

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 2020 (7th EDITION) OF FLORIDA BUILDING CODE. CLIPPED (INTERIOR OR END) MULLIONS MAY BE INSTALLED AT HIGH VELOCITY HURRICANE ZONES (H.V.H.Z) AND OUT OF IT (N.H.V.H.Z).

DESIGN WIND LOADS SHALL BE DETERMINED AS PER SECTION 1620 & 1609 OF THE ABOVE MENTIONED CODE, USING ASCE 7-16, 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 7-16 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.

CLIPPED MULLIONS ADEQUACY FOR IMPACT AND CYCLIC RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1626 & 1609.1.2 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 EVALUATION DOCUMENT (P.E.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 AND 1609 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 SECTION 1620 AND 1609 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 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 2017 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
ALUMINA DISTRIBUTION CENTER

6. ALL ALUMINUM EXTRUSIONS IN CONTACT WITH DISSIMILAR MATERIALS SHALL COMPLY WITH SECTION III-6 OF THE 2015 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 24-11.3.3.4.

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 ELCO CONSTRUCTION PRODUCTS 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 ELCO CONSTRUCTION PRODUCTS 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 ELCO CONSTRUCTION PRODUCTS 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.

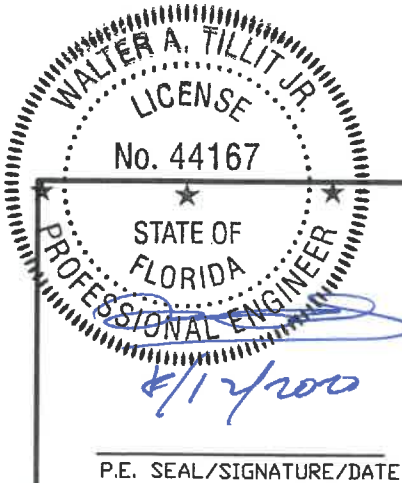
(c) THIS P.E.D. WILL BE CONSIDERED INVALID IF ALTERED BY ANY MEANS.

(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.

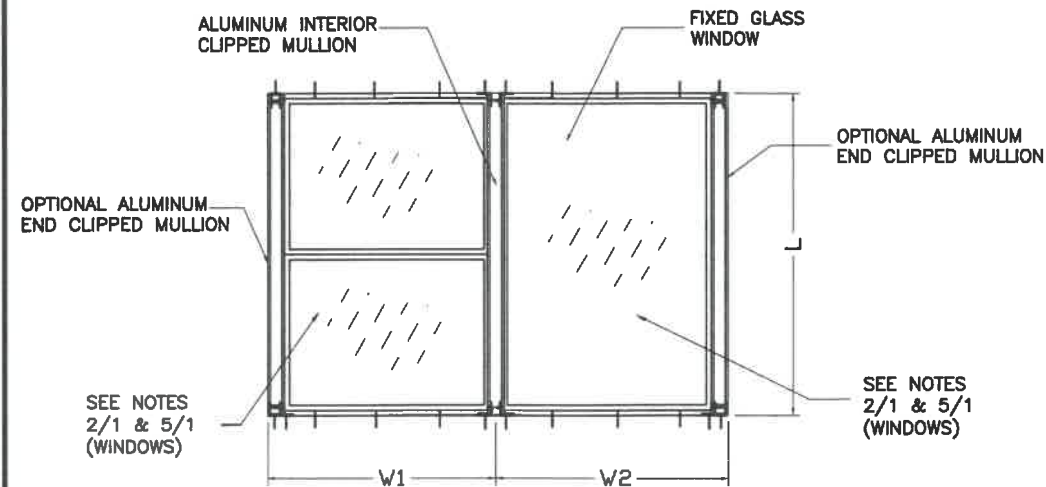
11. MULLION'S MANUFACTURER LABEL SHALL BE PLACED ON THE EXPOSED SURFACE OF PROFILES WITH ACCORDANCE WITH SECTION 1709.5 OF THE FLORIDA BUILDING CODE. ONE LABEL SHALL BE PLACED FOR EVERY OPENING.

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



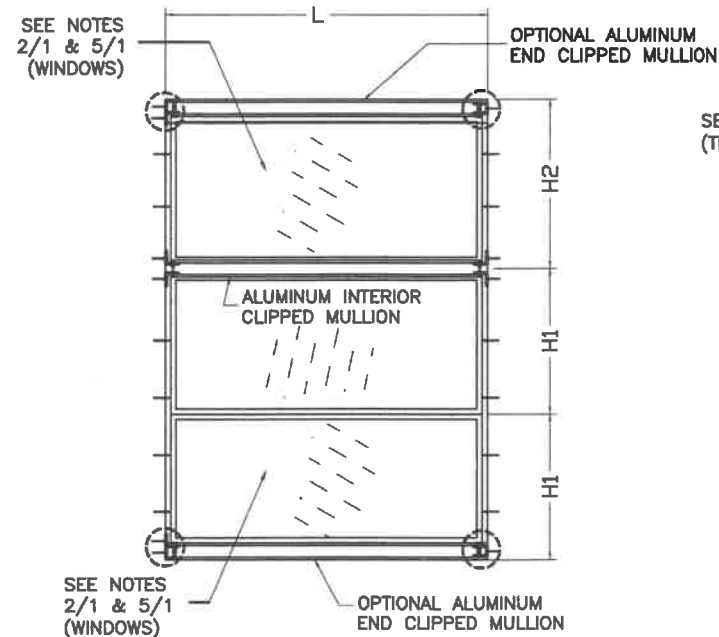
SHEET #	INDEX
	DESCRIPTION
1	GENERAL NOTES AND INDEX
2	INSTALLATION ELEVATIONS
3	CLIPPED INTERIOR & END MULLIONS
4	CLIP TYPES C1 THRU C4
5	TYPICAL ANCHOR/CLIP DETAILS FOR INTERIOR & END MULLIONS
6	ANCHOR SCHEDULE FOR CLIPS
6A	MULLIONS CHARTS SCHEDULES
6B	MULLIONS CHARTS SCHEDULES
6C	MULLIONS CHARTS SCHEDULES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

FLORIDA BUILDING CODE (HIGH & NON HIGH VELOCITY HURRICANE ZONE)					
©2020 TILTECO, INC.			SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS		F.P. DRAWN BY:
TILTECO INC.			ALUMINA DISTRIBUTION CENTER		08/03/2020 DATE:
TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th. St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167			15002 N.W. 107 AVENUE SUITE # 1 HIALEAH GARDENS, FL 33018 PHONE: (305) 444-1198		20-233 DRAWING No.
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-
					SHEET 1 OF 60



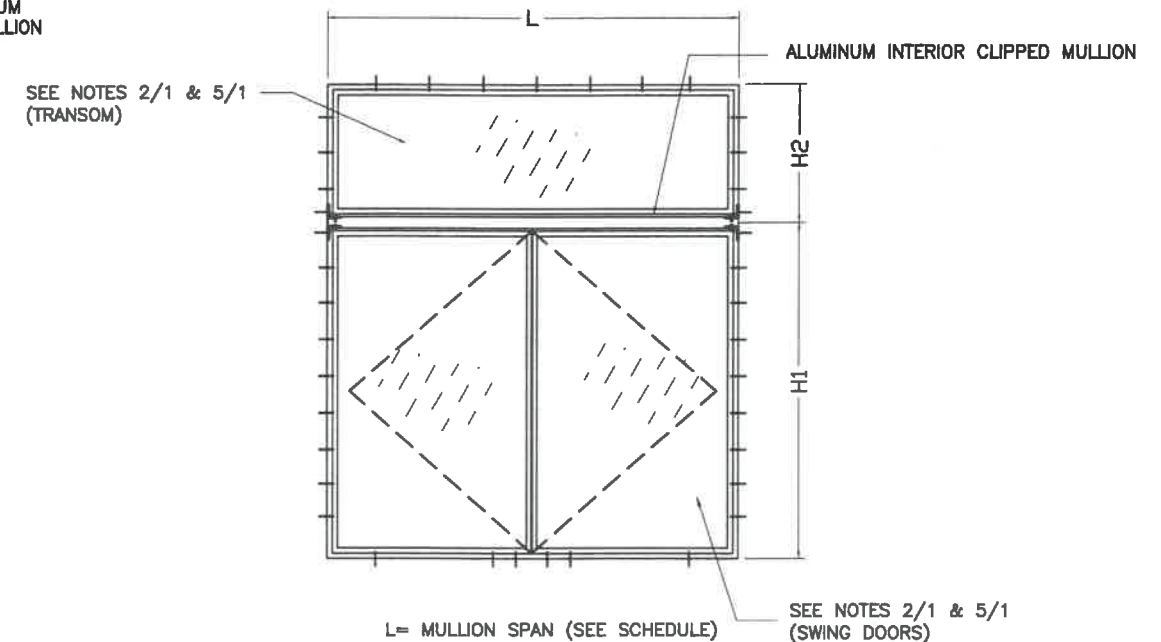
L = MULLION SPAN (SEE SCHEDULE)
 TRIBUTARY WIDTH (b) = $\frac{W1 + W2}{2}$
 FOR INTERIOR MULLIONS
 TRIBUTARY WIDTH (b) = $\frac{W1}{2}$ OR $\frac{W2}{2}$, RESPECTIVELY
 FOR END MULLIONS

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

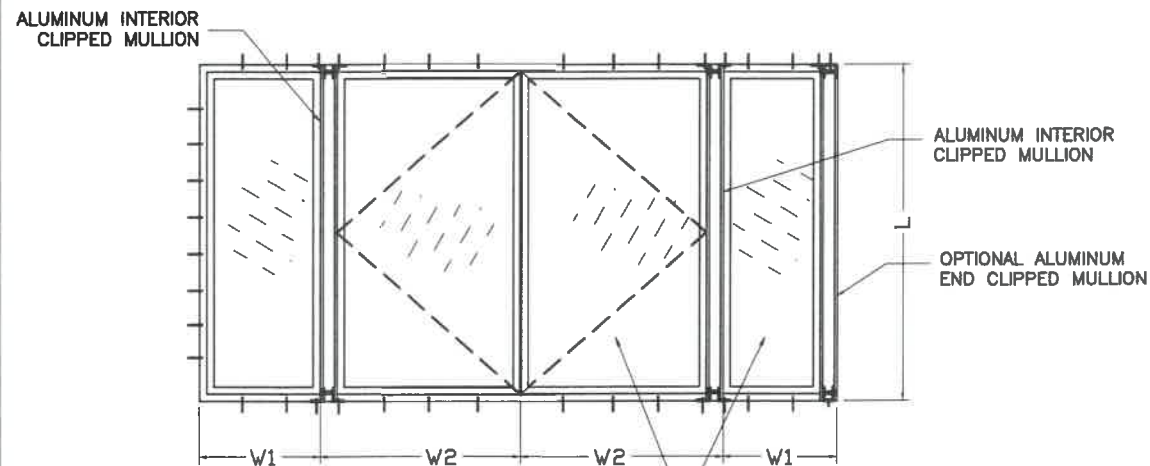


L = MULLION SPAN (SEE SCHEDULE)
 TRIBUTARY WIDTH (b) = $\frac{H1 + H2}{2}$
 FOR INTERIOR MULLIONS
 TRIBUTARY WIDTH (b) = $\frac{H1}{2}$ OR $\frac{H2}{2}$, RESPECTIVELY
 FOR END MULLIONS

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

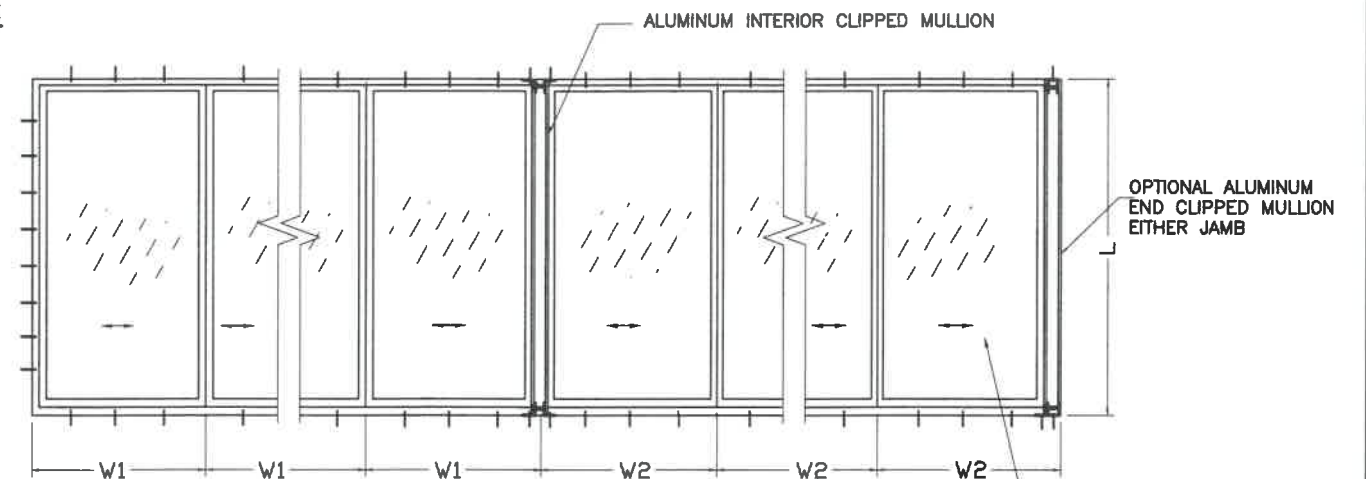


**INSTALLATION ELEVATION W/
 HORIZONTAL INTERIOR CLIPPED MULLION**



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

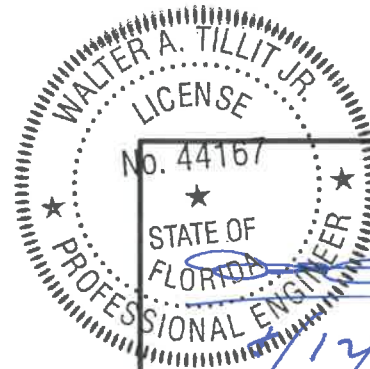
**INSTALLATION ELEVATION W/ VERTICAL
 INTERIOR AND OPTIONAL END CLIPPED
 MULLIONS**



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**

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



P.E. SEAL/SIGNATURE/DATE

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

SERIES 14000 HMMS IMPACT RESISTANT
 CLIPPED ALUMINUM MULLIONS

ALUMINA DISTRIBUTION CENTER

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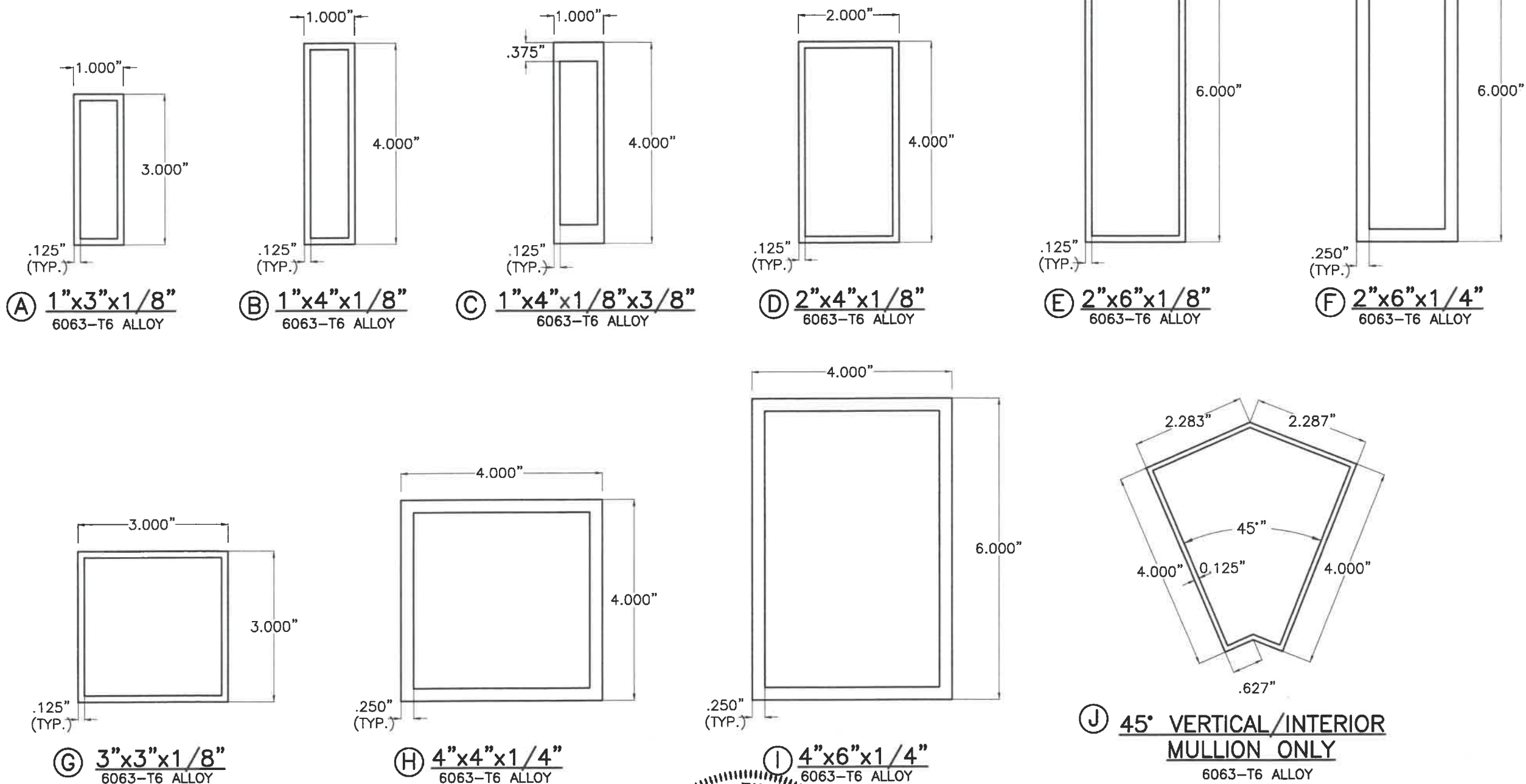
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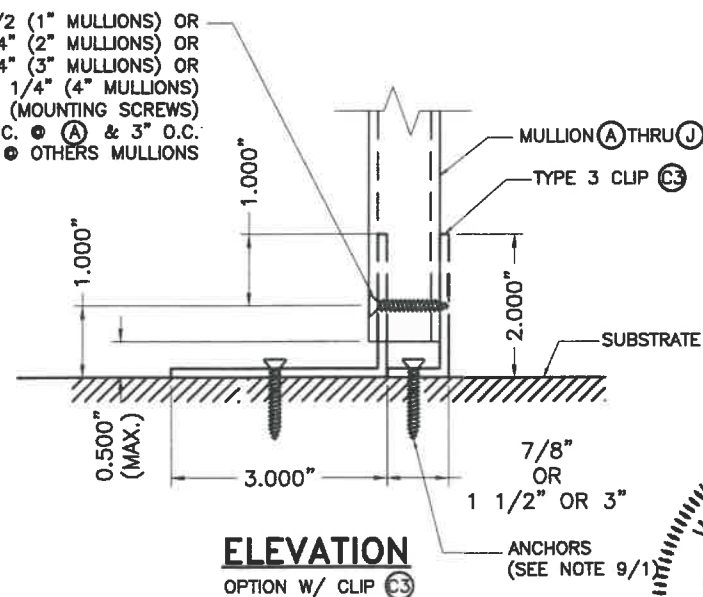
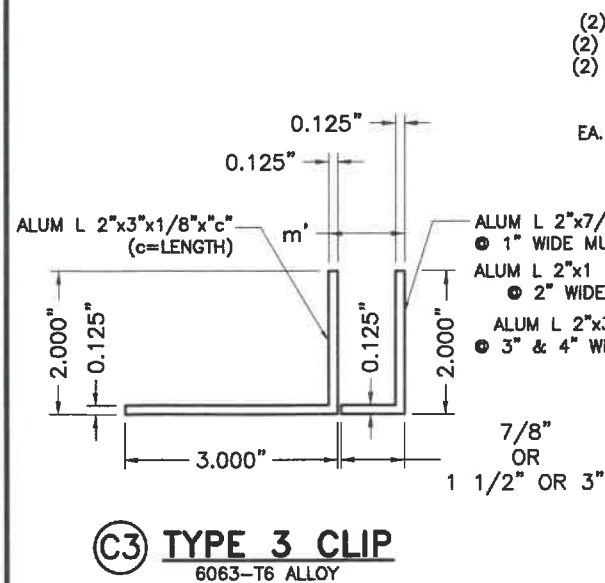
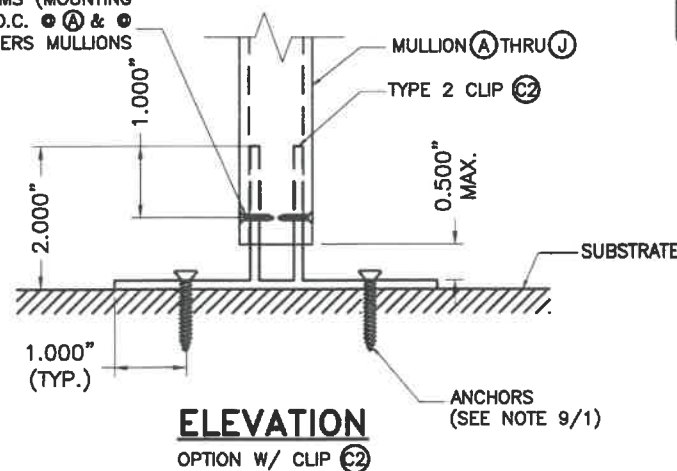
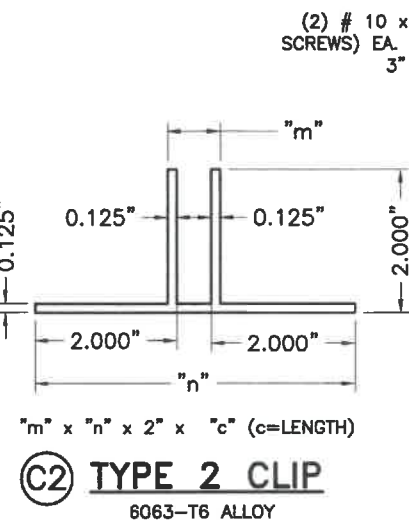
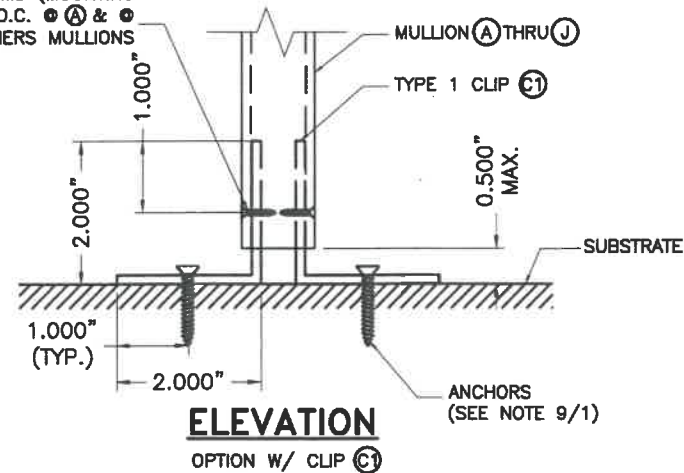
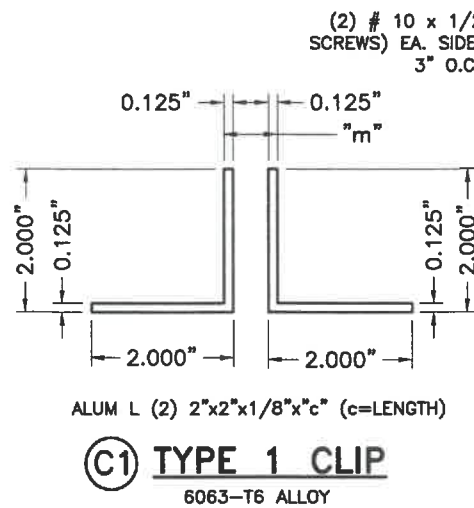
SHEET 2 OF 60

CLIPPED INTERIOR AND END MULLIONS
(EXCEPT AS NOTED)



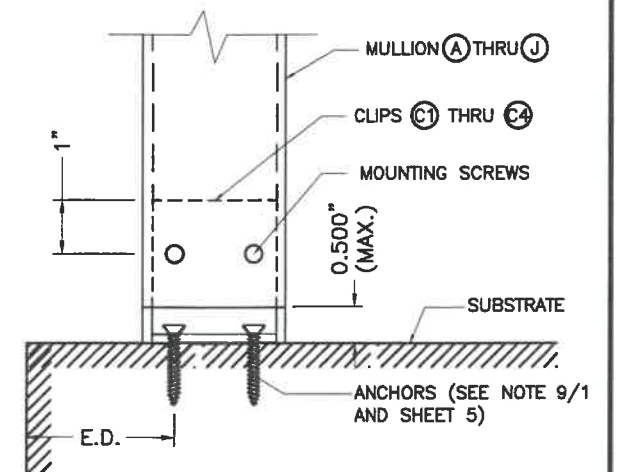
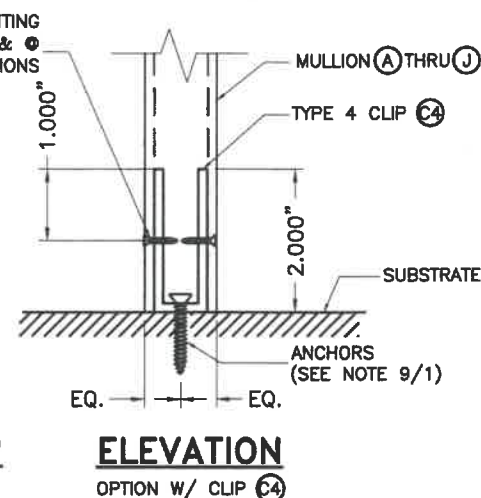
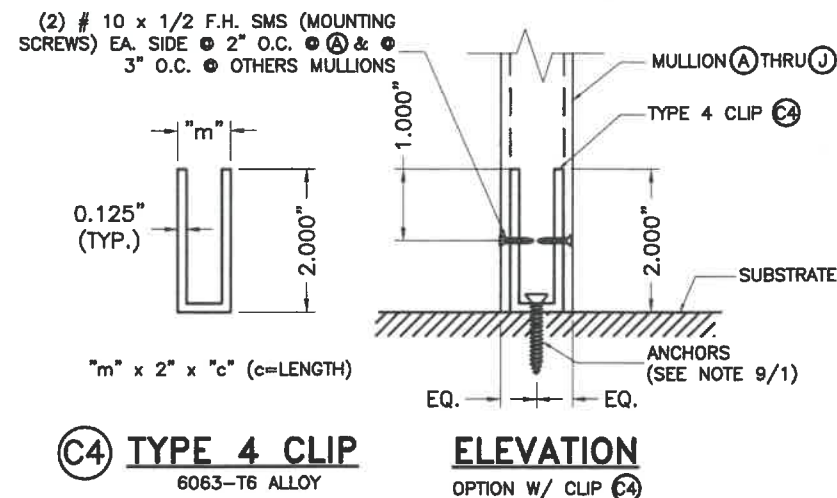
WALTER A. TILLIT JR.
LICENSE
No. 44167
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
1/20/20
P.E. SEAL/SIGNATURE/DATE

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SHEET 3 OF 60					

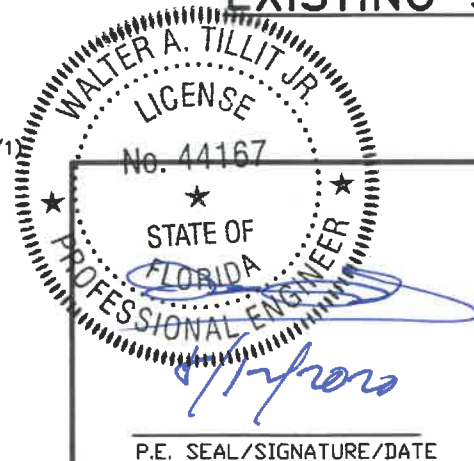


CLIP/SCHEDULE FOR C1, C2, C3 & C4 CLIPS								
MULLION TYPE	m	m'	n	c	REQUIREMENTS FOR CLIP USE			
					C1	C2	C3	C4
(A)	23/32"	1"	4 15/32"	2 23/32"	NOTE 1	NOTE 1	NOTE 2	NOTE 3
(B)	23/32"	1"	4 15/32"	3 23/32"	NOTE 1	NOTE 1	NOTE 2	NOTE 3
(C)	23/32"	1"	4 15/32"	3 7/32"	NOTE 1	NOTE 1	NOTE 2	NOTE 3
(D)	1 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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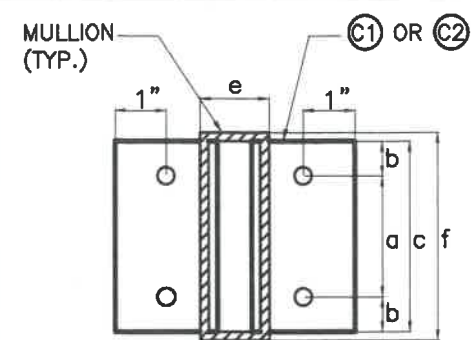
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08/03/2020
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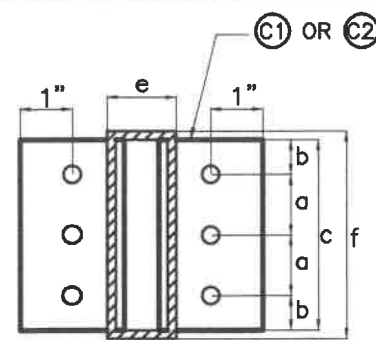
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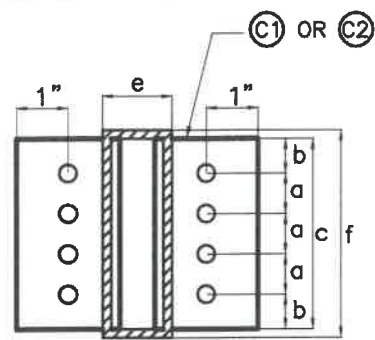
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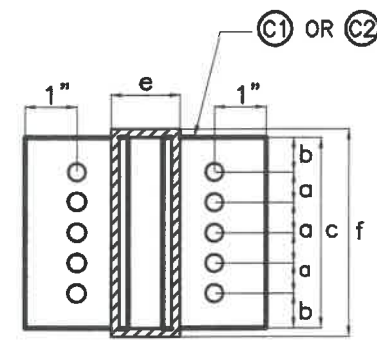
N=4 ANCHORS
 @ INTERIOR MULLION



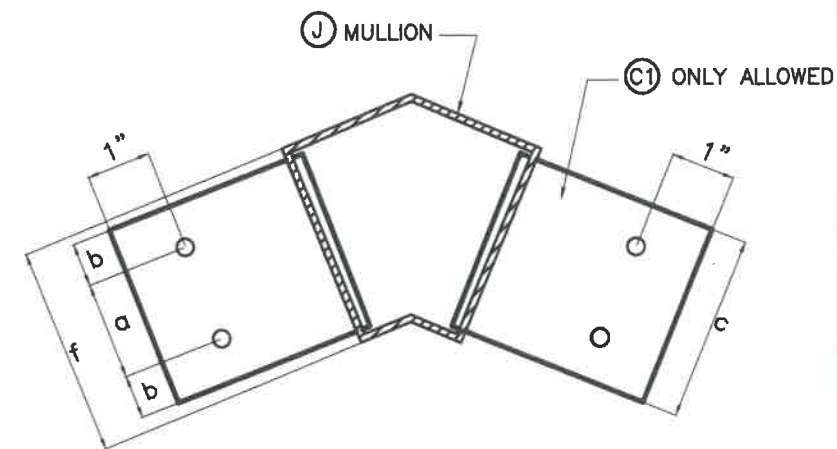
N=6 ANCHORS
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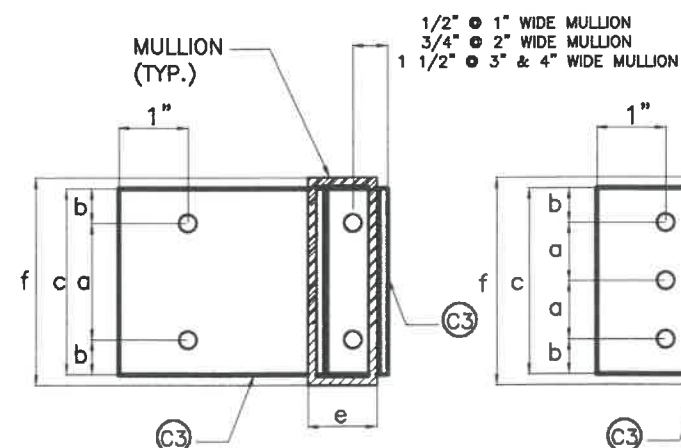
N=8 ANCHORS
 @ INTERIOR MULLION



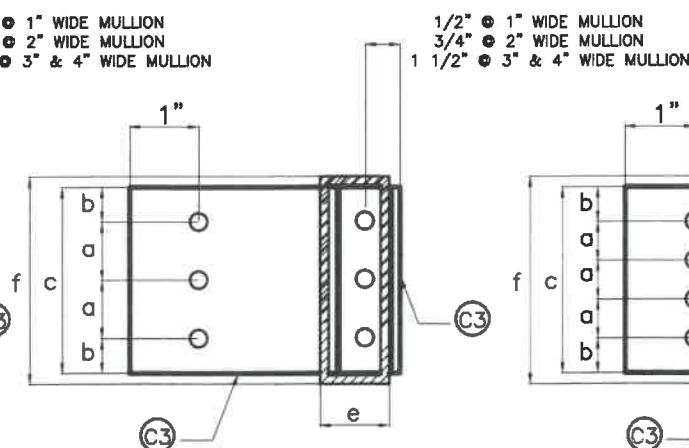
N=10 ANCHORS
 @ INTERIOR MULLION



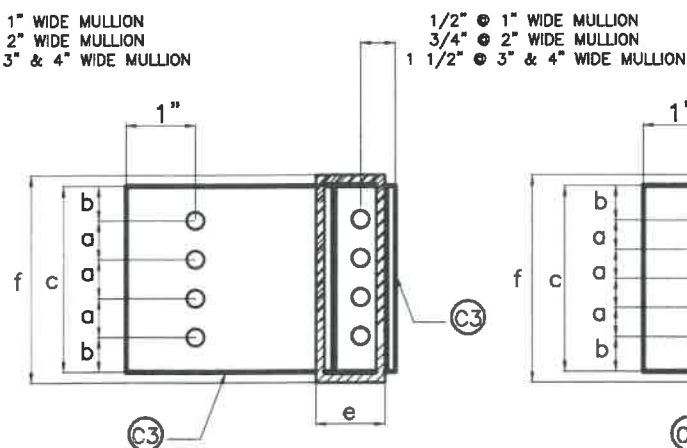
45° VERTICAL/INTERIOR (J)
MULLION W/ N=4 ANCHORS
& (C1) CLIP



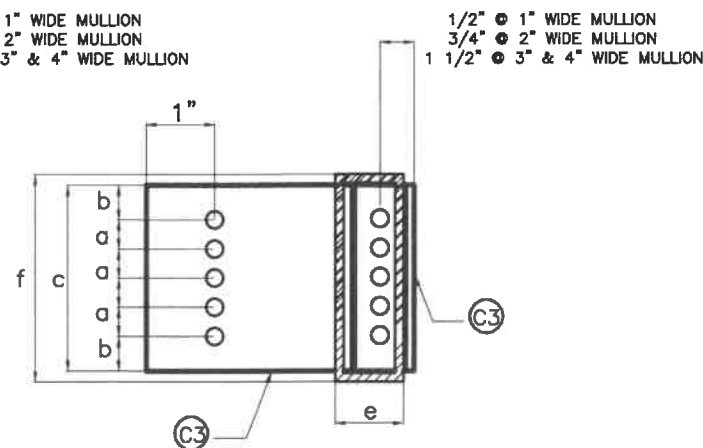
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ONLY END MULLION
 (OPTION 1)



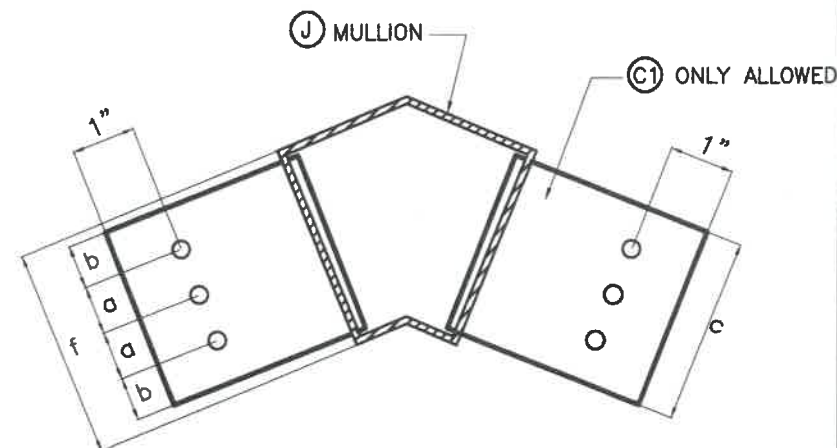
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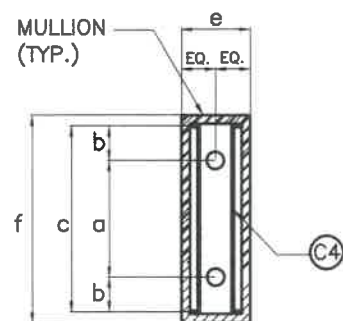
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ONLY END MULLION
 (OPTION 1)



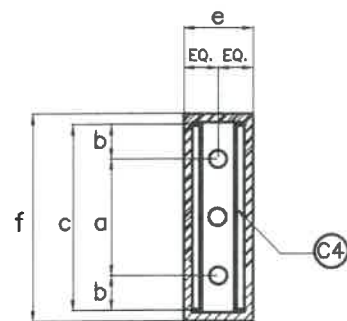
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ONLY END MULLION
 (OPTION 1)



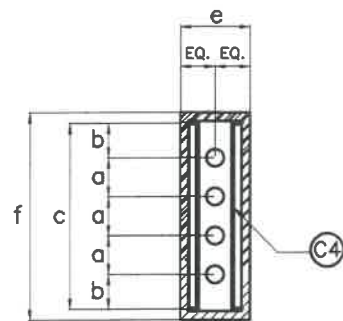
45° VERTICAL/INTERIOR (J)
MULLION W/ 6 ANCHORS &
(C1) CLIP



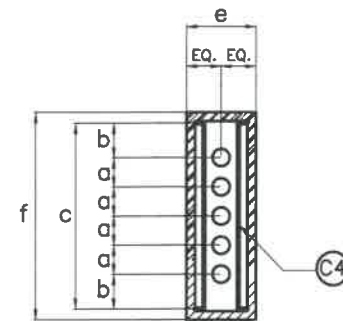
N=2 ANCHORS @
INTERIOR OR END
MULLION
 (OPTION 2)



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



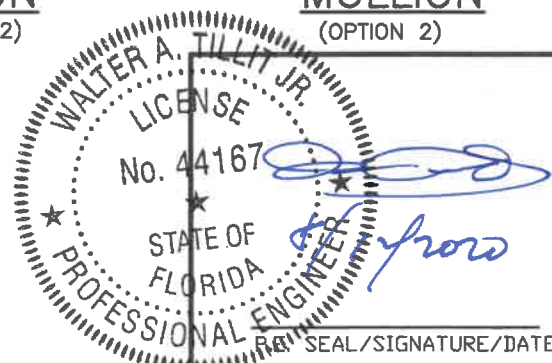
N=4 ANCHORS @
INTERIOR OR END
MULLION
 (OPTION 2)



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)



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

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
 HIALEAH GARDENS, FL. 33018
 PHONE: (305) 444-1198

F.P.
 DRAWN BY:

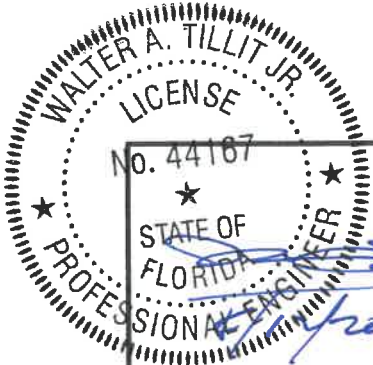
08/03/2020
 DATE:

20-233
 DRAWING No.

SHEET 5 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

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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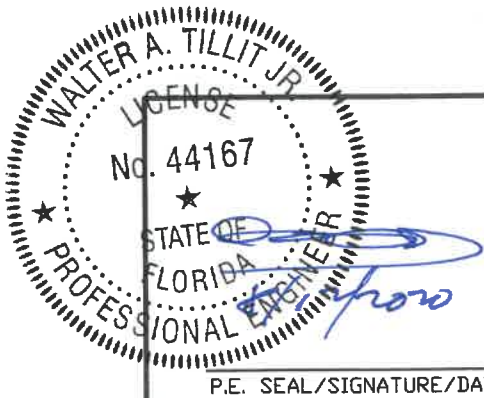
20-233
DRAWING No.

SHEET 6 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	—	—
2	—	—	4	—	—

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



P.E. SEAL/SIGNATURE/DATE

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			ALUMINA DISTRIBUTION CENTER		08/03/2020 DATE:
TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th. St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167			15002 N.W. 107 AVENUE SUITE # 1 HIALEAH GARDENS, FL 33018 PHONE: (305) 444-1198		20-233 DRAWING No.
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-
					SHEET 6A OF 60

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
40	F-C3-N=10-STL/AL	F	C3	10	STL/AL

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

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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-
					20-233 DRAWING No. SHEET 6B 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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P.E. SEAL/SIGNATURE/DATE

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2	-	-	4	-	-
DRAWING No.					20-233
SHEET					8C OF 60

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

A-C1/C2-N=4-WOOD

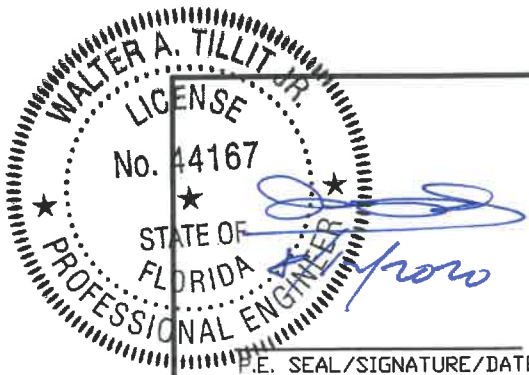
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4 ULTRACONS EACH END OF MULLION				
Tributary	Mullion Length (L)			
Width (b)	38.375	50.625	58	63
20	183.1	138.8	121.2	111.5
23	159.2	120.7	105.4	97.0
26	140.9	106.8	93.2	85.8
29	126.3	95.7	83.6	76.9
32	114.4	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	Mullion Length (L)					
Width (b)	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	Mullion Length (L)					
Width (b)	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



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WALTER A. TILLIT Jr. P.E.
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SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL 33018
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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

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SHEET 7 OF 60

CLIPPED INTERIOR MULLIONS CHARTS INTO WOOD SUBSTRATE

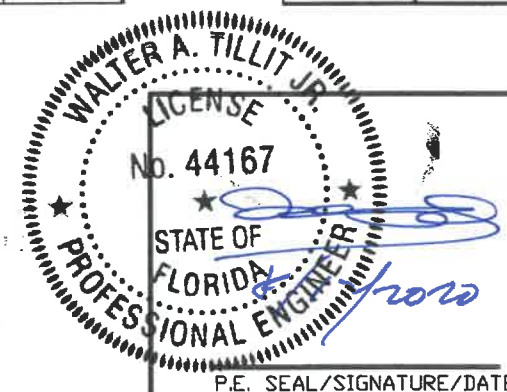
CONNECTED W/ CLIPS C1 & C2

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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**SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS**

ALUMINA DISTRIBUTION CENTER

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DRAWING No.

SHEET 8 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

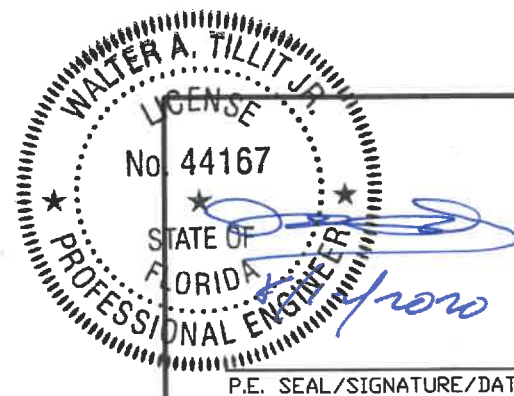
CLIPPED INTERIOR MULLIONS CHARTS INTO WOOD SUBSTRATE CONNECTED W/ CLIPS (C1) & (C2)

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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SHEET 9 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

CLIPPED INTERIOR MULLIONS CHARTS INTO WOOD SUBSTRATE

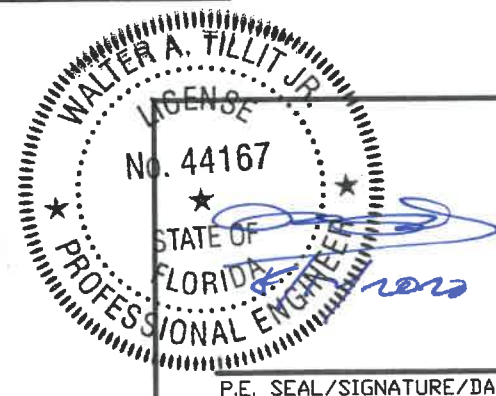
CONNECTED W/ CLIPS (C1) & (C2)

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



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

SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
 HIALEAH GARDENS, FL 33018
 PHONE: (305) 444-1198

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233

DRAWING No.

SHEET 10 OF 60

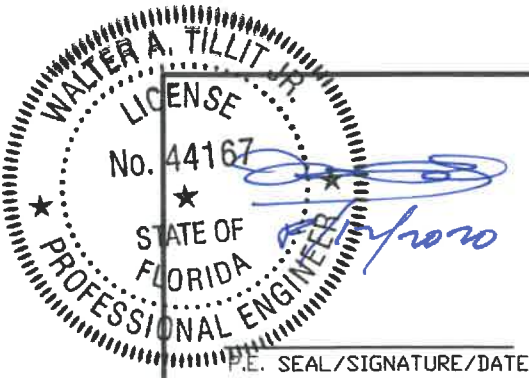
CLIPPED INTERIOR MULLIONS CHARTS INTO WOOD SUBSTRATE CONNECTED W/ CLIPS (C1) & (C2)

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	Mullion Length (L)					
Width (b)	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	Mullion Length (L)								
Width (b)	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

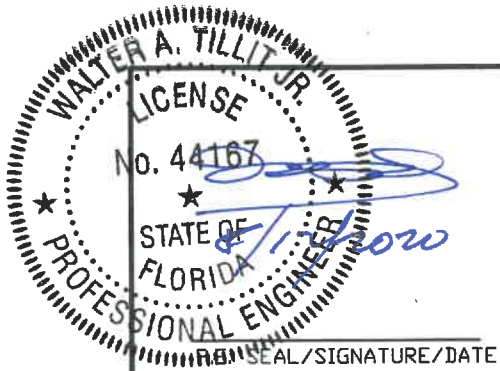


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 TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th. St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 CA-0006719 WALTER A. TILLIT Jr., P.E. FLORIDA Lic. # 44167			ALUMINA DISTRIBUTION CENTER		08/03/2020 DATE:
			15002 N.W. 107 AVENUE SUITE # 1 HIALEAH GARDENS, FL 33018 PHONE: (305) 444-1198		20-233 DRAWING No.
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-
					SHEET 11 OF 60

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

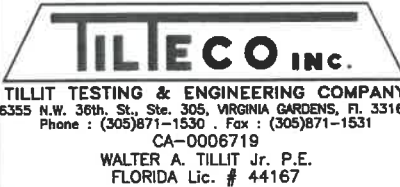
J-C1-N=6-WOOD

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	Mullion Length (L)					
Width (b)	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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SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

ALUMINA DISTRIBUTION CENTER

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08/03/2020
DATE:

20-233
DRAWING No.

SHEET 12 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

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	Mullion Length (L)			
Width (b)	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

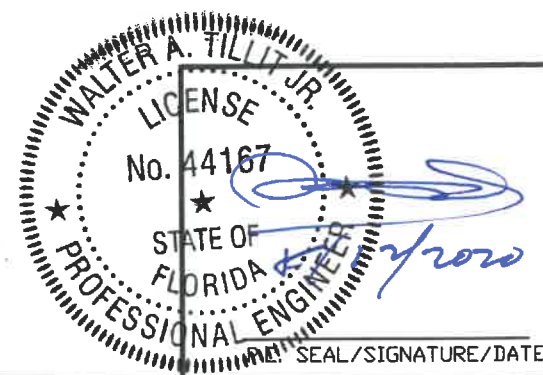
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8" MULLION WITH CLIPS
CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF
MULLION

Tributary	Mullion Length (L)					
Width (b)	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	Mullion Length (L)					
Width (b)	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



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

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CLIPPED ALUMINUM MULLIONS**

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08/03/2020
DATE:

20-233

DRAWING No.

SHEET 13 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

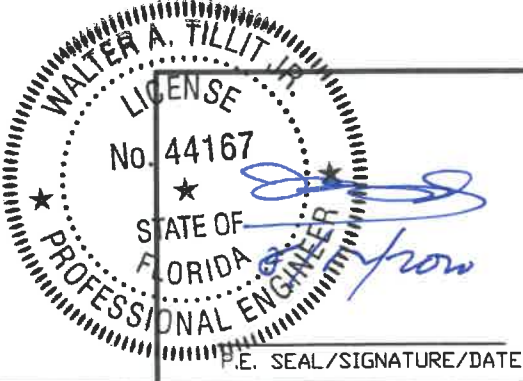
CLIPPED INTERIOR MULLIONS CHARTS INTO BLOCK SUBSTRATE
CONNECTED W/ CLIPS C1 & C2

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	Mullion Length (L)					
Width (b)	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	Mullion Length (L)								
Width (b)	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



FLORIDA BUILDING CODE (HIGH & NON HIGH VELOCITY HURRICANE ZONE)					
©2020 TILTECO, INC.			SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS		F.P. DRAWN BY:
 TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th. St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167			ALUMINA DISTRIBUTION CENTER		08/03/2020 DATE:
			15002 N.W. 107 AVENUE SUITE # 1 HIALEAH GARDENS, FL 33018 PHONE: (305) 444-1198		20-233 DRAWING No.
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-
					SHEET 14 OF 60

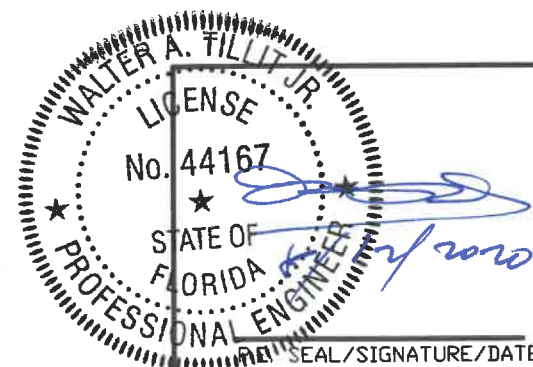
CLIPPED INTERIOR MULLIONS CHARTS INTO BLOCK SUBSTRATE CONNECTED W/ CLIPS (C1) & (C2)

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



FLORIDA BUILDING CODE (HIGH & NON HIGH VELOCITY HURRICANE ZONE)

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SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL 33018
PHONE: (305) 444-1198

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233

DRAWING No.

SHEET 15 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

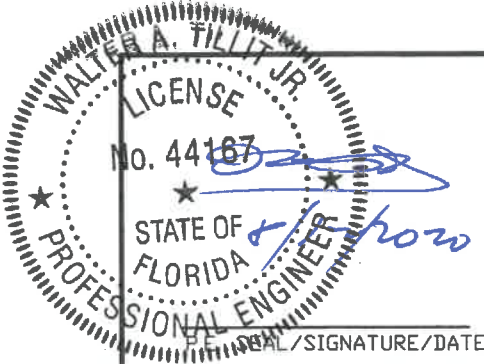
CLIPPED INTERIOR MULLIONS CHARTS INTO BLOCK SUBSTRATE
CONNECTED W/ CLIPS C1 & C2

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	Mullion Length (L)					
Width (b)	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

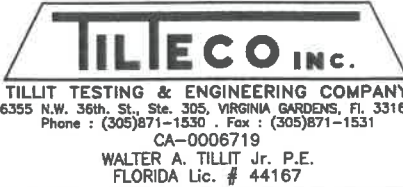
H-C1/C2-N=4-BLOCK

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	Mullion Length (L)								
Width (b)	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



FLORIDA BUILDING CODE (HIGH & NON HIGH VELOCITY HURRICANE ZONE)

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SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL. 33018
PHONE: (305) 444-1198

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233
DRAWING No.

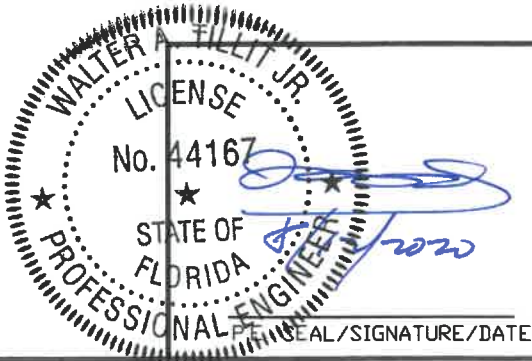
SHEET 16 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	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 UL TRACONS 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)					
©2020 TILTECO, INC.			SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS		F.P. DRAWN BY:
 TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 • Fax : (305)871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167			ALUMINA DISTRIBUTION CENTER		08/03/2020 DATE:
			15002 N.W. 107 AVENUE SUITE # 1 HIALEAH GARDENS, FL 33018 PHONE: (305) 444-1198		20-233 DRAWING No.
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-
					SHEET 17 OF 60

CLIPPED INTERIOR MULLIONS CHARTS INTO CONCRETE SUBSTRATE

CONNECTED W/ CLIPS (C1) & (C2)

A-C1/C2-N=4-CONC

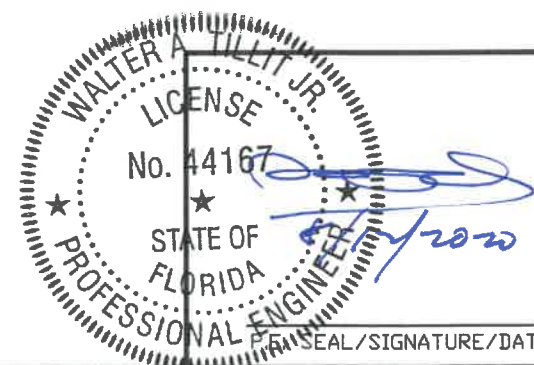
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x 3"x 1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4 ULTRACONS EACH END OF MULLION				
Tributary	Mullion Length (L)			
Width (b)	38.375	50.625	58	63
20	185.0	185.0	154.2	130.7
23	185.0	176.1	134.1	113.7
26	185.0	155.7	118.7	100.6
29	185.0	139.6	106.4	90.2
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	Mullion Length (L)					
Width (b)	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	Mullion Length (L)					
Width (b)	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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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

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
 HIALEAH GARDENS, FL. 33018
 PHONE: (305) 444-1198

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233
DRAWING No.

SHEET 18 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

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

D-C1/C2-N=4-CONC

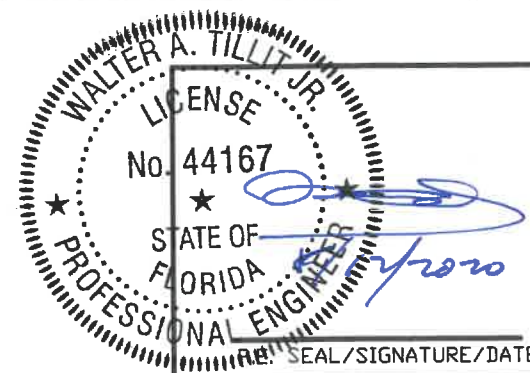
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	185.0	185.0	185.0	185.0	185.0	137.4
23	185.0	185.0	185.0	185.0	185.0	119.5
26	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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SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL 33018
PHONE: (305) 444-1198

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233

DRAWING No.

SHEET 19 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

CLIPPED INTERIOR MULLIONS CHARTS INTO CONCRETE SUBSTRATE

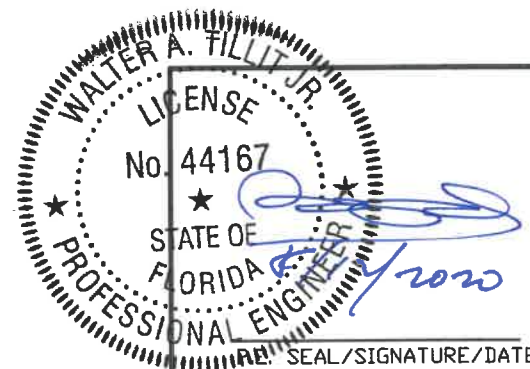
CONNECTED W/ CLIPS (C1) & (C2)

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



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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**

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL 33018
PHONE: (305) 444-1198

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233

DRAWING No.

SHEET 20 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	5	-	-
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

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

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

**SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS**

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HALEAH GARDENS, FL. 33018
PHONE: (305) 444-1198

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233
DRAWING No.

SHEET 21 OF 60

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

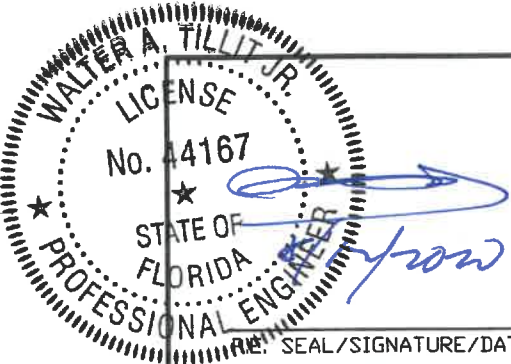
I-C1/C2-N=8-CONC

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	
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



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SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

ALUMINA DISTRIBUTION CENTER

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HIALEAH GARDENS, FL 33018
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DATE:

20-233
DRAWING No.

SHEET 22 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

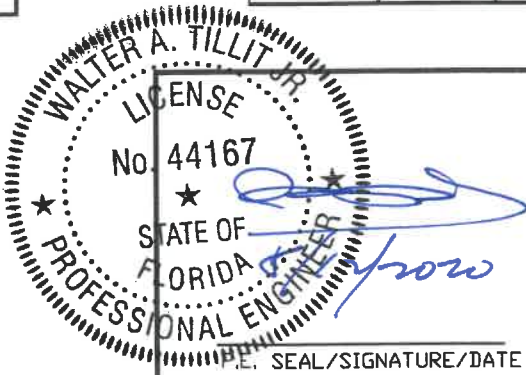
CLIPPED INTERIOR MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE CONNECTED W/ CLIPS C1 & C2

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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TILTECO INC.
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

**SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS**

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL 33018
PHONE: (305) 444-1198

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233

DRAWING No.

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

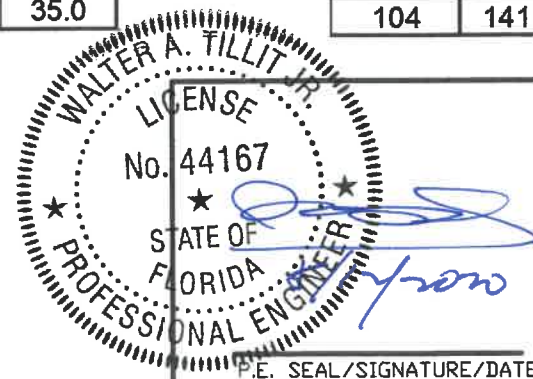
CLIPPED INTERIOR MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE CONNECTED W/ CLIPS (C1) & (C2)

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

**SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS**

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL 33018
PHONE: (305) 444-1198

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233
DRAWING No.

SHEET 24 OF 60

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

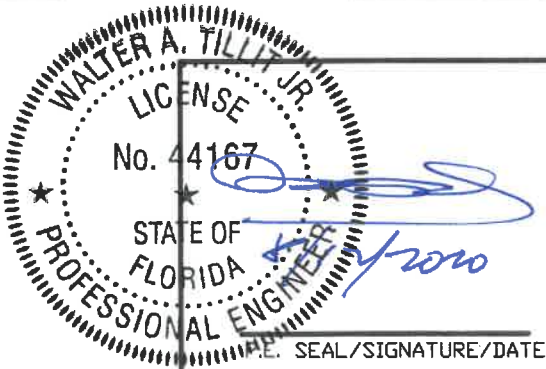
CLIPPED INTERIOR MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE
CONNECTED W/ CLIPS C1 & C2

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	Mullion Length (L)					
Width (b)	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	Mullion Length (L)					
Width (b)	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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SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS					
ALUMINA DISTRIBUTION CENTER					
15002 N.W. 107 AVENUE SUITE # 1 HIALEAH GARDENS, FL 33018 PHONE: (305) 444-1198					
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-
F.P. DRAWN BY: 08/03/2020 DATE: 20-233 DRAWING No. SHEET 25 OF 60					

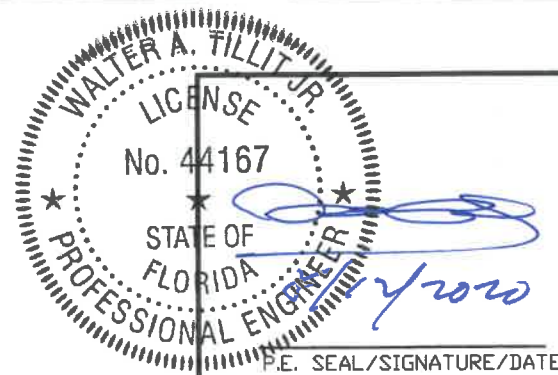
CLIPPED INTERIOR MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE CONNECTED W/ CLIPS (C1) & (C2)

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



FLORIDA BUILDING CODE (HIGH & NON HIGH VELOCITY HURRICANE ZONE)

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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

**SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS**

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL 33018
PHONE: (305) 444-1198

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233
DRAWING No.

SHEET 26 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

CLIPPED INTERIOR MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE

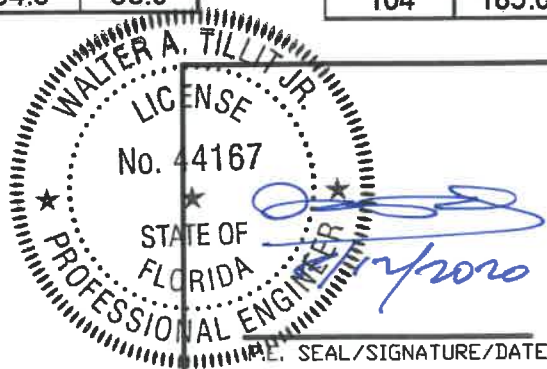
CONNECTED W/ CLIPS (C1) & (C2)

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

**SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS**

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HALEAH GARDENS, FL 33018
PHONE: (305) 444-1198

F.P.

DRAWN BY:

08/03/2020
DATE:

20-233

DRAWING No.

SHEET 27 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

CLIPPED INTERIOR MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE

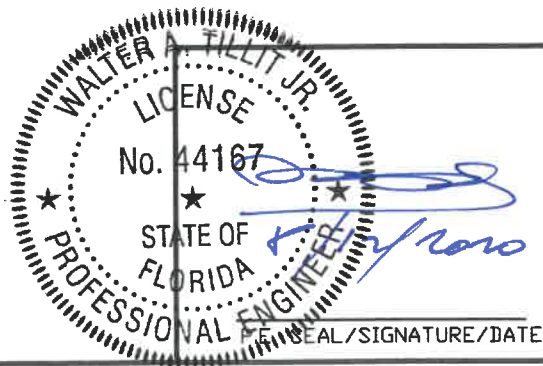
CONNECTED W/ CLIPS C1 & C2

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	Mullion Length (L)					
Width (b)	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	Mullion Length (L)								
Width (b)	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



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**SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS**

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL 33018
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DATE:

20-233
DRAWING No.

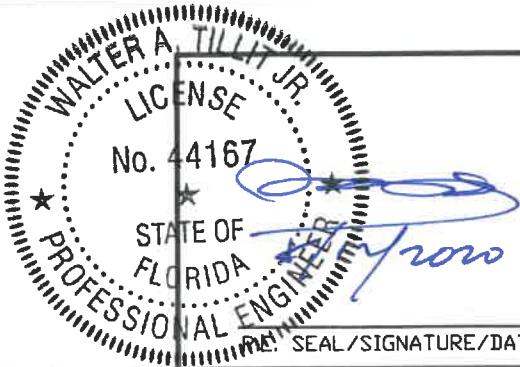
SHEET 28 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

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	Mullion Length (L)					
Width (b)	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



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 TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33186 Phone : (305)871-1530 . Fax : (305)871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167			ALUMINA DISTRIBUTION CENTER		08/03/2020 DATE:
			15002 N.W. 107 AVENUE SUITE # 1 HIALEAH GARDENS, FL 33018 PHONE: (305) 444-1198		20-233 DRAWING No.
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-
					SHEET 29 OF 60

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	Mullion Length (L)				
Width (b)	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	Mullion Length (L)					
Width (b)	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	Mullion Length (L)					
Width (b)	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

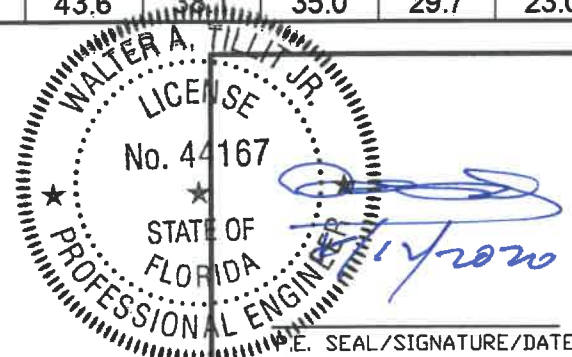
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8 x 3/8" MULLION WITH CLIPS CONNECTED WITH (6) 1/4" ULTRACONS EACH END OF MULLION						
Tributary	Mullion Length (L)					
Width (b)	38.375	50.625	58	63	74.25	80
20	187.2	141.9	123.9	114.1	96.8	89.8
23	162.8	123.4	107.7	99.2	84.1	78.1
26	144.0	109.2	95.3	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	Mullion Length (L)					
Width (b)	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	Mullion Length (L)					
Width (b)	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



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SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL 33018
PHONE: (305) 444-1198

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233
DRAWING No.

SHEET 30 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

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

F-C3-N=8-WOOD

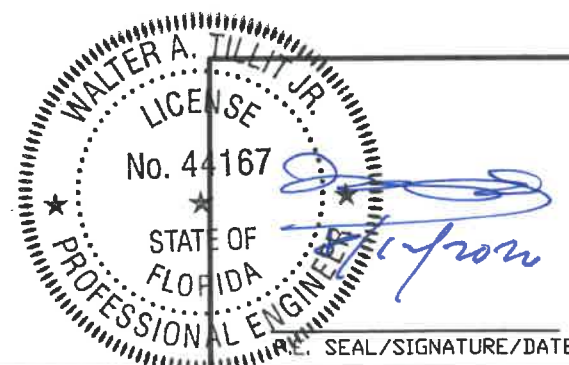
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (8) 1/4" ULTRACONS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	185.7	157.6	121.9	108.3	97.5	81.3
23	200.0	200.0	175.4	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

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=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



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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

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL 33018
PHONE: (305) 444-1198

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08/03/2020
DATE:

20-233

DRAWING No.

SHEET 31 OF 60

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

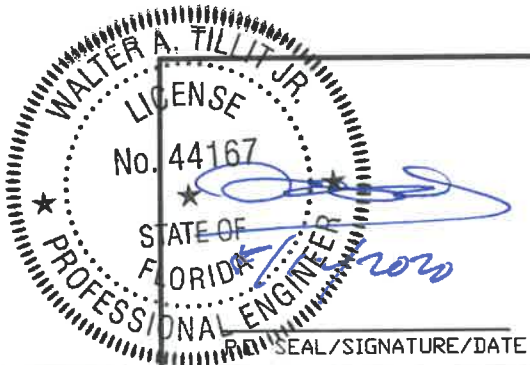
CLIPPED END MULLIONS CHARTS INTO WOOD SUBSTRATE
CONNECTED W/ CLIP C3

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	Mullion Length (L)					
Width (b)	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	Mullion Length (L)								
Width (b)	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



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SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS

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HIALEAH GARDENS, FL 33018
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DRAWN BY:

08/03/2020
DATE:

20-233
DRAWING No.

SHEET 32 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

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

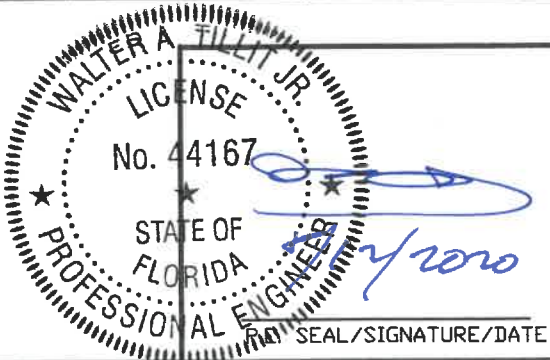
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8"x3/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	184.1	139.5	121.8	112.1	95.1	88.3
23	160.0	121.3	105.9	97.5	82.7	76.8
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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CA-0006719
WALTER A. TILLIT Jr. P.E.
FLORIDA Lic. # 44167

**SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS**

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL 33018
PHONE: (305) 444-1198

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233
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	Mullion Length (L)								
Width (b)	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

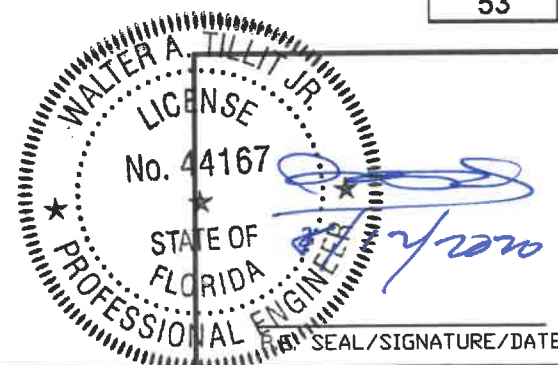
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (8) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION									
Tributary	Mullion Length (L)								
Width (b)	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	186.6	162.9	149.9	127.2	98.4	87.5	78.7	65.6
23	200.0	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	Mullion Length (L)						
Width (b)	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	Mullion Length (L)								
Width (b)	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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**SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS**

ALUMINA DISTRIBUTION CENTER

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PHONE: (305) 444-1198

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DRAWN BY:

08/03/2020
DATE:

20-233
DRAWING No.

SHEET 34 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

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"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4 ULTRACONS EACH END OF MULLION					
Tributary	Mullion Length (L)				
Width (b)	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	Mullion Length (L)					
Width (b)	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

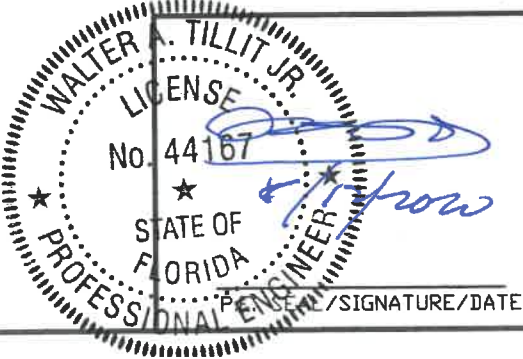
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8"x3/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4 ULTRACONS EACH END OF MULLION						
Tributary	Mullion Length (L)					
Width (b)	38.375	50.625	58	63	74.25	80
20	200.0	200.0	200.0	200.0	199.8	182.2
23	200.0	200.0	200.0	200.0	173.7	158.4
26	200.0	200.0	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	Mullion Length (L)					
Width (b)	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	Mullion Length (L)					
Width (b)	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



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DRAWN BY:

08/03/2020
DATE:

20-233
DRAWING No.

SHEET 35 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

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

F-C3-N=6-CONC

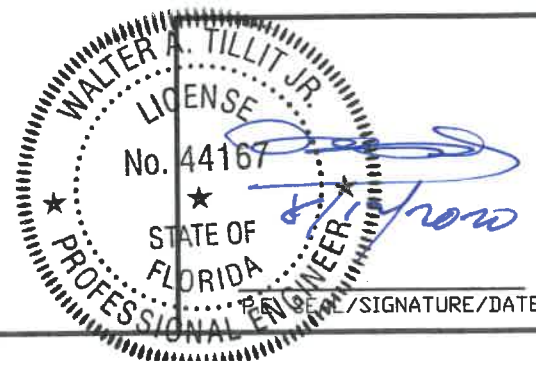
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (6) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	200.0	200.0	198.8	165.7
23	200.0	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

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=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



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 33118
Phone : (305)871-1530 • Fax : (305)871-1531
CA-0006719
WALTER A. TILLIT Jr. P.E.
FLORIDA Lic. # 44167

**SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS**

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL 33018
PHONE: (305) 444-1198

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233
DRAWING No.

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

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

WALTER A. TILLIT JR.

LICENSE

No. 44167

STATE OF FLORIDA

PROFESSIONAL ENGINEER



P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (HIGH & NON HIGH VELOCITY HURRICANE ZONE)

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CLIPPED ALUMINUM MULLIONS

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL. 33018
PHONE: (305) 444-1198

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233
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	Mullion Length (L)				
Width (b)	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	Mullion Length (L)					
Width (b)	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	Mullion Length (L)					
Width (b)	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.

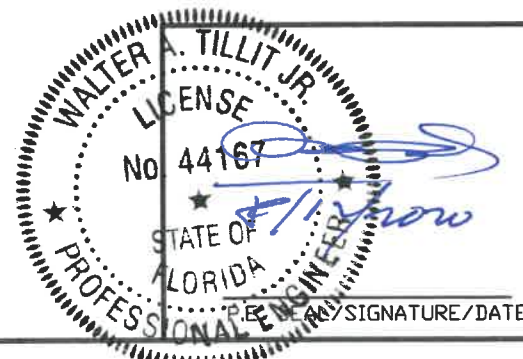
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8 x 3/8" MULLION WITH CLIPS CONNECTED WITH (6) 1/4" TEK SCREWS EACH END OF MULLION						
Tributary	Mullion Length (L)					
Width (b)	38.375	50.625	58	63	74.25	80
20	200.0	200.0	200.0	200.0	200.0	182.2
23	200.0	200.0	200.0	200.0	183.9	158.4
26	200.0	200.0	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	Mullion Length (L)					
Width (b)	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	Mullion Length (L)								
Width (b)	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	186.9	168.2	140.1
38	200.0	200.0	200.0	200.0	200.0	193.6	172.1	154.9	129.1
41	200.0	200.0	200.0	200.0	200.0	179.5	159.5	143.6	119.6
44	200.0	200.0	200.0	200.0	200.0	167.2	148.6	133.8	111.5
47	200.0	200.0	200.0	200.0	200.0	156.5	139.1	125.2	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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F.P.
DRAWN BY:

08/03/2020
DATE:

20-233
DRAWING No.

SHEET 38 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	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.

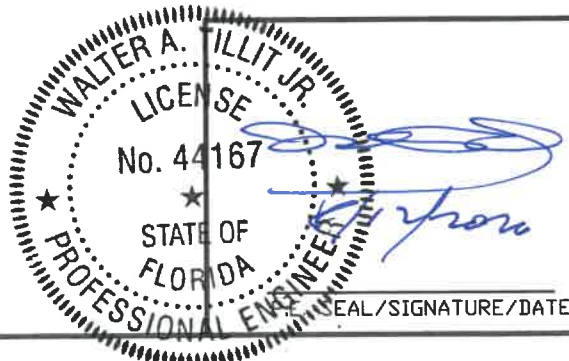
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS
CONNECTED WITH (6) 1/4" TEK SCREWS EACH END OF MULLION

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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TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th. St., Ste. 305, VIRGINIA GARDENS, FL 33168
Phone : (305)871-1530 . Fax : (305)871-1531

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

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL 33018
PHONE: (305) 444-1198

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233

DRAWING No.

SHEET 39 OF 60

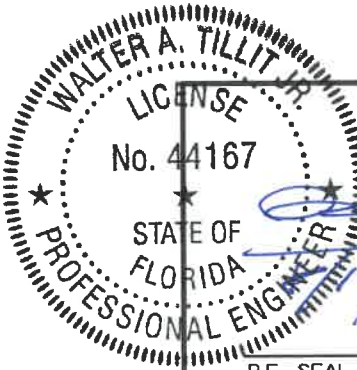
CLIPPED END MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE
CONNECTED W/ CLIP C3

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



P.E. SEAL/SIGNATURE/DATE

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SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL 33018
PHONE: (305) 444-1198

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233
DRAWING No.

SHEET 40 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

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

A-C4-N=2-WOOD

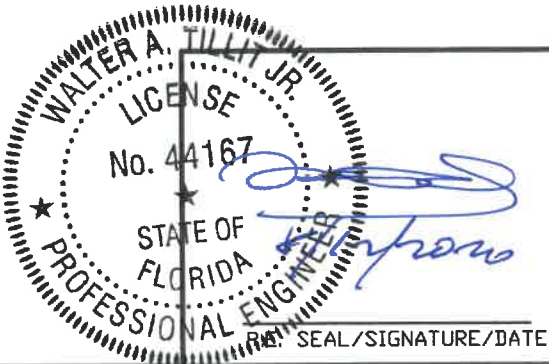
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4 ULTRACONS EACH END OF MULLION					
Tributary	Mullion Length (L)				
Width (b)	38.375	50.625	58	63	
20	91.6	69.4	60.6	55.8	
23	79.6	60.4	52.7	48.5	
26	70.4	53.4	46.6	42.9	
29	63.1	47.9	41.8	38.5	
32	57.2	43.4	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 ULTRACONS EACH END OF MULLION						
Tributary	Mullion Length (L)					
Width (b)	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" ULTRACONS EACH END OF MULLION						
Tributary	Mullion Length (L)					
Width (b)	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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©2020 TILTECO, INC.			SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS		F.P. DRAWN BY:
TILTECO INC.			ALUMINA DISTRIBUTION CENTER		08/03/2020 DATE:
TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th. St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167			15002 N.W. 107 AVENUE SUITE # 1 HIALEAH GARDENS, FL 33018 PHONE: (305) 444-1198		20-233 DRAWING No.
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-
					SHEET 41 OF 60

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

C-C4-N=3-WOOD

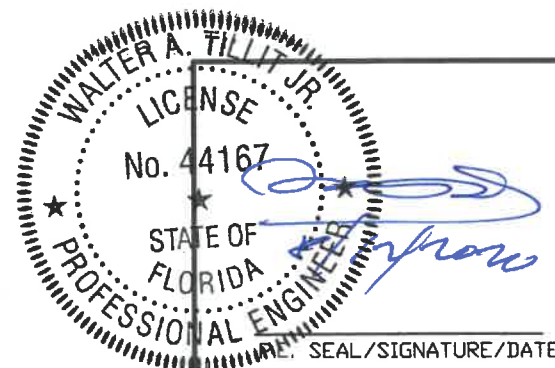
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8 x 3/8" MULLION WITH CLIPS CONNECTED WITH (3) 1/4" ULTRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	137.3	104.1	90.9	83.7	71.0	65.9
23	119.4	90.5	79.0	72.7	61.7	57.3
26	105.6	80.1	69.9	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



FLORIDA BUILDING CODE (HIGH & NON HIGH VELOCITY HURRICANE ZONE)

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SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL 33018
PHONE: (305) 444-1198

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233
DRAWING No.

SHEET 42 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	5	-	-
2	-	-	4	-	-

CLIPPED INTERIOR & END MULLIONS CHARTS INTO WOOD SUBSTRATE

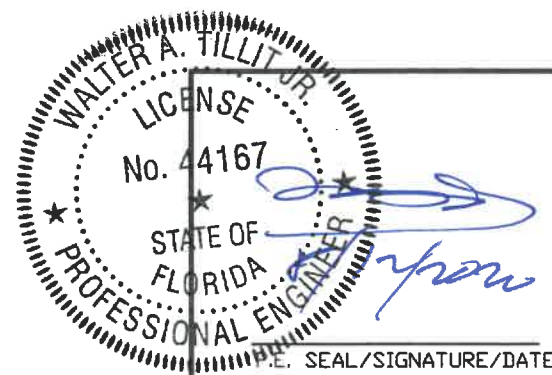
CONNECTED W/ CLIP C4

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



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

**SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS**

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL 33018
PHONE: (305) 444-1198

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233
DRAWING No.

SHEET 43 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

CLIPPED INTERIOR & END MULLIONS CHARTS INTO WOOD SUBSTRATE

CONNECTED W/ CLIP C4

F-C4-N=4-WOOD

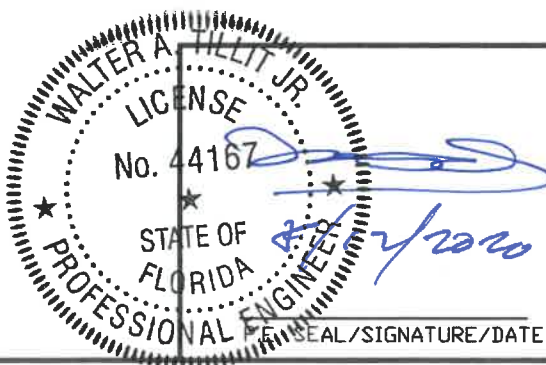
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" ULTRACONS EACH END OF MULLION

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



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

**SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS**

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL. 33018
PHONE: (305) 444-1198

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DRAWING No.

SHEET 44 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

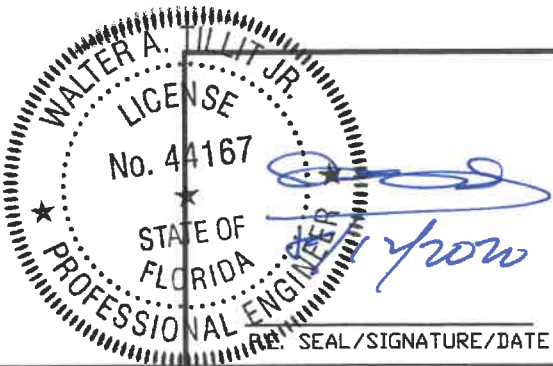
CLIPPED INTERIOR & END MULLIONS CHARTS INTO WOOD SUBSTRATE
CONNECTED W/ CLIP C4

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



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DATE:

20-233

DRAWING No.

SHEET 45 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

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

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PROFESSIONAL ENGINEER
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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

**SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS**

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL. 33018
PHONE: (305) 444-1198

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233
DRAWING No.

SHEET 46 OF 60

CLIPPED INTERIOR & END MULLIONS CHARTS INTO BLOCK SUBSTRATE

CONNECTED W/ CLIP (C4)

D-C4-N=2-BLOCK

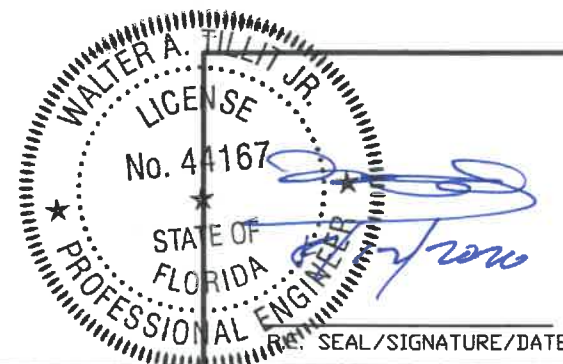
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION						
Tributary	Mullion Length (L)					
Width (b)	38.375	50.625	58	63	74.25	96
20	112.6	85.3	74.5	68.6	58.2	45.0
23	97.9	74.2	64.8	59.6	50.6	39.1
26	86.6	65.6	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	Mullion Length (L)								
Width (b)	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	Mullion Length (L)					
Width (b)	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



FLORIDA BUILDING CODE (HIGH & NON HIGH VELOCITY HURRICANE ZONE)

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SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS

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PHONE: (305) 444-1198

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233

DRAWING No.

SHEET 47 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

CLIPPED INTERIOR & END MULLIONS CHARTS INTO BLOCK SUBSTRATE

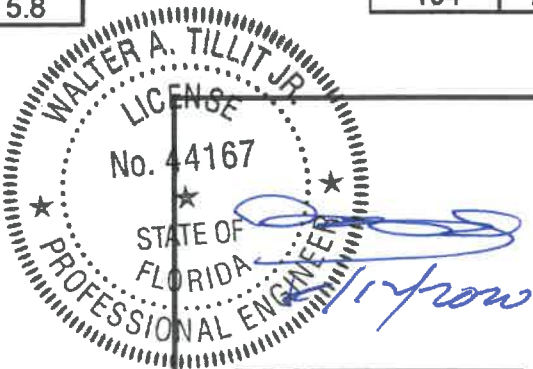
CONNECTED W/ CLIP (C4)

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

FLORIDA BUILDING CODE (HIGH & NON HIGH VELOCITY HURRICANE ZONE)

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TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th. St., Ste. 305, VIRGINIA GARDENS, FL 33166
Phone : (305)871-1530 . Fax : (305)871-1531
CA-0006719

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

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL 33018
PHONE: (305) 444-1198

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233

DRAWING No.

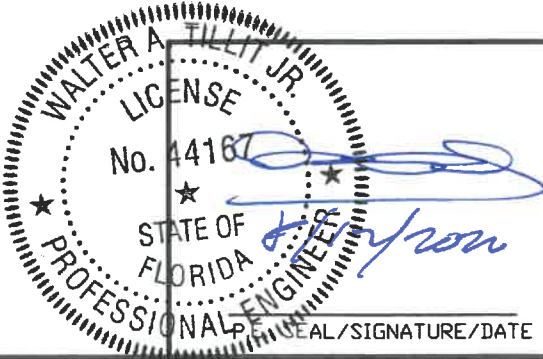
SHEET 48 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	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	Mullion Length (L)								
Width (b)	38.375	50.625	58	63	74.25	96	108	120	144
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



FLORIDA BUILDING CODE (HIGH & NON HIGH VELOCITY HURRICANE ZONE)					
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 TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th. St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 - Fax : (305)871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167			ALUMINA DISTRIBUTION CENTER		08/03/2020 DATE:
			15002 N.W. 107 AVENUE SUITE # 1 HIALEAH GARDENS, FL 33018 PHONE: (305) 444-1198		20-233 DRAWING No.
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-
					SHEET 49 OF 60

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

A-C4-N=2-CONC

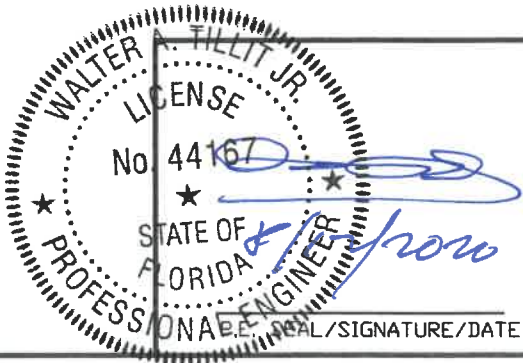
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x 3"x 1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4 ULTRACONS EACH END OF MULLION				
Tributary	Mullion Length (L)			
Width (b)	38.375	50.625	58	63
20	200.0	179.2	154.2	130.7
23	200.0	155.8	134.1	113.7
26	181.8	137.8	118.7	100.6
29	163.0	123.6	106.4	90.2
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	Mullion Length (L)					
Width (b)	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	Mullion Length (L)					
Width (b)	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



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			15002 N.W. 107 AVENUE SUITE # 1 HIALEAH GARDENS, FL 33018 PHONE: (305) 444-1198		20-233 DRAWING No.
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-
					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	Mullion Length (L)					
Width (b)	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	Mullion Length (L)					
Width (b)	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

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

FLORIDA BUILDING CODE (HIGH & NON HIGH VELOCITY HURRICANE ZONE)					
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TILTECO INC.			ALUMINA DISTRIBUTION CENTER		08/03/2020 DATE:
TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th. St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167			15002 N.W. 107 AVENUE SUITE # 1 HIALEAH GARDENS, FL 33018 PHONE: (305) 444-1198		20-233 DRAWING No.
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-
					SHEET 51 OF 60

CLIPPED INTERIOR & END MULLIONS CHARTS INTO CONCRETE SUBSTRATE

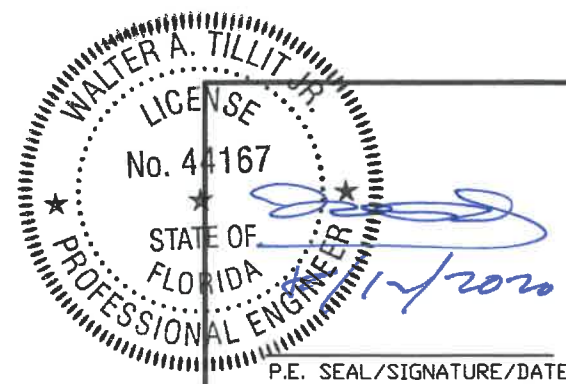
CONNECTED W/ CLIP (C4)

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

**SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS**

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL 33018
PHONE: (305) 444-1198

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233
DRAWING No.

SHEET 52 OF 60

REV. NO	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

CLIPPED INTERIOR & END MULLIONS CHARTS INTO CONCRETE SUBSTRATE

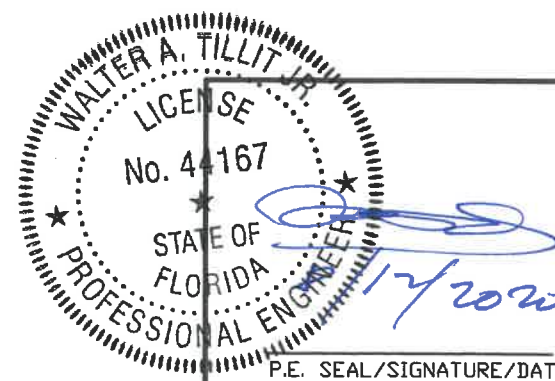
CONNECTED W/ CLIP C4

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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SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

ALUMINA DISTRIBUTION CENTER

15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL 33018
PHONE: (305) 444-1198

F.P.
DRAWN BY:

08/03/2020
DATE:

20-233

DRAWING No.

SHEET 53 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

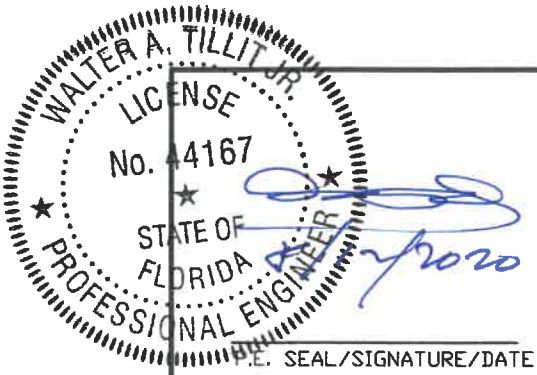
CLIPPED INTERIOR & END MULLIONS CHARTS INTO CONCRETE SUBSTRATE
CONNECTED W/ CLIP C4

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



FLORIDA BUILDING CODE (HIGH & NON HIGH VELOCITY HURRICANE ZONE)					
©2020 TILTECO, INC.			SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS		F.P. DRAWN BY:
			ALUMINA DISTRIBUTION CENTER		08/03/2020 DATE:
TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 CA-0006719			15002 N.W. 107 AVENUE SUITE # 1 HIALEAH GARDENS, FL 33018 PHONE: (305) 444-1198		20-233 DRAWING No.
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-
					SHEET 54 OF 60

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

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

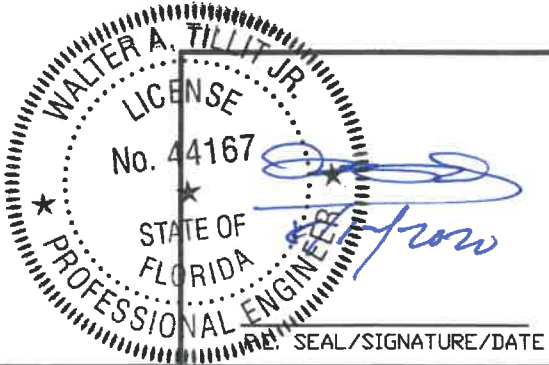
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4 TEK SCREWS EACH END OF MULLION				
Tributary	Mullion Length (L)			
Width (b)	38.375	50.625	58	63
20	200.0	186.0	154.2	130.7
23	200.0	161.8	134.1	113.7
26	188.8	143.1	118.7	100.6
29	169.2	128.3	106.4	90.2
32	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	Mullion Length (L)					
Width (b)	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	Mullion Length (L)					
Width (b)	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



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 TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167			ALUMINA DISTRIBUTION CENTER		08/03/2020 DATE:
			15002 N.W. 107 AVENUE SUITE # 1 HIALEAH GARDENS, FL 33018 PHONE: (305) 444-1198		20-233 DRAWING No.
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

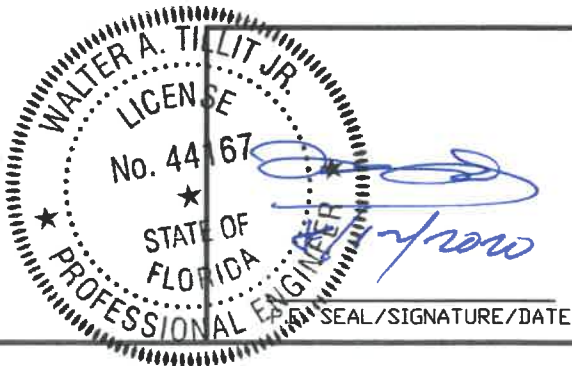
CLIPPED INTERIOR & END MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE
CONNECTED W/ CLIP C4

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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 TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th. St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167			ALUMINA DISTRIBUTION CENTER		08/03/2020 DATE:
			15002 N.W. 107 AVENUE SUITE # 1 HIALEAH GARDENS, FL 33018 PHONE: (305) 444-1198		20-233 DRAWING No.
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-
					SHEET 56 OF 60

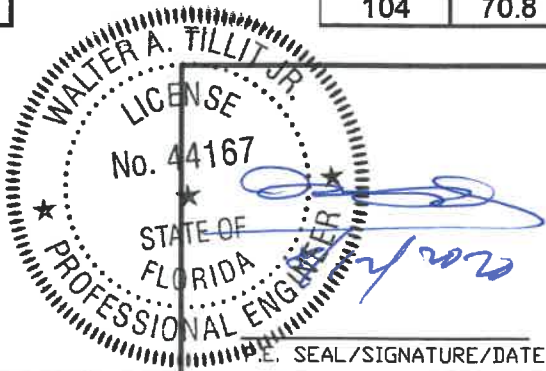
CLIPPED INTERIOR & END MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE
CONNECTED W/ CLIP C4

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



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			15002 N.W. 107 AVENUE SUITE # 1 HIALEAH GARDENS, FL 33018 PHONE: (305) 444-1198		20-233 DRAWING No.
REV. NO	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-
					SHEET 57 OF 60

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	Mullion Length (L)								
Width (b)	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	Mullion Length (L)								
Width (b)	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

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



FLORIDA BUILDING CODE (HIGH & NON HIGH VELOCITY HURRICANE ZONE)					
©2020 TILTECO, INC.			SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS		F.P. DRAWN BY:
			ALUMINA DISTRIBUTION CENTER		08/03/2020 DATE:
TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th. St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 • Fax : (305)871-1531 CA-0006719			15002 N.W. 107 AVENUE SUITE # 1 HIALEAH GARDENS, FL 33018 PHONE: (305) 444-1198		20-233 DRAWING No.
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-
					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

WALTER A. TILLIT JR.
LICENSE
No. 44167
STATE OF FLORIDA
PROFESSIONAL ENGINEER

P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (HIGH & NON HIGH VELOCITY HURRICANE ZONE)

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

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

ALUMINA DISTRIBUTION CENTER
15002 N.W. 107 AVENUE SUITE # 1
HIALEAH GARDENS, FL 33018
PHONE: (305) 444-1198

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-

F.P.
DRAWN BY:

08/03/2020
DATE:

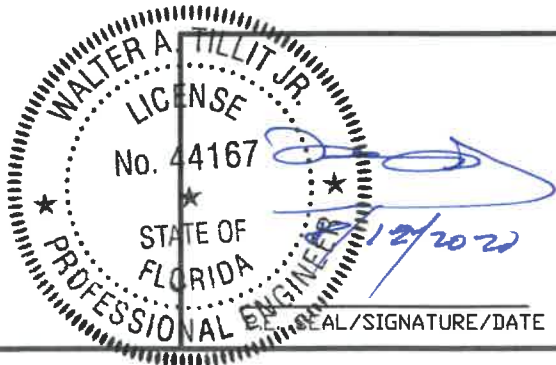
20-233
DRAWING No.

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



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©2020 TILTECO, INC.			SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS		F.P. DRAWN BY:
 TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 • Fax : (305)871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167			ALUMINA DISTRIBUTION CENTER 15002 N.W. 107 AVENUE SUITE # 1 HIALEAH GARDENS, FL 33018 PHONE: (305) 444-1198		08/03/2020 DATE:
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-008	08/03/20	3	-	-
2	-	-	4	-	-
20-233 DRAWING No.					SHEET 60 OF 60