



Product Approval
USER: Public User

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OFFICE OF THE
SECRETARY

FL #	FL42524								
Application Type	New								
Code Version	2023								
Application Status	Approved								
Comments									
Archived	<input type="checkbox"/>								
Product Manufacturer	GIG Windows & Doors								
Address/Phone/Email	290 W 78 Road Hialeah, FL 33014 (305) 558-8103 tony@generalimpact.com								
Authorized Signature	Jose Zuniga tony@generalimpact.com								
Technical Representative									
Address/Phone/Email									
Quality Assurance Representative									
Address/Phone/Email									
Category	Structural Components								
Subcategory	Products Introduced as a Result of New Technology								
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer <input type="checkbox"/> Evaluation Report - Hardcopy Received								
Florida Engineer or Architect Name who developed the Evaluation Report	Walter A. Tillit Jr., P.E.								
Florida License	PE-44167								
Quality Assurance Entity	National Accreditation and Management Institute								
Quality Assurance Contract Expiration Date	12/31/2026								
Validated By	John W. Knezevich, PE <input checked="" type="checkbox"/> Validation Checklist - Hardcopy Received								
Certificate of Independence	FL42524_R0_COI_COI_Drwg_23-212_GIG_Windows_Doors.pdf								
Referenced Standard and Year (of Standard)	<table border="0"> <thead> <tr> <th>Standard</th> <th>Year</th> </tr> </thead> <tbody> <tr> <td>TAS 201</td> <td>1994</td> </tr> <tr> <td>TAS 202</td> <td>1994</td> </tr> <tr> <td>TAS 203</td> <td>1994</td> </tr> </tbody> </table>	Standard	Year	TAS 201	1994	TAS 202	1994	TAS 203	1994
Standard	Year								
TAS 201	1994								
TAS 202	1994								
TAS 203	1994								
Equivalence of Product Standards Certified By									
Sections from the Code									

Product Approval Method

Method 1 Option D

Date Submitted 10/09/2023
 Date Validated 10/09/2023
 Date Pending FBC Approval 10/12/2023
 Date Approved 12/13/2023

Summary of Products

FL #	Model, Number or Name	Description
42524.1	Series 14000 HMMS Impact Resistant Clipped Aluminum Mullions	Extruded aluminum tubing, impact resistant, retained by aluminum profile clips.
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: Yes Design Pressure: +varies/-varies Other: Large & Small Missile Impact Resistant, see General Notes No. 1 and 2, on sheet 1 of installation Drawing No. 23-212. A.S.D. Pressure rating per schedules on sheets 7 thru 60 of installation Drawing No. 23-212. See Section 7 of Evaluation Report for additional Limitations and Conditions of Use.		Installation Instructions FL42524_R0_II_PED_Drwg_23-212_GIG_Windows_Doors.pdf Verified By: Walter A. Tillit Jr., P.E. PE 44167 Created by Independent Third Party: Yes Evaluation Reports FL42524_R0_AE_PER_Drwg_23-212_GIG_Windows_Doors.pdf Created by Independent Third Party: Yes

[Back](#) [Next](#)

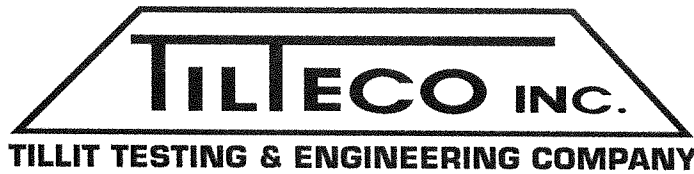
Contact Us :: 2601 Blair Stone Road, Tallahassee FL 32399 Phone: 850-487-1824

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Product Approval Accepts:





WALTER A. TILLIT, JR., P.E.

tilteco@aol.com
FL P.E. License No. 44167
FL C.A. License No. 0006719

CERTIFICATE OF INDEPENDENCE

Evaluation Report #: 23-0919.02

Date: September 19, 2023

Product Category: Structural Components

Product Subcategory: Product Introduced as A Result of New Technology

Product Name: **SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS**

Manufacturer Name: **GIG WINDOWS & DOORS**
290 West 78th Road
Hialeah, FL 33014

Dear Sir (Madam):

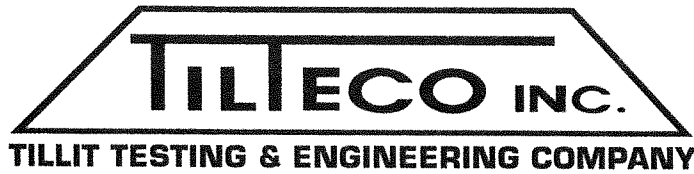
This is to certify that this Florida Professional Engineer, performing this evaluation does not have nor will acquire, a financial interest in any company manufacturing or distributing products for which the reports are being issued.

This is also to certify that this Florida Professional Engineer performing this evaluation does not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product.

Certificate of Independence prepared by Walter A. Tillit, Jr., P.E. (Florida License No. 44167), President of Tilteco, Inc. (Florida CA-0006719).

WAT:ma

D:\TILTECO ADMIN RECORDS \ CERTIFICATION OF INDEPENDENCE \ GIG WINDOWS & DOORS \ SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS \ EVALUATION REPORT # 23-0919.02



WALTER A. TILLIT, JR., P.E.

PRODUCT EVALUATION REPORT

tilteco@aol.com
FL P.E. License No. 44167
FL C.A. License No. 0006719

REPORT No.: 23-0919.02

DATE: September 19, 2023

PRODUCT CATEGORY: Structural Components

PRODUCT SUB-CATEGORY: Product Introduced as A Result of New Technology

PRODUCT NAME: SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

MANUFACTURER: GIG WINDOWS & DOORS
290 West 78th Road
Hialeah, FL 33014

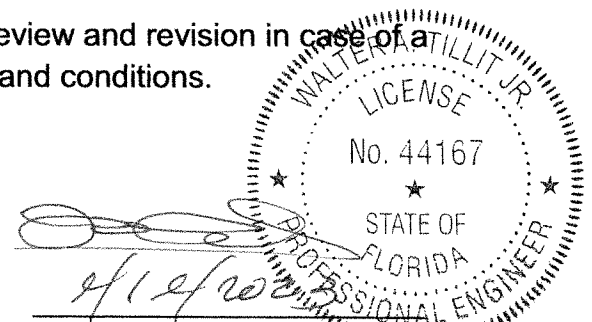
1. PURPOSE OF EVALUATION:

This is a Product Evaluation Report issued by **Walter A. Tillit, Jr., P.E.** (System ID # 1906) to **GIG WINDOWS & DOORS.**, based on **Rule Chapter No. 61G20-3, Method 1D** of the Florida Department of Business and Professional Regulation.

This product is being issued an Evaluation Report as described herein and has been verified for compliance in accordance with the 2023 8th Edition of the Florida Building Code, and to verify that the product is for the purpose intended at least equivalent to that required by the Code.

This Product Evaluation Report shall be subject to review and revision in case of a Building Code change that may affect its limitations and conditions.

2. EVIDENCE SUBMITTED:



2.1. PRODUCT EVALUATION DOCUMENT (P.E.D.):

Drawing No. 23-212, titled “**SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS**” sheets 1 thru 60 of 60 (including 6A, 6B,6C) prepared by **Tilteco, Inc.**; signed and sealed by **Walter A. Tillit, Jr., P.E.**; dated 09/12/2023. This drawing is an integral part of this Evaluation Report.

2.2. TEST REPORTS:

Impact and Cyclic Tests as per protocol TAS-201, TAS-203, Uniform Static Load as per Protocol TAS 202 per sections 1626 and 1609.1.2, respectively of the Florida Building Code.

Test reports prepared by Fenestration Testing Lab Inc., Report No.7553, signed and sealed by Marlin D. Brinson, P.E.

2.3. STRUCTURAL ENGINEERING CALCULATIONS:

On Series 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS for Maximum Pressure Rating vs. Maximum mullion length and tributary width, based on rational and comparative analysis, in accordance with sections 1604 and 1616 of the Florida Building Code. Calculations prepared by Tilteco, Inc., dated 08/25/2017 and 5/02/2013, signed and sealed by Walter A. Tillit, Jr., P.E.

3. MISSILE IMPACT RESISTANCE:

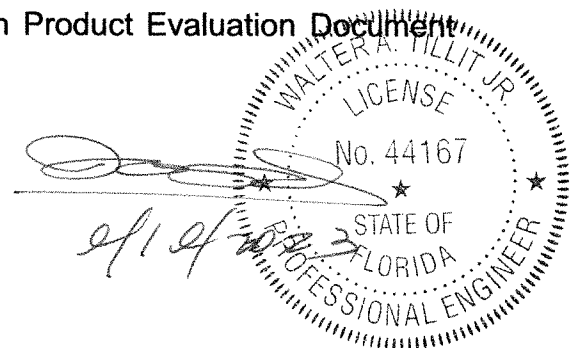
Large Missile Impact resistance is provided per TAS 201 (9 lbs., 50 feet/sec).

4. WIND LOADS RESISTANCE:

On Series 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS has been verified to keep sustain wind pressures. Maximum mullion length and tributary width shall be as indicated on Product Evaluation Document (P.E.D.), Drawing No. 23-212.

5. INSTALLATION:

Installation shall be performed strictly in accordance with General Notes # 3 thru 11, indicated on sheet 1 and details indicated on Product Evaluation Document (P.E.D.), drawing No. 23-212.



6. MATERIAL CHARACTERISTICS AND SPECIFICATIONS:

Shall be strictly in accordance with General Notes and Components indicated on sheets 3 and 4, of Product Evaluation Document (P.E.D.), **Drawing No. 23-212.**

Anchor specifications shall be as indicated on sheet 1, of Product Evaluation Document (P.E.D.), Drawing No. **23-212.** Anchor layout at clips shall be as per sheet 5 of P.E.D. No **23-212.**

7. LIMITATIONS AND CONDITIONS OF USE:

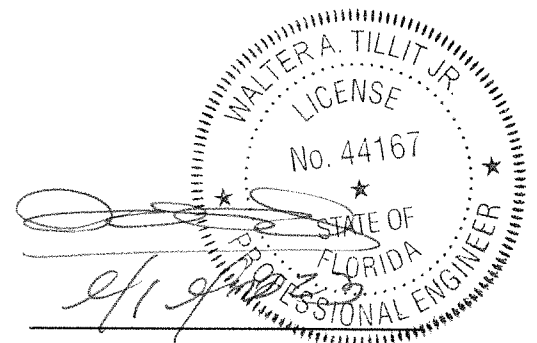
7.1. Shall be strictly in compliance with General Notes No. 1 thru 5, indicated on sheet 1 of Product Evaluation Document (P.E.D.), Drawing No. **23-212** prepared by Tilteco, Inc. and signed and sealed by Walter A. Tillit, Jr., P.E.

7.2. Product **may** be installed within HIGH VELOCITY HURRICANE ZONES as defined on section 202 of the Florida Building Code and out of it.

7.3. Product shall only be installed into substrates with limitations as indicated on sheets 2 and 7 thru 60 of Product Evaluation Document (P.E.D.), Drawing No. **23-212.**

Product Evaluation Report prepared by Walter A. Tillit, Jr., P.E. (Florida License No. 44167), President of Tilteco, Inc. (Florida CA-0026719).

WAT\ma
TILTECO ADMON RECORDS \ P. E. REPORT.23 \ GIG WINDOWS & DOORS \ SERIES 14000 HMMS IMPACT
RESISTANT CLIPPED ALUMINUM MULLIONS\ DRWG # 23-212\ REPORT # 23-0919.02



GENERAL NOTES AND SPECIFICATIONS:

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

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

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

3. INSTRUCTIONS TO DETERMINE REQUIRED INTERIOR CLIPPED MULLION:

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

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

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

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

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

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

4. INSTRUCTIONS TO DETERMINE REQUIRED END CLIPPED MULLION:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(9D) TO EXISTING STEEL (MIN. $F_y=33$ ksi, MIN. THICKNESS= 0.062") AND TO EXISTING ALUMINUM (MIN. $F_y=25$ 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 BE RESPONSIBLE FOR THE PROPER USE OF THE P.E.D.

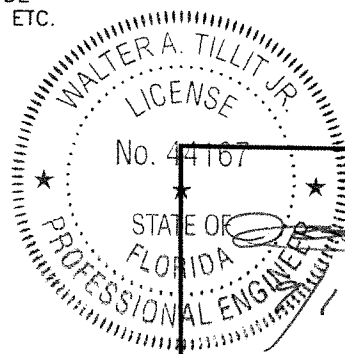
(e) ORIGINAL P.E.D. SHALL BEAR THE DATE AND ORIGINAL SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT.

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

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

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

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



P.E. SEAL/SIGNATURE/DATE

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

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TILTECO INC.

TILLIT TESTING & ENGINEERING COMPANY
 6355 N.W. 36th. St., Ste. 305, VIRGINIA GARDENS, FL 33166
 Phone : (305)871-1530 . Fax : (305)871-1531
 e-mail: tilteco@aol.com

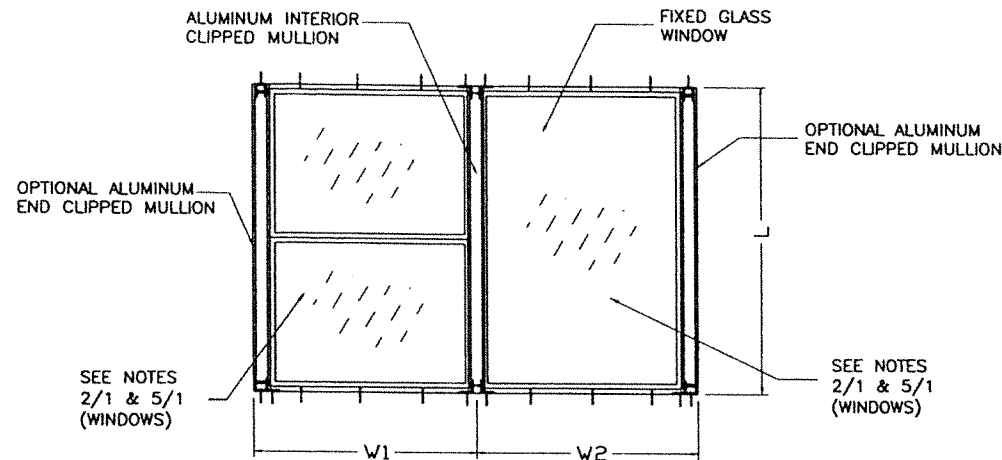
CA-0006719
 WALTER A. TILLIT Jr., P.E.
 FLORIDA Lic. 44167

SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS

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

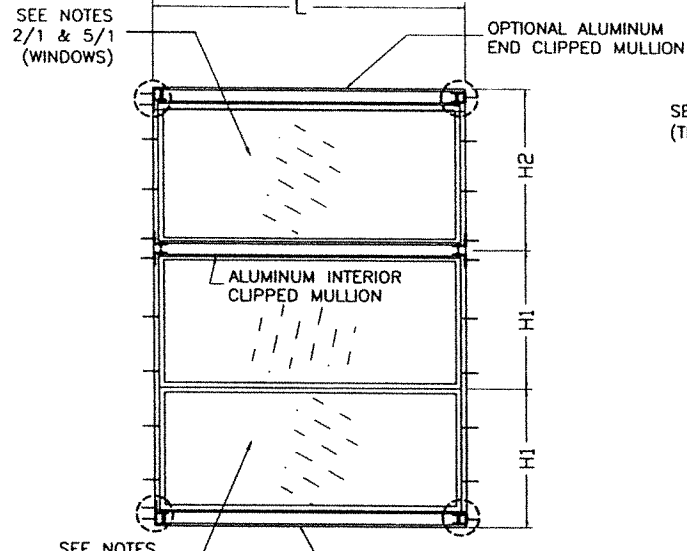
DRAWN BY: W.H.
 DATE: 09/12/2023
 DRAWING No: 23-212
 SHEET 1 OF 60

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



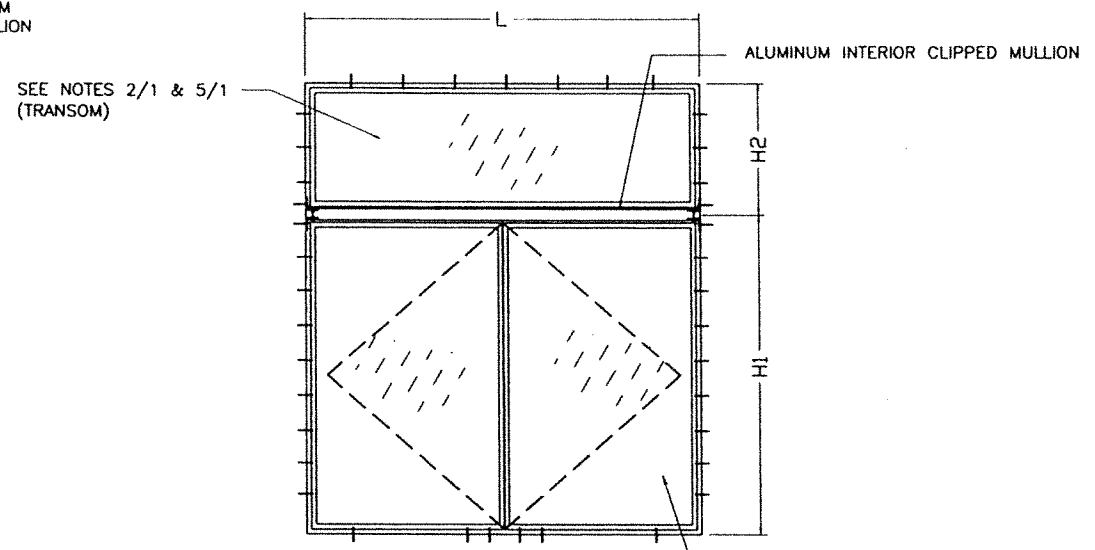
L= MULLION SPAN (SEE SCHEDULE)
 TRIBUTARY WIDTH (b) = $\frac{W1 + W2}{2}$
 FOR INTERIOR MULLIONS
 TRIBUTARY WIDTH (b) = $\frac{W1}{2}$ OR $\frac{W2}{2}$, RESPECTIVELY
 FOR END MULLIONS

INSTALLATION ELEVATION W/ VERTICAL INTERIOR AND OPTIONAL END CLIPPED MULLIONS



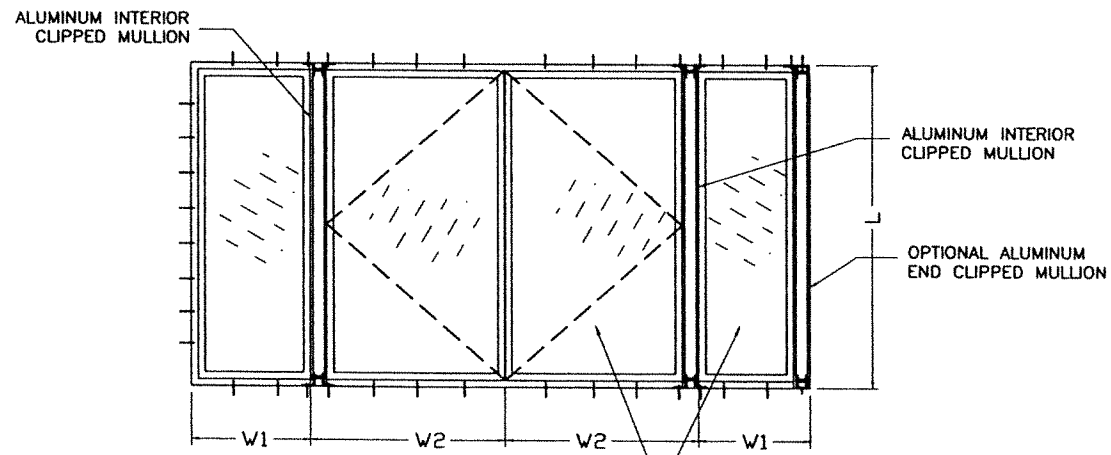
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 TRIBUTARY WIDTH (b) = $\frac{H1 + H2}{2}$
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INSTALLATION ELEVATION W/ HORIZONTAL INTERIOR AND OPTIONAL END CLIPPED MULLIONS



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

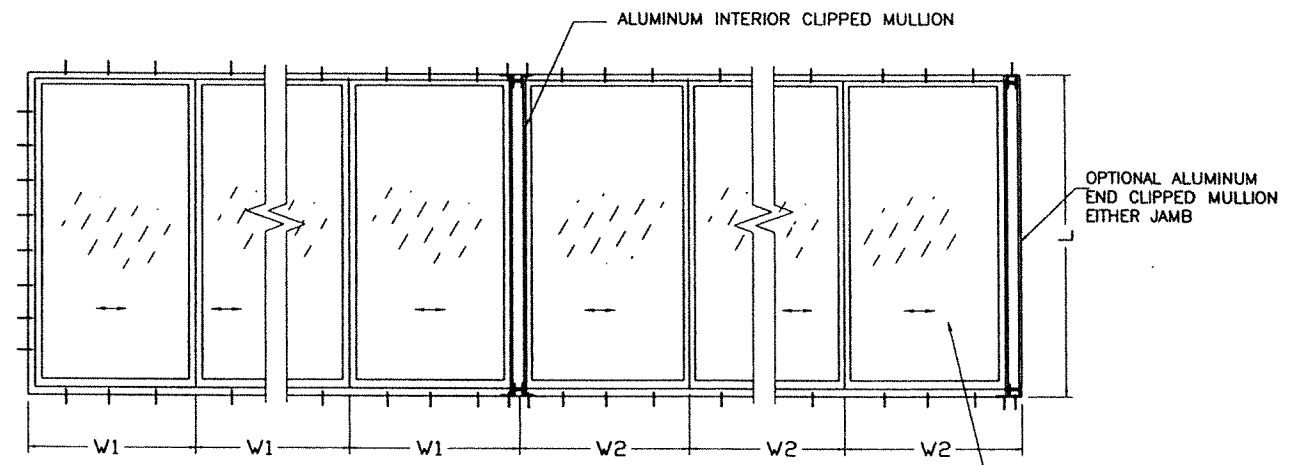
INSTALLATION ELEVATION W/ HORIZONTAL INTERIOR CLIPPED MULLION



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

INSTALLATION ELEVATION W/ VERTICAL INTERIOR AND OPTIONAL END CLIPPED MULLIONS

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



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

INSTALLATION ELEVATION W/ VERTICAL INTERIOR AND OPTIONAL END CLIPPED MULLIONS

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

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

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TILTECO inc.

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

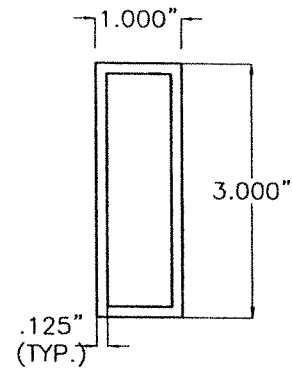
SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS

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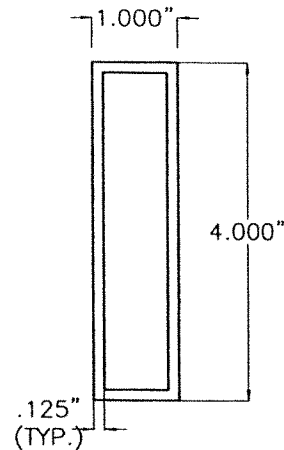
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY: W.H.
 09/12/2023
 DATE
 23-212
 DRAWING No
 SHEET 2 OF 60

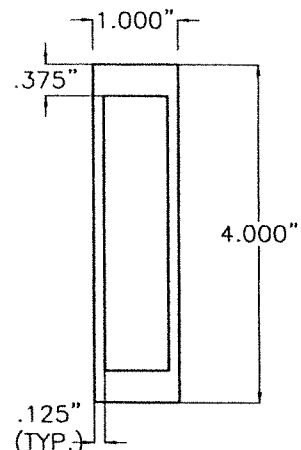
CLIPPED INTERIOR AND END MULLIONS (EXCEPT AS NOTED)



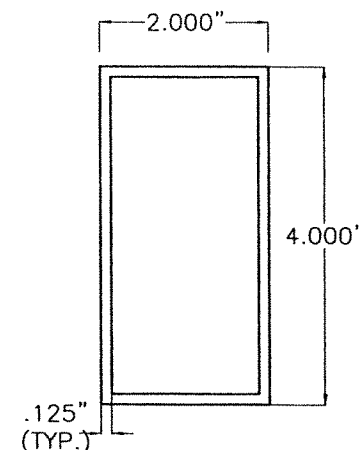
(A) 1"x3"x1/8"
6063-T6 ALLOY



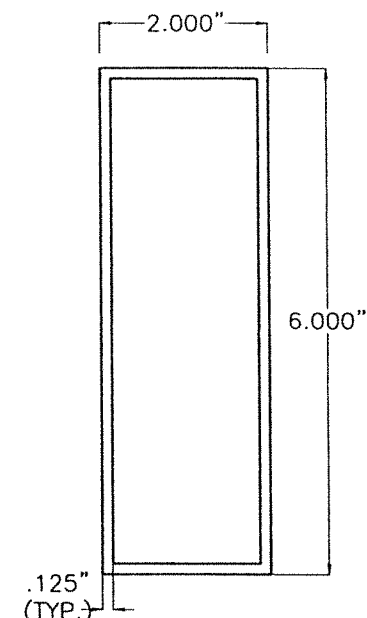
(B) 1"x4"x1/8"
6063-T6 ALLOY



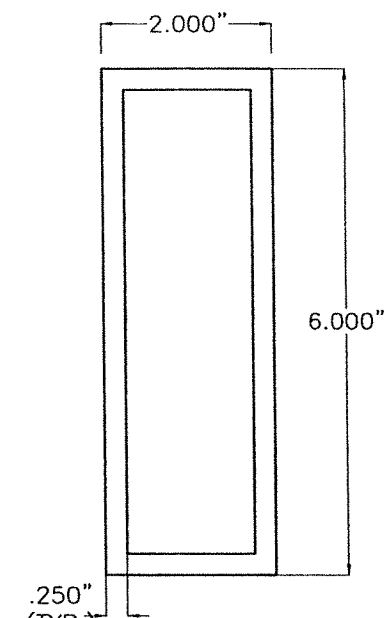
(C) 1"x4"x1/8"x3/8"
6063-T6 ALLOY



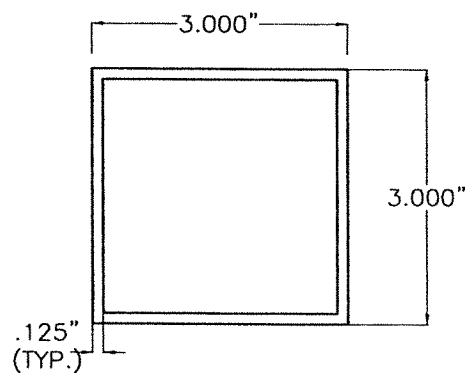
(D) 2"x4"x1/8"
6063-T6 ALLOY



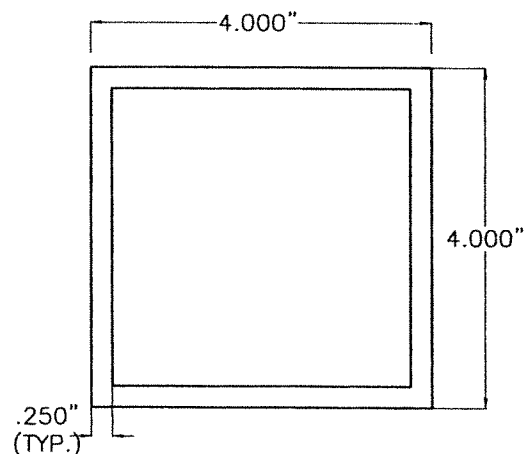
(E) 2"x6"x1/8"
6063-T6 ALLOY



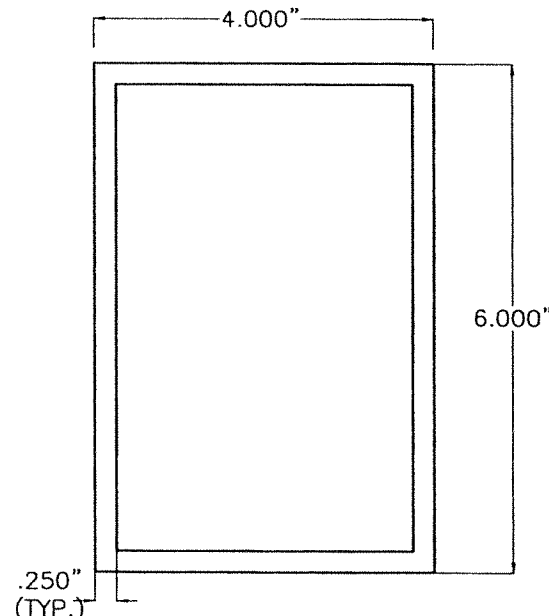
(F) 2"x6"x1/4"
6063-T6 ALLOY



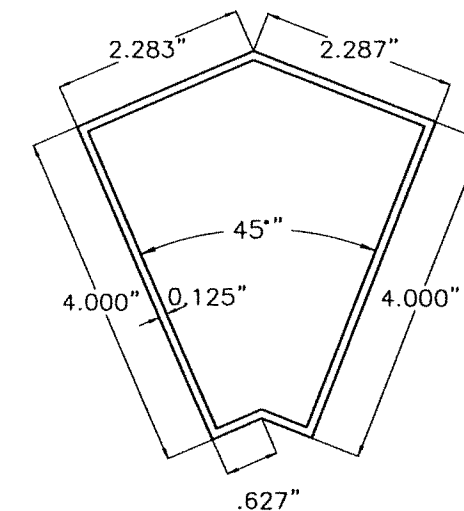
(G) 3"x3"x1/8"
6063-T6 ALLOY



(H) 4"x4"x1/4"
6063-T6 ALLOY



(I) 4"x6"x1/4"
6063-T6 ALLOY



(J) 45° VERTICAL/INTERIOR
MULLION ONLY
6063-T6 ALLOY

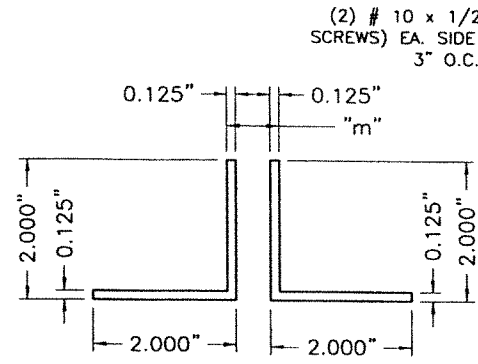
FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

WALTER A. TILLIT JR.
 LICENSE
 No. 44167
 STATE OF
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 PROFESSIONAL ENGINEER
 9/12/2023
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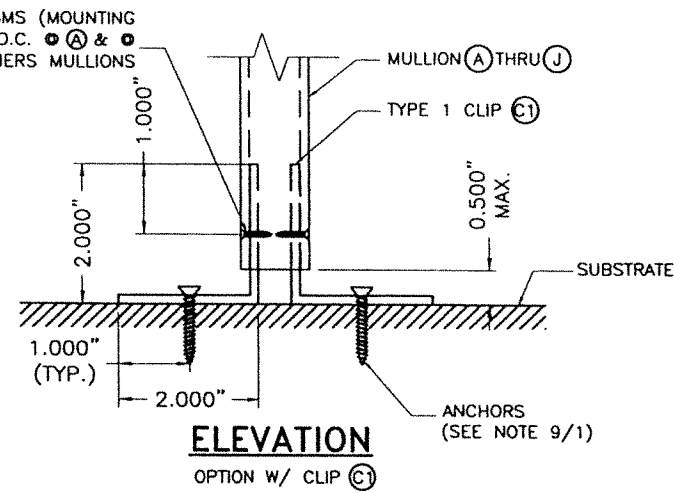
TILTECO inc.
 TILLIT TESTING & ENGINEERING COMPANY
 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166
 Phone: (305)871-1530 Fax: (305)871-1531
 e-mail: Tilteco@aol.com
 CA-0006719
 WALTER A. TILLIT Jr., P.E.
 FLORIDA Lic. 44167

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



ALUM L (2) 2"x2"x1/8"x"c" (c=LENGTH)

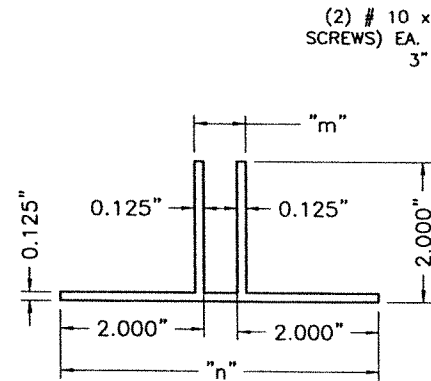
(C1) TYPE 1 CLIP
6063-T6 ALLOY



ELEVATION
OPTION W/ CLIP (C1)

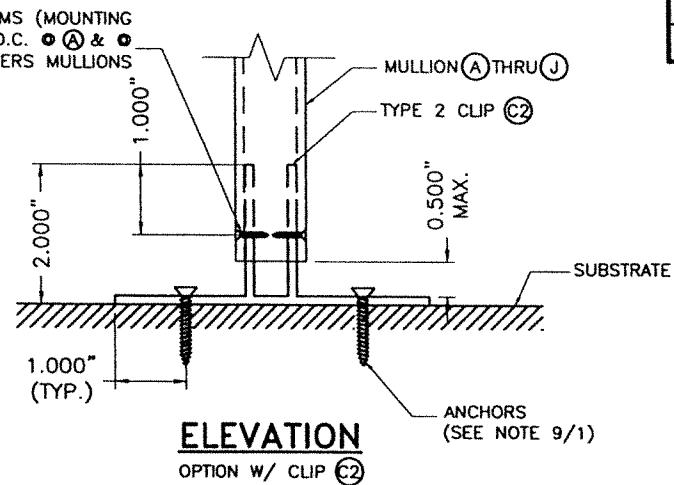
CLIP/SCHEDULE FOR C1, C2, C3 & C4 CLIPS								
MULLION TYPE	m	m'	n	c	REQUIREMENTS FOR CLIP USE			
					C1	C2	C3	C4
(A)	23/32"	1"	4 15/32"	2 23/32"	NOTE 1	NOTE 1	NOTE 2	NOTE 3
(B)	23/32"	1"	4 15/32"	3 23/32"	NOTE 1	NOTE 1	NOTE 2	NOTE 3
(C)	23/32"	1"	4 15/32"	3 7/32"	NOTE 1	NOTE 1	NOTE 2	NOTE 3
(D)	1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



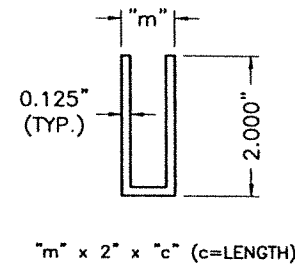
"m" x "n" x 2" x "c" (c=LENGTH)

(C2) TYPE 2 CLIP
6063-T6 ALLOY



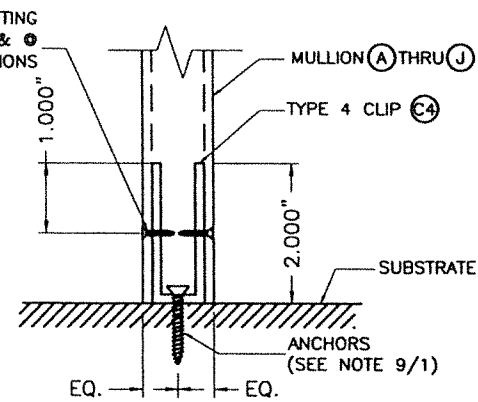
ELEVATION
OPTION W/ CLIP (C2)

(2) # 10 x 1/2 F.H. SMS (MOUNTING SCREWS) EA. SIDE @ 2" O.C. @ (A) & @ 3" O.C. @ OTHERS MULLIONS

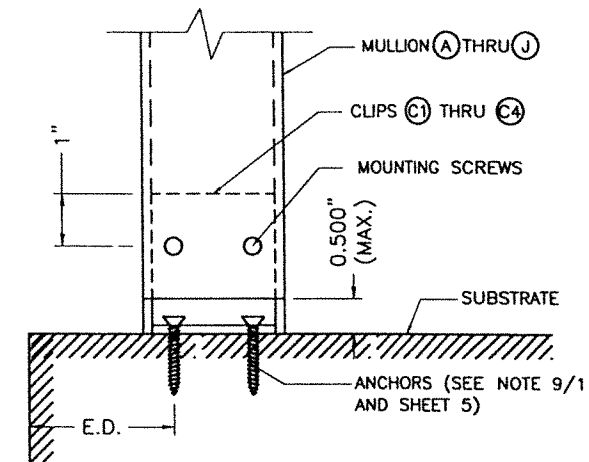


"m" x 2" x "c" (c=LENGTH)

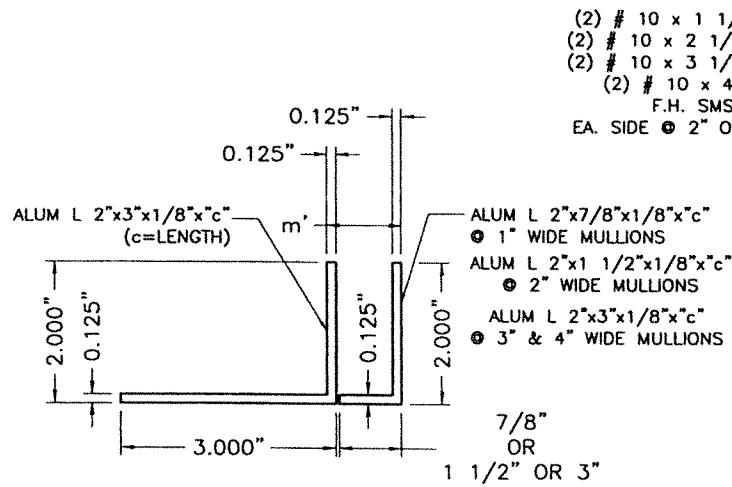
(C4) TYPE 4 CLIP
6063-T6 ALLOY



ELEVATION
OPTION W/ CLIP (C4)



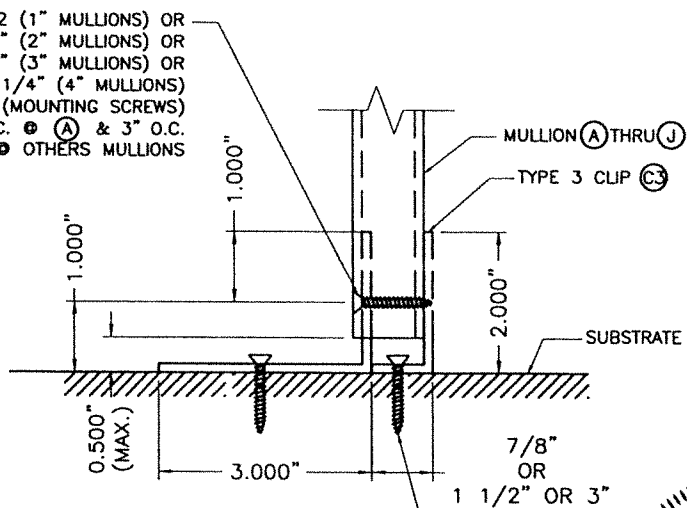
TYPICAL SIDE VIEW & OF CLIPS



7/8" OR 1 1/2" OR 3"

(C3) TYPE 3 CLIP
6063-T6 ALLOY

(2) # 10 x 1 1/2 (1" MULLIONS) OR (2) # 10 x 2 1/4" (2" MULLIONS) OR (2) # 10 x 3 1/4" (3" MULLIONS) OR (2) # 10 x 4 1/4" (4" MULLIONS) F.H. SMS (MOUNTING SCREWS) EA. SIDE @ 2" O.C. @ (A) & 3" O.C. @ OTHERS MULLIONS



ELEVATION
OPTION W/ CLIP (C3)

CLIP TYPES FOR MULLION CONNECTIONS TO EXISTING STRUCTURE AND TYPICAL ELEVATIONS

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 LICENSE
 No. 44187
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER
 9/2023

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 FLORIDA Lic. 44167

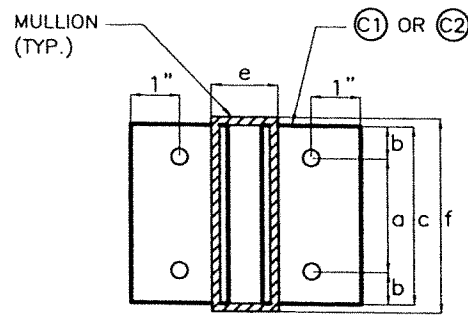
FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

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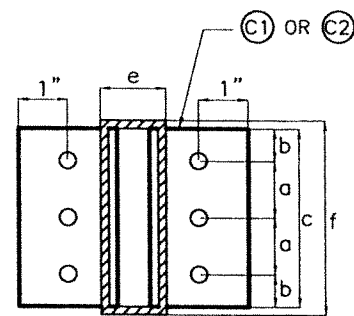
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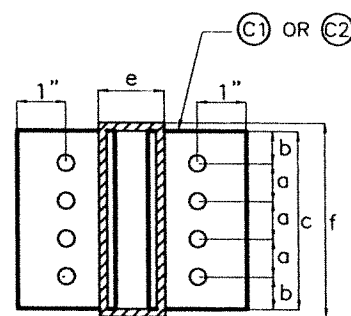
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2			4		



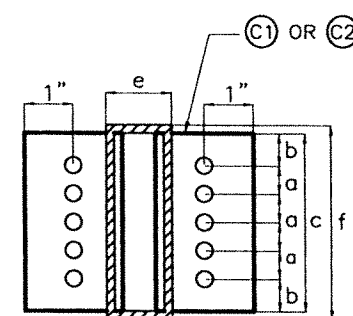
N=4 ANCHORS @ INTERIOR MULLION



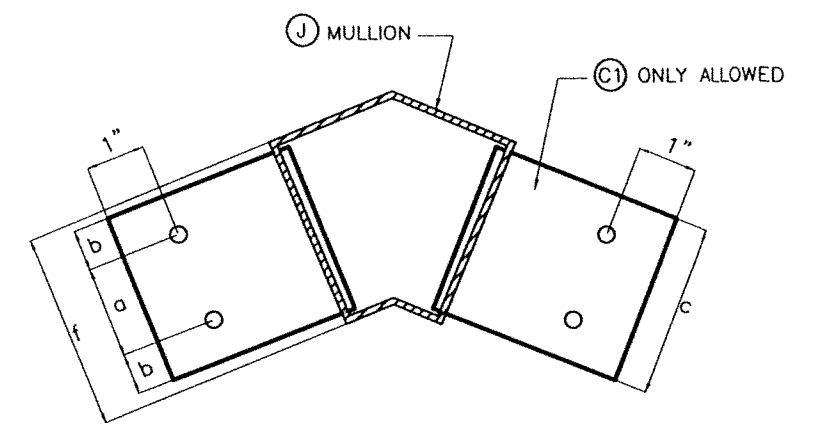
N=6 ANCHORS @ INTERIOR MULLION



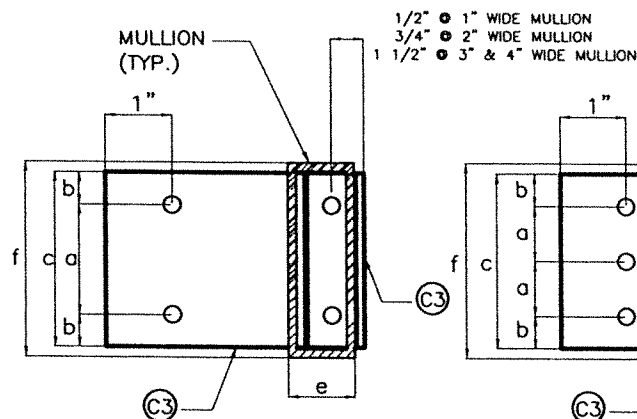
N=8 ANCHORS @ INTERIOR MULLION



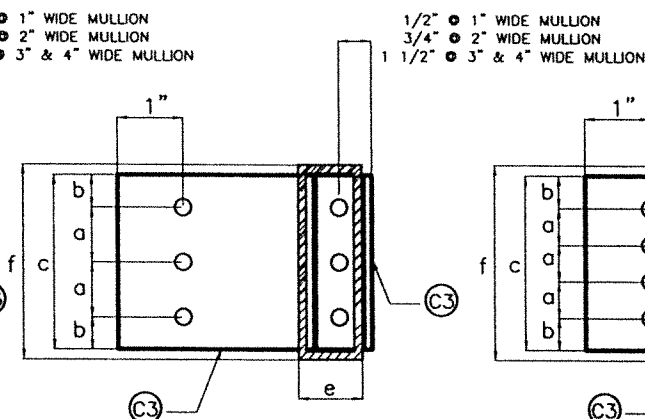
N=10 ANCHORS @ INTERIOR MULLION



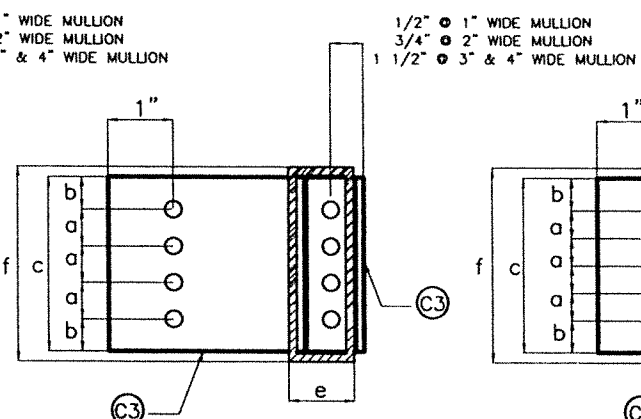
45° VERTICAL/INTERIOR J MULLION W/ N=4 ANCHORS & C1 CLIP



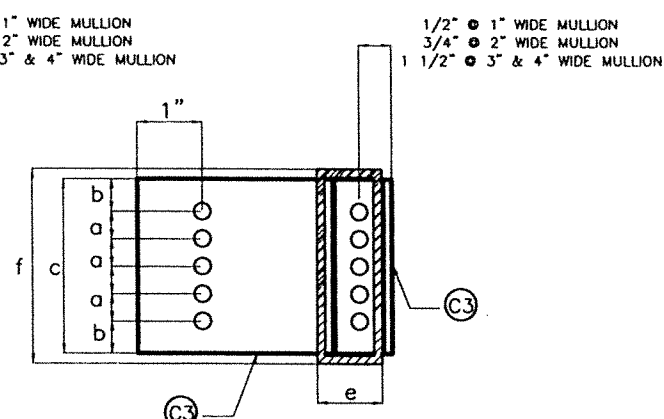
N=4 ANCHORS ONLY END MULLION (OPTION 1)



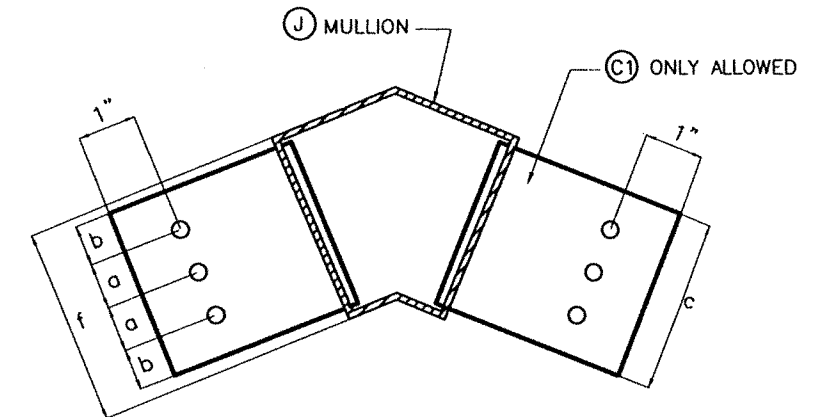
N=6 ANCHORS ONLY END MULLION (OPTION 1)



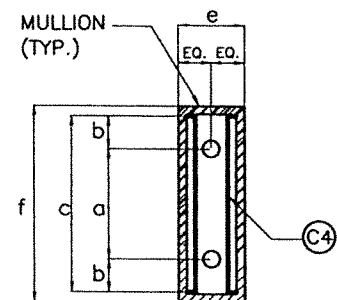
N=8 ANCHORS ONLY END MULLION (OPTION 1)



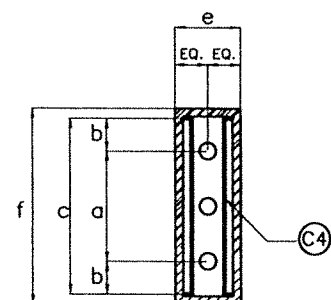
N=10 ANCHORS ONLY END MULLION (OPTION 1)



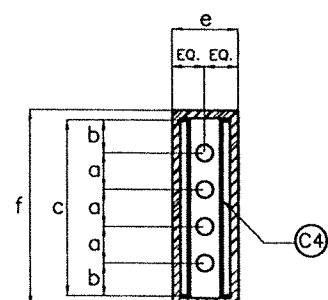
45° VERTICAL/INTERIOR J MULLION W/ 6 ANCHORS & C1 CLIP



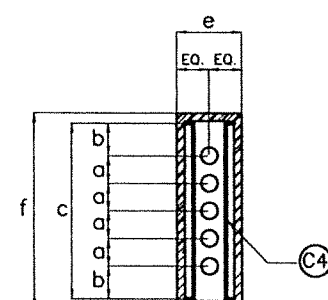
N=2 ANCHORS @ INTERIOR OR END MULLION (OPTION 2)



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



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



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

TYPICAL ANCHOR/CLIP DETAILS FOR INTERIOR & END MULLIONS

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

WALTER A. TILLIT, P.E.
 LICENSE NO. 44107
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 P.E. SEAL/SIGNATURE/DATE

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

SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS

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2			4		

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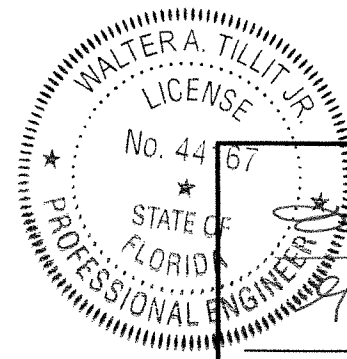
09/12/2023 DATE

23-212 DRAWING No

SHEET 5 OF 60

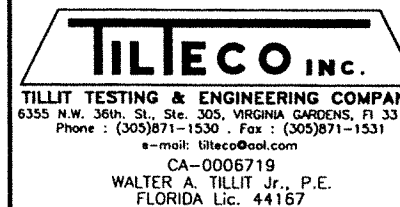
ANCHORS CLIP/SCHEDULE FOR CLIPS C1, C2, C3 & C4 * (SEE SHEETS 4 & 5)

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




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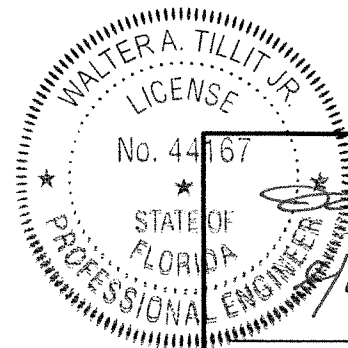


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				23-212 DRAWING No	
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1	OLD 20-270	09/12/23	3		
2			4		

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
20	H-C1/C2-N=4-CONC	H	C1/C2	4	CONC
	E-C1/C2-N=4-CONC	E	C1/C2	4	CONC
21	E-C1/C2-N=6-CONC	E	C1/C2	6	CONC
	F-C1/C2-N=6-CONC	F	C1/C2	6	CONC
22	F-C1/C2-N=8-CONC	F	C1/C2	8	CONC
	I-C1/C2-N=8-CONC	I	C1/C2	8	CONC
23	J-C1-N=4-CONC	J	C1	4	CONC
	A-C1/C2-N=4-STL/AL	A	C1/C2	4	STL/AL
24	B-C1/C2-N=4-STL/AL	B	C1/C2	4	STL/AL
	C-C1/C2-N=4-STL/AL	C	C1/C2	4	STL/AL
25	C-C1/C2-N=6-STL/AL	C	C1/C2	6	STL/AL
	D-C1/C2-N=4-STL/AL	D	C1/C2	4	STL/AL
26	D-C1/C2-N=6-STL/AL	D	C1/C2	6	STL/AL
	E-C1/C2-N=6-STL/AL	E	C1/C2	6	STL/AL
27	E-C1/C2-N=8-STL/AL	E	C1/C2	8	STL/AL
	F-C1/C2-N=8-STL/AL	F	C1/C2	8	STL/AL
28	F-C1/C2-N=10-STL/AL	F	C1/C2	10	STL/AL
	G-C1/C2-N=4-STL/AL	G	C1/C2	4	STL/AL
29	I-C1/C2-N=10-STL/AL	I	C1/C2	10	STL/AL
	J-C1-N=6-STL/AL	J	C1	6	STL/AL



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 SERIES 14000 HMMS IMPACT RESISTANT
 CLIPPED ALUMINUM MULLIONS

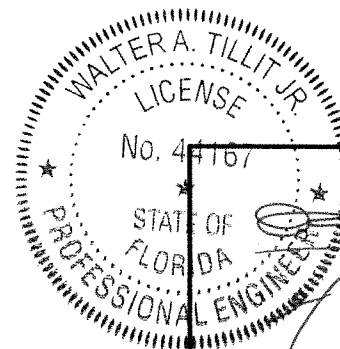
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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
 W.H.
 09/12/2023
 DATE
 23-212
 DRAWING No
 SHEET 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
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
40	F-C3-N=8-STL/AL	F	C3	8	STL/AL
	F-C3-N=10-STL/AL	F	C3	10	STL/AL



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

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SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS

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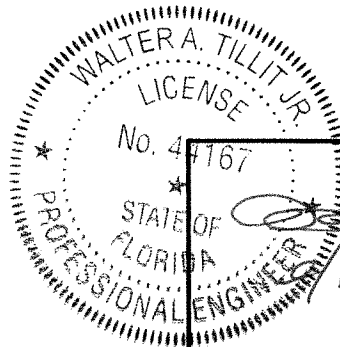
23-212
DRAWING No

SHEET 6B OF 60

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

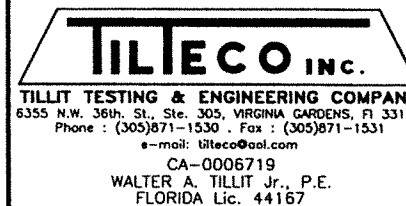
MULLION CHARTS SCHEDULE					
INTERIOR & END MULLIONS CHARTS					
SHEET No.	CHARTS CODIFIED DESIGNATION	MULLIONS (SEE SHEET 3)	CLIPS (SEE SHEET 4)	No. OF ANCHORS N= (SEE SHEET 5)	SUBSTRATE
41	A-C4-N=2-WOOD	A	C4	2	WOOD
	B-C4-N=2-WOOD	B	C4	2	WOOD
	C-C4-N=2-WOOD	C	C4	2	WOOD
42	C-C4-N=3-WOOD	C	C4	3	WOOD
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

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



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23-212
DRAWING No

SHEET 6C OF 60

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

CLIPPED INTERIOR MULLIONS CHARTS INTO WOOD SUBSTRATE

CONNECTED W/ CLIPS (C1) & (C2)

A-C1/C2-N=4-WOOD

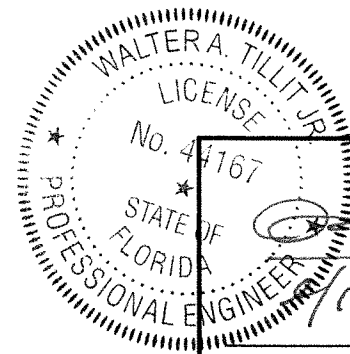
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4 ULTRACONS EACH END OF MULLION				
Tributary Width (b)	Mullion Length (L)			
	38.375	50.625	58	63
20	183.1	138.8	121.2	111.5
23	159.2	120.7	105.4	97.0
26	140.9	106.8	93.2	85.8
29	126.3	95.7	83.6	76.9
32	114.4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

B-C1/C2-N=4-WOOD

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

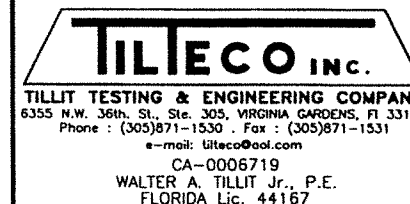
C-C1/C2-N=4-WOOD

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



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23-212
DRAWING No

SHEET 7 OF 60

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

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

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

WALTER A. TILLIT JR.
 LICENSE
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 STATE OF FLORIDA
 PROFESSIONAL ENGINEER
 09/12/2023
 SEAL/SIGNATURE/DATE

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

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)
 SERIES 14000 HMMS IMPACT RESISTANT
 CLIPPED ALUMINUM MULLIONS

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

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

DRAWN BY:
 W.H.
 09/12/2023
 DATE
 23-212
 DRAWING No
 SHEET 8 OF 60

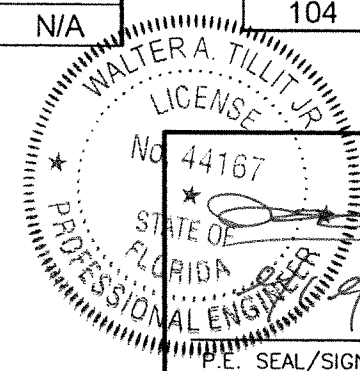
CLIPPED INTERIOR MULLIONS CHARTS INTO WOOD SUBSTRATE CONNECTED W/ CLIPS (C1) & (C2)


E-C1/C2-N=6-WOOD


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

E-C1/C2-N=8-WOOD

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


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

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

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 23-212
 DRAWING No
 SHEET 9 OF 60

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

F-C1/C2-N=8-WOOD

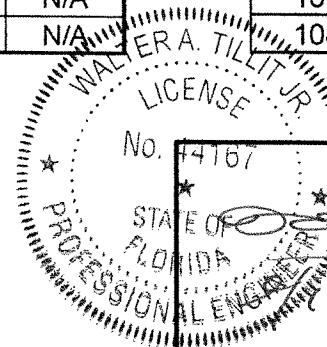
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (8) 1/4" ULTRACONS EACH END OF MULLION

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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SHEET 10 OF 60

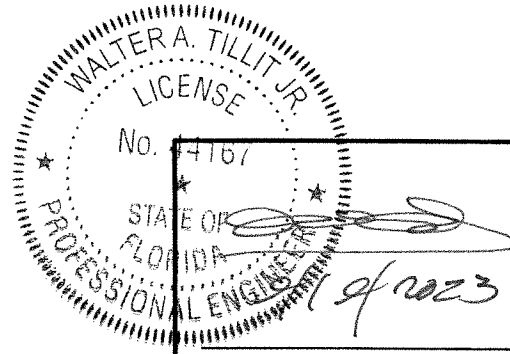
CLIPPED INTERIOR MULLIONS CHARTS INTO WOOD SUBSTRATE CONNECTED W/ CLIPS (C1) & (C2)

G-C1/C2-N=4-WOOD

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

I-C1/C2-N=10-WOOD

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



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

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

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

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

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

DRAWN BY:
W.H.

09/12/2023
DATE

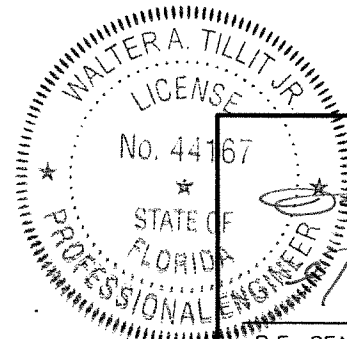
23-212
DRAWING No

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

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TILTECO Inc.

TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166
Phone : (305)871-1530 . Fax : (305)871-1531
e-mail: tilteco@aol.com

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

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

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

A-C1/C2-N=4-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION

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

B-C1/C2-N=4-BLOCK

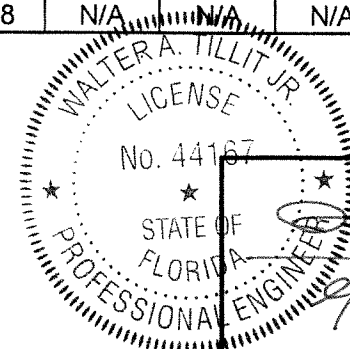
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION

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

C-C1/C2-N=4-BLOCK

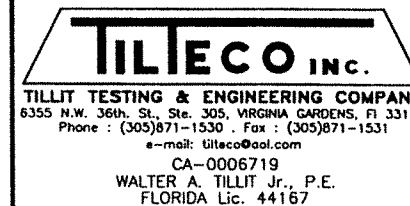
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8"x3/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION

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



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

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

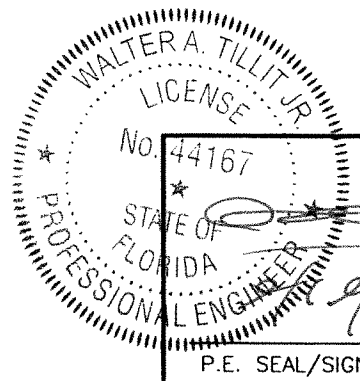
CLIPPED INTERIOR MULLIONS CHARTS INTO BLOCK SUBSTRATE CONNECTED W/ CLIPS (C1) & (C2)

D-C1/C2-N=4-BLOCK

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

F-C1/C2-N=8-BLOCK


A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (8) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	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


 P.E. SEAL/SIGNATURE/DATE

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TILTECO INC.
 TILLIT TESTING & ENGINEERING COMPANY
 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166
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 e-mail: tilteco@aol.com
 CA-0006719
 WALTER A. TILLIT Jr., P.E.
 FLORIDA Lic. 44167

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

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

SHEET 14 OF 60

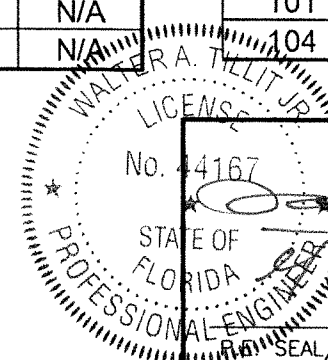
CLIPPED INTERIOR MULLIONS CHARTS INTO BLOCK SUBSTRATE CONNECTED W/ CLIPS (C1) & (C2)

E-C1/C2-N=4-BLOCK

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



E-C1/C2-N=8-BLOCK

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



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

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

© 2023 TILTECO INC.  TILTECO INC. TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 e-mail: tilteco@aol.com CA-0006719 WALTER A. TILLIT Jr., P.E. FLORIDA Lic. 44167	SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS  290 WEST 78 ROAD HIALEAH, FL 33014 PH: (954)226-5555/(305)558-8103 FAX: (305)558-6665 www.gigwindows.com	DRAWN BY: W.H. 09/12/2023 DATE 23-212 DRAWING No SHEET 15 OF 60																		
<table border="1" style="width: 100%; font-size: small;"> <thead> <tr> <th>REV. NO</th> <th>DESCRIPTION</th> <th>DATE</th> <th>REV. No</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>OLD 20-270</td> <td>09/12/23</td> <td>3</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td>4</td> <td></td> <td></td> </tr> </tbody> </table>			REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE	1	OLD 20-270	09/12/23	3			2			4		
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE															
1	OLD 20-270	09/12/23	3																	
2			4																	

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

G-C1/C2-N=4-BLOCK

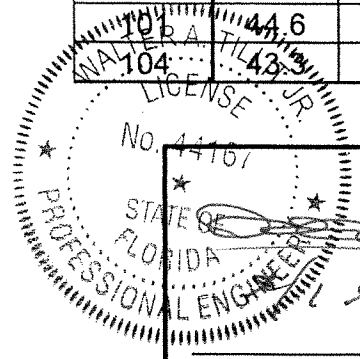
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 3"x3"x1/8" MULLION WITH CLIPS
CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION

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

H-C1/C2-N=4-BLOCK

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

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



P.E. SEAL/SIGNATURE/DATE

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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

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

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

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

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

DRAWN BY:
W.H.
09/12/2023
DATE
23-212
DRAWING No
SHEET 16 OF 60

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

J-C1-N=4-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 45° MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION

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

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

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

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

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

A-C1/C2-N=4-CONC

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

B-C1/C2-N=4-CONC

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

C-C1/C2-N=4-CONC

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

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

© 2023 TILTECO INC.		FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)																			
 TILTECO INC. TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33168 Phone : (305)871-1530 . Fax : (305)871-1531 e-mail: tilteco@aol.com		SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS 290 WEST 78 ROAD HIALEAH, FL 33014 PH: (954)226-5555/(305)558-8103 FAX: (305)558-6665 www.gigwindows.com																			
DRAWN BY: W.H.		DATE 09/12/2023																			
P.E. SEAL/SIGNATURE/DATE		DRAWING No 23-212																			
SHEET 18 OF 60		<table border="1" style="width: 100%; font-size: small;"> <thead> <tr> <th>REV. NO</th> <th>DESCRIPTION</th> <th>DATE</th> <th>REV. No</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>OLD 20-270</td> <td>09/12/23</td> <td>3</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td>4</td> <td></td> <td></td> </tr> </tbody> </table>		REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE	1	OLD 20-270	09/12/23	3			2			4		
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE																
1	OLD 20-270	09/12/23	3																		
2			4																		

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

D-C1/C2-N=4-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION

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

G-C1/C2-N=4-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 3"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION

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

H-C1/C2-N=4-CONC

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

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

WALTER A. TILLIT JR.
 LICENSE
 No. 44167
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER
 2/2023
 SEAL/SIGNATURE/DATE

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

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

SERIES 14000 HMMS IMPACT RESISTANT
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 FAX: (305)558-6665
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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 19 OF 60

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

E-C1/C2-N=4-CONC

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

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



E-C1/C2-N=6-CONC

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

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

WALTER A. TILLIT, P.E.
No. 44107
STATE OF FLORIDA
PROFESSIONAL ENGINEER
12/9/2023

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

<p style="text-align: center;">© 2023 TILTECO INC.</p> <div style="text-align: center;">  <p>TILTECO INC.</p> </div> <p style="font-size: small;">TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 e-mail: tilteco@aol.com CA-0006719 WALTER A. TILLIT Jr., P.E. FLORIDA Lic. 44167</p>	<p style="text-align: center;">SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS</p> <div style="text-align: center;">  <p>GIG</p> </div> <p style="font-size: x-small;">290 WEST 78 ROAD HALEAH, FL 33014 PH: (954)226-5555/(305)558-8103 FAX: (305)558-6665 www.gigwindows.com</p>	<p style="font-size: x-small;">DRAWN BY: W.H.</p> <p style="font-size: x-small;">09/12/2023 DATE</p> <p style="font-size: x-small;">23-212 DRAWING No</p> <p style="font-size: x-small;">SHEET 20 OF 60</p>																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REV. NO</th> <th>DESCRIPTION</th> <th>DATE</th> <th>REV. No</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>OLD 20-270</td> <td>09/12/23</td> <td>3</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td>4</td> <td></td> <td></td> </tr> </tbody> </table>			REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE	1	OLD 20-270	09/12/23	3			2			4		
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE															
1	OLD 20-270	09/12/23	3																	
2			4																	

CLIPPED INTERIOR MULLIONS CHARTS INTO CONCRETE SUBSTRATE

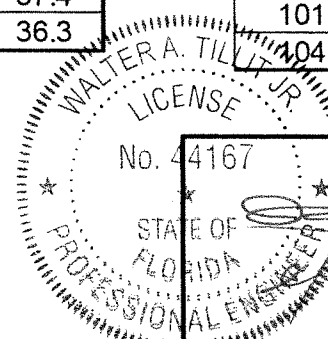
CONNECTED W/ CLIPS (C1) & (C2)

F-C1/C2-N=6-CONC

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

F-C1/C2-N=8-CONC

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



P.E. SEAL/SIGNATURE/DATE
 9/2023

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TILTECO INC.

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 CA-0006719
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 FLORIDA Lic. 44167

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

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

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

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

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 21 OF 60

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

I-C1/C2-N=8-CONC

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

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

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

J-C1-N=4-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 45° MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION

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

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

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TILLIT TESTING & ENGINEERING COMPANY
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REV. NO	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.
09/12/2023
DATE
23-212
DRAWING No
SHEET 22 OF 60

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

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

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

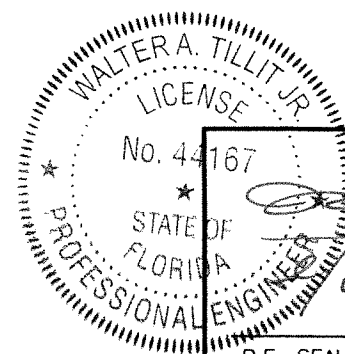
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x3"x1/8"
MULLION WITH CLIPS CONNECTED WITH (4) 1/4 TEK
SCREWS EACH END OF MULLION

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



P.E. SEAL/SIGNATURE/DATE

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

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS



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09/12/2023
DATE

23-212
DRAWING No

SHEET 23 OF 60

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

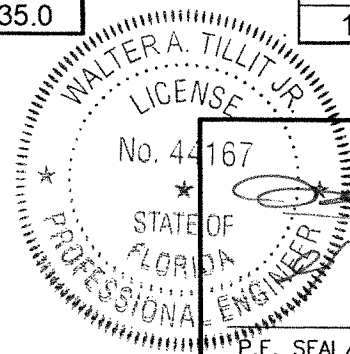
CLIPPED INTERIOR MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE CONNECTED W/ CLIPS (C1) & (C2)

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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 e-mail: tilteco@aol.com

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

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09/12/2023
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23-212
DRAWING No

SHEET 24 OF 60

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

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

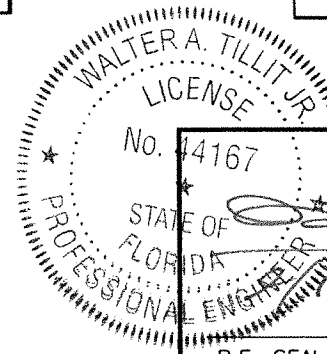
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" TEK SCREWS EACH END OF MULLION

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

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

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (6) 1/4" TEK SCREWS EACH END OF MULLION

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



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23-212
DRAWING No

SHEET 25 OF 60

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

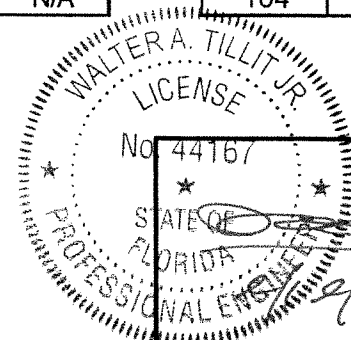
CLIPPED INTERIOR MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE CONNECTED W/ CLIPS (C1) & (C2)

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

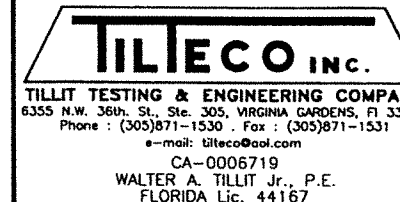
E-C1/C2-N=8-STEEL/ALUM.

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




P.E. SEAL/SIGNATURE/DATE

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W.H.

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DATE

23-212
DRAWING No

SHEET 26 OF 60

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

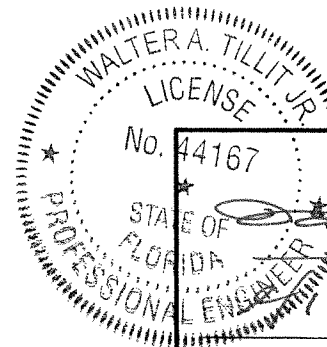
CLIPPED INTERIOR MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE CONNECTED W/ CLIPS (C1) & (C2)

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

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

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

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (10) 1/4" TEK SCREWS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0
23	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	172.0
26	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	152.1
29	185.0	185.0	185.0	185.0	185.0	185.0	185.0	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	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



P.E. SEAL/SIGNATURE/DATE
 [Signature]
 4/2023

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 TILLIT TESTING & ENGINEERING COMPANY
 6355 N.W. 36th. St., Ste. 305, VIRGINIA GARDENS, FL 33186
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 e-mail: tilteco@aol.com
 CA-0006719
 WALTER A. TILLIT Jr., P.E.
 FLORIDA Lic. 44167

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

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

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

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 27 OF 60

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

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

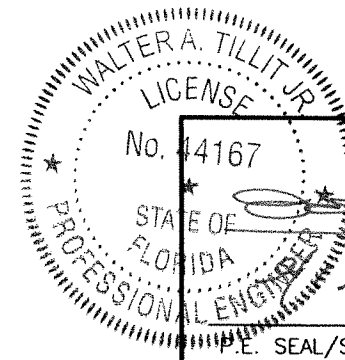
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 3"x3"x1/8" MULLION WITH CLIPS
CONNECTED WITH (4) 1/4" TEK SCREWS EACH END OF MULLION

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

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

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 4"x6"x1/4" MULLION WITH CLIPS
CONNECTED WITH (10) 1/4" TEK SCREWS EACH END OF MULLION

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



P.E. SEAL/SIGNATURE/DATE


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TILTECO INC.

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

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

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS


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

DRAWN BY:
W.H.

09/12/2023
DATE

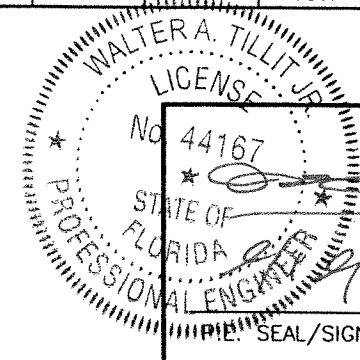
23-212
DRAWING No



SHEET 28 OF 60

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

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

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


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

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DRAWN BY: W.H.		DATE 09/12/2023	
DRAWING No 23-212		SHEET 29 OF 60	
REV. NO	DESCRIPTION	DATE	REV. No
1	OLD 20-270	09/12/23	3
2			4

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

A-C3-N=4-WOOD

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

B-C3-N=4-WOOD

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

C-C3-N=4-WOOD

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

C-C3-N=6-WOOD

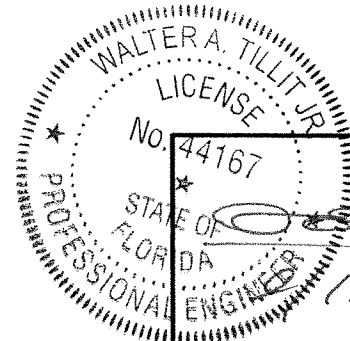
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8 x 3/8" MULLION WITH CLIPS CONNECTED WITH (6) 1/4" ULTRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	187.2	141.9	123.9	114.1	96.8	89.8
23	162.8	123.4	107.7	99.2	84.1	78.1
26	144.0	109.2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

D-C3-N=4-WOOD

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

D-C3-N=6-WOOD


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



 WALTER A. TILLIT JR.
 LICENSE
 No. 44167
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER
 19/2023


P.E. SEAL/SIGNATURE/DATE

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 e-mail: tilteco@aol.com
 CA-0006719
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09/12/2023
DATE

23-212
DRAWING No

SHEET 30 OF 60

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

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

E-C3-N=6-WOOD

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

E-C3-N=8-WOOD

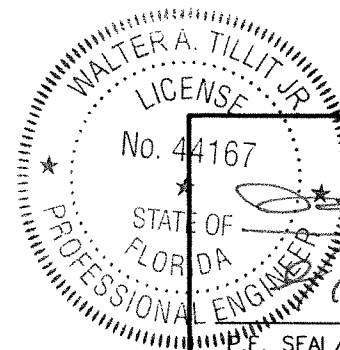
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (8) 1/4" ELCO ULTRACONS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	198.7	182.9	155.2	120.0	106.7	96.0	80.0
23	200.0	198.0	172.8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

F-C3-N=8-WOOD

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

F-C3-N=10-WOOD

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



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

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 31 OF 60

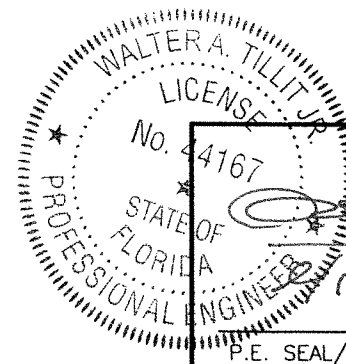
CLIPPED END MULLIONS CHARTS INTO WOOD SUBSTRATE CONNECTED W/ CLIP (C3)


G-C3-N=4-WOOD

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

I-C3-N=10-WOOD


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




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

DRAWN BY:
 W.H.
 09/12/2023
 DATE
 23-212
 DRAWING No
 SHEET 32 OF 60

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

A-C3-N=4-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION

Tributary Width (b)	Mullion Length (L)			
	38.375	50.625	58	63
20	111.1	84.2	73.5	67.7
23	96.6	73.2	63.9	58.8
26	85.4	64.8	56.5	52.0
29	76.6	58.1	50.7	46.7
32	69.4	52.6	45.9	42.3
35	63.5	48.1	42.0	38.7
38	58.5	44.3	38.7	35.6
41	54.2	41.1	35.8	33.0
44	50.5	38.3	33.4	30.8
47	47.3	35.8	31.3	28.8
50	44.4	33.7	29.4	27.1
53	41.9	31.8	27.7	25.5

B-C3-N=4-BLOCK

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

Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	195.3	148.0	129.2	118.9	100.9	93.7
23	169.8	128.7	112.3	103.4	87.8	81.4
26	150.2	113.9	99.4	91.5	77.6	72.0
29	134.7	102.1	89.1	82.0	69.6	64.6
32	122.0	92.5	80.7	74.3	63.1	58.5
35	111.6	84.6	73.8	68.0	57.7	53.5
38	102.8	77.9	68.0	62.6	53.1	49.3
41	95.2	72.2	63.0	58.0	49.2	45.7
44	88.8	67.3	58.7	54.1	45.9	42.6
47	83.1	63.0	55.0	50.6	42.9	39.9
50	78.1	59.2	51.7	47.6	40.4	37.5
53	73.7	55.9	48.8	44.9	38.1	35.3

C-C3-N=4-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8"x3/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION

Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	184.1	139.5	121.8	112.1	95.1	88.3
23	160.0	121.3	105.9	97.5	82.7	76.8
26	141.6	107.3	93.7	86.2	73.2	67.9
29	126.9	96.2	84.0	77.3	65.6	60.9
32	115.0	87.2	76.1	70.1	59.5	55.2
35	105.2	79.7	69.6	64.1	54.4	50.5
38	96.9	73.4	64.1	59.0	50.1	46.5
41	89.8	68.1	59.4	54.7	46.4	43.1
44	83.7	63.4	55.4	51.0	43.2	40.1
47	78.3	59.4	51.8	47.7	40.5	37.6
50	73.6	55.8	48.7	44.8	38.1	35.3
53	69.5	52.6	46.0	42.3	35.9	33.3

D-C3-N=4-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION

Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	187.4	142.1	124.0	114.2	96.9	74.9
23	163.0	123.5	107.8	99.3	84.2	65.2
26	144.2	109.3	95.4	87.8	74.5	57.6
29	129.3	98.0	85.5	78.7	66.8	51.7
32	117.1	88.8	77.5	71.4	60.5	46.8
35	107.1	81.2	70.9	65.2	55.4	42.8
38	98.6	74.8	65.3	60.1	51.0	39.4
41	91.4	69.3	60.5	55.7	47.3	36.5
44	85.2	64.6	56.4	51.9	44.0	34.1
47	79.8	60.5	52.8	48.6	41.2	31.9
50	75.0	56.8	49.6	45.7	38.7	30.0
53	70.7	53.6	46.8	43.1	36.6	28.3

F-C3-N=8-BLOCK


A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (8) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION

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

WALTER A. TILLIT JR.
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PROFESSIONAL ENGINEER
9/2023
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SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS				DRAWN BY: W.H.	
				09/12/2023 DATE	
290 WEST 78 ROAD HIALEAH, FL 33014 PH: (954)226-5555/(305)558-8103 FAX: (305)558-6665 www.gigwindows.com				23-212 DRAWING No	
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		
SHEET 33 OF 60					

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

E-C3-N=4-BLOCK

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

E-C3-N=8-BLOCK

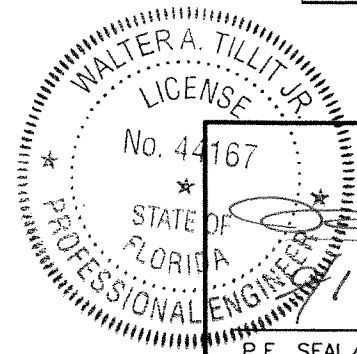
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (8) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	186.6	162.9	149.9	127.2	98.4	87.5	78.7	65.6
23	200.0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

G-C3-N=4-BLOCK

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

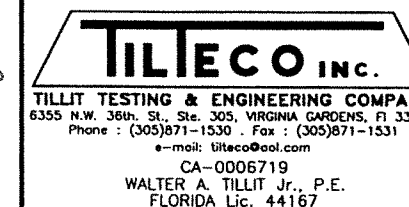
H-C3-N=4-BLOCK

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



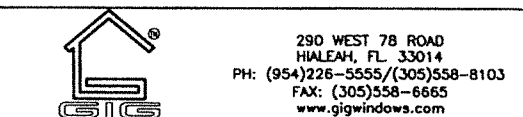
P.E. SEAL/SIGNATURE/DATE

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

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS



DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 34 OF 60

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

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

A-C3-N=4-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x 3"x 1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4 ULTRACONS EACH END OF MULLION

Tributary Width (b)	Mullion Length (L)			
	38.375	50.625	58	63
20	200.0	200.0	154.2	130.7
23	200.0	176.1	134.1	113.7
26	200.0	155.7	118.7	100.6
29	200.0	139.6	106.4	90.2
32	200.0	126.5	96.4	81.7
35	199.9	115.7	88.1	74.7
38	184.1	106.6	81.2	68.8
41	170.7	98.8	75.2	63.8
44	159.0	92.0	70.1	59.4
47	148.9	86.2	65.6	55.6
50	140.0	81.0	61.7	52.3
53	132.0	76.4	58.2	49.3

B-C3-N=4-CONC

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

Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	200.0	200.0	200.0	200.0	145.5	125.4
23	200.0	200.0	200.0	175.8	126.6	109.0
26	200.0	200.0	183.5	155.5	112.0	96.4
29	200.0	200.0	164.5	139.4	100.4	86.5
32	200.0	195.7	149.1	126.4	91.0	78.4
35	200.0	178.9	136.3	115.5	83.2	71.6
38	200.0	164.8	125.5	106.4	76.6	66.0
41	200.0	152.7	116.4	98.6	71.0	61.2
44	200.0	142.3	108.4	91.9	66.2	57.0
47	200.0	133.2	101.5	86.0	61.9	53.4
50	200.0	125.2	95.4	80.9	58.2	50.2
53	191.6	118.1	90.0	76.3	54.9	47.3

C-C3-N=4-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8"x3/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4 ULTRACONS EACH END OF MULLION

Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	200.0	200.0	200.0	200.0	199.8	182.2
23	200.0	200.0	200.0	200.0	173.7	158.4
26	200.0	200.0	196.7	181.1	153.7	140.2
29	200.0	200.0	176.4	162.4	137.8	125.7
32	200.0	183.1	159.8	147.2	124.9	113.9
35	200.0	167.4	146.1	134.5	114.2	104.1
38	200.0	154.2	134.6	123.9	105.1	95.9
41	188.5	142.9	124.7	114.8	97.4	88.9
44	175.7	133.2	116.2	107.0	90.8	82.8
47	164.5	124.7	108.8	100.2	85.0	77.5
50	154.6	117.2	102.3	94.2	79.9	72.9
53	145.9	110.6	96.5	88.8	75.4	68.8

D-C3-N=4-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" ULTRACONS IN CONCRETE EACH END OF MULLION

Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	200.0	200.0	200.0	200.0	200.0	137.4
23	200.0	200.0	200.0	200.0	199.7	119.5
26	200.0	200.0	200.0	200.0	176.7	105.7
29	200.0	200.0	200.0	200.0	158.4	94.8
32	200.0	200.0	200.0	185.5	143.6	85.9
35	200.0	200.0	184.2	169.6	131.2	78.5
38	200.0	194.4	169.7	156.2	120.9	72.3
41	200.0	180.2	157.3	144.8	112.0	67.0
44	200.0	167.9	146.6	134.9	104.4	62.5
47	200.0	157.2	137.2	126.3	97.7	58.5
50	194.9	147.8	129.0	118.7	91.9	55.0
53	183.9	139.4	121.7	112.0	86.7	51.8

G-C3-N=4-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 3"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" ULTRACONS IN CONCRETE

Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	200.0	200.0	200.0	184.3	156.4	99.4
23	200.0	199.5	174.1	160.3	136.0	86.4
26	200.0	176.4	154.0	141.8	120.3	76.4
29	200.0	158.2	138.1	127.1	107.9	68.5
32	189.1	143.4	125.1	115.2	97.7	62.1
35	172.9	131.1	114.4	105.3	89.4	56.8
38	159.3	120.7	105.4	97.0	82.3	52.3
41	147.6	111.9	97.7	89.9	76.3	48.5
44	137.5	104.3	91.0	83.8	71.1	45.2
47	128.8	97.6	85.2	78.4	66.6	42.3
50	121.0	91.8	80.1	73.7	62.6	39.7
53	114.2	86.6	75.6	69.6	59.0	37.5

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

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 TILLIT TESTING & ENGINEERING COMPANY
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 Phone : (305)871-1530 . Fax : (305)871-1531
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 CA-0006719
 WALTER A. TILLIT Jr., P.E.
 FLORIDA Lic. 44167

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

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

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DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 35 OF 60

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

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

E-C3-N=4-CONC

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

Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	200.0	192.6	156.0	108.3
23	200.0	200.0	200.0	200.0	200.0	189.9	167.4	135.6	94.2
26	200.0	200.0	200.0	200.0	200.0	168.0	148.1	120.0	83.3
29	200.0	200.0	200.0	200.0	194.8	150.6	132.8	107.6	74.7
32	200.0	200.0	200.0	200.0	176.5	136.5	120.3	97.5	67.7
35	200.0	200.0	200.0	190.2	161.4	124.8	110.0	89.1	61.9
38	200.0	200.0	190.3	175.2	148.6	115.0	101.3	82.1	57.0
41	200.0	200.0	176.4	162.4	137.8	106.6	93.9	76.1	52.8
44	200.0	188.3	164.3	151.3	128.4	99.3	87.5	70.9	49.2
47	200.0	176.3	153.9	141.6	120.2	93.0	81.9	66.4	46.1
50	200.0	165.7	144.6	133.1	113.0	87.4	77.0	62.4	43.3
53	200.0	156.3	136.4	125.6	106.6	82.4	72.7	58.9	40.9

E-C3-N=6-CONC

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

Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	200.0	192.6	156.0	108.3
23	200.0	200.0	200.0	200.0	200.0	200.0	167.4	135.6	94.2
26	200.0	200.0	200.0	200.0	200.0	200.0	187.5	148.1	120.0
29	200.0	200.0	200.0	200.0	200.0	200.0	168.1	132.8	107.6
32	200.0	200.0	200.0	200.0	200.0	198.9	152.3	120.3	97.5
35	200.0	200.0	200.0	200.0	200.0	181.9	139.3	110.0	89.1
38	200.0	200.0	200.0	200.0	197.4	167.5	128.3	101.3	82.1
41	200.0	200.0	198.8	183.0	155.3	118.9	93.9	76.1	52.8
44	200.0	200.0	185.2	170.5	144.7	110.8	87.5	70.9	49.2
47	200.0	198.6	173.4	159.6	135.4	103.7	81.9	66.4	46.1
50	200.0	186.7	163.0	150.0	127.3	97.5	77.0	62.4	43.3
53	200.0	176.2	153.8	141.6	120.1	92.0	72.7	58.9	40.9

F-C3-N=6-CONC

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

Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	200.0	200.0	198.8	165.7
23	200.0	200.0	200.0	200.0	200.0	200.0	192.1	172.9	144.1
26	200.0	200.0	200.0	200.0	200.0	200.0	191.2	169.9	152.9
29	200.0	200.0	200.0	200.0	200.0	200.0	171.4	152.4	137.1
32	200.0	200.0	200.0	200.0	200.0	200.0	155.3	138.1	124.3
35	200.0	200.0	200.0	200.0	183.6	142.0	126.2	113.6	94.7
38	200.0	200.0	200.0	199.3	169.1	130.8	116.3	104.6	87.2
41	200.0	200.0	200.0	184.7	156.8	121.2	107.8	97.0	80.8
44	200.0	200.0	187.0	172.1	146.1	113.0	100.4	90.4	75.3
47	200.0	200.0	175.1	161.2	136.7	105.8	94.0	84.6	70.5
50	200.0	188.5	164.5	151.5	128.5	99.4	88.4	79.5	66.3
53	200.0	177.8	155.2	142.9	121.3	93.8	83.4	75.0	62.5

F-C3-N=8-CONC

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

Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	197.8
23	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	172.0
26	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	193.7
29	200.0	200.0	200.0	200.0	200.0	200.0	200.0	192.9	173.6
32	200.0	200.0	200.0	200.0	200.0	200.0	196.7	174.8	157.3
35	200.0	200.0	200.0	200.0	200.0	200.0	179.8	159.8	143.9
38	200.0	200.0	200.0	200.0	200.0	200.0	165.6	147.2	132.5
41	200.0	200.0	200.0	200.0	200.0	198.5	153.5	136.4	122.8
44	200.0	200.0	200.0	200.0	200.0	184.9	143.0	127.1	114.4
47	200.0	200.0	200.0	200.0	200.0	173.1	133.9	119.0	107.1
50	200.0	200.0	200.0	200.0	191.8	162.7	125.9	111.9	100.7
53	200.0	200.0	196.6	181.0	153.5	118.7	105.6	95.0	74.6

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

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FAX: (305)558-6665
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WINDOWS & DOORS

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

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

CLIPPED END MULLIONS CHARTS INTO CONCRETE SUBSTRATE

CONNECTED W/ CLIP (C3)

H-C3-N=4-CONC

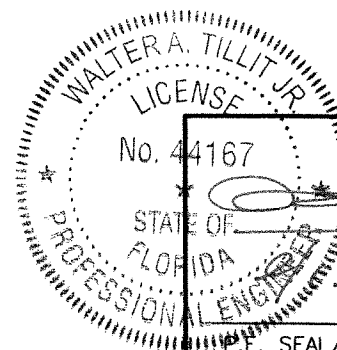
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 4"x4"x1/4" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION

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

I-C3-N=8-CONC

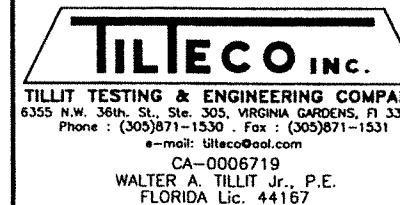
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 4"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (8) 1/4"Ø ULTRACONS IN POURED CONCRETE EACH END OF MULLION

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




P.E. SEAL/SIGNATURE/DATE

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

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

 290 WEST 78 ROAD
HIALEAH, FL 33014
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FAX: (305)558-6665
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DRAWN BY:
W.H.

09/12/2023
DATE

23-212

DRAWING No

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

SHEET 37 OF 60

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

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

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" TEK SCREWS EACH END OF MULLION

Tributary Width (b)	Mullion Length (L)			
	38.375	50.625	58	63
20	200.0	200.0	154.2	130.7
23	200.0	176.1	134.1	113.7
26	200.0	155.7	118.7	100.6
29	200.0	139.6	106.4	90.2
32	200.0	126.5	96.4	81.7
35	200.0	115.7	88.1	74.7
38	185.4	106.6	81.2	68.8
41	171.9	98.8	75.2	63.8
44	160.2	92.0	70.1	59.4
47	149.9	86.2	65.6	55.6
50	140.9	81.0	61.7	52.3
53	133.0	76.4	58.2	49.3

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

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" TEK SCREWS EACH END OF MULLION

Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	200.0	200.0	200.0	200.0	145.5	125.4
23	200.0	200.0	200.0	175.8	126.6	109.0
26	200.0	200.0	183.5	155.5	112.0	96.4
29	200.0	200.0	164.5	139.4	100.4	86.5
32	200.0	195.7	149.1	126.4	91.0	78.4
35	200.0	178.9	136.3	115.5	83.2	71.6
38	200.0	164.8	125.5	106.4	76.6	66.0
41	200.0	152.7	116.4	98.6	71.0	61.2
44	193.5	142.3	108.4	91.9	66.2	57.0
47	181.1	133.2	101.5	86.0	61.9	53.4
50	170.3	125.2	95.4	80.9	58.2	50.2
53	160.6	118.1	90.0	76.3	54.9	47.3

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

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8 x 3/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" TEK SCREWS EACH END OF MULLION

Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	200.0	200.0	200.0	200.0	200.0	182.2
23	200.0	200.0	200.0	200.0	180.3	158.4
26	200.0	200.0	200.0	188.0	159.5	140.2
29	200.0	200.0	183.1	168.6	143.0	125.7
32	200.0	190.1	165.9	152.8	129.6	113.9
35	200.0	173.8	151.7	139.7	118.5	104.1
38	200.0	160.1	139.7	128.6	109.1	95.9
41	195.7	148.4	129.5	119.2	101.2	88.9
44	182.4	138.3	120.7	111.1	94.3	82.8
47	170.7	129.4	113.0	104.0	88.2	77.5
50	160.5	121.7	106.2	97.8	83.0	72.9
53	151.4	114.8	100.2	92.2	78.3	68.8

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

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8 x 3/8" MULLION WITH CLIPS CONNECTED WITH (6) 1/4" TEK SCREWS EACH END OF MULLION

Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	200.0	200.0	200.0	200.0	200.0	182.2
23	200.0	200.0	200.0	200.0	183.9	158.4
26	200.0	200.0	200.0	200.0	162.7	140.2
29	200.0	200.0	200.0	200.0	145.9	125.7
32	200.0	200.0	200.0	183.6	132.2	113.9
35	200.0	200.0	189.7	167.9	120.9	104.1
38	200.0	200.0	174.8	154.6	111.3	95.9
41	200.0	185.6	162.0	143.3	103.2	88.9
44	200.0	172.9	150.9	133.5	96.1	82.8
47	200.0	161.9	141.3	125.0	90.0	77.5
50	200.0	152.2	132.8	117.5	84.6	72.9
53	189.4	143.6	125.3	110.9	79.8	68.8

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

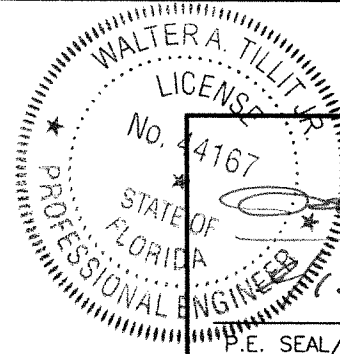
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 3"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" TEK SCREWS EACH END OF

Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	200.0	200.0	200.0	191.3	162.4	99.4
23	200.0	200.0	180.7	166.4	141.2	86.4
26	200.0	183.2	159.9	147.2	124.9	76.4
29	200.0	164.2	143.3	132.0	112.0	68.5
32	196.3	148.8	129.9	119.6	101.5	62.1
35	179.5	136.1	118.8	109.3	92.8	56.8
38	165.3	125.3	109.4	100.7	85.4	52.3
41	153.2	116.2	101.4	93.3	79.2	48.5
44	142.8	108.2	94.5	87.0	73.8	45.2
47	133.7	101.3	88.4	81.4	69.1	42.3
50	125.6	95.2	83.1	76.5	64.9	39.7
53	118.5	89.9	78.4	72.2	61.3	37.5

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

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 4"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (10) 1/4" TEK SCREWS EACH END OF MULLION

Tributary Width (b)	Mullion Length (L)									
	38.375	50.625	58	63	74.25	96	108	120	144	
20	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
23	200.0	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	200.0	188.7
29	200.0	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	200.0	183.9	153.3
35	200.0	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	200.0	193.6	172.1	154.9	129.1
41	200.0	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	200.0	167.2	148.6	133.8	111.5
47	200.0	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	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	



P.E. SEAL/SIGNATURE/DATE

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TILTECO INC.

TILLIT TESTING & ENGINEERING COMPANY
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Phone: (305)871-1530 Fax: (305)871-1531
e-mail: tiltco@aol.com
CA-0006719
WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. 44167

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

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

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

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 38 OF 60

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

WALTER A. TILLIT JR.
 LICENSE
 No. 44167
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER
 9/2023
 SEAL/SIGNATURE/DATE

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

 TILTECO INC. TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33186 Phone : (305)871-1530 Fax : (305)871-1531 e-mail: tilteco@aol.com CA-0006719 WALTER A. TILLIT Jr., P.E. FLORIDA Lic. 44167	SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS 290 WEST 78 ROAD HIALEAH, FL 33014 PH: (954)226-5555/(305)558-8103 FAX: (305)558-6665 www.gigwindows.com	DRAWN BY: W.H. 09/12/2023 DATE 23-212 DRAWING No SHEET 39 OF 60																		
<table border="1" style="width: 100%; font-size: small;"> <thead> <tr> <th>REV. NO</th> <th>DESCRIPTION</th> <th>DATE</th> <th>REV. No</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>OLD 20-270</td> <td>09/12/23</td> <td>3</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td>4</td> <td></td> <td></td> </tr> </tbody> </table>			REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE	1	OLD 20-270	09/12/23	3			2			4		
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE															
1	OLD 20-270	09/12/23	3																	
2			4																	

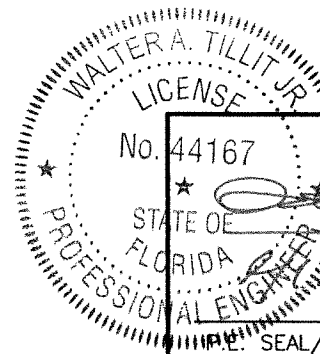
CLIPPED END MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE CONNECTED W/ CLIP **C3**

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



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

<p style="text-align: center;">© 2023 TILTECO INC.</p> <div style="text-align: center;"> <p>TILTECO INC.</p> <p>TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33186 Phone : (305)871-1530 . Fax : (305)871-1531 e-mail: tilteco@aol.com</p> </div> <p style="text-align: center;">CA-0006719 WALTER A. TILLIT Jr., P.E. FLORIDA Lic. 44167</p>	<p style="text-align: center;">SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS</p> <div style="text-align: center;"> <p>290 WEST 78 ROAD HIALEAH, FL. 33014 PH: (954)226-5555/(305)558-8103 FAX: (305)558-6665 www.gigwindows.com</p> </div> <p style="text-align: center; font-size: small;">WINDOWS & DOORS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REV. NO</th> <th>DESCRIPTION</th> <th>DATE</th> <th>REV. No</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>OLD 20-270</td> <td>09/12/23</td> <td>3</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td>4</td> <td></td> <td></td> </tr> </tbody> </table>	REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE	1	OLD 20-270	09/12/23	3			2			4			<p>DRAWN BY: W.H.</p> <p>09/12/2023 DATE</p> <p>23-212 DRAWING No</p> <p style="text-align: right;">SHEET 40 OF 60</p>
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE															
1	OLD 20-270	09/12/23	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 Width (b)	Mullion Length (L)			
	38.375	50.625	58	63
20	91.6	69.4	60.6	55.8
23	79.6	60.4	52.7	48.5
26	70.4	53.4	46.6	42.9
29	63.1	47.9	41.8	38.5
32	57.2	43.4	37.9	34.9
35	52.3	39.7	34.6	31.9
38	48.2	36.5	31.9	29.4
41	44.7	33.9	29.6	27.2
44	41.6	31.5	27.5	25.4
47	39.0	29.5	25.8	23.7
50	36.6	27.8	24.2	22.3
53	34.6	26.2	22.9	21.0
56	32.7	24.8	21.6	19.9
59	31.0	23.5	20.5	18.9
62	29.5	22.4	19.5	18.0
65	28.2	21.4	18.6	17.2
68	26.9	20.4	17.8	16.4
71	25.8	19.6	17.1	15.7
74	24.7	18.8	16.4	15.1
77	23.8	18.0	15.7	14.5
80	22.9	17.4	15.1	13.9
83	22.1	16.7	14.6	13.4
86	21.3	16.1	14.1	13.0
89	20.6	15.6	13.6	12.5
92	19.9	15.1	13.2	12.1
95	19.3	14.6	12.8	11.7
98	18.7	14.2	12.4	11.4
101	18.1	13.7	12.0	11.0
104	17.6	13.3	11.6	10.7

B-C4-N=2-WOOD

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

C-C4-N=2-WOOD

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

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

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 TILLIT TESTING & ENGINEERING COMPANY
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 SERIES 14000 HMMS IMPACT RESISTANT
 CLIPPED ALUMINUM MULLIONS

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

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

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

C-C4-N=3-WOOD

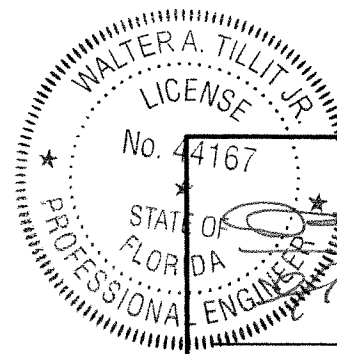
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8" x 3/8" MULLION WITH CLIPS CONNECTED WITH (3) 1/4" ULTRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	137.3	104.1	90.9	83.7	71.0	65.9
23	119.4	90.5	79.0	72.7	61.7	57.3
26	105.6	80.1	69.9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

D-C4-N=2-WOOD

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

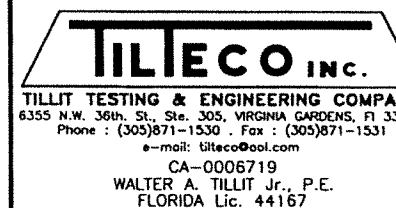
D-C4-N=3-WOOD

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



P.E. SEAL/SIGNATURE/DATE

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

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

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

E-C4-N=3-WOOD

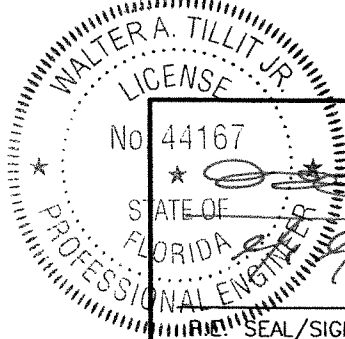
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS
CONNECTED WITH (3) 1/4" ELCO ULTRACONS EACH END OF MULLION


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

DRAWN BY:
 W.H.
 09/12/2023
 DATE
 23-212
 DRAWING No
 SHEET 43 OF 60

CLIPPED INTERIOR & END MULLIONS CHARTS INTO WOOD SUBSTRATE

CONNECTED W/ CLIP (C4)

F-C4-N=4-WOOD

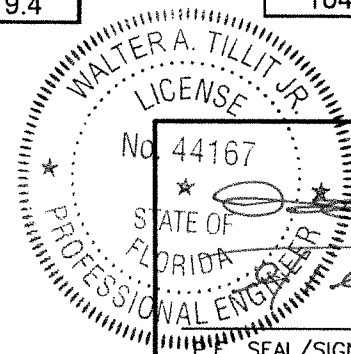
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" ULTRACONS EACH END OF MULLION

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

F-C4-N=5-WOOD

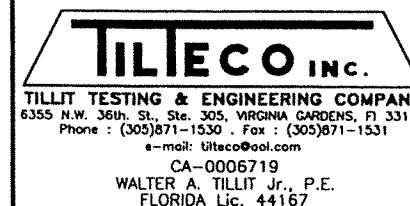
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (5) 1/4" ULTRACONS EACH END OF MULLION

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



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

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 44 OF 60

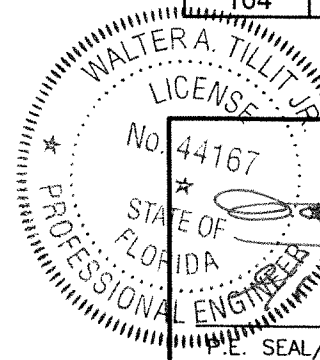
CLIPPED INTERIOR & END MULLIONS CHARTS INTO WOOD SUBSTRATE CONNECTED W/ CLIP (C4)

G-C4-N=2-WOOD

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

I-C4-N=5-WOOD

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



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

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

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

A-C4-N=2-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION

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

B-C4-N=2-BLOCK

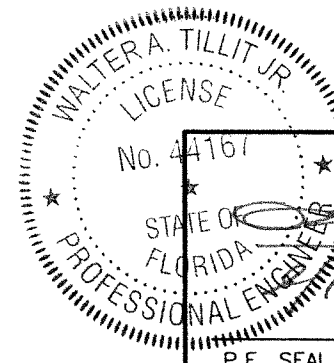
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION

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

C-C4-N=2-BLOCK

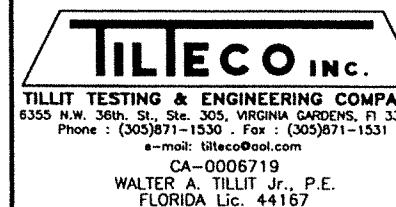
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8"x3/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION

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



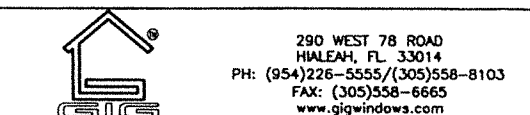
P.E. SEAL/SIGNATURE/DATE

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

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS



DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 46 OF 60

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

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

D-C4-N=2-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION

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

F-C4-N=4-BLOCK

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

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

G-C4-N=2-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 3"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION

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

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

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TILLIT TESTING & ENGINEERING COMPANY
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Phone : (305)871-1530 . Fax : (305)871-1531
e-mail: tilteco@aol.com
CA-0006719
WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. 44167

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

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

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

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

DRAWN BY:
W.H.
09/12/2023
DATE
23-212
DRAWING No
SHEET 47 OF 60

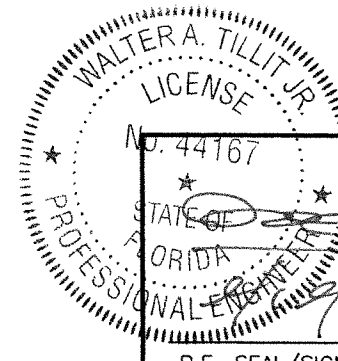
CLIPPED INTERIOR & END MULLIONS CHARTS INTO BLOCK SUBSTRATE CONNECTED W/ CLIP (C4)

E-C4-N=2-BLOCK

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

E-C4-N=4-BLOCK

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



P.E. SEAL/SIGNATURE/DATE

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TILTECO INC.

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

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

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

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

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

DRAWN BY:
W.H.

09/12/2023
DATE

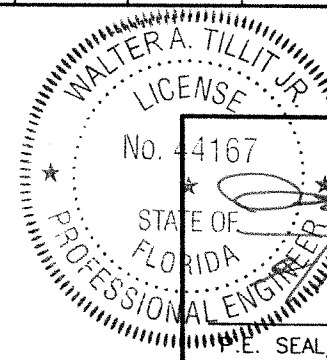
23-212
DRAWING No



SHEET 48 OF 60

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

H-C4-N=2-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 4"x4"x1/4" MULLION WITH CLIPS CONNECTED WITH (2) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	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


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

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 TILTECO INC. TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th. St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 e-mail: Ulteco@aol.com		SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS  290 WEST 78 ROAD HIALEAH, FL 33014 PH: (954)226-5555/(305)558-8103 FAX: (305)558-6665 www.gigwindows.com	
DRAWN BY: W.H.		DATE 09/12/2023	
DRAWING No 23-212		SHEET 49 OF 60	
REV. NO	DESCRIPTION	DATE	REV. No
1	OLD 20-270	09/12/23	3
2			4

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

A-C4-N=2-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x 3"x 1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4 ULTRACONS EACH END OF MULLION

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

B-C4-N=2-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4 ULTRACONS EACH END OF MULLION

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

C-C4-N=2-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8"x3/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4 ULTRACONS EACH END OF MULLION

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

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

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

© 2023 TILTECO INC. TILTECO INC. TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th. St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 e-mail: tilteco@aol.com CA-0006719 WALTER A. TILLIT Jr., P.E. FLORIDA Lic. 44167	SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS 290 WEST 78 ROAD HIALEAH, FL 33014 PH: (954)226-5555/(305)558-8103 FAX: (305)558-6665 www.gigwindows.com	DRAWN BY: W.H. 09/12/2023 DATE 23-212 DRAWING No SHEET 50 OF 60																		
<table border="1" style="width: 100%; font-size: small;"> <thead> <tr> <th>REV. NO</th> <th>DESCRIPTION</th> <th>DATE</th> <th>REV. No</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>OLD 20-270</td> <td>09/12/23</td> <td>3</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td>4</td> <td></td> <td></td> </tr> </tbody> </table>			REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE	1	OLD 20-270	09/12/23	3			2			4		
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE															
1	OLD 20-270	09/12/23	3																	
2			4																	

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

D-C4-N=2-CONC

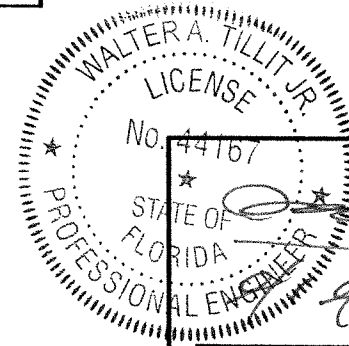
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION

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

G-C4-N=2-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 3"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION

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



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

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

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

WALTER A. TILLIT JR.
LICENSE
No. 44187
STATE OF FLORIDA
PROFESSIONAL ENGINEER
9/2023
P.E. SEAL/SIGNATURE/DATE

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TILLIT TESTING & ENGINEERING COMPANY
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FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

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

DRAWN BY:
W.H.
09/12/2023
DATE
23-212
DRAWING No
SHEET 52 OF 60

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

F-C4-N=3-CONC

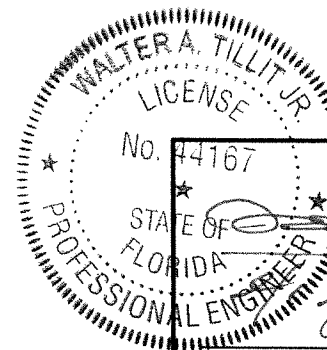
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH
(3) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION

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

F-C4-N=4-CONC

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

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



P.E. SEAL/SIGNATURE/DATE

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 CA-0006719
 WALTER A. TILLIT Jr., P.E.
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FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

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 FAX: (305)558-6665
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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.
09/12/2023
DATE
23-212
DRAWING No
SHEET 53 OF 60

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

H-C4-N=2-CONC

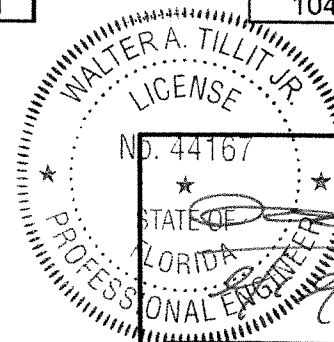
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 4"x4"x1/4" MULLION WITH CLIPS CONNECTED WITH (2) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION

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

I-C4-N=4-CONC

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

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



P.E. SEAL/SIGNATURE/DATE

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TILTECO INC.

TILLIT TESTING & ENGINEERING COMPANY
 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166
 Phone: (305)871-1530 Fax: (305)871-1531
 e-mail: tilteco@aol.com

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

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

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

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

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 54 OF 60

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

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

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4 TEK SCREWS EACH END OF MULLION

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

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

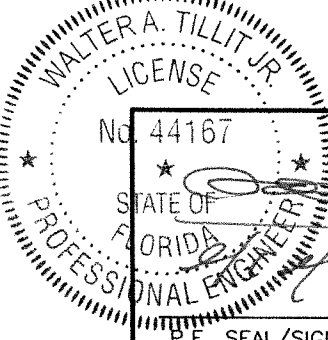
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4 TEK SCREWS EACH END OF MULLION



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

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

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 3"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4" TEK SCREWS EACH END OF

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


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

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 TILTECO INC. TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 e-mail: tilteco@aol.com		SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS  290 WEST 78 ROAD HIALEAH, FL 33014 PH: (954)226-5555/(305)558-8103 FAX: (305)558-6665 www.gigwindows.com	
DRAWN BY: W.H.		DATE 09/12/2023	
P.E. SEAL/SIGNATURE/DATE		DRAWING No 23-212	
FLORIDA Lic. 44167		SHEET 55 OF 60	

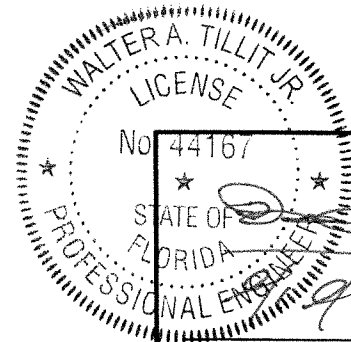
CLIPPED INTERIOR & END MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE CONNECTED W/ CLIP (C4)

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

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

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

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



P.E. SEAL/SIGNATURE/DATE

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23-212
DRAWING No

SHEET 56 OF 60

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

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

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

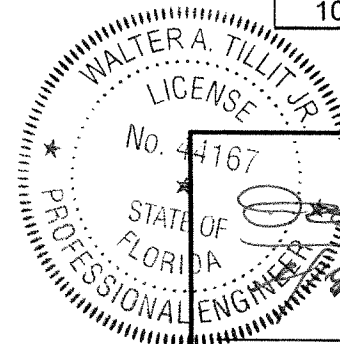
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4" TEK SCREWS EACH END OF MULLION

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

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

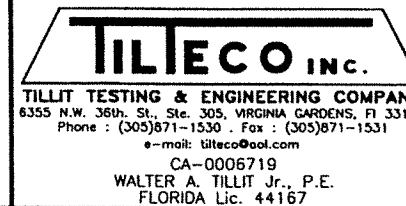
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (3) 1/4" TEK SCREWS EACH END OF MULLION

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



P.E. SEAL/SIGNATURE/DATE

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SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS



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DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 57 OF 60

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

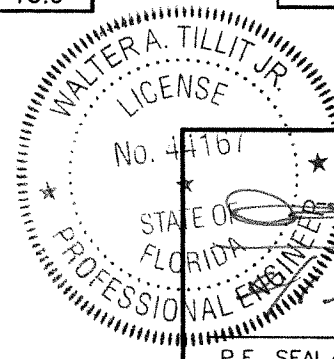
CLIPPED INTERIOR & END MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE CONNECTED W/ CLIP **(C4)**

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

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

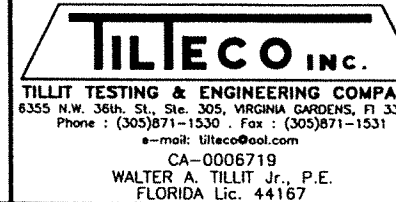
E-C4-N=4-STEEL/ALUM.

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



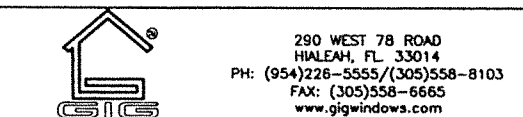
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FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS



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

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 58 OF 60

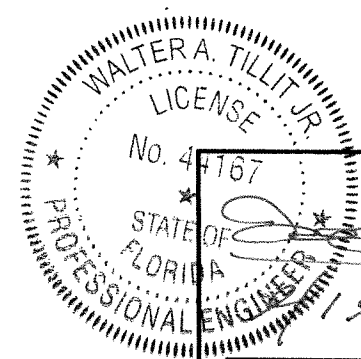
CLIPPED INTERIOR & END MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE CONNECTED W/ CLIP (C4)

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	200.0	189.6	142.2
26	200.0	200.0	200.0	200.0	200.0	200.0	188.7	167.7	125.8
29	200.0	200.0	200.0	200.0	200.0	200.0	169.1	150.3	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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CA-0006719
WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. 44167

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

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS


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 HIALEAH, FL 33014
 PH: (954)226-5555/(305)558-8103
 FAX: (305)558-6665
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09/12/2023
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23-212
DRAWING No

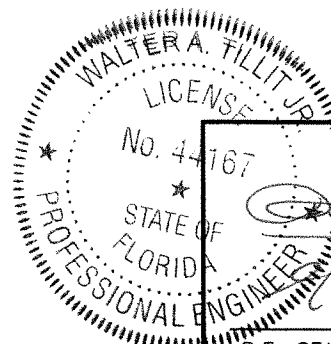
SHEET 59 OF 60

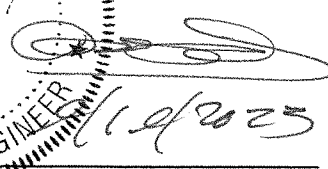
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

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

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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 WALTER A. TILLIT Jr., P.E.
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CLIPPED ALUMINUM MULLIONS


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

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