FL #	FL31658-R4
Application Type	Revision
Code Version	2023
Application Status	Approved
Comments	
Archived	
Product Manufacturer	American Shutter Systems Association, Inc.
Address/Phone/Email	4268 Westroads Drive West Palm Beach, FL 33407 (561) 209-8263 bfeeley@easternmetal.com
Authorized Signature	Bill Feeley lrodriguez@easternmetal.com
Technical Representative	
Address/Phone/Email	
Quality Assurance Representative	
Address/Phone/Email	
Category	Shutters
Subcategory	Roll-up
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer Evaluation Report - Hardcopy Received
Florida Engineer or Architect Name who developed the Evaluation Report	Richard Neet, P.E.
Florida License	PE-86488
Quality Assurance Entity	National Accreditation and Management Institute
Quality Assurance Contract Expiration Date	12/31/2025
Validated By	John Henry Kampmann Jr. Validation Checklist - Hardcopy Received
Certificate of Independence	FL31658_R4_COI_INDEP.pdf

Referenced Standard and Year (of Standard)

Standard	Year
ASTM E1886	2005
ASTM E1996	2006
ASTM E330	2002
TAS 201	1994
TAS 202	1994
TAS 203	1994

Equivalence of Product Standards Certified By	Florida Licensed Professional Engineer or Architect FL31658_R4_Equiv_EQUIV.pdf
Sections from the Code	
Product Approval Method	Method 1 Option D
Date Submitted	10/03/2023
Date Validated	10/17/2023
Date Pending FBC Approval	10/22/2023
Date Approved	12/13/2023

Summary of Products

FL #	Model, Number or Name	Description
31658.1	Single Wall Roll-Up Hurricane Shutter	End Retention Slats

Limits of Use
Approved for use in HVHZ: Yes
Approved for use outside HVHZ: Yes
Impact Resistant: Yes
Design Pressure: +150/-150
Other: See installation instructions for limitations

Installation Instructions
FL31658_R4_II_DWG_.pdf
Verified By: Richard Neet, P.E. PE86488
Created by Independent Third Party: Yes

Evaluation Reports
FL31658_R4_AE_EVAL.pdf
Created by Independent Third Party: Yes

Back Next

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Product Approval Accepts:

Credit Card
Safe
securityMETRICS

AMERICAN SHUTTER SYSTEMS ASSOCIATION, INC.

SINGLE WALL ROLL-UP HURRICANE SHUTTER
LARGE MISSILE IMPACT RESISTANT (MISSILE LEVEL D)
VALID FOR USE INSIDE AND OUTSIDE THE HVHZ (SEE LIMITATIONS HEREIN)

NON-SITE-SPECIFIC STRUCTURAL PERFORMANCE EVALUATION. A DESIGN PROFESSIONAL SHALL BE RESPONSIBLE FOR CERTIFYING THE APPLICATION OF THIS INFORMATION TO ANY SITE-SPECIFIC LOCATION.

GENERAL NOTES:

1. THIS SYSTEM HAS BEEN TESTED AND EVALUATED AS A LARGE MISSILE IMPACT PROTECTIVE SYSTEM IN ACCORDANCE WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE EIGHTH EDITION (2023) FOR USE WITHIN AND OUTSIDE THE HIGH VELOCITY HURRICANE ZONE ("HVHZ"), PER ASTM E330, E1886, E1996 AND TAS 201, 202, & 203 STANDARDS. SEE PRODUCT APPROVAL EVALUATION FOR ADDITIONAL INFORMATION.
2. WIND LOAD DURATION FACTOR Cd=1.6 HAS BEEN USED FOR WOOD ANCHOR DESIGN.
3. POSITIVE AND NEGATIVE DESIGN PRESSURES CALCULATED FOR USE WITH THIS SYSTEM SHALL BE DETERMINED PER SEPARATE ENGINEERING IN ACCORDANCE WITH THE GOVERNING CODE. PRESSURE REQUIREMENTS AS DETERMINED IN ACCORDANCE WITH ASCE 7 AND CHAPTER 1609 OF THE FLORIDA BUILDING CODE SHALL BE LESS THAN OR EQUAL TO THE POSITIVE OR NEGATIVE ASD DESIGN PRESSURE CAPACITY VALUES LISTED HEREIN FOR ANY ASSEMBLY AS SHOWN.
4. DESIGN PRESSURES NOTED HEREIN ARE BASED ON MAXIMUM TESTED PRESSURES DIVIDED BY A 1.5 SAFETY FACTOR.
5. ROLL-UP MECHANISM AND HOOD ASSEMBLY ARE NOT PART OF THIS APPROVAL.
6. THIS DOCUMENT CONTAINS INFORMATION RELEVANT TO THE NECESSARY STRUCTURAL REQUIREMENTS OF THE SYSTEM INSTALLATION. COMPONENTS AND FASTENERS NOT REFERENCED WHICH ARE PART OF THE INTERNAL FABRICATION OF THE SPECIFIED SYSTEMS OR ASSEMBLIES SHALL BE PER MANUFACTURER PUBLISHED SPECIFICATIONS.
7. THE STRUCTURAL ADEQUACY OF THE EXISTING STRUCTURE TO WITHSTAND SUPERIMPOSED LOADS BY THIS SYSTEM SHALL BE VERIFIED BY OTHERS. THE ARCHITECT/ENGINEER OF RECORD FOR THE PROJECT SUPERSTRUCTURE WITH WHICH THIS DESIGN IS USED SHALL BE RESPONSIBLE FOR THE INTEGRITY OF ALL SUPPORTING SURFACES TO THIS DESIGN WHICH SHALL BE COORDINATED BY THE PERMITTING CONTRACTOR.
8. THE SYSTEM DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. IF SITE CONDITIONS DEVIATE FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS TO BE USED IN CONJUNCTION WITH THIS DOCUMENT.

SYSTEM PERFORMANCE DERIVATIONS

SYSTEM PERFORMANCE DERIVED FROM CERTIFIED TEST REPORT(S) #1127.01-19 BY AMERICAN TEST LAB OF SOUTH FLORIDA (ATL) PER TAS 201, TAS 202, TAS 203, ASTM E330, ASTM E1996 & ASTM E1886 TEST STANDARD(S).

GENERAL NOTES (CONTINUED):

9. ALL EXTRUSIONS SHALL BE MINIMUM 6063-T6 ALUMINUM ALLOY, UNLESS NOTED OTHERWISE.
10. EACH SHUTTER ASSEMBLY SHALL BEAR A PERMANENT LABEL ON THE BOTTOM OF THE HOOD FACING THE EXTERIOR, OR ANYWHERE ELSE ALLOWED PER SECTION 1709.9 OF THE FBC 2023 WITH THE FOLLOWING MINIMUM INFORMATION:

    AMERICAN SHUTTER SYSTEMS ASSOC., INC.
    WEST PALM BEACH, FL
    MISSILE LEVEL D - ASTM E1886, E1996 & E330 - TAS 201, 202 & 203
    FLORIDA PRODUCT APPROVAL NUMBER

11. ALL BOLTS & WASHERS SHALL BE ZINC COATED STEEL, GALVANIZED STEEL, OR STAINLESS STEEL WITH A MINIMUM TENSILE YIELD STRENGTH OF 60 KSI. ALL ALUMINUM 3/16"Ø OR 1/4"Ø POP RIVETS SHALL BE 7075-T6 OR STRONGER.
12. ALL STEEL IN CONTACT WITH ALUMINUM SHALL BE PAINTED OR PLATED AS PRESCRIBED IN THE ABOVE-NOTED BUILDING CODE.
13. CONTRACTOR IS RESPONSIBLE TO INSULATE OR PROTECT ALL MEMBERS FROM DISSIMILAR MATERIALS TO PREVENT ELECTROLYSIS.
14. FASTENERS SHALL BE CADMIUM-PLATED OR OTHERWISE CORROSION-RESISTANT MATERIAL AND SHALL COMPLY WITH "SPECIFICATIONS FOR ALUMINUM STRUCTURES" SECTION J.3.7.2 BY THE ALUMINUM ASSOCIATION IN.C, AND ANY APPLICABLE FEDERAL, STATE AND OR LOCAL CODES.
15. REFER TO FASTENER MANUFACTURER'S PUBLISHED DATA SHEETS AND RECOMMENDATIONS FOR FASTENER INSTALLATION INSTRUCTIONS.
16. ENGINEER SEAL AFFIXED HERETO VALIDATE STRUCTURAL DESIGN AS SHOWN ONLY. USE OF THIS SPECIFICATION BY CONTRACTOR, et. al. INDEMNIFIES & SAVES HARMLESS THIS ENGINEER FOR ALL COST & DAMAGES INCLUDING LEGAL FEES & APPELLATE FEES RESULTING FROM MATERIAL FABRICATION, SYSTEM ERECTION, & CONSTRUCTION PRACTICES BEYOND THAT WHICH IS CALLED FOR BY LOCAL, STATE & FEDERAL CODES & FROM DEVIATIONS OF THIS PLAN.
17. EXCEPT AS EXPRESSLY PROVIDED HEREIN, NO ADDITIONAL CERTIFICATIONS OR AFFIRMATIONS ARE INTENDED.
18. PRESSURE VALUES ON THIS APPROVAL ARE (ASD) ALLOWABLE DESIGN PRESSURES.
19. ALTERATIONS ADDITIONS OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE THIS CERTIFICATION.

RICHARD NEET, P.E.
PE# 86488 CA# 9885

OCTOBER 3, 2023

RICHARD NEET LICENSE No. P.E. 86488 STATE OF FLORIDA PROFESSIONAL ENGINEER

Digitally signed by Richard Neet
Date: 2023.10.03 14:08:08-04'00'

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PAGE INDEX:

SHEET INDEX	
# SHEET	DESCRIPTION
1	COVER SHEET
2	TYPICAL ELEVATION & SCHEDULES
3	PARTS
4	TYP. ELEVATIONS
5-7	INSTALLATION DETAILS
8-17	ANCHOR SCHEDULES & DETAILS

TERMINOLOGY:

THE FOLLOWING ABBREVIATIONS APPEAR IN THIS APPROVAL: "INC." FOR "INCORPORATION", "CORP." FOR "CORPORATION", "ALUM" FOR "ALUMINUM, "ASD" FOR "ALLOWABLE STRESS DESIGN", "ASTM" FOR "AMERICAN SOCIETY FOR TESTING AND MATERIALS", "CS" FOR "CARBON STEEL","CONN" FOR "CONNECTION", "EMBED" FOR "EMBEDMENT", "DIST." FOR "DISTANCE", "GA" FOR "GAUGE", "HVHZ" FOR "HIGH-VELOCITY HURRICANE ZONE", "LB" FOR "POUND", "MAX" FOR "MAXIMUM, "N.T.S." FOR "NOT TO SCALE", "PSF" FOR "POUNDS PER SQUARE FOOT (lb/ft²)", "SPECS" FOR "SPECIFICATIONS", "&" FOR "AND", "MAX" FOR "MAXIMUM", "W/" FOR "WITH", "EXIST" FOR "EXISTING, "STRUCT" FOR "STRUCTURE", "CONC." FOR "CONCRETE". CONTACT ENGINEERING EXPRESS FOR ADDITIONAL ABBREVIATION/TERMINOLOGY CLARIFICATIONS.

VISIT ECALC.IO/65152
FOR SITE-SPECIFIC DEVIATIONS & MORE INFORMATION ABOUT THIS DOCUMENT OR SCAN THIS QR CODE
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SINGLE WALL ROLL-UP HURRICANE SHUTTER
FLORIDA BUILDING CODE EIGHTH EDITION (2023)

REMARKS	DRWN	CHKD	DATE
INT ISSUE	RWN	RWN	02/18/20
REV	RWN	RWN	04/14/21
2023 FBC UPDATE	MRT	RWN	10/03/23

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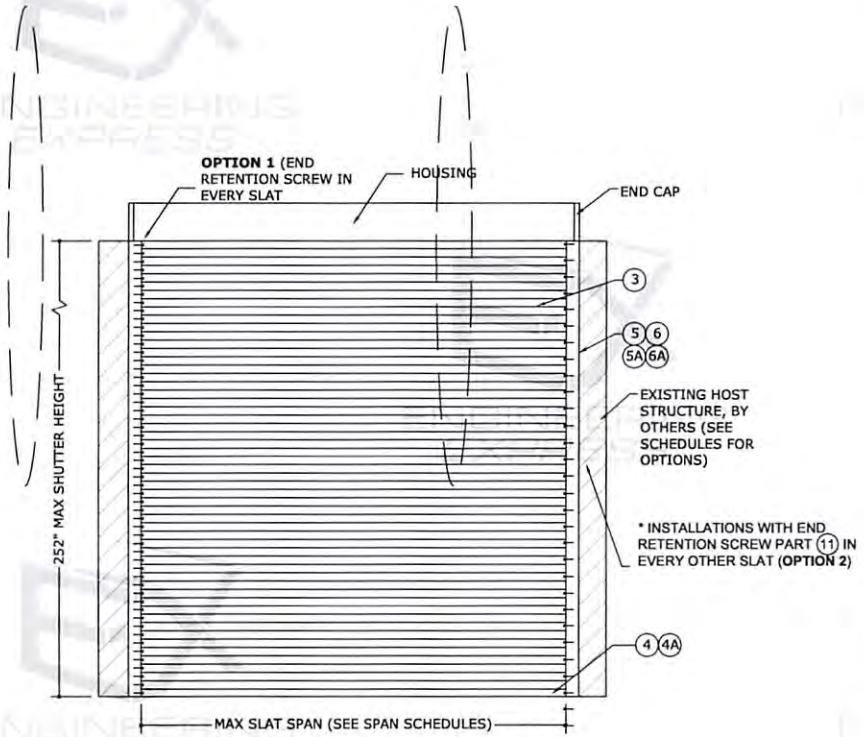

1/2 TYPICAL ROLL-UP SHUTTER

N.T.S. EXTERIOR ELEV

SEE REMAINING SHEETS FOR COMPLETE ELEVATION OPTIONS

SINGLE WALL SLATS (3)

SLAT SPAN SCHEDULE		
	ALLOWABLE DESIGN PRESSURE	
SLAT SPAN	OPTION 1 — END RET. SCREW (11) EVERY SLAT	OPTION 2 — END RET. SCREW (11) EVERY OTHER SLAT*
75.0"	± 150.0 PSF	± 150.0 PSF
80.0"	± 143.1 PSF	± 143.1 PSF
83.5"	± 137.0 PSF	± 137.0 PSF
87.0"	± 131.7 PSF	± 131.7 PSF
90.5"	± 127.0 PSF	± 127.0 PSF
94.0"	± 122.7 PSF	± 122.7 PSF
97.5"	± 118.9 PSF	± 118.9 PSF
101.0"	± 115.5 PSF	± 115.0 PSF
104.5"	± 112.3 PSF	± 110.0 PSF
108.0"	± 109.4 PSF	± 105.0 PSF
111.5"	± 106.8 PSF	± 100.0 PSF
115.0"	± 104.3 PSF	± 95.0 PSF
118.5"	± 102.1 PSF	± 90.0 PSF
120.0"	± 100.0 PSF	± 85.0 PSF
134.0"	± 94.4 PSF	± 76.9 PSF
146.0"	± 88.9 PSF	± 68.1 PSF
158.0"	± 83.4 PSF	± 60.3 PSF
170.0"	± 77.9 PSF	± 52.2 PSF
182.0"	± 72.4 PSF	± 45.0 PSF
194.0"	± 66.8 PSF	
206.0"	± 61.3 PSF	
218.0"	± 55.8 PSF	
230.0"	± 50.3 PSF	
241.5"	± 45.0 PSF	

* SEE ELEVATION VIEW ON THIS SHEET FOR ADDITIONAL REQUIREMENTS AS WELL AS PART (11) DETAIL IN THIS DRAWING

GLASS SEPARATION SCHEDULE		
SLAT SPAN	INSTALLATIONS ≤ 30' ABOVE GRADE	INSTALLATIONS > 30' ABOVE GRADE
75.0"	5.8"	5.8"
80.0"	7.0"	5.9"
83.5"	7.0"	6.1"
87.0"	7.0"	6.2"
90.5"	7.0"	6.4"
94.0"	7.0"	6.5"
97.5"	7.0"	6.7"
101.0"	7.0"	6.9"
104.5"	7.0"	7.0"
108.0"	7.2"	7.2"
111.5"	7.5"	7.5"
115.0"	7.7"	7.7"
118.5"	8.0"	8.0"
120.0"	8.3"	8.3"
134.0"	10.5"	8.6"
146.0"	10.5"	8.8"
158.0"	10.5"	9.0"
170.0"	10.5"	9.2"
182.0"	10.5"	9.4"
194.0"	10.5"	9.6"
206.0"	10.5"	9.9"
218.0"	10.5"	10.1"
230.0"	10.5"	10.3"
241.5"	10.5"	10.5"

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SINGLE WALL ROLL-UP HURRICANE SHUTTER
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-	-	-	-

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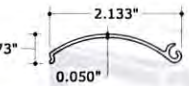
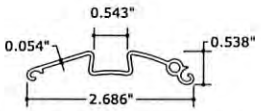
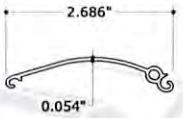


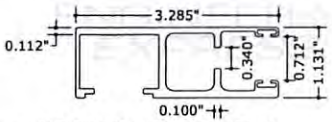
1 STARTER SLAT
N.T.S. 6063-T6 ALUM



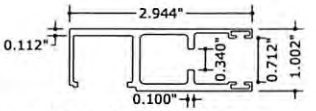
2 FINGER PULL SLAT
N.T.S. 6063-T6 ALUM
(1) PER SHUTTER AS APPLICABLE



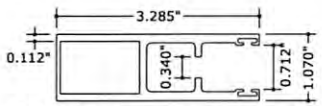
3 SINGLE WALL SLAT
N.T.S. 6063-T6 ALUM



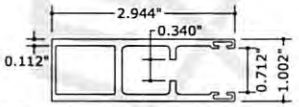
6 SIDE RAIL TYPE 2
N.T.S. 6063-T6 ALUM



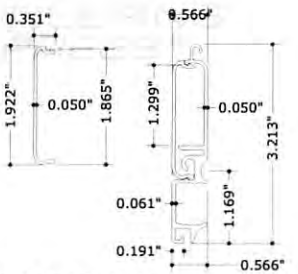
5 SIDE RAIL TYPE 1
N.T.S. 6063-T6 ALUM



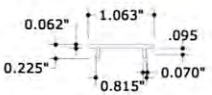
6A SIDE RAIL TYPE 2 (CLOSED)
N.T.S. 6063-T6 ALUM



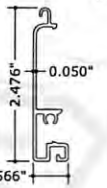
5A SIDE RAIL TYPE 1 (CLOSED)
N.T.S. 6063-T6 ALUM



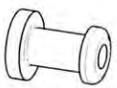
4 BASE SLAT
N.T.S. 6063-T6 ALUM
(OPTIONAL COMPONENT)



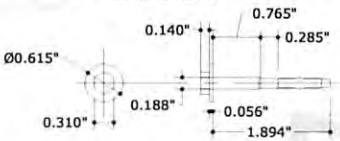
7 SNAP CAP
N.T.S. 6063-T6 ALUM



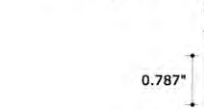
4A SHORT BASE SLAT
N.T.S. 6063-T6 ALUM
(OPTIONAL COMPONENT)



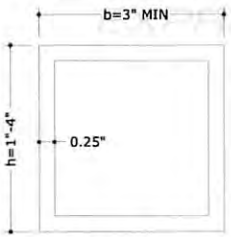
8 END CAP W/ MONOLITHIC SCREW SLEEVE
N.T.S. (LEFT SHOWN, RIGHT IS MIRROR)
RIGID NYLON, 76-78 TYPE "O" SHORE HARDNESS



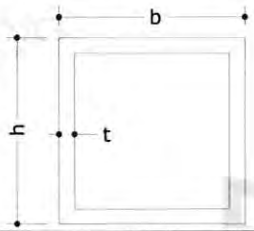
11 #8-32 410 S.S. SCREW
#8-32 X 1.894" AISI 410 S.S. SCREW W/ 0.31" DIAM HV MARKED HEAD & T=0.064" X 0.620" DIAM MONOLITHIC WASHER W/ BERTHA H.V. DACROSHIELD COATING SYSTEM AS MANUFACTURED BY APPROVED COATING APPLICATORS REGISTERED WITH AMERICAN SHUTTER SYSTEM ASSOCIATION. **SEE SHEET 1 FOR SCREW REQUIREMENTS, ALWAYS REQUIRED FOR BASE SLAT FOR ALL INSTALLATIONS**



9 EXTENDED SCREW SLEEVE W/O END CAP
N.T.S. RIGID NYLON, 76-78 TYPE "O" SHORE HARDNESS

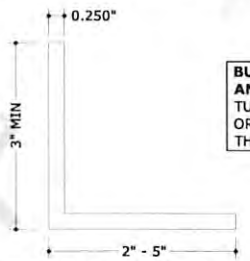


12 BUILD-OUT MOUNTED TUBES
N.T.S. 6063-T6



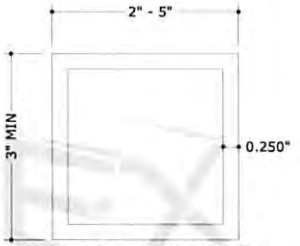
MULLIONS	b	h	t
24	4"	6"	0.250"
25	4"	8"	0.250"
26	4"	4"	0.250"

MULLIONS
N.T.S. 6061-T6 OR 6005-T5



13 TRAPPED ANGLE
N.T.S. 6063-T6 ALUM

BUILD-OUT TUBES AND TRAPPED ANGLE NOTES: FOR 2X ANGLES OR TUBES, THE LONG SIDE OF THE ANGLE OR TUBE SHALL BE FLUSH AGAINST THE HOST WALL



14 OPTIONAL TRAPPED MOUNTED TUBE TO (13)
N.T.S. 6063-T6 ALUM

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WEST PALM BEACH, FL 33407
(800) 432-2204

SINGLE WALL ROLL-UP HURRICANE SHUTTER
FLORIDA BUILDING CODE EIGHTH EDITION (2023)

REMARKS	DRWN	CHKD	DATE
INT ISSUE	RWN	RWN	02/18/20
REV	RWN	RWN	04/14/21
2023 FBC UPDATE	MRT	RWN	10/03/23

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RICHARD NEET, P.E.
PE# 86488 CA# 9885

OCTOBER 3, 2023

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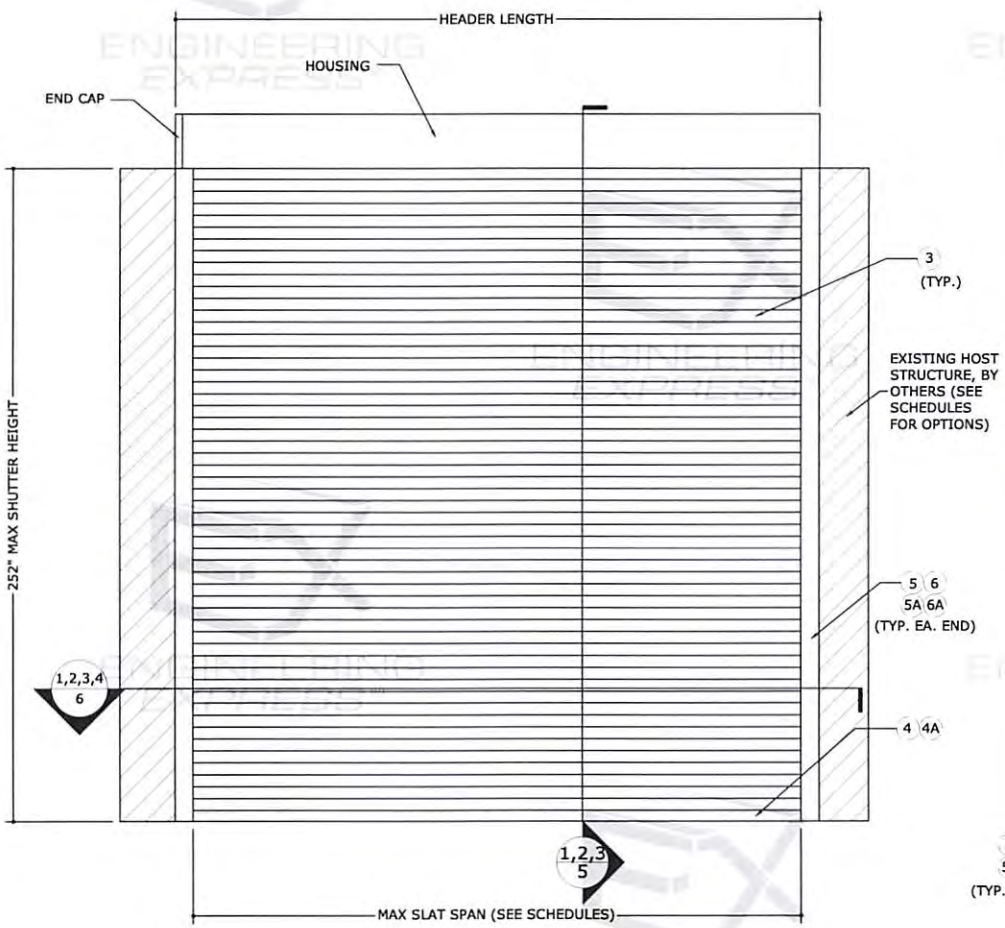
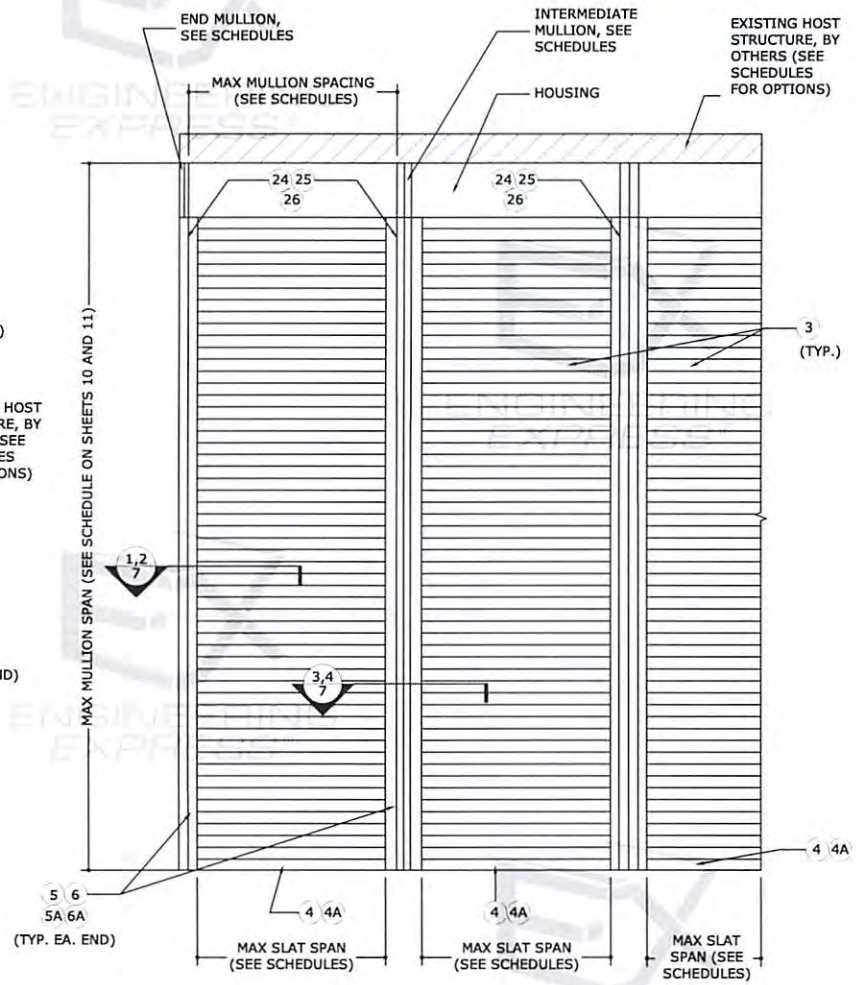


1/4 TYPICAL SINGLE UNIT ELEVATION W/O MULLIONS
N.T.S. EXTERIOR ELEV



2/4 TYPICAL CONSECUTIVE SINGLE UNIT ELEVATION WITH MULLIONS
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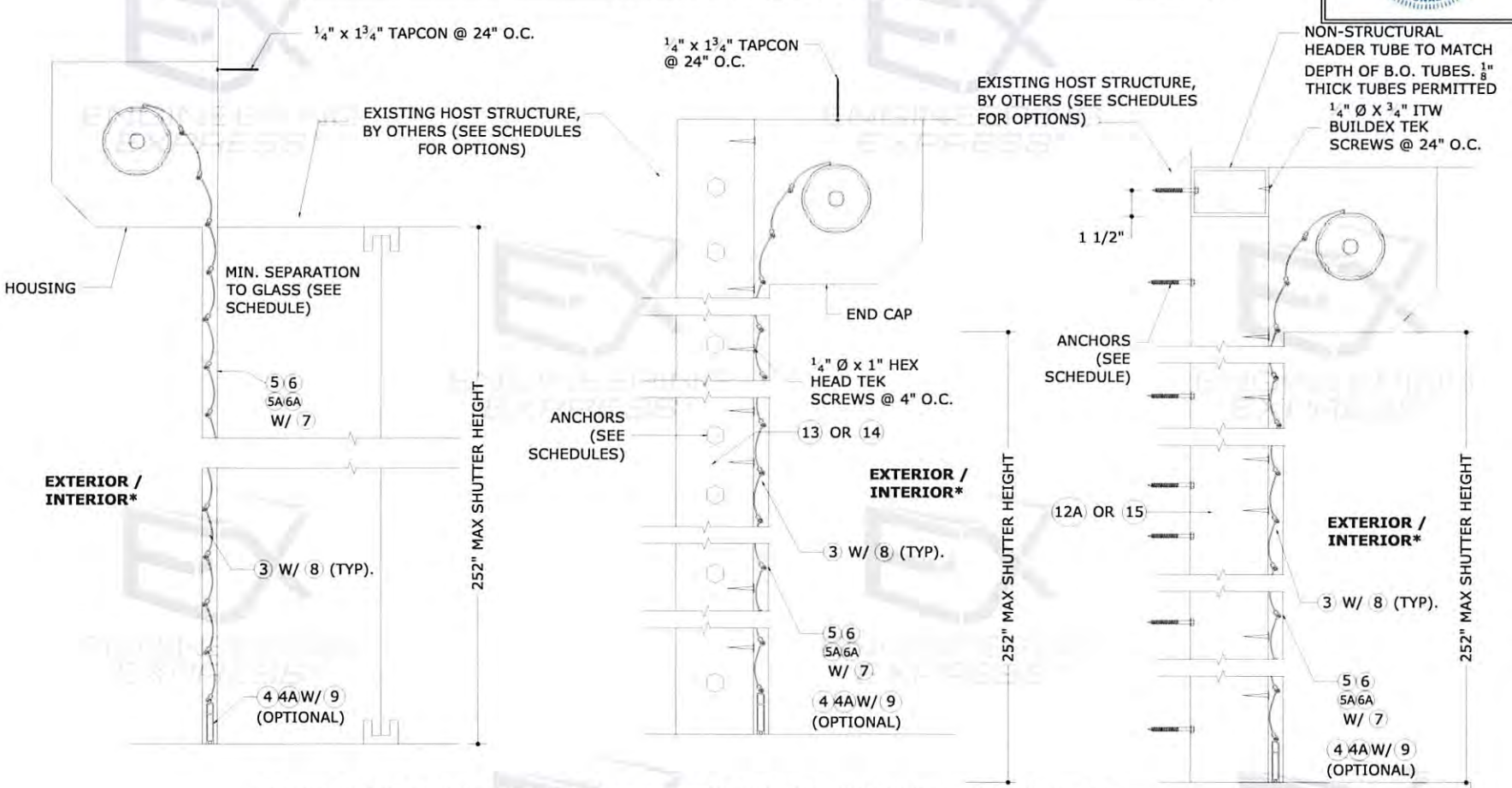
SHUTTER ATTACHMENT TO HOST



* WHEN REVERSE MOUNTED ADD 1" OF GLASS SEPARATION PER "GLASS SEPARATION SCHEDULE" ON SHEET 2

1/5 WALL MOUNT — N.T.S. — SECTION VIEW

2/5 INSIDE/TRAPPED MOUNT — N.T.S. — SECTION VIEW

3/5 BUILD-OUT MOUNT — N.T.S. — SECTION VIEW

HOUSING NOTES:
1. HOUSING (0.040" THICK ALUM, 3105-H14 MIN)
2. END CAP (CAST ALUM, SHALL BE CAPABLE OF SUPPORTING SLAT AND LIFT MECHANISM WEIGHT)
3. 3/16" ALUM POP RIVETS (6 TOTAL PER SIDE CAP, 2 AT TO, 2 AT REAR, 2 AT BOTTOM)
4. HOOD HAS BEEN TESTED FOR IMPACT / CYCLING AND MAY BE INSTALLED WITHIN OPENING

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PE# 86488 CA# 9885

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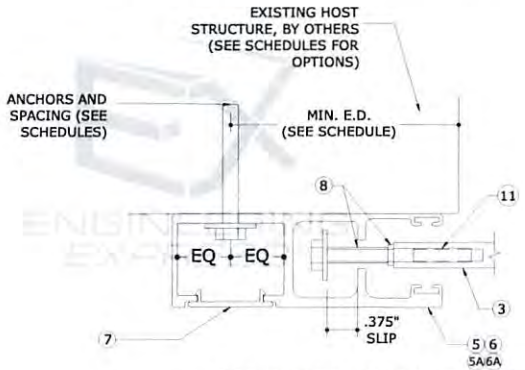
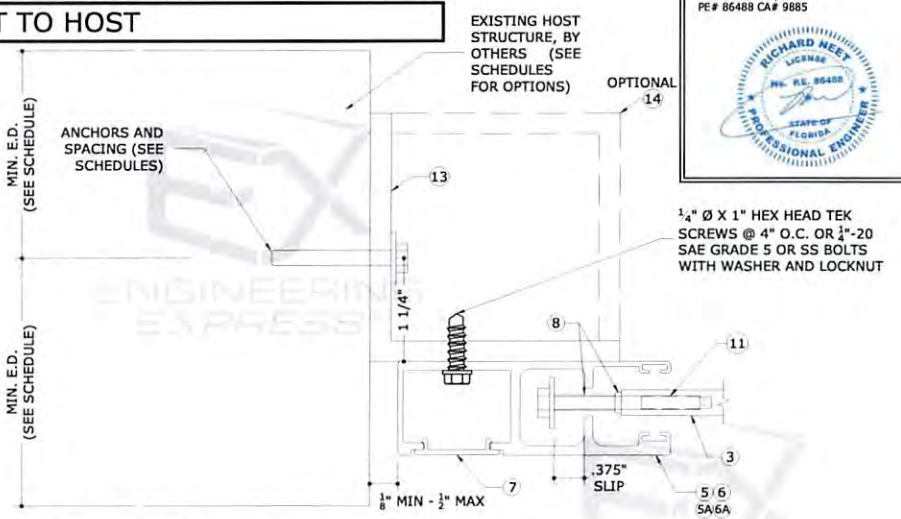
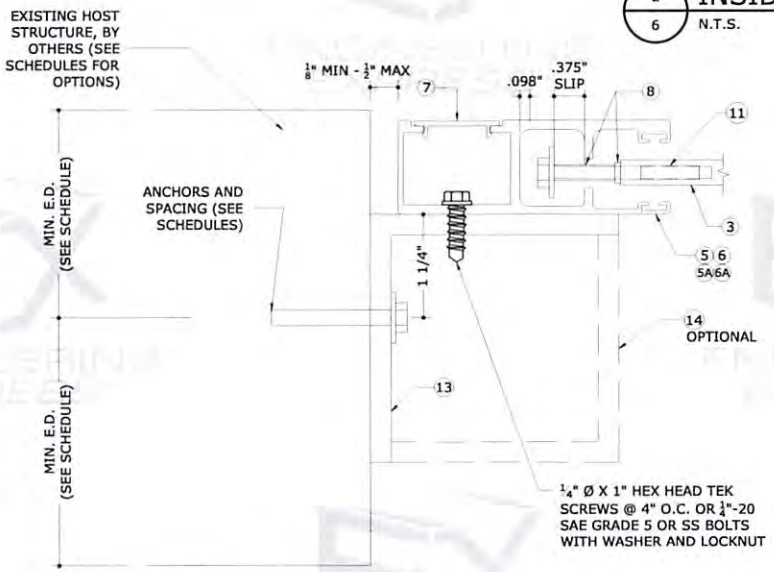
SHUTTER ATTACHMENT TO HOST



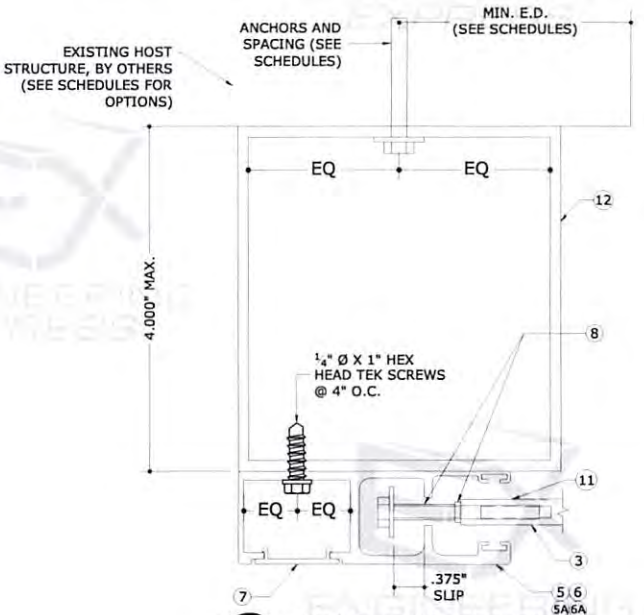
1/6 WALL MOUNT
N.T.S. SECTION VIEW



2/6 INSIDE/TRAPPED MOUNT
N.T.S. SECTION VIEW



3/6 INSIDE/TRAPPED MOUNT (REVERSED)
N.T.S. SECTION VIEW



4/6 BUILD-OUT MOUNT
N.T.S. SECTION VIEW

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SHUTTER ATTACHMENT OPTION TO ALUMINUM MULLIONS

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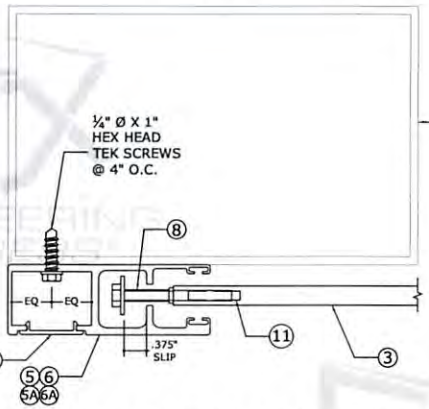
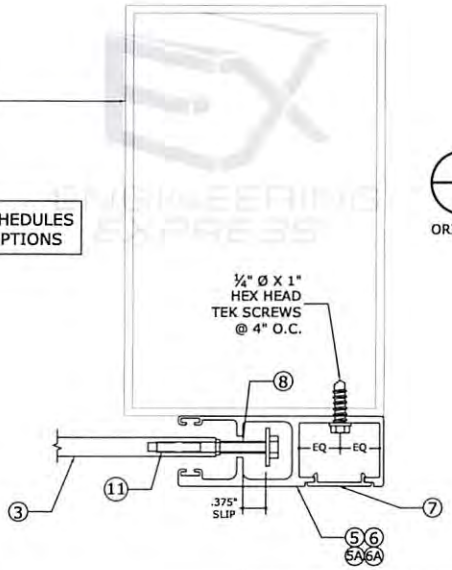


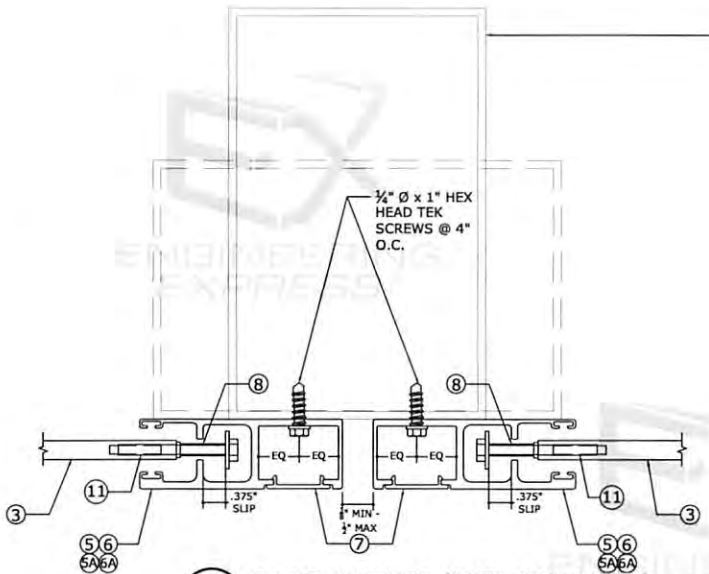
1/7 FACE MOUNT (END MULLION)
N.T.S. SECTION VIEW

SEE MULLION SCHEDULES FOR MULLION OPTIONS

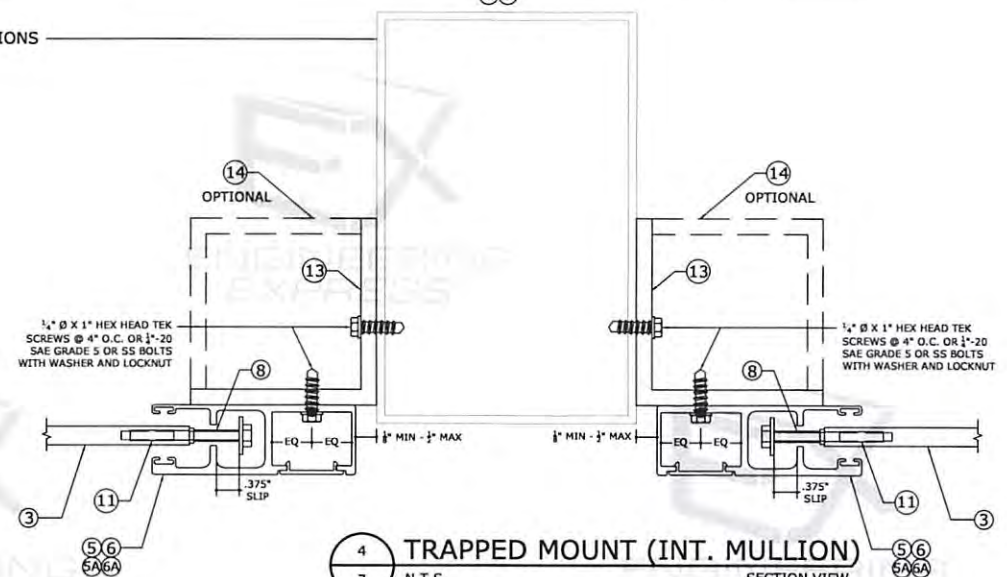


2/7 FACE MOUNT (END MULLION)
N.T.S. SECTION VIEW

ORIENTATION #2 FACE MOUNT END MULLION



3/7 FACE MOUNT (INT. MULLION)
N.T.S. SECTION VIEW



4/7 TRAPPED MOUNT (INT. MULLION)
N.T.S. SECTION VIEW

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OPTION 1 ANCHOR SCHEDULE: WALL MOUNT

				MAXIMUM SPACING (O.C.)																
									5/16" ITW TAPCON										3/8" ELCO/DEWALT CONFLEX	
SLAT SPAN	DESIGN PRESSURE	Rx	Ry	1/4" DEWALT ULTRACON TO 3000 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT 2.5" MIN. EDGE DISTANCE	1/4" SS ITW TAPCON TO 3192 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT 2.5" MIN. EDGE DISTANCE	5/16" HILLMAN GROUP (ALL-POINTS) SCREW TO 3000 CONCRETE; 2.25" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE	5/16" HILLMAN GROUP (ALL-POINTS) SCREW TO GROUT-FILLED BLOCK; 2.25" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE	5/16" DEWALT ULTRACON TO 3500 PSI MIN. CONCRETE; 2" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE	TO 3000 PSI MIN. CONCRETE; 2.25" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE	TO GROUT-FILLED CONCRETE BLOCK; 2.25" MIN. EMBEDMENT; 4" MIN EDGE DISTANCE	TO HOLLOW CONCRETE BLOCK; 1.75" MIN. EMBEDMENT; 4" MIN EDGE DISTANCE	1/4" DEWALT POWER-BOLT TO 3000 PSI MIN. CONCRETE; 2.5" MIN. EMBEDMENT; 3" MIN. EDGE DISTANCE	1/4" LAG SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE	5/16" LAG SCREW TO G=0.42 MIN WOOD; 2" MIN. EMBEDMENT 0.75" MIN. EDGE DISTANCE	#14 WOOD SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN EDGE DISTANCE	#14 410 SS SMS W/ FULL THREAD PENETRATION OR 1/4-20 410 SS THRU-BOLT TO 0.125" MIN. 6063-T6 ALUM.; 0.5" MIN. EDGE DISTANCE	5/16" 410 SS SMS W/ FULL THREAD PENETRATION OR 5/16-18 410 SS THRU-BOLT TO 0.25" MIN. 6063-T6 ALUM.; 0.625" MIN. EDGE DISTANCE	3/8" DEWALT SCREW BOLT TO 3000 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 4.5" MIN EDGE DISTANCE	TO 1819 PSI MIN. CONCRETE; 3.5" MIN EMBEDMENT; 3.75" MIN EDGE DISTANCE	TO 4510 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 3.75" MIN. EDGE DISTANCE
76.5"	+/- 40 PSF	225.4 LB/FT	127.5 LB/FT	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"
	+/- 68 PSF	623.6 LB/FT	215.2 LB/FT	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	5.00"	6.00"	3.00"	2.50"	3.25"	6.00"	6.00"	6.00"	6.00"	6.00"
	+/- 95 PSF	1021.3 LB/FT	302.8 LB/FT	4.00"	4.25"	6.00"	6.00"	6.00"	6.00"	5.75"		5.00"			2.00"	4.25"	6.00"	6.00"	6.00"	6.00"
	+/- 123 PSF	1418.6 LB/FT	390.5 LB/FT	3.00"	3.00"	5.75"	4.50"	5.50"	5.50"	4.25"		3.75"				3.00"	6.00"	6.00"	6.00"	6.00"
	+/- 150 PSF	1815.4 LB/FT	478.1 LB/FT	2.25"	2.50"	4.50"	3.50"	4.25"	4.25"	3.25"		2.75"				2.50"	5.75"	6.00"	6.00"	6.00"
108"	+/- 40 PSF	796.9 LB/FT	180.0 LB/FT	5.50"	5.75"	6.00"	6.00"	6.00"	6.00"	6.00"	4.50"	6.00"	2.50"	2.00"	2.50"	6.00"	6.00"	6.00"	6.00"	6.00"
	+/- 57 PSF	1219.4 LB/FT	258.1 LB/FT	3.50"	3.75"	6.00"	5.50"	6.00"	6.00"	5.25"		4.50"				4.00"	6.00"	6.00"	6.00"	6.00"
	+/- 75 PSF	1641.3 LB/FT	336.2 LB/FT	2.50"	2.75"	5.25"	4.00"	5.00"	5.00"	3.75"		3.25"				3.00"	6.00"	6.00"	6.00"	6.00"
	+/- 92 PSF	2062.8 LB/FT	414.4 LB/FT	2.00"		4.25"		4.00"	4.00"	3.00"		2.75"				2.25"	5.25"	6.00"	6.00"	6.00"
	+/- 109 PSF	2483.2 LB/FT	492.5 LB/FT			3.50"			3.25"							2.00"	4.25"	6.00"	6.00"	6.00"
120"	+/- 40 PSF	998.5 LB/FT	200.0 LB/FT	4.25"	4.75"	6.00"	6.00"	6.00"	6.00"	6.00"	3.75"	5.75"	2.00"		2.00"	5.00"	6.00"	6.00"	6.00"	6.00"
	+/- 55 PSF	1426.2 LB/FT	275.0 LB/FT	3.00"	3.25"	6.00"	4.75"	5.75"	5.75"	4.50"		4.00"				3.50"	6.00"	6.00"	6.00"	6.00"
	+/- 70 PSF	1853.3 LB/FT	350.0 LB/FT	2.25"	2.50"	4.75"	3.75"	4.50"	4.50"	3.50"		3.00"				2.50"	6.00"	6.00"	6.00"	6.00"
	+/- 85 PSF	2279.7 LB/FT	425.0 LB/FT			3.75"		3.75"	3.50"			2.50"				2.00"	4.75"	6.00"	6.00"	6.00"
	+/- 100 PSF	2705.5 LB/FT	500.0 LB/FT						3.00"								4.00"	6.00"	6.00"	6.00"
144"	+/- 40 PSF	1436.7 LB/FT	243.3 LB/FT	3.00"	3.25"	6.00"	4.75"	6.00"	6.00"	4.50"		4.00"				3.50"	6.00"	6.00"	6.00"	6.00"
	+/- 52 PSF	1903.7 LB/FT	317.7 LB/FT	2.25"	2.50"	4.75"	3.75"	4.50"	4.50"	3.25"		3.00"				2.75"	6.00"	6.00"	6.00"	6.00"
	+/- 64 PSF	2369.7 LB/FT	392.1 LB/FT			3.75"		3.50"	3.50"			2.50"				2.00"	4.75"	6.00"	6.00"	6.00"
	+/- 77 PSF	2834.6 LB/FT	466.5 LB/FT						3.00"								4.00"	5.75"	6.00"	6.00"
	+/- 89 PSF	3298.3 LB/FT	540.9 LB/FT														3.25"	5.00"	5.25"	6.00"
170"	+/- 40 PSF	1850.9 LB/FT	283.3 LB/FT	2.25"	2.50"	4.75"	3.75"	4.75"	4.50"	3.50"		3.25"				2.75"	6.00"	6.00"	6.00"	6.00"
	+/- 49 PSF	2301.8 LB/FT	350.4 LB/FT			4.00"		3.75"	3.75"			2.50"				2.25"	5.00"	6.00"	6.00"	6.00"
	+/- 59 PSF	2750.7 LB/FT	417.5 LB/FT						3.00"								4.00"	6.00"	6.00"	6.00"
	+/- 68 PSF	3197.6 LB/FT	484.5 LB/FT														3.50"	5.00"	5.50"	6.00"
	+/- 78 PSF	3642.4 LB/FT	551.6 LB/FT														3.00"	4.50"	4.75"	6.00"
206"	+/- 35 PSF	2212.8 LB/FT	300.4 LB/FT	2.00"		4.00"		4.00"	4.00"	3.00"		2.75"				2.25"	5.25"	6.00"	6.00"	6.00"
	+/- 42 PSF	2638.2 LB/FT	356.9 LB/FT			3.50"			3.25"							2.00"	4.25"	6.00"	6.00"	6.00"
	+/- 48 PSF	3063.5 LB/FT	413.4 LB/FT														3.75"	5.25"	6.00"	6.00"
	+/- 55 PSF	3488.8 LB/FT	469.9 LB/FT														3.25"	4.75"	5.25"	6.00"
	+/- 61 PSF	3914.1 LB/FT	526.3 LB/FT														3.00"	4.25"	4.50"	5.50"
241.5"	+/- 30 PSF	2427.4 LB/FT	301.9 LB/FT			3.75"		3.50"	3.50"			2.50"				2.25"	4.75"	6.00"	6.00"	6.00"
	+/- 34 PSF	2735.3 LB/FT	339.6 LB/FT						3.25"							2.00"	4.25"	6.00"	6.00"	6.00"
	+/- 38 PSF	3043.3 LB/FT	377.3 LB/FT														3.75"	5.50"	6.00"	6.00"
	+/- 41 PSF	3351.2 LB/FT	415.1 LB/FT														3.50"	5.00"	5.50"	6.00"
	+/- 45 PSF	3659.1 LB/FT	452.8 LB/FT														3.00"	4.50"	5.00"	6.00"

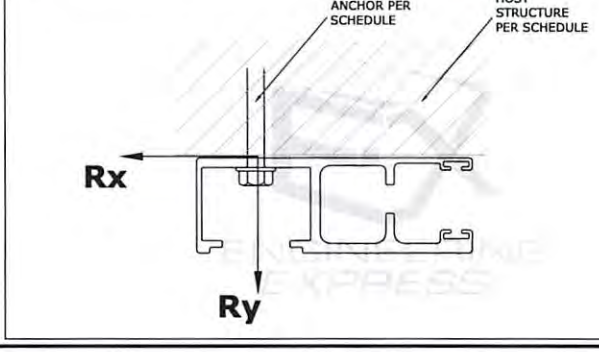
ANCHOR NOTES:

1. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.
2. WHERE ANCHORS FASTEN TO NARROW FACE OF STUD FRAMING, ANCHOR SHALL BE LOCATED IN CENTER OF NOMINAL 2x (MIN) WOOD STUD (i.e. 3/4" EDGE DISTANCE IS ACCEPTABLE FOR ANCHORS TO WOOD FRAMING).
3. MINIMUM EMBEDMENT SHALL BE AS NOTED IN ANCHOR SCHEDULE. MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDES STUCCO, FOAM, BRICK, AND OTHER WALL FINISHES.
4. ANCHOR SCHEDULE APPLIES TO ALL PRODUCTS CERTIFIED HEREIN, BUT ONLY PROVIDES MAXIMUM ALLOWABLE ANCHOR SPACING. MAXIMUM ALLOWABLE SPANS AND PRESSURES INDICATED IN SPAN SCHEDULE SHALL APPLY.
5. WHERE EXISTING STRUCTURE IS WOOD FRAMING, EXISTING CONDITIONS MAY VARY. FIELD VERIFY THAT FASTENERS ARE INTO ADEQUATE WOOD FRAMING MEMBERS, NOT INTO PLYWOOD.
6. WOOD BUCKS (BY OTHERS) SHALL BE ANCHORED PROPERLY TO TRANSFER LOADS TO THE EXISTING STRUCTURE.
7. MACHINE SCREWS SHALL HAVE MINIMUM OF 1/2" ENGAGEMENT OF THREADS IN BASE ANCHOR AND MAY HAVE EITHER A PAN HEAD, TRUSS HEAD, OR WAFER HEAD ("SIDEWALK BOLT") U.N.O.
8. SHEET METAL SCREWS SHALL BE INSTALLED WITH FULL ENGAGEMENT OF THREADS INTO METAL HOST STRUCTURE.
9. ▨ DESIGNATES ANCHOR CONDITIONS WHICH ARE NOT ACCEPTABLE FOR USE.
10. ANCHORS TO GROUT-FILLED BLOCK SHALL PENETRATE THROUGH FACE SHELL INTO GROUTED CELL.

ALTERNATE ANCHOR NOTE:

FOR ALL $\frac{1}{4}$" AND $\frac{5}{16}$" DIAMETER ANCHOR OPTIONS LISTED IN THE ANCHOR SCHEDULES, AN EQUIVALENT DIAMETER HILLMAN/ALL-POINTS SOLID-SET ANCHOR (CARBON OR STAINLESS STEEL) MAY BE USED IN LIEU OF THE OPTION(S) LISTED SO LONG AS THE LISTED MINIMUM EMBEDMENT, EDGE DISTANCE AND SPACING ARE ACHIEVED.

WALL MOUNT DIRECTIVE



RICHARD NEET, P.E.
PE# 86488 CA# 9885

RICHARD NEET LICENSE No. P.E. 86488 STATE OF FLORIDA PROFESSIONAL ENGINEER

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RICHARD NEET, P.E.
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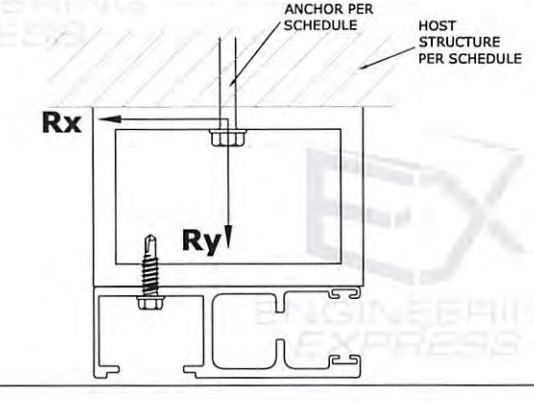
OPTION 1 ANCHOR SCHEDULE: BUILD-OUT MOUNT

SLAT SPAN	DESIGN PRESSURE	Rx	Ry	MAXIMUM SPACING (O.C.)																
								5/16" ITW TAPCON										3/8" ELCO/DEWALT CONFLEX	
				1/4" DEWALT ULTRACON TO 3000 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT 2.5" MIN. EDGE DISTANCE	1/4" SS ITW TAPCON TO 3192 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE	5/16" HILLMAN GROUP (ALL POINTS) SCREW TO 3000 CONCRETE; 2.25" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE	5/16" HILLMAN GROUP (ALL-POINTS) SCREW TO GROUT-FILLED BLOCK, 2.25" MIN EMBEDMENT; 3.125" MIN. EDGE DISTANCE	5/16" DEWALT ULTRACON TO 3500 PSI MIN. CONCRETE; 2" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE	TO 3000 PSI MIN. CONCRETE; 2.25" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE	TO GROUT-FILLED CONCRETE BLOCK; 2.25" MIN. EMBEDMENT; 4" MIN. EDGE DISTANCE	TO HOLLOW CONCRETE BLOCK, 1.75" MIN. EMBEDMENT; 4" MIN. EDGE DISTANCE	1/4" DEWALT POWER-BOLT TO 3000 PSI MIN. CONCRETE; 2.5" MIN EMBEDMENT; 3" MIN. EDGE DISTANCE	1/4" LAG SCREW TO G=0.55 MIN. WOOD, 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE	5/16" LAG SCREW TO G=0.42 MIN WOOD, 2" MIN. EMBEDMENT 0.75" MIN. EDGE DISTANCE	#14 WOOD SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT, 0.75" MIN. EDGE DISTANCE	#14 410 SS SMS W/ FULL THREAD PENETRATION OR 1/4-20 410 SS THRU-BOLT TO 0.125" MIN. 6063-T6 ALUM.; 0.5" MIN. EDGE DISTANCE	5/16" 410 SS SMS W/ FULL THREAD PENETRATION OR 5/16-18 410 SS THRU-BOLT TO 0.25" MIN. 6063-T6 ALUM.; 0.625" MIN. EDGE DISTANCE	3/8" DEWALT SCREW BOLT TO 3000 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 4.5" MIN EDGE DISTANCE	TO 1619 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 3.75" MIN. EDGE DISTANCE	TO 4510 PSI MIN. CONCRETE; 3.5" MIN EMBEDMENT; 3.75" MIN. EDGE DISTANCE
76.5"	+/- 40 PSF	225.4 LB/FT	127.5 LB/FT	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	5.75"	6.00"	6.00"	6.00"	6.00"	6.00"
	+/- 68 PSF	623.6 LB/FT	215.2 LB/FT	5.25"	5.75"	6.00"	6.00"	6.00"	6.00"	6.00"	4.25"	6.00"	2.50"	2.00"	2.50"	5.75"	6.00"	6.00"	6.00"	6.00"
	+/- 95 PSF	1021.3 LB/FT	302.8 LB/FT	3.25"	3.50"	6.00"	5.25"	6.00"	6.00"	4.75"		4.75"				3.50"	6.00"	6.00"	6.00"	6.00"
	+/- 123 PSF	1418.6 LB/FT	390.5 LB/FT	2.25"	2.50"	4.75"	3.75"	4.50"	4.50"	3.50"		3.50"				2.50"	6.00"	6.00"	6.00"	6.00"
	+/- 150 PSF	1815.4 LB/FT	478.1 LB/FT			3.75"		3.50"	3.50"			2.75"				2.00"	4.75"	6.00"	6.00"	6.00"
108"	+/- 40 PSF	796.9 LB/FT	180.0 LB/FT	4.50"	4.75"	6.00"	6.00"	6.00"	6.00"	6.00"	3.75"	6.00"	2.00"		2.00"	5.00"	6.00"	6.00"	6.00"	6.00"
	+/- 57 PSF	1219.4 LB/FT	258.1 LB/FT	2.75"	3.00"	5.75"	4.50"	5.50"	5.50"	4.25"		4.25"				3.25"	6.00"	6.00"	6.00"	6.00"
	+/- 75 PSF	1641.3 LB/FT	336.2 LB/FT	2.00"		4.25"	3.50"	4.25"	4.00"	3.00"		3.00"				2.50"	5.50"	6.00"	6.00"	6.00"
	+/- 92 PSF	2062.6 LB/FT	414.4 LB/FT			3.50"			3.25"			2.50"				2.00"	4.25"	6.00"	6.00"	6.00"
	+/- 109 PSF	2483.2 LB/FT	492.5 LB/FT														3.50"	5.25"	5.75"	6.00"
120"	+/- 40 PSF	998.5 LB/FT	200.0 LB/FT	3.50"	3.75"	6.00"	5.75"	6.00"	6.00"	5.25"		5.25"				4.00"	6.00"	6.00"	6.00"	6.00"
	+/- 55 PSF	1426.2 LB/FT	275.0 LB/FT	2.50"	2.75"	5.00"	4.00"	4.75"	4.75"	3.50"		3.75"				2.75"	6.00"	6.00"	6.00"	6.00"
	+/- 70 PSF	1853.3 LB/FT	350.0 LB/FT			3.75"		3.75"	3.75"			2.75"				2.25"	4.75"	6.00"	6.00"	6.00"
	+/- 85 PSF	2279.7 LB/FT	425.0 LB/FT						3.00"								4.00"	5.75"	6.00"	6.00"
	+/- 100 PSF	2705.5 LB/FT	500.0 LB/FT														3.25"	4.75"	5.25"	6.00"
146"	+/- 40 PSF	1436.7 LB/FT	243.3 LB/FT	2.50"	2.75"	5.00"	4.00"	4.75"	4.75"	3.75"		3.75"				3.00"	6.00"	6.00"	6.00"	6.00"
	+/- 52 PSF	1903.7 LB/FT	317.7 LB/FT			3.75"		3.75"	3.75"			2.75"				2.25"	4.75"	6.00"	6.00"	6.00"
	+/- 64 PSF	2369.7 LB/FT	392.1 LB/FT						3.00"								3.75"	5.50"	6.00"	6.00"
	+/- 77 PSF	2834.6 LB/FT	466.5 LB/FT														3.25"	4.75"	5.00"	6.00"
	+/- 89 PSF	3298.3 LB/FT	540.9 LB/FT														2.75"			5.25"
170"	+/- 40 PSF	1850.9 LB/FT	283.3 LB/FT	2.00"		4.00"		3.75"	3.75"			3.00"				2.25"	5.00"	6.00"	6.00"	6.00"
	+/- 49 PSF	2301.8 LB/FT	350.4 LB/FT						3.00"								4.00"	5.75"	6.00"	6.00"
	+/- 59 PSF	2750.7 LB/FT	417.5 LB/FT														3.25"	4.75"	5.25"	6.00"
	+/- 68 PSF	3197.6 LB/FT	484.5 LB/FT														2.75"		4.50"	5.50"
	+/- 78 PSF	3642.4 LB/FT	551.6 LB/FT														2.50"			
206"	+/- 35 PSF	2212.8 LB/FT	300.4 LB/FT						3.25"			2.50"				2.00"	4.25"	6.00"	6.00"	6.00"
	+/- 42 PSF	2638.2 LB/FT	356.9 LB/FT														3.50"	5.00"	5.50"	6.00"
	+/- 48 PSF	3063.5 LB/FT	413.4 LB/FT														3.00"	4.25"	4.75"	5.75"
	+/- 55 PSF	3488.8 LB/FT	469.9 LB/FT														2.75"			5.00"
	+/- 61 PSF	3914.1 LB/FT	526.3 LB/FT														2.25"			
241.5"	+/- 30 PSF	2427.4 LB/FT	301.9 LB/FT						3.00"								3.75"	5.50"	6.00"	6.00"
	+/- 34 PSF	2735.3 LB/FT	339.8 LB/FT														3.50"	5.00"	5.50"	6.00"
	+/- 38 PSF	3043.3 LB/FT	377.5 LB/FT														3.00"	4.50"	5.00"	6.00"
	+/- 41 PSF	3351.2 LB/FT	415.1 LB/FT														2.75"		4.50"	5.25"
	+/- 45 PSF	3659.1 LB/FT	452.8 LB/FT														2.50"			5.00"

ANCHOR NOTES: SEE SHEET 8 FOR ANCHOR NOTES.

BUILD-OUT MOUNT DIRECTIVE



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WEST PALM BEACH, FL 33407
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SINGLE WALL ROLL-UP HURRICANE SHUTTER
FLORIDA BUILDING CODE EIGHTH EDITION (2023)

REMARKS	DRWN	CHKD	DATE
NT ISSUE	RWN	RWN	02/19/20
REV	RWN	RWN	04/14/21
2023 FBC UPDATE	MRT	RWN	10/03/23
-	-	-	-
-	-	-	-
-	-	-	-

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SCALE: NTS UNLESS NOT

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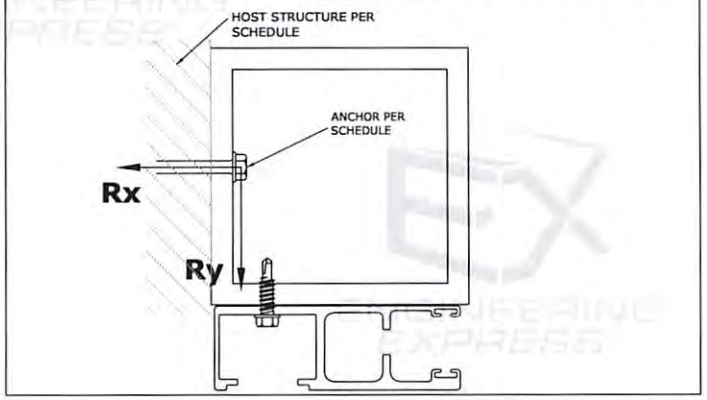
OPTION 1 ANCHOR SCHEDULE: INTERIOR MOUNT

SLAT SPAN	DESIGN PRESSURE	Rx	Ry	MAXIMUM SPACING (O.C.)																	
								5/16" ITW TAPCON											3/8" ELCO/DEWALT CONFLEX	
				1/4" DEWALT ULTRACON TO 3000 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE	1/4" SS ITW TAPCON TO 3192 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE	5/16" HILLMAN GROUP (ALL-POINTS) SCREW TO 3000 CONCRETE; 2.25" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE	5/16" HILLMAN GROUP (ALL-POINTS) SCREW TO GROUT-FILLED BLOCK; 2.25" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE	5/16" DEWALT ULTRACON TO 3500 PSI MIN. CONCRETE; 2" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE	TO 3000 PSI MIN. CONCRETE; 2.25" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE	TO GROUT-FILLED CONCRETE BLOCK; 2.25" MIN. EMBEDMENT; 4" MIN. EDGE DISTANCE	TO HOLLOW CONCRETE BLOCK; 1.75" MIN. EMBEDMENT; 4" MIN. EDGE DISTANCE	1/4" DEWALT POWER-BOLT TO 3000 PSI MIN. CONCRETE; 2.5" MIN. EMBEDMENT; 3" MIN. EDGE DISTANCE	1/4" LAG SCREW TO G=0.55 MIN. WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE	5/16" LAG SCREW TO G=0.42 MIN WOOD; 2" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE	#14 WOOD SCREW TO G=0.55 MIN WOOD; 1.5" MIN EMBEDMENT; 0.75" MIN. EDGE DISTANCE	#14 410 SS SMS W/ FULL THREAD PENETRATION OR 1/4-20 410 SS THRU-BOLT TO 0.125" MIN. 6063-T6 ALUM.; 0.5" MIN. EDGE DISTANCE	5/16" 410 SS SMS W/ FULL THREAD PENETRATION OR 5/16-18 410 SS THRU-BOLT TO 0.25" MIN. 6063-T6 ALUM.; 0.625" MIN. EDGE DISTANCE	3/8" DEWALT SCREW BOLT TO 3000 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 4.5" MIN. EDGE DISTANCE	TO 1819 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 3.75" MIN. EDGE DISTANCE	TO 4510 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 3.75" MIN. EDGE DISTANCE
76.5"	+/- 40 PSF	225.4 LB/FT	127.5 LB/FT	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"
	+/- 68 PSF	623.6 LB/FT	215.2 LB/FT	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"		6.00"	4.75"	4.25"	4.50"	4.75"	6.00"	6.00"	6.00"	6.00"	6.00"
	+/- 95 PSF	1021.3 LB/FT	302.6 LB/FT	4.50"	4.25"	6.00"	5.50"	6.00"	6.00"	6.00"		4.50"	3.00"	2.75"	2.75"	3.00"	6.00"	6.00"	6.00"	6.00"	6.00"
	+/- 123 PSF	1418.6 LB/FT	390.5 LB/FT	3.25"	3.25"	6.00"	4.00"	5.25"	5.00"	4.50"		3.25"	2.25"	2.00"	2.00"	2.00"	6.00"	6.00"	6.00"	6.00"	6.00"
	+/- 150 PSF	1815.4 LB/FT	478.1 LB/FT	2.50"	2.50"	4.50"		4.00"	3.75"	3.50"		2.50"					5.50"	6.00"	6.00"	6.00"	6.00"
106"	+/- 40 PSF	796.9 LB/FT	180.0 LB/FT	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"		6.00"	4.50"	4.25"	4.25"	4.00"	6.00"	6.00"	6.00"	6.00"	6.00"
	+/- 57 PSF	1219.4 LB/FT	258.1 LB/FT	4.00"	4.00"	6.00"	5.00"	6.00"	6.00"	5.50"		4.00"	3.00"	2.75"	2.75"	2.50"	6.00"	6.00"	6.00"	6.00"	6.00"
	+/- 75 PSF	1641.3 LB/FT	336.2 LB/FT	3.00"	3.00"	5.50"	3.75"	4.75"	4.50"	4.00"		2.75"	2.25"	2.25"	2.25"	2.00"	6.00"	6.00"	6.00"	6.00"	6.00"
	+/- 92 PSF	2062.6 LB/FT	414.4 LB/FT	2.50"		4.25"		3.75"	3.50"	3.25"							5.00"	6.00"	6.00"	6.00"	6.00"
	+/- 109 PSF	2483.2 LB/FT	492.5 LB/FT	2.00"		3.50"			3.00"								4.25"	6.00"	6.00"	6.00"	6.00"
120"	+/- 40 PSF	998.5 LB/FT	200.0 LB/FT	5.25"	5.00"	6.00"	6.00"	6.00"	6.00"	6.00"		4.75"	3.75"	3.75"	3.50"	3.25"	6.00"	6.00"	6.00"	6.00"	6.00"
	+/- 55 PSF	1426.2 LB/FT	275.0 LB/FT	3.50"	3.50"	6.00"	4.25"	5.50"	5.25"	4.75"		3.25"	2.75"	2.50"	2.50"	2.25"	6.00"	6.00"	6.00"	6.00"	6.00"
	+/- 70 PSF	1853.3 LB/FT	350.0 LB/FT	2.75"	2.75"	5.00"		4.25"	4.00"	3.75"		2.50"	2.00"	2.00"	2.00"		5.75"	6.00"	6.00"	6.00"	6.00"
	+/- 85 PSF	2279.7 LB/FT	425.0 LB/FT	2.25"		4.00"		3.50"	3.25"	3.00"							4.50"	6.00"	6.00"	6.00"	6.00"
	+/- 100 PSF	2705.5 LB/FT	500.0 LB/FT														3.75"	6.00"	5.75"	6.00"	6.00"
146"	+/- 40 PSF	1436.7 LB/FT	243.3 LB/FT	3.75"	3.50"	6.00"	4.50"	5.75"	5.50"	5.00"		3.50"	2.75"	2.75"	2.50"	2.25"	6.00"	6.00"	6.00"	6.00"	6.00"
	+/- 52 PSF	1903.7 LB/FT	317.7 LB/FT	2.75"	2.75"	5.00"		4.25"	4.00"	3.75"		2.50"	2.25"	2.00"	2.00"		5.75"	6.00"	6.00"	6.00"	6.00"
	+/- 64 PSF	2369.7 LB/FT	392.1 LB/FT	2.25"		4.00"		3.50"	3.25"	3.00"							4.50"	6.00"	6.00"	6.00"	6.00"
	+/- 77 PSF	2834.8 LB/FT	466.5 LB/FT														3.75"	6.00"	5.75"	6.00"	6.00"
	+/- 89 PSF	3298.3 LB/FT	540.9 LB/FT														3.25"	6.00"	4.75"	6.00"	6.00"
170"	+/- 40 PSF	1850.9 LB/FT	283.3 LB/FT	3.00"	2.75"	5.25"	3.50"	4.50"	4.25"	3.75"		2.75"	2.25"	2.25"	2.00"		6.00"	6.00"	6.00"	6.00"	6.00"
	+/- 49 PSF	2301.8 LB/FT	350.4 LB/FT	2.25"		4.00"		3.50"	3.25"	3.00"							4.75"	6.00"	6.00"	6.00"	6.00"
	+/- 59 PSF	2750.7 LB/FT	417.5 LB/FT	2.00"		3.50"											4.00"	6.00"	6.00"	6.00"	6.00"
	+/- 68 PSF	3197.8 LB/FT	484.5 LB/FT														3.50"	6.00"	5.00"	6.00"	6.00"
	+/- 78 PSF	3642.4 LB/FT	551.6 LB/FT														3.00"	5.50"	4.50"	6.00"	6.00"
206"	+/- 35 PSF	2212.8 LB/FT	300.4 LB/FT	2.50"		4.25"		3.75"	3.50"	3.25"			2.00"	2.00"			5.00"	6.00"	6.00"	6.00"	6.00"
	+/- 42 PSF	2638.2 LB/FT	356.9 LB/FT	2.00"		3.75"			3.00"								4.25"	6.00"	6.00"	6.00"	6.00"
	+/- 48 PSF	3063.5 LB/FT	413.4 LB/FT														3.50"	6.00"	5.50"	6.00"	6.00"
	+/- 55 PSF	3488.8 LB/FT	469.9 LB/FT														3.25"	6.00"	4.75"	6.00"	6.00"
	+/- 61 PSF	3914.1 LB/FT	526.3 LB/FT														2.75"	5.25"		6.00"	6.00"
241.5"	+/- 30 PSF	2427.4 LB/FT	301.9 LB/FT	2.25"		4.00"		3.50"	3.25"	3.00"							4.50"	6.00"	6.00"	6.00"	6.00"
	+/- 34 PSF	2735.3 LB/FT	339.6 LB/FT	2.00"		3.50"			3.00"								4.00"	6.00"	6.00"	6.00"	6.00"
	+/- 38 PSF	3043.3 LB/FT	377.3 LB/FT														3.75"	6.00"	5.50"	6.00"	6.00"
	+/- 41 PSF	3351.2 LB/FT	415.1 LB/FT														3.25"	6.00"	5.00"	6.00"	6.00"
	+/- 45 PSF	3659.1 LB/FT	452.8 LB/FT														3.00"	5.75"	4.50"	6.00"	6.00"

ANCHOR NOTES: SEE SHEET 8 FOR ANCHOR NOTES.

INTERIOR MOUNT DIRECTIVE



RICHARD NEET, P.E.
PE# 86488 CA# 9885

RICHARD NEET LICENSE No. PE 86488 STATE OF FLORIDA PROFESSIONAL ENGINEER

OCTOBER 3, 2023

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WEST PALM BEACH, FL 33407
(800) 432-2204

SINGLE WALL ROLL-UP HURRICANE SHUTTER
FLORIDA BUILDING CODE EIGHTH EDITION (2023)

REMARKS	DRWN	CHKD	DATE
INT ISSUE	RWN	RWN	02/18/20
REV	RWN	RWN	04/14/21
2023 FBC UPDATE	MRT	RWN	10/03/23
	-	-	-
	-	-	-
	-	-	-

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SCALE: NTS UNLESS NOTED

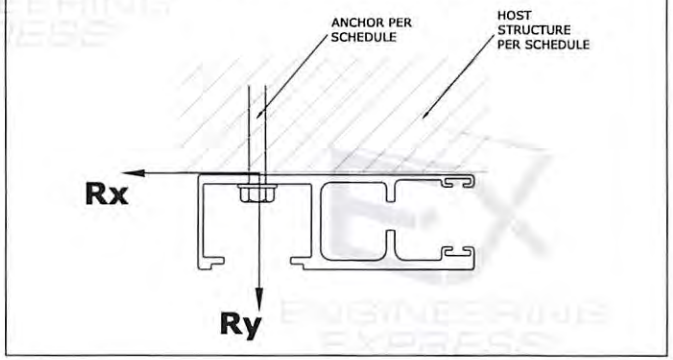
10 OF 14

OPTION 2 ANCHOR SCHEDULE: WALL MOUNT

SLAT SPAN	DESIGN PRESSURE	Rx	Ry	MAXIMUM SPACING (O.C.)																
				1/4" DEWALT ULTRACON TO 3000 PSI MIN CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE	1/4" SS ITW TAPCON TO 3192 PSI MIN CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN EDGE DISTANCE	5/16" HILLMAN GROUP (ALL-POINTS) SCREW TO 3000 CONCRETE; 2.25" MIN. EMBEDMENT; 3.125" MIN EDGE DISTANCE	5/16" HILLMAN GROUP (ALL-POINTS) SCREW TO GROUT-FILLED BLOCK; 2.25" MIN. EMBEDMENT; 3.125" MIN EDGE DISTANCE	5/16" DEWALT ULTRACON TO 3500 PSI MIN CONCRETE; 2" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE	5/16" ITW TAPCON			1/4" DEWALT POWER-BOLT TO 3000 PSI MIN. CONCRETE; 2.5" MIN. EMBEDMENT; 3" MIN. EDGE DISTANCE	1/4" LAG SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE	5/16" LAG SCREW TO G=0.42 MIN WOOD; 2" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE	#14 WOOD SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE	#14 410 SS SMS W/ FULL THREAD PENETRATION OR 1/4-20 410 SS THRU-BOLT TO 0.125" MIN. 6063-T6 ALUM; 0.5" MIN. EDGE DISTANCE	5/16" 410 SS SMS W/ FULL THREAD PENETRATION OR 5/16-18 410 SS THRU-BOLT TO 0.25" MIN. 6063-T6 ALUM; 0.625" MIN. EDGE DISTANCE	3/8" DEWALT SCREW BOLT TO 3000 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 4.5" MIN. EDGE DISTANCE	3/8" ELCO/DEWALT CONFLEX	
									TO 3000 PSI MIN CONCRETE; 2.25" MIN EMBEDMENT; 3.125" MIN EDGE DISTANCE	TO GROUT-FILLED CONCRETE BLOCK; 2.25" MIN EMBEDMENT; 4" MIN. EDGE DISTANCE	TO HOLLOW CONCRETE BLOCK; 1.75" MIN. EMBEDMENT; 4" MIN EDGE DISTANCE							TO 1819 PSI MIN CONCRETE; 3.5" MIN. EMBEDMENT; 3.75" MIN EDGE DISTANCE	TO 4510 PSI MIN CONCRETE; 3.5" MIN. EMBEDMENT; 3.75" MIN. EDGE DISTANCE
76.5"	+/- 40 PSF	225.4 LB/FT	127.5 LB/FT	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"
	+/- 68 PSF	623.6 LB/FT	215.2 LB/FT	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	5.00"	6.00"	3.00"	2.50"	3.25"	6.00"	6.00"	6.00"	6.00"
	+/- 95 PSF	1021.3 LB/FT	302.8 LB/FT	4.00"	4.25"	6.00"	6.00"	6.00"	6.00"	5.75"			5.00"			2.00"	4.25"	6.00"	6.00"	6.00"
	+/- 123 PSF	1418.8 LB/FT	390.5 LB/FT	3.00"	3.00"	5.75"	4.50"	5.50"	5.50"	4.25"			3.75"				3.00"	6.00"	6.00"	6.00"
	+/- 150 PSF	1815.4 LB/FT	478.1 LB/FT	2.25"	2.50"	4.50"	3.50"	4.25"	4.25"	3.25"			2.75"				2.50"	5.75"	6.00"	6.00"
108"	+/- 40 PSF	796.9 LB/FT	180.0 LB/FT	5.50"	5.75"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	4.50"	6.00"	2.50"	2.00"	2.50"	6.00"	6.00"	6.00"	6.00"
	+/- 56 PSF	1192.4 LB/FT	253.1 LB/FT	3.50"	4.00"	6.00"	5.75"	6.00"	6.00"	5.25"			4.75"				4.00"	6.00"	6.00"	6.00"
	+/- 73 PSF	1587.3 LB/FT	326.3 LB/FT	2.75"	3.00"	5.50"	4.25"	5.25"	5.25"	4.00"			3.50"				3.00"	6.00"	6.00"	6.00"
	+/- 89 PSF	1981.8 LB/FT	399.4 LB/FT	2.00"		4.25"	3.50"	4.25"	4.00"	3.25"			2.75"				2.50"	5.50"	6.00"	6.00"
	+/- 105 PSF	2375.7 LB/FT	472.5 LB/FT			3.50"		3.50"	3.50"								2.00"	4.50"	6.00"	6.00"
120"	+/- 40 PSF	968.5 LB/FT	200.0 LB/FT	4.25"	4.75"	6.00"	6.00"	6.00"	6.00"	6.00"		3.75"	5.75"	2.00"		2.00"	5.00"	6.00"	6.00"	6.00"
	+/- 51 PSF	1319.3 LB/FT	256.3 LB/FT	3.25"	3.50"	6.00"	5.25"	6.00"	6.00"	4.75"			4.25"				3.75"	6.00"	6.00"	6.00"
	+/- 63 PSF	1639.8 LB/FT	312.5 LB/FT	2.50"	2.75"	5.25"	4.25"	5.00"	5.00"	3.75"			3.50"				3.00"	6.00"	6.00"	6.00"
	+/- 74 PSF	1959.9 LB/FT	368.8 LB/FT	2.25"		4.50"	3.50"	4.25"	4.25"	3.25"			2.75"				2.50"	5.50"	6.00"	6.00"
	+/- 85 PSF	2279.7 LB/FT	425.0 LB/FT			3.75"		3.75"	3.50"				2.50"				2.00"	4.75"	6.00"	6.00"
146"	+/- 40 PSF	1436.7 LB/FT	243.3 LB/FT	3.00"	3.25"	6.00"	4.75"	6.00"	6.00"	4.50"			4.00"				3.50"	6.00"	6.00"	6.00"
	+/- 47 PSF	1705.1 LB/FT	286.1 LB/FT	2.50"	2.75"	5.25"	4.00"	5.00"	5.00"	3.75"			3.25"				3.00"	6.00"	6.00"	6.00"
	+/- 54 PSF	1973.3 LB/FT	328.8 LB/FT	2.25"	2.50"	4.50"	3.50"	4.25"	4.25"	3.25"			3.00"				2.50"	5.75"	6.00"	6.00"
	+/- 61 PSF	2241.0 LB/FT	371.5 LB/FT	2.00"		4.00"		3.75"	3.75"				2.50"				2.25"	5.00"	6.00"	6.00"
	+/- 68 PSF	2508.4 LB/FT	414.3 LB/FT			3.50"			3.25"								2.00"	4.50"	6.00"	6.00"
170"	+/- 35 PSF	1612.1 LB/FT	247.9 LB/FT	2.75"	3.00"	5.50"	4.50"	5.25"	5.25"	4.00"			3.75"				3.25"	6.00"	6.00"	6.00"
	+/- 39 PSF	1817.5 LB/FT	278.4 LB/FT	2.50"	2.75"	5.00"	4.00"	4.75"	4.75"	3.50"			3.25"				2.75"	6.00"	6.00"	6.00"
	+/- 44 PSF	2022.6 LB/FT	308.8 LB/FT	2.25"		4.50"	3.50"	4.25"	4.25"	3.25"			2.75"				2.50"	5.50"	6.00"	6.00"
	+/- 48 PSF	2227.2 LB/FT	339.3 LB/FT	2.00"		4.00"		3.75"	3.75"	3.00"			2.50"				2.25"	5.00"	6.00"	6.00"
	+/- 52 PSF	2431.5 LB/FT	369.8 LB/FT			3.75"		3.50"	3.50"								2.00"	4.75"	6.00"	6.00"
182"	+/- 30 PSF	1545.9 LB/FT	227.5 LB/FT	2.75"	3.25"	5.75"	4.50"	5.50"	5.50"	4.25"			3.75"				3.25"	6.00"	6.00"	6.00"
	+/- 34 PSF	1747.0 LB/FT	255.9 LB/FT	2.50"	2.75"	5.25"	4.00"	5.00"	5.00"	3.75"			3.25"				3.00"	6.00"	6.00"	6.00"
	+/- 38 PSF	1948.1 LB/FT	284.4 LB/FT	2.25"	2.50"	4.75"	3.75"	4.50"	4.50"	3.25"			3.00"				2.75"	5.75"	6.00"	6.00"
	+/- 41 PSF	2149.3 LB/FT	312.8 LB/FT	2.00"		4.25"		4.00"	4.00"	3.00"			2.75"				2.50"	5.25"	6.00"	6.00"
	+/- 45 PSF	2350.4 LB/FT	341.3 LB/FT			3.75"		3.75"	3.75"				2.50"				2.25"	4.75"	6.00"	6.00"

ANCHOR NOTES: SEE SHEET 8 FOR ANCHOR NOTES.

WALL MOUNT DIRECTIVE



RICHARD NEET, P.E.
PE# 86488 CA# 9885

OCTOBER 3, 2023

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WEST PALM BEACH, FL 33407
(800) 432-2204

SINGLE WALL ROLL-UP HURRICANE SHUTTER
FLORIDA BUILDING CODE EIGHTH EDITION (2023)

REMARKS	DRWN	CHKD	DATE
INT ISSUE	RWN	RWN	02/18/20
REV	RWN	RWN	04/14/21
2023 FBC UPDATE	MRT	RWN	10/03/23
	-	-	-
	-	-	-
	-	-	-

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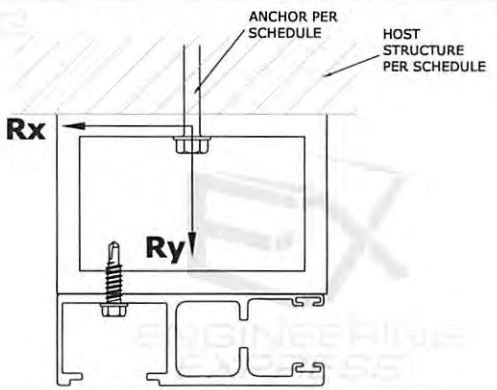
OPTION 2 ANCHOR SCHEDULE: BUILD-OUT MOUNT

SLAT SPAN	DESIGN PRESSURE	Rx	Ry	MAXIMUM SPACING (O.C.)																
				1/4" DEWALT ULTRACON TO 3000 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN EDGE DISTANCE	1/4" SS ITW TAPCON TO 3192 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN EDGE DISTANCE	5/16" HILLMAN GROUP (ALL-POINTS) SCREW TO 3000 CONCRETE; 2.25" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE	5/16" HILLMAN GROUP (ALL-POINTS) SCREW TO GROUT-FILLED BLOCK, 2.25" MIN EMBEDMENT; 3.125" MIN. EDGE DISTANCE	5/16" DEWALT ULTRACON TO 3500 PSI MIN. CONCRETE; 2" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE	5/16" ITW TAPCON			1/4" DEWALT POWER-BOLT TO 3000 PSI MIN CONCRETE; 2.5" MIN. EMBEDMENT; 3" MIN. EDGE DISTANCE	1/4" LAG SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN EDGE DISTANCE	5/16" LAG SCREW TO G=0.42 MIN WOOD; 2" MIN. EMBEDMENT; 0.75" MIN EDGE DISTANCE	#14 WOOD SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE	#14 410 SS SMS W/ FULL THREAD PENETRATION OR 1/4-20 410 SS THRU-BOLT TO 0.125" MIN. 6063-T6 ALUM; 0.5" MIN. EDGE DISTANCE	5/16" 410 SS SMS W/ FULL THREAD PENETRATION OR 5/16-18 410 SS THRU-BOLT TO 0.25" MIN. 6063-T6 ALUM; 0.625" MIN. EDGE DISTANCE	3/8" DEWALT SCREW BOLT TO 3000 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 4.5" MIN EDGE DISTANCE	3/8" ELCO/DEWALT COMPLEX	
									TO GROUT-FILLED CONCRETE BLOCK; 2.25" MIN. EMBEDMENT; 4" MIN. EDGE DISTANCE	TO HOLLOW CONCRETE BLOCK; 1.75" MIN. EMBEDMENT; 4" MIN. EDGE DISTANCE								TO 1819 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 3.75" MIN. EDGE DISTANCE	TO 4510 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 3.75" MIN. EDGE DISTANCE
76.5"	+/- 40 PSF	225.4 LB/FT	127.5 LB/FT	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	5.75"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"
	+/- 68 PSF	623.6 LB/FT	215.2 LB/FT	5.25"	5.75"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	4.25"	6.00"	2.50"	2.00"	2.50"	5.75"	6.00"	6.00"	6.00"
	+/- 95 PSF	1021.3 LB/FT	302.8 LB/FT	3.25"	3.50"	6.00"	5.25"	6.00"	6.00"	6.00"	4.75"		4.75"				3.50"	6.00"	6.00"	6.00"
	+/- 123 PSF	1418.6 LB/FT	390.5 LB/FT	2.25"	2.50"	4.75"	3.75"	4.50"	4.50"	3.50"			3.50"				2.50"	6.00"	6.00"	6.00"
	+/- 150 PSF	1815.4 LB/FT	478.1 LB/FT			3.75"		3.50"	3.50"				2.75"				2.00"	4.75"	6.00"	6.00"
108"	+/- 40 PSF	798.9 LB/FT	180.0 LB/FT	4.50"	4.75"	6.00"	6.00"	6.00"	6.00"	6.00"	3.75"		6.00"	2.00"		2.00"	5.00"	6.00"	6.00"	6.00"
	+/- 56 PSF	1192.4 LB/FT	253.1 LB/FT	3.00"	3.25"	6.00"	4.75"	5.75"	5.75"	4.25"			4.25"				3.50"	6.00"	6.00"	6.00"
	+/- 73 PSF	1587.3 LB/FT	326.3 LB/FT	2.25"		4.50"	3.50"	4.25"	4.25"	3.25"			3.25"				2.50"	5.75"	6.00"	6.00"
	+/- 89 PSF	1981.8 LB/FT	399.4 LB/FT			3.50"		3.50"	3.50"				2.50"				2.00"	4.50"	6.00"	6.00"
	+/- 105 PSF	2375.7 LB/FT	472.5 LB/FT															3.75"	5.50"	6.00"
120"	+/- 40 PSF	998.5 LB/FT	200.0 LB/FT	3.50"	3.75"	6.00"	5.75"	6.00"	6.00"	5.25"			5.25"				4.00"	6.00"	6.00"	6.00"
	+/- 51 PSF	1319.3 LB/FT	256.3 LB/FT	2.75"	3.00"	5.50"	4.25"	5.25"	5.25"	4.00"			4.00"				3.00"	6.00"	6.00"	6.00"
	+/- 63 PSF	1639.8 LB/FT	312.5 LB/FT	2.00"		4.25"	3.50"	4.25"	4.25"	3.25"			3.25"				2.50"	5.50"	6.00"	6.00"
	+/- 74 PSF	1959.9 LB/FT	368.8 LB/FT			3.75"		3.50"	3.50"				2.75"				2.00"	4.50"	6.00"	6.00"
	+/- 85 PSF	2279.7 LB/FT	425.0 LB/FT						3.00"									4.00"	5.75"	6.00"
146"	+/- 40 PSF	1438.7 LB/FT	243.5 LB/FT	2.50"	2.75"	5.00"	4.00"	4.75"	4.75"	3.75"			3.75"				3.00"	6.00"	6.00"	6.00"
	+/- 47 PSF	1705.1 LB/FT	286.1 LB/FT	2.00"		4.25"		4.00"	4.00"	3.00"			3.00"				2.50"	5.50"	6.00"	6.00"
	+/- 54 PSF	1973.3 LB/FT	328.8 LB/FT			3.75"		3.50"	3.50"				2.75"				2.00"	4.75"	6.00"	6.00"
	+/- 61 PSF	2241.0 LB/FT	371.5 LB/FT						3.00"									4.00"	6.00"	6.00"
	+/- 68 PSF	2508.4 LB/FT	414.3 LB/FT															3.75"	5.25"	5.75"
170"	+/- 35 PSF	1612.1 LB/FT	247.9 LB/FT	2.25"	2.50"	4.50"	3.50"	4.50"	4.25"	3.25"			3.25"				2.75"	5.75"	6.00"	6.00"
	+/- 39 PSF	1817.5 LB/FT	278.4 LB/FT	2.00"		4.00"		3.75"	3.75"	3.00"			3.00"				2.25"	5.00"	6.00"	6.00"
	+/- 44 PSF	2022.6 LB/FT	308.8 LB/FT			3.50"		3.50"	3.50"				2.75"				2.00"	4.50"	6.00"	6.00"
	+/- 48 PSF	2227.2 LB/FT	339.3 LB/FT						3.00"				2.50"				2.00"	4.25"	6.00"	6.00"
	+/- 52 PSF	2431.5 LB/FT	369.8 LB/FT															3.75"	5.50"	6.00"
182"	+/- 30 PSF	1545.9 LB/FT	227.5 LB/FT	2.25"	2.50"	4.75"	3.75"	4.50"	4.50"	3.50"			3.50"				2.75"	6.00"	6.00"	6.00"
	+/- 34 PSF	1747.0 LB/FT	255.9 LB/FT	2.00"		4.25"		4.00"	4.00"	3.00"			3.00"				2.50"	5.25"	6.00"	6.00"
	+/- 38 PSF	1948.1 LB/FT	284.4 LB/FT			3.75"		3.50"	3.50"				2.75"				2.25"	4.75"	6.00"	6.00"
	+/- 41 PSF	2149.3 LB/FT	312.8 LB/FT			3.50"			3.25"				2.50"				2.00"	4.25"	6.00"	6.00"
	+/- 45 PSF	2350.4 LB/FT	341.3 LB/FT						3.00"									4.00"	5.75"	6.00"

ANCHOR NOTES: SEE SHEET 8 FOR ANCHOR NOTES.

BUILD-OUT MOUNT DIRECTIVE



RICHARD NEET, P.E.
PE# 86488 CA# 9885

RICHARD NEET LICENSE No. P.E. 86488 STATE OF FLORIDA PROFESSIONAL ENGINEER

OCTOBER 3, 2023

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SINGLE WALL ROLL-UP HURRICANE SHUTTER
FLORIDA BUILDING CODE EIGHTH EDITION (2023)

REMARKS	DRWN	CHKD	DATE
INT ISSUE	RWN	RWN	02/18/20
REV	RWN	RWN	04/14/21
2023 FBC UPDATE	MRT	RWN	10/03/23
-	-	-	-
-	-	-	-
-	-	-	-

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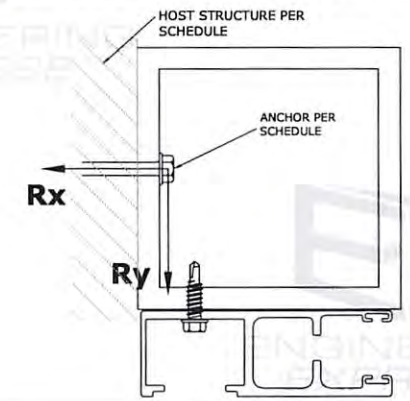
12 OF 1

OPTION 2 ANCHOR SCHEDULE: INTERIOR MOUNT

SLAT SPAN	DESIGN PRESSURE	Rx	Ry	MAXIMUM SPACING (O.C.)																
				1/4" DEWALT ULTRACON TO 3000 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE	1/4" SS ITW TAPCON TO 3192 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN EDGE DISTANCE	5/16" HILLMAN GROUP (ALL-POINTS) SCREW TO 3000 CONCRETE; 2.25" MIN EMBEDMENT; 3.125" MIN EDGE DISTANCE	5/16" HILLMAN GROUP (ALL-POINTS) SCREW TO GROUT-FILLED BLOCK; 2.25" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE	5/16" DEWALT ULTRACON TO 3500 PSI MIN. CONCRETE; 2" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE	5/16" ITW TAPCON			1/4" DEWALT POWER-BOLT TO 3000 PSI MIN. CONCRETE; 2.5" MIN. EMBEDMENT; 3" MIN. EDGE DISTANCE	1/4" LAG SCREW TO G=0.55 MIN WOOD; 1.5" MIN EMBEDMENT; 0.75" MIN. EDGE DISTANCE	5/16" LAG SCREW TO G=0.42 MIN WOOD; 2" MIN EMBEDMENT; 0.75" MIN EDGE DISTANCE	#14 WOOD SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE	#14 410 SS SMS W/ FULL THREAD PENETRATION OR 1/4-20 410 SS THRU-BOLT TO 0.125" MIN. 6063-T6 ALUM; 0.5" MIN. EDGE DISTANCE	5/16" 410 SS SMS W/ FULL THREAD PENETRATION OR 5/16-18 410 SS THRU-BOLT TO 0.25" MIN. 6063-T6 ALUM; 0.625" MIN. EDGE DISTANCE	3/8" DEWALT SCREW BOLT TO 3000 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 4.5" MIN. EDGE DISTANCE	3/8" ELCO/DEWALT CONFLEX	
										TO 3000 PSI MIN. CONCRETE; 2.25" MIN EMBEDMENT; 3.125" MIN. EDGE DISTANCE	TO GROUT-FILLED CONCRETE BLOCK; 2.25" MIN. EMBEDMENT; 4" MIN. EDGE DISTANCE	TO HOLLOW CONCRETE BLOCK; 1.75" MIN EMBEDMENT; 4" MIN. EDGE DISTANCE							TO 1819 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 3.75" MIN. EDGE DISTANCE	TO 4510 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 3.75" MIN. EDGE DISTANCE
76.5"	+/- 40 PSF	225.4 LB/FT	127.5 LB/FT	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"		6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"
	+/- 68 PSF	623.6 LB/FT	215.2 LB/FT	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"		6.00"	4.75"	4.25"	4.50"	4.75"	6.00"	6.00"	6.00"
	+/- 95 PSF	1021.3 LB/FT	302.8 LB/FT	6.00"	4.25"	6.00"	5.50"	6.00"	6.00"	6.00"			4.50"	3.00"	2.75"	2.75"	3.00"	6.00"	6.00"	6.00"
	+/- 123 PSF	1418.6 LB/FT	390.5 LB/FT	3.25"	3.25"	6.00"	4.00"	5.25"	5.00"	4.50"			3.25"	2.25"	2.00"	2.00"	2.00"	6.00"	6.00"	6.00"
	+/- 150 PSF	1815.4 LB/FT	478.1 LB/FT	2.50"	2.50"	4.50"		4.00"	3.75"	3.50"			2.50"					5.50"	6.00"	6.00"
108"	+/- 40 PSF	796.9 LB/FT	180.0 LB/FT	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"			6.00"	4.50"	4.25"	4.25"	4.00"	6.00"	6.00"	6.00"
	+/- 56 PSF	1192.4 LB/FT	253.1 LB/FT	4.25"	4.00"	6.00"	5.25"	6.00"	6.00"	5.75"			4.00"	3.25"	3.00"	2.75"	2.50"	6.00"	6.00"	6.00"
	+/- 73 PSF	1587.3 LB/FT	326.3 LB/FT	3.25"	3.00"	5.75"	3.75"	5.00"	4.75"	4.25"			3.00"	2.25"	2.25"	2.25"	2.00"	6.00"	6.00"	6.00"
	+/- 89 PSF	1981.8 LB/FT	399.4 LB/FT	2.50"	2.50"	4.50"		4.00"	3.75"	3.50"				2.00"				5.25"	6.00"	6.00"
	+/- 105 PSF	2375.7 LB/FT	472.5 LB/FT	2.00"		3.75"			3.00"									4.25"	6.00"	6.00"
120"	+/- 40 PSF	998.5 LB/FT	200.0 LB/FT	5.25"	5.00"	6.00"	6.00"	6.00"	6.00"	6.00"			4.75"	3.75"	3.75"	3.50"	3.25"	6.00"	6.00"	6.00"
	+/- 51 PSF	1319.3 LB/FT	256.3 LB/FT	4.00"	3.75"	6.00"	4.75"	6.00"	5.75"	5.25"			3.75"	3.00"	2.75"	2.75"	2.50"	6.00"	6.00"	6.00"
	+/- 63 PSF	1639.8 LB/FT	312.5 LB/FT	3.00"	3.00"	5.50"	3.75"	4.75"	4.50"	4.25"			3.00"	2.25"	2.25"	2.25"	2.00"	6.00"	6.00"	6.00"
	+/- 74 PSF	1959.9 LB/FT	368.8 LB/FT	2.50"	2.50"	4.75"		4.00"	3.75"	3.50"			2.50"	2.00"				5.25"	6.00"	6.00"
	+/- 85 PSF	2279.7 LB/FT	425.0 LB/FT	2.25"		4.00"		3.50"	3.25"	3.00"								4.50"	6.00"	6.00"
144"	+/- 40 PSF	1436.7 LB/FT	243.3 LB/FT	3.75"	3.50"	6.00"	4.50"	5.75"	5.50"	5.00"			3.50"	2.75"	2.75"	2.50"	2.25"	6.00"	6.00"	6.00"
	+/- 47 PSF	1705.1 LB/FT	286.1 LB/FT	3.00"	3.00"	5.50"	3.75"	4.75"	4.50"	4.00"			2.75"	2.50"	2.25"	2.25"		6.00"	6.00"	6.00"
	+/- 54 PSF	1973.3 LB/FT	328.8 LB/FT	2.75"	2.50"	4.75"		4.00"	4.00"	3.50"			2.50"	2.00"	2.00"			5.50"	6.00"	6.00"
	+/- 61 PSF	2241.0 LB/FT	371.5 LB/FT	2.25"		4.25"		3.50"	3.50"	3.00"								4.75"	6.00"	6.00"
	+/- 68 PSF	2508.4 LB/FT	414.3 LB/FT	2.00"		3.75"			3.00"									4.25"	6.00"	6.00"
170"	+/- 35 PSF	1812.1 LB/FT	247.9 LB/FT	3.25"	3.25"	6.00"	4.00"	5.00"	4.75"	4.50"			3.00"	2.75"	2.50"	2.25"	2.00"	6.00"	6.00"	6.00"
	+/- 39 PSF	1817.5 LB/FT	278.4 LB/FT	3.00"	2.75"	5.25"	3.50"	4.50"	4.25"	4.00"			2.75"	2.25"	2.25"	2.00"		6.00"	6.00"	6.00"
	+/- 44 PSF	2022.6 LB/FT	308.8 LB/FT	2.75"	2.50"	4.75"		4.00"	3.75"	3.50"			2.50"	2.00"	2.00"			5.50"	6.00"	6.00"
	+/- 48 PSF	2227.2 LB/FT	339.3 LB/FT	2.50"		4.25"		3.75"	3.50"	3.25"				2.00"				5.00"	6.00"	6.00"
	+/- 52 PSF	2431.5 LB/FT	369.8 LB/FT	2.25"		4.00"			3.25"	3.00"								4.50"	6.00"	6.00"
182"	+/- 30 PSF	1545.9 LB/FT	227.5 LB/FT	3.50"	3.25"	6.00"	4.25"	5.50"	5.00"	4.75"			3.25"	2.75"	2.75"	2.50"	2.00"	6.00"	6.00"	6.00"
	+/- 34 PSF	1747.0 LB/FT	255.9 LB/FT	3.00"	3.00"	5.50"	3.75"	4.75"	4.50"	4.00"			2.75"	2.50"	2.50"	2.25"		6.00"	6.00"	6.00"
	+/- 38 PSF	1948.1 LB/FT	284.4 LB/FT	2.75"	2.75"	5.00"		4.25"	4.00"	3.75"			2.50"	2.25"	2.00"	2.00"		5.75"	6.00"	6.00"
	+/- 41 PSF	2149.3 LB/FT	312.8 LB/FT	2.50"	2.50"	4.50"		3.75"	3.75"	3.25"				2.00"	2.00"			5.00"	6.00"	6.00"
	+/- 45 PSF	2350.4 LB/FT	341.3 LB/FT	2.25"		4.00"		3.50"	3.25"	3.00"								4.75"	6.00"	6.00"

ANCHOR NOTES: SEE SHEET 8 FOR ANCHOR NOTES.

INTERIOR MOUNT DIRECTIVE



RICHARD NEET, P.E.
PE# 86488 CA# 9885

RICHARD NEET LICENSE No. P.E. 86488 STATE OF FLORIDA PROFESSIONAL ENGINEER

OCTOBER 3, 2023

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AMERICAN SHUTTER SYSTEMS ASSOCIATION, INC.
4268 WESTROADS DR.
WEST PALM BEACH, FL 33407
(800) 432-2204

SINGLE WALL ROLL-UP HURRICANE SHUTTER
FLORIDA BUILDING CODE EIGHTH EDITION (2023)

REMARKS	DRWN	CHKD	DATE
NT ISSUE	RWN	RWN	02/18/20
REV	RWN	RWN	04/14/21
2023 FBC UPDATE	MRT	RWN	10/03/23
	-	-	-
	-	-	-
	-	-	-
	-	-	-

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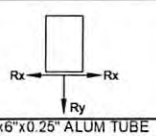
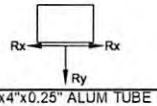
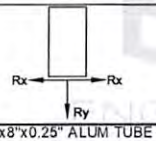
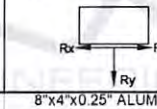
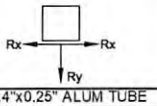
13 OF 14

INTERMEDIATE MULLION SCHEDULES

MULLION SCHEDULE: INTERMEDIATE MULLIONS		 4"x6"x0.25" ALUM TUBE		 6"x4"x0.25" ALUM TUBE		 4"x8"x0.25" ALUM TUBE		 8"x4"x0.25" ALUM TUBE		 4"x4"x0.25" ALUM TUBE	
SLAT SPAN	DESIGN PRESSURE	MAX MULLION LENGTH	END REACTION Rt	MAX MULLION LENGTH	END REACTION Rt	MAX MULLION LENGTH	END REACTION Rt	MAX MULLION LENGTH	END REACTION Rt	MAX MULLION LENGTH	END REACTION Rt
77"	+/- 40 PSF	144.0"	1530.0 LB	144.0"	1530.0 LB	144.0"	1530.0 LB	144.0"	1530.0 LB	139.0"	1476.8 LB
	+/- 68 PSF	144.0"	2581.9 LB	130.6"	2341.1 LB	144.0"	2581.9 LB	142.0"	2545.2 LB	116.7"	2093.3 LB
	+/- 95 PSF	144.0"	3633.8 LB	116.5"	2940.1 LB	144.0"	3633.8 LB	126.7"	3196.5 LB	104.2"	2628.9 LB
	+/- 123 PSF	132.6"	4314.8 LB	107.0"	3483.1 LB	144.0"	4685.6 LB	116.4"	3786.9 LB	95.7"	3114.5 LB
	+/- 150 PSF	123.7"	4929.7 LB	100.1"	3986.6 LB	138.9"	5534.0 LB	108.8"	4334.3 LB	89.5"	3564.7 LB
108"	+/- 40 PSF	144.0"	2160.0 LB	138.6"	2078.6 LB	144.0"	2160.0 LB	144.0"	2160.0 LB	123.9"	1858.5 LB
	+/- 57 PSF	144.0"	3139.2 LB	122.3"	2666.9 LB	144.0"	3139.2 LB	133.0"	2899.5 LB	109.4"	2384.6 LB
	+/- 75 PSF	136.5"	4069.4 LB	110.2"	3285.1 LB	144.0"	4291.7 LB	119.8"	3571.5 LB	98.6"	2937.3 LB
	+/- 92 PSF	125.9"	4787.6 LB	101.6"	3864.8 LB	142.2"	5406.7 LB	110.5"	4201.9 LB	90.9"	3455.8 LB
	+/- 109 PSF	114.5"	5324.7 LB	95.0"	4418.2 LB	128.6"	5977.4 LB	103.3"	4803.5 LB	85.0"	3950.5 LB
146"	+/- 40 PSF	144.0"	3331.5 LB	119.9"	2774.7 LB	144.0"	3331.5 LB	130.4"	3016.7 LB	107.2"	2481.0 LB
	+/- 52 PSF	134.0"	4226.7 LB	108.2"	3412.1 LB	144.0"	4543.0 LB	117.6"	3709.6 LB	96.7"	3050.9 LB
	+/- 64 PSF	122.9"	4962.8 LB	99.6"	4022.4 LB	138.0"	5571.2 LB	108.3"	4373.2 LB	89.1"	3596.7 LB
	+/- 77 PSF	110.9"	5502.0 LB	93.0"	4615.4 LB	124.4"	6176.4 LB	101.1"	5017.9 LB	83.1"	4126.9 LB
	+/- 89 PSF	101.4"	6013.9 LB	87.6"	5196.7 LB	113.9"	6751.1 LB	95.3"	5649.9 LB	76.2"	4516.9 LB
170"	+/- 40 PSF	134.6"	4188.1 LB	108.7"	3380.9 LB	144.0"	4480.9 LB	118.1"	3675.8 LB	97.2"	3023.1 LB
	+/- 49 PSF	122.7"	4971.4 LB	99.5"	4031.7 LB	137.7"	5580.8 LB	108.2"	4383.3 LB	89.0"	3605.0 LB
	+/- 59 PSF	109.8"	5555.6 LB	92.4"	4675.5 LB	123.2"	6236.7 LB	100.5"	5083.3 LB	82.5"	4172.7 LB
	+/- 68 PSF	99.7"	6117.6 LB	86.6"	5316.6 LB	111.9"	6867.6 LB	94.2"	5780.2 LB	74.9"	4594.8 LB
	+/- 78 PSF	91.5"	6662.8 LB	81.3"	5918.7 LB	102.8"	7479.5 LB	89.0"	6477.0 LB	68.8"	5004.3 LB
206"	+/- 35 PSF	140.5"	3843.8 LB	113.4"	3102.9 LB	144.0"	3939.8 LB	123.3"	3373.5 LB	101.4"	2774.5 LB
	+/- 42 PSF	132.5"	4322.9 LB	106.9"	3489.7 LB	144.0"	4698.8 LB	116.3"	3794.0 LB	95.6"	3120.3 LB
	+/- 48 PSF	126.0"	4777.0 LB	101.7"	3856.3 LB	142.4"	5397.7 LB	110.6"	4192.6 LB	91.0"	3448.1 LB
	+/- 55 PSF	118.8"	5132.2 LB	97.4"	4206.5 LB	133.4"	5761.3 LB	105.9"	4573.4 LB	87.1"	3761.3 LB
	+/- 61 PSF	112.2"	5437.1 LB	93.7"	4543.0 LB	125.9"	6103.6 LB	101.9"	4939.2 LB	83.8"	4062.1 LB
242"	+/- 30 PSF	140.0"	3873.5 LB	113.0"	3126.9 LB	144.0"	3985.5 LB	122.8"	3399.6 LB	101.0"	2796.0 LB
	+/- 34 PSF	134.5"	4194.8 LB	108.6"	3386.3 LB	144.0"	4491.6 LB	118.0"	3681.6 LB	97.1"	3027.9 LB
	+/- 38 PSF	129.8"	4504.3 LB	104.8"	3636.1 LB	144.0"	4997.7 LB	113.9"	3953.2 LB	93.7"	3251.3 LB
	+/- 41 PSF	125.7"	4803.5 LB	101.5"	3877.7 LB	141.8"	5420.1 LB	110.3"	4215.9 LB	90.7"	3467.3 LB
	+/- 45 PSF	120.9"	5045.5 LB	98.5"	4112.0 LB	135.7"	5664.0 LB	107.1"	4470.6 LB	88.1"	3676.8 LB

MULLION SCHEDULE NOTES:

1. VALUES SHOWN IN MULLION SCHEDULES ARE MAXIMUM ALLOWABLE MULLION LENGTHS AT EACH RESPECTIVE SLAT SPAN AND DESIGN PRESSURE.
2. "INTERMEDIATE MULLIONS" ARE AS DEFINED IN ELEVATION 2/4.
3. "END MULLIONS" ARE AS DEFINED IN ELEVATION 2/4
4. ALL MULLIONS SHALL BE 6061-T6 ALUMINUM OR EQUIVALENT.
5. ALLOWABLE DESIGN PRESSURES AND SLAT SPANS INDICATED ARE FOR DETERMINING PERMISSIBLE MULLION LENGTHS ONLY. ACTUAL SLAT SPANS AND DESIGN PRESSURES SHALL NOT EXCEED THOSE INDICATED IN SPAN SCHEDULES.
6. "END REACTIONS" ARE LISTED FOR EACH COMBINATION OF DESIGN LOAD, MULLION TYPE, SLAT TYPE (OPEN OR CLOSED) & SLAT SPAN. CHOOSE MOUNTING CONNECTIONS (PER APPLICABLE CONNECTION DETAILS HEREIN) THAT PROVIDES "CONNECTION CAPACITY" GREATER THAN OR EQUAL TO "END REACTIONS" GIVEN ABOVE.
7. "INTERMEDIATE MULLIONS" SHALL HAVE EQUAL SLAT SPANS (+/- 12") ON ADJACENT SIDES OF MULLION. OTHERWISE, USE "END MULLION" TABLES.

RICHARD NEET, P.E.
PE# 86488 CA# 9885

RICHARD NEET LICENSE No. P.E. 86488 STATE OF FLORIDA PROFESSIONAL ENGINEER

OCTOBER 3, 2023

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AMERICAN SHUTTER SYSTEMS ASSOCIATION, INC.
4268 WESTROADS DR.
WEST PALM BEACH, FL 33407
(800) 432-2204

SINGLE WALL ROLL-UP HURRICANE SHUTTER
FLORIDA BUILDING CODE EIGHTH EDITION (2023)

REMARKS	DRWN	CHKD	DATE
INT ISSUE	RWN	RWN	02/18/20
REV	RWN	RWN	04/14/21
2023 FBC UPDATE	MRT	RWN	10/03/23
-	-	-	-
-	-	-	-
-	-	-	-

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END MULLION SCHEDULES

RICHARD NEET, P.E.
PE# 86488 CA# 9885

OCTOBER 3, 2023

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FL 31658.1

MULLION SCHEDULE: END MULLIONS		4"x6"x0.25" ALUM TUBE				6"x4"x0.25" ALUM TUBE				4"x8"x0.25" ALUM TUBE				8"x4"x0.25" ALUM TUBE				4"x4"x0.25" ALUM TUBE			
SLAT SPAN	DESIGN PRESSURE	MAX MULLION LENGTH	END REACTION Rv	END REACTION Rt	END REACTION Rsum	MAX MULLION LENGTH	END REACTION Rv	END REACTION Rt	END REACTION Rsum	MAX MULLION LENGTH	END REACTION Rv	END REACTION Rt	END REACTION Rsum	MAX MULLION LENGTH	END REACTION Rv	END REACTION Rt	END REACTION Rsum	MAX MULLION LENGTH	END REACTION Rv	END REACTION Rt	END REACTION Rsum
77"	+/- 40 PSF	144.0"	1352.6 LB	765.0 LB	1553.9 LB	144.0"	1352.6 LB	765.0 LB	1553.9 LB	144.0"	1352.6 LB	765.0 LB	1553.9 LB	144.0"	1352.6 LB	765.0 LB	1553.9 LB	144.0"	1352.6 LB	765.0 LB	1553.9 LB
	+/- 68 PSF	120.7"	3135.0 LB	1081.7 LB	3316.4 LB	115.4"	2997.8 LB	1034.4 LB	3171.3 LB	136.5"	3546.5 LB	1223.7 LB	3751.7 LB	125.4"	3259.3 LB	1124.6 LB	3447.8 LB	99.2"	2578.0 LB	889.5 LB	2727.2 LB
	+/- 95 PSF	95.7"	4073.9 LB	1208.0 LB	4249.2 LB	97.9"	4165.3 LB	1235.1 LB	4344.6 LB	108.3"	4609.7 LB	1366.8 LB	4808.1 LB	106.4"	4528.6 LB	1342.8 LB	4723.5 LB	79.0"	3360.5 LB	996.4 LB	3505.1 LB
	+/- 123 PSF	81.8"	4834.4 LB	1330.7 LB	5014.2 LB	87.5"	5169.9 LB	1423.0 LB	5362.1 LB	92.6"	5470.7 LB	1505.9 LB	5674.2 LB	95.4"	5637.7 LB	1551.8 LB	5847.4 LB	67.6"	3993.4 LB	1099.2 LB	4141.9 LB
	+/- 150 PSF	72.6"	5490.2 LB	1445.9 LB	5677.4 LB	77.8"	5881.5 LB	1549.0 LB	6082.0 LB	82.1"	6213.3 LB	1636.4 LB	6425.2 LB	87.5"	6618.5 LB	1743.1 LB	6844.2 LB	60.0"	4538.8 LB	1195.4 LB	4693.6 LB
108"	+/- 40 PSF	110.9"	3682.8 LB	831.9 LB	3775.6 LB	106.3"	3530.4 LB	797.4 LB	3619.3 LB	125.6"	4168.7 LB	941.6 LB	4273.7 LB	115.6"	3838.3 LB	867.0 LB	3935.0 LB	91.9"	3052.7 LB	689.6 LB	3129.7 LB
	+/- 57 PSF	90.0"	4573.0 LB	981.1 LB	4677.1 LB	92.3"	4688.0 LB	1005.7 LB	4794.6 LB	101.9"	5176.7 LB	1110.6 LB	5294.5 LB	100.3"	5096.8 LB	1093.5 LB	5212.8 LB	74.7"	3793.9 LB	813.9 LB	3880.2 LB
	+/- 75 PSF	77.5"	5299.5 LB	1154.8 LB	5423.8 LB	83.6"	5714.9 LB	1245.3 LB	5849.1 LB	87.7"	5999.0 LB	1307.2 LB	6139.7 LB	90.9"	6213.4 LB	1353.9 LB	6359.2 LB	64.3"	4395.4 LB	957.8 LB	4498.6 LB
	+/- 92 PSF	69.0"	5934.1 LB	1313.0 LB	6077.6 LB	74.5"	6398.2 LB	1415.7 LB	6553.0 LB	78.2"	6717.2 LB	1486.3 LB	6879.7 LB	83.8"	7197.9 LB	1592.7 LB	7372.0 LB	57.3"	4920.6 LB	1088.8 LB	5039.6 LB
	+/- 109 PSF	62.9"	6503.9 LB	1461.0 LB	6665.9 LB	67.7"	7008.8 LB	1574.4 LB	7183.5 LB	71.2"	7362.0 LB	1653.8 LB	7545.5 LB	76.2"	7884.9 LB	1771.2 LB	8081.4 LB	52.1"	5391.7 LB	1211.2 LB	5526.0 LB
146"	+/- 40 PSF	83.5"	4999.9 LB	966.2 LB	5092.4 LB	87.4"	5229.5 LB	1010.6 LB	5326.3 LB	94.6"	5660.6 LB	1093.9 LB	5765.3 LB	95.0"	5685.6 LB	1098.7 LB	5790.8 LB	69.4"	4154.6 LB	802.8 LB	4231.5 LB
	+/- 52 PSF	72.4"	5744.4 LB	1142.4 LB	5856.9 LB	78.4"	6216.2 LB	1236.2 LB	6338.0 LB	82.0"	6503.3 LB	1293.3 LB	6630.7 LB	86.5"	6859.2 LB	1364.1 LB	6993.5 LB	60.2"	4771.3 LB	948.8 LB	4864.7 LB
	+/- 64 PSF	64.8"	6396.8 LB	1308.1 LB	6529.2 LB	70.0"	6915.8 LB	1414.2 LB	7058.9 LB	73.3"	7241.6 LB	1480.8 LB	7391.5 LB	78.8"	7779.1 LB	1590.7 LB	7940.1 LB	53.8"	5310.8 LB	1086.0 LB	5420.7 LB
	+/- 77 PSF	59.1"	6982.8 LB	1467.2 LB	7135.3 LB	63.9"	7542.5 LB	1584.8 LB	7707.2 LB	66.9"	7904.8 LB	1660.9 LB	8077.4 LB	71.8"	8484.4 LB	1782.7 LB	8669.6 LB	49.1"	5795.0 LB	1217.6 LB	5921.5 LB
	+/- 89 PSF	54.7"	7518.1 LB	1621.9 LB	7691.1 LB	59.0"	8113.3 LB	1750.3 LB	8300.0 LB	61.9"	8510.5 LB	1836.0 LB	8706.3 LB	66.4"	9126.9 LB	1969.0 LB	9336.9 LB	45.4"	6236.6 LB	1345.5 LB	6380.1 LB
170"	+/- 40 PSF	73.4"	5658.7 LB	1141.6 LB	5772.7 LB	79.4"	6120.5 LB	1234.8 LB	6243.8 LB	83.1"	6406.1 LB	1292.4 LB	6535.2 LB	87.3"	6731.8 LB	1358.1 LB	6867.4 LB	60.9"	4699.0 LB	948.0 LB	4793.7 LB
	+/- 49 PSF	65.6"	6290.0 LB	1328.8 LB	6428.8 LB	70.8"	6792.8 LB	1435.0 LB	6942.8 LB	74.2"	7120.4 LB	1504.2 LB	7277.6 LB	79.7"	7641.2 LB	1614.2 LB	7809.8 LB	54.4"	5219.5 LB	1102.6 LB	5334.7 LB
	+/- 59 PSF	59.8"	6854.0 LB	1513.1 LB	7019.1 LB	64.5"	7390.7 LB	1631.6 LB	7568.7 LB	67.7"	7758.5 LB	1712.8 LB	7945.4 LB	72.5"	8314.3 LB	1835.5 LB	8514.5 LB	49.6"	5683.6 LB	1254.7 LB	5820.4 LB
	+/- 68 PSF	55.3"	7366.4 LB	1696.3 LB	7559.1 LB	59.5"	7931.2 LB	1826.4 LB	8138.8 LB	62.6"	8338.0 LB	1920.1 LB	8556.3 LB	67.0"	8923.0 LB	2054.8 LB	9156.6 LB	45.8"	6104.2 LB	1405.7 LB	6263.9 LB
	+/- 78 PSF	51.6"	7837.2 LB	1879.3 LB	8059.3 LB	55.5"	8425.7 LB	2020.4 LB	8664.5 LB	58.4"	8870.5 LB	2127.1 LB	9121.9 LB	62.5"	9480.0 LB	2273.2 LB	9748.7 LB	42.8"	6489.8 LB	1556.2 LB	6673.8 LB
206"	+/- 35 PSF	68.4"	6302.8 LB	935.1 LB	6371.8 LB	74.6"	6880.1 LB	1020.8 LB	6955.4 LB	77.4"	7137.6 LB	1059.0 LB	7215.8 LB	82.2"	7583.0 LB	1125.1 LB	7666.0 LB	57.0"	5256.0 LB	779.8 LB	5313.5 LB
	+/- 42 PSF	62.6"	6881.8 LB	1021.4 LB	6957.2 LB	68.3"	7512.0 LB	1115.0 LB	7594.3 LB	70.9"	7793.3 LB	1156.7 LB	7878.7 LB	76.8"	8445.9 LB	1253.6 LB	8538.4 LB	52.2"	5738.8 LB	851.8 LB	5801.6 LB
	+/- 48 PSF	58.1"	7415.6 LB	1101.1 LB	7496.9 LB	63.4"	8094.7 LB	1201.9 LB	8183.4 LB	65.8"	8397.9 LB	1246.9 LB	8489.9 LB	71.3"	9101.0 LB	1351.3 LB	9200.7 LB	48.4"	6183.9 LB	918.2 LB	6251.7 LB
	+/- 55 PSF	54.4"	7913.5 LB	1175.5 LB	8000.3 LB	59.4"	8638.1 LB	1283.1 LB	8732.9 LB	61.6"	8961.7 LB	1331.2 LB	9060.0 LB	66.8"	9711.9 LB	1442.6 LB	9818.5 LB	45.4"	6599.1 LB	980.2 LB	6671.5 LB
	+/- 61 PSF	51.4"	8381.8 LB	1245.5 LB	8473.8 LB	56.1"	9149.2 LB	1359.5 LB	9249.6 LB	58.2"	9492.0 LB	1410.5 LB	9596.2 LB	63.1"	10286.5 LB	1528.5 LB	10399.5 LB	42.9"	6989.6 LB	1038.6 LB	7066.3 LB
242"	+/- 30 PSF	65.5"	6628.4 LB	906.9 LB	6690.1 LB	71.7"	7250.7 LB	992.1 LB	7318.3 LB	74.2"	7506.9 LB	1027.1 LB	7576.8 LB	79.7"	8065.6 LB	1103.6 LB	8140.7 LB	54.7"	5532.8 LB	757.0 LB	5584.3 LB
	+/- 34 PSF	61.7"	7036.2 LB	962.8 LB	7101.8 LB	67.5"	7696.8 LB	1053.2 LB	7768.6 LB	69.9"	7968.8 LB	1090.4 LB	8043.0 LB	75.9"	8652.8 LB	1184.0 LB	8733.4 LB	51.5"	5873.2 LB	803.7 LB	5927.9 LB
	+/- 38 PSF	58.5"	7421.7 LB	1015.7 LB	7490.8 LB	64.0"	8118.5 LB	1111.0 LB	8194.1 LB	66.3"	8405.3 LB	1150.3 LB	8483.6 LB	72.0"	9126.7 LB	1249.0 LB	9211.8 LB	48.9"	6194.9 LB	847.8 LB	6252.7 LB
	+/- 41 PSF	55.8"	7788.0 LB	1065.9 LB	7860.6 LB	61.0"	8519.2 LB	1166.0 LB	8598.6 LB	63.2"	8820.2 LB	1207.2 LB	8902.5 LB	68.6"	9577.3 LB	1310.8 LB	9666.6 LB	46.6"	6500.7 LB	889.7 LB	6561.3 LB
	+/- 45 PSF	53.4"	8137.9 LB	1113.9 LB	8213.8 LB	58.4"	8901.9 LB	1218.5 LB	8984.9 LB	60.5"	9216.5 LB	1261.5 LB	9302.5 LB	65.6"	10007.5 LB	1369.8 LB	10100.8 LB	44.6"	6792.8 LB	929.8 LB	6856.1 LB

MULLION SCHEDULE NOTES:
SEE SHEET 14 FOR MULLION SCHEDULE NOTES.

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WEST PALM BEACH, FL 33407
(800) 432-2204

SINGLE WALL ROLL-UP HURRICANE SHUTTER
FLORIDA BUILDING CODE EIGHTH EDITION (2023)

REMARKS	DRWN	CHKD	DATE
INT ISSUE	RWN	RWN	02/18/20
REV	RWN	RWN	04/14/21
2023 FBC UPDATE	MRT	RWN	10/03/23
-	-	-	-
-	-	-	-
-	-	-	-

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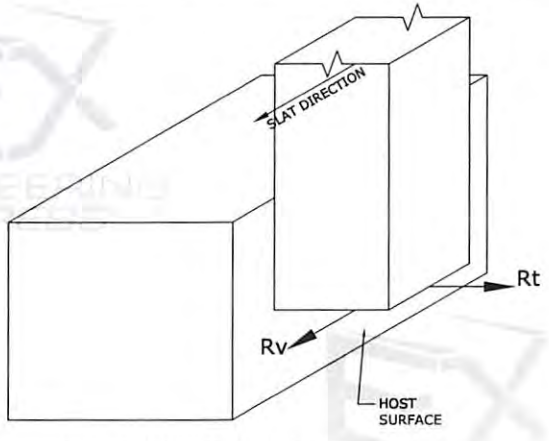
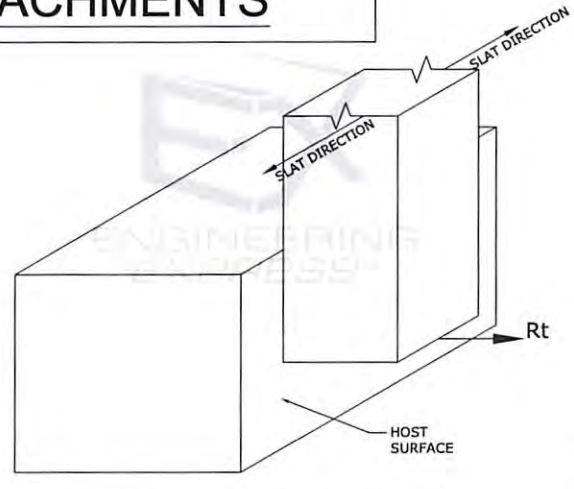
MULLION END ATTACHMENTS



1/16 END MULLION "FACE MOUNT" DIAGRAM
N.T.S. ISOMETRIC



2/16 INTERIOR MULLION "FACE MOUNT" DIAGRAM
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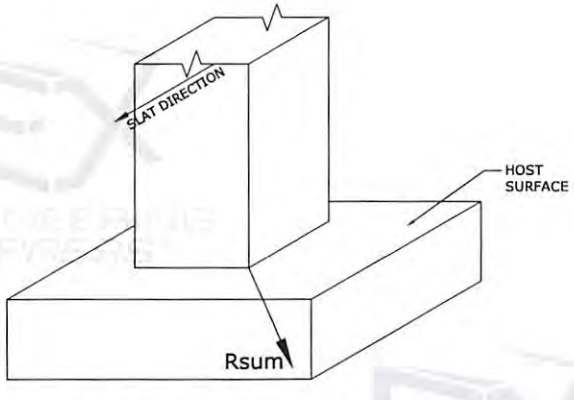

3/16 END MULLION "TRAPPED MOUNT" DIAGRAM
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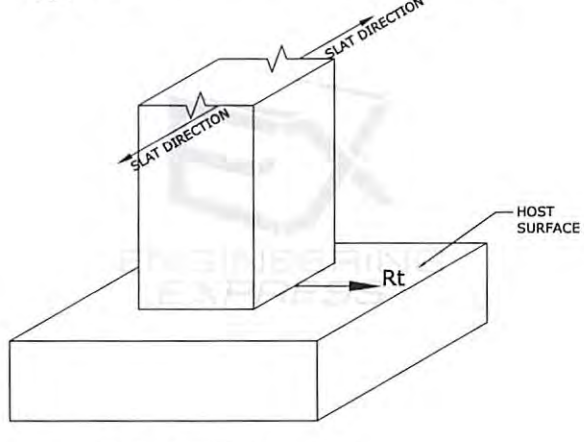

4/16 INTERIOR MULLION "TRAPPED MOUNT" DIAGRAM
N.T.S. ISOMETRIC

RICHARD NEET, P.E.
PE# 86488 CA# 9885

RICHARD NEET LICENSE No. P.E. 86488 STATE OF FLORIDA PROFESSIONAL ENGINEER

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INT ISSUE	RWN	RWN	02/18/20
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2023 FBC UPDATE	MRT	RWN	10/03/23
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-	-	-	-

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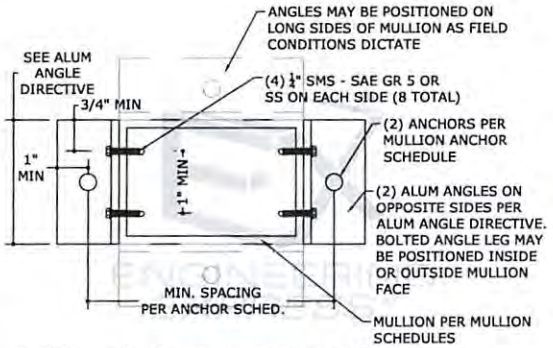

1A / 17 TRAPPED MOUNT OPTION 1
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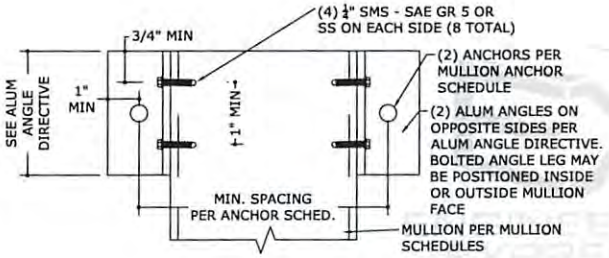

1B / 17 FACE MOUNT OPTION 1
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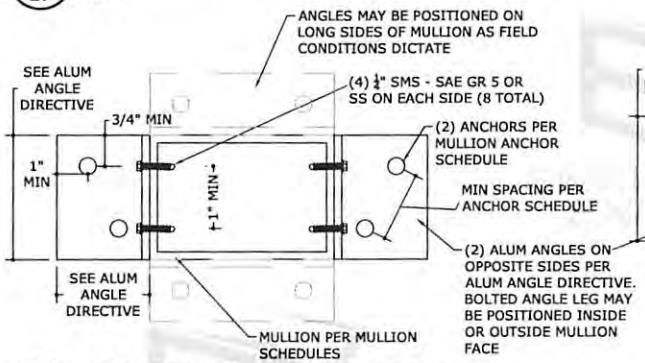

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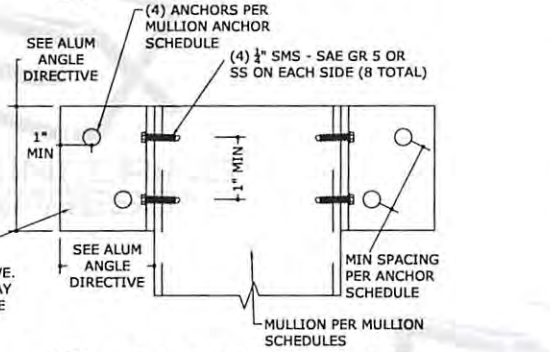

2B / 17 FACE MOUNT OPTION 2
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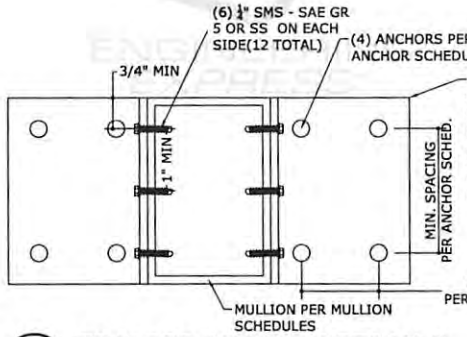

3A / 17 TRAPPED MOUNT OPTION 3
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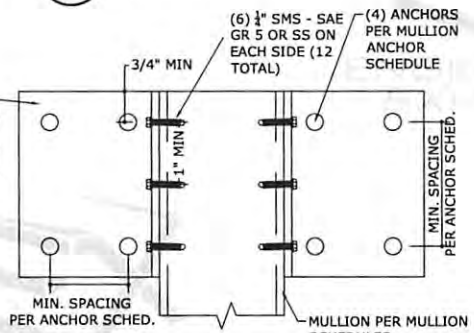


3B / 17 FACE MOUNT OPTION 3
N.T.S.

MULLION ANCHOR SCHEDULE

ANCHOR TYPE	MINIMUM SPACING	MINIMUM EDGE DISTANCE	CONNECTION DETAIL	CONNECTION CAPACITY	
1/2" DEWALT SCREW BOLTS (OR EQUIV.) W/ 2-1/2" EMBED TO 3KSI MIN. CONCRETE	8"	4.5"	1A/13, 1B/13	Tcap	3660 LB
				Vcap	2249 LB
	4.0"	4.5"	2A/13, 2B/13	Tcap	6442 LB
				Vcap	4106 LB
	4.0"	4.5"	3A/13, 3B/13	Tcap	12883 LB
				Vcap	8213 LB
3/8" DEWALT SCREW BOLTS (OR EQUIV.) W/ 2" EMBED TO 3KSI MIN. CONCRETE	6.0"	2.5"	1A/13, 1B/13	Tcap	1905 LB
				Vcap	1007 LB
	3.0"	2.5"	2A/13, 2B/13	Tcap	3801 LB
				Vcap	1700 LB
	3.0"	2.5"	3A/13, 3B/13	Tcap	7622 LB
				Vcap	3399 LB
3/8" DEWALT SCREW BOLTS (OR EQUIV.) W/ 3-1/4" EMBED TO GROUT-FILLED CONCRETE BLOCK*	6.0"	4.5"	1A/13, 1B/13	Tcap	1953 LB
				Vcap	1233 LB
	3.0"	4.5"	2A/13, 2B/13	Tcap	3906 LB
				Vcap	2467 LB
	3.0"	4.5"	3A/13, 3B/13	Tcap	7812 LB
				Vcap	4934 LB
5/16" LAG SCREW W/ 2" MIN. THREAD PENETRATION TO G=0.42 MIN WOOD	2.0"	1.25"	1A/13, 1B/13	Tcap	1310 LB
				Vcap	302 LB
	2.0"	1.25"	2A/13, 2B/13	Tcap	2620 LB
				Vcap	604 LB
	2.0"	1.25"	3A/13, 3B/13	Tcap	3930 LB
				Vcap	906 LB
5/16" DEWALT ULTRACON (OR EQUIV.) W/ 2" EMBED TO 3.5KSI MIN CONCRETE	5.0"	3.125"	1A/13, 1B/13	Tcap	1670 LB
				Vcap	1700 LB
	3.75"	3.125"	2A/13, 2B/13	Tcap	1820 LB
				Vcap	2840 LB
	3.75"	3.125"	3A/13, 3B/13	Tcap	3640 LB
				Vcap	5680 LB
5/16" DEWALT ULTRACON (OR EQUIV.) W/ 2-1/4" EMBED TO GROUT-FILLED CONCRETE BLOCK	5.0"	2.5"	1A/13, 1B/13	Tcap	580 LB
				Vcap	750 LB
	5.0"	2.5"	2A/13, 2B/13	Tcap	1160 LB
				Vcap	1500 LB
	5.0"	2.5"	3A/13, 3B/13	Tcap	2320 LB
				Vcap	3000 LB

MULLION ANCHOR SCHEDULE NOTES:

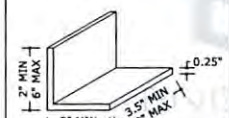
1. FOR "TRAPPED MOUNT" CONDITIONS WITH END MULLIONS, 'Rsum' VALUES IN MULLION SCHEDULE SHALL NOT EXCEED MAX 'Vcap' VALUES NOTED IN THIS SCHEDULE.
2. FOR "FACE MOUNT" CONDITIONS WITH END MULLIONS, **Rv/Vcap + Rt/Tcap SHALL BE LESS THAN OR EQUAL TO 1.0**, WHERE 'Rv' AND 'Rt' ARE PER MULLION SCHEDULES, AND 'Tcap' AND 'Vcap' ARE PER THIS SCHEDULE.
3. FOR "TRAPPED MOUNT" CONDITIONS WITH INTERMEDIATE MULLIONS, 'Rt' VALUES IN MULLION SCHEDULES SHALL NOT EXCEED 'Vcap' VALUES NOTED IN THIS SCHEDULE.
4. FOR "FACE MOUNT" CONDITIONS WITH INTERMEDIATE MULLIONS, 'Rt' VALUES IN MULLION SCHEDULES SHALL NOT EXCEED 'Tcap' VALUES NOTED IN THIS SCHEDULE
5. * ANCHORS SHALL PENETRATE THROUGH FACE SHELL INTO GROUTED CELL.
6. ALTERNATE ANCHORS AND OR END CONNECTION CONFIGURATIONS MAY BE DESIGNED/CERTIFIED ON A SITE SPECIFIC BASIS BASED ON THE END LOADINGS LISTED IN THE MULLION SCHEDULES.
7. 1/2" UNC THRU BOLTS MAY BE USED IN LEIU OF ¼" SMS PER THE FOLLOWING DIRECTIVE
   7.1. (4) SMS PER SIDE = (2) ½" UNC THRU BOLTS / (6) SMS PER SIDE = (3) ½" UNC THRU BOLTS

ALTERNATE ANCHOR NOTE:

FOR ALL ¼" AND ⅜" DIAMETER ANCHOR OPTIONS LISTED IN THE ANCHOR SCHEDULES, AN EQUIVALENT DIAMETER HILLMAN/ALL-POINTS SOLID-SET ANCHOR (CARBON OR STAINLESS STEEL) MAY BE USED IN LIEU OF THE OPTION(S) LISTED SO LONG AS THE LISTED MINIMUM EMBEDMENT, EDGE DISTANCE AND SPACING ARE ACHIEVED.

ALUM ANGLE DIRECTIVE

N.T.S. 6061-T6 OR 6005-T5 ALUM



ANGLE DIMENSION NOTE: MINIMUM REQUIRED ANGLE LEG SIZES AND LENGTH SHALL BE DETERMINED BASED ON THE ANCHOR REQUIREMENTS IN THE MULLION ANCHOR SCHEDULE AND THE MULLION ATTACHMENT DETAILS HEREIN

RICHARD NEET, P.E.
PE# 86488 CA# 9885

OCTOBER 3, 2023

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