



Product Approval
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SECRETARY

FL #	FL31658-R4														
Application Type	Revision														
Code Version	2023														
Application Status	Approved														
Comments															
Archived	<input type="checkbox"/>														
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 <input type="checkbox"/> 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	12/31/2024														
Validated By	John Henry Kampmann Jr. <input checked="" type="checkbox"/> Validation Checklist - Hardcopy Received														
Certificate of Independence	FL31658_R4_COI_INDEP.pdf														
Referenced Standard and Year (of Standard)	<table border="0"> <thead> <tr> <th>Standard</th> <th>Year</th> </tr> </thead> <tbody> <tr> <td>ASTM E1886</td> <td>2005</td> </tr> <tr> <td>ASTM E1996</td> <td>2006</td> </tr> <tr> <td>ASTM E330</td> <td>2002</td> </tr> <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	ASTM E1886	2005	ASTM E1996	2006	ASTM E330	2002	TAS 201	1994	TAS 202	1994	TAS 203	1994
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

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Product Approval Accepts:



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:

- 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.
- WIND LOAD DURATION FACTOR $C_d=1.6$ HAS BEEN USED FOR WOOD ANCHOR DESIGN.
- 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.
- DESIGN PRESSURES NOTED HEREIN ARE BASED ON MAXIMUM TESTED PRESSURES DIVIDED BY A 1.5 SAFETY FACTOR.
- ROLL-UP MECHANISM AND HOOD ASSEMBLY ARE NOT PART OF THIS APPROVAL.
- 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.
- 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.
- 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):

- ALL EXTRUSIONS SHALL BE MINIMUM 6063-T6 ALUMINUM ALLOY, UNLESS NOTED OTHERWISE.
- 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

- 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.
- ALL STEEL IN CONTACT WITH ALUMINUM SHALL BE PAINTED OR PLATED AS PRESCRIBED IN THE ABOVE-NOTED BUILDING CODE.
- CONTRACTOR IS RESPONSIBLE TO INSULATE OR PROTECT ALL MEMBERS FROM DISSIMILAR MATERIALS TO PREVENT ELECTROLYSIS.
- 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.
- REFER TO FASTENER MANUFACTURER'S PUBLISHED DATA SHEETS AND RECOMMENDATIONS FOR FASTENER INSTALLATION INSTRUCTIONS.
- 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.
- EXCEPT AS EXPRESSLY PROVIDED HEREIN, NO ADDITIONAL CERTIFICATIONS OR AFFIRMATIONS ARE INTENDED.
- PRESSURE VALUES ON THIS APPROVAL ARE (ASD) ALLOWABLE DESIGN PRESSURES.
- ALTERATIONS ADDITIONS OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE THIS CERTIFICATION.

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



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

OCTOBER 3, 2023

NOTE REGARDING USE OF THIS DOCUMENT & USE OUTSIDE FLORIDA:

NON-SITE-SPECIFIC STRUCTURAL PERFORMANCE EVALUATION. THIS PRODUCT EVALUATION IS VALID FOR USE IN FLORIDA ONLY. USE OF THIS EVALUATION REQUIRES A REVIEW & CERTIFICATION BY A LOCAL DESIGN PROFESSIONAL WHO SHALL BE RESPONSIBLE FOR THE PROPER ADAPTATION OF THIS GENERAL PERFORMANCE EVALUATION TO ANY SITE-SPECIFIC PROJECT. CONTACT THIS OFFICE AT ENGINEERINGEXPRESS.COM /QUOTE FOR ASSISTANCE WITH YOUR PROJECT-SPECIFIC NEEDS & FOR ADAPTATION & CERTIFICATION OF THIS DOCUMENT OUTSIDE OF FLORIDA.

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SHEET INDEX	
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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

VISIT ENGINEERINGEXPRESS.COM/STORE FOR ADDITIONAL PLANS, REPORTS & RESOURCES



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(800) 432-2204

SINGLE WALL ROLL-UP HURRICANE SHUTTER
FLORIDA BUILDING CODE EIGHTH EDITION (2023)
FLORIDA STATEWIDE APPROVAL (FSA FL #31658.1)

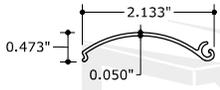
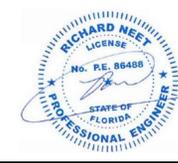
REMARKS	DATE	DRWN	CHKD
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REV	04/14/21	RWIN	RWIN
2023 FBC UPDATE	10/03/23	MRT	RWIN

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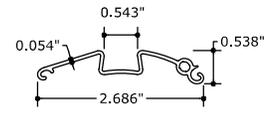
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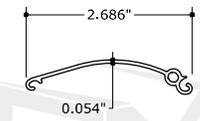
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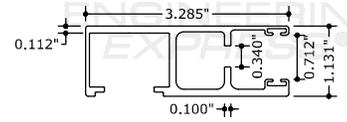
1 **STARTER SLAT**
N.T.S. 6063-T6 ALUM



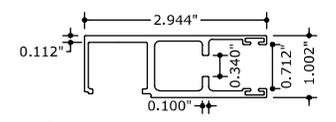
2 **FINGER PULL SLAT**
N.T.S. 6063-T6 ALUM
(1) PER SHUTTER AS APPLICABLE



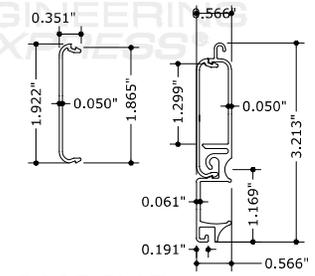
3 **SINGLE WALL SLAT**
N.T.S. 6063-T6 ALUM



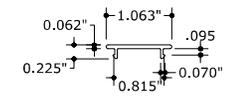
6 **SIDE RAIL TYPE 2**
N.T.S. 6063-T6 ALUM



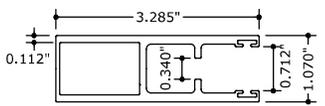
5 **SIDE RAIL TYPE 1**
N.T.S. 6063-T6 ALUM



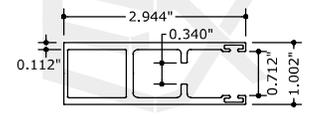
4 **BASE SLAT**
N.T.S. (OPTIONAL COMPONENT) 6063-T6 ALUM



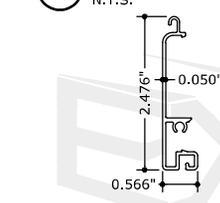
7 **SNAP CAP**
N.T.S. 6063-T6 ALUM



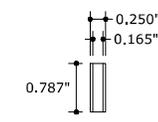
6A **SIDE RAIL TYPE 2 (CLOSED)**
N.T.S. 6063-T6 ALUM



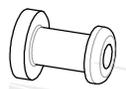
5A **SIDE RAIL TYPE 1 (CLOSED)**
N.T.S. 6063-T6 ALUM



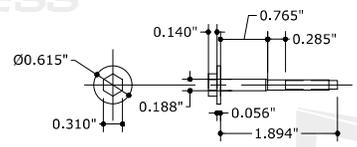
4A **SHORT BASE SLAT**
N.T.S. (OPTIONAL COMPONENT) 6063-T6 ALUM



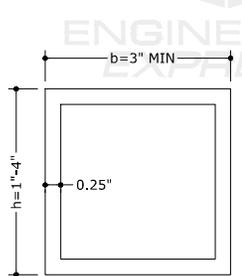
9 **EXTENDED SCREW SLEEVE W/O END CAP**
N.T.S. RIGID NYLON, 76-78 TYPE "O" SHORE HARDNESS



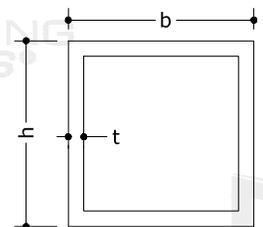
8 **END CAP W/ MONOLITHIC SCREW SLEEVE**
N.T.S. (LEFT SHOWN, RIGHT IS MIRROR) RIGID NYLON, 76-78 TYPE "O" SHORE HARDNESS



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**

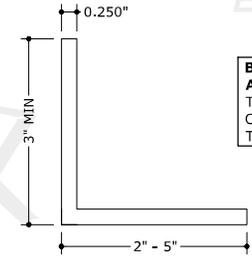


12 **BUILD-OUT MOUNTED TUBES**
N.T.S. 6063-T6



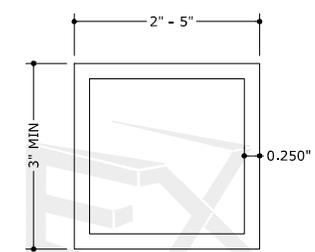
MULLIONS	b	h	t
(24)	4"	6"	0.250"
(25)	4"	8"	0.250"
(26)	4"	4"	0.250"

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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REMARKS	DRWN	CHKD	DATE
INT ISSUE	IRWN	IRWN	02/18/20
REV	IRWN	IRWN	04/14/21
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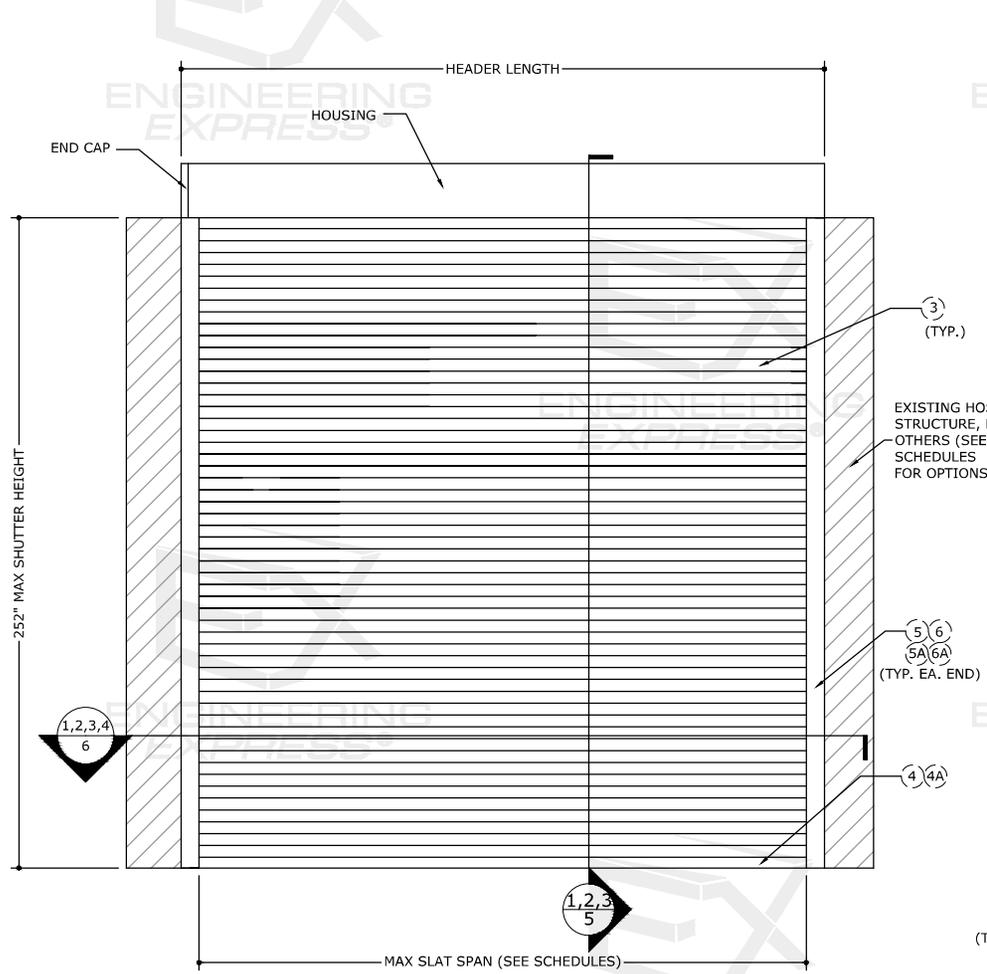
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 PE# 86488 CA# 9885

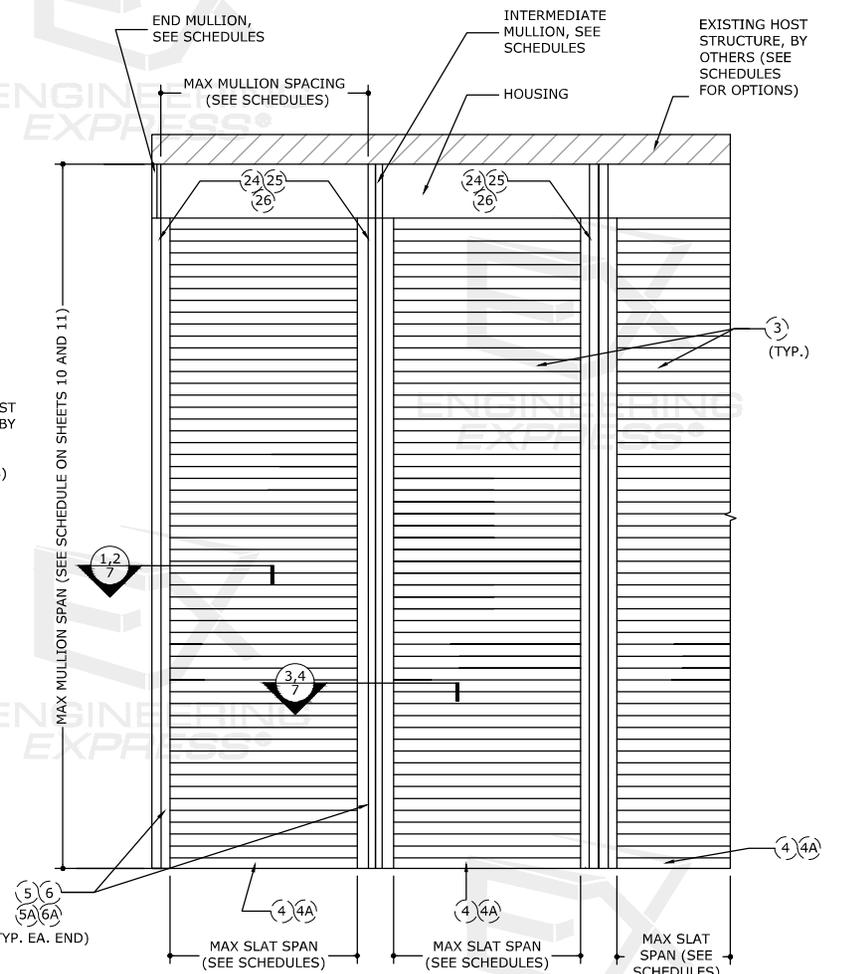
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1
 TYPICAL SINGLE UNIT
 ELEVATION W/O MULLIONS
 4 N.T.S. EXTERIOR ELEV



2
 TYPICAL CONSECUTIVE SINGLE
 UNIT ELEVATION WITH MULLIONS
 4 N.T.S. EXTERIOR ELEV

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IRVN	IRVN	02/16/20
IRVN	IRVN	04/14/21
IRVN	IRVN	10/03/23
MIRT	IRVN	10/03/23
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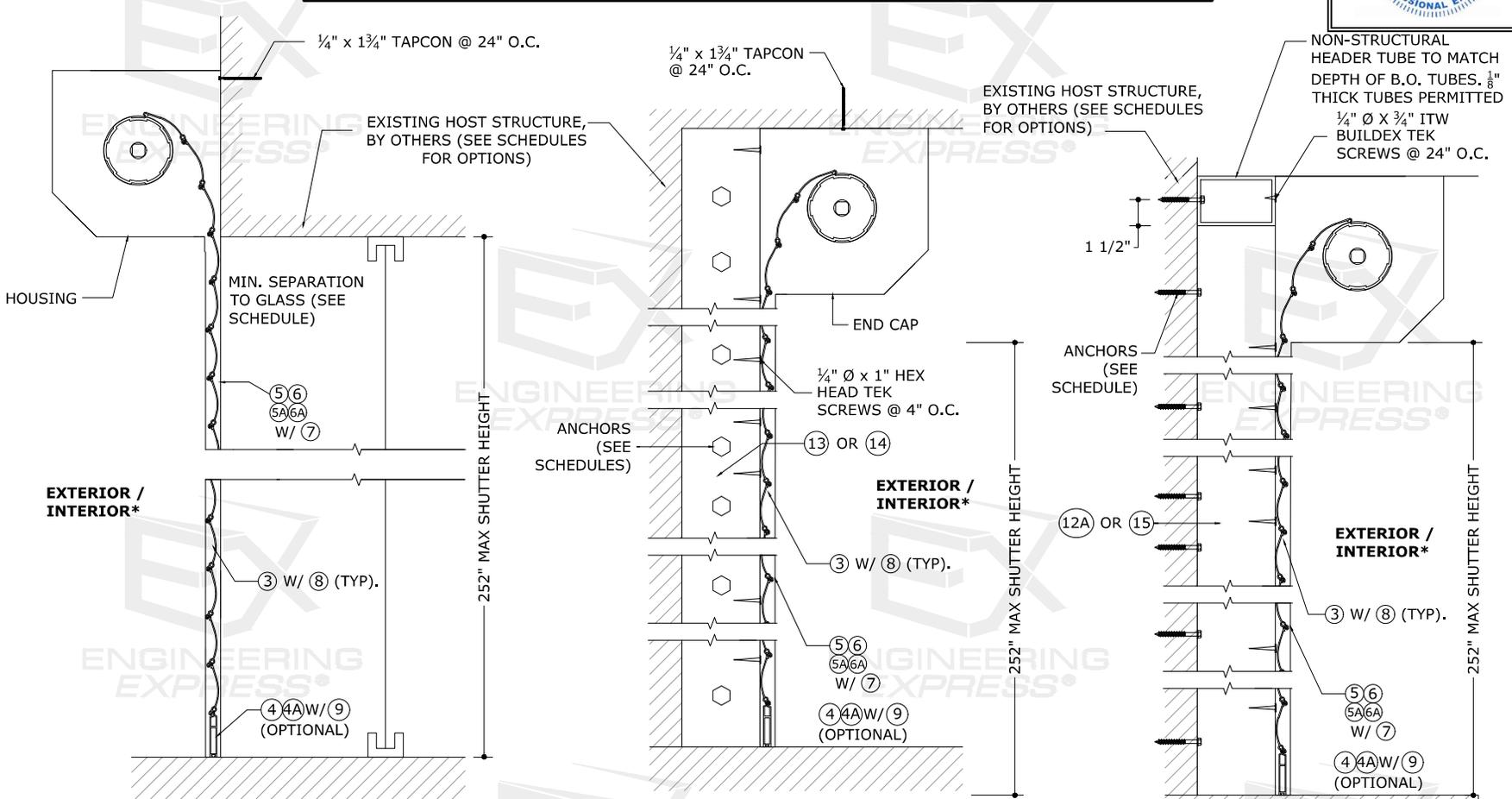
4 17

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PE# 86488 CA# 9885

OCTOBER 3, 2023



SHUTTER ATTACHMENT TO HOST



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



- 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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 (800) 432-2204
 SINGLE WALL ROLL-UP HURRICANE SHUTTER
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RVN	RVN	02/16/20	INT ISSUE
RVN	RVN	04/14/21	REV
MRT	RVN	10/03/23	2023 FBC UPDATE

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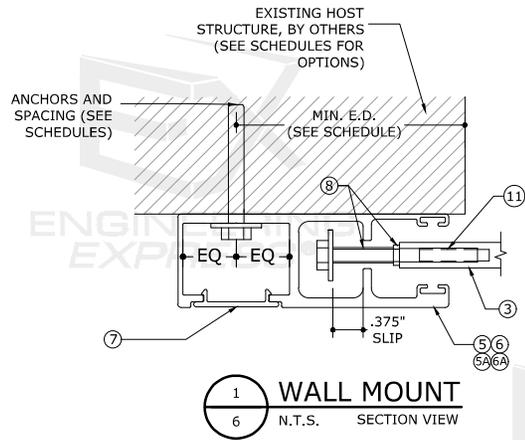


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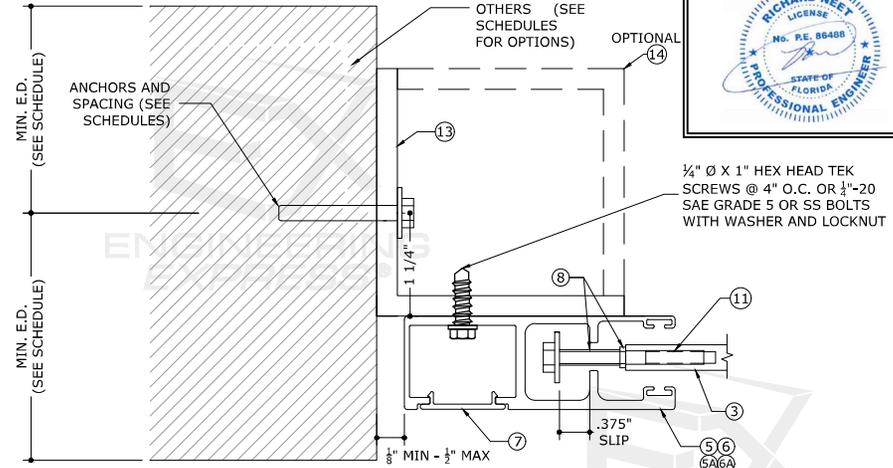
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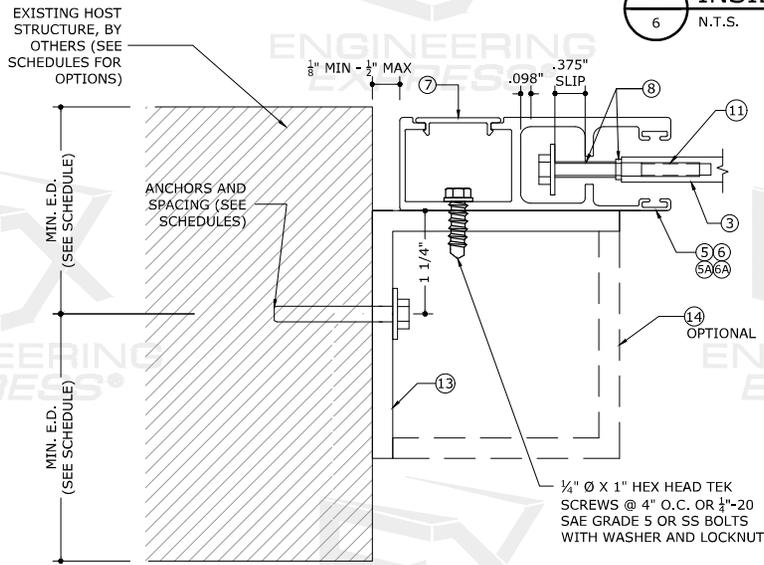
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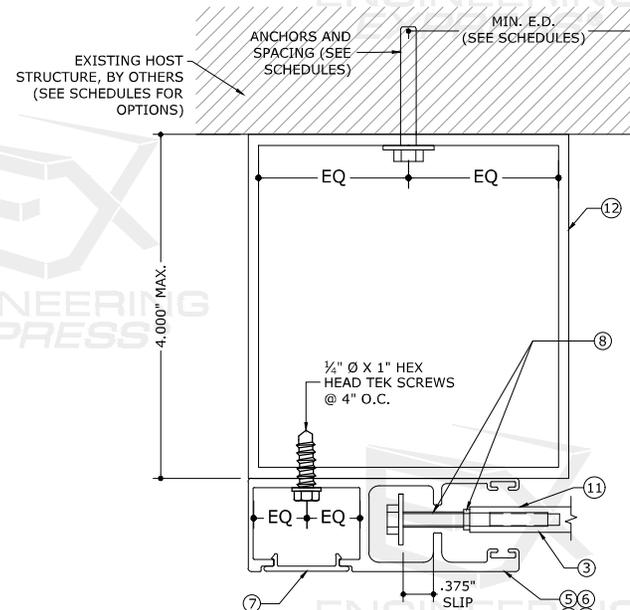
1 WALL MOUNT
6 N.T.S. SECTION VIEW



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



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



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

1/4" Ø X 1" HEX HEAD TEK SCREWS @ 4" O.C. OR 1/4"-20 SAE GRADE 5 OR SS BOLTS WITH WASHER AND LOCKNUT

FL 31658.1

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WEST PALM BEACH, FL 33407
(800) 432-2204
SINGLE WALL ROLL-UP HURRICANE SHUTTER
FLORIDA BUILDING CODE EIGHTH EDITION (2023)
FLORIDA STATEWIDE APPROVAL (FSA FL#31658.1)

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

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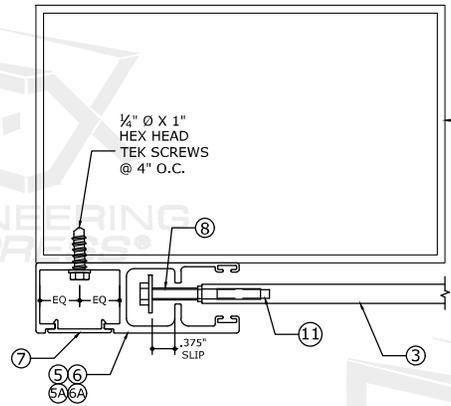
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SHUTTER ATTACHMENT OPTION TO ALUMINUM MULLIONS

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

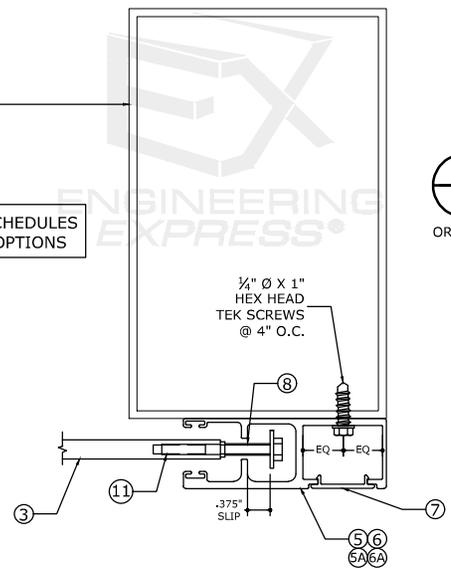
OCTOBER 3, 2023

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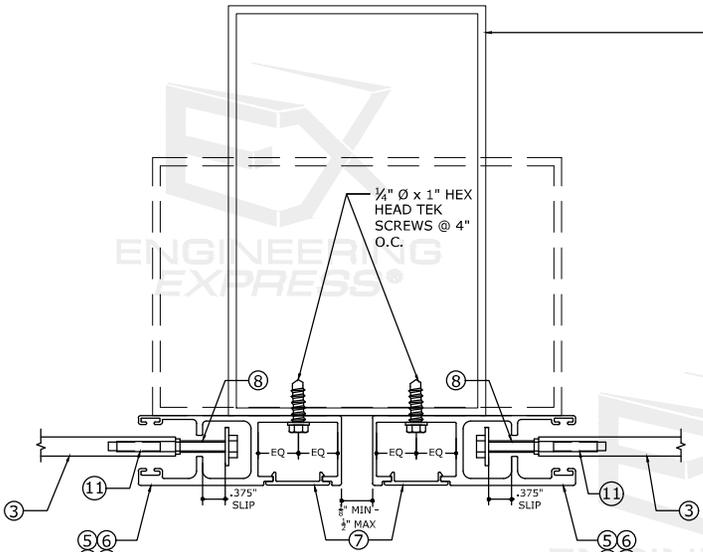


1 FACE MOUNT (END MULLION)
SECTION VIEW
7 N.T.S.

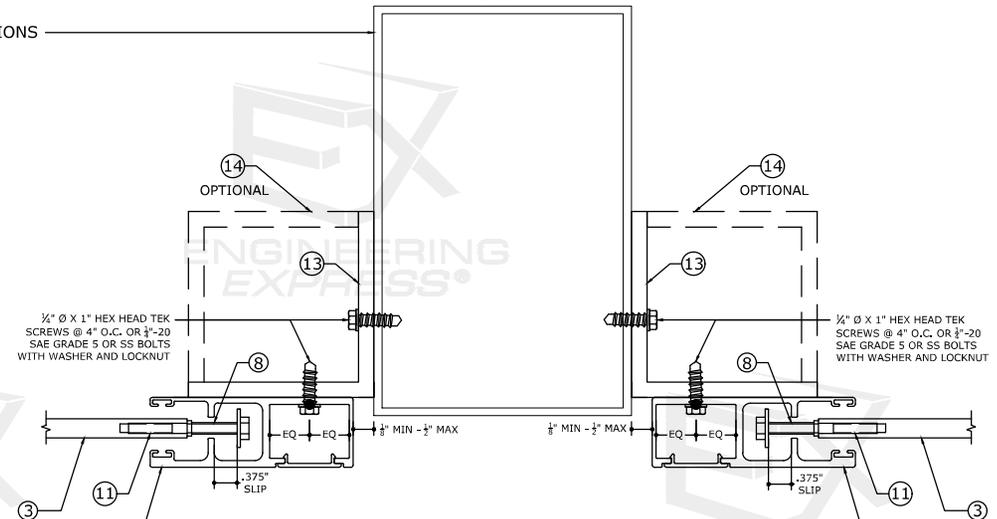
SEE MULLION SCHEDULES
FOR MULLION OPTIONS



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



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



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

FL 31658.1

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SINGLE WALL ROLL-UP HURRICANE SHUTTER
FLORIDA BUILDING CODE EIGHTH EDITION (2023)
FLORIDA STATEWIDE APPROVAL (FSA FL #31658.1)

DRWN	CHKD	DATE
RWIN	RWIN	02/16/20
RWIN	RWIN	04/14/21
MRT	RWIN	10/03/23

REMARKS: 2023 FBC UPDATE

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OPTION 1 ANCHOR SCHEDULE: BUILD-OUT MOUNT

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

OCTOBER 3, 2023



FL 31658.1

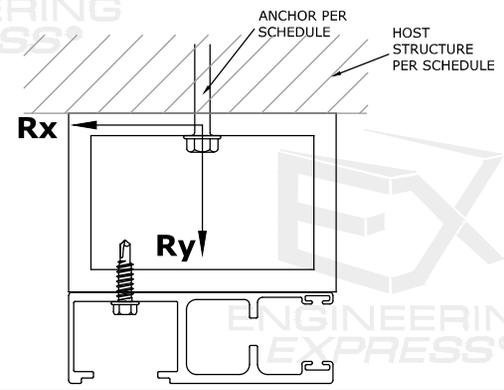
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 (800) 432-2204
 SINGLE WALL ROLL-UP HURRICANE SHUTTER
 FLORIDA BUILDING CODE EIGHTH EDITION (2023)
 FLORIDA STATEWIDE APPROVAL (FSA FL #31658.1)

SLAT SPAN	DESIGN PRESSURE	Rx	Ry	MAXIMUM SPACING (O.C.)															
				1/4" DEWALT ULTRACON TO 3000 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT	1/4" SS TAPON TO 3192 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT	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	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
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	5.25"	5.75"	6.00"	6.00"	6.00"	6.00"	6.00"	4.25"	6.00"	6.00"	2.50"	6.00"	6.00"	6.00"	6.00"	6.00"
	+-95 PSF	1021.3 LB/FT	302.8 LB/FT	3.25"	3.50"	6.00"	6.00"	6.00"	6.00"	4.75"	6.00"	6.00"	6.00"	2.50"	6.00"	6.00"	6.00"	6.00"	6.00"
108"	+-40 PSF	1418.6 LB/FT	390.5 LB/FT	4.75"	4.75"	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"
	+-57 PSF	1815.4 LB/FT	478.1 LB/FT	2.25"	2.50"	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"
	+-75 PSF	2299.2 LB/FT	582.3 LB/FT	2.00"	2.00"	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"
120"	+-40 PSF	1796.9 LB/FT	451.7 LB/FT	4.50"	4.75"	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"
	+-57 PSF	2299.2 LB/FT	582.3 LB/FT	2.00"	2.00"	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"
	+-75 PSF	2891.7 LB/FT	722.9 LB/FT	2.00"	2.00"	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"
140"	+-40 PSF	2183.2 LB/FT	545.8 LB/FT	3.50"	3.75"	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"
	+-57 PSF	2891.7 LB/FT	722.9 LB/FT	2.00"	2.00"	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"
	+-75 PSF	3684.2 LB/FT	921.0 LB/FT	2.00"	2.00"	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"
170"	+-40 PSF	2796.9 LB/FT	701.7 LB/FT	3.00"	3.25"	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"
	+-57 PSF	3684.2 LB/FT	921.0 LB/FT	2.00"	2.00"	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"
	+-75 PSF	4677.2 LB/FT	1169.3 LB/FT	2.00"	2.00"	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"
206"	+-35 PSF	2212.8 LB/FT	553.2 LB/FT	3.25"	3.50"	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"
	+-42 PSF	2638.2 LB/FT	659.5 LB/FT	3.00"	3.25"	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"
	+-55 PSF	3488.8 LB/FT	872.2 LB/FT	3.00"	3.25"	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"
241.5"	+-30 PSF	2427.4 LB/FT	606.8 LB/FT	3.00"	3.25"	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"
	+-34 PSF	2735.3 LB/FT	683.8 LB/FT	3.00"	3.25"	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"
	+-41 PSF	3351.2 LB/FT	837.8 LB/FT	3.00"	3.25"	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"

ANCHOR NOTES: SEE SHEET 8 FOR ANCHOR NOTES.

BUILD-OUT MOUNT DIRECTIVE



DRWN	CHAD	DATE	REMARKS
RWIN	RWIN	02/16/20	INT ISSUE
RWIN	RWIN	04/14/21	REV
MRT	RWIN	10/03/23	2023 FCC UPDATE
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OPTION 1 ANCHOR SCHEDULE: INTERIOR MOUNT

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

OCTOBER 3, 2023

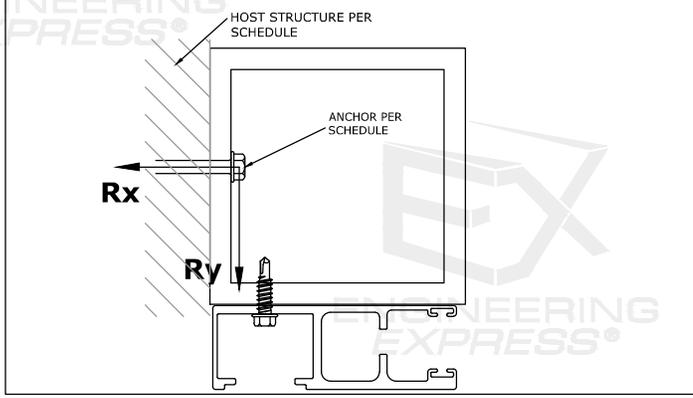


MAXIMUM SPACING (O.C.)

SLAT SPAN	DESIGN PRESSURE	Rx	Ry	1/4" DEWALT ULTRACON TO 3000 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT	1/4" SS IWV TAPCON TO 3192 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT	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	5/16" IWV TAPCON 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; 2" 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; 3.75" MIN. EDGE DISTANCE	3/8" ELCO/DEWALT CONFLX 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"
	+/- 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"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"
	+/- 95 PSF	1021.3 LB/FT	302.8 LB/FT	4.50"	4.25"	6.00"	4.50"	6.00"	6.00"	6.00"	6.00"	4.50"	6.00"	4.75"	4.25"	4.50"	4.50"	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"	3.25"	3.00"	2.75"	2.75"	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"	4.00"	3.75"	3.50"	2.50"	2.50"	2.25"	2.25"	2.00"	2.00"	2.00"	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"	6.00"	4.50"	4.25"	4.25"	4.00"	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"	6.00"	6.00"	4.00"	3.00"	2.75"	2.75"	2.50"	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"	2.00"	2.00"	2.00"	6.00"	6.00"	6.00"	6.00"
	+/- 92 PSF	2062.6 LB/FT	414.4 LB/FT	2.50"	2.50"	4.25"	3.50"	3.75"	3.50"	3.25"	2.50"	2.25"	2.25"	2.00"	2.00"	2.00"	6.00"	6.00"	6.00"	6.00"
	+/- 109 PSF	2483.2 LB/FT	492.5 LB/FT	2.00"	2.00"	3.50"	3.00"	3.00"	3.00"	3.00"	2.00"	2.00"	2.00"	2.00"	2.00"	2.00"	4.25"	6.00"	6.00"	6.00"
	+/- 140 PSF	3289.5 LB/FT	647.9 LB/FT	1.50"	1.50"	3.00"	2.50"	2.50"	2.50"	2.50"	2.00"	2.00"	2.00"	2.00"	2.00"	2.00"	3.75"	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"	6.00"	4.75"	3.75"	3.75"	3.50"	3.25"	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"	3.25"	2.75"	2.50"	2.50"	2.25"	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"	4.25"	4.00"	3.75"	2.50"	2.00"	2.00"	2.00"	2.00"	2.00"	5.75"	6.00"	6.00"	6.00"
	+/- 85 PSF	2279.7 LB/FT	425.0 LB/FT	2.25"	2.25"	4.00"	3.50"	3.50"	3.25"	3.00"	2.50"	2.50"	2.00"	2.00"	2.00"	2.00"	4.50"	6.00"	6.00"	6.00"
	+/- 100 PSF	2705.5 LB/FT	500.0 LB/FT	2.00"	2.00"	3.50"	3.00"	3.00"	3.00"	3.00"	2.50"	2.50"	2.00"	2.00"	2.00"	2.00"	3.75"	6.00"	6.00"	6.00"
	+/- 120 PSF	3366.6 LB/FT	616.6 LB/FT	1.50"	1.50"	3.00"	2.50"	2.50"	2.50"	2.50"	2.00"	2.00"	2.00"	2.00"	2.00"	2.00"	3.50"	6.00"	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"	3.50"	2.75"	2.75"	2.50"	2.25"	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"	4.25"	4.00"	2.50"	2.50"	2.25"	2.00"	2.00"	2.00"	5.75"	6.00"	6.00"	6.00"
	+/- 64 PSF	2369.7 LB/FT	392.1 LB/FT	2.25"	2.25"	4.00"	3.50"	3.50"	3.25"	3.00"	2.50"	2.50"	2.25"	2.00"	2.00"	2.00"	4.50"	6.00"	6.00"	6.00"
	+/- 77 PSF	2834.6 LB/FT	466.5 LB/FT	2.00"	2.00"	3.50"	3.00"	3.00"	3.00"	3.00"	2.50"	2.50"	2.25"	2.00"	2.00"	2.00"	4.25"	6.00"	6.00"	6.00"
	+/- 89 PSF	3298.3 LB/FT	540.9 LB/FT	1.75"	1.75"	3.00"	2.50"	2.50"	2.50"	2.50"	2.00"	2.00"	2.00"	2.00"	2.00"	2.00"	3.75"	6.00"	6.00"	6.00"
	+/- 100 PSF	3762.0 LB/FT	616.0 LB/FT	1.50"	1.50"	3.00"	2.50"	2.50"	2.50"	2.50"	2.00"	2.00"	2.00"	2.00"	2.00"	2.00"	3.50"	6.00"	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"	2.75"	2.25"	2.25"	2.00"	2.00"	4.00"	6.00"	6.00"	6.00"
	+/- 49 PSF	2301.8 LB/FT	350.4 LB/FT	2.25"	2.25"	4.00"	3.50"	3.50"	3.25"	3.00"	2.50"	2.50"	2.00"	2.00"	2.00"	2.00"	4.75"	6.00"	6.00"	6.00"
	+/- 59 PSF	2750.7 LB/FT	417.5 LB/FT	2.00"	2.00"	3.50"	3.00"	3.00"	3.00"	3.00"	2.50"	2.50"	2.00"	2.00"	2.00"	2.00"	4.00"	6.00"	6.00"	6.00"
	+/- 68 PSF	3197.6 LB/FT	484.5 LB/FT	1.75"	1.75"	3.00"	2.50"	2.50"	2.50"	2.50"	2.00"	2.00"	2.00"	2.00"	2.00"	2.00"	3.50"	6.00"	6.00"	6.00"
	+/- 78 PSF	3642.4 LB/FT	551.6 LB/FT	1.50"	1.50"	3.00"	2.50"	2.50"	2.50"	2.50"	2.00"	2.00"	2.00"	2.00"	2.00"	2.00"	3.00"	5.50"	4.50"	6.00"
	+/- 35 PSF	2212.8 LB/FT	300.4 LB/FT	2.50"	2.50"	4.25"	3.75"	3.50"	3.50"	3.25"	2.00"	2.00"	2.00"	2.00"	2.00"	2.00"	5.00"	6.00"	6.00"	6.00"
200"	+/- 42 PSF	2638.2 LB/FT	356.9 LB/FT	2.00"	2.00"	3.75"	3.00"	3.00"	3.00"	3.00"	2.50"	2.50"	2.00"	2.00"	2.00"	2.00"	4.25"	6.00"	6.00"	6.00"
	+/- 48 PSF	3063.5 LB/FT	413.4 LB/FT	1.75"	1.75"	3.00"	2.50"	2.50"	2.50"	2.50"	2.00"	2.00"	2.00"	2.00"	2.00"	2.00"	3.50"	6.00"	5.50"	6.00"
	+/- 55 PSF	3488.8 LB/FT	469.9 LB/FT	1.50"	1.50"	3.00"	2.50"	2.50"	2.50"	2.50"	2.00"	2.00"	2.00"	2.00"	2.00"	2.00"	3.25"	6.00"	4.75"	6.00"
	+/- 61 PSF	3914.1 LB/FT	526.3 LB/FT	1.25"	1.25"	2.50"	2.00"	2.00"	2.00"	2.00"	1.75"	1.75"	1.50"	1.50"	1.50"	1.50"	2.75"	5.25"	4.50"	6.00"
	+/- 30 PSF	2427.4 LB/FT	301.9 LB/FT	2.25"	2.25"	4.00"	3.50"	3.50"	3.25"	3.00"	2.50"	2.50"	2.00"	2.00"	2.00"	2.00"	4.50"	6.00"	6.00"	6.00"
	+/- 34 PSF	2735.3 LB/FT	339.6 LB/FT	2.00"	2.00"	3.50"	3.00"	3.00"	3.00"	3.00"	2.50"	2.50"	2.00"	2.00"	2.00"	2.00"	4.00"	6.00"	6.00"	6.00"
	+/- 38 PSF	3043.3 LB/FT	377.3 LB/FT	1.75"	1.75"	3.00"	2.50"	2.50"	2.50"	2.50"	2.00"	2.00"	2.00"	2.00"	2.00"	2.00"	3.75"	6.00"	5.50"	6.00"
	+/- 41 PSF	3351.2 LB/FT	415.1 LB/FT	1.50"	1.50"	3.00"	2.50"	2.50"	2.50"	2.50"	2.00"	2.00"	2.00"	2.00"	2.00"	2.00"	3.25"	6.00"	5.00"	6.00"
	+/- 45 PSF	3659.1 LB/FT	452.8 LB/FT	1.25"	1.25"	2.50"	2.00"	2.00"	2.00"	2.00"	1.75"	1.75"	1.50"	1.50"	1.50"	1.50"	3.00"	5.75"	4.50"	6.00"

ANCHOR NOTES: SEE SHEET 8 FOR ANCHOR NOTES.

INTERIOR MOUNT DIRECTIVE



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 FLORIDA STATEWIDE APPROVAL (FSA FL #31658.1)

REMARKS	DATE	DRWN	CHKD
INT ISSUE	02/16/20	RWIN	RWIN
REV	04/14/21	RWIN	RWIN
2023 FCC UPDATE	10/03/23	MRT	RWIN

23-65152

SCALE: NTS UNLESS NOTED

10/17

OPTION 2 ANCHOR SCHEDULE: WALL MOUNT

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

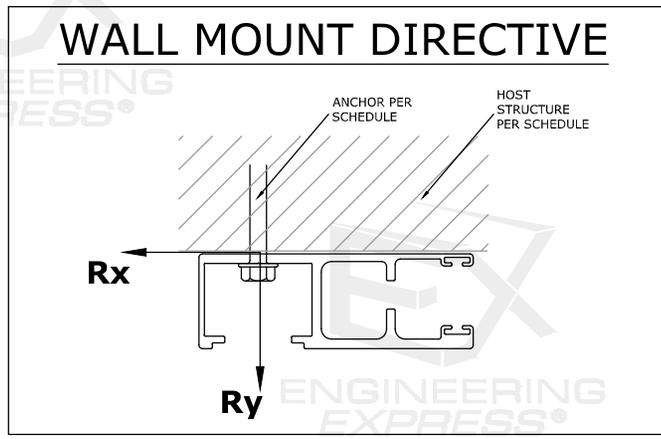
OCTOBER 3, 2023



MAXIMUM SPACING (O.C.)

SLAT SPAN	DESIGN PRESSURE	Rx	Ry	1/4" DEWALT ULTRACON TO 3000 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT	1/4" SS ITW TAPCON TO 3192 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT	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 3000 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; 2.25" 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. 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. 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 CONFLX TO 1819 PSI MIN. CONCRETE; 3.75" MIN. EMBEDMENT; 3.75" MIN. EDGE DISTANCE	TO 4510 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 3.75" MIN. EDGE DISTANCE
				TO 3000 PSI MIN. CONCRETE; 2.25" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE	TO GROUT-FILLED BLOCK; 2.25" MIN. EMBEDMENT; 4" MIN. EDGE DISTANCE	TO HOLLOW CONCRETE BLOCK; 1.75" MIN. EMBEDMENT; 4" MIN. EDGE DISTANCE	TO 3000 PSI MIN. CONCRETE; 2.25" MIN. EMBEDMENT; 3" MIN. EDGE DISTANCE	TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE	TO G=0.42 MIN WOOD; 2" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE	TO 410 SS SMS W/ FULL THREAD PENETRATION OR 1/4-20 410 SS THRU-BOLT TO 0.125" MIN. T6 ALUM; 0.5" MIN. EDGE DISTANCE	TO 1819 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 4.5" MIN. EDGE DISTANCE	TO 4510 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 3.75" MIN. EDGE DISTANCE								
78.5"	+/- 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"	6.00"	6.00"	6.00"	6.00"	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"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"
108"	+/- 123 PSF	1418.6 LB/FT	390.5 LB/FT	3.00"	3.00"	5.75"	4.50"	5.50"	5.50"	5.75"	5.00"	3.75"	5.00"	5.00"	5.00"	5.00"	5.00"	5.00"	5.00"	5.00"
	+/- 150 PSF	1815.4 LB/FT	478.1 LB/FT	2.25"	2.50"	4.50"	3.50"	4.25"	4.25"	4.25"	3.25"	2.75"	3.25"	3.25"	3.25"	3.25"	3.25"	3.25"	3.25"	3.25"
	+/- 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"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"
120"	+/- 56 PSF	1192.4 LB/FT	253.1 LB/FT	3.50"	4.00"	6.00"	5.75"	6.00"	6.00"	6.00"	5.25"	4.75"	6.00"	6.00"	6.00"	6.00"	6.00"	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"	4.00"	4.00"	4.00"	4.00"	4.00"	4.00"	4.00"	4.00"
	+/- 89 PSF	1981.8 LB/FT	399.4 LB/FT	2.00"	2.25"	4.25"	3.50"	4.25"	4.00"	3.25"	2.75"	2.50"	2.50"	2.50"	2.50"	2.50"	2.50"	2.50"	2.50"	2.50"
140"	+/- 40 PSF	998.5 LB/FT	200.0 LB/FT	4.25"	4.75"	6.00"	6.00"	6.00"	6.00"	6.00"	5.75"	5.00"	6.00"	6.00"	6.00"	6.00"	6.00"	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"	6.00"	4.75"	4.25"	6.00"	6.00"	6.00"	6.00"	6.00"	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"	3.75"	3.75"	3.75"	3.75"	3.75"	3.75"	3.75"	3.75"
170"	+/- 40 PSF	1436.7 LB/FT	243.3 LB/FT	3.00"	3.25"	6.00"	4.75"	6.00"	6.00"	6.00"	4.50"	4.00"	6.00"	6.00"	6.00"	6.00"	6.00"	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"	3.75"	3.75"	3.75"	3.75"	3.75"	3.75"	3.75"	3.75"
	+/- 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"	3.00"	3.00"	3.00"	3.00"	3.00"	3.00"	3.00"	3.00"
182"	+/- 40 PSF	2241.0 LB/FT	371.5 LB/FT	2.00"	2.25"	4.00"	3.50"	4.00"	4.00"	3.75"	3.25"	2.50"	3.00"	3.00"	3.00"	3.00"	3.00"	3.00"	3.00"	3.00"
	+/- 52 PSF	2431.5 LB/FT	399.8 LB/FT	2.00"	2.25"	3.75"	3.50"	3.50"	3.50"	3.50"	3.50"	3.50"	3.50"	3.50"	3.50"	3.50"	3.50"	3.50"	3.50"	3.50"
	+/- 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"	4.25"	4.25"	4.25"	4.25"	4.25"	4.25"	4.25"	4.25"

ANCHOR NOTES: SEE SHEET 8 FOR ANCHOR NOTES.



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 SINGLE WALL ROLL-UP HURRICANE SHUTTER
 FLORIDA BUILDING CODE EIGHTH EDITION (2023)
 FLORIDA STATEWIDE APPROVAL (FSA FL # 31658.1)

DRWN	CHKD	DATE	REMARKS
RWIN	RWIN	02/16/20	INT ISSUE
RWIN	RWIN	04/14/21	REV
MRT	RWIN	10/03/23	2023 FCC UPDATE

23-65152

SCALE: NTS UNLESS NOTED

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INTERMEDIATE MULLION SCHEDULES

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

OCTOBER 3, 2023



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	
		MAX MULLION LENGTH	END REACTION Rt								
77"	+/- 40 PSF	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
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
144"	+/- 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	134.6"	4188.1 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
170"	+/- 40 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
	+/- 49 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
	+/- 59 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
	+/- 68 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
206"	+/- 40 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
	+/- 35 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
	+/- 42 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
	+/- 48 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
242"	+/- 40 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
	+/- 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
242"	+/- 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.

FL 31658.1

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 FLORIDA STATEWIDE APPROVAL (FSA FL #31658.1)

DRWN	CHKD	DATE
RWIN	RWIN	02/18/20
RWIN	RWIN	04/14/21
MRT	RWIN	10/03/23

REMARKS: 2023 FBC UPDATE

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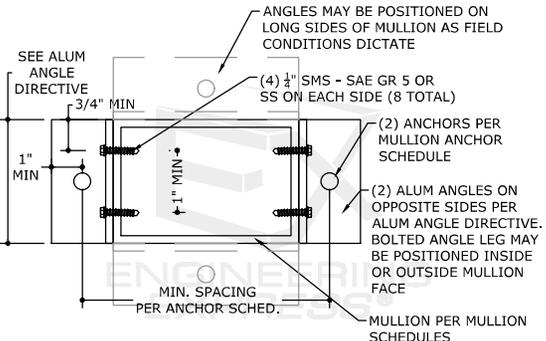
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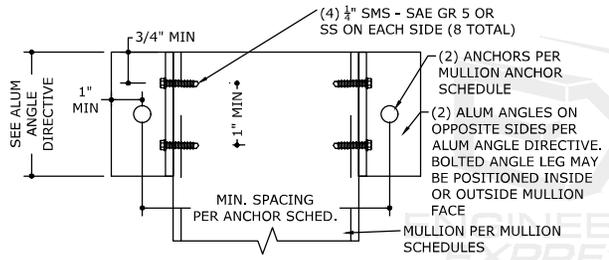
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RICHARD NEET, P.E.
PE# 86488 CA# 9885

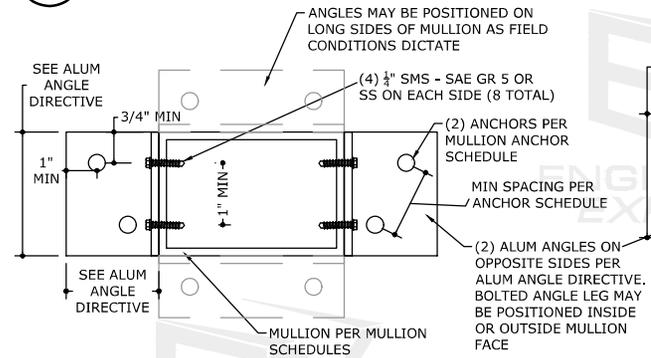
OCTOBER 3, 2023



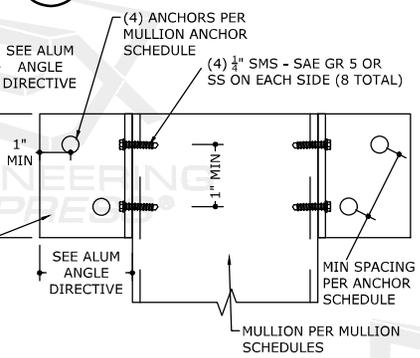
1A TRAPPED MOUNT OPTION 1
17 N.T.S.



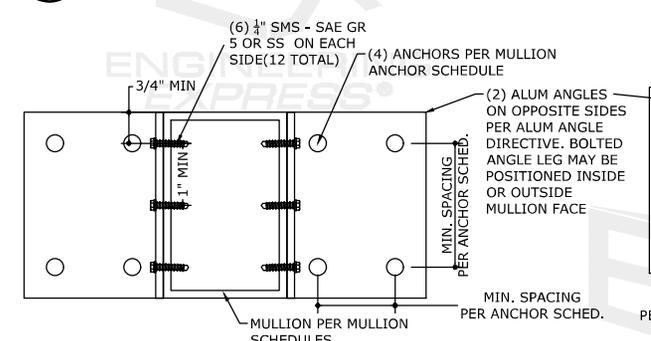
1B FACE MOUNT OPTION 1
17 N.T.S.



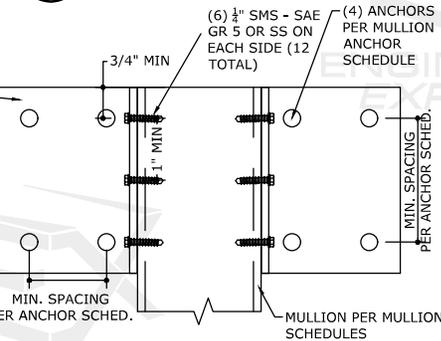
2A TRAPPED MOUNT OPTION 2
17 N.T.S.



2B FACE MOUNT OPTION 2
17 N.T.S.



3A TRAPPED MOUNT OPTION 3
17 N.T.S.



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

MULLION ANCHOR SCHEDULE

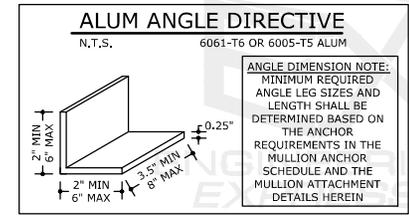
ANCHOR TYPE	MINIMUM SPACING	MINIMUM EDGE DISTANCE	CONNECTION DETAIL	CONNECTION CAPACITY	
				Tcap	Rcap
1/2" DEWALT SCREW BOLTS (OR EQUIV.) W/ 2-1/2" EMBED TO 3KSI MIN. CONCRETE	6"	4.5"	1A/13, 1B/13	Tcap 3660 LB	Rcap 2249 LB
	4.0"	4.5"	2A/13, 2B/13	Tcap 6442 LB	Vcap 4106 LB
	4.0"	4.5"	3A/13, 3B/13	Tcap 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 1280 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:

- FOR "TRAPPED MOUNT" CONDITIONS WITH END MULLIONS, "Rsum" VALUES IN MULLION SCHEDULE SHALL NOT EXCEED MAX "Vcap" VALUES NOTED IN THIS SCHEDULE.
- FOR "FACE MOUNT" CONDITIONS WITH END MULLIONS, $R_v/Vcap + R_t/Tcap$ 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.
- FOR "TRAPPED MOUNT" CONDITIONS WITH INTERMEDIATE MULLIONS, "Rr" VALUES IN MULLION SCHEDULES SHALL NOT EXCEED "Vcap" VALUES NOTED IN THIS SCHEDULE.
- FOR "FACE MOUNT" CONDITIONS WITH INTERMEDIATE MULLIONS, "Rr" VALUES IN MULLION SCHEDULES SHALL NOT EXCEED "Tcap" VALUES NOTED IN THIS SCHEDULE.
- * ANCHORS SHALL PENETRATE THROUGH FACE SHELL INTO GROUTED CELL.
- 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.
- 1/2" UNC THRU BOLTS MAY BE USED IN LIEU OF 1/2" SMS PER THE FOLLOWING DIRECTIVE:
7.1. (4) SMS PER SIDE = (2) 1/2" UNC THRU BOLTS / (6) SMS PER SIDE = (3) 1/2" UNC THRU BOLTS

ALTERNATE ANCHOR NOTE:

FOR ALL 1/2" AND 5/8" 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.



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

FL 31658.1

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FLORIDA BUILDING CODE EIGHTH EDITION (2023)
FLORIDA STATEWIDE APPROVAL (FSA FL #31658.1)

DRWN	CHKD	DATE	REMARKS
IRWIN	IRWIN	02/16/20	INT ISSUE
IRWIN	IRWIN	04/14/21	REV
IRWIN	IRWIN	10/03/23	2023 FBC UPDATE
MRT	IRWIN		

23-65152

SCALE: NTS UNLESS NOTED

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