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Product Approval
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OFFICE OF THE SECRETARY

FL #	FL31658														
Application Type	New														
Code Version	2017														
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	Frank Bennardo frank@engineeringexpress.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	12/31/2020														
Validated By	John Henry Kampmann Jr. <input checked="" type="checkbox"/> Validation Checklist - Hardcopy Received														
Certificate of Independence	FL31658_R0_COI_Indep.pdf														
Referenced Standard and Year (of Standard)	<table border="0"> <thead> <tr> <th><u>Standard</u></th> <th><u>Year</u></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>	<u>Standard</u>	<u>Year</u>	ASTM E1886	2005	ASTM E1996	2006	ASTM E330	2002	TAS 201	1994	TAS 202	1994	TAS 203	1994
<u>Standard</u>	<u>Year</u>														
ASTM E1886	2005														
ASTM E1996	2006														
ASTM E330	2002														
TAS 201	1994														
TAS 202	1994														
TAS 203	1994														

Equivalence of Product Standards
Certified By

Sections from the Code

Product Approval Method Method 1 Option D

Date Submitted 02/14/2020
Date Validated 02/14/2020
Date Pending FBC Approval 02/17/2020
Date Approved 04/07/2020

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_R0_II_Dwg.pdf Verified By: Richard Neet, P.E. PE86488 Created by Independent Third Party: Yes Evaluation Reports FL31658_R0_AE_Eval.pdf Created by Independent Third Party: Yes

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[Contact Us :: 2601 Blair Stone Road, Tallahassee FL 32399 Phone: 850-487-1824](#)

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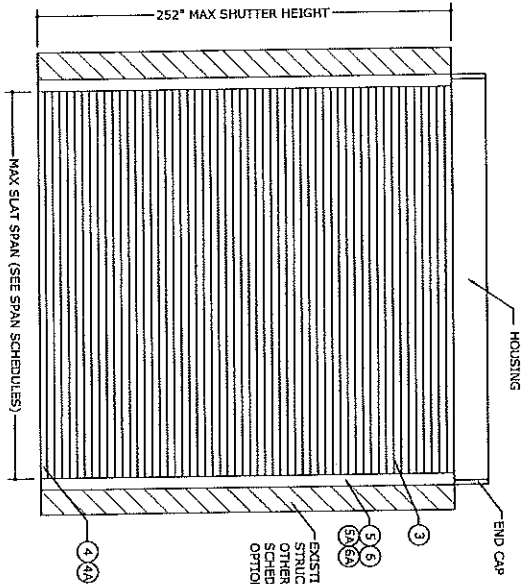
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Credit Card
Safe



SINGLE WALL ROLL-UP HURRICANE SHUTTER



1 TYPICAL ROLL-UP SHUTTER
EXTENSION ELEV
1 N.T.S.
SEE REMAINING SHEETS FOR COMPLETE ELEVATION OPTIONS

FOR ENGINEER CERTIFIED ORIGINALS
& MORE INFORMATION ABOUT THIS DOCUMENT
VISIT ECALC.IO/197536
OR SCAN THE QR CODE TO THE RIGHT
FOR ADDITIONAL PLANS, DETAILS & RESOURCES

GENERAL NOTES

- THE SYSTEM DESCRIBED HEREIN HAS BEEN DESIGNED AND TESTED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE SIXTH EDITION (2017) FOR USE INSIDE AND OUTSIDE OUTSIDE THE HIGH VELOCITY WINDBORNE ZONE PER ASTM SECTION FOR ADDITIONAL AND HAS INFORMATION STANDARDS. SEE PRODUCT APPROVAL EVALUATION FOR ADDITIONAL AND HAS INFORMATION.
- NO 33-1/3% INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF THIS SYSTEM. WIND LOAD DURATION FACTOR SHALL BE APPLIED FOR USE WITH THIS SYSTEM.
- DESIGN PRESSURE REQUIREMENTS AS DETERMINED IN ACCORDANCE WITH THE GOVERNING CODE SHALL BE DETERMINED PER SEPARATE ENGINEERING IN ACCORDANCE WITH THE GOVERNING CODE OF THE FLORIDA BUILDING CODE SIXTH EDITION LISTED HEREIN FOR ANY ASSEMBLY AS SHOWN.
- DESIGN PRESSURES NOTED HEREIN ARE BASED ON MAXIMUM TESTED PRESSURES DIVIDED BY A 1.5 SAFETY FACTOR.

SINGLE WALL SLATS
3

SLAT SPAN	ALLOWABLE DESIGN PRESSURE
78.5"	± 150.0 PSF
80.0"	± 144.1 PSF
83.5"	± 137.0 PSF
87.0"	± 131.7 PSF
90.5"	± 127.0 PSF
94.0"	± 122.7 PSF
97.5"	± 118.8 PSF
101.0"	± 115.3 PSF
104.5"	± 112.3 PSF
108.0"	± 109.4 PSF
111.5"	± 106.8 PSF
115.0"	± 104.3 PSF
118.5"	± 102.1 PSF
121.9"	± 100.0 PSF
124.0"	± 98.4 PSF
126.0"	± 96.9 PSF
128.0"	± 95.4 PSF
130.0"	± 94.0 PSF
132.0"	± 92.4 PSF
134.0"	± 90.8 PSF
136.0"	± 89.3 PSF
138.0"	± 87.8 PSF
140.0"	± 86.3 PSF
142.0"	± 84.8 PSF
144.0"	± 83.3 PSF
146.0"	± 81.8 PSF
148.0"	± 80.3 PSF
150.0"	± 78.8 PSF

SLAT SPAN	INSTALLATIONS 5'30" ABOVE GRADE	INSTALLATIONS 5'30" ABOVE GRADE
78.5"	5.8"	4.8"
80.0"	7.0"	5.0"
83.5"	7.0"	5.2"
87.0"	7.0"	5.3"
90.5"	7.0"	5.5"
94.0"	7.0"	5.7"
97.5"	7.0"	5.9"
101.0"	7.0"	6.0"
104.5"	7.0"	6.1"
108.0"	7.0"	6.3"
111.5"	7.5"	6.5"
115.0"	7.5"	6.8"
118.5"	8.0"	7.1"
121.9"	8.5"	7.4"
124.0"	10.1"	7.5"
126.0"	10.1"	7.6"
128.0"	10.1"	7.7"
130.0"	10.1"	7.8"
132.0"	10.1"	7.9"
134.0"	10.1"	8.0"
136.0"	10.1"	8.1"
138.0"	10.1"	8.2"
140.0"	10.1"	8.3"
142.0"	10.1"	8.3"

SPAN SCHEDULE NOTES:

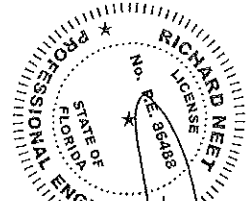
- SLAT SPAN IS DEFINED AS THE DISTANCE BETWEEN RAILS FOR SINGLE SPAN ASSEMBLIES.
- LINEAR INTERPOLATION BETWEEN SHUTTER SPANS IS NOT PERMITTED. FOR SPANS BETWEEN THOSE INDICATED ABOVE, THE DESIGN PRESSURES FOR THE NEXT HIGHER SPAN SHALL BE USED.
- FOR INSTALLATIONS TO WOOD FRAMING HOIST, SEE SPAN CHARTS TO WOOD FRAMING (SHEET 4)

GLASS SEPARATION NOTES:

- SLAT SPAN IS DEFINED AS THE DISTANCE BETWEEN RAILS FOR SINGLE SPAN ASSEMBLIES.
- SEPARATION FROM GLAZING IS REQUIRED ONLY IN ASTM RESENTENTIAL FACILITIES AND WIND ZONE 4.
- LINEAR INTERPOLATION BETWEEN SHUTTER SPANS IS NOT PERMITTED. FOR SPANS BETWEEN THOSE INDICATED ABOVE, THE SEPARATION FROM GLASS FOR THE NEXT HIGHER SPAN SHALL BE USED.

- THE SYSTEM DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC CASE. FOR SIGNED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE IN CONJUNCTION WITH THIS DOCUMENT.
6. HOIST-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 DETAIL OF THE SPECIFIED SYSTEM 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.

- ALL EXTRUSIONS SHALL BE MINIMUM 6063-T6 ALUMINUM ALLOY, UNLESS NOTED OTHERWISE.
- THE BOTTOM OF THE HOOD FACING THE EXTENSION, OR ANYWHERE ELSE ALLOWED PER SECTION 1709.9.3 OF THE FBC 2017 WITH THE FOLLOWING MINIMUM INFORMATION:
MIST PALM BEACH, FL
MISTLE LEVEL, D - ASTM E1886, E1995 & E330 - 1AS 201, 202 & 203
FLORIDA PRODUCT APPROVAL NUMBER COATED STEEL GALVANIZED
11. OR STAINLESS STEEL WITH A MINIMUM TENSILE YIELD STRENGTH OF 60 KSI. ALL ALUMINUM IN CONTACT WITH ALUMINUM SHALL BE PAINTED OR PLATED AS PRESCRIBED IN THE ABOVE-NOTED BUILDING CODE.



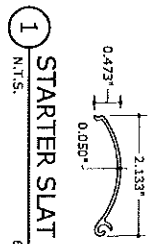
AMERICAN SHUTTER SYSTEMS ASSOCIATION, INC.
4268 West Roads Dr.
West Palm Beach, FL 33407

SINGLE WALL ROLL-UP HURRICANE SHUTTER
PRODUCT APPROVAL #FL31658-1

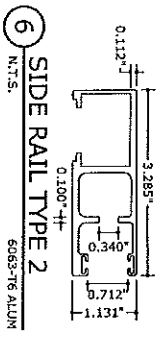
ENGINEERING EXPRESS
CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
9990 354-3566
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

REMARKS	DRWN	CHKD	DATE
SCALE: NTS UNLESS NOTED	GD	RWN	2/4/2020
19-8239			

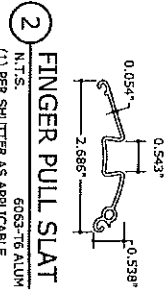
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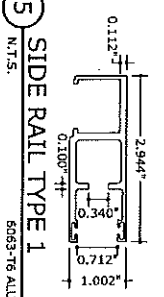
1 STARTER SLAT
N.T.S.
6063-T6 ALUM



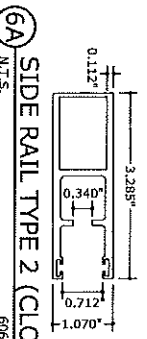
6 SIDE RAIL TYPE 2
N.T.S.
6063-T6 ALUM



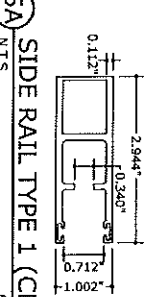
2 FINGER PULL SLAT
N.T.S.
6063-T6 ALUM
(1) PER SHUTTER AS APPLICABLE



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



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

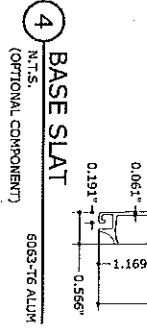
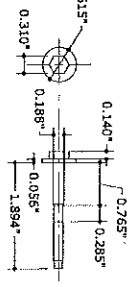


6A SIDE RAIL TYPE 1 (CLOSED)
N.T.S.
6063-T6 ALUM

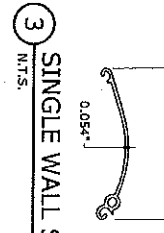


8 END CAP W/ MONOLITHIC SCREW SLEEVE
N.T.S.
(LEFT SHOWN, RIGHT IS MIRROR)
RIGID NYLON, 76-78 TYPE 'O' SHORE HARDNESS

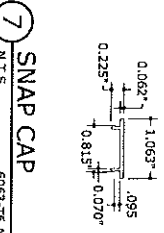
11 #8-32 410 S.S. SCREW
#8-32 X 1.894" A316 410 S.S. SCREW W/ 0.31" DIAM HV MARKED HEAD & T=0.064" X 0.620" DIAM MONOLITHIC WASHER W/ BERTHA H.V. DIAGONSHIELD COATING SYSTEM AS MANUFACTURED BY APPROVED COATING APPLICATIONS REGISTERED WITH AMERICAN SHUTTER SYSTEM ASSOCIATION, SCREW AT EVERY SLAT, INCLUDING BASE SLAT FOR POURED CONCRETE, GROUTED BLOCK & WOOD INSTALLATIONS



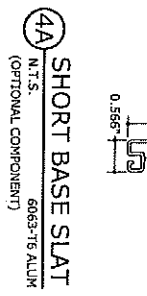
4 BASE SLAT
N.T.S. (OPTIONAL COMPONENT)
6063-T6 ALUM



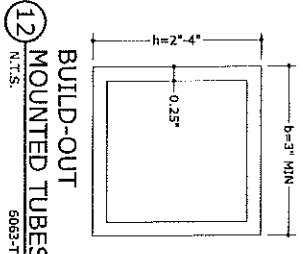
3 SINGLE WALL SLAT
N.T.S.
6063-T6 ALUM



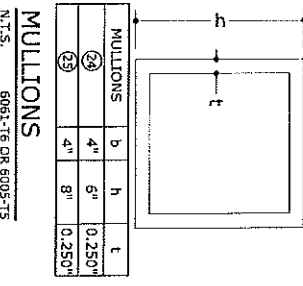
7 SNAP CAP
N.T.S.
6063-T6 ALUM



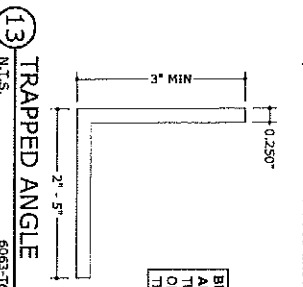
4A SHORT BASE SLAT
N.T.S. (OPTIONAL COMPONENT)
6063-T6 ALUM



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

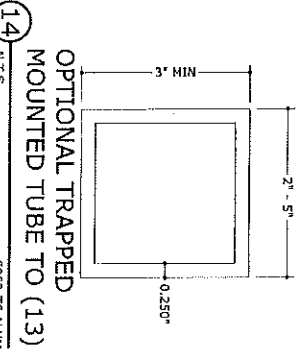


11 MULLIONS
N.T.S.
6063-T6 OR 6005-T5



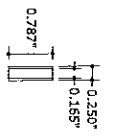
13 TRAPPED ANGLE
N.T.S.
6063-T6 ALUM

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 WALL.



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

9 EXTENDED SCREW SLEEVE W/O END CAP
N.T.S.
RIGID NYLON, 76-78 TYPE 'O' SHORE HARDNESS



REMARKS	DATE	CHKD	DRWN
19-8239	2/4/2020	GD	GD

SCALE: AS SHOWN UNLESS NOTED

AMERICAN SHUTTER SYSTEMS ASSOCIATION, INC.
4268 West Roads Dr.
West Palm Beach, FL 33407

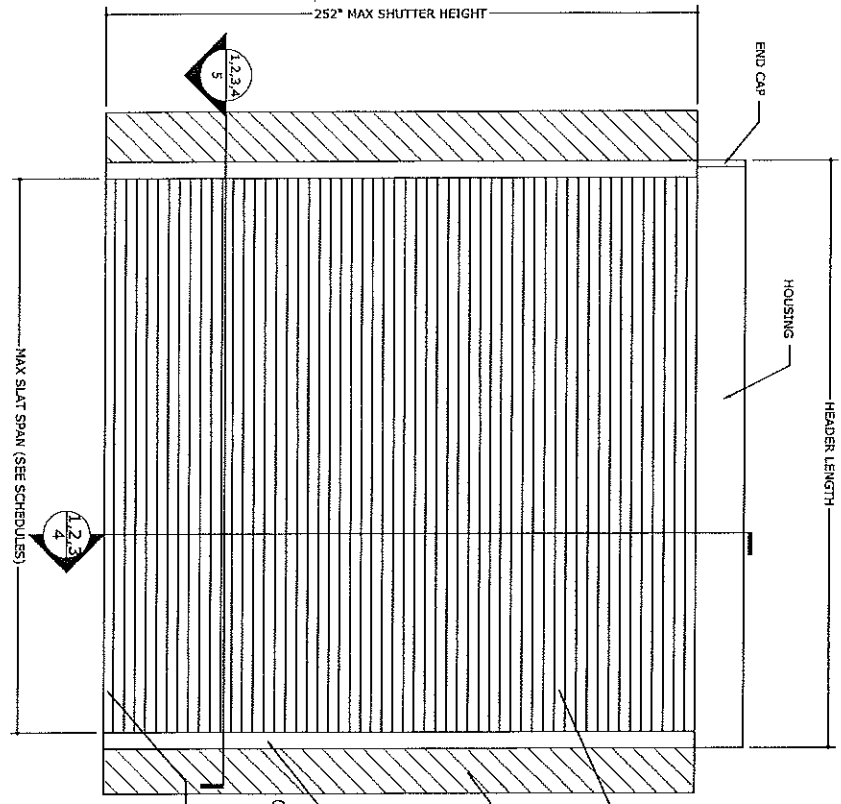
SINGLE WALL ROLL-UP HURRICANE SHUTTER

PRODUCT APPROVAL #FL31658.1

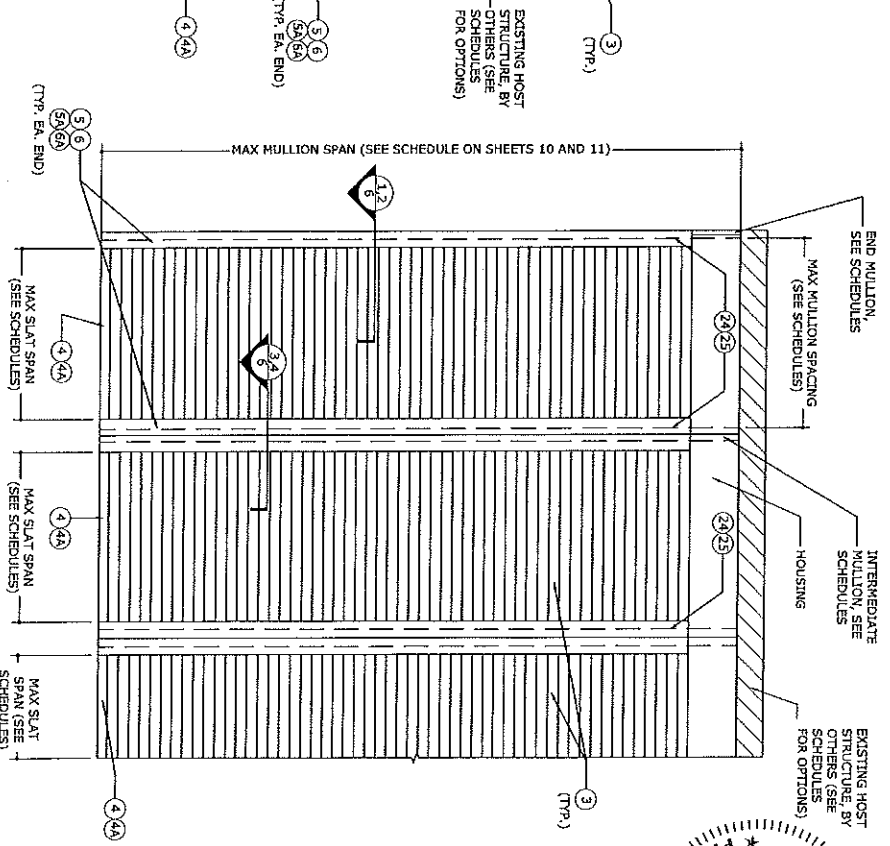
ENGINEERING EXPRESS
CORPORATE OFFICE
160 SW 12th Ave, Suite 306
Deerfield Beach, FL 33442
P: (561) 354-0669
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

REGISTERED PROFESSIONAL ENGINEER
No. 12442
FLORIDA
RICHARD L. KENNEDY, P.E.
1000 N. W. 10th St., Suite 1000
Fort Lauderdale, FL 33304

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



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



REVISION	DATE	BY	CHKD	APP	DESCRIPTION
1	02/14/2020	plogan			INITIAL ISSUE

19-8239
SCALE: NTS UNLESS NOTED
3

AMERICAN SHUTTER SYSTEMS ASSOCIATION, INC.
4268 West Roads Dr.
West Palm Beach, FL 33407

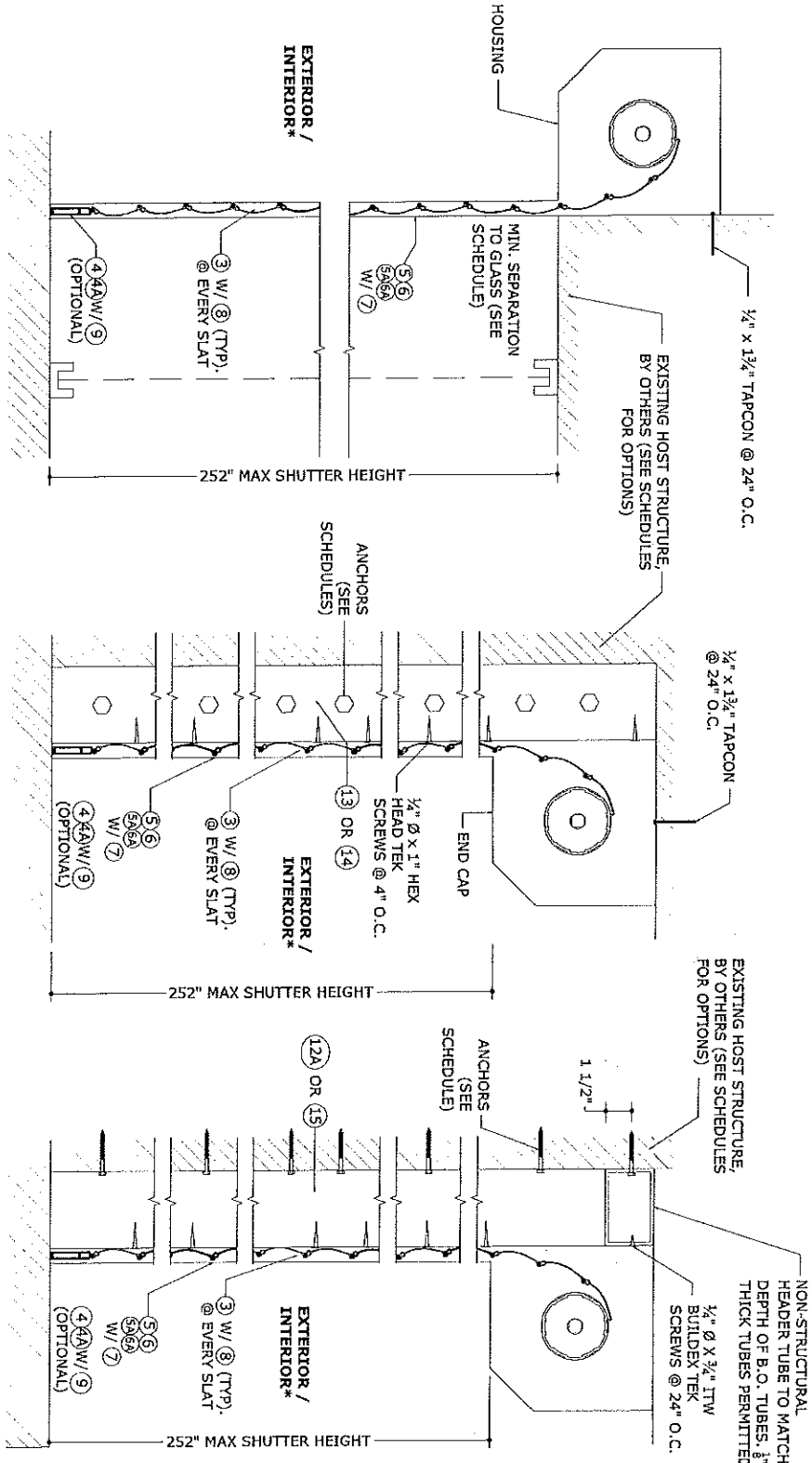
SINGLE WALL ROLL-UP HURRICANE SHUTTER

PRODUCT APPROVAL #FL31658.1

ENGINEERING EXPRESS
CORPORATE OFFICE
160 SW 42nd Ave, Suite 106
Deerfield Beach, FL 33442
P: (954) 354-6200
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

REGISTERED PROFESSIONAL ENGINEER
FLORIDA
RICHARD NEELY, P.E.
No. 19858
Exp. 12/31/2021

SHUTTER ATTACHMENT TO HOST



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

1 **WALL MOUNT**
SECTION VIEW
4 N.T.S.

2 **INSIDE/TRAPPED MOUNT**
SECTION VIEW
4 N.T.S.

3 **BUILD-OUT MOUNT**
SECTION VIEW
4 N.T.S.

- 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. 3/4" ALUM POP RIVETS, 6 TOTAL PER SLAT AND 2 AT TO, 2 AT REAR, 2 AT BOTTOM
 4. HOOD HAS BEEN TESTED FOR IMPACT / CYCLING AND MAY BE INSTALLED WITHIN OPENING

REV	DATE	BY	CHKD	APP	DESCRIPTION
1	2/4/2020	EB	RW		ISSUE FOR CONSTRUCTION

SCALE: NOTED UNLESS NOTED
19-8239

AMERICAN SHUTTER SYSTEMS ASSOCIATION, INC.
4268 West Roads Dr.
West Palm Beach, FL 33407

SINGLE WALL ROLL-UP HURRICANE SHUTTER

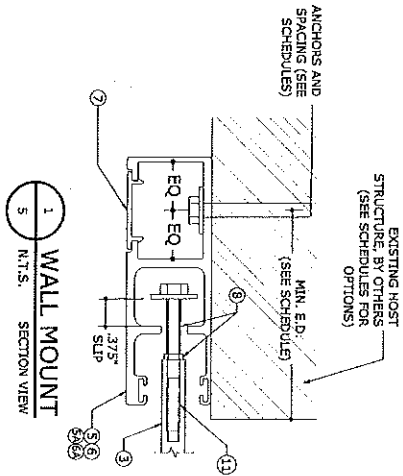
PRODUCT APPROVAL #FL31658.1

REGISTERED PROFESSIONAL ENGINEER

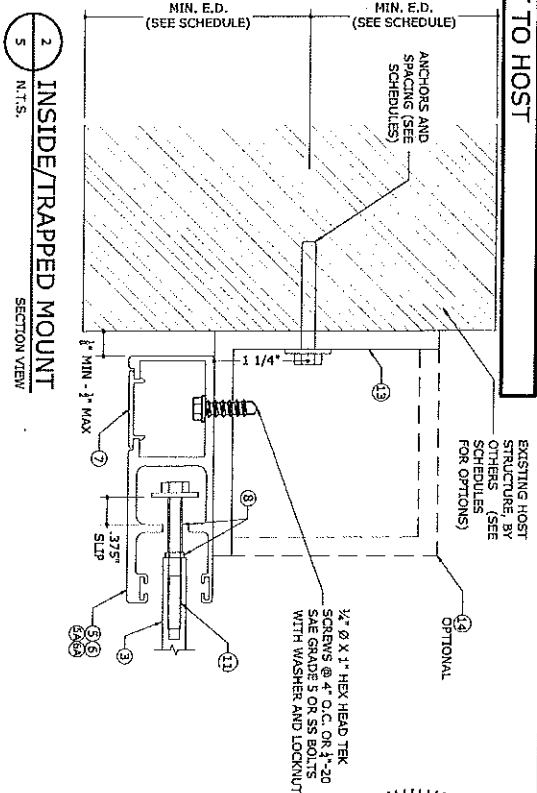
RICHARD NEFF, P.E.
No. 12676
Exp. 08/31/2025

ENGINEERING EXPRESS, INC.
CORPORATE OFFICE: 106 DEERFIELD BEACH, FL 33442
P. (561) 354-0600
TEAM ENGINEERING EXPERTS
ENGINEERING EXPRESS

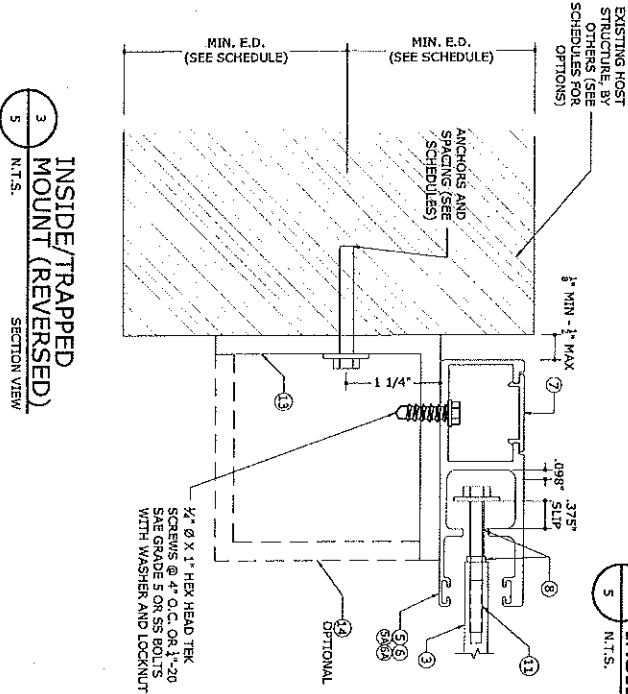
SHUTTER ATTACHMENT TO HOST



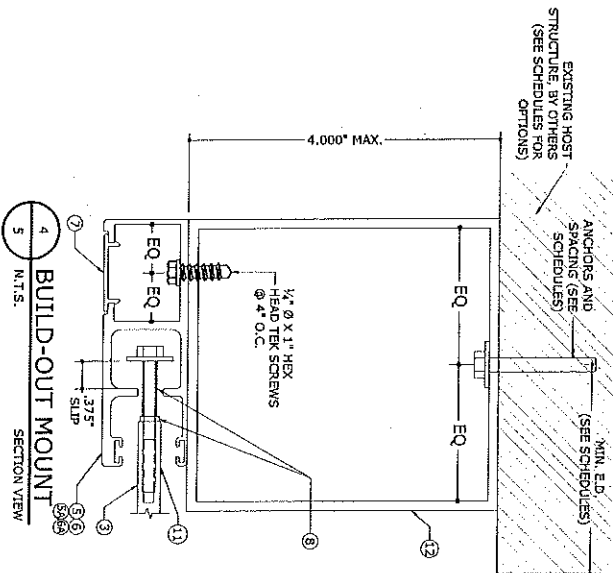
1 WALL MOUNT SECTION VIEW N.T.S.



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



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



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

REMARKS	DRWN	CHRD	DATE
REV ISSUE	GD	RVN	2/4/2020

19-8239
SCALE: AS SHOWN UNLESS NOTED
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AMERICAN SHUTTER SYSTEMS ASSOCIATION, INC.
4268 West Roads Dr,
West Palm Beach, FL 33407

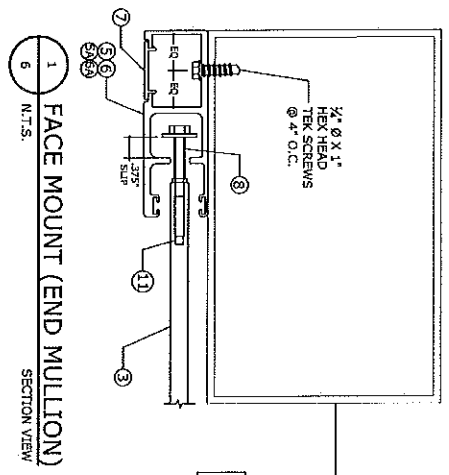
SINGLE WALL ROLL-UP HURRICANE SHUTTER

PRODUCT APPROVAL #FL31658.1

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160 SW 12th Ave, Suite 106
DEERFIELD BEACH, FL 33442
P: (561) 314-6869
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

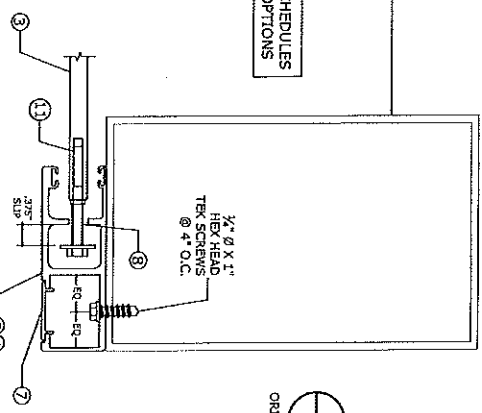
PROFESSIONAL ENGINEER
STATE OF FLORIDA
NO. 12345
EXPIRES 12/31/2020

SHUTTER ATTACHMENT OPTION TO ALUMINUM MULLIONS

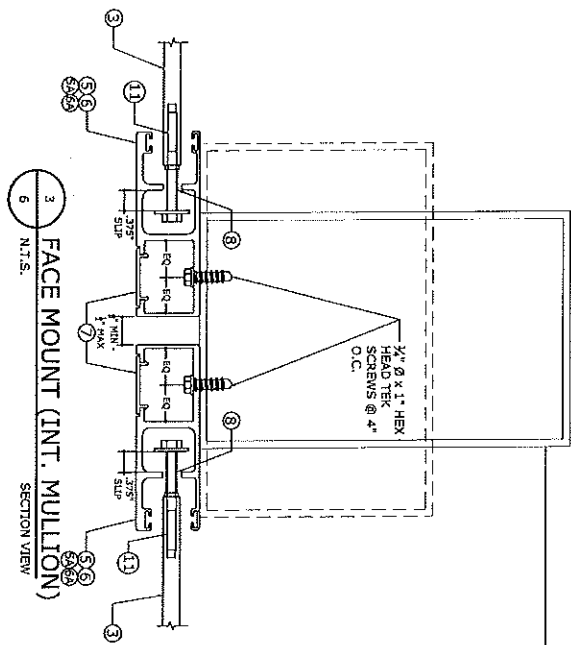


1 FACE MOUNT (END MULLION)
6 N.T.S.
SECTION VIEW

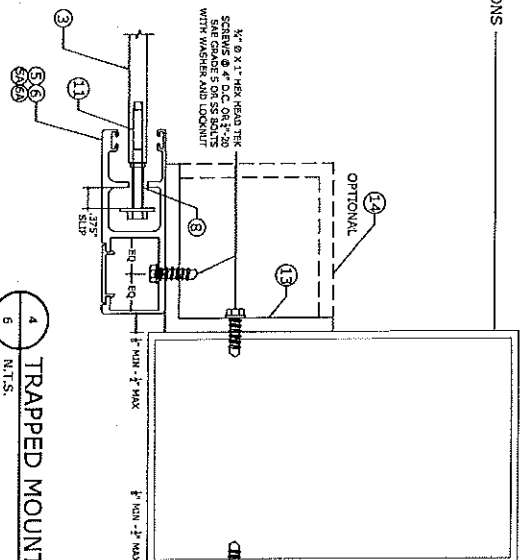
SEE MULLION SCHEDULES FOR MULLION OPTIONS



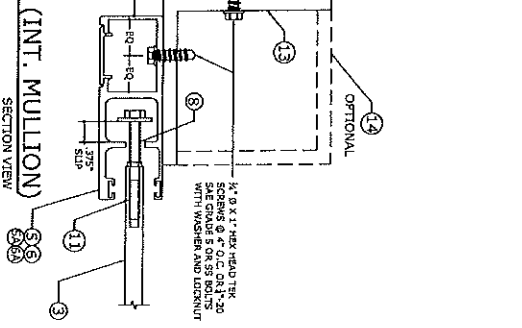
2 FACE MOUNT (END MULLION)
6 N.T.S.
ORIENTATION #2 FACE MOUNT END MULLION
SECTION VIEW



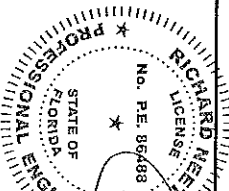
3 FACE MOUNT (INT. MULLION)
6 N.T.S.
SECTION VIEW



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



5 TRAPPED MOUNT (INT. MULLION)
6 N.T.S.
ORIENTATION #2 TRAPPED MOUNT INT. MULLION
SECTION VIEW



REMARKS	DRWN	CHKD	DATE
SET ISSUE	GD	RWN	2/2/2020

19-8229
SCALE: N.T.S. UNLESS NOTED

AMERICAN SHUTTER SYSTEMS ASSOCIATION, INC.
4268 West Roads Dr.
West Palm Beach, FL 33407

SINGLE WALL ROLL-UP HURRICANE SHUTTER

PRODUCT APPROVAL #FL31658.1

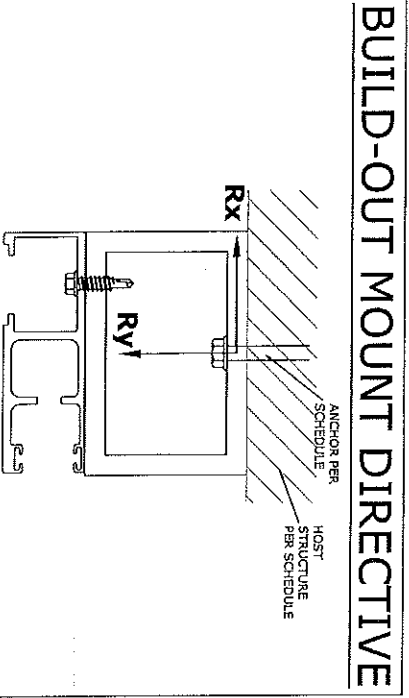
ENGINEERING EXPRESS
CORPORATE OFFICE:
160 SW 12TH AVE, SUITE 106
DEERFIELD BEACH, FL 33442
P (561) 354-0866
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM



ANCHOR SCHEDULE: BUILD-OUT MOUNT

WALL THICKNESS	WIND PRESSURE	SCHEDULE	TO 2700 PSI	TO 3192 PSI	TO 3500 PSI	5/16" F1913A-304		TO 3000 PSI	TO 3000 PSI	TO 3000 PSI	TO 3000 PSI	TO 3000 PSI	TO 3000 PSI	TO 3000 PSI
						CONCRETE EMBEDMENT	EDGE DISTANCE							
4" RC	4.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	5.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	6.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	7.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	8.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	9.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	10.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	11.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	12.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	13.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	14.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	15.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	16.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	17.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	18.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	19.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	20.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	21.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	22.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	23.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	24.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	25.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	26.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	27.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	28.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	29.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	30.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	31.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	32.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	33.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	34.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"
4" RC	35.0	AS	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"

ANCHOR NOTES: SEE SHEET 7 FOR ANCHOR NOTES.



AMERICAN SHUTTER SYSTEMS ASSOCIATION, INC.
 4268 West Roads Dr.
 West Palm Beach, FL 33407

SINGLE WALL ROLL-UP HURRICANE SHUTTER

PRODUCT APPROVAL #FL31658.1

REMARKS
 DATE
 19-8239
 2/4/2020

SCALE: THIS UNLESS NOTED 1/8"

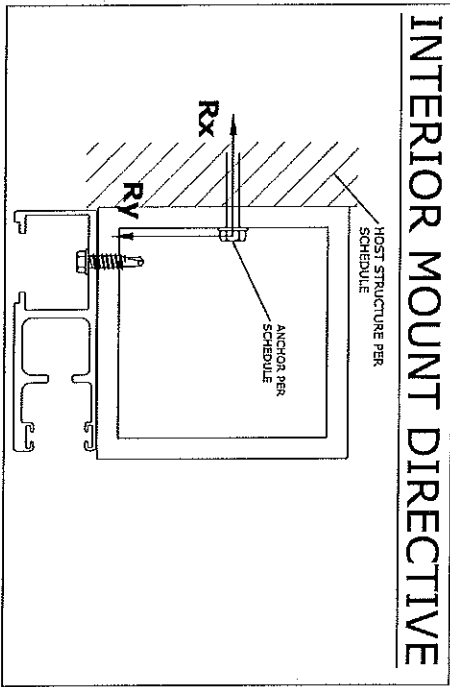
ENGINEERING EXPRESS, INC. REGISTERED PROFESSIONAL ENGINEER
 160 SW 12th Street Suite 100
 DEERFIELD BEACH, FL 33442
 TEL: 561-861-8618
 FAX: 561-861-8619
 TEAM@ENGINEERINGEXPRESS.COM
 ENGINEERINGEXPRESS.COM

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 ENGINEERING DEPARTMENT

ANCHOR SCHEDULE: INTERIOR MOUNT

SIZING		ANCHOR		1/4" DEWALT TO 2700 PSI MIN. CONCRETE EMBEDMENT: 2.5" MIN. EDGE DISTANCE		1/4" SSI TO 3425 PSI MIN. CONCRETE EMBEDMENT: 2.5" MIN. EDGE DISTANCE		5/8" DEWALT TO 5000 PSI MIN. CONCRETE EMBEDMENT: 3.125" MIN. EDGE DISTANCE		616" (3/4" R/C) CONCRETE TO 5000 PSI MIN. EMBEDMENT: 4" MIN. EDGE DISTANCE		1/4" DEWALT TO 5000 PSI CONCRETE EMBEDMENT: 2.5" MIN. EDGE DISTANCE		1/4" ALL-PURPS SOLID-SET TO 5000 PSI MIN. CONCRETE EMBEDMENT: 3" MIN. EDGE DISTANCE		1/4" LAG SCREW TO 6-0/8-1/2 MIN. WOOD: 1.5" MIN. EMBEDMENT: 0.75" MIN. EDGE DISTANCE		5/16" LAG SCREW TO 6-0/8-1/2 MIN. WOOD: 1.5" MIN. EMBEDMENT: 0.75" MIN. EDGE DISTANCE		#14 WOOD SCREW TO 6-0/8-1/2 MIN. WOOD: 1.5" MIN. EMBEDMENT: 0.75" MIN. EDGE DISTANCE		#14 410 SS SAGE W/PULL THROUGH PENETRATION 0.625" MIN. ALUM. EMBEDMENT: 0.5" MIN. EDGE DISTANCE		5/16" 410 SS SAGE W/PULL THROUGH PENETRATION 0.625" MIN. ALUM. EMBEDMENT: 0.5" MIN. EDGE DISTANCE		3/8" DEWALT TO 2000 PSI CONCRETE EMBEDMENT: 3.5" MIN. EDGE DISTANCE		3/8" ELOCORRUM CONCRETE TO 2819 PSI MIN. CONCRETE EMBEDMENT: 3.5" MIN. EDGE DISTANCE		TO 4510 PSI MIN. CONCRETE EMBEDMENT: 3.5" MIN. EDGE DISTANCE	
PSI	ANCHOR	Rx	Ry	MIN.	MIN.	MIN.	MIN.	MIN.	MIN.	MIN.	MIN.	MIN.	MIN.	MIN.	MIN.	MIN.	MIN.	MIN.	MIN.	MIN.	MIN.	MIN.	MIN.	MIN.	MIN.	MIN.	MIN.	MIN.			
100*	1/4" DEWALT TO 2700 PSI MIN. CONCRETE EMBEDMENT: 2.5" MIN. EDGE DISTANCE	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"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	
7.5*	1/4" DEWALT TO 2700 PSI MIN. CONCRETE EMBEDMENT: 2.5" MIN. EDGE DISTANCE	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"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	
14*	1/4" DEWALT TO 2700 PSI MIN. CONCRETE EMBEDMENT: 2.5" MIN. EDGE DISTANCE	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"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	
17*	1/4" DEWALT TO 2700 PSI MIN. CONCRETE EMBEDMENT: 2.5" MIN. EDGE DISTANCE	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"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"
20*	1/4" DEWALT TO 2700 PSI MIN. CONCRETE EMBEDMENT: 2.5" MIN. EDGE DISTANCE	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"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"
24.5*	1/4" DEWALT TO 2700 PSI MIN. CONCRETE EMBEDMENT: 2.5" MIN. EDGE DISTANCE	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"	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 7 FOR ANCHOR NOTES.



INTERIOR MOUNT DIRECTIVE

<p>AMERICAN SHUTTER SYSTEMS ASSOCIATION, INC.</p> <p>4268 West Roads Dr. West Palm Beach, FL 33407</p> <p>SINGLE WALL ROLL-UP HURRICANE SHUTTER</p> <p>PRODUCT APPROVAL #FL31658.1</p>			<p>160 SW 12th Ave Suite #101 Deerfield Beach, FL 33442 Tel: (561) 957-9770 Team@EngExpress.com EngExpress.com</p>	<p>19-8239 198</p>	<p>APPROVED FOR CONSTRUCTION</p> <p>198</p>
<p>REMARKS</p> <p>DATE</p>	<p>DRWN</p> <p>CHKD</p> <p>DATE</p>	<p>DATE</p> <p>SCALE: THIS SHEET UNLESS NOTED</p>			

INTERMEDIATE MULLION SCHEDULES

SLAT SPAN	DESIGN PRESSURE	4'x8'-0" 25' ALUM TUBE		6'x8'-0" 25' ALUM TUBE		7'x8'-0" 25' ALUM TUBE		8'x8'-0" 25' ALUM TUBE	
		MAX MULLION LENGTH	END REACTION R	MAX MULLION LENGTH	END REACTION R	MAX MULLION LENGTH	END REACTION R	MAX MULLION LENGTH	END REACTION R
7'	+/-40 PSF	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB
	+/-40 PSF	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB
	+/-40 PSF	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB
	+/-40 PSF	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB
10'	+/-40 PSF	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB
	+/-40 PSF	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB
	+/-40 PSF	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB
	+/-40 PSF	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB
14'	+/-40 PSF	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB
	+/-40 PSF	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB
	+/-40 PSF	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB
	+/-40 PSF	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB
24'	+/-40 PSF	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB
	+/-40 PSF	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB
	+/-40 PSF	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB
	+/-40 PSF	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 LB	144.0	2530.0 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 2/3.
3. "END MULLIONS" ARE AS DEFINED IN ELEVATION 2/3.
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 ON ADJACENT SIDES OF MULLION.
8. 4"x4" 0.25" ALUMINUM MULLIONS MAY BE USED UNDER SITE SPECIFIC CONDITIONS WHEN REGISTERED PROFESSIONAL ENGINEER IN FLORIDA.

RICHARD NEELY, P.E.
 LICENSE NO. PE-86488
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER
 EXPIRES 12/31/2020

AMERICAN SHUTTER SYSTEMS ASSOCIATION, INC.
 4268 West Roads Dr.
 West Palm Beach, FL 33407
 SINGLE WALL ROLL-UP HURRICANE SHUTTER
 PRODUCT APPROVAL #FL31658.1

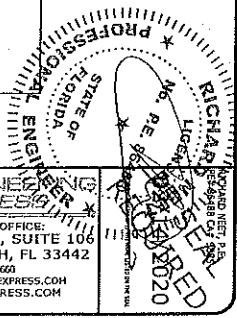
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REMARKS	DRWN/CHRD	DATE	
EXT ISSUE	OD / RVAL	2/4/2020	
SCALE: INCHES UNLESS NOTED 19-8239 10			

END MILLION SCHEDULES

MILLION SCHEDULE END MILLIONS	4'-6" x 26' ALUM TUBE				6'-3" x 20.5" ALUM TUBE				7'-9" x 20.25" ALUM TUBE				8'-3" x 20.25" ALUM TUBE			
	DESIGN PRESSURE	MAX MILLION LENGTH	END REACTION Rv	END REACTION Rn	DESIGN PRESSURE	MAX MILLION LENGTH	END REACTION Rv	END REACTION Rn	DESIGN PRESSURE	MAX MILLION LENGTH	END REACTION Rv	END REACTION Rn	DESIGN PRESSURE	MAX MILLION LENGTH	END REACTION Rv	END REACTION Rn
7"	+/-40 PSF	144.0"	3292.0 LB	1097.0 LB	+/-40 PSF	144.0"	1532.0 LB	1833.0 LB	+/-40 PSF	144.0"	1592.5 LB	1833.0 LB	+/-40 PSF	144.0"	1592.5 LB	1833.0 LB
	+/-38 PSF	157.7"	3292.0 LB	1203.0 LB		157.7"	1532.0 LB	1833.0 LB		157.7"	1592.5 LB	1833.0 LB		157.7"	1592.5 LB	1833.0 LB
	+/-32 PSF	187.8"	4027.0 LB	1328.0 LB		187.8"	1532.0 LB	1833.0 LB		187.8"	1592.5 LB	1833.0 LB		187.8"	1592.5 LB	1833.0 LB
	+/-30 PSF	201.6"	4027.0 LB	1434.0 LB		201.6"	1532.0 LB	1833.0 LB		201.6"	1592.5 LB	1833.0 LB		201.6"	1592.5 LB	1833.0 LB
	+/-28 PSF	215.4"	4027.0 LB	1540.0 LB		215.4"	1532.0 LB	1833.0 LB		215.4"	1592.5 LB	1833.0 LB		215.4"	1592.5 LB	1833.0 LB
	+/-26 PSF	229.2"	4027.0 LB	1646.0 LB		229.2"	1532.0 LB	1833.0 LB		229.2"	1592.5 LB	1833.0 LB		229.2"	1592.5 LB	1833.0 LB
	+/-24 PSF	243.0"	4027.0 LB	1752.0 LB		243.0"	1532.0 LB	1833.0 LB		243.0"	1592.5 LB	1833.0 LB		243.0"	1592.5 LB	1833.0 LB
	+/-22 PSF	256.8"	4027.0 LB	1858.0 LB		256.8"	1532.0 LB	1833.0 LB		256.8"	1592.5 LB	1833.0 LB		256.8"	1592.5 LB	1833.0 LB
	+/-20 PSF	270.6"	4027.0 LB	1964.0 LB		270.6"	1532.0 LB	1833.0 LB		270.6"	1592.5 LB	1833.0 LB		270.6"	1592.5 LB	1833.0 LB
	+/-18 PSF	284.4"	4027.0 LB	2070.0 LB		284.4"	1532.0 LB	1833.0 LB		284.4"	1592.5 LB	1833.0 LB		284.4"	1592.5 LB	1833.0 LB
	+/-16 PSF	298.2"	4027.0 LB	2176.0 LB		298.2"	1532.0 LB	1833.0 LB		298.2"	1592.5 LB	1833.0 LB		298.2"	1592.5 LB	1833.0 LB
	+/-14 PSF	312.0"	4027.0 LB	2282.0 LB		312.0"	1532.0 LB	1833.0 LB		312.0"	1592.5 LB	1833.0 LB		312.0"	1592.5 LB	1833.0 LB
	+/-12 PSF	325.8"	4027.0 LB	2388.0 LB		325.8"	1532.0 LB	1833.0 LB		325.8"	1592.5 LB	1833.0 LB		325.8"	1592.5 LB	1833.0 LB
	+/-10 PSF	339.6"	4027.0 LB	2494.0 LB		339.6"	1532.0 LB	1833.0 LB		339.6"	1592.5 LB	1833.0 LB		339.6"	1592.5 LB	1833.0 LB
	+/-8 PSF	353.4"	4027.0 LB	2600.0 LB		353.4"	1532.0 LB	1833.0 LB		353.4"	1592.5 LB	1833.0 LB		353.4"	1592.5 LB	1833.0 LB
	+/-6 PSF	367.2"	4027.0 LB	2706.0 LB		367.2"	1532.0 LB	1833.0 LB		367.2"	1592.5 LB	1833.0 LB		367.2"	1592.5 LB	1833.0 LB
	+/-4 PSF	381.0"	4027.0 LB	2812.0 LB		381.0"	1532.0 LB	1833.0 LB		381.0"	1592.5 LB	1833.0 LB		381.0"	1592.5 LB	1833.0 LB
	+/-2 PSF	394.8"	4027.0 LB	2918.0 LB		394.8"	1532.0 LB	1833.0 LB		394.8"	1592.5 LB	1833.0 LB		394.8"	1592.5 LB	1833.0 LB

MILLION SCHEDULE NOTES:
SEE SHEET 10 FOR MILLION SCHEDULE NOTES.



AMERICAN SHUTTER SYSTEMS ASSOCIATION, INC.
4268 West Roads Dr.
West Palm Beach, FL 33407

19-8239

SCALE: NTS UNLESS NOTED

DATE: 2/4/2020

DRWN: []
CHKD: []
DATE: []

REMARKS: []

19-8239

SCALE: NTS UNLESS NOTED

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SINGLE WALL ROLL-UP HURRICANE SHUTTER

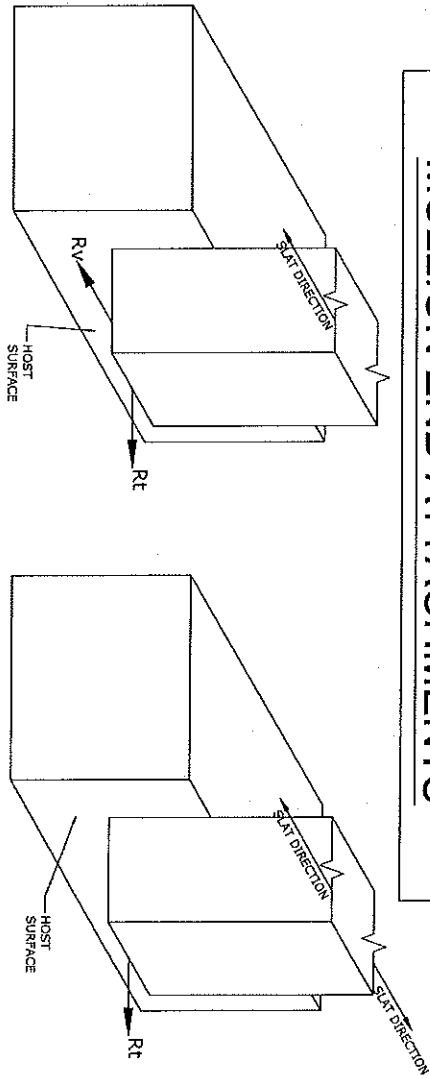
PRODUCT APPROVAL #FL31655.1

FORMED NEXT TO THIS SEAL

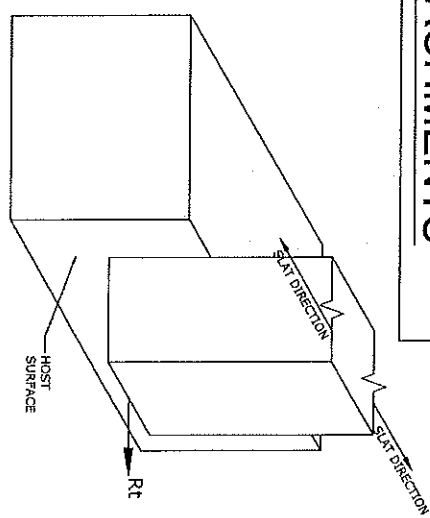
NOT VALID FOR ANY OTHER PROJECT

EXPIRES 02/20

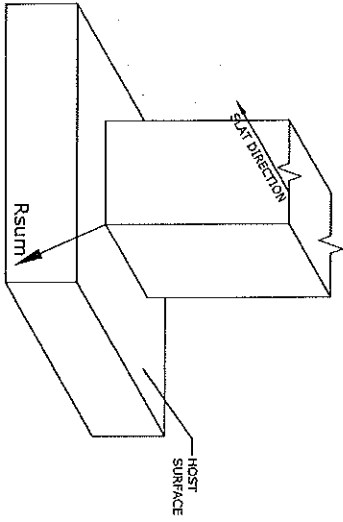
MULLION END ATTACHMENTS



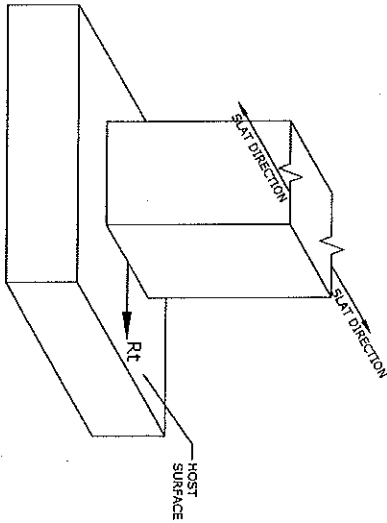
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12
END MULLION "FACE"
MOUNT "DIAGRAM
ISOMETRIC
N.T.S.



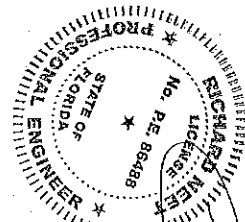
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INTERIOR MULLION "FACE"
MOUNT "DIAGRAM
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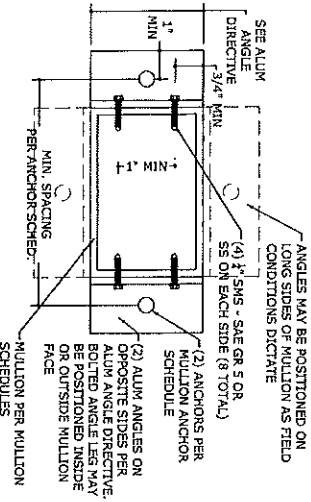
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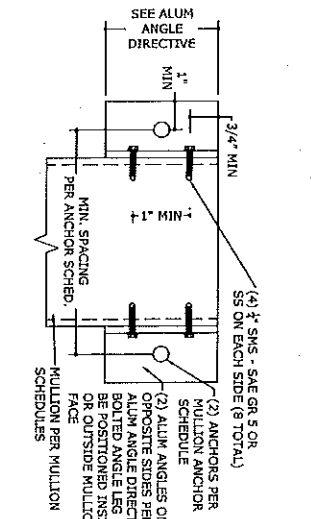
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INTERIOR MULLION
"TRAPPED MOUNT" "DIAGRAM
ISOMETRIC
N.T.S.



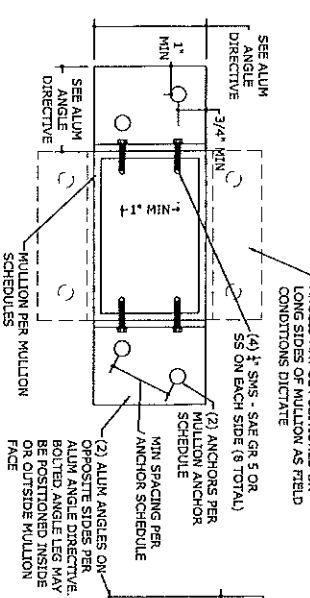
<p>19-8239</p> <p>SCALE: 1/8" = 1'-0"</p> <p>12</p>	<p>REMARKS</p> <p>DATE</p> <p>2/4/2020</p>	<p>AMERICAN SHUTTER SYSTEMS ASSOCIATION, INC.</p> <p>4268 West Roads Dr.</p> <p>West Palm Beach, FL 33407</p>	<p>ENGINEERING EXPRESS</p> <p>CORPORATE OFFICE:</p> <p>160 SW 12th AVE, SUITE 106</p> <p>DEERFIELD BEACH, FL 33442</p> <p>P: (561) 354-0669</p> <p>TEAM@ENGINEERINGEXPRESS.COM</p> <p>ENGINEERINGEXPRESS.COM</p>
	<p>CONTRACT: ENGINEERING EXPRESS</p> <p>19-8239</p> <p>SCALE: 1/8" = 1'-0"</p>	<p>SINGLE WALL ROLL-UP HURRICANE SHUTTER</p> <p>PRODUCT APPROVAL: #FL31658.1</p>	<p>RICHARD NERI, P.E.</p> <p>No. P.E. 86488</p> <p>License No. 19820</p> <p>DEERFIELD BEACH, FL</p>



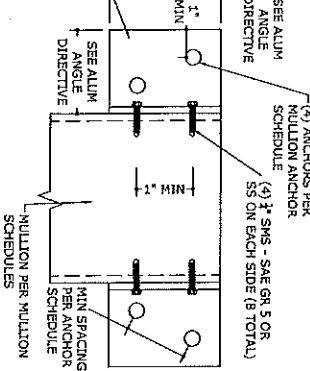
1A TRAPPED MOUNT OPTION 1
13 N.T.S.



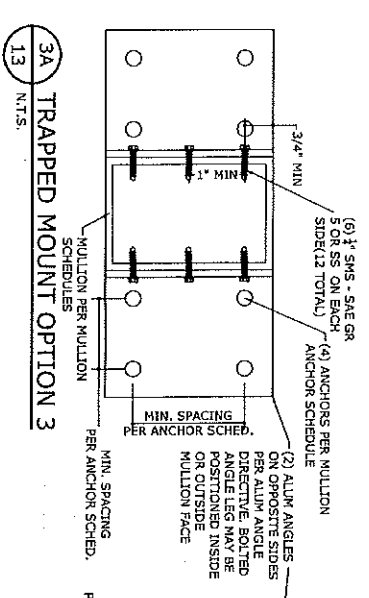
1B FACE MOUNT OPTION 1
13 N.T.S.



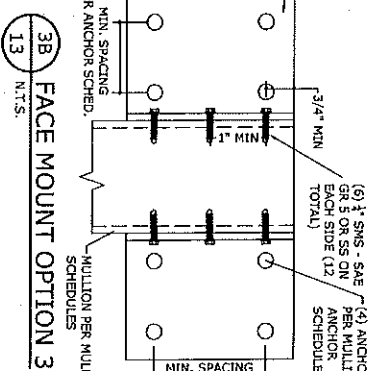
2A TRAPPED MOUNT OPTION 2
13 N.T.S.



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



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

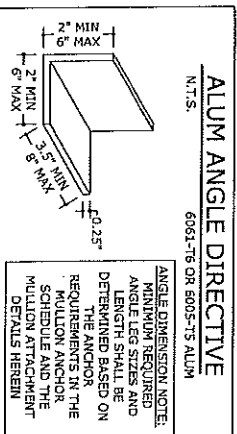


3B FACE MOUNT OPTION 3
13 N.T.S.

MULLION ANCHOR SCHEDULE

ANCHOR TYPE	MINIMUM SPACING	MINIMUM EDGE DISTANCE	CONNECTION DETAIL	CONNECTION CAPACITY
1/2\"/>	6"	4.5"	1A/13, 1B/13	Tensile 8990 LB Vgrp 2249 LB Temp 6442 LB
1/2\"/>	4.0"	4.5"	2A/13, 2B/13	Tensile 6442 LB Vgrp 4109 LB Temp 6299 LB
3/8\"/>	4.0"	4.5"	3A/13, 3B/13	Tensile 8213 LB Vgrp 4213 LB Temp 1951 LB
3/8\"/>	6.0"	2.5"	1A/13, 1B/13	Tensile 1107 LB Vgrp 1007 LB Temp 3801 LB
3/8\"/>	3.0"	2.5"	2A/13, 2B/13	Tensile 1700 LB Vgrp 1522 LB Temp 3399 LB
3/8\"/>	3.0"	2.5"	3A/13, 3B/13	Tensile 4324 LB Vgrp 3924 LB Temp 1310 LB
3/8\"/>	6.0"	4.5"	1A/13, 1B/13	Tensile 1133 LB Vgrp 1033 LB Temp 3006 LB
3/8\"/>	3.0"	4.5"	2A/13, 2B/13	Tensile 2467 LB Vgrp 2121 LB Temp 7812 LB
3/8\"/>	3.0"	4.5"	3A/13, 3B/13	Tensile 4324 LB Vgrp 3924 LB Temp 1310 LB
5/8\"/>	2.0"	1.25"	1A/13, 1B/13	Tensile 327 LB Vgrp 267 LB Temp 824 LB
5/8\"/>	2.0"	1.25"	2A/13, 2B/13	Tensile 390 LB Vgrp 327 LB Temp 989 LB
5/8\"/>	5.0"	3.125"	1A/13, 1B/13	Tensile 3170 LB Vgrp 2701 LB Temp 1820 LB
5/8\"/>	3.75"	3.125"	2A/13, 2B/13	Tensile 3801 LB Vgrp 3260 LB Temp 1950 LB
5/8\"/>	3.75"	3.125"	3A/13, 3B/13	Tensile 5501 LB Vgrp 4801 LB Temp 2801 LB
5/8\"/>	5.0"	2.5"	1A/13, 1B/13	Tensile 1501 LB Vgrp 1301 LB Temp 4601 LB
5/8\"/>	5.0"	2.5"	2A/13, 2B/13	Tensile 1801 LB Vgrp 1601 LB Temp 5201 LB
5/8\"/>	5.0"	2.5"	3A/13, 3B/13	Tensile 3201 LB Vgrp 2801 LB Temp 9300 LB

- MULLION ANCHOR SCHEDULE NOTES:**
1. ALL CONDITIONS WITH END MULLIONS, "TEMP" VALUES IN MULLION SCHEDULE SHALL NOT EXCEED MAXIMUM VALUES NOTED IN THIS SCHEDULE.
 2. FOR FACE MOUNT CONDITIONS WITH END MULLIONS, RY/TEMP + 48" TEMP SHALL BE LESS THAN OR EQUAL TO 1.0, WHERE RY AND RY ARE PER MULLION SCHEDULES, AND TEMP AND VGR/ ARE PER THIS SCHEDULE.
 3. FOR TRAPPED MOUNT CONDITIONS WITH INTERMEDIATE MULLIONS, "RY" VALUES IN MULLION SCHEDULES SHALL NOT EXCEED TEMP VALUES NOTED IN THIS SCHEDULE.
 4. FOR TRAPPED MOUNT CONDITIONS WITH INTERMEDIATE MULLIONS, "R/TEMP" VALUES IN MULLION SCHEDULES SHALL NOT EXCEED TEMP VALUES NOTED IN THIS SCHEDULE.
 5. ANCHORS SHALL PENETRATE THROUGH FACES SHELL INTO GROUTED CELL.
 6. ALTERNATE ANCHORS AND OR END CONNECTION CONFIGURATIONS MAY BE DESIGNATED/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 LEU OF 1/2" SMS PER SIDE IN THE FOLLOWING DIRECTIVE:
 - 7.1. (1) SMS PER SIDE = (2) 1/2" UNC THRU BOLTS / (6) SMS PER SIDE = (3) 1/2" UNC THRU BOLTS



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REMARKS: 19-8239 SCALE: N.T.S. (UNLESS NOTED)

13

PRODUCT APPROVAL #FL31658.1