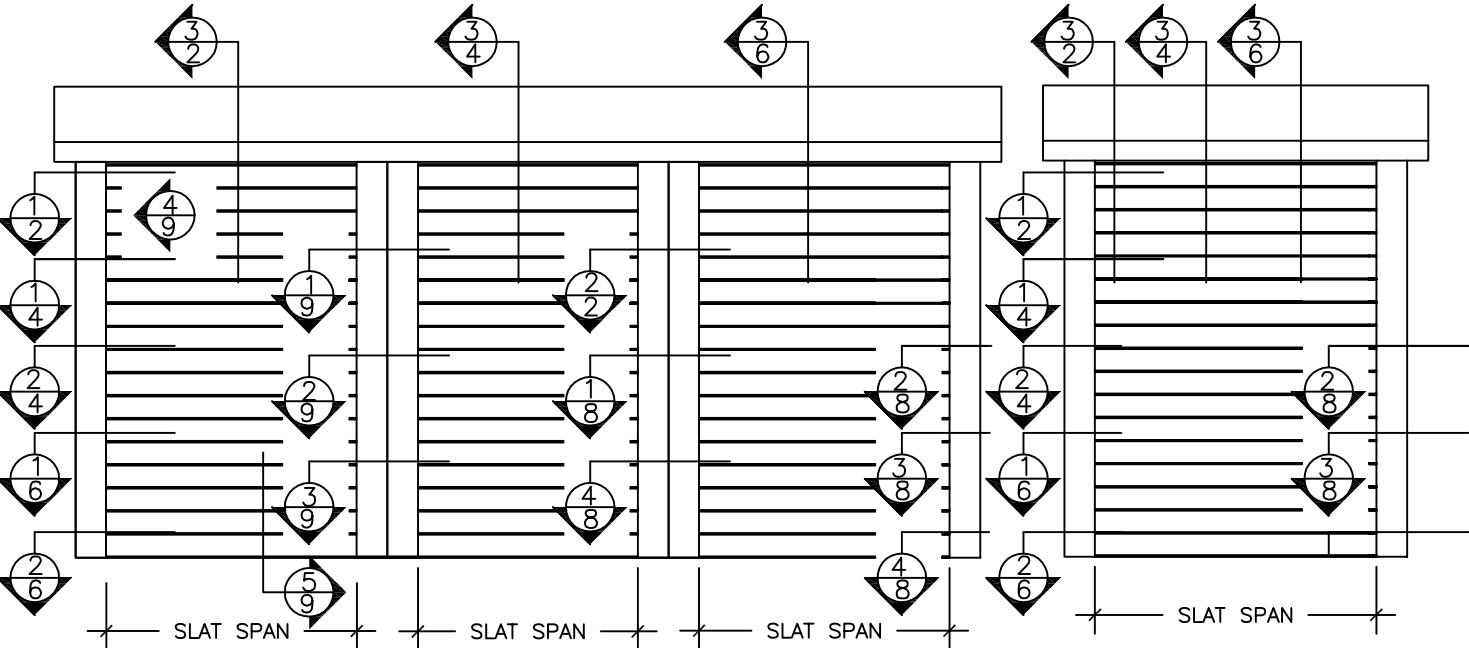


STRUCTURAL NOTES:

1. THIS NON POROUS SYSTEM HAS BEEN VERIFIED FOR COMPLIANCE IN ACCORDANCE WITH THE 2023 EDITION OF THE FLORIDA BUILDING CODE (FBC) . THIS SYSTEM SHALL NOT BE INSTALLED IN THE HIGH VELOCITY HURRICANE ZONE (MIAMI-DADE/ BROWARD COUNTIES), NOR WIND ZONE 4 NOR ESSENTIAL FACILITIES I. THE ADEQUACY FOR IMPACT, DEFLECTION AND FATIGUE RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH APPLICABLE SECTIONS OF THE ABOVE REFERENCED CODE, AND ASTM E330-02, ASTM E1886-05 AND ASTM E1996-06. SEE LIST OF REPORTS ON SHEET 1 OF 11.
2. DESIGN PRESSURE REQUIREMENTS OF A SPECIFIC SITE SHALL BE DETERMINED BY OTHERS IN CONFORMANCE TO THE FBC FOR A BASIC WIND SPEED (ALLOWABLE STRESS DESIGN) AS REQUIRED BY THE JURISDICTION WHERE THE SYSTEM WILL BE INSTALLED. ULTIMATE DESIGN LOADS (UD) DETERMINED BY ASCE 7-22 SHALL BE REDUCED TO ALLOWABLE STRESS DESIGN LOADS (ASD) BY MULTIPLYING THE UD BY 0.6. TO COMPARE THEM TO THE ASD PRESSURE RATINGS SHOWN ON SHEETS 3, 5 & 7 OF 11. USE OF DIRECTIONALITY FACTOR Kd=0.85 IS ALLOWED.
3. IMPACT AND FATIGUE RESISTANCE HAS BEEN DETERMINED IN ACCORDANCE WITH THE FBC SECTION 1626 LARGE MISSILE AND 1609.1.2 MISSILE TYPE "D" AS LISTED HEREIN.
4. NO 33-1/3% INCREASE IN ALLOWABLE STRESS INCREASE HAS BEEN USED IN THE DESIGN OF THIS PRODUCT.
5. THIS PRODUCT EVALUATION DOCUMENT (PED) 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.
6. THE CONTRACTOR AND / OR PERMIT HOLDER IS TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION OF THIS SYSTEM, INCLUDING VERIFYING THE ADEQUACY OF THE EXISTING STRUCTURE TO WITHSTAND THE NEW SUPERIMPOSED LOADS SHOWN BELOW AND THE SOUDNESS OF THE STRUCTURE WHERE THE SYSTEM IS TO BE ATTACHED TO INSURE PROPER ANCHORAGE.
7. SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A FLORIDA LICENSED ENGINEER OR ARCHITECT WHO WILL BECOME THE ENGINEER OF RECORD (EOR) FOR THE PROJECT AND WHO WILL BE RESPONSIBLE FOR THE PROPER USE OF THE PED. THE ENGINEER OF RECORD, ACTING AS A DELEGATED ENGINEER TO THE PED ENGINEER SHALL SUBMIT TO THIS ENGINEER THE SITE SPECIFIC DRAWINGS FOR REVIEW.
8. THIS PED SHALL BEAR THE DATE AND ORIGINAL SEAL OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT REGARDLESS OF ITS AVAILABILITY FROM THE FLORIDA PRODUCT APPROVAL WEBSITE.
9. AN OPTIONAL UV AND / OR SOLAR EXTERNAL LAYER MAY BE ADDED ONTO THE SYSTEM.
10. LIMITATIONS OF USE:
THE MAXIMUM SIZE SHALL BE SHOWN ON SHEETS 3, 5 & 7 OF 11.
MAXIMUM HEIGHT OF ROLL-UP SHALL BE 15'-0".
11. FOR DETERMINING INTERNAL PRESSURE IN THE ABOVE REFERENCED CODES, THIS PRODUCT IS CLASSIFIED AS NON-POROUS WITH A POROSITY OF LESS THAN 10% FOR THE CONDITIONS SHOWN IN THIS PRODUCT EVALUATION DOCUMENT. THIS PRODUCT MUST COMPLETELY COVER AN OPENING IN ALL DIRECTIONS.
12. ALL SCREWS TO BE STAINLESS STEEL 304 OR GALVANIZED A307 STEEL.
13. ALL BOLTS TO BE ASTM A307, GALVANIZED OR 304 SERIES STAINLESS STEEL.
14. SUPPORTBRACKETS AND ANCHORS :
A. ANCHORS INTO THE SUPPORT SUBSTRUCTURE (WALL, CEILINGS, BEAMS AND FLOORS) SHALL BE INSTALLED PER MANUFACTURER'S REQUIREMENTS.
B. THE ANCHOR SPACING SHOWN ON SHEETS 3, 5, & 7 OF 11 INDICATED FOR 1/4" and 3/8" DIAMETERS REFER TO CENTER OF SUPPORTING BRACKETS.
C. ANCHOR MINIMUM EMBEDMENT AND EDGE DISTANCES
- | SUBSTRUCTURE | EMBEDMENT | EDGE DISTANCE |
|----------------------------------|------------|--------------------|
| HOLLOW BLOCK | 1-1/4 INCH | 12 D OR PER MANUF. |
| GROUT FILLED OR KSI CONCRETE | 1-3/4 INCH | 12 D OR PER MANUF. |
| 4 KSI CONCRETE OR 2 KSI CONCRETE | 1-3/4 INCH | 12 D OR PER MANUF. |
| WOOD OR TIMBER | 8 D | 3/4 INCH |
- D. NO EMBEDMENT INTO NON-STRUCTURAL MATERIAL SUCH AS STUCCO, SIDING AND PAVERS SHALL BE INCLUDED AS PART OF THE EMBEDMENT REQUIREMENT.
15. STEEL SURFACES TO BE PLACED IN CONTACT WITH ALUMINUM SHALL BE GIVEN ONE COAT OF ZINC CHROMATE PRIMER IN ACCORDANCE WITH FEDERAL SPEC NO.: TTP-645, OR BE GALVANIZED.
16. MAXIMUM DESIGN PRESSURE VERSUS PANEL SPAN SHOWN ON SHEETS 3, 5 & 7 OF 11.
17. ALL ALUMINUM ALLOYS SHALL BE 6063-T6 OR 6005-T6 U.N.O.
18. ANCHORING OR LOADING CONDITIONS OTHER THAN THOSE SHOWN IN THESE DETAILS ARE NOT PART OF THIS APPROVAL.
19. MANUFACTURER LABEL SHALL BE PLACED ON A READILY AND VISIBLE LOCATION ON THE ROLL-UP. ONE LABEL SHALL BE PLACED FOR EVERY OPENING. LABEL SHALL READ AS FOLLOWS:
National Approved Shutter Assn LLC
8717 NW 117 St; Suite 1
Hialeah Gardens, FL 33018
FLORIDA PRODUCT APPROVAL NUMBER: FL-XXXX. OPENING NO.: XX
20. THIS DOCUMENT IN ITS ENTIRETY WILL BE CONSIDERED INVALID IF IT IS ALTERED BY ANY MEANS OR DOES NOT BEAR THE DATE AND ORIGINAL SEAL OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED



TYPICAL MULTIPLE UNIT ELEVATION

INTERMEDIATE MULLION REQUIRED FOR INSTALLATION
SCALE 1:20

TYPICAL SINGLE UNIT ELEV.

SINGLE SPAN UNIT INSTALLATION
SCALE 1:20

LIST OF REPORTS

EVALUATION BASED ON:
ARCHITECTURAL TESTING INC.

LAB NO.: B4522.01-401-18
DATED 12/16/2011
TAS 201, TAS 203 - LARGE MISSILE IMPACT RESISTANCE & CYCLIC LOADING PERFORMANCE
TAS 202 - UNIFORM STATIC LOADS

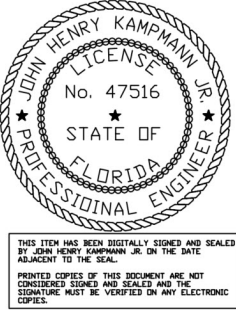
LAB NO.: B4519.01-401-18
DATED 02/02/2012
TAS 201, TAS 203 - LARGE MISSILE IMPACT RESISTANCE & CYCLIC LOADING PERFORMANCE
TAS 202 - UNIFORM STATIC LOADS

LAB NO.: B4521.02-401-44
DATED 02/22/2012
ASTM E330-02 - UNIFORM STATIC LOADS
ASTM E1886-05 & ASTM E1996-06 - LARGE MISSILE TYPE "D" IMPACT RESISTANCE & CYCLIC LOADING PERFORMANCE

LAB NO.: B4520.02-401-44
DATED 02/22/2012
ASTM E330-02 - UNIFORM STATIC LOADS
ASTM E1886-05 & ASTM E1996-06 - LARGE MISSILE TYPE "D" IMPACT RESISTANCE & CYCLIC LOADING PERFORMANCE

SPAN SCHEDULE

END RETENTION SHUTTER	
SLAT SPAN	ALLOWABLE DESIGN PRESSURE
84.0"	+/- 120.0 PSF
90.0"	+/- 107.9 PSF
100.0"	+/- 92.6 PSF
110.0"	+/- 81.4 PSF
120.0"	+/- 72.9 PSF
130.0"	+/- 66.2 PSF
140.0"	+/- 60.8 PSF
168.0"	+/- 50.0 PSF
190.0"	+/- 46.6 PSF
200.0"	+/- 45.2 PSF
210.0"	+/- 44.0 PSF
220.0"	+/- 43.0 PSF
230.0"	+/- 42.0 PSF
240.0"	+/- 41.0 PSF
250.0"	+/- 40.2 PSF
252.0"	+/- 40.0 PSF



John Henry
Kampmann
Jr.
2023.11.01
14:36:
09-04'00'

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John H. Kampmann Jr., PE
FL License #: 47516
DATE:

FBC 2023 (NON-HIGH VELOCITY HURRICANE ZONE)

www.meaengineers.com

MEA
ENGINEERS, INC.
2352 Appaloosa Circle
Sarasota, Florida 34240
(941) 922-3854 CA-6752

REV.	DESCRIPTION
1	XX/XX/XX - RESERVED.

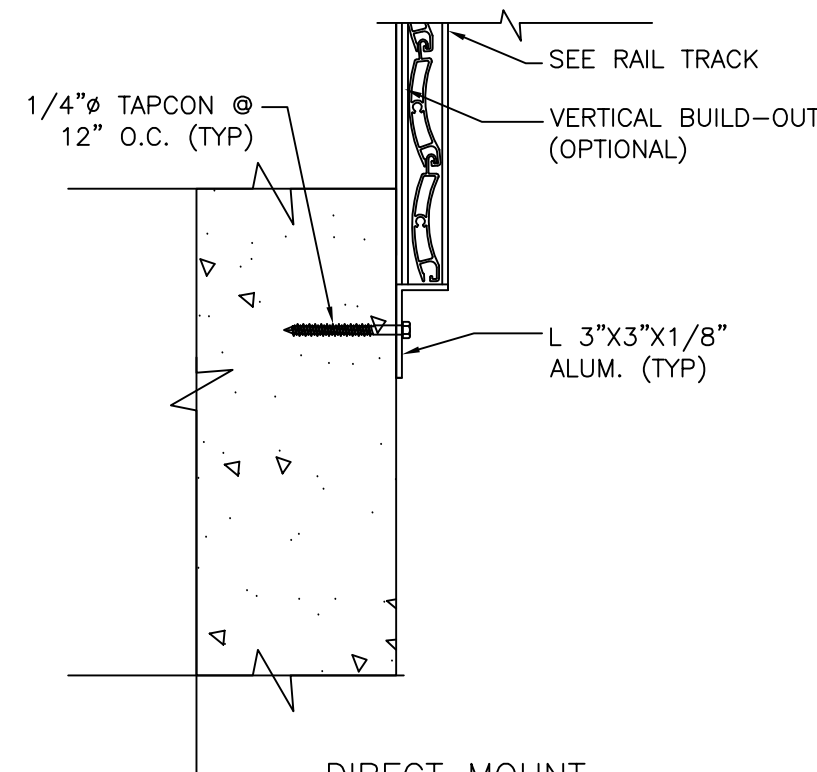
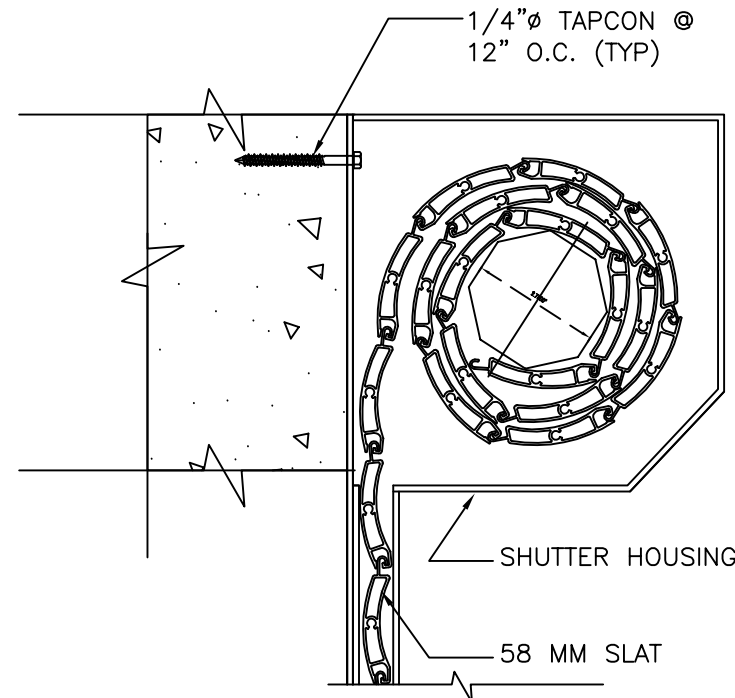
Project Name:

National Approved Shutter Assn LLC
8717 NW 117 St, Suite 1
Hialeah Gardens, FL 33018
Phone: (786)621-6706

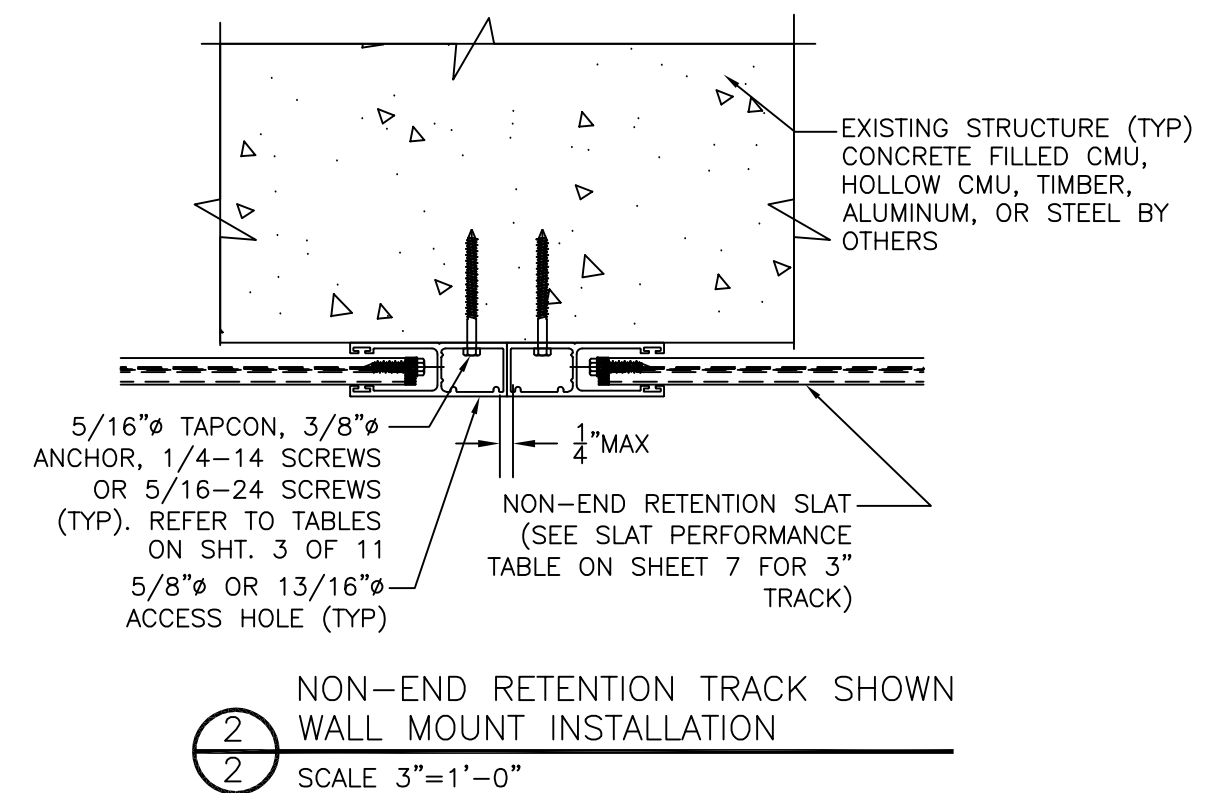
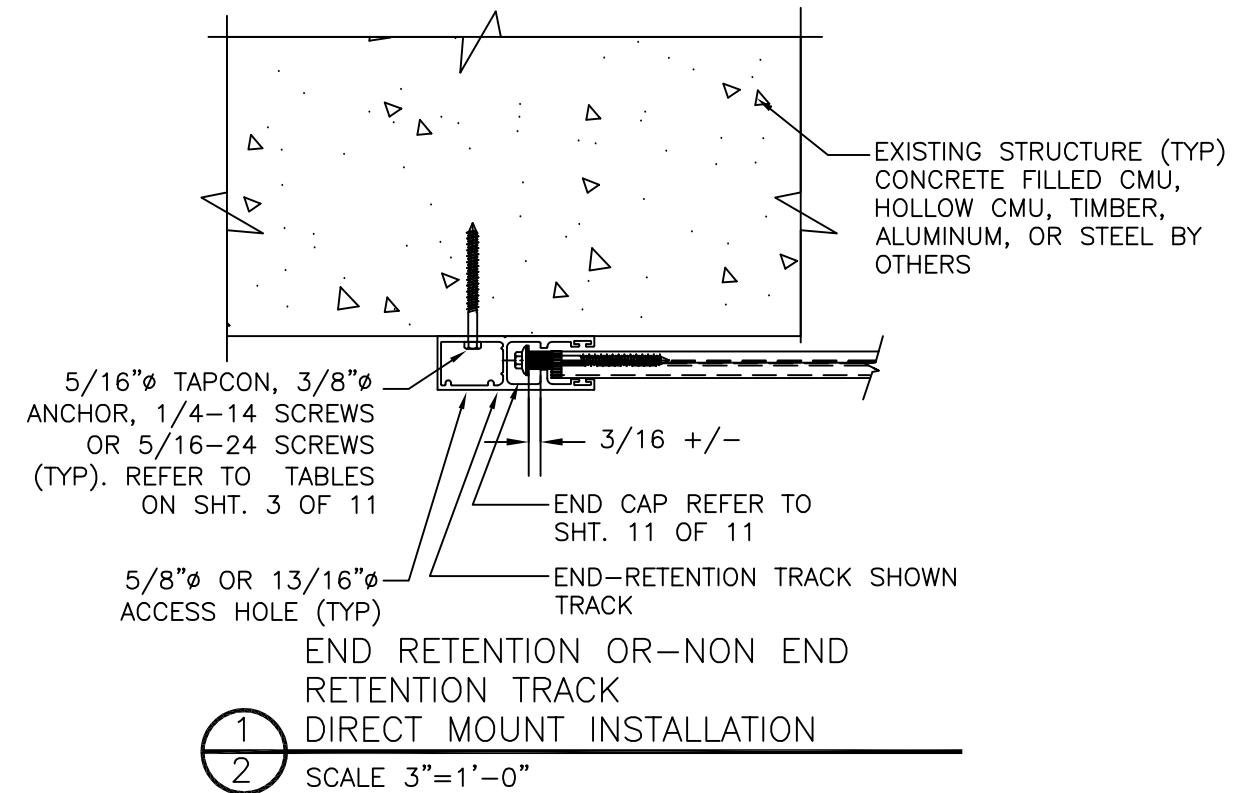
Description:

NAS-Assn 58 MILLIMETER
ROLL-UP SHUTTER SYSTEM

Drawn:	JK
Project #:	23-0615
Scale:	NOTED
Date:	10/19/23
Sheet No.:	1 of 11



3
2 DIRECT MOUNT 3-1/4" END RETENTION TRACK WALL MOUNT INSTALLATION
SCALE 3"=1'-0"



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John H. Kampmann Jr., PE
FL License #: 47516
DATE:

WWW.MEAENGINEERS.COM

MEA
ENGINEERS, INC.

2352 Appaloosa Circle
Sarasota, Florida 34240
(941) 922-3854 CA-6752

REV.	DESCRIPTION
1	XX/XX/XX - RESERVED.

Project Name:

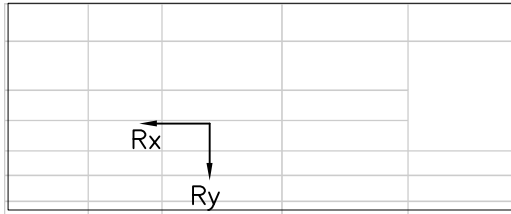
National Approved Shutter Assn LLC
8717 NW 117 St, Suite 1
Hialeah Gardens, FL 33018
Phone: (786)621-6706

Description:

NAS-Assn 58 MILLIMETER ROLL-UP SHUTTER SYSTEM

Drawn:	JK
Project #:	23-0615
Scale:	NOTED
Date:	10/19/23
Sheet No.:	2 of 11

FBC 2023 (NON-HIGH VELOCITY HURRICANE ZONE)



END RETENTION (WALL MOUNT)

SLAT SPAN		DESIGN PRESSURE	R _x	R _y	2.5" MIN. EDGE DISTANCE	2.5" MIN. EDGE DISTANCE	3.125" MIN. EDGE DISTANCE	3.125" MIN. EDGE DISTANCE	4" MIN. EDGE DISTANCE	4" MIN. EDGE DISTANCE	EMBEDMENT T; 3" MIN. EDGE DISTANCE	3" MIN. EDGE DISTANCE	EDGE DISTANCE	EDGE DISTANCE	EDGE DISTANCE	EDGE DISTANCE	6063-T6 ALUM; 0.5" MIN	6063-T6 ALUM; 0.625" MIN	EMBEDMENT T; 4.5" MIN. EDGE DISTANCE	3.75" MIN. EDGE DISTANCE	3.75" MIN. EDGE DISTANCE
7.0 FT	84"	+/- 30 PSF	143.1 LB/FT	105.0 LB/FT	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"
	84"	+/- 35 PSF	249.4 LB/FT	122.5 LB/FT	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	7.5"	6.5"	7.8"	10.0"	10.0"	10.0"	10.0"	10.0"
	84"	+/- 40 PSF	355.5 LB/FT	140.0 LB/FT	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	9.6"	5.4"	4.7"	5.6"	10.0"	10.0"	10.0"	10.0"	10.0"
	84"	+/- 45 PSF	461.4 LB/FT	157.5 LB/FT	8.8"	9.5"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	7.7"	4.2"	3.6"	4.4"	9.5"	10.0"	10.0"	10.0"	10.0"
	84"	+/- 50 PSF	567.1 LB/FT	175.0 LB/FT	7.3"	7.9"	10.0"	10.0"	10.0"	10.0"	10.0"	9.1"	6.4"	3.5"		3.6"	8.1"	9.0"	10.0"	10.0"	10.0"
	84"	+/- 60 PSF	778.1 LB/FT	210.0 LB/FT	5.5"	5.9"	10.0"	10.0"	9.9"	5.5"	7.6"	6.8"	4.8"				6.3"	7.1"	10.0"	10.0"	10.0"
	84"	+/- 70 PSF	988.2 LB/FT	245.0 LB/FT	4.4"	4.7"	8.3"	8.2"	7.9"	4.5"	6.1"	5.5"	3.9"				5.1"	5.9"	10.0"	10.0"	10.0"
	84"	+/- 80 PSF	1197.6 LB/FT	280.0 LB/FT	3.7"	3.9"	6.9"	6.8"	6.6"	3.8"	5.1"	4.6"	3.2"				4.3"	5.0"	10.0"	10.0"	10.0"
	84"	+/- 90 PSF	1406.1 LB/FT	315.0 LB/FT	3.1"	3.4"	5.9"	5.9"	5.6"	3.3"	4.4"	3.9"					3.7"	4.4"	10.0"	10.0"	10.0"
	84"	+/- 100 PSF	1613.7 LB/FT	350.0 LB/FT			5.2"	5.1"	4.9"		3.9"	3.4"					3.3"	3.9"	9.9"	10.0"	10.0"
8.0 FT	96"	+/- 30 PSF	401.4 LB/FT	120.0 LB/FT	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	9.1"	4.9"	4.2"	5.1"	10.0"	10.0"	10.0"	10.0"	10.0"
	96"	+/- 35 PSF	531.6 LB/FT	140.0 LB/FT	8.1"	8.7"	10.0"	10.0"	10.0"	8.2"	10.0"	10.0"	7.1"	3.7"	3.2"	3.9"	9.3"	10.0"	10.0"	10.0"	10.0"
	96"	+/- 40 PSF	661.9 LB/FT	160.0 LB/FT	6.6"	7.1"	10.0"	10.0"	10.0"	6.8"	9.2"	8.2"	5.8"	3.0"		3.2"	7.7"	8.9"	10.0"	10.0"	10.0"
	96"	+/- 45 PSF	792.0 LB/FT	180.0 LB/FT	5.6"	6.0"	10.0"	10.0"	10.0"	5.8"	7.8"	6.9"	4.9"				6.6"	7.7"	10.0"	10.0"	10.0"
	96"	+/- 50 PSF	922.2 LB/FT	200.0 LB/FT	4.8"	5.2"	9.1"	9.0"	8.7"	5.0"	6.8"	6.0"	4.2"				5.8"	6.8"	10.0"	10.0"	10.0"
	96"	+/- 60 PSF	1182.5 LB/FT	240.0 LB/FT	3.8"	4.1"	7.2"	7.1"	6.8"	4.0"	5.4"	4.7"	3.3"				4.6"	5.5"	10.0"	10.0"	10.0"
	96"	+/- 70 PSF	1442.8 LB/FT	280.0 LB/FT	3.1"	3.4"	5.9"	5.9"	5.6"	3.3"	4.4"	3.9"					3.8"	4.6"	10.0"	10.0"	10.0"
	96"	+/- 80 PSF	1703.0 LB/FT	320.0 LB/FT		3.0"	5.0"	5.0"	4.8"		3.8"	3.3"					3.3"	3.9"	9.6"	10.0"	10.0"
	120"	+/- 30 PSF	849.8 LB/FT	150.0 LB/FT	5.4"	5.8"	10.0"	10.0"	9.7"	5.8"	7.7"	6.7"	4.8"				6.7"	8.2"	10.0"	10.0"	10.0"
	120"	+/- 35 PSF	1032.0 LB/FT	175.0 LB/FT	4.5"	4.8"	8.4"	8.4"	8.0"	4.8"	6.4"	5.6"	3.9"				5.6"	6.8"	10.0"	10.0"	10.0"
10.0 FT	120"	+/- 40 PSF	1214.2 LB/FT	200.0 LB/FT	3.8"	4.1"	7.2"	7.1"	6.8"	4.1"	5.5"	4.8"	3.4"				4.8"	5.9"	10.0"	10.0"	10.0"
	120"	+/- 45 PSF	1396.3 LB/FT	225.0 LB/FT	3.3"	3.6"	6.3"	6.2"	5.9"	3.6"	4.8"	4.2"					4.2"	5.2"	10.0"	10.0"	10.0"
	120"	+/- 50 PSF	1578.5 LB/FT	250.0 LB/FT	3.0"	3.2"	5.6"	5.5"	5.3"	3.2"	4.2"	3.7"					3.8"	4.6"	10.0"	10.0"	10.0"
	120"	+/- 60 PSF	1942.8 LB/FT	300.0 LB/FT			4.5"	4.5"	4.3"		3.5"	3.0"					3.1"	3.8"	8.5"	9.3"	10.0"
	120"	+/- 70 PSF	2307.0 LB/FT	350.0 LB/FT			3.8"	3.8"	3.6"									3.2"	7.2"	7.9"	9.6"
	120"	+/- 80 PSF	2671.2 LB/FT	400.0 LB/FT			3.3"	3.3"	3.1"										6.2"	6.8"	8.3"
	144"	+/- 30 PSF	1269.0 LB/FT	180.0 LB/FT	3.7"	4.0"	7.0"	7.0"	6.6"	4.1"	5.4"	4.7"	3.3"				4.8"	6.0"	10.0"	10.0"	10.0"
	144"	+/- 35 PSF	1508.7 LB/FT	210.0 LB/FT	3.1"	3.4"	5.9"	5.9"	5.6"	3.5"	4.5"	3.9"					4.1"	5.1"	10.0"	10.0"	10.0"
12.0 FT	144"	+/- 40 PSF	1748.4 LB/FT	240.0 LB/FT		3.0"	5.1"	5.1"	4.8"	3.0"	3.9"	3.4"					3.5"	4.4"	9.6"	10.0"	10.0"
	144"	+/- 45 PSF	1988.0 LB/FT	270.0 LB/FT			4.5"	4.5"	4.3"		3.4"						3.1"	3.9"	8.5"	9.3"	10.0"
	144"	+/- 50 PSF	2227.7 LB/FT	300.0 LB/FT			4.0"	4.0"	3.8"		3.1"							3.5"	7.5"	8.3"	10.0"
	144"	+/- 60 PSF	2706.9 LB/FT	360.0 LB/FT			3.3"	3.3"	3.1"										6.2"	6.8"	8.3"
	144"	+/- 70 PSF	3186.1 LB/FT	420.0 LB/FT			3.0"	3.0"											5.3"	5.8"	7.0"
	168"	+/- 30 PSF	1689.0 LB/FT	210.0 LB/FT		3.0"	5.4"	5.3"	5.1"	3.2"	4.1"	3.6"					3.8"	4.8"	10.0"	10.0"	10.0"
14.0 FT	168"	+/- 35 PSF	1991.2 LB/FT	245.0 LB/FT			4.6"	4.5"	4.3"		3.5"	3.0"					3.2"	4.1"	8.5"	9.4"	10.0"
	168"	+/- 40 PSF	2293.3 LB/FT	280.0 LB/FT			4.0"	3.9"	3.7"		3.0"							3.5"	7.4"	8.1"	9.9"
	168"	+/- 45 PSF	2595.5 LB/FT	315.0 LB/FT			3.5"	3.5"	3.3"									3.1"	6.5"	7.2"	8.7"
	168"	+/- 50 PSF	2897.6 LB/FT	350.0 LB/FT			3.1"	3.1"	3.0"										5.9"	6.5"	7.8"
	192"	+/- 20 PSF	1382.2 LB/FT	160.0 LB/FT	3.5"	3.7"	6.6"	6.6"	6.2"	3.9"	5.1"	4.4"	3.1"				4.7"	6.0"	10.0"	10.0"	10.0"
16.0 FT	192"	+/- 25 PSF	1751.5 LB/FT	200.0 LB/FT	3.0"	3.0"	5.2"	5.2"	4.9"	3.1"	4.0"	3.5"					3.7"	4.8"	9.7"	10.0"	10.0"
	192"	+/- 30 PSF	2120.7 LB/FT	240.0 LB/FT			4.3"	4.3"	4.1"		3.3"						3.1"	3.9"	8.0"	8.9"	10.0"
	192"	+/- 35 PSF	2489.9 LB/FT	280.0 LB/FT			3.7"	3.7"	3.5"									3.4"	6.9"	7.6"	9.1"
	192"	+/- 40 PSF	2859.1 LB/FT	320.0 LB/FT			3.2"	3.2"	3.0"										6.0"	6.6"	8.0"
	192"	+/- 45 PSF	3228.2 LB/FT	360.0 LB/FT			3.0"	3.0"											5.3"	5.8"	7.1"
	216"	+/- 20 PSF	1687.9 LB/FT	180.0 LB/FT	3.0"	3.1"	5.5"	5.4"	5.1"	3.3"	4.2"	3.6"					3.9"	5.1"	10.0"	10.0"	10.0"
18.0 FT	216"	+/- 25 PSF	2128.4 LB/FT	225.0 LB/FT			4.3"	4.3"	4.1"		3.3"						3.1"	4.0"	8.0"	8.9"	10.0"
	216"	+/- 30 PSF	2568.8 LB/FT	270.0 LB/FT			3.6"	3.6"	3.4"									3.3"	6.7"	7.4"	8.9"
	216"	+/- 35 PSF	3009.1 LB/FT	315.0 LB/FT			3.1"	3.1"	3.0"										5.7"	6.3"	7.6"
	216"	+/- 40 PSF	3449.3 LB/FT	360.0 LB/FT															5.0"	5.5"	6.6"
	216"	+/- 45 PSF	3889.4 LB/FT	405.0 LB/FT															4.4"	4.9"	5.9"
	252.0"	+/- 20 PSF	2167.0 LB/FT	210.0 LB/FT			4.3"	4.3"	4.0"		3.3"						3.1"	4.1"	8.0"	8.8"	10.0"
21.0 FT	252.0"	+/- 25 PSF	2722.2 LB/FT	262.5 LB/FT			3.4"	3.4"	3.2"									3.2"	6.3"	7.0"	8.5"
	252.0"	+/- 30 PSF	3277.1 LB/FT	315.0 LB/FT			3.0"	3.0"											5.3"	5.8"	7.0"
	252.0"	+/- 35 PSF	3831.9 LB/FT	367.5 LB/FT															4.5"	5.0"	6.0"
	252.0"	+/- 40 PSF	4386.4 LB/FT	420.0 LB/FT															3.9"	4.4"	5.3"

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FBC 2023 (NON-HIGH VELOCITY HURRICANE ZONE)

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MEAEENGINEERS, INC.

2352 Appaloosa Circle
Sarasota, Florida 34240
(941) 922-3854 CA-6752

Project Name:

National Approved Shutter Assn LLC
8717 NW 117 St, Suite 1
Hialeah Gardens, FL 33018
Phone: (786)621-6706

Description:

NAS-Assn 58 MILLIMETER
ROLL-UP SHUTTER SYSTEM

Drawn:

JK

Project #:

23-0615

Scale:

NOTED

Date:

10/19/23

Sheet No.:

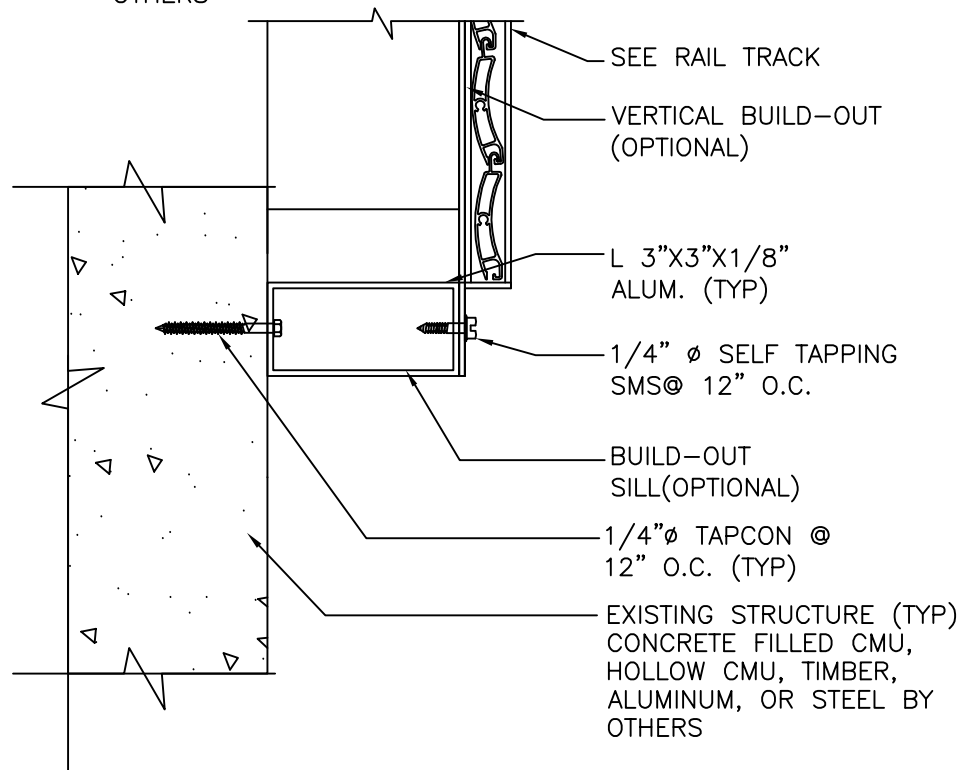
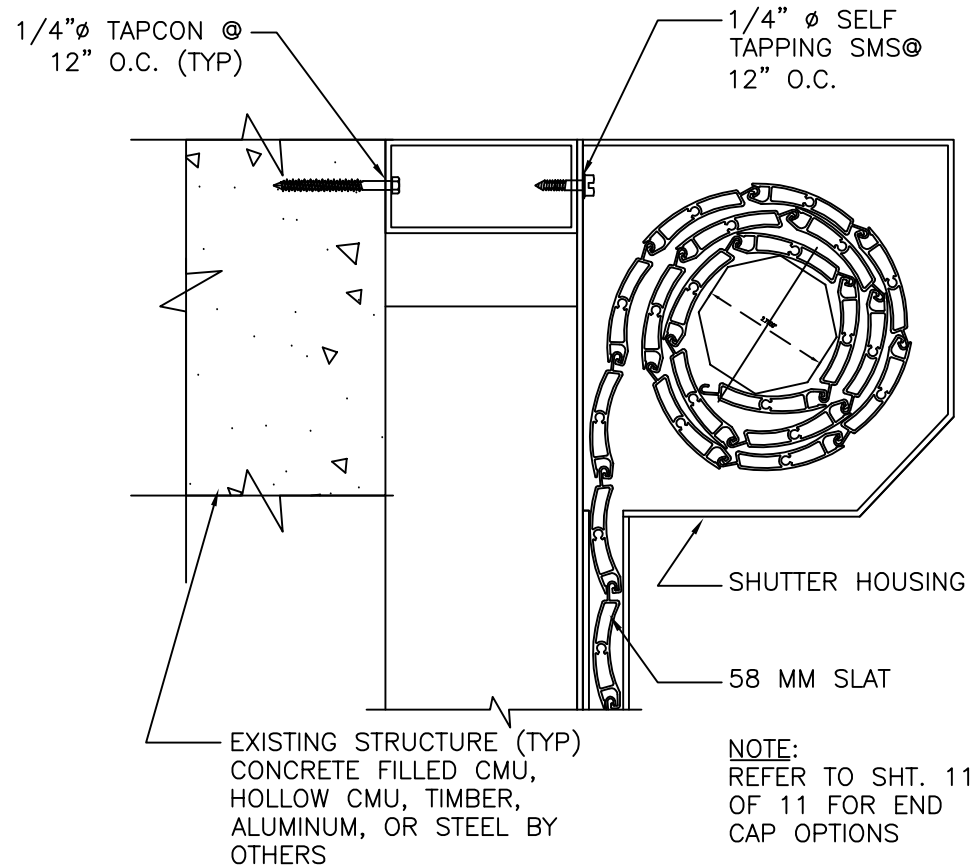
3 of 11

REV.

1

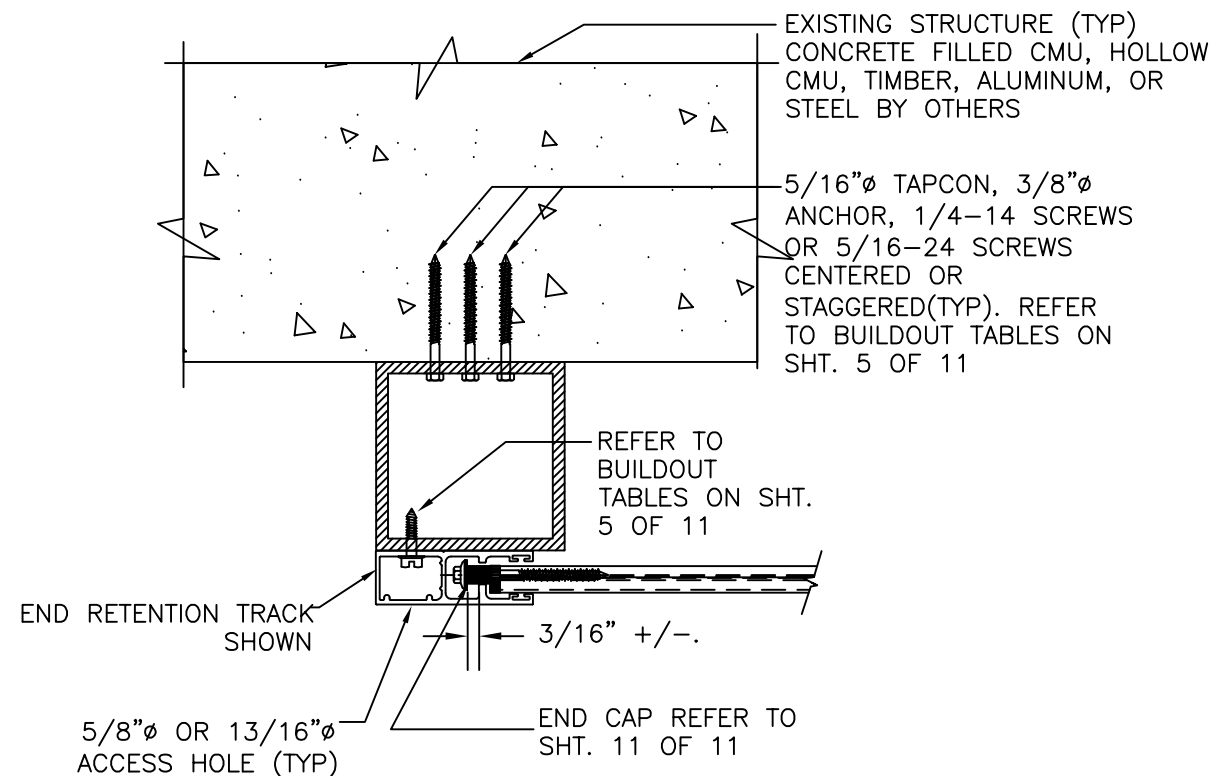
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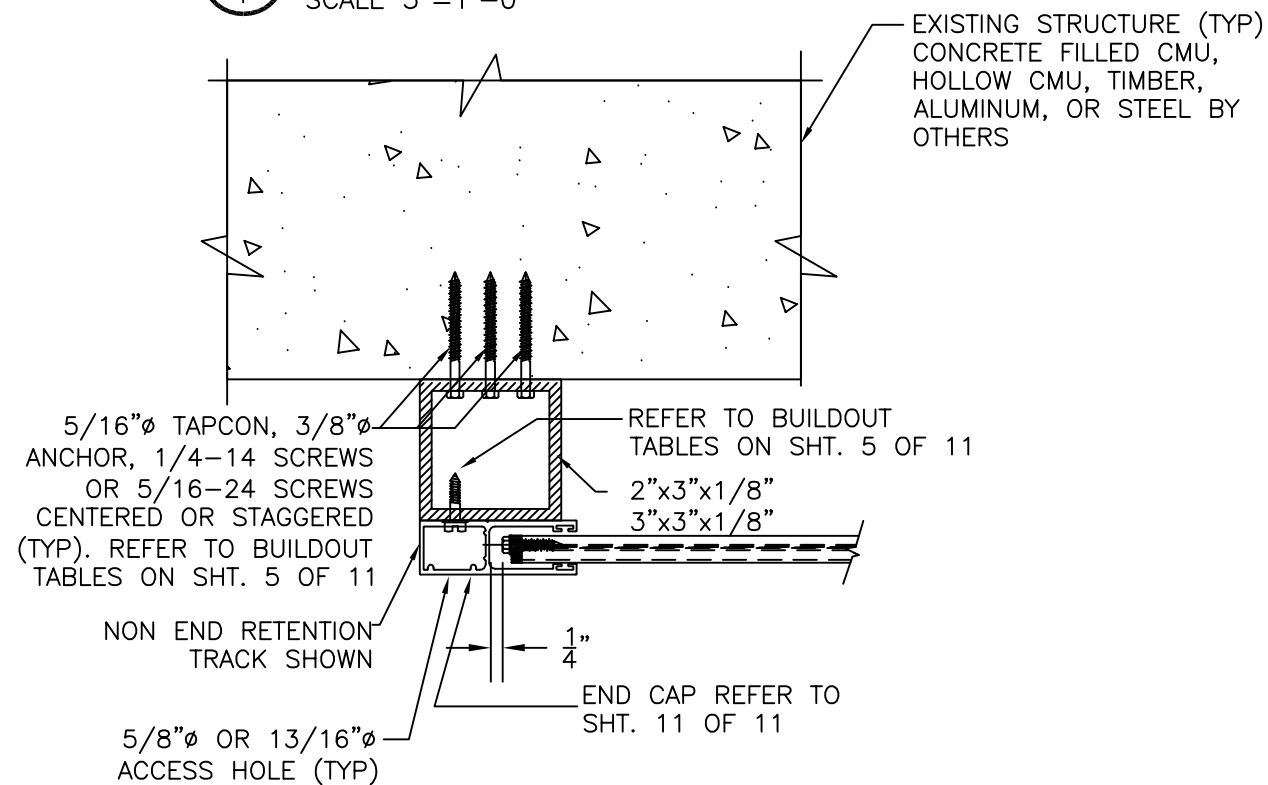
1
4 SCALE 3"=1'-0"

BUILT-OUT INSTALLATION
END RETENTION TRACK
WALL MOUNT INSTALLATION



1
4 SCALE 3"=1'-0"

4" BUILD-OUT INSTALLATION
END RETENTION &
NON-END RETENTION



2
4 SCALE 3"=1'-0"

2"-3" BUILD-OUT INSTALLATION
END RETENTION &
NON-END RETENTION

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FBC 2023 (NON-HIGH VELOCITY HURRICANE ZONE)

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2352 Appaloosa Circle
Sarasota, Florida 34240
(941) 922-3854 CA-6752

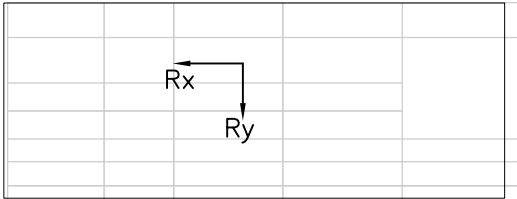
REV. 1
DESCRIPTION
XX/XX/XX - RESERVED.

Project Name:
National Approved Shutter Assn LLC
8717 NW 117 St, Suite 1
Hialeah Gardens, FL 33018
Phone: (786)621-6706

Description:
**NAS-Assn 58 MILLIMETER
ROLL-UP SHUTTER SYSTEM**

Drawn: JK
Project #: 23-0615
Scale: NOTED
Date: 10/19/23
Sheet No.:

4 of 11



END RETENTION (BUILD-OUT MOUNT)

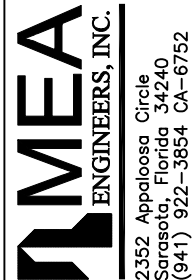
SLAT SPAN		DESIGN PRESSURE	R _x	R _y	2.5" MIN. EDGE DISTANCE	2.5" MIN. EDGE DISTANCE	3.125" MIN. EDGE DISTANCE	3.125" MIN. EDGE DISTANCE	4" MIN. EDGE DISTANCE	4" MIN. EDGE DISTANCE	EMBEDMEN T; 3" MIN. EDGE	3" MIN. EDGE DISTANCE	EDGE DISTANCE	EDGE DISTANCE	EDGE DISTANCE	EDGE DISTANCE	6063-T6 ALUM; 0.5" MIN	6063-T6 ALUM; 0.625" MIN	EMBEDMEN T; 4.5" MIN. EDGE	3.75" MIN. EDGE DISTANCE	3.75" MIN. EDGE DISTANCE
7.0 FT	84"	+/- 30 PSF	143.1 LB/FT	145.0 LB/FT	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"
	84"	+/- 35 PSF	249.4 LB/FT	194.2 LB/FT	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	7.0"	6.1"	7.1"	10.0"	10.0"	10.0"	10.0"	10.0"
	84"	+/- 40 PSF	355.5 LB/FT	245.2 LB/FT	9.1"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	7.9"	5.0"	4.4"	5.1"	8.3"	8.2"	10.0"	10.0"	10.0"
	84"	+/- 45 PSF	461.4 LB/FT	298.0 LB/FT	7.2"	7.9"	10.0"	10.0"	10.0"	6.2"	9.3"	8.8"	6.3"	3.9"	3.4"	4.0"	6.6"	6.6"	10.0"	10.0"	10.0"
	84"	+/- 50 PSF	567.1 LB/FT	352.4 LB/FT	6.0"	6.5"	10.0"	10.0"	10.0"	5.1"	7.7"	7.3"	5.2"	3.2"		3.3"	5.5"	5.6"	10.0"	10.0"	10.0"
	84"	+/- 60 PSF	778.1 LB/FT	466.5 LB/FT	4.4"	4.8"	8.2"	8.0"	8.1"	3.8"	5.7"	5.4"	3.8"				4.1"	4.2"	10.0"	10.0"	10.0"
	84"	+/- 70 PSF	988.2 LB/FT	587.4 LB/FT	3.5"	3.8"	6.4"	6.3"	6.4"	3.0"	4.5"	4.2"	3.0"				3.3"	3.3"	10.0"	10.0"	10.0"
	84"	+/- 80 PSF	1197.6 LB/FT	715.0 LB/FT		3.1"	5.3"	5.2"	5.3"		3.7"	3.5"							10.0"	10.0"	10.0"
	84"	+/- 90 PSF	1406.1 LB/FT	849.3 LB/FT			4.5"	4.4"	4.5"		3.1"								9.2"	9.1"	10.0"
8.0 FT	96"	+/- 100 PSF	1613.7 LB/FT	990.2 LB/FT			3.9"	3.8"	3.9"										8.0"	7.9"	10.0"
	96"	+/- 110 PSF	1820.4 LB/FT	1137.6 LB/FT			3.4"	3.4"	3.4"										7.0"	6.9"	8.9"
	96"	+/- 120 PSF	2026.1 LB/FT	1291.5 LB/FT			3.1"	3.0"	3.0"										6.3"	6.2"	7.9"
	96"	+/- 30 PSF	401.4 LB/FT	222.8 LB/FT	8.8"	9.5"	10.0"	10.0"	10.0"	7.7"	10.0"	10.0"	7.6"	4.6"	4.0"	4.7"	8.4"	8.5"	10.0"	10.0"	10.0"
	96"	+/- 35 PSF	531.6 LB/FT	277.2 LB/FT	6.7"	7.3"	10.0"	10.0"	10.0"	6.0"	8.9"	8.3"	5.9"	3.5"	3.0"	3.6"	6.6"	6.8"	10.0"	10.0"	10.0"
	96"	+/- 40 PSF	661.9 LB/FT	332.0 LB/FT	5.5"	6.0"	10.0"	10.0"	10.0"	4.9"	7.2"	6.7"	4.8"	3.0"		3.0"	5.4"	5.6"	10.0"	10.0"	10.0"
	96"	+/- 45 PSF	792.0 LB/FT	387.2 LB/FT	4.6"	5.0"	8.6"	8.4"	8.5"	4.2"	6.1"	5.7"	4.0"				4.6"	4.8"	10.0"	10.0"	10.0"
	96"	+/- 50 PSF	922.2 LB/FT	443.0 LB/FT	4.0"	4.3"	7.4"	7.3"	7.3"	3.6"	5.3"	4.9"	3.5"				4.0"	4.1"	10.0"	10.0"	10.0"
	96"	+/- 60 PSF	1182.5 LB/FT	555.9 LB/FT	3.1"	3.4"	5.8"	5.7"	5.7"	3.0"	4.2"	3.9"					3.1"	3.3"	10.0"	10.0"	10.0"
10.0 FT	96"	+/- 70 PSF	1442.8 LB/FT	670.6 LB/FT		3.0"	4.8"	4.7"	4.7"		3.4"	3.2"							9.6"	9.7"	10.0"
	96"	+/- 80 PSF	1703.0 LB/FT	787.3 LB/FT			4.1"	4.0"	4.0"										8.2"	8.3"	10.0"
	120"	+/- 30 PSF	849.8 LB/FT	345.9 LB/FT	4.5"	4.9"	8.5"	8.4"	8.3"	4.3"	6.1"	5.6"	4.0"				4.7"	5.0"	10.0"	10.0"	10.0"
	120"	+/- 35 PSF	1032.0 LB/FT	414.3 LB/FT	3.8"	4.1"	7.0"	6.9"	6.8"	3.5"	5.1"	4.6"	3.3"				3.9"	4.2"	10.0"	10.0"	10.0"
	120"	+/- 40 PSF	1214.2 LB/FT	483.3 LB/FT	3.2"	3.5"	6.0"	5.9"	5.8"	3.0"	4.3"	4.0"	3.0"				3.3"	3.6"	10.0"	10.0"	10.0"
	120"	+/- 45 PSF	1396.3 LB/FT	552.7 LB/FT		3.0"	5.2"	5.1"	5.1"		3.8"	3.4"					3.0"	3.1"	10.0"	10.0"	10.0"
	120"	+/- 50 PSF	1578.5 LB/FT	622.7 LB/FT			4.6"	4.5"	4.5"		3.3"	3.0"							9.1"	9.4"	10.0"
	120"	+/- 60 PSF	1942.8 LB/FT	764.1 LB/FT			3.8"	3.7"	3.7"										7.4"	7.6"	9.6"
12.0 FT	120"	+/- 70 PSF	2307.0 LB/FT	907.6 LB/FT			3.2"	3.1"	3.1"										6.3"	6.4"	8.1"
	120"	+/- 80 PSF	2671.2 LB/FT	1053.1 LB/FT															5.4"	5.5"	7.0"
	144"	+/- 20 PSF	789.6 LB/FT	284.9 LB/FT	5.1"	5.5"	9.5"	9.3"	9.2"	4.8"	6.9"	6.2"	4.4"				5.4"	5.9"	10.0"	10.0"	10.0"
	144"	+/- 25 PSF	1029.3 LB/FT	366.3 LB/FT	3.9"	4.2"	7.3"	7.2"	7.1"	3.7"	5.3"	4.8"	3.4"				4.2"	4.5"	10.0"	10.0"	10.0"
	144"	+/- 30 PSF	1269.0 LB/FT	448.4 LB/FT	3.2"	3.4"	5.9"	5.8"	5.7"	3.0"	4.3"	3.9"					3.4"	3.7"	10.0"	10.0"	10.0"
	144"	+/- 35 PSF	1508.7 LB/FT	531.1 LB/FT		3.0"	5.0"	4.9"	4.8"		3.6"	3.3"					3.0"	3.1"	9.8"	10.0"	10.0"
	144"	+/- 40 PSF	1748.4 LB/FT	614.4 LB/FT			4.3"	4.2"	4.2"		3.1"								8.5"	8.8"	10.0"
	144"	+/- 45 PSF	1988.0 LB/FT	698.4 LB/FT			3.8"	3.7"	3.7"										7.4"	7.7"	9.6"
14.0 FT	144"	+/- 50 PSF	2227.7 LB/FT	783.0 LB/FT			3.4"	3.3"	3.3"										6.6"	6.9"	8.6"
	144"	+/- 55 PSF	2467.3 LB/FT	868.3 LB/FT			3.0"	3.0"											6.0"	6.2"	7.7"
	168"	+/- 20 PSF	1084.6 LB/FT	350.0 LB/FT	3.8"	4.1"	7.1"	7.0"	6.8"	3.7"	5.2"	4.7"	3.3"				4.2"	4.6"	10.0"	10.0"	10.0"
	168"	+/- 25 PSF	1386.8 LB/FT	445.3 LB/FT		3.2"	5.6"	5.5"	5.4"		4.1"	3.7"					3.3"	3.6"	10.0"	10.0"	10.0"
	168"	+/- 30 PSF	1689.0 LB/FT	541.3 LB/FT			4.6"	4.5"	4.4"		3.3"	3.0"						3.0"	8.9"	9.3"	10.0"
	168"	+/- 35 PSF	1991.2 LB/FT	638.0 LB/FT			3.9"	3.8"	3.7"										7.6"	7.9"	9.8"
	168"	+/- 40 PSF	2293.3 LB/FT	735.5 LB/FT			3.4"	3.3"	3.2"										6.6"	6.8"	8.5"
	168"	+/- 45 PSF	2595.5 LB/FT	833.7 LB/FT															5.8"	6.0"	7.5"
16.0 FT	168"	+/- 50 PSF	2897.6 LB/FT	932.6 LB/FT															5.2"	5.4"	6.7"
	168"	+/- 55 PSF	3199.7 LB/FT	1032.3 LB/FT															4.7"	4.9"	6.1"
	192"	+/- 20 PSF	1382.2 LB/FT	413.0 LB/FT	3.0"	3.3"	5.7"	5.6"	5.5"		4.2"	3.7"					3.4"	3.8"	10.0"	10.0"	10.0"
	192"	+/- 25 PSF	1751.5 LB/FT	523.4 LB/FT			4.5"	4.4"	4.3"		3.3"								8.7"	9.1"	10.0"
	192"	+/- 30 PSF	2120.7 LB/FT	635.0 LB/FT			3.7"	3.6"	3.6"										7.2"	7.5"	9.3"
	192"	+/- 35 PSF	2489.9 LB/FT	747.8 LB/FT			3.1"	3.1"	3.0"										6.1"	6.4"	8.0"
	192"	+/- 40 PSF	2859.1 LB/FT	861.8 LB/FT															5.3"	5.6"	6.9"
	192"	+/- 45 PSF	3228.2 LB/FT	977.0 LB/FT															4.7"	4.9"	6.1"
18.0 FT	192"	+/- 50 PSF	3597.2 LB/FT	1093.4 LB/FT															4.2"	4.4"	5.5"
	192"	+/- 55 PSF	3966.2 LB/FT	1210.9 LB/FT															3.8"	4.0"	5.0"
	216"	+/- 20 PSF	1687.9 LB/FT	476.9 LB/FT			4.7"	4.6"	4.5"		3.5"	3.1"					3.2"		9.1"	9.6"	10.0"
	216"	+/- 25 PSF	2128.4 LB/FT	604.4 LB/FT			3.7"	3.7"	3.6"										7.2"	7.6"	9.4"
	216"	+/- 30 PSF	2568.8 LB/FT	734.0 LB/FT			3.1"	3.0"											6.0"	6.3"	7.8"
	216"	+/- 35 PSF	3009.1 LB/FT	865.7 LB/FT															5.1"	5.4"	6.6"
20.0 FT	216"	+/- 40 PSF	3449.3 LB/FT	999.4 LB/FT															4.4"	4.7"	5.8"
	240.0"	+/- 20 PSF	2004.4 LB/FT	566.6 LB/FT			4.0"	3.9"	3.8"										7.7"	8.1"	10.0"
	240.0"	+/- 25 PSF	2520.4 LB/FT	727.0 LB/FT			3.1"	3.1"	3.0"										6.1"	6.4"	7.9"
	240.0"	+/- 30 PSF	3036.2 LB/FT	893.8 LB/FT															5.0"	5.3"	6.5"
	240.0"	+/- 35 PSF	3551.8 LB/FT	1067.1 LB/FT															4.3"	4.5"	5.6"
	240.0"	+/- 40 PSF	4067.3 LB/FT	1246.9 LB/FT															3.7"	3.9"	4.8"

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John H. Kampmann Jr., PE
FL License #: 47516
DATE:

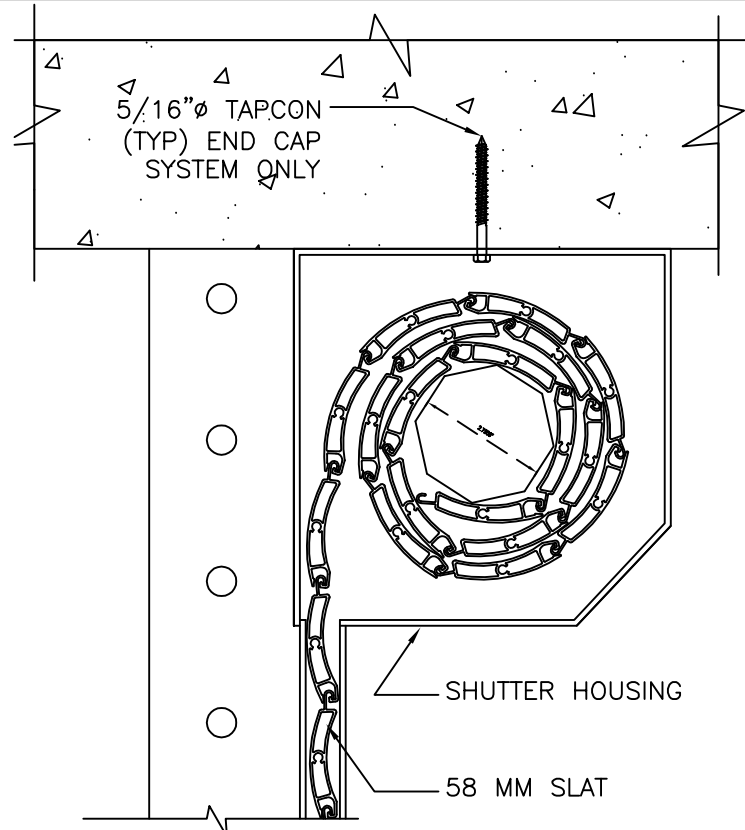
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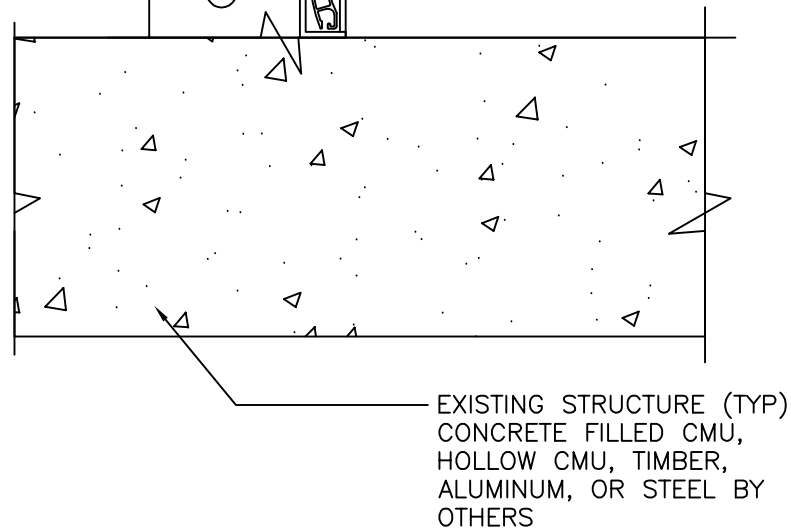
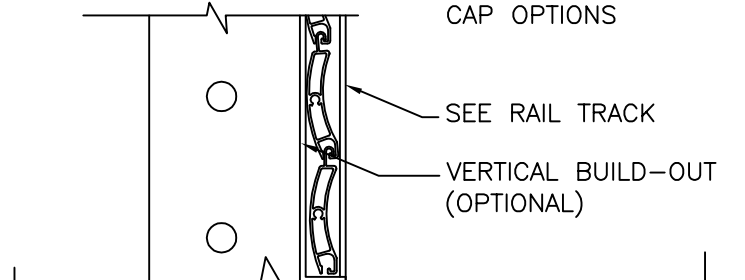


REV.	DESCRIPTION
1	XX/XX/XX - RESERVED.

Project Name:
National Approved Shutter Assn LLC
8717 NW 117 St,



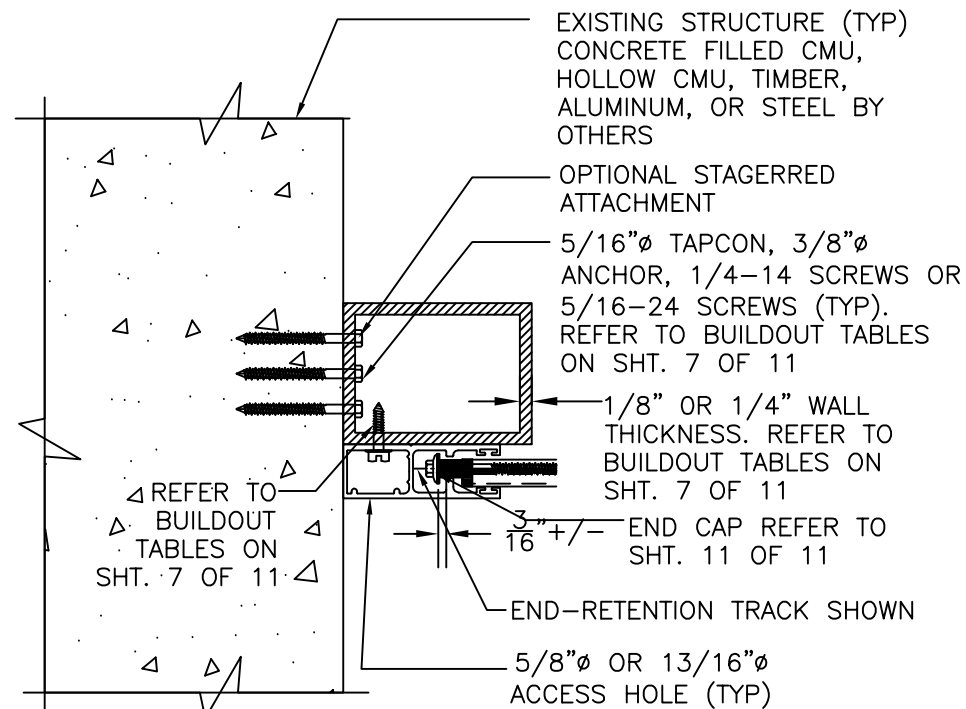
NOTE:
REFER TO SHT. 11
OF 11 FOR END
CAP OPTIONS



3/8" ANGLE TRAPPED INSTALLATION
END RETENTION &
NON-END RETENTION

3
6

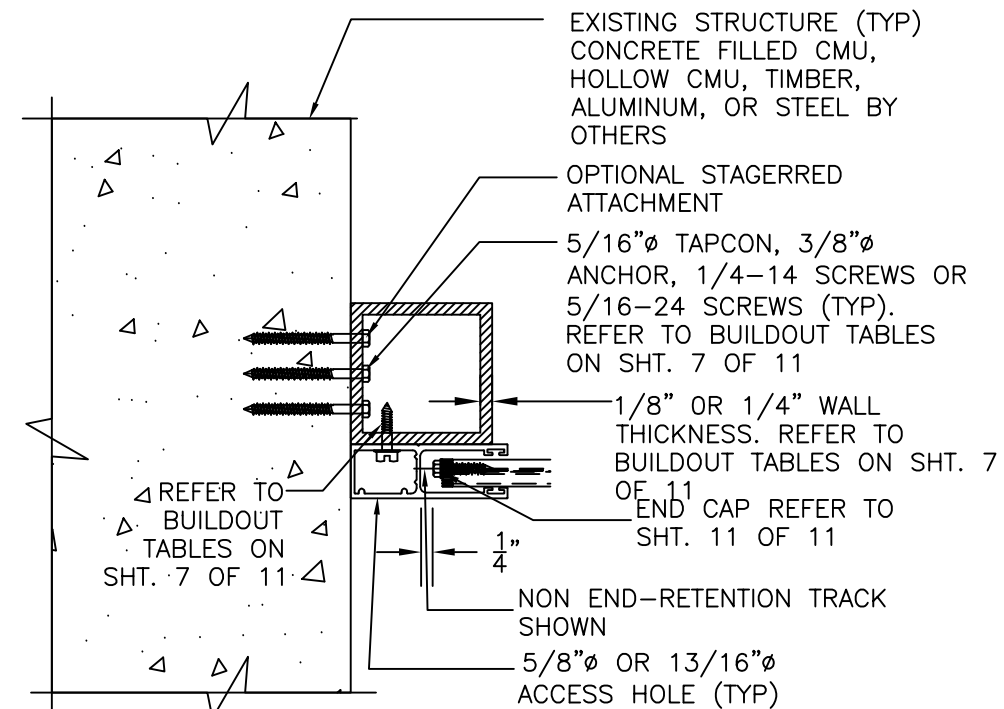
SCALE 3"=1'-0"



2", 3" OR 4" BUILD-OUT TRAPPED
INSTALLATION END RETENTION &
NON-END RETENTION

1
6

SCALE 3"=1'-0"



3" OR 2" BUILD-OUT TRAPPED
INSTALLATION END RETENTION &
NON-END RETENTION

2
6

SCALE 3"=1'-0"

NOTE: SEE BUILD-OUT TABLE
CORRESPONDING TO THE
BUILD-OUT WIDTH AGAINST THE
EXISTING STRUCTURE

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John H. Kampmann Jr., PE
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FBC 2023 (NON-HIGH VELOCITY HURRICANE ZONE)

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MEA
ENGINEERS, INC.
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Sarasota, Florida 34240
(941) 922-3854 CA-6752

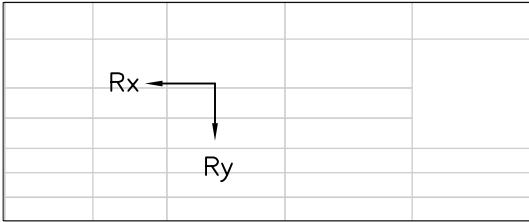
DESCRIPTION
XX/XX/XX - RESERVED.

Project Name:
National Approved Shutter Assn LLC
8717 NW 117 St, Suite 1
Hialeah Gardens, FL 33018
Phone: (786) 621-6706

Description:
**NAS-Assn 58 MILLIMETER
ROLL-UP SHUTTER SYSTEM**

Drawn: JK
Project #: 23-0615
Scale: NOTED
Date: 10/19/23
Sheet No.:

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END RETENTION (INTERIOR MOUNT)

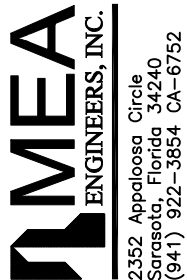
SLAT SPAN		DESIGN PRESSURE	R _x	R _y	2.5" MIN EDGE DISTANCE	2.5" MIN. EDGE DISTANCE	3.125" MIN. EDGE DISTANCE	3.125" MIN. EDGE DISTANCE	4" MIN. EDGE DISTANCE	4" MIN. EDGE DISTANCE	EMBEDMEN T; 3" MIN. EDGE DISTANCE	3" MIN. EDGE DISTANCE	EDGE DISTANCE	EDGE DISTANCE	EDGE DISTANCE	EDGE DISTANCE	0.125" MIN. 6063-T6 ALUM; 0.5" MIN	0.25" MIN. 6063-T6 ALUM; 0.625" MIN	EMBEDMEN T; 4.5" MIN. EDGE DISTANCE	3.75" MIN. EDGE DISTANCE	3.75" MIN. EDGE DISTANCE
7.0 FT	84"	+/- 30 PSF	229.2 LB/FT	129.0 LB/FT	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"	9.9"	10.0"	10.0"	10.0"	10.0"	10.0"	10.0"
	84"	+/- 35 PSF	359.8 LB/FT	165.5 LB/FT	10.0"	10.0"	10.0"	10.0"	10.0"	7.2"	10.0"	10.0"	9.0"	8.0"	7.3"	7.6"	7.4"	6.6"	10.0"	10.0"	10.0"
	84"	+/- 40 PSF	491.0 LB/FT	203.1 LB/FT	8.1"	9.0"	10.0"	10.0"	10.0"	5.4"	9.2"	9.5"	6.8"	6.2"	5.7"	5.9"	5.5"	4.9"	10.0"	10.0"	10.0"
	84"	+/- 45 PSF	622.7 LB/FT	241.8 LB/FT	6.5"	7.3"	10.0"	10.0"	10.0"	4.3"	7.3"	7.6"	5.5"	5.1"	4.7"	4.8"	4.3"	3.8"	10.0"	10.0"	10.0"
	84"	+/- 50 PSF	754.9 LB/FT	281.4 LB/FT	5.4"	6.1"	9.7"	9.3"	10.0"	3.5"	6.1"	6.4"	4.6"	4.3"	4.0"	4.0"	3.6"	3.2"	10.0"	10.0"	10.0"
	84"	+/- 60 PSF	1020.8 LB/FT	363.9 LB/FT	4.0"	4.6"	7.3"	7.0"	7.8"		4.5"	4.8"	3.4"	3.3"	3.0"				10.0"	10.0"	10.0"
	84"	+/- 70 PSF	1288.6 LB/FT	450.4 LB/FT	3.2"	3.6"	5.8"	5.5"	6.2"		3.6"	3.8"							10.0"	10.0"	10.0"
	84"	+/- 80 PSF	1558.4 LB/FT	540.9 LB/FT		3.0"	4.8"	4.6"	5.1"		3.0"	3.1"							10.0"	9.5"	10.0"
	84"	+/- 90 PSF	1830.0 LB/FT	635.5 LB/FT			4.1"	3.9"	4.4"										9.6"	8.1"	10.0"
84"	+/- 100 PSF	2103.3 LB/FT	734.0 LB/FT			3.6"	3.4"	3.8"										8.4"	7.0"	9.7"	
84"	+/- 110 PSF	2378.4 LB/FT	836.5 LB/FT			3.1"	3.0"	3.3"										7.4"	6.2"	8.6"	
8.0 FT	96"	+/- 30 PSF	522.6 LB/FT	181.7 LB/FT	8.0"	9.0"	10.0"	10.0"	10.0"	5.2"	8.9"	9.4"	6.7"	6.5"	6.0"	6.0"	5.2"	4.6"	10.0"	10.0"	10.0"
	96"	+/- 35 PSF	679.9 LB/FT	222.3 LB/FT	6.2"	7.0"	10.0"	10.0"	10.0"	4.0"	6.9"	7.3"	5.3"	5.1"	4.8"	4.8"	4.1"	3.6"	10.0"	10.0"	10.0"
	96"	+/- 40 PSF	837.4 LB/FT	263.2 LB/FT	5.1"	5.7"	9.2"	8.7"	9.8"	3.3"	5.7"	6.0"	4.3"	4.3"	4.0"	3.9"	3.3"		10.0"	10.0"	10.0"
	96"	+/- 45 PSF	995.0 LB/FT	304.3 LB/FT	4.3"	4.9"	7.8"	7.4"	8.3"	3.0"	4.8"	5.1"	3.7"	3.6"	3.4"	3.4"			10.0"	10.0"	10.0"
	96"	+/- 50 PSF	1152.8 LB/FT	345.7 LB/FT	3.7"	4.2"	6.7"	6.4"	7.2"		4.2"	4.4"	3.2"	3.2"					10.0"	10.0"	10.0"
	96"	+/- 60 PSF	1469.0 LB/FT	429.5 LB/FT	3.0"	3.3"	5.3"	5.1"	5.7"		3.3"	3.5"							10.0"	10.0"	10.0"
	96"	+/- 70 PSF	1785.9 LB/FT	514.3 LB/FT			4.4"	4.2"	4.7"										10.0"	8.6"	10.0"
	96"	+/- 80 PSF	2103.4 LB/FT	600.3 LB/FT			3.7"	3.6"	4.0"										8.9"	7.3"	10.0"
10.0 FT	120"	+/- 30 PSF	1028.2 LB/FT	267.5 LB/FT	4.3"	4.9"	7.8"	7.4"	8.4"		4.8"	5.1"	3.7"	3.8"	3.6"	3.5"			10.0"	10.0"	10.0"
	120"	+/- 35 PSF	1244.5 LB/FT	318.6 LB/FT	3.6"	4.1"	6.4"	6.1"	6.9"		4.0"	4.2"	3.0"	3.2"					10.0"	10.0"	10.0"
	120"	+/- 40 PSF	1460.9 LB/FT	369.9 LB/FT	3.1"	3.5"	5.5"	5.2"	5.9"		3.4"	3.6"							10.0"	10.0"	10.0"
	120"	+/- 45 PSF	1677.5 LB/FT	421.6 LB/FT		3.0"	4.8"	4.6"	5.2"		3.0"	3.1"							10.0"	9.4"	10.0"
	120"	+/- 50 PSF	1894.4 LB/FT	473.6 LB/FT			4.3"	4.1"	4.6"										10.0"	8.4"	10.0"
	120"	+/- 60 PSF	2328.6 LB/FT	578.4 LB/FT			3.5"	3.3"	3.7"										8.4"	6.8"	9.5"
	120"	+/- 70 PSF	2763.6 LB/FT	684.5 LB/FT			3.0"	3.0"	3.2"										7.1"	5.7"	8.0"
12.0 FT	144"	+/- 30 PSF	1496.5 LB/FT	341.0 LB/FT	3.1"	3.5"	5.5"	5.2"	5.9"		3.3"	3.6"							10.0"	10.0"	10.0"
	144"	+/- 35 PSF	1777.3 LB/FT	402.6 LB/FT		3.0"	4.6"	4.4"	5.0"			3.0"							10.0"	9.1"	10.0"
	144"	+/- 40 PSF	2058.3 LB/FT	464.6 LB/FT			4.0"	3.8"	4.3"										9.7"	7.8"	10.0"
	144"	+/- 45 PSF	2339.6 LB/FT	527.0 LB/FT			3.5"	3.3"	3.8"										8.5"	6.9"	9.7"
	144"	+/- 50 PSF	2621.1 LB/FT	589.8 LB/FT			3.1"	3.0"	3.4"										7.6"	6.2"	8.7"
14.0 FT	168"	+/- 30 PSF	1961.6 LB/FT	408.7 LB/FT			4.2"	4.0"	4.6"										10.0"	8.3"	10.0"
	168"	+/- 35 PSF	2311.8 LB/FT	480.7 LB/FT			3.6"	3.4"	3.9"										8.8"	7.1"	10.0"
	168"	+/- 40 PSF	2662.3 LB/FT	553.2 LB/FT			3.1"	3.0"	3.4"										7.7"	6.1"	8.7"
	168"	+/- 45 PSF	3013.1 LB/FT	626.1 LB/FT					3.0"										6.8"	5.4"	7.7"
	168"	+/- 50 PSF	3364.2 LB/FT	699.5 LB/FT															6.1"	4.9"	6.9"
16.0 FT	192"	+/- 30 PSF	2438.9 LB/FT	477.0 LB/FT			3.5"	3.3"	3.8"										8.5"	6.8"	9.6"
	192"	+/- 35 PSF	2863.9 LB/FT	560.7 LB/FT			3.0"	3.0"	3.2"										7.2"	5.8"	8.1"
	192"	+/- 40 PSF	3289.3 LB/FT	645.0 LB/FT															6.3"	5.0"	7.1"
18.0 FT	216"	+/- 20 PSF	1926.7 LB/FT	358.1 LB/FT			4.4"	4.2"	4.8"										10.0"	8.6"	10.0"
	216"	+/- 25 PSF	2430.3 LB/FT	452.6 LB/FT			3.5"	3.3"	3.8"										8.6"	6.8"	9.7"
	216"	+/- 30 PSF	2934.6 LB/FT	548.4 LB/FT			3.0"	3.0"	3.1"										7.1"	5.7"	8.0"
	216"	+/- 35 PSF	3439.6 LB/FT	645.3 LB/FT															6.1"	4.8"	6.8"
	216"	+/- 40 PSF	3945.3 LB/FT	743.5 LB/FT															5.3"	4.2"	6.0"
20.0 FT	240.0"	+/- 20 PSF	2284.5 LB/FT	419.9 LB/FT			3.7"	3.5"	4.1"										9.2"	7.3"	10.0"
	240.0"	+/- 25 PSF	2878.0 LB/FT	536.1 LB/FT			3.0"	3.0"	3.2"										7.3"	5.8"	8.2"
	240.0"	+/- 30 PSF	3473.9 LB/FT	656.2 LB/FT															6.0"	4.8"	6.8"
	240.0"	+/- 35 PSF	4072.2 LB/FT	780.2 LB/FT															5.1"	4.1"	5.7"
	240.0"	+/- 40 PSF	4673.0 LB/FT	908.0 LB/FT															4.4"	3.5"	5.0"

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John H. Kampmann Jr., PE
FL License #: 47516
DATE:

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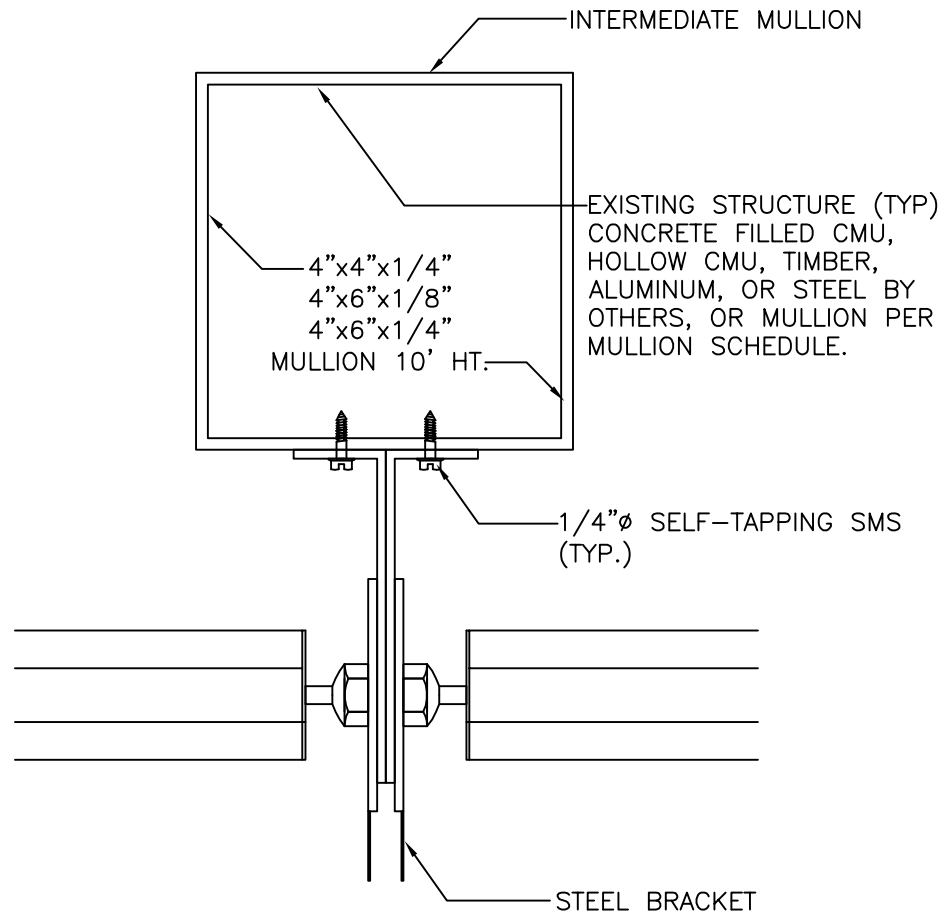


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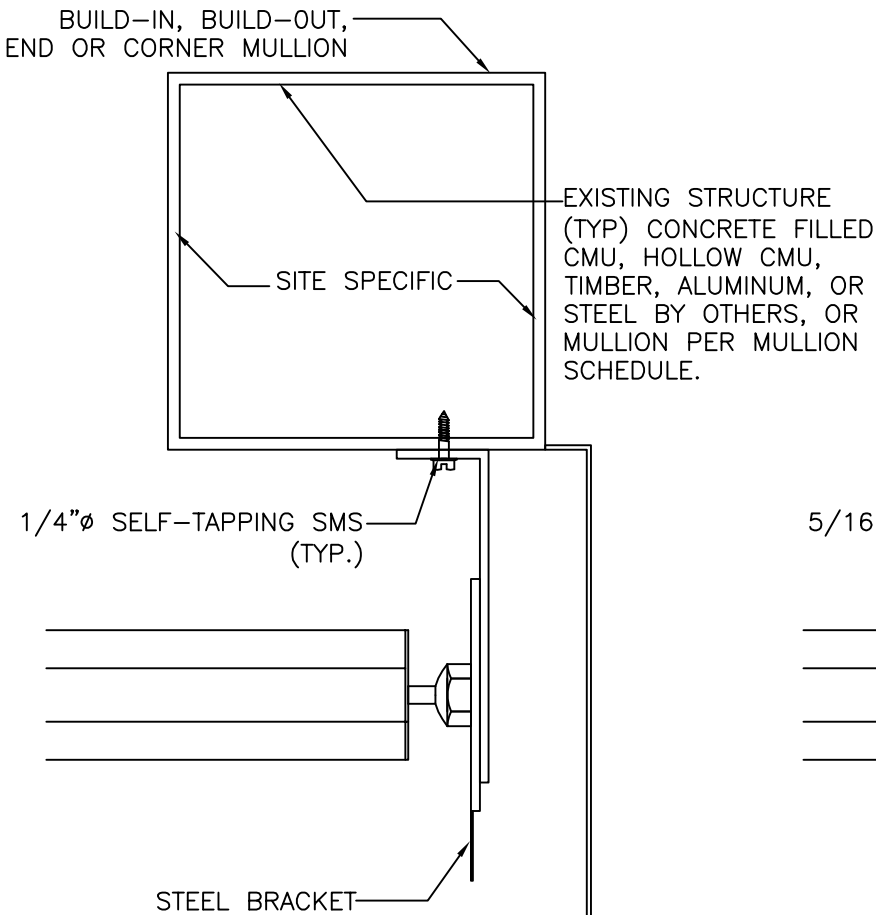
Project Name:
National Approved Shutter Assn LLC
8717NW 117 St, Suite 1
Hialeah Gardens, FL 33018
Phone: (786)621-6706

Description:
NAS-Assn 58 MILLIMETER
ROLL-UP SHUTTER SYSTEM

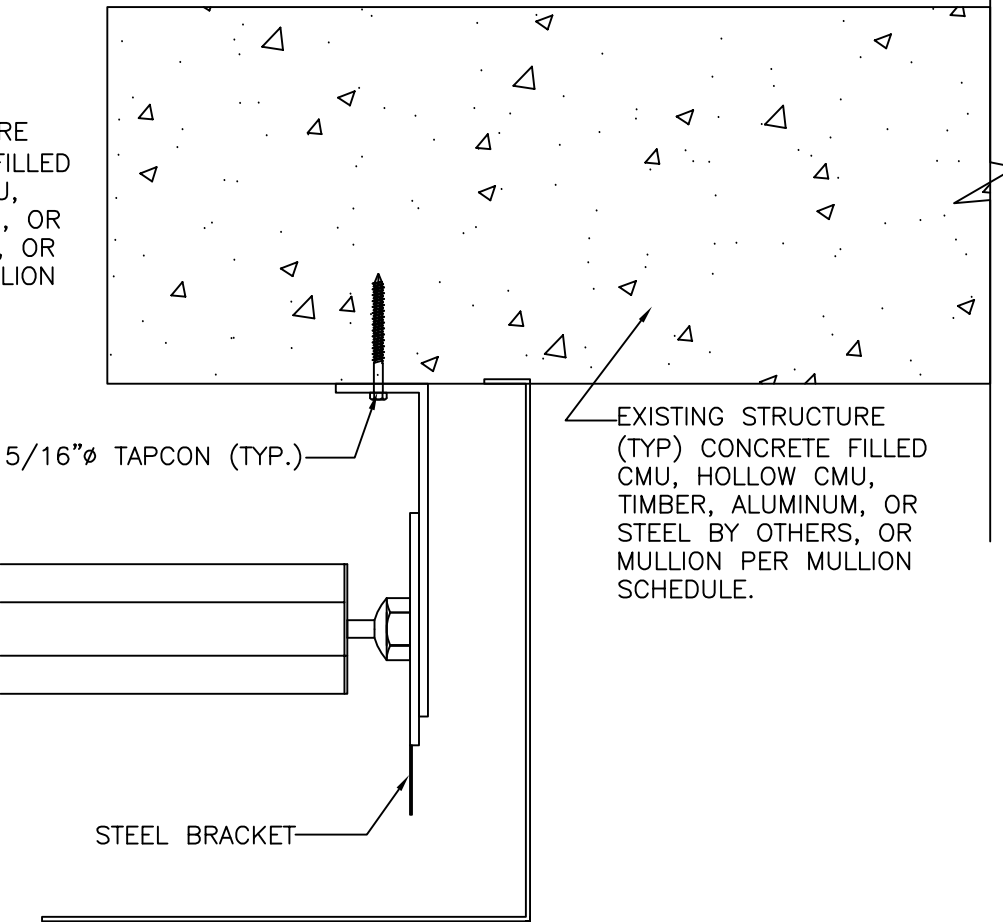
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Project #:	23-0615
Scale:	NOTED
Date:	10/19/23
Sheet No.:	



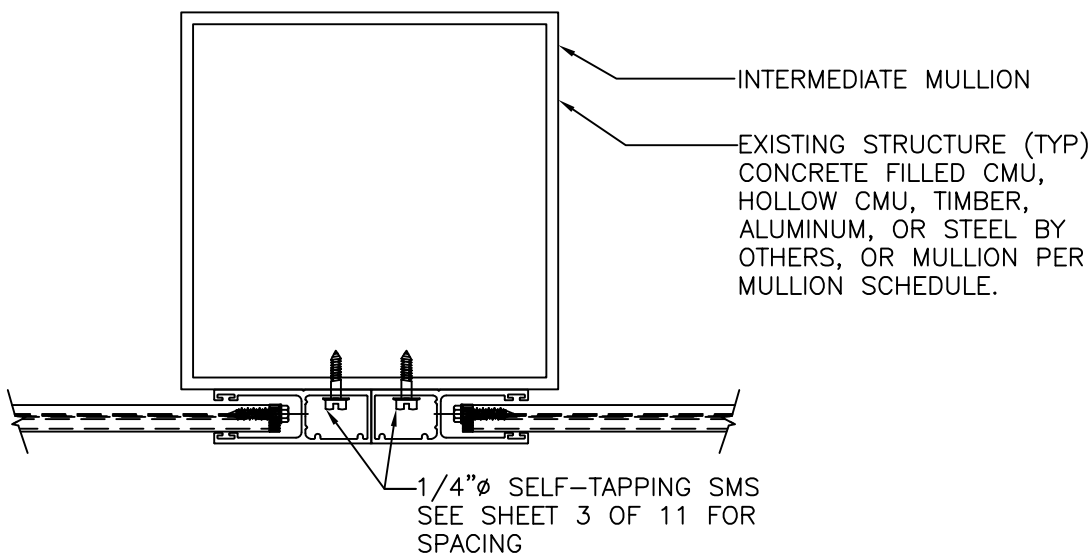
1
8 MOUNTING BRACKET INSTALLATION
END RETENTION & NON-END RETENTION INSTALLATION
SCALE 3"=1'-0"



2
8 MOUNTING BRACKET INSTALLATION
END RETENTION & NON-END RETENTION INSTALLATION
SCALE 3"=1'-0"



3
8 MOUNTING BRACKET INSTALLATION
END RETENTION & NON-END RETENTION INSTALLATION
SCALE 3"=1'-0"



4
8 MOUNTING BRACKET INSTALLATION
END RETENTION & NON-END RETENTION INSTALLATION
SCALE 3"=1'-0"

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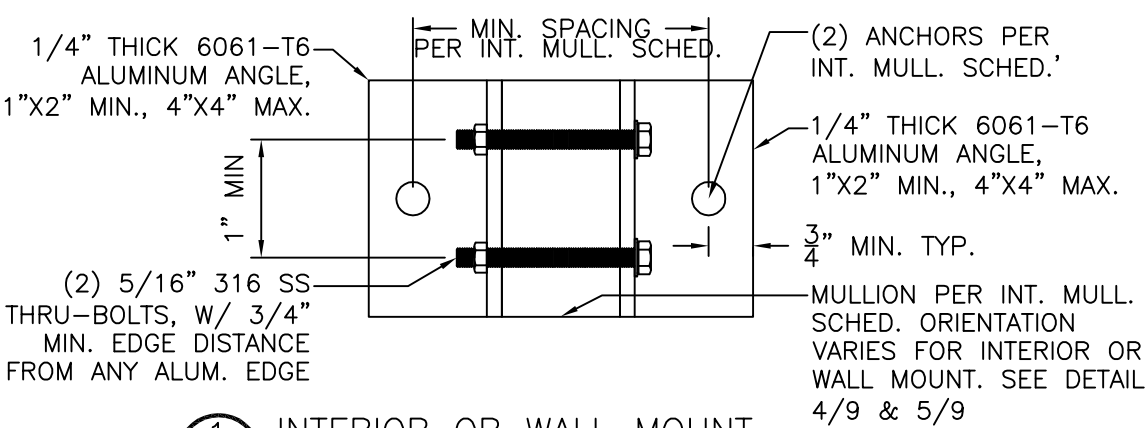
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MEA
ENGINEERS, INC.
2352 Appaloosa Circle
Sarasota, Florida 34240
(941) 922-3854 CA-6752

DESCRIPTION
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REV. 1

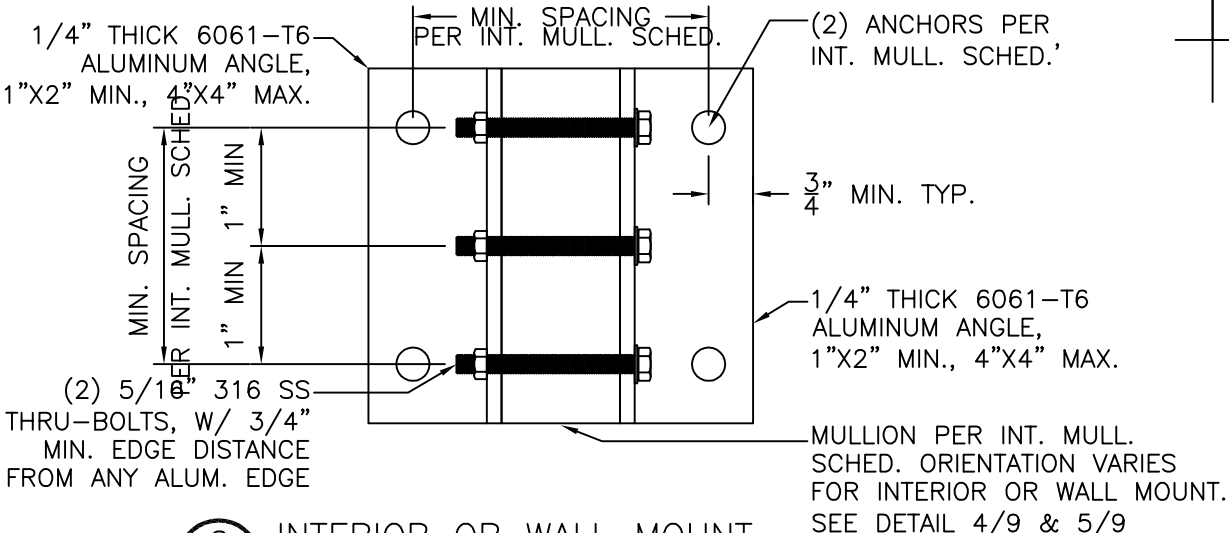
Project Name:
National Approved Shutter Assn LLC
8717 NW 117 St, Suite 1
Hialeah Gardens, FL 33018
Phone: (786)621-6706

Description:
**NAS-Assn 58 MILLIMETER
ROLL-UP SHUTTER SYSTEM**

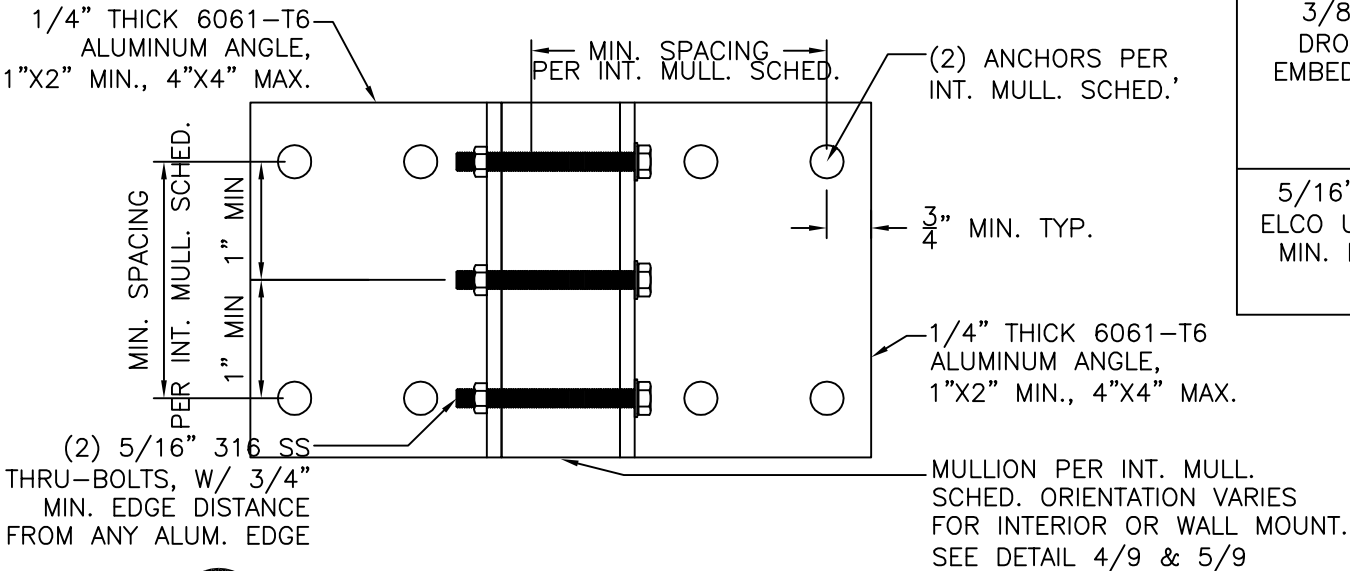
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Project #: 23-0615
Scale: NOTED
Date: 10/19/23
Sheet No.:



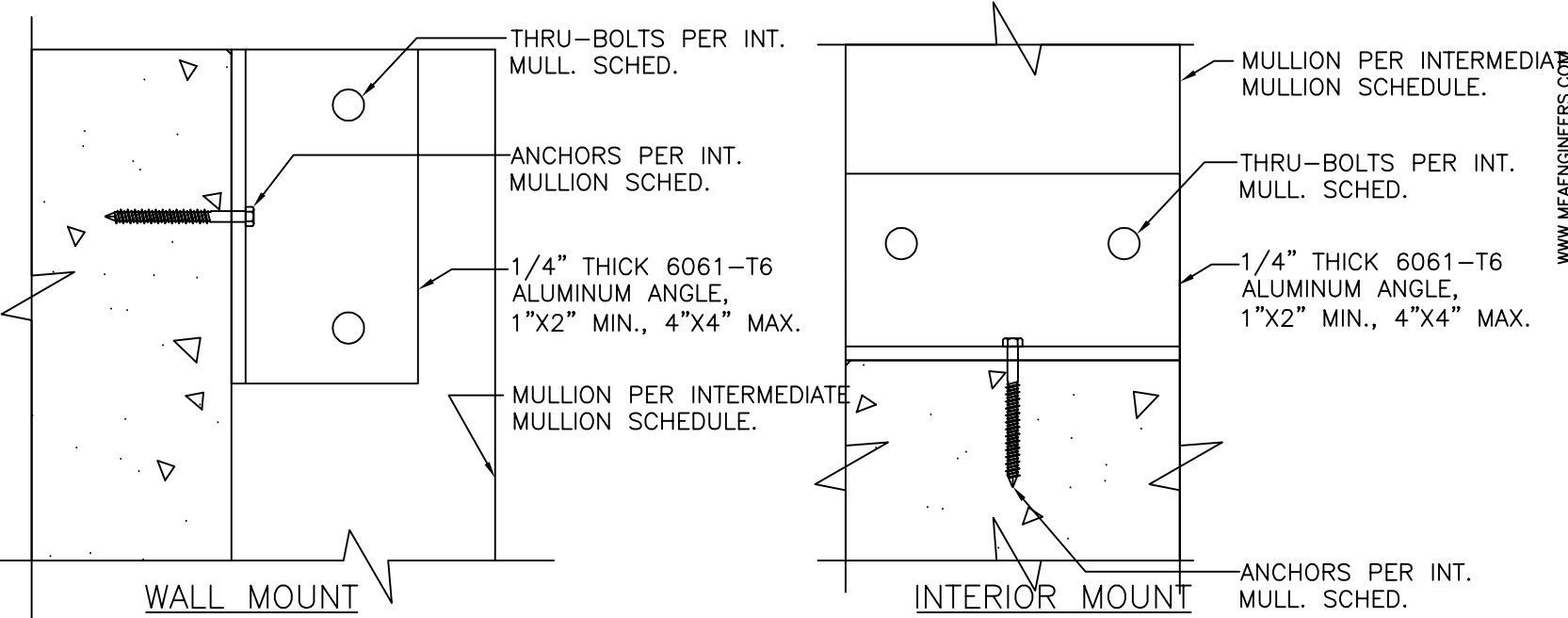
1 INTERIOR OR WALL MOUNT
9 END RETENTION & NON-END RETENTION INSTALLATION N.T.S.



2 INTERIOR OR WALL MOUNT
9 END RETENTION & NON-END RETENTION INSTALLATION N.T.S.



3 INTERIOR OR WALL MOUNT
9 END RETENTION & NON-END RETENTION INSTALLATION N.T.S.



4 MOUNTING CONDITIONS VERTICAL SECTIONS
9 END RETENTION & NON-END RETENTION INSTALLATION N.T.S.

INTERMEDIATE MULLION SCHED. W/ EQUAL SPANS BOTH SIDES								
ANCHOR TYPE	MINIMUM SPACING	MINIMUM EDGE DISTANCE	CONNECTION DETAIL	MIN. MULLION SIZE	MAX. SLAT SPAN	MAX. MULLION HT.	MAX. DP	E.R. OR NON E.R
3/8" POWERS WEDGE BOLTS W/ 3-1/2" EMBED TO 3000P SI MIN CONCRETE	4.5"	4.5"	1/9	3X3.25	96"	60"	60	E.R.
			2/9	4X6X.25	180"	90"	60	E.R.
	2.5"	4.5"	3/9	4X8X.25	240"	90"	40	E.R.
3/8" POWERS STEEL DROPIN W/ 1-9/16" EMBED TO 3000 PSI MIN CONCRETE	4.5"	5.25"	1/9	3X3.25	84"	90"	120	NON E.R.
			2/9	4X6X.25	144"	90"	120	E.R.
	2.5"	5.25"	3/9	4X6X.25	168"	90"	60	E.R.
5/16" ITW TAPCON XL OR ELCO ULTRAACON W/ 2-1/4" MIN. EMBED TO 3500 PS1 MIN. CONCRETE	5.0"	3.125"	1/9	3X3.25	84"	90"	120	NON E.R.
			2/9	3X3.25	96"	60"	60	E.R.

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Sarasota, Florida 34240
(941) 922-3854 CA-6752

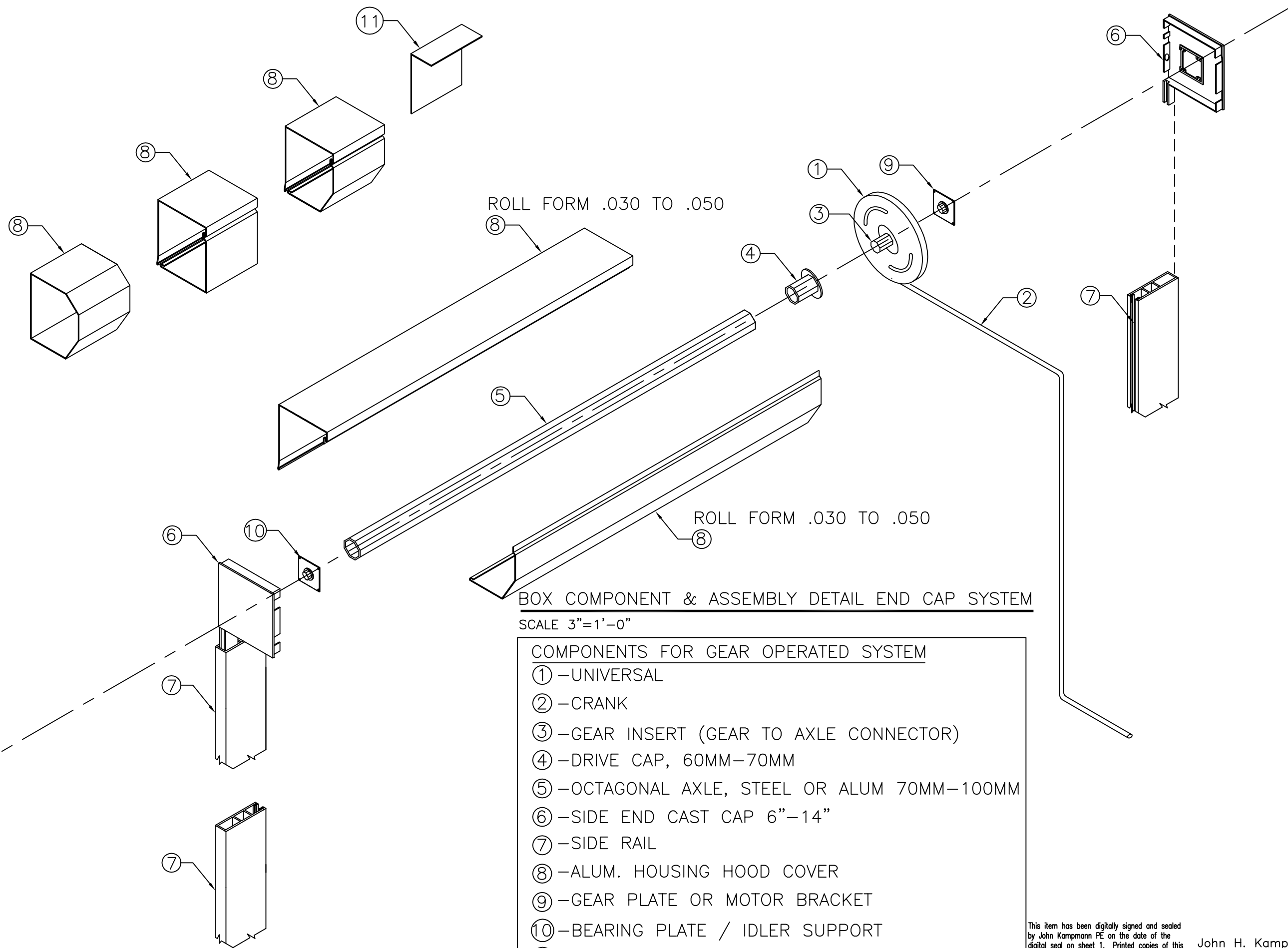
DESCRIPTION
XX/XX/XX - RESERVED.

REV.
1

Project Name:
National Approved Shutter Assn LLC
8717 NW 117 St, Suite 1
Hialeah Gardens, FL 33018
Phone: (786)621-6706

Description:
NAS-Assn 58 MILLIMETER
ROLL-UP SHUTTER SYSTEM

Drawn: JK
Project #: 23-0615
Scale: NOTED
Date: 10/19/23
Sheet No.: 9 of 11



BOX COMPONENT & ASSEMBLY DETAIL END CAP SYSTEM
SCALE 3"=1'-0"

- COMPONENTS FOR GEAR OPERATED SYSTEM
- ① – UNIVERSAL
 - ② – CRANK
 - ③ – GEAR INSERT (GEAR TO AXLE CONNECTOR)
 - ④ – DRIVE CAP, 60MM–70MM
 - ⑤ – OCTAGONAL AXLE, STEEL OR ALUM 70MM–100MM
 - ⑥ – SIDE END CAST CAP 6"–14"
 - ⑦ – SIDE RAIL
 - ⑧ – ALUM. HOUSING HOOD COVER
 - ⑨ – GEAR PLATE OR MOTOR BRACKET
 - ⑩ – BEARING PLATE / IDLER SUPPORT
 - ⑪ – STEEL BRACKET

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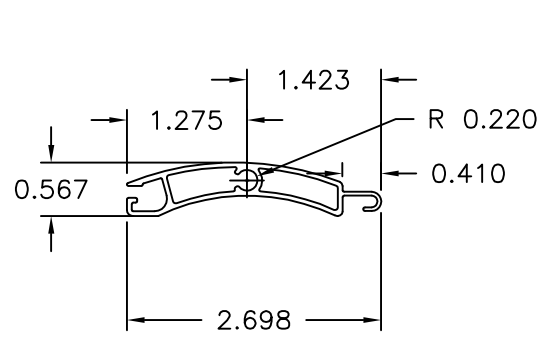
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ENGINEERS, INC.
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Sarasota, Florida 34240
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REV.	DESCRIPTION
1	XX/XX/XX – RESERVED.

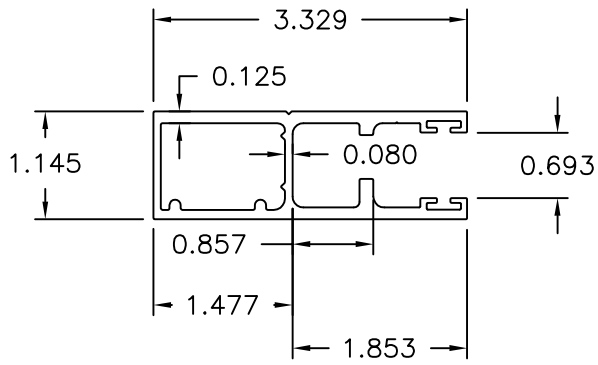
Project Name:
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Hialeah Gardens, FL 33018
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Description:
**NAS-Assn 58 MILLIMETER
ROLL-UP SHUTTER SYSTEM**

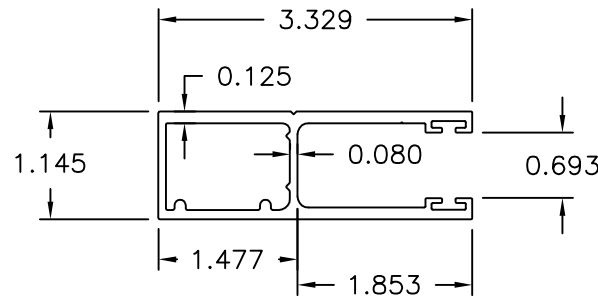
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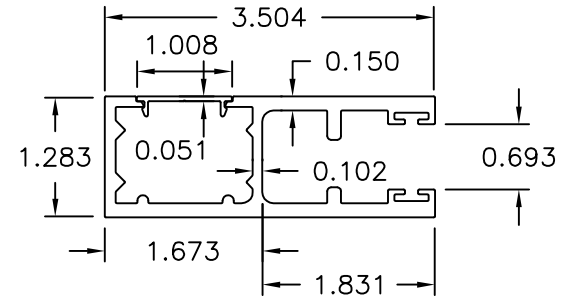
58MM SLAT
SCALE 1:2



58MM SIDE RAIL W/ RETENTION LEGS
SCALE 1:2



58MM SIDE RAIL W/O RETENTION LEGS
SCALE 1:2



1500 ULTRA END RETENTION SIDE RAIL W/ COVER
SCALE 1:2



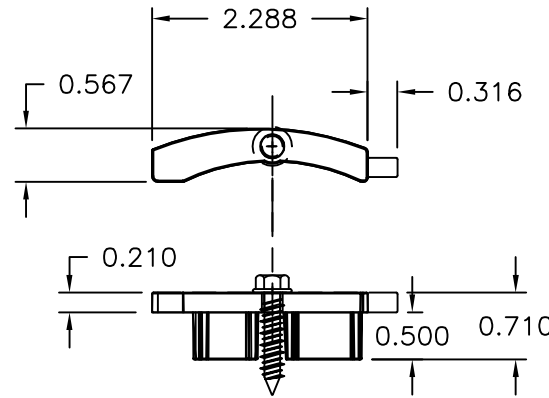
DETAIL-1
SCALE 1:2
2' TO 7'
NON-END RETENTION



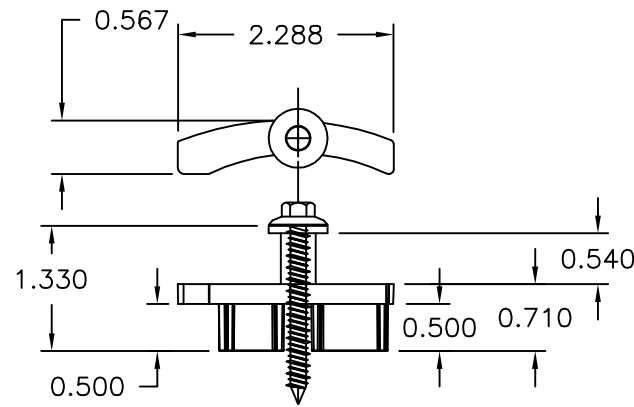
DETAIL-2
SCALE 1:2
2' TO 14'
END RETENTION



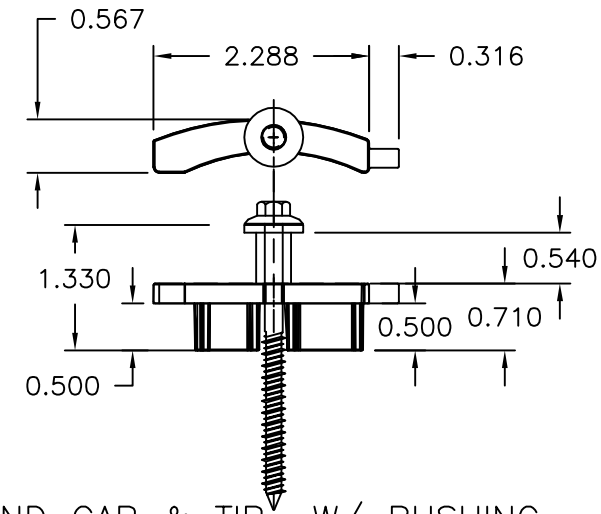
DETAIL-3
SCALE 1:2
14' TO 21'
END RETENTION



1 END CAP & TIP W/OUT BUSHING
SCALE 1:2 SEE DETAIL-1 ON THIS SHT.



3 END CAP W/ BUSHING
SCALE 1:2 SEE DETAIL-3 ON THIS SHEET



2 END CAP & TIP W/ BUSHING
SCALE 1:2 SEE DETAIL-2 ON THIS SHEET

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REV. 1
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8717 NW 117 St, Suite 1
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