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Product Approval
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FL #	FL320-R8								
Application Type	Revision								
Code Version	2017								
Application Status	Approved								
Comments									
Archived	☐								
Product Manufacturer	Armor Screen Corp.								
Address/Phone/Email	2744 Hillsboro Road West Palm Beach, FL 33405 (561) 841-8890 doug@armorscreen.com								
Authorized Signature	Douglas Turner doug@armorscreen.com								
Technical Representative									
Address/Phone/Email									
Quality Assurance Representative									
Address/Phone/Email									
Category	Impact Protective Systems								
Subcategory	Operable								
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer ☐ Evaluation Report - Hardcopy Received								
Florida Engineer or Architect Name who developed the Evaluation Report	Theodore Berman, P.E.								
Florida License	PE-09814								
Quality Assurance Entity	National Accreditation and Management Institute								
Quality Assurance Contract Expiration Date	12/31/2023								
Validated By	Simon Segal, P.E. ☒ Validation Checklist - Hardcopy Received								
Certificate of Independence	FL320_R8_COI_Certification of Independence.SS.pdf								
Referenced Standard and Year (of Standard)	<table border="0"> <thead> <tr> <th>Standard</th> <th>Year</th> </tr> </thead> <tbody> <tr> <td>TAS 201</td> <td>1994</td> </tr> <tr> <td>TAS 202</td> <td>1994</td> </tr> <tr> <td>TAS 203</td> <td>1994</td> </tr> </tbody> </table>	Standard	Year	TAS 201	1994	TAS 202	1994	TAS 203	1994
Standard	Year								
TAS 201	1994								
TAS 202	1994								
TAS 203	1994								
Equivalence of Product Standards Certified By									
Sections from the Code									

Product Approval Method

Method 1 Option D

Date Submitted 12/18/2017
 Date Validated 12/19/2017
 Date Pending FBC Approval 01/02/2018
 Date Approved 02/13/2018

Summary of Products

FL #	Model, Number or Name	Description
320.1	Hemcord Roll-up System	Flexible Wind Abatement / Impact Hurricane Protection
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: Yes Design Pressure: +110/-110 Other: Glass separation is required for installations within Wind Zone 4, High Velocity Hurricane Zone and on Essential Facilities. The un-breached envelope criterion is met since the system is considered 'non-porous' outside of the High Velocity Hurricane Zone and remains intact under impact and air pressure loading. The system is to enclose the protected opening all around.		Installation Instructions FL320_R8_II_FL320 Installation Instructions-Hemcord Roll-up System.pdf Verified By: Theodore Berman, P.E. 09814 Created by Independent Third Party: No Evaluation Reports FL320_R8_AE_FL320 Evaluation Report.pdf Created by Independent Third Party: Yes

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Product Approval Accepts:

ARMOR SCREEN HEMCORD ROLL-UP SYSTEM

GENERAL NOTES:

- This Flexible Wind Abatement / Impact Protection System is for use within and outside the high velocity hurricane zone (HVHZ - Miami-Dade & Broward Counties). Separation from glass is required only when system is installed within wind zone 4, high velocity hurricane zone and on essential facilities.
- The design loads are calculated in accordance with the Florida Building Code 6th Edition (2017) and ASCE 7-10. Pressures obtained under ASCE 7-10 may be multiplied by 0.6.
- Testing meets Florida Building Code 5th Edition (2014); TAS 201; TAS 202; TAS 203; ASTM E 330-02; ASTM E 1996-05 Level E; and ASTM E 1886-05 per Sections 1620 and 1626 and fulfills its requirement for opening protection.
Testing performed by Fenestration Testing Laboratory, Inc. Medley, FL:
Test Reports: Date: 01/28/07 File #07-482 Lab #5174 Report #01
Date: 01/28/07 File #07-482 Lab #5180 Report #02
Date: 08/25/07 File #07-482 Lab #5279 Report #03
Date: 12/07/07 File #07-482 Lab #5446 Report #04
Date: 02/08/08 File #08-482 Lab #5533 Report #01
- Has been tested for resistance to burning, smoke, ignition, temperature and weathering: ASTM C158, ASTM D 635-C1, ASTM D 638, ASTM D 1929 and ASTM G 155.
- The pores in Armor Screen are small enough that the surface tension of water causes the barrier screen to become solid in the presence of rain, and prevents damaging voluminous water intrusion, even from torrential rains.
In dry conditions, the pores remain open, and based on testing, allow approximately 3% of the wind to pass through.
- The unbreached envelope criterion is met since the system is considered "non-porous" and remains intact under impact and air pressure loading. This envelope criterion is met when the system encloses the protected opening all around.
- Product Marking: A permanent label shall be fixed to the screen barrier with the following statement: "Armor Screen Corporation, West Palm Beach, FL, Testing Standards, Current FBC Number, Job Name and Screen Opening/Number, Patented and Patents Pending, US Patent No. 6176050".

PRODUCT DATA:

- Geosynthetic hurricane screen: The hurricane screen shall be produced from a polypropylene, woven geotextile fabric with filaments woven such that the filaments retain dimensional stability relative to each other.
The woven geotextile fabric shall have the following minimum average roll values:
Grab Textile Strength (ASTM D4632) 425 x 325 LBS
Puncture Strength (ASTM D4833) 130 LBS
Mullen Burst (ASTM D3786) 675 PSI
Trapezoidal Tear (ASTM D4533) 150 x 125 LBS
Wide Width Tensile Strength (ASTM D4595) 225 x 205 LBS/IN
Thickness (ASTM D5199) 20 MIL.
Wide Width Elongation (ASTM D4595) 22 x 21%
Apparent Opening Size 30 US STD Sieve
Percentage of Open Area 5%

LIMITATIONS OF USE:

- Maximum Span 192 Inches Hemcord
- Maximum Design Pressure +110 / -110 PSF
- The design pressure may be increased 5% for negative loads.
- Span equals the distance between the primary rows of fasteners .

INSTALLATION NOTES:

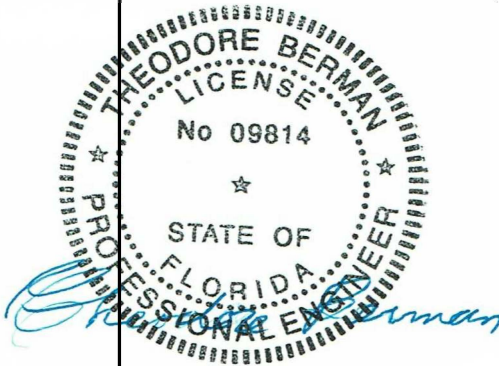
- Deflection is the minimum glass separation measured at mid span of the screen and subject to rational analysis and may be achieved by using Storm Bars.
- All specifications to be equivalent or greater in product.
- All Aluminum Extrusions to be minimum 6063-T6 or as indicated.
- The thickness of typical facing materials i.e. stucco, siding, stone, brick, pavers, etc. are not to be considered part of the anchor embedment. Longer fasteners may be used to allow for facing materials.
- Anchor embedment shall be in face shell, not mortar joints.
- The screens may be installed at any height on the structure as long as the design pressure rating for the screens is not exceeded.
- All fasteners shall be corrosion resistant as specified in the IRC, IBC and FBC.
- In instances where a screen is made up of two pieces of fabric or for repair purposes, a flat felt seam or triple layer hem with a minimum of two rows of double lock stitch thread is acceptable.The fabric comes in standard lengths such as 12' wide, therefore for screens that are larger, two pieces are seamed together as noted above.
- Roll-up must be installed plumb and level for proper functionality.

All Geosynthetic Hurricane Screen assembly details depicted within these drawings are typical for the installation of this wind / rain abatement and impact system only. All other building components shown herein are depicted as existing or samples and not constructed by the screen company.

TITLE:
ARMOR SCREEN
HEMCORD ROLL-UP
SYSTEM

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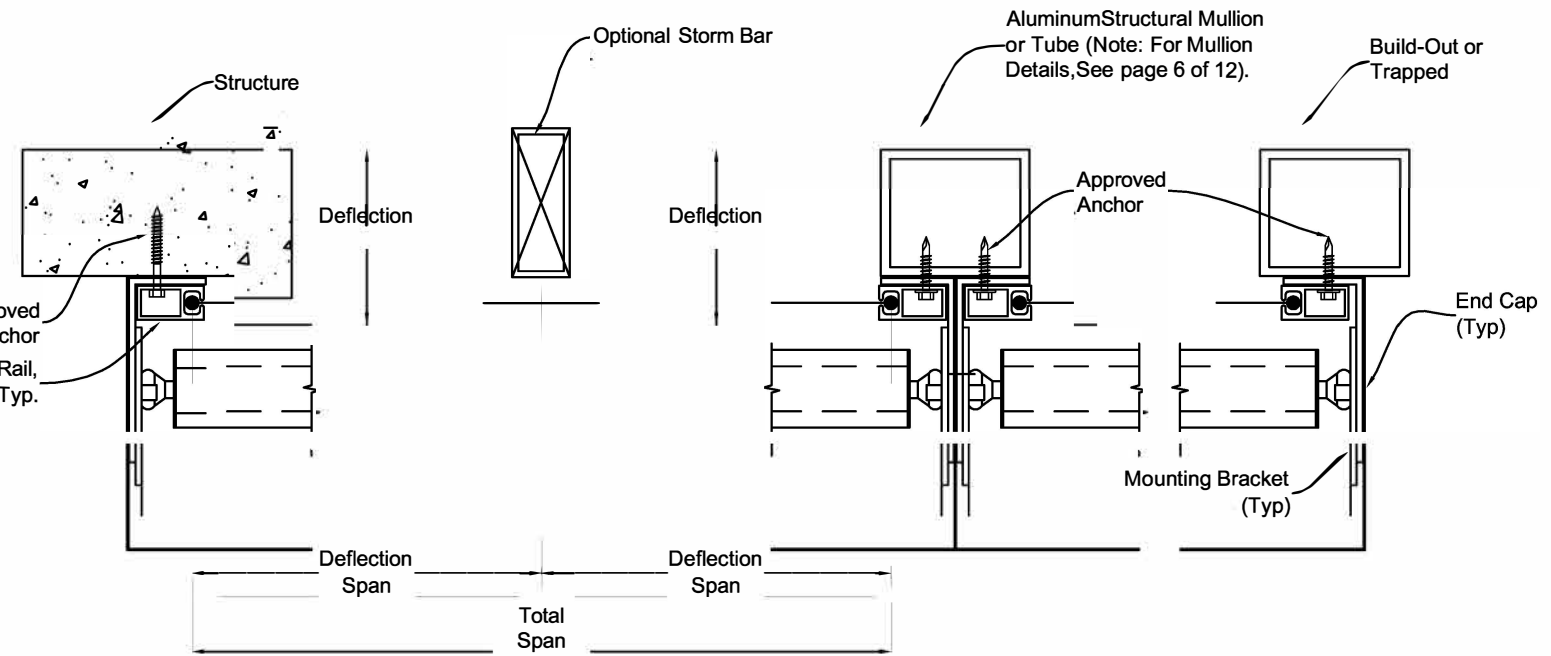
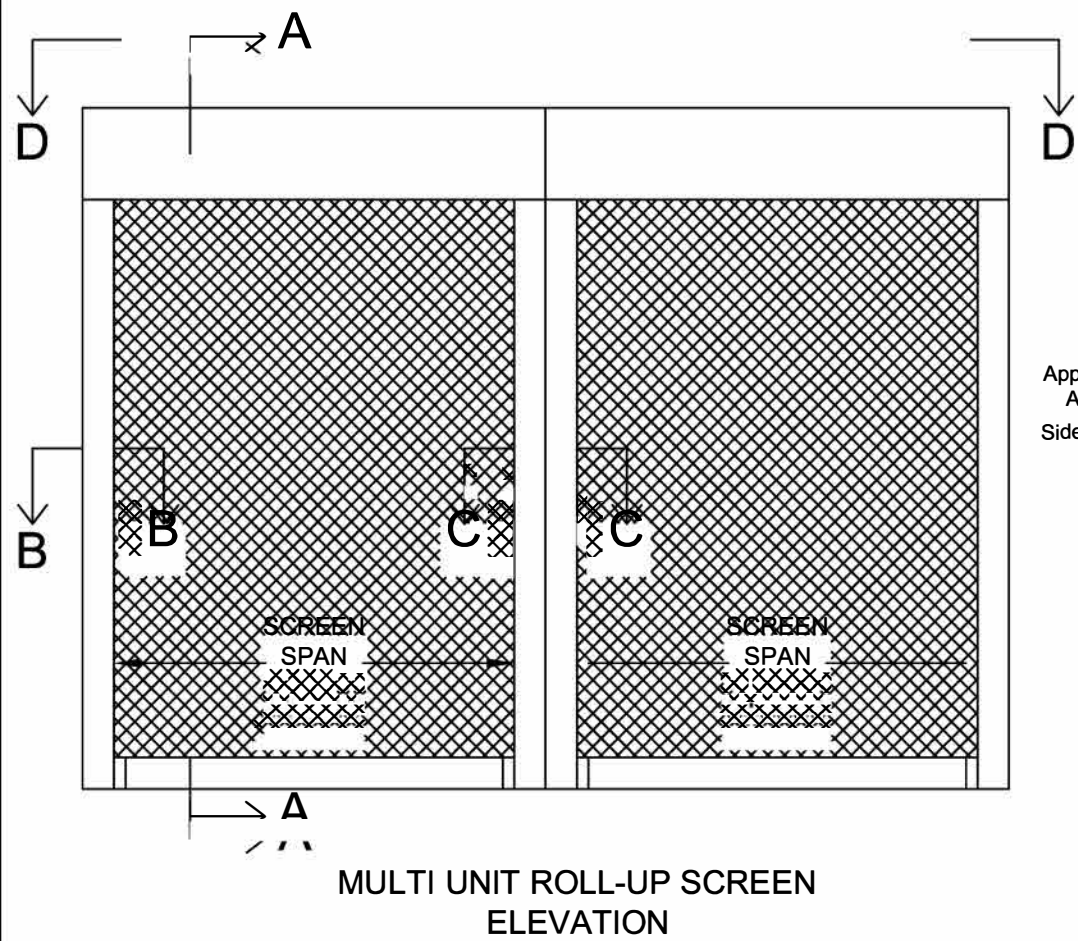
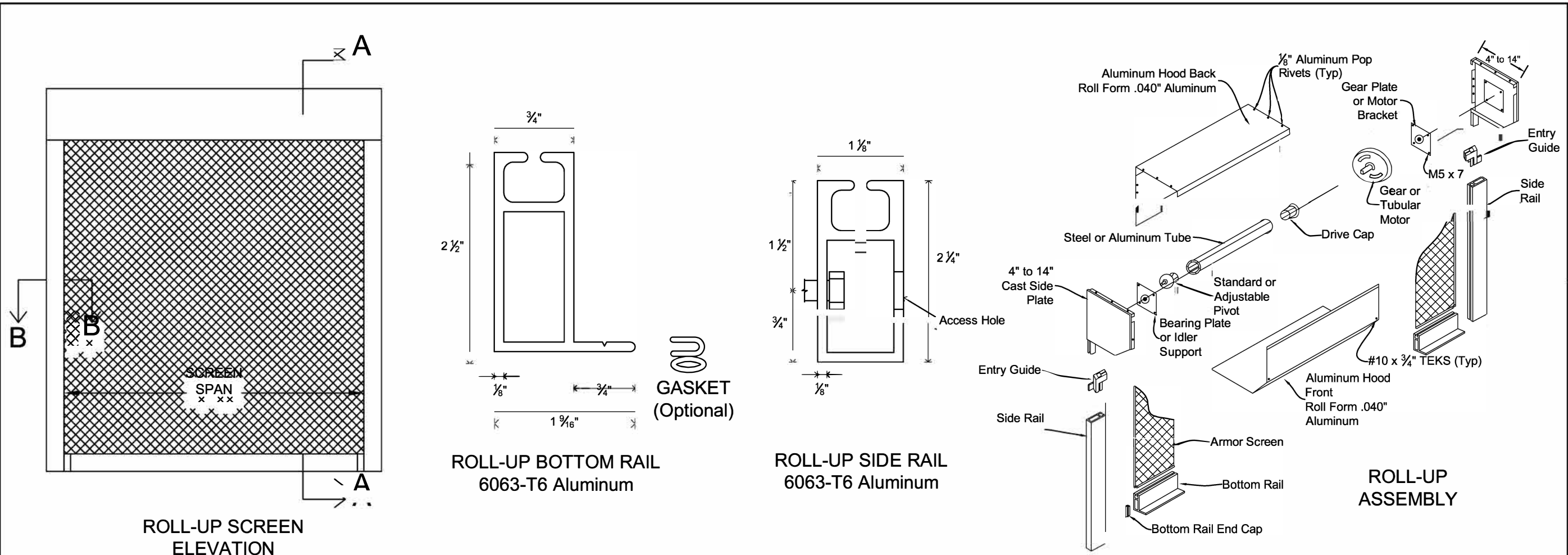
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DATE:

DWG #: 201-2010

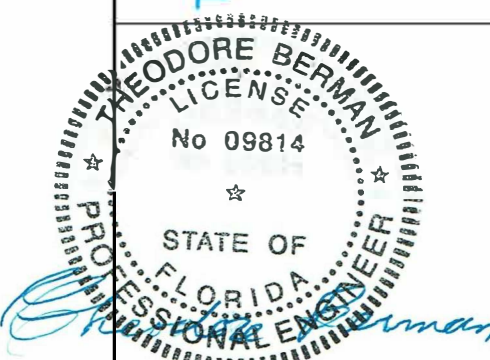
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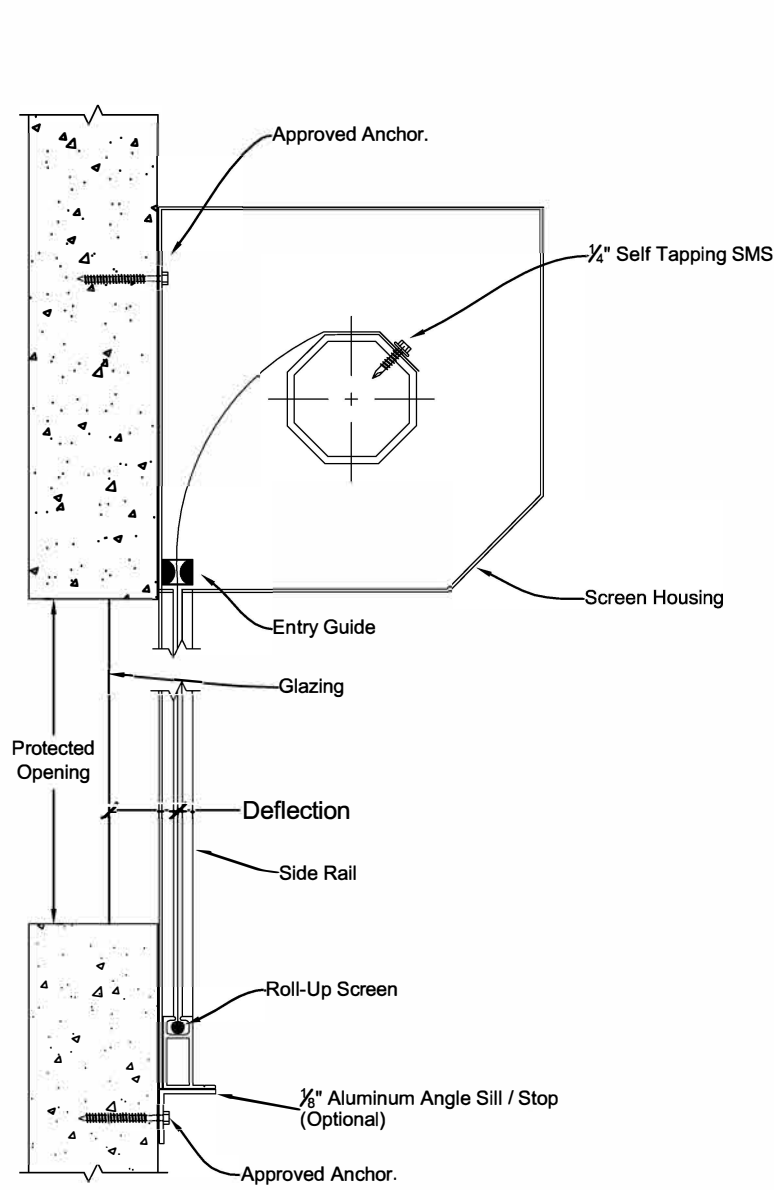
SHEET: 1 of 12



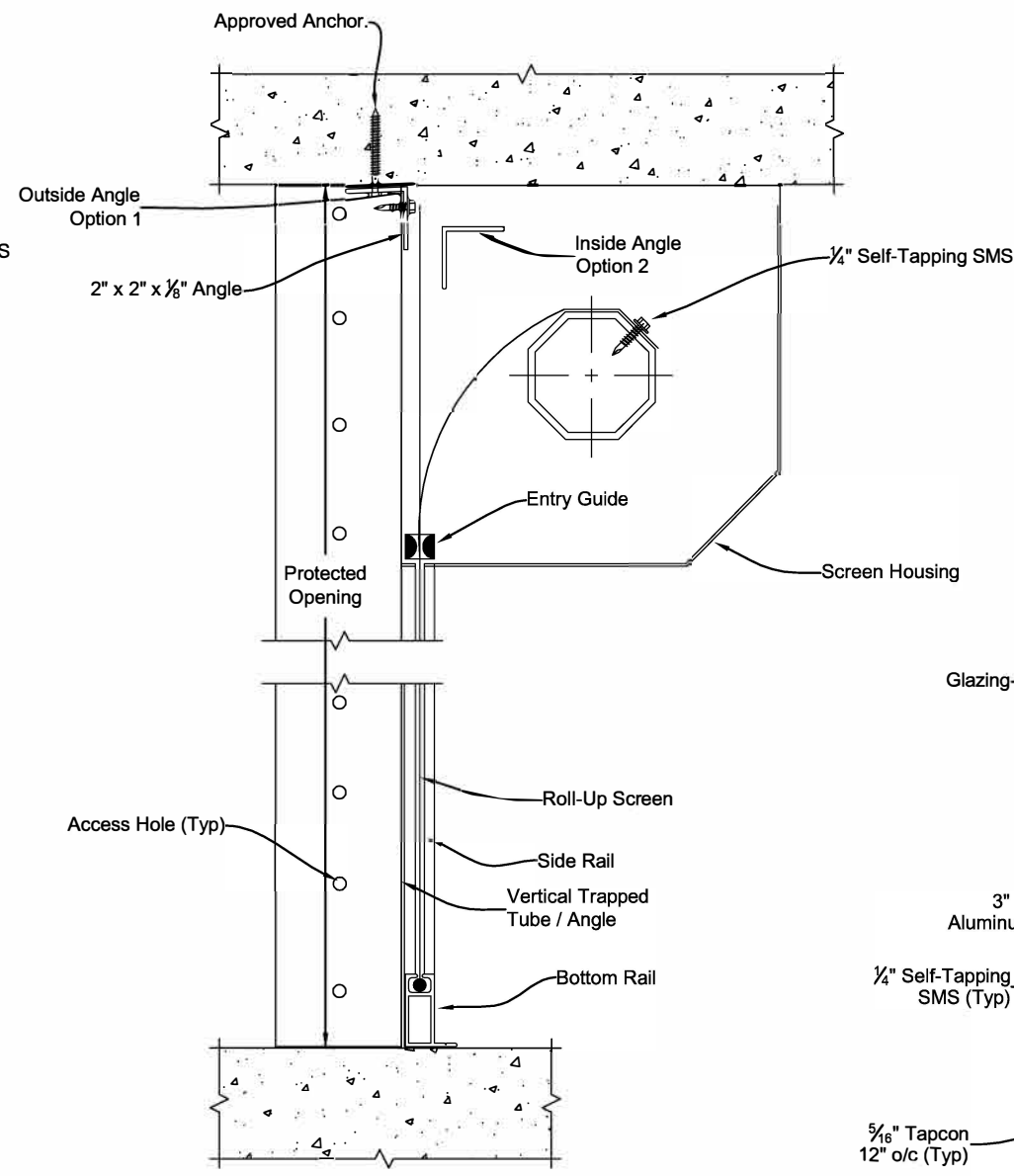
- NOTES:**
- 1. Refer to the appropriate product approval for storm bar data.
 - 2. The storm bar splits the anchor / screen span into multiple spans, each of which is used to determine the minimum deflection.
 - 3. Multiple storm bars may be used within the allowable span.
 - 4. All aluminum extrusions to be 6063-T6 minimum.
 - 5. For Mullion details, see sheet 6.

HEMCORD ROLL-UP

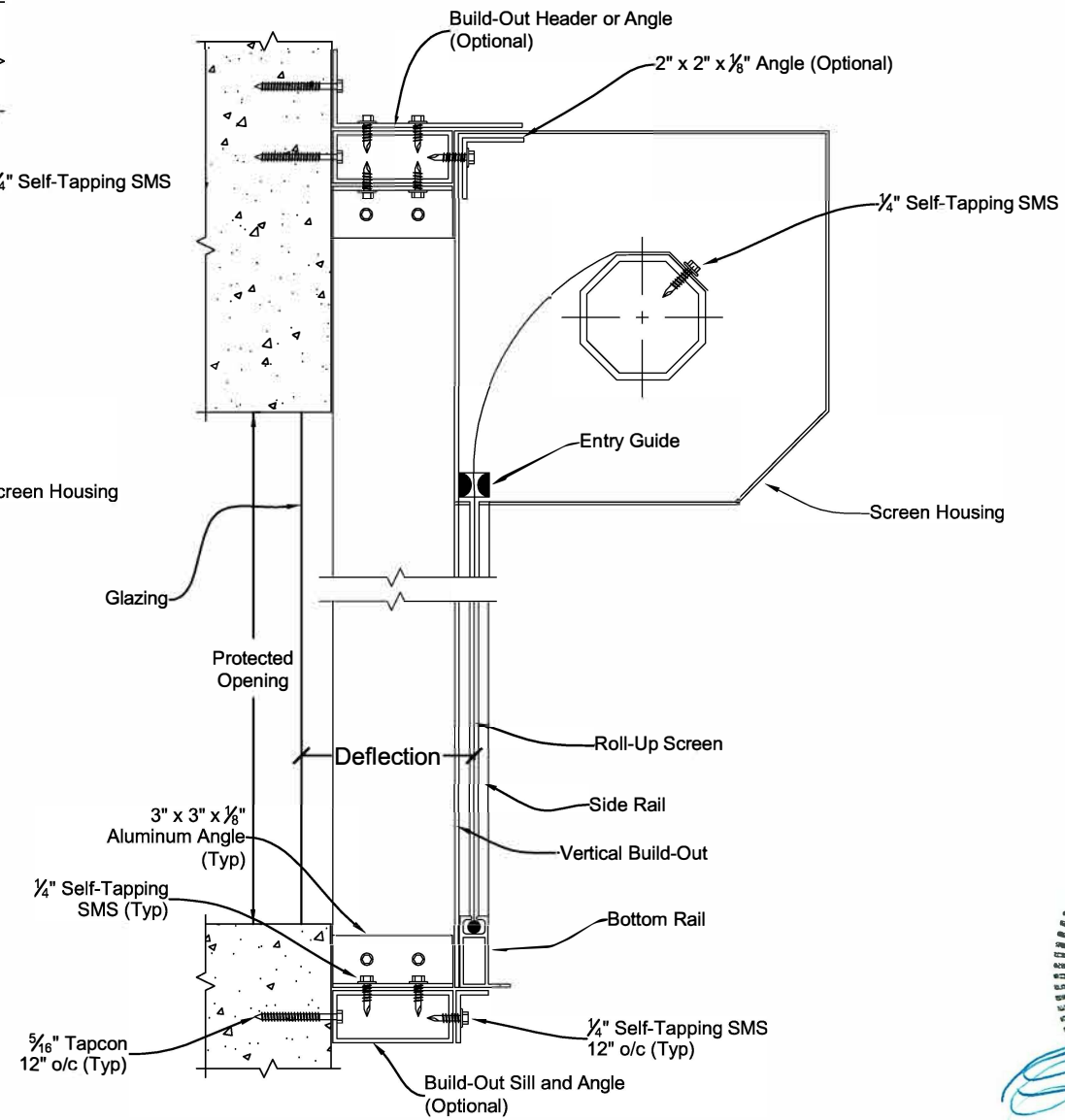
TITILE: ARMOR SCREEN H EMCORD ROLL-UP SYSTEM		ARMOR SCREEN, Inc. 2744 Hillsboro Road West Palm Beach, FL 33405 (561) 841-8890 www.armorscreen.com	
THEODORE BERMAN and Associates LLC Certificate of Authorization # 27502 925 Arthur Godfrey Rd. Suite 104 Miami Beach, FL 33140 (305) 868-4707 www.flproductapproval.com			
			
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SHEET: 2		of 12	



WALL MOUNT
WALL MOUNT SECTION A - A



TRAPPED
TRAPPED SECTION A - A



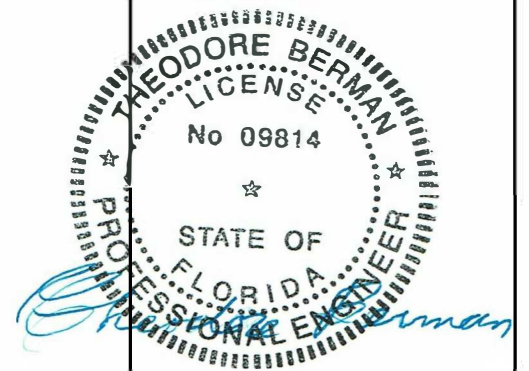
Build-Out
BUILD-OUT SECTION A - A

HEMCORD ROLL-UP

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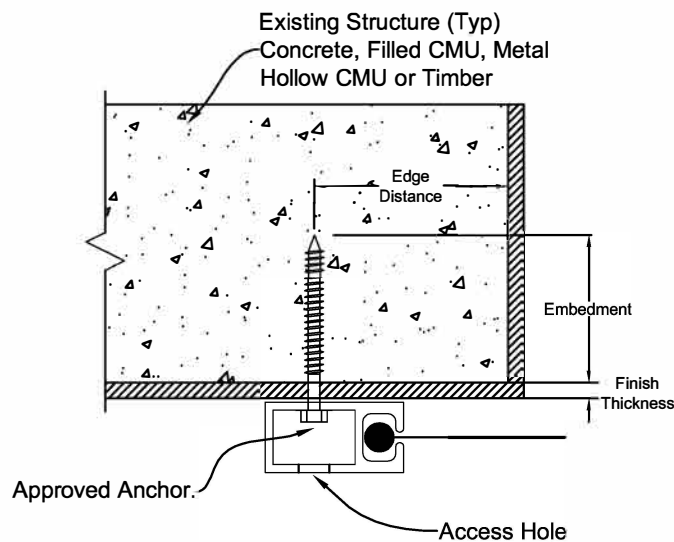
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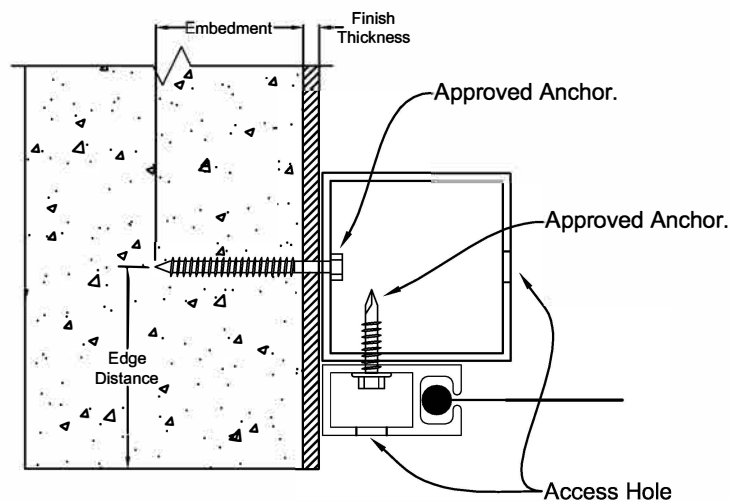
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SHEET: 3 of 12

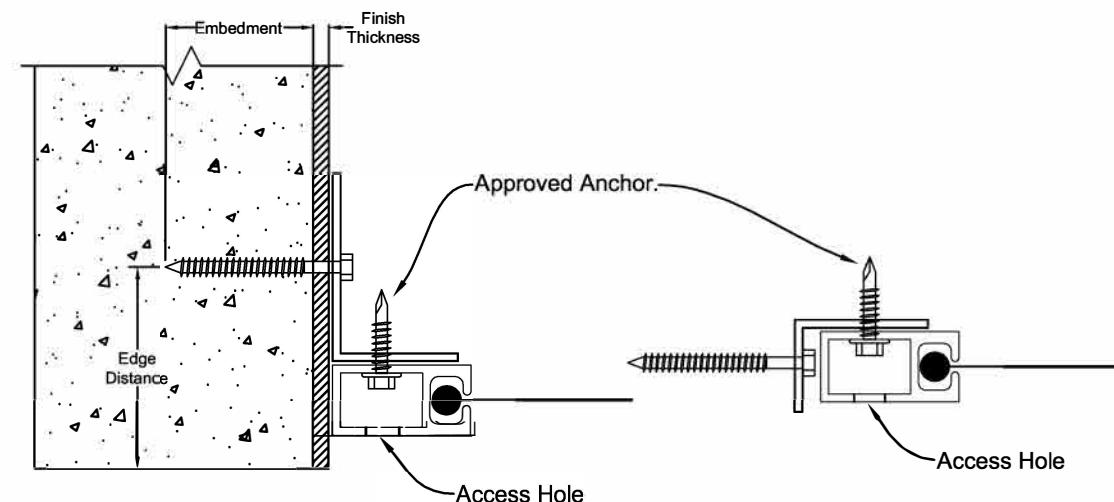


SECTION B - B TYPE 1
WALL MOUNT INSTALLATION



SECTION B - B TYPE 2
TRAPPED TUBE INSTALLATION

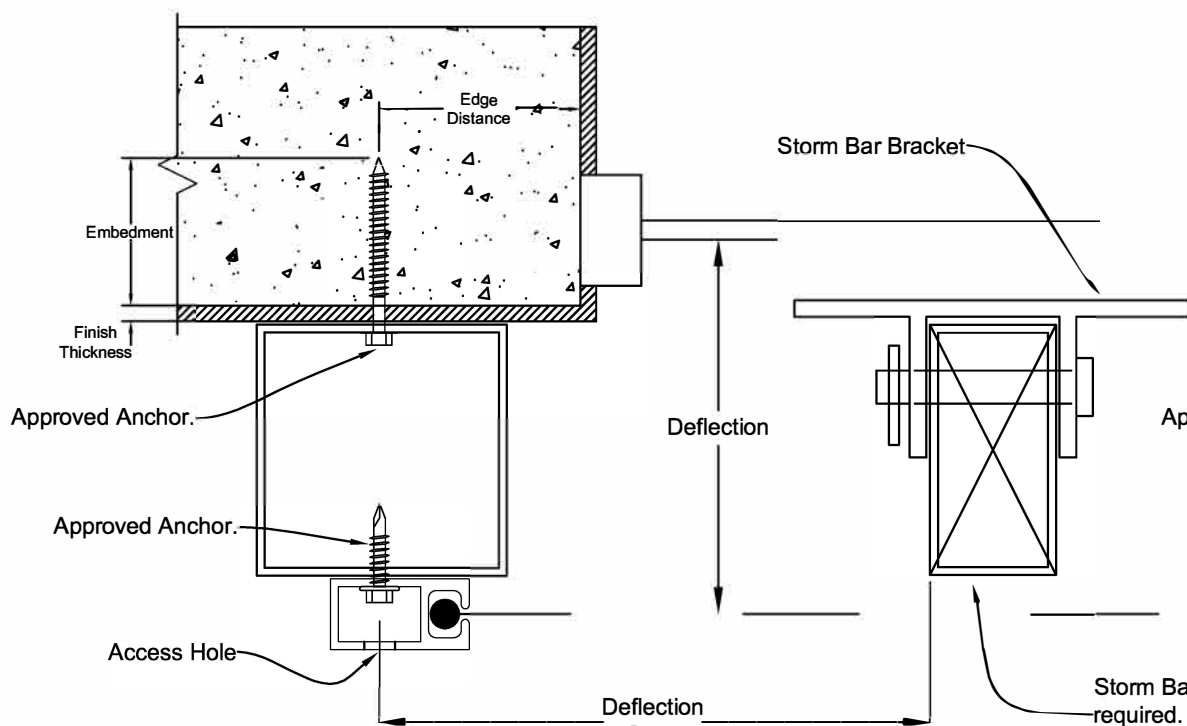
2" x 4" x ($\frac{1}{8}$ " or $\frac{1}{4}$ ")
2" x 3" x ($\frac{1}{8}$ " or $\frac{1}{4}$ ")
3" x 3" x ($\frac{1}{8}$ " or $\frac{1}{4}$ ")
3" x 4" x ($\frac{1}{8}$ " or $\frac{1}{4}$ ")
2 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ " x $\frac{1}{8}$ "



SECTION B - B TYPE 3
TRAPPED ANGLE INSTALLATION

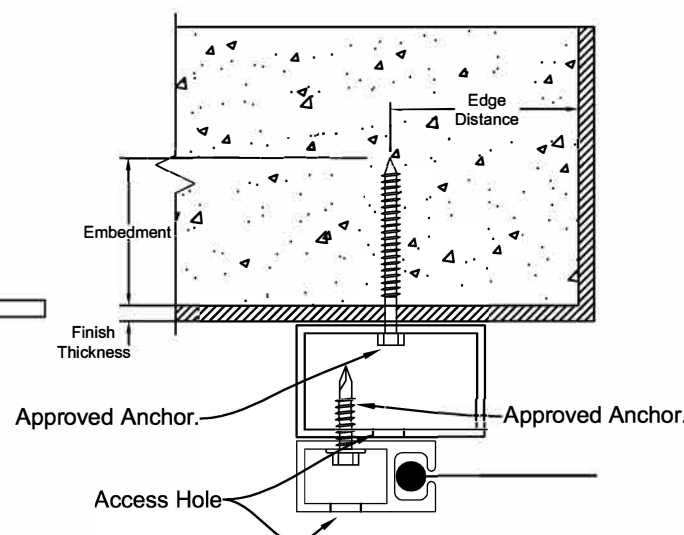
2" X 2" X $\frac{3}{16}$ "
2" X 3" X $\frac{3}{16}$ "

TYPE 3 ALTERNATIVE



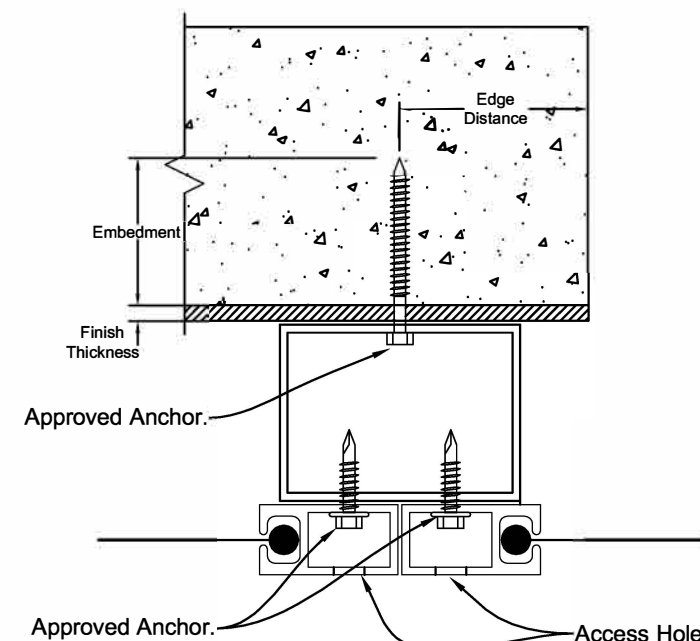
SECTION B - B TYPE 4
BUILD-OUT INSTALLATION

2" x 4" x ($\frac{1}{8}$ " or $\frac{1}{4}$ ")
4" x 4" x ($\frac{1}{8}$ " or $\frac{1}{4}$ ")
3" x 4" x ($\frac{1}{8}$ " or $\frac{1}{4}$ ")



SECTION B - B TYPE 5
BUILD-OUT INSTALLATION

1" x 3" x ($\frac{1}{8}$ " or $\frac{1}{4}$ ")
2" x 3" x ($\frac{1}{8}$ " or $\frac{1}{4}$ ")
3" x 3" x ($\frac{1}{8}$ " or $\frac{1}{4}$ ")
4" x 3" x ($\frac{1}{8}$ " or $\frac{1}{4}$ ")



SECTION C - C TYPE 1
STRUCTURAL POST FOR MULLION

1" x 4" x ($\frac{1}{8}$ " or $\frac{1}{4}$ ")
2" x 4" x ($\frac{1}{8}$ " or $\frac{1}{4}$ ")
3" x 4" x ($\frac{1}{8}$ " or $\frac{1}{4}$ ")
4" x 4" x ($\frac{1}{8}$ " or $\frac{1}{4}$ ")

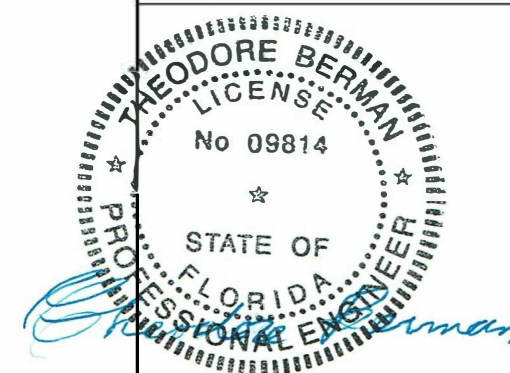
NOTES:

1. Refer to the appropriate product approval for storm bar data.
2. The storm bar splits the anchor / screen span into multiple spans, each of which is used to determine the minimum deflection.
3. Multiple storm bars may be used within the allowable span.
4. All aluminum extrusions to be 6063-T6 minimum.
5. Mount all build out tubes with widest side against the structure

HEMCORD ROLL-UP SIDE RAIL DETAILS

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TITLE:

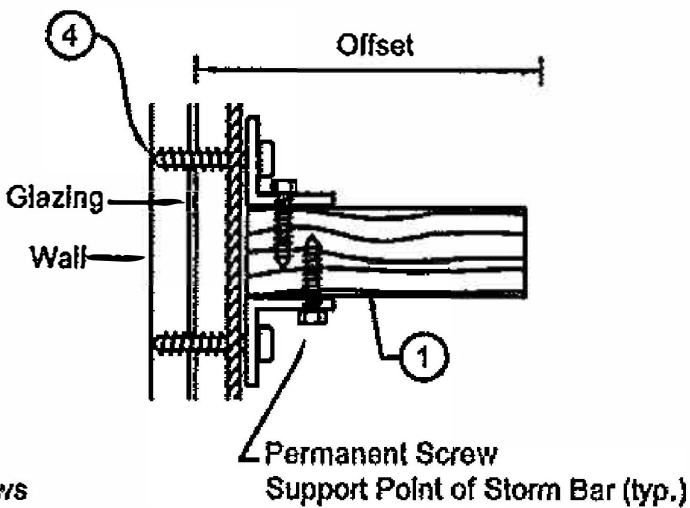
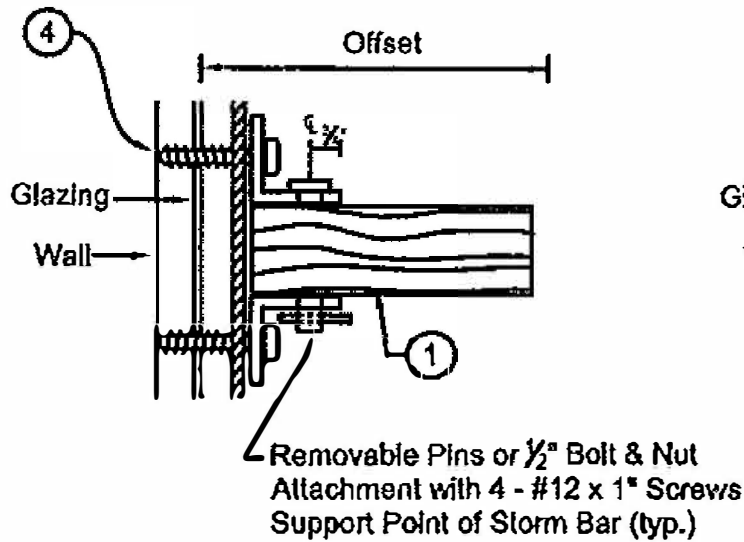
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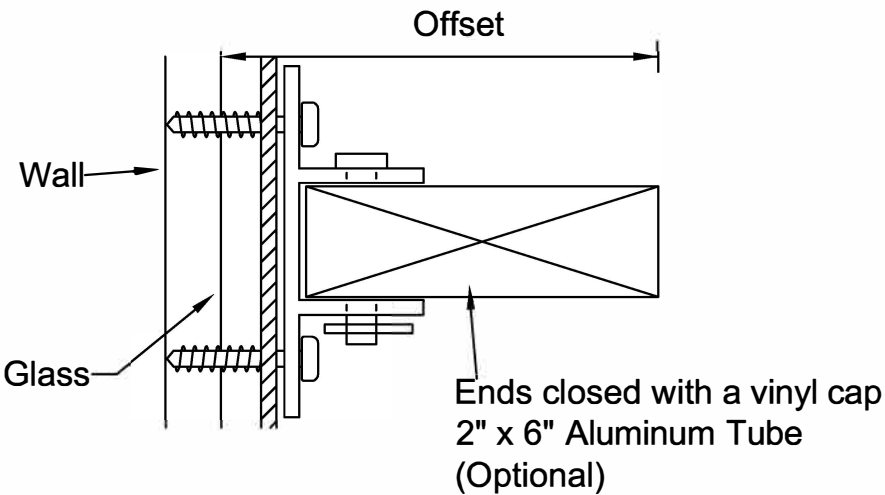
STORM BAR TABLE									
Storm Bar Span / Length		3'	4'	5'	6'	8'	10'	12'	14'
Max. PSF		Per Deflection Table							
Deflection		Per Deflection Table							
1	Reserved								
2	Reserved								
3	Alum. Tube 1" x 2" x 1/8" 6063-T6	x							
4	Alum. Tube 2" x 2" x 1/8" 6063-T6	x	x	x					
5	Alum. Tube 2" x 4" x 1/8" 6061-T6	x	x	x					
6	Alum. Tube 2" x 4" x 1/4" 6061-T6	x	x	x	x				
7	Alum. Tube 2" x 6" x 1/8" 6063-T6	x	x	x	x	x			
8	Alum. Tube 2" x 6" x 1/4" 6061-T6	x	x	x	x	x	x	x	
9	Alum. Tube 2" x 8" x 1/4" 6061-T6	x	x	x	x	x	x	x	x

STORM BAR NOTES:

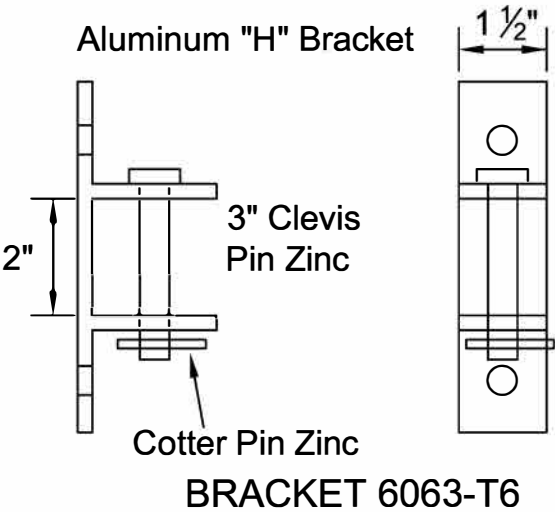
- 1. The storm bar system is designed to achieve deflection and may utilize one or more storm bars. The offset may be increased with blocking at the support.
- 2. Storm bars may be positioned horizontal, vertical or as required.
- 3. The storm bar bracket may be permanent or removable and attached to the structure using two (2) approved 1/4 inch anchors. Refer to pages 8 - 12.
- 4. Use "Deflection" span and positive wind pressure to determine the minimum separation between screen and glazing.
- 5. Use "anchor" span and negative wind pressure to determine fastener size and spacing.
- 6. Storm Bars #3, #4, #5, and #6, screen width supported by storm bars shall be equal to span or 6' maximum. For screens wider than maximum width use multiple storm bars.
- 7. See Table D-1.1 on Sheet 7 of 12.



ALTERNATE BRACKETS
2" x 2" x 1 1/2" x 1/8"
ALUMINUM ANGLE



STORM BAR & BRACKET



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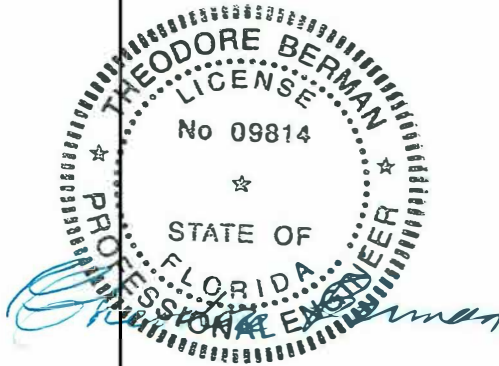
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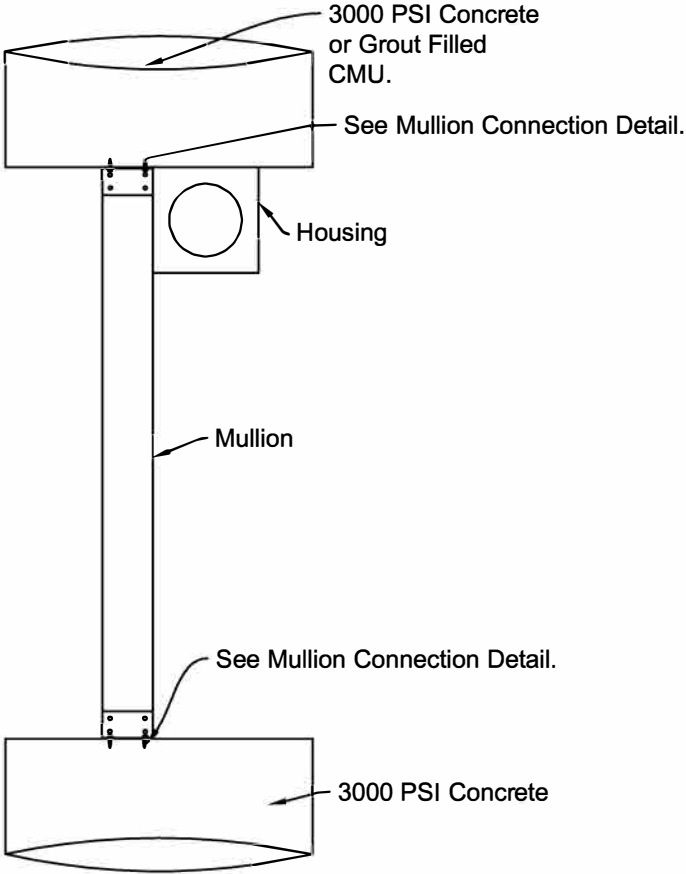
SHEET: 5 of 12

MULLION	
Type	Size
A	4 x 4 - 1/4"
B	4 x 6 -1/4"
C	4 x 8 - 1/4"

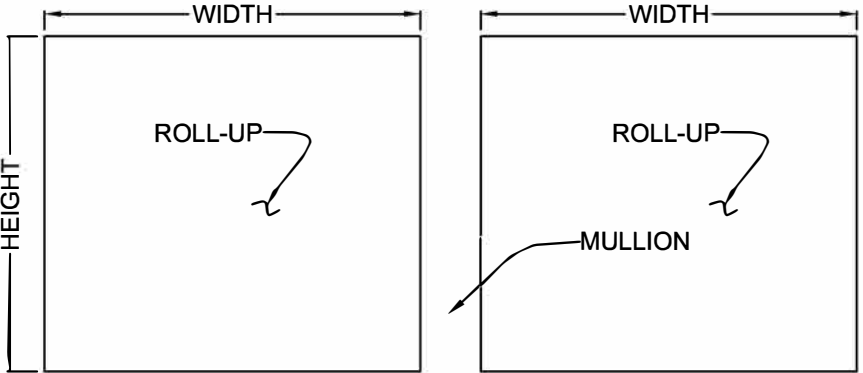
MAX. SCREEN WIDTH				
PSF	65	75	90	110
WIDTH	16'	15'	13'	12'

MULLION SELECTION CHART							
PSF HT	35	45	55	65	75	90	110
12'	B	C	C	C	C	---	---
11'	B	B	C	C	C	C	---
10'	B	B	B	B	B	C	C
9'	B	B	B	B	B	B	C
8'	A	A	B	B	B	B	B
7'	A	A	A	A	A	B	B
6'	A	A	A	A	A	A	A
5'	A	A	A	A	A	A	A
4'	A	A	A	A	A	A	A

- NOTES:**
1. All mullions to be Aluminum 6061-T6.
 2. Mullion shall not be used within Wind Zone 4, High Velocity Hurricane Zone and Essential Facilities.
 3. All Screws & Fasteners shall be corrosion resistant.
 4. Larger dimension of Mullion shall be perpendicular to Screen.
 5. Mullion shall be used with Screen on both sides, not isolated or corner.



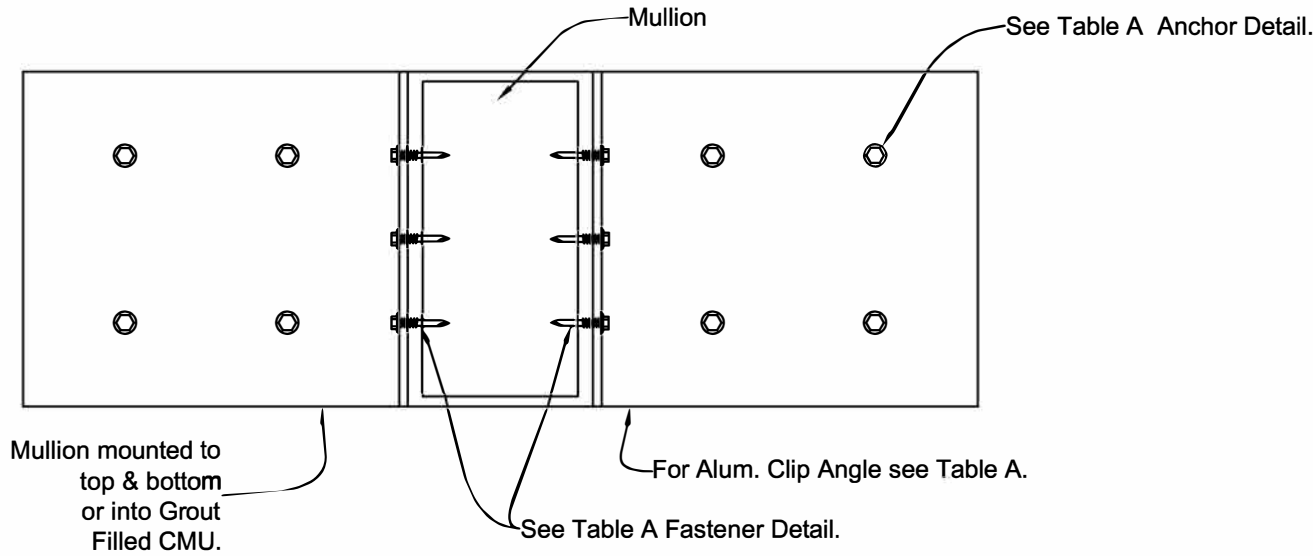
MULLION ELEVATION



MULLION DIAGRAM

TABLE A (3,000 PSI Concrete)			
Mullion Type	Anchor Detail	Min. Emb.	Fastener Detail
A *	4 x 4 - 3/16" 6063-T6 Alum. Clip Angle (4) 1/4" Tapcon	1 3/4"	(4) 1/4"-14 Teks
B *	4 x 6 - 3/16" 6063-T6 Alum. Clip Angle (8) 1/4" Tapcon	1 3/4"	(6) 1/4"-14 Teks
C **	4 x 8 - 3/16" 6063-T6 Alum. Clip Angle (8) 3/8" LDT Anchor	3 1/2"	(6) 1/4"-28 Teks

*A & B: 2" x Depth of Mullion x 3/16" 6063-T6 Alum. Clip Angle.
**C: 8" x Depth of Mullion x 5/16" 6063-T6 Alum. Clip Angle 1" from edge of steel and 6" O.C.



MULLION CONNECTION DETAIL

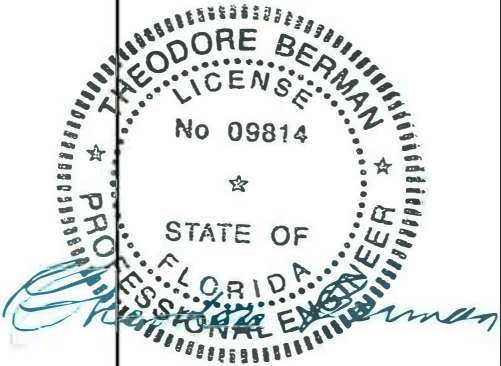
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LOADS ON EXISTING STRUCTURE FROM SCREEN SYSTEM
Rh = PERPENDICULAR LOADS (PLF)

Span in feet	Span in inches	PRESSURE (PSF)						
		35 psf	45 psf	55 psf	65 psf	75 psf	90 psf	110 psf
3 ft.	36 in.	53	68	83	98	113	135	165
4 ft.	48 in.	70	90	110	130	150	180	220
5 ft.	60 in.	88	113	138	163	188	225	275
6 ft.	72 in.	105	135	165	195	225	270	330
7 ft.	84 in.	123	158	193	228	263	315	385
8 ft.	96 in.	140	180	220	260	300	360	440
9 ft.	108 in.	158	203	248	293	338	405	495
10 ft.	120 in.	175	225	275	325	375	450	550
11 ft.	132 in.	193	248	303	358	413	495	605
12 ft.	144 in.	210	270	330	390	450	540	660
13 ft.	156 in.	228	293	358	423	488	585	715
14 ft.	168 in.	245	315	385	455	525	630	770
15 ft.	180 in.	263	338	413	488	563	675	825
16 ft.	192 in.	280	360	440	520	600	720	880

LOADS ON EXISTING STRUCTURE FROM SCREEN SYSTEM
Rv = PARALLEL LOADS (PLF)

Span in feet	Span in inches	PRESSURE (PSF)						
		35 psf	45 psf	55 psf	65 psf	75 psf	90 psf	110 psf
3 ft.	36 in.	154	167	186	205	221	238	256
4 ft.	48 in.	206	223	248	273	295	317	342
5 ft.	60 in.	257	278	310	341	369	396	427
6 ft.	72 in.	309	334	372	410	443	475	512
7 ft.	84 in.	360	390	434	478	517	555	598
8 ft.	96 in.	412	446	495	546	591	634	683
9 ft.	108 in.	463	501	557	614	664	713	769
10 ft.	120 in.	515	557	619	683	738	792	854
11 ft.	132 in.	566	613	681	751	812	871	939
12 ft.	144 in.	618	688	743	819	886	951	1025
13 ft.	156 in.	669	724	805	888	960	1030	1110
14 ft.	168 in.	721	780	867	956	1033	1109	1196
15 ft.	180 in.	772	835	929	1024	1107	1188	1281
16 ft.	192 in.	824	891	991	1092	1181	1268	1366

$R_h = W \cdot L / 2$
 $R_v = W \cdot (L^2) / (2 \cdot \text{DEFLECTION})$
 $\text{TENSION} = (R_h^2 + R_v^2)^{0.5}$

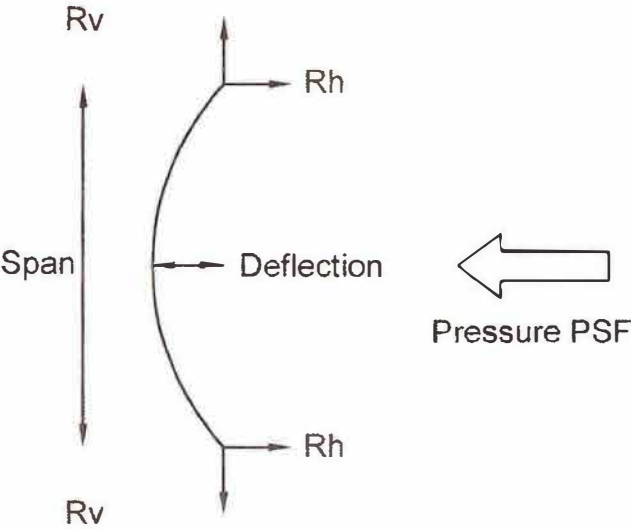


TABLE D-1.1

Hemcord Deflection Table								
Span in feet	Span in inches	Deflection in inches						
		30 psf	40 psf	50 psf	60 psf	70 psf	90 psf	110 psf
2 ft.	24	2.0	2.1	2.3	2.5	2.6	3.0	3.4
3 ft.	36	3.0	3.2	3.4	3.8	4.0	4.6	5.1
4 ft.	48	3.9	4.3	4.5	5.0	5.3	6.1	6.8
5 ft.	60	4.9	5.3	5.7	6.3	6.6	7.6	8.5
6 ft. 4 in.	76	6.2	6.8	7.1	8.0	8.4	9.7	10.8
7 ft. 4 in.	88	7.2	7.8	8.3	9.2	9.7	11.2	12.5
8 ft. 4 in.	100	8.2	8.9	9.4	10.5	11.0	12.7	14.2
9 ft. 4 in.	112	9.2	10.0	10.5	11.8	12.3	14.2	15.9
10 ft. 4 in.	124	10.2	11.0	11.7	13.0	13.7	15.7	17.6
11 ft. 4 in.	136	11.2	12.1	12.8	14.3	15.0	17.3	19.3
12 ft. 4 in.	148	12.1	13.2	13.7	15.5	16.3	18.8	21.0
13 ft.	156	12.8	13.9	14.7	16.4	17.2	19.8	22.2
14 ft.	168	13.8	15.0	15.8	17.6	18.5	21.3	23.9
15 ft.	180	14.8	16.0	16.9	18.9	19.8	22.9	25.6
16 ft.	192	15.7	17.1	18.0	20.2	21.2	24.4	27.3

NOTE: Deflection is the minimum glass separation measured at mid span of the screen and subject to rational analysis.

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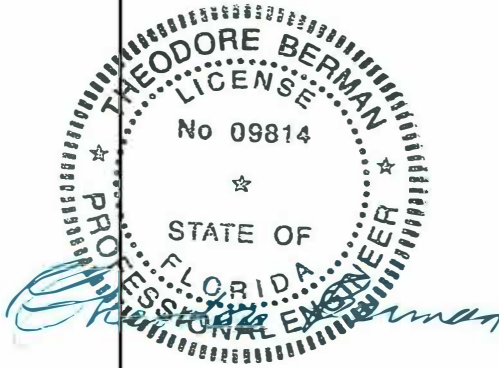
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TABLE 1 ANCHOR SPACING
CONCRETE, 3000 PSI - 1/4" ANCHORS

3000 PSI CONCRETE - 1/4" ANCHORS	Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span				
					to 48"	to 76"	to 100"	to 124"	to 148"
	1/4" DIA. X 1 3/4" SS TAPCON	1 3/4"	2 1/2"	30 (psf)	6"	6"	6"	6"	6"
				40 (psf)	6"	6"	6"	6"	6"
				60 (psf)	6"	6"	6"	6"	4"
				90 (psf)	6"	6"	4"	4"	4"
				110 (psf)	6"	6"	4"	4"	4"
	1/2" DIA. X 2 1/4" PANELMATE (INSTALL PER PANELMATE INSTRUCTIONS)	1 3/4"	2 1/2"	30 (psf)	6"	6"	6"	6"	6"
				40 (psf)	6"	6"	6"	6"	6"
				60 (psf)	6"	6"	6"	6"	4"
				90 (psf)	6"	6"	4"	4"	4"
				110 (psf)	6"	6"	4"	4"	4"
3000 PSI CONCRETE - 1/4" ANCHORS	1/4" ELCO CRETE FLEX 410 SS (INSTALL PER MIAMI-DADE NOA NO. 12-0126.09)	2"	2 1/2"	30 (psf)	12"	12"	12"	12"	6"
				40 (psf)	12"	12"	12"	6"	6"
				60 (psf)	12"	12"	6"	6"	6"
				90 (psf)	12"	6"	6"	---	---
				110 (psf)	12"	6"	6"	---	---
	1/4" DIA POWERS WEDGE BOLT 410 SS	1 3/4"	3"	30 (psf)	6"	6"	6"	6"	6"
				40 (psf)	6"	6"	6"	6"	6"
				60 (psf)	6"	6"	6"	6"	4"
				90 (psf)	6"	6"	4"	4"	4"
				110 (psf)	6"	6"	4"	4"	4"

CONCRETE NOTES: Provide longer fasteners, if required, to allow for thickness of finishes such as stucco, plaster, siding, etc.

TABLE 2 ANCHOR SPACING

3000 PSI CONCRETE - 1/4" & 5/16" ANCHORS	Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span				
					to 48"	to 76"	to 100"	to 124"	to 148"
	5/16" ITW BUILDEX XL SERIES TAPCON	2 1/4"	2 3/16"	30 (psf)	12"	12"	12"	12"	12"
				40 (psf)	12"	12"	12"	12"	12"
				60 (psf)	12"	12"	6"	6"	6"
				90 (psf)	12"	6"	6"	6"	---
				110 (psf)	12"	6"	6"	6"	---

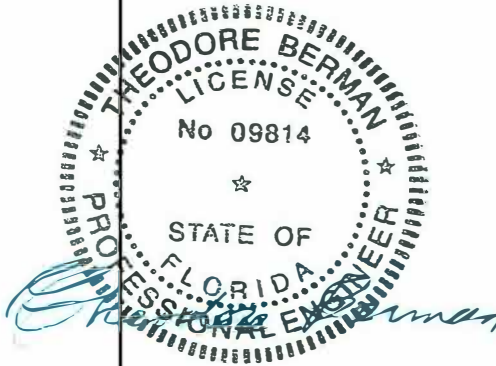
TABLE 3 ANCHOR SPACING

3000 PSI CONCRETE - 3/8" ANCHORS	Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span						
					to 48"	to 76"	to 100"	to 124"	to 148"	to 168"	to 192"
	3/8" DIA. 410 SS POWERS WEDGE BOLT	3"	4"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
				40 (psf)	12"	12"	12"	12"	12"	12"	12"
				60 (psf)	12"	12"	12"	12"	12"	12"	12"
				90 (psf)	12"	12"	12"	12"	12"	12"	12"
				110 (psf)	12"	12"	12"	12"	12"	12"	12"
	3/8" LDT	3 1/2"	5"	30 (psf)	12"	12"	12"	12"	12"	6"	6"
				40 (psf)	12"	12"	6"	6"	6"	6"	6"
				60 (psf)	12"	12"	6"	6"	6"	6"	6"
				90 (psf)	12"	12"	6"	6"	6"	6"	---
				110 (psf)	12"	12"	6"	6"	6"	---	---

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TABLE 4 ANCHOR SPACING
CONCRETE BLOCK (CMU) - 1/4"

CONCRETE BLOCK (CMU) CMU F'm = 1800 psi (note typical F'm = 1500 psi)	Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span				
					to 48"	to 76"	to 100"	to 124"	to 148"
	1/4" DIA. X 1 3/4" 410 SS TAPCON (INSTALL PER MIAMI-DADE NOA NO. 03-0114.03)	1 3/4" shall be in face shell, not mortar joints	2 1/2"	30 (psf)	6"	6"	6"	6"	6"
				40 (psf)	6"	6"	6"	6"	6"
				60 (psf)	6"	6"	6"	6"	4"
				90 (psf)	6"	6"	4"	4"	4"
				110 (psf)	6"	4"	4"	4"	4"
	1/4" DIA. X 2 1/4" PANELMATE (INSTALL PER MANUFACTURER'S INSTRUCTIONS)	1 1/4" shall be in face shell, not mortar joints	3"	30 (psf)	6"	6"	6"	6"	6"
				40 (psf)	6"	6"	6"	6"	6"
				60 (psf)	6"	6"	6"	6"	4"
				90 (psf)	6"	6"	4"	4"	4"
				110 (psf)	6"	4"	4"	4"	4"

CONCRETE BLOCK (CMU) NOTES:

- Provide longer fasteners, if required, to allow for thickness of finishes such as stucco, plaster, siding, etc.

TABLE 5 ANCHOR SPACING
CMU AND TERRA COTTA BLOCK WITH STUCCO - 1/4" AND 3/8"

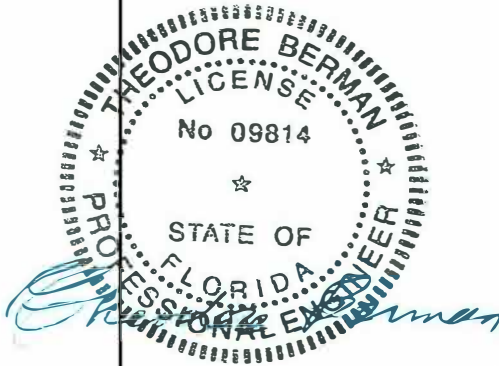
TERRACOTTA BLOCK AND STUCCO	Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span				
					to 48"	to 76"	to 100"	to 124"	to 148"
	ELCO ¼" X 2 ¼" CRETEFLEX MASONRY FASTENERS (INSTALL PER MANUFACTURER'S INSTRUCTIONS)	1 ¼"	2 ½"	30 (psf)	12"	12"	6"	6"	6"
				40 (psf)	12"	6"	6"	6"	---
				60 (psf)	12"	6"	6"	---	---
				90 (psf)	6"	6"	---	---	---
				110 (psf)	6"	6"	---	---	---
	CUSTOM COUPLER IN EPOXY	3 ¼"	4"	30 (psf)	12"	12"	12"	12"	12"
				40 (psf)	12"	12"	12"	12"	6"
				60 (psf)	12"	12"	12"	6"	6"
				90 (psf)	12"	12"	6"	6"	6"
				110 (psf)	12"	12"	6"	6"	6"
Notes: 1. Custom fastener = ⅜" x 2 ½" threaded rod (30455) w/ ½" x 1 ¼" coupler (31656) fully inserted in ½" dia. 3 ¼" screen tube fully filled w/ Sikadur Anchorfix-4 Injection Gel. 2. ⅜" x 1" carriage bolt, eye bolt, or machine screw									

- Allowable values for Terra Cotta Block with Stucco per HTL Test report #0365-0416-06 dated 05-31-06.

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SOLID GROUTED (CMU) - 1/4" AND 3/8"

TABLE 6 ANCHOR SPACING

SOLID GROUTED (CMU)	Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span				
					to 48"	to 76"	to 100"	to 124"	to 148"
	1/2" DIA. X 1 3/4" 410 SS TAPCON (INSTALL PER MANUFACTURER'S INSTRUCTIONS)	2 1/4" shall be in face, not mortar joints	2 1/2"	30 (psf)	12"	12"	12"	12"	6"
				40 (psf)	12"	12"	12"	6"	6"
				60 (psf)	12"	12"	6"	6"	6"
				90 (psf)	12"	6"	6"	---	---
				110 (psf)	12"	6"	6"	---	---
	1/4" DIA. 410 SS POWERS WEDGE BOLT (INSTALL PER MANUFACTURER'S INSTRUCTIONS)	1 3/4" shall be in face, not mortar joints	3 3/4"	30 (psf)	12"	12"	6"	6"	6"
				40 (psf)	12"	12"	6"	6"	6"
				60 (psf)	12"	6"	6"	---	---
				90 (psf)	6"	6"	---	---	---
				110 (psf)	6"	6"	---	---	---
	1/4" ELCO CRETE-FLEX 410 SS	2" shall be in face, not mortar joints	2 1/2"	30 (psf)	12"	12"	6"	6"	6"
				40 (psf)	12"	6"	6"	6"	---
				60 (psf)	12"	6"	6"	---	---
				90 (psf)	6"	6"	---	---	---
				110 (psf)	6"	6"	---	---	---

SOLID GROUTED CMU NOTES:

- Provide longer fasteners, if required, to allow for thickness of finishes such as stucco plaster, siding, etc.

SOLID GROUTED (CMU)	Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span						
					to 48"	to 76"	to 100"	to 124"	to 148"	to 168"	to 192"
	3/8" ASTM 304-316 SS THREADED ROD IN EPOXY W/ SS COUPLER AND EYEBOLT (INSTALL PER MANUFACTURER'S INSTRUCTIONS)	3 1/2" shall be in face shell, not mortar joints	12"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
				40 (psf)	12"	12"	12"	12"	12"	12"	12"
				60 (psf)	12"	12"	12"	12"	12"	12"	12"
				90 (psf)	12"	12"	12"	12"	12"	6"	6"
				110 (psf)	12"	12"	12"	12"	6"	6"	6"
	3/8" DIA. POWERS WEDGE BOLT (LDT) 410 SS (spacing per test #04 dated 12-7-07)	2 1/2" shall be in face shell, not mortar joints	4"	30 (psf)	18"	18"	18"	18"	18"	18"	18"
				40 (psf)	18"	18"	18"	18"	18"	18"	18"
				60 (psf)	18"	18"	18"	18"	18"	18"	18"
				90 (psf)	18"	18"	18"	18"	18"	12"	12"
				110 (psf)	18"	18"	18"	18"	12"	12"	12"

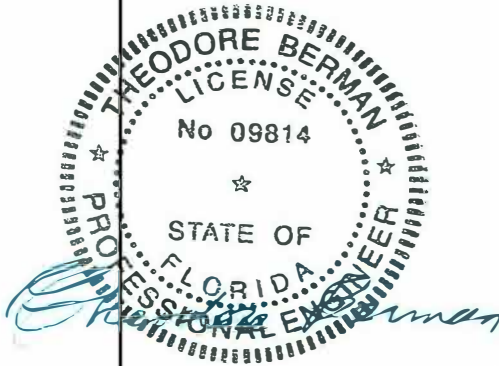
SOLID GROUTED CMU NOTES:

- Spacing for fasteners used in testing are shown at spacing used in tests
- Spacing for all other fasteners calculated with SF=3 min.

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TABLE 7 ANCHOR SPACING

WOOD SYP #2 - 1/4" and 5/16"

WOOD SYP #2	Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span				
					to 48"	to 76"	to 100"	to 124"	to 148"
	1/4" DIA. PANELMATE (INSTALL PER MANUFACTURER'S INSTRUCTIONS) (VALUES PER NDS FOR WOOD CONSTRUCTION)	1 3/4"	3/4"	30 (psf)	12"	12"	12"	6"	6"
				40 (psf)	12"	12"	6"	6"	6"
				60 (psf)	12"	6"	6"	6"	---
				90 (psf)	6"	6"	---	---	---
				110 (psf)	6"	6"	---	---	---
	1/2" DIA. X 1 3/4" SS TAPCON (INSTALL PER MANUFACTURER'S INSTRUCTIONS) (VALUES PER NDS FOR WOOD CONSTRUCTION)	1 3/4"	3/4"	30 (psf)	12"	12"	12"	6"	6"
				40 (psf)	12"	12"	6"	6"	6"
				60 (psf)	12"	6"	6"	6"	---
				90 (psf)	6"	6"	---	---	---
				110 (psf)	6"	6"	---	---	---
	1/4" DIA. SS LAG SCREWS	2"	1" into stud or lintel	30 (psf)	12"	12"	12"	6"	6"
				40 (psf)	12"	12"	6"	6"	6"
				60 (psf)	12"	12"	6"	6"	---
				90 (psf)	6"	6"	---	---	---
				110 (psf)	6"	6"	---	---	---
	5/16" DIA. SS LAG SCREWS	2"	1 1/4" into stud or lintel	30 (psf)	12"	12"	12"	6"	6"
				40 (psf)	12"	12"	12"	6"	6"
				60 (psf)	12"	12"	6"	6"	---
				90 (psf)	6"	6"	6"	---	---
				110 (psf)	6"	6"	---	---	---

WOOD SYP #2 - 3/8" and 1/2"

WOOD SYP #2	Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span						
					to 48"	to 76"	to 100"	to 124"	to 148"	to 168"	to 192"
	3/8" DIA. SS LAG SCREWS	2"	1 1/2" into stud or intel	30 (psf)	12"	12"	12"	12"	6"	6"	6"
				40 (psf)	12"	12"	12"	6"	6"	6"	6"
				60 (psf)	12"	12"	6"	6"	6"	---	---
				90 (psf)	12"	6"	6"	---	---	---	---
				110 (psf)	6"	6"	---	---	---	---	---
	3/8" DIA. SS LAG SCREW	*3"	1 1/2" into stud or intel	30 (psf)	12"	12"	12"	12"	12"	6"	6"
				40 (psf)	12"	12"	12"	12"	6"	6"	6"
				60 (psf)	12"	12"	6"	6"	6"	6"	---
				90 (psf)	12"	6"	6"	---	---	---	---
				110 (psf)	12"	6"	6"	---	---	---	---
	1/2" DIA. SS LAG SCREW	*3"	2" into side grain	30 (psf)	12"	12"	12"	12"	12"	12"	12"
				40 (psf)	12"	12"	12"	12"	12"	12"	6"
				60 (psf)	12"	12"	12"	6"	6"	6"	6"
				90 (psf)	12"	12"	6"	6"	6"	6"	6"
				110 (psf)	12"	6"	6"	6"	6"	6"	---

WOOD SYP #2 NOTES:

- Provide longer fasteners, if required, to allow for thickness of finishes such as stucco, plaster, siding, etc.
- Design as per NDS 2015.
- *Lag Anchor to be fully embedded.
- Douglas Fir - Larch alternate acceptable wood type.
- Note to Installer: 1/2" Lag Screw does not have available hole plug for side rail.

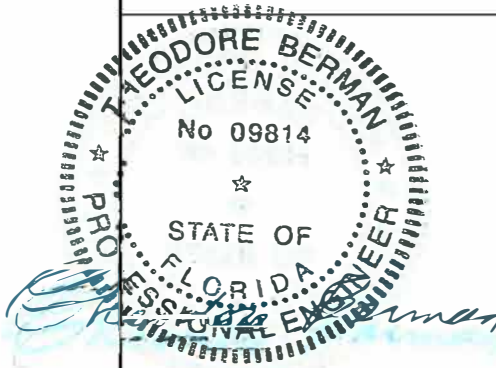
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METAL - 1/4"

TABLE 8 ANCHOR SPACING

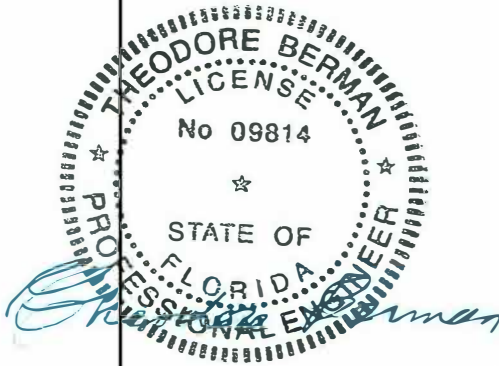
	Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span						
					to 48"	to 76"	to 100"	to 124"	to 148"	to 168"	to 192"
20 GAGE METAL STUDS	1/4"-14 TEKS SELF-TAPPING SCREWS			30 (psf)	6"	3"	3"	3"	---	---	---
				40 (psf)	6"	3"	3"	---	---	---	---
				60 (psf)	---	---	---	---	---	---	---
				90 (psf)	---	---	---	---	---	---	---
				110 (psf)	---	---	---	---	---	---	---
18 GAGE METAL STUDS	1/4"-14 TEKS SELF-TAPPING SCREWS (spacing per test #01 dated 2-8-08)			30 (psf)	6"	6"	6"	6"	6"	6"	6"
				40 (psf)	6"	6"	6"	6"	6"	6"	6"
				60 (psf)	6"	6"	6"	6"	6"	6"	6"
				90 (psf)	6"	6"	6"	6"	6"	6"	6"
				110 (psf)	6"	6"	6"	6"	6"	6"	6"
3/16" STEEL	1/4"-14 TEKS SELF-TAPPING SCREWS			30 (psf)	12"	12"	12"	12"	12"	12"	12"
				40 (psf)	12"	12"	12"	12"	12"	12"	12"
				60 (psf)	12"	12"	12"	12"	12"	12"	12"
				90 (psf)	12"	12"	12"	12"	12"	6"	6"
				110 (psf)	12"	12"	12"	12"	6"	6"	6"
1/8" (12 GA) STEEL	1/4"-14 TEKS SELF-TAPPING SCREWS			30 (psf)	12"	12"	12"	12"	12"	12"	6"
				40 (psf)	12"	12"	12"	12"	12"	6"	6"
				60 (psf)	12"	12"	12"	6"	6"	6"	6"
				90 (psf)	12"	12"	6"	6"	6"	6"	3"
				110 (psf)	12"	12"	6"	6"	6"	3"	3"
3/8" ALUMINUM 6063-T6	1/4"-14 TEKS SS SELF-TAPPING SCREWS			30 (psf)	12"	6"	6"	6"	3"	3"	3"
				40 (psf)	12"	6"	6"	3"	3"	3"	3"
				60 (psf)	6"	6"	3"	3"	3"	---	---
				90 (psf)	6"	3"	3"	3"	---	---	---
				110 (psf)	6"	3"	3"	---	---	---	---
1/4" ALUMINUM 6063-T6	1/4"-14 TEKS SS SELF-TAPPING SCREWS			30 (psf)	12"	6"	6"	6"	6"	6"	6"
				40 (psf)	12"	6"	6"	6"	6"	6"	6"
				60 (psf)	6"	6"	6"	6"	6"	3"	3"
				90 (psf)	6"	6"	6"	6"	3"	3"	3"
				110 (psf)	6"	6"	6"	3"	3"	3"	3"

METAL NOTES:
• Minimum 3 pitch shall extend past metal substrate.

TITLE :
ARMOR SCREEN
HEMCORD ROLL-UP
SYSTEM

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THEODORE BERMAN, P.E.
NO. 09814
12/12/2017

DATE: 01/03/11

REV.
DATE: 12/12/2017

DWG #: 201-2010

SCALE: N.T.S.

SHEET: 12 of 12