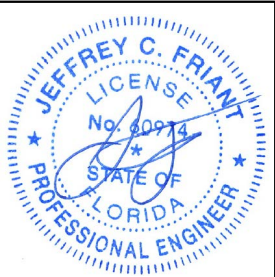


StormFortress - Accordion Shutter

Jeffrey C. Friant, P.E. 60974

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Date: 2024.12.17 10:07:01 -05'00'



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Info@specialtyengineeringns.com
CA 32371

Title:

StormFortress
Aluminum Shutter
HVHZ & Non-HVHZ
FL42085



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Date	4/20/23				
Name	JCF	MC			
Signed	Drawn	Chk'd	App'd	Mfg.	Q.A.

SCALE: AS NOTED

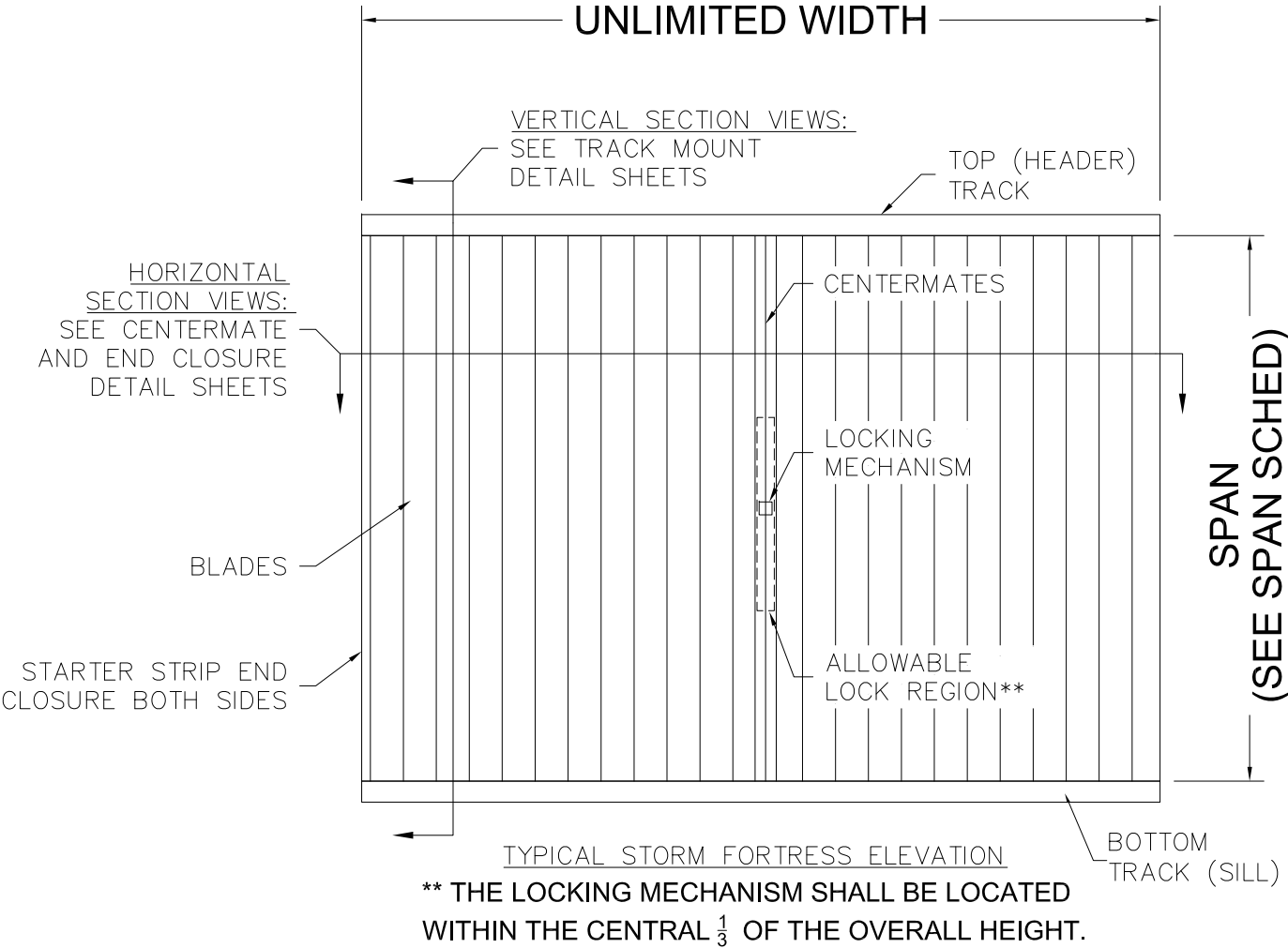
DATE: 12/12/24

JOB #: 24-3074

SHEET

1 of 8

24-3074 - Storm Fortress Installation Instructions



SHUTTER SPAN SCHEDULE

DESIGN PRESSURE (±PSF)	MAX SPAN (IN)	MINIMUM SEPRATION FROM GLASS	
		INSTALLATIONS GREATER THAN 30ft ABOVE GRADE	INSTALLATIONS LESS THAN 30ft ABOVE GRADE
70	168	7.3	9.2
72	163	7.1	9.2
73	158	6.8	9.2
75	154	6.6	9.2
76	149	6.4	9.2
78	144	6.2	9.2
79	139	6.0	9.2
81	134	5.7	9.2
82	130	5.5	9.2
84	125	5.3	9.2
85	120	5.1	9.2
87	115	4.9	9.2
88	110	4.6	9.2
90	106	4.4	9.2
91	101	4.2	9.2
93	96	4.0	9.2
94	91	3.8	9.2
96	86	3.5	9.2
97	82	3.3	9.2
99	77	3.1	9.2
100	72	3.0	6.0

SEPARATION FROM GLASS SCHEDULE NOTES:

- GLASS SEPARATION ONLY REQUIRED WITHIN THE HIGH VELOCITY HURRICANE ZONE (HVHZ) UNLESS REQUIRED BY LOCAL JURISDICTION.
- LINEAR INTERPOLATION IS ALLOWED FOR INTERMEDIATE PRESSURES, SPANS AND GLASS SEPARATION VALUES GREATER THAN 30FT ABOVE GRADE. INTERPOLATION IS NOT ALLOWED FOR GLASS SEPARATION VALUES BELOW 30FT FROM GRADE.

GENERAL NOTES:

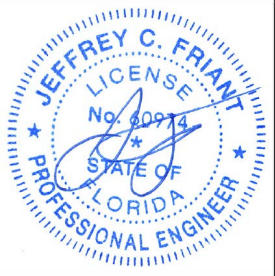
- THIS PRODUCT HAS BEEN DESIGNED AND TESTED PER THE STRUCTURAL REQUIRMENTS OF THE 2020 FLORIDA BUILDING CODE 7TH ED. AND THE FOLLOWING TEST STANDARDS: TAS 201/202/203 FOR USE WITHIN AND OUTSIDE THE HVHZ (HIGH VELOCITY HURRICANE ZONE) PER MISSILE LEVEL D.
- REQUIRED DESIGN PRESSURES SHALL BE CALCULATED ON A SITE SPECIFIC BASIS PER ASCE 7-16 AND THE PRODUCT SHALL BE INSTALLED IN ACCORDANCE WITH THE LIMITATIONS OF THE DESIGN SCHEDULES HEREIN (DESIGN WIND PRESSURES LISTED HEREIN ARE ALLOWABLE STRESS DESIGN LOADS).
- ALUMINUM MEMBERS AND COMPONENTS SHALL BE 6005-T5 OR 6061-T6 MINIMUM UNLESS NOTED OTHERWISE.
- ALL CARBON STEEL FASTENERS SHALL BE SAE GR. 2 MINIMUM. ALL STAINLESS STEEL FASTENERS SHALL BE SERIES 304 OR 316 MINIMUM UNLESS NOTED OTHERWISE.
- FASTENERS IN STEEL SUBSTRATES SHALL HAVE A MINIMUM EDGE/END DISTANCE OF 2x DIAMETER AND MINIMUM CENTER TO CENTER SPACING OF 3x DIAMETER. FASTENERS IN ALUMINUM SUBSTRATES SHALL HAVE A MINIMUM EDGE/END DISTANCE OF 2x DIAMETER AND MINIMUM CENTER TO CENTER SPACING OF 2.5x DIAMETER
- THE ENGINEER SHALL HAVE NO LIABILITY TO OTHERS FOR ACTS OR OMISSIONS OF THE CONTRACTOR/BUILDER OR ANY OTHERS PERFORMING WORK ON THIS PROJECT. THE ENGINEER IS NOT RESPONSIBLE FOR CONSTRUCTION SEQUENCES, METHODS, OR TECHNIQUES AND/OR SAFETY REQUIREMENTS IN CONNECTION WITH THE CONSTRUCTION OF THIS STRUCTURE.
- ELECTRICAL GROUND (IF APPLICABLE) SHALL BE PROVIDED BY OTHERS.
- ANY MECHANICAL, ELECTRICAL, VIBRATION OR ANY OTHER NON-STRUCTURAL DESIGN ASPECTS ARE BEYOND THE SCOPE OF THIS CERTIFICATION.
- WATERPROOFING/WATER PENETRATION ARE NOT PART OF THIS EVALUATION AND ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR ISOLATING DISSIMILAR MATERIALS TO PREVENT ELECTROLYSIS
- THE SHUTTER "SPAN" IS DEFINED AS THE DISTANCE BETWEEN THE INSIDE EDGES OF THE TRACKS.
- ALL SHUTTERS SHALL BE PROPERLY LABELED IN ACCORDANCE WITH FBC SECTION 1709.9.
- THE CONTRACTOR OR ENGINEER OF RECORD OF THE HOST STRUCTURE SHALL CONFIRM THE STRUCTURE CAN RESIST THE IMPOSED LOADS FROM THIS PRODUCT..
- DETAILS HEREIN SHALL NOT BE USED AS FABRICATION OR SHOP DRAWINGS.
- WORK SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION. THIS THIS DOCUMENT IS GENERIC AND DOES NOT APPLY TO A SPECIFIC PROJECT SITE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR OR OTHERS TO ENSURE COMPLIANCE WITH THIS DOCUMENT.

DRAWING SHEET INDEX	
SHEET NO.	DESCRIPTION
1	NOTES, SPAN CHARTS, ELEV.
2	SYSTEM COMPONENTS
3	TRACK MOUNT SECTIONS
4	TRACK MOUNT & CENTERMATE & LOCK SECTIONS
5	END CLOSURE SECTIONS
6	ANCHOR SCHEDULES
-	-

StormFortress - Components

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StormFortress
Aluminum Shutter
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FL42085

Title:

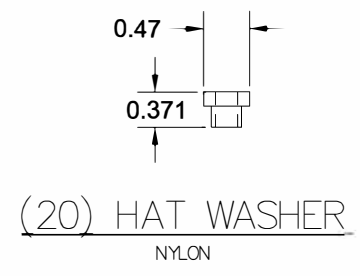
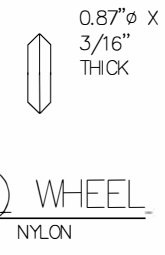
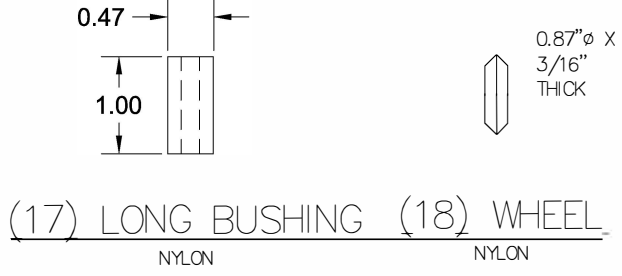
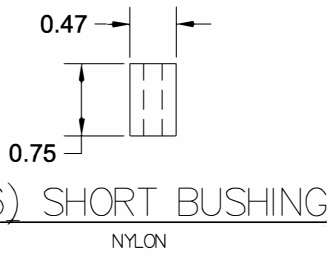
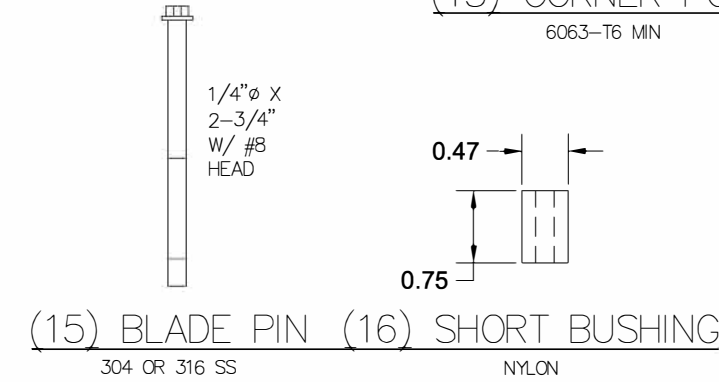
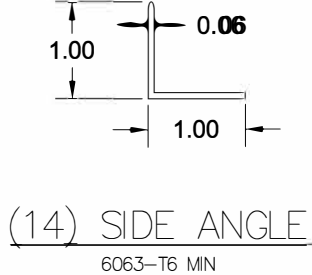
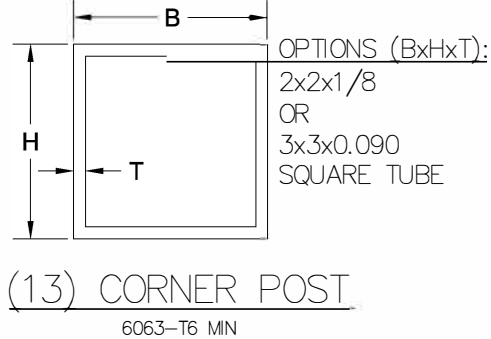
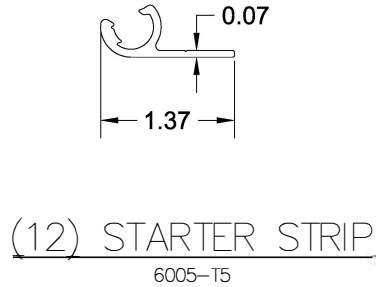
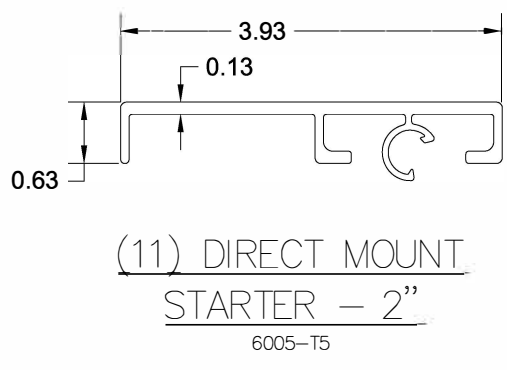
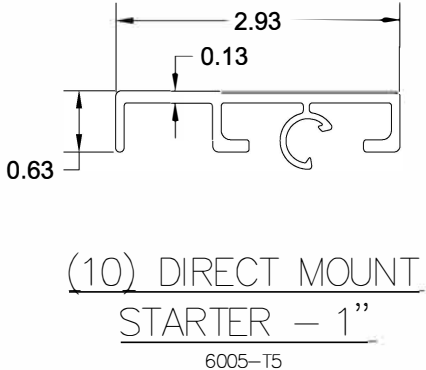
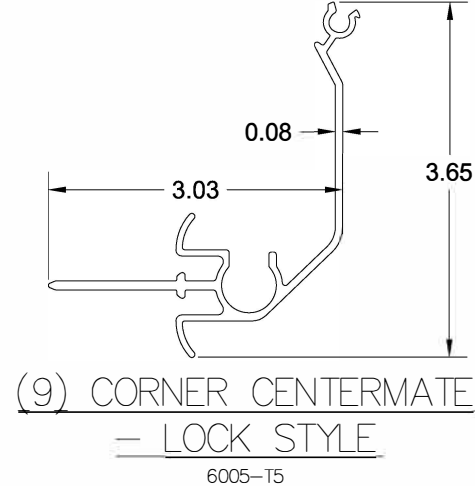
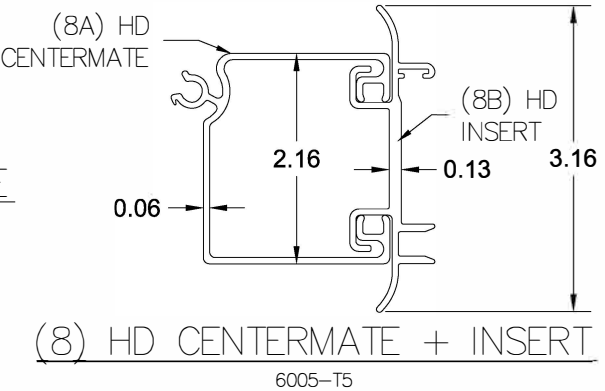
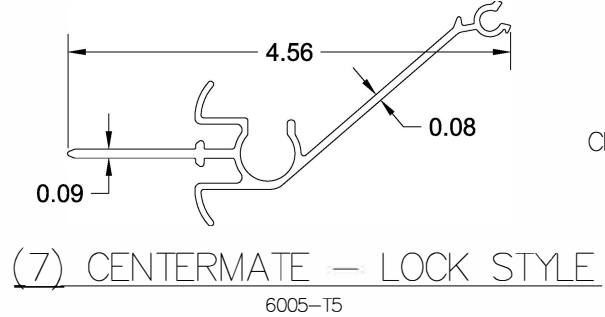
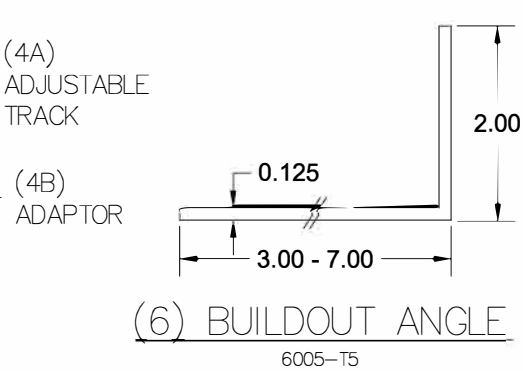
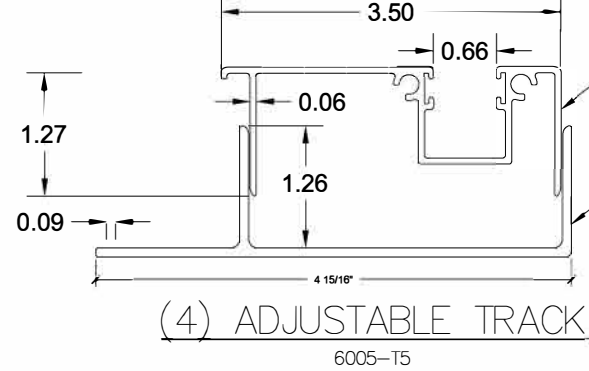
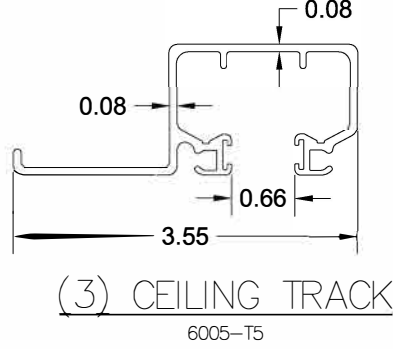
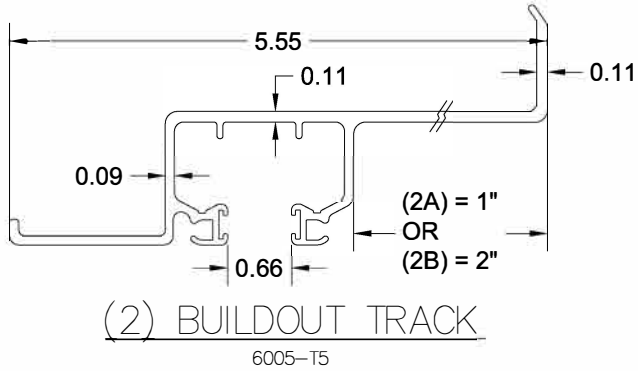
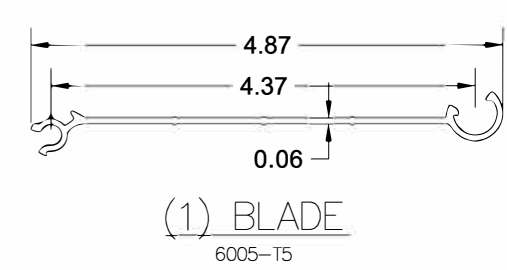
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Signed	Drawn	Chk'd	App'd	Mfg.	Q.A.
	JCF	MC			

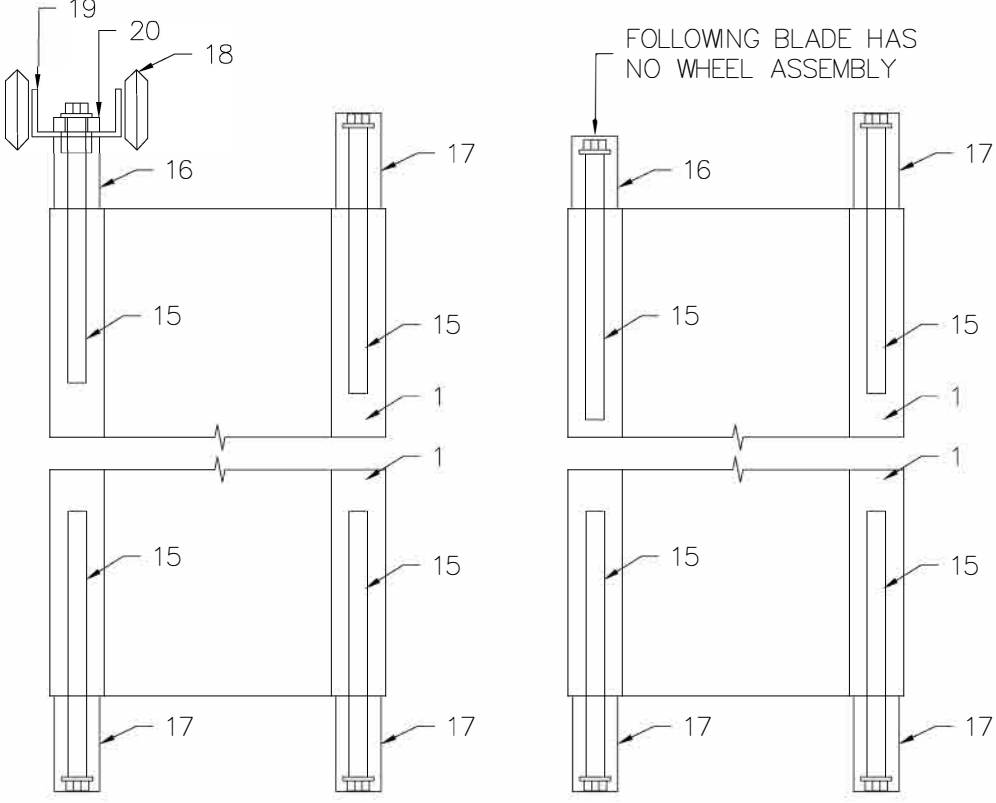
Date	4/20/23				
Name	JCF	MC			

SCALE: AS NOTED
DATE: 12/12/24
JOB #: 24-3074
SHEET
2 of 8



BLADE ASSEMBLY COMPONENTS	
PART NO.	DESCRIPTION
1	BLADE, SEE DETAIL
15	1/4" X 2-3/4" LONG THREADED PIN W/ #8 HEAD
16	NYLON BUSHING, 0.475" DIA. X 3/4"
17	NYLON BUSHING, 0.475" DIA. X 1"
18	0.87"Ø X 3/16" NYLON WHEELS W/ 3/16"Ø SS POP RIVETS
19	WHEEL CARRIAGE, 0.05" THICK AISI 302 OR 303 SS
20	NYLON HAT WASHER, 0.32"Ø X 0.37"

NOTE THAT #5 WAS INTENTIONALLY NOT USED

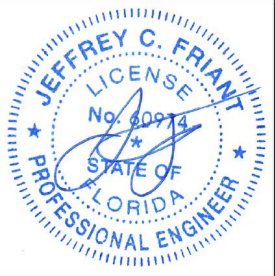


BLADE ASSEMBLY COMPONENTS
(SEE TABLE)

StormFortress - Vertical Section Views

Jeffrey C. Friant, P.E. 60974

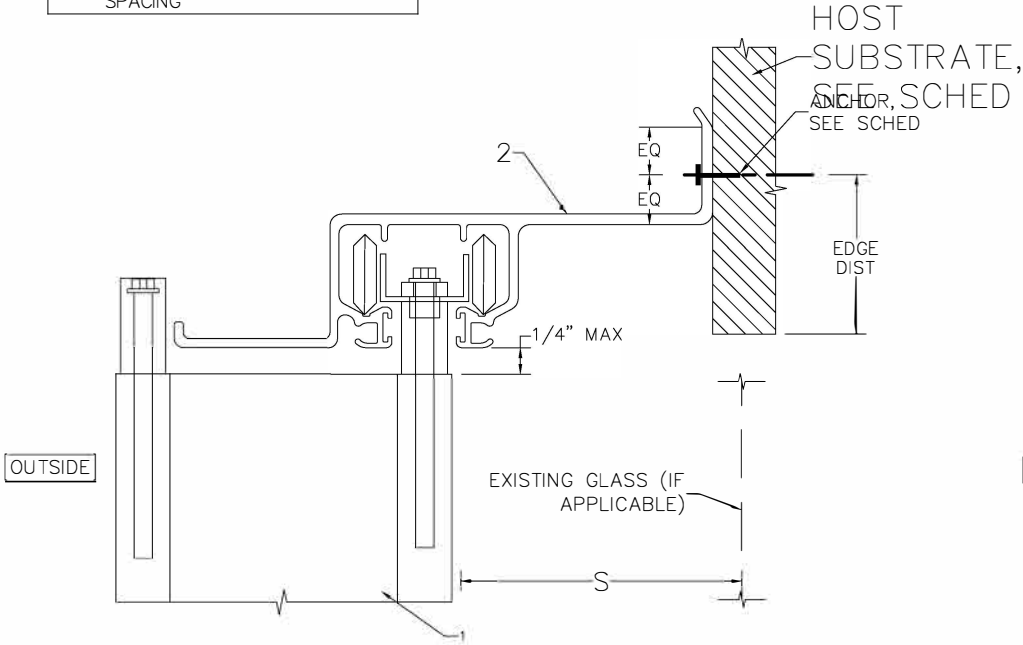
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Date: 2024.12.17 10:07:36 -05'00'



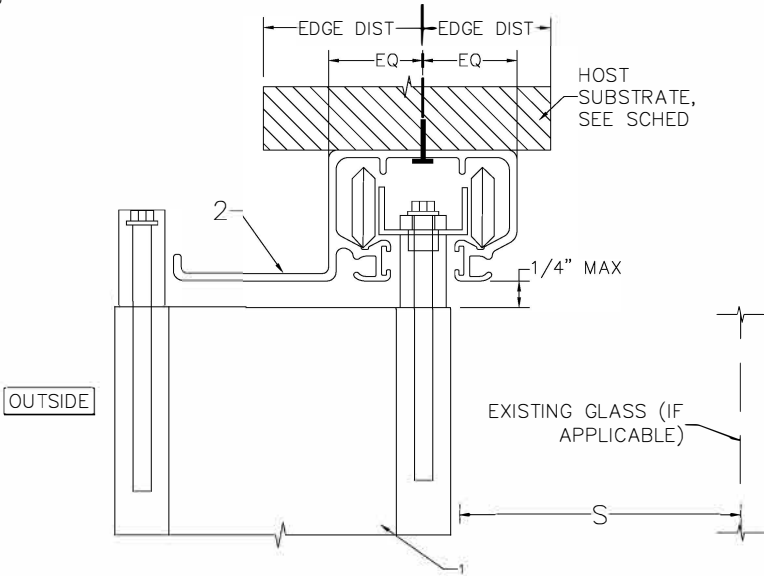
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info@specialtyengineeringns.com
CA 32371

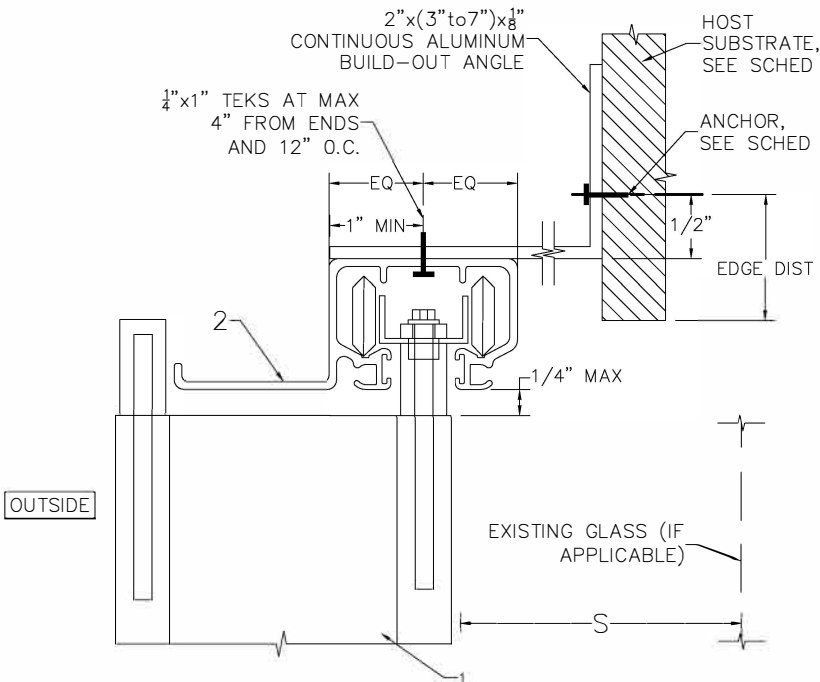
- NOTES:
- 1. S = SEPARATION FROM GLASS
 - 2. * = SEE ANCHOR SCHEDULES FOR OPTIONS AND REQUIRED SPACING



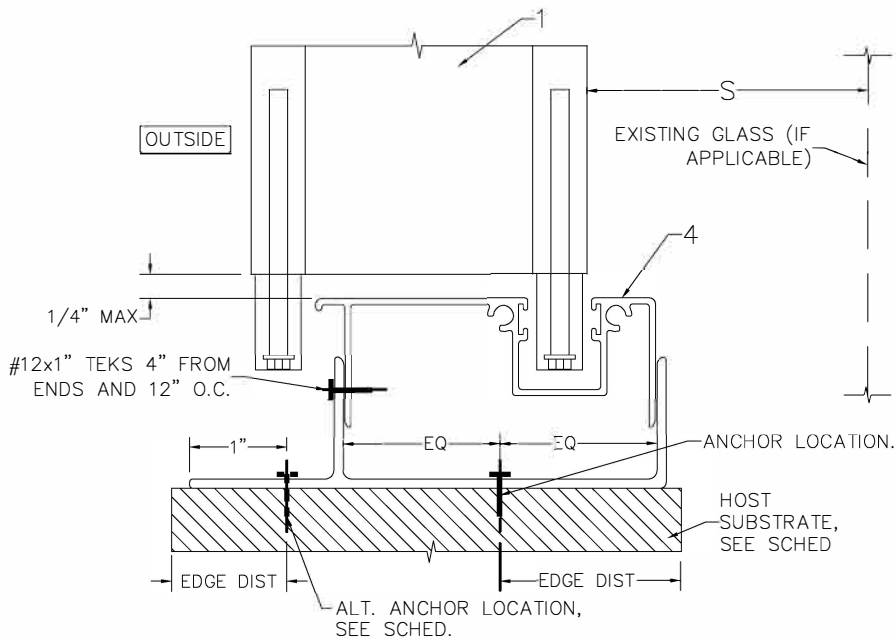
BUILDOUT TRACK MOUNT (HEADER OR SILL)
NTS (NOTE: MAY BE REVERSED FOR USE AT SILL)
*CONNECTION TYPE: 1



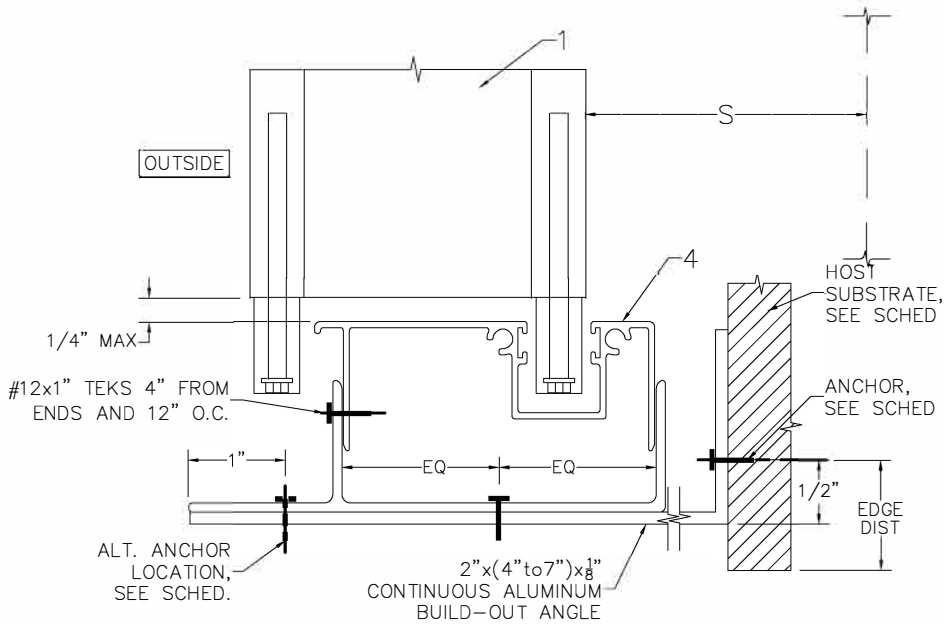
CEILING TRACK MOUNT (HEADER)
NTS
*CONNECTION TYPE: 2



BUILDOUT ANGLE MOUNT (HEADER OR SILL)
NTS
*CONNECTION TYPE: 3



ADJUSTABLE TRACK MOUNT (SILL)
NTS
*CONNECTION TYPE: 5



ADJUSTABLE TRACK MOUNT W/ BUILDOUT ANGLE (SILL)
NTS
*CONNECTION TYPE: 6

StormFortress
Aluminum Shutter
HVHZ & Non-HVHZ
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Signed	Drawn	Chk'd	App'd	Mfg.	Q.A.
	JCF	MC			

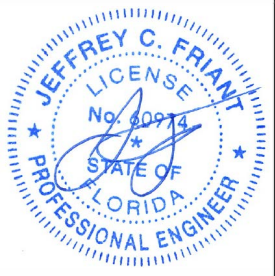
Date	Name
4/20/23	JCF

SCALE: AS NOTED
DATE: 12/12/24
JOB #: 24-3074
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StormFortress - Vertical Section Views (cont'd)

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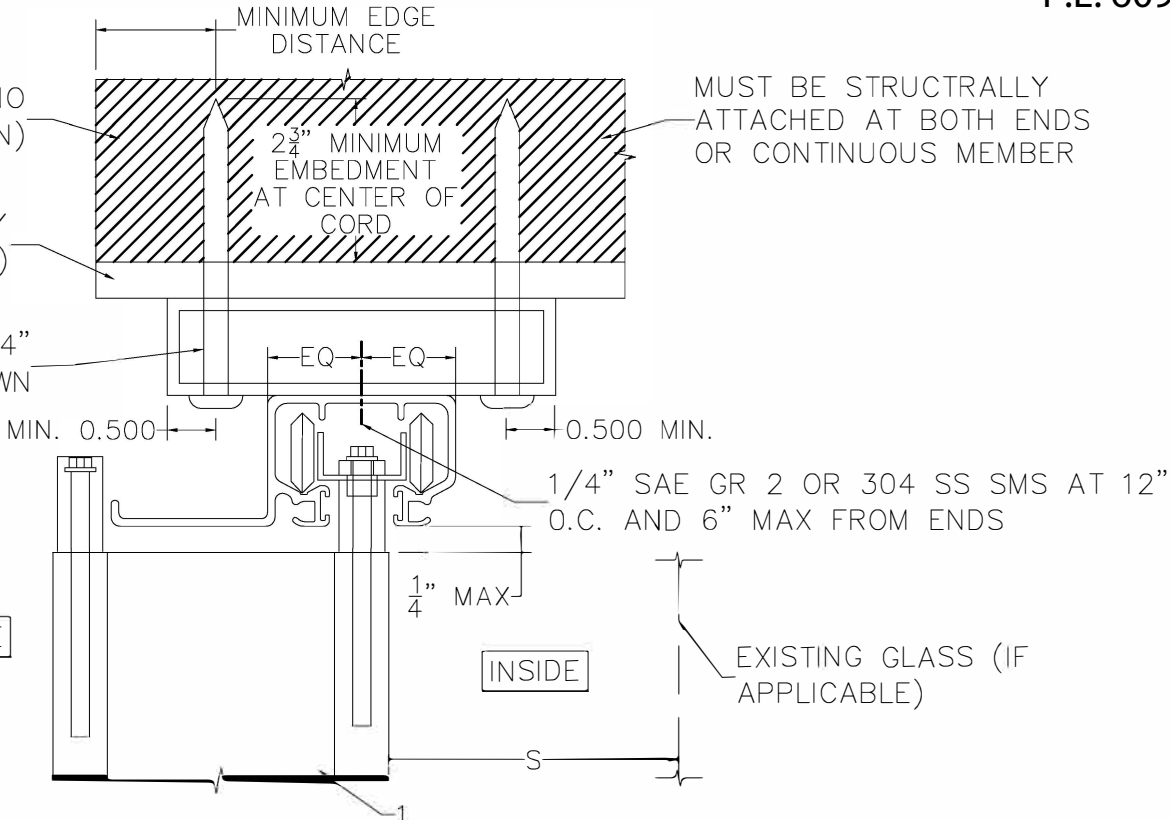
Signed	Drawn	Chk'd	App'd	Mfg.	Q.A.
JCF	MC				

Date	4/20/23
Name	JCF
MC	
App'd	
Mfg.	
Q.A.	

SCALE: AS NOTED
DATE: 12/12/24
JOB #: 24-3074
SHEET

STRUCTURAL WOOD TRUSSES OR RAFTER, (NO TAILS) AT 24" O.C. MAX, BY OTHERS (G=0.42 MIN)

3/4" MAX THICK SOFFIT, BY OTHERS (IF APPLICABLE)



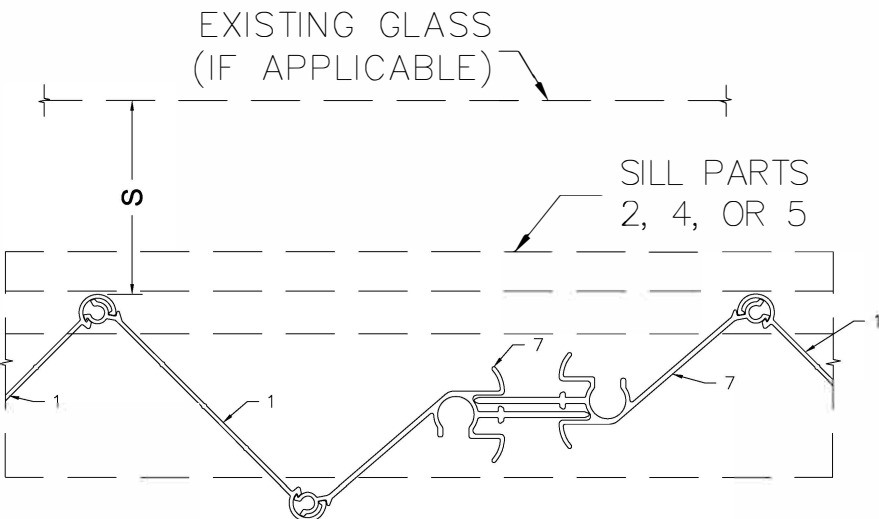
PROVIDE (2) 1/4" WOOD SCREWS OR LAG SCREWS AT EACH WOOD MEMBER (24" O.C. MAX). PROVIDE 2-3/4" MIN EMBED INTO MEMBER. SPACE PAIRS AS SHOWN

CEILING TRACK MOUNT TO WOOD TRUSSES/RAFTERS (HEADER)

NTS

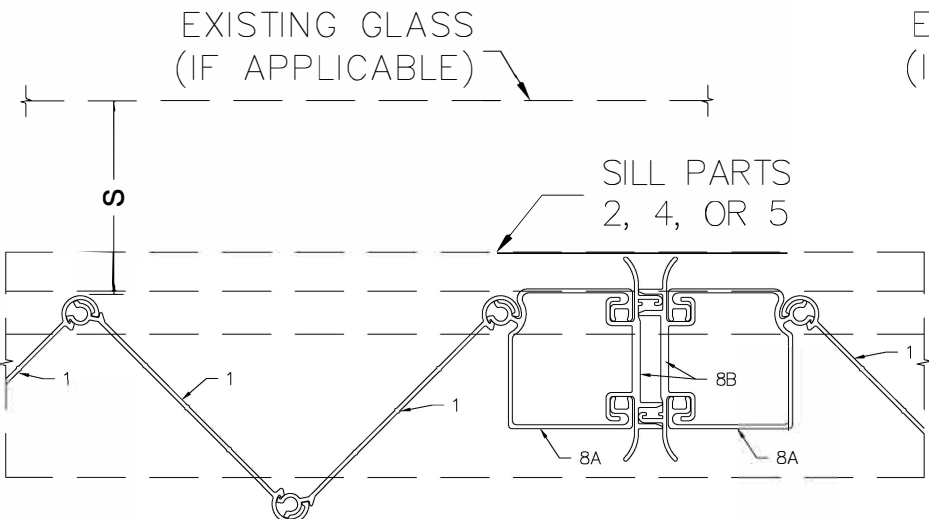
CONNECTION TYPE: ANCHOR SCHED. NOT APPLICABLE FOR THIS CONDITION. INSTALL PER THIS DETAIL

StormFortress - Centermate Lock Details
Horizontal Section Views



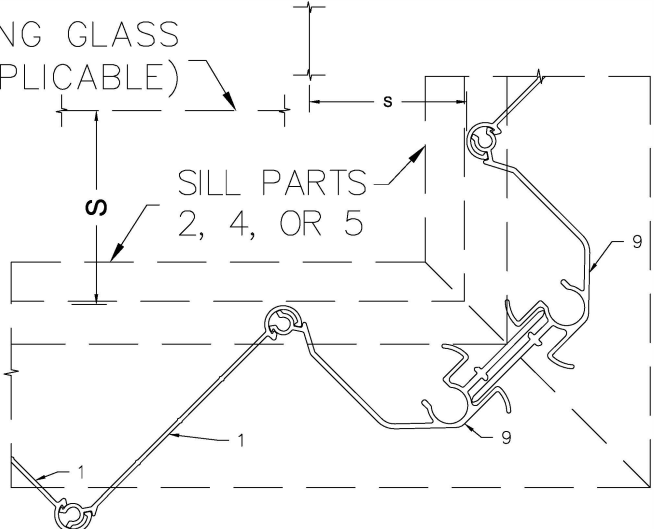
CENTERMATE — LOCK STYLE

NTS



HD CENTERMATE

NTS

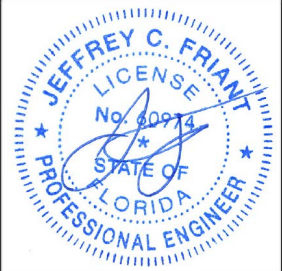


CORNER CENTERMATE — LOCK STYLE

NTS

StormFortress - Centermate Lock Details
Horizontal Section Views (cont'd)

Jeffrey C. Friant, P.E.
60974
Date: 2024.12.17
10:08:25 -05'00'



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Signed	Drawn	Chk'd	Appv'd	Mfg.	Q.A.
	JCF	MC			

Date	4/20/23
Name	JCF
Chk'd	MC
Appv'd	
Mfg.	
Q.A.	

SCALE: AS NOTED

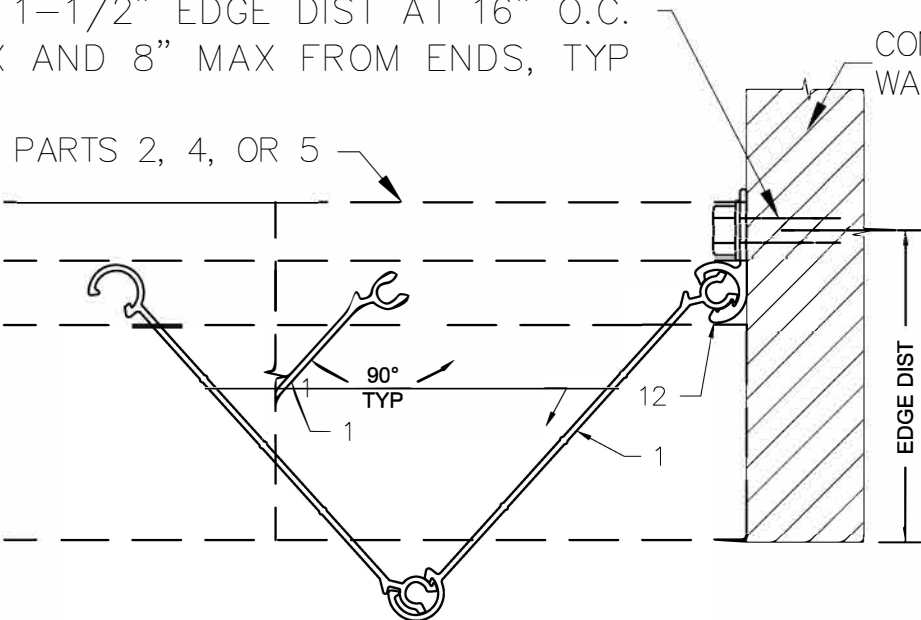
DATE: 12/12/24

JOB #: 24-3074

SHEET

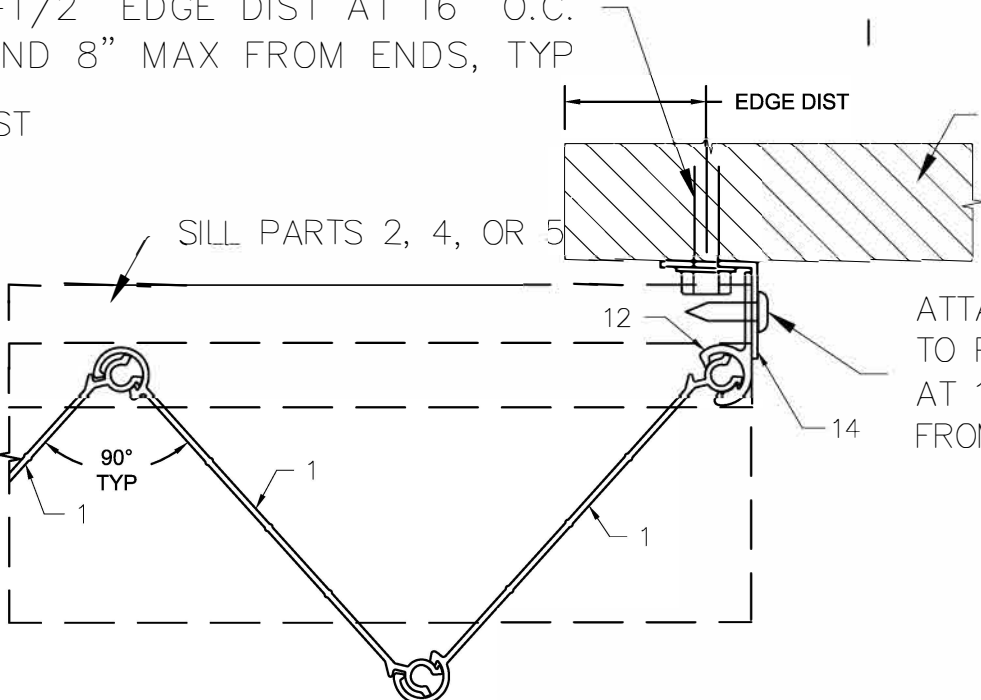
1/4" ITW TAPCONS W/ 1-1/4" EMBED
AND 1-1/2" EDGE DIST AT 16" O.C.
MAX AND 8" MAX FROM ENDS, TYP

SILL PARTS 2, 4, OR 5



END CLOSURE TO WALL 1
NTS

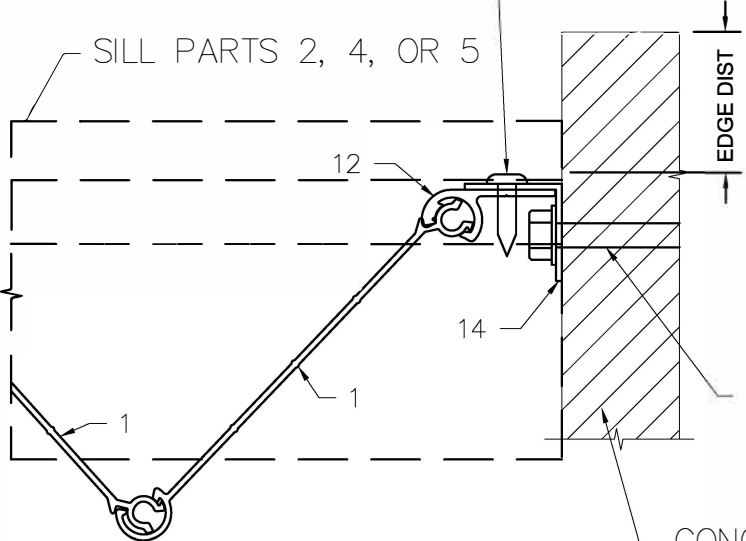
1/4" ITW TAPCONS W/ 1-1/4" EMBED
AND 1-1/2" EDGE DIST AT 16" O.C.
MAX AND 8" MAX FROM ENDS, TYP



END CLOSURE TO WALL 2
NTS

ATTACH STARTER STRIPS
TO POST W/ #12 SMS
AT 12" O.C. AND 4" MAX
FROM ENDS, TYP

ATTACH STARTER STRIPS TO POST W/ #10 SMS
AT 12" O.C. AND 6" MAX FROM ENDS, TYP



END CLOSURE TO WALL 3
NTS

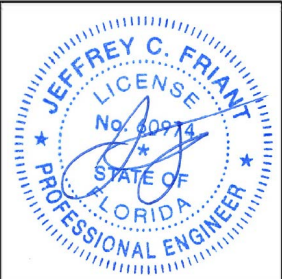
1/4" ITW TAPCONS W/ 1-1/4" EMBED
AND 1-1/2" EDGE DIST AT 12" O.C.
MAX AND 4" MAX FROM ENDS, TYP

CONC. OR CMU HOST
WALL

StormFortress - Centermate Lock Details
Horizontal Section Views (cont'd)

Jeffrey C. Friant, P.E. 60974

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Date: 2024.12.17 10:08:39 -05'00'



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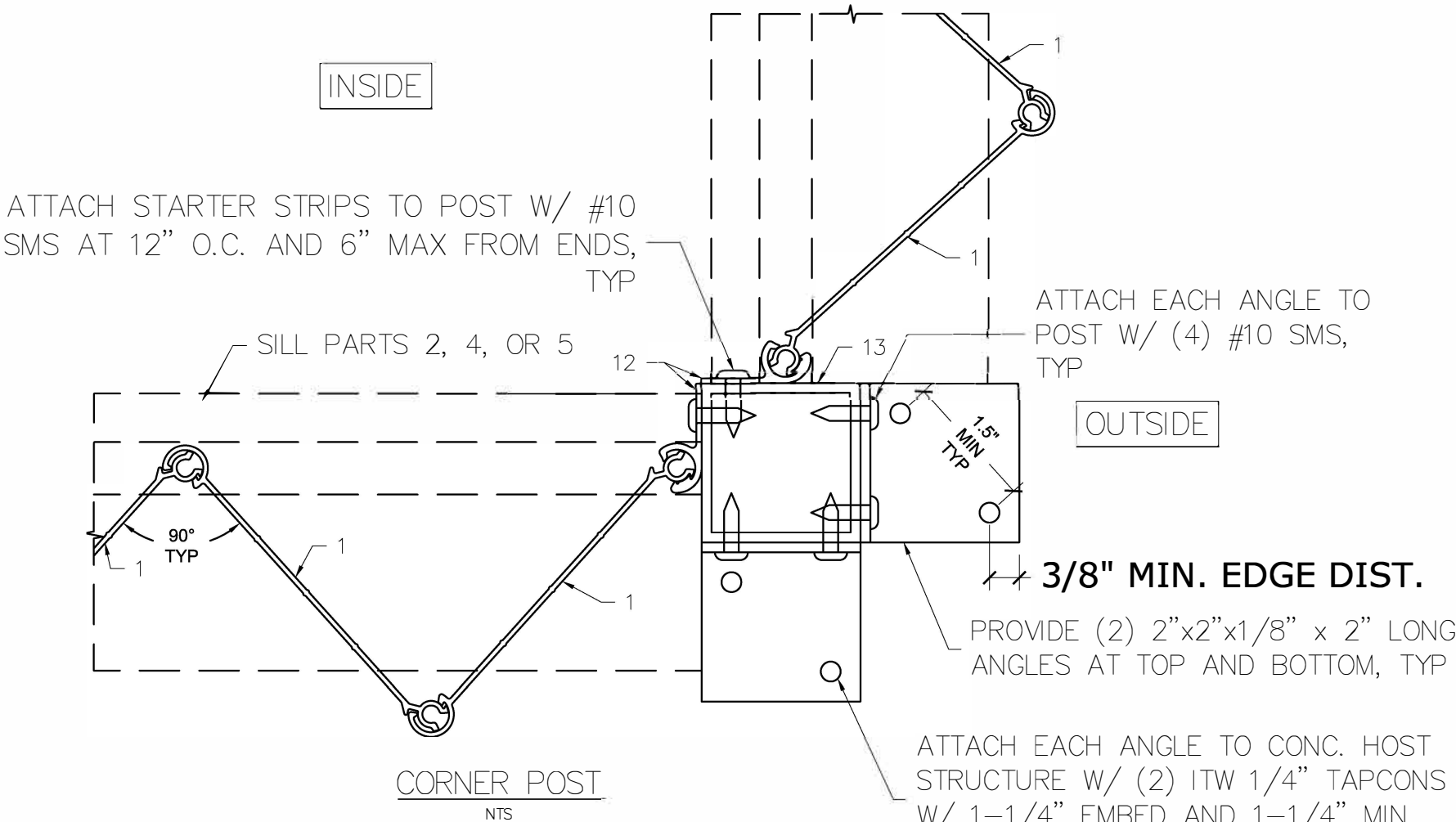
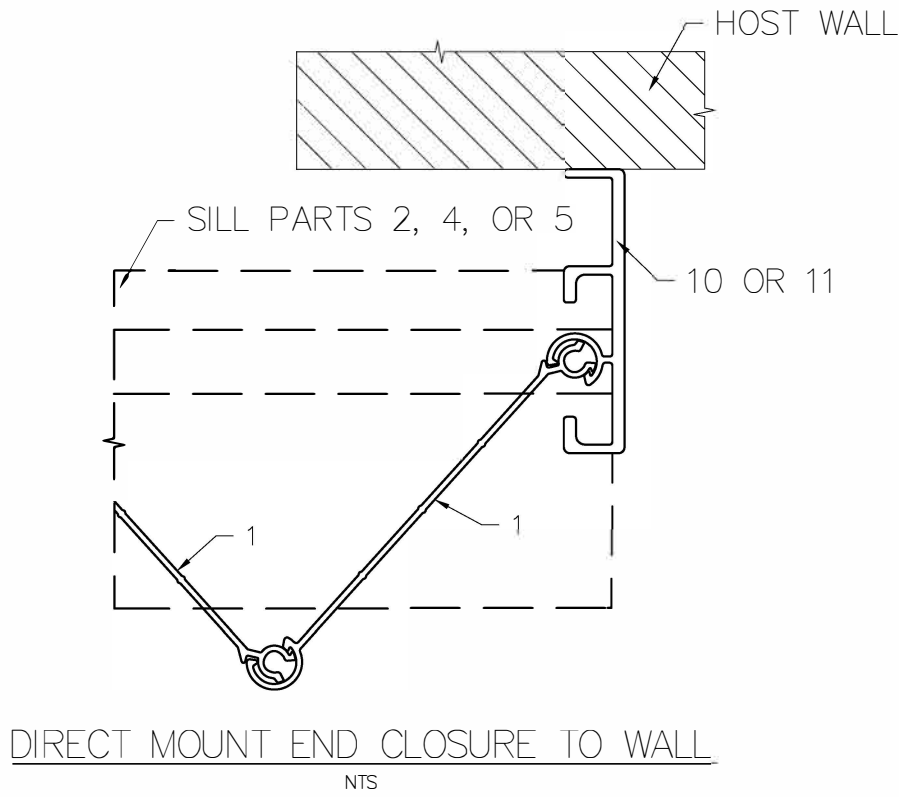
Signed	Name	Date
Drawn	JCF	4/20/23
Chk'd	MC	
App'd		
Mfg.		
Q.A.		

SCALE: AS NOTED

DATE: 12/12/24

JOB #: 24-3074

SHEET



ANCHOR SCHEDULE NOTES:

1. EDGE DISTANCE & EMBEDMENT VALUES DO NOT INCLUDE WALL FINISHES SUCH AS STUCCO, ETC. CONTRACTOR SHALL ENSURE THAT THESE VALUES ARE MET.
2. FOR CONNECTIONS TO WOOD, THE ANCHOR OPTION(S) LISTED MAY BE SUBSTITUTED WITH A LAG SCREW OR WOOD SCREW WITH EQUIVALENT DIAMETER, EMBEDMENT AND EDGE DISTANCE.
3. BOLTS SHALL HAVE STANDARD SAE GRADE WASHER OR BE WASHER HEAD TYPE. BOLT HOLES SHALL NOT BE GREATER THAN 1/16" OF THE ANCHOR DIAMETER.
4. MINIMUM ANCHOR MATERIAL STRENGTH SHALL BE SAE GR 2 MINIMUM FOR CARBON STEEL (CS), SERIES 316 FOR STAINLESS STEEL (SS),
5. ADDITIONAL ANCHOR OPTIONS MAY BE USED FOR THIS PRODUCT AS LONG AS THE ANCHOR IS NO SMALLER THAN THE MINIMUM DIAMETER LISTED AND IT IS CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER.
6. "X" = SPACING VALUES NOT APPROVED FOR INSTALLATION.
7. LINEAR INTERPOLATION MAY BE USED FOR INTERMEDIATE SPAN OR PRESSURE TIERS BETWEEN APPROVED SPACING VALUES ONLY. SPACING VALUES BETWEEN AN "X" AND AN APPROVED VALUE SHALL NOT BE INTERPOLATED.
8. ANCHOR INTSALLATION SHALL FOLLOW ALL MANUFACTURER RECOMMENDATIONS.
9. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF CONCRETE SUBSTRATES SHALL BE f_c = 3.0 KSI MIN. (UNCRACKED).
10. MASONRY HOST STRUCTURE SHALL BE ASTM C-90 MEDIUM WEIGHT MINIMUM.
11. WOOD HOST MEMBERS SHALL BE STRUCTURAL 2X MEMBERS MINIMUM (SPECIFIC GRAVITY = G = 0.42 OR 0.55). MINIMUM DISTANCE FROM ANCHOR TO END OF WOOD MEMBER = 1.0". SHUTTER SHALL NOT ATTACH TO PLYWOOD OR ANY EXTERIOR SHEATHING.
12. METAL HOST STRUCTURES SHALL BE STRUCTURAL MEMBERS ONLY. STEEL HOST MEMBERS SHALL BE 16GA THICK MINIMUM WITH MINIMUM F_y = 33KSI. ALUMINUM HOST MEMBERS SHALL BE 1/8" THICK MINIMUM WITH MINIMUM 6063-T6 ALLOY AND TEMPER. SCREWS SHALL PENETRATE 3 PITCHES MINIMUM PAST THE THREAD PLANE OF THE HOST MATERIAL.
13. FOR ATTACHMENTS TO HOST WALL WITH DECORATIVE BRICK VENEER OF EIFS SIDING, ANCHORS SHALL PENETRATE FAR ENOUGH TO REACH A STRUCTURAL MEMBER AND ACHIEVE THE EMBEDMENT LISTED.
14. FASTENERS IN STEEL SUBSTRATES SHALL HAVE A MINIMUM EDGE/END DISTANCE OF 2x DIAMETER AND MINIMUM CENTER TO CENTER SPACING OF 3x DIAMETER. FASTENERS IN ALUMINUM SUBSTRATES SHALL HAVE A MINIMUM EDGE/END DISTANCE OF 2x DIAMETER AND MINIMUM CENTER TO CENTER SPACING OF 2.5x DIAMETER.

ANCHOR SCHEDULE - REQUIRED O.C. SPACING (in)

		Anchor Type: A Substrate: Concrete Embed. = 1.75" Min. Edge Dist. = 2.50"						Anchor Type: A Substrate: Concrete Embed. = 1.75" Min. Edge Dist. = 1.25"						Anchor Type: A Substrate: GFB Embed. = 1.75" Min. Edge Dist. = 2.50"						Anchor Type: A Substrate: GFB Embed. = 1.75" Min. Edge Dist. = 1.25"						Anchor Type: A Substrate: Hollow Block Embed. = 1.25" Min. Edge Dist. = 2.50"						Anchor Type: A Substrate: Wood (0.55) Embed. = 1.75" Min. Edge Dist. = 0.75"						Anchor Type: A Substrate: Wood (0.42) Embed. = 1.75" Min. Edge Dist. = 0.75"					
SHUTTER SPAN (IN)	DESIGN PRESSURE (PSF, [-])	CONNECTION TYPE						CONNECTION TYPE						CONNECTION TYPE						CONNECTION TYPE						CONNECTION TYPE						CONNECTION TYPE											
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152	30	12	12	12	12	12	1																																				

ANCHOR SCHEDULE NOTES:

1. EDGE DISTANCE & EMBEDMENT VALUES DO NOT INCLUDE WALL FINISHES SUCH AS STUCCO, ETC. CONTRACTOR SHALL ENSURE THAT THESE VALUES ARE MET.

2. FOR CONNECTIONS TO WOOD, THE ANCHOR OPTION(S) LISTED MAY BE SUBSTITUTED WITH A LAG SCREW OR WOOD SCREW WITH EQUIVALENT DIAMETER, EMBEDMENT AND EDGE DISTANCE.

3. BOLTS SHALL HAVE STANDARD SAE GRADE WASHER OR BE WASHER HEAD TYPE. BOLT HOLES SHALL NOT BE GREATER THAN 1/16" OF THE ANCHOR DIAMETER.

4. MINIMUM ANCHOR MATERIAL STRENGTH SHALL BE SAE GR 2 MINIMUM FOR CARBON STEEL (CS), SERIES 316 FOR STAINLESS STEEL (SS),

5. ADDITIONAL ANCHOR OPTIONS MAY BE USED FOR THIS PRODUCT AS LONG AS THE ANCHOR IS NO SMALLER THAN THE MINIMUM DIAMETER LISTED AND IT IS CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER.

6. "X" = SPACING VALUES NOT APPROVED FOR INSTALLATION.

7. LINEAR INTERPOLATION MAY BE USED FOR INTERMEDIATE SPAN OR PRESSURE TIERS BETWEEN APPROVED SPACING VALUES ONLY. SPACING VALUES BETWEEN AN "X" AND AN APPROVED VALUE SHALL NOT BE INTERPOLATED.

8. ANCHOR INTSALLATION SHALL FOLLOW ALL MANUFACTURER RECOMMENDATIONS.

9. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF CONCRETE SUBSTRATES SHALL BE f_c = 3.0 KSI MIN. (UNCRACKED).

10. MASONRY HOST STRUCTURE SHALL BE ASTM C-90 MEDIUM WEIGHT MINIMUM.

11. WOOD HOST MEMBERS SHALL BE STRUCTURAL 2X MEMBERS MINIMUM (SPECIFIC GRAVITY = G = 0.42 OR 0.55). MINIMUM DISTANCE FROM ANCHOR TO END OF WOOD MEMBER = 1.0". SHUTTER SHALL NOT ATTACH TO PLYWOOD OR ANY EXTERIOR SHEATHING.

12. METAL HOST STRUCTURES SHALL BE STRUCTURAL MEMBERS ONLY. STEEL HOST MEMBERS SHALL BE 16GA THICK MINIMUM WITH MINIMUM F_y = 33KSI. ALUMINUM HOST MEMBERS SHALL BE 1/8" THICK MINIMUM WITH MINIMUM 6063-T6 ALLOY AND TEMPER. SCREWS SHALL PENETRATE 3 PITCHES MINIMUM PAST THE THREAD PLANE OF THE HOST MATERIAL.

13. FOR ATTACHMENTS TO HOST WALL WITH DECORATIVE BRICK VENEER OF EIFS SIDING, ANCHORS SHALL PENETRATE FAR ENOUGH TO REACH A STRUCTURAL MEMBER AND ACHIEVE THE EMBEDMENT LISTED.

14. FASTENERS IN STEEL SUBSTRATES SHALL HAVE A MINIMUM EDGE/END DISTANCE OF 2x DIAMETER AND MINIMUM CENTER TO CENTER SPACING OF 3x DIAMETER. FASTENERS IN ALUMINUM SUBSTRATES SHALL HAVE A MINIMUM EDGE/END DISTANCE OF 2x DIAMETER AND MINIMUM CENTER TO CENTER SPACING OF 2.5x DIAMETER.

ANCHOR SCHEDULE - REQUIRED O.C. SPACING (in)

		Anchor Type: B Substrate: Wood (0.55) Embed. = 2.25" Min. Edge Dist. = 0.75"						Anchor Type: B Substrate: Conc or GFB Embed. = 2.25" Min. Edge Dist. = 3.00"						Anchor Type: C Substrate: Steel or Alum Embed. = 1.75" Min. Edge Dist. = 2.50"					
SHUTTER SPAN (IN)	DESIGN PRESSURE (PSF, [-])	CONNECTION TYPE						CONNECTION TYPE						CONNECTION TYPE					
		1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
72	30	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
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Jeffrey C. Friant

P.E. 60974

Digitally signed by Jeffrey C. Friant, P.E. 60974

Date: 2024.12.17 10:09:09 -05'00'

ANCHOR TYPE B	ANCHOR TYPE C
Anchor Options	Anchor Options
5/16 ITW Tapcon CS	1/4-14 SMS CS
5/16 Dewalt Ultracon CS	1/4-14 SMS SS
5/16 Hillman Solid Set CS	1/4 Bolt CS or SS
NOT USED	NOT USED
NOT USED	NOT USED

SPECIALTY

ENGINEERING

SERVICES & SOLUTIONS, LLC.

18540 126TH TERRACE NORTH

JUPITER, FLORIDA 33478

www.SESS-inc.com

info@specialtyengineeringnservices.com

CA 32371

StormFortress

Aluminum Shutter

HVHZ & Non-HVHZ

FL42085

STORM

SMART

Storm Smart has exclusive rights and usage to this drawing and without the expressed written permission of Storm Smart it cannot be used by anyone else.

Signed	Name	Date
Drawn	JCF	4/20/23
Chk'd	MC	
App'd		
Mfg.		
Q.A.		

SCALE: AS NOTED

DATE: 12/12/24

JOB #: 24-3074

SHEET

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24-3074 - Storm Fortress Installation Instructions