

HVHZ

HR ACCORDION SHUTTER
FOR USE WITHIN AND OUTSIDE THE HVHZ

NON-HVHZ

TABLE 1 ALLOWABLE SPAN SCHEDULE FOR USE IN THE HVHZ		
DESIGN WIND LOAD 'W' (P.S.F.)	POSITIVE ASD WIND LOAD	NEGATIVE ASD WIND LOAD
	L max.	L max.
32.5	183"	186"
40	174"	186"
50	164"	186"
60	157"	186"
70	151"	186"
80	146"	181"
90	142"	170"
100	138"	161"
110	135"	153"
120	132"	146"
130	129"	140"
140	127"	135"
150	125"	130"
160	123"	123"
170	117"	117"
180	111"	111"
190	105"	105"
200	100"	100"

TABLE 1 & 2 NOTES:

1. HVHZ: defined by the FBC as Miami-Dade County and Broward County, Florida.
2. For Table 1, determine both the Positive and Negative ASD wind load. Check the max span for each and use the lesser of the two values.
3. See sections for shutter span definition.
4. For design loads between tabulated values, use next higher load to determine allowable span.
5. For Table 2, enter at a Positive Load ≥ project positive load and Span ≥ project span to determine Minimum Shutter Separation From Glass.

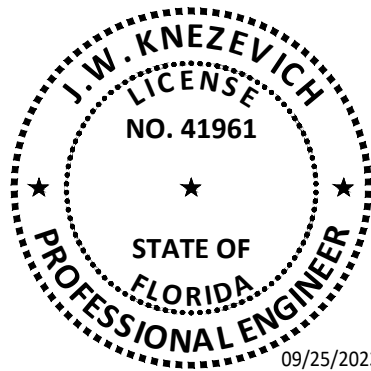
TABLE 2 MINIMUM SEPARATON FROM GLASS FOR USE IN THE HVHZ			
POSITIVE ASD LOAD 'W' (P.S.F.)	SHUTTER SPAN 'L'	MINIMUM SEPARATION FROM GLASS	
		INSTALLATIONS ≤ 30' ABOVE GRADE	INSTALLATIONS > 30' ABOVE GRADE
40	108"	2-1/2"	1-3/8"
	132"	2-1/2"	1-3/4"
	174"	3"	3"
50	108"	2-1/2"	1-3/8"
	132"	2-1/2"	1-7/8"
	164"	3"	3"
60	108"	2-1/2"	1-1/2"
	132"	2-1/2"	2"
	156"	3"	3"
70	108"	2-1/2"	1-5/8"
	132"	2-1/2"	2-1/4"
	150"	3"	3"
80	108"	2-1/2"	1-5/8"
	132"	2-1/2"	2-3/8"
	141"	3"	3"
90	108"	2-1/2"	1-3/4"
	132"	2-1/2"	2-1/2"
	141"	3"	3"
100	108"	2-1/2"	1-3/4"
	132"	2-3/4"	2-3/4"
	138"	3"	3"
110	108"	2-1/2"	1-7/8"
	120"	2-1/2"	2-1/4"
	135"	3"	3"
120	108"	2-1/2"	2"
	120"	2-1/2"	2-3/8"
	132"	3"	3"
130	108"	2-1/2"	2"
	120"	2-1/2"	2-1/2"
	129"	3"	3"

TABLE 3 ALLOWABLE SPAN SCHEDULE NON-HVHZ & ASTM WIND ZONE 4 w/ 9 LB. MISSILE D	
DESIGN WIND LOAD 'W' (P.S.F.)	POSITIVE & NEGATIVE ASD WIND LOAD
	L max.
32.5	186"
40	186"
50	186"
60	186"
70	186"
80	181"
90	170"
100	161"
110	153"
120	146"
130	140"
140	135"
150	130"
160	123"
170	117"
180	111"
190	105"
200	100"

TABLE 3 & 4 NOTES:

1. Non-HVHZ: defined by the FBC as all locations other than Miami-Dade County and Broward County, Florida.
2. For Table 3, determine the maximum Positive or Negative ASD wind load and use the corresponding max span.
3. See sections for shutter span definition.
4. For design loads between tabulated values, use next higher load to determine allowable span.
5. For Table 4, enter at a Positive Load ≥ project positive load and a Span ≥ project span to determine Minimum Shutter Separation From Glass.

TABLE 4 MINIMUM SEPARATON FROM GLASS NON-HVHZ & ASTM WIND ZONE 4 w/ 9 LB. MISSILE D			
POSITIVE ASD LOAD 'W' (P.S.F.)	SHUTTER SPAN 'L'	MINIMUM SEPARATION FROM GLASS	
		INSTALLATIONS ≤ 30' ABOVE GRADE	INSTALLATIONS > 30' ABOVE GRADE
40	108"	2-1/2"	1-3/8"
	132"	2-1/2"	1-3/4"
	186"	3-5/8"	3-5/8"
50	108"	2-1/2"	1-3/8"
	132"	2-1/2"	1-7/8"
	186"	4-1/4"	4-1/4"
60	108"	2-1/2"	1-1/2"
	132"	2-1/2"	2"
	186"	5"	5"
70	108"	2-1/2"	1-5/8"
	132"	2-1/2"	2-1/4"
	186"	5-5/8"	5-5/8"
80	108"	2-1/2"	1-5/8"
	132"	2-1/2"	2-3/8"
	180"	5-3/4"	5-3/4"
90	108"	2-1/2"	1-3/4"
	132"	2-1/2"	2-1/2"
	170"	5-1/8"	5-1/8"
100	108"	2-1/2"	1-3/4"
	132"	2-3/4"	2-3/4"
	161"	4-3/4"	4-3/4"
110	108"	2-1/2"	1-7/8"
	132"	2-7/8"	2-7/8"
	153"	4-3/8"	4-3/8"
120	108"	2-1/2"	2"
	132"	3"	3"
	146"	4"	4"
130	108"	2-1/2"	2"
	132"	3-1/4"	3-1/4"
	140"	3-3/4"	3-3/4"



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HR ACCORDION SHUTTER SYSTEM

Client/
Manufacturer:

Town & Country
INDUSTRIES

Wholesale Aluminum and Building Products
A DIVISION OF ABC SUPPLY, INC.
400 West McNab Road * Fort Lauderdale, FL 33309
phone 954.970.9999 * fax 954-970-9988

Revisions		description
no	date	by
0	9/25/2023	JWK

Scale: AS NOTED
Drawn by: JWK
Date: 9/25/2023

J.W. Knezevich
Professional Engineer
FL License No.: PE 41961

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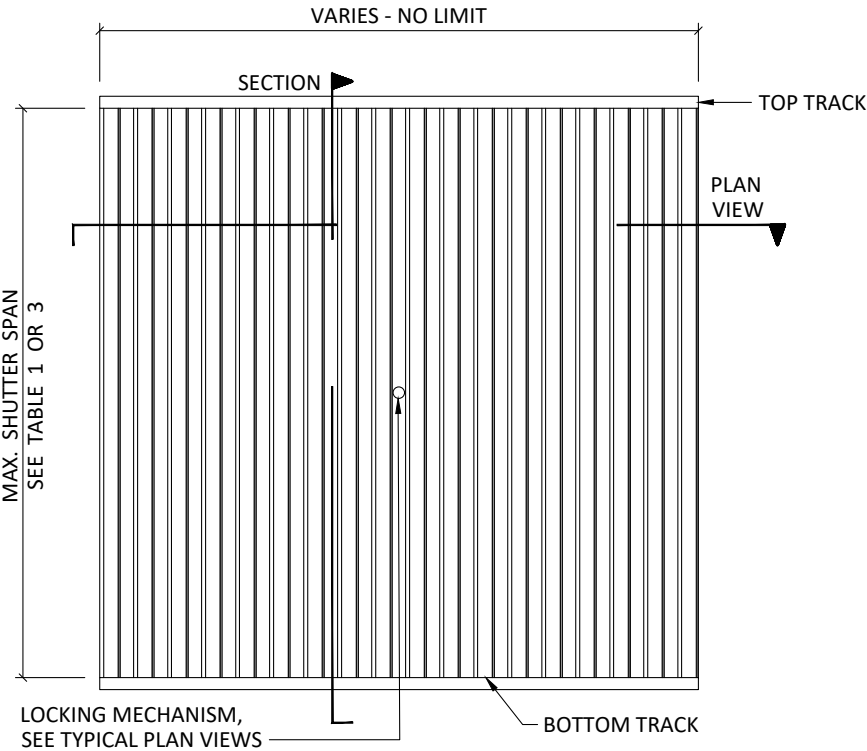
Drawing No.
KC23-0710
sheet 1 of 9

GENERAL NOTES:

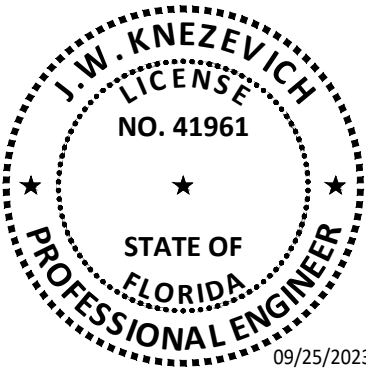
1. This Product Evaluation Document (PED) represents a shutter system analyzed and tested in accordance with the Florida Building Code, Building 8th Edition (2023) for use within and outside of the High Velocity Hurricane Zone (HVHZ).
2. Product performance testing was conducted in accordance with TAS 201, TAS 202, TAS 203, & ASTM E330.
3. Determine the Positive and Negative design loads to use when referencing these documents in accordance with ASCE 7-22 utilizing Allowable Stress Design (ASD) Load Factors. Calculated wind loads shall be multiplied by the ASD load factor 0.6 before referencing these documents.
4. For wind load calculations in accordance with ASCE 7-22, a directionality factor of $k_d = 0.85$ may be used.
5. No allowable stress increase is utilized in the design of this system; however, a wind load duration factor of $C_d = 1.6$ is used for wood lag screw design.
6. This PED is generic and does not include information prepared for application of this system to a specific site.
7. This PED is the installation instructions portion of a Product Evaluation and shall only be used with the corresponding Product Evaluation Report.
8. This PED is suitable to be applied by the Contractor provided the Contractor does not deviate from the conditions detailed herein and the Contractor verifies that the existing structure does not deviate in either form or material from the structural substrates detailed herein.
9. Any modifications or additions to this PED will void the evaluation documents.
10. When site conditions deviate from the PED, the Building Official may require that site specific documents justifying the deviation be prepared, signed, dated and sealed by a licensed engineer or registered architect.
11. Each shutter assembly shall be permanently labeled with the following minimum information:

Town & Country Ind.
Fort Lauderdale, FL
TAS 201, 202, & 203
9 lb Large Missile
FBC Approval Number

12. All extrusions shown shall be 6063-T6 aluminum alloy, u.o.n. with a minimum $F_y = 25$ ksi.
13. All bolts and washers, excluding installation fasteners, shall be stainless steel with a minimum tensile strength of 60 ksi, u.o.n. Pop rivets shall be 1/4" ϕ or 3/16" ϕ 5052 aluminum alloy.
14. All shutters shall have a locking mechanism consisting of thumbscrew or box lock at center or side closure. See Sheet 4 for lock locations and details.
15. Top and bottom details may be interchanged as field conditions require.
16. Floor tracks may be removable at non-stacking locations provided removable anchors are used.
17. Piece 5 & 27 on sheet 3 may be bent to form a curve with a minimum radius of 10"
18. All piece dimensions shown include powder coating finish.



TYPICAL ACCORDION SHUTTER ELEVATION
N.T.S.



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A DIVISION OF ABC SUPPLY, INC.

400 West McNab Road * Fort Lauderdale, FL 33309

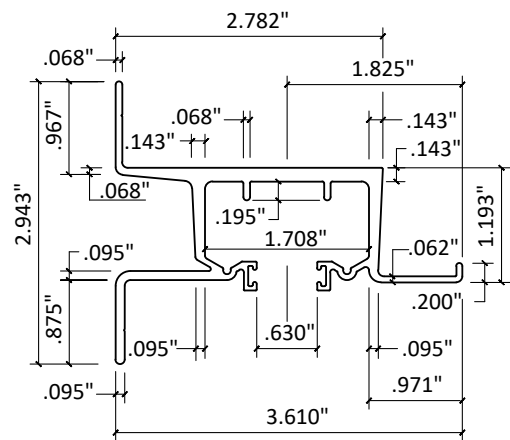
phone 954-970-9999 * fax 954-970-9988

Revisions		description	
no	date	by	
0	9/25/2023	JWK	FBC 2023 Update - Formerly KC20-0413

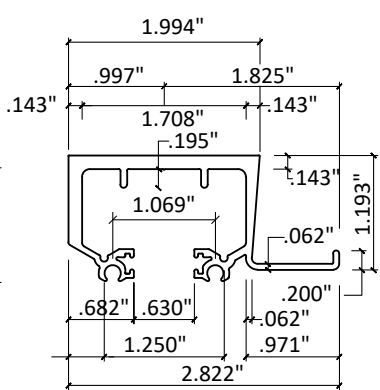
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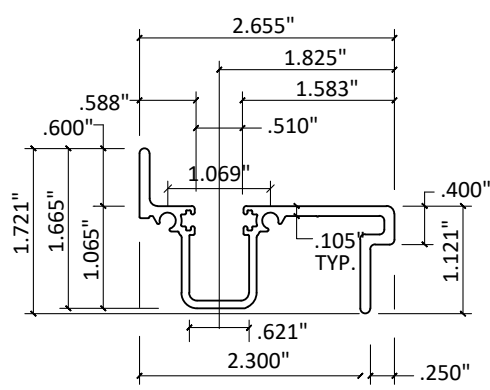
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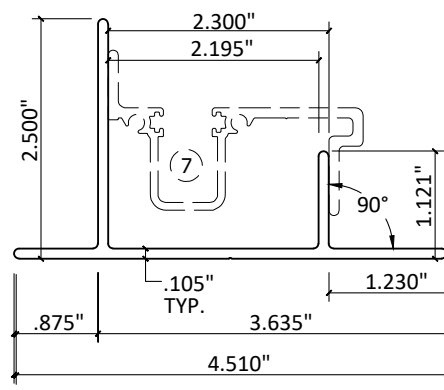
3 HEAVY 2-LEG WALL
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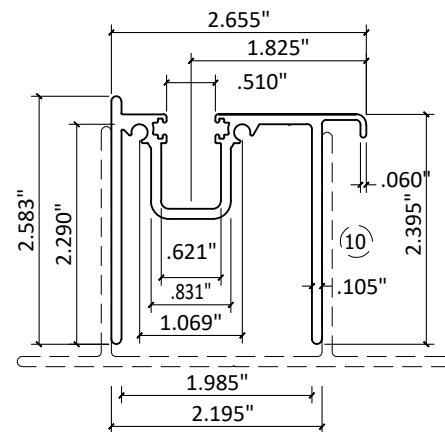
5 HEAVY HEADER
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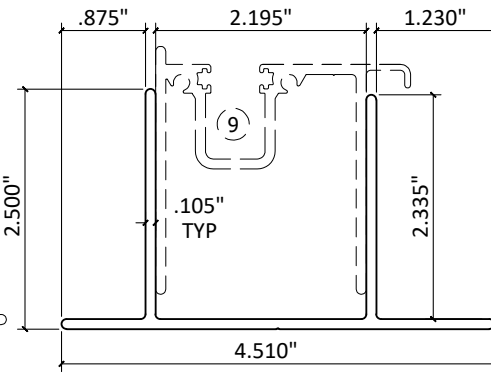
7 SILL
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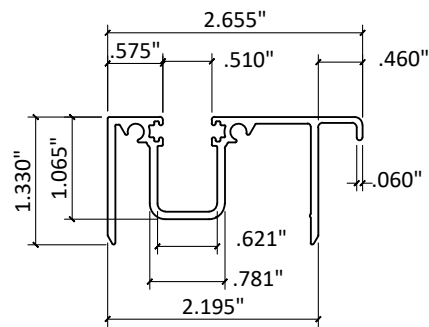
8 SILL ADAPTER
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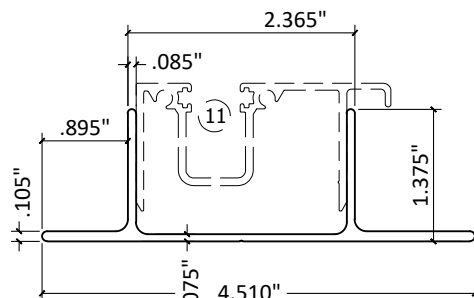
9 EXTENDED SILL
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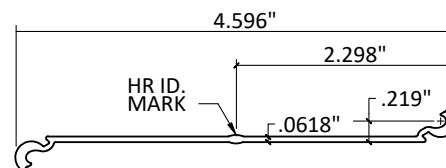
10 EXTENDED SILL ADAPTOR
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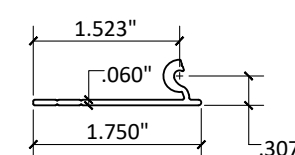
11 MID SILL
SCALE: HALF SIZE



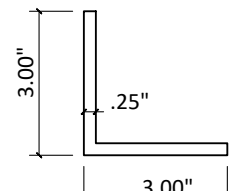
12 MID SILL ADAPTOR
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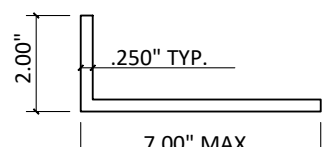
16 ALT. HR SLAT
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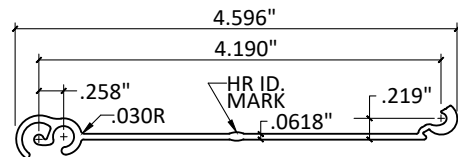
18 HR STARTER
SCALE: HALF SIZE



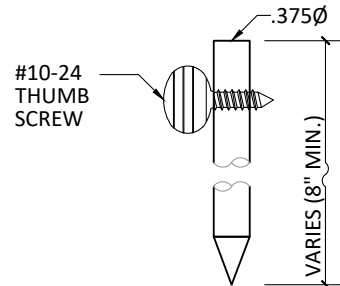
19 ANGLE
SCALE: 3" = 1' - 0"



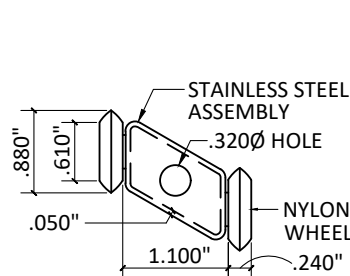
20 ANGLE
SCALE: 3" = 1' - 0"



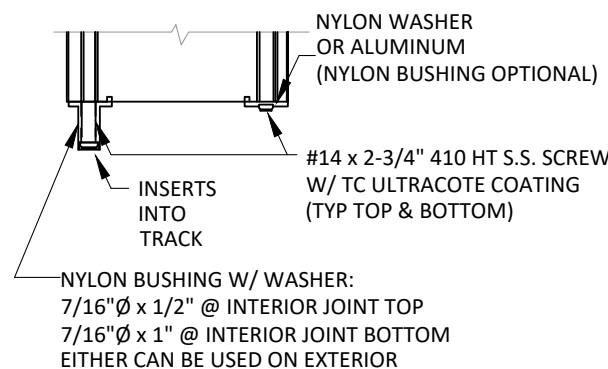
14 TYP. HR SLAT
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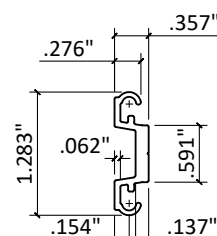
21 SLIDE ROD
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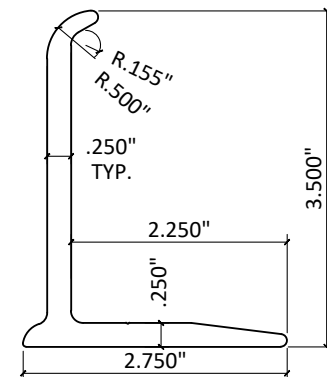
22 ROLLER ASSEMBLY
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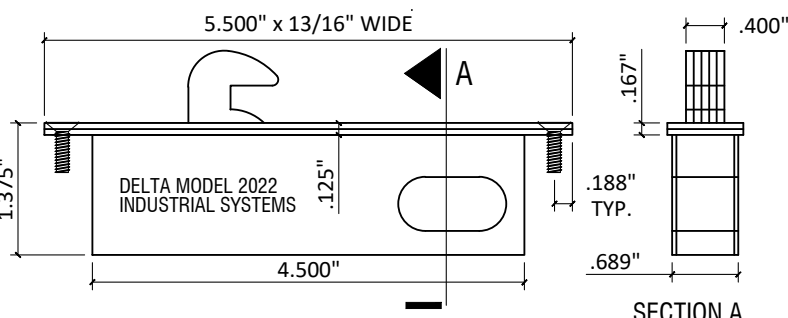
24 BUSHING ASSEMBLY DETAIL
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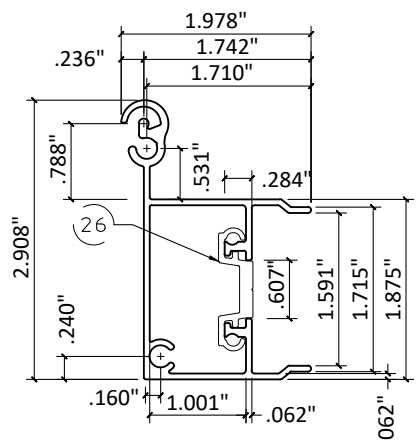
26 CENTER BOX INSERT
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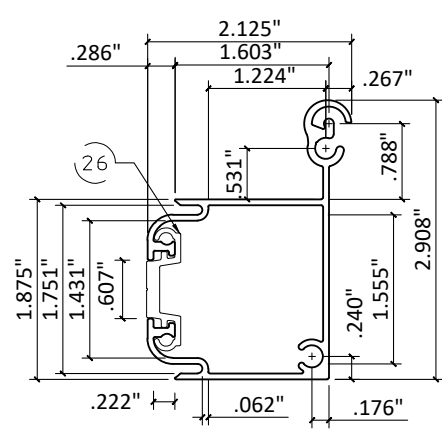
27 RAINGUARD
SCALE: HALF SIZE



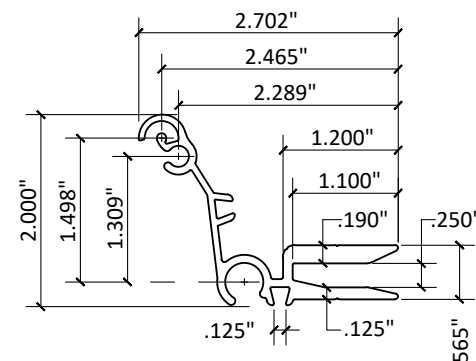
35 BOX LOCK
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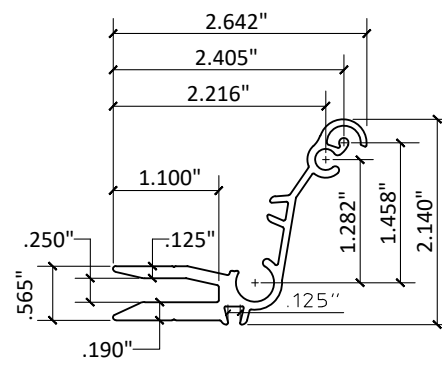
31 MALE BOX CENTER
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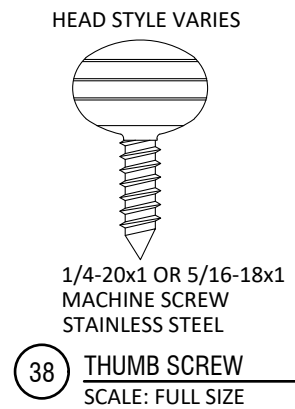
32 FEMALE BOX CENTER
SCALE: HALF SIZE



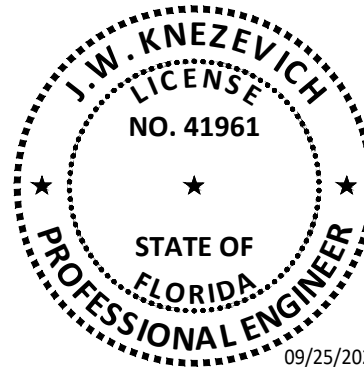
33 OUTSIDE CENTER MATE
SCALE: HALF SIZE



34 INSIDE CENTER MATE
SCALE: HALF SIZE



38 THUMB SCREW
SCALE: FULL SIZE



Revisions		description
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0	9/25/2023	JWK
FBC 2023 Update - Formerly KC20-Q413		

Scale: AS NOTED

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sheet 3 of 9

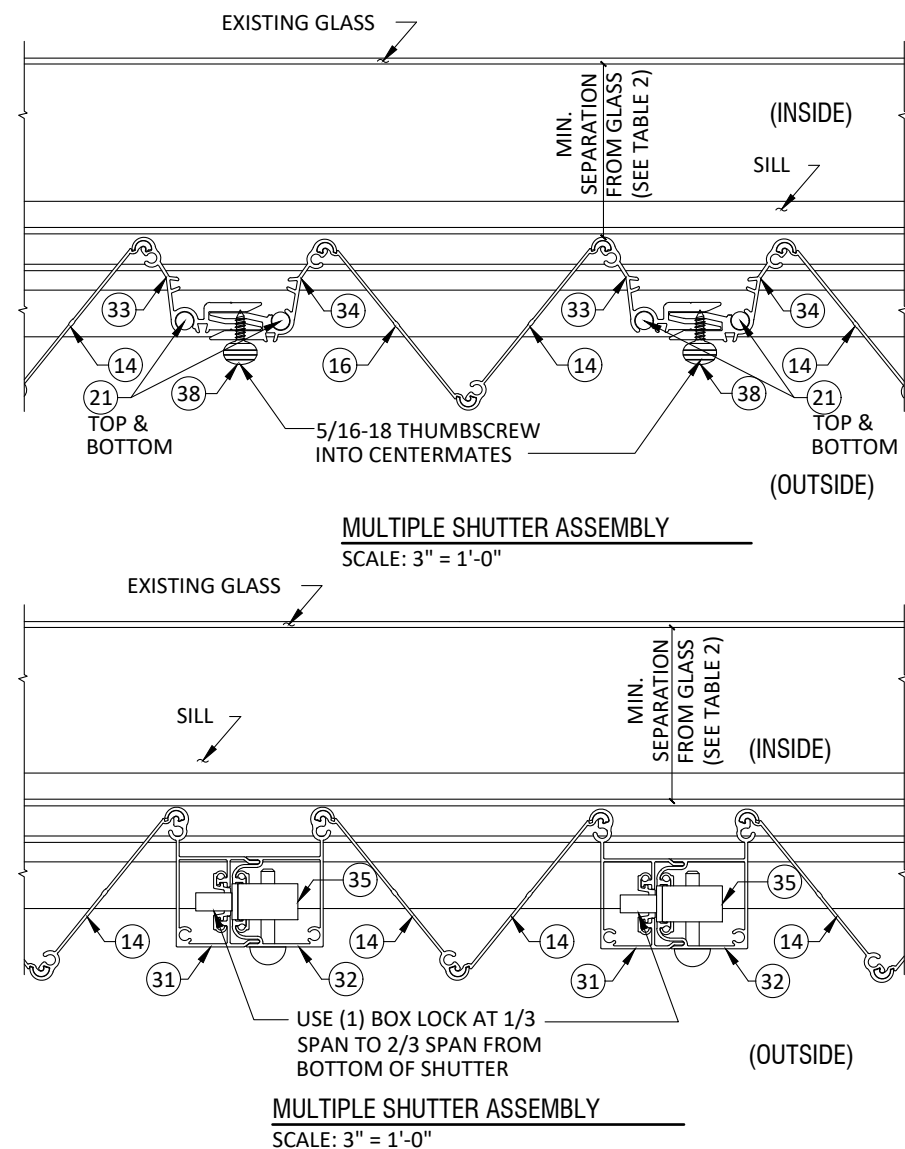
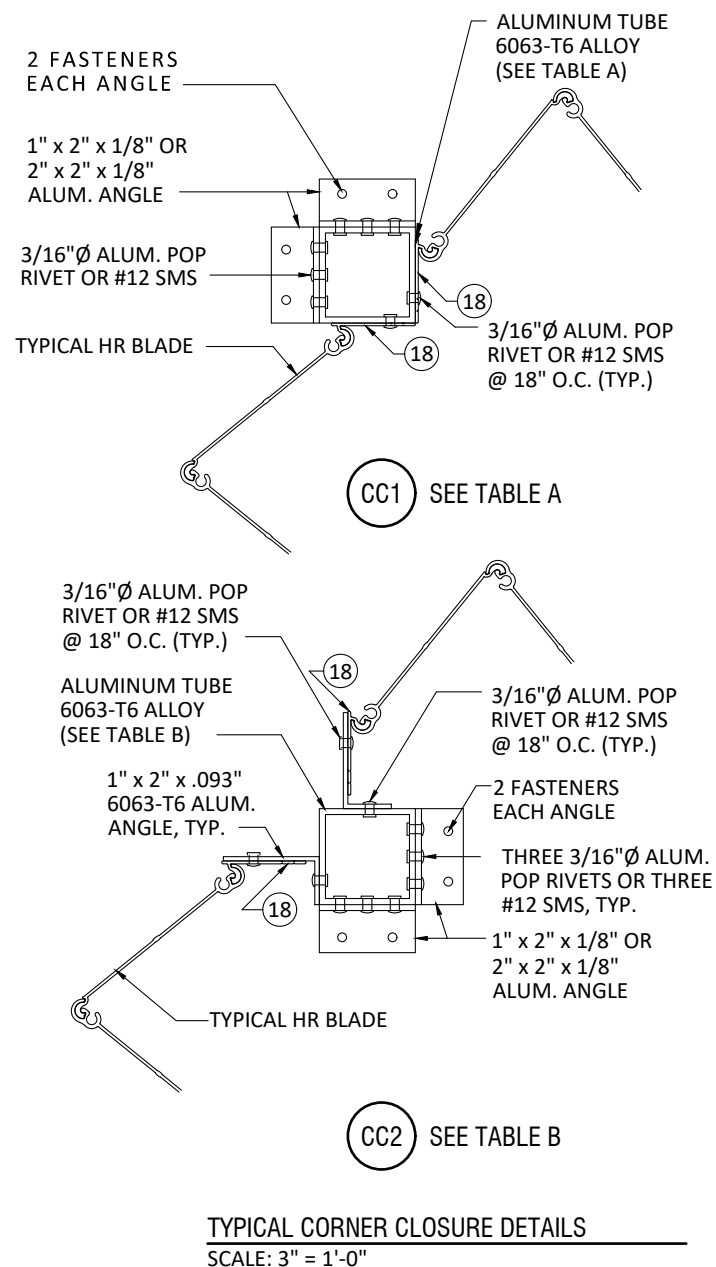
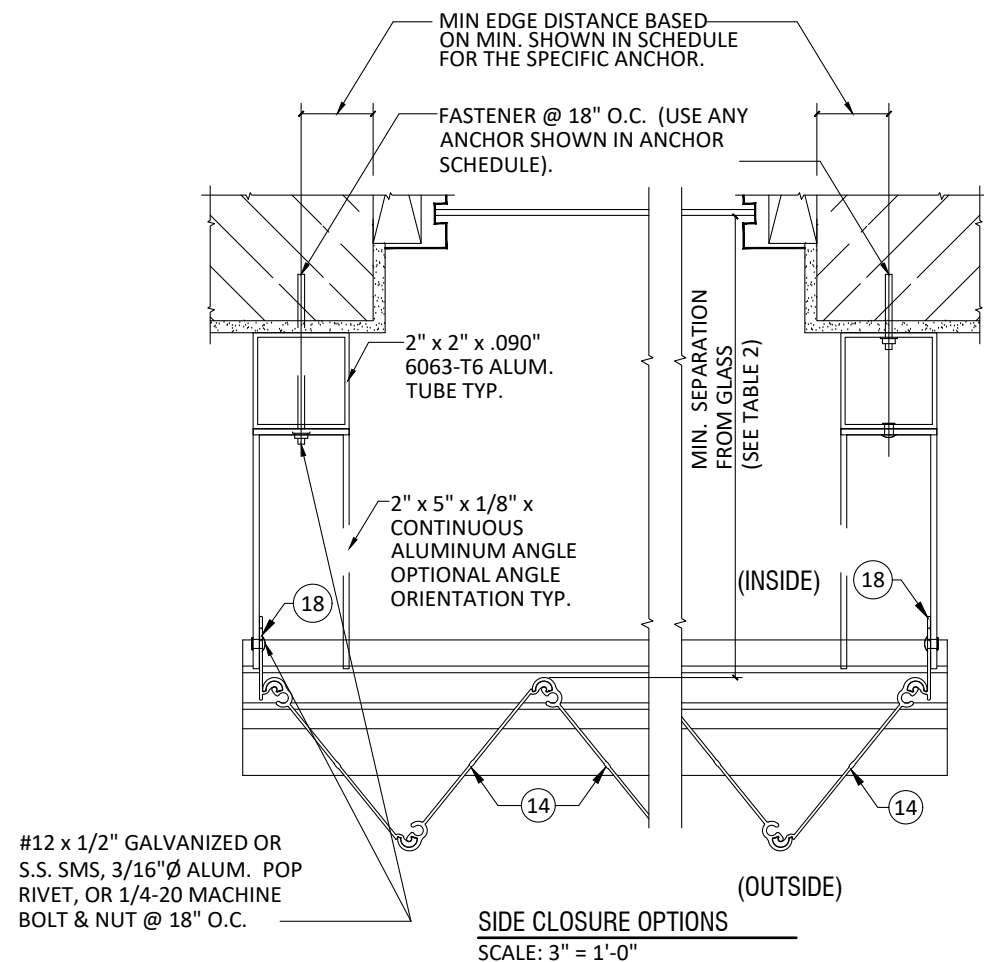
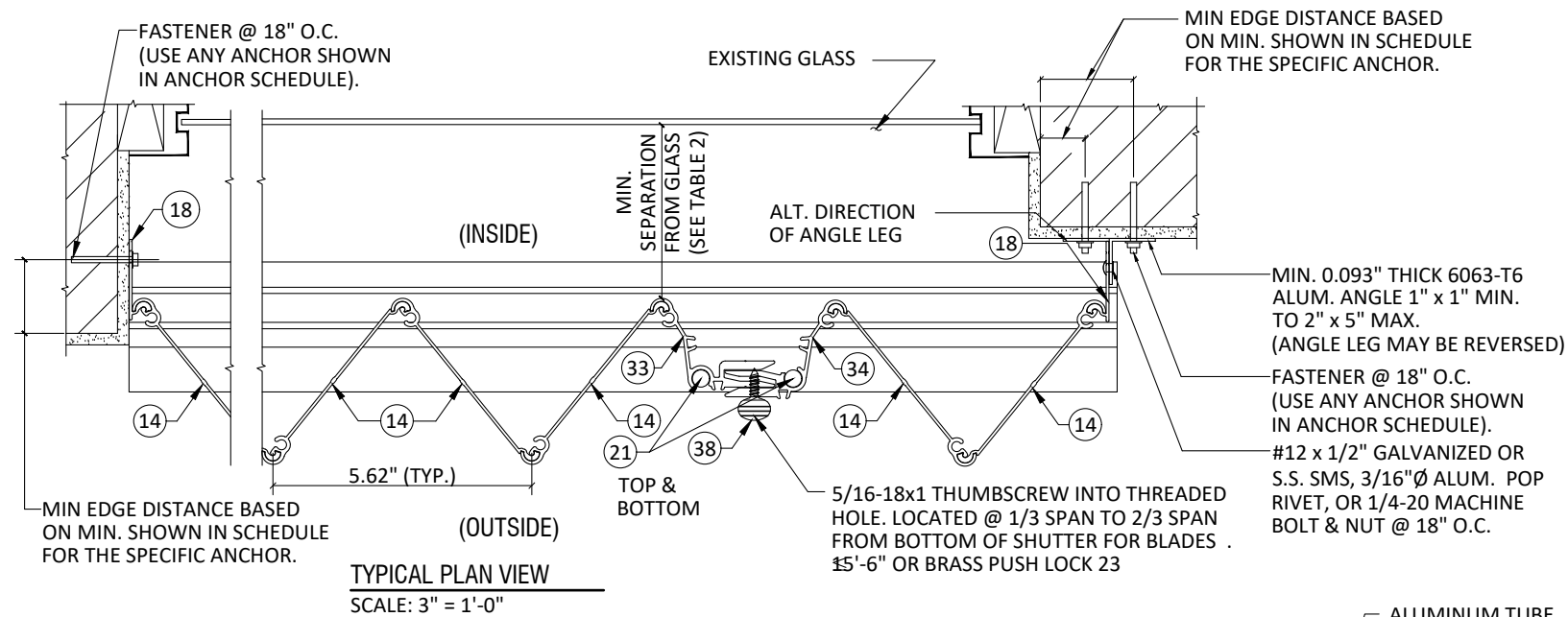
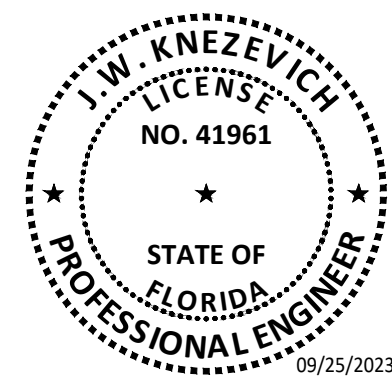


TABLE A (CC1)			TABLE B (CC2)		
PRESSURE VS ALLOWABLE LENGTH			PRESSURE VS ALLOWABLE LENGTH		
PSF	2"x2"x1/8" No B/O	3"x3"x1/8" No B/O	PSF	2"x2"x1/8" WITH B/O	3"x3"x1/8" WITH B/O
62	9'-8"	13'-8"	62	8'-3"	12'-4"
72	9'-2"	13'-0"	72	7'-10"	11'-9"
82	8'-9"	12'-5"	82	7'-6"	11'-3"
92	8'-5"	11'-11"	92	7'-3"	10'-10"
102	8'-2"	11'-7"	102	7'-0"	10'-5"
120	7'-9"	10'-11"	120	6'-7"	9'-11"
150	7'-2"	10'-2"	150	6'-2"	9'-2"
200	6'-6"	9'-3"	200	5'-7"	8'-4"



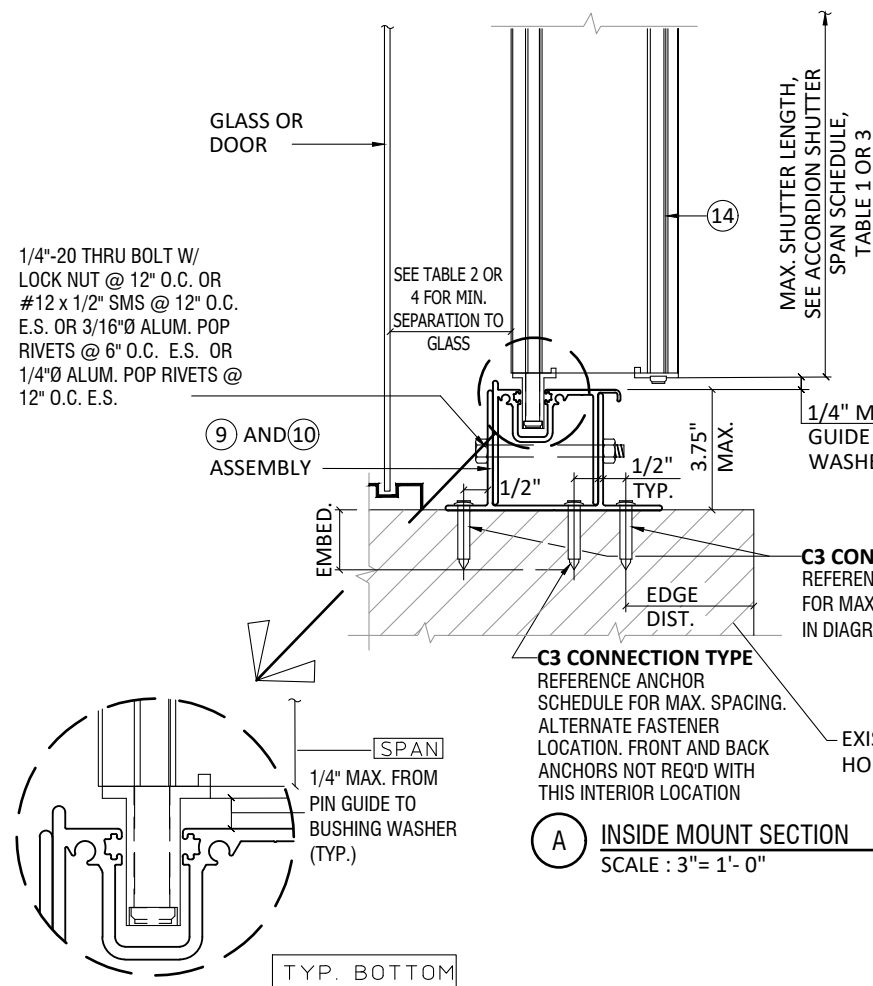
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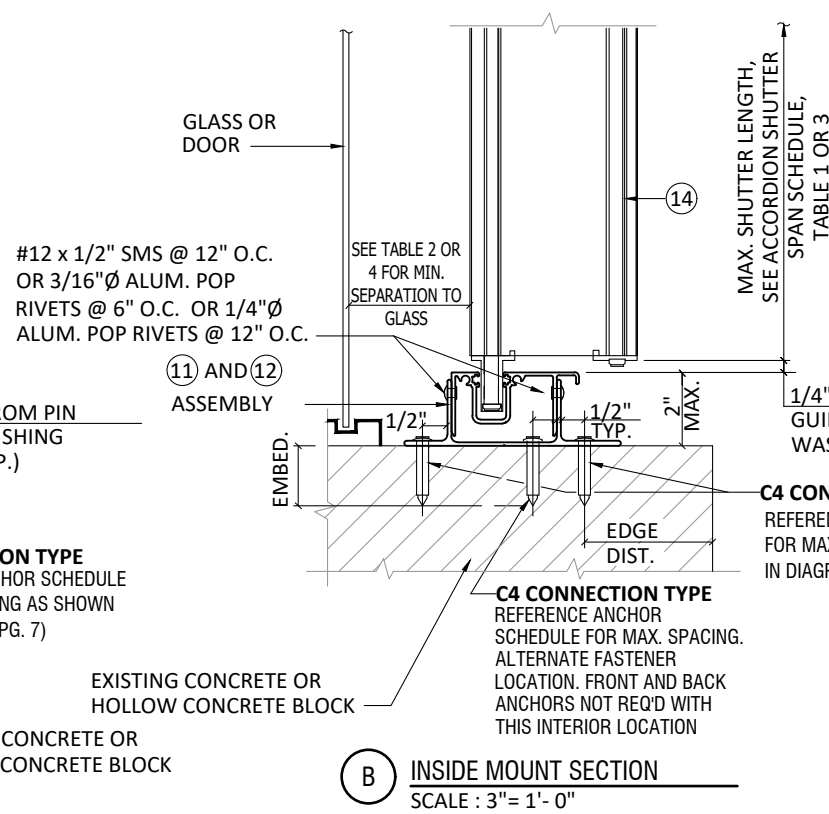
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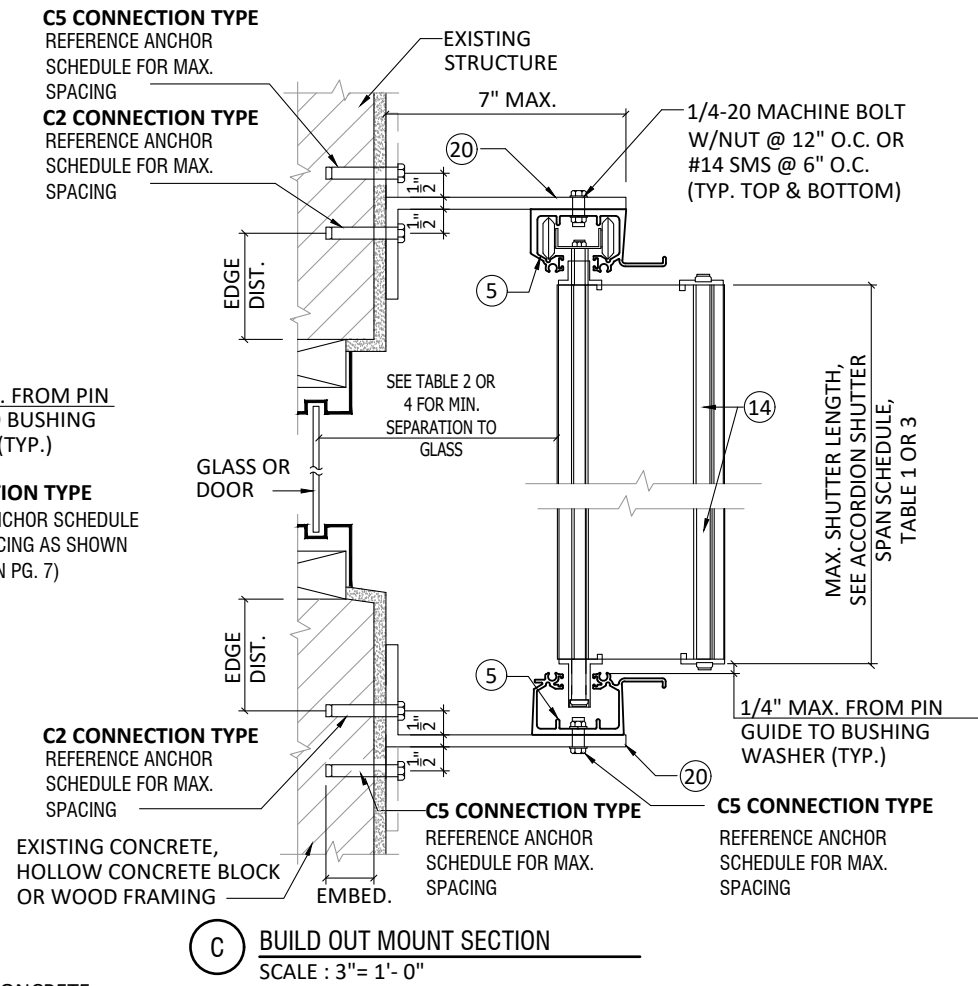
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 sheet 4 of 9



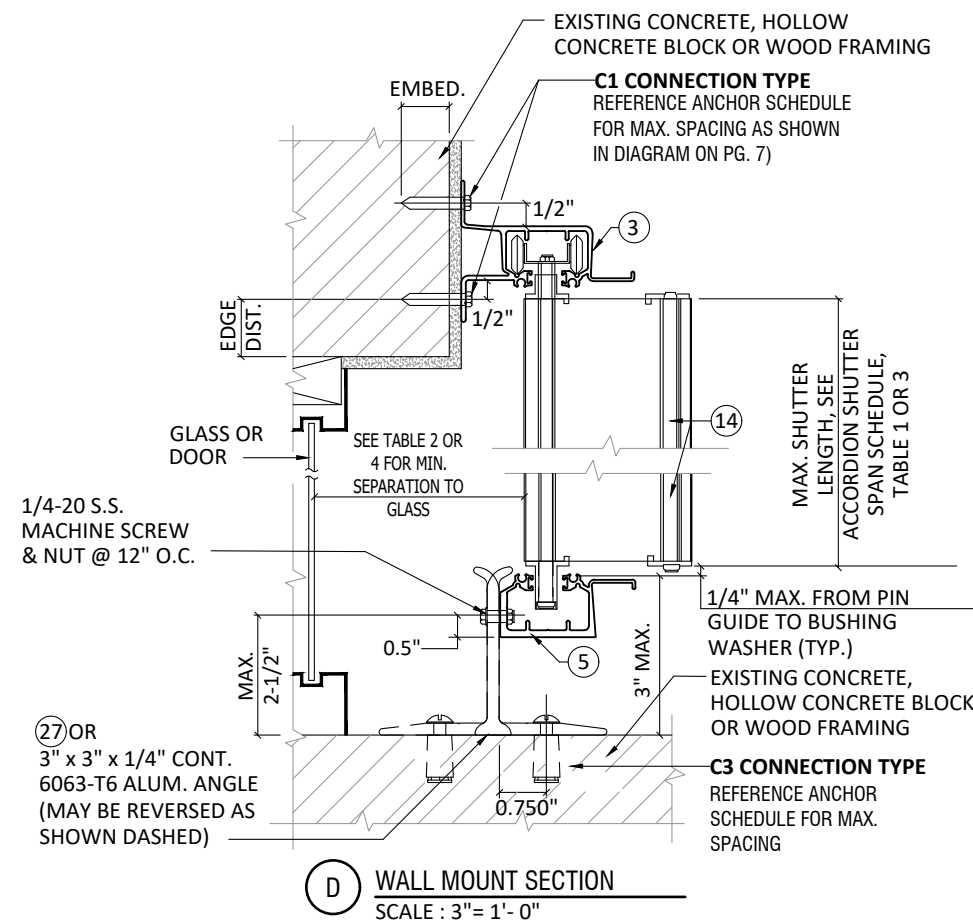
A INSIDE MOUNT SECTION
SCALE : 3" = 1'-0"



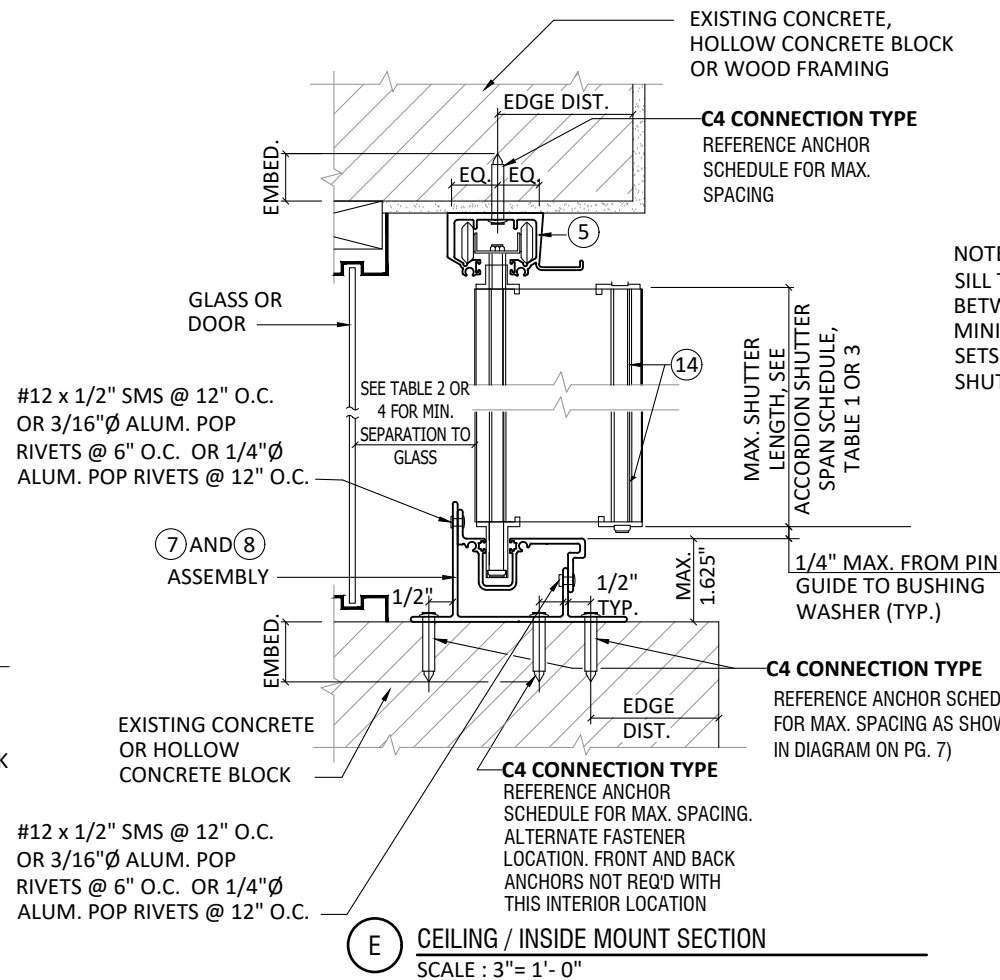
B INSIDE MOUNT SECTION
SCALE : 3" = 1'-0"



C BUILD OUT MOUNT SECTION
SCALE : 3" = 1'-0"

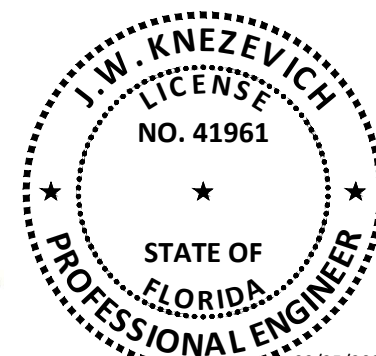


D WALL MOUNT SECTION
SCALE : 3" = 1'-0"



E CEILING / INSIDE MOUNT SECTION
SCALE : 3" = 1'-0"

NOTE: FOR DETAILS A, B, D, AND E, THE BASE OF THE 2-PART SILL TRACKS MAY BE DISCONTINUOUS WITH 1/4" GAPS BETWEEN SECTIONS PROVIDED EACH SECTION SHALL BE A MINIMUM OF 12" LONG AND HAVE AT LEAST 2 ANCHORS OR SETS OF ANCHORS. THE TOP PIECE IN CONTACT WITH THE SHUTTER SHALL BE CONTINUOUS ACROSS GAPS.



Revisions		description
no	date	by
0	9/25/2023	JWK

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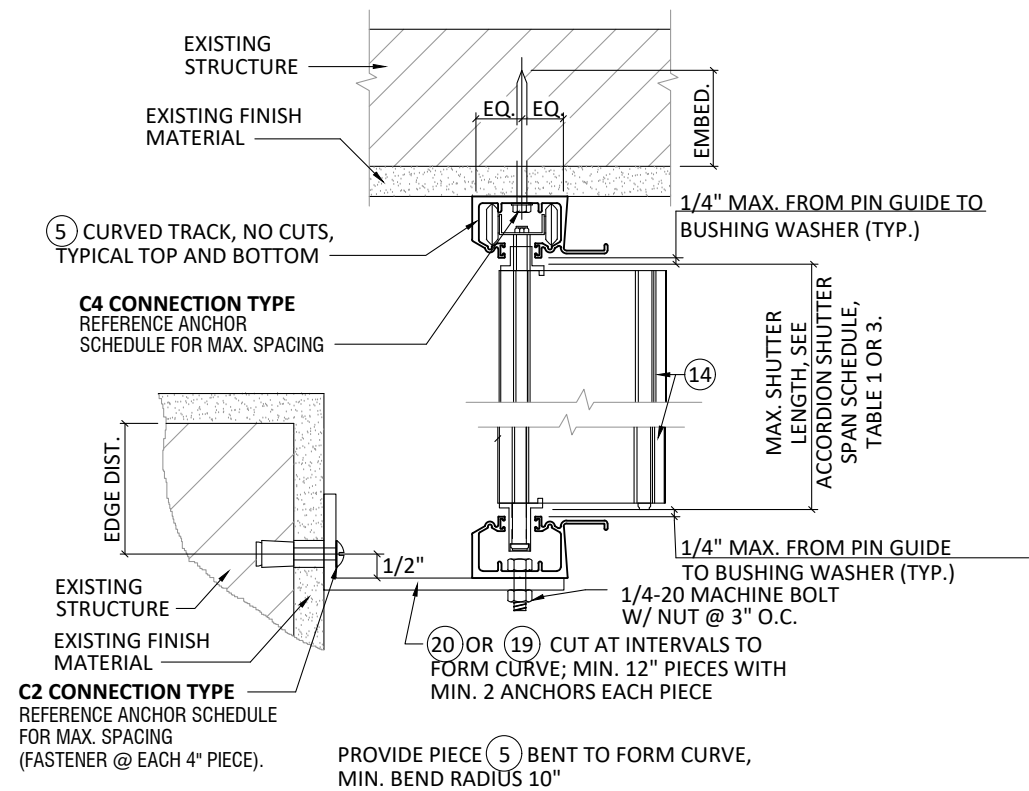
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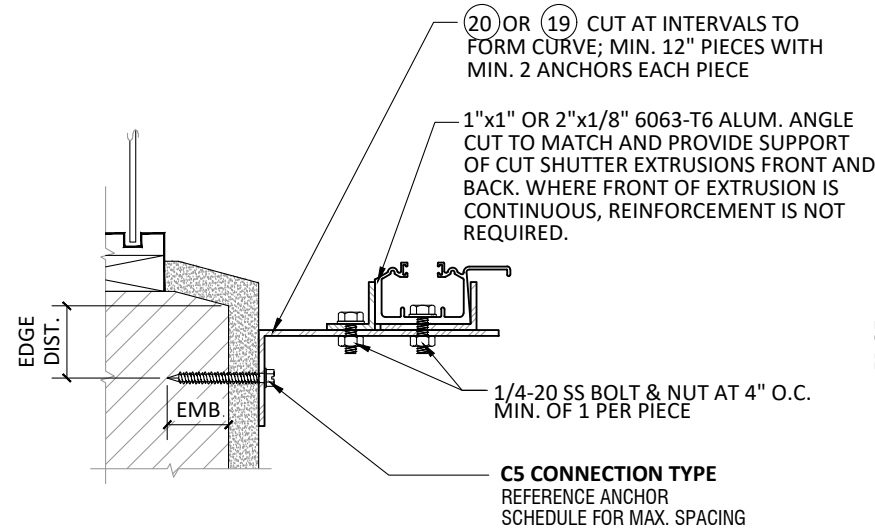
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Drawing No. **KC23-0710**
sheet 5 of 9

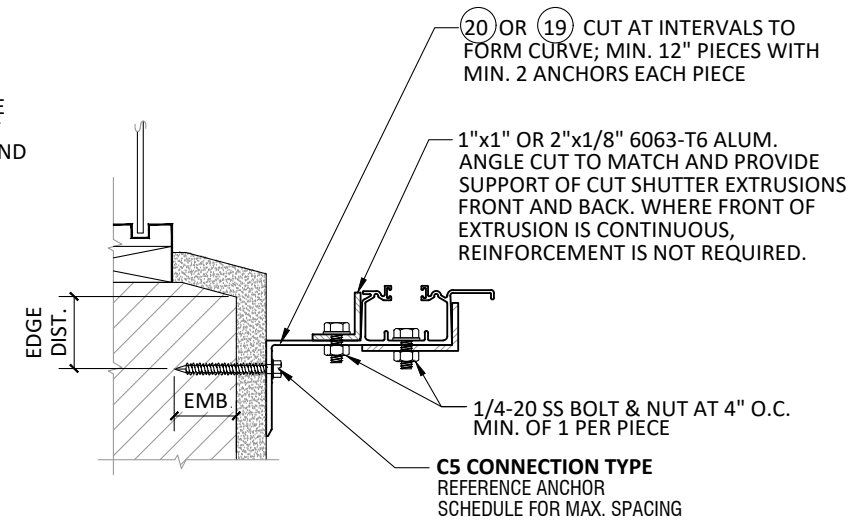
09/25/2023



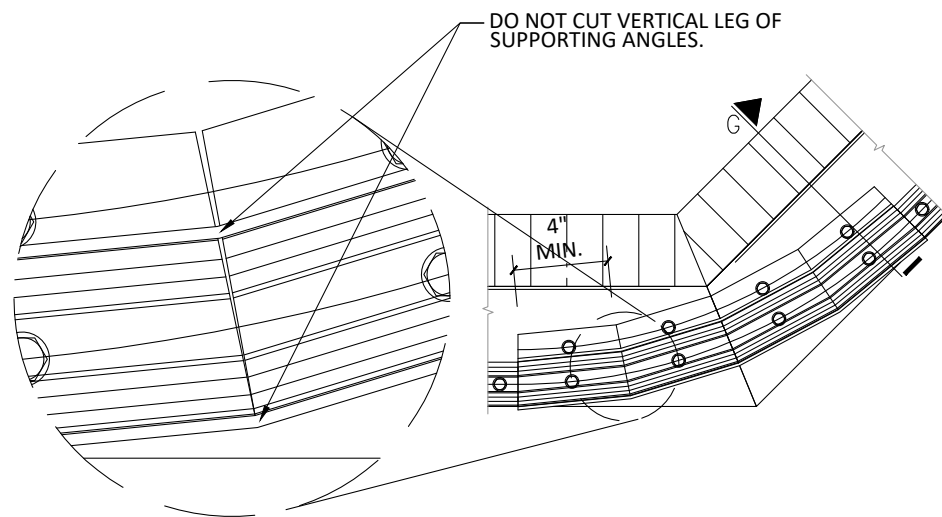
F CURVED TRACK DETAIL
SCALE : 3" = 1'- 0"



G1 CURVED TRACK REINF OPTION 1
SPANS > 6'-0" AND UP TO 10'-0"
SCALE: 3" = 1'-0"



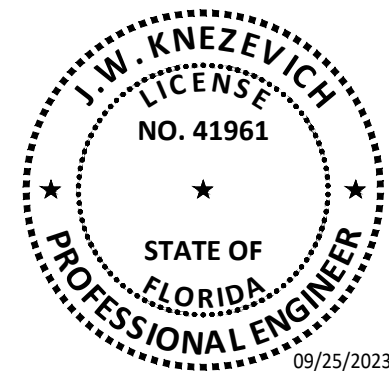
G2 CURVED TRACK REINF OPTION 2
SPANS 6'-0" AND UP TO 10'-0"
SCALE: 3" = 1'-0"



G3 CURVED TRACK DETAIL
N.T.S.

DETAIL G1, G2, G3 NOTES:

1. Maximum ASD Design Load = +/- 56.1 psf.
2. Applicable for spans less than or equal to 10'-0".
3. Angle to wall may be cut at intervals to form curve; use min. 12" pieces with min. 2 anchors each piece.
4. Track fastened to angle may be cut at intervals to form curve. Use 4" min. pieces with min. 1 bolt per piece.
5. If outside leg of track is not cut, outside angle reinforcing is not required.



HR ACCORDION SHUTTER SYSTEM

Town & Country INDUSTRIES
Wholesale Aluminum and Building Products
A DIVISION OF ABC SUPPLY, INC.
400 West McNab Road * Fort Lauderdale, FL 33309
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Revisions		description
no	date	by
0	9/25/2023	JWK

Scale: AS NOTED

Drawn by: JWK

Date: 9/25/2023

J.W. Knezevich
Professional Engineer
FL License No.: PE 41961

This item has been digitally signed and sealed by John W. Knezevich, PE on the date adjacent to the seal.

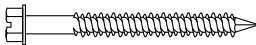
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Drawing No.
KC23-0710
sheet 6 of 9

ANCHOR SCHEDULE

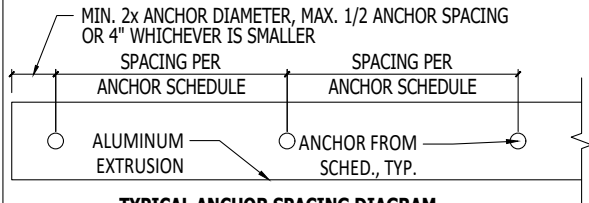
FASTENER MAXIMUM SPACING (INCHES) REQUIRED FOR VARIOUS DESIGN LOADS AND SPANS

EXIST. STRUC.	ANCHOR TYPE	MAX LOAD (PSF) SEE NOTE 1	SPANS UP TO 9'-0" (SEE NOTE 1)		SPANS UP TO 11'-0" (SEE NOTE 1)		SPANS UP TO 15'-6" (SEE NOTE 1)		SPANS UP TO 8'-6" (SEE NOTE 1)		SPANS UP TO 9'-6" (SEE NOTE 1)		SPANS UP TO 10'-6" (SEE NOTE 1)		SPANS UP TO 12'-6" (SEE NOTE 1)		SPANS UP TO 15'-6" (SEE NOTE 1)																									
			CONNECTION TYPE (SEE NOTE 3)		CONNECTION TYPE (SEE NOTE 3)		CONNECTION TYPE (SEE NOTE 3)		CONNECTION TYPE (SEE NOTE 3)		CONNECTION TYPE (SEE NOTE 3)		CONNECTION TYPE (SEE NOTE 3)		CONNECTION TYPE (SEE NOTE 3)		CONNECTION TYPE (SEE NOTE 3)																									
CONCRETE	 3/8" Ø Dew alt SS Drop-In w / 1-9/16" embed in 4.0 ksi Concrete & 3/8-16 Stainless Steel Machine Screw	W	3" Edge Distance										5.25" Edge Distance																													
		C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5						
		80.0	16	16	7	11	12	16	16	6	9	10	16	11		6	7	16	16	10	16	14	16	16	9	14	12	16	16	8	13	11	16	15	7	11	9	16	12	5	9	7
		95.0	16	16	6	9	10	16	13	5	7	8	15	9		5	6	16	16	8	13	12	16	16	7	12	10	16	16	7	11	9	16	13	5	9	8	16	10		7	6
		110.0	16	14	5	8	8	16	12		6	7	13	8			5	16	16	7	12	10	16	15	6	10	9	16	13	6	9	8	16	11	5	8	7	14	9		6	5
		151.0	16	10		6	6	13	8			5	13	8			5	16	12	5	8	7	16	11		7	6	15	10		7	6	15	10		7	6	14	9		6	5
	200.0	13	8			5	13	8			5	13	8			5	14	9		6	5	14	9		6	5	14	9		6	5	14	9		6	5	14	9		6	5	
	 1/4" Ø Dew alt Ultracon+ w / Stalgard Coating w / 1.75" embed in 3.1 ksi Concrete	W	1.25" Edge Distance										2.5" Edge Distance																													
		C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	
		80.0	16	11	4	5	6	14	9		4	5	10	6			4	16	13	7	10	8	16	12	6	9	7	16	11	5	8	6	14	9	4	7	5	11	7		5	4
		95.0	14	9		4	5	12	7			4	8	5			16	11	5	9	7	16	10	5	8	6	14	9	4	7	5	12	7	4	6	4	10	6		4		
		110.0	12	8			5	10	6			4	7	4			15	10	5	7	6	14	9	4	6	5	12	8	4	6	5	10	6		5	4	8	5		4		
		151.0	9	6				7	4				7	4			11	7		5	4	10	6		5	4	9	5		4		9	6		4		8	5		4		
	200.0	7	4				7	4				7	4			8	5		4		8	5		4		8	5		4		8	5		4		8	5		4			
	 1/4" Ø T&C-Ultracote™ Concrete Screw by Millennium Fasteners w / 1.75" embed in 3.5 ksi Concrete	W	1.25" Edge Distance										2.5" Edge Distance																													
		C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	
		80.0	11	7	3	5	4	9	6		4	3	6	4		3		16	10	5	9	6	14	9	5	8	5	13	8	4	8	5	11	7	3	6	4	8	5	3	5	3
		95.0	9	6	3	4	3	8	5		3	3	5	3			13	8	4	8	5	12	7	4	7	4	11	7	3	6	4	9	6	3	5	3	7	4		4		
		110.0	8	5		3	3	7	4		3		5	3			11	7	4	7	4	10	6	3	6	4	9	6	3	5	3	8	5		4	3	6	4		4		
		151.0	6	4				5	3				5	3			8	5	3	5	3	7	4		4	3	7	4		4		7	4		4		6	4		4		
200.0	5	3				5	3				5	3			6	4		4		6	4		4		6	4		4		6	4		4		6	4		4				
 1/4" Ø Hillman Group Solid-Set Anchor w / 7/8" embed in 3.0 ksi Concrete & 1/4-20 Stainless Steel Machine Screw	W	1.25" Edge Distance										3" Edge Distance																														
	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5		
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	95.0	9	5		3	3	7	4				5	3			16	10	4	7	6	14	9	4	6	5	13	8	3	5	5	10	7	3	4	4	8	5		4	3		
	110.0	7	5			3	6	4				4	3			13	8	3	6	5	12	8	3	5	4	11	7	3	5	4	9	6		4	3	7	5		3	3		
	151.0	5	3				4	3				4	3			10	6		4	3	9	5		4	3	8	5		3	3	8	5		3	3	7	5		3	3		
200.0	4	3				4	3				4	3			7	5		3	3	7	5		3	3	7	5		3	3	7	5		3	3	7	5		3	3			
 5/16" Ø Dew alt Ultracon w / 1.75" embed in 3.5 ksi Concrete	W	2.25" Edge Distance										3.125" Edge Distance																														
	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5		
	80.0	16	12	7	12	7	16	10	5	10	6	11	7		7		16	14	8	14	9	16	13	7	13	8	16	12	6	12	7	15	10	5	10	6	12	8		8	5	
	95.0	16	10	6	10	6	13	8	5	8	5	9	6		6		16	12	7	12	7	16	11	6	11	6	15	10	5	10	6	13	8		8	5	10	6		6		
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	151.0	10	6		6		8	5		5		8	5		5		12	7		7		11	7		7		9	6		6		10	6		6		9	6		6		
200.0	8	5		5		8	5		5		8	5		5		9	6		6		9	6		6		9	6		6		9	6		6		9	6		6			
 1/4" Ø E.A. Hex Head Bolt (Male & Female head optional) w / 2.5" embed in 2.9 ksi Concrete	W	1.25" Edge Distance										2.5" Edge Distance																														
	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5		
	80.0	10	6	3	4	4	8	5		3	3	6	4			11	7	4	7	4	10	6	3	6	4	9	6	3	5	3	7	5		4	3	6	4		3			
	95.0	9	5		3	3	7	4				5	3			9	6	3	6	3	8	5	3	5	3	7	5		4	3	6	4		4		5	3		3			
	110.0	7	5		3	3	6	4				4				8	5	3	5	3	7	4		4		6	4		4		5	3		3		4	3					
	151.0	5	3				4	3				4				6	3		3		5	3		3		4	3		3		5	3		3		4	3					
200.0	4					4					4				4	3				4	3				4	3				4	3				4	3						

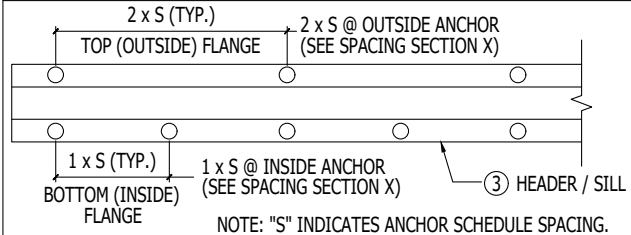
ANCHOR SCHEDULE																																												
FASTENER MAXIMUM SPACING (INCHES) REQUIRED FOR VARIOUS DESIGN LOADS AND SPANS																																												
EXIST. STRUC.	ANCHOR TYPE	MAX LOAD (PSF) SEE NOTE 1	SPANS UP TO 5'-6" (SEE NOTE 1)					SPANS UP TO 8'-8" (SEE NOTE 1)					SPANS UP TO 12'-0" (SEE NOTE 1)					SPANS UP TO 15'-6" (SEE NOTE 1)					SPANS UP TO 5'-6" (SEE NOTE 1)					SPANS UP TO 8'-8" (SEE NOTE 1)					SPANS UP TO 12'-0" (SEE NOTE 1)					SPANS UP TO 15'-6" (SEE NOTE 1)						
			CONNECTION TYPE (SEE NOTE 3)					CONNECTION TYPE (SEE NOTE 3)					CONNECTION TYPE (SEE NOTE 3)					CONNECTION TYPE (SEE NOTE 3)					CONNECTION TYPE (SEE NOTE 3)					CONNECTION TYPE (SEE NOTE 3)					CONNECTION TYPE (SEE NOTE 3)					CONNECTION TYPE (SEE NOTE 3)						
Hollow Block	 1/4" Ø ITW Tapcon w/ Climaseal Coating w/ 1.0" embed in Hollow Block	W	2" Edge Distance																				4" Edge Distance																					
		C1 C2 C3 C4 C5 C1 C2 C3 C4 C5 C1 C2 C3 C4 C5 C1 C2 C3 C4 C5 C1 C2 C3 C4 C5 C1 C2 C3 C4 C5 C1 C2 C3 C4 C5 C1 C2 C3 C4 C5 C1 C2 C3 C4 C5	C1 C2 C3 C4 C5 C1 C2 C3 C4 C5 C1 C2 C3 C4 C5 C1 C2 C3 C4 C5 C1 C2 C3 C4 C5 C1 C2 C3 C4 C5 C1 C2 C3 C4 C5 C1 C2 C3 C4 C5 C1 C2 C3 C4 C5																																									
		35.0 14 9 5 9 5 9 6 6 6 6 4 4 4 5 14 9 5 10 5 9 6 6 6 6 4 4 5 14 9 5 10 5 9 6 6 6 6 4 4 5	48.0 10 6 6 4 6 4 4 4 4 4 4 4 5 10 6 7 4 6 4 4 4 4 4 4 4 4 4 4 10 6 7 4 6 4 4 4 4 4 4 4																																									
		57.0 9 5 5 5 5 4 4 4 4 4 4 4 9 9 5 6 5 9 5 4 4 4 4 4 9 5 6 5 9 5 6 5 9 5 4 4 4 4 4 4 4	75.0 6 4 4 4 4 4 4 4 4 4 4 4 6 6 4 4 4 4 4 4 4 4 4 4 6 4 4 4 6 4 4 4 6 4 4 4 6 4 4 4																																									
		110.0 4																																										

ANCHOR NOTES:

1. FOR COMPLETE ANCHOR NOTES, SEE PAGE 9 OF 9.

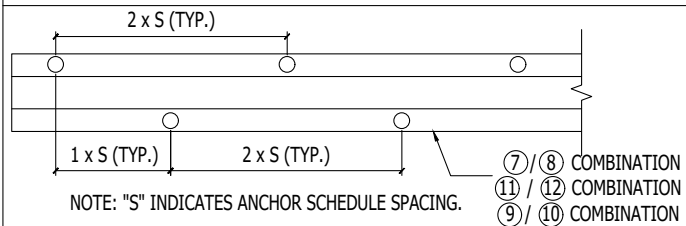


TYPICAL ANCHOR SPACING DIAGRAM



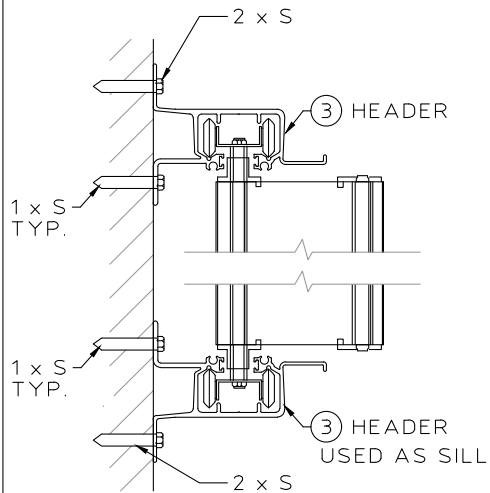
SPACING DIAGRAM FOR TRACK 3

- C1 CONNECTION TYPE USING PIECE 3 OR 4

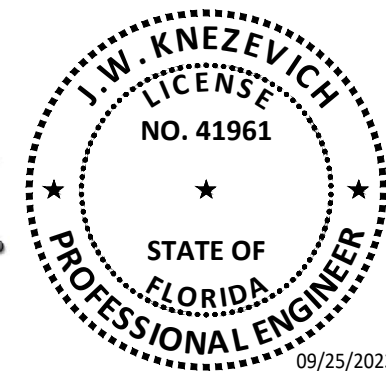


SPACING DIAGRAM FOR TRACKS COMBINATIONS 7 & 8, 11 & 12, OR 9 & 10

- C3 CONNECTION TYPE USING PIECE 10 WITH OUTSIDE ANCHORS ONLY, BOTH ANCHORS REQUIRED.
- C4 CONNECTION TYPE USING PIECE 8 OR 12 WITH OUTSIDE ANCHORS ONLY, BOTH ANCHORS REQUIRED.
- INSIDE SINGLE ANCHOR FOLLOWS TYPICAL ANCHOR SPACING DIAGRAM.



SPACING SECTION
SCALE: 3\"/>

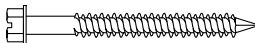
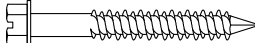
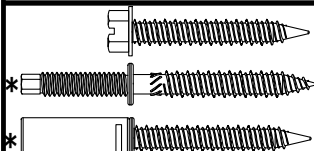


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Revisions	description	by	date	no
		JWK	9/25/2023	0

Scale: AS NOTED
Drawn

ANCHOR SCHEDULE																													
FASTENER MAXIMUM SPACING (INCHES) REQUIRED FOR VARIOUS DESIGN LOADS AND SPANS																													
EXIST. STRUC.	ANCHOR TYPE	MAX LOAD (PSF) SEE NOTE 1	SPANS UP TO 5'-6" (SEE NOTE 1)					SPANS UP TO 8'-8" (SEE NOTE 1)					SPANS UP TO 12'-0" (SEE NOTE 1)					SPANS UP TO 15'-6" (SEE NOTE 1)											
			CONNECTION TYPE (SEE NOTE 3)					CONNECTION TYPE (SEE NOTE 3)					CONNECTION TYPE (SEE NOTE 3)					CONNECTION TYPE (SEE NOTE 3)											
Grouted Block		W	2.5" Edge Distance																										
			C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5		
			35.0	16	16	10	16	11	16	11	6	10	7	13	8	4	7	5	10	6			6						
			48.0	16	13	7	12	8	13	8	4	8	5	9	6		5		7	4			4						
			57.0	16	11	6	10	6	11	7		6	4	8	5		4		6	4									
			75.0	13	8	4	8	5	8	5		5		6					4										
	110.0	9	5		5		5					4																	
		W	2.5 Edge Distance																										
			C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5		
			35.0	16	16	10	16	11	16	11	6	12	7	13	8		8	5	10	6			6						
			48.0	16	13	7	14	8	13	8		9	5	9	6		6		7				5						
			57.0	16	11	6	11	6	11	7		7		8	5		5		6										
			75.0	13	8		9	5	8	5		5		6															
	110.0	9	5		6		5																						
	W	1.25" Edge Distance																											
		C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5			
		35.0	16	16	16	16	16	16	16	11	16	13	16	15	8	12	9	16	12	6	9	7							
		48.0	16	16	12	16	15	16	16	8	12	9	16	11	5	9	7	14	9	4	7	5							
		57.0	16	16	10	16	13	16	13	6	10	8	15	9	4	7	5	11	7		5	4							
		75.0	16	16	8	12	9	16	10	5	8	6	11	7		5	4	8	5		4								
110.0	16	11	5	8	6	10	7		5	4	7	5		4		6													

ANCHOR NOTES:

1. Spans and loads shown here are for determining anchor spacing only. Allowable shutter spans for specific loads must be limited to those shown in Table 1 or Table 3 on Sheet 1.

2. An Effective Wind Area of 10 ft² shall be used for determining wind loads for anchors.

3. See mounting section details for identification of Connection Type.

4. Enter Anchor Schedule based on the existing structure material, anchor type and edge distance. Select Design Load greater than or equal to Negative Design Load on shutter and select Span greater than or equal to Shutter Span.

5. Existing structure may be concrete, ASTM C90 hollow or grout filled concrete block, or wood framing. Reference Anchor Schedule for proper anchor type based on type of existing structure.

6. Anchors shall be installed in accordance with manufacturers' recommendations.

7. Minimum embedment and edge distance excludes wall finish or stucco.

8. Where existing structure is post-tensioned concrete, Contractor shall locate cables prior to anchoring and coordinate anchorage such that cables are not damaged.
9. Where existing structure is wood framing, wood framing conditions vary. Field verify that fasteners are into adequate wood framing members, not plywood. Fastening to plywood is acceptable only for side closure pieces.

10. Where lag screws fasten to narrow face of stud framing, fastener shall be located in center of nominal 2" x 4" (min.) wood stud. 3/4" edge distance is acceptable for wood framing. Wood stud shall have a minimum density as noted in Anchor Schedule. Lag screws shall have phillips pan head or hex head.

11. Machine screws shall have minimum of 1/2" engagement of threads in base anchor and may have either a pan head, truss head, or wafer head (sidewalk bolt), u.o.n.

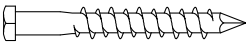
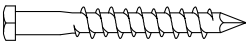
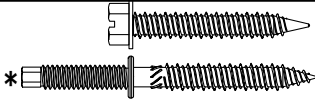
12. designates anchor conditions which are not acceptable uses.

13. * designates anchors which are removable by removing machine screw, nut or washered wingnut.

14. All concrete anchors shall be installed in un-cracked concrete only with minimum concrete strengths as noted in Anchor Schedule.

15. When anchoring to concrete block, SDS and Impact Drills shall not be used to drill into block or to install concrete screws.

16. See Sheets 7 or 8 for anchor spacing diagrams for typical tracks, track 3, and track combinations 7 & 8, 11 & 12, and 9 & 10.

ANCHOR SCHEDULE																								
FASTENER MAXIMUM SPACING (INCHES) REQUIRED FOR VARIOUS DESIGN LOADS AND SPANS																								
EXIST. STRUC.	ANCHOR TYPE	MAX LOAD (PSF) SEE NOTE 1	SPANS UP TO 5'-6" (SEE NOTE 1)					SPANS UP TO 8'-8" (SEE NOTE 1)					SPANS UP TO 12'-0" (SEE NOTE 1)					SPANS UP TO 15'-6" (SEE NOTE 1)						
			CONNECTION TYPE (SEE NOTE 3)					CONNECTION TYPE (SEE NOTE 3)					CONNECTION TYPE (SEE NOTE 3)					CONNECTION TYPE (SEE NOTE 3)						
WOOD	 1/4" Ø Wood Lag Screw w/ min 1.75" penetration Shear or ⊥ to grain G = 0.55	W	0.75" Edge Distance																					
		C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5			
		35.0	16	16	11	14	16	16	16	7	9	16	16	16	5	6	14	16	16	4	5	11		
		48.0	16	16	8	10	16	16	16	5	6	14	16	16	4	4	10	16	13	3	3	8		
		57.0	16	16	7	9	16	16	16	4	5	12	1	14	3	4	9	16	11		3	7		
		75.0	16	16	5	6	15	16	15	3	4	9	16	11		3	6	13	8			5		
	110.0	16	16	3	4	10	16	10			6	12	7			4	9	6			3			
	 1/4" Ø Wood Lag Screw min 1.75" penetration Shear or ⊥ to grain G = 0.42	W	0.75" Edge Distance																					
		C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5			
		35.0	16	16	9	11	16	16	16	5	7	13	16	16	4	5	9	16	12	3	4	7		
		48.0	16	16	6	8	15	16	16	4	5	9	16	11	3	3	7	14	9		3	5		
		57.0	16	16	5	7	13	16	13	3	4	8	15	9		3	6	11	7			4		
		75.0	16	16	4	5	10	16	10		3	6	11	7			4	9	5			3		
	110.0	16	11		3	6	11	7			4	8	5			3	6	4						
 7/16" Ø Brass Wood Bushing w/ 7/8" embed in wood 5/16" Ø pre-drilled hole G = 0.55	W	0.75" Edge Distance																						
	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5				
	35.0	16	13			8	13	8			5	9	6		3	7	4							
	48.0	15	10			6	9	6			3	7	4			5	3							
	57.0	13	8			5	8	5			3	6	3			4	3							
	75.0	10	6			3	6	4			4					3								
110.0	6	4				4				3														
 1/4" Ø E.A. Male, Female, or Hex Head Bolt w/ min 2" embed in wood Shear or ⊥ to grain; G = 0.42	W	.75" Edge Distance																						
	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5				
	35.0	16	16	15	16	16	16	16	10	13	16	16	16	7	9	14	16	16	5	7	11			
	48.0	16	16	11	15	16	16	16	7	9	14	16	16	5	7	10	16	13	4	5	8			
	57.0	16	16	9	13	16	16	16	6	8	12	16	14	4	5	8	16	11	3	4	6			
	75.0	16	16	7	9	14	16	15	4	6	9	16	10	3	4	6	13	8		3	5			
110.0	16	16	5	6	9	16	10	3	4	6	11	7		3	4	9	5			3				

