

SUPERNOVA ACCORDION SHUTTER

EXTRUDED ALUMINUM ACCORDION SHUTTER

FLORIDA STATE APPROVAL
 CODE VERSION: FLORIDA BUILDING CODE 2023 - 8th EDITION
 APPROVED FOR USE IN HVHZ AND OUTSIDE HVHZ
 CATEGORY: SHUTTERS -- SUBCATEGORY: ACCORDION
 IMPACT RESISTANT: (LEVEL D) - LARGE & SMALL MISSILE



Pedro De Figueiredo
 PE 52609
 08/11/2023

DIGITALLY SIGNED FOR 18 PAGES

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GENERAL NOTES: (FLORIDA BUILDING CODE 2023 - 8th ED. - HVHZ & non HVHZ)

- 1- DEFINITION: THIS PRODUCT IS AN ACCORDION TYPE SHUTTER; DESIGNED, CONSTRUCTED AND ERECTED TO EASILY ENCLOSE AN AREA, PROVIDING PROTECTION FROM HURRICANE FORCE WINDS AND WIND BORNE DEBRIS (LEVEL D OR LARGE MISSILE) WITHIN THE ALLOWABLE DESIGNED PRESSURES AND LIMITATIONS STATED IN THIS APPROVAL.
- 2- CODE: THIS PRODUCT HAS BEEN TESTED AND DESIGNED IN ACCORDANCE WITH THE 2023 FLORIDA BUILDING CODE UNDER TAS 201, 202 AND 203, ASTM E330, ASTM E1886 & ASTM E1996.
- 3- POSTING: A PERMANENT LABEL SHALL BE PROVIDED AS PER FBC. IT SHALL BE ONE LABEL PER OPENING LOCATED ON THE BOTTOM OF THE CENTER MATE FACING THE EXTERIOR SIDE.
- 4- LOADS: DESIGNED LOAD CALCULATED BASED ON THE ASCE 7-22. IN HVHZ OR AS REQUIRED BY THE BUILDING OFFICIAL. PRESSURES MUST BE PROVIDED BY A PROFESSIONAL ARCHITECT OR ENGINEER FOR EACH SPECIFIC PROJECT. THE DESIGNED PRESSURE MUST NOT EXCEED THE ALLOWABLE PRESSURES FOR EACH SHUTTER COMPONENT TO BE USED.
- 5- MATERIAL: ALL EXTRUDED ALUMINUM SHAPES SHALL BE MADE OF 6063-T6 OR AS NOTED.
- 6- FASTENERS: ASSEMBLY SCREWS AND ANCHORS SHALL BE AS SPECIFIED IN THE CURRENT SET OF DRAWINGS. INSTALLATION AND LOADS AS PER THIS APPROVAL.
- 7- USE: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, ARCHITECT OR ENGINEER OF RECORD TO VERIFY THE FOLLOWING:
 - 7.1- THE STABILITY OF THE STRUCTURE WHERE THE SHUTTER IS TO BE ATTACHED INSURING PROPER ANCHORAGE.
 - 7.2- THE SITE SPECIFIC PROJECT CRITERIA, SUCH AS BUT NOT LIMITED TO, WIND LOADS, LOCAL CODE REQUIREMENTS, DESIGNED PRESSURES ETC.
 - 7.3- THAT THIS APPROVAL IS ADEQUATE TO THE SPECIFIC PROJECT.
- 8- 33 1/3% INCREASE IN ALLOWABLE LOADS HAVE NOT BEEN USED IN THE DESIGN OF THE ANCHORS FOR THIS PRODUCT APPROVAL. HOWEVER, WOOD ANCHORS WITH 1.6 LOAD DURATION INCREASE FOR WIND LOAD HAVE BEEN USED.

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18	LOCK HARDWARE SECTION "N" DETAIL, SPECIAL SHUTTER HEIGHT TRANSITION

STANDARD COMPLIANCE:
 ASTM E330, E1996 (LEVEL D MISSILE)
 TAS 201, 202, 203 (LARGE & SMALL MISSILE)
 ASCE 7-22, ADM-20, NDS-18



USER INSTRUCTIONS:

- 1- DETERMINE PROJECT DESIGN WIND LOAD PRESSURES AS PER ITEM 4 OF GENERAL NOTES.
- 2- CHECK BLADE SPAN ALLOWABLE DESIGN PRESSURE ON TABLE 1 OR TABLE 1A.
- 3- VERIFY GLASS SEPARATION ON TABLE 2 IF APPLICABLE.
- 4- DETERMINE MAXIMUM ANCHORAGE PRESSURE CAPACITY FUNCTION OF SECTION TYPE TO BE USED AS PER SHEET 13 AND 14.
- 5- THE LOWEST PRESSURE FROM ITEMS 2 AND 4 ABOVE MUST NOT EXCEED THE REQUIRED DESIGN PRESSURE FROM GENERAL NOTES 4

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ASSOCIATION OF MANUFACTURERS:
N.A.S.A
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 MIRAMAR, FL 33027

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TABLE I
MAXIMUM ALLOWABLE #1 BLADE
SHUTTER SPAN X PRESSURE

BLADE SPAN INCHES	PRESSURE (PSF)	
	POS	NEG
60	160	160
66	158	158
72	144	144
78	133	133
84	124	124
90	116	116
96	108	108
104	100	100
108	93	93
114	83	83
120	75	75
126	68	68
132	62	62
138	57	57
144	48	52
150	41	48
162	30	40

TABLE 1A
MAXIMUM ALLOWABLE #1 & #1B BLADES
SHUTTER SPAN X PRESSURE

BLADE SPAN INCHES	PRESSURE (PSF)	
	POS	NEG
60	160	160
66	158	158
72	144	144
78	133	133
84	124	124
90	116	116
96	108	108
104	100	100
108	93	93
114	83	83
120	75	75
126	68	68
132	61	61
138	53	53
144	45	47
150	38	42
162	28	33

NOTES:
1- ACCORDION SHUTTER BLADE SPAN (INCHES) FOR ALL CONDITIONS
2- PRESSURE - DESIGN WIND LOAD (PSF)
3- LINEAR INTERPOLATION IS ACCEPTABLE FOR DESIGN WIND LOADS AND BLADE SPAN BETWEEN TABULATED VALUES.
4- USE TABLE 1A WHEN ONE OR MORE TYPE 1B BLADE IS USED
5- BLADE REVERSED INSTALLATION IS ALLOWED FOR ALL MOUNTED CONDITIONS

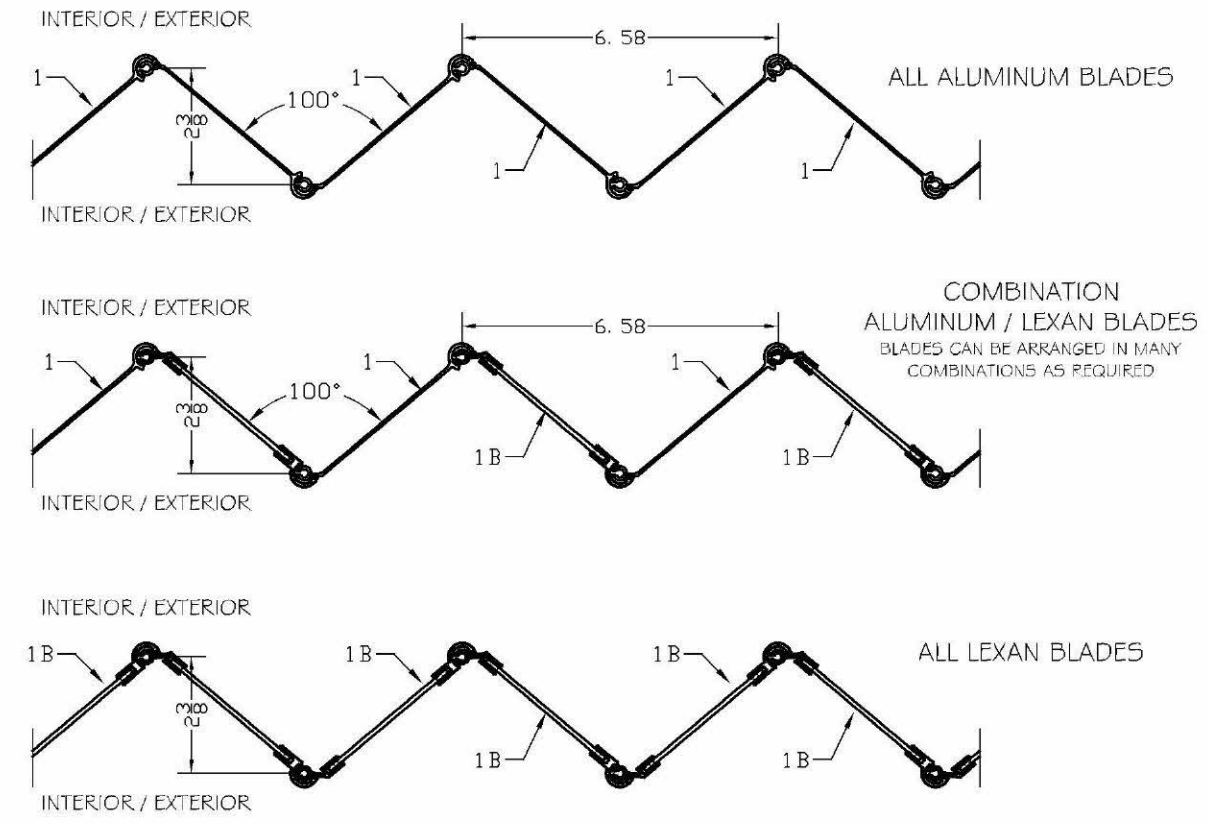
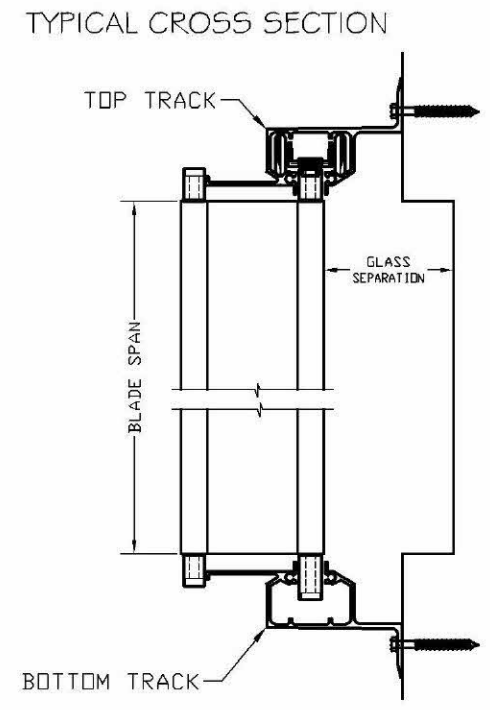
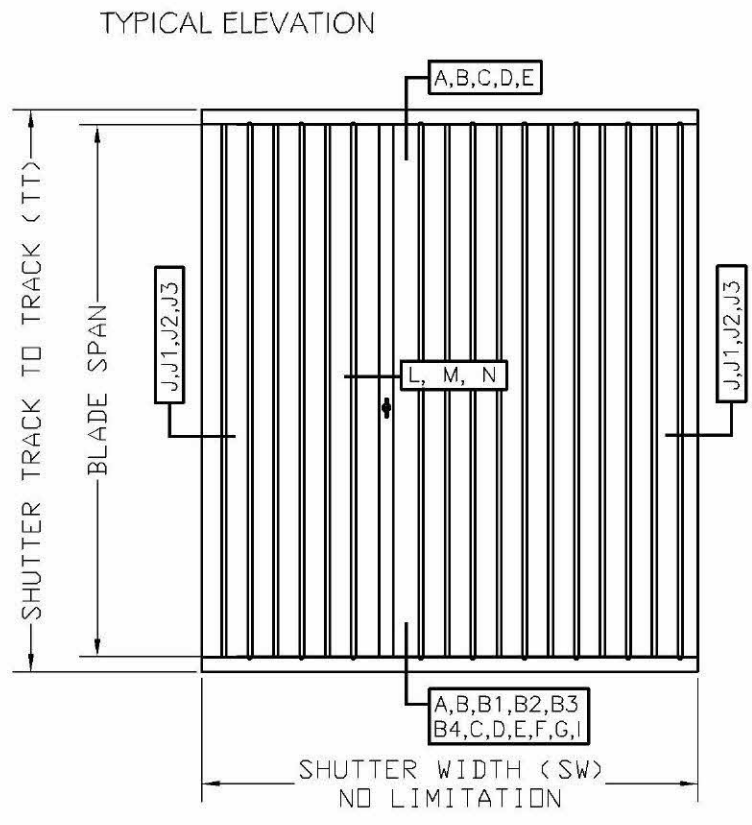


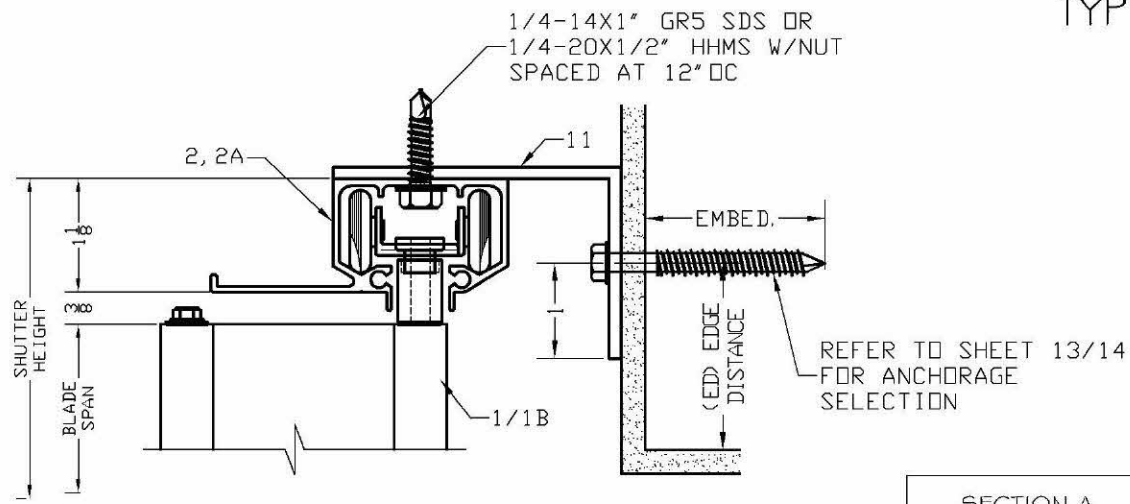
TABLE 2
MINIMUM SHUTTER SEPARATION FROM GLAZING

BLADE TYPE	GLAZING SEPARATION (INCHES)		
	BLADE SPAN <=60"	BLADE SPAN <=104"	BLADE SPAN <=162"
ALUMINUM ALL ELEVATIONS	2"	2 3/4"	3"
LEXAN <=30' ELEVATION	3"	3"	3"
LEXAN >30' ELEVATION	2 1/8"	3"	3"

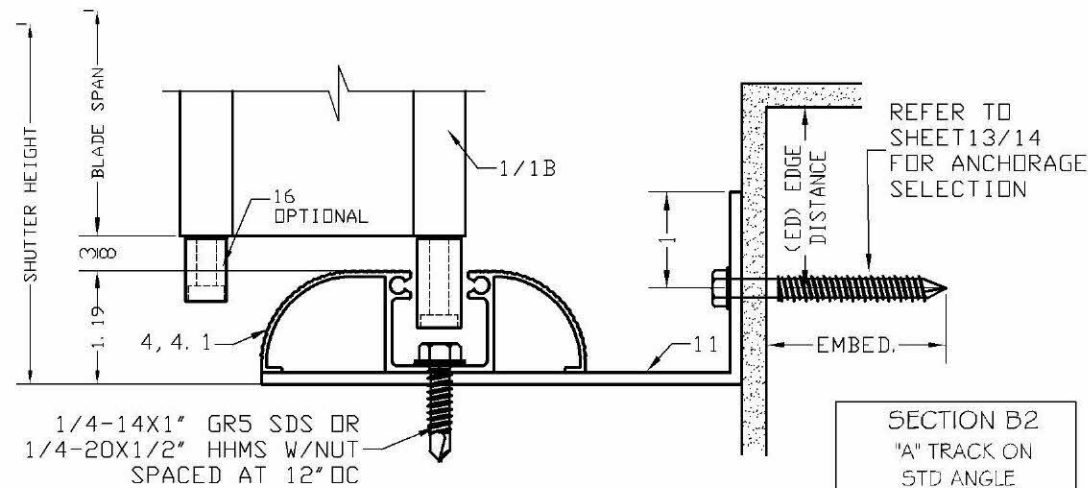
NOTES:
1- SEPARATION FROM GLAZING AREAS SHALL BE MEASURED FROM GLAZING SURFACE TO THE INNER MOST BLADE OR LOCK SURFACE.
2- GLASS SEPARATION IS APPLICABLE ONLY WITHIN THE HVHZ (BROWARD AND MIAMI-DADE COUNTIES), WIND ZONE 4 AS PER ASTM E1996 AND ESSENTIAL FACILITIES AS DEFINED ON ASCE 7-22.
3- WHEN SHUTTER IS ASSEMBLED WITH BOTH TYPES OF BLADES THE LARGEST GLASS SEPARATION SHALL APPLY.



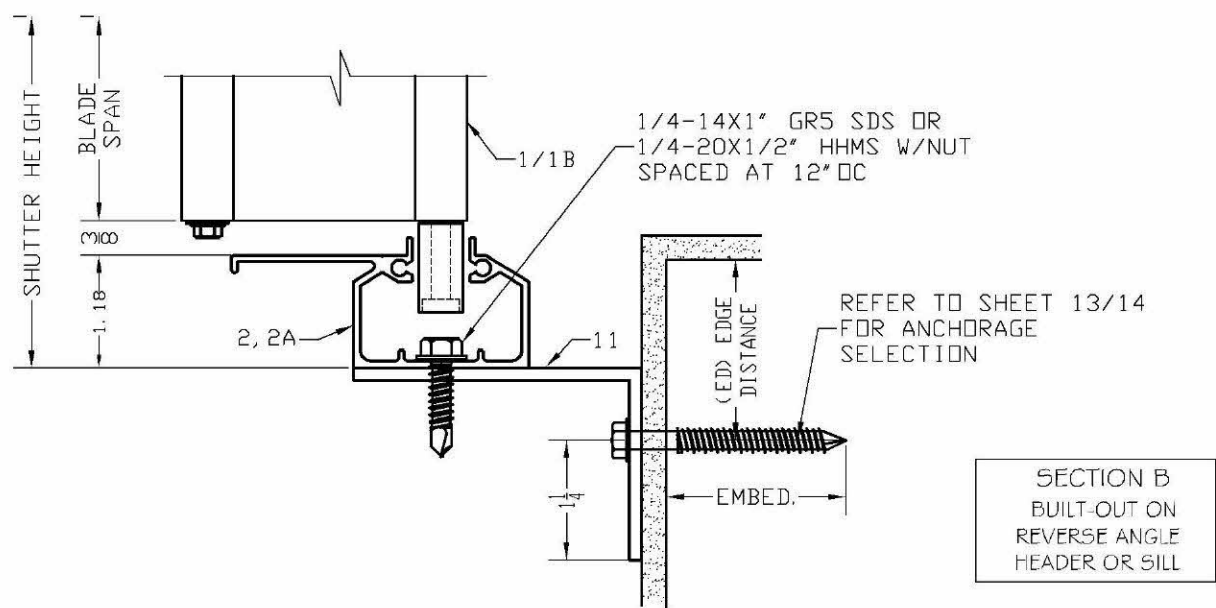
TYPICAL SECTIONS



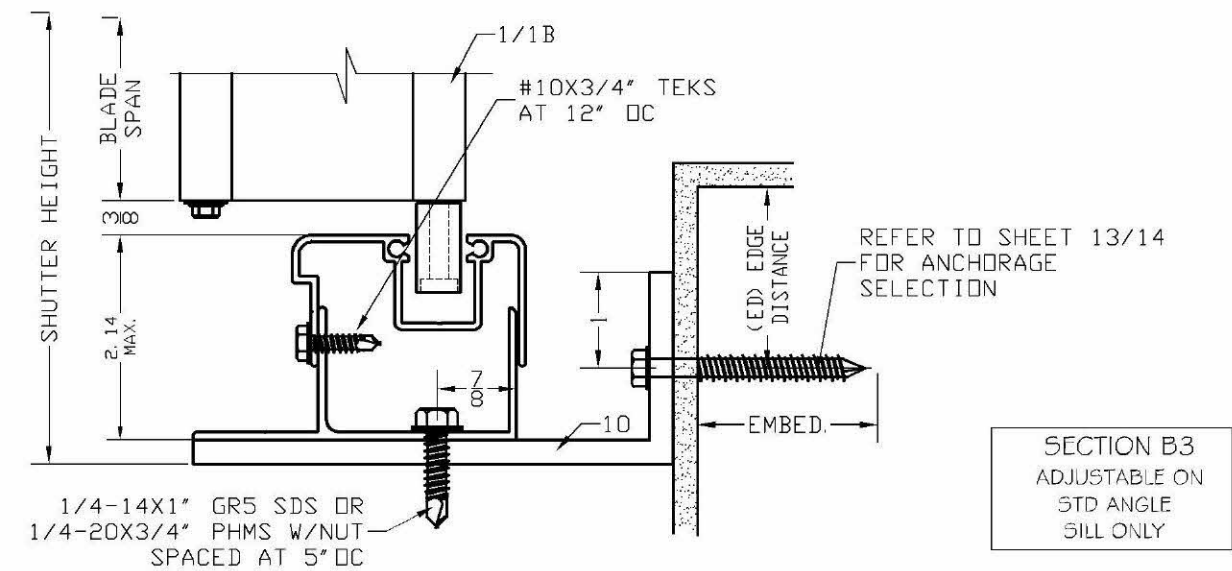
SECTION A
BUILT-OUT ON ANGLE
HEADER OR SILL



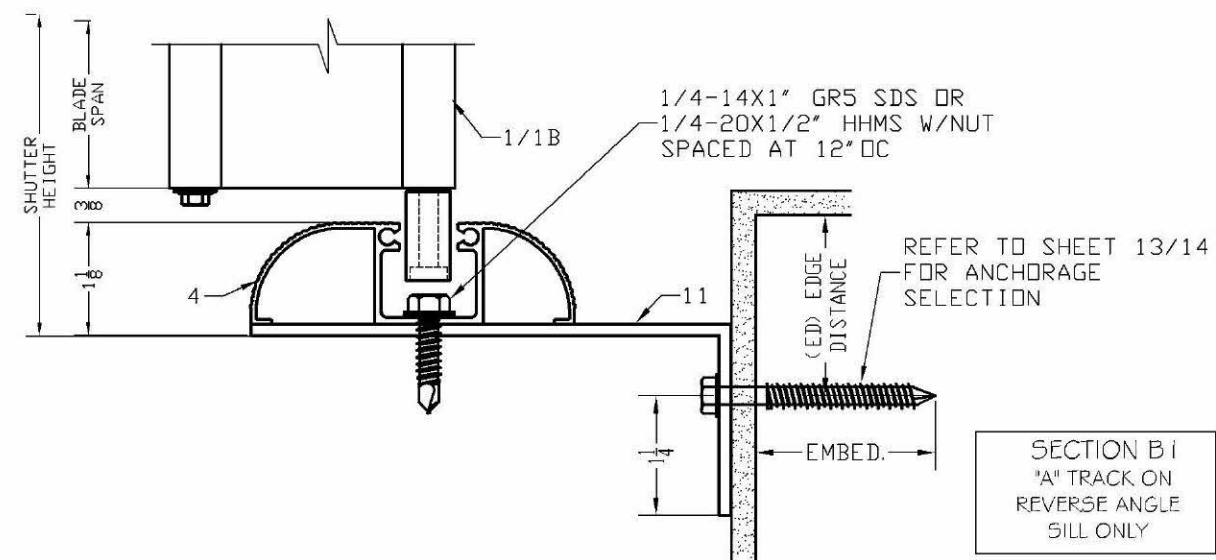
SECTION B2
"A" TRACK ON
STD ANGLE
SILL ONLY



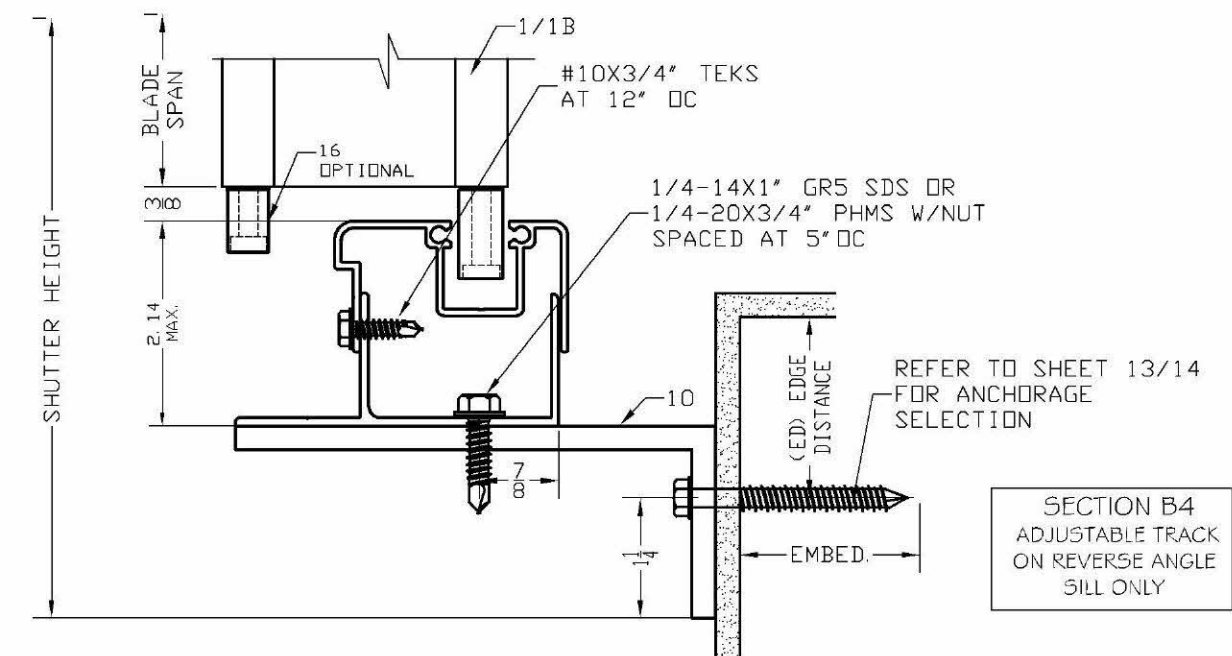
SECTION B
BUILT-OUT ON
REVERSE ANGLE
HEADER OR SILL



SECTION B3
ADJUSTABLE ON
STD ANGLE
SILL ONLY



SECTION B1
"A" TRACK ON
REVERSE ANGLE
SILL ONLY



SECTION B4
ADJUSTABLE ON
REVERSE ANGLE
SILL ONLY



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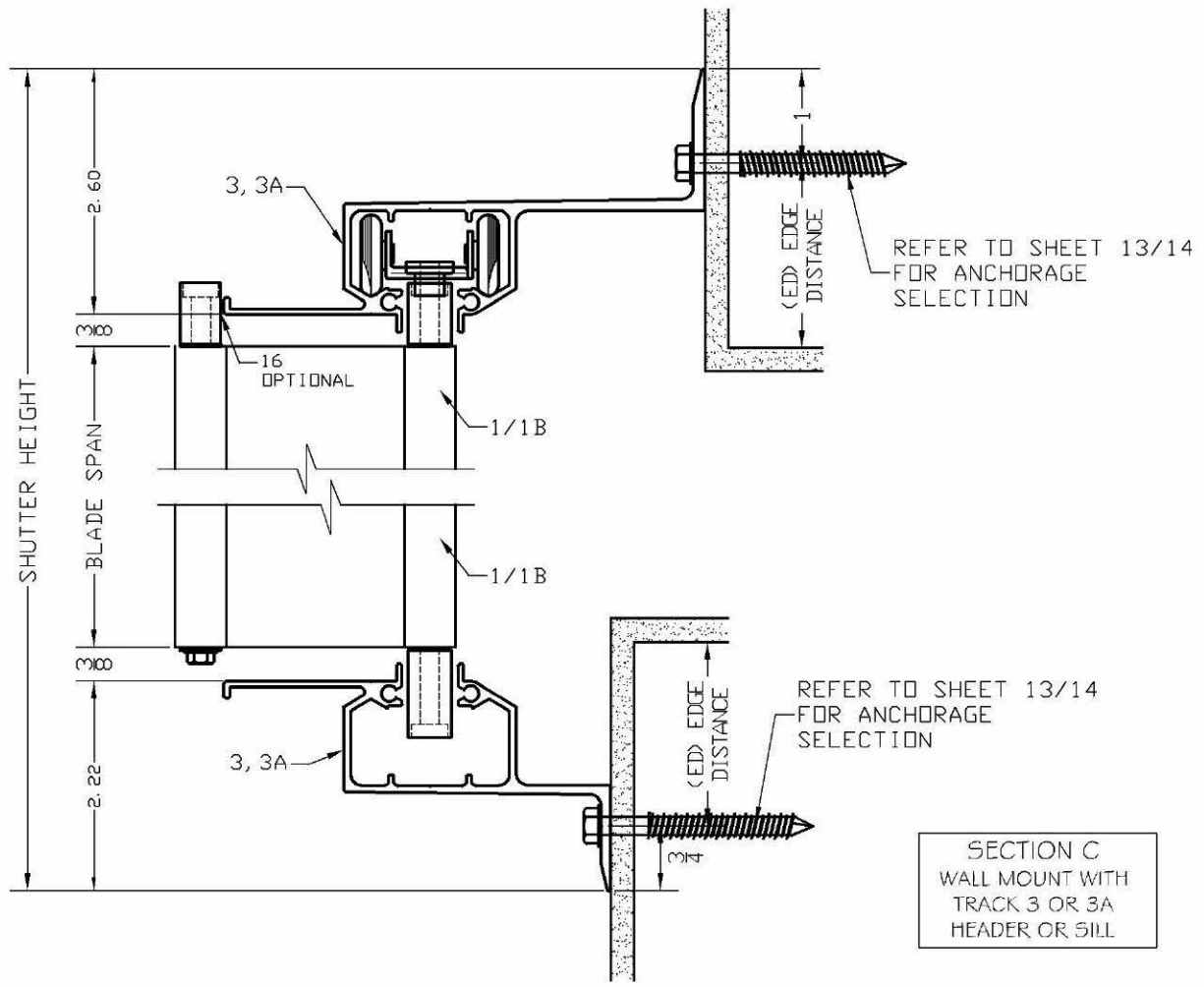


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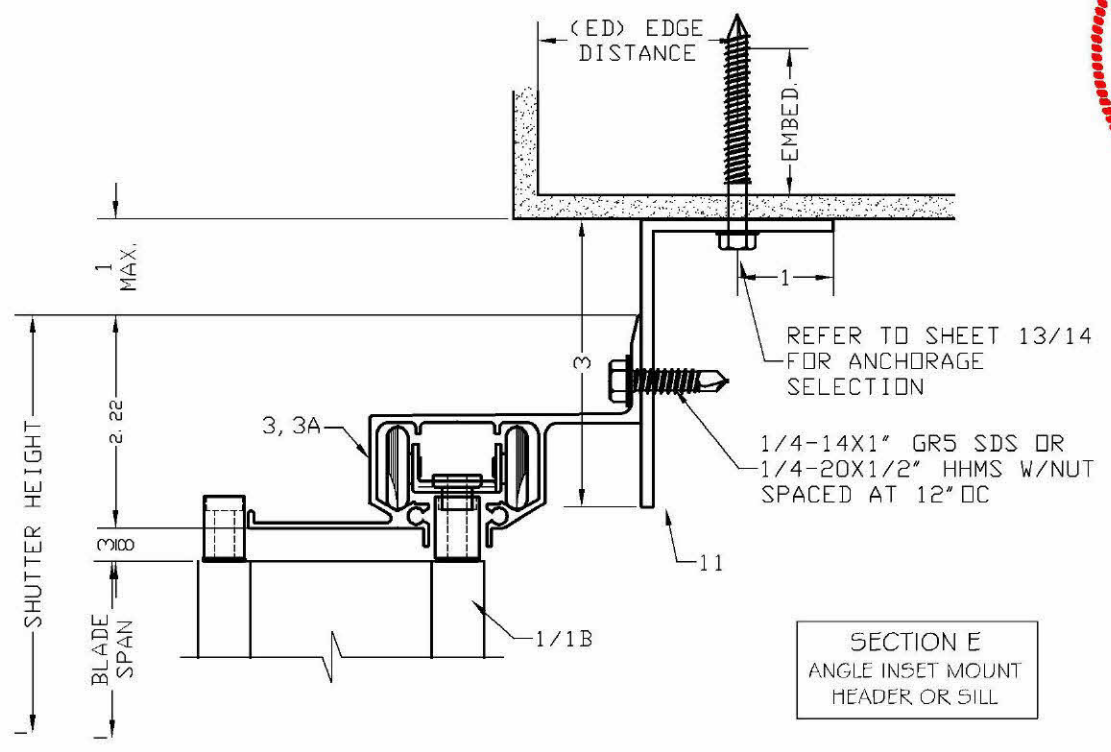
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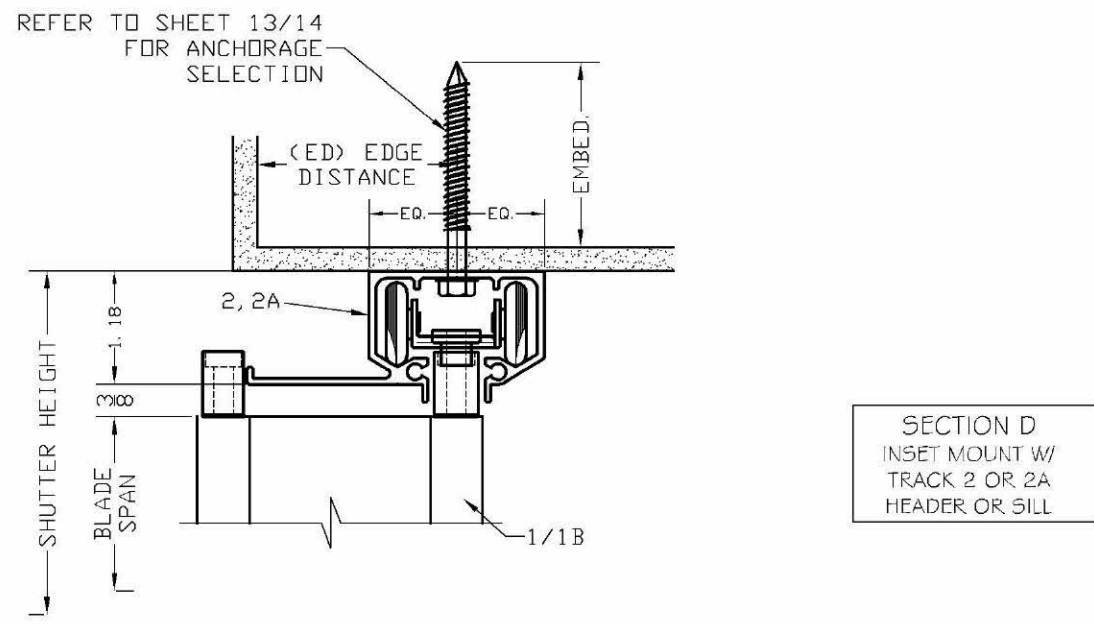
TYPICAL SECTIONS



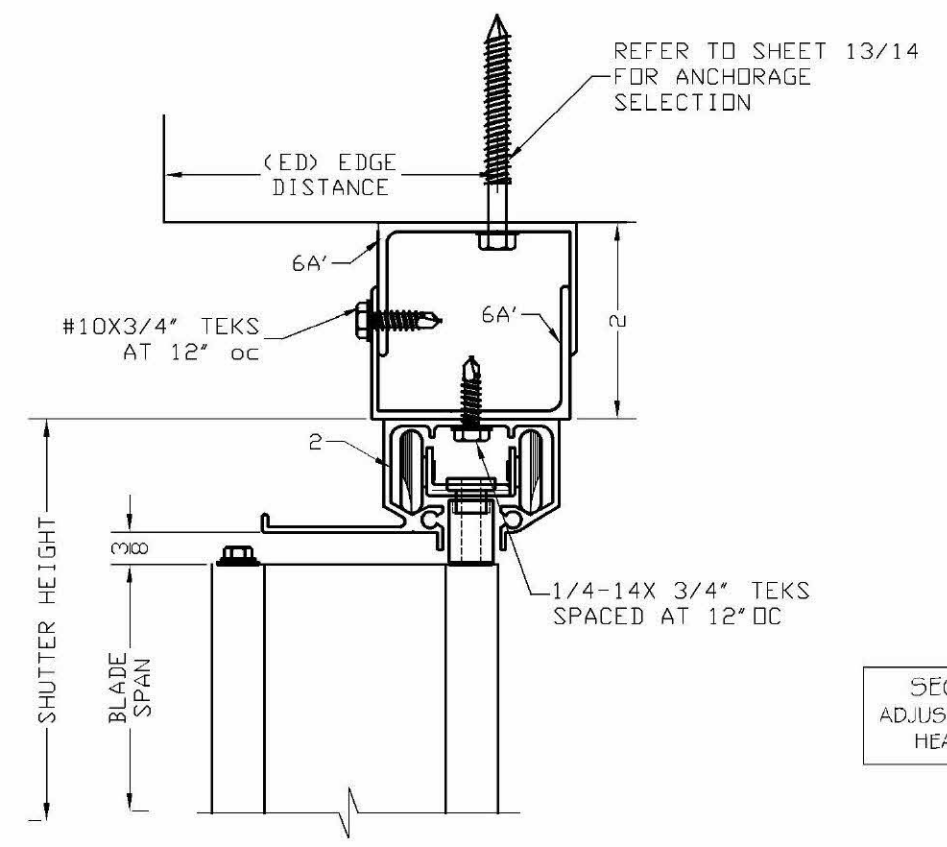
SECTION C
WALL MOUNT WITH
TRACK 3 OR 3A
HEADER OR SILL



SECTION E
ANGLE INSET MOUNT
HEADER OR SILL



SECTION D
INSET MOUNT W/
TRACK 2 OR 2A
HEADER OR SILL



SECTION GH
ADJUSTABLE MOUNT
HEADER / SILL



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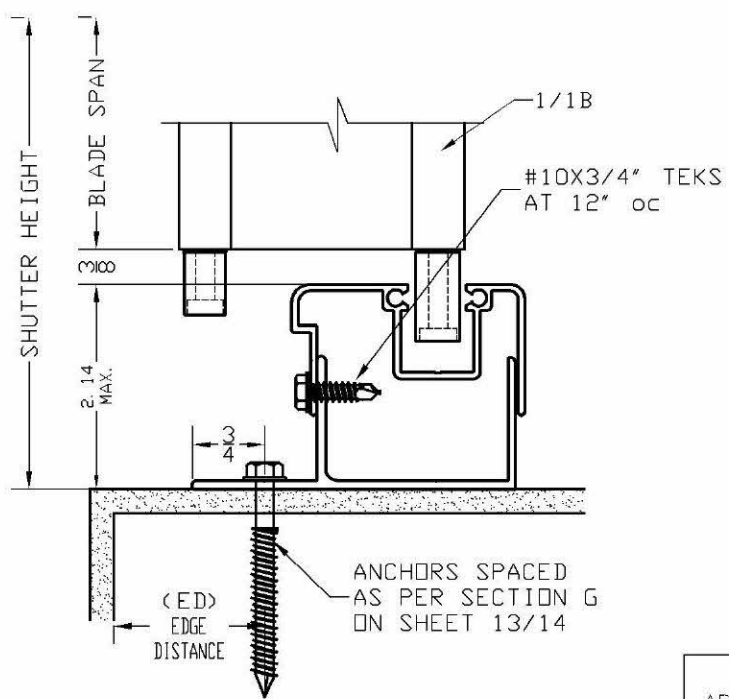
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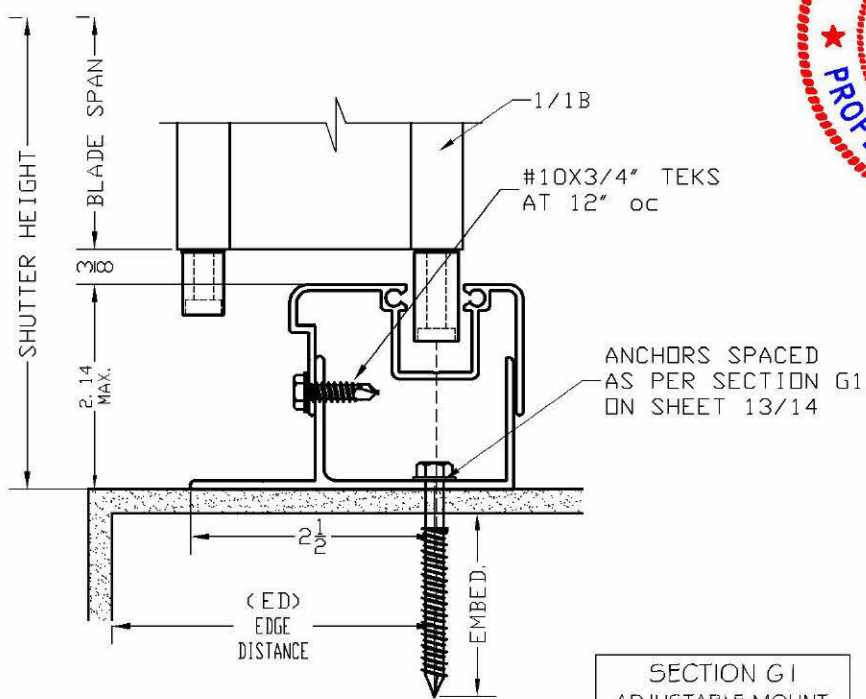
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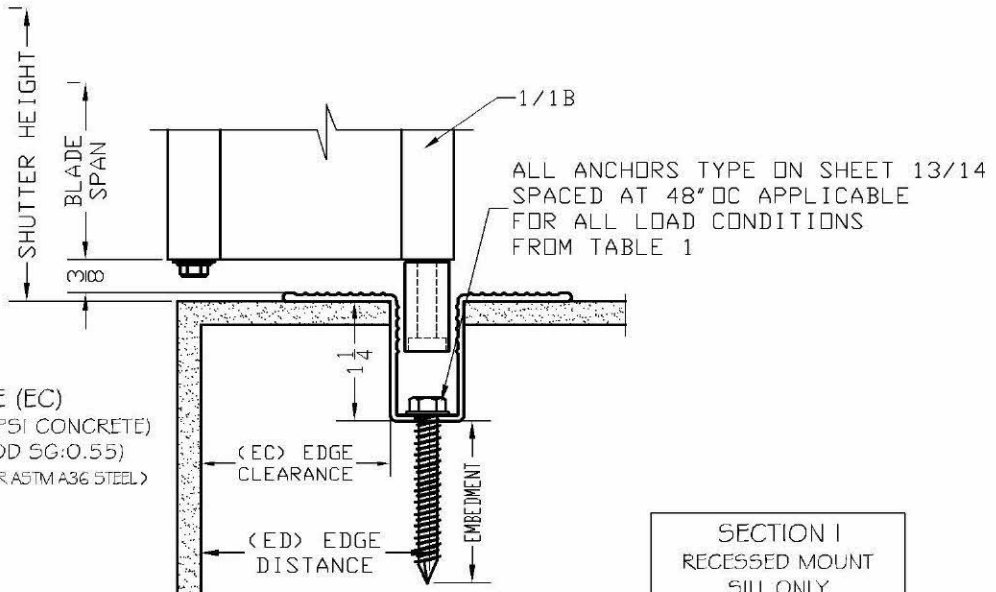
TYPICAL SECTIONS



SECTION G
ADJUSTABLE MOUNT
SILL ONLY

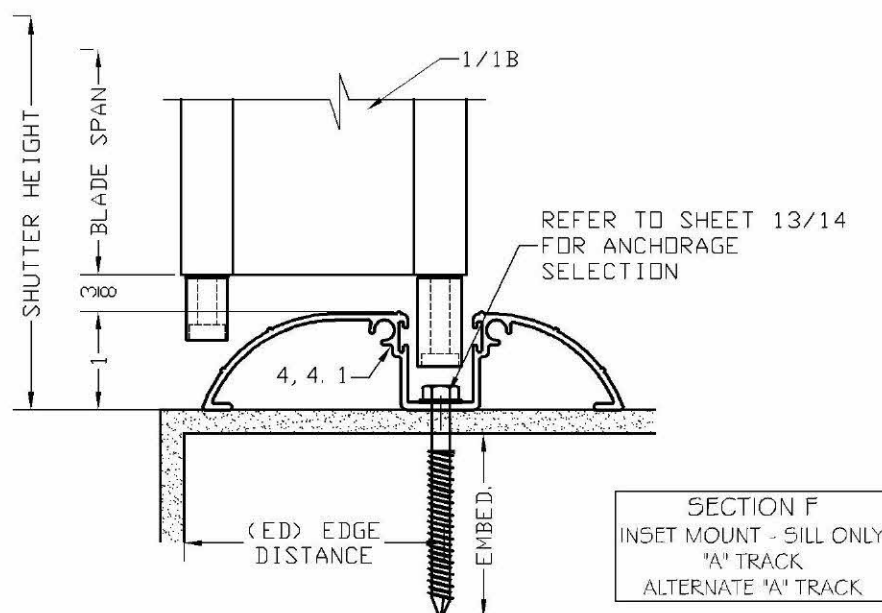


SECTION G1
ADJUSTABLE MOUNT
SILL ONLY



SECTION I
RECESSED MOUNT
SILL ONLY

EDGE CLEARANCE (EC)
 INTO CONCRETE= 4" (3000 PSI CONCRETE)
 INTO WOOD= 2 1/2" (WOOD SG-0.55)
 INTO METAL= 2" (6063-T6 ALUM. OR A57M A36 STEEL)



SECTION F
INSET MOUNT - SILL ONLY
'A' TRACK
ALTERNATE 'A' TRACK



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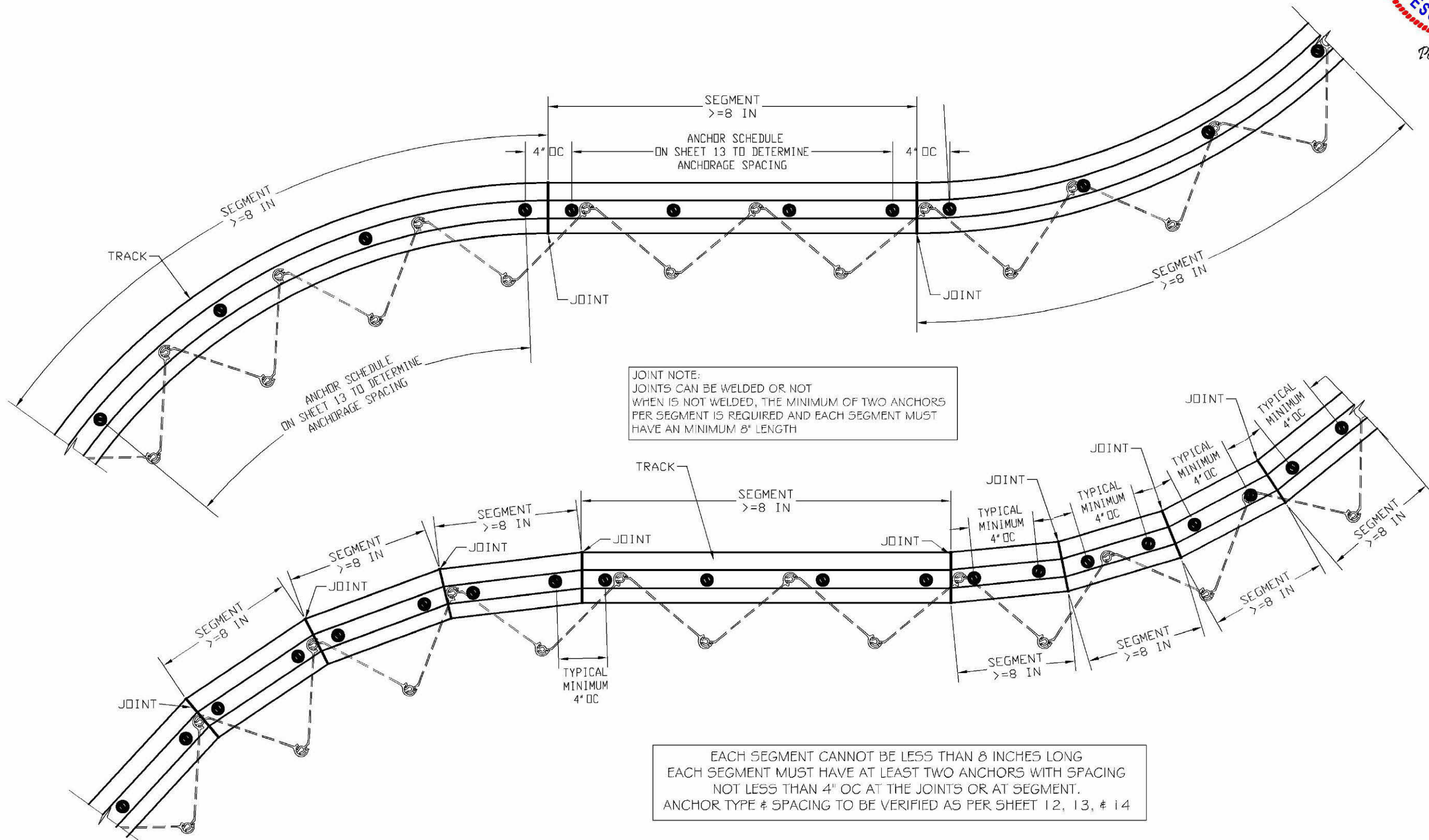


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OPTIONAL CURVED TRACK
BENT TRACK OR SEGMENTED TRACK OPTIONS



JOINT NOTE:
JOINTS CAN BE WELDED OR NOT
WHEN IS NOT WELDED, THE MINIMUM OF TWO ANCHORS
PER SEGMENT IS REQUIRED AND EACH SEGMENT MUST
HAVE AN MINIMUM 8" LENGTH

EACH SEGMENT CANNOT BE LESS THAN 8 INCHES LONG
EACH SEGMENT MUST HAVE AT LEAST TWO ANCHORS WITH SPACING
NOT LESS THAN 4" OC AT THE JOINTS OR AT SEGMENT.
ANCHOR TYPE & SPACING TO BE VERIFIED AS PER SHEET 12, 13, & 14



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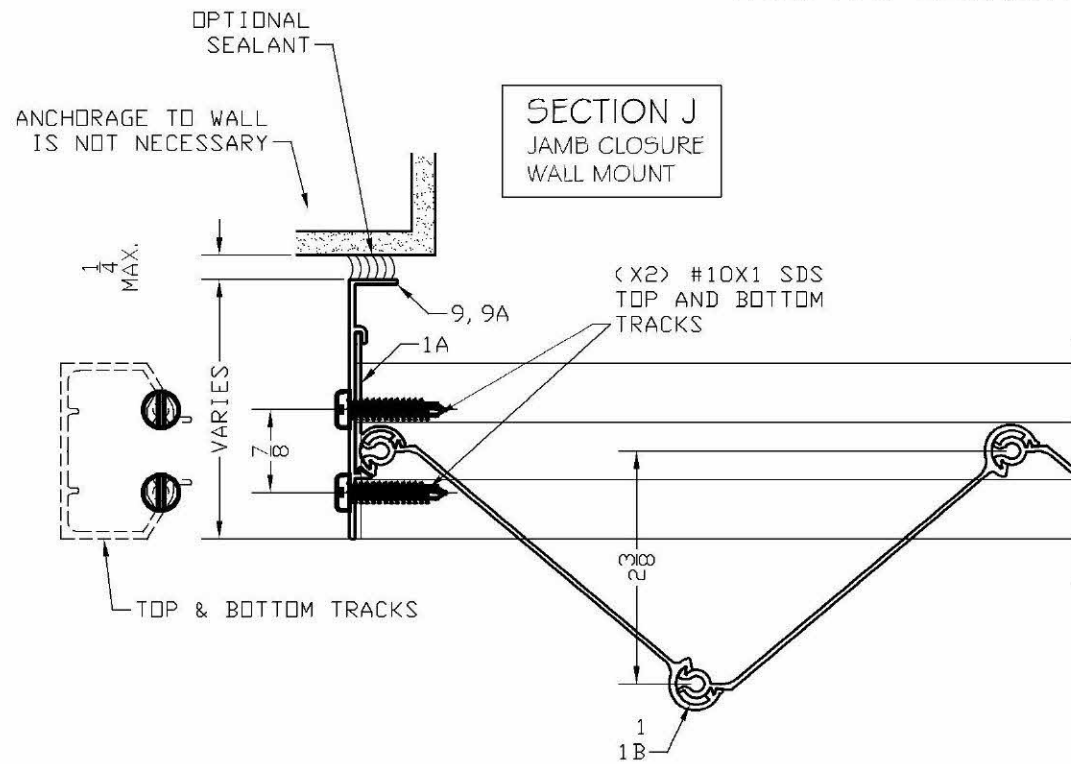
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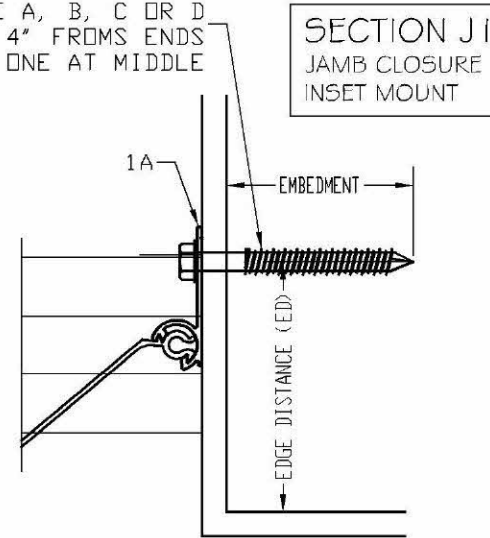
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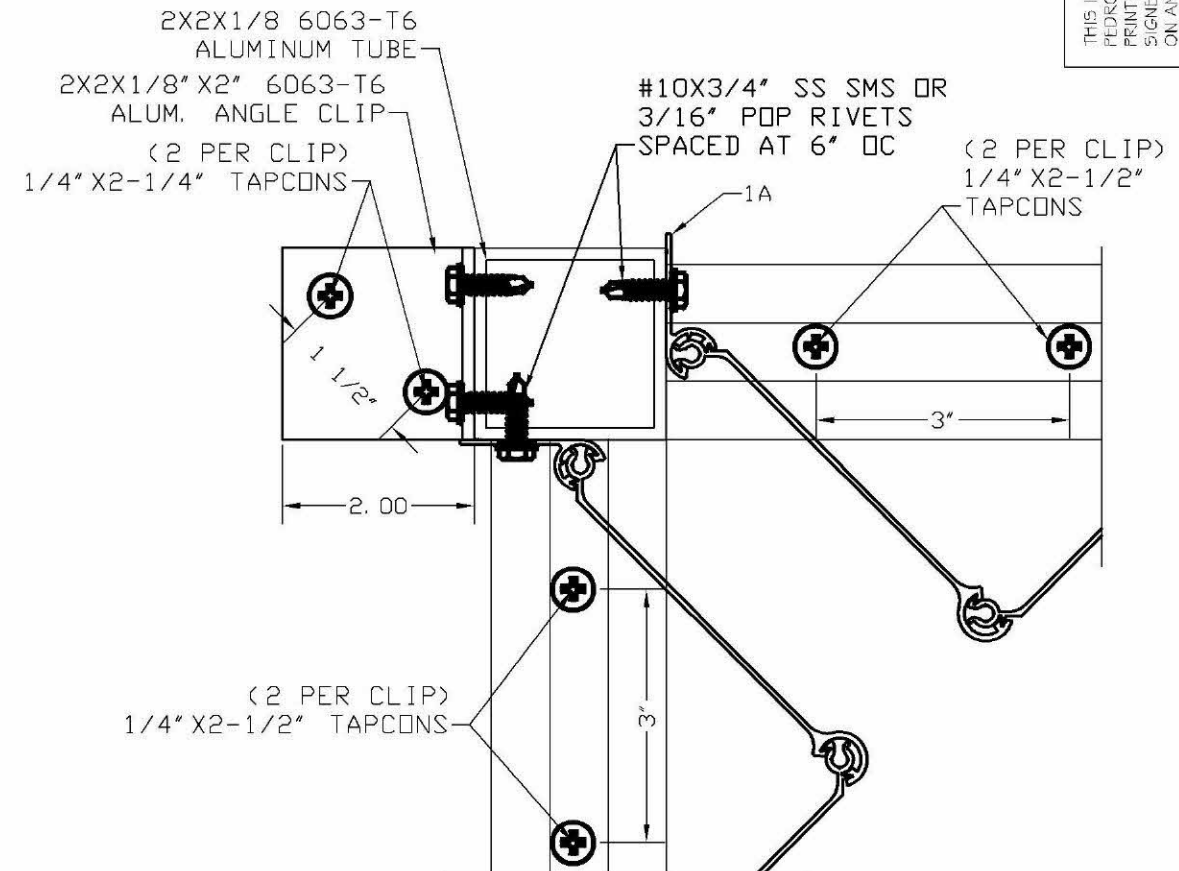
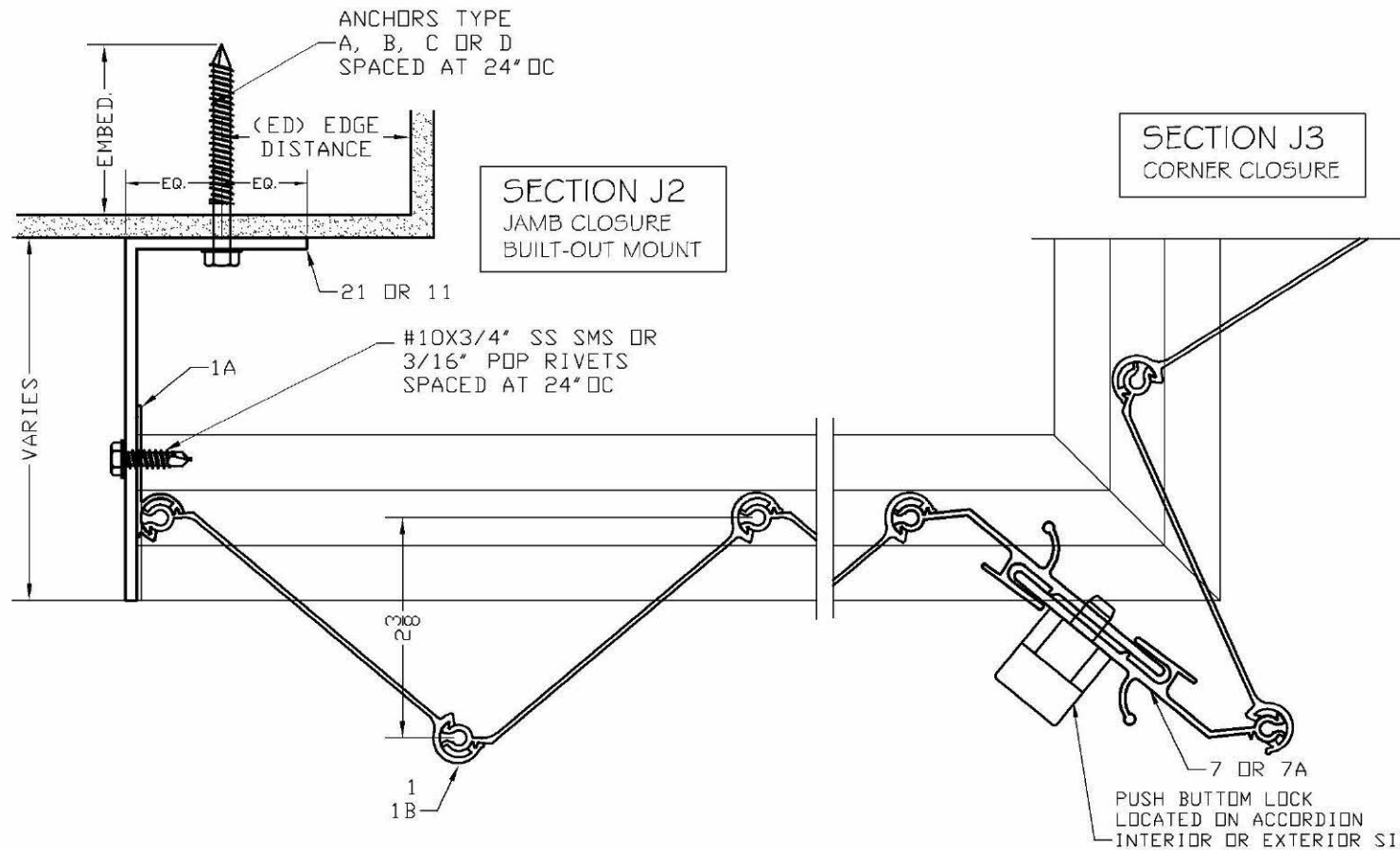
TYPICAL HORIZONTAL
JAMB AND CORNER SECTIONS J



MIN. (3) ANCHORS
TYPE A, B, C OR D
4" FROMS ENDS
AND ONE AT MIDDLE



SECTION J3.1
ALTERNATE
CORNER CLOSURE



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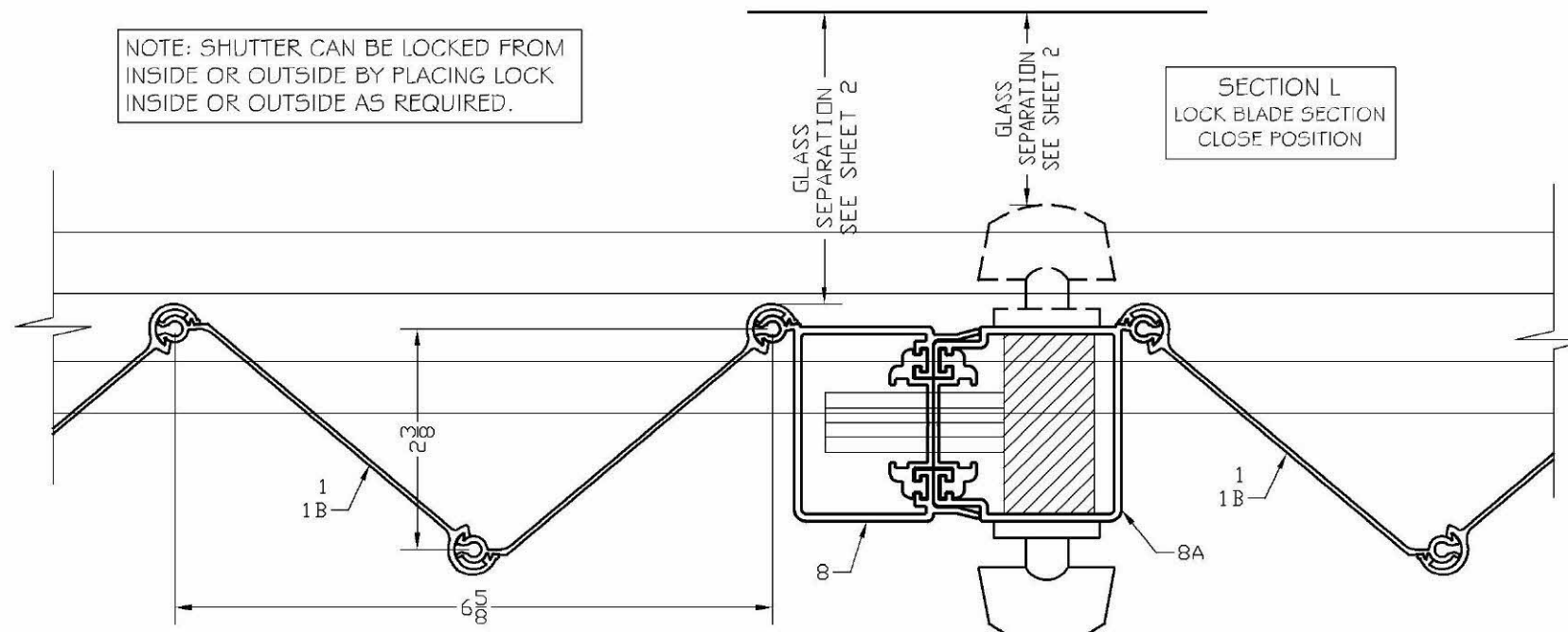
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TYPICAL HORIZONTAL SECTIONS
HD LOCK SECTIONS L

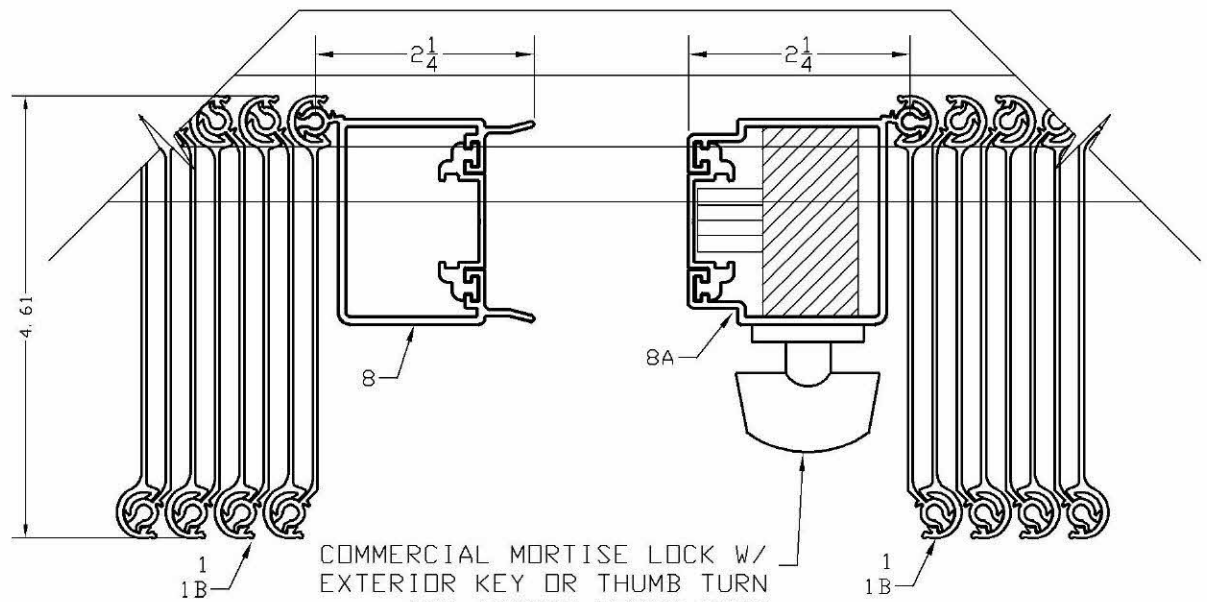
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SECTION L
LOCK BLADE SECTION
CLOSE POSITION

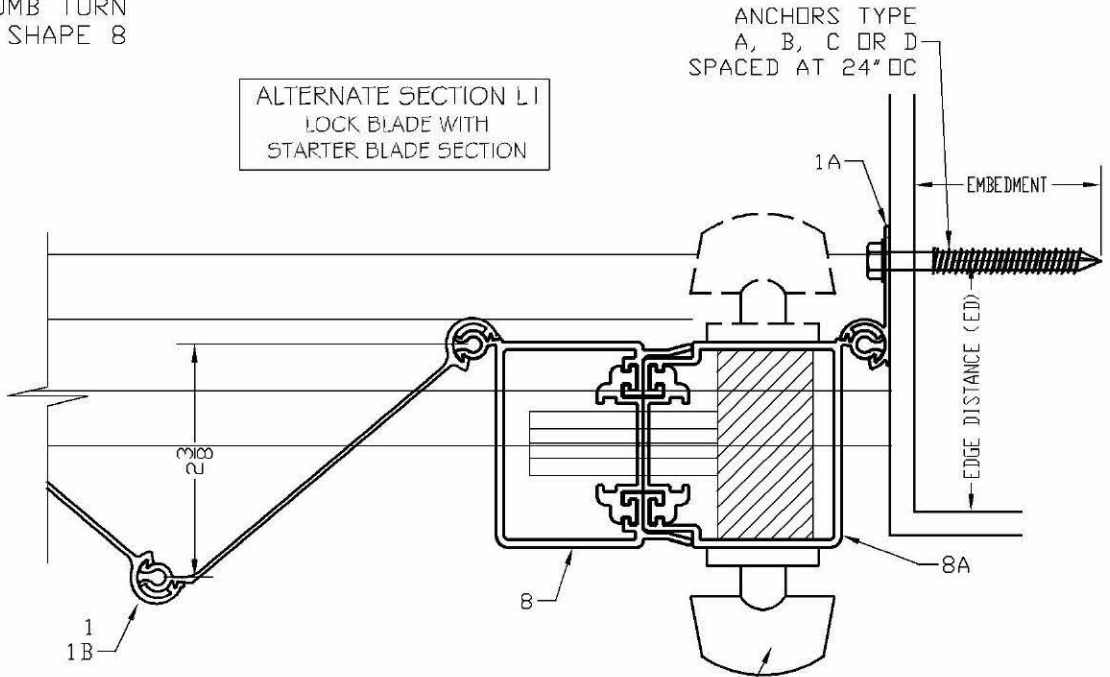
COMMERCIAL MORTISE LOCK W/
EXTERIOR KEY OR THUMB TURN
AND INSIDE THUMB TURN
INSTALLED ON SHAPE 8

SECTION L
LOCK BLADE SECTION
OPEN POSITION



COMMERCIAL MORTISE LOCK W/
EXTERIOR KEY OR THUMB TURN
AND INSIDE THUMB TURN
INSTALLED ON SHAPE 8

ALTERNATE SECTION L1
LOCK BLADE WITH
STARTER BLADE SECTION



COMMERCIAL MORTISE LOCK W/
EXTERIOR KEY OR THUMB TURN
AND INSIDE THUMB TURN
INSTALLED ON SHAPE 8



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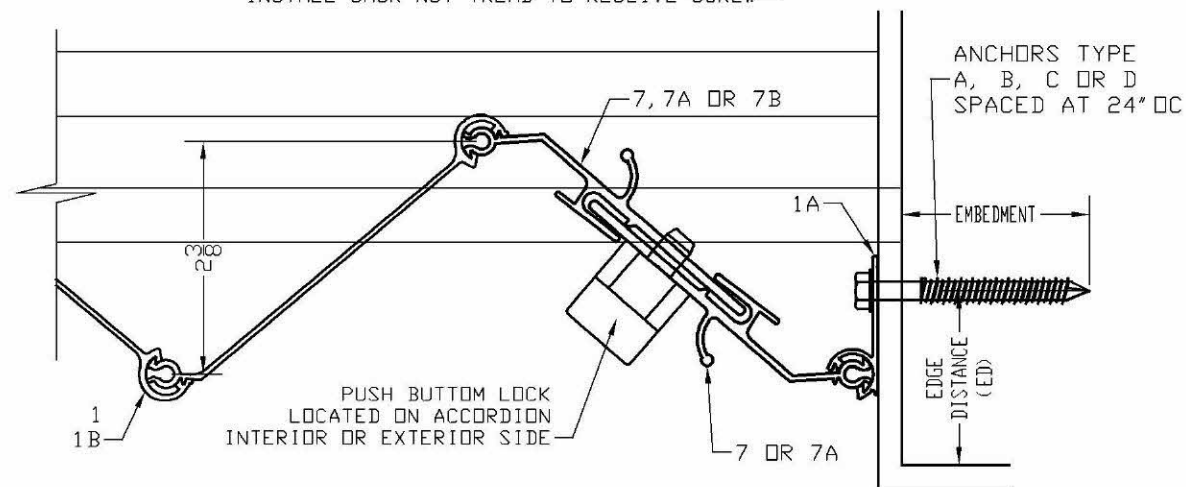
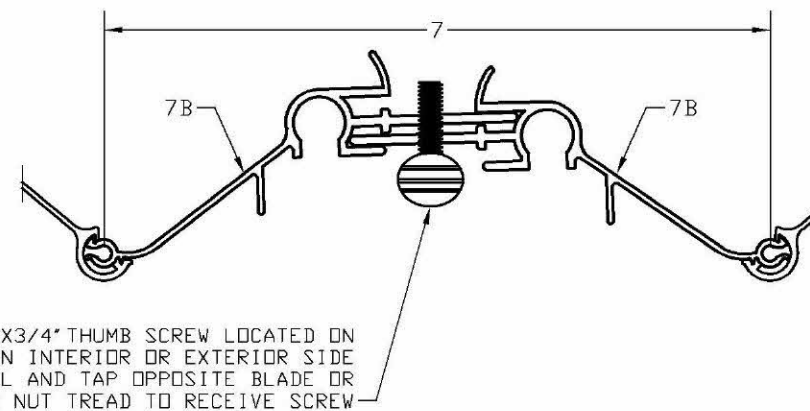
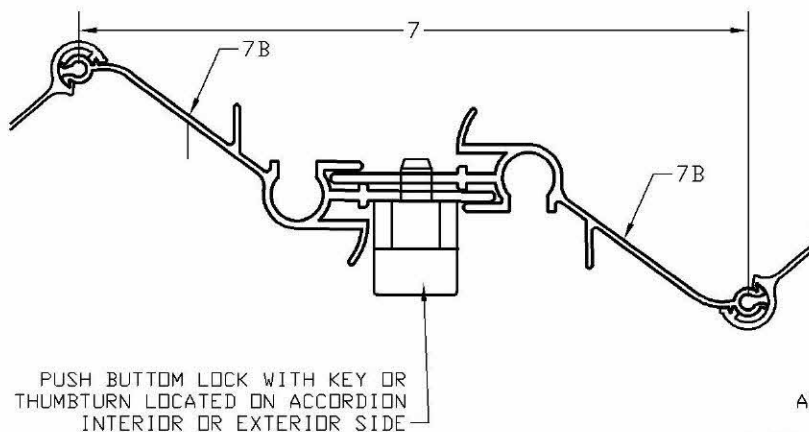
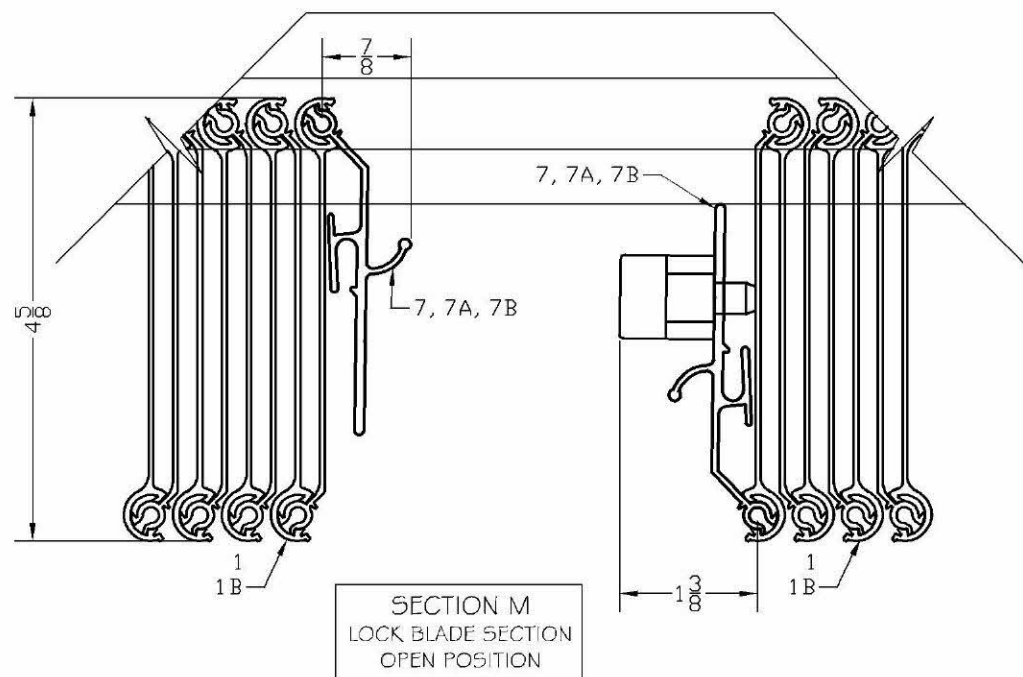
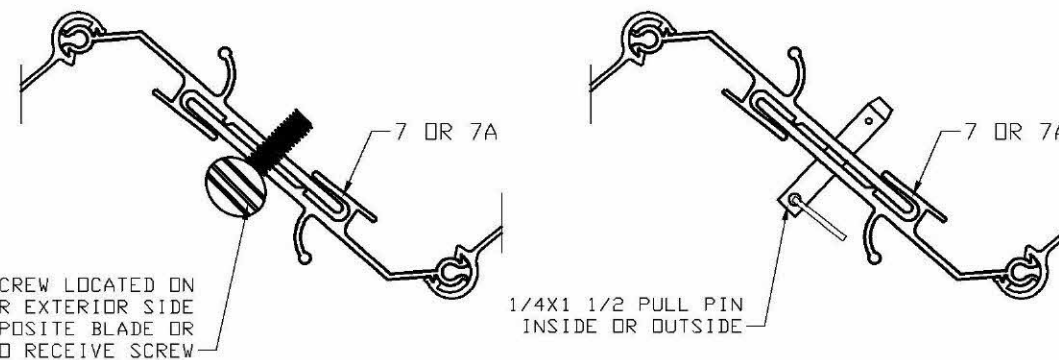
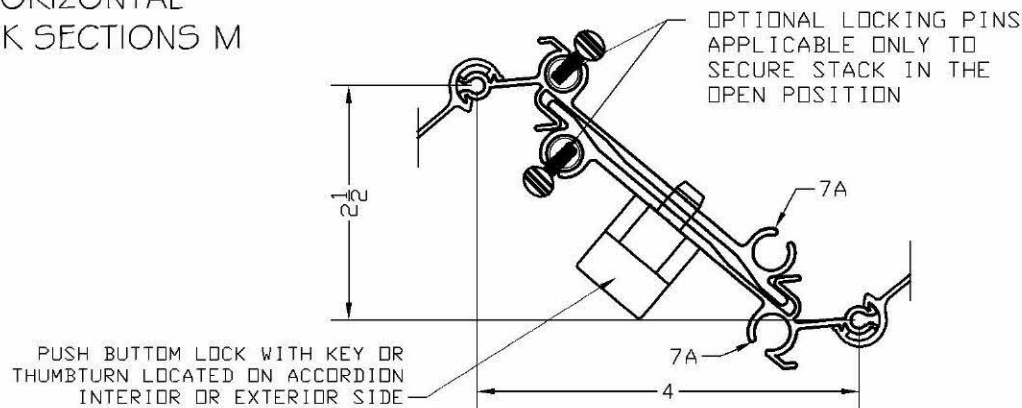
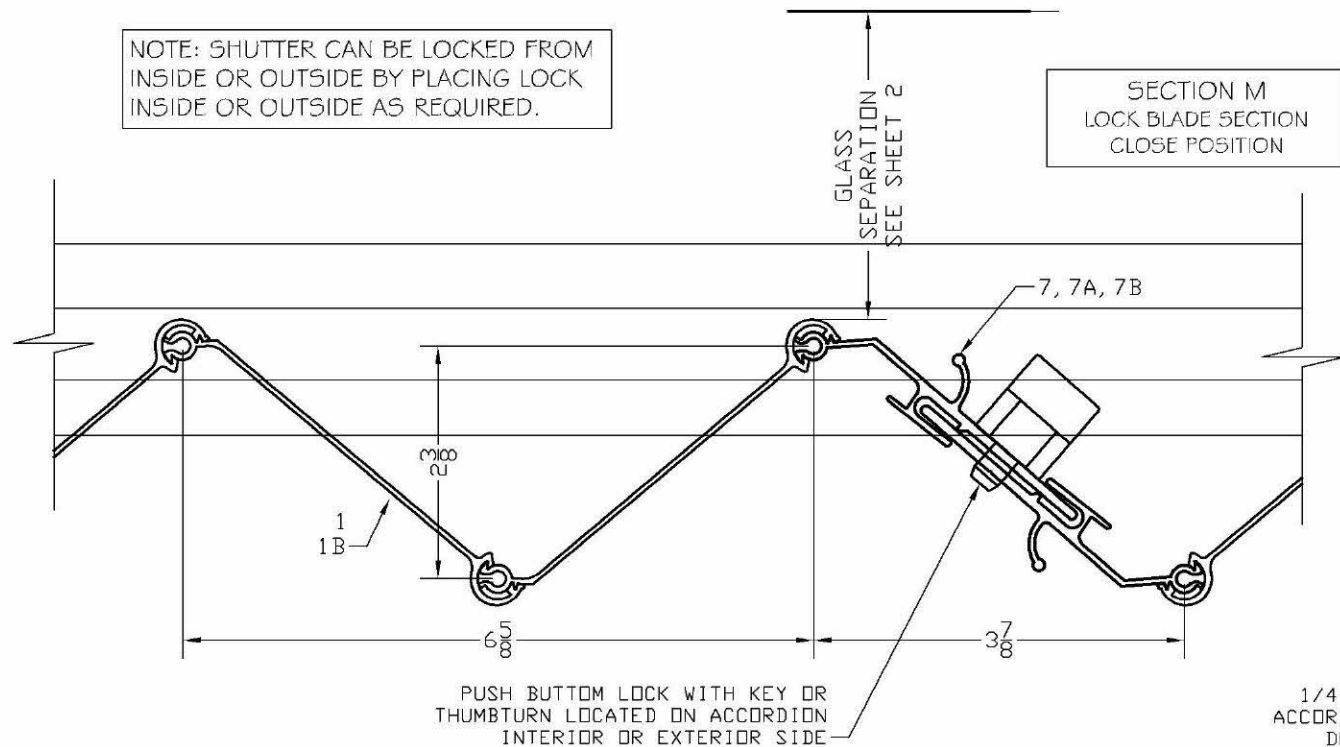
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TYPICAL HORIZONTAL UNIMATE LOCK SECTIONS M

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PE 52609
08/11/2023

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PRODUCT:
SUPERNOVA
EXTRUDED ALUMINUM
ACCORDION SHUTTER
LARGE MISSILE IMPACT RESISTANT

ASSOCIATION OF MANUFACTURERS:
N.A.S.A
NATIONAL APPROVED SHUTTER ASSOCIATION LLC.
MIRAMAR, FL 33027

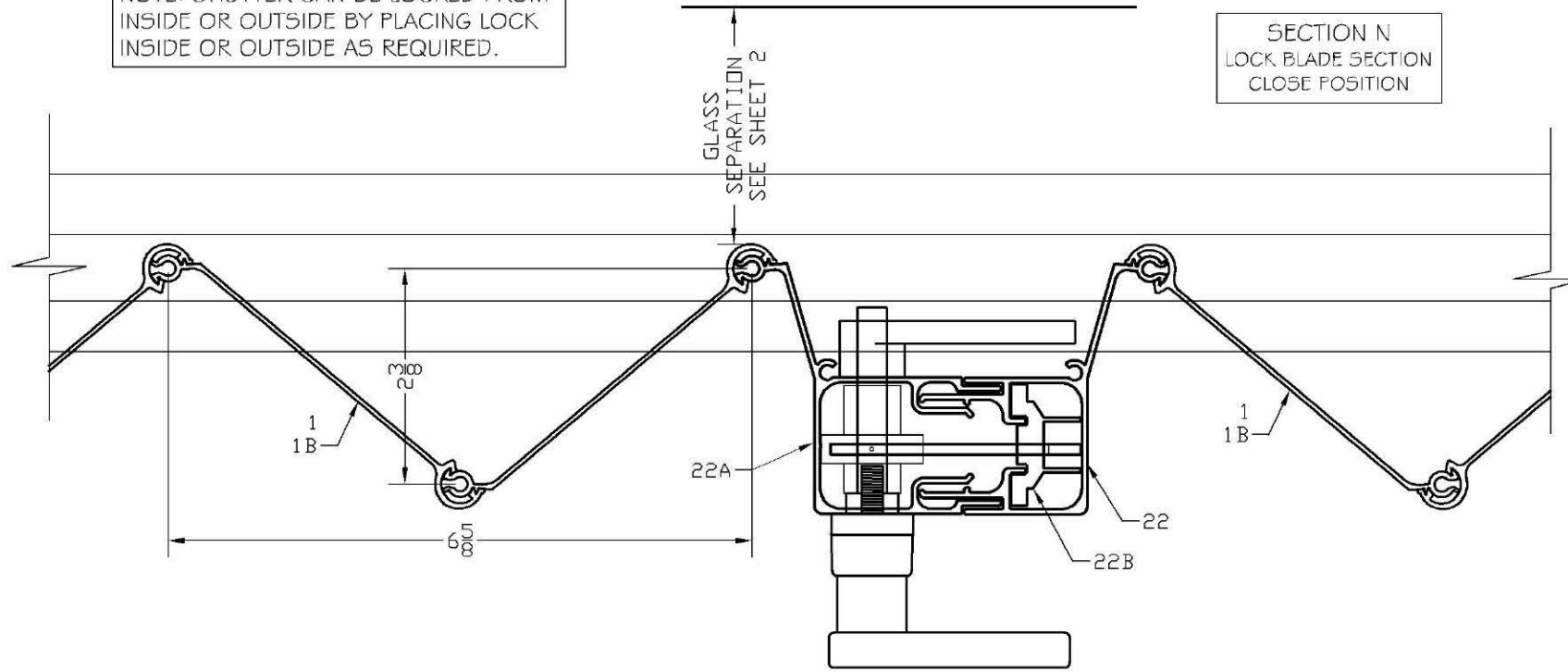
SCALE:
NA
DATE:
08/09/2023
DRAWING #
23-120
SHEET
09 OF 18

ENGINEERING SERVICES - CA 32459
9715 W. BROWARD BLVD., 247
PLANTATION, FL 33324
ENGINEER SEAL
PEDRO DE FIGUEIREDO
PFM/F@AOL.COM
FL 52609



TYPICAL HORIZONTAL SECTIONS
STD LOCK SECTIONS N

NOTE: SHUTTER CAN BE LOCKED FROM
INSIDE OR OUTSIDE BY PLACING LOCK
INSIDE OR OUTSIDE AS REQUIRED.



SECTION N
LOCK BLADE SECTION
CLOSE POSITION



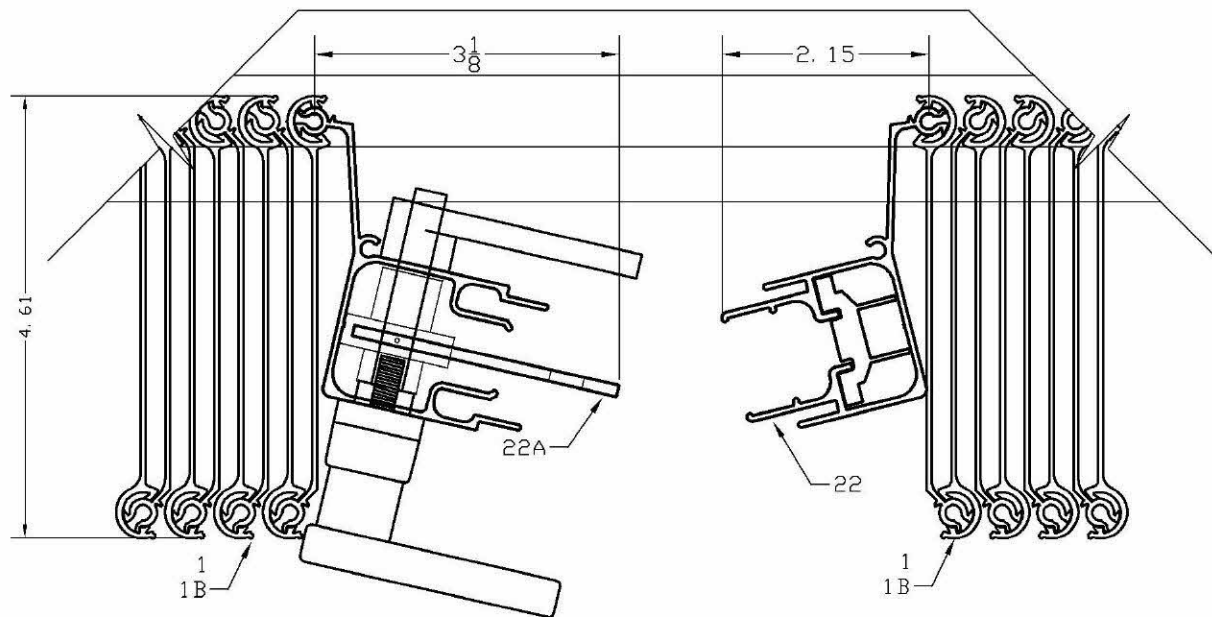
Pedro De Figueiredo
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08/11/2023

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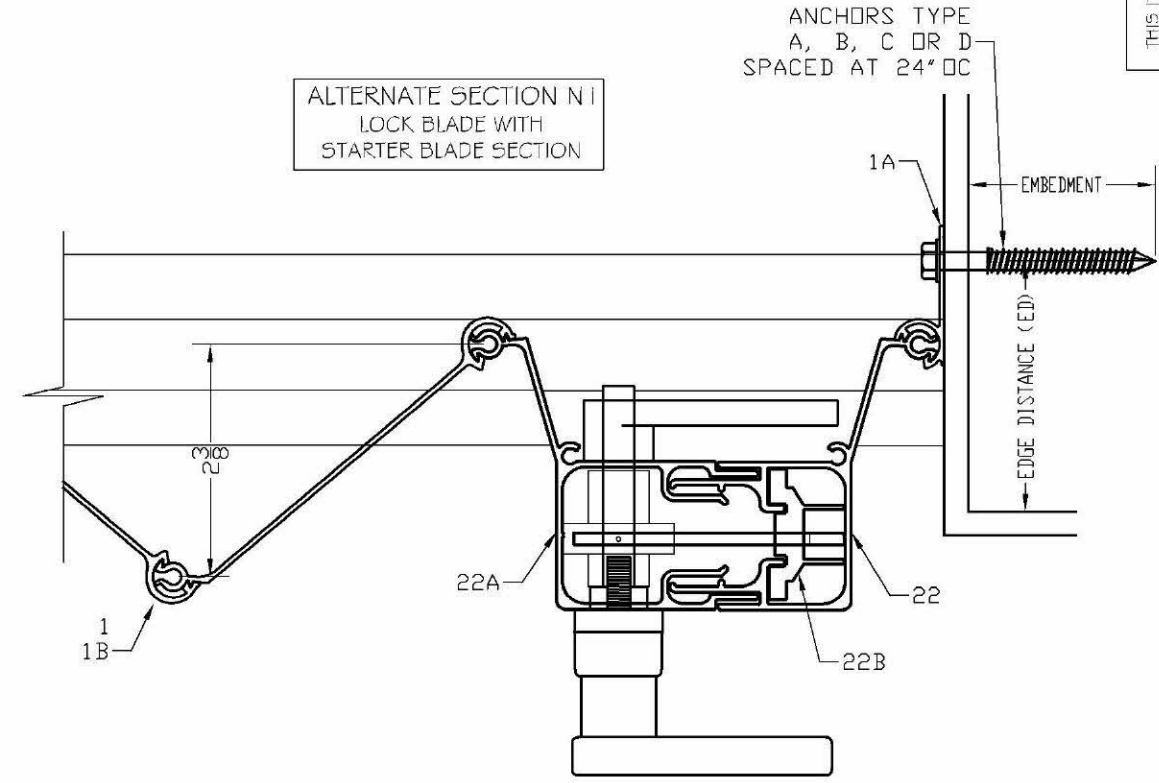


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SECTION N
LOCK BLADE SECTION
OPEN POSITION



ALTERNATE SECTION N |
LOCK BLADE WITH
STARTER BLADE SECTION



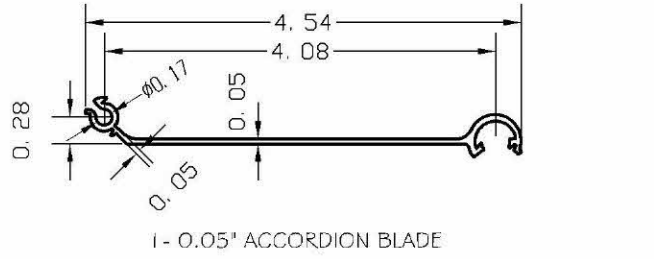
ANCHORS TYPE
A, B, C OR D
SPACED AT 24" OC

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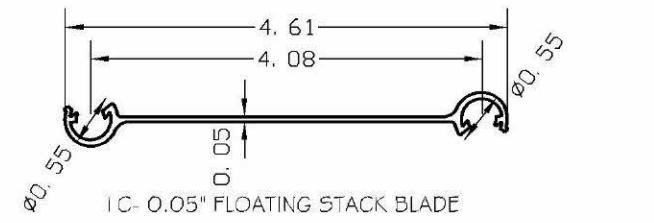
ASSOCIATION OF MANUFACTURERS:
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NATIONAL APPROVED SHUTTER ASSOCIATION L.L.C.
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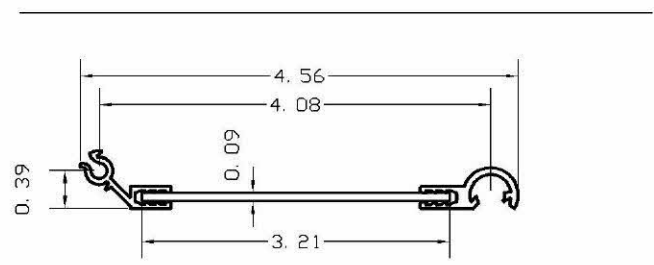
SHUTTER COMPONENTS



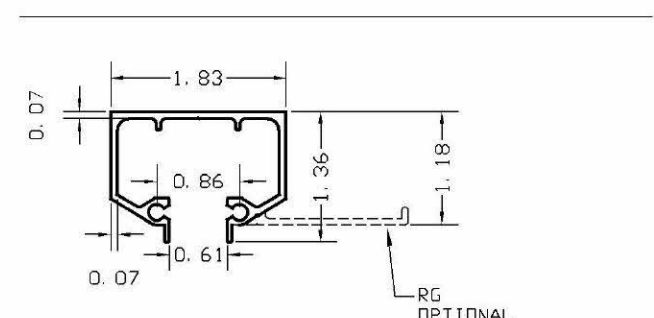
1- 0.05" ACCORDION BLADE



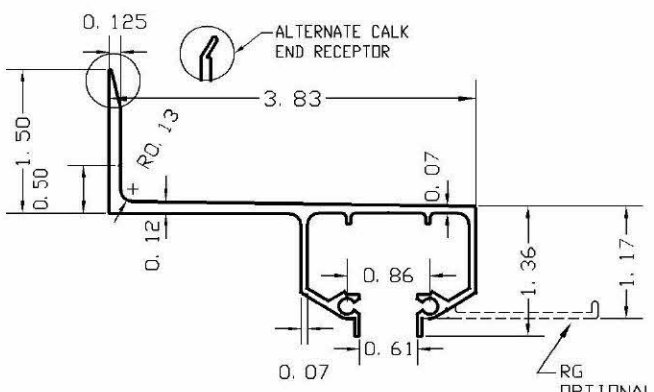
1C- 0.05" FLOATING STACK BLADE



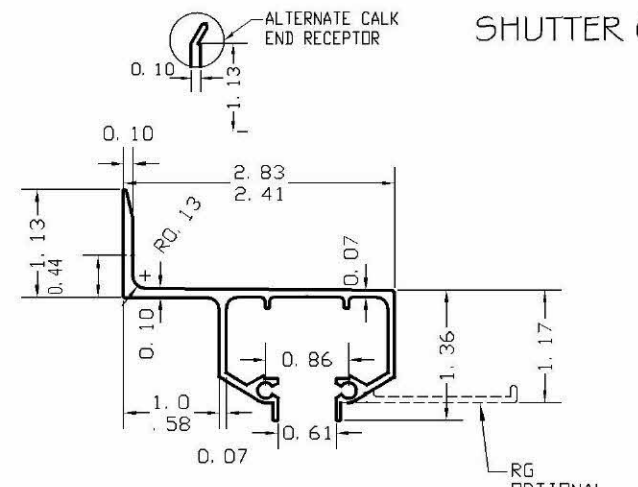
1B- COMPOSITE ALUMINUM / LEXAN BLADE
LEXAN POLYCARBONATE APPROVED AS PER NOA 13-07 17.01 XLT02UV



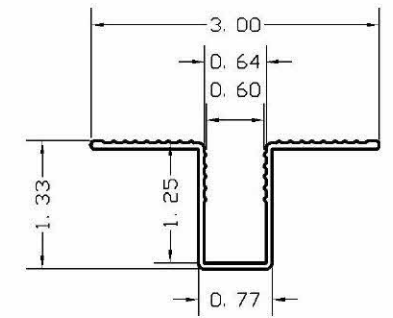
2- INSET TRACK W/ RG HEADER / SILL MOUNT
2.1- INSET TRACK W/O RG HEADER / SILL MOUNT



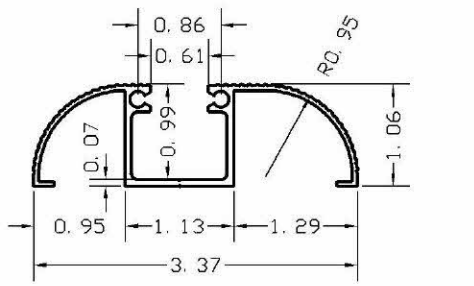
3A- 2" BUILD-OUT TRACK HEADER / SILL MOUNT
3A.1- 2" BO TRACK W/O RAIN GUARD (RG)



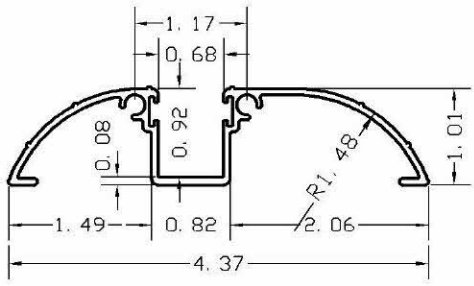
3- 1" // 1/2" BUILT-OUT TRACK HEADER / SILL MOUNT
3.1- 1" // 1/2" BO TRACK W/O RAIN GUARD (RG)



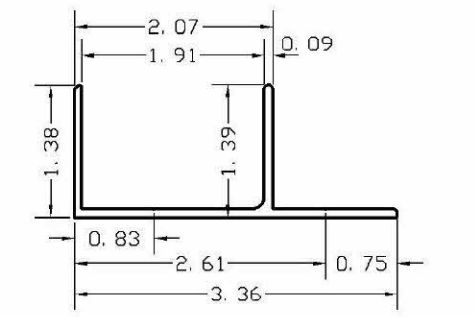
5- RECESSED TRACK SILL MOUNT ONLY



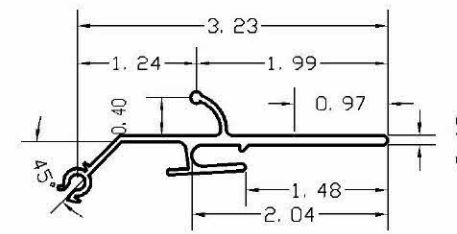
4- "A" TRACK SILL MOUNT ONLY



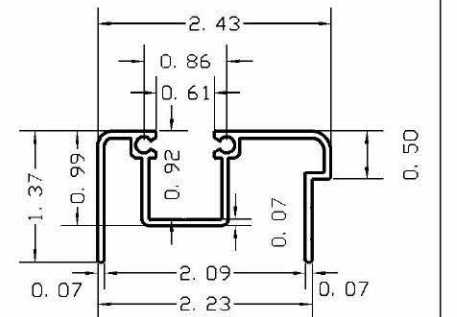
4.1- ALTERNATE "A" TRACK SILL MOUNT ONLY



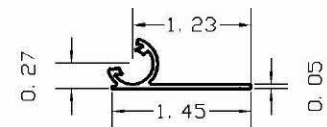
6A- ADJUSTABLE MALE HEADER / SILL MOUNT



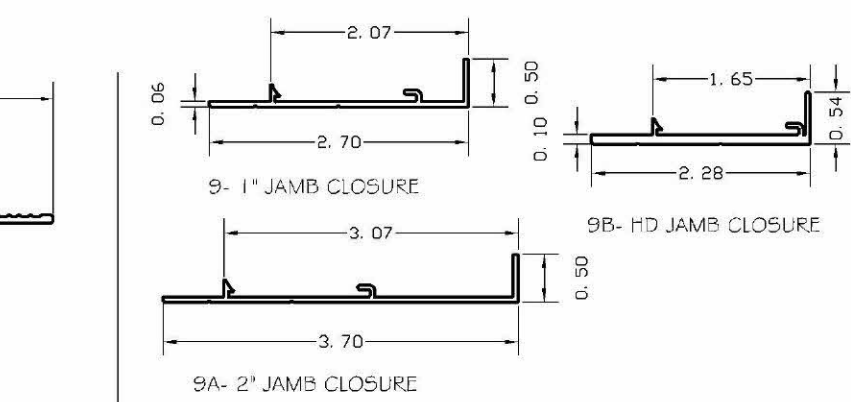
7- UNIMATE W/O LP LOCKING BLADES



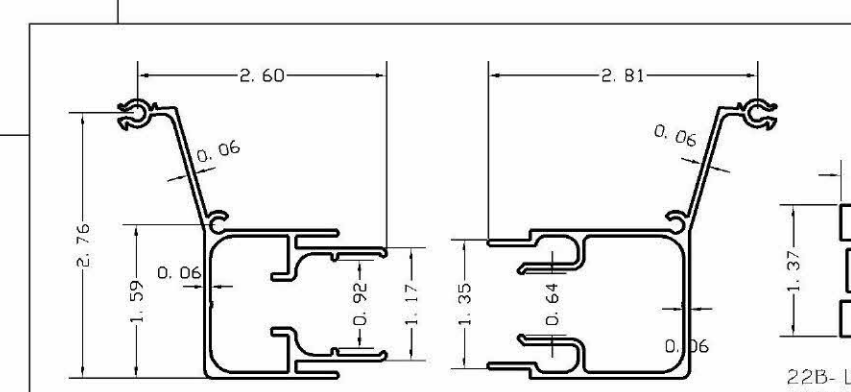
6- ADJUSTABLE FEMALE HEADER / SILL MOUNT



1A- STARTER BLADE



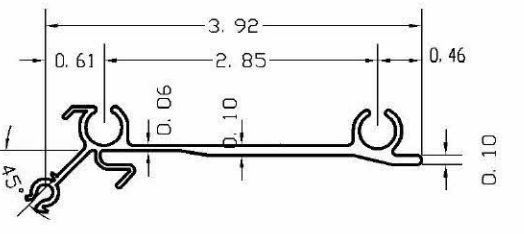
9- 1" JAMB CLOSURE



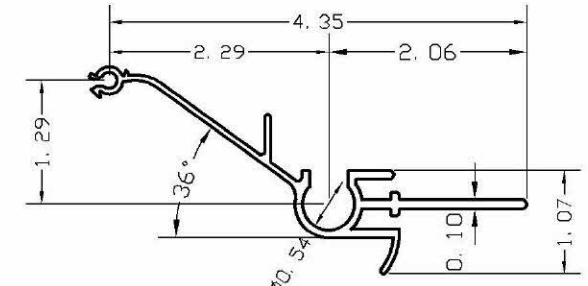
22- FEMALE STD LOCKING BLADE

22A- MALE STD LOCKING BLADE

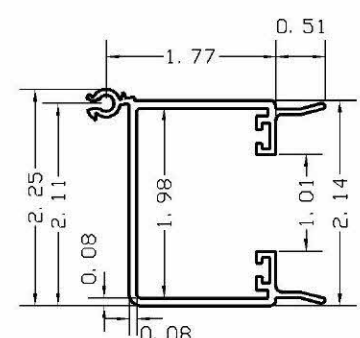
22B- LOCK KEEPER INSERT



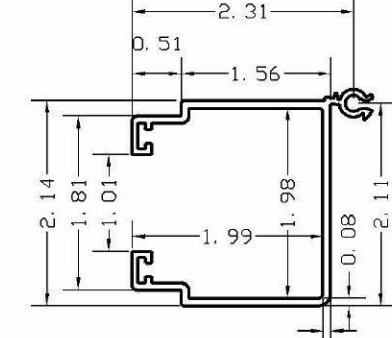
7A- UNIMATE W/ LP LOCKING BLADES



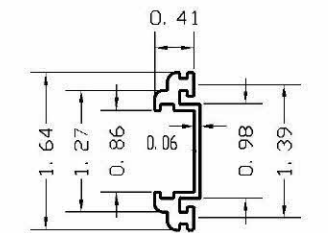
7B- UNIVERSAL LOCKING BLADES



8- FEMALE HD LOCKING BLADE



8A- MALE HD LOCKING BLADE



8B- ADAPTOR FILLER USE WITH 8 AND 8A



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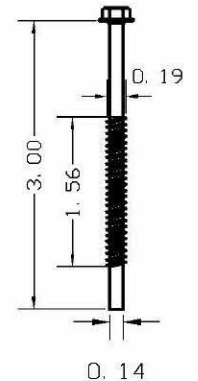
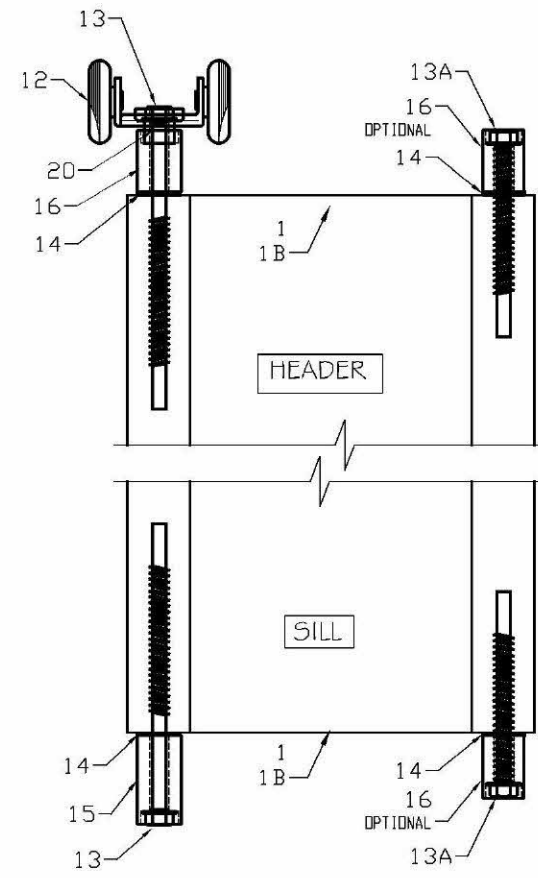
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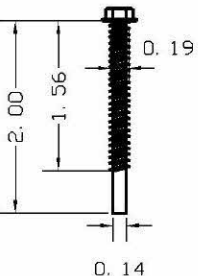
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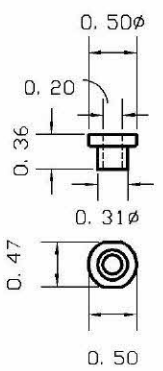
TYPICAL BLADE ASSEMBLY



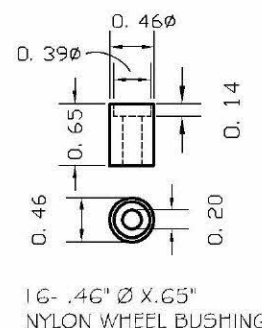
13- #10x3" HH BLADE SCREW
410 STAINLESS STEEL



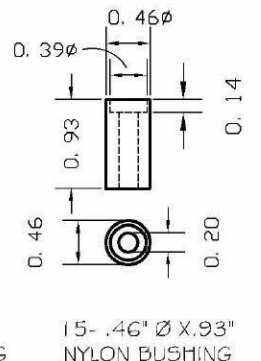
13A- #10x2" HH BLADE SCREW
410 STAINLESS STEEL



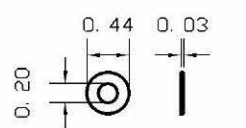
20- 1/2" Ø X 0.36" NYLON WHEEL SPACER



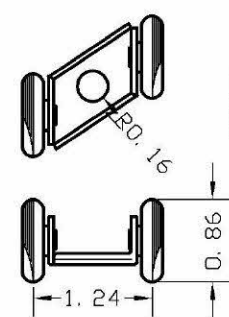
16- .46" Ø X.65" NYLON WHEEL BUSHING



15- .46" Ø X.93" NYLON BUSHING



14- 0.03" X 0.44" Ø STAINLESS STEEL FLAT WASHER



12- WHEEL CARRIER, STAMPED SS WITH NYLON WHEELS

BILL OF MATERIALS

ITEM	DESCRIPTION	MATERIAL	MANUFACTURER
1	BLADE	6063-T6 ALUMINUM	N.A.S.A.
1A	STARTER BLADE	6063-T6 ALUMINUM	N.A.S.A.
1B	COMPOSITE BLADE	6063-T6 / LEXAN	N.A.S.A.
1C	FLOATING STACK BLADE	6063-T6 ALUMINUM	N.A.S.A.
2	CEILING TRACK	6063-T6 ALUMINUM	N.A.S.A.
3	1" WALL MOUNT TRACK	6063-T6 ALUMINUM	N.A.S.A.
3A	2" WALL MOUNT TRACK	6063-T6 ALUMINUM	N.A.S.A.
4	"A" TRACK	6063-T6 ALUMINUM	N.A.S.A.
4.1	ALTERNATE "A" TRACK	6063-T6 ALUMINUM	N.A.S.A.
5	RECESSED TRACK	6063-T6 ALUMINUM	N.A.S.A.
6	ADJUSTABLE FEMALE TRACK	6063-T6 ALUMINUM	N.A.S.A.
6A	ADJUSTABLE MALE TRACK	6063-T6 ALUMINUM	N.A.S.A.
7	UNIMATE LOCK BLADE W/O LP	6063-T6 ALUMINUM	N.A.S.A.
7A	UNIMATE LOCK BLADE W/ LP	6063-T6 ALUMINUM	N.A.S.A.
8	HD FEMALE LOCK BLADE	6063-T6 ALUMINUM	N.A.S.A.
8A	HD MALE LOCK BLADE	6063-T6 ALUMINUM	N.A.S.A.
8B	HD ADAPTOR FILLER	6063-T6 ALUMINUM	N.A.S.A.
9	1" JAMB CLOSURE	6063-T6 ALUMINUM	N.A.S.A.
9A	2" JAMB CLOSURE	6063-T6 ALUMINUM	N.A.S.A.
10	1/4-2X ANGLE	6063-T6 ALUMINUM	N.A.S.A.
11	1/8-2X ANGLE	6063-T6 ALUMINUM	N.A.S.A.
12	WHEEL CARRIER	PLATED STEEL/ NYLON	N.A.S.A.
13	#10x3" HH BLADE SCREW	410 STAINLESS STEEL	N.A.S.A.
13A	#10x2" HH BLADE SCREW	410 STAINLESS STEEL	N.A.S.A.
14	0.44" Ø FLAT WASHER	STAINLESS STEEL	N.A.S.A.
15	0.46" Ø x 0.93" BUSHING	NYLON	N.A.S.A.
16	0.46" Ø x 0.65" WHEEL BUSHING	NYLON	N.A.S.A.
19	PUSH-BUTTON LOCK		
20	1/2"x 3/8" WHEEL SPACER	NYLON	N.A.S.A.
21	1/16"-1X2, 1X2.5, 1X4, 1.5X3 ANGLES	6063-T5 ALUMINUM	N.A.S.A.
22	STD FEMALE LOCK BLADE	6063-T6 ALUMINUM	N.A.S.A.
22A	STD MALE LOCK BLADE	6063-T6 ALUMINUM	N.A.S.A.
22B	STD LOCK KEEPER	6063-T6 ALUMINUM	N.A.S.A.

ANCHOR SCHEDULE

TYPE	DESCRIPTION	EMB	E.D.
A	1/4" ITW TAPCON INTO 3000 PSI CONCRETE	1.75	3.0
	1/4" DEWALT ULTRACON INTO 2700 PSI CONCRETE	1.75	2.5
A1	1/4" ITW TAPCON INTO CONCRETE BLOCK	1.25	3.0
	1/4" DEWALT ULTRACON INTO CONCRETE BLOCK	1.25	2.5
B	1/4-20X1 ALL POINTS SOLID-SET INTO 3.0 KSI CONCRETE	0.875	3.0
B1	1/4-20X1 ALL POINTS SOLID-SET INTO CONCRETE BLOCK	0.875	3.0
C	1/4" WOOD LAG SCREW INTO G=.55 WOOD	1.50	0.75
D	1/4"-14 SELF DRILLING SCREWS INTO 1/8" STEEL OR ALUMINUM	---	0.75
E	1/4" CRETE-FLEX 554 INTO 3000 PSI CONCRETE	1.75	3.0
E1	1/4" CRETE-FLEX 554 INTO CONCRETE BLOCK (2000 PSI)	1.25	3.0

- NOTES:
- 1- ED: EDGE DISTANCE SHALL BE BEYOND WALL DRESSING
 - 2- EMB: EMBEDMENT SHALL BE BEYOND WALL DRESSING
 - 3- 1/4" TAPCON, 1/4" CRETE-FLEX, #14 WOOD SCREWS CAN BE USED IN REPLACE OF 1/4" LAG SCREWS
 - 4- ANCHORS TYPE A CAN BE USED WITH REDUCED EDGE DISTANCE (3.0>E.D.>=1 1/4") WHEN THE TABLE ANCHOR SPACING VALUES ON SHEET 13/14 ARE MULTIPLIED BY 0.95. THIS IS APPLICABLE ONLY FOR MOUNTS TYPE A, B, B1, B2, B3, B4 AND C
 - 5- THE ANCHOR TYPE A1 CAN BE USE WITH REDUCED EDGE DISTANCE OF 1" FOR ITW TAPCONS AND 2" FOR ULTRACONS FOR INSTALLATIONS WITH MOUNTS TYPE A, B, B1, B2, B3, B4 AND C. THE TABLE VALUES ON SHEET 13 CAN BE USED W/O REDUCTION.



Pedro De Figueiredo
PE 52609
08/11/2023

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ANCHOR SPACING TABLE
30 PSF <= PD <=70 PSF

PD		MOUNT TYPE																																								
		A, B1, B2, B3, B4								B, C							D					E					GH					G					G1, F					
		ANCHOR TYPES								ANCHOR TYPES							ANCHOR TYPES					ANCHOR TYPES					ANCHOR TYPES					ANCHOR TYPES										
		SPAN	A	A1	B	B1	C	D	E	E1	A	A1	B	B1	C	D	E	E1	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D
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ANCHOR SPACING TABLE
80 PSF <= PD <= 160 PSF



Pedro De Figueiredo
PE 52609
08/11/2023

ENGINEERING SERVICES - CA 32459
9715 W. BROWARD BLVD., 247
PLANTATION, FL 33324
ENGINEER SEAL
PEDRO DE FIGUEIREDO
PFM/F@AOL.COM
FL 52609



PRODUCT:
SUPERNOVA
EXTRUDED ALUMINUM
ACCORDION SHUTTER
LARGE MISSILE IMPACT RESISTANT

ASSOCIATION OF MANUFACTURERS:
N.A.S.A
NATIONAL APPROVED SHUTTER ASSOCIATION LLC.
MIRAMAR, FL 33027

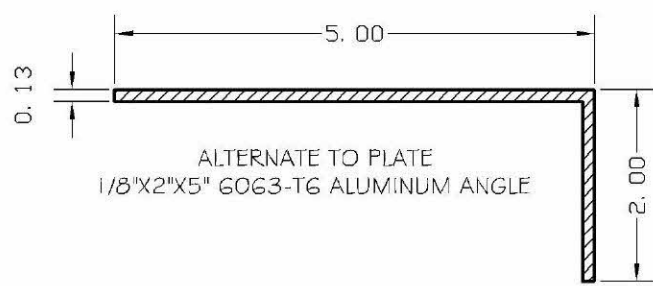
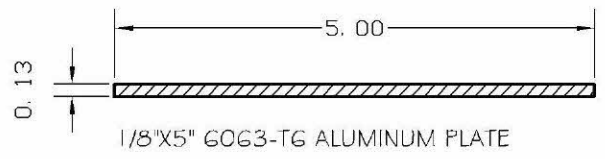
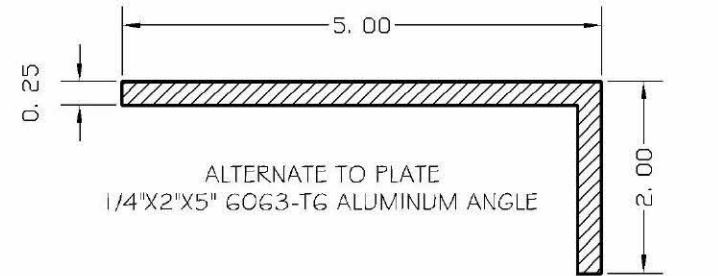
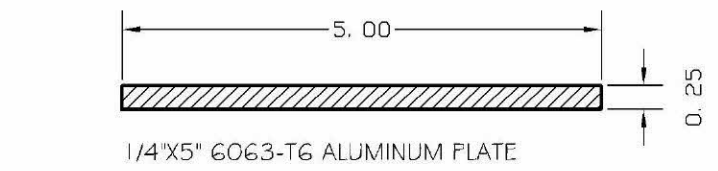
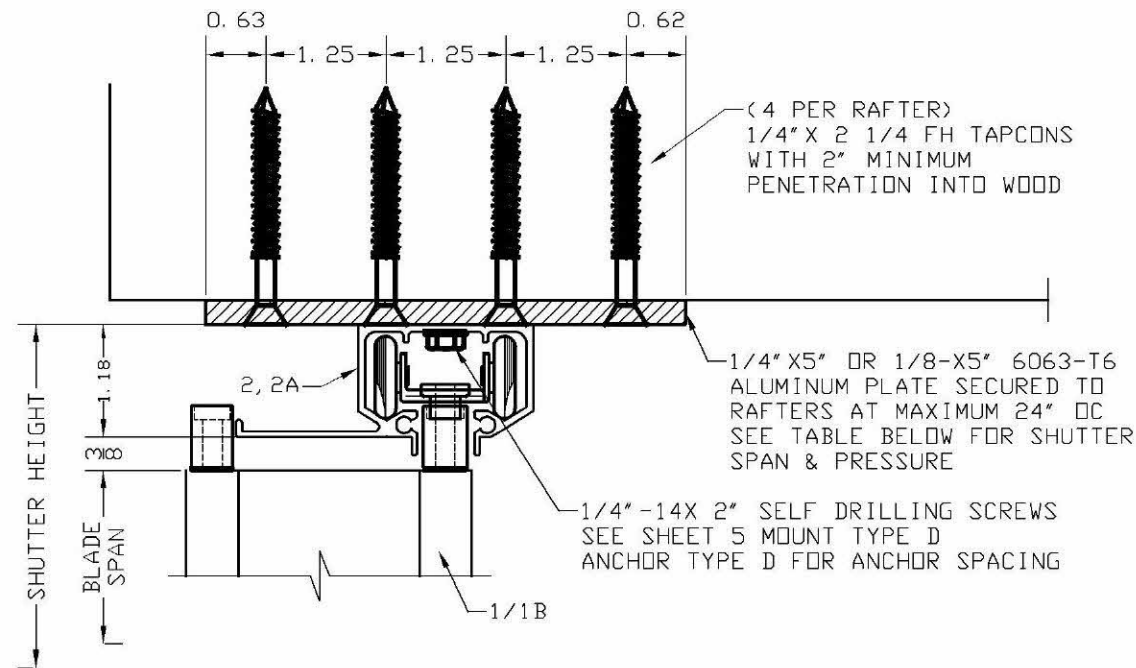
SCALE:
NA
DATE:
08/09/2023
DRAWING #
23-120
SHEET
14 OF 18

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		MOUNT TYPE																																								
		A, B1, B2, B3, B4								B, C								D					E					GH					G					G1, F				
		ANCHOR TYPES								ANCHOR TYPES								ANCHOR TYPES					ANCHOR TYPES					ANCHOR TYPES					ANCHOR TYPES					ANCHOR TYPES				
PD	SPAN	A	A1	B	B1	C	D	E	E1	A	A1	B	B1	C	D	E	E1	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
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NOTE: SEE SHEET 12 FOR ANCHOR TYPE AND SELECTION

SECTION X
 TRACK 2 OR 2A INSET MOUNT
 SECURED TO AN ALUMINUM PLATE
 BETWEEN WOOD TRUSSES



ALLOWABLE DESIGNED PRESSURES
 FOR SECTION X WITH 1/4" ALUMINUM PLATE

BLADE SPAN (IN)	MAXIMUM DESIGNED PRESSURE (PSF)	
	BLADE I	BLADE IB
60	±159	±159
72	±132	±132
84	±113	±113
90	±106	±106
108	± 88	± 88
126	± 68	± 68
132	± 62	± 61
144	+48, -52	+45, -47
162	+30, -40	+28, -33

ALLOWABLE DESIGNED PRESSURES
 FOR SECTION X WITH 1/8" ALUMINUM PLATE

BLADE SPAN (IN)	MAXIMUM DESIGNED PRESSURE (PSF)	
	BLADE I	BLADE IB
60	±99	±99
72	±82	±82
84	±71	±71
90	±66	±66
108	±55	±55
126	±47	±47
132	±45	±45
144	±41	±41
162	±30	+28, -30

NOTE: I - LINEAR INTERPOLATION IS ALLOWABLE BETWEEN BLADE SPAN SIZES



Pedro De Figueiredo
 PE 52609
 08/11/2023

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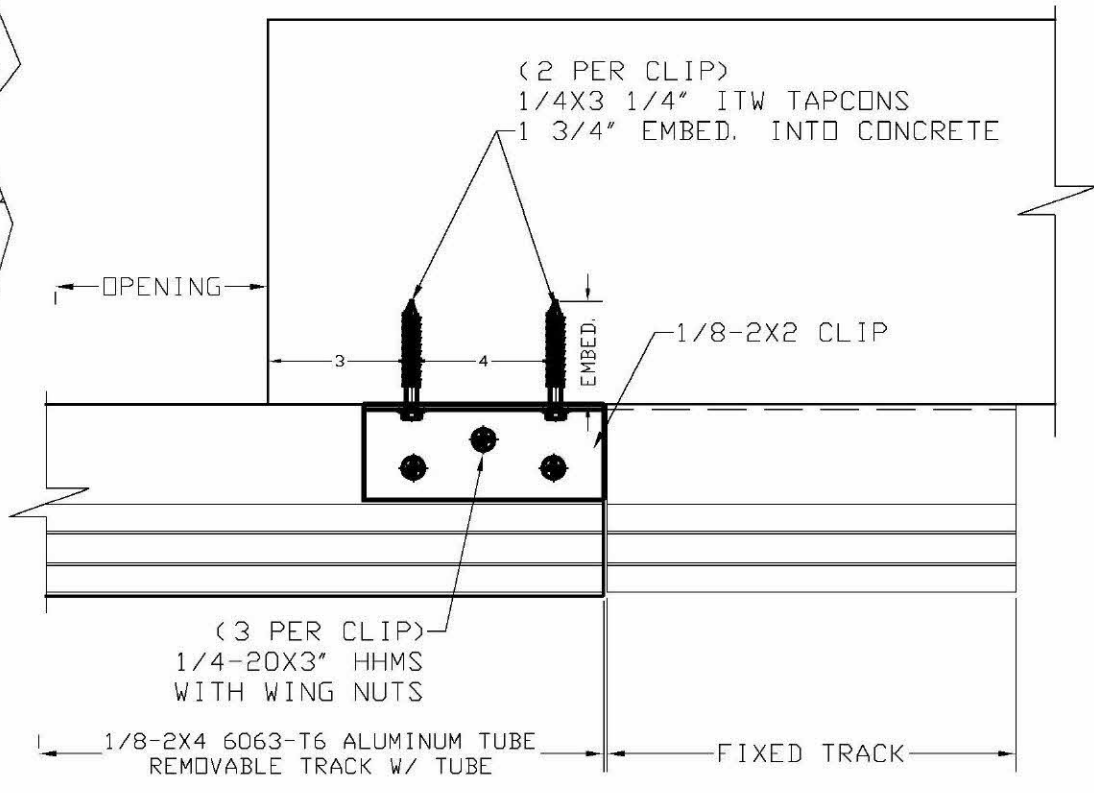
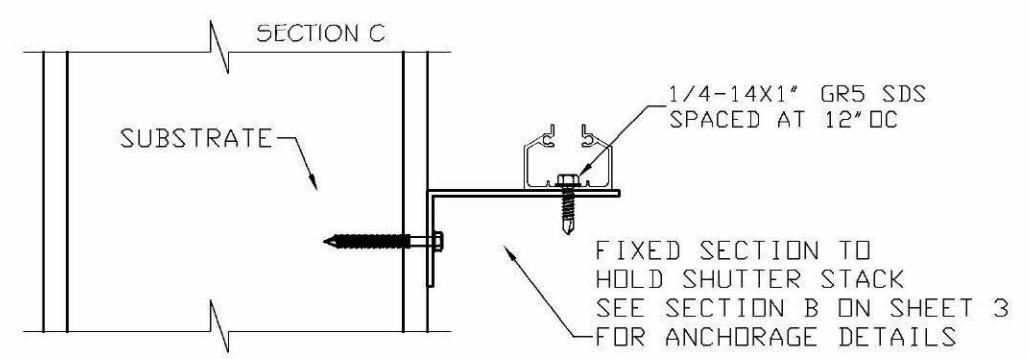
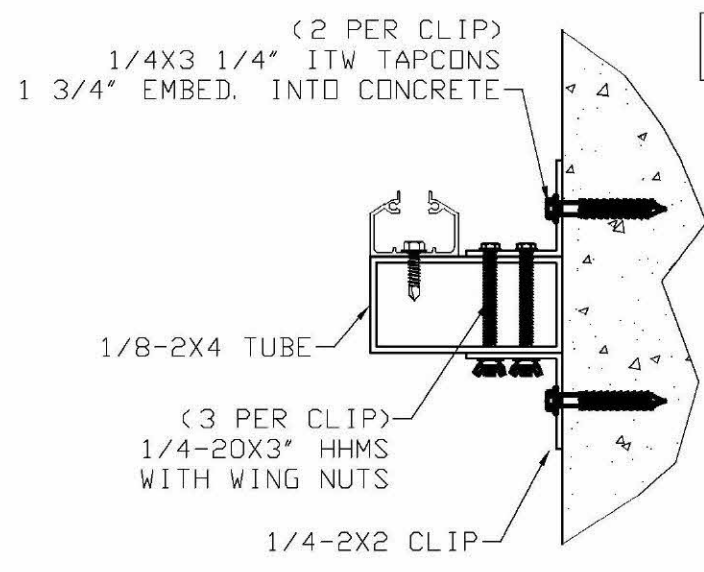
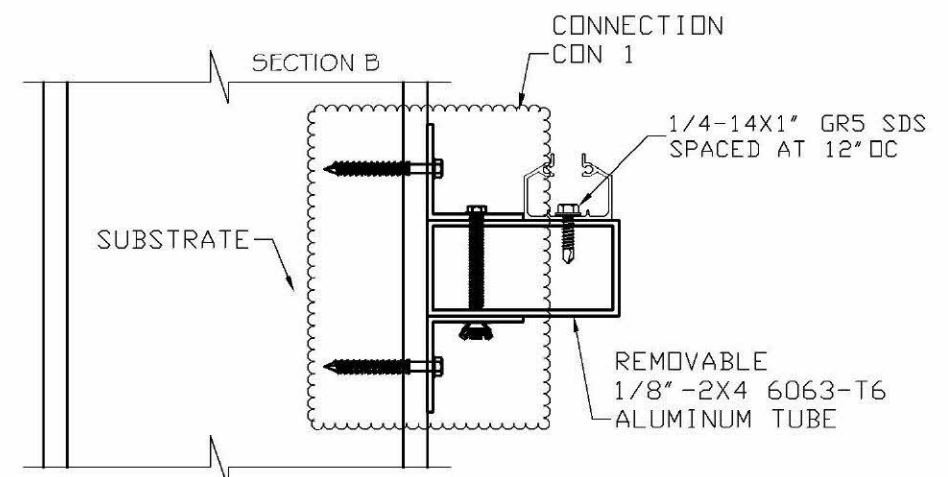
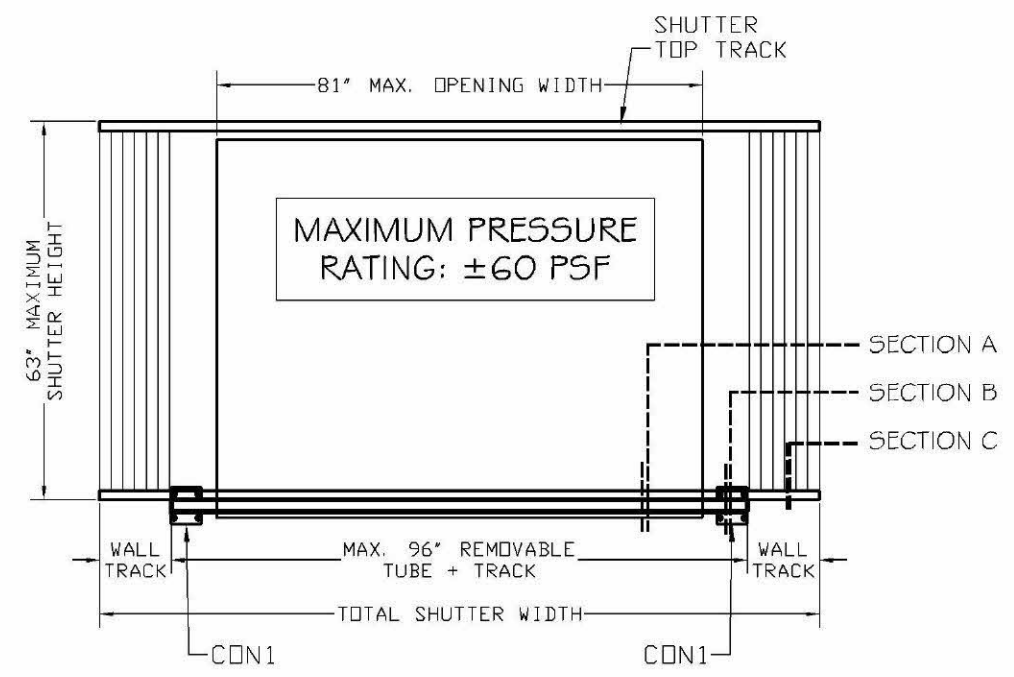
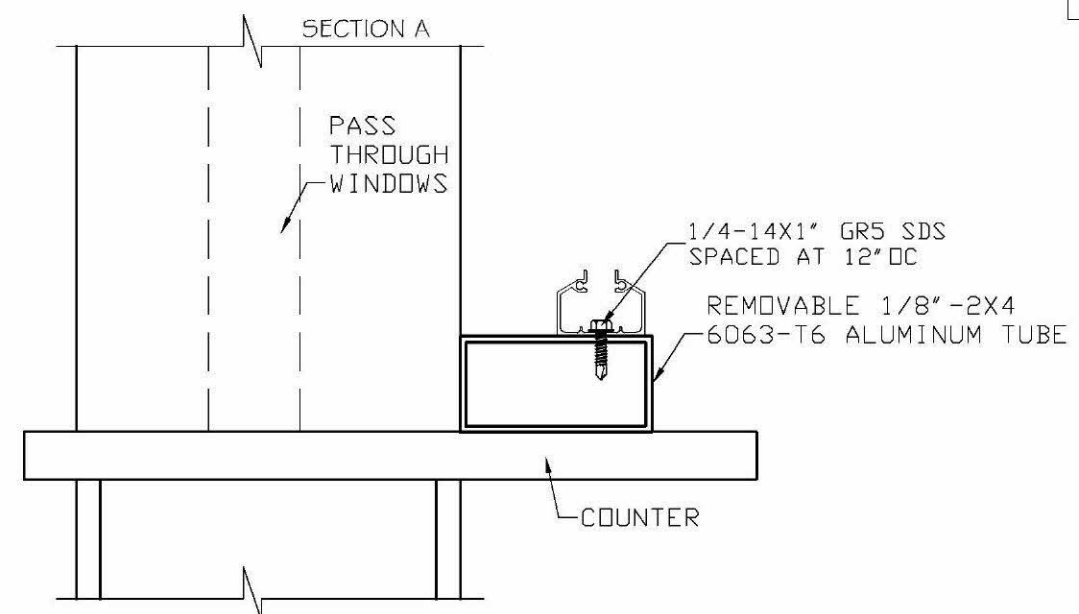
PRODUCT:
SUPERNOVA
 EXTRUDED ALUMINUM
 ACCORDION SHUTTER
 LARGE MISSILE IMPACT RESISTANT

ASSOCIATION OF MANUFACTURERS:
N.A.S.A
 NATIONAL APPROVED SHUTTER ASSOCIATION LLC.
 MIRAMAR, FL 33027

SCALE:
 NA
 DATE:
 08/09/2023
 DRAWING #
 23-120
 SHEET
 15 OF 18

ENGINEERING SERVICES - CA 32459
 9715 W. BROWARD BLVD., 247
 PLANTATION, FL 33324
 PEDRO DE FIGUEIREDO
 PE 52609
 PFMF@AOL.COM

SECTION CT
REMOVABLE SILL
OVER COUNTER TOP



Pedro De Figueiredo
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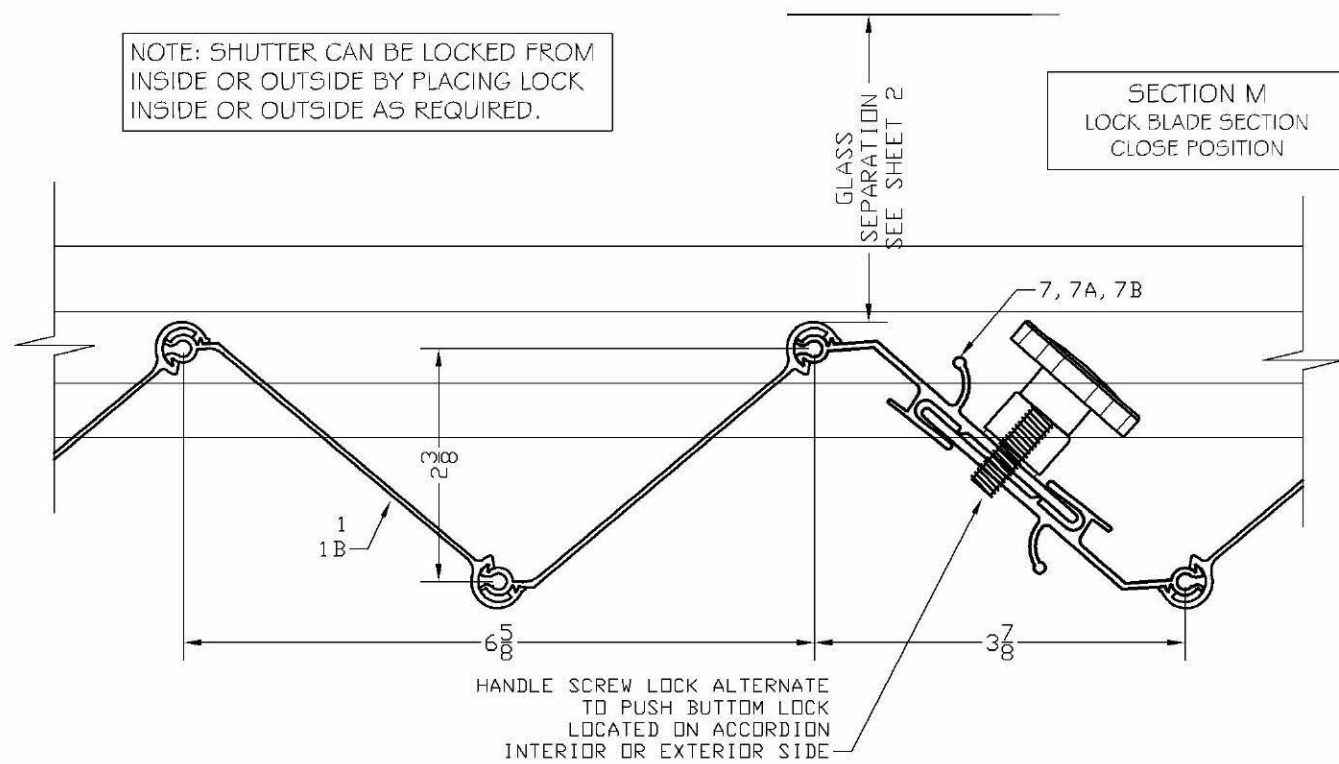
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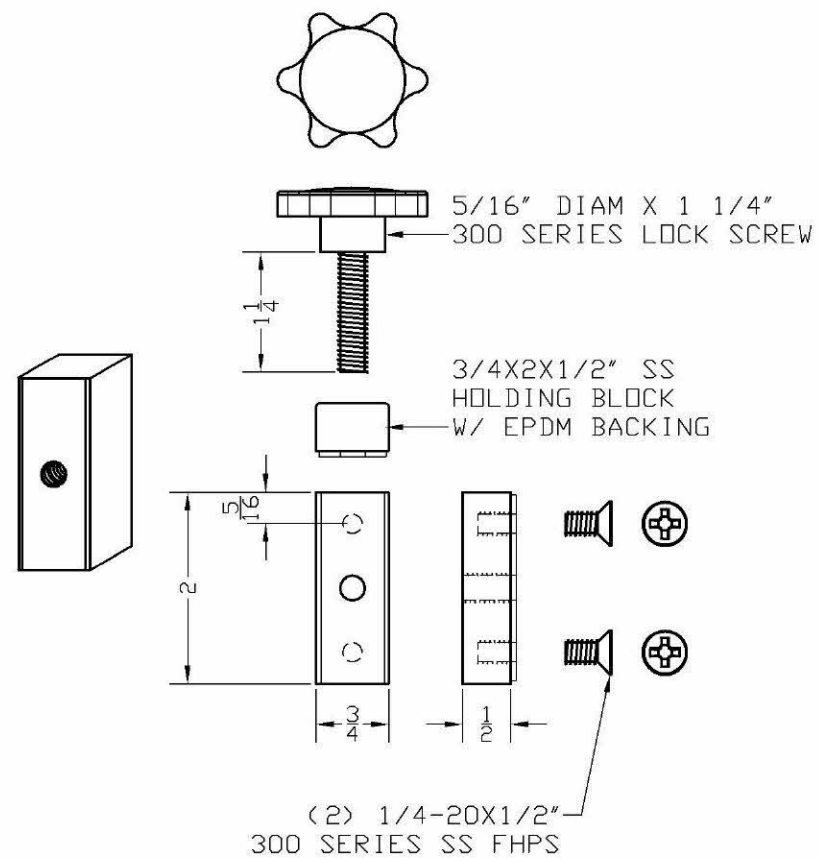
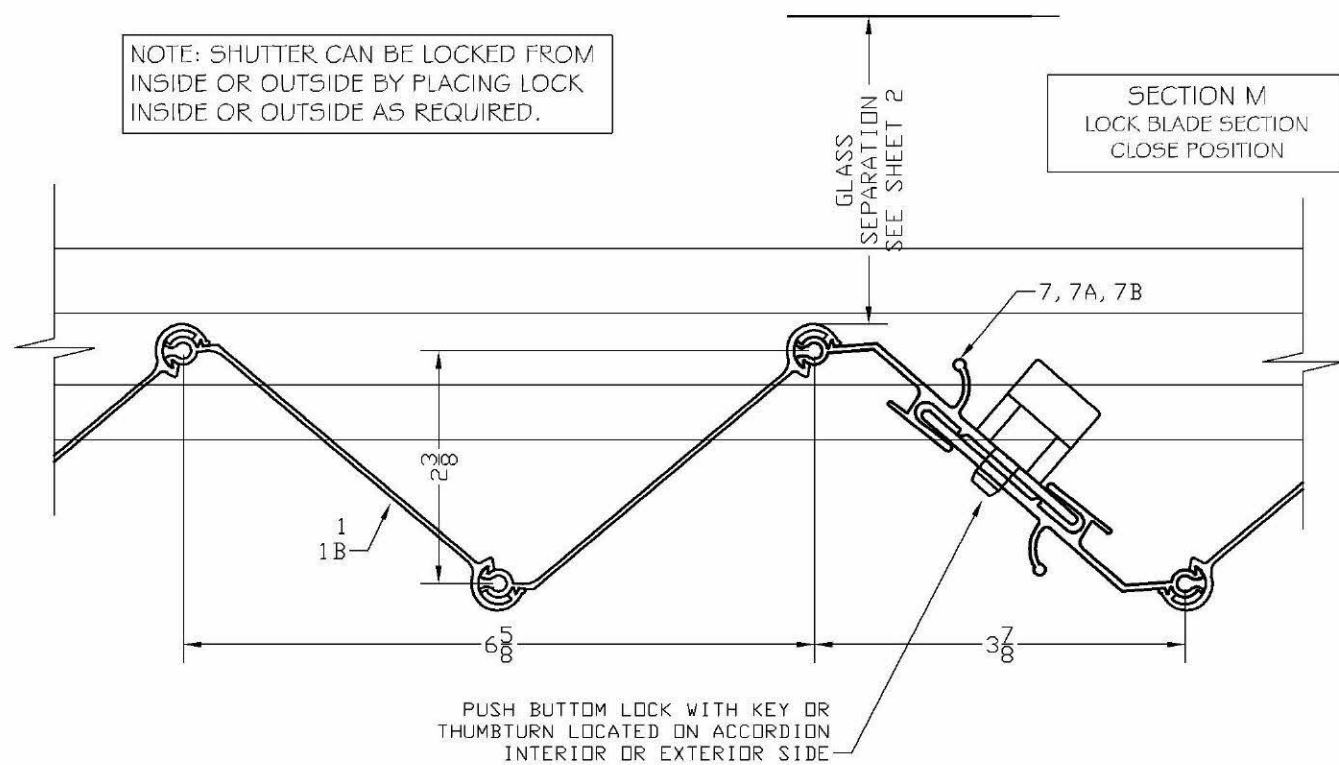
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DATE:
08/09/2023
DRAWING #
23-120
SHEET
16 OF 18

TYPICAL HORIZONTAL
UNIMATE LOCK SECTIONS M
WITH PUSH BUTTON LOCK OR HANDLE SCREW LOCK

NOTE: SHUTTER CAN BE LOCKED FROM
INSIDE OR OUTSIDE BY PLACING LOCK
INSIDE OR OUTSIDE AS REQUIRED.



NOTE: SHUTTER CAN BE LOCKED FROM
INSIDE OR OUTSIDE BY PLACING LOCK
INSIDE OR OUTSIDE AS REQUIRED.



Pedro De Figueiredo
PE 52609
08/11/2023

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PRODUCT:
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ACCORDION SHUTTER
LARGE MISSILE IMPACT RESISTANT

ASSOCIATION OF MANUFACTURERS:
N.A.S.A
NATIONAL APPROVED SHUTTER ASSOCIATION L.L.C.
MIRAMAR, FL 33027

SCALE:

NA

DATE:

08/09/2023

DRAWING #

23-120

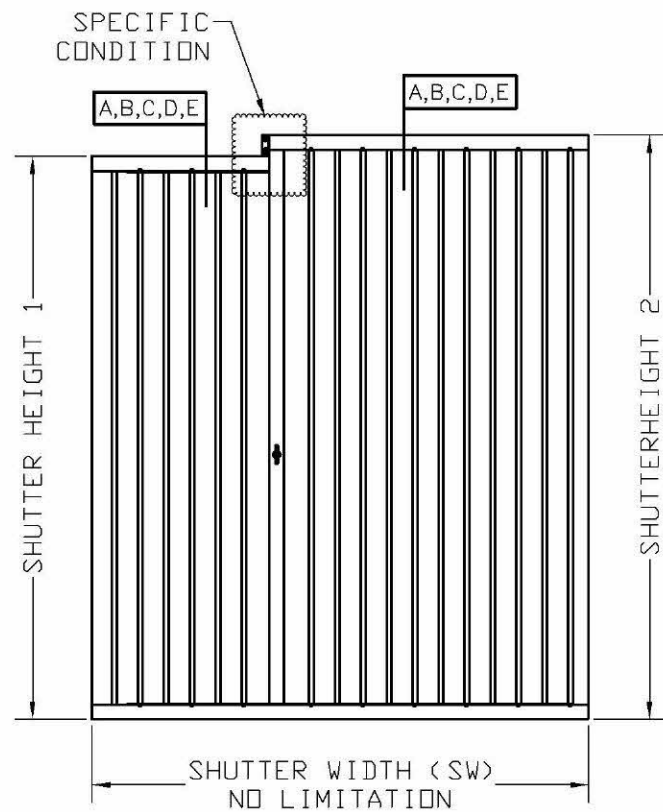
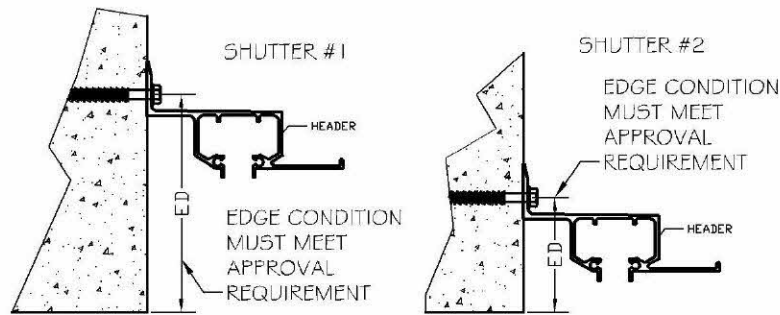
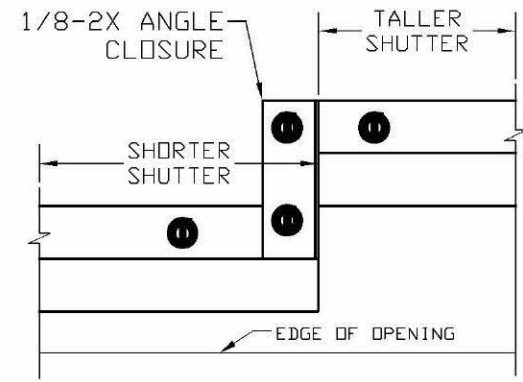
SHEET

17 OF 18

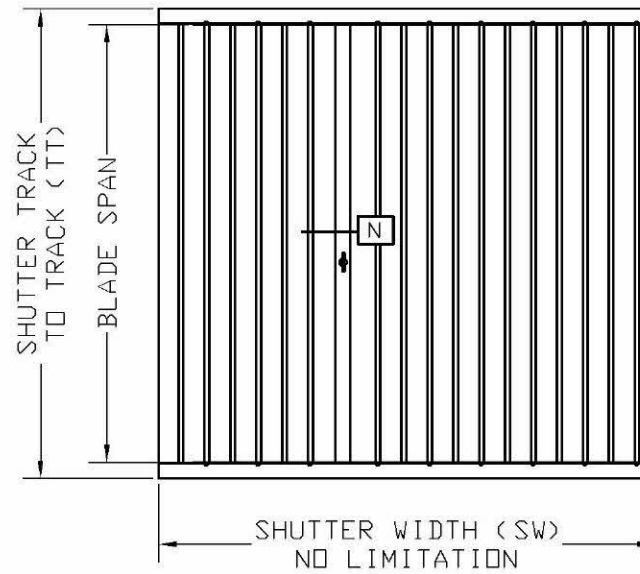
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PLANTATION, FL 33324
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PEDRO DE FIGUEIREDO
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FL 52609

SHUTTERS STACKS WITH DIFFERENT HEIGHTS:

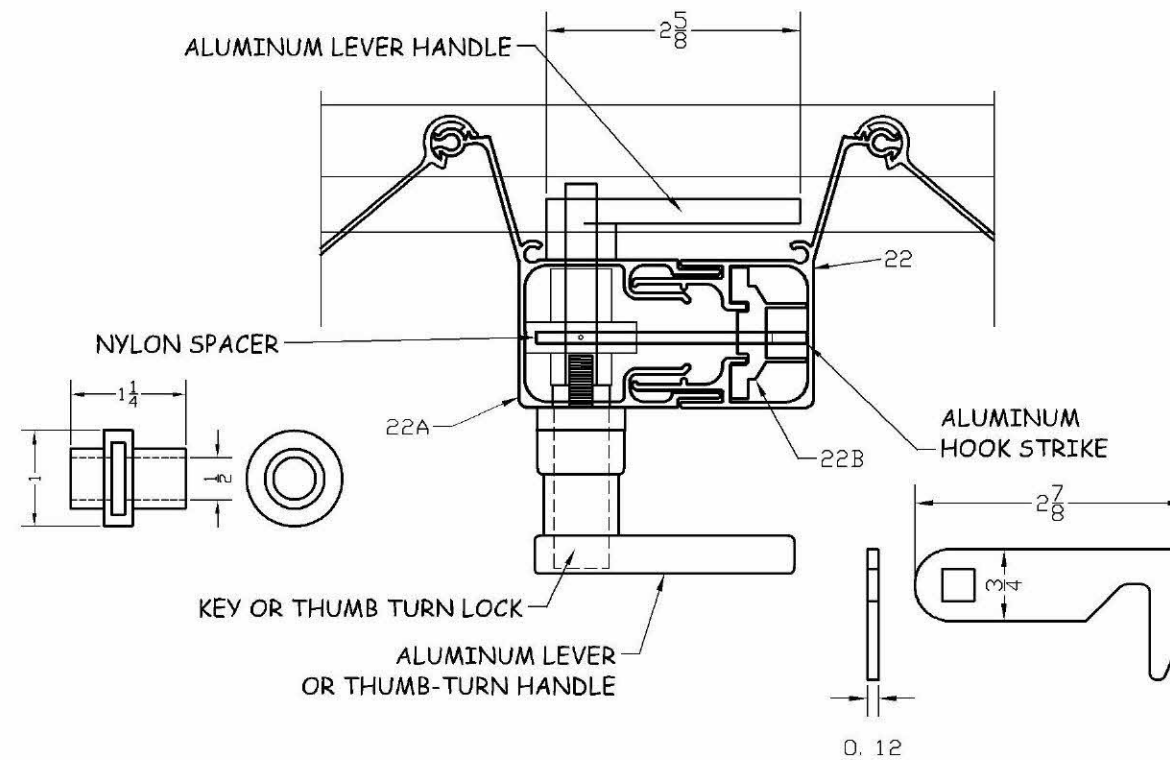
- 1- SOME FIELD CONDITIONS WILL CREATE AN INSTALLATION REQUIREMENT THAT THE LEFT AND THE RIGHT STACKS OF THE SHUTTER BE WITH DIFFERENT HEIGHTS. THE LOCK STILES WILL BE THE BRIDGE TO CONNECT BOTH STACKS AT THE CLOSED POSITION.
- 2- THIS APPLICATION IS NOT VALID FOR INSET MOUNT HEAD CONDITIONS



ACCORDION SHUTTER
LOCK TYPE N DETAILS



STANDARD ACCORDION LEVER HANDLE LOCK
INSTALLATION CAN BE DONE WITH
LOCK ACCESS FROM INSIDE OR OUTSIDE



Pedro De Figueiredo
PE 52609
08/11/2023

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PRODUCT:
SUPERNOVA
EXTRUDED ALUMINUM
ACCORDION SHUTTER
LARGE MISSILE IMPACT RESISTANT

ASSOCIATION OF MANUFACTURERS:
N.A.S.A
NATIONAL APPROVED SHUTTER ASSOCIATION L.L.C.
MIRAMAR, FL 33027

SCALE:
NA
DATE:
08/09/2023
DRAWING #
23-120
SHEET
18 OF 18

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