

SUPERNOVA ACCORDION SHUTTER

EXTRUDED ALUMINUM ACCORDION SHUTTER

FLORIDA STATE APPROVAL

CODE VERSION: FLORIDA BUILDING CODE 2020 - 7th EDITION
APPROVED FOR USE IN HVHZ AND OUTSIDE HVHZ
CATEGORY: SHUTTERS -- SUBCATEGORY: ACCORDION
IMPACT RESISTANT: (LEVEL D) - LARGE & SMALL MISSILE



Pedro De Figueiredo
09/01/2020

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9249 CHELSEA DR. S
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GENERAL NOTES: (FLORIDA BUILDING CODE 2020 - 7th 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 2020 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 SECTION 1703.5. 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 7-16. 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.

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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17	LOCK UNIMATE SECTION "M" WITH PUSH BUTTON OR HANDLE SCREW LOCK

STANDARD COMPLIANCE:
ASTM E330, E1996 (LEVEL D MISSILE)
TAS 201, 202, 203 (LARGE & SMALL MISSILE)
ASCE 7-16, ADM-15, NDS-18

ASSOCIATION:
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L.L.C.

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PRODUCT:
SUPERNOVA
EXTRUDED ALUMINUM
ACCORDION SHUTTER
LARGE MISSILE IMPACT RESISTANT

ASSOCIATION OF MANUFACTURERS:
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SCALE:
NA
DATE:
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DRAWING #
20-144
SHEET
01 OF 17

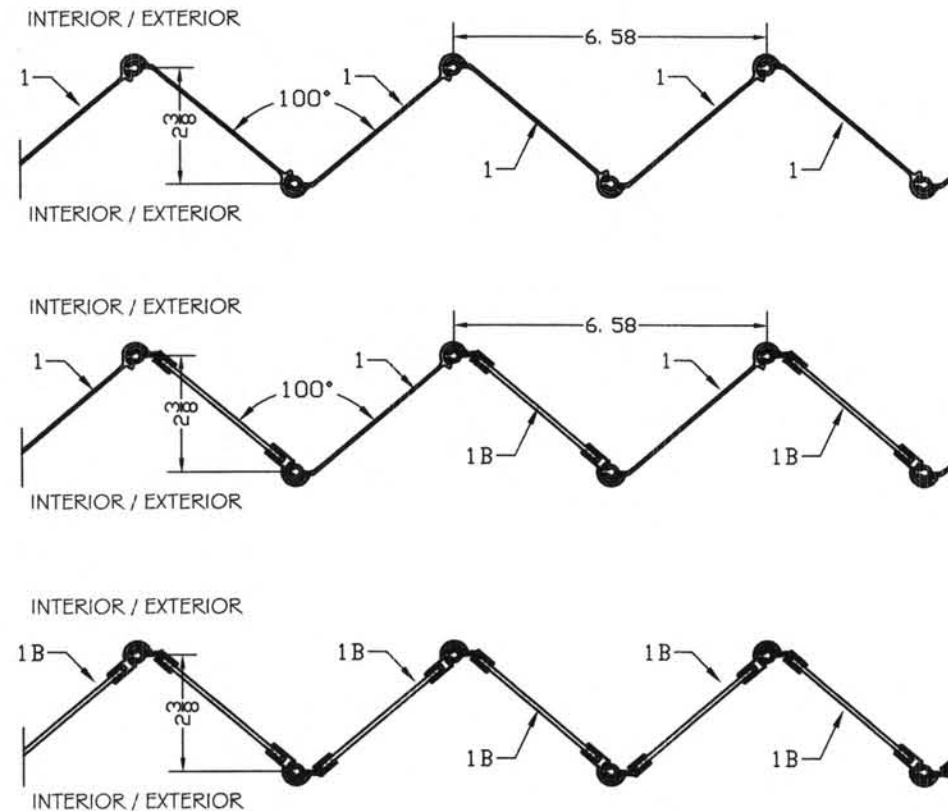
TABLE I
MAXIMUM ALLOWABLE #1 BLADE
SHUTTER SPAN X PRESSURE

BLADE SPAN INCHES	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

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

BLADE SPAN INCHES	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



ALL ALUMINUM BLADES

COMBINATION
ALUMINUM / LEXAN BLADES
BLADES CAN BE ARRANGED IN MANY
COMBINATIONS AS REQUIRED

ALL LEXAN BLADES



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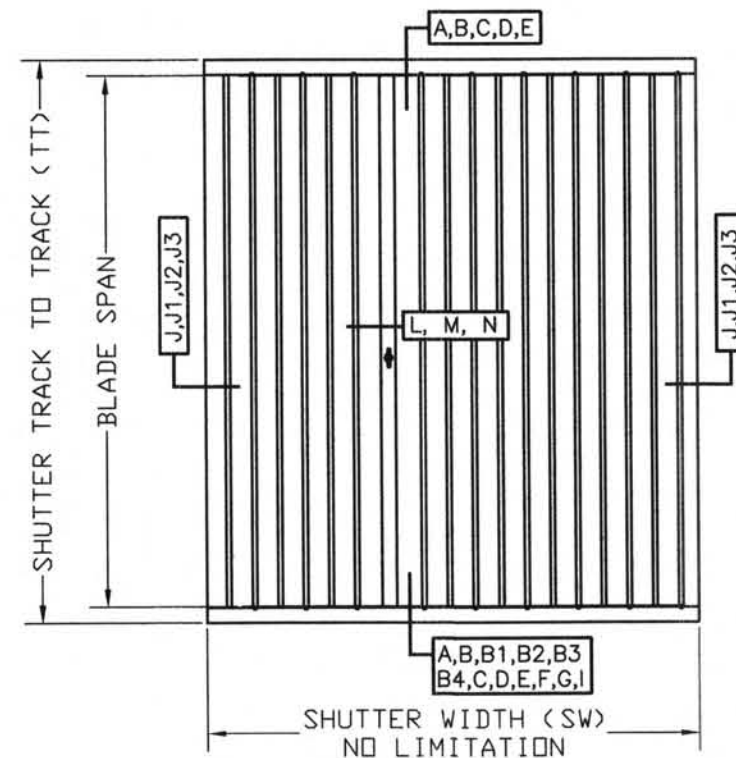


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TYPICAL ELEVATION



TYPICAL CROSS SECTION

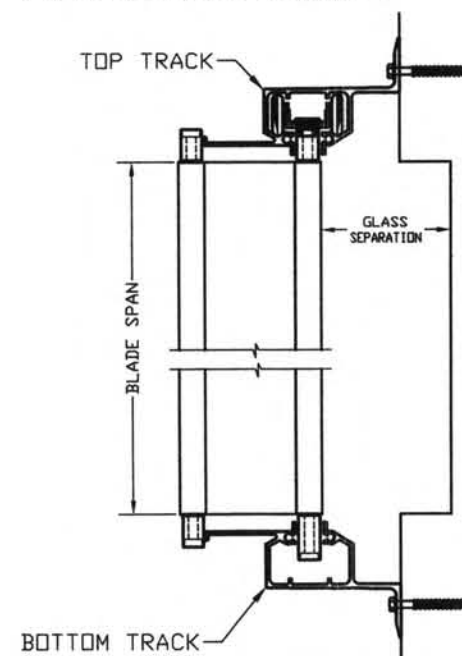
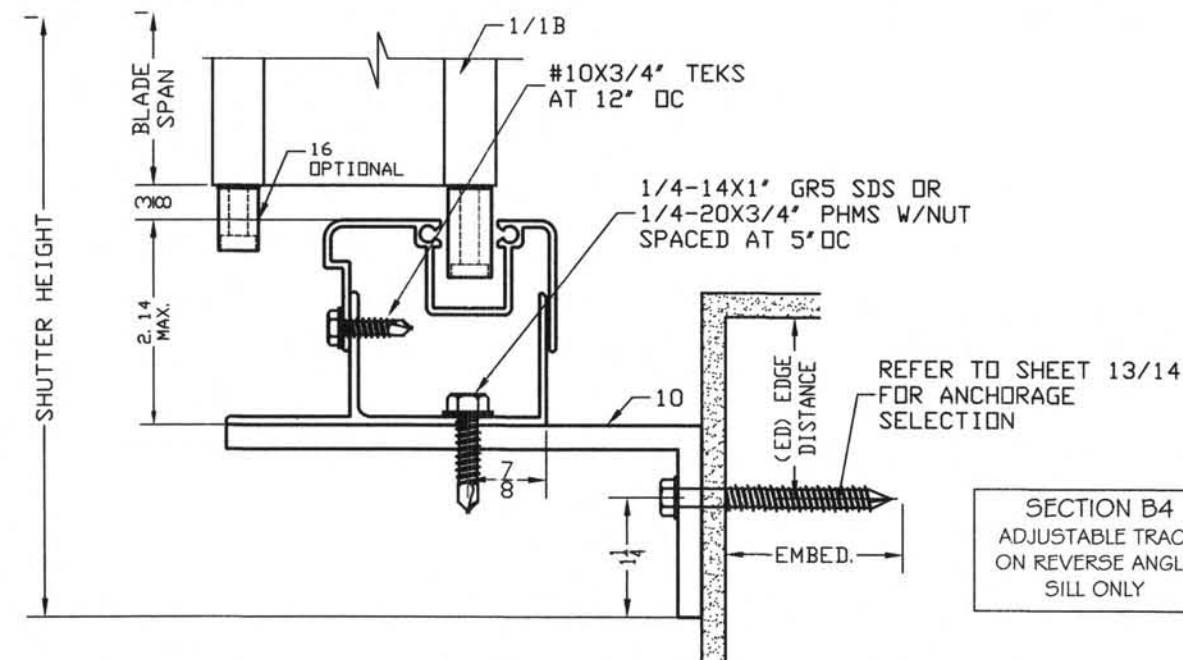
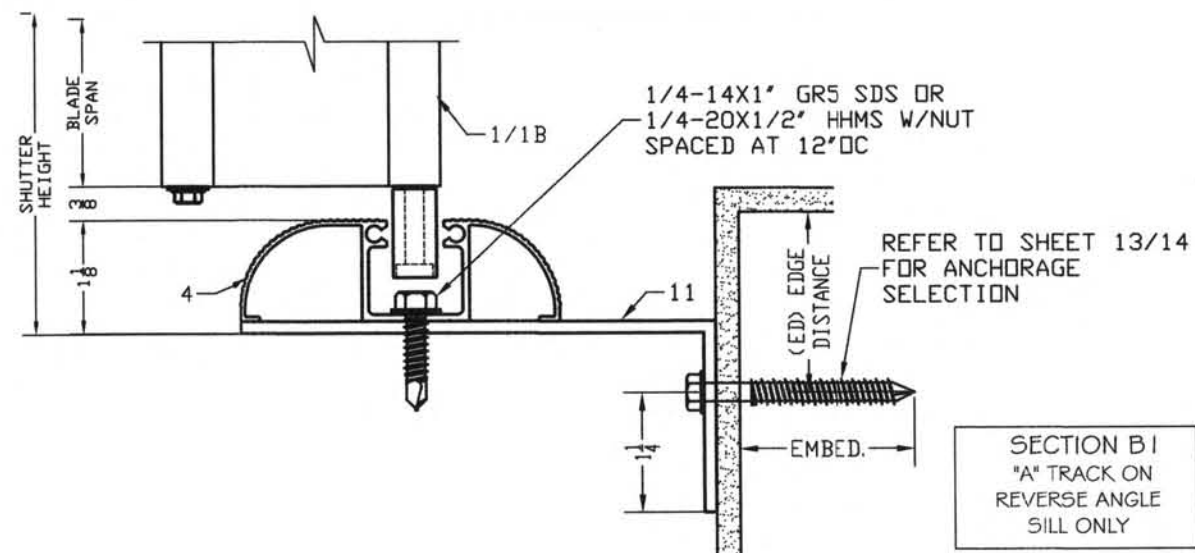
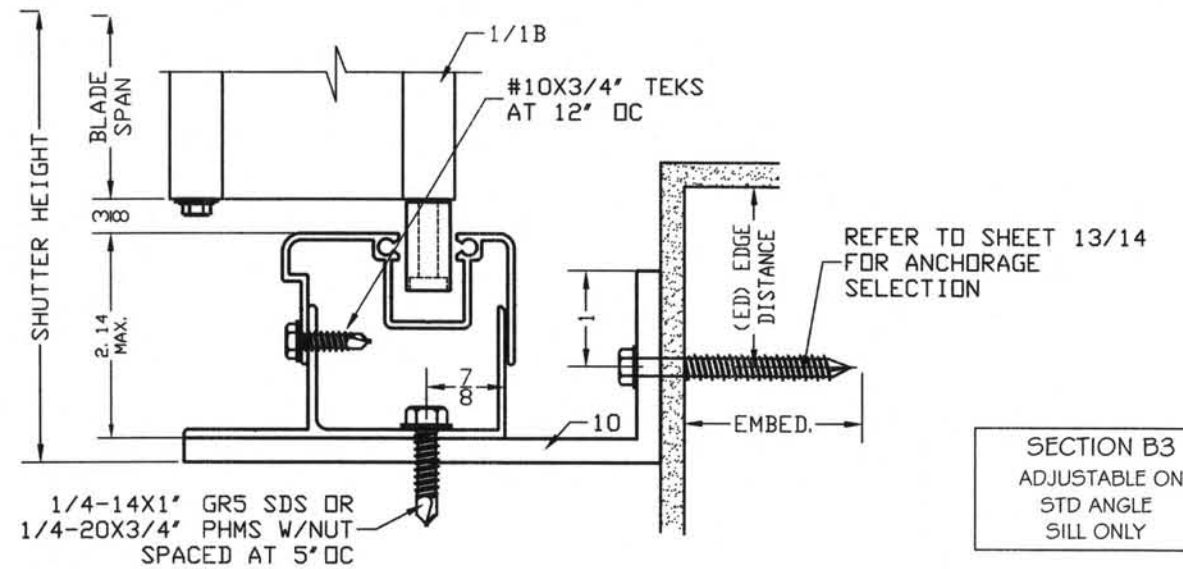
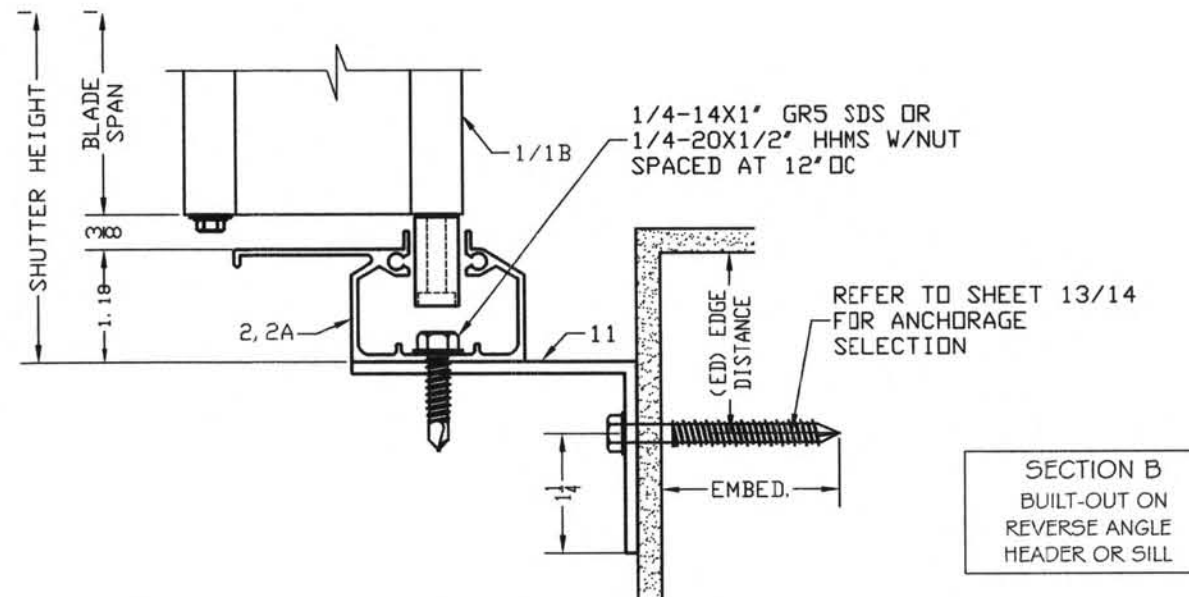
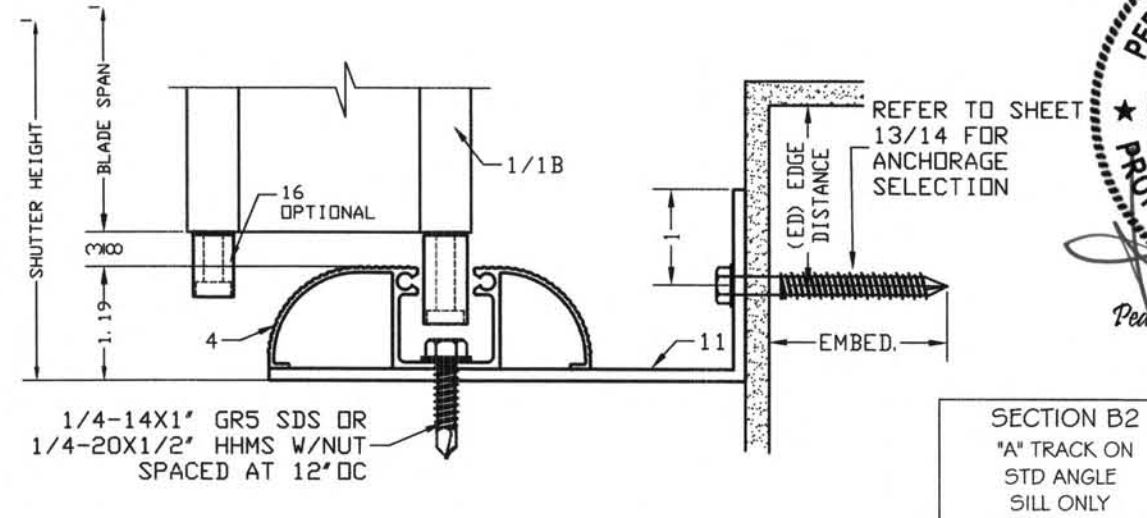
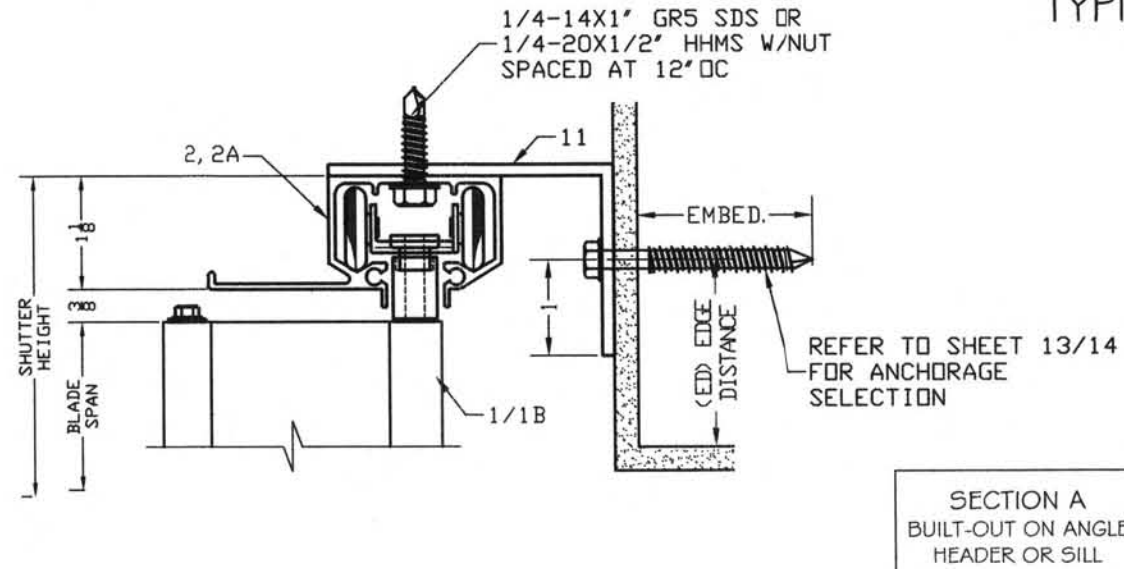


TABLE 2
MINIMUM SHUTTER SEPARATION FROM GLAZING

BLADE TYPE	GLAZING SEPARATION (INCHES)		
	BLADE SPAN		
	<=60"	<=104"	<=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 7-16.
3- WHEN SHUTTER IS ASSEMBLED WITH BOTH TYPES OF BLADES THE LARGEST GLASS SEPARATION SHALL APPLY.

TYPICAL SECTIONS



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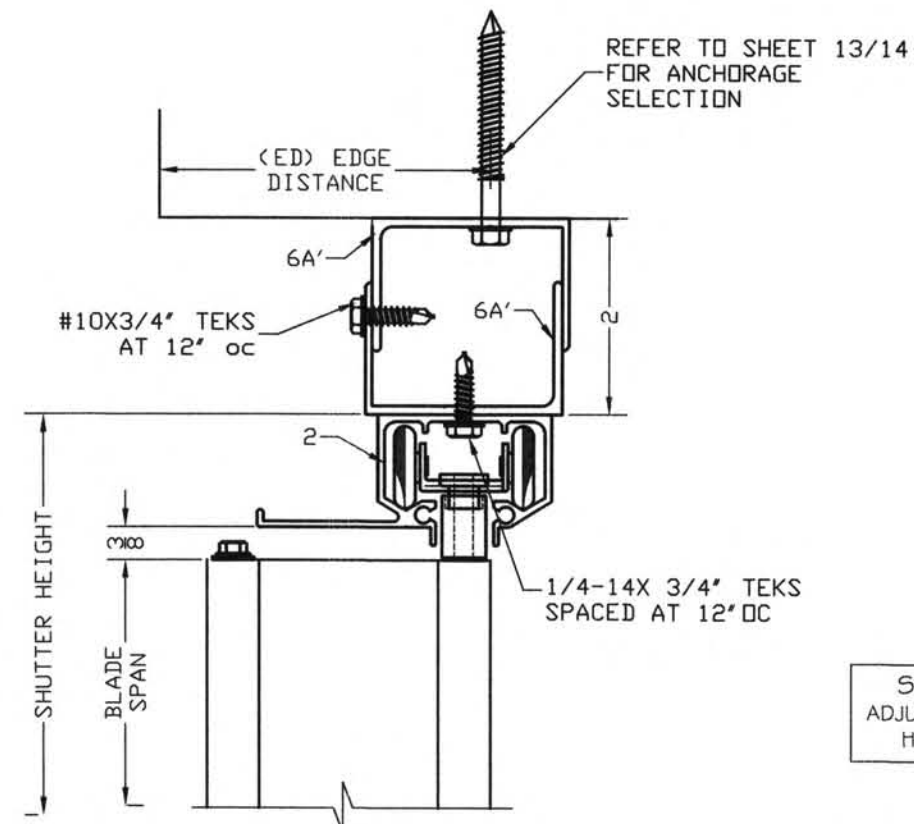
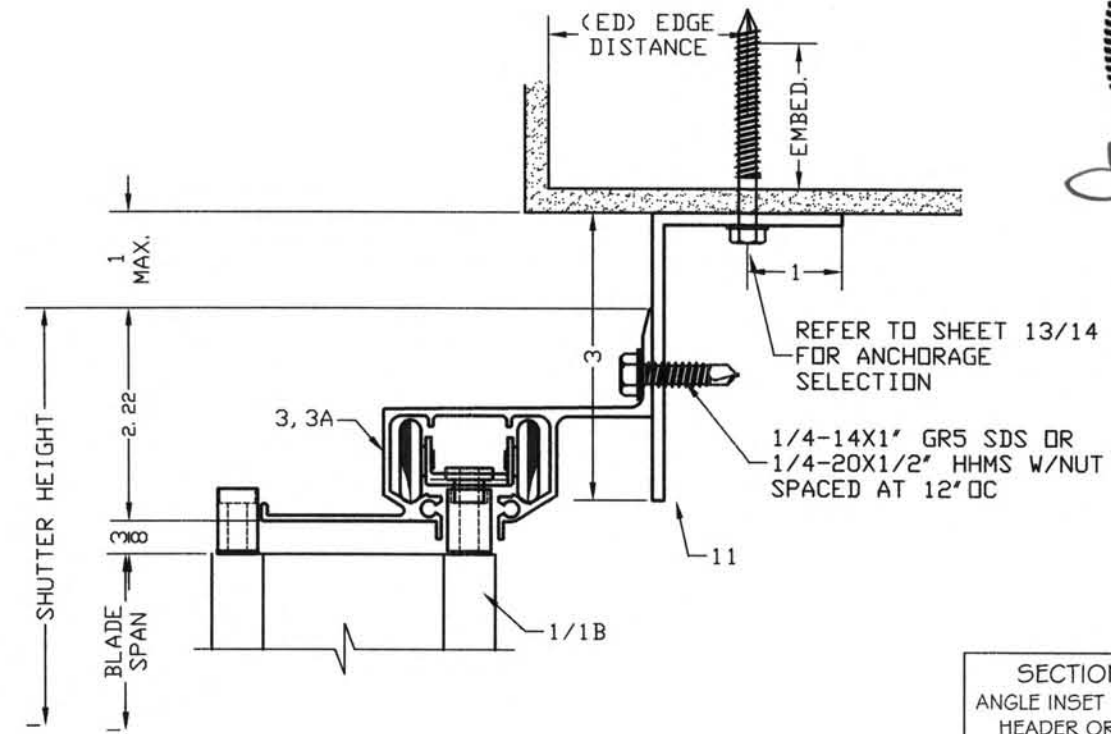
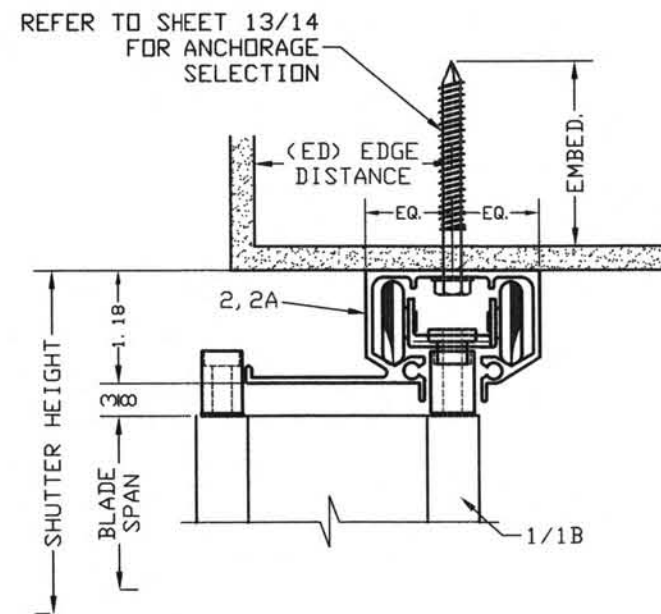
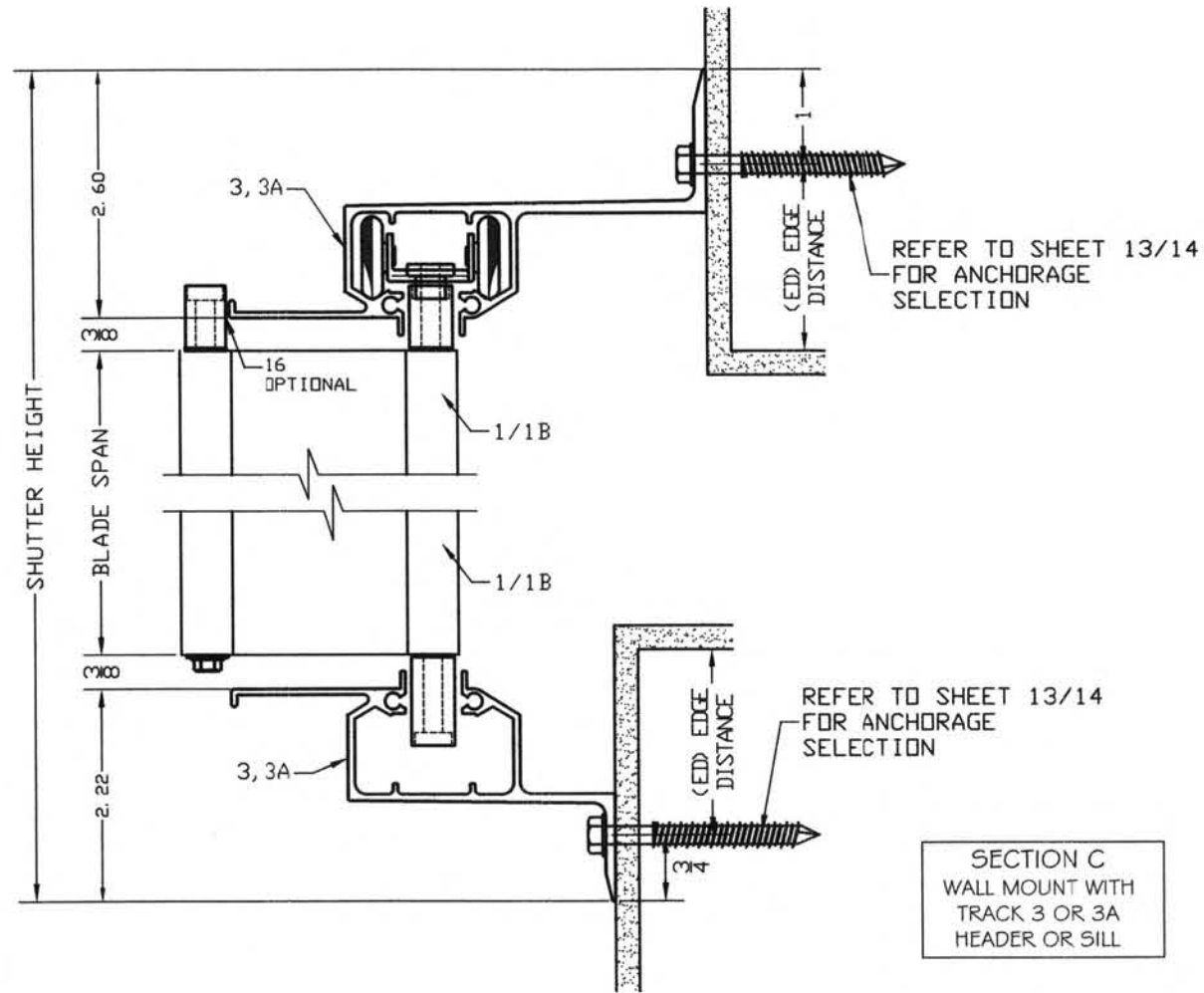


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TYPICAL SECTIONS

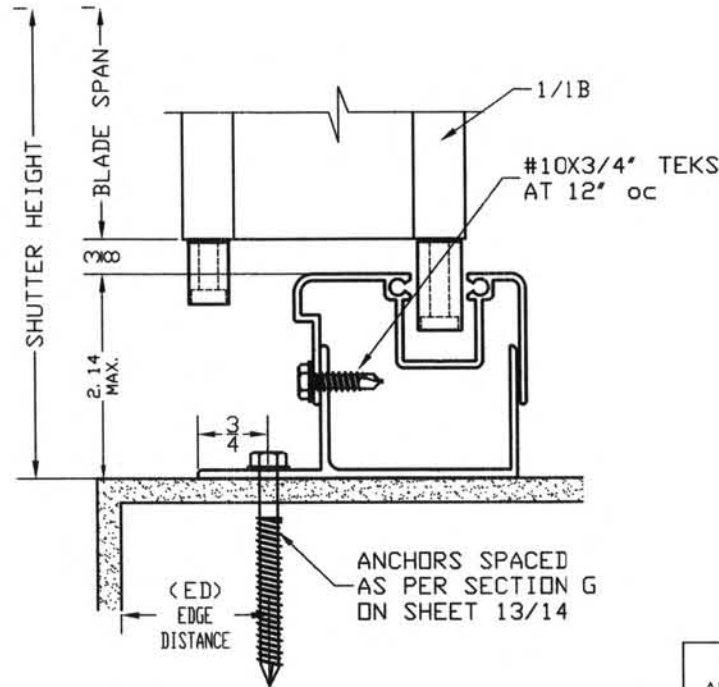


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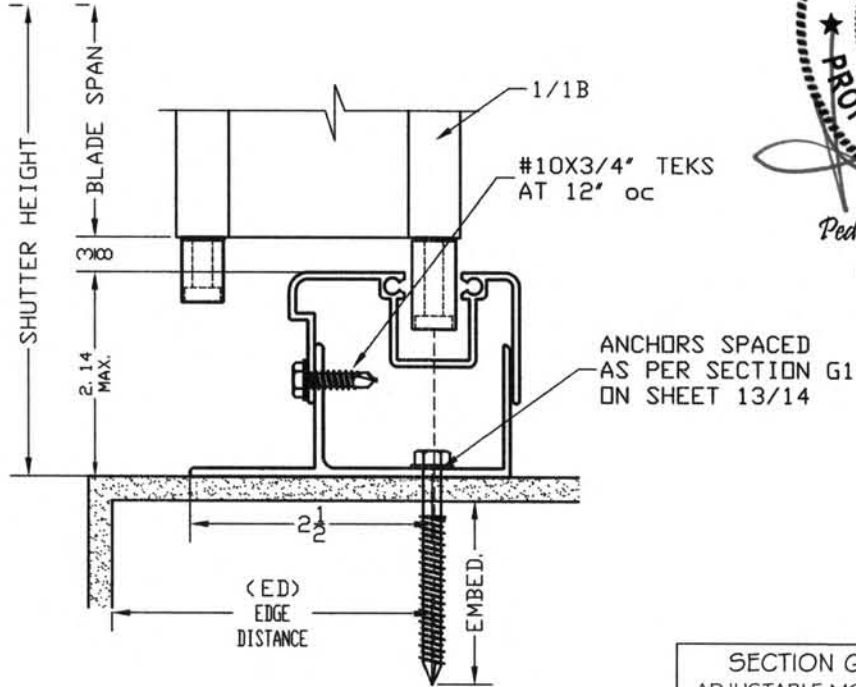
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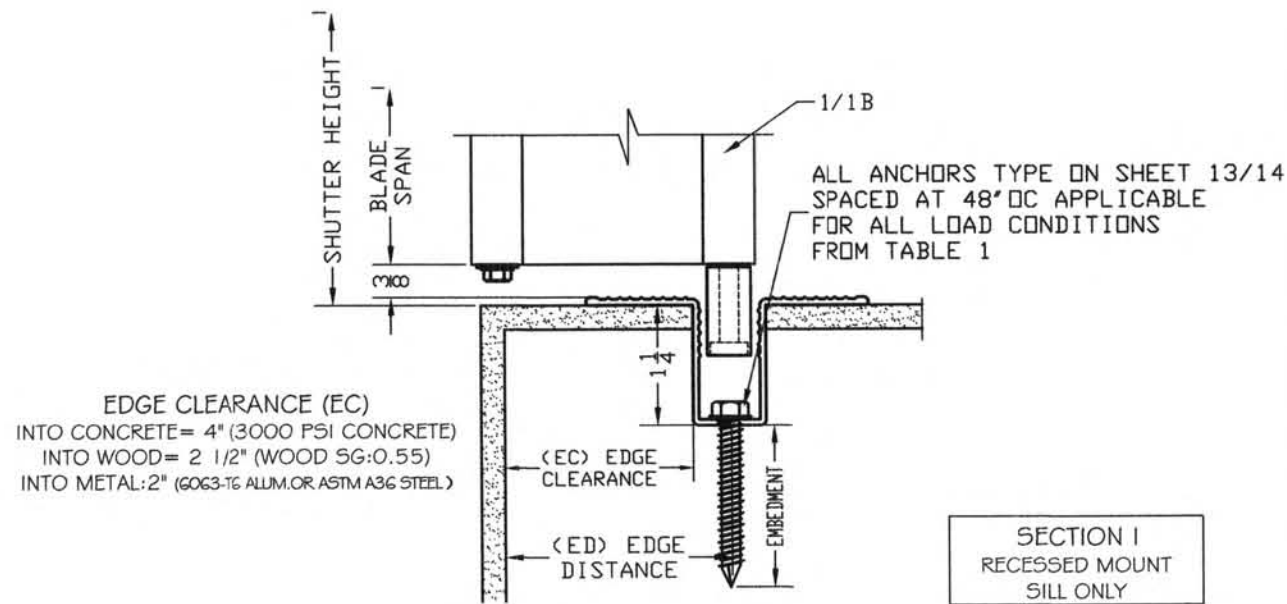
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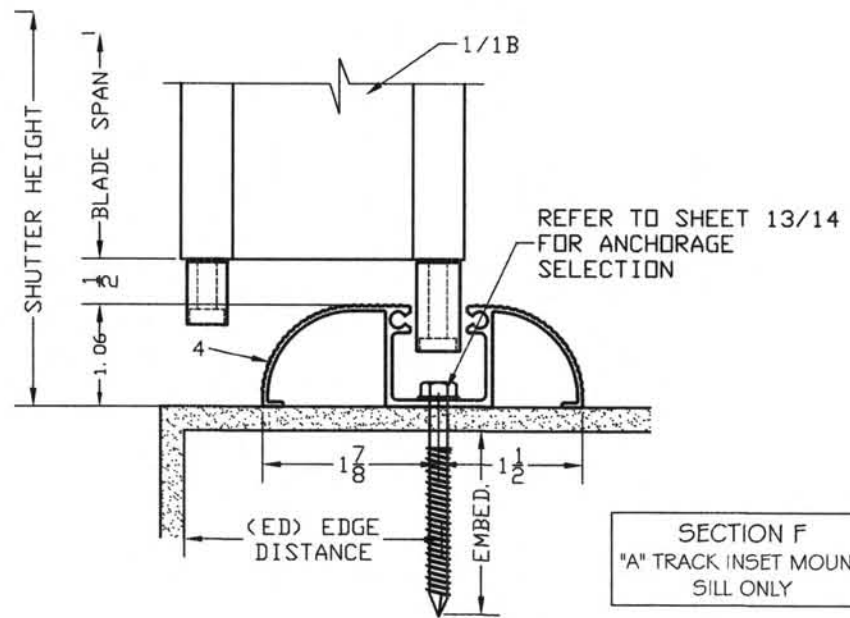
SECTION G
ADJUSTABLE MOUNT
SILL ONLY



SECTION G1
ADJUSTABLE MOUNT
SILL ONLY



SECTION I
RECESSED MOUNT
SILL ONLY



SECTION F
"A" TRACK INSET MOUNT
SILL ONLY



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OPTIONAL CURVED TRACK
BENT TRACK OR SEGMENTED TRACK OPTIONS



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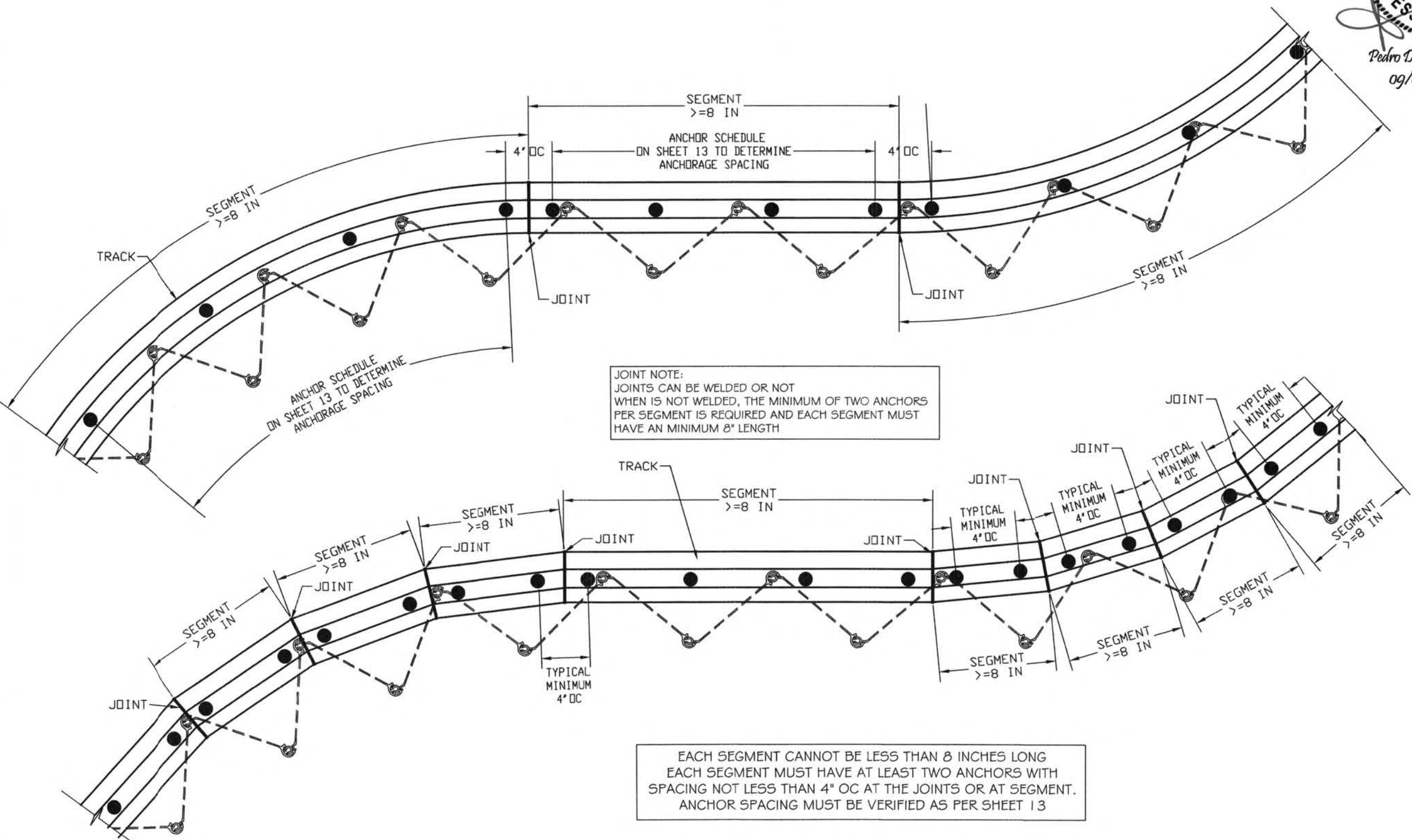


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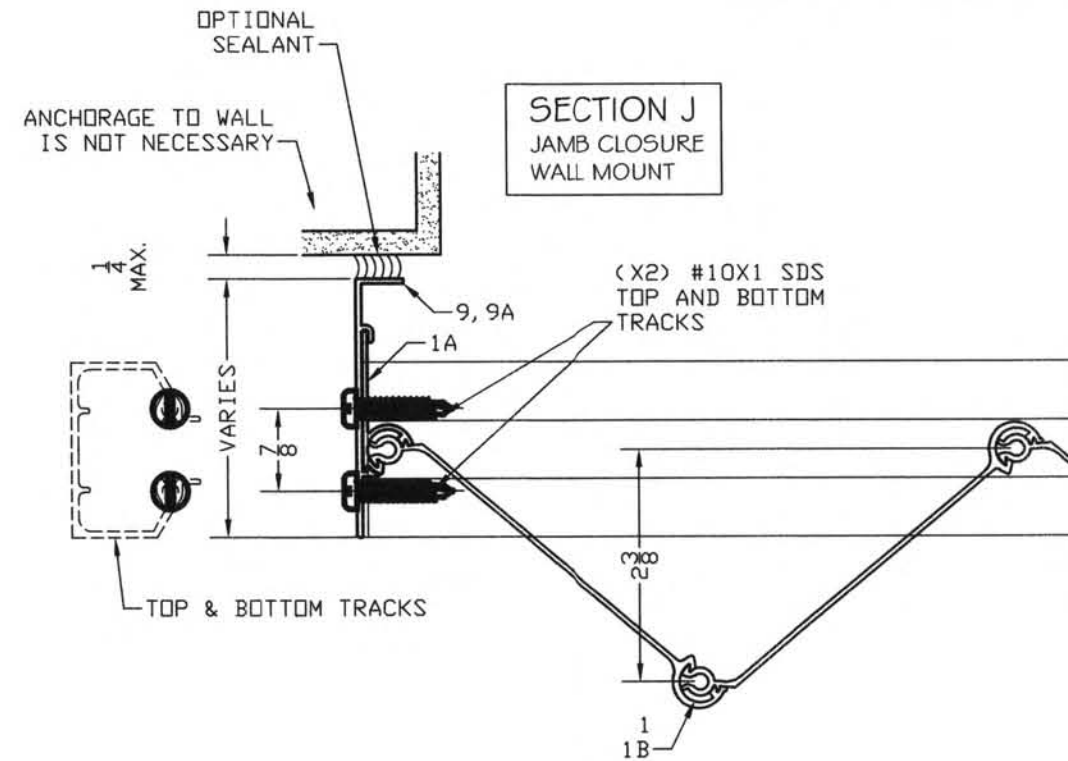
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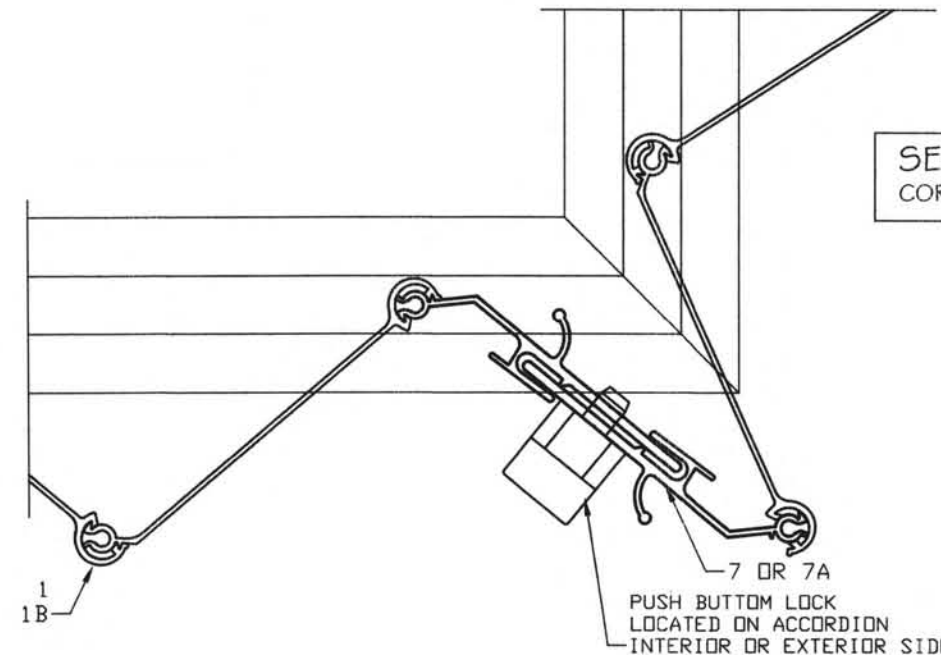
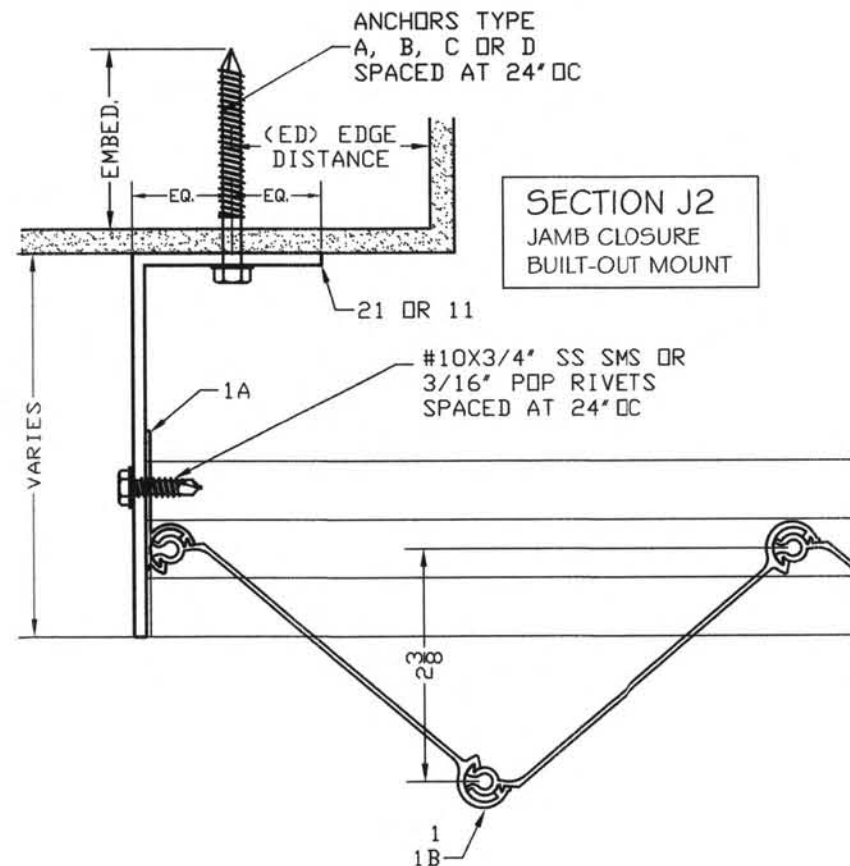
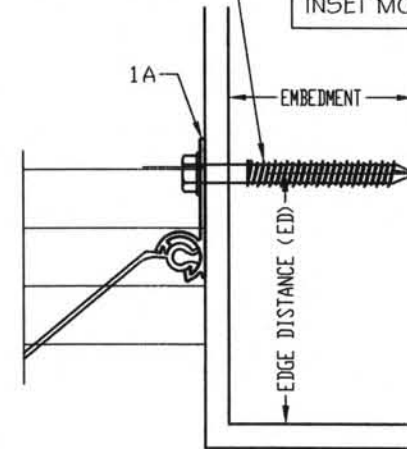


TYPICAL HORIZONTAL JAMB AND CORNER SECTIONS J



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

SECTION J I JAMB CLOSURE INSET MOUNT



SECTION J3 CORNER CLOSURE



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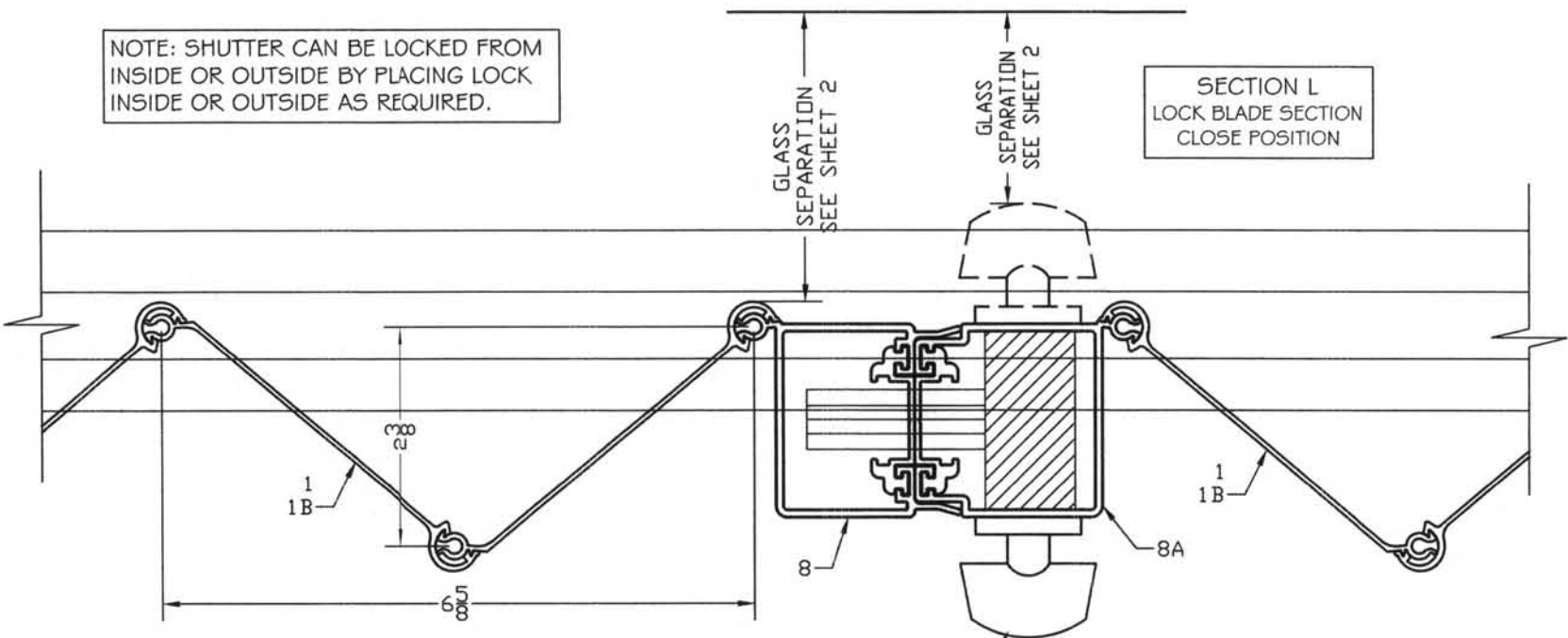
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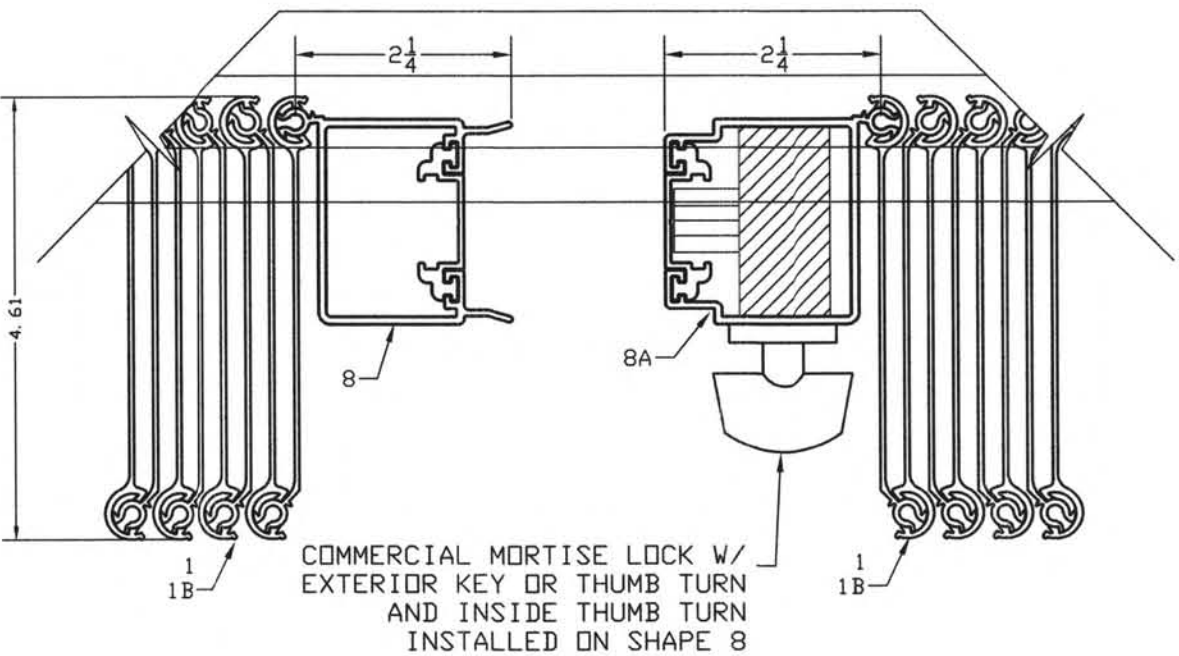
TYPICAL HORIZONTAL SECTIONS
HD LOCK SECTIONS L

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



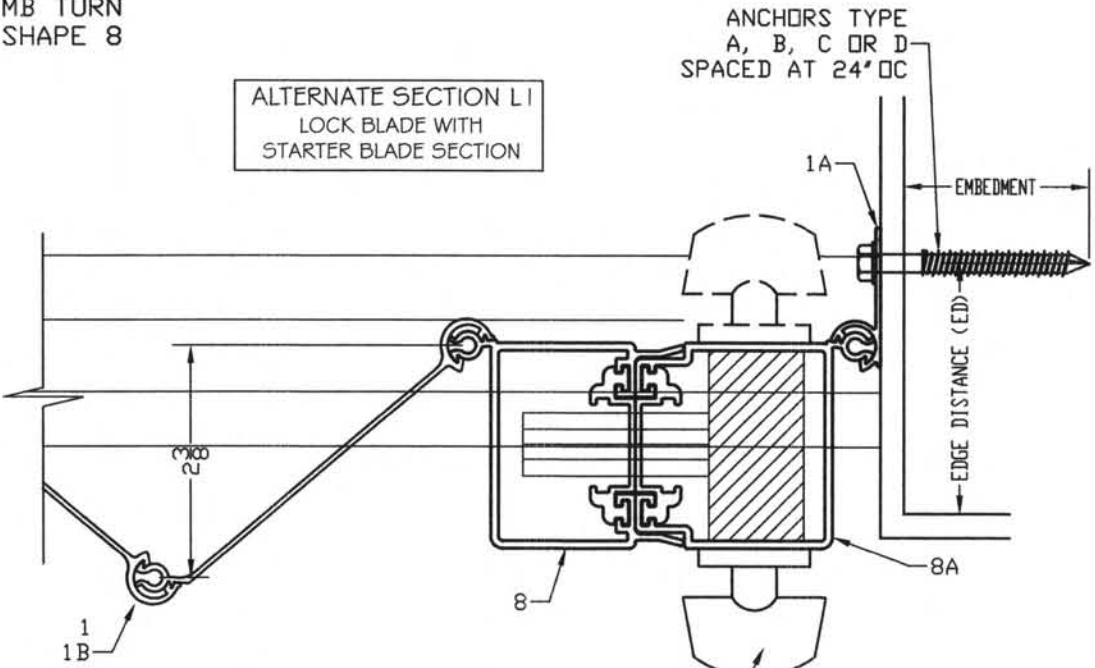
COMMERCIAL MORTISE LOCK W/
EXTERIOR KEY OR THUMB TURN
AND INSIDE THUMB TURN
INSTALLED ON SHAPE 8

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 L I
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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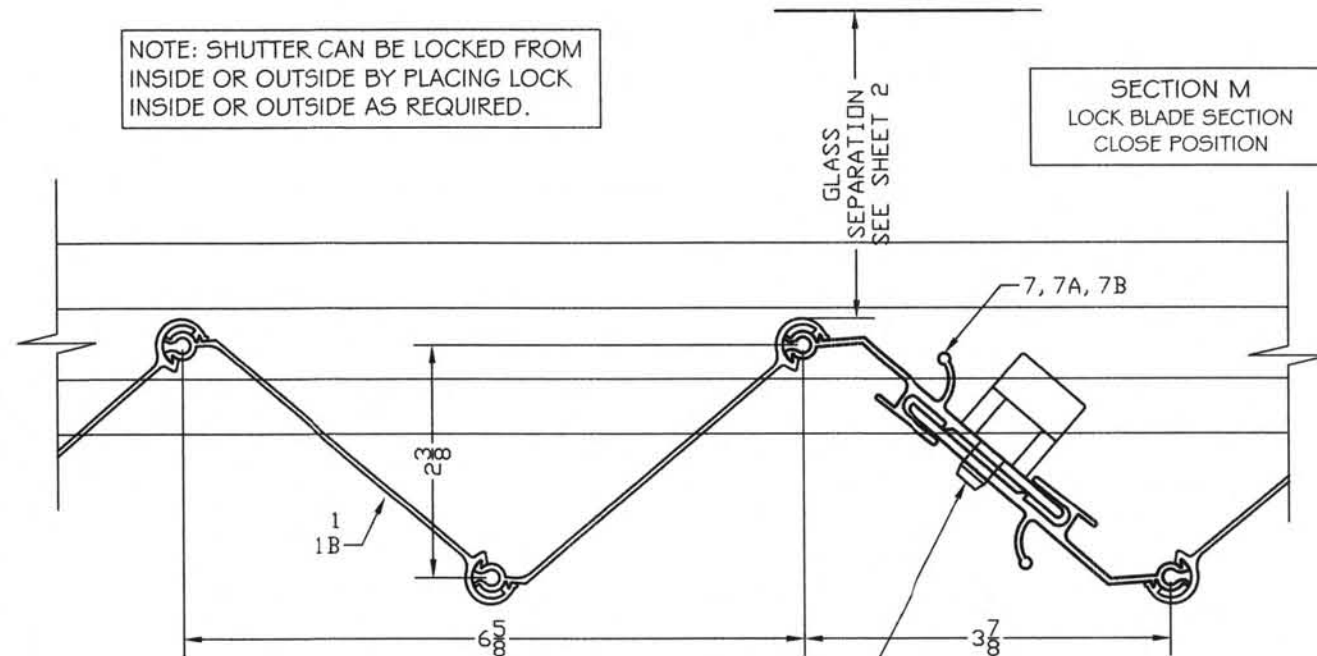
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TYPICAL HORIZONTAL UNIMATE LOCK SECTIONS M

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



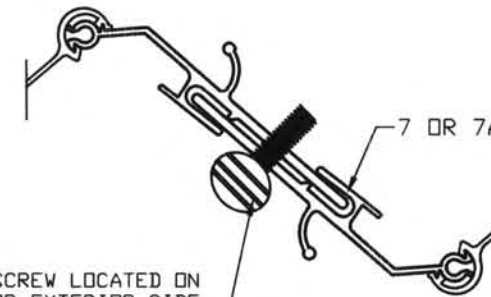
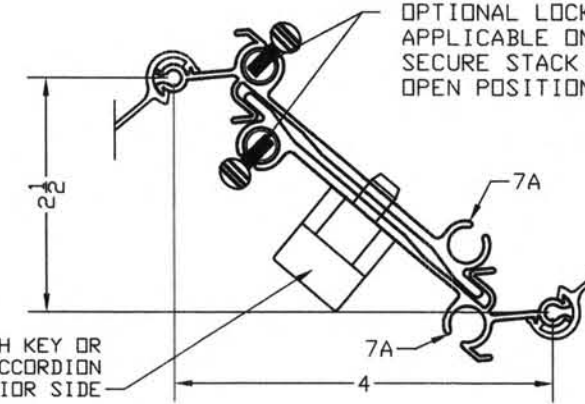
PUSH BUTTON LOCK WITH KEY OR
THUMBTURN LOCATED ON ACCORDION
INTERIOR OR EXTERIOR SIDE

SECTION M
LOCK BLADE SECTION
CLOSE POSITION

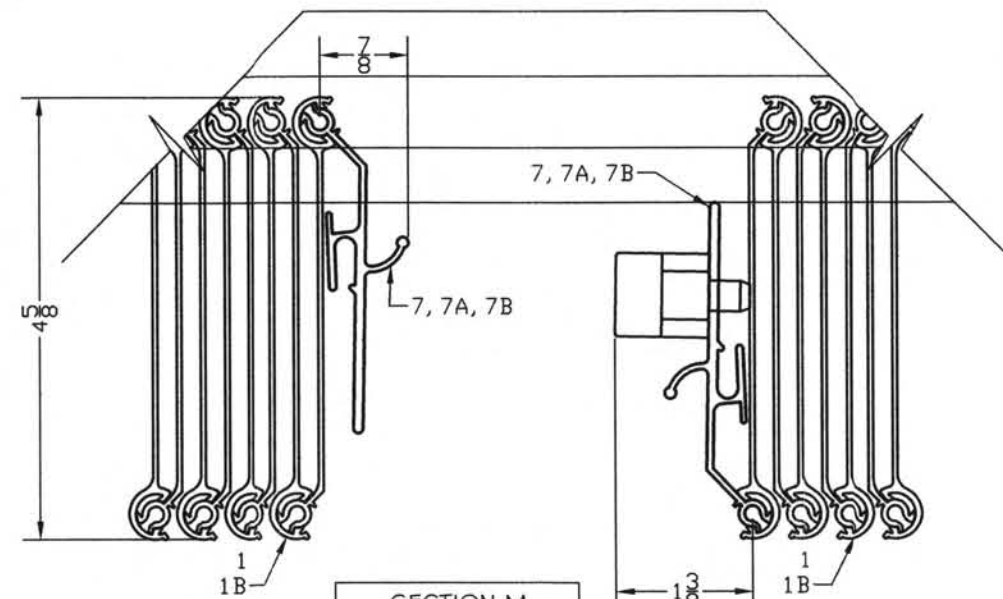
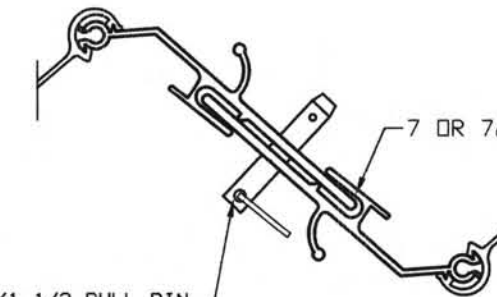
PUSH BUTTON LOCK WITH KEY OR
THUMBTURN LOCATED ON ACCORDION
INTERIOR OR EXTERIOR SIDE

1/4-20X3/4\"/>

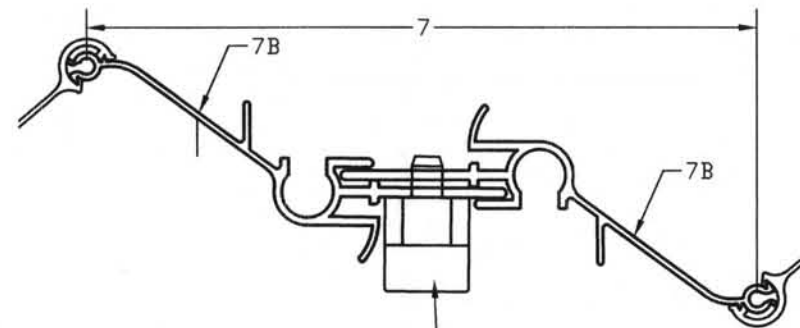
OPTIONAL LOCKING PINS
APPLICABLE ONLY TO
SECURE STACK IN THE
OPEN POSITION



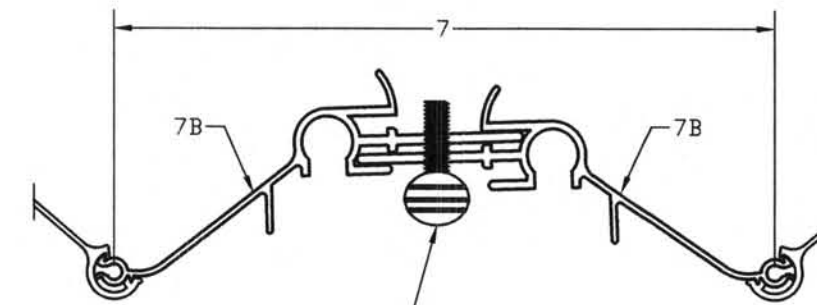
1/4X1 1/2 PULL PIN
INSIDE OR OUTSIDE



SECTION M
LOCK BLADE SECTION
OPEN POSITION

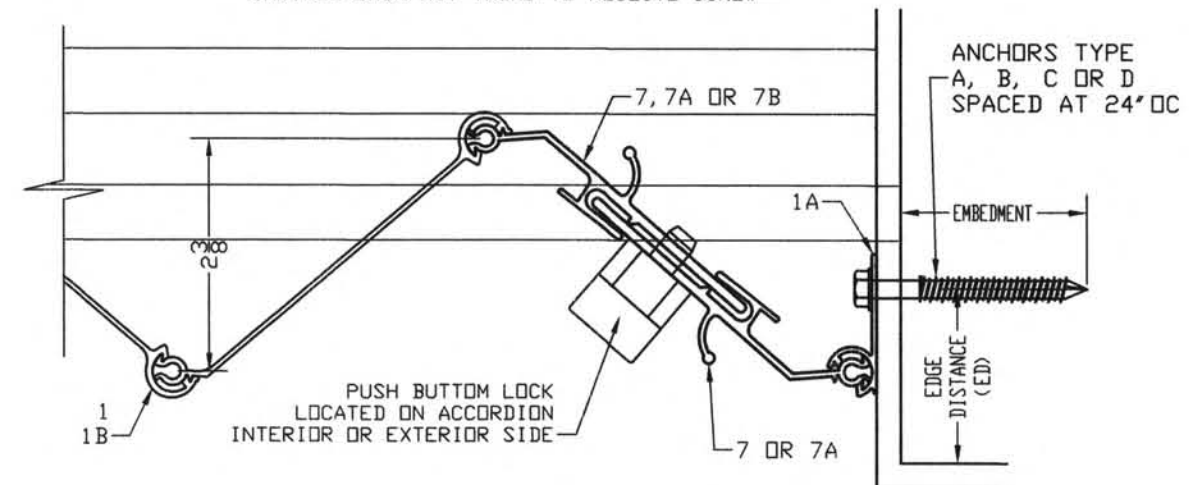


PUSH BUTTON LOCK WITH KEY OR
THUMBTURN LOCATED ON ACCORDION
INTERIOR OR EXTERIOR SIDE



1/4-20X3/4\"/>

ALTERNATE SECTION M I
LOCK BLADE WITH
STARTER BLADE SECTION



ANCHORS TYPE
A, B, C OR D
SPACED AT 24\"/>

EMBEDMENT
EDGE
DISTANCE (ED)



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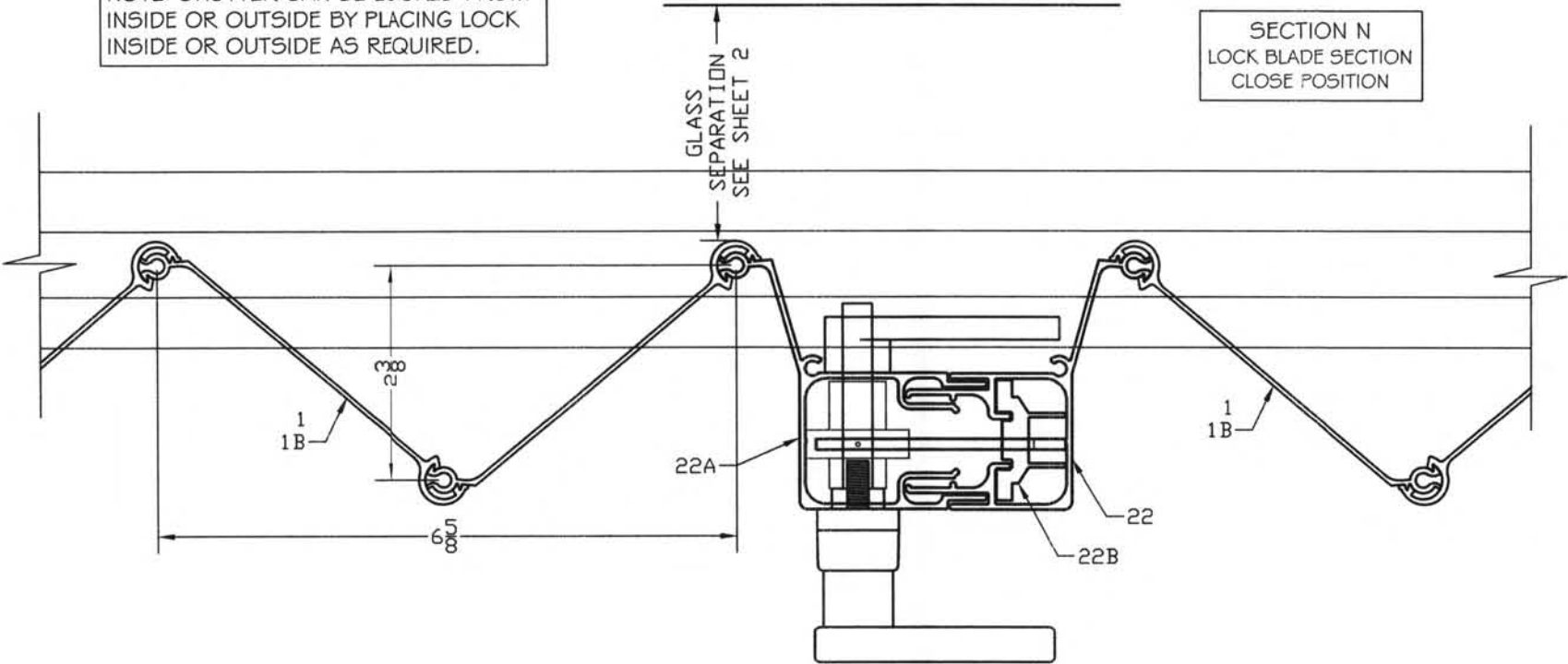
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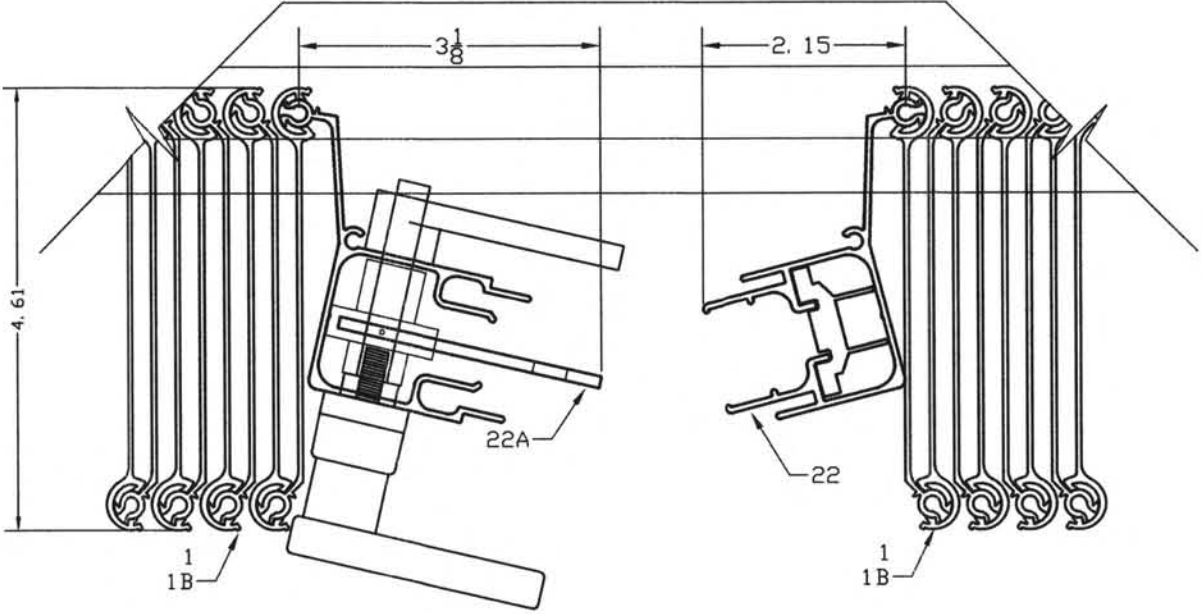
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TYPICAL HORIZONTAL SECTIONS
STD LOCK SECTIONS N

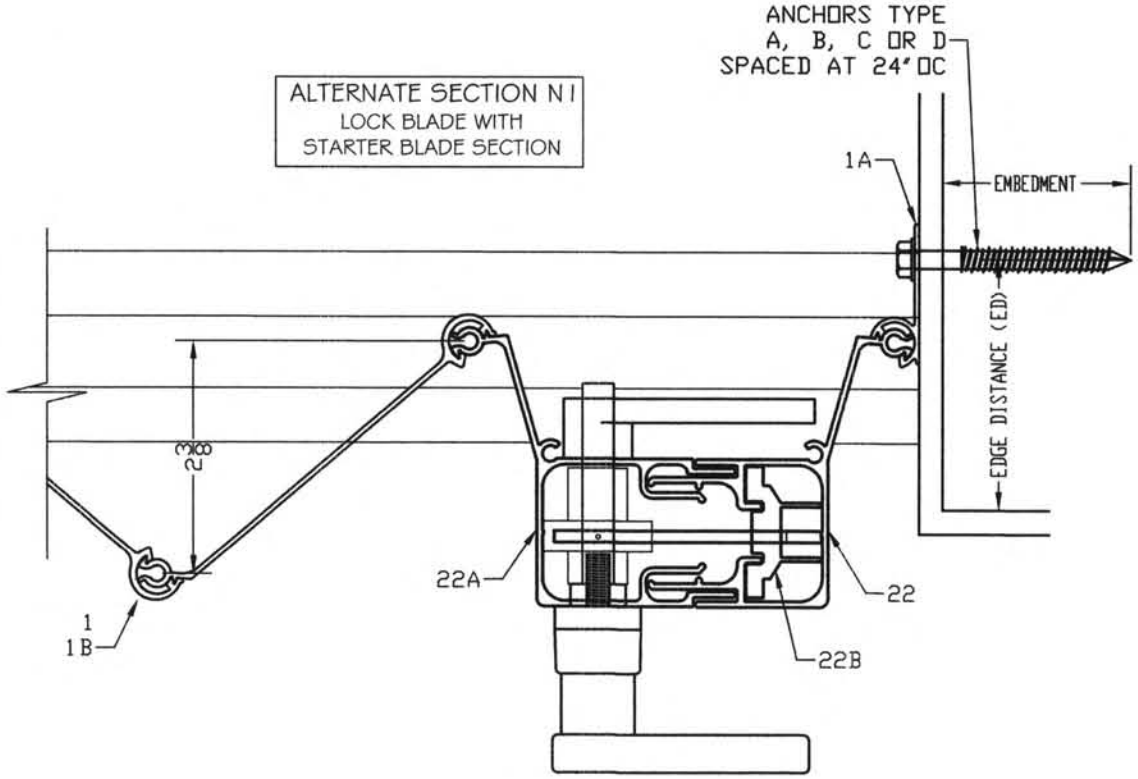
NOTE: SHUTTER CAN BE LOCKED FROM
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INSIDE OR OUTSIDE AS REQUIRED.



SECTION N
LOCK BLADE SECTION
OPEN POSITION



ALTERNATE SECTION N I
LOCK BLADE WITH
STARTER BLADE SECTION

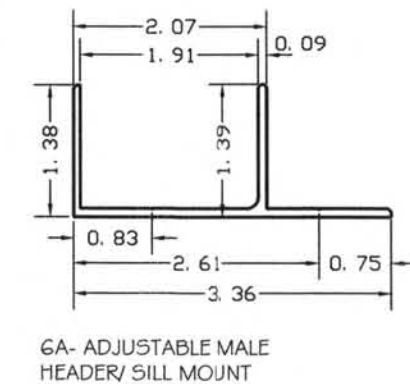
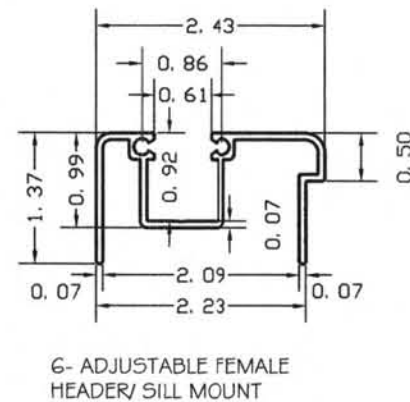
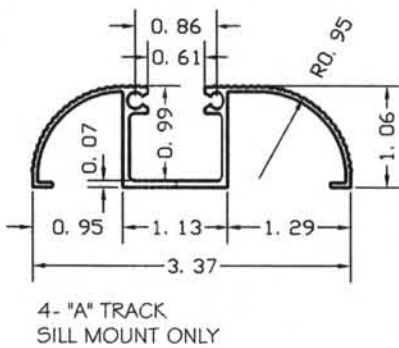
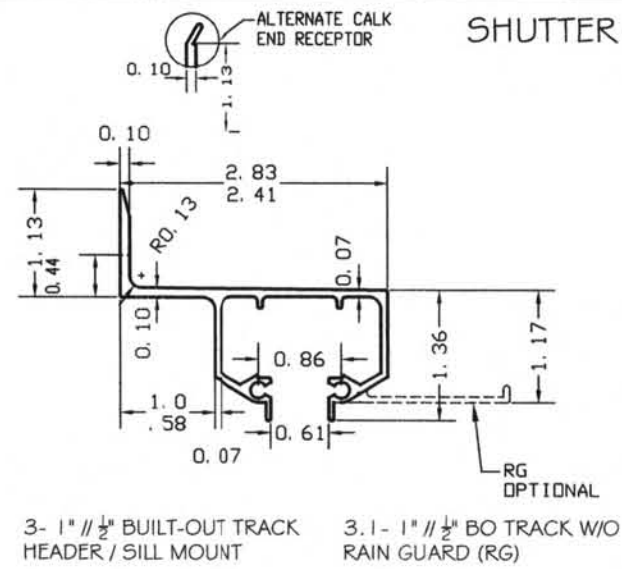
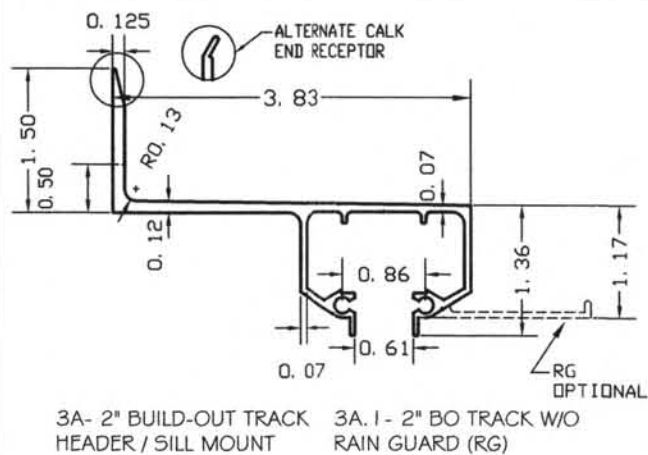
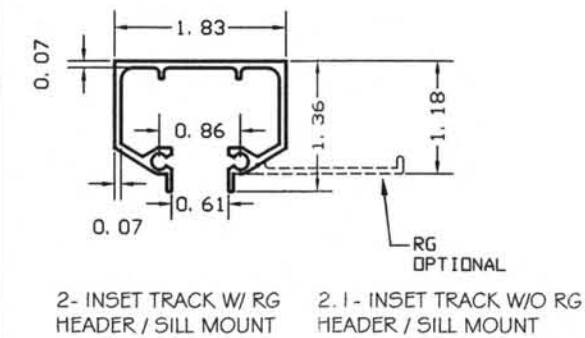
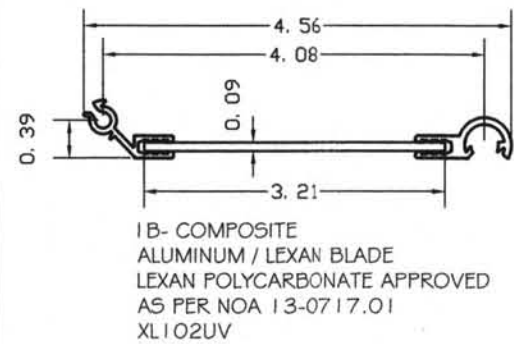
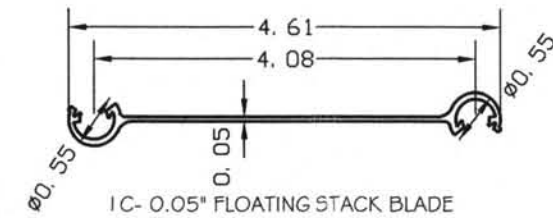
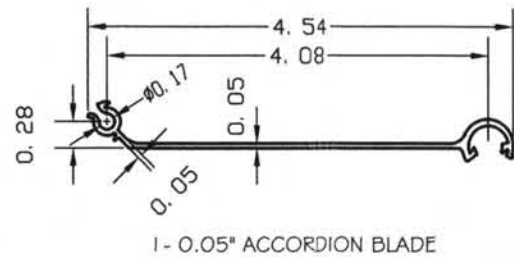


PRODUCT:
SUPERNOVA
EXTRUDED ALUMINUM
ACCORDION SHUTTER
LARGE MISSILE IMPACT RESISTANT

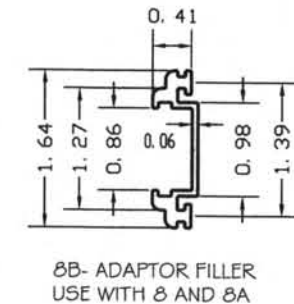
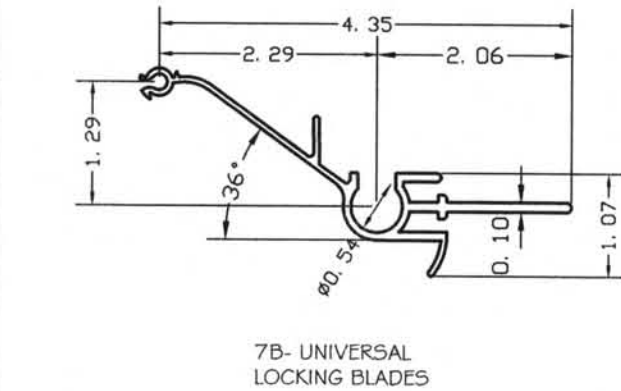
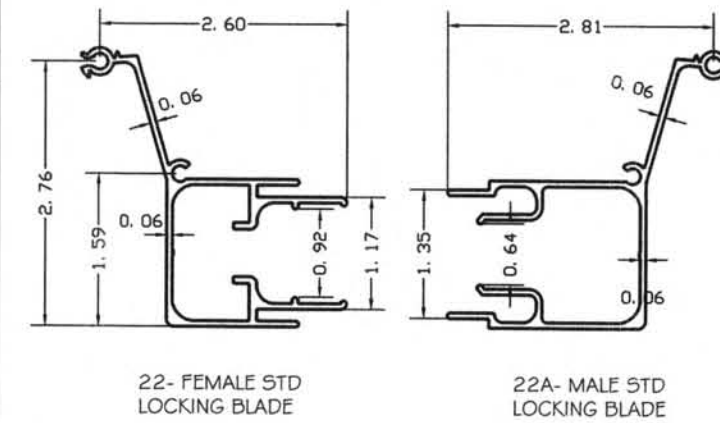
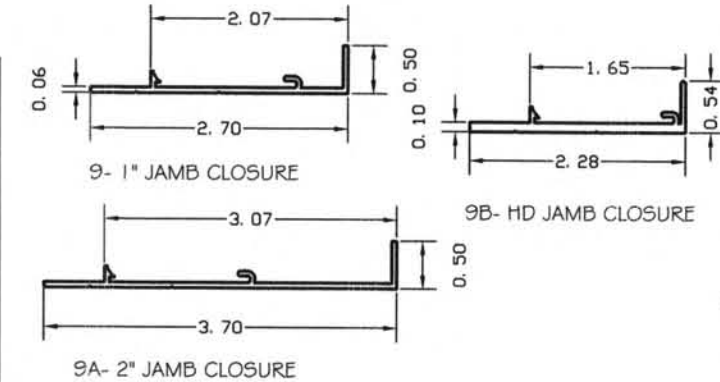
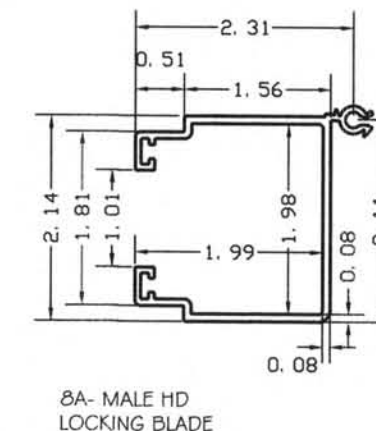
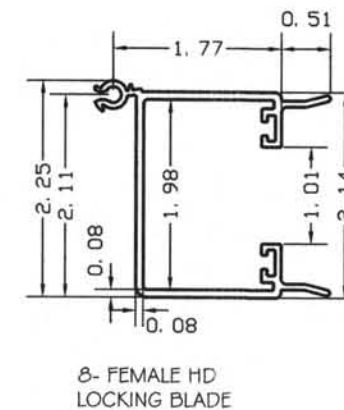
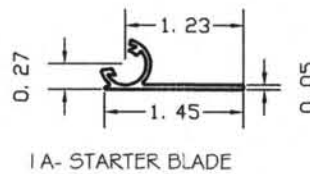
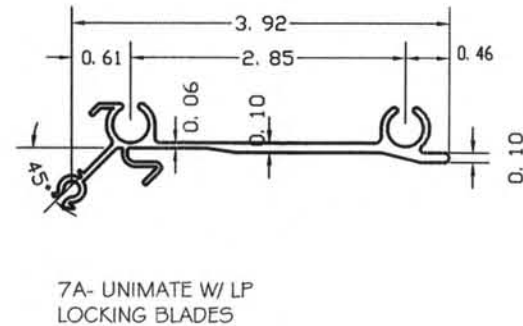
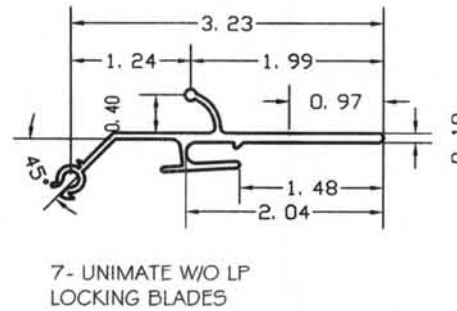
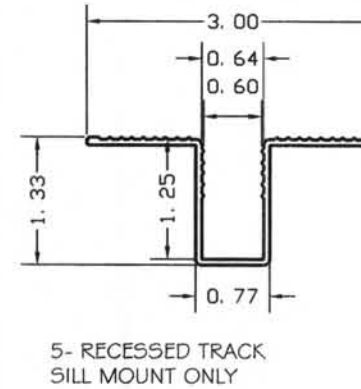
ASSOCIATION OF MANUFACTURERS:
N.A.S.A.
NATIONAL APPROVED SHUTTER ASSOCIATION LLC.
MIRAMAR, FL 33027

SCALE:
NA
DATE:
09/01/2020
DRAWING #
20-144
SHEET
10 OF 17

ENGINEERING SERVICES - CA 32459
9249 CHELSEA DR. S
PLANTATION, FL 33324
PPMF@AOL.COM
ENGINEER SEAL
PEDRO DE FIGUEIREDO
PE 52609



SHUTTER COMPONENTS



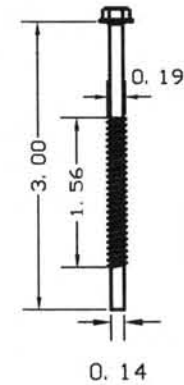
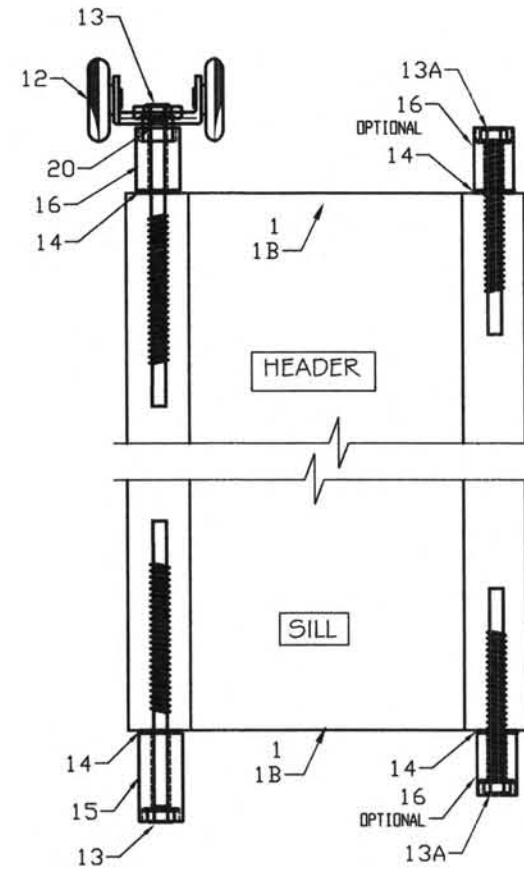
PRODUCT:
SUPERNOVA
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LARGE MISSILE IMPACT RESISTANT

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

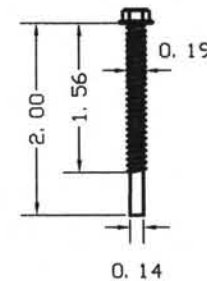
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SHEET
11 OF 17

ENGINEERING SERVICES - CA 32459
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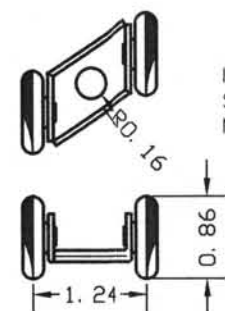
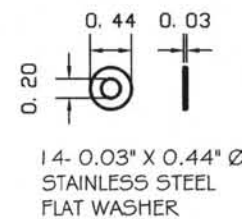
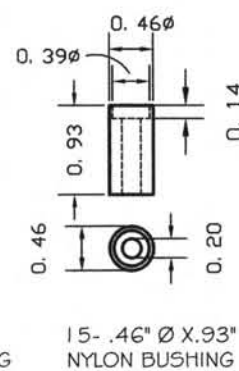
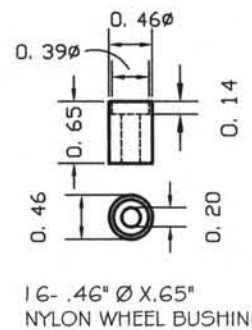
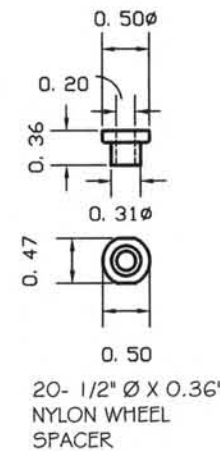
TYPICAL BLADE ASSEMBLY



13- #10X3" HH
BLADE SCREW
410 STAINLESS STEEL



13A- #10X2" HH
BLADE SCREW
410 STAINLESS STEEL



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.
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-BOTTOM 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" ELCO ULTRACON INTO 2700 PSI CONCRETE	1.75	2.5
A1	1/4" ITW TAPCON INTO CONCRETE BLOCK	1.25	3.0
	1/4" ELCO 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 REPLY 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.



ENGINEERING SERVICES - CA 32459
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PRODUCT:
SUPERNOVA
EXTRUDED ALUMINUM
ACCORDION SHUTTER
LARGE MISSILE IMPACT RESISTANT

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

SCALE:
NA
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20-144
SHEET
12 OF 17

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

		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									
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					
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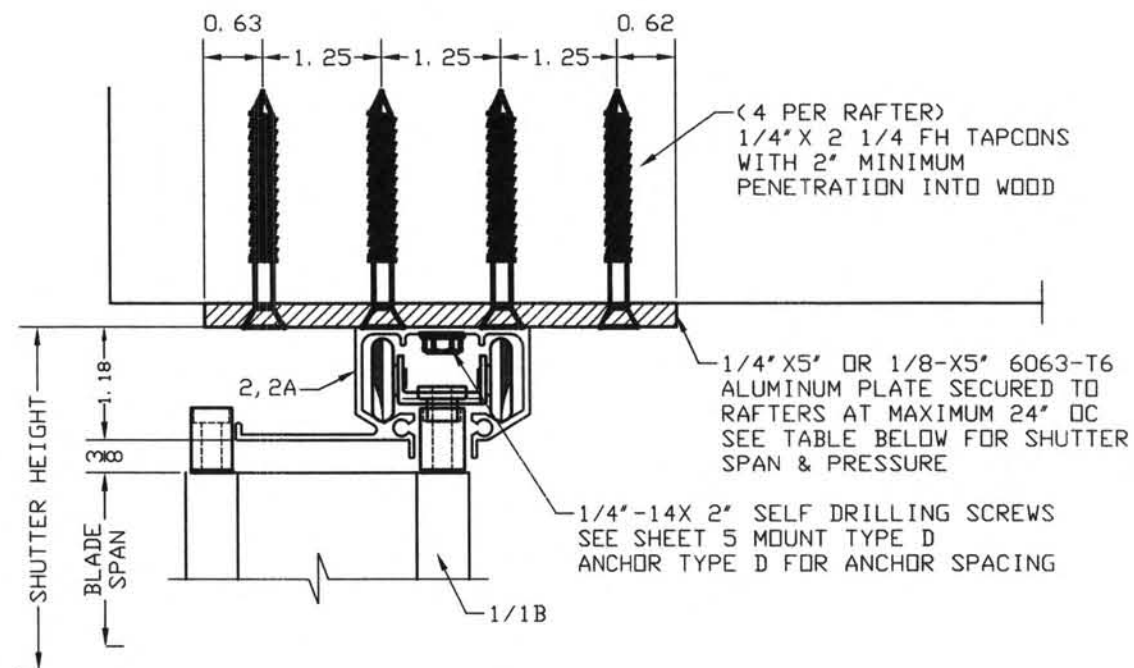
ENGINEERING SERVICES - CA 32459
9249 CHELSEA DR. 5
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ASSOCIATION OF MANUFACTURERS:
N.A.S.A
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SCALE:	NA
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SHEET	14 OF 17

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



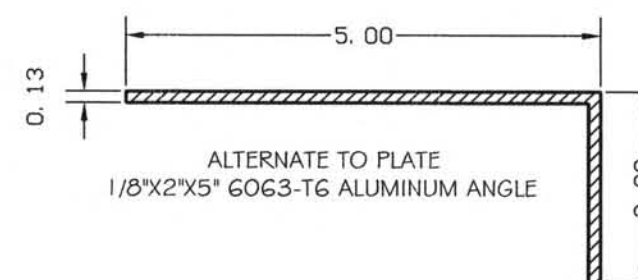
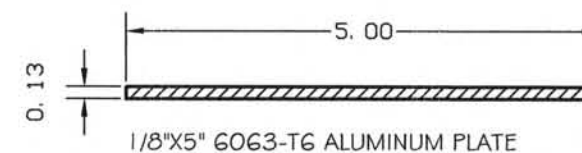
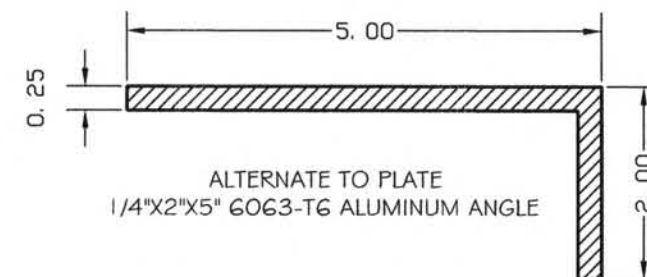
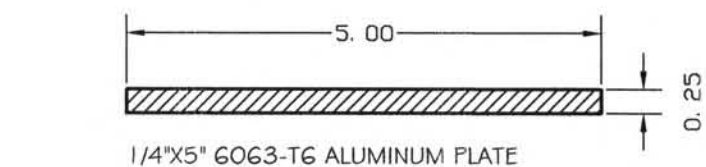
ALLOWABLE DESIGNED PRESSURES
FOR SECTION X WITH 1/4" ALUMINUM PLATE

BLADE SPAN (IN)	MAXIMUM DESIGNED PRESSURE (PSF)	
	BLADE I	BLADE I B
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 I B
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



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PRODUCT:
SUPERNOVA
EXTRUDED ALUMINUM
ACCORDION SHUTTER
LARGE MISSILE IMPACT RESISTANT

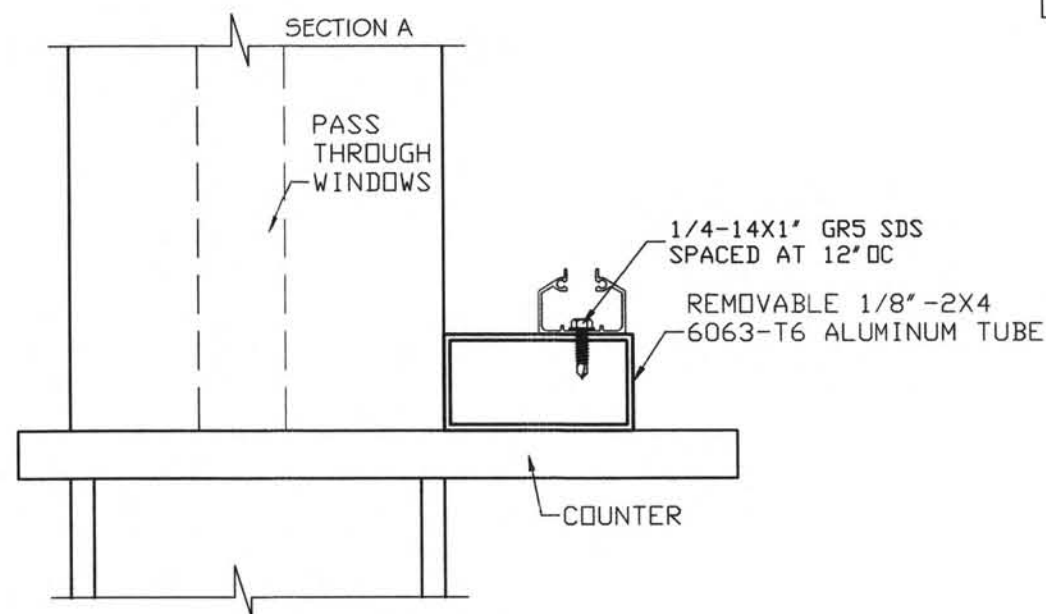
ASSOCIATION OF MANUFACTURERS:
N.A.S.A.
NATIONAL APPROVED SHUTTER ASSOCIATION LLC.
MIRAMAR, FL 33027

SCALE:
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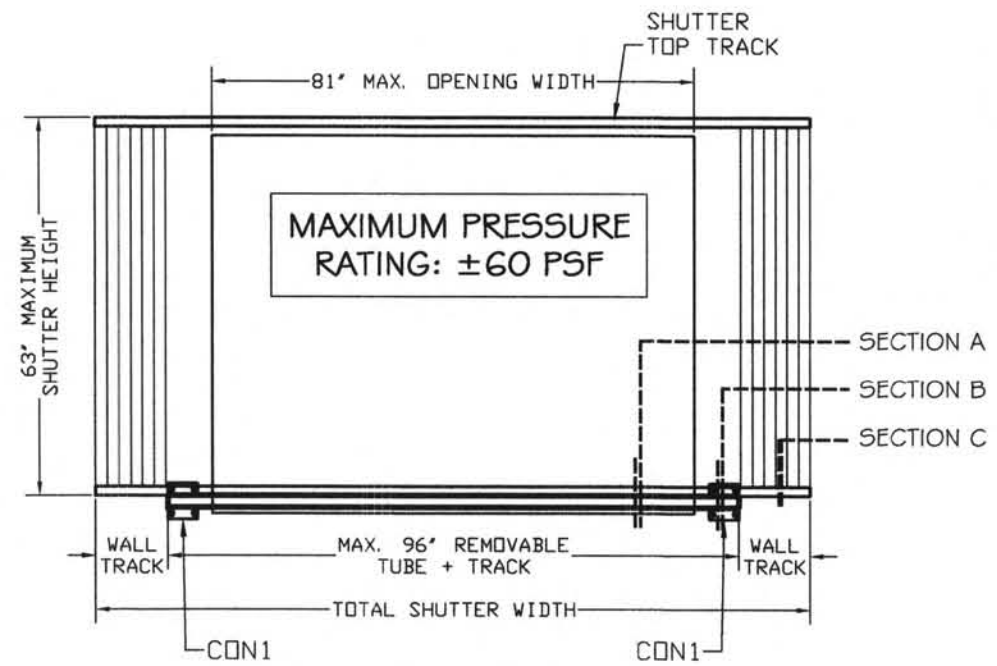
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09/01/2020

DRAWING #
20-144

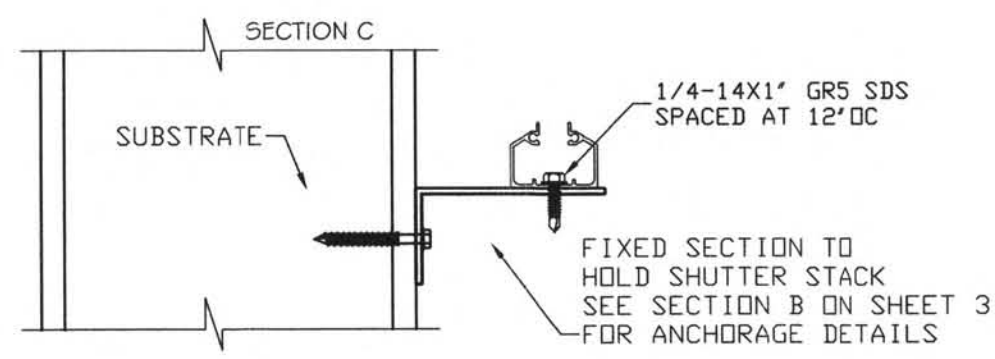
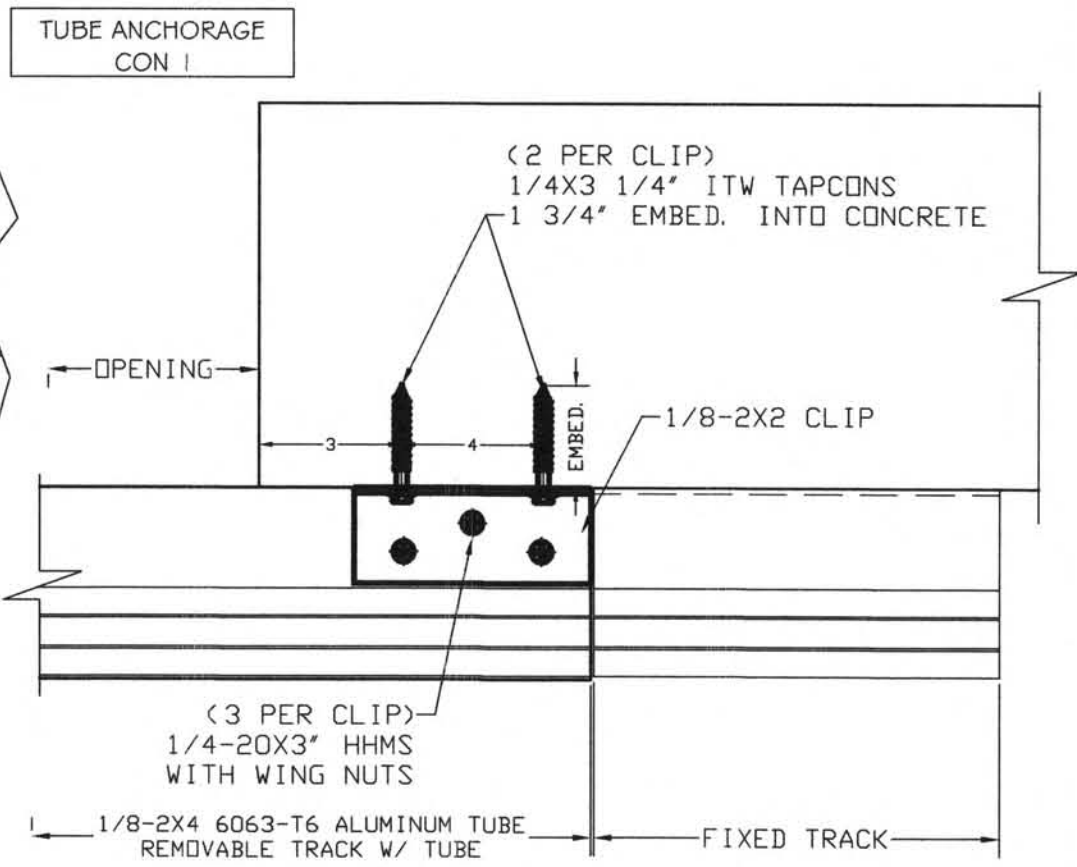
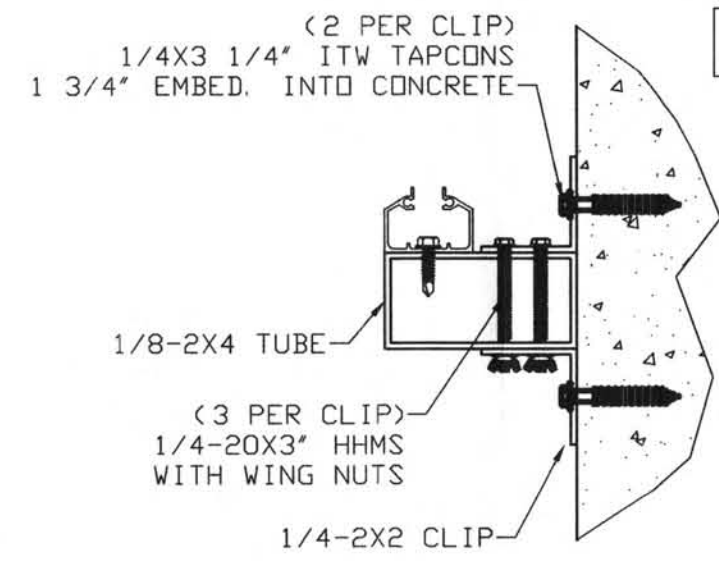
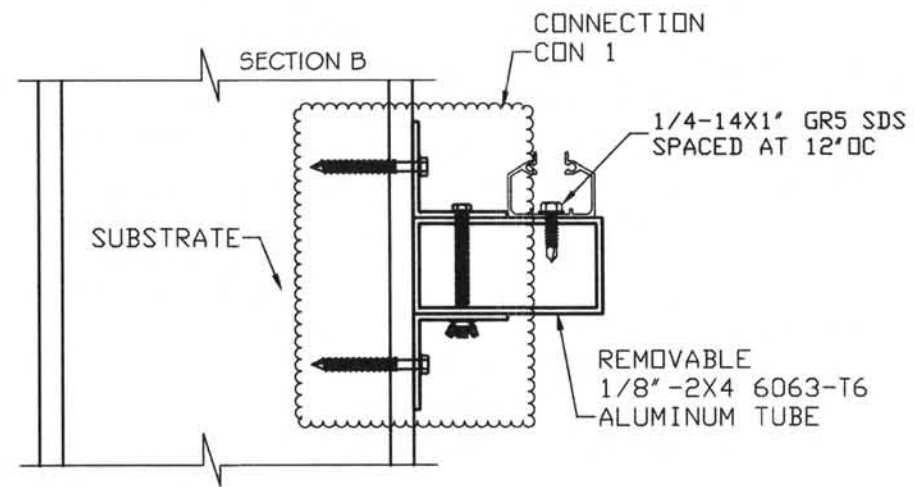
SHEET
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SECTION CT
REMOVABLE SILL
OVER COUNTER TOP



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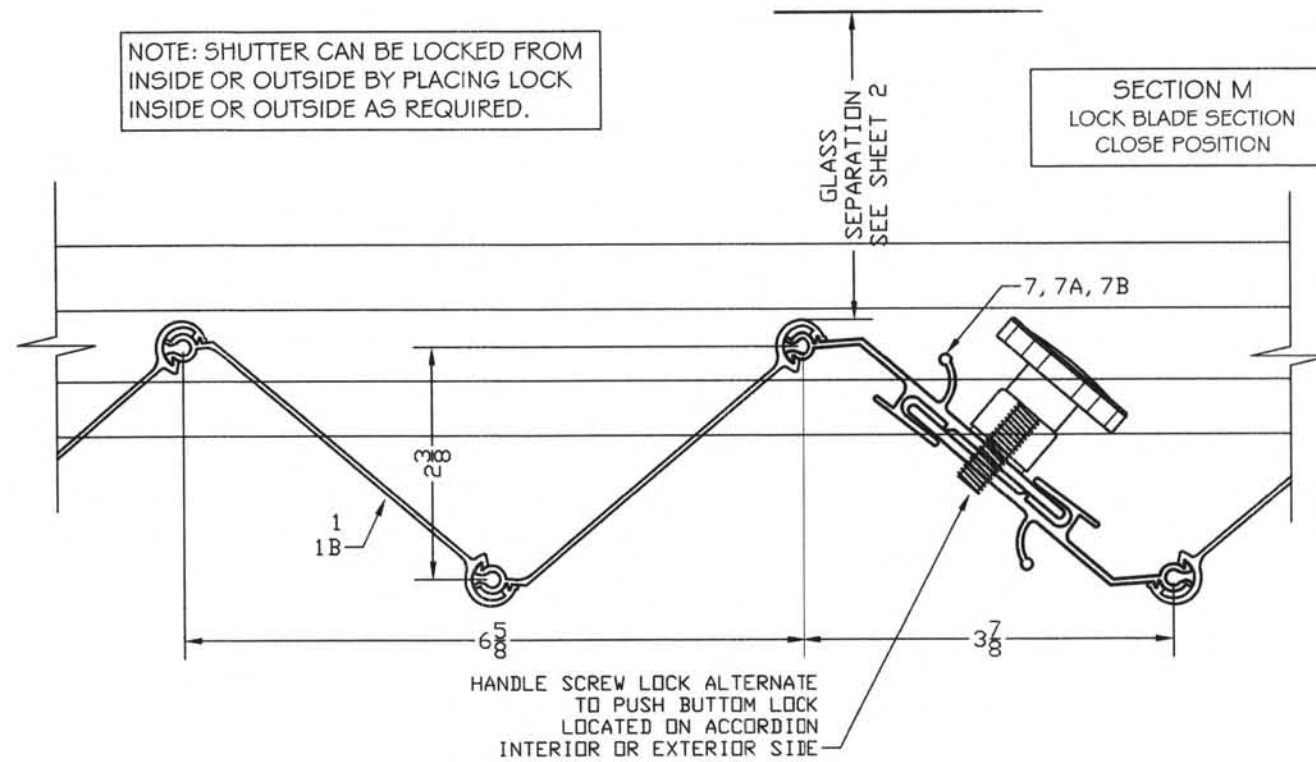
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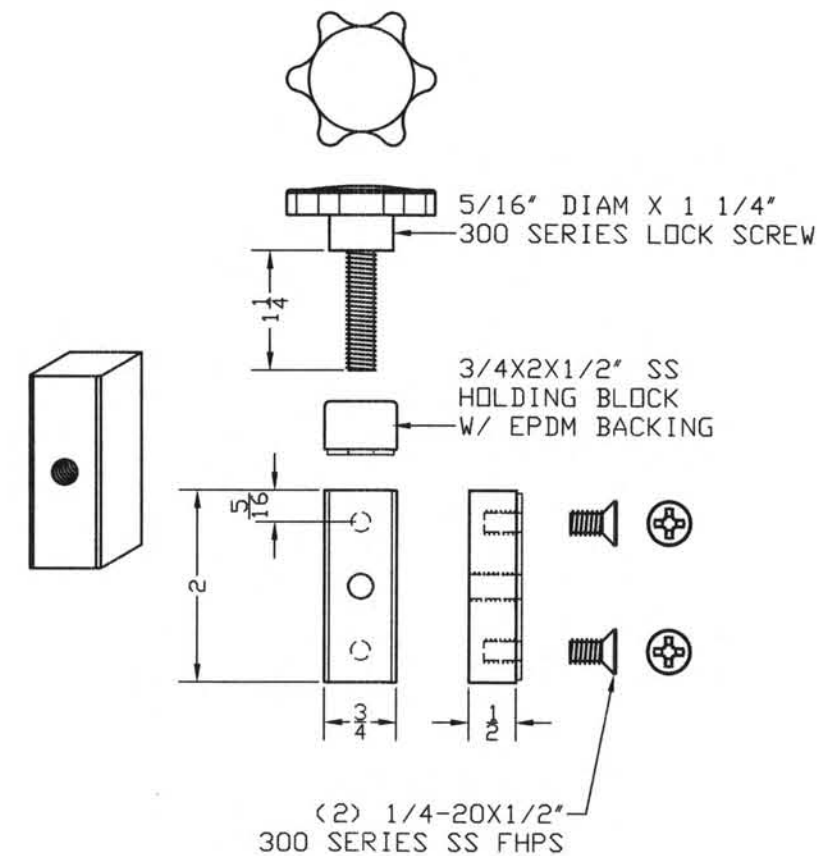
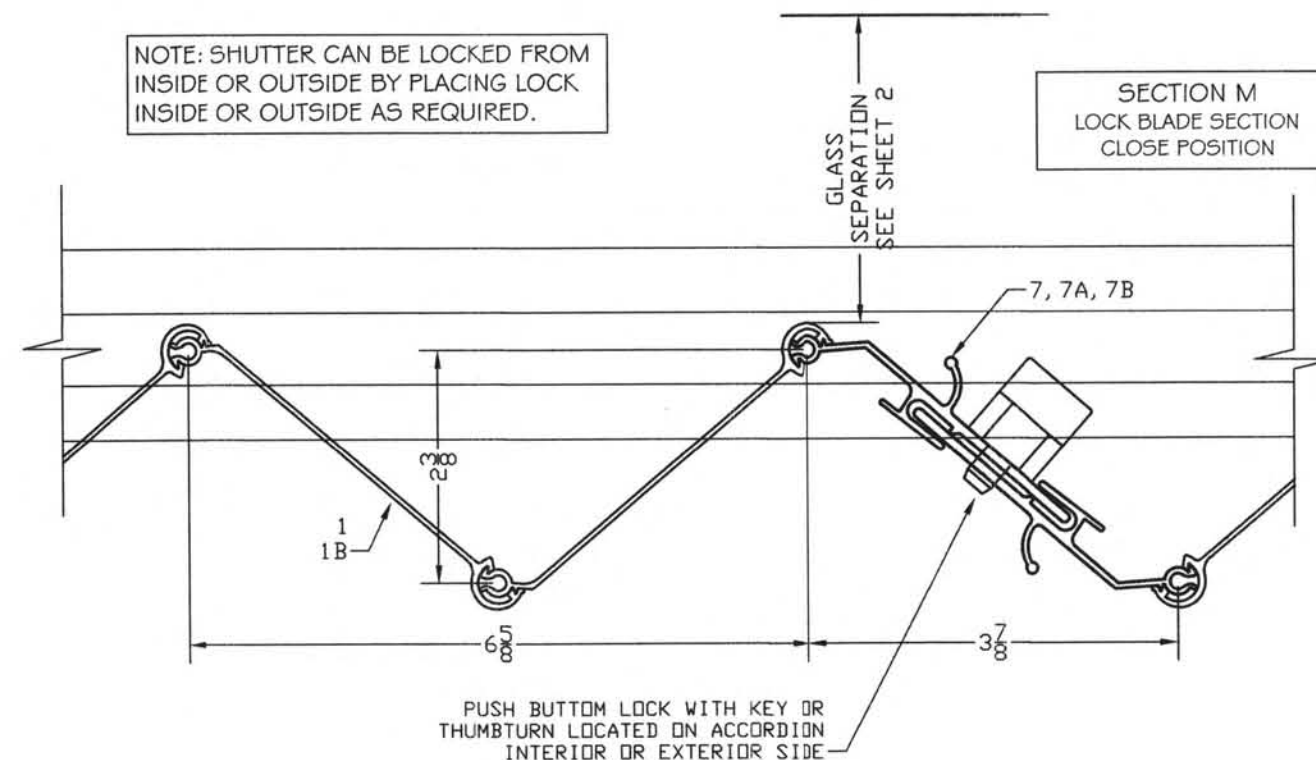
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NA
DATE:
09/01/2020
DRAWING #
20-144
SHEET
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TYPICAL HORIZONTAL
UNIMATE LOCK SECTIONS M
WITH PUSH BUTTON LOCK OR HANDLE SCREW LOCK

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.



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