

# 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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### 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:  
**N.A.S.A**  
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 L.L.C.

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PRODUCT:  
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 EXTRUDED ALUMINUM  
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 LARGE MISSILE IMPACT RESISTANT

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SCALE:  
 NA

DATE:  
 09/01/2020

DRAWING #  
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SHEET  
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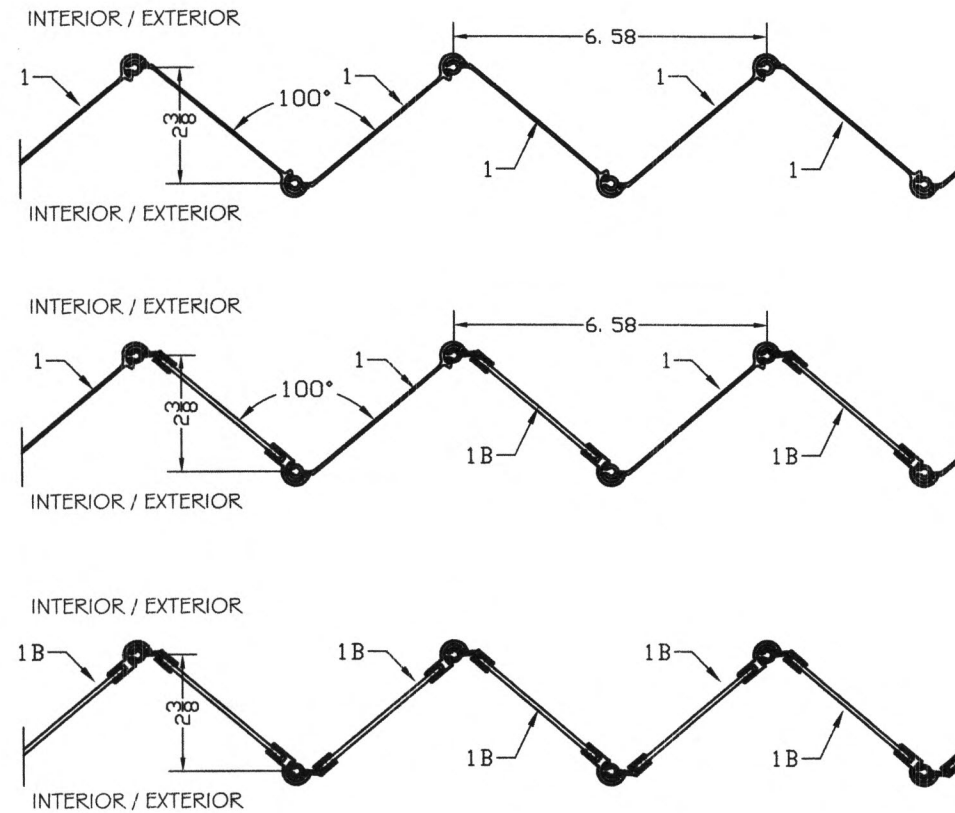
**TABLE 1**  
MAXIMUM ALLOWABLE #1 BLADE  
SHUTTER SPAN X PRESSURE

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

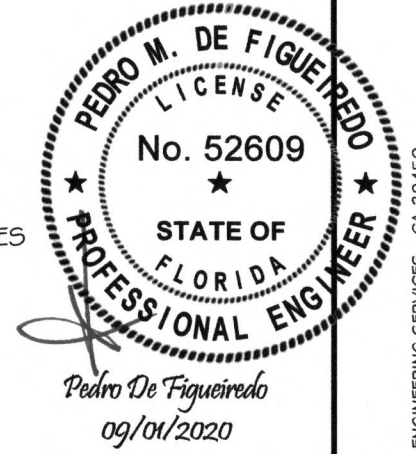
NOTES:  
1- ACCORDION SHUTTER BLADE SPAN (INCHES) FOR ALL CONDITIONS  
2- PRESSURE - DESIGN WIND LOAD (PSF)  
3- LINEAR INTERPOLATION IS ACCEPTABLE FOR DESIGN WIND LOADS AND BLADE SPAN BETWEEN TABULATED VALUES.  
4- USE TABLE 1A WHEN ONE OR MORE TYPE 1B BLADE IS USED  
5- BLADE REVERSED INSTALLATION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



ALL ALUMINUM BLADES

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

ALL LEXAN BLADES



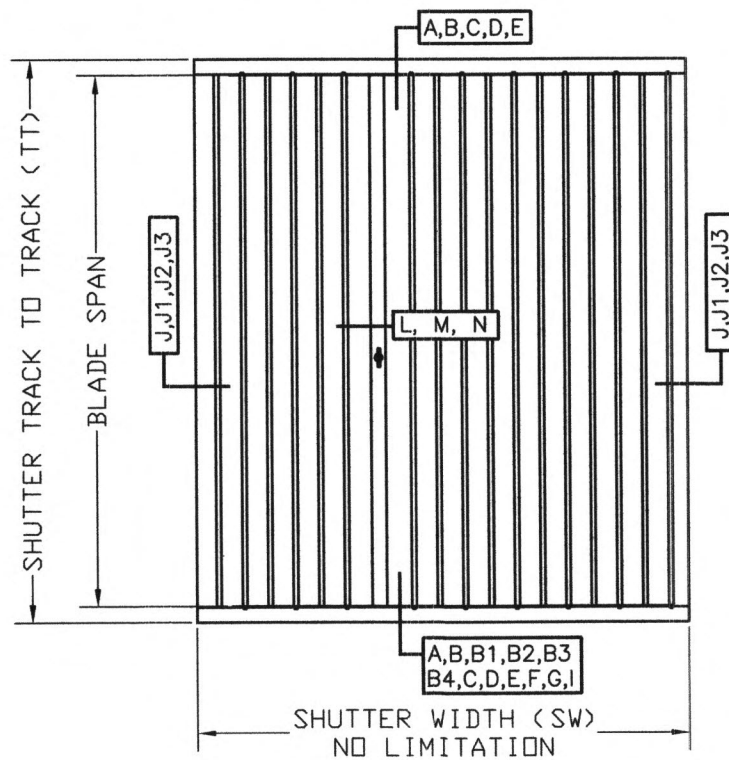
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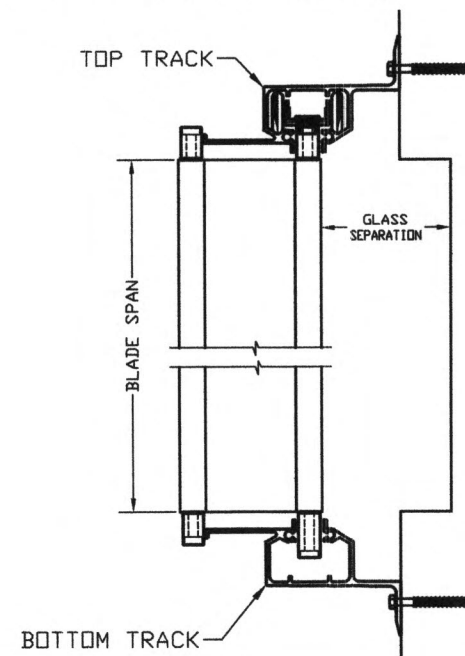
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TYPICAL ELEVATION



TYPICAL CROSS SECTION



**TABLE 2**  
MINIMUM SHUTTER SEPARATION FROM GLAZING

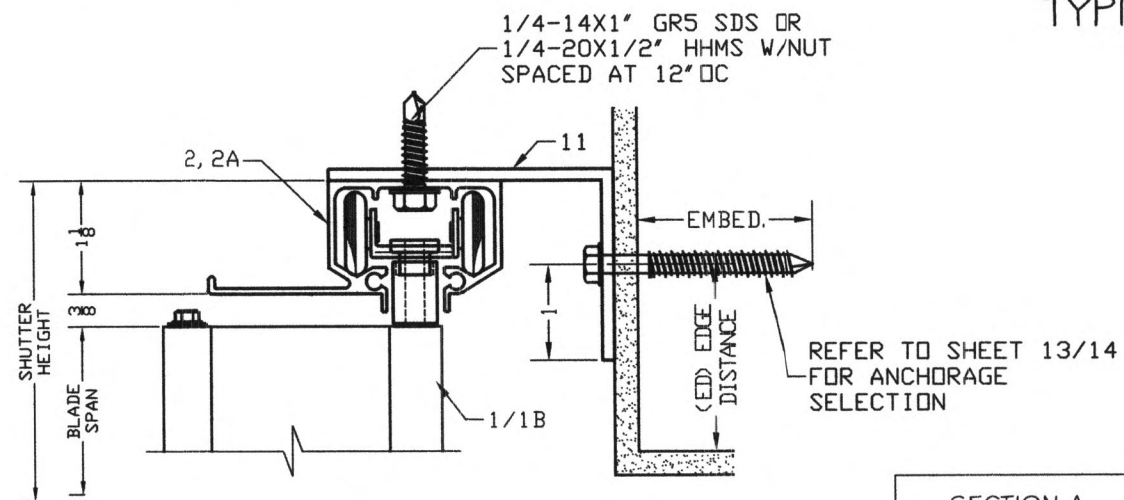
BLADE TYPE	GLAZING SEPARATION (INCHES)		
	BLADE SPAN		
	<=60"	<=104"	<=162"
ALUMINUM ALL ELEVATIONS	2"	2 3/4"	3"
LEXAN <=30' ELEVATION	3"	3"	3"
LEXAN >30' ELEVATION	2 1/8"	3"	3"

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.

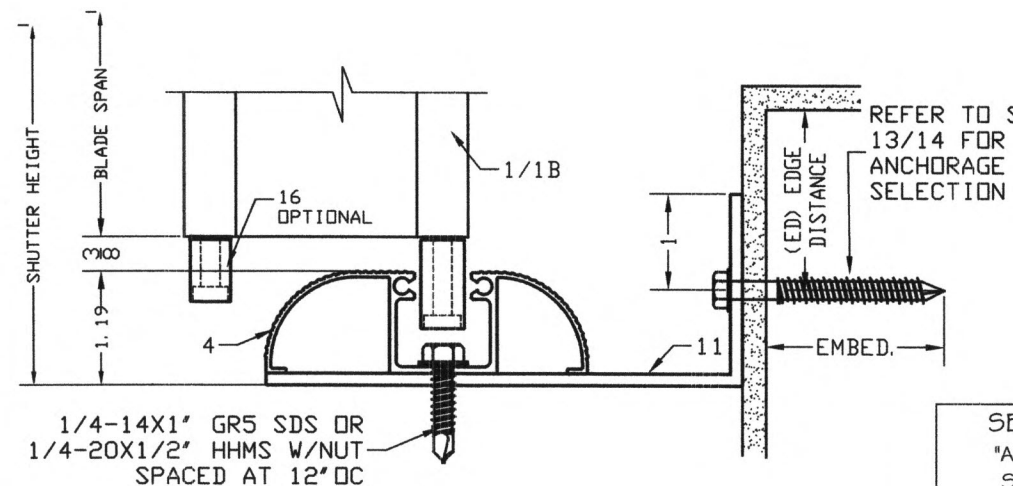
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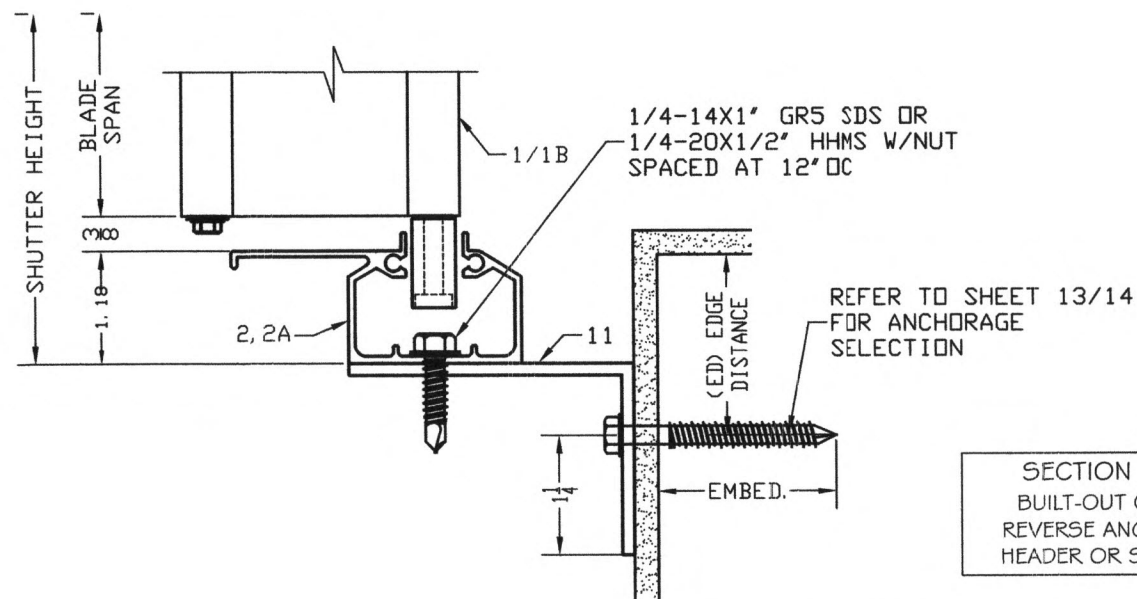
TYPICAL SECTIONS



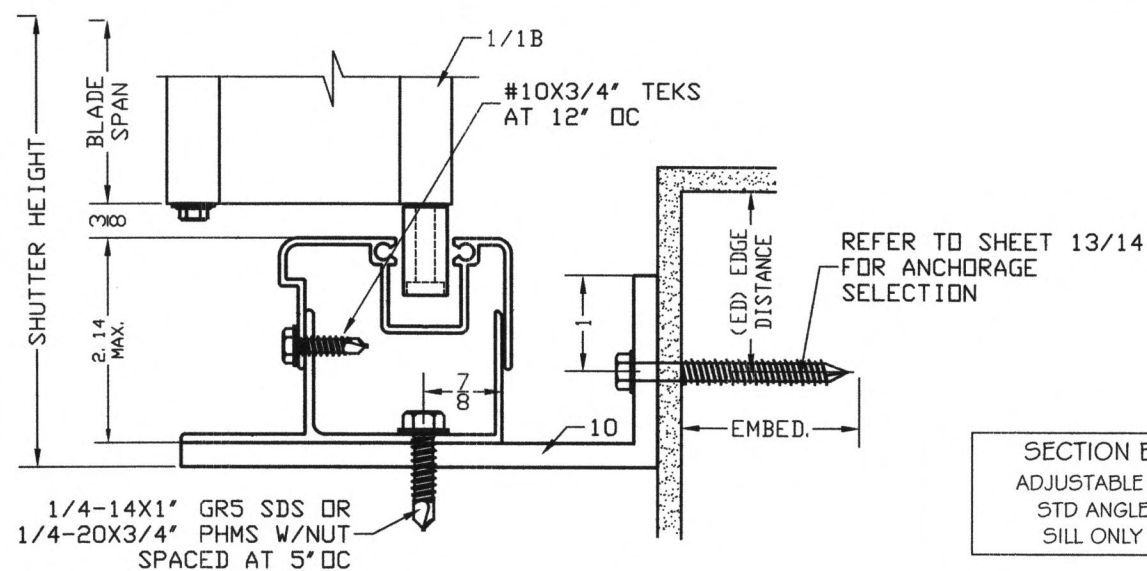
SECTION A  
BUILT-OUT ON ANGLE  
HEADER OR SILL



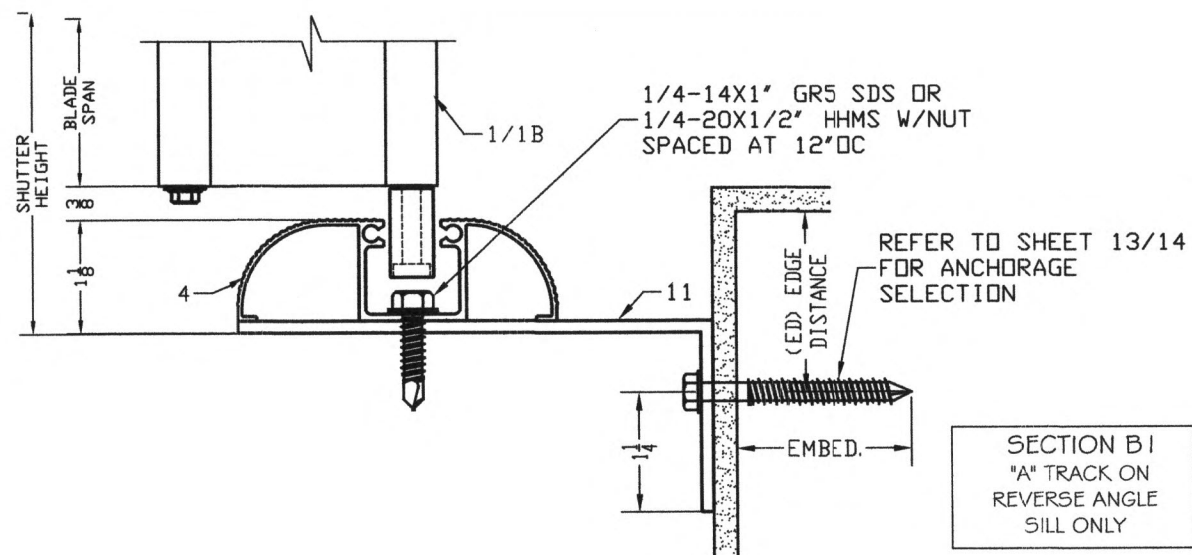
SECTION B2  
"A" TRACK ON  
STD ANGLE  
SILL ONLY



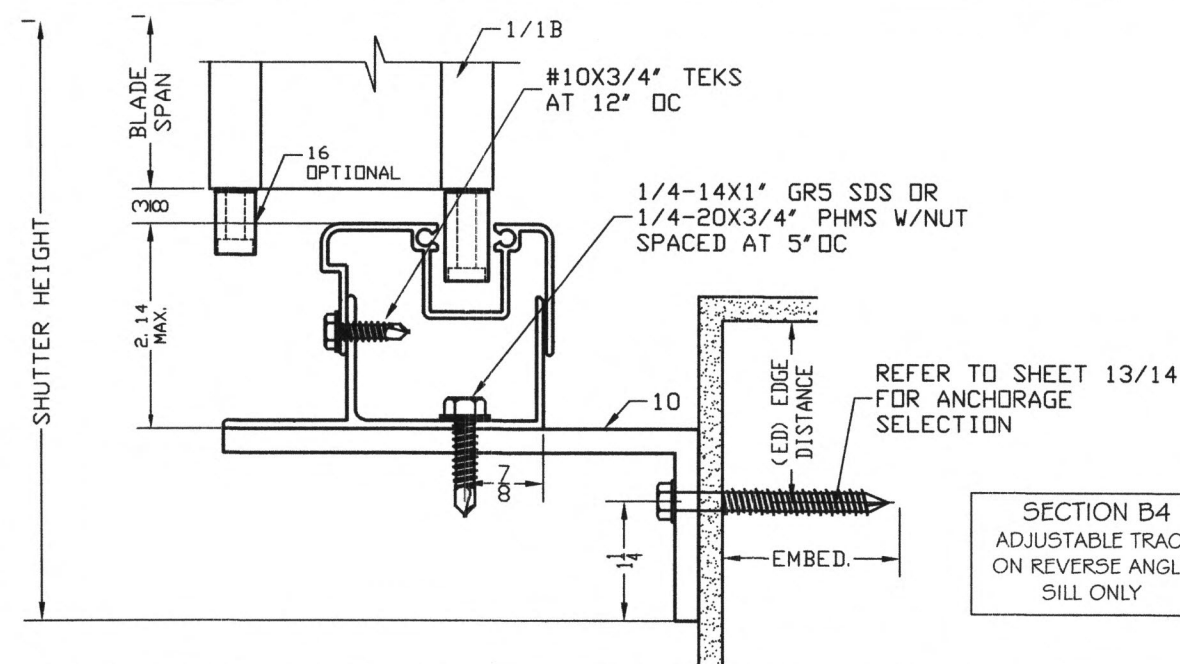
SECTION B  
BUILT-OUT ON  
REVERSE ANGLE  
HEADER OR SILL



SECTION B3  
ADJUSTABLE ON  
STD ANGLE  
SILL ONLY



SECTION B1  
"A" TRACK ON  
REVERSE ANGLE  
SILL ONLY



SECTION B4  
ADJUSTABLE TRACK  
ON REVERSE ANGLE  
SILL ONLY



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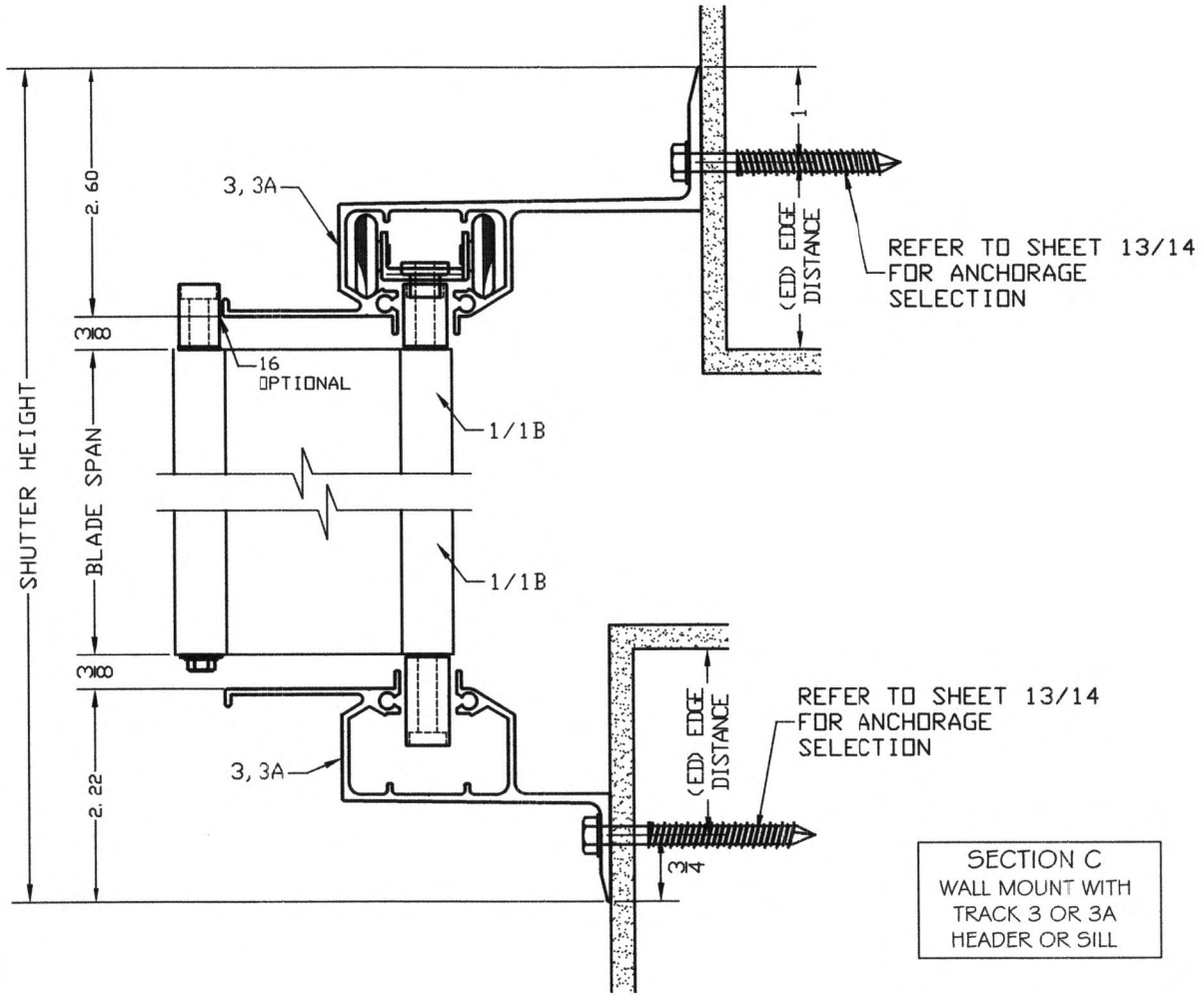


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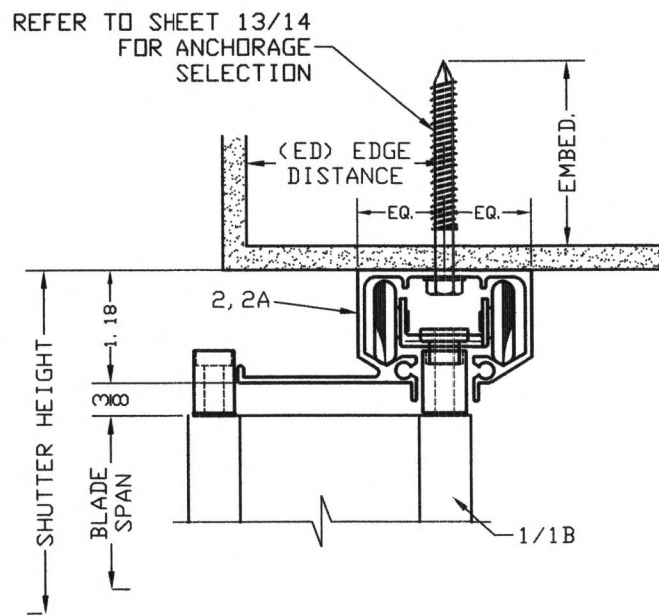
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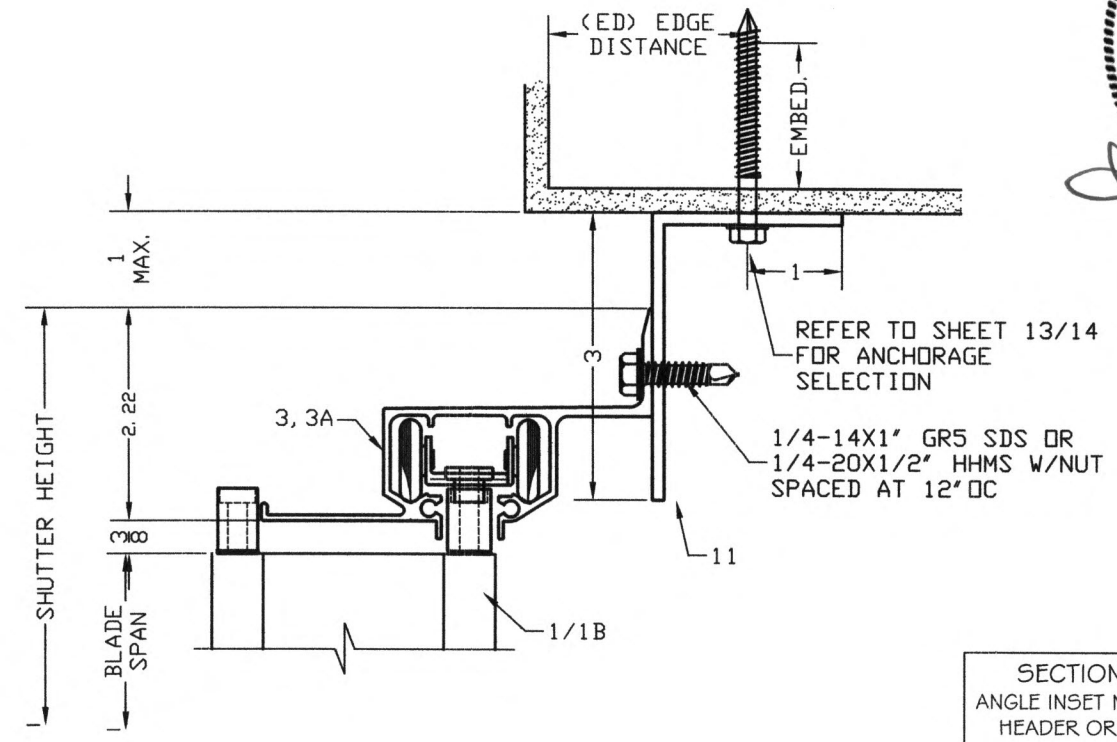
TYPICAL SECTIONS



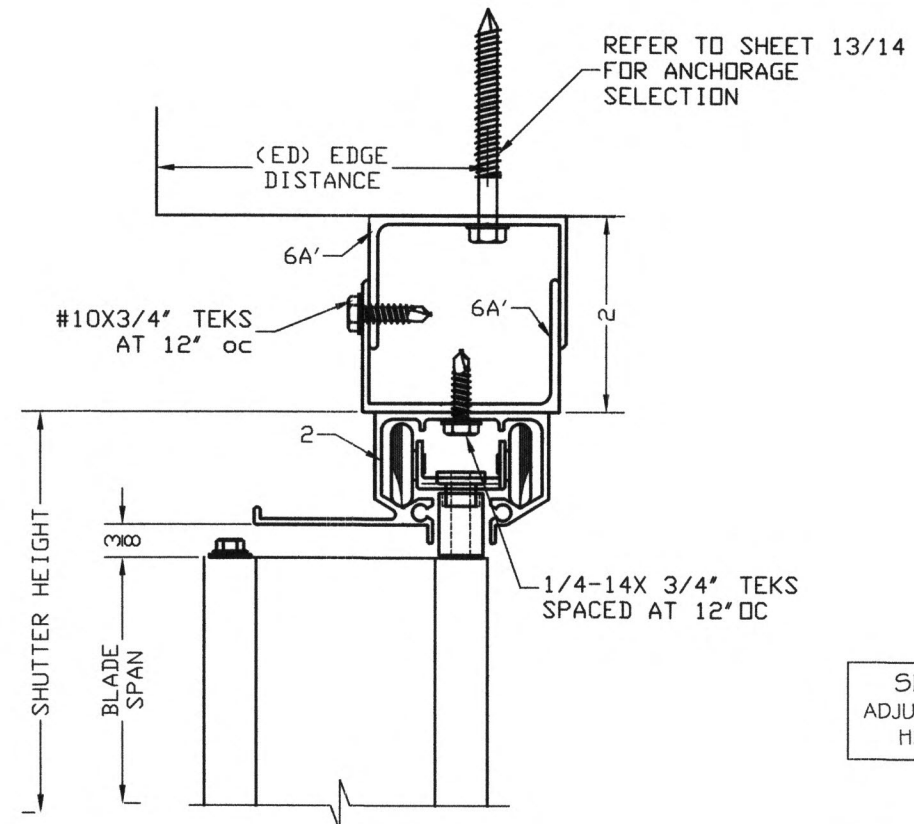
SECTION C  
WALL MOUNT WITH  
TRACK 3 OR 3A  
HEADER OR SILL



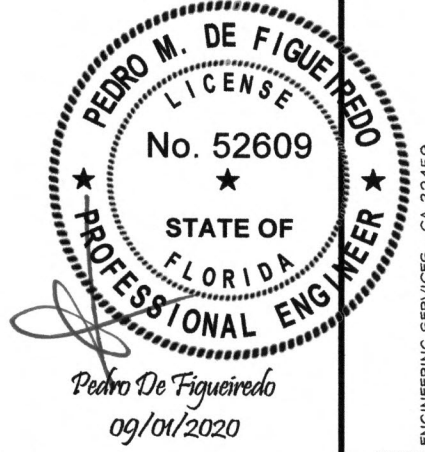
SECTION D  
INSET MOUNT W/  
TRACK 2 OR 2A  
HEADER OR SILL



SECTION E  
ANGLE INSET MOUNT  
HEADER OR SILL



SECTION GH  
ADJUSTABLE MOUNT  
HEADER / SILL



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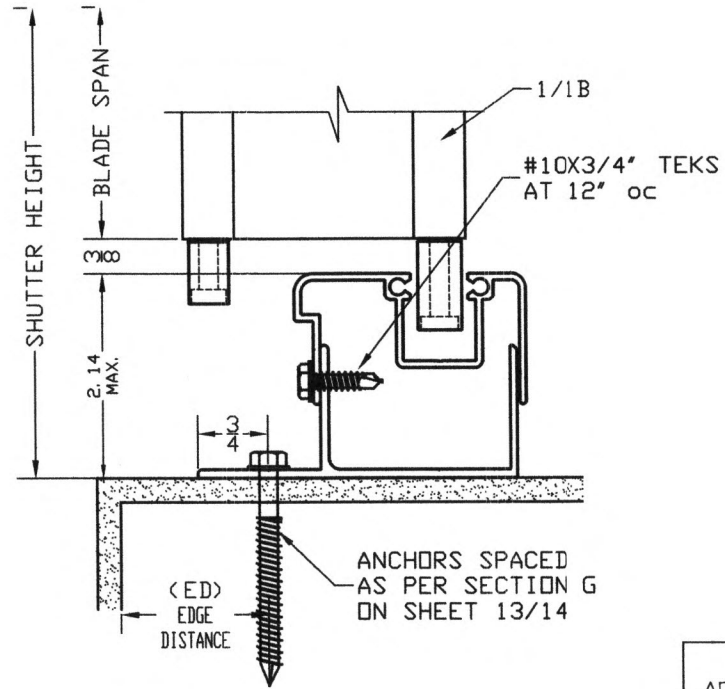
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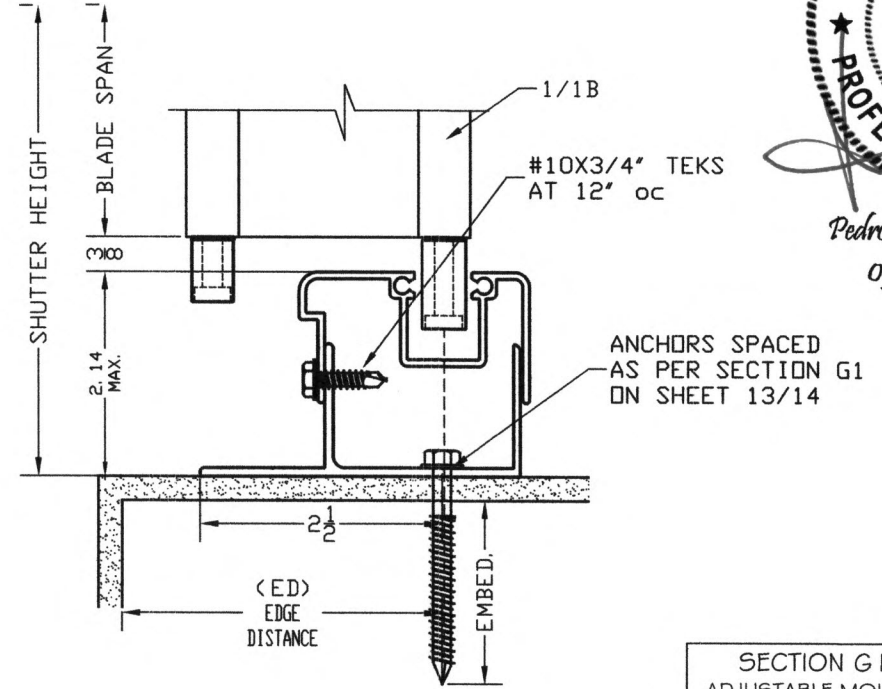
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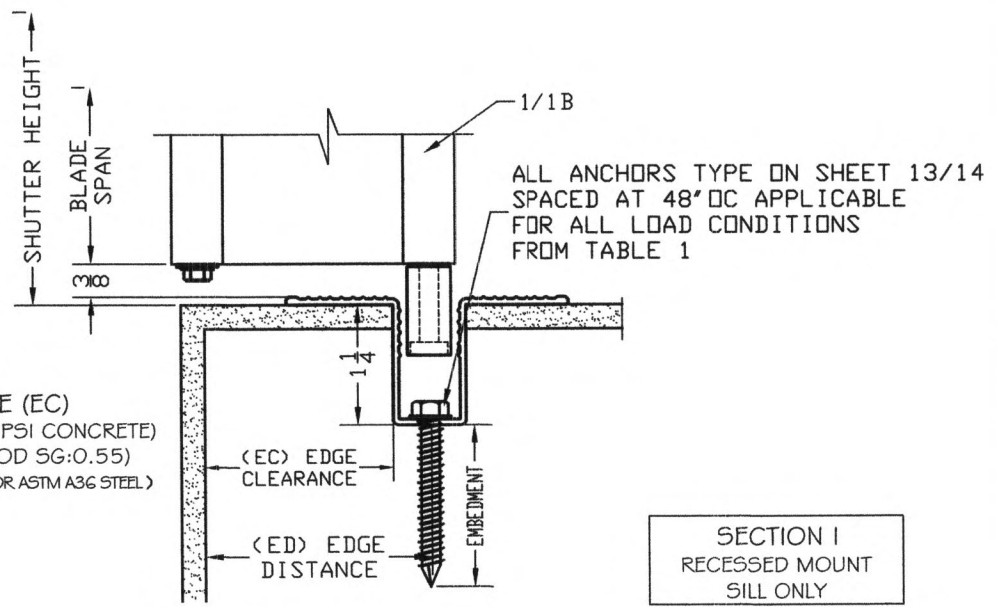
TYPICAL SECTIONS



SECTION G  
ADJUSTABLE MOUNT  
SILL ONLY

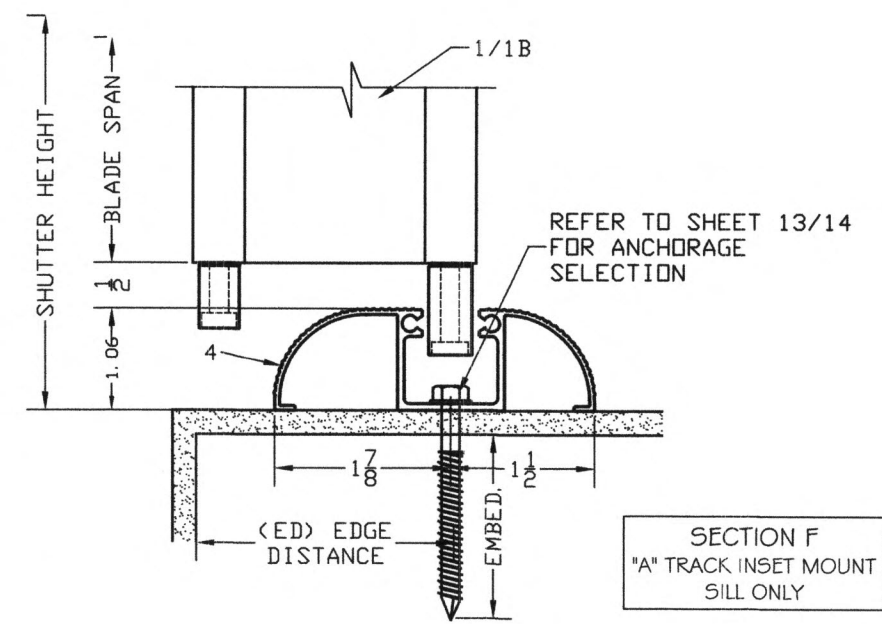


SECTION G1  
ADJUSTABLE MOUNT  
SILL ONLY

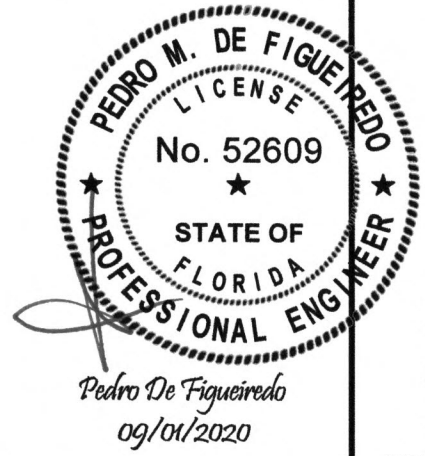


SECTION I  
RECESSED MOUNT  
SILL ONLY

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 ASTM A36 STEEL)



SECTION F  
"A" TRACK INSET MOUNT  
SILL ONLY



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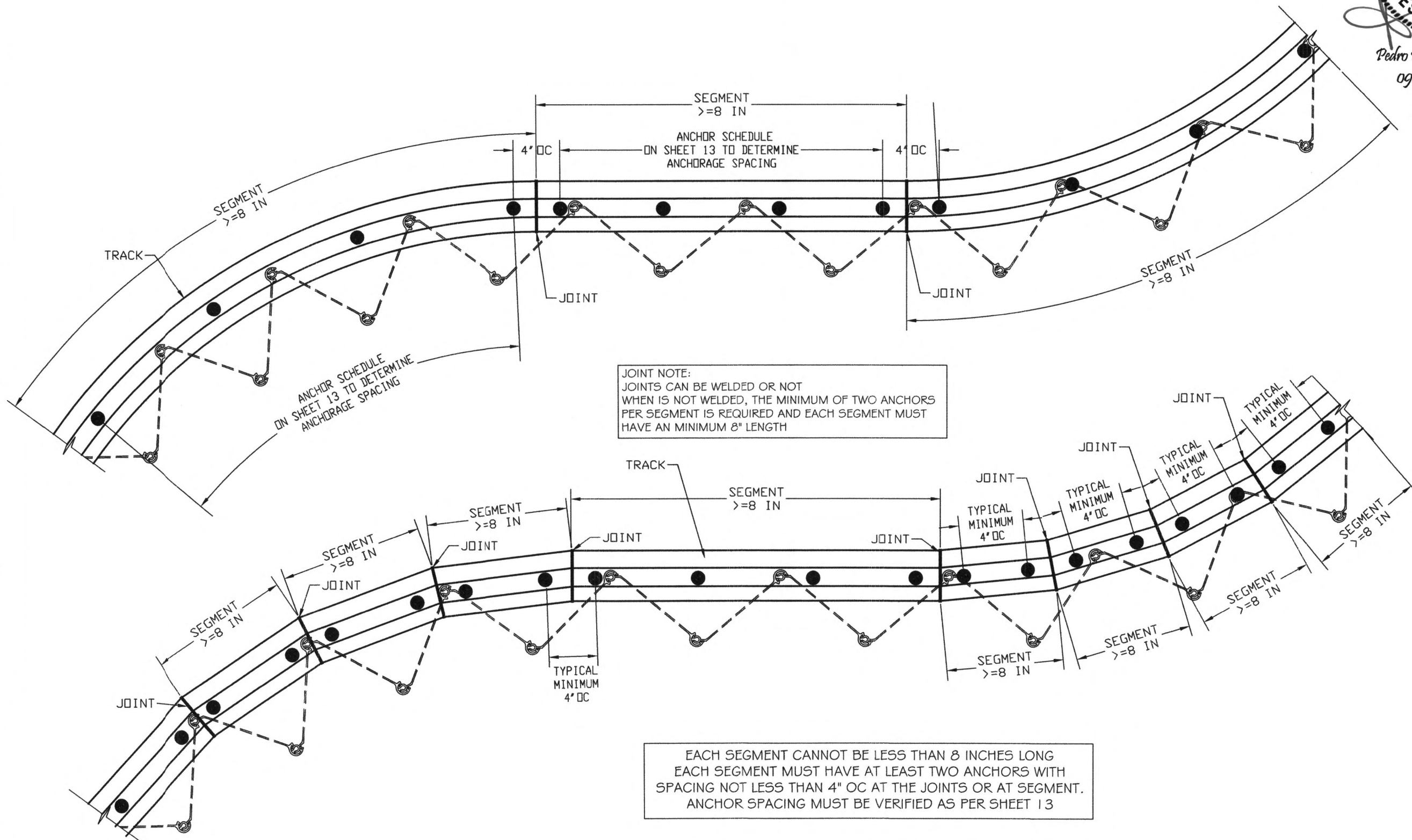
OPTIONAL CURVED TRACK  
BENT TRACK OR SEGMENTED TRACK OPTIONS



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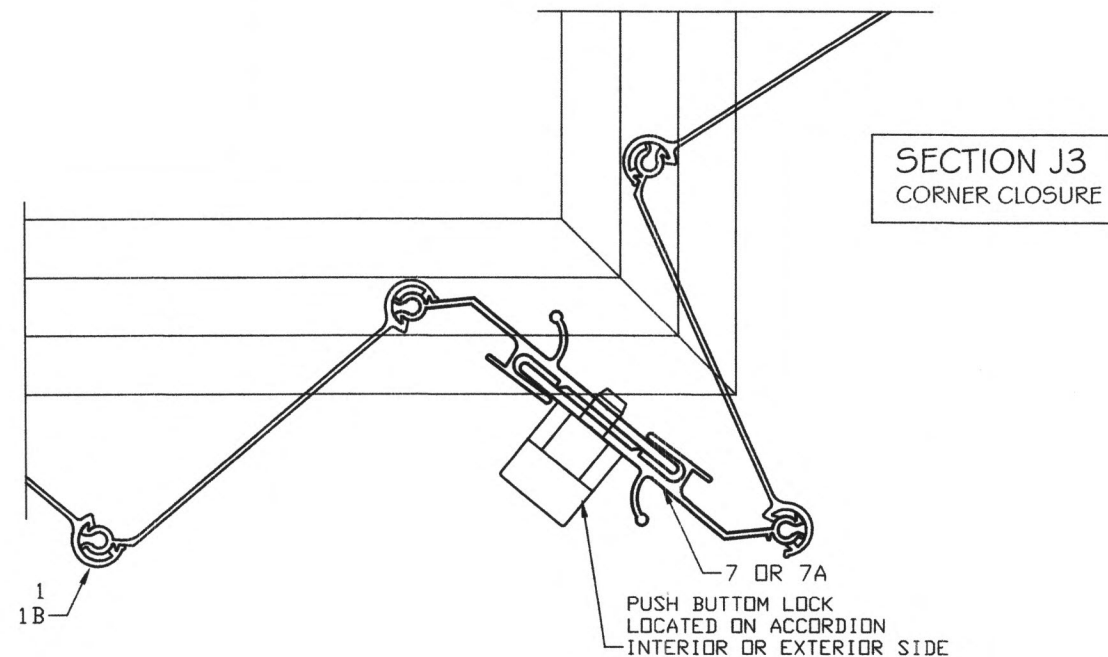
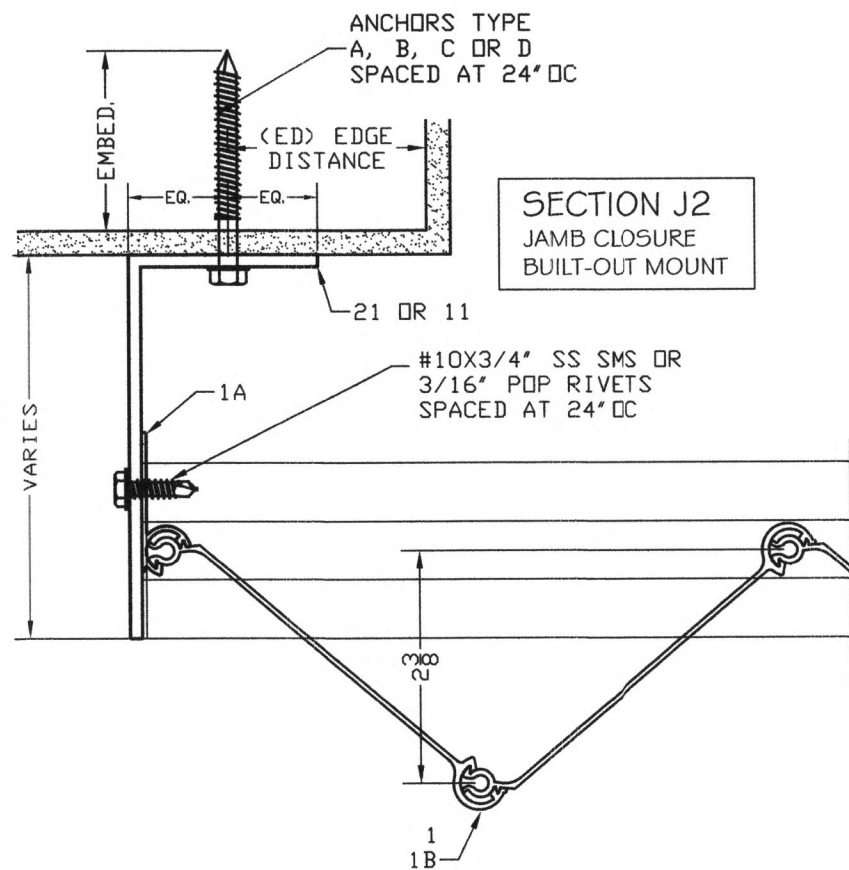
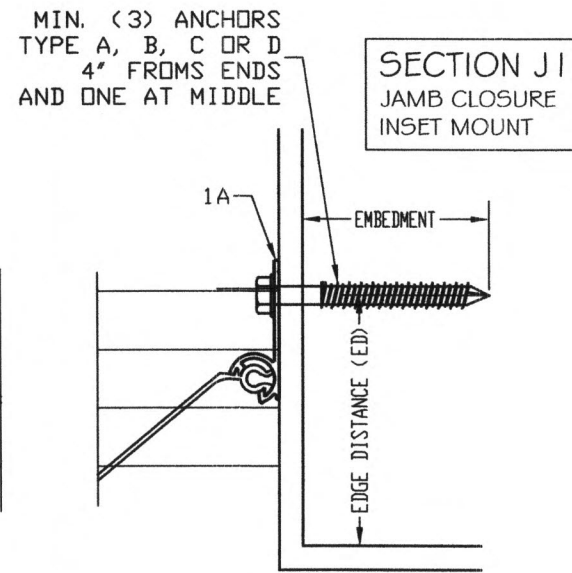
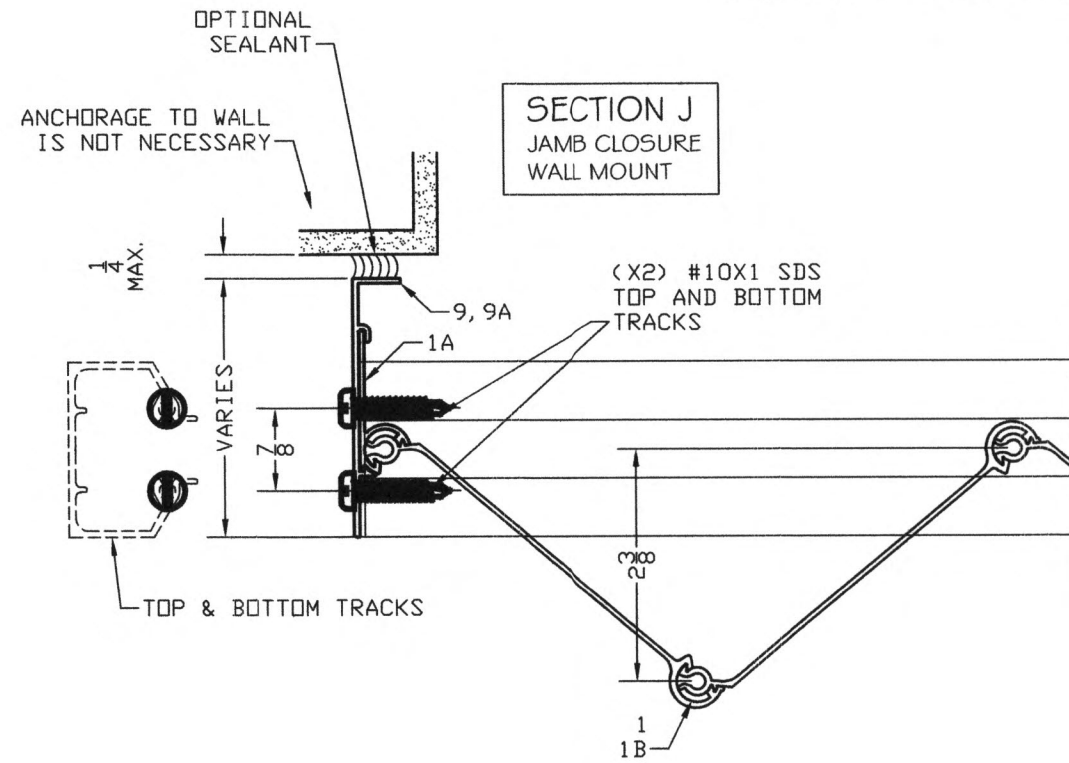


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TYPICAL HORIZONTAL  
JAMB AND CORNER SECTIONS J



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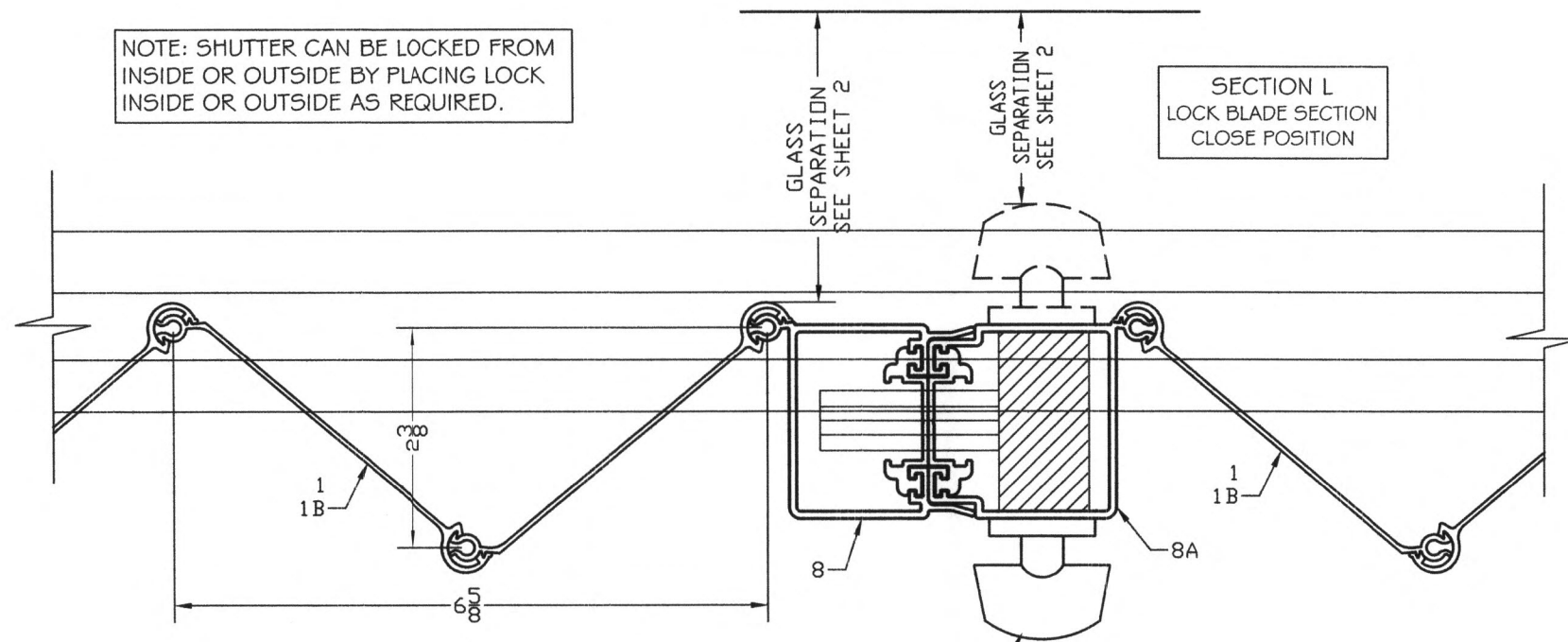
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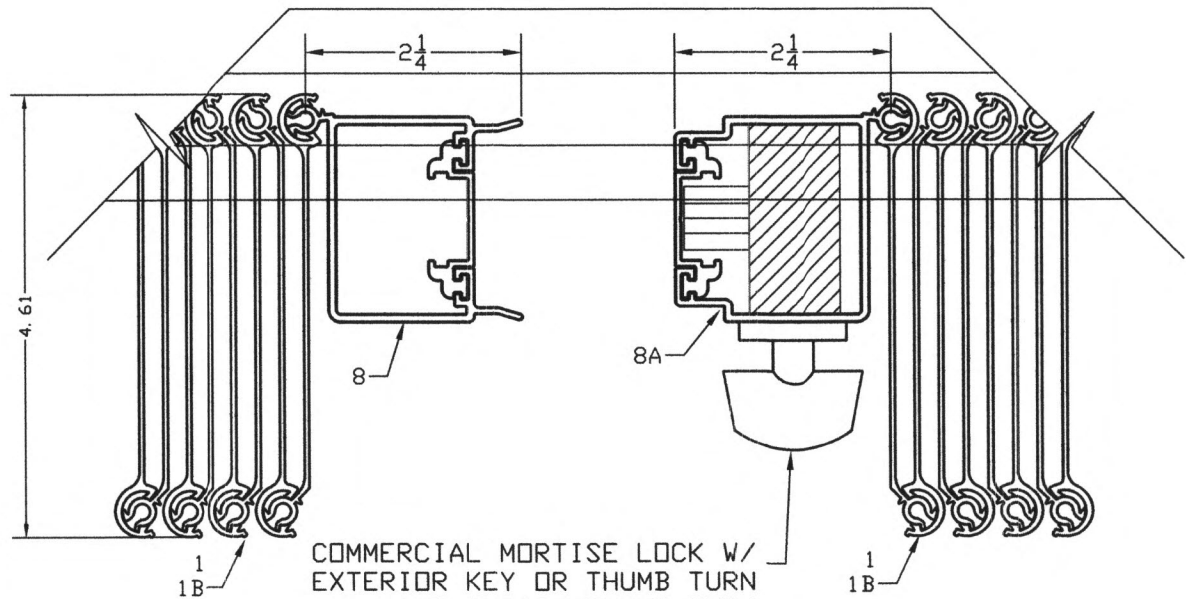
TYPICAL HORIZONTAL SECTIONS  
HD LOCK SECTIONS L

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



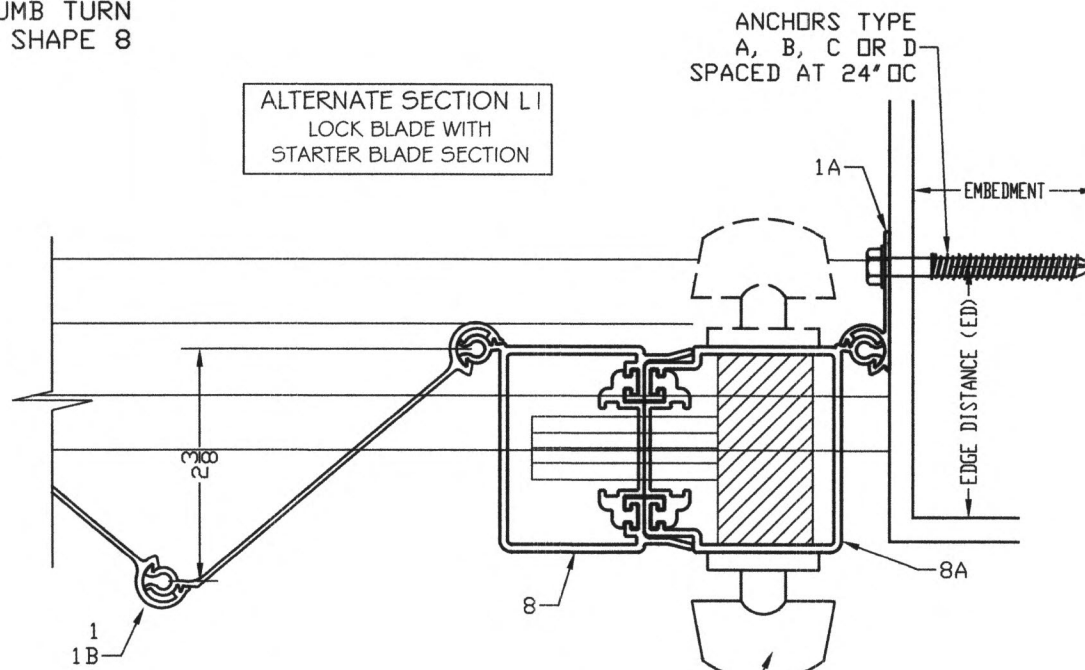
COMMERCIAL MORTISE LOCK W/  
EXTERIOR KEY OR THUMB TURN  
AND INSIDE THUMB TURN  
INSTALLED ON SHAPE 8

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  
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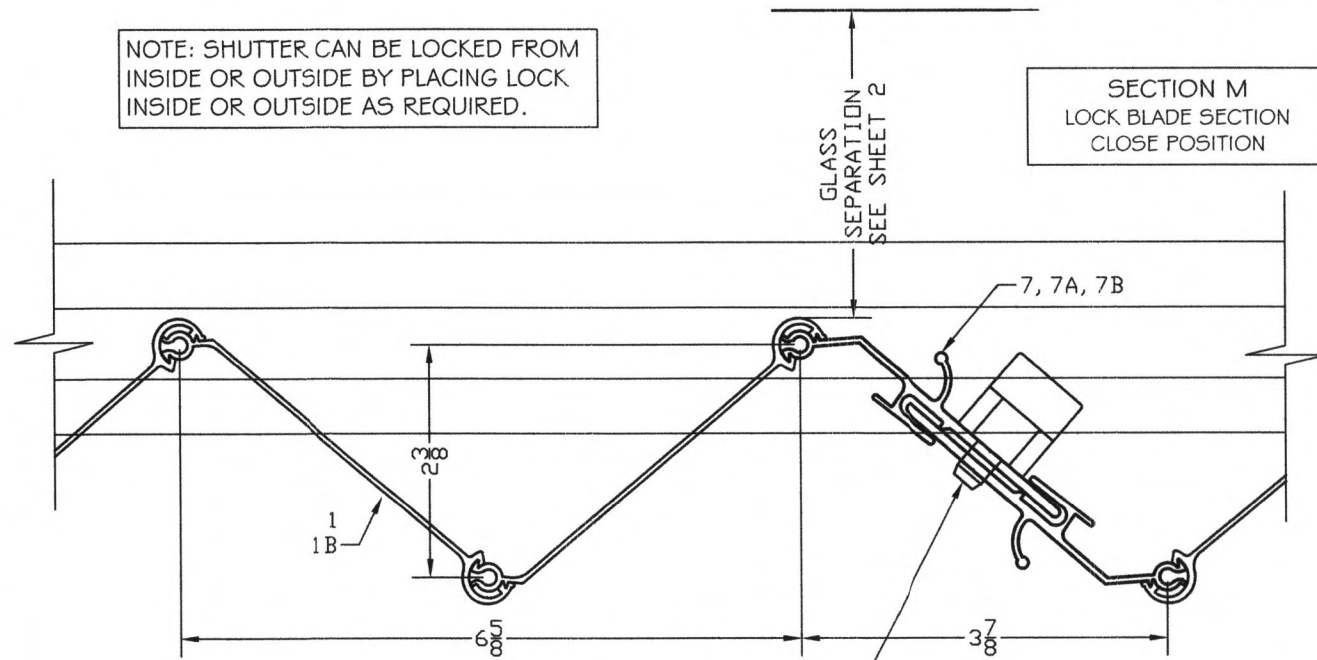
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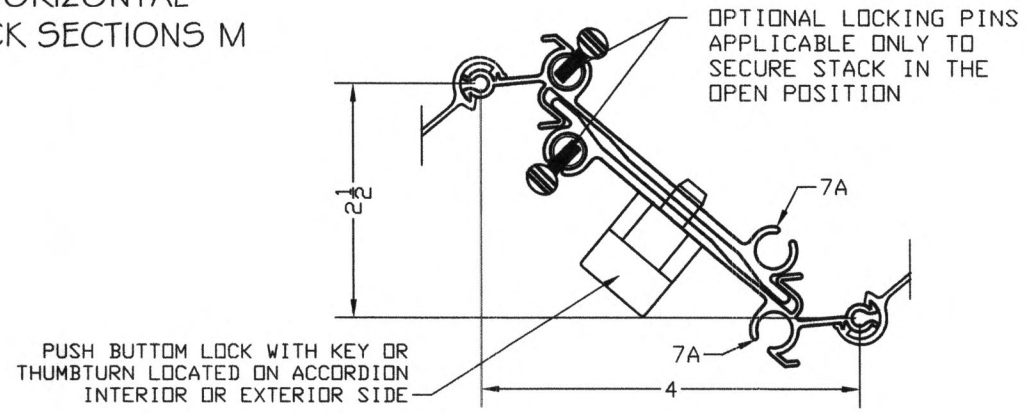
TYPICAL HORIZONTAL UNIMATE LOCK SECTIONS M

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

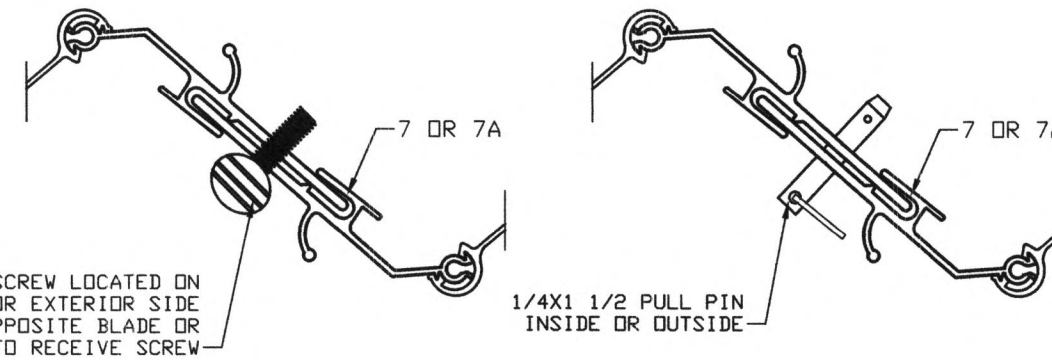


PUSH BUTTOM LOCK WITH KEY OR THUMBTURN LOCATED ON ACCORDION INTERIOR OR EXTERIOR SIDE

SECTION M  
LOCK BLADE SECTION  
CLOSE POSITION

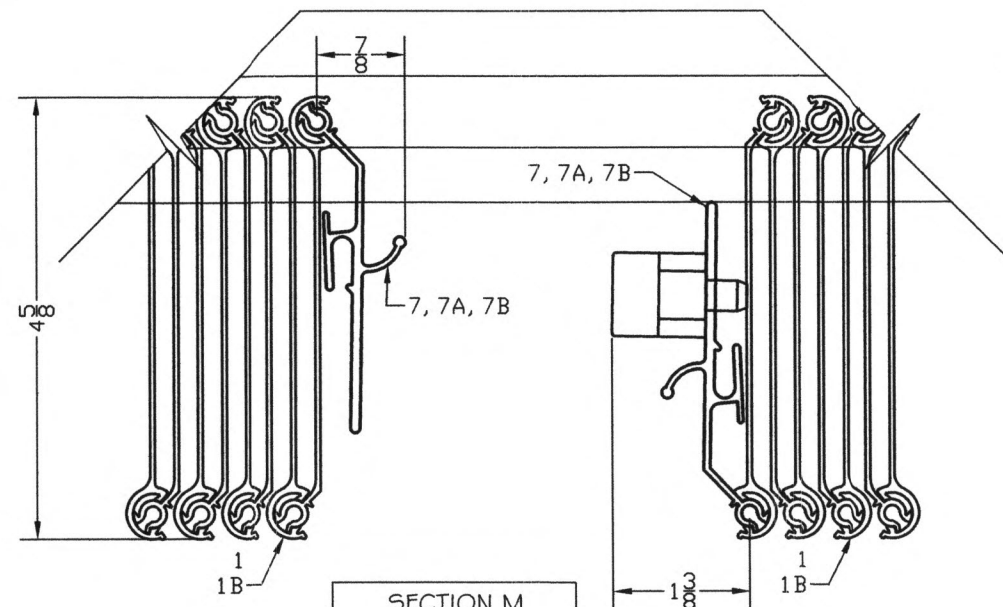


PUSH BUTTOM LOCK WITH KEY OR THUMBTURN LOCATED ON ACCORDION INTERIOR OR EXTERIOR SIDE

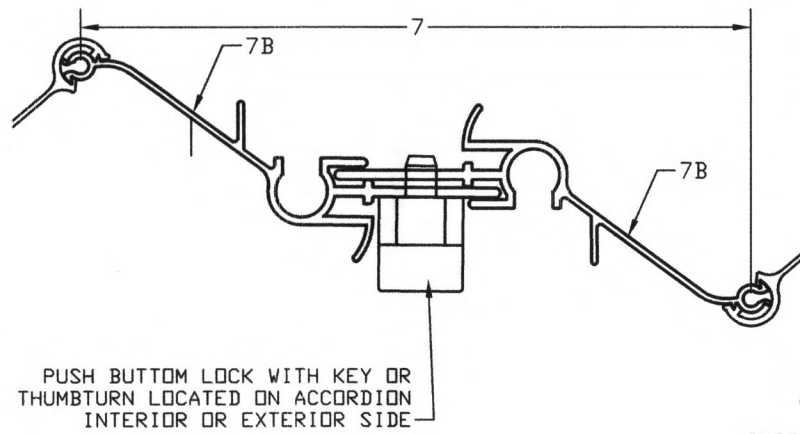


1/4-20x3/4 THUMB SCREW LOCATED ON ACCORDION INTERIOR OR EXTERIOR SIDE DRILL AND TAP OPPOSITE BLADE OR INSTALL JACK NUT TREAD TO RECEIVE SCREW

1/4x1 1/2 PULL PIN INSIDE OR OUTSIDE

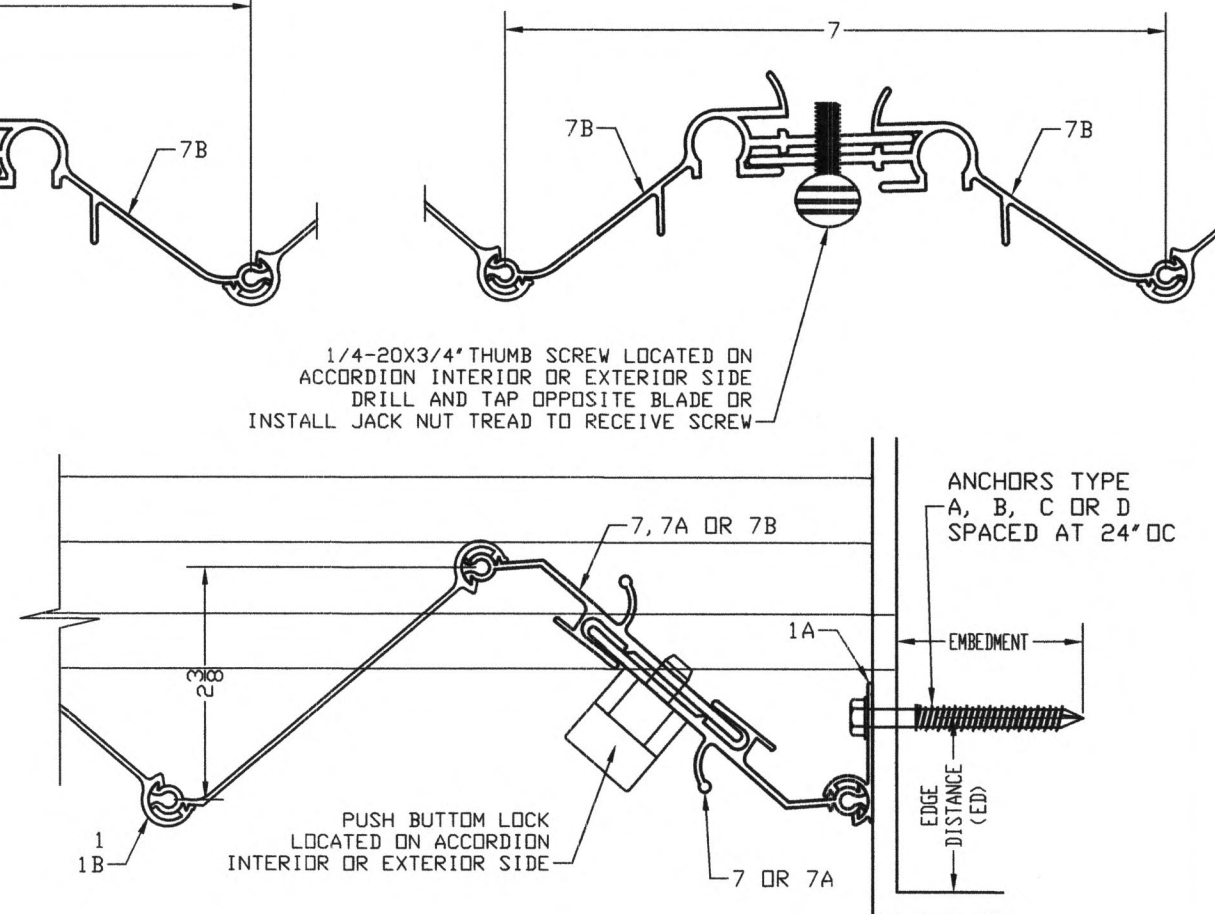


SECTION M  
LOCK BLADE SECTION  
OPEN POSITION



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

ALTERNATE SECTION M I  
LOCK BLADE WITH  
STARTER BLADE SECTION



PUSH BUTTOM LOCK LOCATED ON ACCORDION INTERIOR OR EXTERIOR SIDE

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

EMBEDMENT  
EDGE DISTANCE (ED)



PRODUCT:  
**SUPERNOVA**  
EXTRUDED ALUMINUM  
ACCORDION SHUTTER  
LARGE MISSILE IMPACT RESISTANT

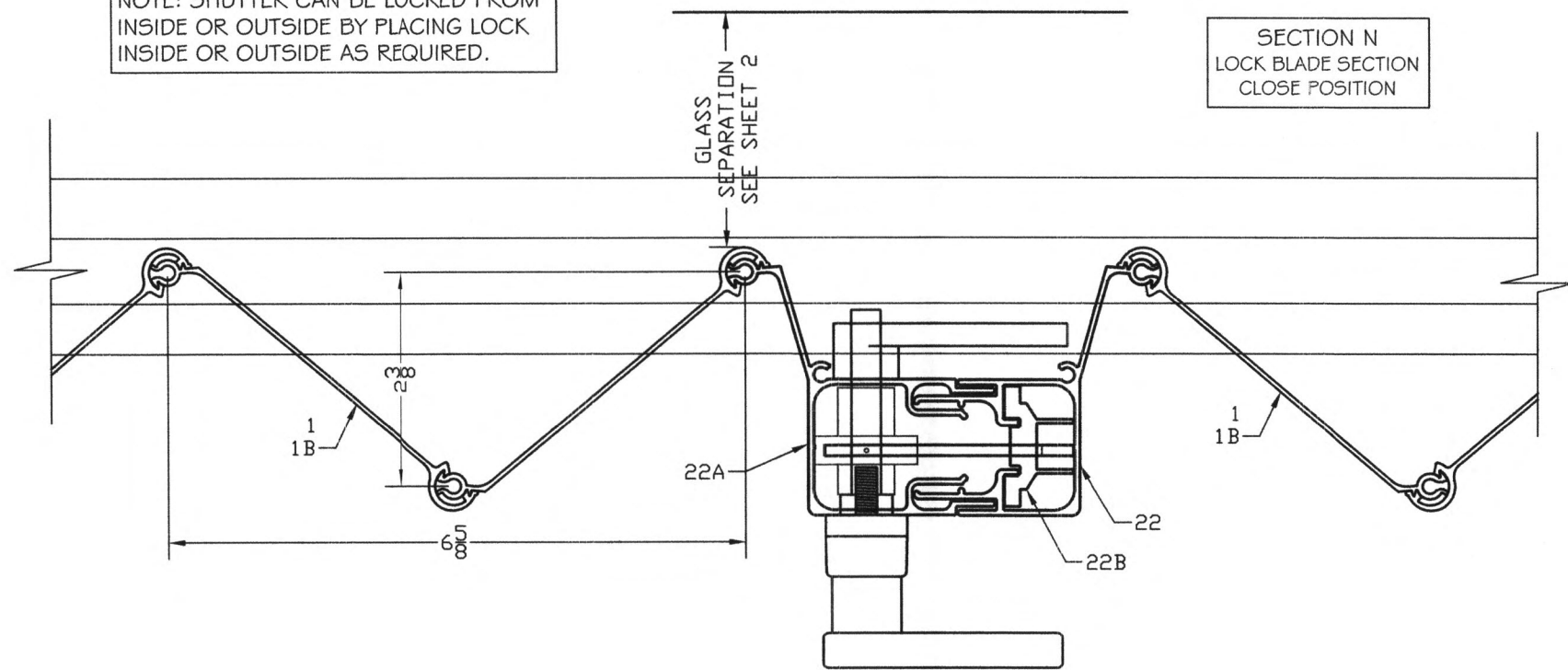
ASSOCIATION OF MANUFACTURERS:  
**N.A.S.A**  
NATIONAL APPROVED SHUTTER ASSOCIATION L.L.C.  
MIRAMAR, FL 33027

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

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

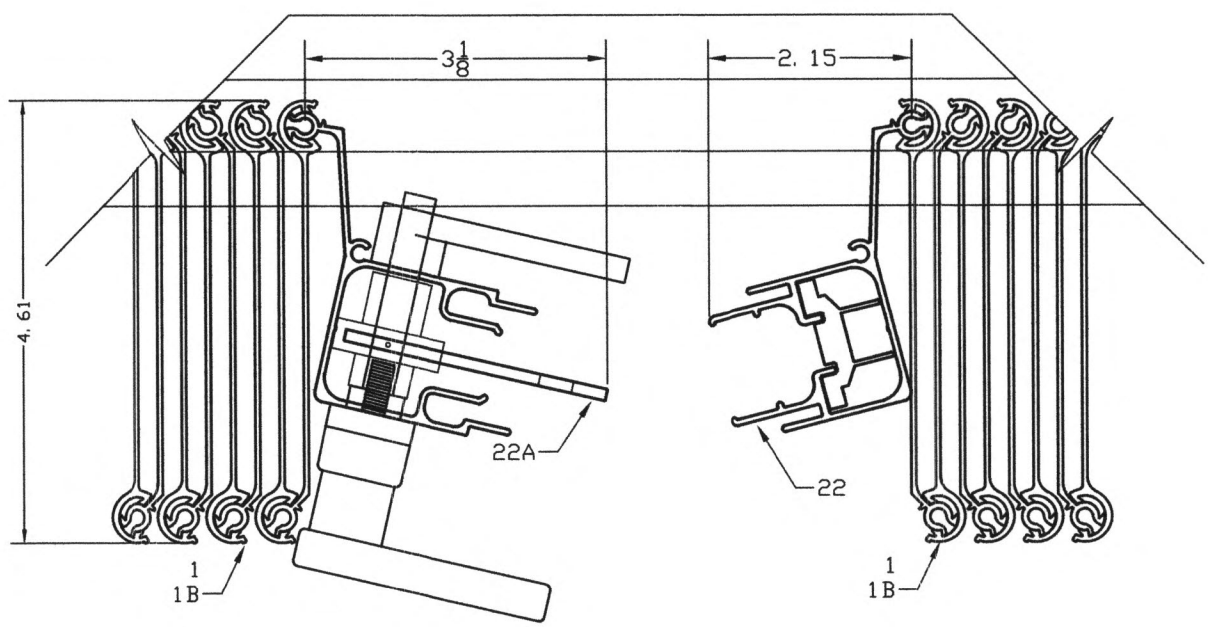
TYPICAL HORIZONTAL SECTIONS  
STD LOCK SECTIONS N

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

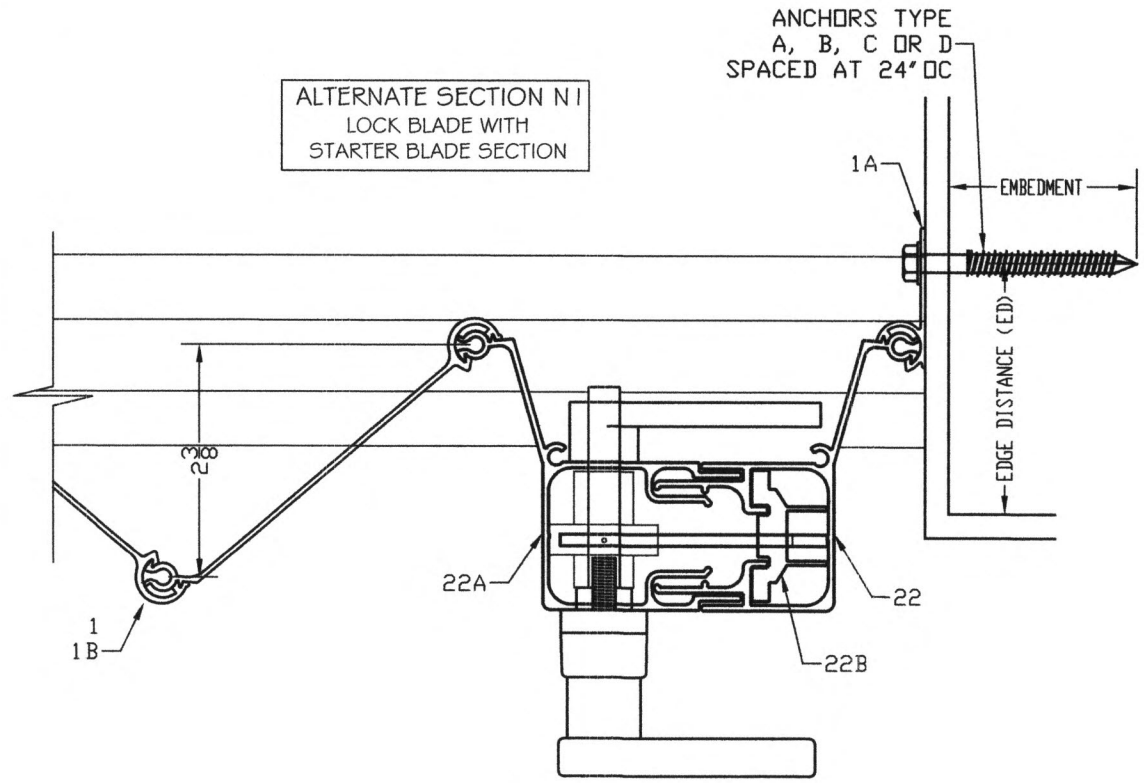


SECTION N  
LOCK BLADE SECTION  
CLOSE POSITION

SECTION N  
LOCK BLADE SECTION  
OPEN POSITION



ALTERNATE SECTION N I  
LOCK BLADE WITH  
STARTER BLADE SECTION



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



PRODUCT:  
**SUPERNOVA**  
EXTRUDED ALUMINUM  
ACCORDION SHUTTER  
LARGE MISSILE IMPACT RESISTANT

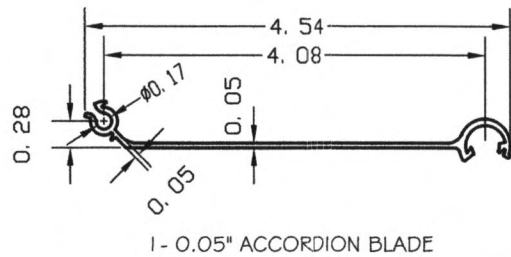
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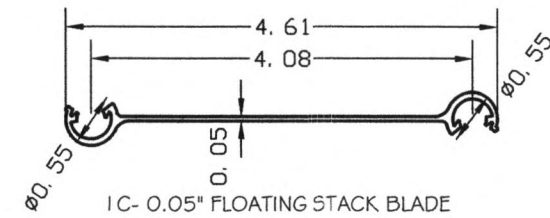
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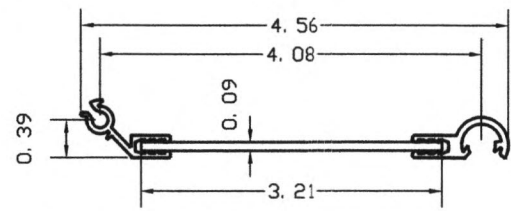
# SHUTTER COMPONENTS



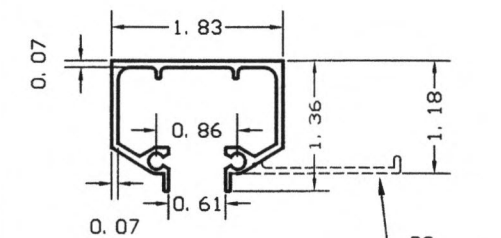
1- 0.05" ACCORDION BLADE



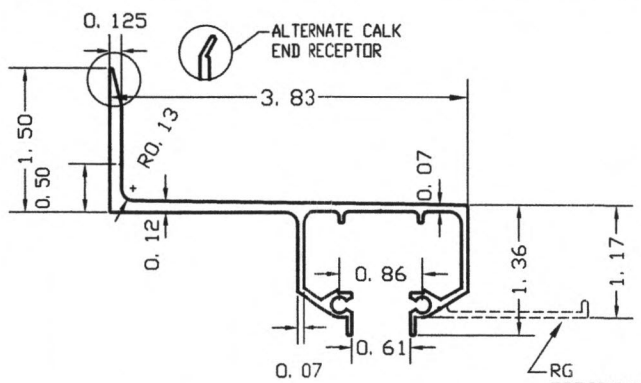
1C- 0.05" FLOATING STACK BLADE



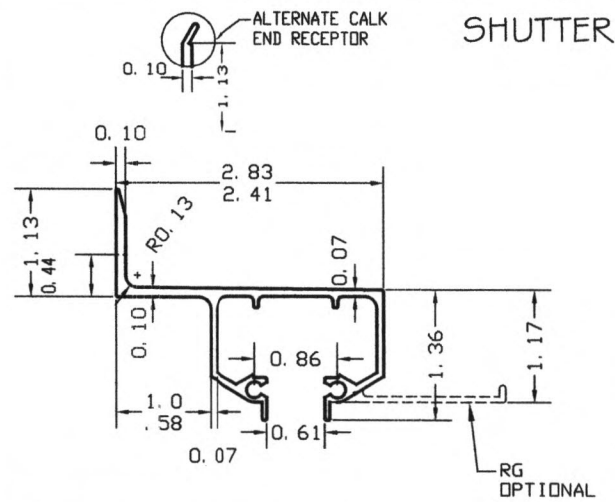
1B- COMPOSITE ALUMINUM / LEXAN BLADE LEXAN POLYCARBONATE APPROVED AS PER NOA 13-0717.01 XL102UV



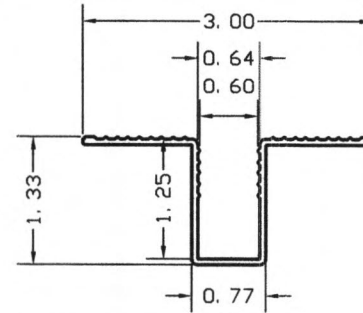
2- INSET TRACK W/ RG HEADER / SILL MOUNT 2.1- INSET TRACK W/O RG HEADER / SILL MOUNT



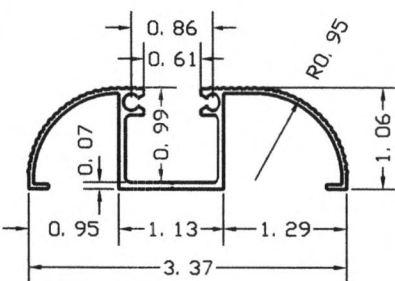
3A- 2" BUILD-OUT TRACK HEADER / SILL MOUNT 3A.1- 2" BO TRACK W/O RAIN GUARD (RG)



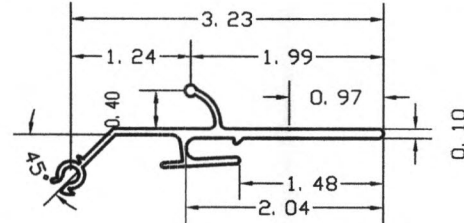
3- 1" 1/2" BUILT-OUT TRACK HEADER / SILL MOUNT 3.1- 1" 1/2" BO TRACK W/O RAIN GUARD (RG)



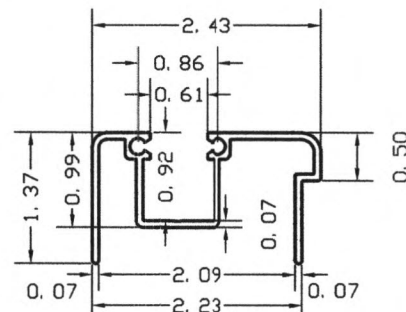
5- RECESSED TRACK SILL MOUNT ONLY



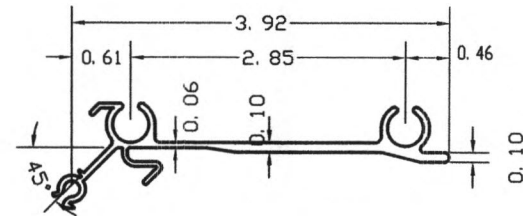
4- "A" TRACK SILL MOUNT ONLY



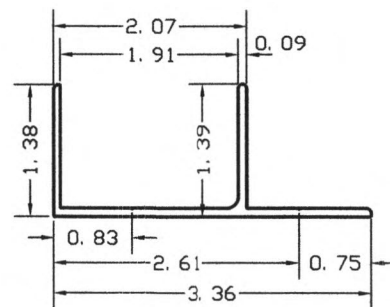
7- UNIMATE W/O LP LOCKING BLADES



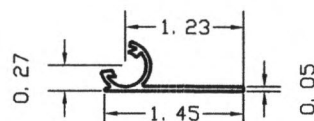
6- ADJUSTABLE FEMALE HEADER / SILL MOUNT



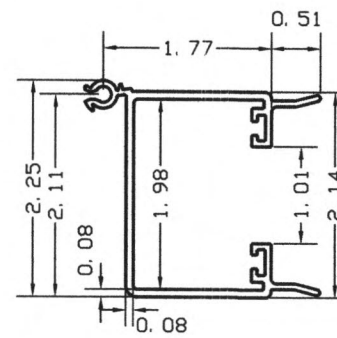
7A- UNIMATE W/ LP LOCKING BLADES



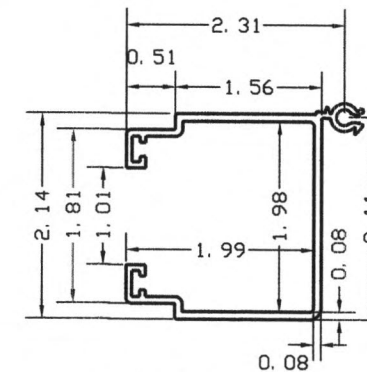
6A- ADJUSTABLE MALE HEADER / SILL MOUNT



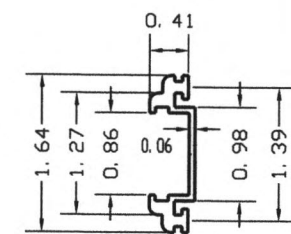
1A- STARTER BLADE



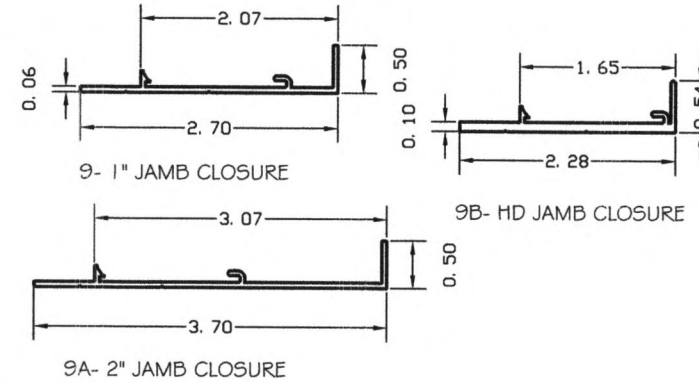
8- FEMALE HD LOCKING BLADE



8A- MALE HD LOCKING BLADE

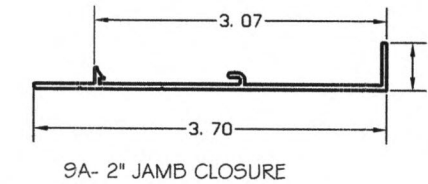


8B- ADAPTOR FILLER USE WITH 8 AND 8A

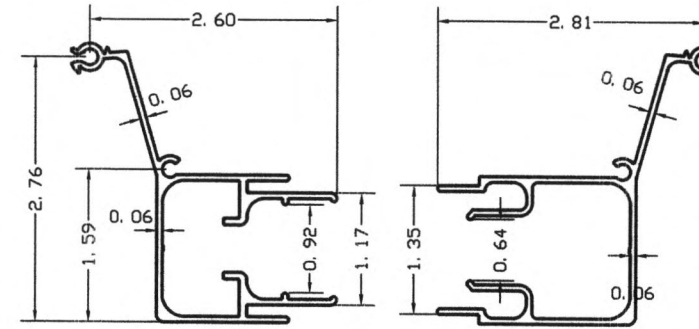


9- 1" JAMB CLOSURE

9B- HD JAMB CLOSURE

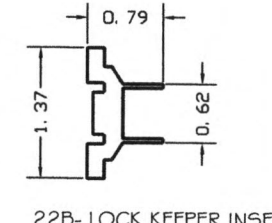


9A- 2" JAMB CLOSURE



22- FEMALE STD LOCKING BLADE

22A- MALE STD LOCKING BLADE



22B- LOCK KEEPER INSERT



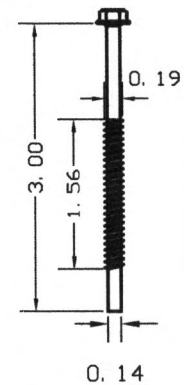
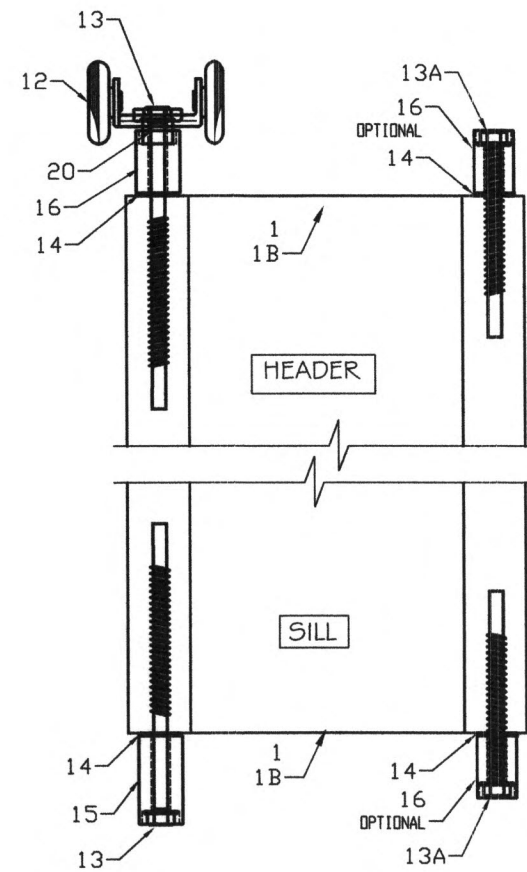
PRODUCT:  
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EXTRUDED ALUMINUM  
ACCORDION SHUTTER  
LARGE MISSILE IMPACT RESISTANT

ASSOCIATION OF MANUFACTURERS:  
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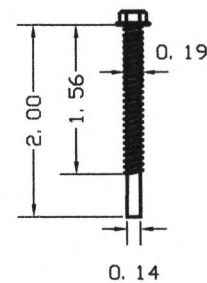
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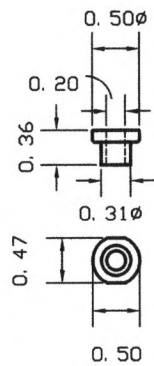
TYPICAL BLADE ASSEMBLY



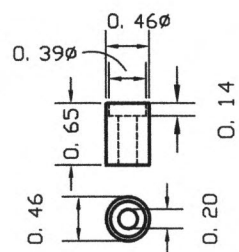
13- #10X3" HH BLADE SCREW 410 STAINLESS STEEL



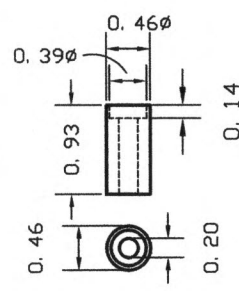
13A- #10X2" HH BLADE SCREW 410 STAINLESS STEEL



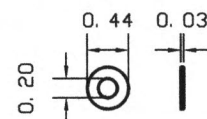
20- 1/2" Ø X 0.36" NYLON WHEEL SPACER



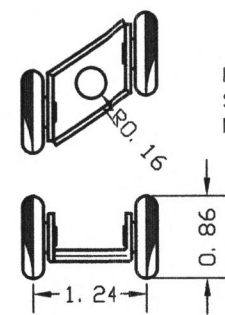
16- .46" Ø X .65" NYLON WHEEL BUSHING



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

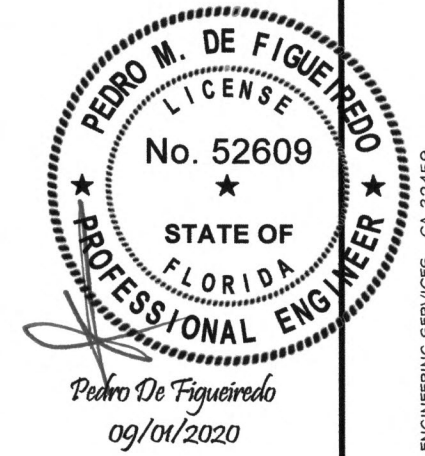
BILL OF MATERIALS

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.
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" 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 S54 INTO 3000 PSI CONCRETE	1.75	3.0
E1	1/4" CRETE-FLEX S54 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.



PRODUCT:  
**SUPERNOVA**  
EXTRUDED ALUMINUM  
ACCORDION SHUTTER  
LARGE MISSILE IMPACT RESISTANT

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PEFME@AOL.COM  
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PE 52609



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	A	B	C	D	E
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72		14	7	14	14	14	14																																			



ANCHOR SPACING TABLE  
80 PSF <= PD <= 160 PSF



Pedro De Figueiredo  
09/01/2020

ENGINEERING SERVICES - CA 32459  
9249 CHELSEA DR. 5  
PLANTATION, FL 33324  
PPMF@AOL.COM  
ENGINEER SEAL  
PEDRO DE FIGUEIREDO  
PE 52609



		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	A	B	C	D	E			
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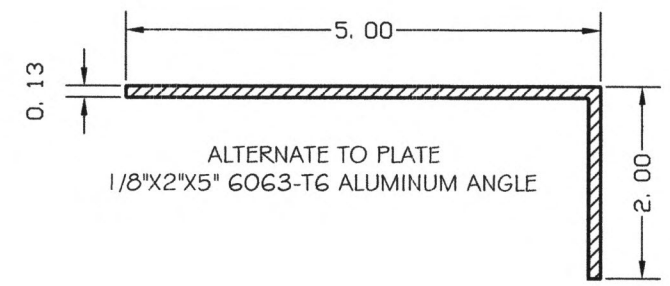
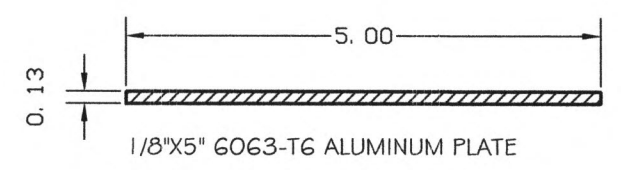
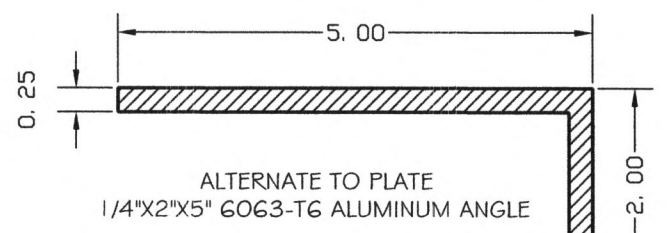
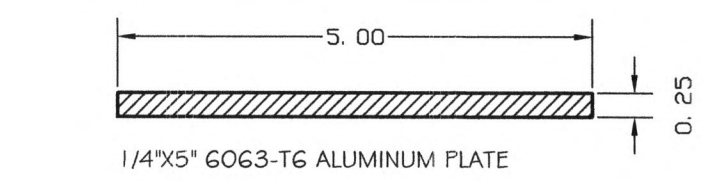
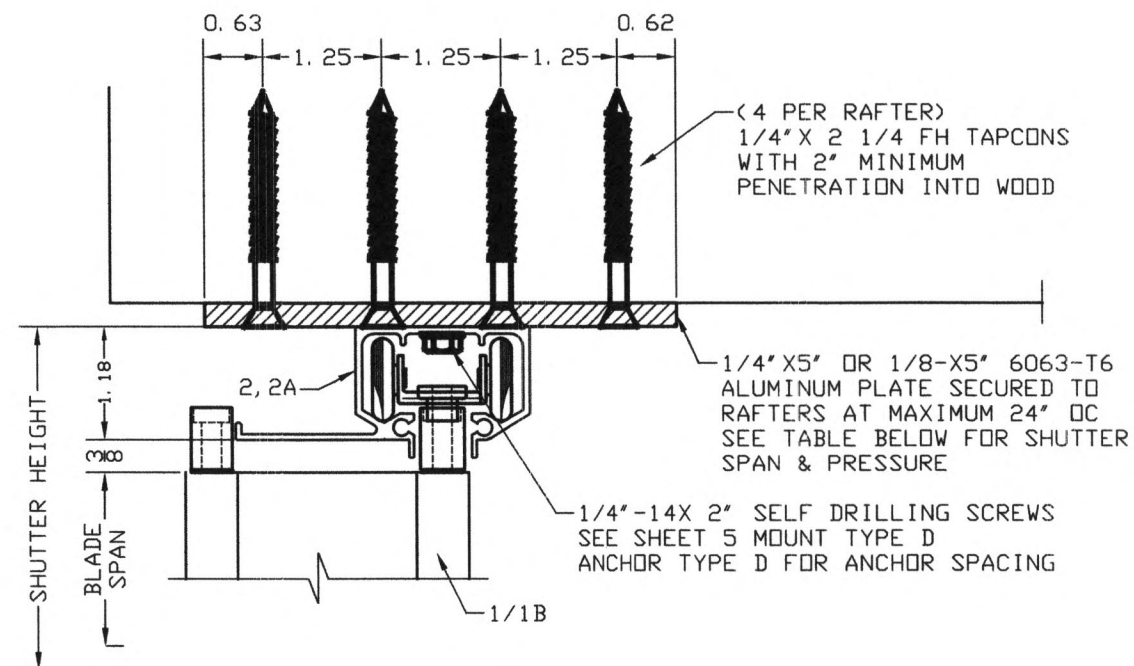
NOTE: SEE SHEET 12 FOR ANCHOR TYPE AND SELECTION

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  
14 OF 17

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



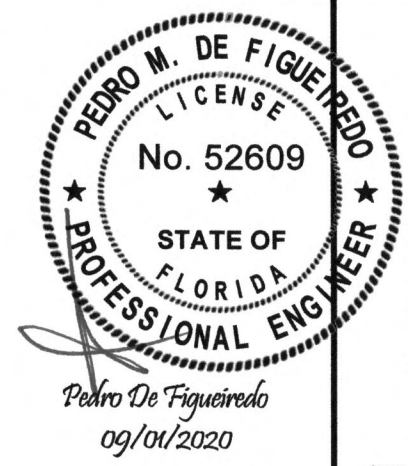
ALLOWABLE DESIGNED PRESSURES  
 FOR SECTION X WITH 1/4" ALUMINUM PLATE

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



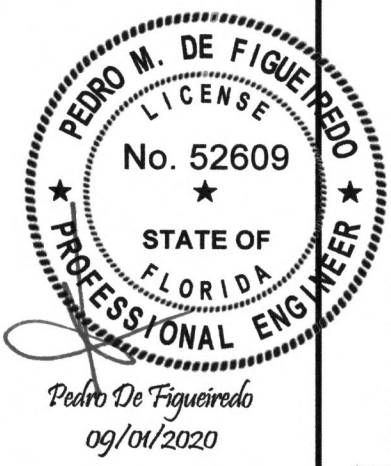
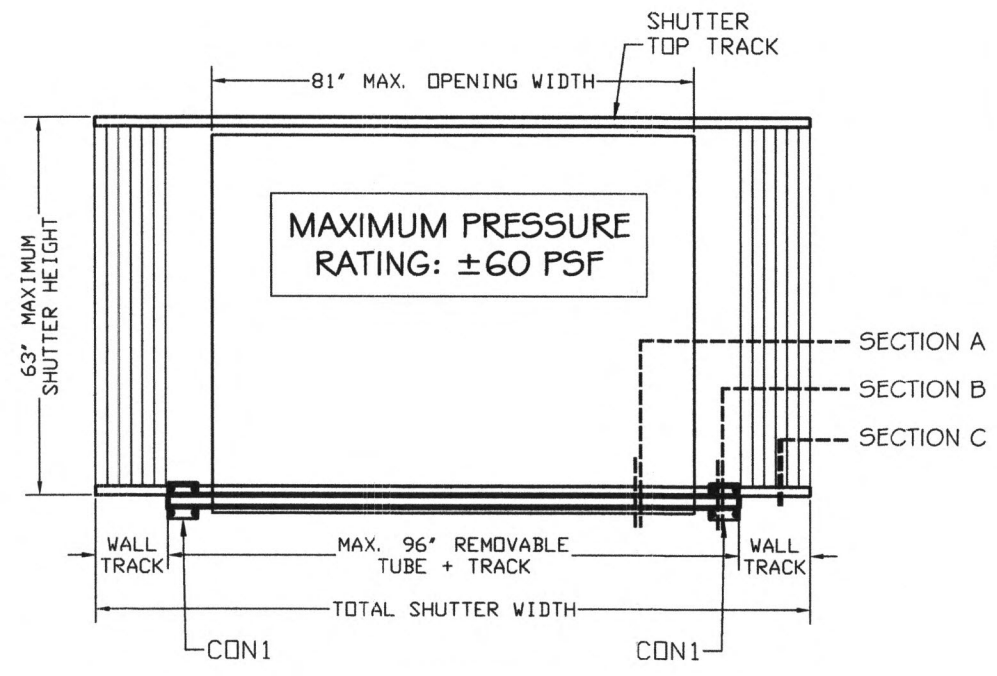
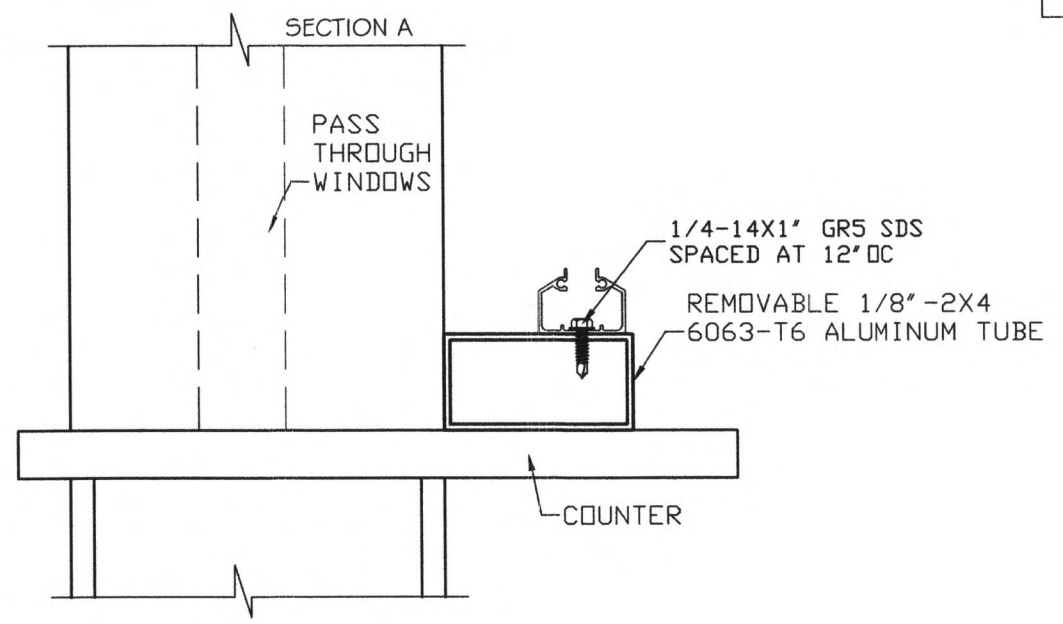
ENGINEERING SERVICES - CA 32459  
 9249 CHELSEA DR. S  
 PLANTATION, FL 33324  
 PEDRO DE FIGUEIREDO  
 PE 52609  
 PPMF@AOL.COM

PRODUCT:  
**SUPERNOVA**  
 EXTRUDED ALUMINUM  
 ACCORDION SHUTTER  
 LARGE MISSILE IMPACT RESISTANT

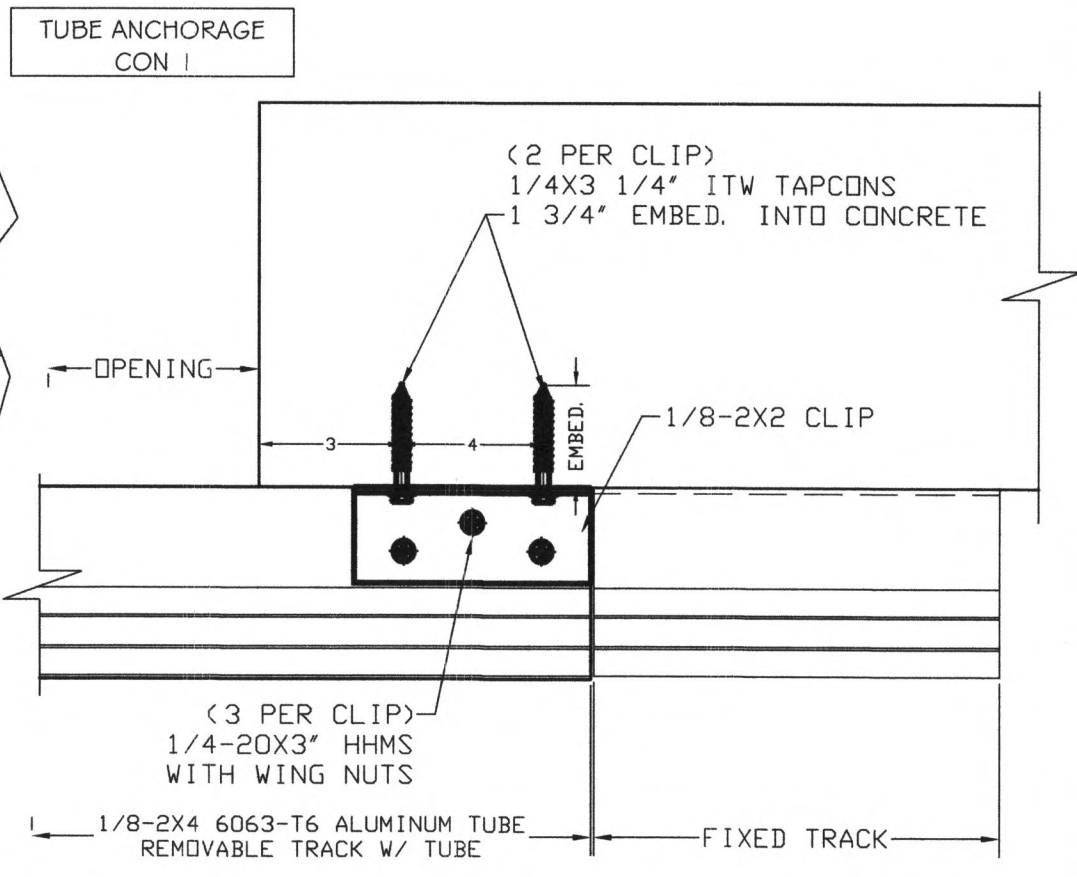
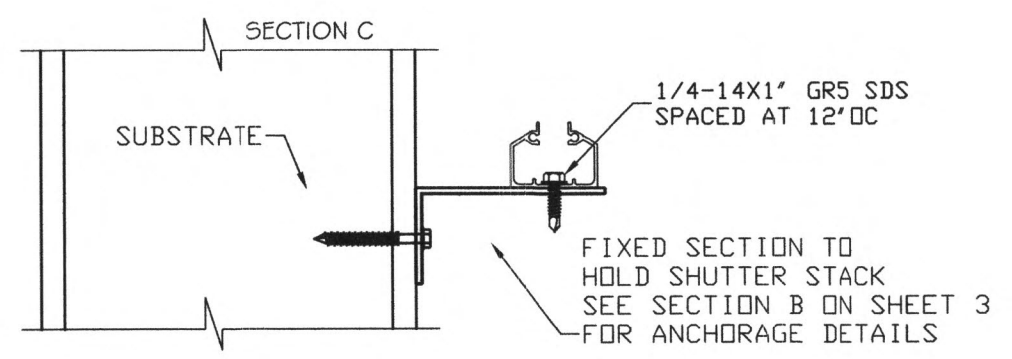
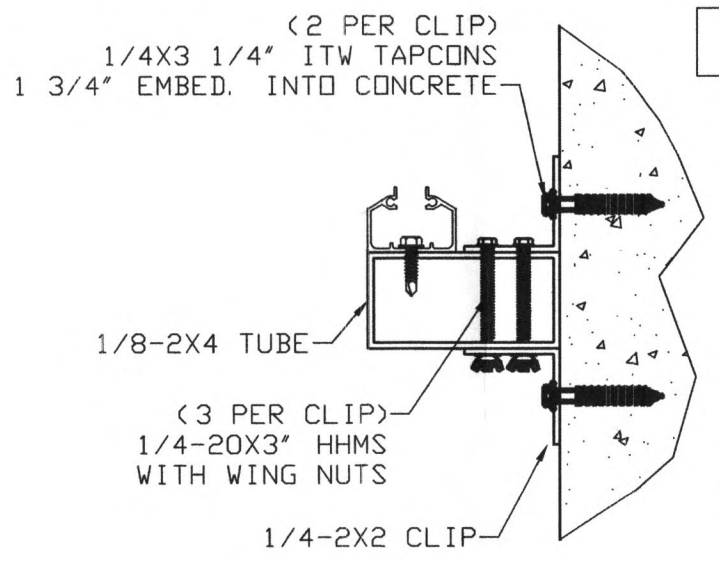
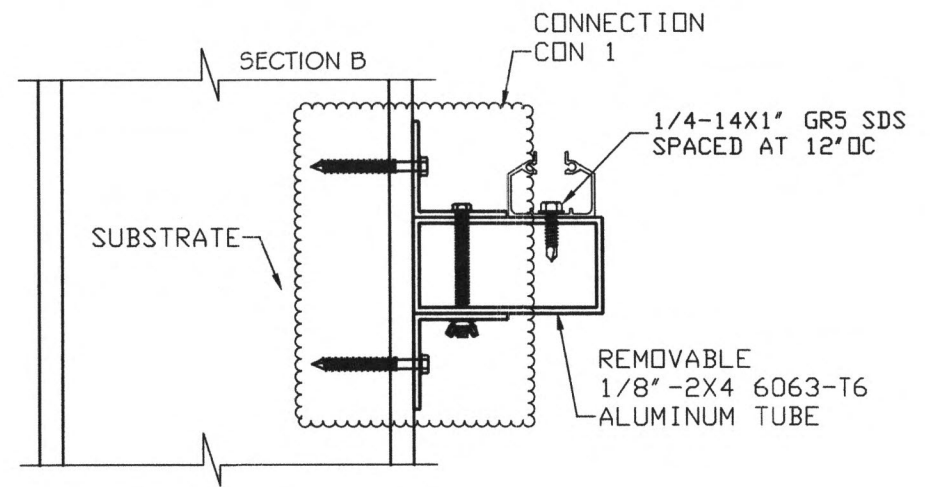
ASSOCIATION OF MANUFACTURERS:  
**N.A.S.A.**  
 NATIONAL APPROVED SHUTTER ASSOCIATION LLC.  
 MIRAMAR, FL 33027

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

**SECTION CT**  
REMOVABLE SILL  
OVER COUNTER TOP



ENGINEERING SERVICES - CA 32459  
9249 CHELSEA DR. S  
PLANTATION, FL 33324  
PPMF@AOL.COM  
ENGINEER SEAL  
PEDRO DE FIGUEIREDO  
PE 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:  
09/01/2020  
DRAWING #  
20-144  
SHEET  
16 OF 17



