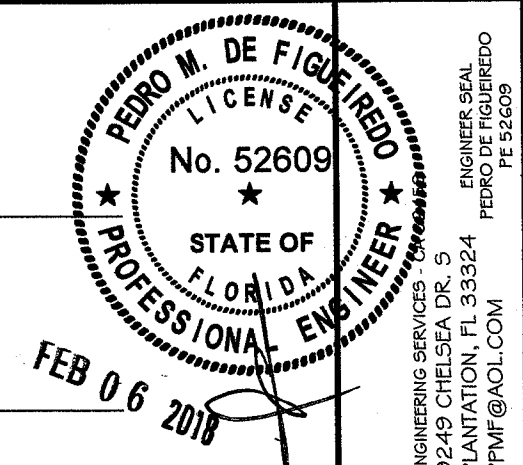


SUPERNOVA ACCORDION SHUTTER

EXTRUDED ALUMINUM ACCORDION SHUTTER

FLORIDA STATE APPROVAL

CODE VERSION: FLORIDA BUILDING CODE 2017 - 6th EDITION
 APPROVED FOR USE IN HVHZ AND OUTSIDE HVHZ
 CATEGORY: SHUTTERS -- SUBCATEGORY: ACCORDION
 IMPACT RESISTANT: (LEVEL D) - LARGE & SMALL MISSILE



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

GENERAL NOTES: (FLORIDA BUILDING CODE 2017 - 6th 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 2014 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 7-10. 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.

TABLE OF CONTENTS:

SHEET	DESCRIPTION
1	TABLE OF CONTENTS, GENERAL NOTES, USER INSTRUCTIONS
2	TYPICAL ELEVATION, ALLOWABLE BLADE PRESSURE TABLE 1, 1A AND GLASS SEPARATION TABLE 2
3	TYPICAL SECTIONS A, B, B1, B2, B3 & B4
4	TYPICAL SECTIONS C, D, E & GH
5	TYPICAL SECTIONS F, G & I
6	OPTIONAL CURVE TRACK DETAILS
7	JAMB AND CORNER SECTIONS "J"
8	LOCK MALE & FEMALE SECTIONS "L"
9	LOCK UNIMATE SECTIONS "M"
10	STANDARD LOCK SECTIONS "N"
11	COMPONENTS
12	BILL OF MATERIALS, BLADE ASSEMBLY & ANCHOR SCHEDULE.
13	ANCHORAGE SPACING SELECTION
14	ANCHORAGE SPACING SELECTION
15	SECTION "X" DETAILS
16	OVER COUNTER TOP INSTALLATION SECTION CT DETAILS

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

STANDARD COMPLIANCE:
 ASTM E330, E1996 (LEVEL D MISSILE)
 TAS 201, 202, 203 (LARGE & SMALL MISSILE)
 ASCE 7-10, ADM-15, NDS-15

ASSOCIATION:
N.A.S.A
 NATIONAL APPROVED SHUTTER ASSOCIATION L.L.C.

8717 NW 117 ST, STE 1
 HIALEAH GARDENS, FL 33018
 Tel.: (786) 621-6706
 Fax: (786) 621-6708
 WWW.NASASHUTTER.COM

PRODUCT:
SUPERNOVA
 EXTRUDED ALUMINUM
 ACCORDION SHUTTER
 LARGE MISSILE IMPACT RESISTANT

ASSOCIATION OF MANUFACTURERS:
N.A.S.A
 NATIONAL APPROVED SHUTTER ASSOCIATION L.L.C.
 HIALEAH GARDENS, FL 33018

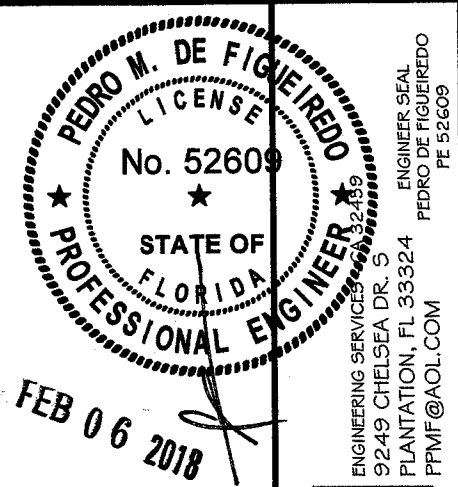
SCALE:
 NA

DATE:
 02/06/18

DRAWING #
 18-048

SHEET
 01 OF 16

REV. FEB/18



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

PRODUCT:
SUPERNOVA
 EXTRUDED ALUMINUM
 ACCORDION SHUTTER
 LARGE MISSILE IMPACT RESISTANT

ASSOCIATION OF MANUFACTURERS:
N.A.S.A.
 NATIONAL APPROVED SHUTTER ASSOCIATION LLC.
 HIALEAH GARDENS, FL 33018

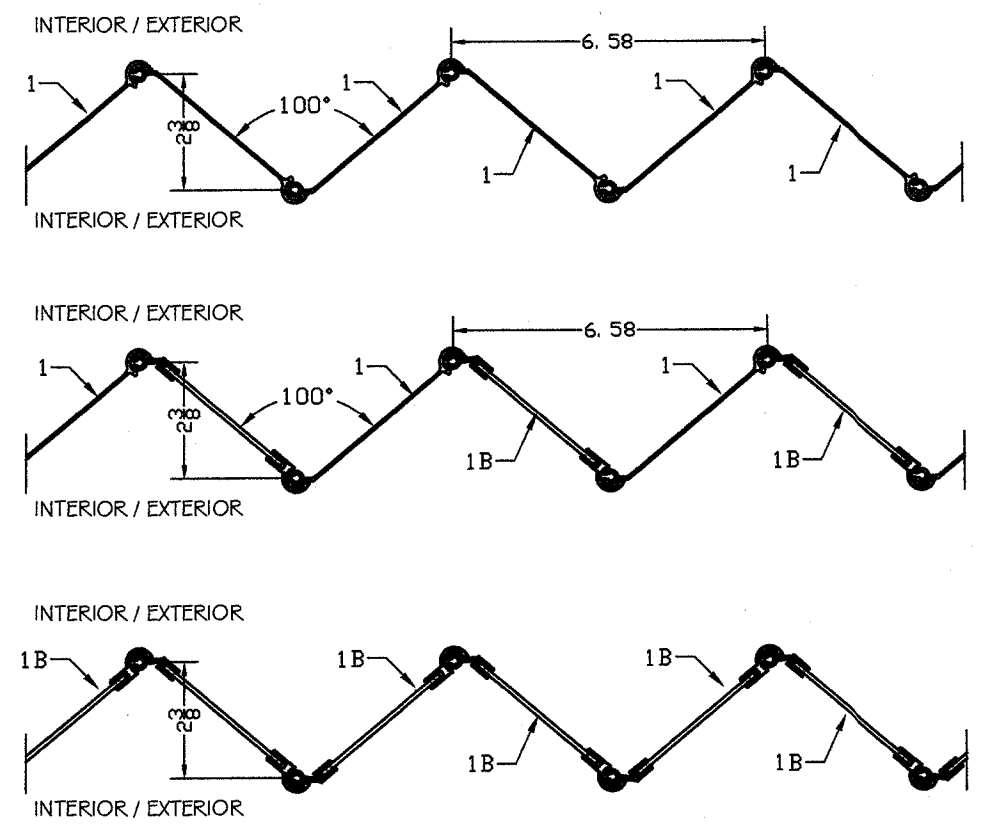
TABLE I
 MAXIMUM ALLOWABLE #1 BLADE
 SHUTTER SPAN X PRESSURE

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

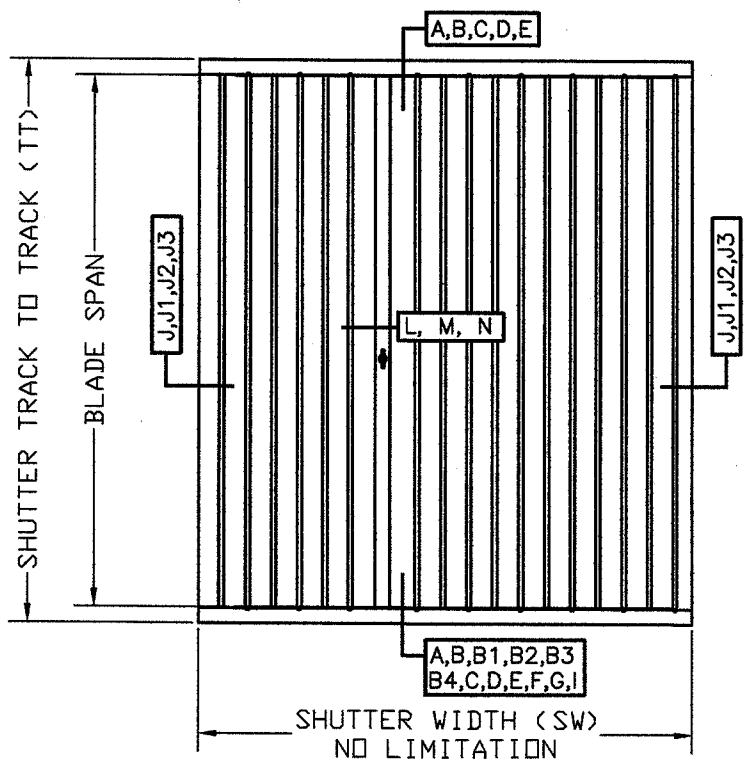


ALL ALUMINUM BLADES

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

ALL LEXAN BLADES

TYPICAL ELEVATION



TYPICAL CROSS SECTION

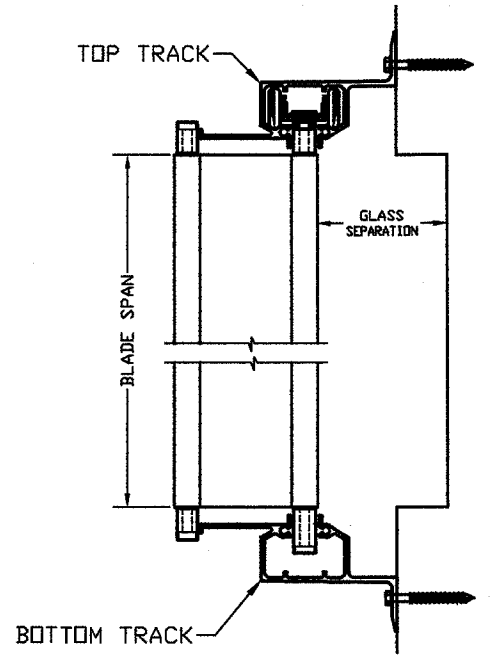


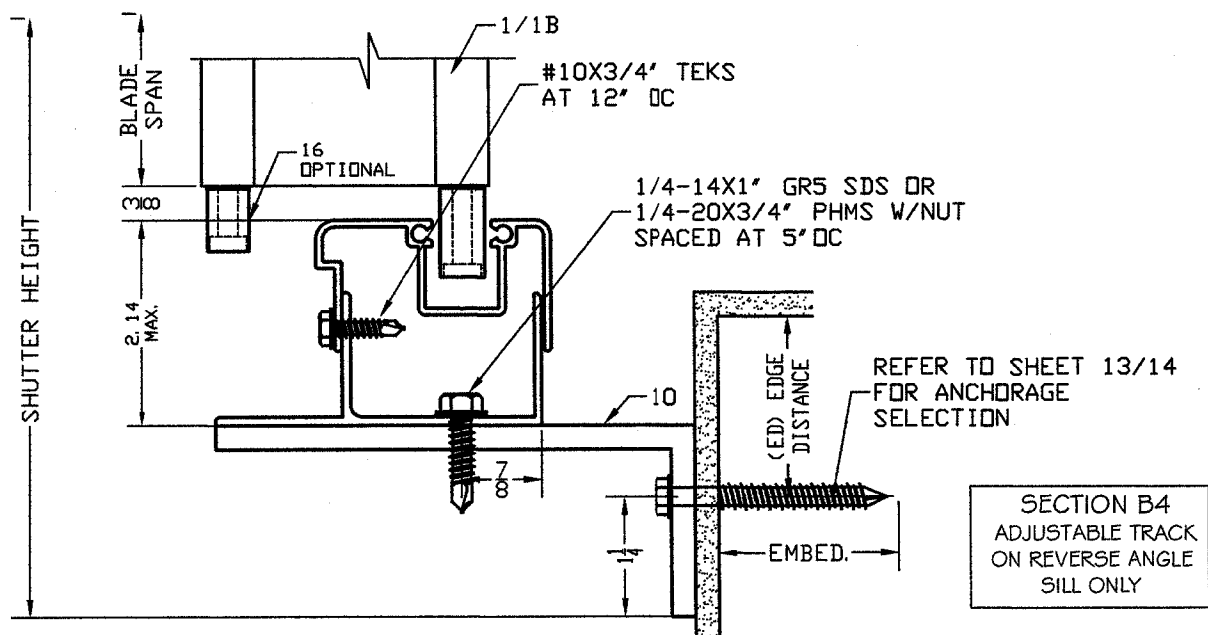
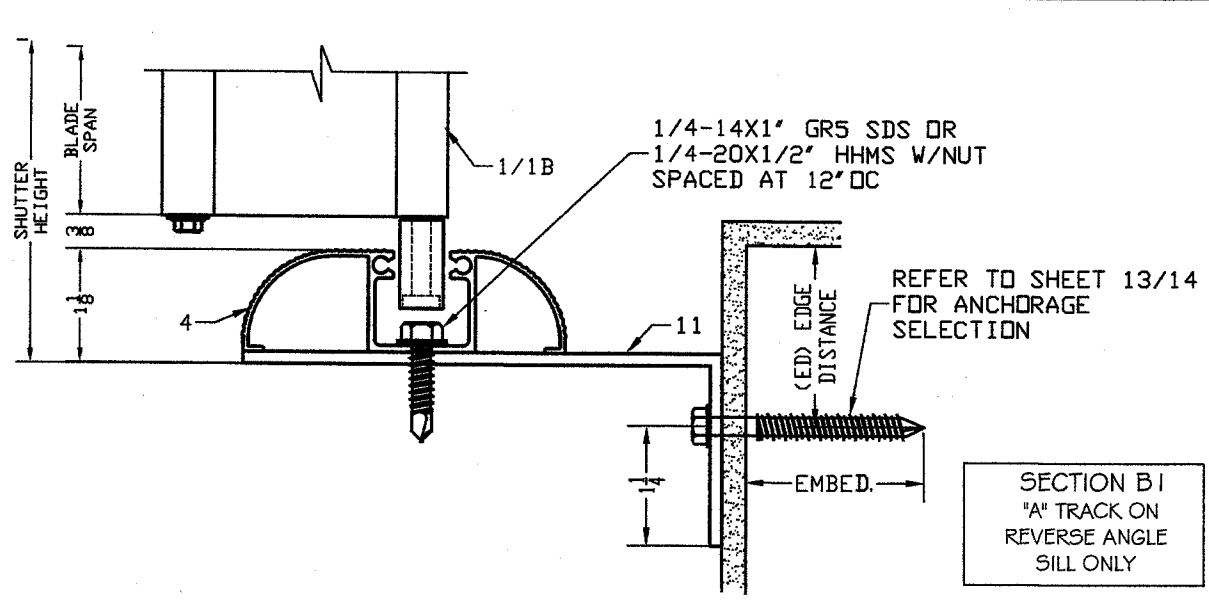
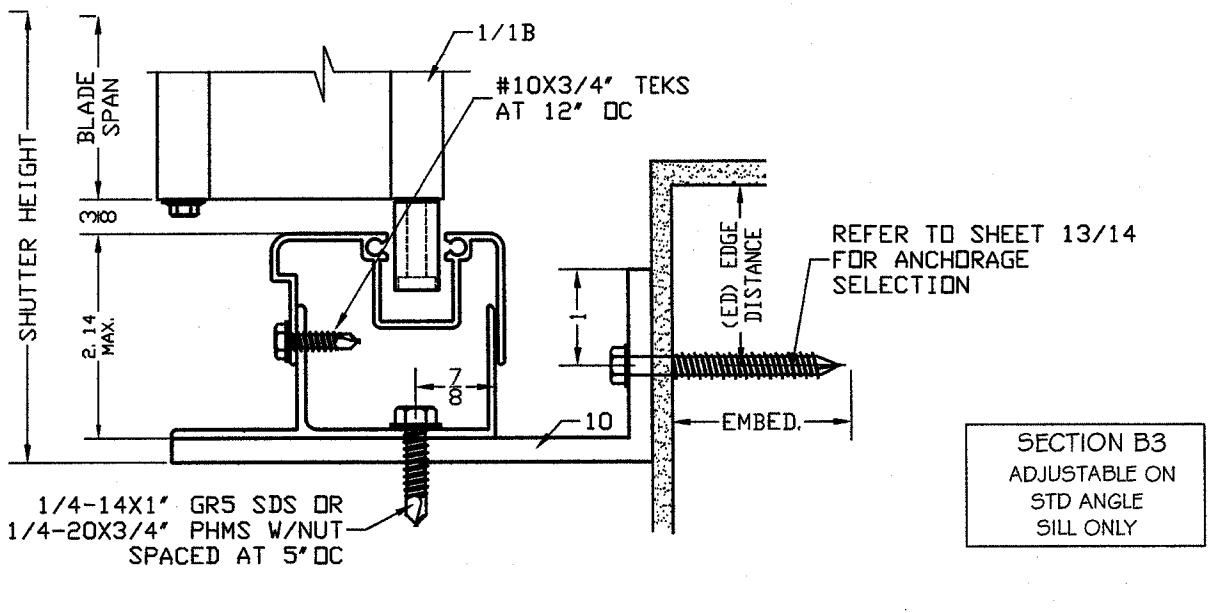
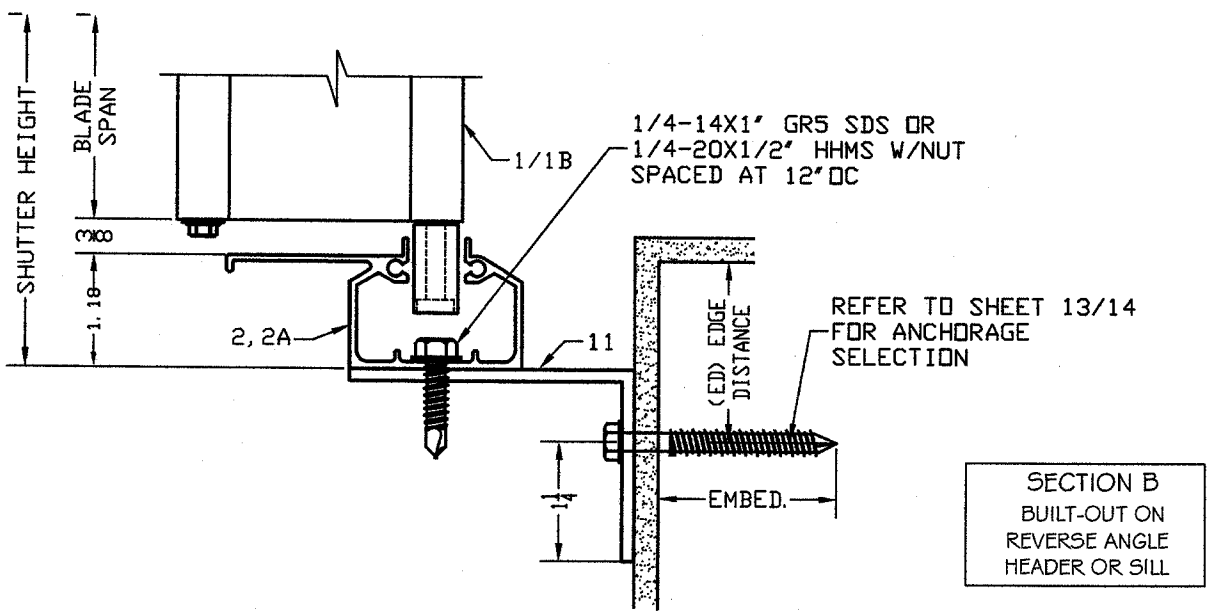
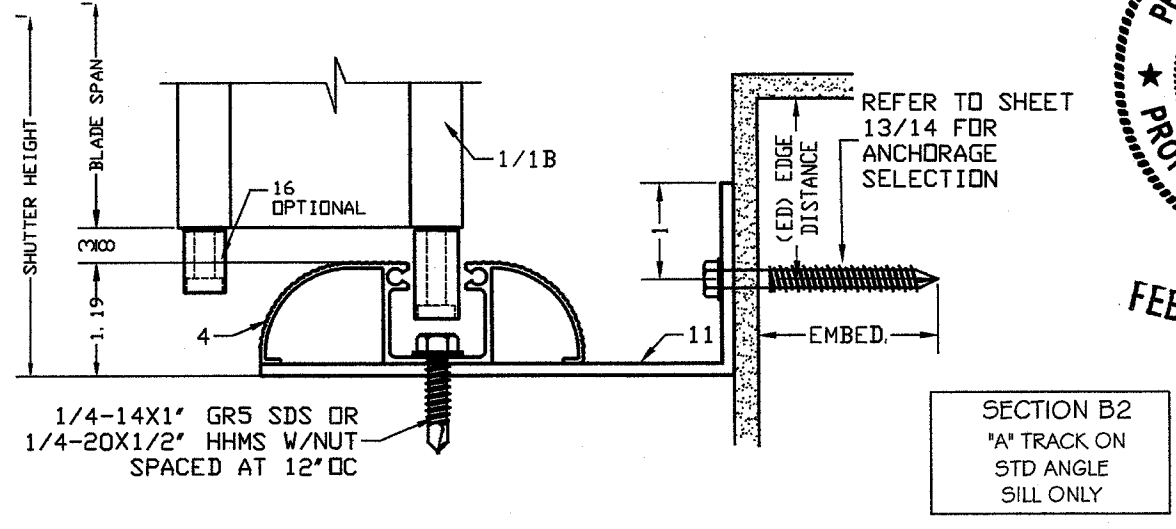
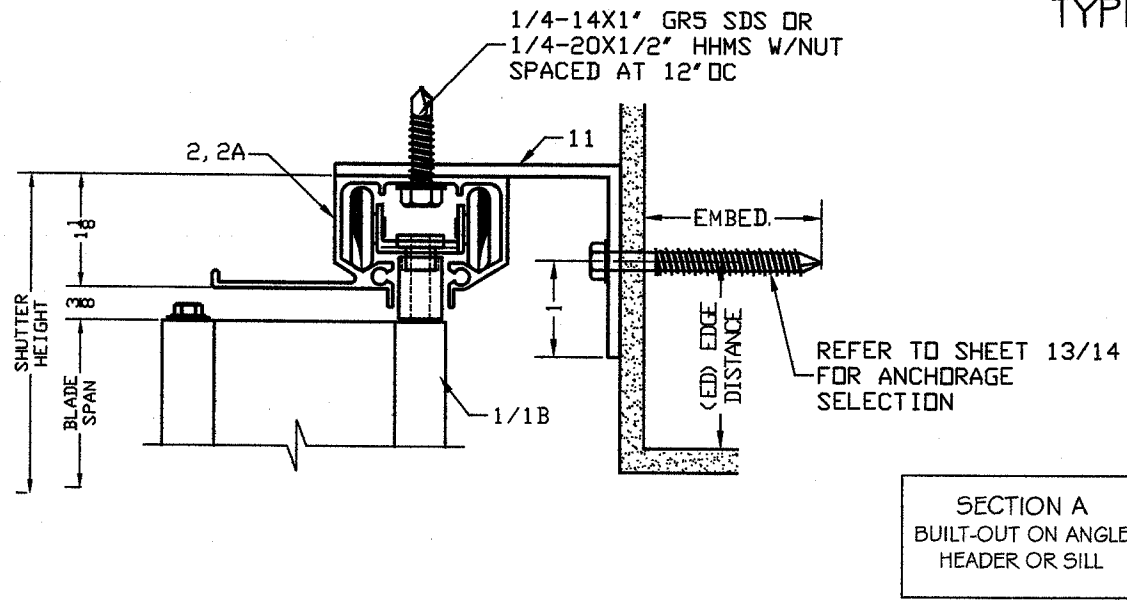
TABLE 2
 MINIMUM SHUTTER SEPARATION FROM GLAZING

BLADE TYPE	GLAZING SEPARATION (INCHES)		
	≤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 7-10.
 3- WHEN SHUTTER IS ASSEMBLED WITH BOTH TYPES OF BLADES THE LARGEST GLASS SEPARATION SHALL APPLY.

SCALE:
 NA
 DATE:
 02/06/18
 DRAWING #
 18-048
 SHEET
 02 OF 16

TYPICAL SECTIONS



PEDRO M. DE FIGUEIREDO
 LICENSE
 No. 52609
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER
 FEB 06 2018

ENGINEERING SERVICES - 459
 9249 CHELSEA DR. S
 PLANTATION, FL 33324
 PEDRO DE FIGUEIREDO
 PFMF@AOL.COM
 ENGINEER SEAL

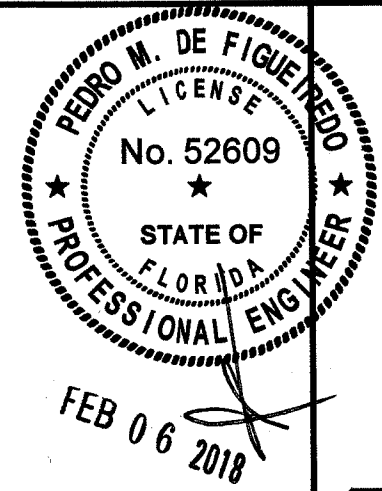
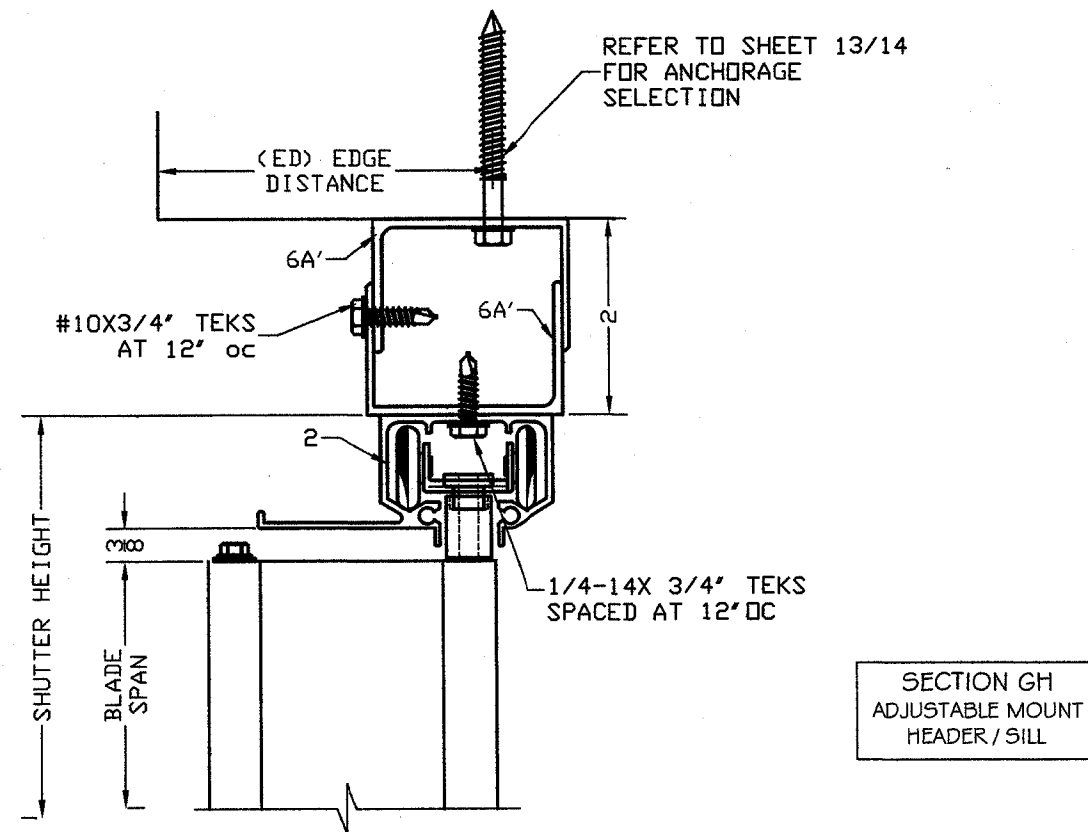
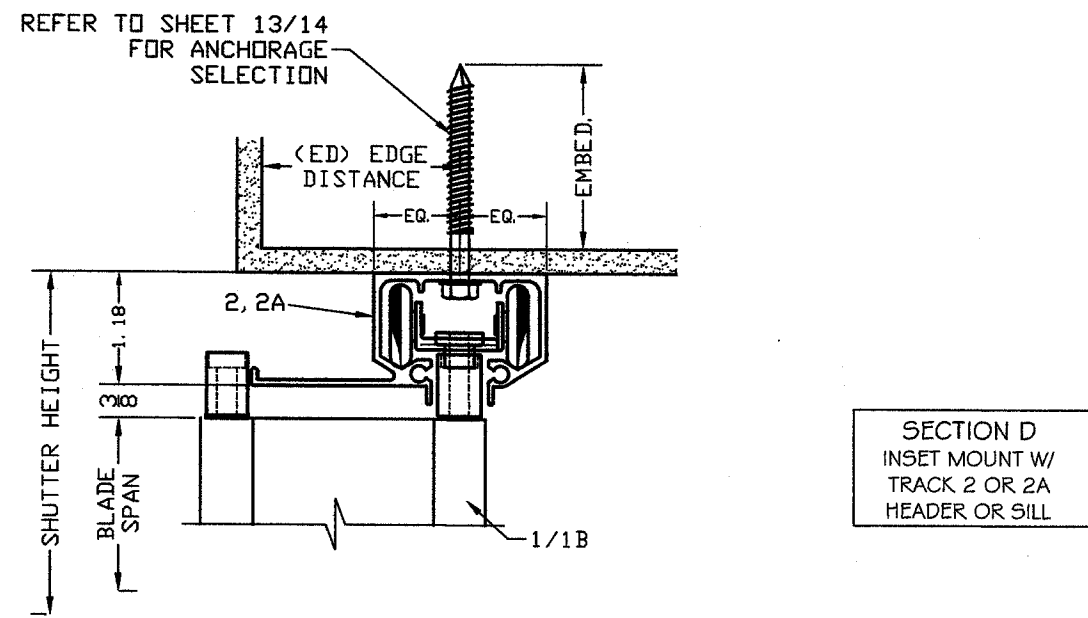
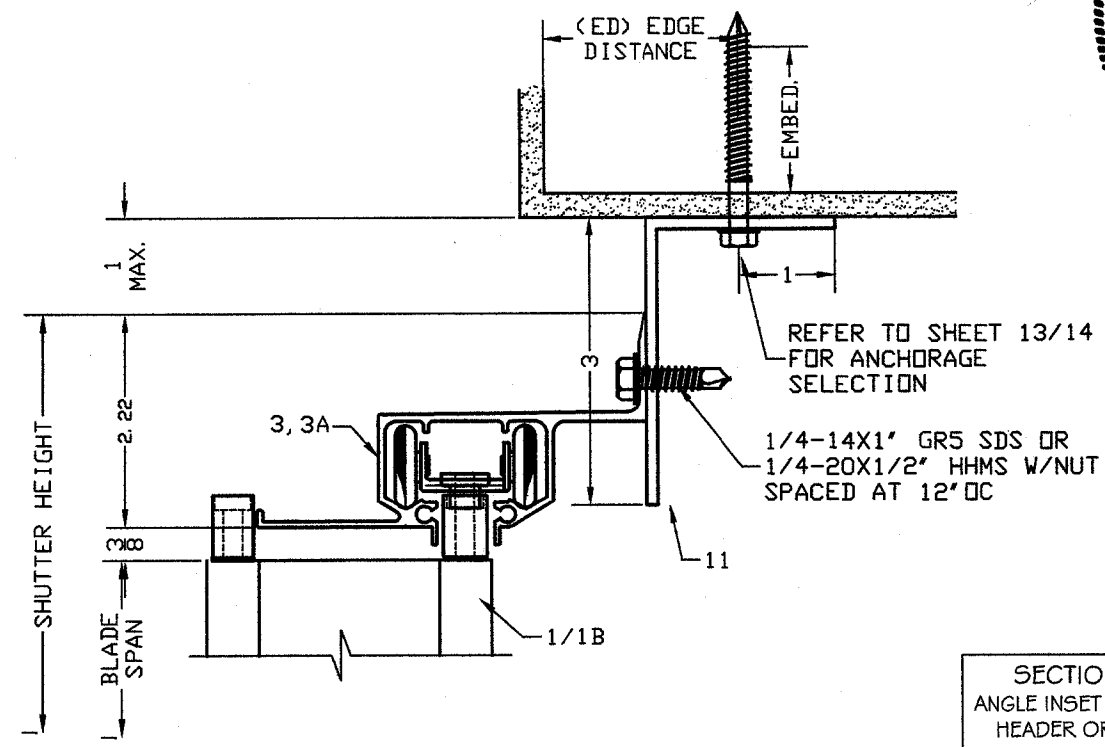
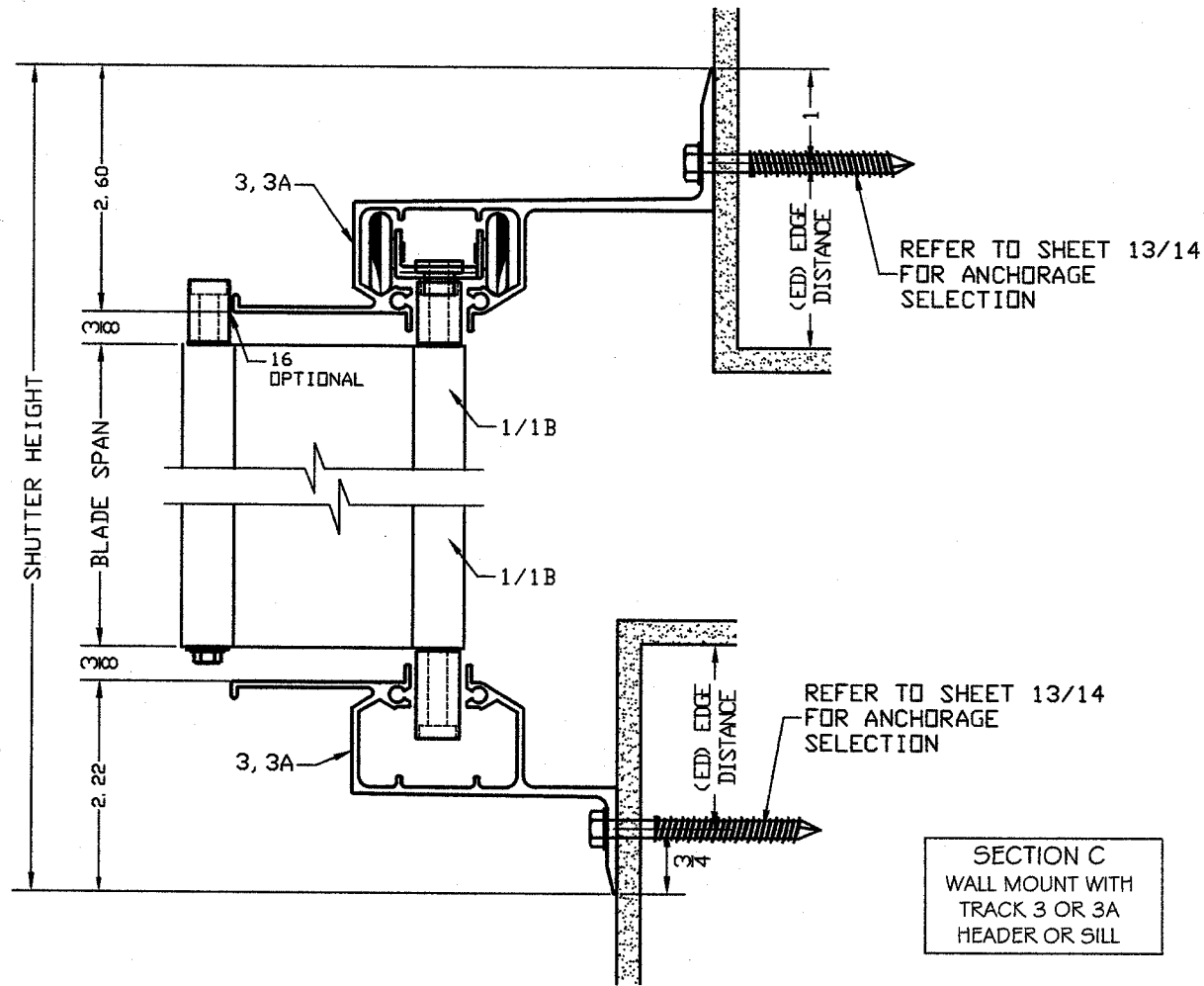


PRODUCT:
SUPERNOVA
 EXTRUDED ALUMINUM
 ACCORDION SHUTTER
 LARGE MISSILE IMPACT RESISTANT

ASSOCIATION OF MANUFACTURERS:
N.A.S.A.
 NATIONAL APPROVED SHUTTER ASSOCIATION LLC.
 HIALEAH GARDENS, FL 33018

SCALE:
 NA
 DATE:
 02/06/18
 DRAWING #
 18-048
 SHEET
 03 OF 16

TYPICAL SECTIONS



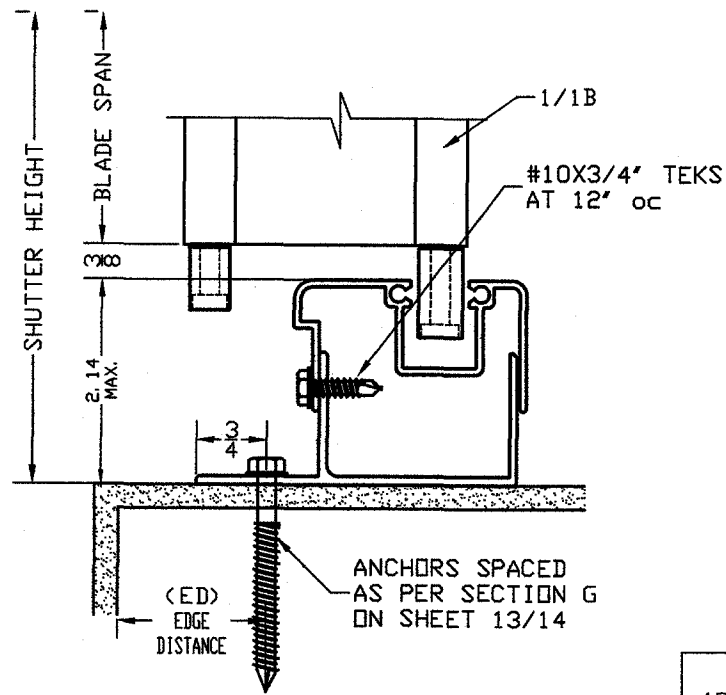
PRODUCT:
SUPERNOVA
EXTRUDED ALUMINUM
ACCORDION SHUTTER
LARGE MISSILE IMPACT RESISTANT

ASSOCIATION OF MANUFACTURERS:
N.A.S.A.
NATIONAL APPROVED SHUTTER ASSOCIATION LLC.
HIALEAH GARDENS, FL 33018

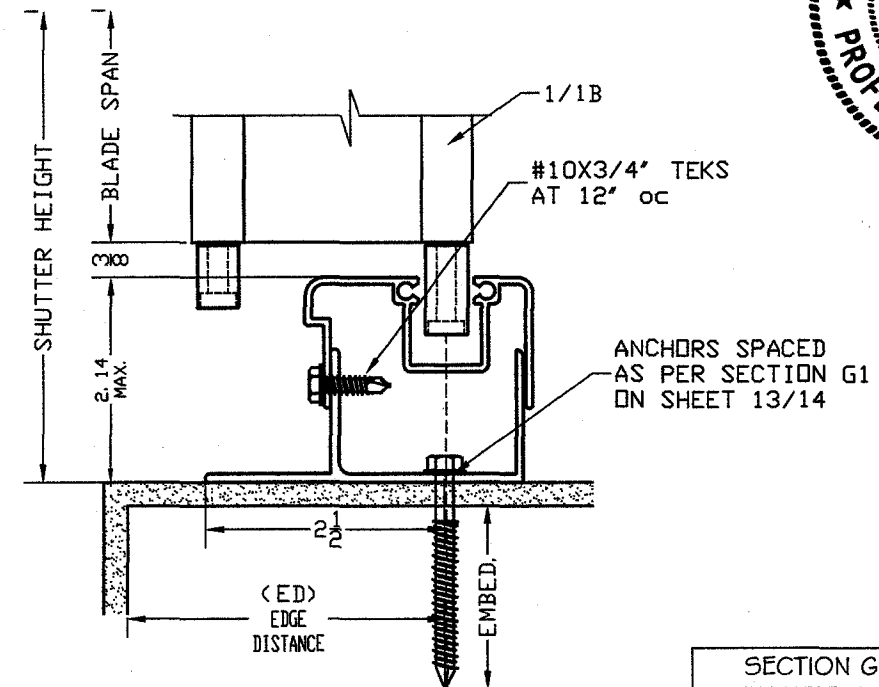
SCALE:
NA
DATE:
02/06/18
DRAWING #
18-048
SHEET
04 OF 16

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

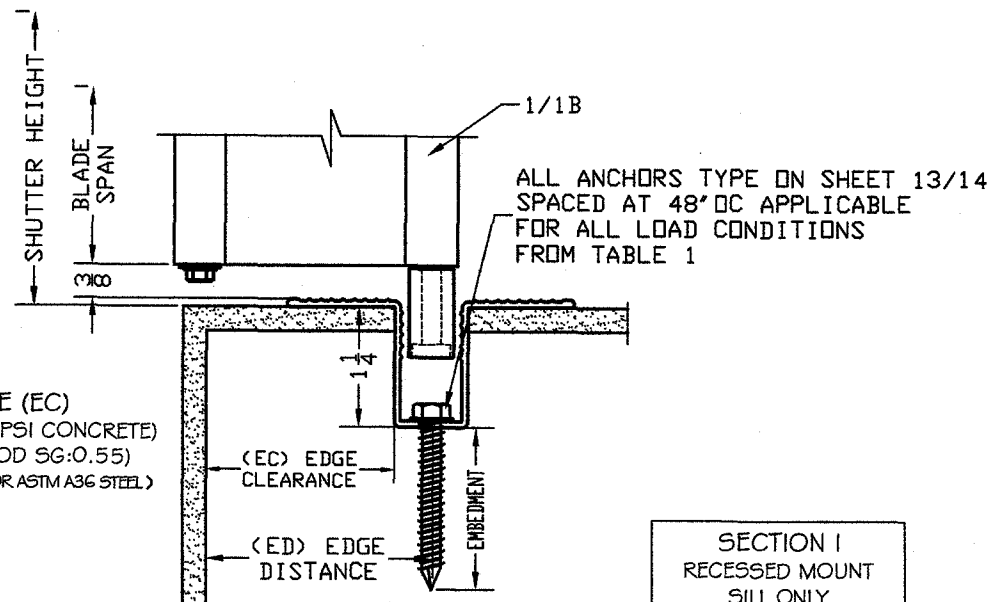
TYPICAL SECTIONS



SECTION G
ADJUSTABLE MOUNT
SILL ONLY

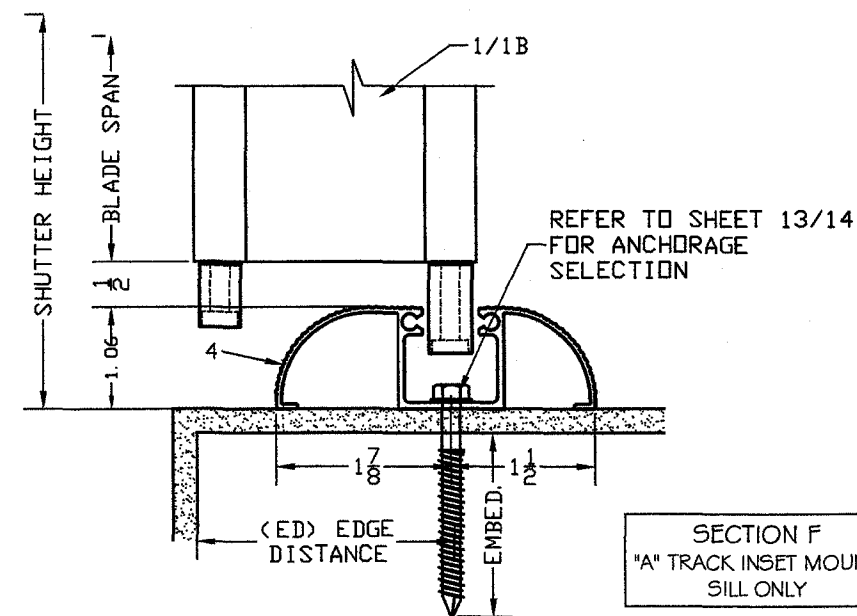


SECTION G I
ADJUSTABLE MOUNT
SILL ONLY

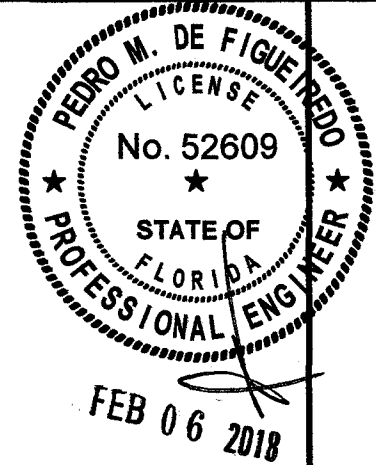


SECTION I
RECESSED MOUNT
SILL ONLY

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



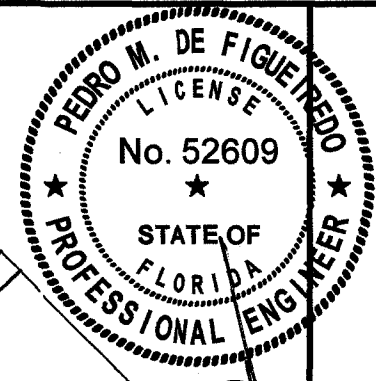
ENGINEERING SERVICES - CA 32459
9249 CHELSEA DR. S
PLANTATION, FL 33324
PPMF@AOL.COM
ENGINEER SEAL
PEDRO DE FIGUEIREDO
PE 52609

PRODUCT:
SUPERNOVA
EXTRUDED ALUMINUM
ACCORDION SHUTTER
LARGE MISSILE IMPACT RESISTANT

ASSOCIATION OF MANUFACTURERS:
N.A.S.A.
NATIONAL APPROVED SHUTTER ASSOCIATION L.L.C.
HIALEAH GARDENS, FL 33018

SCALE:
NA
DATE:
02/06/18
DRAWING #
18-048
SHEET
5 OF 16

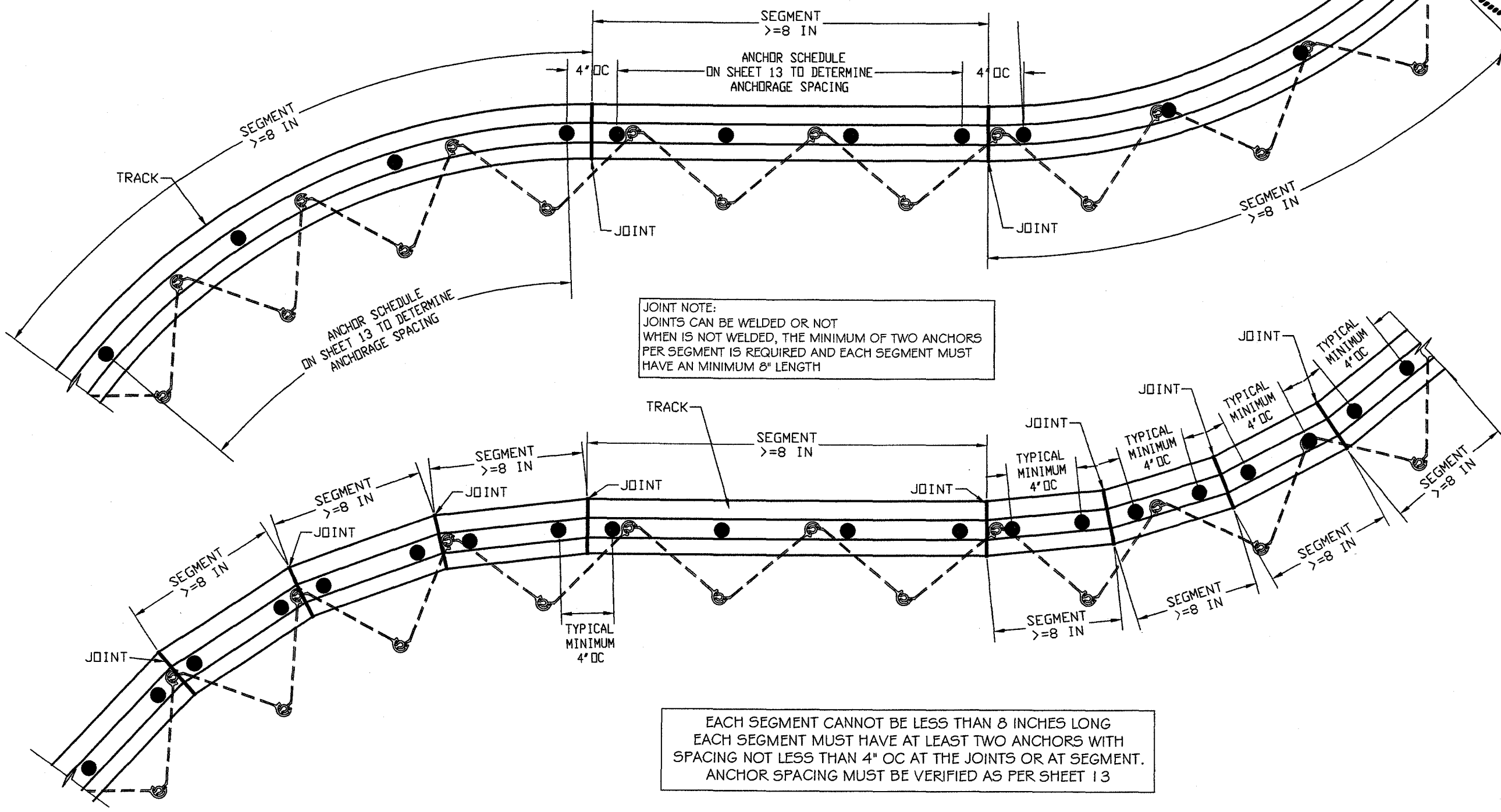
OPTIONAL CURVED TRACK
BENT TRACK OR SEGMENTED TRACK OPTIONS



FEB 06 2018



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



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

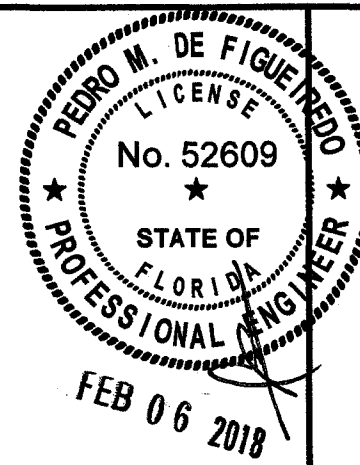
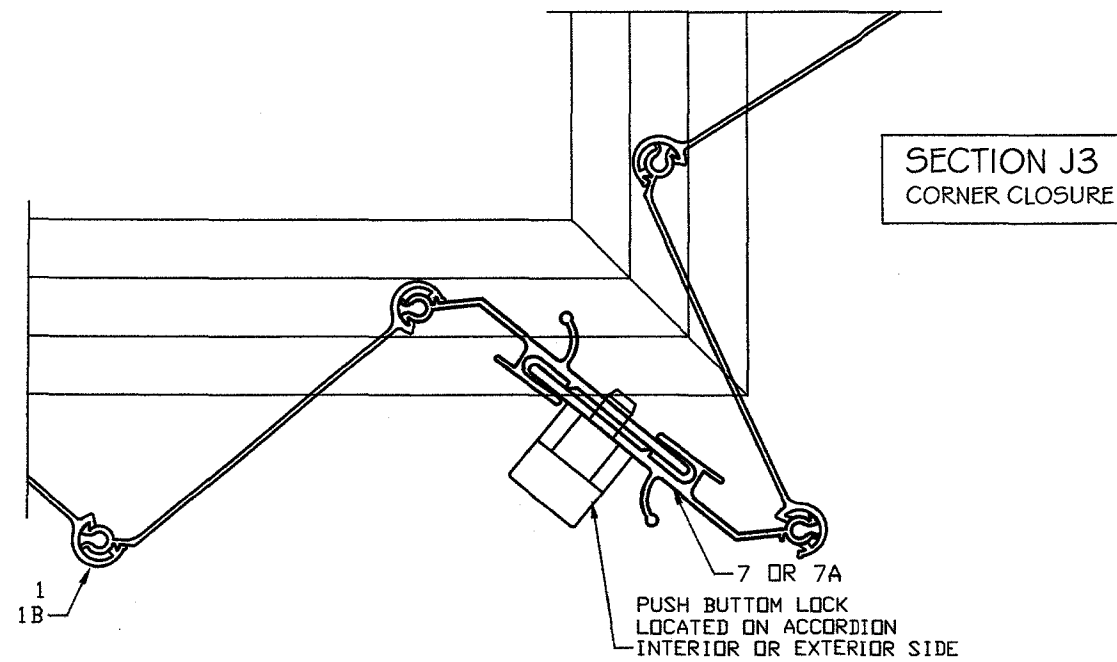
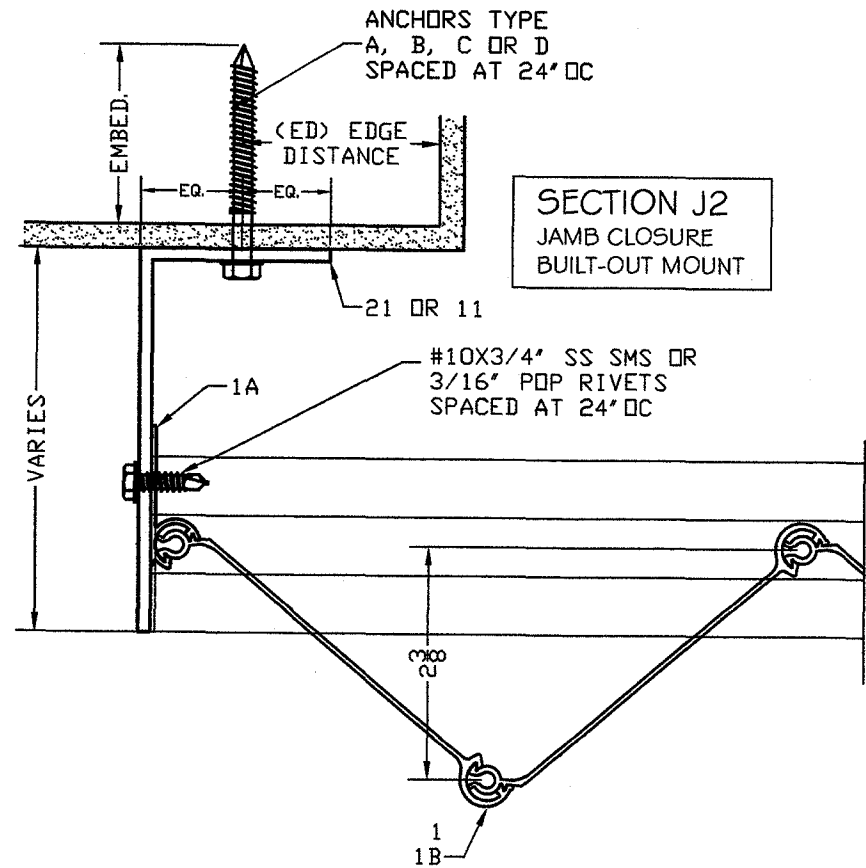
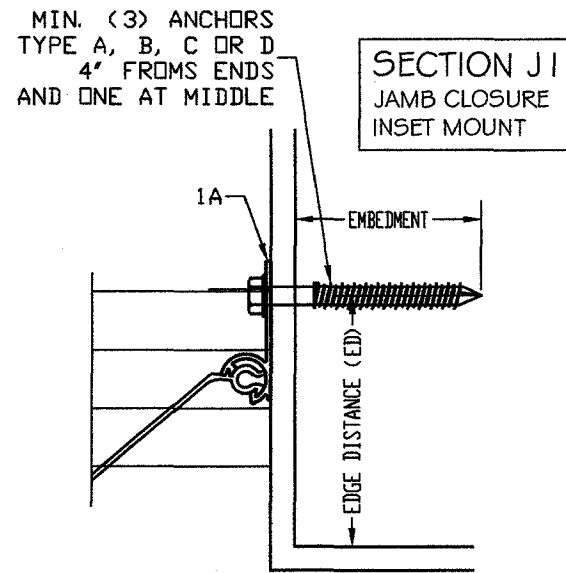
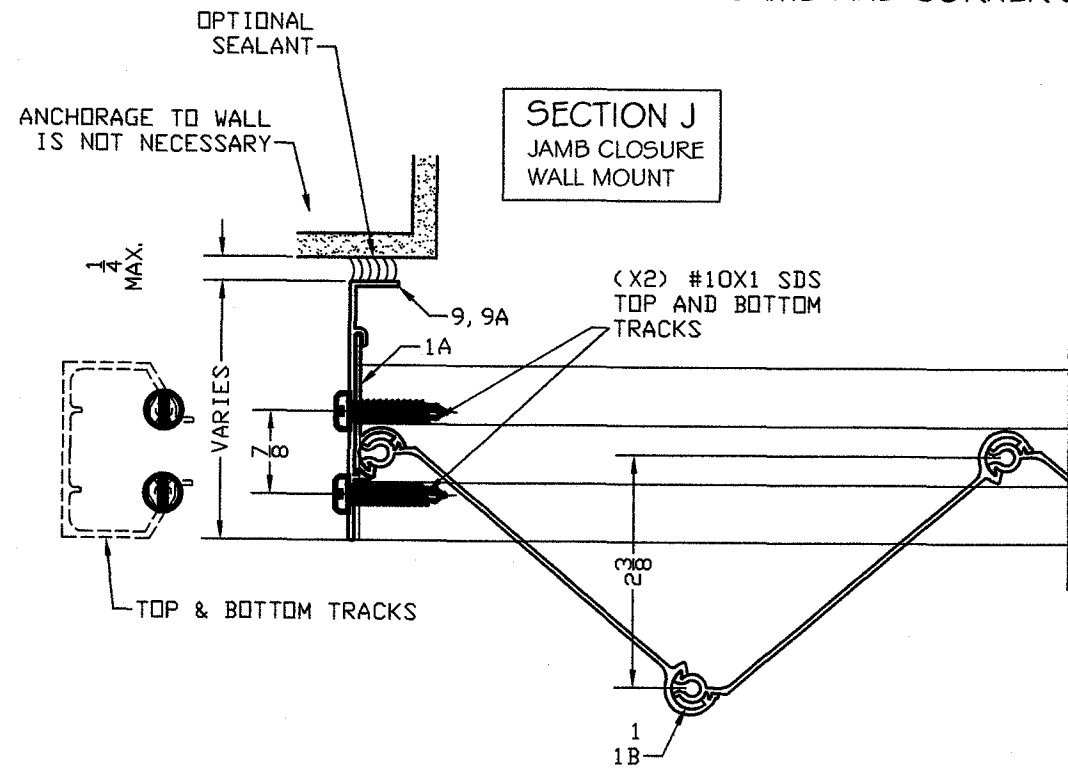
EACH SEGMENT CANNOT BE LESS THAN 8 INCHES LONG
EACH SEGMENT MUST HAVE AT LEAST TWO ANCHORS WITH
SPACING NOT LESS THAN 4" OC AT THE JOINTS OR AT SEGMENT.
ANCHOR SPACING MUST BE VERIFIED AS PER SHEET 13

PRODUCT:
SUPERNOVA
EXTRUDED ALUMINUM
ACCORDION SHUTTER
LARGE MISSILE IMPACT RESISTANT

ASSOCIATION OF MANUFACTURERS:
N.A.S.A
NATIONAL APPROVED SHUTTER ASSOCIATION LLC.
HIALEAH GARDENS, FL 33018

SCALE:
NA
DATE:
02/06/18
DRAWING #
18-048
SHEET
06 OF 16

TYPICAL HORIZONTAL
JAMB AND CORNER SECTIONS J



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

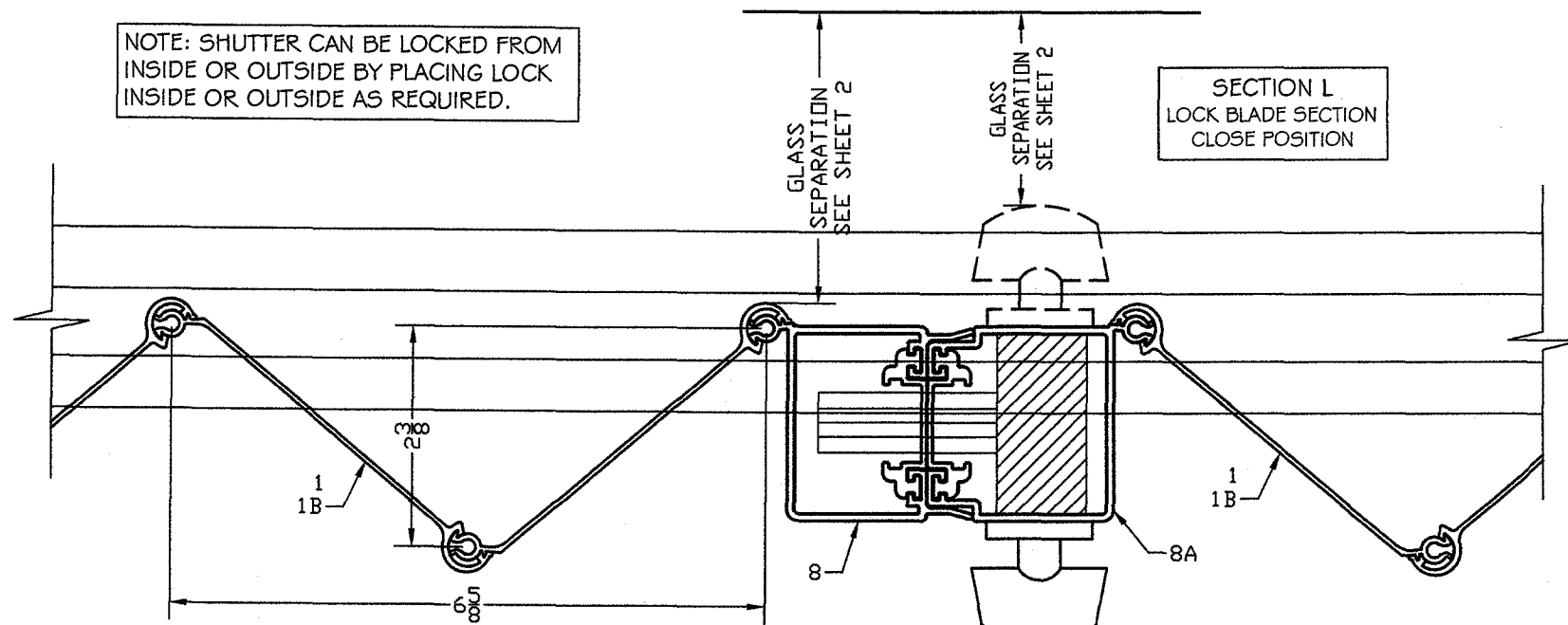
PRODUCT:
SUPERNOVA
EXTRUDED ALUMINUM
ACCORDION SHUTTER
LARGE MISSILE IMPACT RESISTANT

ASSOCIATION OF MANUFACTURERS:
N.A.S.A
NATIONAL APPROVED SHUTTER ASSOCIATION L.L.C.
HIALEAH GARDENS, FL 33018

SCALE:
NA
DATE:
02/06/18
DRAWING #
18-048
SHEET
07 OF 16

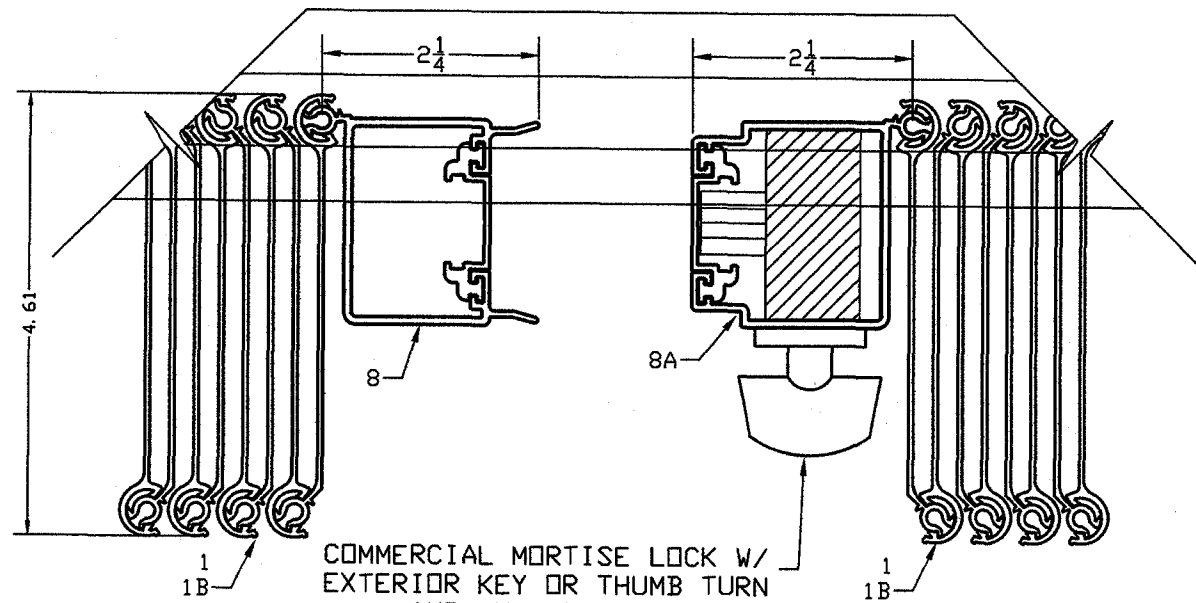
TYPICAL HORIZONTAL SECTIONS
HD LOCK SECTIONS L

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



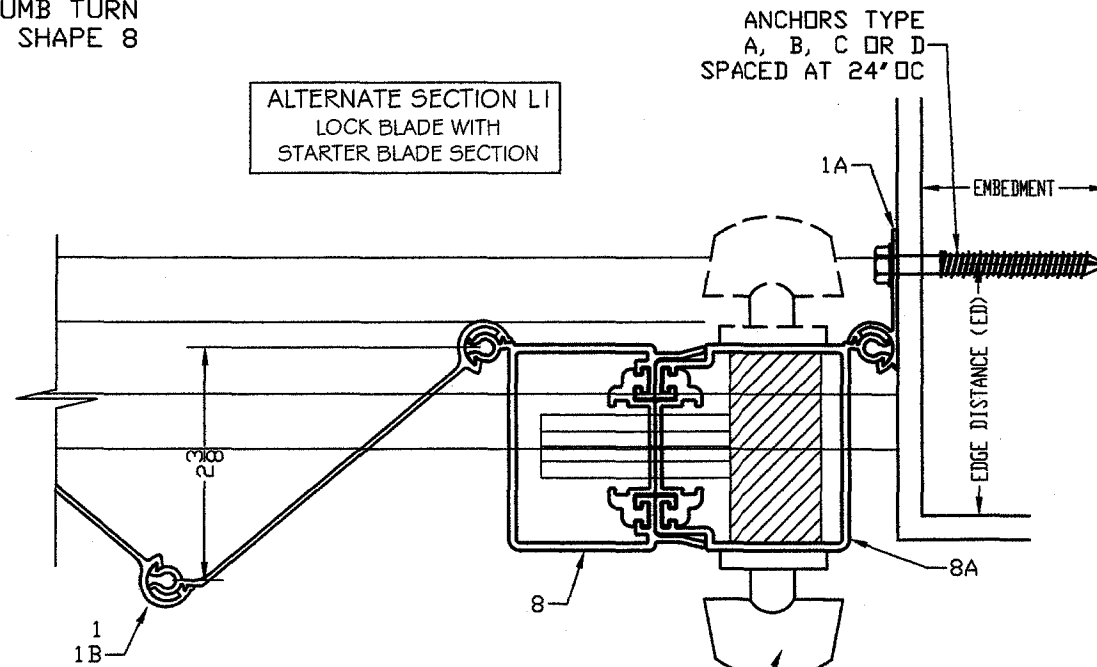
COMMERCIAL MORTISE LOCK W/
EXTERIOR KEY OR THUMB TURN
AND INSIDE THUMB TURN
INSTALLED ON SHAPE 8

SECTION L
LOCK BLADE SECTION
OPEN POSITION

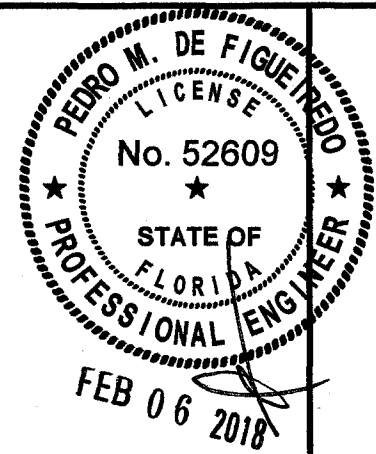


COMMERCIAL MORTISE LOCK W/
EXTERIOR KEY OR THUMB TURN
AND INSIDE THUMB TURN
INSTALLED ON SHAPE 8

ALTERNATE SECTION LI
LOCK BLADE WITH
STARTER BLADE SECTION



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



PRODUCT:
SUPERNOVA
EXTRUDED ALUMINUM
ACCORDION SHUTTER
LARGE MISSILE IMPACT RESISTANT

ASSOCIATION OF MANUFACTURERS:
N.A.S.A
NATIONAL APPROVED SHUTTER ASSOCIATION LLC.
HIALEAH GARDENS, FL 33018

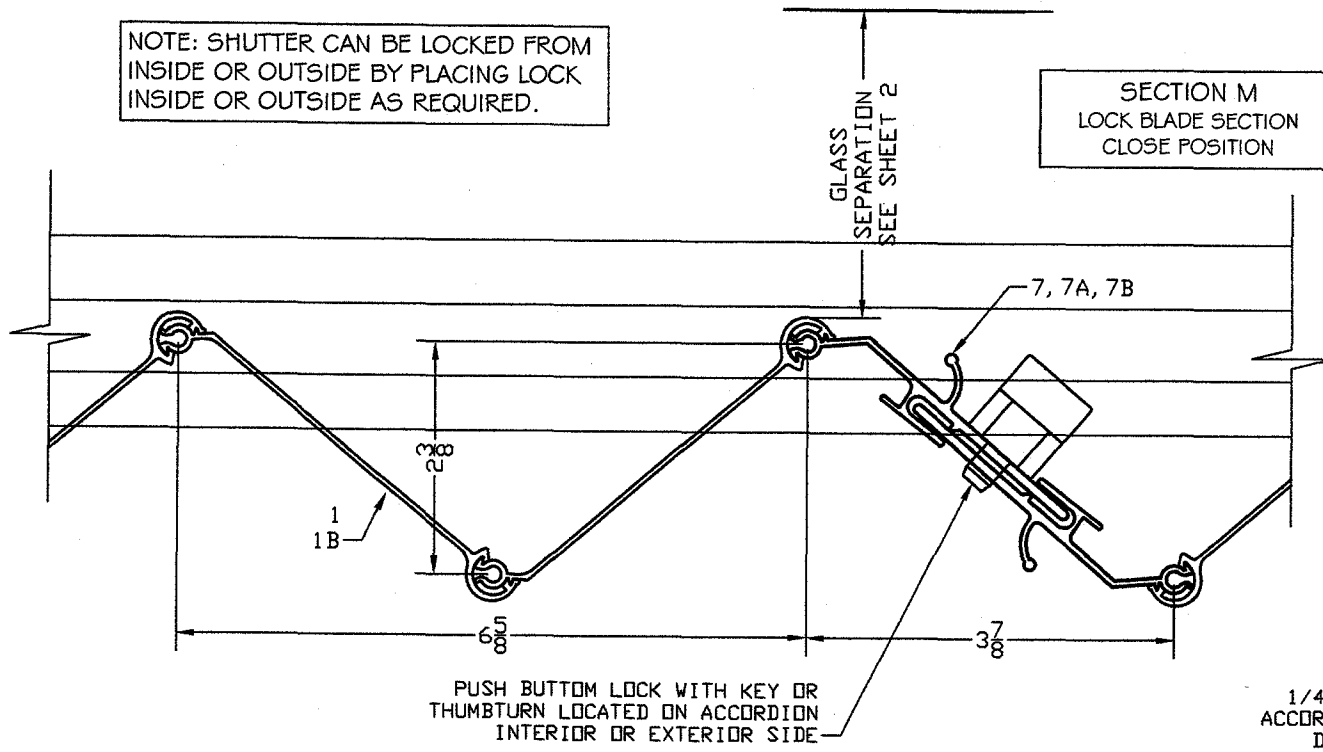
SCALE:
NA
DATE:
02/06/18
DRAWING #
18-048
SHEET
08 OF 16

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

TYPICAL HORIZONTAL UNIMATE LOCK SECTIONS M

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

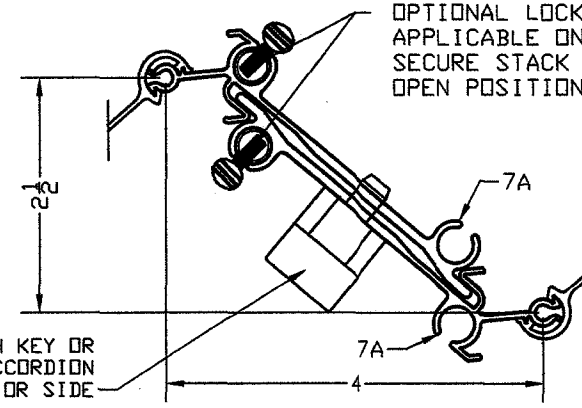
SECTION M
LOCK BLADE SECTION
CLOSE POSITION



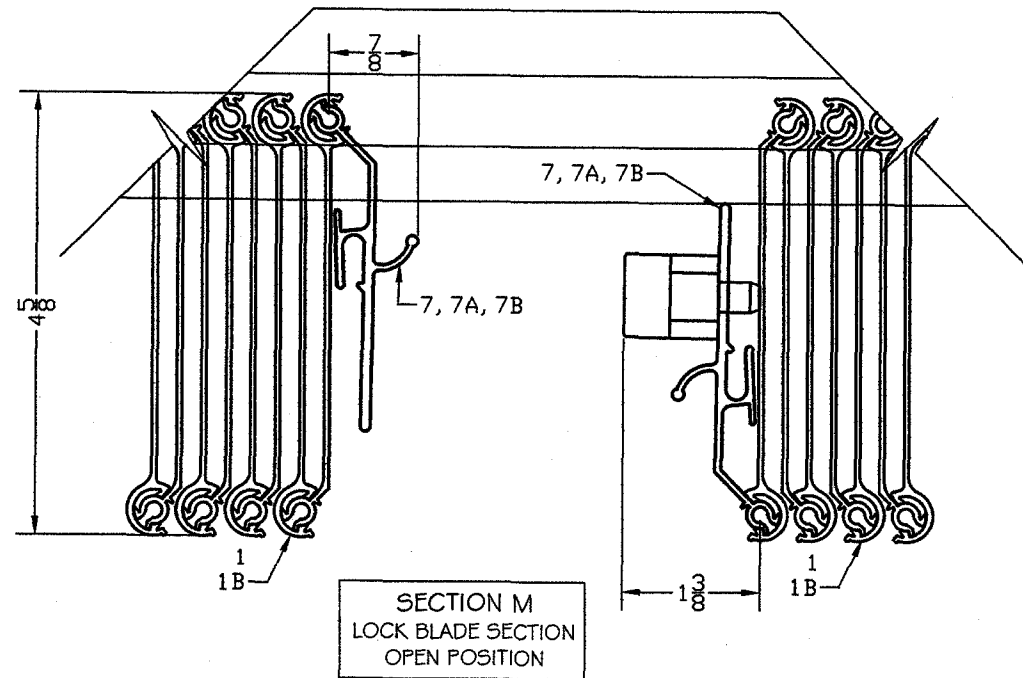
PUSH BUTTOM LOCK WITH KEY OR THUMBTURN LOCATED ON ACCORDION INTERIOR OR EXTERIOR SIDE

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

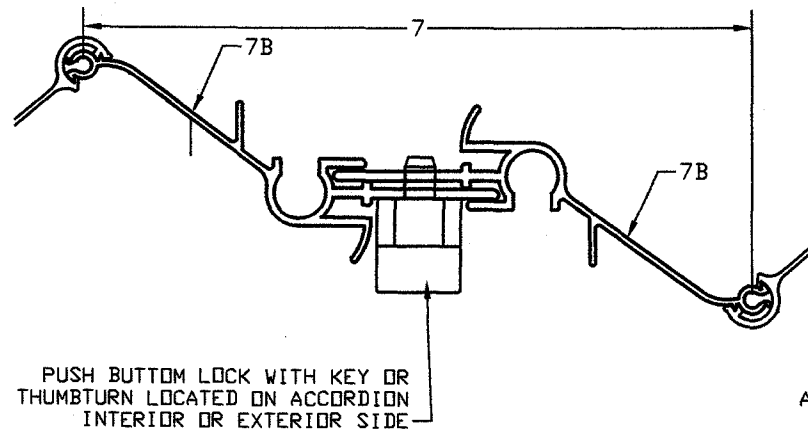
OPTIONAL LOCKING PINS APPLICABLE ONLY TO SECURE STACK IN THE OPEN POSITION



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

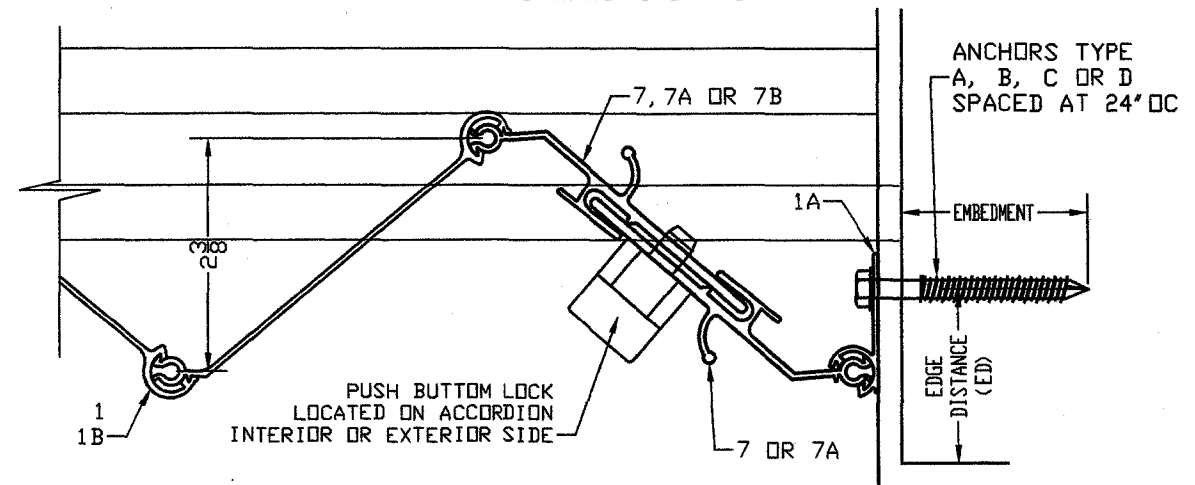


SECTION M
LOCK BLADE SECTION
OPEN POSITION



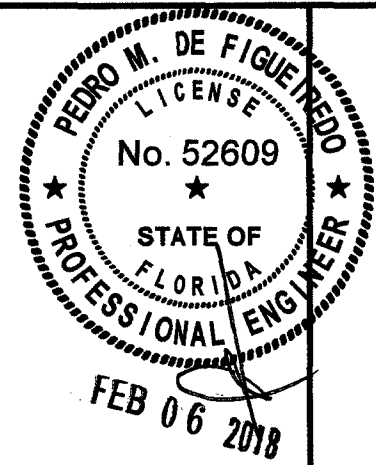
ALTERNATE SECTION M I
LOCK BLADE WITH
STARTER BLADE SECTION

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



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 LLC.
HIALEAH GARDENS, FL 33018

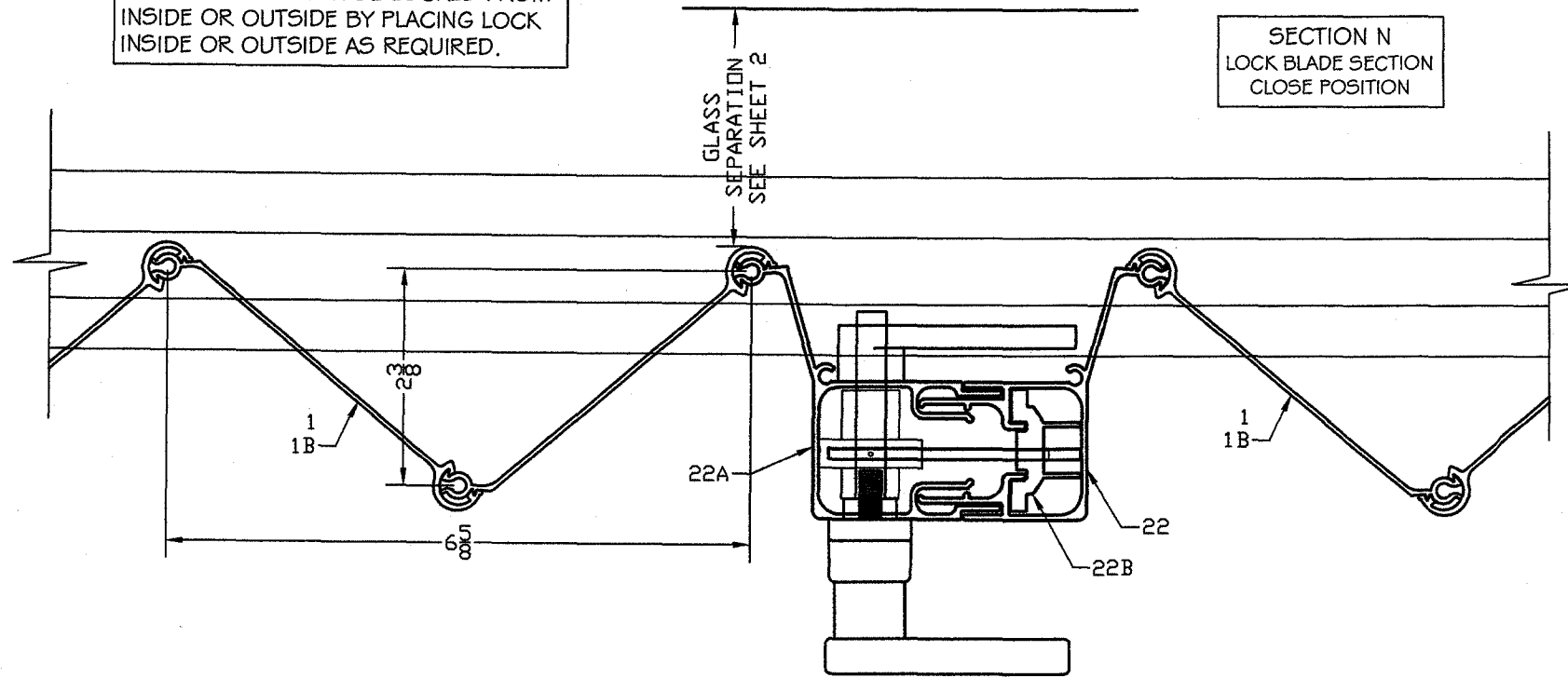
SCALE:
NA
DATE:
02/06/18
DRAWING #
18-048
SHEET
09 OF 16

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

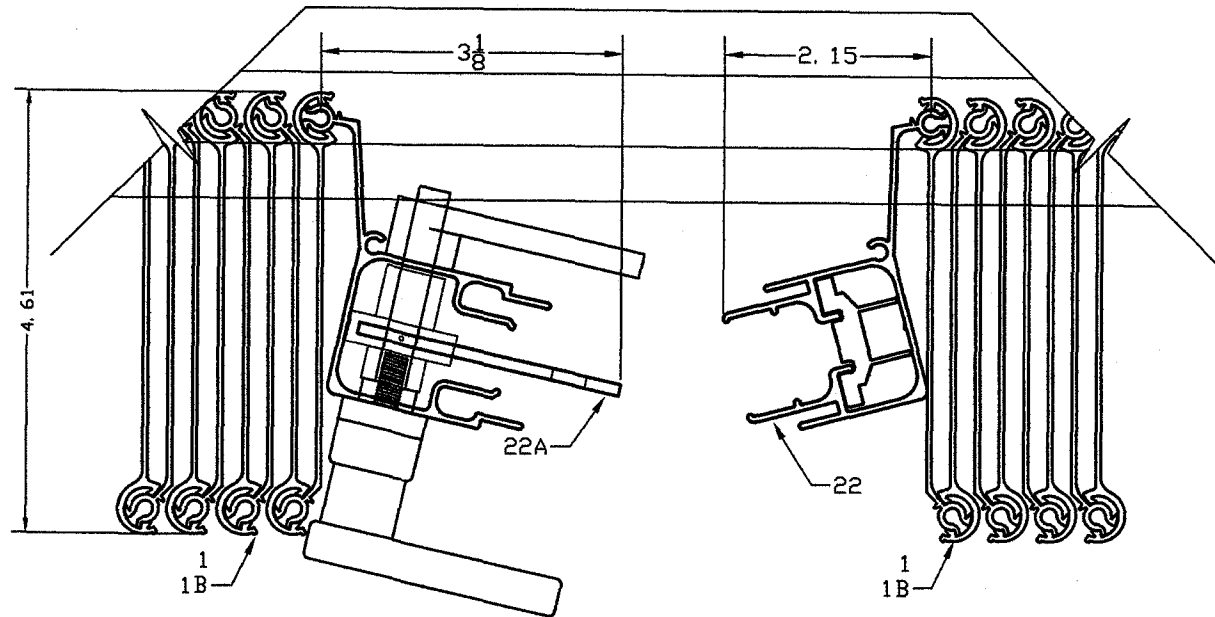
TYPICAL HORIZONTAL SECTIONS
STD LOCK SECTIONS N

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

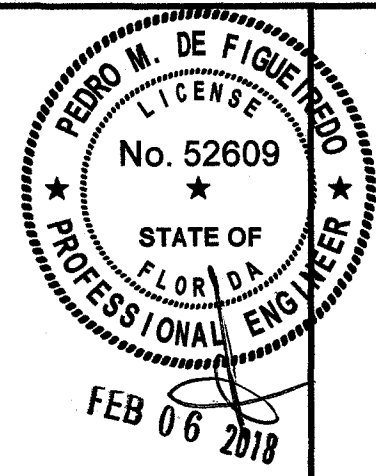
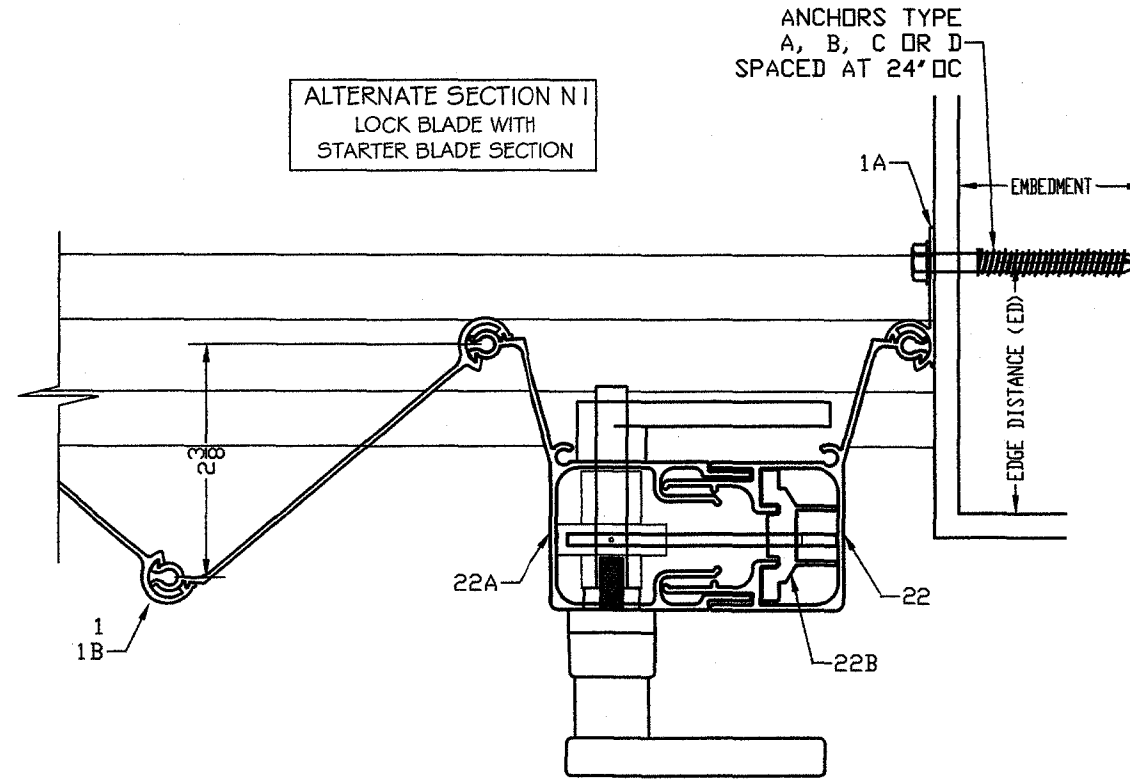
SECTION N
LOCK BLADE SECTION
CLOSE POSITION



SECTION N
LOCK BLADE SECTION
OPEN POSITION



ALTERNATE SECTION N I
LOCK BLADE WITH
STARTER BLADE SECTION



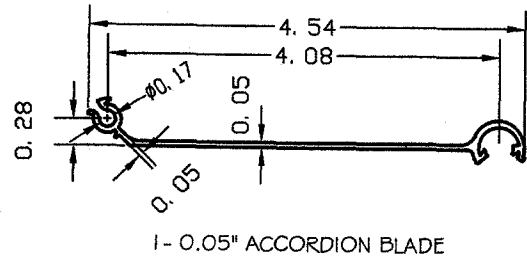
ENGINEERING SERVICES - CA 32459
9249 CHELSEA DR. S
PLANTATION, FL 33324
PPMF@AOL.COM
ENGINEER SEAL
PEDRO DE FIGUEIREDO
PE 52609

PRODUCT:
SUPERNOVA
EXTRUDED ALUMINUM
ACCORDION SHUTTER
LARGE MISSILE IMPACT RESISTANT

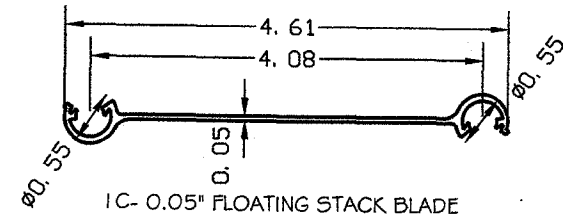
ASSOCIATION OF MANUFACTURERS:
N.A.S.A
NATIONAL APPROVED SHUTTER ASSOCIATION LLC.
HIALEAH GARDENS, FL 33018

SCALE:
NA
DATE:
02/06/18
DRAWING #
18-048
SHEET
10 OF 16

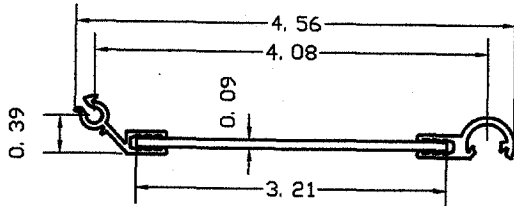
SHUTTER COMPONENTS



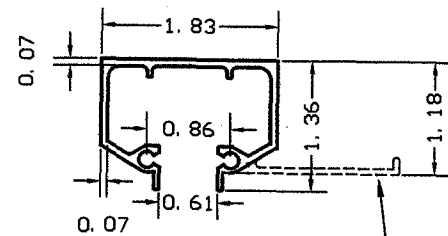
1- 0.05" ACCORDION BLADE



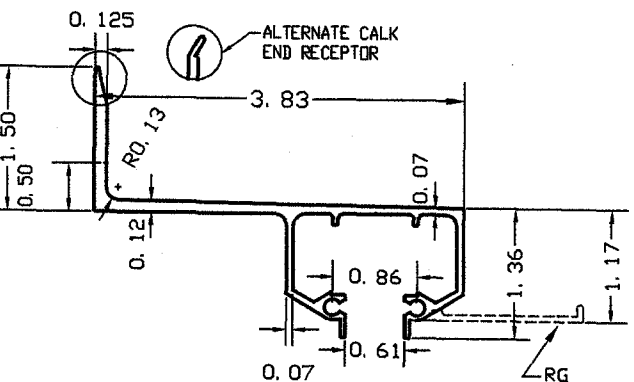
1C- 0.05" FLOATING STACK BLADE



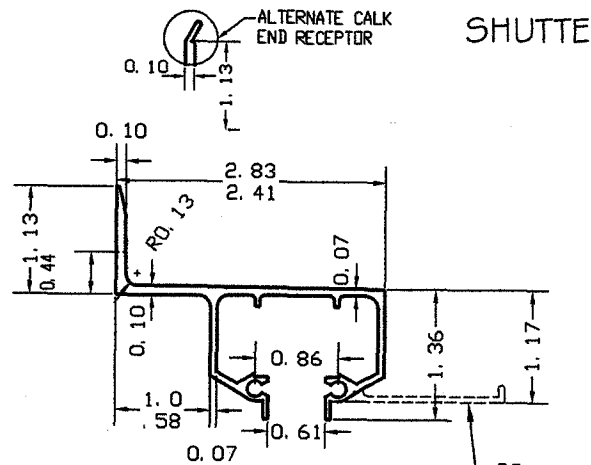
1B- COMPOSITE ALUMINUM / LEXAN BLADE LEXAN POLYCARBONATE APPROVED AS PER NOA 13-0717.01 XL102UV



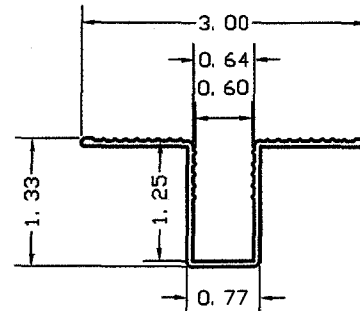
2- INSET TRACK W/ RG HEADER / SILL MOUNT 2.1- INSET TRACK W/O RG HEADER / SILL MOUNT



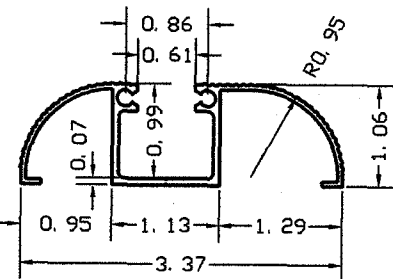
3A- 2" BUILD-OUT TRACK HEADER / SILL MOUNT 3A.1- 2" BO TRACK W/O RAIN GUARD (RG)



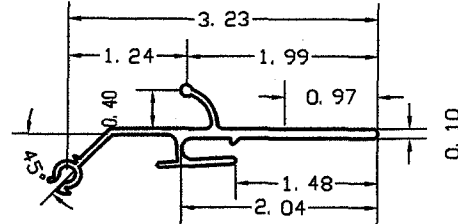
3- 1" // 1/2" BUILT-OUT TRACK HEADER / SILL MOUNT 3.1- 1" // 1/2" BO TRACK W/O RAIN GUARD (RG)



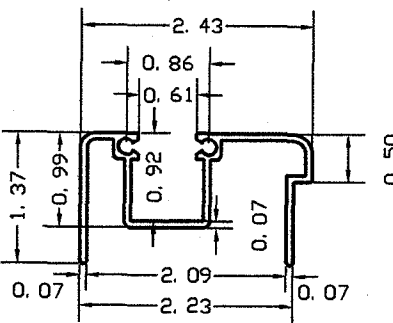
5- RECESSED TRACK SILL MOUNT ONLY



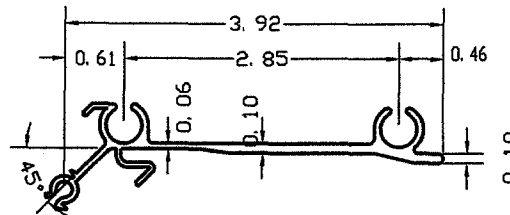
4- "A" TRACK SILL MOUNT ONLY



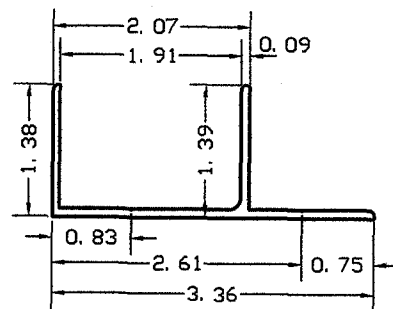
7- UNIMATE W/O LP LOCKING BLADES



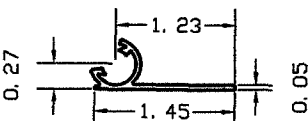
6- ADJUSTABLE FEMALE HEADER/ SILL MOUNT



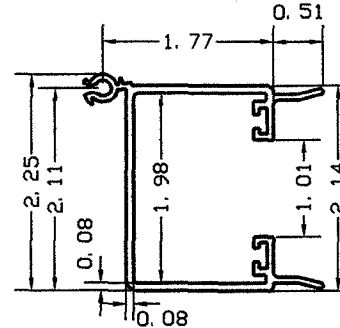
7A- UNIMATE W/ LP LOCKING BLADES



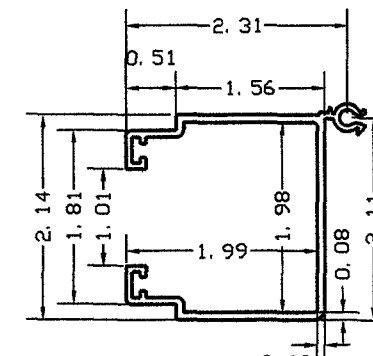
6A- ADJUSTABLE MALE HEADER/ SILL MOUNT



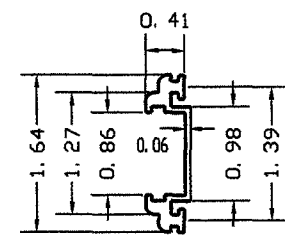
1A- STARTER BLADE



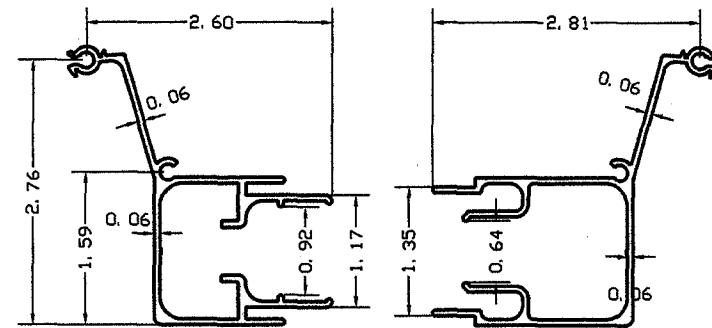
8- FEMALE HD LOCKING BLADE



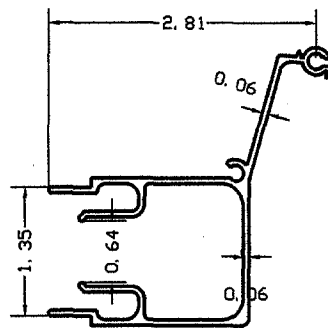
8A- MALE HD LOCKING BLADE



8B- ADAPTOR FILLER USE WITH 8 AND 8A



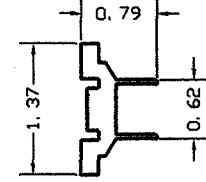
9A- 2" JAMB CLOSURE



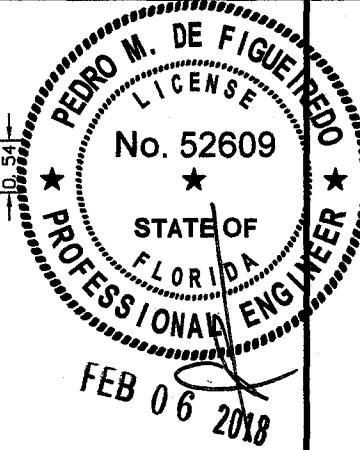
9B- HD JAMB CLOSURE

22- FEMALE STD LOCKING BLADE

22A- MALE STD LOCKING BLADE



22B- LOCK KEEPER INSERT



ENGINEERING SERVICES - CA 92459
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 L.L.C.
HIALEAH GARDENS, FL 33018

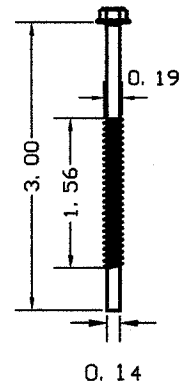
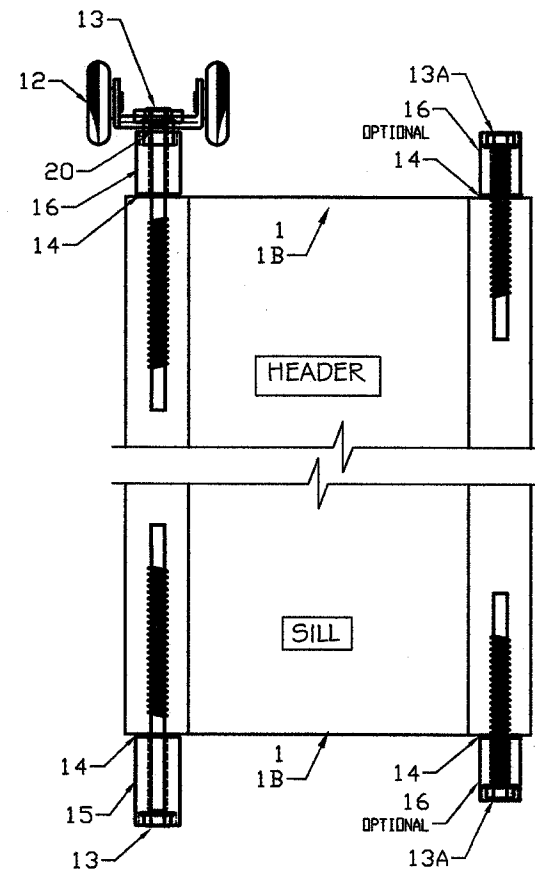
SCALE:
NA

DATE:
02/06/18

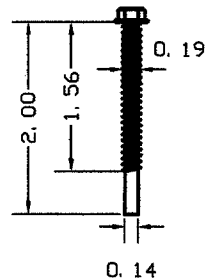
DRAWING #
18-048

SHEET
11 OF 16

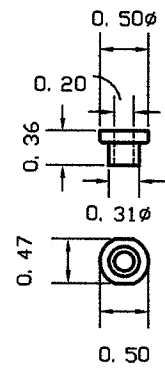
TYPICAL BLADE ASSEMBLY



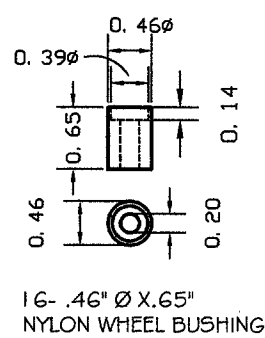
13- #10X3" HH BLADE SCREW
410 STAINLESS STEEL



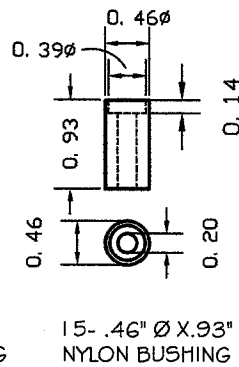
13A- #10X2" HH BLADE SCREW
410 STAINLESS STEEL



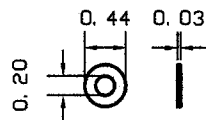
20- 1/2" Ø X 0.36"
NYLON WHEEL
SPACER



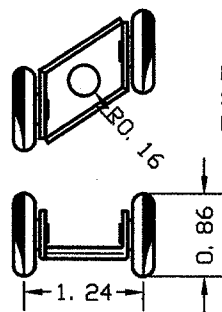
16- .46" Ø X .65"
NYLON WHEEL BUSHING



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

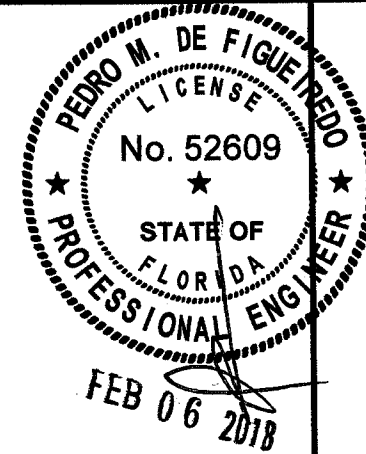
BILL OF MATERIALS

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 SS4 INTO 3000 PSI CONCRETE	1.75	3.0
E1	1/4" CRETE-FLEX SS4 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.



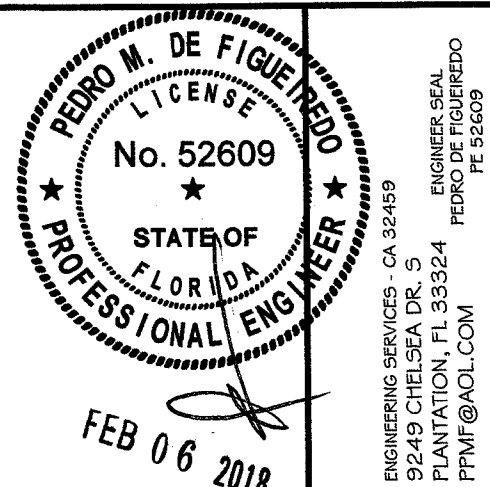
ENGINEERING SERVICES - CA 32459
9249 CHELSEA DR. S
PLANTATION, FL 33324
PEDE M DE FIGUEIREDO
PE 52609
PMF@AOL.COM

PRODUCT:
SUPERNOVA
EXTRUDED ALUMINUM
ACCORDION SHUTTER
LARGE MISSILE IMPACT RESISTANT

ASSOCIATION OF MANUFACTURERS:
N.A.S.A.
NATIONAL APPROVED SHUTTER ASSOCIATION LLC.
HIALEAH GARDENS, FL 33018

SCALE:
NA
DATE:
02/06/18
DRAWING #
18-048
SHEET
12 OF 16

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



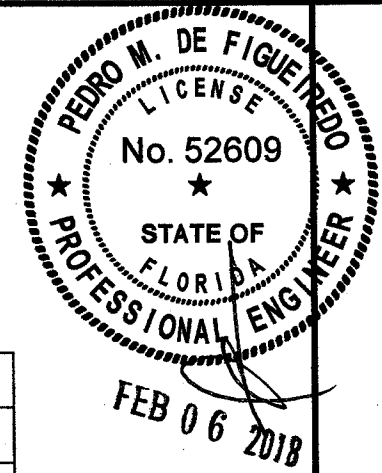
ENGINEERING SERVICES - CA 32459
9249 CHELSEA DR. S
PLANTATION, FL 33324
PEMF@AOL.COM

ASSOCIATION OF MANUFACTURERS:
N.A.S.A.
NATIONAL APPROVED SHUTTER ASSOCIATION LLC.
HIALEAH GARDENS, FL 33018

SCALE:
NA
DATE:
02/06/18
DRAWING #
18-048
SHEET
13 OF 16

		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
30	162	14	7	14	14	14	14	14	14	14	7	14	14	14	14	14	14	12	14	7	8	15	7	8	5	5	8	6	7	4	4	7	8	9	5	5	9	15	16	8	11	16
	156	14	7	14	14	14	14	14	14	14	7	14	14	14	14	14	14	12	15	7	9	15	7	8	5	5	8	6	7	5	4	7	8	9	5	5	9	16	16	8	11	16
	144	14	8	14	14	14	14	14	14	14	8	14	14	14	14	14	14	13	16	8	10	16	8	9	5	5	9	7	8	5	5	8	8	10	6	6	10	16	16	9	12	16
	132	14	9	14	14	14	14	14	14	14	9	14	14	14	14	14	14	15	16	9	10	16	8	10	6	6	10	7	8	5	5	9	9	11	6	6	11	16	16	10	13	16
	120	14	9	14	14	14	14	14	14	14	9	14	14	14	14	14	14	16	16	10	11	16	9	11	7	6	11	8	9	6	5	10	10	12	7	7	12	16	16	11	15	16
	108	14	10	14	14	14	14	14	14	14	10	14	14	14	14	14	14	16	16	11	13	16	10	11	7	7	11	9	10	7	6	11	11	13	8	8	14	16	16	12	16	16
	96	14	12	14	14	14	14	14	14	14	12	14	14	14	14	14	14	16	16	12	14	16	11	11	8	8	11	10	12	7	7	12	13	15	9	9	15	16	16	14	16	16
	84	14	13	14	14	14	14	14	14	14	13	14	14	14	14	14	14	16	16	14	16	16	11	11	9	9	11	11	12	9	8	12	15	16	10	10	16	16	16	15	16	16
	72	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	16	16	16	16	16	11	11	11	10	11	12	10	9	12	16	16	16	12	12	16	16	16	16	16	16
60	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	16	16	16	16	16	11	11	11	11	11	12	12	12	11	12	16	16	14	14	16	16	16	16	16	16	16
40	162	14	5	14	14	14	14	14	11	14	5	14	14	14	14	14	11	9	11	5	6	11	5	6	-	-	6	4	5	-	-	5	6	7	-	-	7	11	14	6	8	14
	156	14	5	14	14	14	14	14	11	14	5	14	14	14	14	14	11	9	11	5	7	11	5	6	-	-	6	5	5	-	-	6	6	7	4	4	7	12	14	6	9	15
	144	14	6	14	14	14	14	14	12	14	6	14	14	14	14	14	12	10	12	6	7	12	6	7	4	-	7	5	6	-	-	6	6	7	4	4	8	13	15	7	9	16
	132	14	6	14	14	14	14	14	13	14	6	14	14	14	14	14	13	11	13	6	8	14	6	7	4	4	7	5	6	4	-	7	7	8	5	5	8	14	16	7	10	16
	120	14	7	14	14	14	14	14	14	14	7	14	14	14	14	14	14	12	14	7	9	15	7	8	5	5	8	6	7	4	4	7	8	9	5	5	9	15	16	8	11	16
	108	14	8	14	14	14	14	14	14	14	8	14	14	14	14	14	14	13	16	8	10	16	8	9	5	5	9	7	8	5	5	8	8	10	6	6	10	16	16	9	12	16
	96	14	9	14	14	14	14	14	14	14	9	14	14	14	14	14	14	15	16	9	11	16	8	10	6	6	10	7	9	6	5	9	10	11	7	7	12	16	16	10	14	16
	84	14	10	14	14	14	14	14	14	14	10	14	14	14	14	14	14	16	16	10	12	16	10	11	7	7	11	9	10	6	6	10	11	13	8	8	13	16	16	12	16	16
	72	14	12	14	14	14	14	14	14	14	12	14	14	14	14	14	14	16	16	12	14	16	11	11	8	8	11	10	12	7	7	12	13	15	9	9	15	16	16	14	16	16
60	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	16	16	16	16	16	11	11	10	9	11	12	12	9	8	12	15	16	11	11	16	16	16	16	16	16	16
50	156	14	4	14	12	14	12	14	9	14	4	14	12	14	12	14	9	7	9	4	5	9	4	5	-	-	5	-	4	-	-	4	5	6	-	-	6	9	11	5	7	12
	144	14	5	14	13	14	13	14	10	14	5	14	13	14	13	14	10	8	10	5	6	10	5	5	-	-	5	-	5	-	-	5	5	6	-	-	6	10	12	5	7	13
	132	14	5	14	14	14	14	14	11	14	5	14	14	14	14	14	11	9	11	5	6	11	5	6	-	-	6	4	5	-	-	5	6	7	-	-	7	11	13	6	8	14
	120	14	6	14	14	14	14	14	12	14	6	14	14	14	14	14	12	10	12	6	7	12	5	6	-	-	7	5	6	-	-	6	6	7	4	4	7	12	15	6	9	15
	108	14	6	14	14	14	14	14	13	14	6	14	14	14	14	14	13	11	13	6	8	13	6	7	4	4	7	5	6	-	-	6	7	8	5	5	8	14	16	7	10	16
	96	14	7	14	14	14	14	14	14	14	7	14	14	14	14	14	14	12	14	7	9	15	7	8	5	5	8	6	7	4	4	7	8	9	5	5	9	15	16	8	11	16
	84	14	8	14	14	14	14	14	14	14	8	14	14	14	14	14	14	14	16	8	10	16	8	9	6	5	9	7	8	5	5	8	9	10	6	6	11	16	16	9	13	16
	72	14	9	14	14	14	14	14	14	14	9	14	14	14	14	14	14	16	16	10	11	16	9	11	7	6	11	8	9	6	5	10	10	12	7	7	12	16	16	11	15	16
	60	14	11	14	14	14	14	14	14	14	11	14	14	14	14	14	14	16	16	11	14	16	11	11	8	7	11	10	11	7	7	12	12	14	9	8	15	16	16	13	16	16
60	144	14	-	14	11	14	10	14	8	6	-	7	4	6	4	7	-	7	8	-	5	8	-	4	-	-	5	-	-	-	-	4	5	-	-	5	8	10	5	6	11	
	132	14	4	14	11	14	11	14	9	14	4	14	11	14	11	14	9	7	9	4	5	9	4	5	-	-	5	-	4	-	-	4	5	5	-	-	6	9	11	5	7	12
	120	14	5	14	13	14	13	14	10	14	5	14	13	14	13	14	10	8	10	5	6	10	5	5	-	-	5	-	5	-	-	5	5	6	-	-	6	10	12	5	7	13
	108	14	5	14	14	14	14	14	11	14	5	14	14	14	14	14	11	9	11	5	6	11	5	6	-	-	6	4	5	-	-	5	6	7	-	-	7	11	14	6	8	14
	96	14	6	14	14	14	14	14	12	14	6	14	14	14	14	14	12	10	12	6	7	12	6	7	4	-	7	5	6	-	-	6	6	7	4	4	8	13	15	7	9	16
	84	14	7	14	14	14	14	14	14	14	7	14	14	14	14	14	14	12	14	7	8	14	6	8	5	4	8	6	7	4	-	7	7	9	5	5	9	15	16	8	11	16
	72	14	8	14	14	14	14	14	14	14	8	14	14	14	14	14	14	13	16	8	10	16	8	9	5	5	9	7	8	5	5	8	8	10	6	6	10	16	16	9	12	16
60	14	9	14	14	14	14	14	14	14	9	14	14	14	14	14	14	16	16	10	11	16	9	11	7	6	11	8	9	6	5	10	10	12	7	7	12	16	16	11	15	16	
70	132	14	-	14	10	14	10	14	8	6	-	7	-	6	-	7	-	6	8	-	4	8	-	4	-	-	4	-	-	-	-	5	-	-	5	8	10	4	6	10		
	120	14	4	14	11	14	11	14	8	7	-	7	4	7	4	8	-	7	8	4	5	8	-	5	-	-	5	-	4	-	-	4	4	5	-	-	5	9	11	5	6	11
	108	14	4	14	12	14	12	14	9	14	4	14	12	14	12	14	9	8	9	5	5	9	4	5	-	-	5	-	4	-	-	5	5	6	-	-	6	10	12	5	7	12
	96	14	5	14	14	14	13	14	10	14	5	14	14	14	13	14	10	9	10	5	6	11	5	6	-	-	6	4	5	-	-	5	5									

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



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



PRODUCT:
SUPERNOVA
EXTRUDED ALUMINUM
ACCORDION SHUTTER
LARGE MISSILE IMPACT RESISTANT

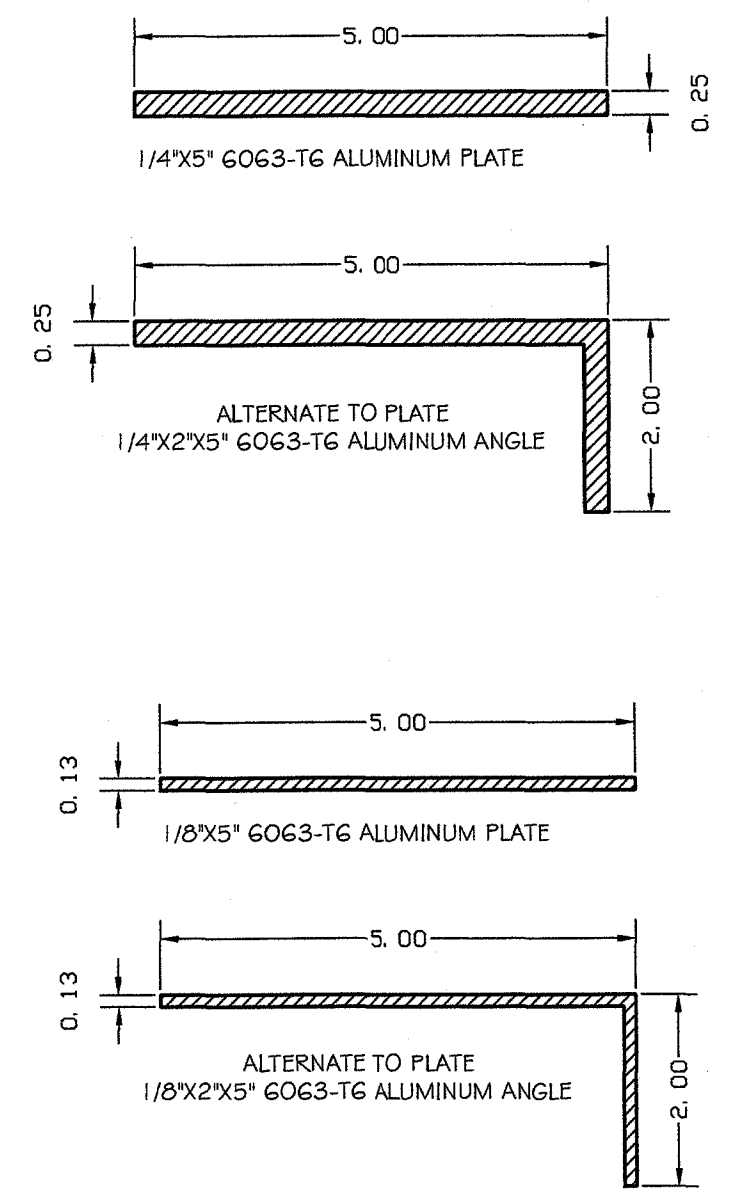
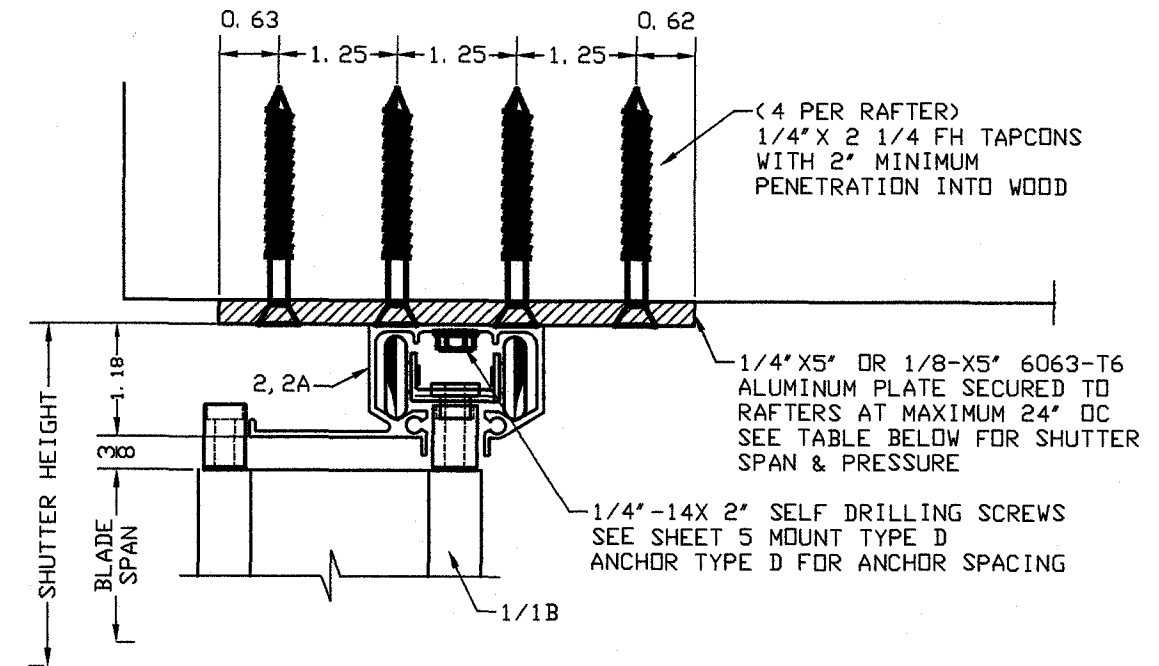
ASSOCIATION OF MANUFACTURERS:
N.A.S.A.
NATIONAL APPROVED SHUTTER ASSOCIATION L.L.C.
HIALEAH GARDENS, FL 33018

SCALE:
NA
DATE:
02/06/18
DRAWING #
18-048
SHEET
14 OF 16

		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				
80	120	14	-	14	9	14	9	14	7	6	-	7	-	6	-	7	-	6	7	-	4	7	-	-	-	-	4	-	-	-	-	-	-	4	-	-	-	5	8	9	4	6	9			
	96	14	4	14	12	14	12	14	9	14	4	14	12	14	12	14	9	8	9	4	5	9	4	5	-	-	5	-	4	-	-	4	5	6	-	-	6	10	12	5	7	12				
	84	14	5	14	14	14	13	14	10	14	5	14	14	14	13	14	10	9	10	5	6	11	5	6	-	-	6	4	5	-	-	5	5	6	-	-	7	11	13	6	8	14				
	72	14	6	14	14	14	14	14	12	14	6	14	14	14	14	14	12	10	12	6	7	12	6	7	4	-	7	5	6	-	-	6	6	7	4	4	8	13	15	7	9	16				
	60	14	7	14	14	14	14	14	14	14	7	14	14	14	14	14	14	12	14	7	9	15	7	8	5	5	8	6	7	4	4	7	8	9	5	5	9	15	16	8	11	16				
90	120	13	-	14	8	13	8	14	7	5	-	6	-	5	-	6	-	5	6	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	4	7	8	-	5	8					
	96	14	-	14	11	14	10	14	8	6	-	7	4	6	4	7	-	7	8	-	5	8	-	4	-	-	5	-	-	-	-	4	5	-	-	5	8	10	5	6	11					
	84	14	4	14	12	14	12	14	9	14	4	14	12	14	12	14	9	8	9	5	5	9	4	5	-	-	5	-	4	-	-	5	5	6	-	-	6	10	12	5	7	12				
	72	14	5	14	14	14	14	14	11	14	5	14	14	14	14	14	11	9	11	5	6	11	5	6	-	-	6	4	5	-	-	5	6	7	-	-	7	11	14	6	8	14				
	60	14	6	14	14	14	14	14	13	14	6	14	14	14	14	14	13	11	13	6	8	13	6	7	4	4	7	5	6	-	-	6	7	8	5	5	8	14	16	7	10	16				
100	120	11	-	13	8	12	8	13	6	5	-	5	-	5	-	5	-	5	6	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	7	-	4	8					
	96	14	-	14	9	14	9	14	7	6	-	7	-	6	-	7	-	6	7	-	4	7	-	-	-	-	4	-	-	-	-	-	-	-	4	-	-	5	8	9	4	6	9			
	84	14	4	14	11	14	11	14	8	7	-	7	4	7	4	8	-	7	8	4	5	8	-	5	-	-	5	-	4	-	-	4	4	5	-	-	5	9	11	5	6	11				
	72	14	5	14	13	14	13	14	10	14	5	14	13	14	13	14	10	8	10	5	6	10	5	5	-	-	5	-	5	-	-	5	5	6	-	-	6	10	12	5	7	13				
	60	14	6	14	14	14	14	14	12	14	6	14	14	14	14	14	12	10	12	6	7	12	5	6	-	-	7	5	6	-	-	6	6	7	4	4	7	12	15	6	9	15				
110	120	14	7	14	14	14	14	14	14	14	7	14	14	14	14	14	14	12	14	7	9	15	7	8	5	5	8	6	7	4	4	7	8	9	5	5	9	15	16	8	11	16				
	96	13	-	14	9	13	9	14	7	5	-	6	-	5	-	6	-	5	7	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	4	7	8	-	5	9						
	84	14	-	14	10	14	10	14	8	6	-	7	-	6	-	7	-	6	8	-	4	8	-	4	-	-	4	-	-	-	-	-	-	-	5	8	10	4	6	10						
	72	14	4	14	11	14	11	14	9	14	4	14	11	14	11	14	9	7	9	4	5	9	4	5	-	-	5	-	4	-	-	4	5	5	-	-	6	9	11	5	7	12				
	60	14	5	14	14	14	14	14	11	14	5	14	14	14	14	14	11	9	11	5	6	11	5	6	-	-	6	4	5	-	-	5	6	7	-	-	7	11	13	6	8	14				
120	120	14	6	14	14	14	14	13	14	6	14	14	14	14	14	13	11	13	6	8	14	6	7	4	4	7	5	6	4	-	7	7	8	5	5	8	14	16	7	10	16					
	96	12	-	14	8	12	8	14	6	5	-	5	-	5	-	6	-	5	6	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	8	-	5	8					
	84	14	-	14	9	14	9	14	7	5	-	6	-	6	-	6	-	6	7	-	4	7	-	-	-	-	-	-	-	-	-	-	-	-	4	7	9	-	5	9						
	72	14	-	14	11	14	10	14	8	6	-	7	4	6	4	7	-	7	8	-	5	8	-	4	-	-	5	-	-	-	-	-	-	-	4	5	-	-	5	8	10	5	6	11		
	60	14	5	14	13	14	13	14	10	14	5	14	13	14	13	14	10	8	10	5	6	10	5	5	-	-	5	-	5	-	-	5	5	6	-	-	6	10	12	5	7	13				
140	120	14	6	14	14	14	14	14	14	14	7	14	14	14	14	14	12	10	12	6	7	12	6	7	4	-	7	5	6	-	-	6	6	7	4	4	8	13	15	7	9	16				
	96	12	-	13	8	12	8	14	6	5	-	5	-	5	-	5	-	5	6	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	8	-	5	8				
	84	14	-	14	9	14	9	14	7	5	-	6	-	6	-	6	-	6	7	-	4	7	-	-	-	-	-	-	-	-	-	-	-	-	-	4	7	9	-	5	9					
	72	14	-	14	11	14	10	14	8	6	-	7	4	6	4	7	-	7	8	-	5	8	-	4	-	-	5	-	-	-	-	-	-	-	4	5	-	-	5	8	10	5	6	11		
	60	14	5	14	13	14	13	14	10	14	5	14	13	14	13	14	10	8	10	5	6	10	5	5	-	-	5	-	5	-	-	5	5	6	-	-	6	10	12	5	7	13				
160	120	14	7	14	14	14	14	14	14	14	7	14	14	14	14	14	14	12	10	12	6	7	12	6	7	4	-	7	5	6	-	-	6	6	7	4	4	8	13	15	7	9	16			
	96	12	-	13	8	12	8	14	6	5	-	5	-	5	-	5	-	5	6	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	8	-	5	8			
	84	14	-	14	9	14	9	14	7	5	-	6	-	6	-	6	-	6	7	-	4	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	8	-	5	8	
	72	14	-	14	11	14	10	14	8	6	-	7	4	6	4	7	-	7	8	-	5	8	-	4	-	-	5	-	-	-	-	-	-	-	-	-	4	5	-	-	5	9	11	5	6	11
	60	14	4	14	11	14	11	14	8	7	-	7	4	7	4	8	-	7	8	4	5	8	-	5	-	-	5	-	4	-	-	4	4	5	-	-	5	9	11	5	6	11				
160	72	12	-	14	8	12	8	14	6	5	-	5	-	5	-	5	-	5	6	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	8	-	5	8		
	60	14	-	14	9	14	9	14	7	6	-	7	-	6	-	7	-	6	7	-	4	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	6	9			
	48	14	4	14	12	14	12	14	9	14	4	14	12	14	12	14	9	8	9	4	5	9	4	5	-	-	5	-	4	-	-	4	5	6	-	-	6	10	12	5	7	12				

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



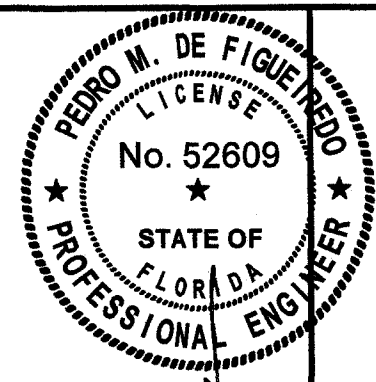
ALLOWABLE DESIGNED PRESSURES
 FOR SECTION X WITH 1/4" ALUMINUM PLATE

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: 1- LINEAR INTERPOLATION IS ALLOWABLE BETWEEN BLADE SPAN SIZES



FEB 06 2018



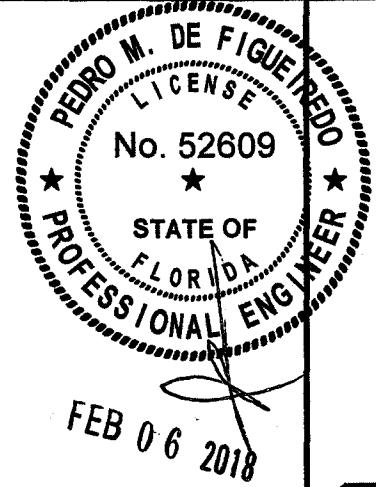
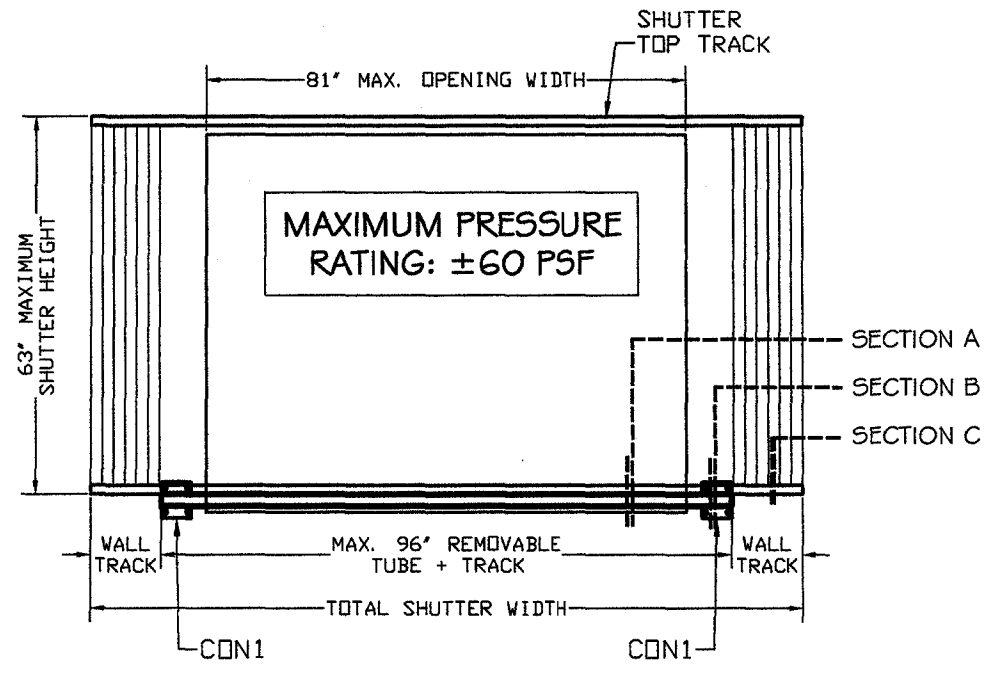
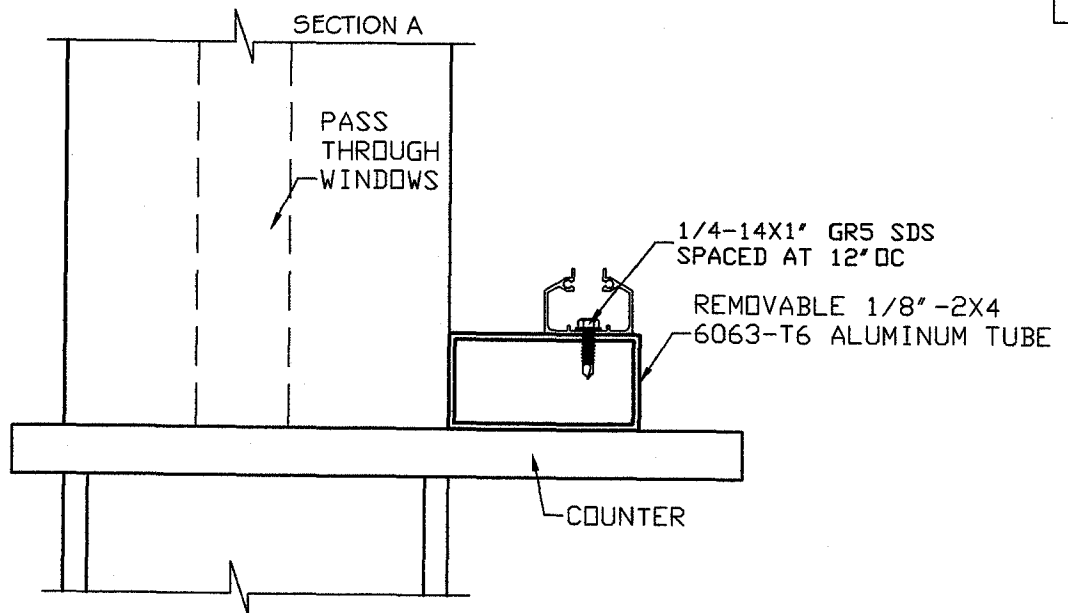
ENGINEERING SERVICES - CA 32459
 9249 CHELSEA DR. S
 PLANTATION, FL 33324
 PEDRO DE FIGUEIREDO
 PE 52609
 PPMF@AOL.COM

PRODUCT:
SUPERNOVA
 EXTRUDED ALUMINUM
 ACCORDION SHUTTER
 LARGE MISSILE IMPACT RESISTANT

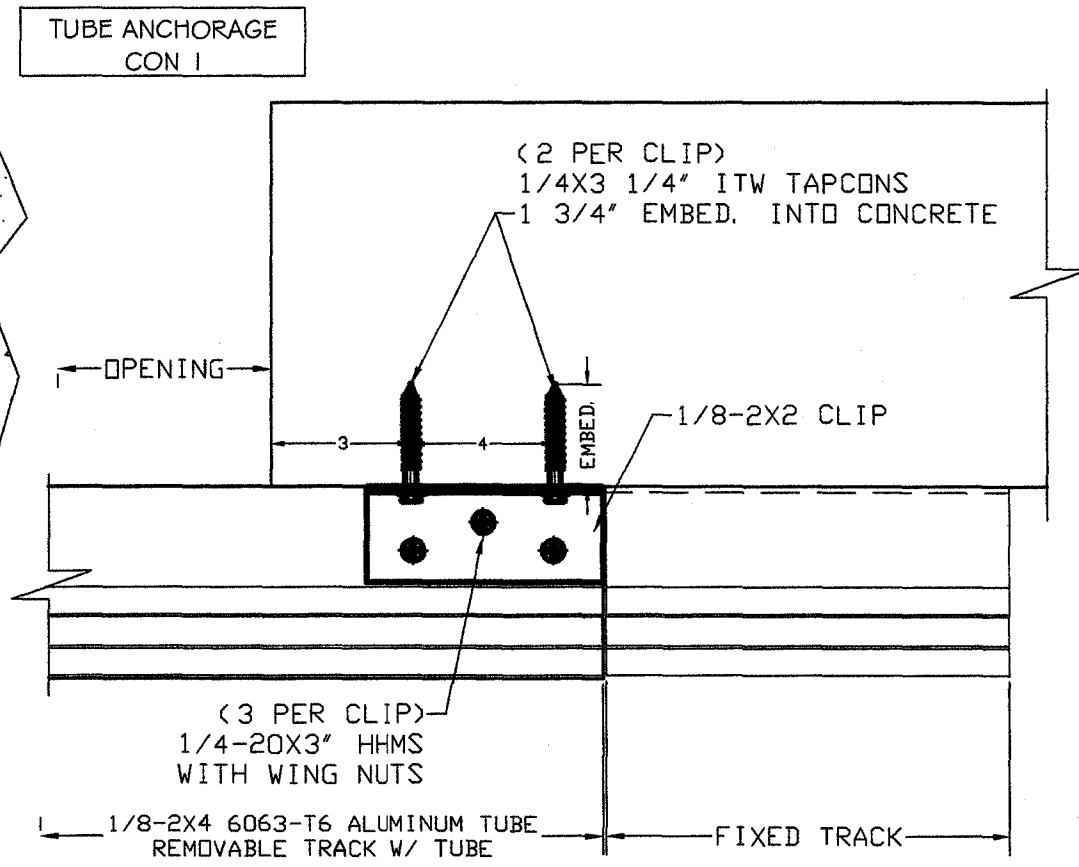
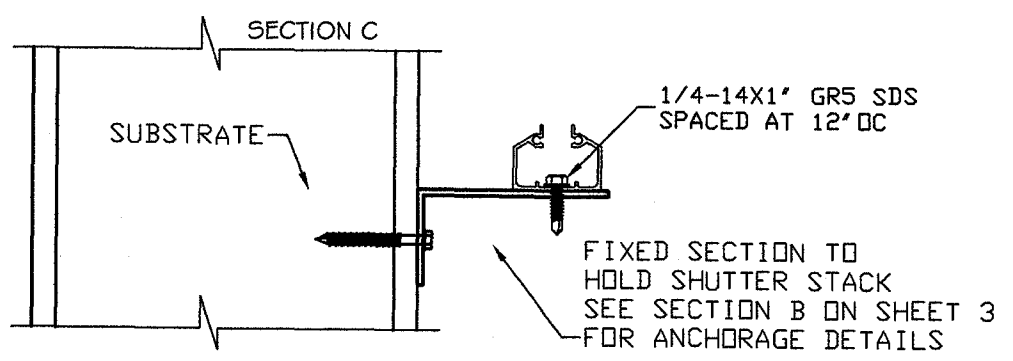
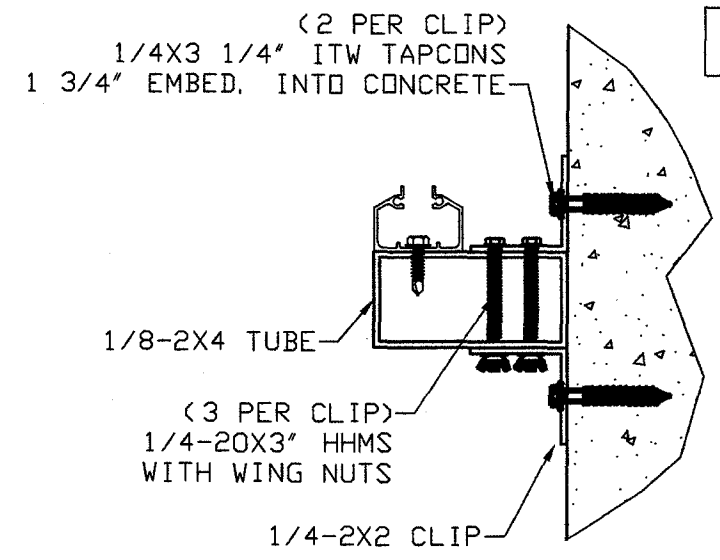
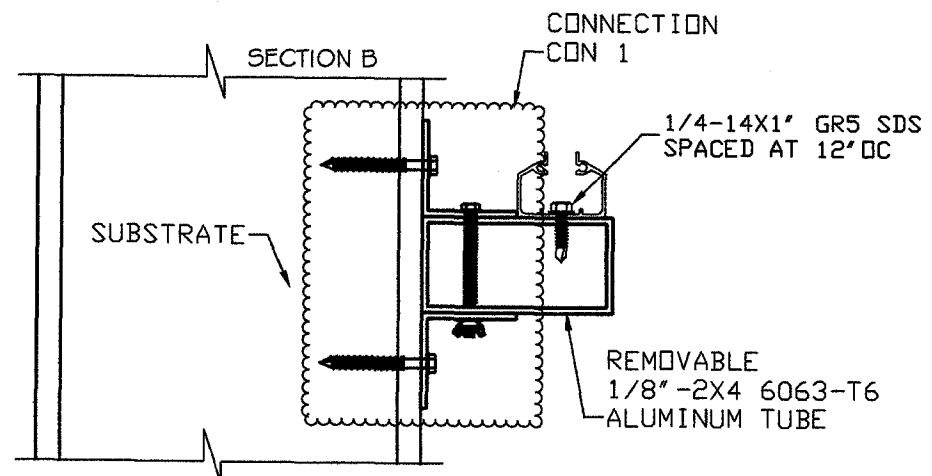
ASSOCIATION OF MANUFACTURERS:
N.A.S.A.
 NATIONAL APPROVED SHUTTER ASSOCIATION LLC.
 HIALEAH GARDENS, FL 33018

SCALE:
 NA
 DATE:
 02/06/18
 DRAWING #
 18-048
 SHEET
 15 OF 16

SECTION CT
REMOVABLE SILL
OVER COUNTER TOP



ENGINEERING SERVICES - CA 32459
9249 CHELSEA DR. S
PLANTATION, FL 33324
PPMIF@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.
HIALEAH GARDENS, FL 33018

SCALE:
NA
DATE:
02/06/18
DRAWING #
18-048
SHEET
16 OF 16