

GENERAL NOTES:

1. THIS SHUTTER ACCORDION "RS-1" HAS BEEN VERIFIED IN ACCORDANCE WITH SECTIONS 1609 AND 1626 OF THE FLORIDA BUILDING CODE EDITION 2020, AS PER TAS 201-94, TAS 202-94 & TAS 203-94 OF THE TEST PROTOCOLS FOR HIGH-VELOCITY HURRICANES ZONES, AND AS PER AMERICAN TESTING LABORATORY WITH THE TEST NO. 4986.
 THE WIND DESIGN LOADS COMPLY WITH SECTION 1620 OF THE FLORIDA BUILDING CODE EDITION 2020. THE WIND PRESSURES SHOWN IN THE TABLES ON SHEETS (6 OF 9) AND (7 OF 9) IN THIS DOCUMENTS ARE AS PER FBC 2020 EDITION (ALLOWABLE SERVICE DESIGN), TO OBTAIN THE EQUIVALENT ULTIMATE WIND PRESSURES, DIVIDE THE WIND PRESSURES SHOWN IN THE TABLES ON SHEETS (6 OF 9) AND (7 OF 9) OF THIS DOCUMENT BY 0.6 FACTOR (ULTIMATE FACTOR DESIGN). IN ORDER TO VERIFY THAT ANCHORS ON THIS PRODUCT APPROVAL DOCUMENTS, AS TESTED, WERE NOT OVERSTRESSED, A 33% INCREASE IN ALLOWABLE STRESS FOR WIND LOADS WAS NOT USED IN THEIR ANALYSIS, AND IN THE LABORATORY THE TEST LOAD WAS 50% MORE OF DESIGN LOAD.
 THE RS-1 ALUMINUM ACCORDION HIGH VELOCITY SHUTTER SYSTEM IS ADEQUATE FOR IMPACT AND FATIGUE RESISTANCE AS SHOWN IN THE TEST RESULTS FROM LABORATORY.
 AND LAST BUT NOT LESS, THE RS-1 ALUMINUM ACCORDION HIGH VELOCITY SHUTTER SYSTEM MAY BE INSTALLED AT HIGH VELOCITY HURRICANE ZONES (H.V.H.Z.)"

2. ALL ALUMINUM EXTRUSIONS SHALL BE ALUMINUM ASSOCIATION 6063-T6 ALLOY AND TEMPER, WITH $F_y = 25.0$ ksi MINIMUM (UNLESS OTHERWISE NOTED).

3. SCREWS SHALL BE:
 - AISI SERIES 304 OR 316 STAINLESS STEEL, $F_y=35$ ksi MIN.
 - CARBON STEEL CORROSION RESISTANT AS PER DIN 50018, $F_y=50$ ksi.

4. BOLTS SHALL BE:
 - T4-2024 ALUMINUM ALLOY AND TEMPER, $F_y= 18$ ksi MIN.
 - ASTM A-307 GALVANIZED STEEL, $F_y= 50$ ksi
 - AISI SERIES 304 STAINLESS STEEL, $F_y=35$ ksi MIN.

5. ANCHORS TO WALL SHALL BE AS FOLLOWS:
 (5.1) TO EXISTING POURED CONCRETE: (Min. $f'_c = 3$ ksi)
 - 1/4"Ø TAPCON ANCHORS AND 1/4"Ø MAXI-SET TAPCON, AS MANUFACTURED BY I.T.W. RAMSET/ RED HEAD.
 - 1/4"Ø CRETE-FLEX SS4 ANCHORS, AS MANUFACTURED BY ELCO TEXTRON.
 - 1/4"Ø x 7/8" CALK-IN ANCHORS AS MANUFACTURED BY ALL POWERS FASTENERS

NOTES:
 5.1.1) MINIMUM EMBEDMENT INTO POURED CONCRETE OF TAPCON ANCHORS IS 1 3/4".
 5.1.2) MINIMUM EMBEDMENT OF 1/4"Ø CALK-IN ANCHORS SHALL BE 7/8" INTO THE POURED CONCRETE. NO EMBEDMENT INTO STUCCO SHALL BE PERMITTED. 1/4" Ø-20 S.S. MACHINE SCREW USED TOGETHER WITH 1/4"Ø CALK-IN ANCHORS.

5.2) IN CASE THAT PRECAST STONE, PRECAST CONCRETE PANELS, PAVERS OR ANY VENEER BE FOUND ON THE EXISTING WALL OR FLOOR, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SAID WALL FINISHES. ANCHORAGE SHALL BE AS INDICATED ON NOTES 5.1.1) & 5.1.2) ABOVE.

(5.3) TO EXISTING CONCRETE BLOCK WALL:
 - 1/4"Ø TAPCON ANCHORS AND 1/4"Ø MAXI-SET TAPCON, AS MANUFACTURED BY I.T.W. RAMSET/ RED HEAD.
 - 1/4"Ø CRETE-FLEX SS4 ANCHORS, AS MANUFACTURED BY ELCO TEXTRON.
 - 1/4"Ø x 7/8" CALK-IN ANCHORS AS MANUFACTURED BY ALL POWERS FASTENERS

NOTES:
 5.4.1) MINIMUM EMBEDMENT INTO CONCRETE BLOCK OF TAPCON & WEDGE-BOLT ANCHORS, IS 1 1/4".
 5.4.2) MINIMUM EMBEDMENT OF 1/4"Ø CALK-IN ANCHORS SHALL BE 7/8" INTO THE POURED CONCRETE. NO EMBEDMENT INTO STUCCO SHALL BE PERMITTED. 1/4" Ø-20 S.S. MACHINE SCREW USED TOGETHER WITH 1/4"Ø CALK-IN ANCHORS.

5.5) IN CASE THAT PRECAST STONE, PRECAST CONCRETE PANELS, PAVERS OR ANY VENEER BE FOUND ON THE EXISTING WALL OR FLOOR, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SAID WALL FINISHES. ANCHORAGE SHALL BE AS INDICATED ON NOTES 5.4.1) & 5.4.2) ABOVE.

(5.6) ANCHORS SHALL BE INSTALLED FOLLOWING ALL OF THE RECOMMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER.

(5.7) SEE SCHEDULE BELOW FOR EDGE DISTANCE (E.D.) VERSUS SPACING RELATIONSHIP FOR ANCHORS ON SHEET 7 OF 9.

6 MOUNTING SECTIONS CAN BE COMBINED IN ANY WAY TO SUIT ANY INSTALLATION. (SEE ALTERNATIVES NOTES ON SHEET 6 OF 9).
 - FLOOR MOUNTING INSTALLATION SHALL BE REMOVABLE WHEN PERFORMED ADJACENT TO AN OPERABLE EXIT OR ENTRANCE

7. CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS OF THE OPENINGS WHERE SHUTTER WILL BE INSTALLED TO INSURE APPROPRIATE INSTALLATION.

CONTRACTOR SHALL BE RESPONSIBLE FOR:
 -VERIFY THE EXISTING CONDITIONS OF THE STRUCTURE WHERE SHUTTER WILL BE INSTALLED TO PREVENT ANY DAMAGE TO EXISTING STRUCTURE.
 -SEAL ALL SHUTTER TRACKS COMPONENTS ALL AROUND EDGES IN CONTACT WITH THE STRUCTURE TO PREVENT ANY DAMAGE DUE TO WIND AND RAIN
 -SELECT THE PROPER TYPE OF INSTALLATION TO PROVIDE APPROPRIATE WORK INCLUDING LIFE SAFETY OF THIS PRODUCT.
 -IF IN ANY CASE CONTRACTOR NEEDS TO MADE ANY MODIFICATION HE/SHE SHOULD COMMUNICATE IMMEDIATELY TO ENGINEER OF RECORD BEFORE ANY ACTION.

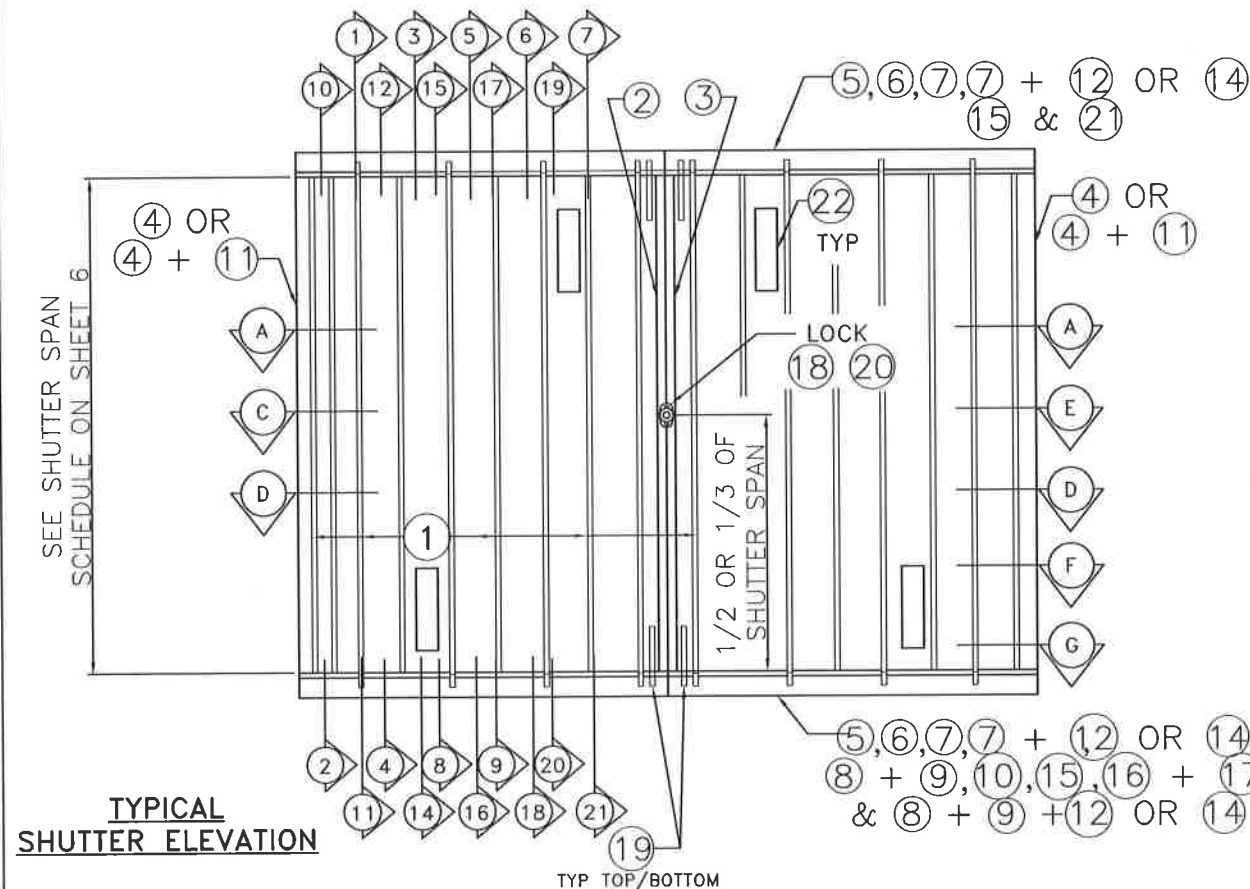
8. A LABEL SHALL BE PLACED FOR EVERY OPENING BY THE MANUFACTURER AND SHALL BE EXPOSED ON THE CENTERMATE, COMPONENT 2 OR 3.
 LABEL SHALL READ:

RS-1 ALUMINUM ACCORDION.
 ROLLINGSHIELD INC.
 MIAMI, FLORIDA
 MIAMI-DADE COUNTY PRODUCT CONTROL APPROVED.

9. THE INSTALLATION OF THIS RS-1 ALUMINUM ACCORDION HIGH VELOCITY SHUTTER SYSTEM SHALL COMPLY WITH THE SPECIFICATIONS INDICATED IN THIS DRAWING PLUS ANY BUILDING AND ZONING REGULATIONS PROVIDED BY THE JURISDICTION WHERE PERMIT IS APPLIED TO.

10. THIS PRODUCT APPROVAL DOCUMENTS WILL BE VALID ONLY WHEN IT MEETS THE FOLLOWING TERMS:
 -PLANS SHALL BE SIGNED & SEALED BY THE ENGINEER OF RECORD.
 -NO MODIFICATIONS AND/OR ALTERATIONS MAY BE MADE BY ANY MEANS.

11. THIS PRODUCT APPROVAL DOCUMENTS WAS NOT PREPARED FOR A SPECIFIC SITE.

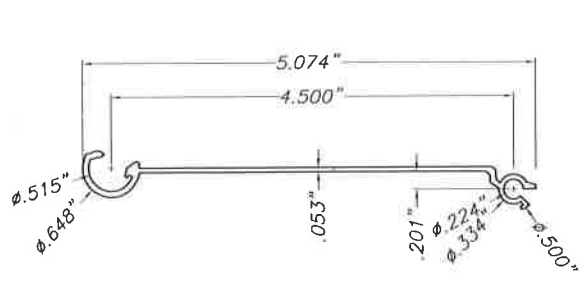


RS-1 ALUMINUM SHUTTER HIGH VELOCITY SHUTTER SYSTEM		ROLLINGSHIELD INC.	
		PHONE (305) 436-6661 FAX (305) 436-5523 9875 NW 79th AVE Hialeah Gardens, FL 33016 www.rollingshield.com	
REV. No	DESCRIPTION	DATE	
1	RENEWAL AS PER FBC 2017	09-19-2017	
2	RENEWAL AS PER FBC 2020	09-16-2020	
3			
4			
5			

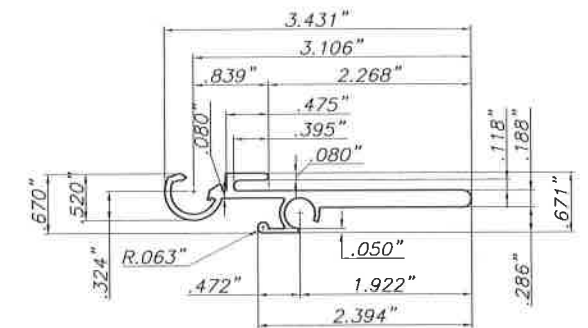
V.M. Engineering Inc.
 C. of A. No. 27633
 11278 S.W. 153rd Place
 MIAMI, FLORIDA 33196
 TEL: 786-281-6968
 TEL: 305-563-5896



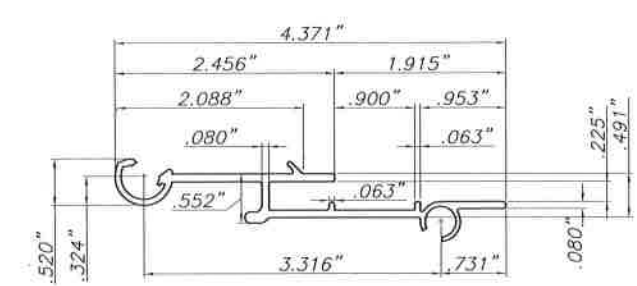
SCALE:	N.T.S.
DATE:	09-16-2020
F.B.C. (High Velocity Hurricane Zone)	
DWG No:	169-2020 (RS1-20)
SHEET	1 OF 9



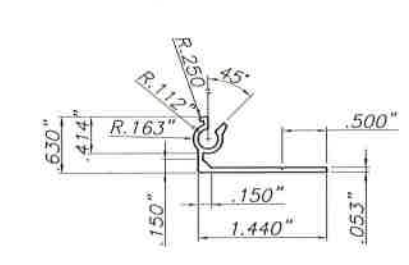
① MALE/FEMALE BLADE



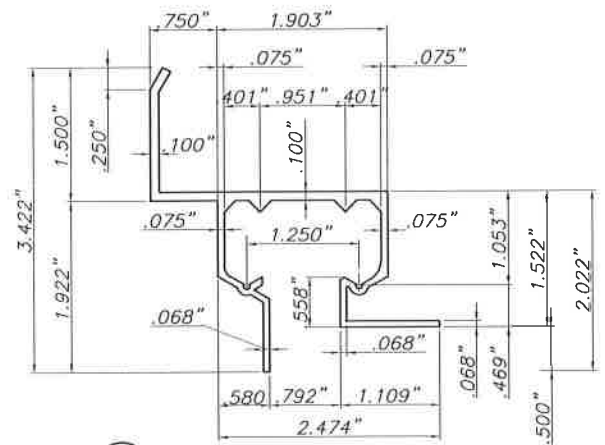
② MALE CENTERMATE BLADE



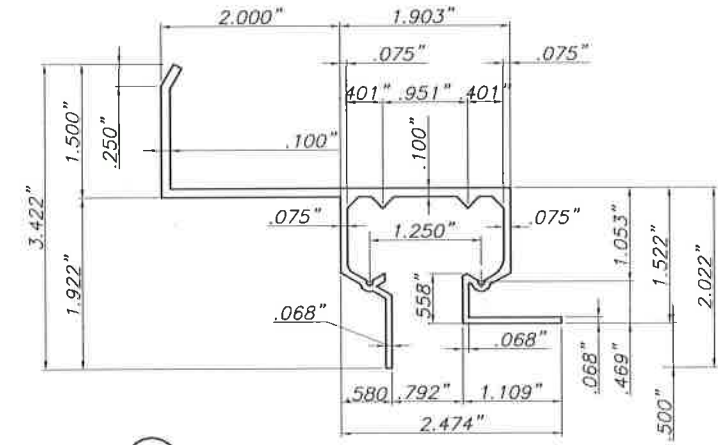
③ FEMALE CENTERMATE BLADE



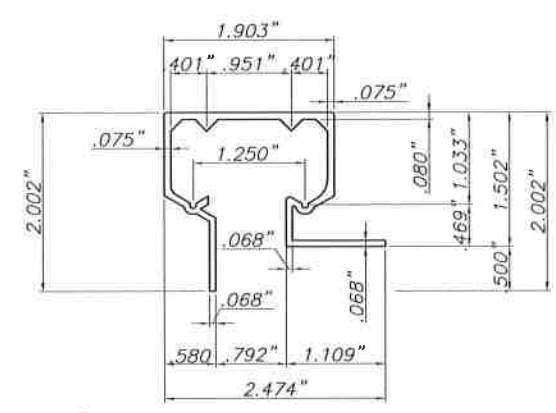
④ 180° MALE STARTER



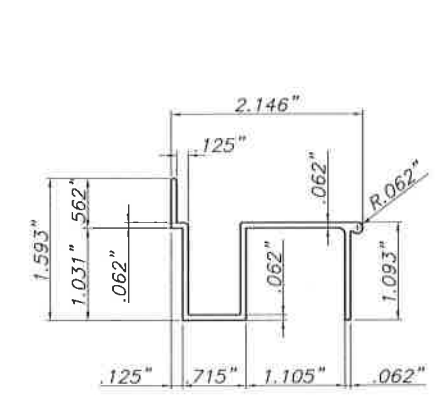
⑤ HEADER WALL MOUNT.



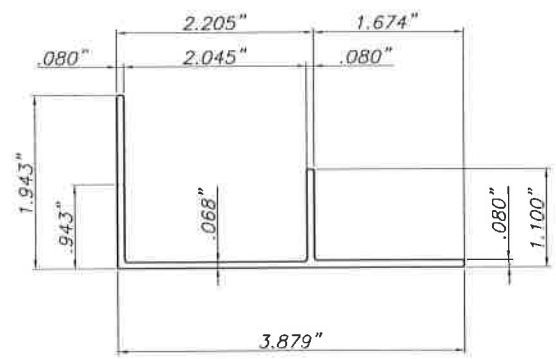
⑥ B.O. HEADER WALL MOUNT.



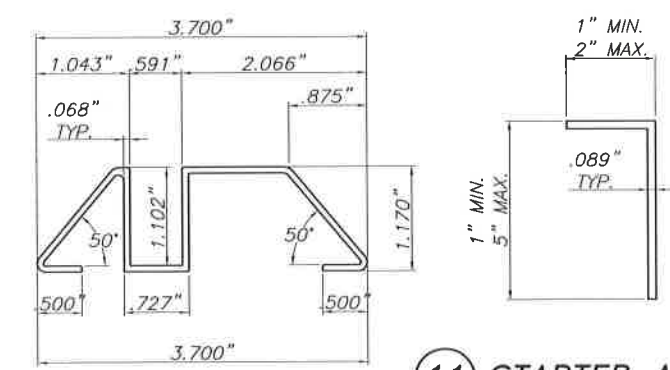
⑦ CEILING HEADER MOUNT.



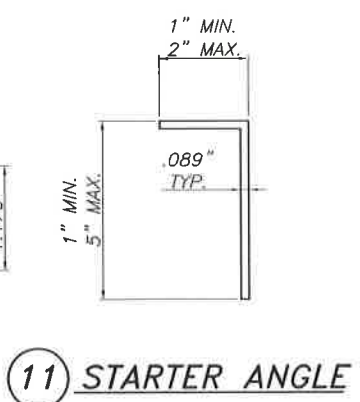
⑧ FLOOR SILL



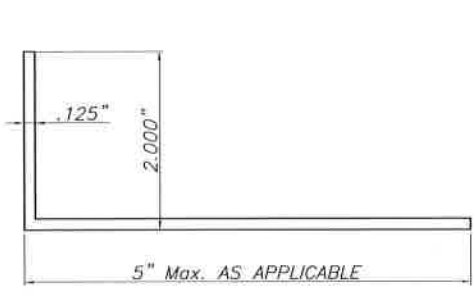
⑨ ADJUSTABLE FLOOR SILL ADAPTOR



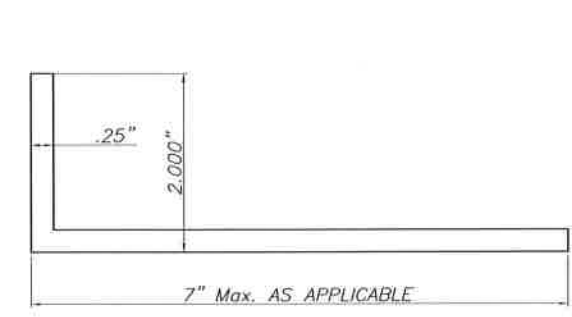
⑩ THRESHOLD TRACK



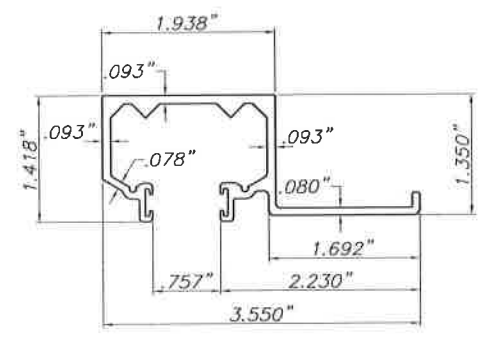
⑪ STARTER ANGLE



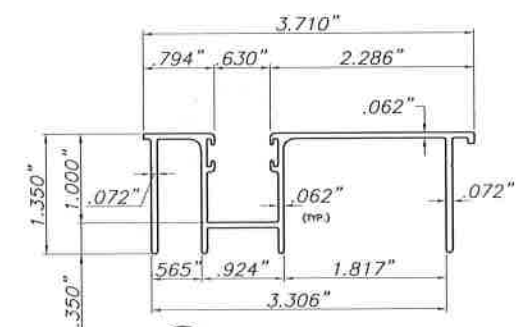
⑫ ALUMINUM B.O. ANGLE



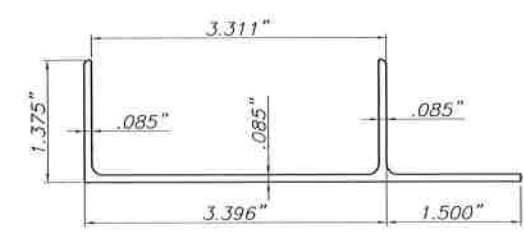
⑭ ALUMINUM B.O ANGLE



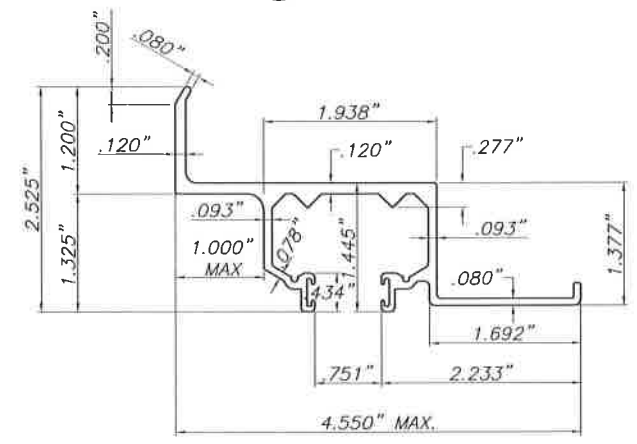
⑮ CEILING HEADER



⑯ FLOOR SILL

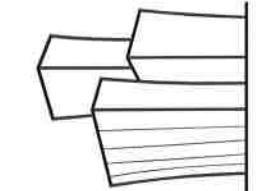


⑰ ADJUSTABLE FLOOR SILL ADAPTOR W / LIP

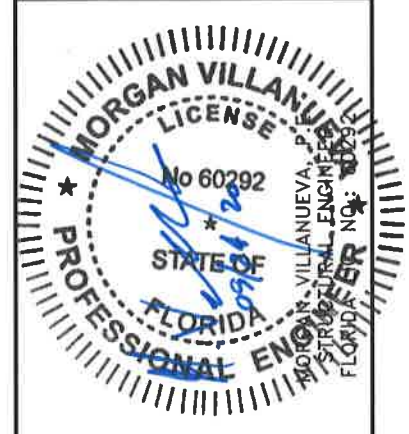


⑳ WALL HEADER

RS-1 ALUMINUM SHUTTER HIGH VELOCITY SHUTTER SYSTEM		DATE	09-19-2017
ROLLINGSHIELD INC. PHONE (305) 436-6661 FAX (305) 436-5523 9875 NW 79th AVE Hialeah Gardens, FL 33016 www.rollingshield.com		DESCRIPTION	RENEWAL AS PER FEB 2020
REV. No	1	RENEWAL AS PER FEB 2017	09-19-2017
	2	RENEWAL AS PER FEB 2020	09-16-2020
	3		
	4		
	5		



V.M. Engineering Inc.
C. of A. No. 27633
11278 S.W. 153rd Place
MIAMI, FLORIDA 33196
TEL: 786-281-6968
TEL: 305-383-5896



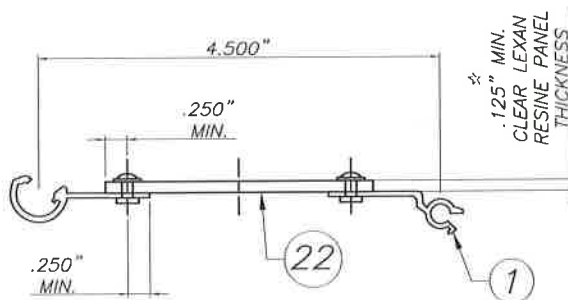
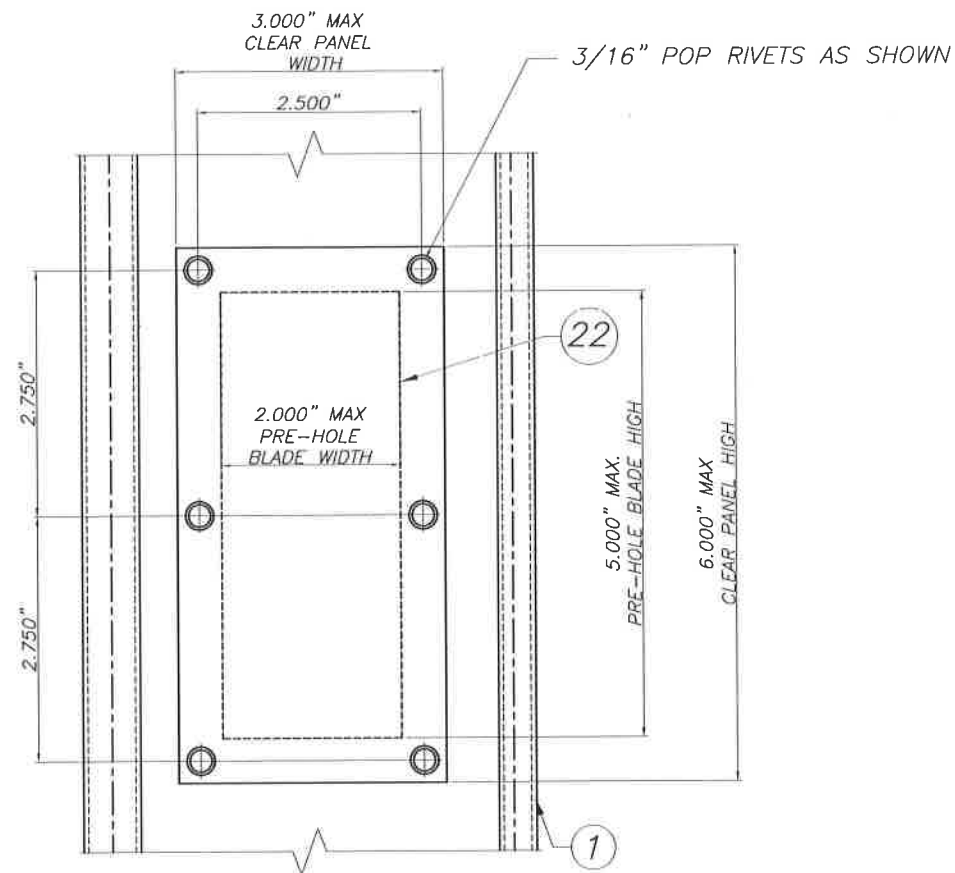
SCALE: N.T.S.

DATE: 09-16-2020

F.B.C.
(High Velocity Hurricane Zone)

DWG No: 169-2020 (RS1-20)

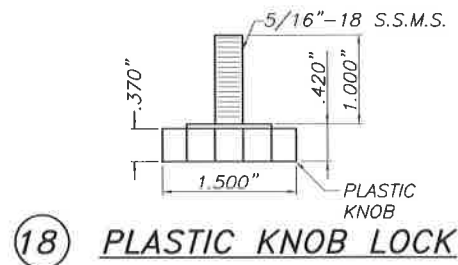
SHEET 2 OF 9



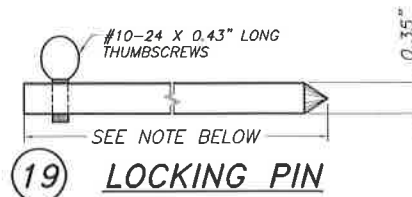
MALE/FEMALE BLADE DETAIL OF CLEAR PANEL LOCATION

MAXIMUM NUMBER OF CLEAR PANELS PER SHUTTER MUST NOT EXCEED FOUR (4) PER ACCORDION AND LOCATED TWO AT EACH SIDE OF THE CENTERMATES STARTED AT THIRD BLADE AFTER THE CENTERMATES AND THE SECOND ONE FOURTH BLADE AFTER, TYPICAL AT EACH SIDE OF THE SHUTTER.

☆ CLEAR PANEL SHALL BE LEXAN RESIN #103-112 (UV STABILIZED) OR EQUIVALENT COMPARABLE TO G.E. LEXAN POLYMER SHEET #90-34, THERMOPLASTIC POLYMER TENSILE STRENGTH $F_y=8.9\text{ksi}$, $F_b=12.9\text{ksi}$, $E=328.7\text{ksi}$

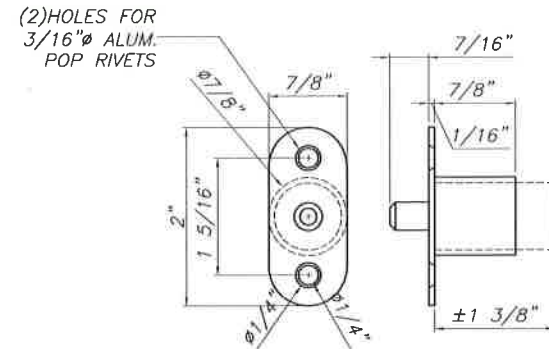


18 PLASTIC KNOB LOCK

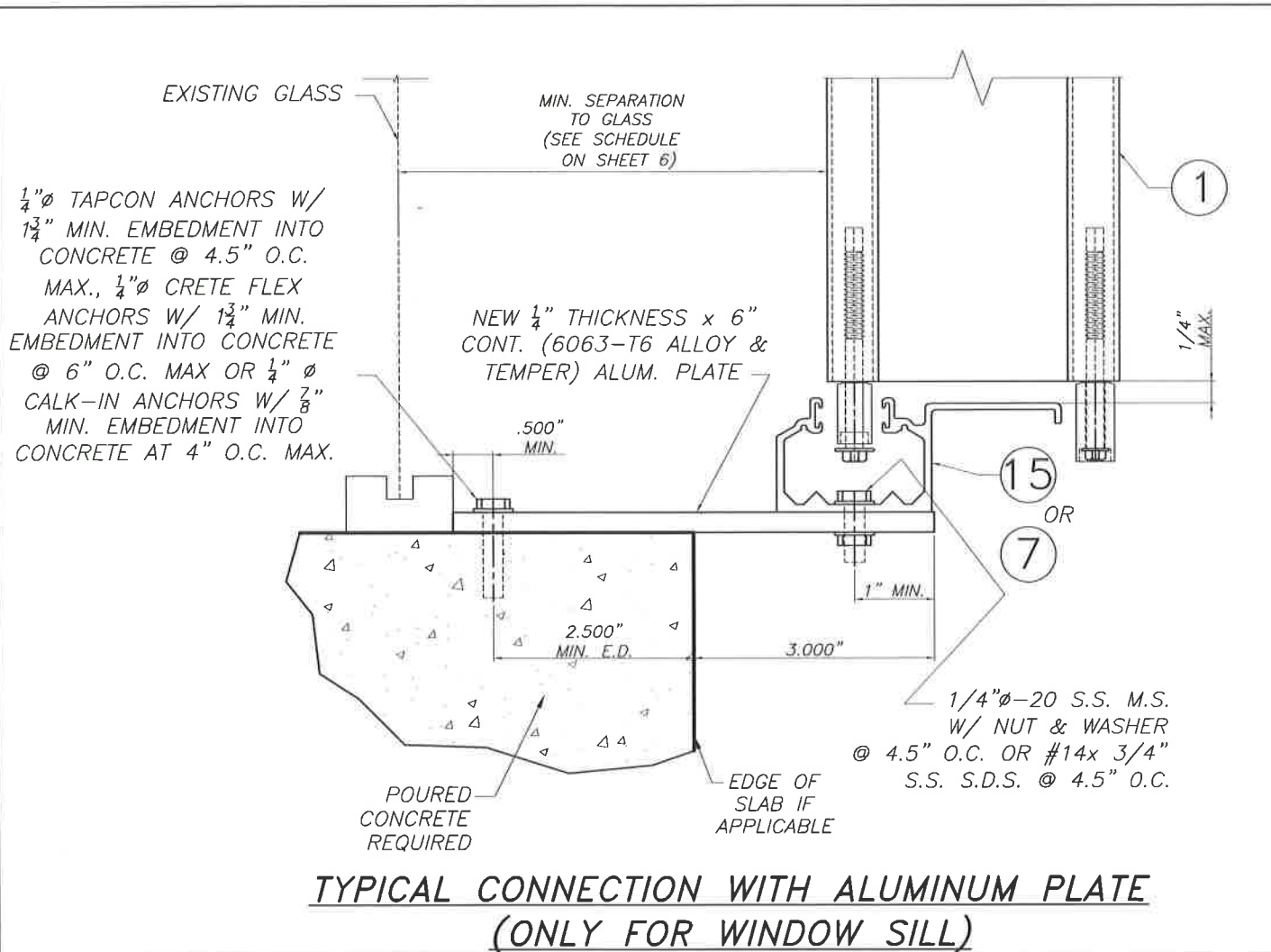


19 LOCKING PIN

24\"/>



20 NICKEL PLATED PUSH LOCK BOTTOM



TYPICAL CONNECTION WITH ALUMINUM PLATE (ONLY FOR WINDOW SILL)

RS-1 ALUMINUM SHUTTER HIGH VELOCITY SHUTTER SYSTEM

ROLLINGSHIELD INC.
 PHONE (305) 436-6661 FAX (305) 436-5523
 9675 NW 79th AVE
 Hialeah Gardens, FL 33016
 www.rollingshield.com

REV. No	DESCRIPTION	DATE
1	RENEWAL AS PER FBC 2017	09-19-2017
2	RENEWAL AS PER FBC 2020	09-16-2020
3		
4		
5		

V.M. Engineering Inc.
 C. of A. No. 27633
 11278 S.W. 153rd Place
 MIAMI, FLORIDA 33196
 TEL: 786-281-6868
 TEL: 305-383-5896

MORGAN VILLANUEVA
 LICENSE No. 60292
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER
 STRUCTURAL ENGINEER
 FLORIDA #111601

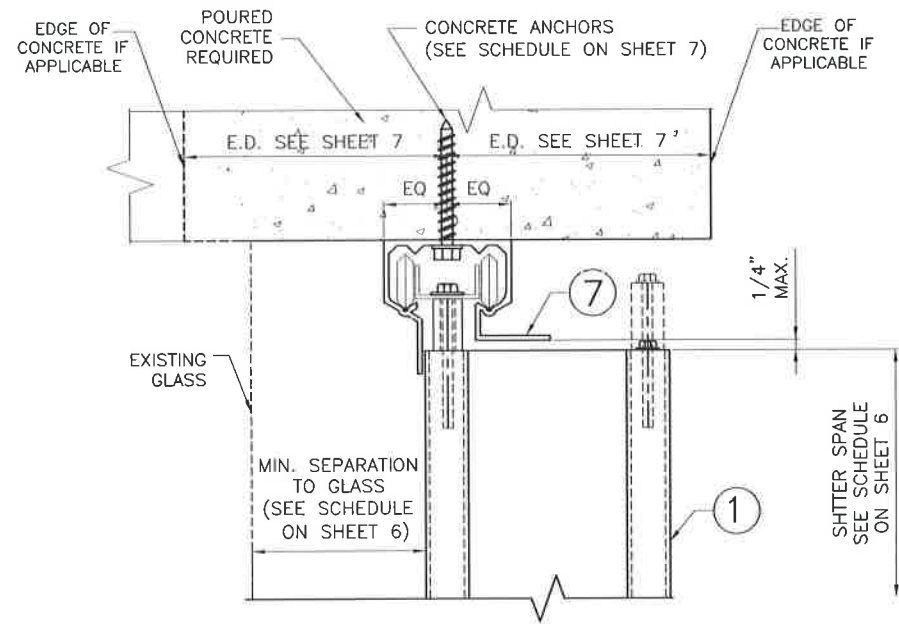
SCALE: N.T.S.

DATE: 09-16-2020

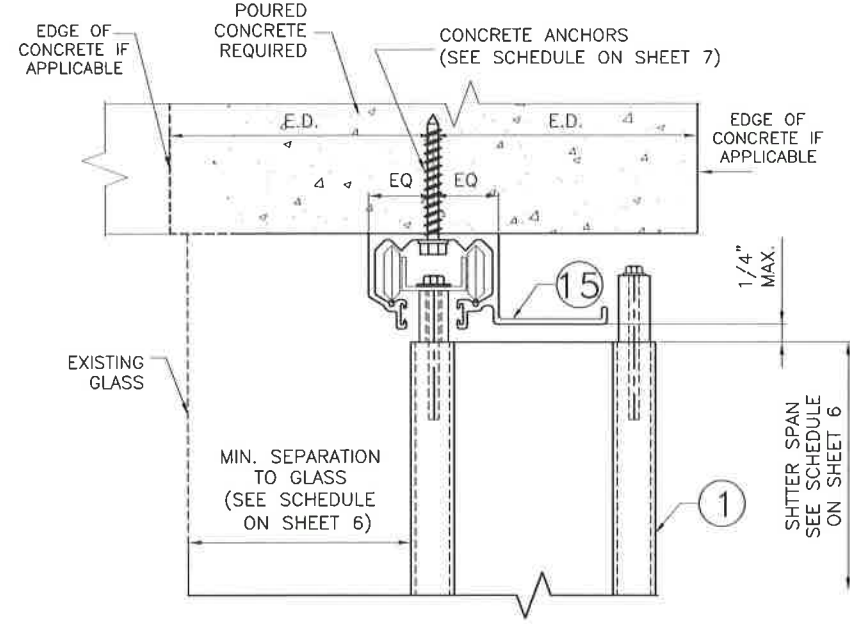
F.B.C.
 (High Velocity Hurricane Zone)

DWG No: 169-2020 (RS1-20)

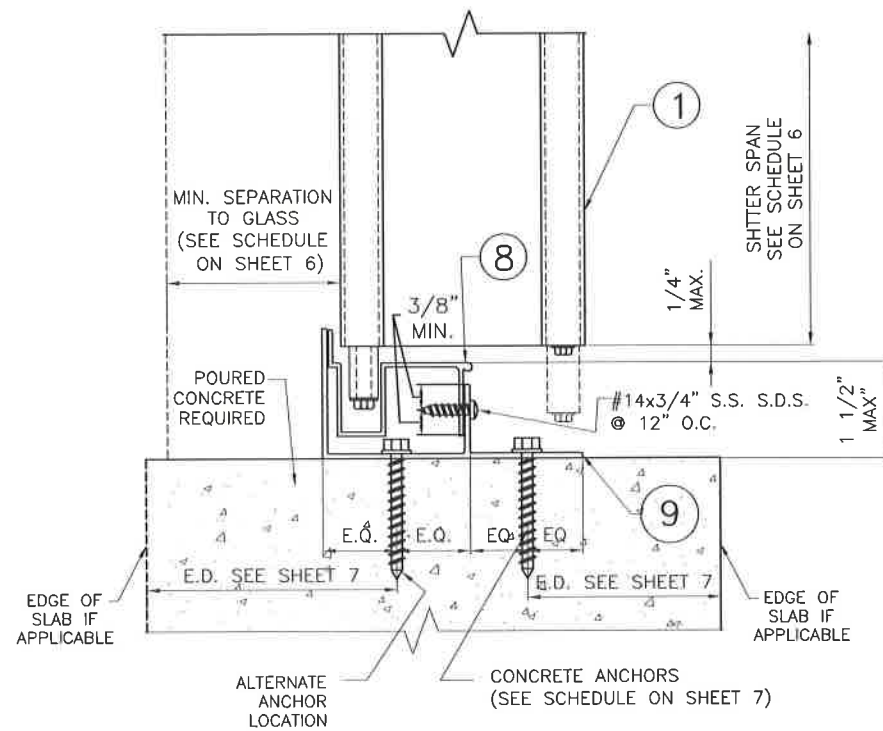
SHEET 2A OF 9



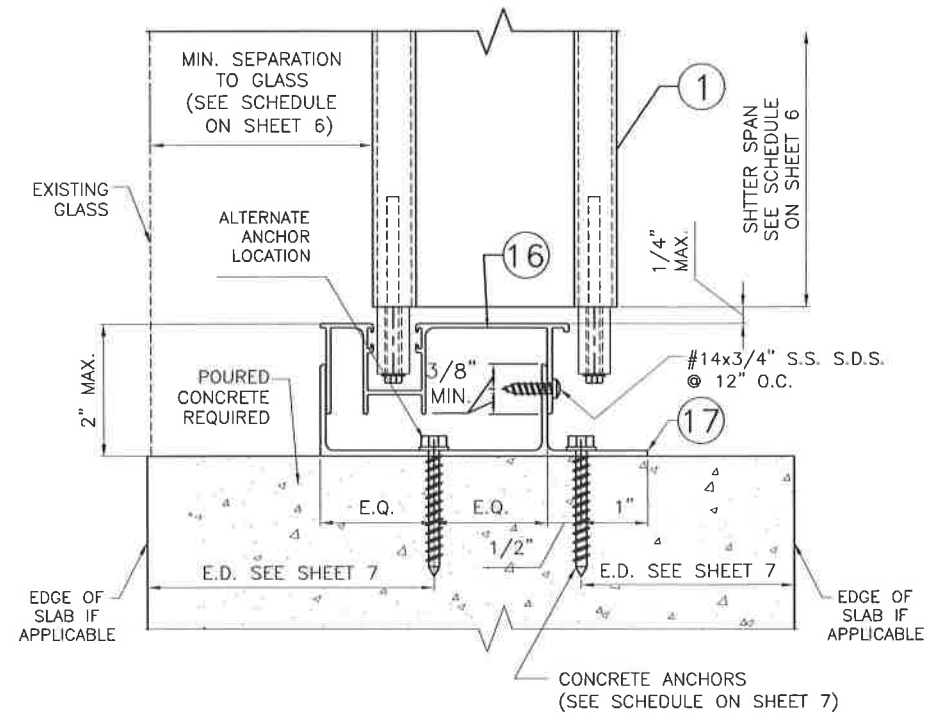
① CEILING HEADER MOUNTING INSTALLATION



③ CEILING HEADER MOUNTING INSTALLATION



② SILL & ADJUSTABLE FLOOR MOUNTING INSTALLATION

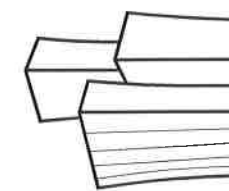


④ SILL & ADJUSTABLE FLOOR MOUNTING INSTALLATION

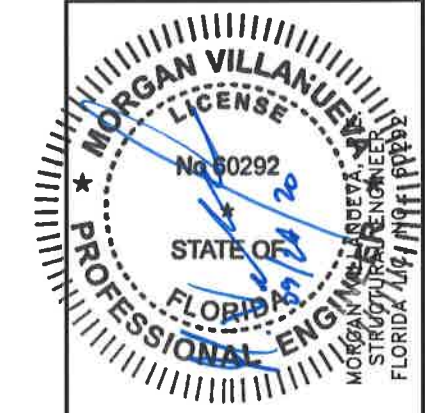
RS-1 ALUMINUM SHUTTER
HIGH VELOCITY SHUTTER SYSTEM

ROLLINGSHIELD INC.
PHONE (305) 436-6661 FAX (305) 436-5523
9875 NW 79th AVE
Hialeah Gardens, FL 33016
www.rollingshield.com

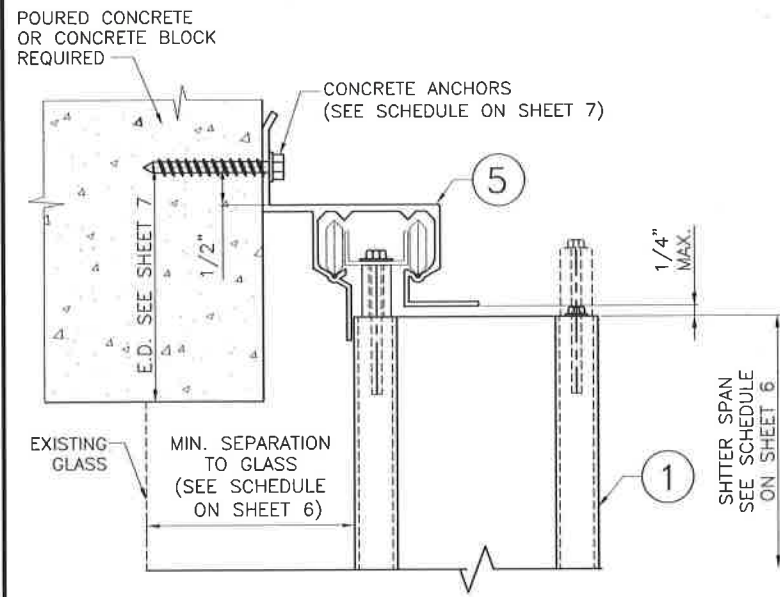
REV. No	DESCRIPTION	DATE
1	RENEWAL AS PER FBC 2017	09-19-2017
2	RENEWAL AS PER FBC 2020	09-16-2020
3		
4		
5		



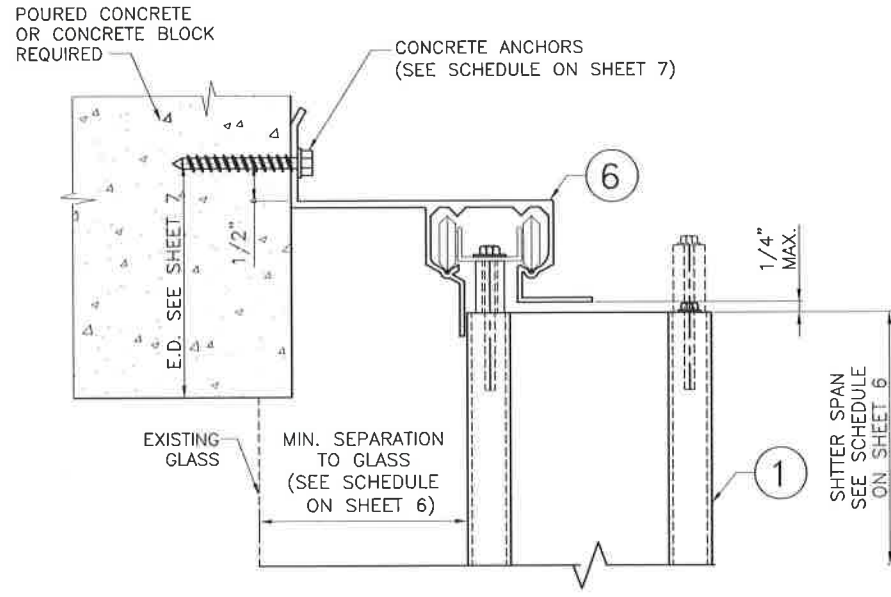
V.M. Engineering Inc.
C. of A. No. 27633
11278 S.W. 153rd Place
MIAMI, FLORIDA 33196
TEL: 786-281-6968
TEL: 305-383-5896



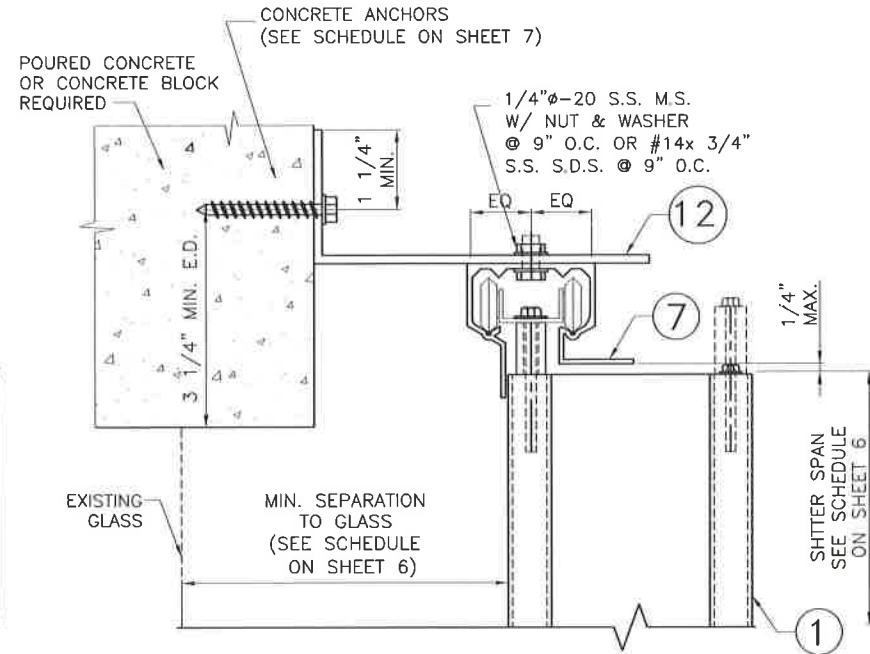
SCALE:	N.T.S.
DATE:	09-16-2020
F.B.C. (High Velocity Hurricane Zone)	
DWG No: 169-2020 (RS1-20)	
SHEET 3 OF 9	



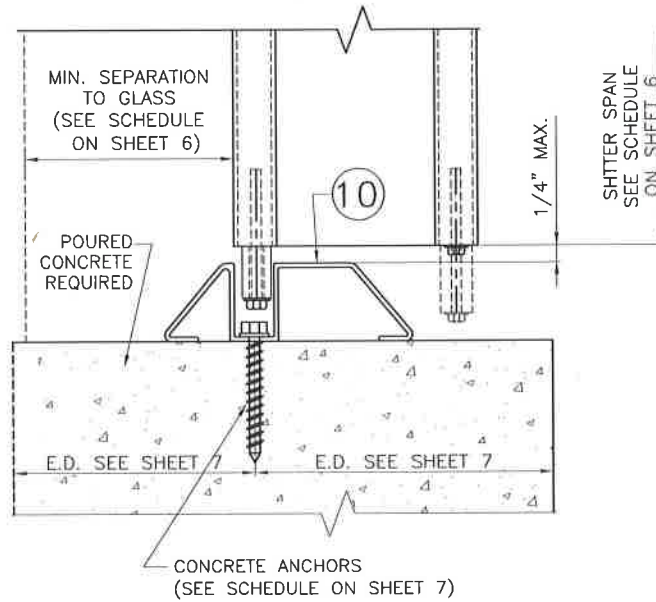
⑤ HEADER WALL MOUNTING INSTALLATION



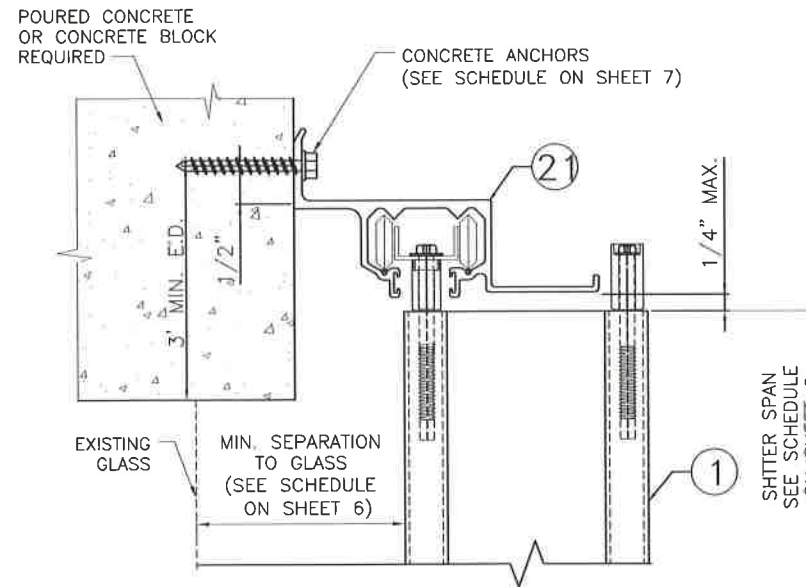
⑥ B.O. HEADER WALL MOUNTING INSTALLATION



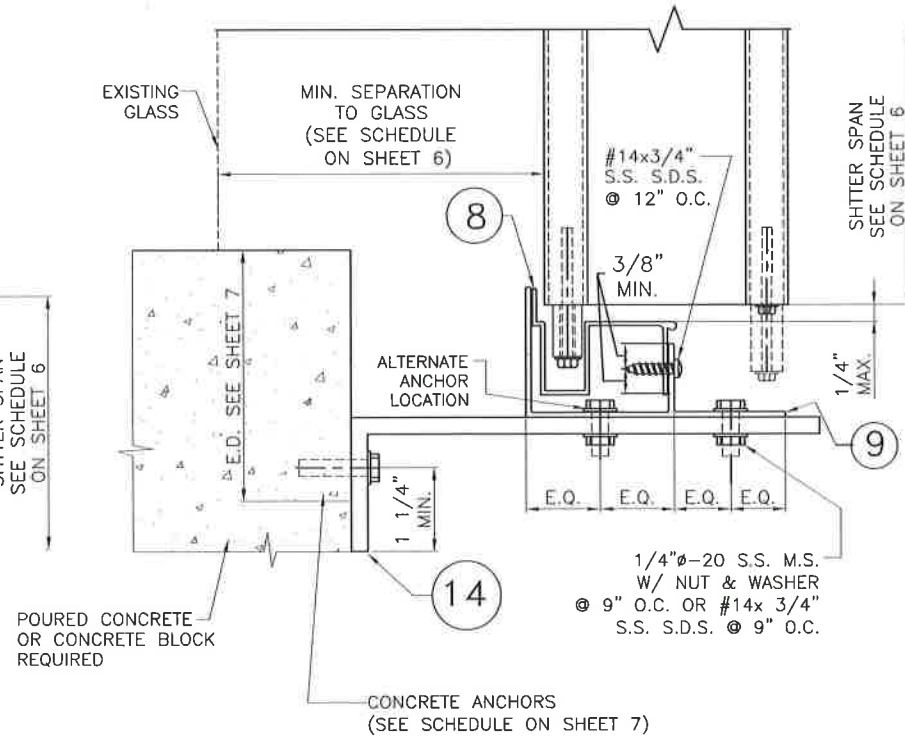
⑦ B.O. CEILING HEADER MOUNTING INSTALLATION



⑨ THRESHOLD FLOOR MOUNTING INSTALLATION



⑩ WALL MOUNTING INSTALLATION



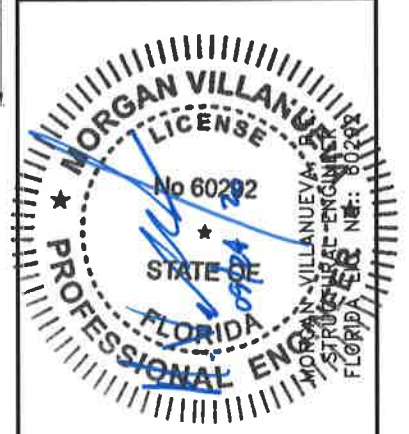
⑧ B.O. SILL & ADJUSTABLE FLOOR MOUNTING INSTALLATION

RS-1 ALUMINUM SHUTTER HIGH VELOCITY SHUTTER SYSTEM

ROLLINGSHIELD INC.
 PHONE (305) 436-6661 FAX (305) 436-5523
 9875 NW 79th AVE
 Hialeah Gardens, FL 33016
 www.rollingshield.com

REV. No	DESCRIPTION	DATE
1	RENEWAL AS PER FEB 2017	09-19-2017
2	RENEWAL AS PER FEB 2020	09-16-2020
3		
4		
5		

V.M. Engineering Inc.
 C. of A. No. 27633
 11278 S.W. 153rd Place
 MIAMI, FLORIDA 33196
 TEL: 786-281-6968
 TEL: 305-383-5896



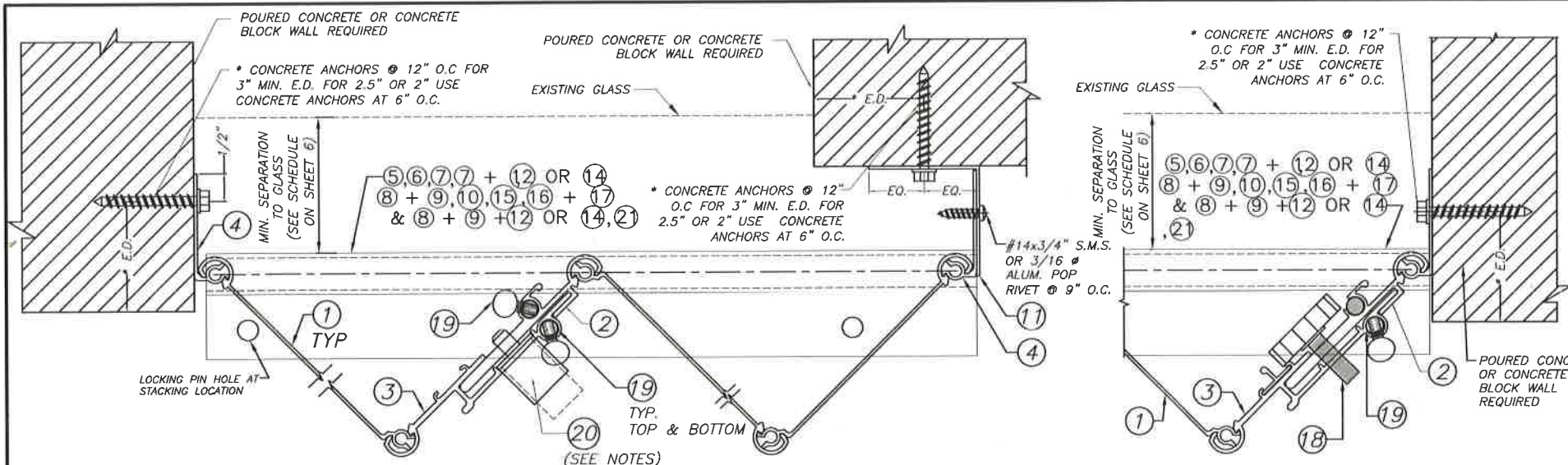
SCALE: N.T.S.

DATE: 09-16-2020

F.B.C.
 (High Velocity Hurricane Zone)

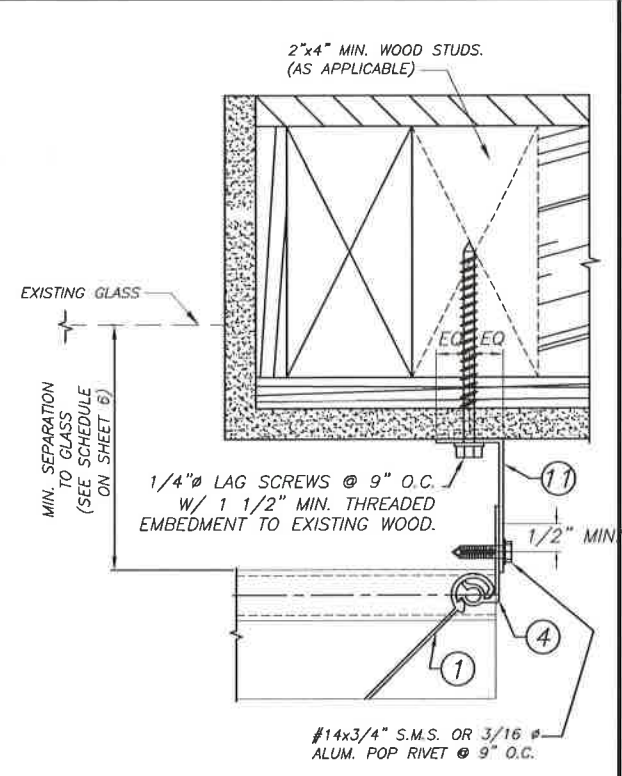
DWG No: 169-2020 (RS1-20)

SHEET 4 OF 9

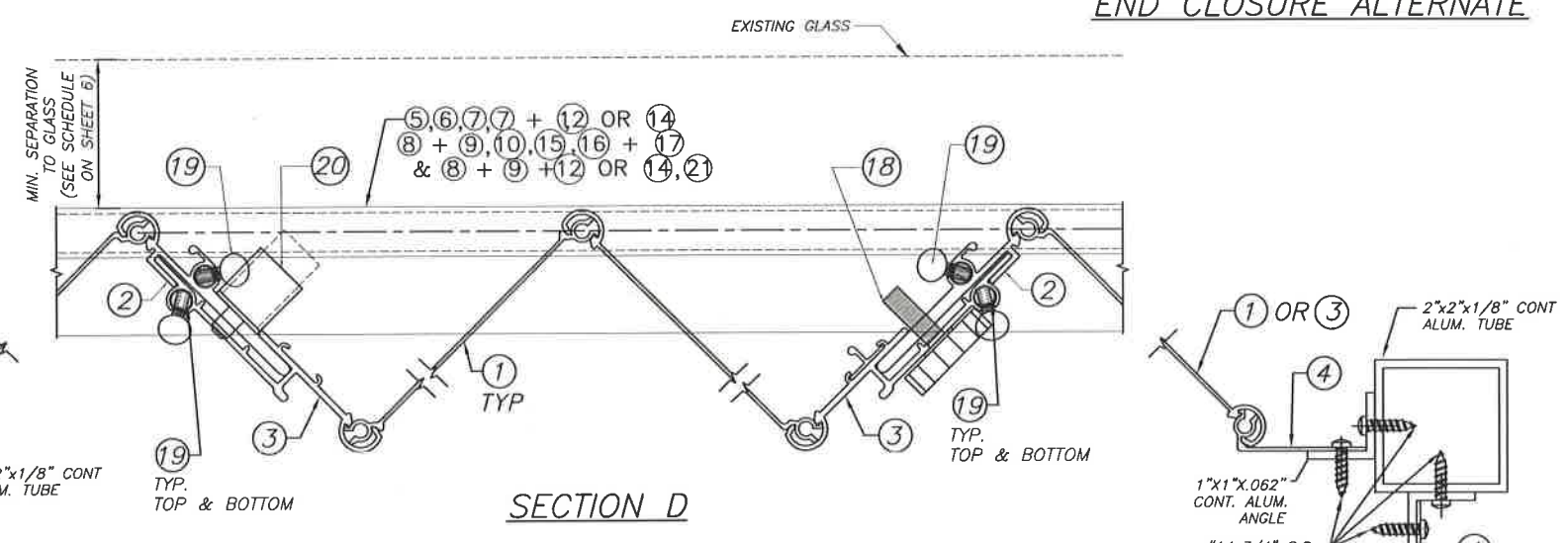


SECTION A-A

SECTION B
END CLOSURE ALTERNATE

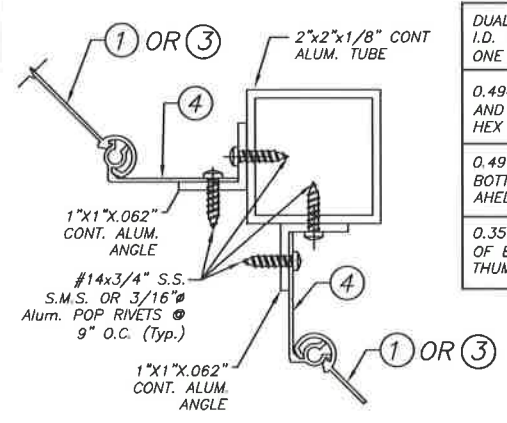


SECTION F



SECTION C

SECTION D



SECTION E

DUAL NYLON WHEELS WITH 0.490\" BY 1.100\" LONG NYLON GUIDE, WITH NO I.D. MARKS, AT TOP OF INTERIOR SLATS SPACED EQUALLY, FASTENED WITH ONE NO. 14 BY 3\" HEX HEAD PIN SCREWS.

0.490\" DIAMETER BY 0.590\" NYLON GUIDE, WITH NO I.D. MARKS, AT TOP AND BOTTOM OF EACH INTERIOR SLAT, FASTENED WITH ONE NO. 14 BY 3\" HEX HEAD PIN SCREWS.

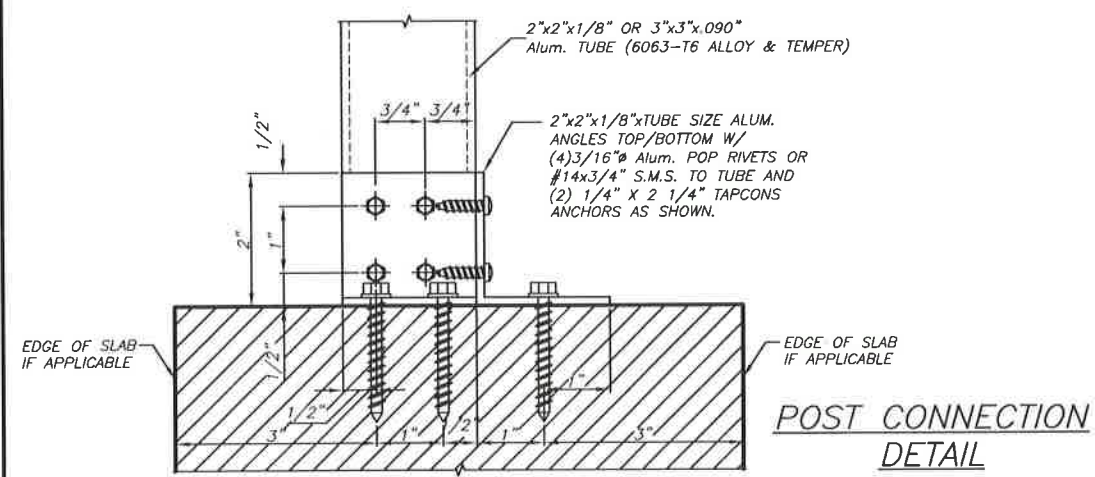
0.490\" DIAMETER BY 0.820\" NYLON GUIDE, WITH NO MARKS, AT TOP AND BOTTOM OF EACH INTERIOR SLAT, FASTENED WITH ONE NO. 14 BY 3\" HEX AHED PIN SCREWS.

0.350\" DIAMETER BY 24\" LONG ALUMINUM LOCK PIN, AT TOP AND BOTTOM OF EACH LOCKING SLAT, FASTENED WITH ONE 10-24 BY 0.430\" LONG THUMB TURN SCREWS.

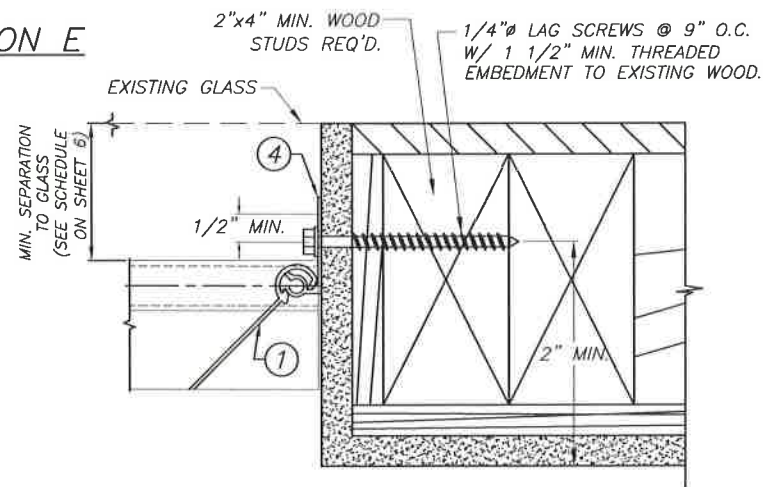
NOTES FOR LOCKING OF (2) & (3)

PUSH BOTTOM LOCK (20) MAY BE USED FOR INSTALLATIONS SECURED FROM THE OUTSIDE OR INSIDE OF SHUTTER. WHEN INSTALLING (20) FROM THE OUTSIDE, A 7/8\" HOLE SHALL BE DRILLED AT (3) AND (20) MUST BE RIVETED FROM THE BACK OF (3) TO THE FRONT W/ (2) 3/16\" ALUM. POP RIVETS. A 3/8\" HOLE MUST THEN BE DRILLED AT (2) TO ALLOW FOR (20) PIN TO PASS THRU. WHEN INSTALLING (20) FROM THE INSIDE, (20) MUST BE RIVETED TO (2) W/ (2) 3/16\" ALUM. POP RIVETS. A 3/8\" HOLE MUST THEN BE DRILLED THRU (3) AND (2) TO ALLOW FOR (20) PIN TO PASS THRU.

5/16\"x1\" LOCK (18) MAY BE USED ALTERNATIVELY TO (20) LOCK FOR INSTALLATIONS SECURED FROM THE OUTSIDE OR INSIDE OF SHUTTER. IN THIS CASE, A 5/16\" HOLE SHALL BE DRILLED THRU (2) AND (3) HOLE DRILLED TO (2) SHALL BE TAPPED TO ACCEPT (18) THREADS PER INCH MACHINE SCREW.



POST CONNECTION
DETAIL



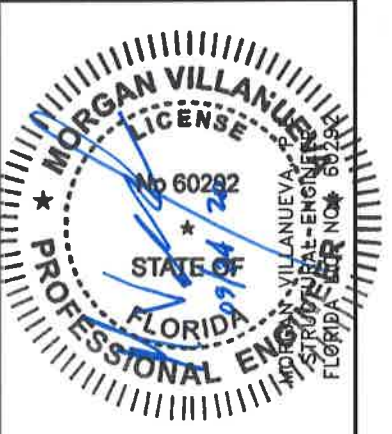
SECTION G

RS-1 ALUMINUM SHUTTER
HIGH VELOCITY SHUTTER SYSTEM

ROLLINGSHIELD INC.
PHONE (305) 436-6661 FAX (305) 436-5523
9875 NW 79th AVE
Hialeah Gardens, FL 33016
www.rollingshield.com

REV. No	DESCRIPTION	DATE
1	RENEWAL AS PER FEB 2017	09-19-2017
2	RENEWAL AS PER FEB 2020	09-16-2020
3		
4		
5		

V.M. Engineering Inc.
C. of A. No. 27633
11278 S.W. 153rd Place
MIAMI, FLORIDA 33196
TEL: 786-281-6968
TEL: 305-383-5896



SCALE: N.T.S.

DATE: 09-16-2020

F.B.C.
(High Velocity Hurricane Zone)

DWG No: 169-2020 (RS1-20)

SHEET 5 OF 9

MAXIMUM DESIGN PRESSURE RATING "W" (p.s.f.) AND
CORRESPONDING MAXIMUM SPAN "L" SCHEDULE.

MAXIMUM ALLOWABLE WIND LOAD DESIGN "W" (p.s.f.)	MAXIMUM ALLOWABLE DESIGN SPANS								MINIMUM SEPARATION TO GLASS (in.)	
	SECTIONS 5 TO 8 WALL MOUNTING INSTALLATIONS		SECTIONS 1, 2 & 9 FLOOR/CEILING MOUNTING INSTALLATIONS		SECTIONS 3 & 4 FLOOR/CEILING MOUNTING INSTALLATIONS		SECTION 10 WALL MOUNTING INSTALLATION		WHEN SHUTTERS INSTALLED WITHIN THE FIRST 30'-0" ELEVATION OF BUILDING MEASURED AT BOTTOM OF SHUTTER.	WHEN SHUTTERS INSTALLED ABOVE 30'-0" ELEVATION OF BUILDING, MEASURED AT BOTTOM OF SHUTTER.
	L+	L-	L+	L-	L+	L-	L+	L-		
30	12'-4"	12'-4"	12'-4"	12'-4"	12'-4"	12'-4"	12'-4"	12'-4"	3"	2 3/4"
35	12'-4"	12'-4"	12'-4"	12'-4"	12'-4"	12'-4"	12'-4"	12'-4"	3"	2 3/4"
40	12'-4"	12'-4"	12'-4"	12'-4"	12'-4"	12'-4"	12'-4"	12'-4"	3"	2 3/4"
45	11'-10"	11'-10"	11'-10"	11'-10"	12'-4"	12'-4"	12'-1"	12'-3"	3"	2 3/4"
50	11'-3"	11'-3"	11'-5"	11'-5"	12'-4"	12'-4"	11'-11"	12'-1"	3"	2 3/4"
55	10'-8"	10'-8"	11'-0"	11'-0"	12'-4"	12'-4"	11'-8"	12'-0"	3"	2 3/4"
60	10'-3"	10'-3"	10'-7"	10'-7"	12'-0"	12'-4"	11'-6"	11'-10"	3"	2 3/4"
65	9'-10"	9'-10"	10'-2"	10'-2"	11'-6"	12'-4"	11'-3"	11'-9"	3"	2 3/4"
70	9'-6"	9'-6"	9'-9"	9'-9"	11'-1"	12'-4"	11'-1"	11'-6"	3"	2 3/4"
75	9'-2"	9'-2"	9'-4"	9'-4"	10'-9"	12'-4"	10'-10"	11'-4"	3"	2 3/4"
80	8'-10"	8'-10"	9'-4"	9'-4"	10'-5"	12'-4"	10'-8"	11'-2"	3"	2 3/4"
85	8'-7"	8'-7"	9'-0"	9'-4"	10'-1"	12'-4"	10'-5"	11'-0"	3"	2 3/4"
90	8'-4"	8'-4"	8'-9"	9'-3"	9'-10"	12'-4"	10'-3"	10'-10"	3"	2 3/4"
95	7'-8"	8'-2"	8'-6"	9'-3"	9'-6"	12'-4"	10'-0"	10'-8"	2 3/4"	2 3/4"
100	6'-10"	7'-11"	8'-4"	9'-1"	9'-4"	12'-4"	9'-10"	10'-6"	2 3/4"	2 3/4"
105	6'-3"	7'-9"	8'-1"	8'-10"	8'-10"	12'-2"	9'-7"	10'-5"	2 3/4"	2 3/4"
110	5'-6"	7'-7"	7'-9"	8'-8"	8'-6"	11'-11"	9'-5"	10'-3"	2 3/4"	2 3/4"
115	4'-10"	7'-5"	7'-3"	8'-6"	8'-0"	11'-8"	9'-2"	10'-2"	2 3/4"	2 3/4"
120	4'-2"	7'-3"	7'-2"	8'-3"	7'-7"	11'-5"	9'-0"	10'-1"	2 3/4"	2 3/4"
125	3'-6"	7'-1"	7'-0"	8'-1"	7'-3"	11'-2"	-	10'-0"	2 3/4"	2 3/4"
130	-	6'-11"	-	7'-11"	7'-0"	10'-11"	-	9'-10"	2 3/4"	2 3/4"
135	-	6'-10"	-	7'-10"	6'-9"	10'-9"	-	9'-9"	2 3/4"	2 3/4"
140	-	6'-8"	-	7'-8"	6'-6"	10'-7"	-	9'-8"	2 3/4"	2 3/4"
145	-	6'-7"	-	7'-6"	6'-3"	10'-4"	-	9'-7"	2 3/4"	2 3/4"
150	-	6'-6"	-	7'-1"	6'-0"	10'-2"	-	9'-6"	2 3/4"	2 3/4"
155	-	6'-4"	-	6'-9"	5'-10"	10'-0"	-	9'-5"	2 3/4"	2 3/4"
160	-	6'-3"	-	6'-5"	5'-8"	9'-10"	-	9'-4"	2 3/4"	2 3/4"
165	-	6'-2"	-	6'-0"	5'-6"	9'-9"	-	9'-4"	2 1/2"	2 3/4"
170	-	5'-11"	-	5'-8"	5'-4"	9'-7"	-	9'-3"	2 1/2"	2 3/4"
175	-	5'-6"	-	5'-4"	5'-2"	9'-5"	-	9'-1"	2 1/2"	2 3/4"
180	-	5'-2"	-	4'-11"	5'-0"	9'-4"	-	9'-0"	2 1/2"	2 3/4"
185	-	4'-10"	-	4'-7"	4'-10"	9'-0"	-	8'-11"	2 1/2"	2 3/4"
190	-	4'-5"	-	4'-2"	4'-9"	8'-10"	-	8'-9"	2 1/2"	2 3/4"
195	-	4'-1"	-	3'-10"	4'-8"	8'-6"	-	8'-6"	2 1/2"	2 3/4"
200	-	3'-6"	-	3'-6"	4'-7"	8'-0"	-	8'-0"	2 1/2"	2 3/4"

NOTES:

(1) L+: ALLOWABLE SPAN DUE TO POSITIVE DESIGN LOAD +W (psf)
L-: ALLOWABLE SPAN DUE TO NEGATIVE DESIGN LOAD -W (psf)

(2) TO DETERMINE MAXIMUM ALLOWABLE SPAN:
GIVEN: POSITIVE LOAD (W+) AND NEGATIVE LOAD (W-)

- IDENTIFY TYPE OF INSTALLATION (WALL MOUNTING, FLOOR MOUNTING, ...ETC.).

- DETERMINE VALUE OF L+ AND L- FROM TABLE

FINAL MAXIMUM ALLOWABLE SPAN SHALL BE EQUAL TO THE "MINIMUM" OF VALUES OF L+ AND L-

(3) AFTER THE MAXIMUM ALLOWABLE SPAN CHECK SCHEDULE TABLE TO OBTAIN MAXIMUM ANCHOR SPACING.

REMEMBER TO SELECT ANCHOR SPACING USING NEGATIVE DESIGN LOAD (W psf)

DUAL NYLON WHEELS WITH 0.490" BY 1.100" LONG NYLON GUIDE, WITH NO I.D. MARKS, AT TOP OF INTERIOR SLATS SPACED EQUALLY, FASTENED WITH ONE NO. 14 BY 3" HEX HEAD PIN SCREWS.

0.490" DIAMETER BY 0.590" NYLON GUIDE, WITH NO I.D. MARKS, AT TOP AND BOTTOM OF EACH EXTERIOR SLAT, FASTENED WITH ONE NO. 14 BY 3" HEX HEAD PIN SCREWS.

0.490" DIAMETER BY 0.820" NYLON GUIDE, WITH NO MARKS, AT TOP AND BOTTOM OF EACH INTERIOR SLAT, FASTENED WITH ONE NO. 14 BY 3" HEX AHED PIN SCREWS.

0.350" DIAMETER BY 24" LONG ALUMINUM LOCK PIN, AT TOP AND BOTTOM OF EACH LOCKING SLAT, FASTENED WITH ONE 10-24 BY 0.430" LONG THUMB TURN SCREWS.

ALTERNATIVES NOTES:

A) SECTIONS (1) & (2) ON THESE GROUPS CAN BE COMBINED AND MOST BE TAKEN THE LOWEST SPAN.

B) SECTIONS (1) & (2) ON THESE GROUPS CAN BE COMBINED AND MOST BE TAKEN THE LOWEST SPAN.

TO OBTAIN ULTIMATE WIND PRESSURE= $\frac{\text{ALLOWABLE WIND PRESSURE}}{0.6}$

SAMPLE: FOR 100psf ALLOWABLE
ULTIMATE = $\frac{100}{0.6} = 167 \text{ psf}$

RS-1 ALUMINUM SHUTTER HIGH VELOCITY SHUTTER SYSTEM

ROLLINGSIELD INC.
PHONE (305) 436-6661 FAX (305) 436-5523
9875 NW 79th AVE
Hialeah Gardens, FL 33016
www.rollingsield.com

REV. No	DESCRIPTION	DATE
1	RENEWAL AS PER FEB 2017	09-19-2017
2	RENEWAL AS PER FEB 2020	09-16-2020
3		
4		
5		

V.M. Engineering Inc.
C. of A. No. 27633
11278 S.W. 153rd Place
MIAMI, FLORIDA 33196
TEL: 786-281-6968
TEL: 305-383-5896

MORGAN VILLANUEVA
LICENSE
No 69292
STATE OF FLORIDA
PROFESSIONAL ENGINEER
STRUCTURE ENGINEER
FLORIDA INC. NO. 1111

SCALE: N.T.S.

DATE: 09-16-2020

F.B.C.
(High Velocity Hurricane Zone)

DWG No: **169-2020 (RS1-20)**

SHEET **6** OF **9**

MAXIMUM WIND LOAD DESIGN PRESSURE "W" AND CORRESPONDING MAXIMUM ANCHOR SPACING (in.) SCHEDULE.

MAXIMUM ALLOWABLE DESIGN LOAD "W" (p.s.f.)	WALL MOUNTING INSTALLATION AT TOP OR BOTTOM (SECTIONS 5 THRU 8) (TO CONCRETE)			WALL MOUNTING INSTALLATION AT TOP OR BOTTOM (SECTIONS 5 THRU 8) (TO MASONRY)		
	SHUTTER SPAN			SHUTTER SPAN		
	5'-0" OR LESS	5'-0" TO 8'-6"	8'-6" TO MAX. ALLOWED	5'-0" OR LESS	5'-0" TO 8'-6"	8'-6" TO MAX. ALLOWED
LESS THAN 30.0	9	9	9	9	9	9
FROM >30.0 TO 60.0	9	9	9	9	7	5
	9	9	8	9	9	9
FROM >60.0 TO 70.0	9	9	9	9	9	7
	9	9	8	9	9	8.5
FROM >70.0 TO 80.0	9	9	9	9	8	6
	9	9	9	9	4	3.5
FROM >80.0 TO 90.0	9	9	6	8	3.5	n/a
	9	9	n/a	9	6.5	n/a
FROM >90.0 TO 100.0	9	9	n/a	9	5	n/a
	9	9	n/a	7	3	n/a
FROM >100.0 TO 120.0	9	8	n/a	5.5	n/a	n/a
	8.5	4	n/a	9	5	n/a
FROM >120.0 TO 140.0	9	7	n/a	4	n/a	n/a
	8	3.5	n/a	7.5	4.5	n/a
FROM >140.0 TO 160.0	9	6	n/a	3	n/a	n/a
	6.5	3.5	n/a	6	4	n/a
FROM >160.0 TO 180.0	6.5	7	n/a	4	3	n/a
	7.5	5	n/a	n/a	n/a	n/a
FROM >180.0 TO 200.0	6	3	n/a	5	4	n/a
	6	6	n/a	3.5	3	n/a

MAXIMUM WIND LOAD DESIGN PRESSURE "W" AND CORRESPONDING MAXIMUM ANCHOR SPACING (in.) SCHEDULE.

MAXIMUM ALLOWABLE DESIGN LOAD "W" (p.s.f.)	CEILING & FLOOR MOUNTING INSTALLATION AT TOP OR BOTTOM (SECTIONS 1,2 & 9) (TO CONCRETE)		
	SHUTTER SPAN		
	5'-0" OR LESS	5'-0" TO 8'-6"	8'-6" TO MAX. ALLOWED
LESS THAN 30.0	9	9	9
FROM >30.0 TO 60.0	9	9	9
	9	7.5	6
FROM >60.0 TO 70.0	9	9	9
	9	6.5	5.5
FROM >70.0 TO 80.0	9	9	8
	9	6.5	5.5
FROM >80.0 TO 90.0	9	5.5	5
	9	8	7.5
FROM >90.0 TO 100.0	9	5.5	5
	8.5	5	4.5
FROM >100.0 TO 120.0	9	7	6.5
	8.5	5	4.5
FROM >120.0 TO 140.0	7.5	4.5	4.5
	9	6.5	6
FROM >140.0 TO 160.0	8	4.5	4.5
	6.5	4	n/a
FROM >160.0 TO 180.0	9	5.5	n/a
	6.5	4	n/a
FROM >180.0 TO 200.0	5.5	3.5	n/a
	8	5	n/a

MAXIMUM WIND LOAD DESIGN PRESSURE "W" AND CORRESPONDING MAXIMUM ANCHOR SPACING (in.) SCHEDULE.

MAXIMUM ALLOWABLE DESIGN LOAD "W" (p.s.f.)	CEILING & FLOOR MOUNTING INSTALLATION AT TOP OR BOTTOM (SECTIONS 3 & 4) (TO CONCRETE)		
	SHUTTER SPAN		
	5'-0" OR LESS	5'-0" TO 8'-6"	8'-6" TO MAX. ALLOWED
LESS THAN 30.0	9	9	9
FROM >30.0 TO 60.0	9	9	9
	9	9	6.5
FROM >60.0 TO 70.0	9	9	9
	9	8	5.5
FROM >70.0 TO 80.0	9	9	8
	9	8	5.5
FROM >80.0 TO 90.0	9	7	4.5
	9	9	7
FROM >90.0 TO 100.0	9	7	4.5
	9	6	4
FROM >100.0 TO 120.0	9	9	6
	9	6	4
FROM >120.0 TO 140.0	9	5.5	3.5
	9	8	5.5
FROM >140.0 TO 160.0	9	5.5	3.5
	9	7	4
FROM >160.0 TO 180.0	8	4.5	3.5
	9	6.5	5
FROM >180.0 TO 200.0	9	6.5	5
	6.5	4	3

MAXIMUM WIND LOAD DESIGN PRESSURE "W" AND CORRESPONDING MAXIMUM ANCHOR SPACING (in.) SCHEDULE.

MAXIMUM ALLOWABLE DESIGN LOAD "W" (p.s.f.)	WALL MOUNTING INSTALLATION AT TOP OR BOTTOM (SECTIONS 5 THRU 8) (TO CONCRETE)			WALL MOUNTING INSTALLATION AT TOP OR BOTTOM (SECTIONS 5 THRU 8) (TO MASONRY)		
	SHUTTER SPAN			SHUTTER SPAN		
	5'-0" OR LESS	5'-0" TO 8'-6"	8'-6" TO MAX. ALLOWED	5'-0" OR LESS	5'-0" TO 8'-6"	8'-6" TO MAX. ALLOWED
LESS THAN 30.0	9	9	9	9	9	9
FROM >30.0 TO 60.0	9	9	9	9	9	9
	9	9	9	9	7	3.5
FROM >60.0 TO 70.0	9	9	9	9	9	7.5
	9	9	9	9	9	5.5
FROM >70.0 TO 80.0	9	9	7	9	6	n/a
	9	9	9	9	9	4.5
FROM >80.0 TO 90.0	9	9	8	9	9	3.5
	9	9	8	9	9	4.5
FROM >90.0 TO 100.0	9	9	5	9	4.5	n/a
	9	9	7	9	9	3.5
FROM >100.0 TO 120.0	9	9	6	9	6.5	2.5
	9	8.5	4	8	n/a	n/a
FROM >120.0 TO 140.0	9	9	6	9	5.5	n/a
	9	9	5	9	4	n/a
FROM >140.0 TO 160.0	9	6	3.5	7.5	n/a	n/a
	9	8	5	9	4	n/a
FROM >160.0 TO 180.0	9	7	4	9	3	n/a
	9	4	n/a	6	n/a	n/a
FROM >180.0 TO 200.0	9	5	3.5	9	n/a	n/a
	9	4.5	3	9	2.5	n/a

MAXIMUM ANCHOR SPACINGS FOR TAPCON, MAXI-SET TAPCONS OR CRETE-FLEX SS4 ARE VALID FOR 3 1/2" EDGE DISTANCE. FOR EDGE DISTANCE LESS THAN 3 1/2", REDUCE ANCHOR SPACING BY MULTIPLYING SPACING GIVEN ON SCHEDULE BY THE BELLOW FACTORS. THE MINIMUM EDGE DISTANCE FOR CALK-IN ANCHORS IS 2 1/2". **THE MINIMUM ANCHOR SPACING FOR TAPCON, MAXI-SET TAPCONS OR CRETE-FLEX SS4 IS 3" O.C. AND 2 1/2" FOR CALK-IN ANCHORS.**

EXISTING E. D.	FACTOR
3"	.90
2 1/2"	.75
2"	.50

ANCHOR LEGEND	
TAPCON OR MAXI-SET TAPCONS	
CRETE-FLEX SS4	
CALK-IN	

RS-1 ALUMINUM SHUTTER HIGH VELOCITY SHUTTER SYSTEM

ROLLINGSHIELD INC.
 PHONE (305) 436-6661 FAX (305) 436-5523
 9875 NW 79th AVE
 Hialeah Gardens, FL 33016
 www.rollingshield.com

REV. No	DESCRIPTION	DATE
1	RENEWAL AS PER FBC 2017	09-19-2017
2	RENEWAL AS PER FBC 2020	09-16-2020
3		
4		
5		

V.M. Engineering Inc.
 C. of A. No. 27633
 11278 S.W. 153rd Place
 MIAMI, FLORIDA 33196
 TEL: 786-281-6968
 TEL: 305-383-5896

MORGAN VILLANUEVA
 LICENSE No. 60292
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER
 STRUCTURAL-ENGINEER
 FLORIDA REG. NO. 60292

SCALE: N.T.S.

DATE: 09-16-2020

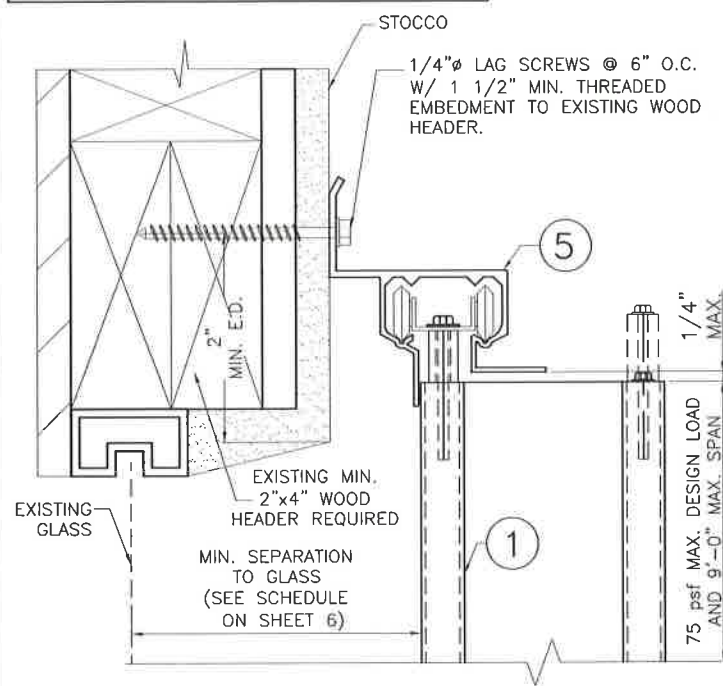
F.B.C.
 (High Velocity Hurricane Zone)

DWG No: 169-2020 (RS1-20)

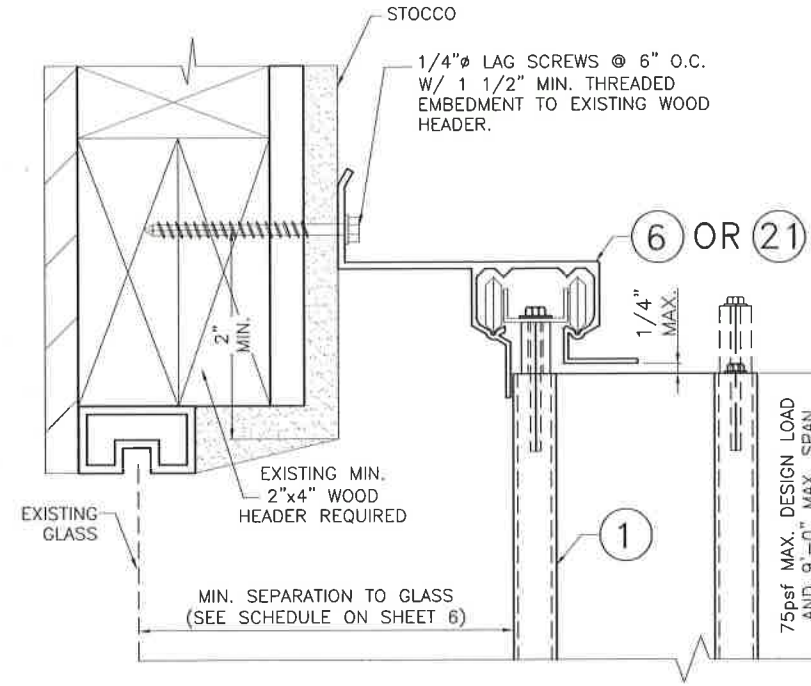
SHEET 7 OF 9

NOTE:
ALL WOOD MEMBERS SHALL COMPLY WITH THE NATIONAL DESIGN SPECIFICATIONS CURRENT EDITION, MINIMUM OF STRUCTURAL GRADE Fb=2000 psi AND SPECIFIC GRAVITY OF 0.55

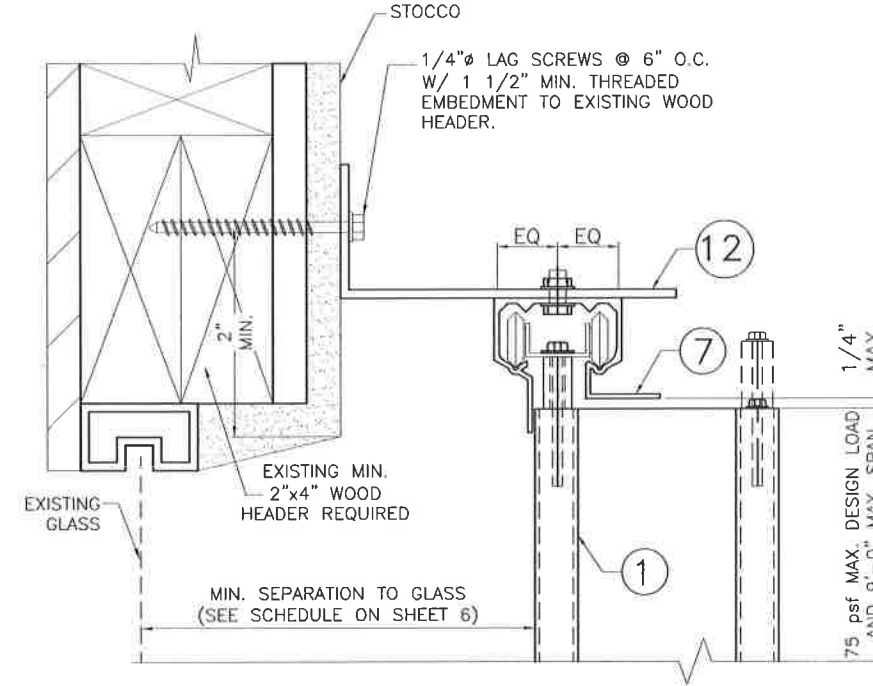
RECOMMENDED INSTALLATIONS AT STRUCTURAL WOOD MEMBERS



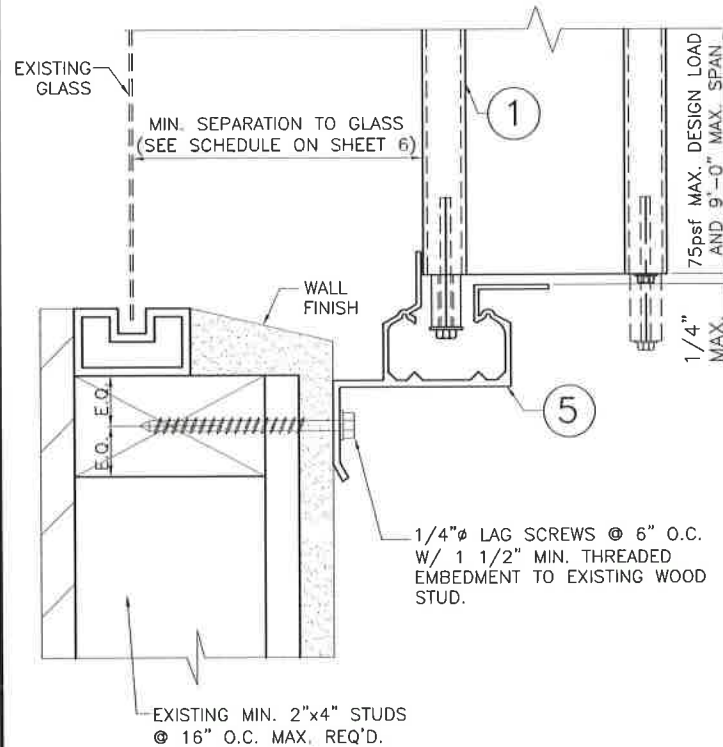
10 WALL CONNECTION AT TOP



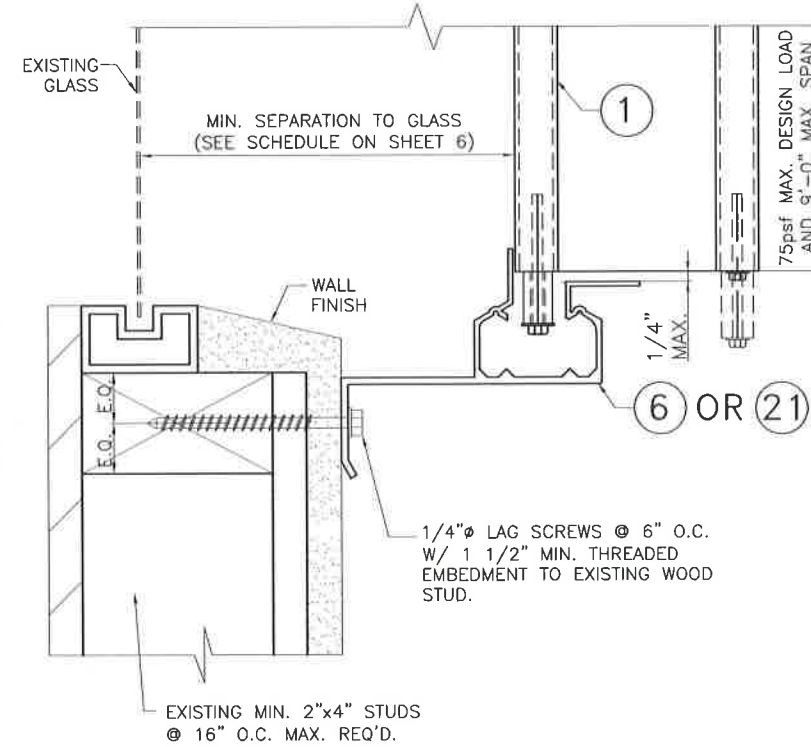
12 WALL CONNECTION AT TOP



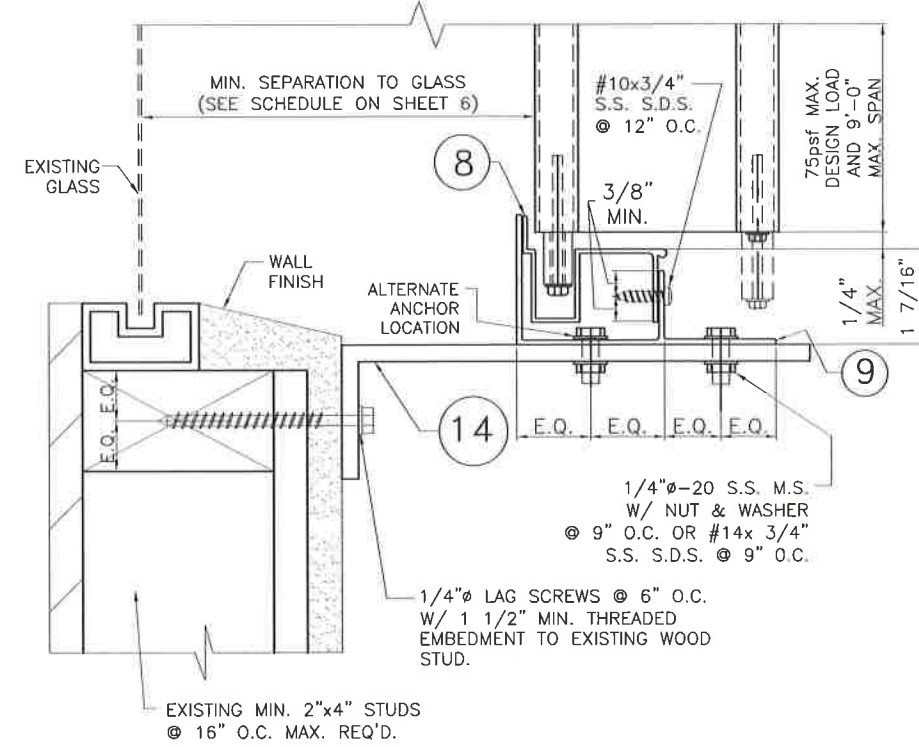
15 B.O WALL CONNECTION AT TOP



11 WALL CONNECTION AT BOTTOM



14 WALL CONNECTION AT BOTTOM



16 B.O WALL CONNECTION AT BOTTOM

RS-1 ALUMINUM SHUTTER SYSTEM
HIGH VELOCITY SHUTTER SYSTEM

ROLLINGSHIELD INC.
PHONE (305) 436-6661 FAX (305) 436-5523
9875 NW 79th AVE
Hialeah Gardens, FL 33016
www.rollingshield.com

REV. No	DESCRIPTION	DATE
1	RENEWAL AS PER FBC 2017	09-19-2017
2	RENEWAL AS PER FBC 2020	09-16-2020
3		
4		
5		

V.M. Engineering Inc.
C. of A. No. 27633
11278 S.W. 153rd Place
MIAMI, FLORIDA 33196
TEL: 786-281-6968
TEL: 305-383-5896

MORGAN VILLANUEVA
LICENSE
No 80292
STATE OF FLORIDA
PROFESSIONAL ENGINEER
STRUCTURAL ENGINEER
FLORIDA

SCALE: N.T.S.

DATE: 09-16-2020

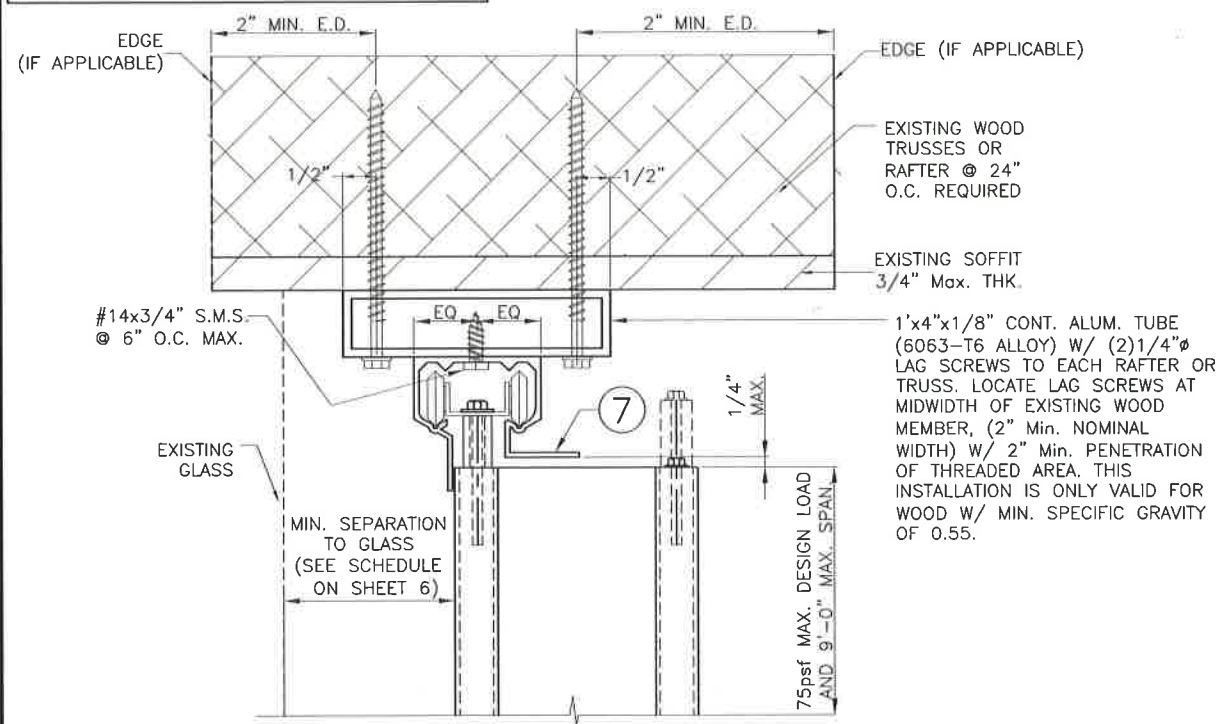
F.B.C.
(High Velocity Hurricane Zone)

DWG No: 169-2020 (RS1-20)

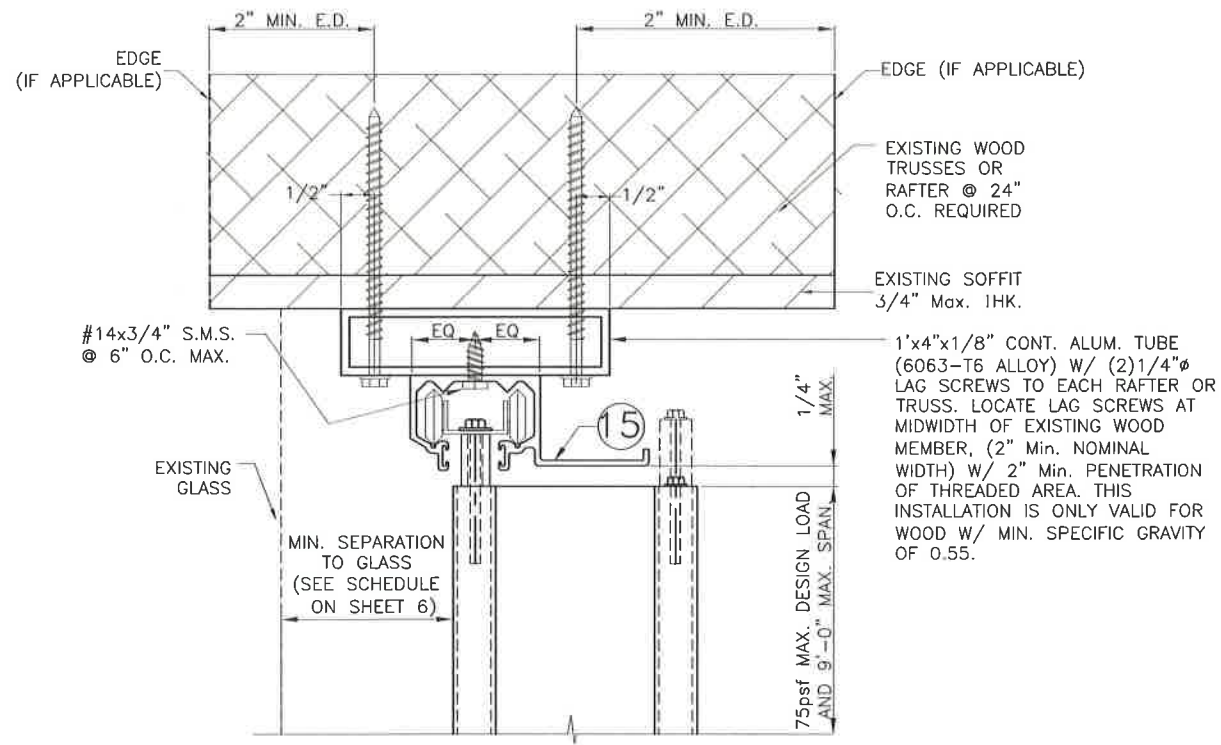
SHEET 8 OF 9

NOTE:
ALL WOOD MEMBERS SHALL COMPLIED WITH THE NATIONAL DESIGN SPECIFICATIONS CURRENT EDITION, MINIMUM OF STRUCTURAL GRADE Fb=2000 psi AND SPECIFIC GRAVITY OF 0.55

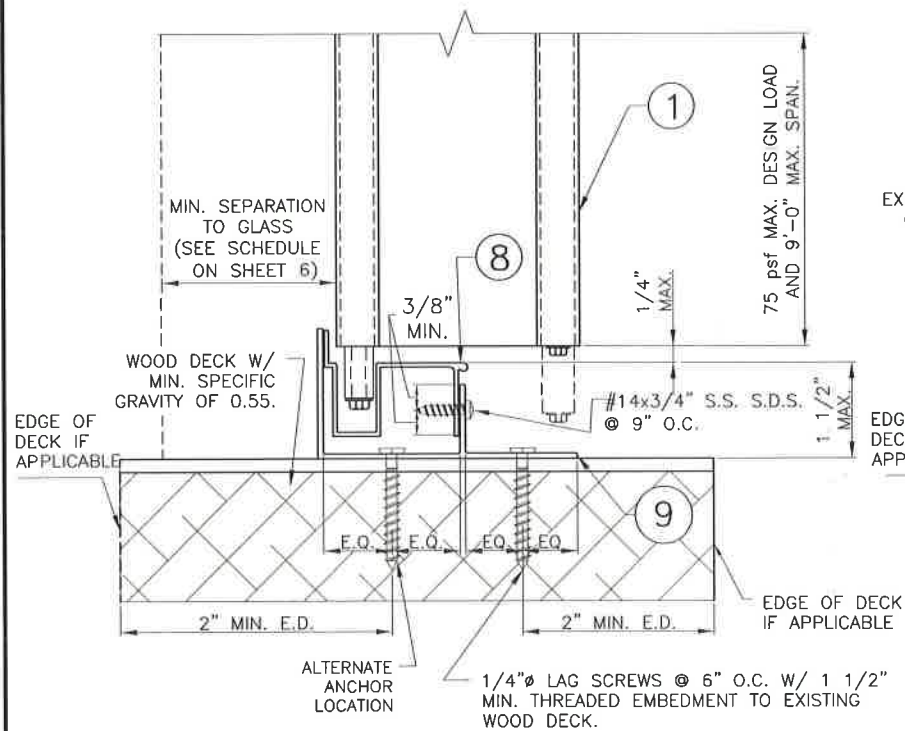
RECOMMENDED INSTALLATIONS AT STRUCTURAL WOOD MEMBERS



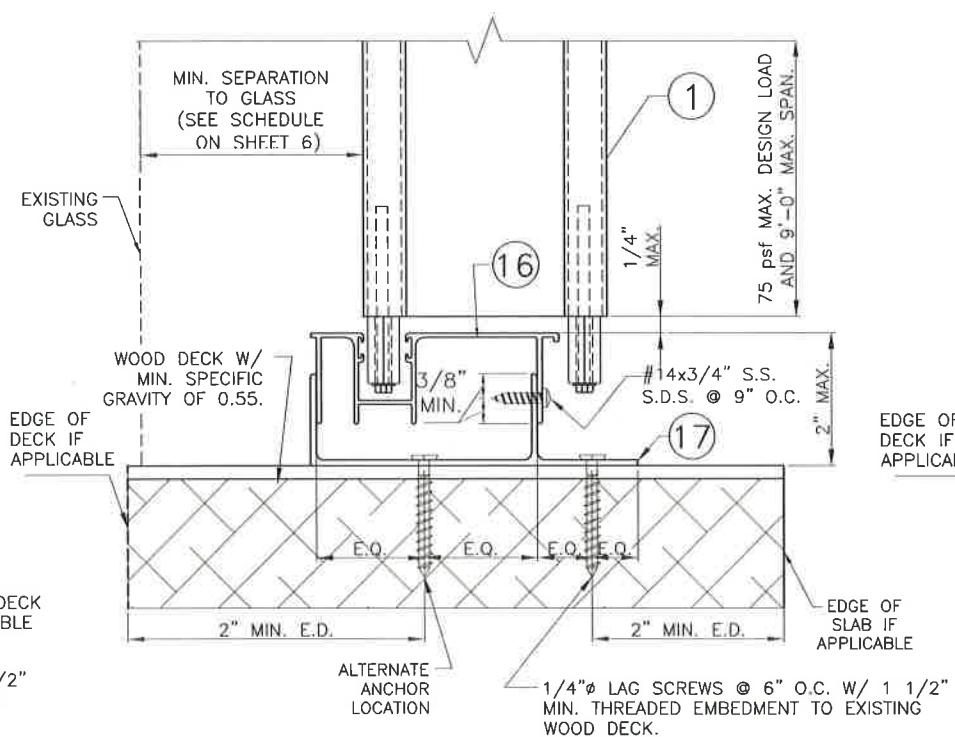
10 HOLLOW CEILING MOUNTING INSTALLATION



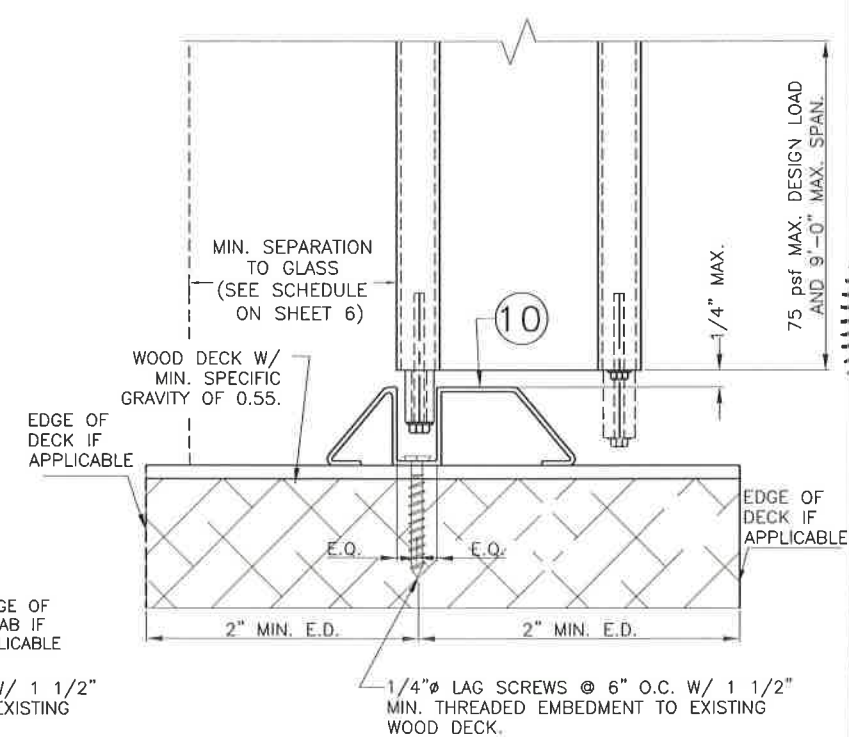
12 HOLLOW CEILING MOUNTING INSTALLATION



11 SILL & ADJUSTABLE FLOOR MOUNTING INSTALLATION

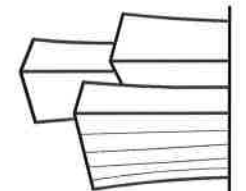


14 SILL & ADJUSTABLE FLOOR MOUNTING INSTALLATION

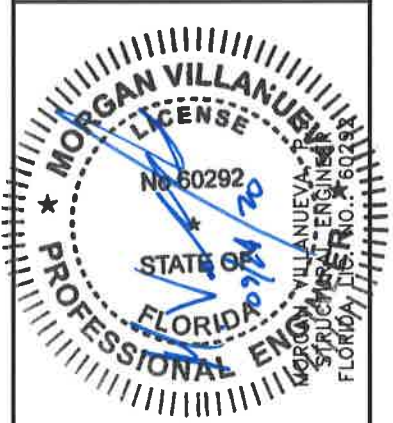


9 THRESHOLD FLOOR MOUNTING INSTALLATION

RS-1 ALUMINUM SHUTTER SYSTEM HIGH VELOCITY SHUTTER SYSTEM		ROLLINGSHIELD INC. PHONE (305) 436-6661 FAX (305) 436-5523 9875 NW 79th AVE Hialeah Gardens, FL 33016 www.rollingshield.com	
REV. No	DESCRIPTION	DATE	
1	RENEWAL AS PER FBC 2017	09-19-2017	
2	RENEWAL AS PER FBC 2020	09-16-2020	
3			
4			
5			



V.M. Engineering Inc.
C. of A. No. 27633
11278 S.W. 153rd Place
MIAMI, FLORIDA 33196
TEL: 786-281-6968
TEL: 305-383-5896



SCALE: N.T.S.

DATE: 09-16-2020

F.B.C.
(High Velocity Hurricane Zone)

DWG No: 169-2020 (RS1-20)

SHEET 9 OF 9