

GENERAL NOTES:

1. ROLL-UP SHUTTER SHOWN ON THIS PRODUCT EVALUATION DOCUMENT (P.E.D.) HAS BEEN VERIFIED FOR COMPLIANCE IN ACCORDANCE WITH THE 2018 EDITION OF THE INTERNATIONAL BUILDING CODE, (I.B.C.) AND INTERNATIONAL RESIDENTIAL CODE, (I.R.C.).

DESIGN WIND LOADS SHALL BE DETERMINED AS PER SECTION 1609 OF THE INTERNATIONAL BUILDING CODE, FOR A BASIC WIND SPEED AS REQUIRED BY THE JURISDICTION WHERE SHUTTER WILL BE INSTALLED, AND FOR A DIRECTIONALITY FACTOR $K_d=0.85$, IN ACCORDANCE W/ ASCE 7-16 STANDARD.

IN ORDER TO VERIFY THE ABOVE CONDITION, ULTIMATE DESIGN WIND LOADS DETERMINED PER ASCE 7-16 SHALL BE FIRST REDUCED TO A.S.D. DESIGN WIND LOADS BY MULTIPLYING THEM BY 0.6 IN ORDER TO COMPARE THESE W/ MAX. (A.S.D.) DESIGN PRESSURE RATINGS INDICATED ON SHEETS 10 THRU 13.

IN ORDER TO VERIFY THAT ANCHORS ON THIS P.E.D. AS TESTED, WERE NOT OVERSTRESSED, A 33% INCREASE IN ALLOWABLE STRESS FOR WIND LOADS WAS **NOT** USED IN THEIR ANALYSIS. FASTENER SPACING TO WOOD HAS BEEN DETERMINED IN ACCORDANCE WITH N.D.S. 2018.

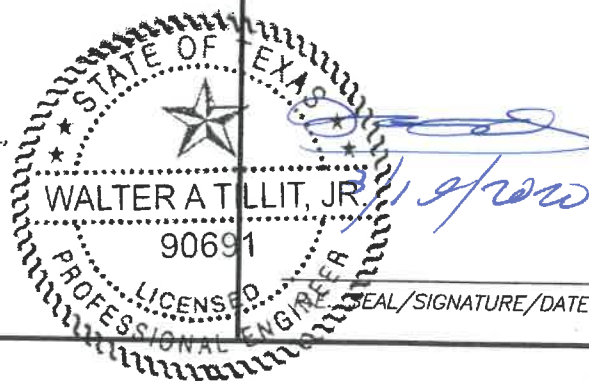
ROLL-UP SHUTTER ADEQUACY FOR IMPACT AND CYCLIC RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1609.2 OF THE INTERNATIONAL BUILDING CODE, AS PER FENESTRATION TESTING LAB REPORTS #6242, 6243 AND 6244 (SLATS AND MULLION), #6536 (STORM BARS) PER ASTM E 1886, E 1996, AND E 330 STANDARDS., QUALIFYING INSTALLATIONS FOR WIND ZONES 1, 2 & 3, MISSILE TYPE D, AND FOR INSTALLATIONS AT NON ESSENTIAL FACILITIES AS DEFINED BY SECTIONS 6.2.1.1, 6.2.1.2 AND 8.3 OF ASTM E 1996.

- 2. ALL ALUMINUM EXTRUSIONS SHALL BE ALUMINUM ASSOCIATION 6063-T6 ALLOY AND TEMPER, WITH $F_y = 25.0$ ksi MINIMUM (UNLESS OTHERWISE NOTED). THE THICKNESS OF ALL EXTRUSIONS SHALL BE AS SHOWN ON THIS DRAWING.
- 3. ALL ALUMINUM EXTRUSIONS IN CONTACT WITH DISSIMILAR MATERIALS SHALL COMPLY WITH SECTION III-6 OF THE ALUMINUM DESIGN MANUAL 2015 EDITION.
- 4. ALL SCREWS & BOLTS INSTALLED TO BE STAINLESS STEEL 304 OR 316 AISI SERIES AND MEET ASTM A167, OR HOT DIPPED GALVANIZED (AFTER FABRICATION) CARBON STEEL AS PER ASTM A123 OR ASTM A153, OR HOT DIPPED GALVANIZED OR GALVANNEALED (PRIOR TO FABRICATION) AND MEET ASTM A653 WITH 50 ksi YIELD STRENGTH AND 90 ksi TENSILE STRENGTH,
- 5. STORM BARS AT FLOOR AND CEILING MOUNTING INSTALLATIONS MAY BE REMOVABLE AT NON HURRICANE CONDITIONS. HOWEVER, EACH STORM BAR SHALL BEAR A PERMANENT LABEL IN A VISIBLE PLACE WITH A WARNING NOTE INSTRUCTING THE TENANT OR OWNER THAT STORM BARS MUST BE INSTALLED WITH CORRESPONDING HARDWARE DURING PERIODS OF HURRICANE WARNING AND THAT ROLL UP SHUTTERS WILL NOT OFFER HURRICANE PROTECTION UNLESS ALL STORM BAR ARE INSTALLED AS DIRECTED.
- 6. REMOVABLE STORM BARS SHALL BE STORED IN A CONSPICUOUS PLACE WITH EASY AND IMMEDIATE ACCESS SO THAT THEY CAN BE REACHED AND INSTALLED ANY TIME (HURRICANE CONDITIONS OR NOT) SLATS ARE ROLLED DOWN. THE EFFECT OF THE SLATS ROLLED DOWN WITHOUT STORM BARS IS; THOSE SLATS WILL SLIP OUT OF TRACK DUE TO THE DEFLECTION CAUSED BY WIND FORCES. WHEN REMOVING STORM BARS, ONE STORM BAR SHALL ALWAYS BE LEFT INSTALLED (SHALL NOT BE REMOVED). THIS CONDITION IS ONLY REQUIRED FOR HEADER SPANS EQUAL OR GREATER THAN 12'-0".
- 7. ANCHORS TO WALL FOR SIDE RAILS & BOX CONNECTION SHALL BE AS FOLLOWS: (UNLESS OTHERWISE NOTED). EMBEDMENT AND EDGE DISTANCE ARE BEYOND ANY FINISH.

(A) TO EXISTING POURED CONCRETE ($f'_c=3192$ psi Min.):
 -1/4" ϕ TAPCON ANCHORS AS MANUFACTURED BY ITW BUILDEX, INC.
NOTES:
 A.1) MINIMUM EMBEDMENT OF TAPCON ANCHORS INTO POURED CONCRETE SHALL BE 1 3/4"; NO EMBEDMENT INTO STUCCO SHALL BE CONSIDERED AS PART OF THE REQUIRED EMBEDMENT.
 A.2) IN CASE THAT PRECAST STONE, PRECAST CONCRETE PANELS, OR PAVERS BE FOUND ON THE EXISTING WALL OR FLOOR, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SUCH PANELS.

(B) TO EXISTING CONCRETE BLOCK WALL (ASTM C-90):
 -1/4" ϕ TAPCON ANCHORS, AS MANUFACTURED BY ITW BUILDEX, INC.
NOTES:
 B.1) MINIMUM EMBEDMENT OF TAPCON ANCHORS, INTO THE CONCRETE BLOCK UNIT SHALL BE 1 1/4".
 B.2) IN CASE THAT PRECAST STONE OR PRECAST CONCRETE PANELS BE FOUND ON THE EXISTING WALL, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SUCH PANELS.

THIS DRAWING SHALL BE USED ONLY TO OBTAIN PERMITS UNDER THE TEXAS DEPARTMENT OF INSURANCE JURISDICTION



(C) TO EXISTING WOOD FRAME BUILDING: SOUTHERN PINE #2 W/ $G=0.55$ OR DOUGLAS FIR W/ $G=0.42$ MIN. -1/4" ϕ TAPCON, ITW BUILDEX PER N.D.S. 2005.
NOTES:
 C.1) MINIMUM THREADED PENETRATION OF TAPCON ANCHORS INTO TO WOOD FRAME UNIT SHALL BE 1 1/2". NO THREADED PENETRATION INTO TO STUCCO SHALL BE CONSIDERED AS PART OF THE REQUIRED THREADED PENETRATION.
 C.2) IN CASE THAT PRECAST STONE OR PRECAST CONCRETE PANELS BE FOUND ON THE EXISTING WALL, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SUCH PANELS.

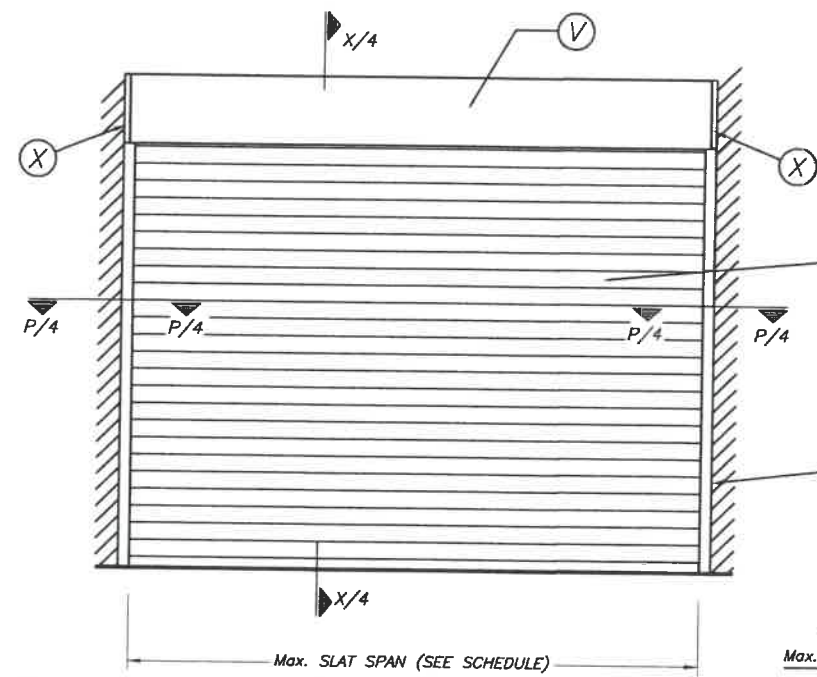
(D) ANCHORS SHALL BE INSTALLED FOLLOWING ALL OF THE RECOMMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER.
 8. ANCHORS REQUIRED FOR STORM BARS, HEADERS & MULLION CONNECTIONS TO CONCRETE ($f'_c=3$ ksi) SHALL BE AS SPECIFIED ON APPLICABLE SECTIONS SHOWN ON SHEETS 5, 6, 7 & 8 OF 13 RESPECTIVELY.
 -CALK-IN ANCHORS TO BE AS MANUFACTURED BY POWERS FASTENERS, INC.
 -TAPCON ANCHORS AS MANUFACTURED BY ITW BUILDEX, INC.
 -410 S.S. WEDGE-BOLT ANCHORS AS MANUFACTURED BY POWERS FASTENERS, INC.

MINIMUM EDGE DISTANCE AND SPACING FOR ABOVE MENTIONED ANCHORS SHALL BE AS INDICATED BELOW OR AT ABOVE MENTIONED SHEETS. EDGE DISTANCE AND EMBEDMENT ARE BEYOND ANY FINISH MATERIAL.

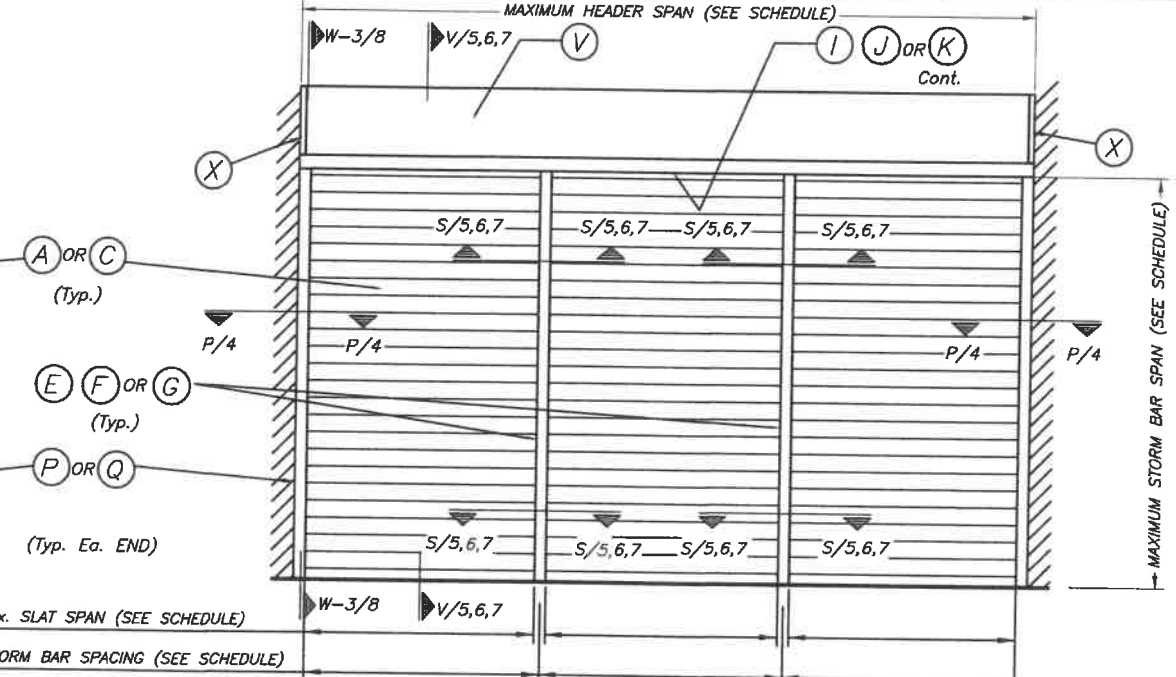
ANCHOR	SPACING	EDGE DISTANCE	MINIMUM EMBEDMENT	
			POURED CONCRETE	CONCRETE BLOCK
-1/4" ϕ TAPCON	3"	3"	1 3/4" (Min. $f'_c=3192$ psi)	1 1/4" (ASTM C-90)
-1/4" ϕ CALK-IN	2 1/2"	3"	7/8" (Min. $f'_c=3000$ psi)	-
-3/8" ϕ CALK-IN	3 3/4"	4 1/2"	1 1/4" (Min. $f'_c=3000$ psi)	-
-5/16" ϕ TAPCON XL	3 3/4"	4"	-	1 3/4" (ASTM C-90, GROUT FILLED)
-3/8" ϕ 410 S.S. WEDGE-BOLT	4 1/2"	4 1/2"	2 1/2" (Min. $f'_c=3000$ psi)	-
-1/2" ϕ 410 S.S. WEDGE-BOLT	6"	6"	3" (Min. $f'_c=3000$ psi)	-

- 9. A-200-H SLATS FOAM PLASTIC CORE SHALL CONSIST OF 100/100 PARTS BY WEIGHT OF ELASTOPOR R P12041 R(1.06 SPECIFIC GRAVITY) RESIN + ELASTOPOR R P1001 U (1.22 SPECIFIC GRAVITY) ISOCYANATE. SLATS FOAM PLASTIC CORE SURFACE BURNING CHARACTERISTICS HAVE BEEN VERIFIED IN ACCORDANCE WITH SECTION 2603.3 OF THE INTERNATIONAL BUILDING CODE AS PER CELOTEX CORPORATION TEST REPORT #520274A & 520274B RESPECTIVELY.
- 10. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE WHERE SHUTTER IS TO BE ATTACHED TO INSURE PROPER ANCHORAGE. THIS SHUTTER SHALL ONLY BE ATTACHED TO CONCRETE, BLOCK OR WOOD FRAME BUILDINGS.
- 11. THE INSTALLATION CONTRACTOR IS TO SEAL/CAULK ALL SHUTTER COMPONENT EDGES WHICH REMAIN IN CONTINUOUS CONTACT WITH THE BUILDING TO PREVENT WIND/RAIN INTRUSION.
- 12. ROLL-UP MECHANISM NOT PART OF THIS APPROVAL.
- 13. ROLL-UP SHUTTER INSTALLATION SHALL COMPLY WITH SPECS INDICATED IN THIS DRAWING PLUS ANY BUILDING AND ZONING REGULATIONS PROVIDED BY THE JURISDICTION WHERE PERMIT IS APPLIED TO.
- 14. (a) THIS P.E.D. PREPARED BY THIS ENGINEER IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SITE SPECIFIC PROJECT; i.e. WHERE THE SITE CONDITIONS DEVIATE FROM THE P.E.D.
 (b) CONTRACTOR TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION INCLUDING LIFE SAFETY OF THIS PRODUCT, BASED ON THIS P.E.D. PROVIDED HE/SHE DOES NOT DEVIATE FROM THE CONDITIONS DETAILED ON THIS DOCUMENT. CONSTRUCTION SAFETY AT SITE IS THE CONTRACTOR'S RESPONSIBILITY.
 (c) THIS P.E.D. WILL BE CONSIDERED INVALID IF ALTERED BY ANY MEANS.
 (d) SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A PROFESSIONAL ENGINEER OR REGISTERED ARCHITECT WHICH WILL BECOME THE ENGINEER OF RECORD (E.O.R.) FOR THE PROJECT AND WHO WILL BE RESPONSIBLE FOR THE PROPER USE OF THE P.E.D. ENGINEER OF RECORD, ACTING AS A DELEGATED ENGINEER TO THE P.E.D. ENGINEER, SHALL SUBMIT TO THIS LATTER THE SITE SPECIFIC DRAWINGS FOR REVIEW.
 (e) THIS P.E.D. SHALL BEAR THE DATE AND ORIGINAL SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT.
- 15. SHUTTER MANUFACTURER'S LABEL SHALL BE LOCATED ON A READILY VISIBLE LOCATION AT ROLL-UP SHUTTER IN ACCORDANCE WITH THE TEXAS DEPARTMENT OF INSURANCE REQUIREMENTS. ONE LABEL SHALL BE PLACED FOR EVERY OPENING.

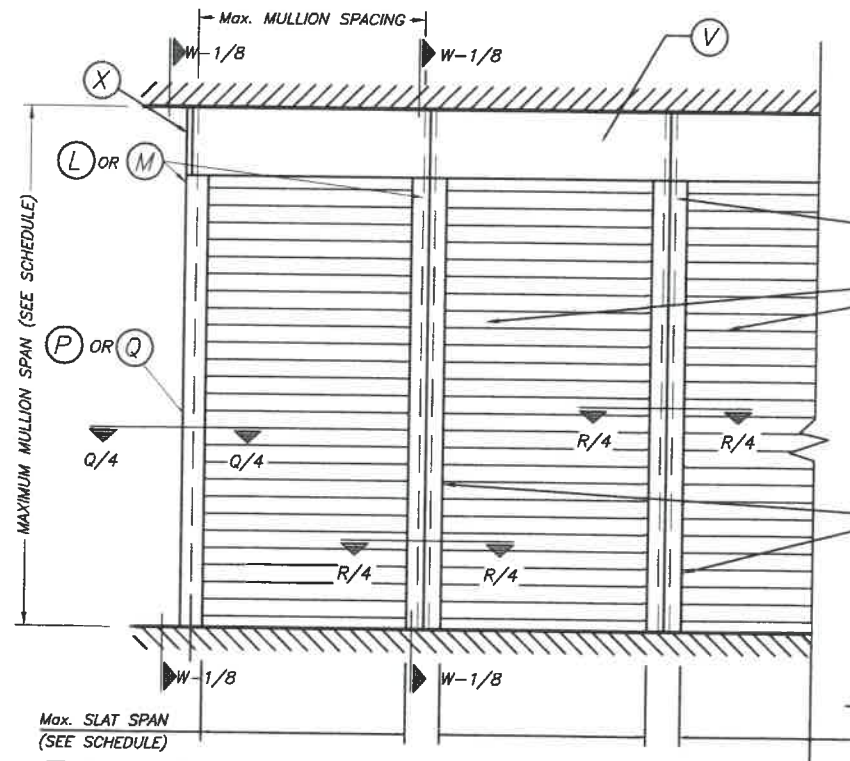
TEXAS DEPARTMENT INSURANCE-2018					
WALTER A. TILLIT Jr. P.E. PROFESSIONAL ENGINEER 6355 N.W. 36 STREET, STE. 305 VIRGINIA GARDENS, FL 33166 PHONE (305) 871-1530 FAX (305) 871-1531 TEXAS LIC. # 90691 FIRM REGISTRATION # F-13790			ROLL-UP SHUTTER/WIND BORNE DEBRIS REGION RLS 55-X AND A-200-H SLATS		M.P. DRAWN BY
			ROLLAC SHUTTERS OF TEXAS, INC. 5331 ORANGE STREET PEARLAND, TX 77581 PHONE: (800) 880-0922, FAX: (281) 485-0839		3/17/2020 DATE
					20-043 DRAWING No
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 10-035	3/17/2020	3		
2			4		
					SHEET 1 OF 13



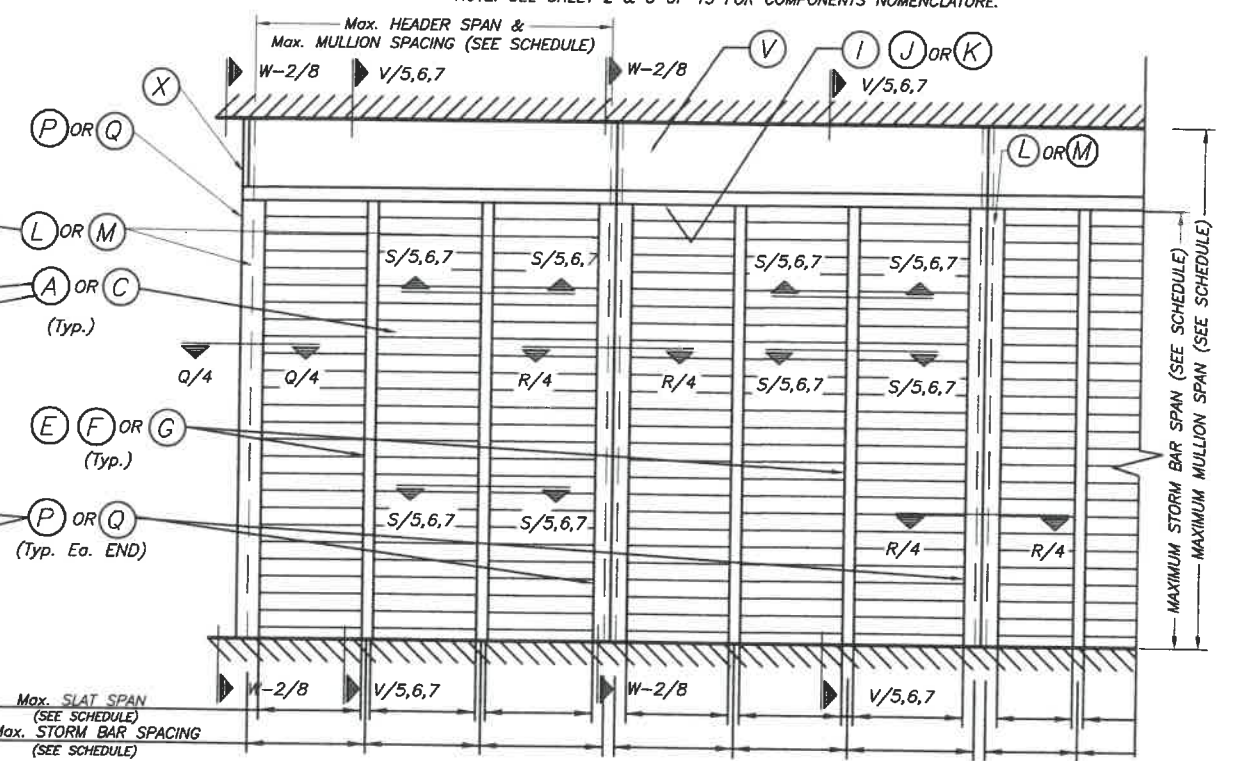
TYPICAL SINGLE UNIT ELEVATION (NO STORM BARS REQUIRED)
NOTE: SEE SHEET 2 & 3 OF 13 FOR COMPONENTS NOMENCLATURE.



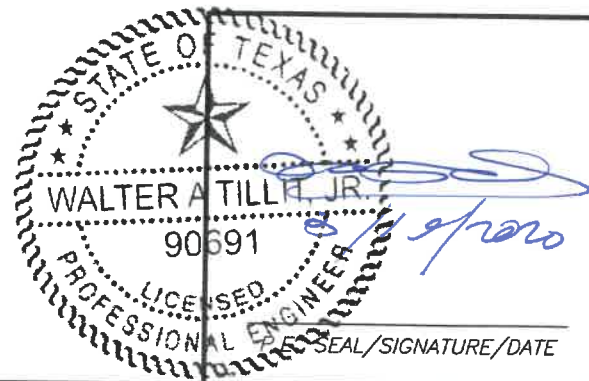
TYPICAL MULTIPLE UNIT ELEVATION (STORM BARS REQUIRED)
NOTE: SEE SHEET 2 & 3 OF 13 FOR COMPONENTS NOMENCLATURE.



TYPICAL CONSECUTIVE SINGLE UNIT ELEVATION (NO STORM BARS REQUIRED)
NOTE: SEE SHEET 2 & 3 OF 13 FOR COMPONENTS NOMENCLATURE.

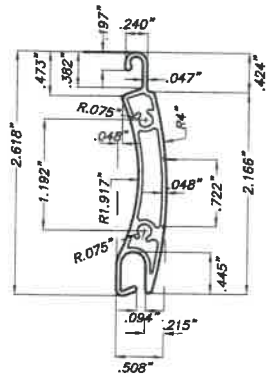


TYPICAL CONSECUTIVE MULTIPLE UNIT ELEVATION (STORM BARS REQUIRED)
NOTE: SEE SHEET 2 & 3 OF 13 FOR COMPONENTS NOMENCLATURE.

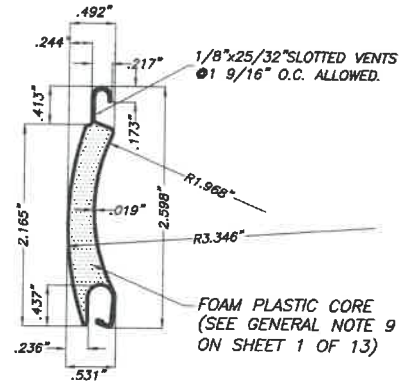


TEXAS DEPARTMENT INSURANCE-2018

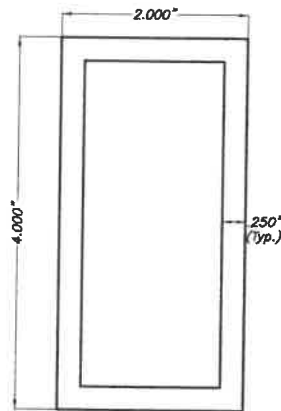
<p>WALTER A. TILLIT Jr. P.E. PROFESSIONAL ENGINEER</p> <p>6355 N.W. 36 STREET, STE. 305 VIRGINIA GARDENS, FL 33166 PHONE (305) 871-1530 FAX (305) 871-1531</p> <p>TEXAS LIC. # 90691 FIRM REGISTRATION # F-13790</p>	<p>ROLL-UP SHUTTER/WIND BORNE DEBRIS REGION RLL 55-X AND A-200-H SLATS</p> <p>ROLLAC SHUTTERS OF TEXAS, INC.</p> <p>5331 ORANGE STREET PEARLAND, TX 77581 PHONE: (800) 880-0922, FAX: (281) 485-0639</p>																		
<p>M.P. DRAWN BY</p> <p>3/17/2020 DATE</p> <p>20-043 DRAWING No</p>																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REV. No</th> <th>DESCRIPTION</th> <th>DATE</th> <th>REV. No</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>OLD 10-035</td> <td>3/17/2020</td> <td>3</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td>4</td> <td></td> <td></td> </tr> </tbody> </table>		REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE	1	OLD 10-035	3/17/2020	3			2			4		
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE														
1	OLD 10-035	3/17/2020	3																
2			4																
<p>SHEET 1A OF 13</p>																			



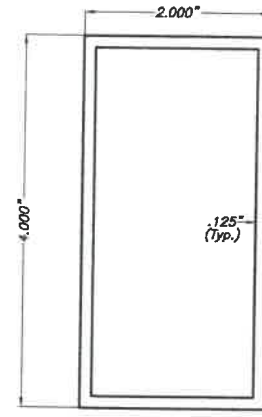
(A) SLAT
 RLL 55-X SLAT
 6061-T6 OR 6005-T5 ALUM. ALLOY



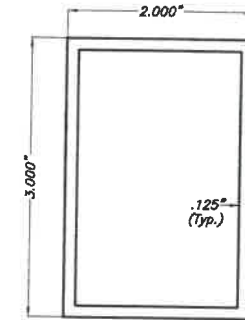
(C) TYPE 2 SLAT:
 A-200-H SLAT
 55mm (t = .019") HIGH
 DENSITY FOAM PLASTIC CORE
 SHEET METAL ALUMINUM SLAT
 3005-H48 ALUMINUM ALLOY



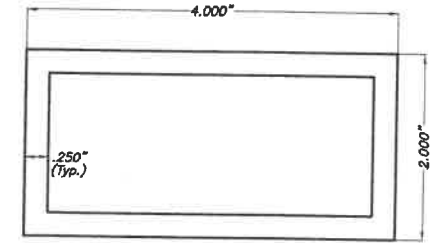
(E) TYPE 1 STORM BAR:
 4" HEAVY EXTRUDED STORM BAR
 6063-T6 ALUMINUM ALLOY



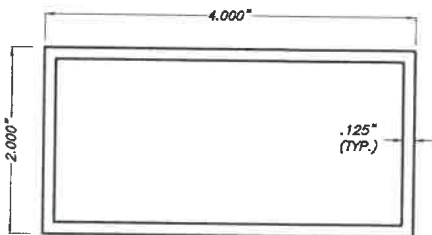
(F) TYPE 2 STORM BAR:
 4" EXTRUDED STORM BARS
 6063-T6 ALUMINUM ALLOY



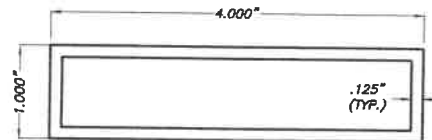
(G) TYPE 3 STORM BAR:
 3" EXTRUDED STORM BARS
 6063-T6 ALUMINUM ALLOY



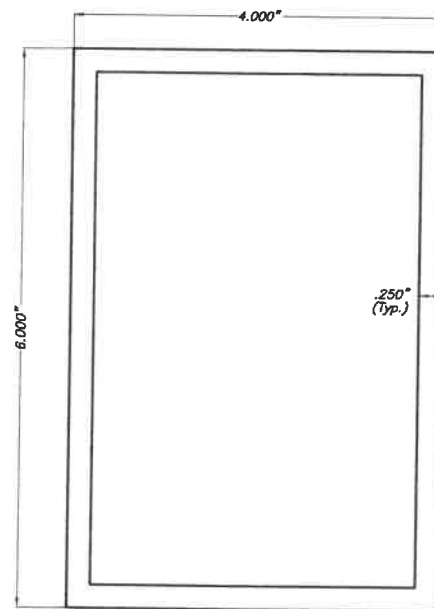
(I) TYPE 1 HEADER:
 4" HEAVY EXTRUDED HEADER
 6063-T6 ALUMINUM ALLOY



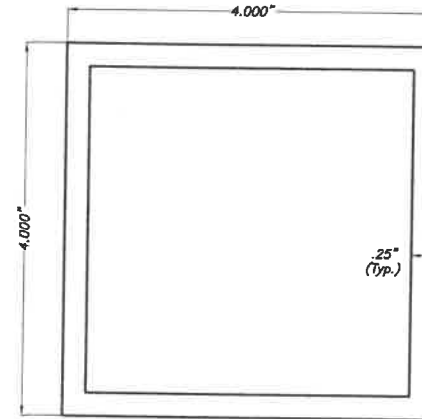
(J) TYPE 2 HEADER:
 4" EXTRUDED HEADER
 6063-T6 ALUMINUM ALLOY



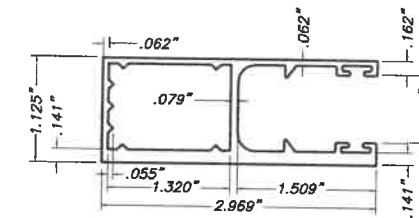
(K) TYPE 3 HEADER:
 1"x4" EXTRUDED HEADER
 6063-T6 ALUMINUM ALLOY



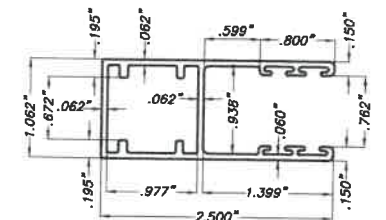
(L) TYPE 1 MULLION:
 6" EXTRUDED MULLION
 6063-T6 ALUMINUM ALLOY



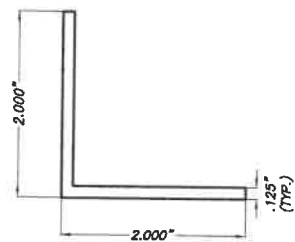
(M) TYPE 2 MULLION:
 4" EXTRUDED MULLION
 6063-T6 ALUMINUM ALLOY



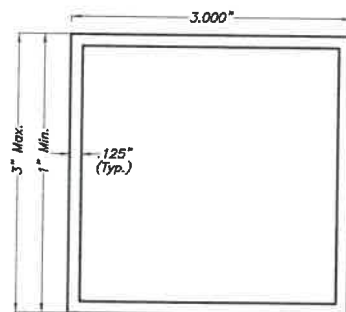
(P) TYPE 1 SIDE RAIL
 RLL-40 SIDE RAIL
 6063-T5 ALUM. ALLOY



(Q) TYPE 2 SIDE RAIL
 RLL-1 SIDE RAIL
 6063-T5 ALUM. ALLOY



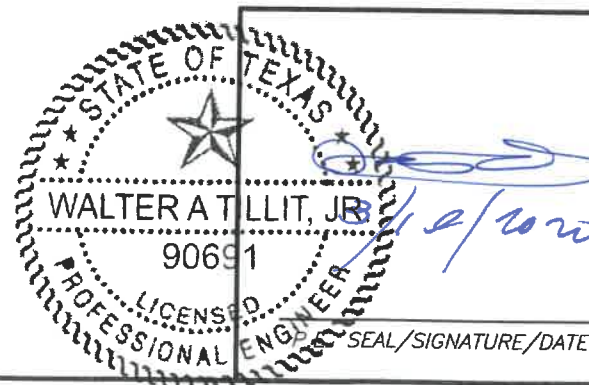
(S) INSIDE MOUNT ALUM. ANGLE:
 EXTRUDED ALUMINUM
 6063-T6 ALUMINUM ALLOY



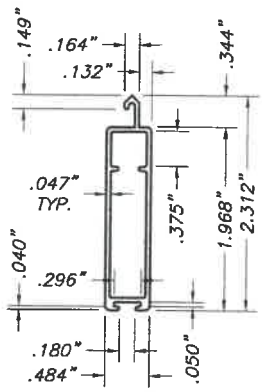
(Y) BUILD-OUT TUBES
 3"x3" EXTRUDED TUBE
 6063-T5 ALUMINUM ALLOY

COMPONENTS

SCALE: 1/2" = 1"



TEXAS DEPARTMENT INSURANCE-2018					
WALTER A. TILLIT Jr. P.E. PROFESSIONAL ENGINEER			ROLL-UP SHUTTER/WIND BORNE DEBRIS REGION RLL 55-X AND A-200-H SLATS		M.P. DRAWN BY
6355 N.W. 36 STREET, STE. 305 VIRGINIA GARDENS, FL 33166 PHONE (305) 871-1530 FAX (305) 871-1531			ROLLAC SHUTTERS OF TEXAS, INC.		3/17/2020 DATE
TEXAS LIC. # 90691 FIRM REGISTRATION # F-13790			5331 ORANGE STREET PEARLAND, TX 77581 PHONE: (800) 880-0922, FAX: (281) 485-0839		20-043 DRAWING No
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 10-035	3/17/2020	3		
2			4		



RLL-6
FOR A-200-H & RLL 55-X SLATS
EXTRUDED ALUMINUM
6063-T6 ALUMINUM ALLOY

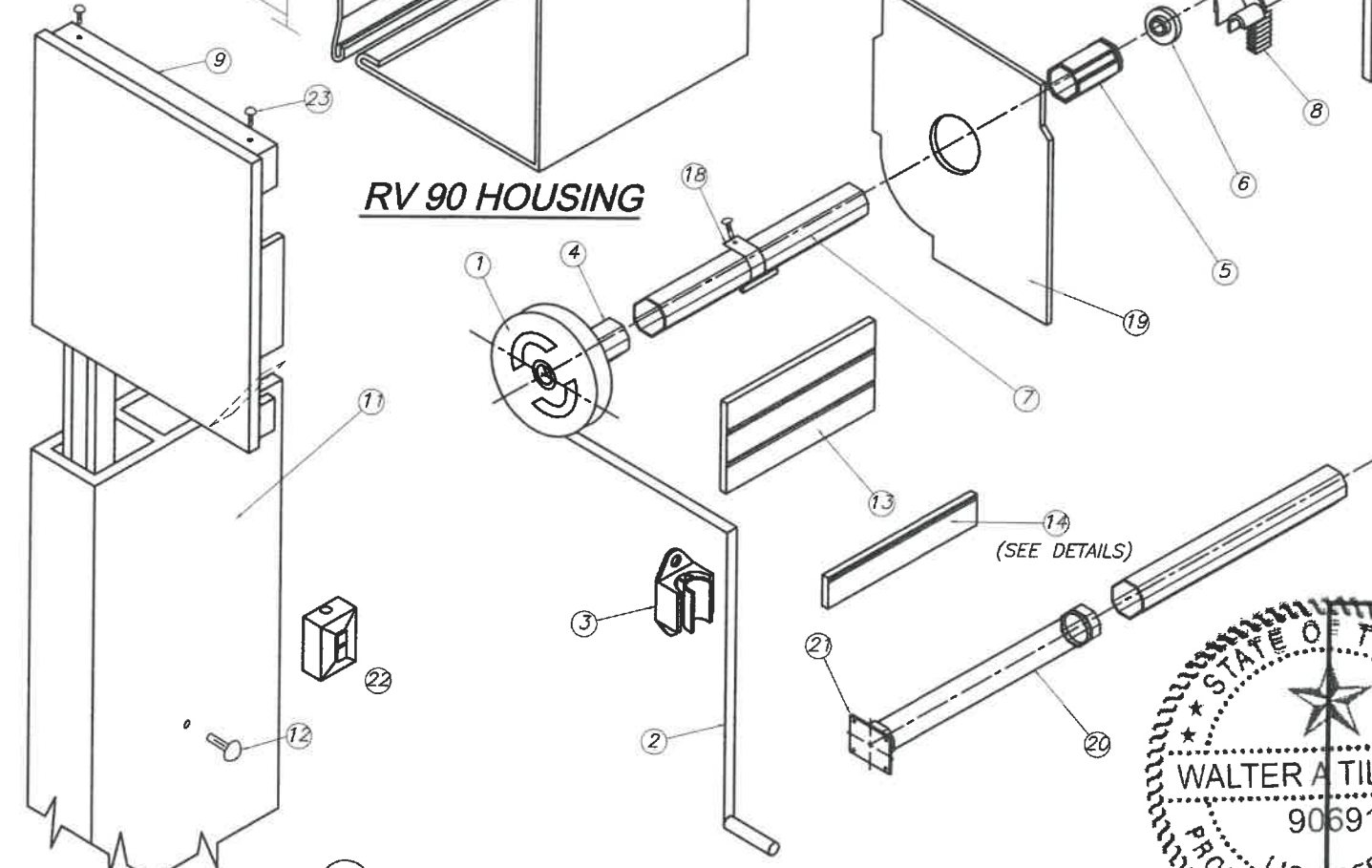
(14) DETAILS

- TYPE 10 : N/A
- TYPE 9 : 10"
- TYPE 8 : 9"
- TYPE 7 : 8"
- TYPE 6 : 7"
- TYPE 5 : 6.5"
- TYPE 4 : 6"
- TYPE 3 : 5.5"
- TYPE 2 : 5"
- TYPE 1 : 4"

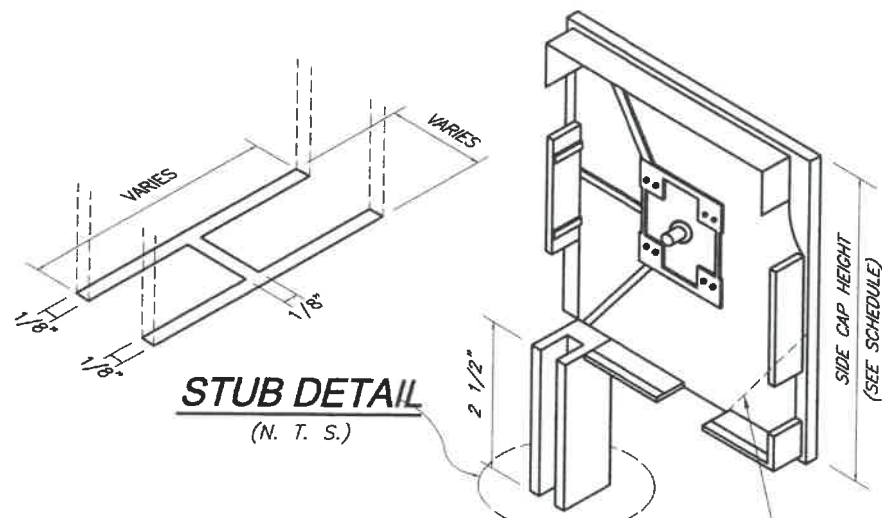
- TYPE 10 : 12"
- TYPE 9 : 10"
- TYPE 8 : 9"
- TYPE 7 : 8"
- TYPE 6 : 7"
- TYPE 5 : 6.5"
- TYPE 4 : 6"
- TYPE 3 : N/A
- TYPE 2 : N/A
- TYPE 1 : N/A

RV 45 & RV 45/S HOUSINGS

RV 90 HOUSING



(V) BOX COMPONENTS AND ASSEMBLY DETAIL
(SEE NOTE 12 ON SHEET 1)



(X) SIDE CAPS:
BK 90, BK 45 & BK 45/S

45° CHAMFER AS APPLICABLE

COMPONENTS FOR GEAR OPERATED SYSTEM

- ① - GEAR
- ② - UNIVERSAL & CRANK
- ③ - CRANK HOLDER(OPTIONAL)
- ④ - GEAR INSERT(GEAR TO AXLE CONNECTOR)
- ⑤ - IDLER INSERT
- ⑥ - BALL BEARING
- ⑦ - OCTAGONAL AXLE *
- ⑧ - ENTRY GUIDES (ONLY FOR A-150-H SLAT)
- ⑨ - SIDE/END CAP *
- ⑩ - HOUSING(FRONT & BOTTOM), 0.040" THICK
- ⑪ - SIDE RAIL
- ⑫ - PLUG-BOTTOMS
- ⑬ - ALUMINUM SLATS W/PLASTIC SLAT LOCKS @ EVERY OTHER SLAT W/ (2) #4x1" F.H. S.M.S.
- ⑭ - BASE SLAT
- ⑮ - SPRINGLOCK HANGER
- ⑯ - SAFETY PLATES

TYPE	90"	45"
1	4.0"	N/A
2	5.0"	N/A
3	5.5"	N/A
4	6.0"	6.0"
5	6.5"	6.5"
6	7.0"	7.0"
7	8.0"	8.0"
8	9.0"	9.0"
9	10.0"	10.0"
10	N/A	12.0"

N/A = NOT APPLICABLE

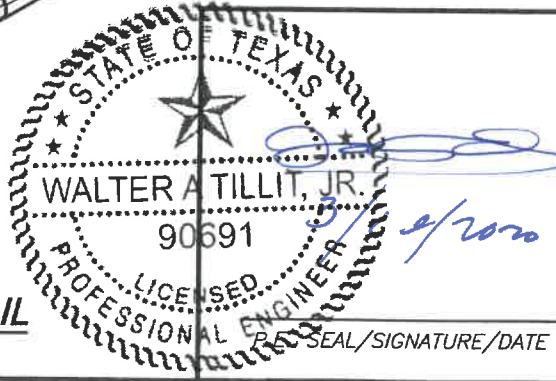
ADDITIONAL COMPONENTS FOR MOTORIZED OPERATED SYSTEM

- ⑳ - TUBULAR MOTOR
- ㉑ - MOTOR BRACKET
- ㉒ - SWITCH

* SHALL BE CAPABLE TO SUSTAIN SLAT'S WEIGHT AND ASSURE LIFTING MECHANISM (SEE NOTE 12/1).

FASTENERS

- ㉓ - 3/16" ALUMINUM POP RIVETS (6 REQ'D EA. SIDE CAP) : 2 @ TOP, 2 @ REAR, 2 @ BOTTOM



TEXAS DEPARTMENT INSURANCE-2018

WALTER A. TILLIT Jr. P.E.
PROFESSIONAL ENGINEER
6355 N.W. 36 STREET, STE. 305
VIRGINIA GARDENS, FL 33166
PHONE (305) 871-1530 FAX (305) 871-1531
TEXAS LIC. # 90691
FIRM REGISTRATION # F-13790

**ROLL-UP SHUTTER/WIND BORNE DEBRIS REGION
RLL 55-X AND A-200-H SLATS**

ROLLAC SHUTTERS OF TEXAS, INC.

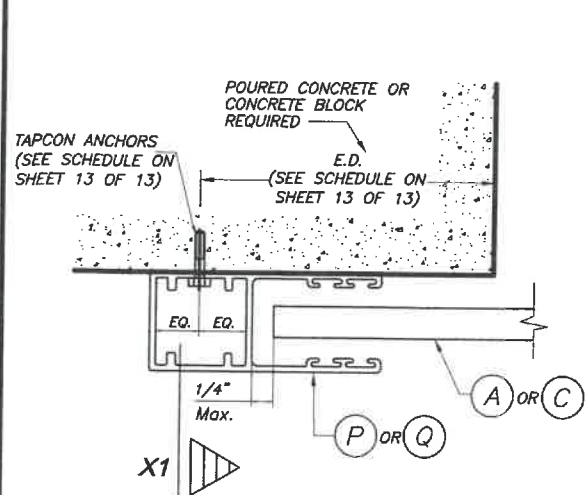
5331 ORANGE STREET
PEARLAND, TX 77581
PHONE: (800) 880-0922, FAX: (281) 485-0839

M.P.
DRAWN BY

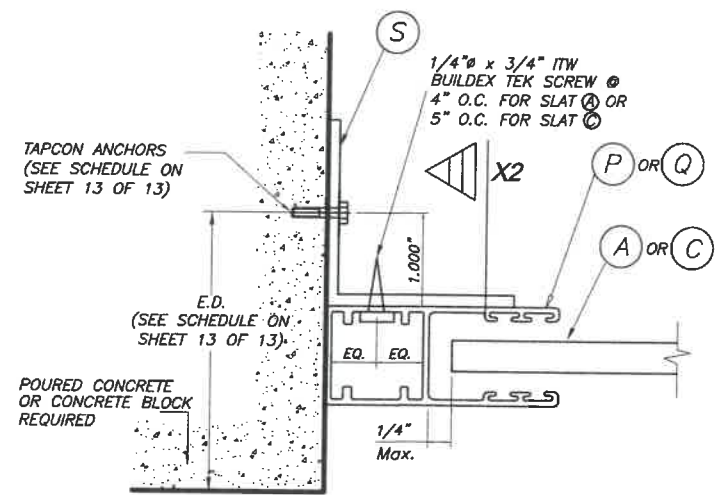
3/17/2020
DATE

20-043
DRAWING No

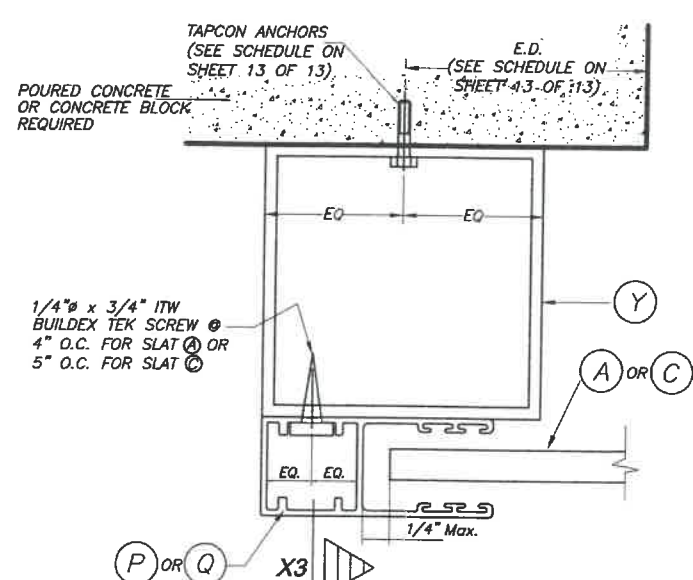
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 10-055	3/17/2020	3		
2			4		



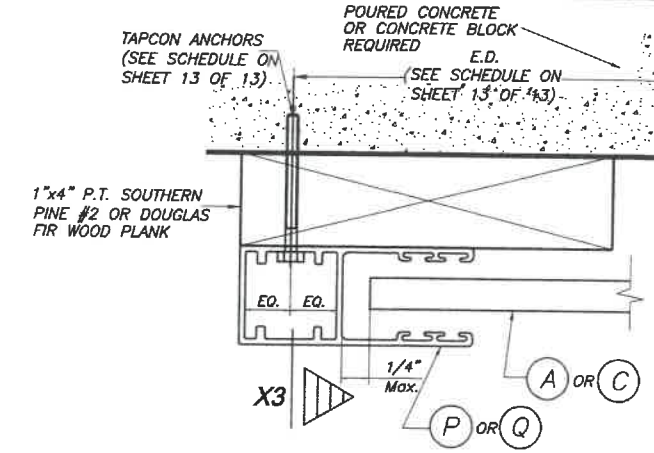
SECTION P - P (1) : WALL MOUNT
N.T.S.



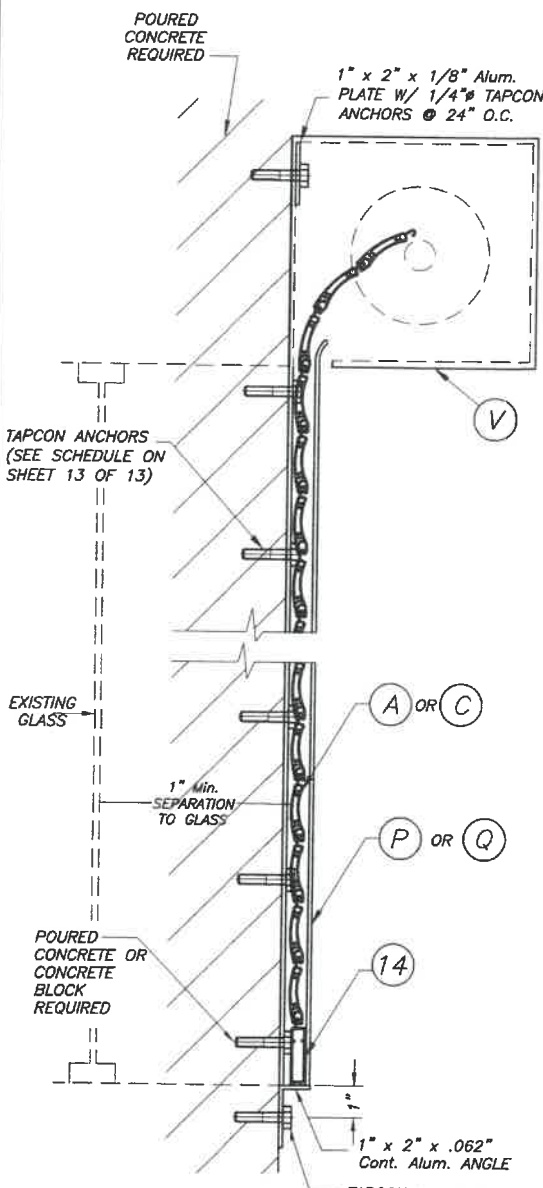
SECTION P - P (2) : SIDE WALL MOUNT
N.T.S.



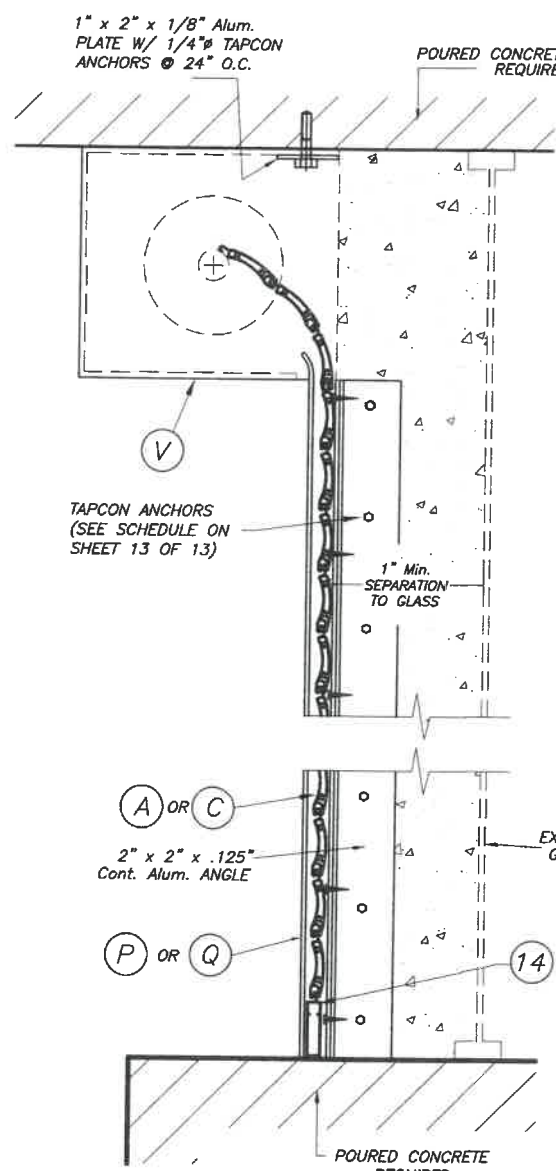
SECTION P - P (3) : BUILD-OUT
N.T.S.



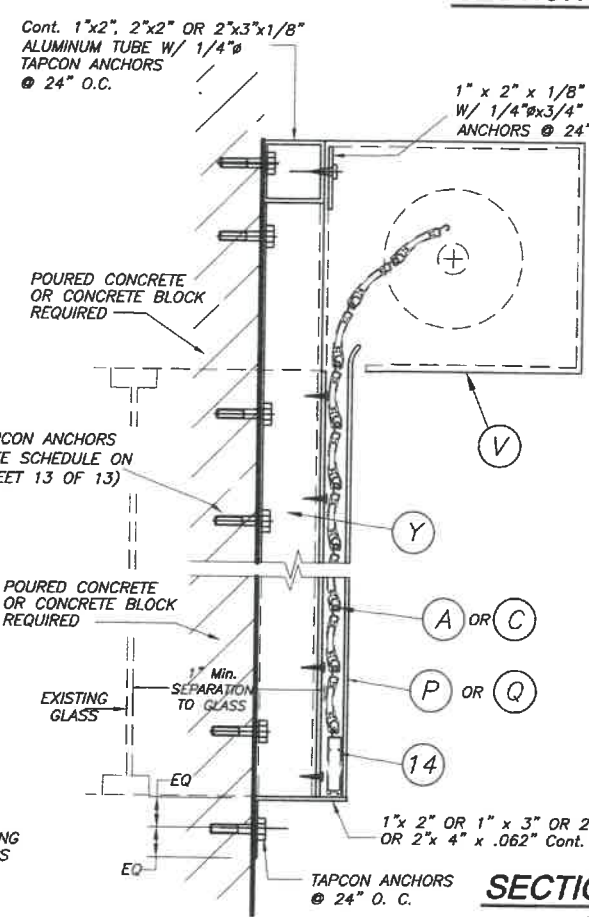
SECTION P - P (3) : B.O. (OPTION)
N.T.S.



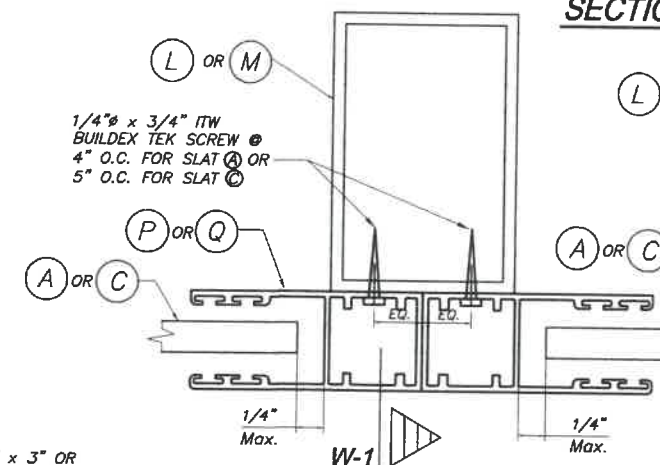
SECTION X - X (1)
N. T. S.



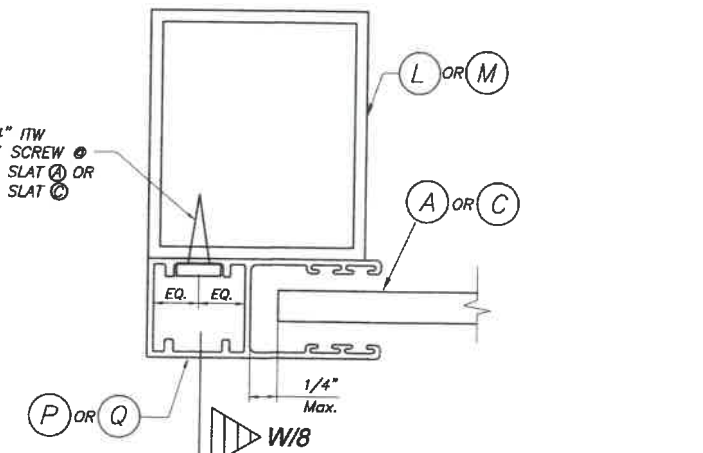
SECTION X - X (2)
N. T. S.



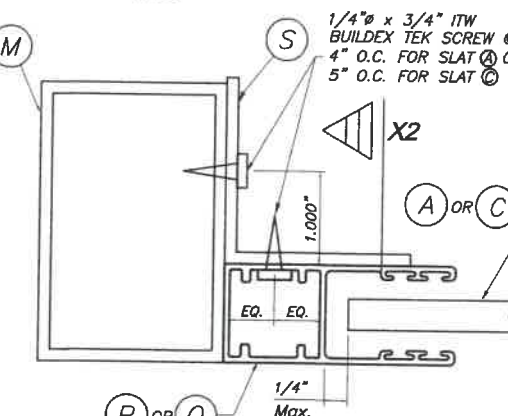
SECTION X - X (3)
N. T. S.



SECTION R - R : MULLION MOUNT
N.T.S.



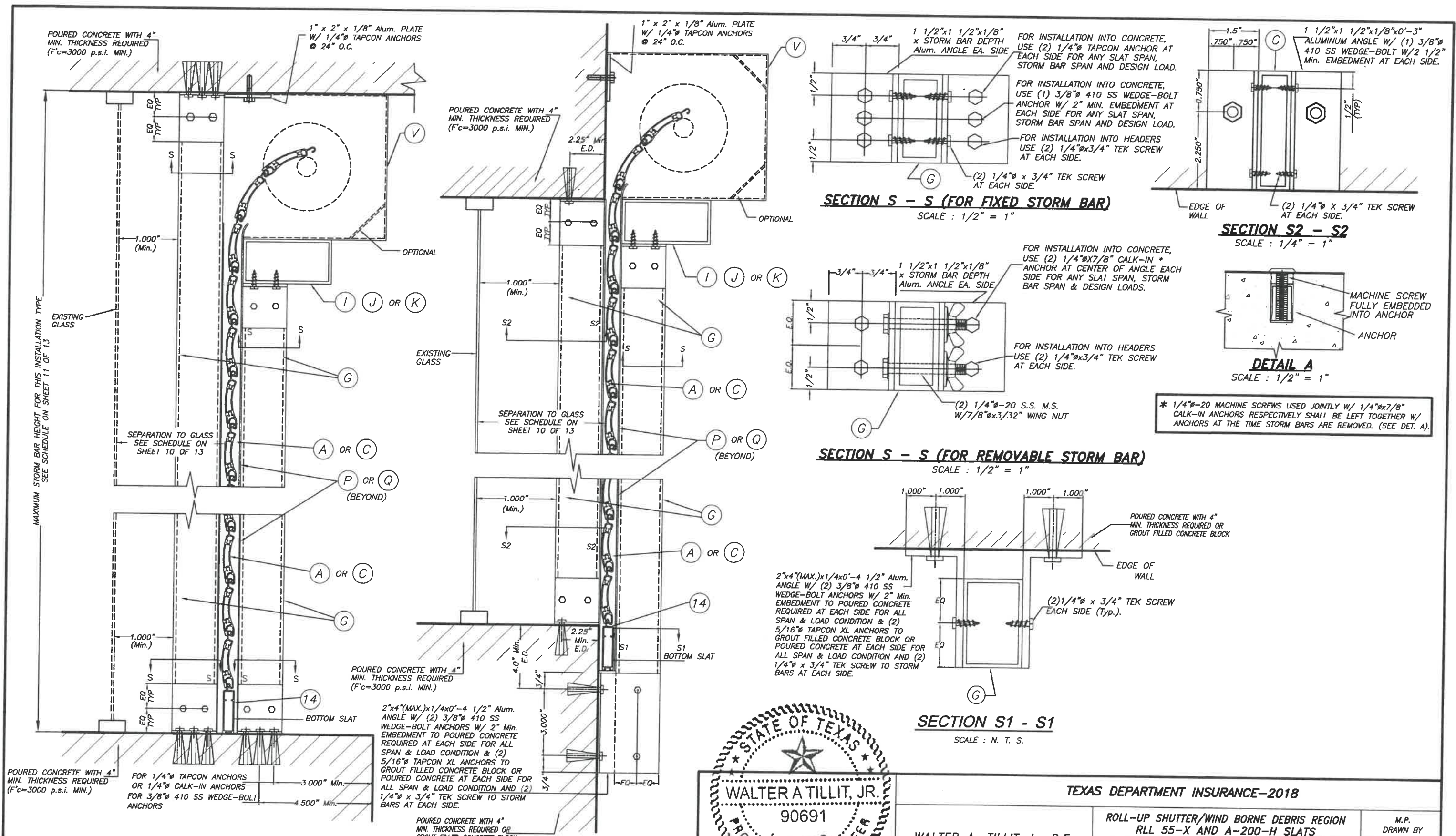
SECTION Q - Q : MULLION MOUNT
N.T.S.



SECTION R - R : MULLION MOUNT
N.T.S.

STATE OF TEXAS
 WALTER A. TILLIT, JR.
 90691
 LICENSED PROFESSIONAL ENGINEER
 SEAL/SIGNATURE/DATE

TEXAS DEPARTMENT INSURANCE-2018					
ROLL-UP SHUTTER/WIND BORNE DEBRIS REGION RLL 55-X AND A-200-H SLATS			M.P. DRAWN BY		
WALTER A. TILLIT Jr. P.E. PROFESSIONAL ENGINEER 6355 N.W. 36 STREET, STE. 305 VIRGINIA GARDENS, FL 33166 PHONE (305) 871-1530 FAX (305) 871-1531 TEXAS LIC. # 90691 FIRM REGISTRATION # F-13790			ROLLAC SHUTTERS OF TEXAS, INC. 5331 ORANGE STREET PEARLAND, TX 77581 PHONE: (800) 880-0922, FAX: (281) 485-0839		
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 10-035	5/17/2020	3		
2			4		
					20-043 DRAWING No
					SHEET 4 OF 13



CEILING & FLOOR MOUNTING: SECTION V-V(2) INSTALLATION W/ FIXED OR REMOVABLE STORM BARS W/ CONCRETE ANCHORS
 (SEE SECTION "S" FOR ANCHOR TYPE REQUIREMENT)
 N.T.S.

SINGLE SPAN SECTIONS AND DETAILS ARE SIMILAR TO ABOVE SHOWN WITHOUT STORM BAR & HEADERS.

WALL MOUNTING: SECTION V-V(1) INSTALLATION W/ FIXED STORM BARS W/ CONCRETE ANCHORS
 N.T.S.

SECTION V - V

STATE OF TEXAS
 WALTER A TILLIT, JR.
 90691
 PROFESSIONAL ENGINEER
 P.E. SEAL/SIGNATURE/DATE

TEXAS DEPARTMENT INSURANCE-2018

WALTER A. TILLIT Jr. P.E.
 PROFESSIONAL ENGINEER

6355 N.W. 36 STREET, STE. 305
 VIRGINIA GARDENS, FL 33166
 PHONE (305) 871-1530 FAX (305) 871-1531

TEXAS LIC. # 90691
 FIRM REGISTRATION # F-13790

ROLL-UP SHUTTER/WIND BORNE DEBRIS REGION
 RLL 55-X AND A-200-H SLATS

ROLLAC SHUTTERS OF TEXAS, INC.

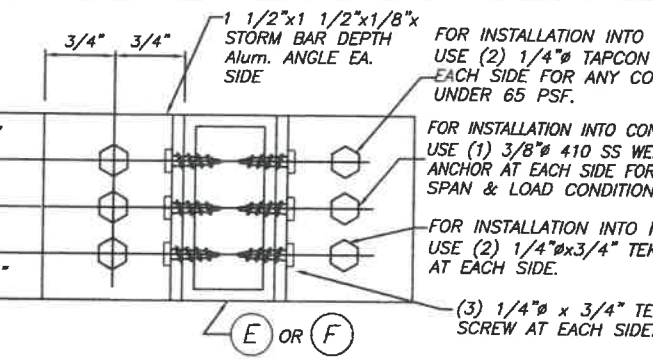
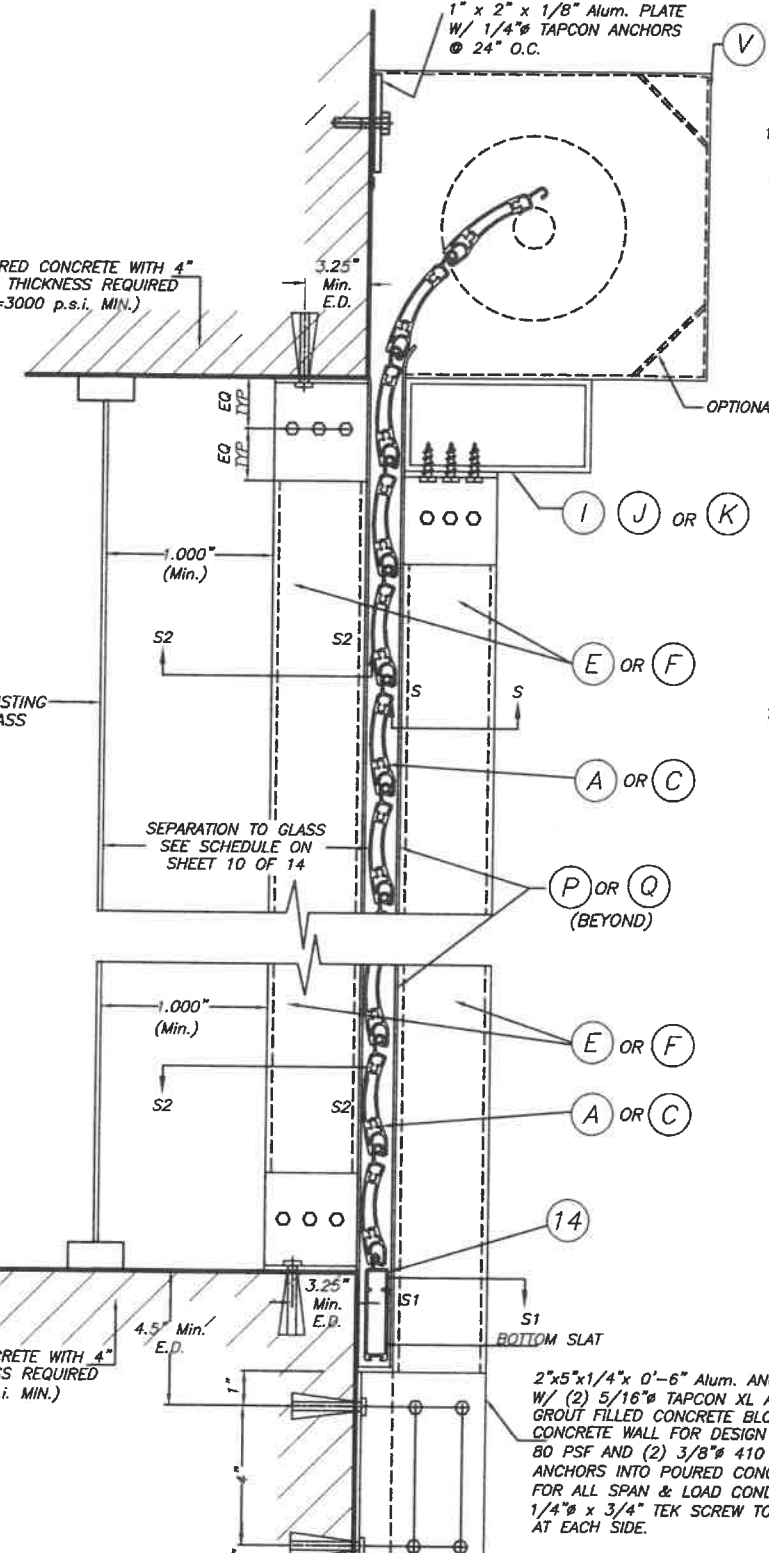
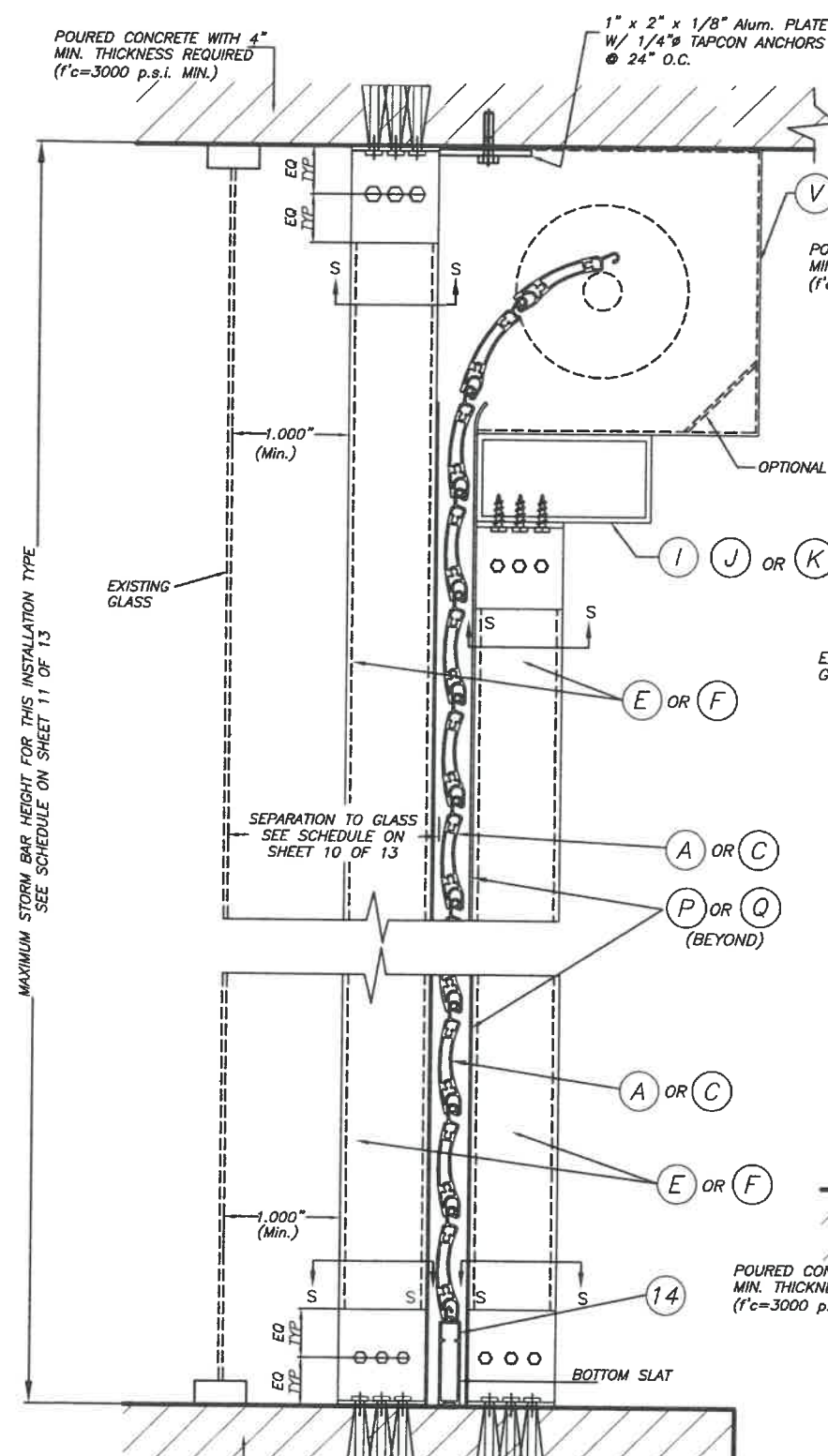
5331 ORANGE STREET
 PEARLAND, TX 77581
 PHONE: (800) 880-0922, FAX: (281) 485-0839

M.P. DRAWN BY

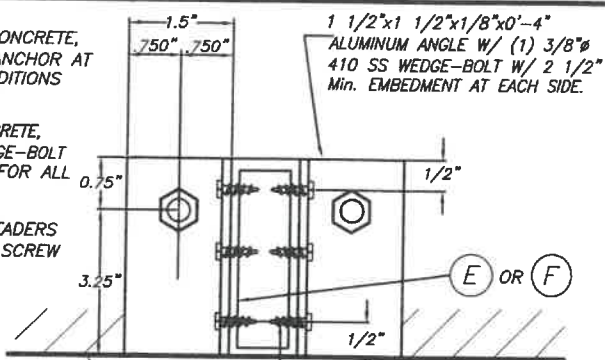
3/17/2020 DATE

20-043 DRAWING No

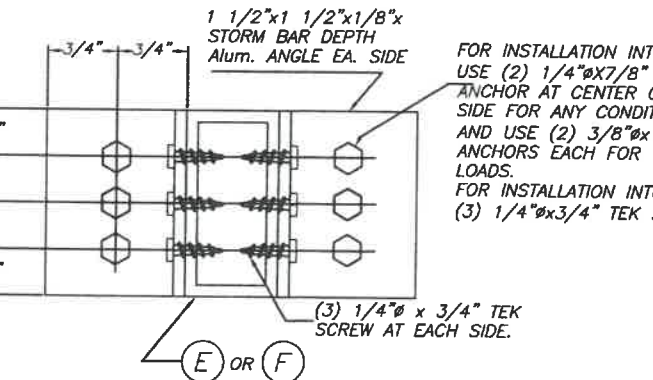
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 10-035	3/17/2020	3		
2			4		



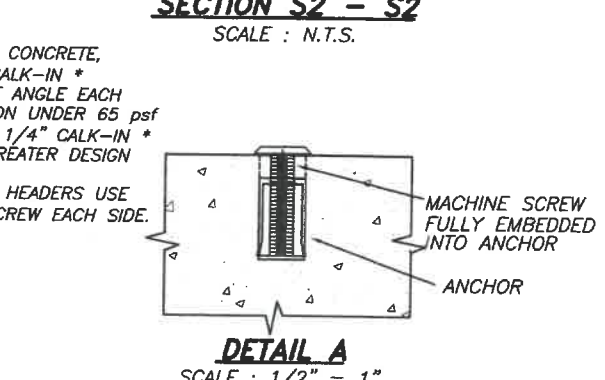
SECTION S - S (FOR FIXED STORM BAR)
SCALE : N.T.S.



SECTION S2 - S2
SCALE : N.T.S.



SECTION S - S (FOR REMOVABLE STORM BAR)
SCALE : N.T.S.



DETAIL A
SCALE : 1/2" = 1"

* 1/4" #20 OR 3/8" #16 MACHINE SCREWS USED JOINTLY W/ 1/4" # x 7/8" OR 3/8" # x 1 1/4" CALK-IN ANCHORS RESPECTIVELY SHALL BE LEFT TOGETHER W/ ANCHORS AT THE TIME STORM BARS ARE REMOVED. (SEE DET. A).

POURED CONCRETE WITH 4" MIN. THICKNESS REQUIRED (f'c=3000 p.s.i. MIN.)

FOR 1/4" TAPCON ANCHORS OR 1/4" CALK-IN ANCHORS	3.000" Min.
FOR 3/8" CALK-IN ANCHORS	4.500" Min.
FOR 3/8" 410 SS WEDGE-BOLT ANCHORS	4.500" Min.

CEILING & FLOOR MOUNTING: SECTION V-V(2) INSTALLATION W/ FIXED OR REMOVABLE STORM BARS W/ CONCRETE ANCHORS
(SEE SECTION "S" FOR ANCHOR TYPE REQUIREMENT)
SCALE : N.T.S.

POURED CONCRETE WITH 4" MIN. THICKNESS REQUIRED OR GROUT FILLED CONCRETE BLOCK WALL REQUIRED.

WALL MOUNTING: SECTION V-V(1) INSTALLATION W/ FIXED STORM BARS W/ CONCRETE ANCHORS
SCALE : N.T.S.

SECTION V - V

SINGLE SPAN SECTIONS AND DETAILS ARE SIMILAR TO ABOVE SHOWN WITHOUT STORM BAR & HEADERS.

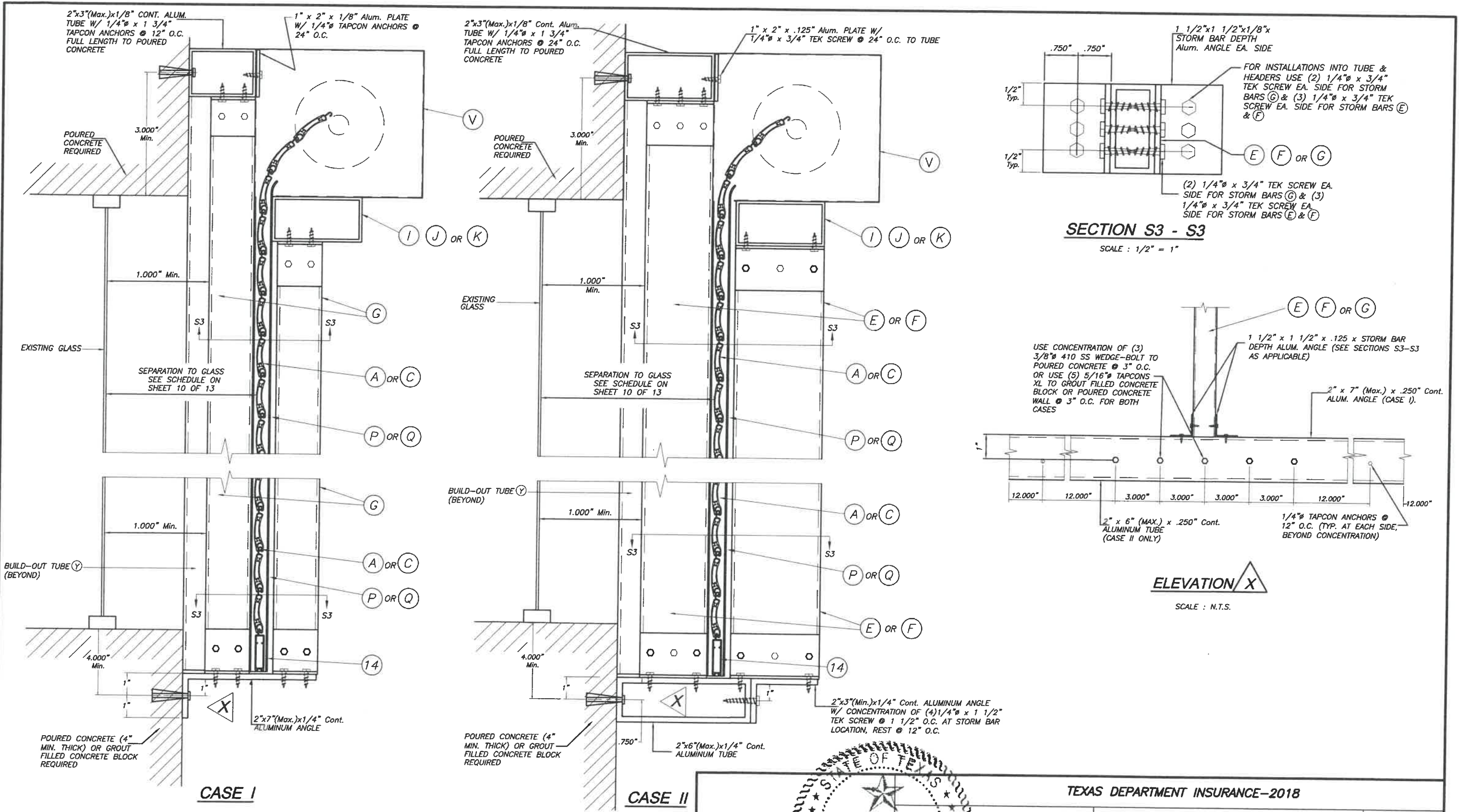
MAXIMUM STORM BAR HEIGHT FOR THIS INSTALLATION TYPE SEE SCHEDULE ON SHEET 11 OF 13

STATE OF TEXAS

WALTER A. TILLIT Jr. P.E.
 PROFESSIONAL ENGINEER
 90691
 3/19/2020
 6385 NW. 36 STREET, STE. 305
 VIRIDIA GARDENS, FL 33166
 PHONE (305) 871-1530 FAX (305) 871-1531
 TEXAS LIC. # 90691
 FIRM REGISTRATION # F-13790
 P.E. SEAL/SIGNATURE/DATE

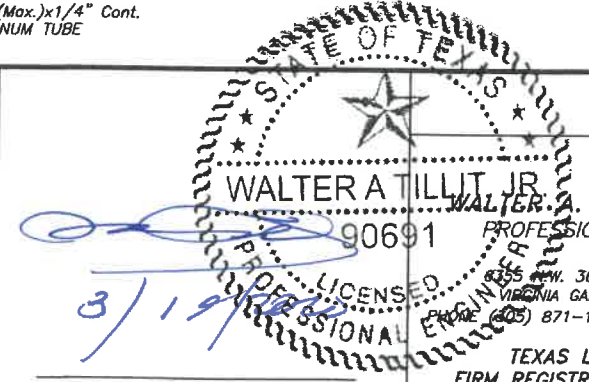
TEXAS DEPARTMENT INSURANCE-2018

ROLL-UP SHUTTER/WIND BORNE DEBRIS REGION RLL 55-X AND A-200-H SLATS		M.P. DRAWN BY
ROLLAC SHUTTERS OF TEXAS, INC.		3/17/2020 DATE
5331 ORANGE STREET PEARLAND, TX 77581 PHONE: (800) 880-0922, FAX: (281) 485-0839		20-043 DRAWING No
REV. No	DESCRIPTION	DATE
1	OLD 10-035	3/17/2020
2		



STORM BAR CONNECTION AT BUILD-OUT INSTALLATION : SECTIONS V - V (3)

SCALE : 1/4" = 1"



P.E. SEAL/SIGNATURE/DATE

WALTER A. TILLIT Jr. P.E.
 90691
 PROFESSIONAL ENGINEER
 36 STREET, STE. 305
 VICTORIA GARDENS, FL 33166
 PHONE (305) 871-1530 FAX (305) 871-1531
 TEXAS LIC. # 90691
 FIRM REGISTRATION # F-13790

TEXAS DEPARTMENT INSURANCE-2018

ROLL-UP SHUTTER/WIND BORNE DEBRIS REGION
 RLL 55-X AND A-200-H SLATS

ROLLAC SHUTTERS OF TEXAS, INC.

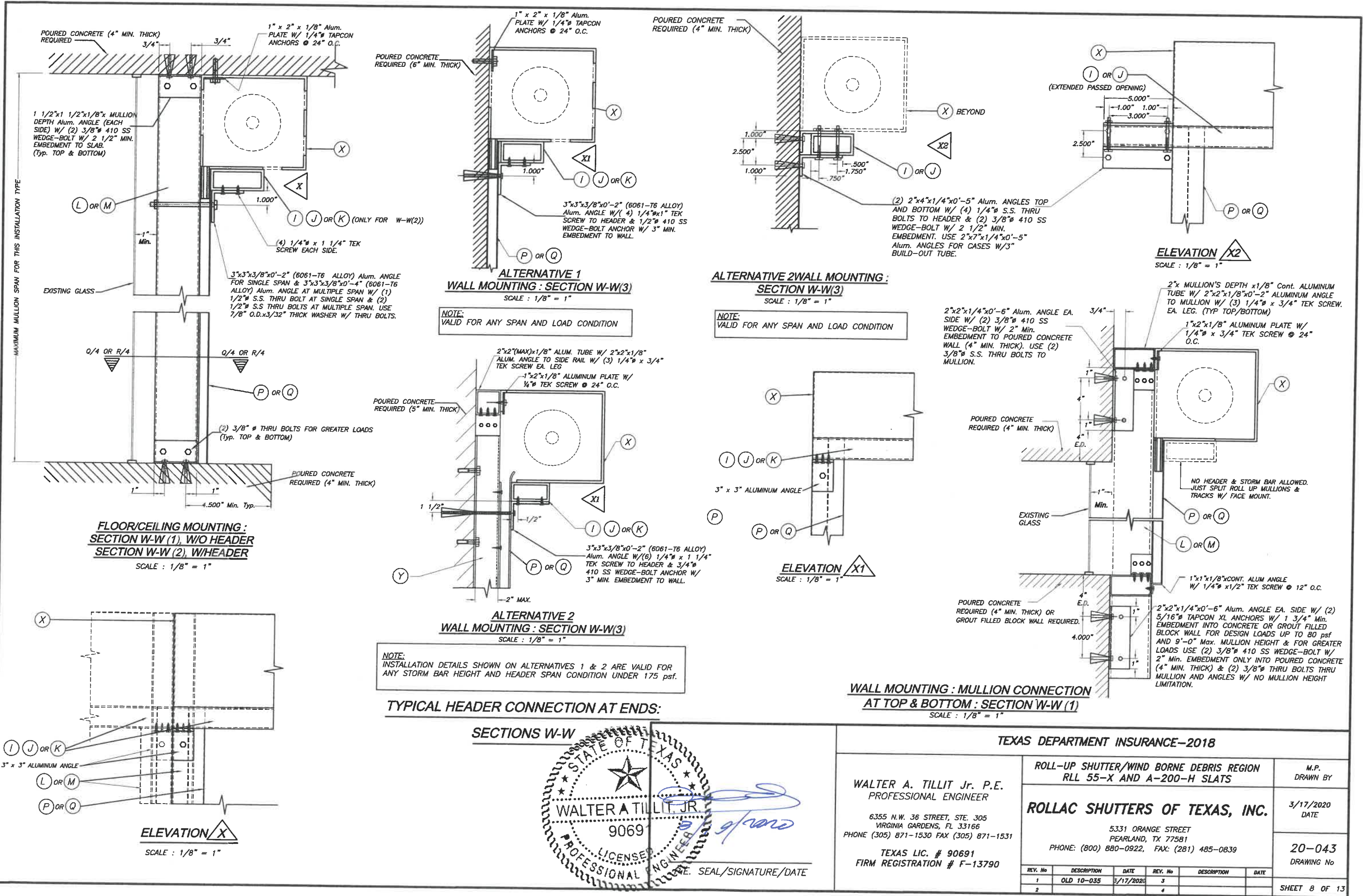
5331 ORANGE STREET
 PEARLAND, TX 77581
 PHONE: (800) 880-0922, FAX: (281) 485-0839

M.P.
 DRAWN BY

3/17/2020
 DATE

20-043
 DRAWING No

REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 10-035	3/17/2020	3		
2			4		

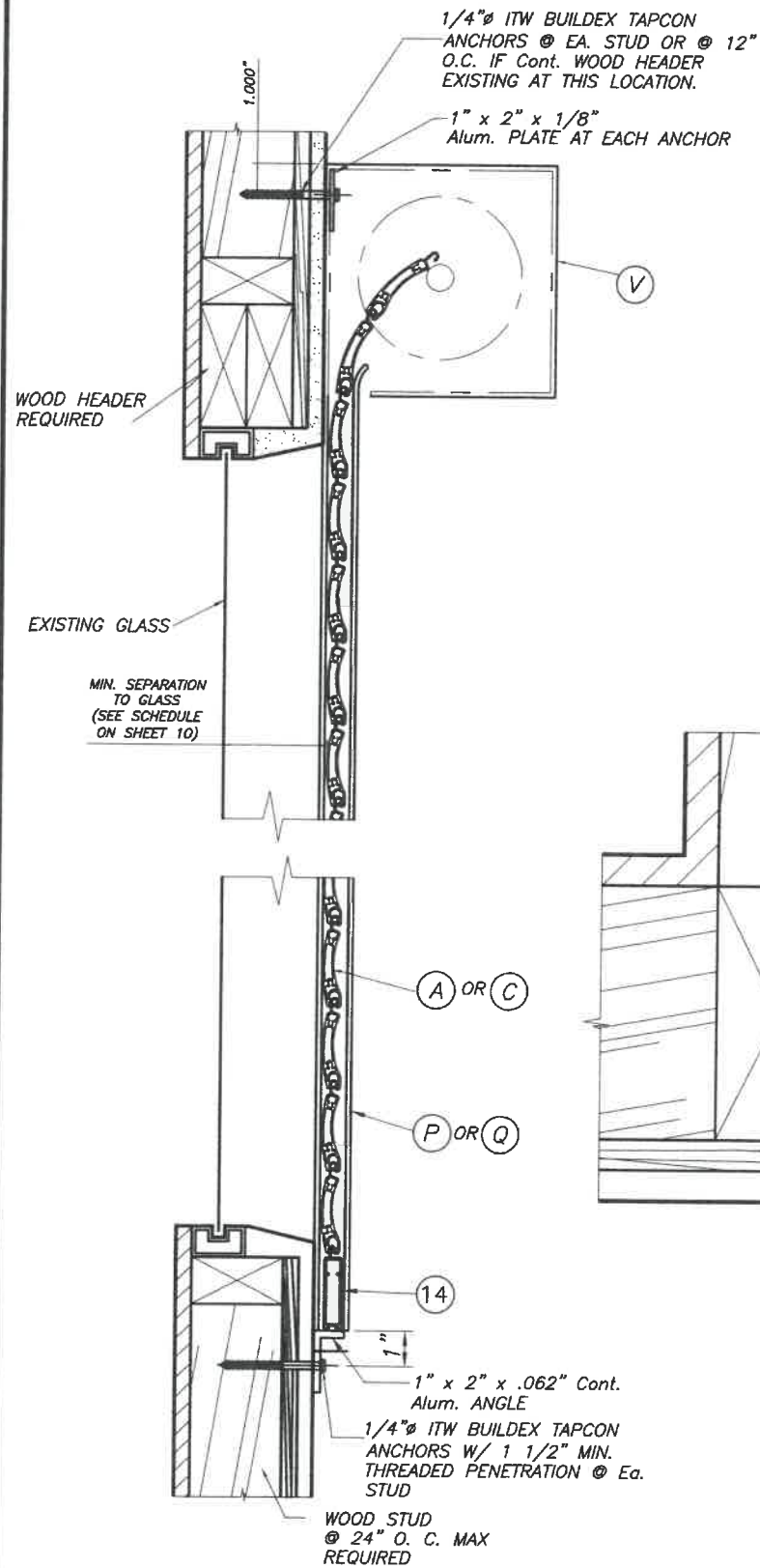


NOTE: INSTALLATION DETAILS SHOWN ON ALTERNATIVES 1 & 2 ARE VALID FOR ANY STORM BAR HEIGHT AND HEADER SPAN CONDITION UNDER 175 psf.

STATE OF TEXAS
 WALTER A. TILLIT, JR.
 9069
 LICENSED PROFESSIONAL ENGINEER
 SEAL/SIGNATURE/DATE

TEXAS DEPARTMENT INSURANCE-2018					
WALTER A. TILLIT Jr. P.E. PROFESSIONAL ENGINEER			ROLL-UP SHUTTER/WIND BORNE DEBRIS REGION RLL 55-X AND A-200-H SLATS		M.P. DRAWN BY
6355 N.W. 36 STREET, STE. 305 VIRGINIA GARDENS, FL 33166 PHONE (305) 871-1530 FAX (305) 871-1531			ROLLAC SHUTTERS OF TEXAS, INC.		3/17/2020 DATE
TEXAS LIC. # 90691 FIRM REGISTRATION # F-13790			5331 ORANGE STREET PEARLAND, TX 77581 PHONE: (800) 880-0922, FAX: (281) 485-0839		20-043 DRAWING No
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 10-035	3/17/2020	3		
2			4		

INSTALLATIONS INTO EXISTING WOOD BUILDINGS

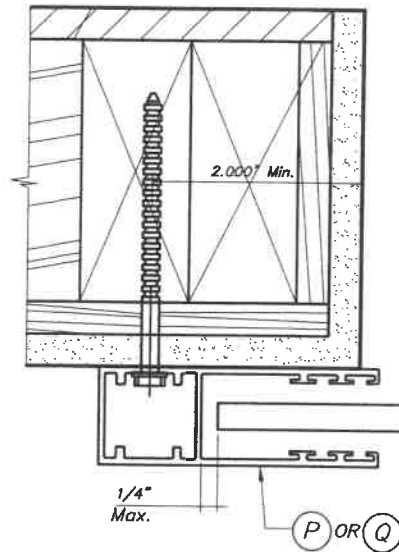


WALL MOUNTING INSTALLATION SINGLE SPAN CONDITION

N. T. S.

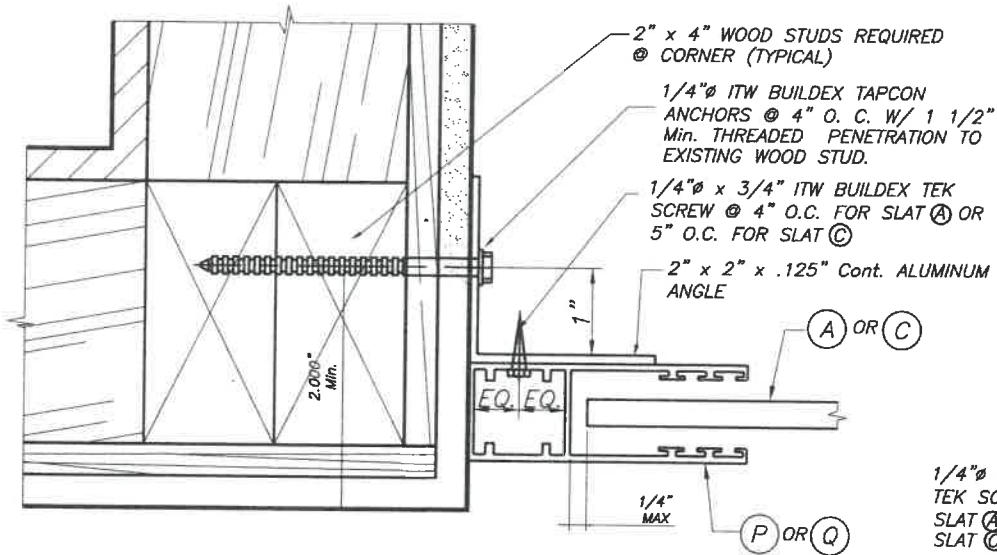
NOTES:

- INSTALLATIONS ARE ONLY VALID FOR BUILDINGS WITH DESIGN LOAD UP TO 72 p.s.f.
- FOR NEW FRAME CONSTRUCTION: WOOD MEMBER TO BE SOUTHERN PINE No. 2 W/ SPECIFIC DENSITY OF 0.55 OR DOUGLAS FIR W/ SPECIFIC DENSITY OF 0.42.



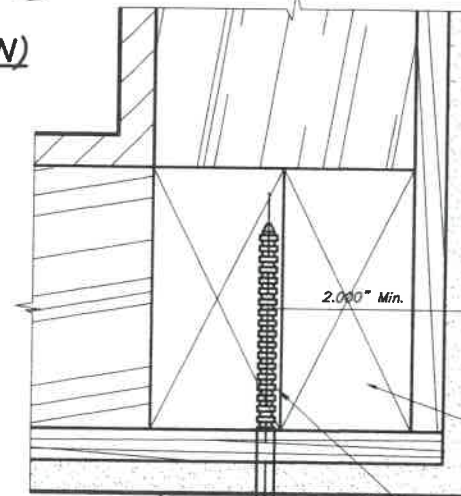
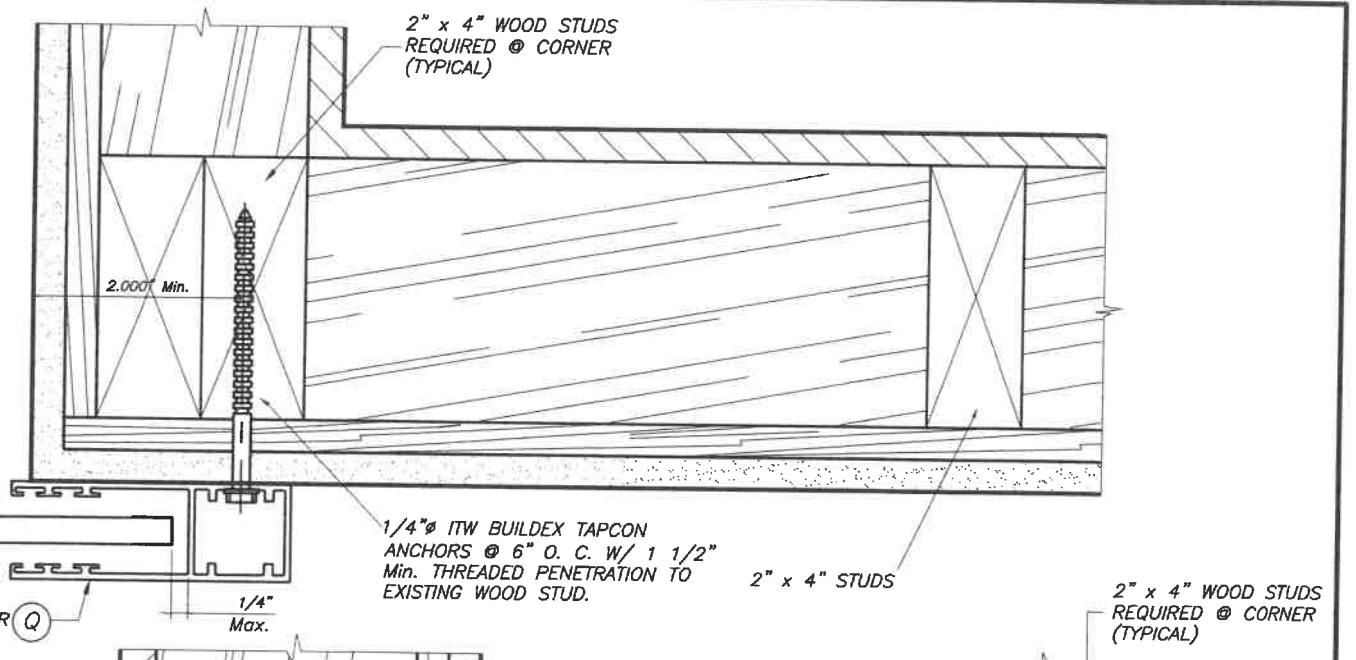
PLAN A (SECTION) WALL MOUNT

SCALE : 3/8" = 1"



PLAN B (SECTION) INSIDE MOUNT

SCALE : 3/8" = 1"

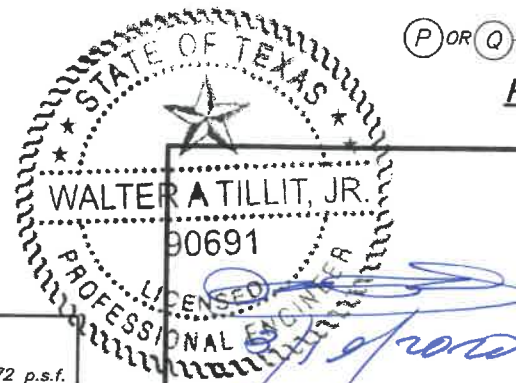


PLAN C BUILD-OUT

SCALE : 3/8" = 1"

PLAN C BUILD-OUT (OPTION)

SCALE : 3/8" = 1"



P.E. SEAL/SIGNATURE/DATE

TEXAS DEPARTMENT INSURANCE-2018

WALTER A. TILLIT Jr. P.E.
PROFESSIONAL ENGINEER

6355 N.W. 36 STREET, STE. 305
VIRGINIA GARDENS, FL 33166
PHONE (305) 871-1530 FAX (305) 871-1531

TEXAS LIC. # 90691
FIRM REGISTRATION # F-13790

ROLL-UP SHUTTER/WIND BORNE DEBRIS REGION
RLL 55-X AND A-200-H SLATS

ROLLAC SHUTTERS OF TEXAS, INC.

5331 ORANGE STREET
PEARLAND, TX 77581
PHONE: (800) 880-0922, FAX: (281) 485-0839

M.P.
DRAWN BY

3/17/2020
DATE

20-043
DRAWING No

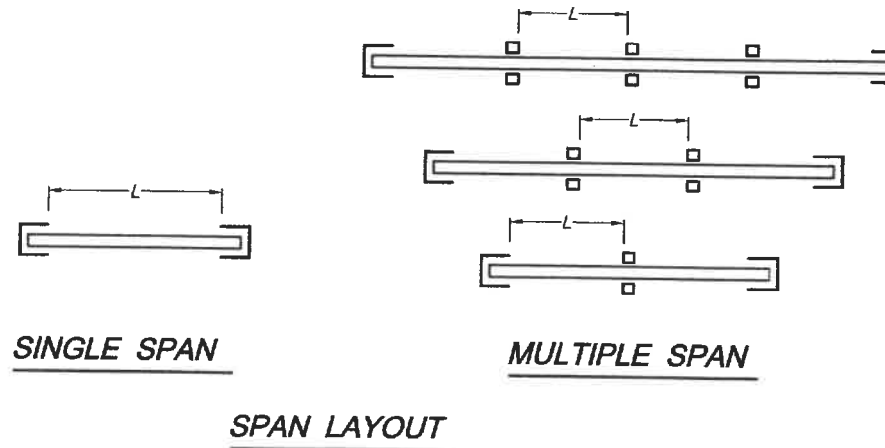
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 10-035	3/17/2020	3		
2			4		

SHEET 9 OF 13

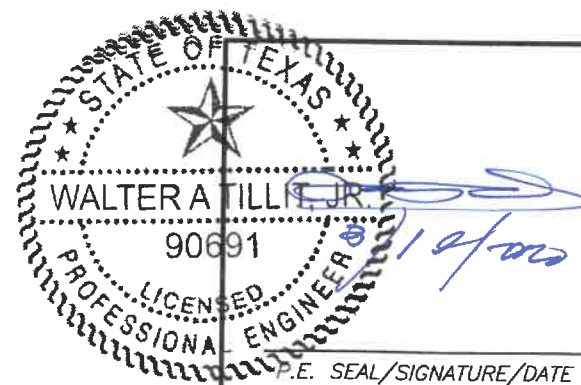
SLAT PERFORMANCE CHART
MAXIMUM DESIGN PRESSURE RATING (p. s. f.) AND
CORRESPONDING MAXIMUM SLAT SPAN "L"

(USE MAXIMUM VALUES BETWEEN POSITIVE AND NEGATIVE LOAD)

DESIGN PRESSURE RATING (p.s.f.)	TYPE 1 SLAT RLL 55-X		TYPE 2 SLAT A-200-H SLAT	
	MAXIMUM SLAT SPAN	MINIMUM SEPARATION TO GLASS	MAXIMUM SLAT SPAN	MINIMUM SEPARATION TO GLASS
	SINGLE & MULTIPLE	SINGLE & MULTIPLE UNIT WIND ZONES 1-3	SINGLE & MULTIPLE UNIT	SINGLE & MULTIPLE UNIT WIND ZONES 1-3
25.0	7'-0"	1"	6'-0"	1"
30.0	7'-0"	1"	5'-9"	1"
35.0	7'-0"	1"	5'-4"	1"
40.0	7'-0"	1"	5'-0"	1"
45.0	6'-7"	1"	4'-8"	1"
50.0	6'-3"	1"	4'-5"	1"
55.0	6'-0"	1"	4'-3"	1"
60.0	5'-8"	1"	4'-1"	1"
65.0	5'-6"	1"	3'-11"	1"
70.0	5'-3"	1"	3'-9"	1"
72.0	5'-2 1/2"	1"	3'-8"	1"
75.0	-	-	3'-8"	1"
80.0	-	-	3'-6"	1"
85.0	-	-	3'-5"	1"
90.0	-	-	3'-4"	1"
95.0	-	-	3'-3"	1"
100.0	-	-	3'-2"	1"
105.0	-	-	3'-1"	1"
110.0	-	-	3'-0"	1"
115.0	-	-	2'-11"	1"
120.0	-	-	2'-11"	1"
125.0	-	-	2'-10"	1"
130.0	-	-	2'-9"	1"
135.0	-	-	2'-9"	1"
140.0	-	-	2'-8"	1"
145.0	-	-	2'-7"	1"
150.0	-	-	2'-7"	1"
155.0	-	-	2'-6"	1"
160.0	-	-	2'-6"	1"
165.0	-	-	2'-5"	1"
170.0	-	-	2'-5"	1"
175.0	-	-	2'-5"	1"
180.0	-	-	2'-4"	1"
185.0	-	-	2'-4"	1"
190.0	-	-	2'-3"	1"
195.0	-	-	2'-3"	1"



NOTES: - MINIMUM SEPARATION TO GLASS FOR SINGLE AND MULTIPLE UNITS SHALL BE MEASURED FROM BACK OF SLAT TO GLASS.
 - WIND ZONES 1 THRU 3 AS DEFINED BY SECTION 6.2.2 OF ASTM E-1996-05



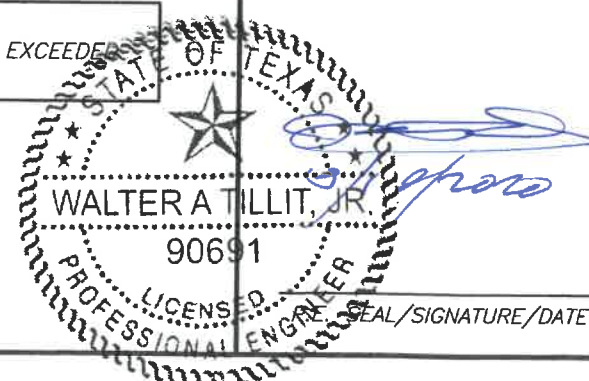
TEXAS DEPARTMENT INSURANCE-2018					
WALTER A. TILLIT Jr. P.E. PROFESSIONAL ENGINEER 6355 N.W. 36 STREET, STE. 305 VIRGINIA GARDENS, FL 33166 PHONE (305) 871-1530 FAX (305) 871-1531 TEXAS LIC. # 90691 FIRM REGISTRATION # F-13790				ROLL-UP SHUTTER/WIND BORNE DEBRIS REGION RLL 55-X AND A-200-H SLATS ROLLAC SHUTTERS OF TEXAS, INC. 5331 ORANGE STREET PEARLAND, TX 77581 PHONE: (800) 880-0922, FAX: (281) 485-0839	
				M.P. DRAWN BY	
				3/17/2020 DATE	
				20-043 DRAWING No	
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 10-035	3/17/2020	3		
2			4		

**STORM BAR LOADING CHART. MAXIMUM DESIGN PRESSURE RATING (p. s. f.) AND
CORRESPONDING MAXIMUM SPAN "L" FOR A GIVEN TYPE OF STORM BAR AND STORM
BAR SPACING.**

(USE MAXIMUM VALUES BETWEEN POSITIVE AND NEGATIVE LOAD)

MAXIMUM DESIGN PRESSURE RATING (p.s.f.)	Ⓔ TYPE 1 STORM BAR 2" x 4" x 1/4"				Ⓕ TYPE 2 STORM BAR 2" x 4" x 1/8"				Ⓖ TYPE 3 STORM BAR 2" x 3" x 1/8"			
	* STORM BAR SPACING				* STORM BAR SPACING				* STORM BAR SPACING			
	≤ 3'-0"	3' TO 4'	4' TO 5'	5' TO 6'	≤ 3'-0"	3' TO 4'	4' TO 5'	5' TO 6'	≤ 3'-0"	3' TO 4'	4' TO 5'	5' TO 6'
30.0 OR LESS	10'-0"	10'-0"	10'-0"	10'-0"	9'-0"	9'-0"	9'-0"	8'-11"	8'-0"	8'-0"	8'-0"	7'-3"
35.0	10'-0"	10'-0"	10'-0"	10'-0"	9'-0"	9'-0"	9'-0"	8'-3"	8'-0"	8'-0"	7'-5"	6'-9"
40.0	10'-0"	10'-0"	10'-0"	9'-11"	9'-0"	9'-0"	8'-6"	7'-9"	8'-0"	7'-9"	6'-11"	6'-4"
45.0	10'-0"	10'-0"	10'-0"	9'-8"	9'-0"	8'-11"	8'-0"	7'-4"	8'-0"	7'-3"	6'-6"	5'-11"
50.0	10'-0"	10'-0"	9'-10"	9'-3"	9'-0"	8'-6"	7'-7"	6'-11"	8'-0"	6'-11"	6'-2"	5'-8"
55.0	10'-0"	10'-0"	9'-7"	8'-10"	9'-0"	8'-1"	7'-3"	6'-7"	7'-7"	6'-7"	5'-11"	5'-5"
60.0	10'-0"	9'-11"	9'-3"	8'-5"	8'-11"	7'-9"	6'-11"	6'-4"	7'-3"	6'-4"	5'-8"	5'-2"
65.0	10'-0"	9'-9"	8'-11"	8'-1"	8'-7"	7'-5"	6'-8"	6'-1"	7'-0"	6'-1"	5'-5"	4'-11"
70.0	10'-0"	9'-7"	8'-7"	7'-10"	8'-3"	7'-2"	6'-5"	5'-10"	6'-9"	5'-10"	5'-3"	4'-9"
75.0	10'-0"	9'-3"	8'-3"	7'-7"	8'-0"	6'-11"	6'-2"	5'-8"	6'-6"	5'-8"	5'-1"	4'-7"
80.0	9'-11"	8'-11"	8'-0"	7'-4"	7'-9"	6'-9"	6'-0"	5'-6"	6'-4"	5'-6"	4'-11"	4'-6"
85.0	9'-10"	8'-8"	7'-9"	7'-1"	7'-6"	6'-6"	5'-10"	5'-4"	6'-1"	5'-4"	4'-9"	4'-4"
90.0	9'-8"	8'-5"	7'-7"	6'-11"	7'-4"	6'-4"	5'-8"	5'-2"	5'-11"	5'-2"	4'-7"	4'-2"
95.0	9'-6"	8'-3"	7'-4"	6'-8"	7'-1"	6'-2"	5'-6"	5'-0"	5'-9"	5'-0"	4'-6"	4'-1"
100.0	9'-3"	8'-0"	7'-2"	6'-6"	6'-11"	6'-0"	5'-4"	4'-11"	5'-8"	4'-11"	4'-4"	4'-0"
105.0	9'-0"	7'-10"	7'-0"	6'-5"	6'-9"	5'-10"	5'-3"	4'-9"	5'-6"	4'-9"	4'-3"	3'-11"
110.0	8'-10"	7'-8"	6'-10"	6'-3"	6'-7"	5'-9"	5'-1"	4'-8"	5'-5"	4'-8"	4'-2"	3'-10"
115.0	8'-7"	7'-6"	6'-8"	6'-1"	6'-6"	5'-7"	5'-0"	4'-7"	5'-3"	4'-7"	4'-1"	3'-9"
120.0	8'-5"	7'-4"	6'-6"	6'-0"	6'-4"	5'-6"	4'-11"	4'-6"	5'-2"	4'-6"	4'-0"	3'-8"
125.0	8'-3"	7'-2"	6'-5"	5'-10"	6'-2"	5'-4"	4'-10"	4'-5"	5'-1"	4'-4"	3'-11"	3'-7"
130.0	8'-1"	7'-0"	6'-3"	5'-9"	6'-1"	5'-3"	4'-9"	4'-4"	4'-11"	4'-3"	3'-10"	3'-6"
135.0	7'-11"	6'-11"	6'-2"	5'-8"	6'-0"	5'-2"	4'-7"	4'-3"	4'-10"	4'-2"	3'-9"	3'-5"
140.0	7'-10"	6'-9"	6'-1"	5'-6"	5'-10"	5'-1"	4'-6"	4'-2"	4'-9"	4'-2"	3'-8"	3'-4"
145.0	7'-8"	6'-8"	5'-11"	5'-5"	5'-9"	5'-0"	4'-6"	4'-1"	4'-8"	4'-1"	3'-8"	3'-4"
150.0	7'-7"	6'-6"	5'-10"	5'-4"	5'-8"	4'-11"	4'-5"	4'-0"	4'-7"	4'-0"	3'-7"	3'-3"
155.0	7'-5"	6'-5"	5'-9"	5'-3"	5'-7"	4'-10"	4'-4"	3'-11"	4'-6"	3'-11"	3'-6"	3'-2"
160.0	7'-4"	6'-4"	5'-8"	5'-2"	5'-6"	4'-9"	4'-3"	3'-11"	4'-6"	3'-10"	3'-5"	3'-2"
165.0	7'-2"	6'-3"	5'-7"	5'-1"	5'-5"	4'-8"	4'-2"	3'-10"	4'-5"	3'-10"	3'-5"	3'-1"
170.0	7'-1"	6'-2"	5'-6"	5'-0"	5'-4"	4'-7"	4'-1"	3'-9"	4'-4"	3'-9"	3'-4"	3'-1"
175.0	7'-0"	6'-1"	5'-5"	4'-11"	5'-3"	4'-6"	4'-1"	3'-8"	4'-3"	3'-8"	3'-4"	3'-0"
180.0	6'-11"	6'-0"	5'-4"	4'-10"	5'-2"	4'-6"	4'-0"	3'-8"	4'-2"	3'-8"	3'-3"	3'-0"
185.0	6'-10"	5'-11"	5'-3"	4'-10"	5'-1"	4'-5"	3'-11"	3'-7"	4'-2"	3'-7"	3'-3"	2'-11"
190.0	6'-8"	5'-10"	5'-2"	4'-9"	5'-0"	4'-4"	3'-11"	3'-7"	4'-1"	3'-7"	3'-2"	2'-11"
195.0	6'-7"	5'-9"	5'-2"	4'-8"	5'-0"	4'-4"	3'-10"	3'-6"	4'-0"	3'-6"	3'-2"	2'-10"

* STORM BAR SPACING SHALL BE SUCH THAT MAXIMUM SLAT SPAN SHALL NOT BE EXCEEDED



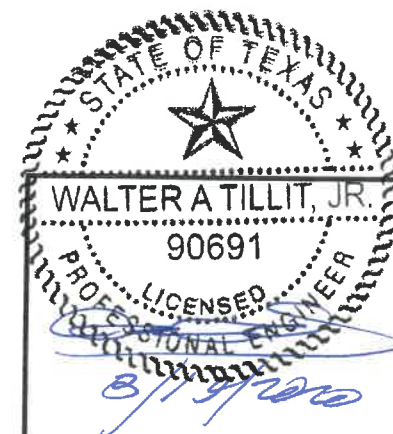
TEXAS DEPARTMENT INSURANCE-2018					
WALTER A. TILLIT Jr. P.E. PROFESSIONAL ENGINEER 6355 N.W. 36 STREET, STE. 305 VIRGINIA GARDENS, FL 33166 PHONE (305) 871-1530 FAX (305) 871-1531 TEXAS LIC. # 90691 FIRM REGISTRATION # F-13790				ROLL-UP SHUTTER/WIND BORNE DEBRIS REGION RLL 55-X AND A-200-H SLATS ROLLAC SHUTTERS OF TEXAS, INC. 5331 ORANGE STREET PEARLAND, TX 77581 PHONE: (800) 880-0922, FAX: (281) 485-0839	
				M.P. DRAWN BY 3/17/2020 DATE 20-043 DRAWING No	
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 10-035	3/17/2020	3		
2			4		

HEADER LOADING CHART

MAXIMUM DESIGN PRESSURE RATING (p. s. f.) AND CORRESPONDING MAXIMUM SPAN "L" (Ft.) FOR A GIVEN TYPE OF HEADER AND STORM BAR HEIGHT (Ft.).

(USE MAXIMUM VALUES BETWEEN POSITIVE AND NEGATIVE LOAD)

MAXIMUM PRESSURE RATING (p.s.f.)	Ⓛ TYPE 1 HEADER 2" x 4" x 1/4"			Ⓜ TYPE 2 HEADER 2" x 4" x 1/8"		Ⓚ TYPE 3 HEADER 1" x 4" x 1/8"	
	STORM BAR HEIGHT			STORM BAR HEIGHT		STORM BAR HEIGHT	
	≤ 7'-0"	7' TO 9'	9' TO 10'	≤ 5'-0"	5' TO 8'	≤ 5'-0"	5' TO 7'
30.0 OR LESS	15'-1"	14'-0"	13'-2"	12'-0"	11'-2"	7'-1"	6'-6"
35.0	14'-9"	13'-0"	12'-4"	12'-0"	10'-4"	7'-1"	6'-6"
40.0	13'-9"	12'-2"	11'-6"	12'-0"	9'-8"	7'-1"	6'-6"
45.0	13'-0"	11'-5"	10'-10"	11'-6"	9'-1"	7'-1"	6'-4"
50.0	12'-4"	10'-10"	10'-4"	10'-11"	8'-8"	7'-1"	6'-0"
55.0	11'-9"	10'-4"	9'-10"	10'-5"	8'-3"	6'-10"	5'-9"
60.0	11'-3"	9'-11"	9'-5"	10'-0"	7'-11"	6'-6"	5'-6"
65.0	10'-10"	9'-6"	9'-0"	9'-7"	7'-7"	6'-3"	5'-4"
70.0	10'-5"	9'-2"	8'-8"	9'-3"	7'-4"	6'-0"	5'-1"
75.0	10'-1"	8'-10"	8'-5"	8'-11"	7'-1"	5'-10"	4'-11"
80.0	9'-9"	8'-7"	8'-2"	8'-8"	6'-10"	5'-8"	4'-9"
85.0	9'-5"	8'-4"	7'-11"	8'-5"	6'-7"	5'-6"	4'-8"
90.0	9'-2"	8'-1"	7'-8"	8'-2"	6'-5"	5'-4"	4'-6"
95.0	8'-11"	7'-11"	7'-6"	7'-11"	6'-3"	5'-2"	4'-5"
100.0	8'-8"	7'-8"	7'-3"	7'-9"	6'-1"	5'-1"	4'-3"
105.0	8'-6"	7'-6"	7'-1"	7'-6"	6'-0"	4'-11"	4'-2"
110.0	8'-4"	7'-4"	6'-11"	7'-4"	5'-10"	4'-10"	4'-1"
115.0	8'-1"	7'-2"	6'-9"	7'-2"	5'-8"	4'-9"	4'-0"
120.0	7'-11"	7'-0"	6'-8"	7'-1"	5'-7"	4'-7"	3'-11"
125.0	7'-9"	6'-10"	6'-6"	6'-11"	5'-6"	4'-6"	3'-10"
130.0	7'-8"	6'-9"	6'-5"	6'-9"	5'-4"	4'-5"	3'-9"
135.0	7'-6"	6'-7"	6'-3"	6'-8"	5'-3"	4'-4"	3'-8"
140.0	7'-4"	6'-6"	6'-2"	6'-6"	5'-2"	4'-3"	3'-7"
145.0	7'-3"	6'-5"	6'-1"	6'-5"	5'-1"	4'-2"	3'-7"
150.0	7'-1"	6'-3"	5'-11"	6'-4"	5'-0"	4'-2"	3'-6"
155.0	7'-0"	6'-2"	5'-10"	6'-2"	4'-11"	4'-1"	3'-5"
160.0	6'-11"	6'-1"	5'-9"	6'-1"	4'-10"	4'-0"	3'-5"
165.0	6'-9"	6'-0"	5'-8"	6'-0"	4'-9"	3'-11"	3'-4"
170.0	6'-8"	5'-11"	5'-7"	5'-11"	4'-8"	3'-11"	3'-3"
175.0	6'-7"	5'-10"	5'-6"	5'-10"	4'-7"	3'-10"	3'-3"
180.0	6'-6"	5'-9"	5'-5"	5'-9"	4'-7"	3'-9"	3'-2"
185.0	6'-5"	5'-8"	5'-4"	5'-8"	4'-6"	3'-9"	3'-2"
190.0	6'-4"	5'-7"	5'-3"	5'-7"	4'-5"	3'-8"	3'-1"
195.0	6'-3"	5'-6"	5'-3"	5'-6"	4'-4"	3'-7"	3'-1"



P.E. SEAL/SIGNATURE/DATE

TEXAS DEPARTMENT INSURANCE-2018					
WALTER A. TILLIT Jr. P.E. PROFESSIONAL ENGINEER 6355 N.W. 36 STREET, STE. 305 VIRGINIA GARDENS, FL 33166 PHONE (305) 871-1530 FAX (305) 871-1531 TEXAS LIC. # 90691 FIRM REGISTRATION # F-13790				ROLL-UP SHUTTER/WIND BORNE DEBRIS REGION RLL 55-X AND A-200-H SLATS M.P. DRAWN BY	
ROLLAC SHUTTERS OF TEXAS, INC. 5331 ORANGE STREET PEARLAND, TX 77581 PHONE: (800) 880-0922, FAX: (281) 485-0839				3/17/2020 DATE	
20-043 DRAWING No				SHEET 12 OF 13	
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 10-035	5/17/2020	3		
2			4		

MULLION LOADING CHART
MAXIMUM DESIGN PRESSURE RATING (p. s. f.) AND CORRESPONDING
MAXIMUM SPAN "L" (Ft.) FOR A GIVEN TYPE OF MULLION AND
MULLION SPACING (Ft.).

(USE MAXIMUM VALUES BETWEEN POSITIVE AND NEGATIVE LOAD)

MAXIMUM DESIGN PRESSURE RATING (psf)	L TYPE 1 MULLION (4"x6"x1/4")			M TYPE 2 MULLION (4"x4"x1/4")		
	MULLION SPACING			MULLION SPACING		
	≤ 4'-0"	4' TO 5'	5' TO 8'	≤ 4'-0"	4' TO 5'	5' TO 8'
30 OR LESS	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	11'-10"
35	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	11'-3"
40	12'-0"	12'-0"	12'-0"	11'-9"	12'-0"	10'-9"
45	12'-0"	12'-0"	12'-0"	11'-4"	12'-0"	10'-4"
50	12'-0"	12'-0"	12'-0"	10'-11"	11'-8"	10'-0"
55	12'-0"	12'-0"	12'-0"	10'-7"	11'-3"	9'-8"
60	12'-0"	12'-0"	12'-0"	10'-3"	11'-0"	9'-5"
65	12'-0"	12'-0"	12'-0"	10'-0"	10'-8"	9'-2"
70	12'-0"	12'-0"	12'-0"	9'-9"	10'-5"	8'-11"
75	12'-0"	12'-0"	12'-0"	9'-7"	10'-2"	8'-8"
80	12'-0"	12'-0"	11'-10"	9'-4"	10'-0"	8'-6"
85	12'-0"	12'-0"	11'-7"	9'-2"	9'-9"	8'-4"
90	12'-0"	12'-0"	11'-4"	9'-0"	9'-7"	8'-2"
95	12'-0"	12'-0"	11'-2"	8'-10"	9'-5"	8'-1"
100	12'-0"	12'-0"	10'-11"	8'-8"	9'-3"	7'-11"
105	11'-10"	12'-0"	10'-9"	8'-6"	9'-1"	7'-9"
110	11'-8"	12'-0"	10'-7"	8'-5"	9'-0"	7'-8"
115	11'-6"	12'-0"	10'-5"	8'-3"	8'-10"	7'-7"
120	11'-4"	12'-0"	10'-4"	8'-2"	8'-8"	7'-5"
125	11'-2"	11'-11"	10'-2"	8'-1"	8'-7"	7'-4"
130	11'-0"	11'-9"	10'-0"	7'-11"	8'-6"	7'-3"
135	10'-11"	11'-7"	9'-11"	7'-10"	8'-4"	7'-2"
140	10'-9"	11'-5"	9'-10"	7'-9"	8'-3"	7'-1"
145	10'-7"	11'-4"	9'-8"	7'-8"	8'-2"	7'-0"
150	10'-6"	11'-2"	9'-7"	7'-7"	8'-1"	6'-11"
155	10'-5"	11'-1"	9'-6"	7'-6"	8'-0"	6'-10"
160	10'-3"	10'-11"	9'-4"	7'-5"	7'-11"	6'-9"
165	10'-11"	9'-9"	7'-8"	8'-2"	7'-4"	5'-9"
170	10'-9"	9'-7"	7'-7"	8'-1"	7'-2"	5'-8"
175	10'-7"	9'-5"	7'-6"	7'-11"	7'-1"	5'-7"
180	10'-5"	9'-4"	7'-4"	7'-10"	7'-0"	5'-6"
185	10'-3"	9'-2"	7'-3"	7'-9"	6'-11"	5'-6"
190	10'-2"	9'-1"	7'-2"	7'-7"	6'-10"	5'-5"
195	10'-0"	9'-0"	7'-1"	7'-6"	6'-9"	5'-4"

SIDE RAIL ANCHOR SCHEDULE. MAXIMUM DESIGN PRESSURE RATING
(p. s. f.) AND CORRESPONDING MAXIMUM ANCHOR SPACING(in) * FOR
SIDE RAILS (P) & (Q) CONNECTION TO POURED CONCRETE OR
CONCRETE BLOCK WALL *

(USE MAXIMUM VALUES BETWEEN POSITIVE AND NEGATIVE LOAD)

SLAT TYPE 1 (A)
(RLL 55-X)

Design PRESSURE RATING (psf)	SUBSTRATE	FASTENERS' SPACING "spcg" (in o.c.)					
		P (RLL-40) SIDE RAIL			Q (RLL-1) SIDE RAIL		
		WALL MOUNT	INSIDE MOUNT	BUILD-OUT MOUNT	WALL MOUNT	INSIDE MOUNT	BUILD-OUT MOUNT
45 OR LESS	POURED CONCRETE	8"	8"	6"	8"	7.5"	6"
	CONCRETE BLOCK	7.5"	5.5"	6"	7.5"	6"	6"
> 45 to 72	POURED CONCRETE	8"	8"	6"	8"	7.5"	6"
	CONCRETE BLOCK	5.5"	4"	6"	5.5"	5"	6"


SLAT TYPE 2 (C)
(A-200-H)

Design PRESSURE RATING (psf)	SUBSTRATE	FASTENERS' SPACING "spcg" (in o.c.)					
		P (RLL-40) SIDE RAIL			Q (RLL-1) SIDE RAIL		
		WALL MOUNT	INSIDE MOUNT	BUILD-OUT MOUNT	WALL MOUNT	INSIDE MOUNT	BUILD-OUT MOUNT
80 OR LESS	POURED CONCRETE	7"	8"	8"	7"	8"	8"
	CONCRETE BLOCK	7"	5.5"	8"	7"	6.5"	8"
> 80 to 120	POURED CONCRETE	7"	8"	8"	7"	8"	8"
	CONCRETE BLOCK	6.5"	4.5"	8"	6.5"	5.5"	8"
> 120 to 150	POURED CONCRETE	7"	8"	8"	7"	8"	8"
	CONCRETE BLOCK	5"	4"	8"	5"	4.5"	8"
> 150 to 195	POURED CONCRETE	6"	6"	6"	6"	6"	6"
	CONCRETE BLOCK	4.5"	3.5"	6"	4.5"	4"	6"

* MAXIMUM ANCHOR SPACING (in.) AT SIDE RAILS VERSUS EDGE DISTANCE = E.D.

MAXIMUM ANCHOR SPACING IS VALID FOR 3" EDGE DISTANCE.

NOTES : REFER TO ELEVATIONS ON SHEET 1A OF 13
 1- FOR MULLIONS INSTALLED W/O STORM BARS
 A) MULLION SPACING SHALL BE SUCH THAT MAXIMUM SLAT SPAN SHALL NOT BE EXCEEDED
 2- FOR MULLIONS INSTALLED W/ STORM BARS & HEADERS
 A) MULLION SPACING SHALL BE SUCH THAT MAXIMUM HEADER SPAN SHALL NOT BE EXCEEDED
 B) STORM BAR SPACING SHALL BE SUCH THAT MAXIMUM SLAT SPAN SHALL NOT BE EXCEEDED


 WALTER A. TILLIT, JR.
 90691
 LICENSED PROFESSIONAL ENGINEER
 P.E. SEAL/SIGNATURE/DATE

TEXAS DEPARTMENT INSURANCE-2018					
WALTER A. TILLIT Jr. P.E. PROFESSIONAL ENGINEER 6355 N.W. 36 STREET, STE. 305 VIRGINIA GARDENS, FL 33166 PHONE (305) 871-1530 FAX (305) 871-1531 TEXAS LIC. # 90691 FIRM REGISTRATION # F-13790			ROLL-UP SHUTTER/WIND BORNE DEBRIS REGION RLL 55-X AND A-200-H SLATS		M.P. DRAWN BY
			ROLLAC SHUTTERS OF TEXAS, INC. 5331 ORANGE STREET PEARLAND, TX 77581 PHONE: (800) 880-0922, FAX: (281) 485-0839		3/17/2020 DATE
					20-043 DRAWING No
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 10-035	3/17/2020	3		
2			4		