

GENERAL NOTES:

1. ROLL-UP SHUTTER SHOWN ON THIS PRODUCT EVALUATION DOCUMENT (P.E.D.) HAS BEEN VERIFIED FOR COMPLIANCE IN ACCORDANCE WITH THE 2023 (8th EDITION) OF THE FLORIDA BUILDING CODE. THIS ROLL-UP SHUTTER SHALL NOT BE INSTALLED AT HIGH VELOCITY HURRICANE ZONES (MIAMI-DADE/BROWARD COUNTIES).

DESIGN WIND LOADS SHALL BE DETERMINED AS PER SECTION 1609 OF THE ABOVE MENTIONED CODE, FOR A BASIC WIND SPEED AS REQUIRED BY THE JURISDICTION WHERE THESE SHUTTERS WILL BE INSTALLED FOR A DIRECTIONALITY FACTOR $K_d=0.85$. USING ASCE 7-22 SHALL NOT EXCEED THE MAXIMUM (A.S.D.) DESIGN PRESSURE RATINGS INDICATED ON SHEETS 10, 11, 15 THRU 19.

IN ORDER TO VERIFY THE ABOVE CONDITION, ULTIMATE DESIGN WIND LOADS DETERMINED PER ASCE 7-22 SHALL BE FIRST REDUCED TO A.S.D. DESIGN WIND LOADS BY MULTIPLYING THEM BY 0.6 IN ORDER TO TO COMPARE THESE W/ MAX. (A.S.D) DESIGN PRESSURE RATINGS INDICATED ON SHEETS 10, 11, 15 THRU 19.

IN ORDER TO VERIFY THAT COMPONENTS AND ANCHORS ON THIS P.E.D. AS TESTED WERE NOT OVER STRESSED, A 33% INCREASE IN ALLOWABLE STRESS FOR WIND LOADS WAS NOT USED IN THEIR ANALYSIS. FASTENERS SPACING TO WOOD HAS BEEN DETERMINED IN ACCORDANCE WITH N.D.S. 2018. ROLL-UP SHUTTER'S ADEQUACY FOR IMPACT (L.M.I) AND CYCLIC RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1609.1.2 OF THE ABOVE MENTIONED CODE AS PER FENESTRATION TESTING LAB. REPORTS # 5908, 5905 AND 6235 AS PER ASTM E 1886, E 1996 AND E 330 STANDARDS, QUALIFYING INSTALLATIONS FOR WIND ZONES 1, 2, 3 & 4. MISSILE TYPE D, APPLICABLE TO BASIC PROTECTION ONLY, INSTALLATIONS AT NON ESSENTIAL FACILITIES AS DEFINED BY ASTM E 1996 SEE NOTES *, Δ ON SHEETS 12 & 18 FOR ADDITIONAL LIMITATIONS.

2. ALL ALUMINUM EXTRUSIONS SHALL BE AS INDICATED ON SHEET 2.
3. EVERY OTHER SLAT SHALL INCLUDE WIND LOCKS AT EACH END (SEE COMPONENTS SHEET). EVERY SLAT (A) ADJACENT AND ABOVE BOTTOM SLAT (A) MUST INCLUDE WIND LOCKS.
4. ALL SCREWS (EXCEPT COMPONENT (C)) TO BE STAINLESS STEEL 304 OR 316 SERIES WITH 50 ksi YIELD STRENGTH AND 90 ksi TENSILE STRENGTH OR CORROSION RESISTANT COATED CARBON STEEL AS PER DIN 50018. ALL S.D.S. ARE TEK SCREWS MANUFACTURED BY ITW BUILDEX & SHALL COMPLY W/ FLORIDA BUILDING CODE SECTION 2411.3.3.4.
5. BOLTS TO BE ASTM A-307, GALVANIZED OR AISI 304 OR 316 SERIES STAINLESS STEEL WITH 36 ksi MINIMUM YIELD STRENGTH.
6. ANCHORS TO WALL FOR (B1), (B2), (B3) & (B4) SIDE RAILS SHALL BE AS FOLLOWS: (UNLESS OTHERWISE NOTED)

- (A) TO EXISTING POURED CONCRETE: MIN. $f'_c = 2899$ p.s.i. COMPRESSIVE STRENGTH.
- 5/16"Ø CARBON STEEL TAPCON XL ANCHORS AS MANUFACTURED BY ITW BUILDEX, INC.
- A.1) MINIMUM EMBEDMENT OF 5/16" TAPCON XL ANCHORS INTO POURED CONCRETE SHALL BE 2 1/4". NO EMBEDMENT INTO STUCCO SHALL BE CONSIDERED AS PART OF THE REQUIRED EMBEDMENT.
- A.2) MINIMUM EDGE DISTANCE (E.D.) OF TAPCON XL ANCHORS INTO POURED CONCRETE SHALL BE 4". EDGE DISTANCE IS BEYOND ANY FINISH MATERIAL.
- A.3) IN CASE THAT PRECAST STONE, PRECAST CONCRETE OR BRICK PANELS, VENEER OR PAVERS BE FOUND ON THE EXISTING WALL, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN SUBSTRATE BEHIND SUCH PANELS. MINIMUM EMBEDMENT SHALL BE AS INDICATED ON NOTE A.1 ABOVE.
- (B) TO EXISTING GROUT FILLED CELL CONCRETE BLOCK WALL: ASTM C-90
- 5/16"Ø CARBON STEEL TAPCON XL ANCHORS, AS MANUFACTURED BY ITW BUILDEX, INC.
- B.1) MINIMUM EMBEDMENT OF 5/16" TAPCON XL ANCHORS, INTO THE GROUT FILLED CELL CONCRETE BLOCK UNIT SHALL BE 2 1/4". NO EMBEDMENT INTO STUCCO SHALL BE CONSIDERED AS PART OF THE REQUIRED EMBEDMENT.
- B.2) MINIMUM EDGE DISTANCE (E.D.) OF 5/16" TAPCON XL ANCHORS INTO GROUT FILLED CELL CONCRETE BLOCK SHALL BE 4". EDGE DISTANCE IS BEYOND ANY FINISH MATERIAL.
- B.3) IN CASE THAT PRECAST STONE, PRECAST CONCRETE OR BRICK PANELS, VENEER OR PAVERS BE FOUND ON THE EXISTING WALL, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN SUBSTRATE BEHIND SUCH PANELS. MINIMUM EMBEDMENT SHALL BE AS INDICATED ON NOTE B.1 ABOVE.

- (C) TO EXISTING WOOD FRAME BUILDING: SOUTHERN PINE #2 W/ $G=0.55$ MIN., DOUGLAS FIR-SOUTH ($G=0.46$) OR SPRUCE-PINE-FIR SOUTH, ($G=0.36$). SHEATHING TO BE MIN. 1/2" PLYWOOD OR 7/16" O.S.B. WITH LIMITATIONS AS PER SHEET 18.
- 5/16"Ø CARBON STEEL ULTRACON ANCHORS, AS MANUFACTURED BY ELCO CONSTRUCTION PRODUCTS, INC.

- C.1) MINIMUM PENETRATION OF ULTRACON ANCHORS, INTO THE WOOD FRAME UNIT SHALL BE 2 1/2". (MUST INCLUDE 2" THREADED LENGTH) NO PENETRATION INTO STUCCO SHALL BE CONSIDERED AS PART OF THE REQUIRED PENETRATION.
- C.2) MINIMUM EDGE DISTANCE (E.D.) OF ULTRACON ANCHORS, INTO WOOD SHALL BE 2". EDGE DISTANCE IS BEYOND ANY FINISH MATERIAL.
- C.3) IN CASE THAT PRECAST STONE, PRECAST CONCRETE OR BRICK PANELS, VENEER OR PAVERS BE FOUND ON THE EXISTING WALL, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN SUBSTRATE BEHIND SUCH PANELS. MINIMUM THREADED PENETRATION SHALL BE AS INDICATED ON NOTE C.1 ABOVE.
7. ANCHORS SHALL BE INSTALLED FOLLOWING ALL OF THE RECOMMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER.
8. ANCHORS REQUIRED FOR MULLION CONNECTIONS SHALL BE AS SPECIFIED ON APPLICABLE SECTIONS SHOWN ON SHEETS 13 & 14 RESPECTIVELY.

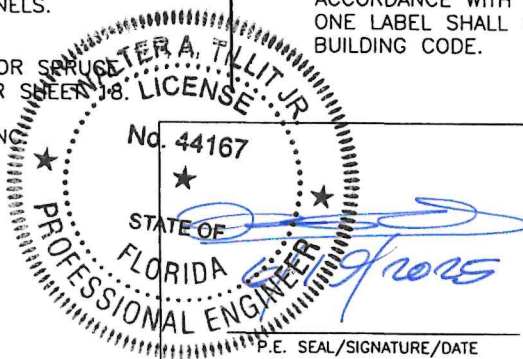
-3/4"Ø KWIK BOLT TZ EXPANSION ANCHOR TO BE AS MANUFACTURED BY HILTI, INC.

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

ANCHOR	SPACING @ 100%	EDGE DISTANCE @ 100%	EMBEDMENT	
			CONCRETE	GROUT FILLED OR CONCRETE BLOCK
KWIK BOLT TZ	27"	9"	4 3/4" (3000 psi)	-

9. THE INSTALLATION CONTRACTOR IS TO SEAL/CAULK ALL SHUTTER COMPONENT EDGES WHICH REMAIN IN CONTINUOUS CONTACT WITH THE BUILDING TO PREVENT WIND/RAIN INTRUSION. CAULK AND SEAL SHUTTER TRACKS ALL AROUND FULL LENGTH.
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, GROUT FILLED CELL CONCRETE BLOCK OR WOOD FRAME BUILDINGS.
11. ROLL-UP SHUTTERS INSTALLATION SHALL COMPLY WITH SPECS INDICATED IN THIS DRAWING PLUS ANY BUILDING AND ZONING REGULATIONS PROVIDED BY THE JURISDICTION WHERE PERMIT IS APPLIED TO.
12. ROLL-UP MECHANISM NOT PART OF THIS APPROVAL, BUT SHALL BE CERTIFIED BY AN INDEPENDENT TESTING AGENCY.
13. (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 REGISTERED ENGINEER OR 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.
14. SHUTTER MANUFACTURER'S LABEL SHALL BE LOCATED ON A READILY VISIBLE LOCATION AT ROLL-UP SHUTTER IN ACCORDANCE WITH SECTION 1709.9.3 OF FLORIDA BUILDING CODE. ONE LABEL SHALL BE PLACED FOR EVERY OPENING. LABELING TO COMPLY WITH SECTION 1709.9.2 OF THE FLORIDA BUILDING CODE.

THIS DRAWING SHALL ONLY BE USED TO OBTAIN PERMITS IN THE STATE OF FLORIDA



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TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th St., Ste. 305 - VIRGINIA GARDENS, FL 33166
Phone : (305) 871-1530 , Fax : (305) 871-1531
e-mail: tilteco@aol.com
CA-0006719
WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. # 44167

FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

RLL 55-X SLAT END RETENTION ROLL-UP SHUTTER

ROLLAC SHUTTER OF TEXAS, INC.

5331 ORANGE STREET
PEARLAND, TX. 77581
PH:(281) 485-1911, FAX:(281) 485-0839

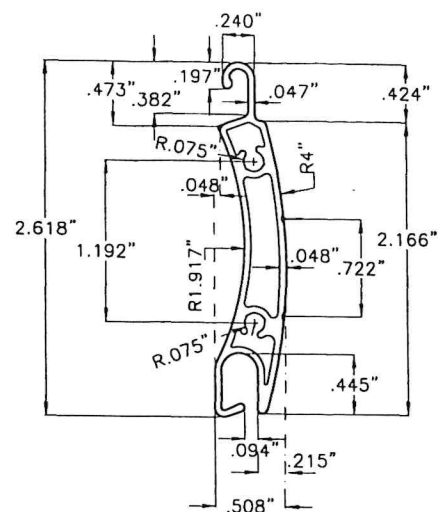
REV #	DESCRIPTION	DATE	REV #	DESCRIPTION	DATE
1	OLD 20-242	06/19/25	3		
2			4		

W.H. DRAWN BY

06/19/2025 DATE

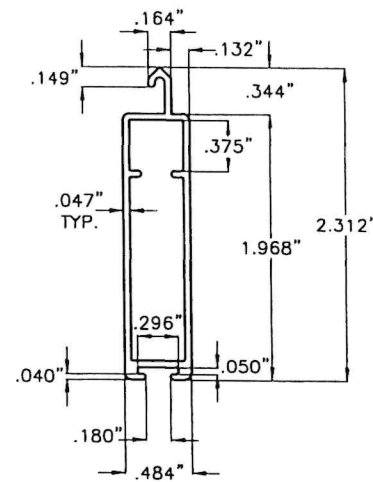
25-052 DRAWING N°

SHEET 1 OF 19



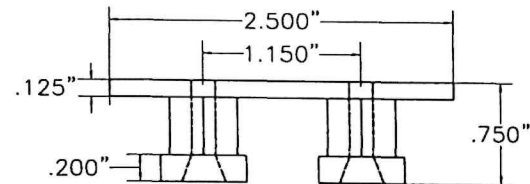
(A) SLAT

6061-T6 OR 6005-T5 ALUMINUM ALLOY
SCALE: 3/4" = 1"



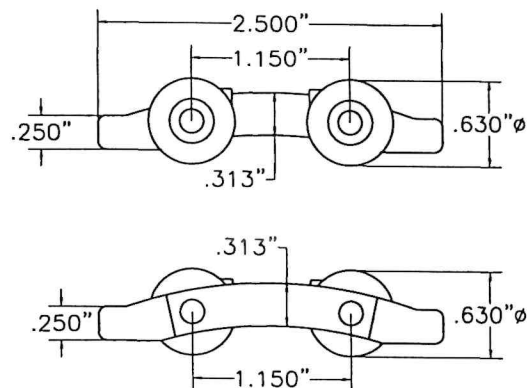
(A1) BOTTOM SLAT

6063-T6 ALUMINUM ALLOY
SCALE: 3/4" = 1"



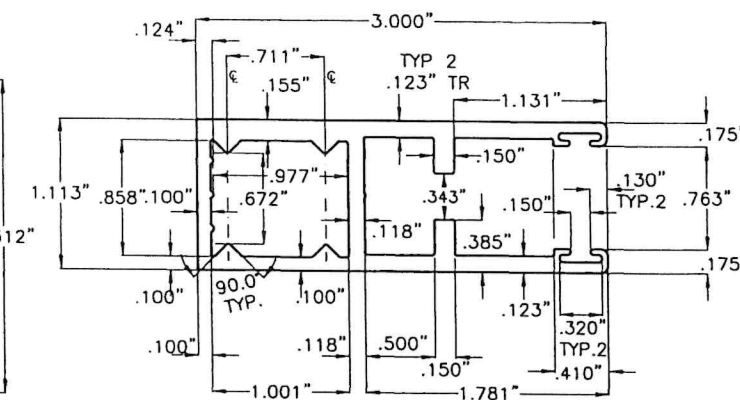
(C) WIND LOCK:

RIGID NYLON Ft_u = 5001 psi.
SCALE: 3/4" = 1"

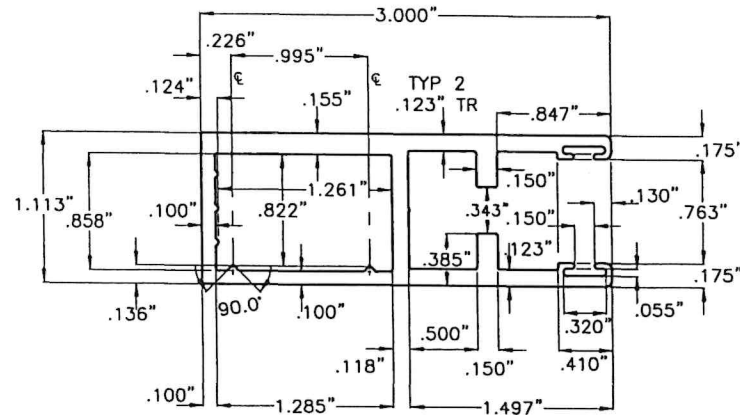


(C1) WIND LOCK SCREW:

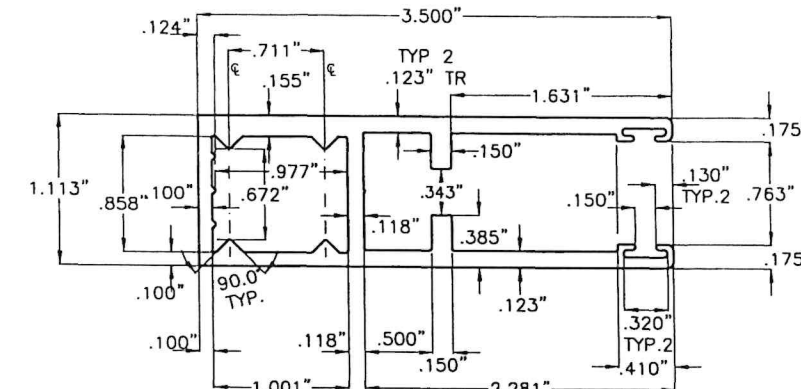
(2) #8-18 x 2 1/2" F.H. S.S. AISI 410 SERIES,
COATED WITH ROLLAC-1000 CHROMED-FREE
ANTI-CORROSION COATING SYSTEM; MANUFACTURED
AND APPLIED BY SUN BELT COATING, LLC
(Min. F_y = 121.1 ksi, Min. F_{tu} = 164.6 ksi)
SCALE: 3/4" = 1"



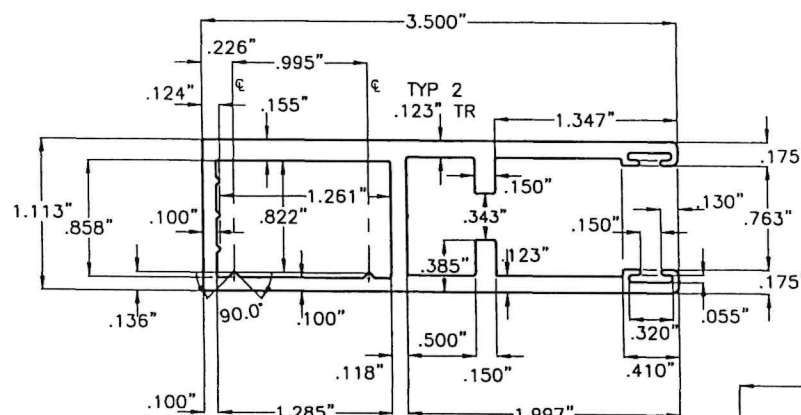
(B1) TYPE 1 SIDE RAIL



(B2) TYPE 2 SIDE RAIL



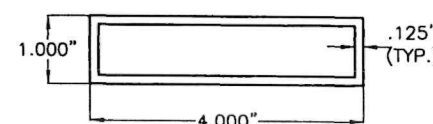
(B3) TYPE 3 SIDE RAIL



(B4) TYPE 4 SIDE RAIL

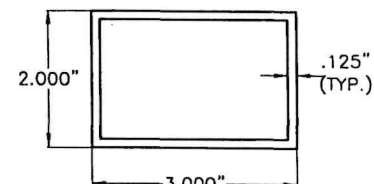
SIDE RAILS:

6005-T5 ALUMINUM ALLOY
SCALE: 3/4" = 1"



(E1) ALUMINUM BUILD-OUT TUBE

6063-T6 ALUMINUM ALLOY
SCALE: 3/8" = 1"

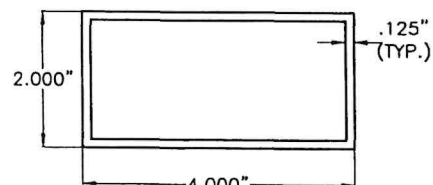


(E2) ALUMINUM BUILD-OUT TUBE

6063-T6 ALUMINUM ALLOY
SCALE: 3/8" = 1"

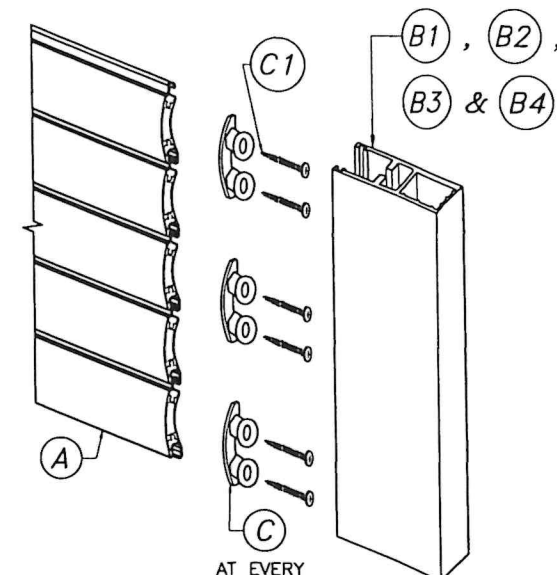
(D) ALUMINUM INSIDE MOUNT ANGLE

6063-T6 ALUMINUM ALLOY
SCALE: 3/8" = 1"



(E) ALUMINUM BUILD-OUT TUBE

6063-T6 ALUMINUM ALLOY
SCALE: 3/8" = 1"



AT EVERY
OTHER SLAT

SLAT ASSEMBLY DETAIL:
N.T.S.

(E2) ALUMINUM BUILD-OUT TUBE

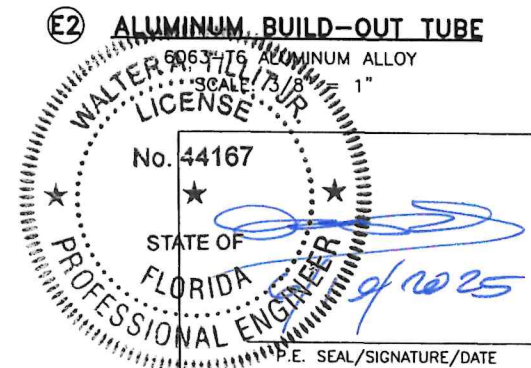
6063-T6 ALUMINUM ALLOY
SCALE: 3/8" = 1"

(F) TYPE 1 MULLION

6061-T6 ALUMINUM ALLOY
SCALE: 3/8" = 1"

(G) TYPE 2 MULLION

6061-T6 ALUMINUM ALLOY
SCALE: 3/8" = 1"



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TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th. St., Ste. 305 - VIRGINIA GARDENS, FL 33166
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e-mail: tilteco@aol.com
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WALTER A. TILLIT Jr., P.E.
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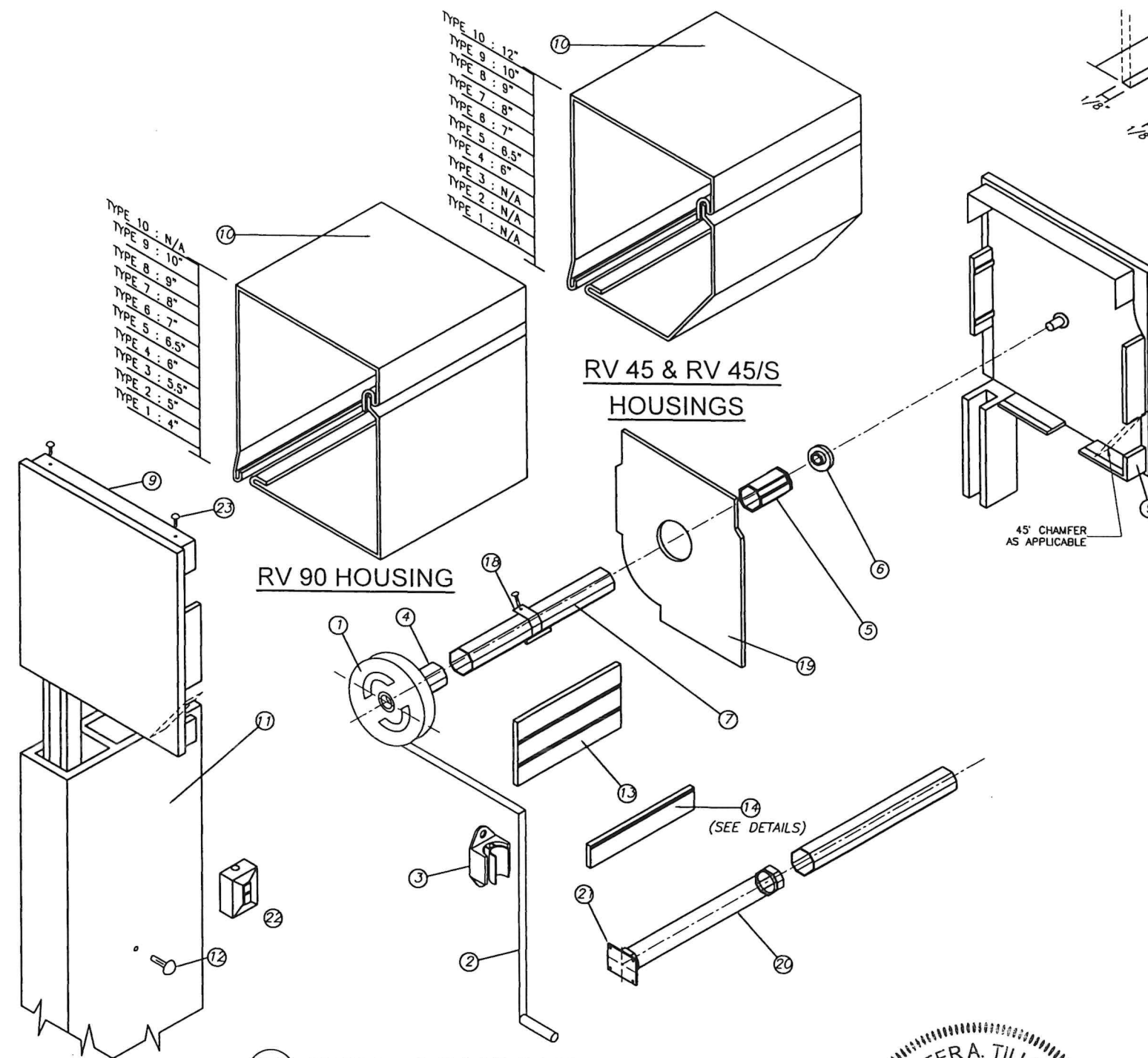
REV. N°	DESCRIPTION	DATE	REV. N°	DESCRIPTION	DATE
1	OLD 20-242	08/19/23	3		
2			4		

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SHEET 2 OF 19



(H) SIDE CAPS:

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 - SIDE/END CAP *
- ⑨ - HOUSING(FRONT & BOTTOM), 0.040" THICK
- ⑩ - SIDE RAIL
- ⑪ - PLUG-BUTTONS
- ⑫ - ALUMINUM SLATS
- ⑬ - BASE SLAT
- ⑭ - PLASTIC STOPS(OPTIONAL)
- ⑮ - SIDE LOCKS(OPTIONAL)
- ⑯ - STAPLES(OPTIONAL)
- ⑰ - SPRINGLOCK HANGER
- ⑱ - SAFETY PLATES

ADDITIONAL COMPONENTS FOR MOTORIZED OPERATED SYSTEM

- ⑲ - TUBULAR MOTOR
- ⑳ - MOTOR BRACKET
- ㉑ - SWITCH

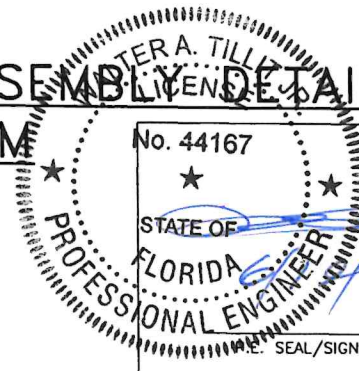
FASTENERS

- ㉒ - 3/16" ALUMINUM POP RIVETS(6 REQ'D EA. SIDE CAP) : 2 @ TOP, 2 @ REAR, 2 @ BOTTOM

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

(H) BOX COMPONENTS AND ASSEMBLY DETAIL

(SEE NOTE 12 ON SHEET 1)



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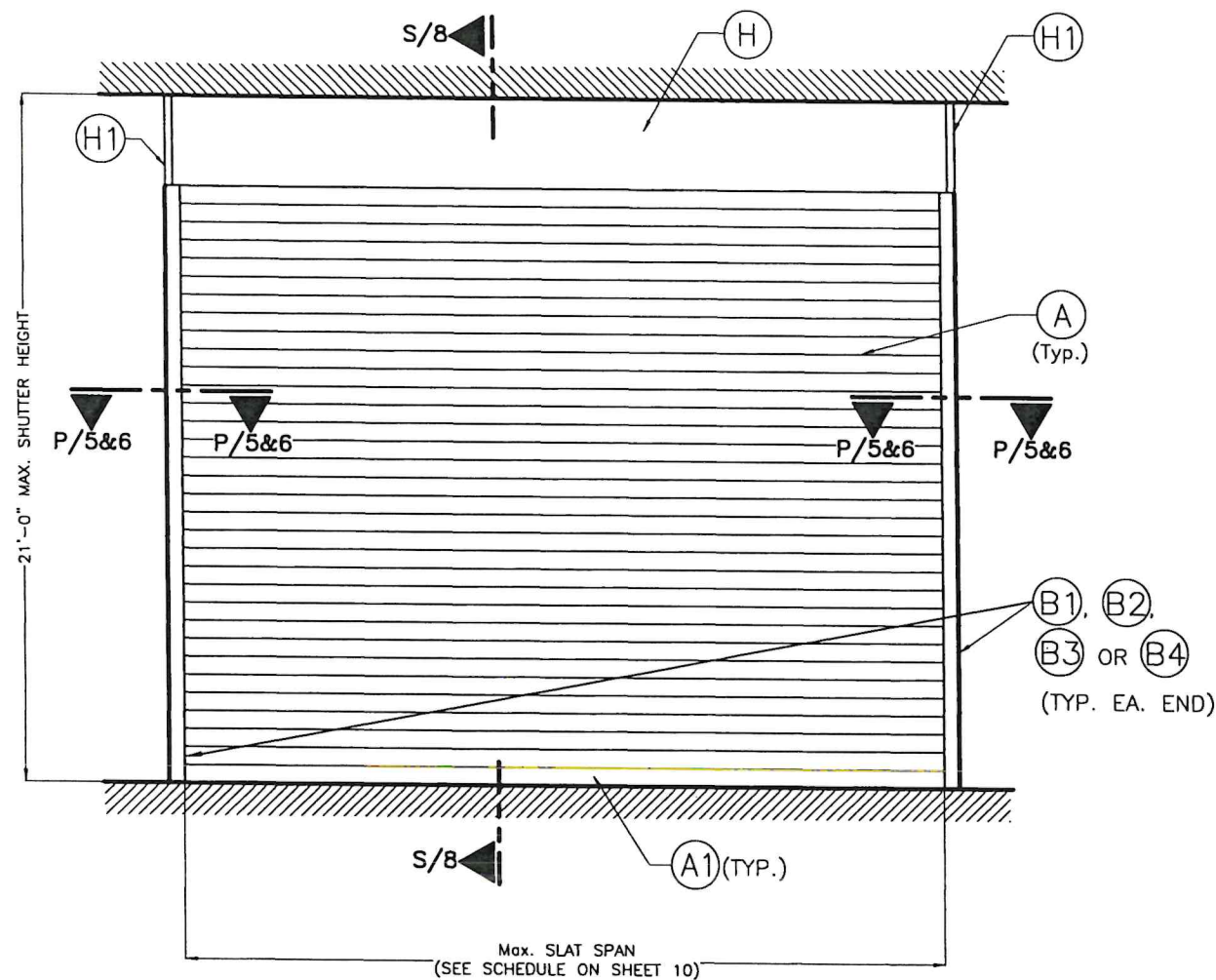
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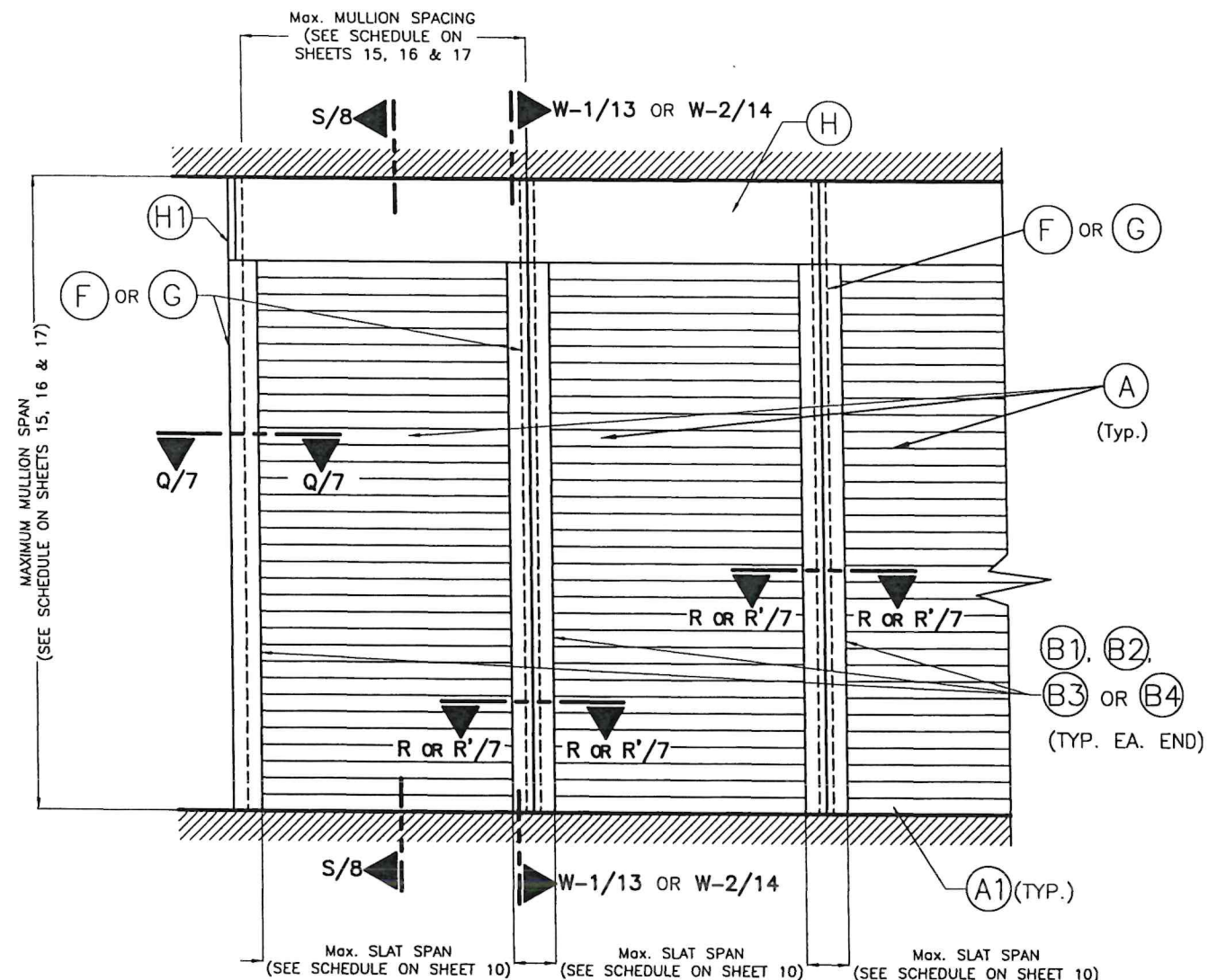
SHEET 3 OF 19

REV N°	DESCRIPTION	DATE	REV N°	DESCRIPTION	DATE
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2			4		



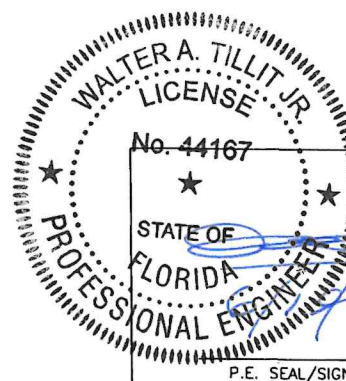
**TYPICAL SINGLE UNIT ELEVATION:
INSTALLATION INTO POURED CONCRETE,
GROUT FILLED CELL CONCRETE BLOCK & WOOD**

NOTES: SEE SHEETS 2 & 3 FOR
COMPONENTS NOMENCLATURE.
N.T.S



**TYPICAL CONSECUTIVE SINGLE UNIT ELEVATION W/ MULLIONS:
INSTALLATION INTO POURED CONCRETE**

NOTES: SEE SHEETS 2 & 3 FOR COMPONENTS NOMENCLATURE.
N.T.S



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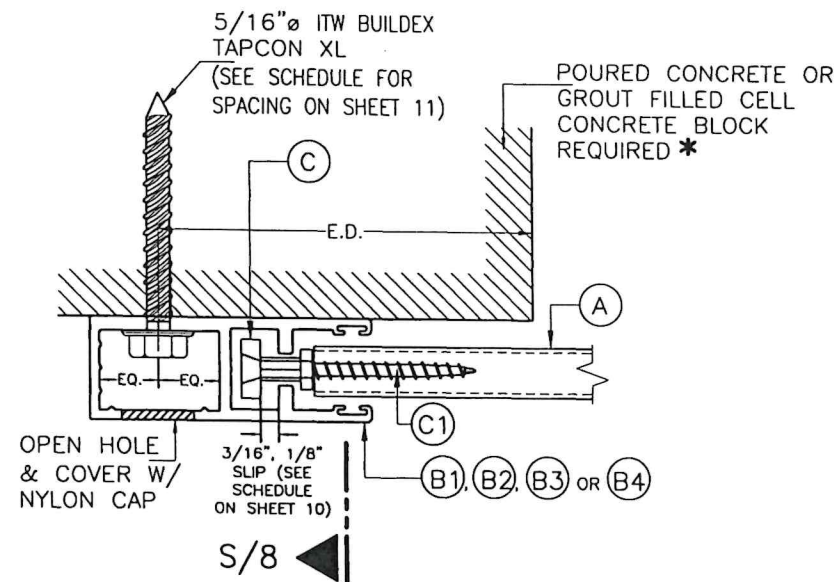
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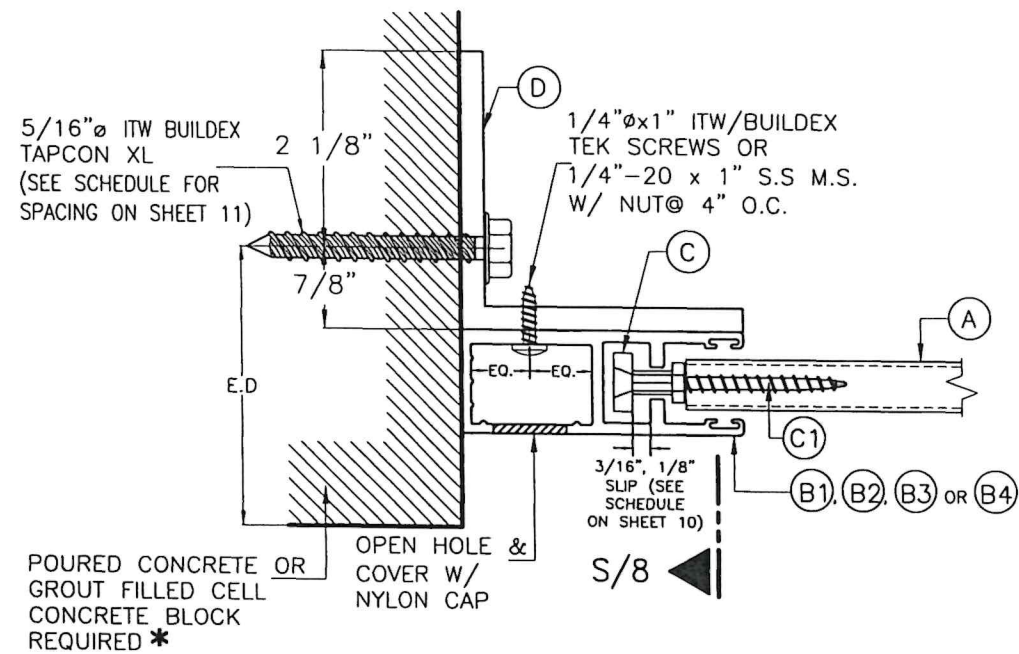
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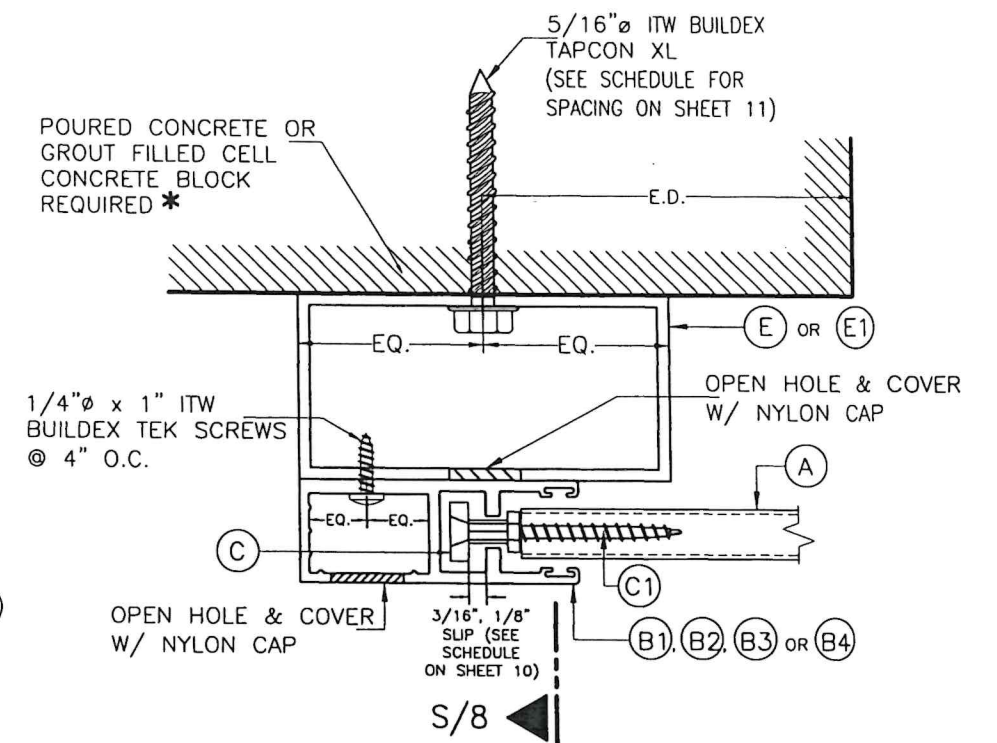
SHEET 4 OF 19



SECTION P-P (1):
WALL MOUNT



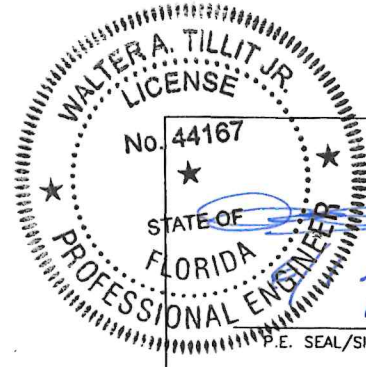
SECTION P-P (2):
INSIDE WALL MOUNT



SECTION P-P (3):
BUILD-OUT MOUNT

SIDE RAIL CONNECTIONS TO POURED CONCRETE OR GROUT FILLED CELL CONCRETE BLOCK

SCALE: 1/2" = 1"



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SHEET 5 OF 19

REV N°	DESCRIPTION	DATE	REV N°	DESCRIPTION	DATE
1	OLD 20-242	06/19/23	3		
2			4		

(2) 2"x4" OR 2"x6" STUDS
REQ'D. @ JAMB. (SEE NOTE
(*) BELOW.

MIN. 1/2" PLYWOOD OR
7/16" O.S.B. REQ'D. (SEE
NOTE (*) BELOW.

5/16"Ø ELCO CONSTRUCTION
PRODUCTS ULTRACON ANCHORS (SEE
SCHEDULE FOR SPACING ON SHEET 19)

OPEN HOLE
& COVER W/
NYLON CAP

3/16", 1/8"
SLIP (SEE
SCHEDULE
ON SHEET 18)

S/8

SECTION P-P (1):
WALL MOUNT

(2) 2"x4" OR 2"x6" STUDS
REQ'D. @ JAMB. (SEE NOTE
(*) BELOW.

MIN. 1/2" PLYWOOD OR
7/16" O.S.B. REQ'D. (SEE
NOTE (*) BELOW.

5/16"Ø ELCO CONSTRUCTION
PRODUCTS ULTRACON ANCHORS (SEE
SCHEDULE FOR SPACING ON SHEET 19)

1/4"Ø x 1" ITW BUILDDEX
TEK SCREWS
@ 4" O.C.

3/4" 2 1/4"

OPEN HOLE & COVER
W/ NYLON CAP

OPEN HOLE
& COVER W/
NYLON CAP

3/16", 1/8"
SLIP (SEE
SCHEDULE
ON SHEET 18)

S/8

SECTION P-P (2):
BUILD-OUT MOUNT

SIDE RAIL CONNECTIONS TO WOOD WALL

(*) SEE LIMITATIONS FOR SHUTTER SPAN AND
DESIGN PRESSURE RATING ON SHEET 18.



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TILTECO INC.
TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th St., Ste. 305 - VIRGINIA GARDENS, FL 33166
Phone: (305) 871-1530, Fax: (305) 871-1531
e-mail: tilteco@aol.com
CA-0006719
WALTER A. TILLIT JR., P.E.
FLORIDA Lic. # 44167

FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

RLL 55-X SLAT END RETENTION
ROLL-UP SHUTTER

ROLLAC SHUTTER OF TEXAS, INC.

5331 ORANGE STREET
PEARLAND, TX. 77581
PH: (281) 485-1911, FAX: (281) 485-0839

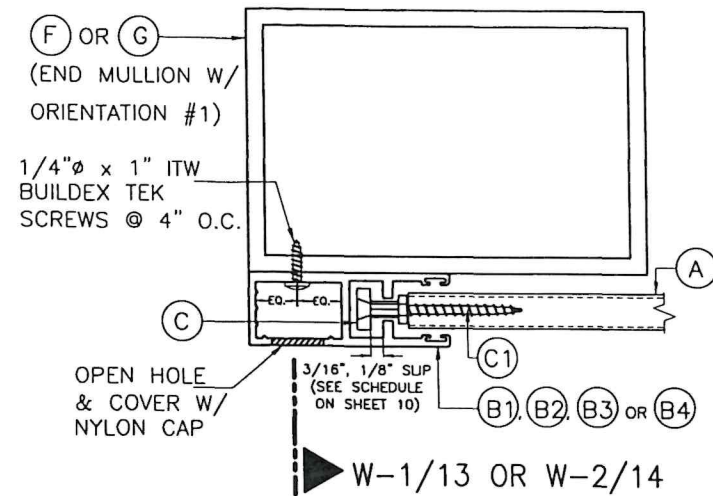
W.H
DRAWN BY

06/19/2025
DATE

25-052
DRAWING N°

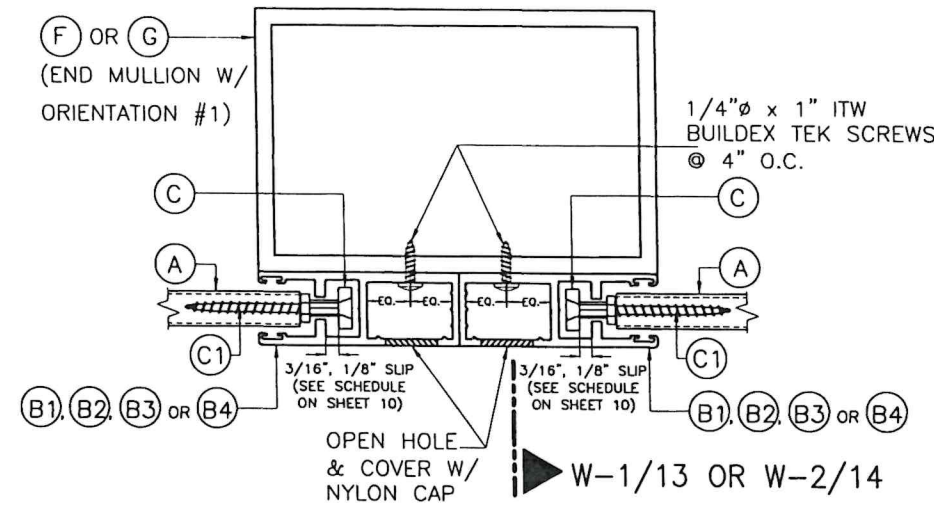
SHEET 6 OF 19

REV N°	DESCRIPTION	DATE	REV N°	DESCRIPTION	DATE
1	OLD 20-242	06/19/25	3		
2			4		



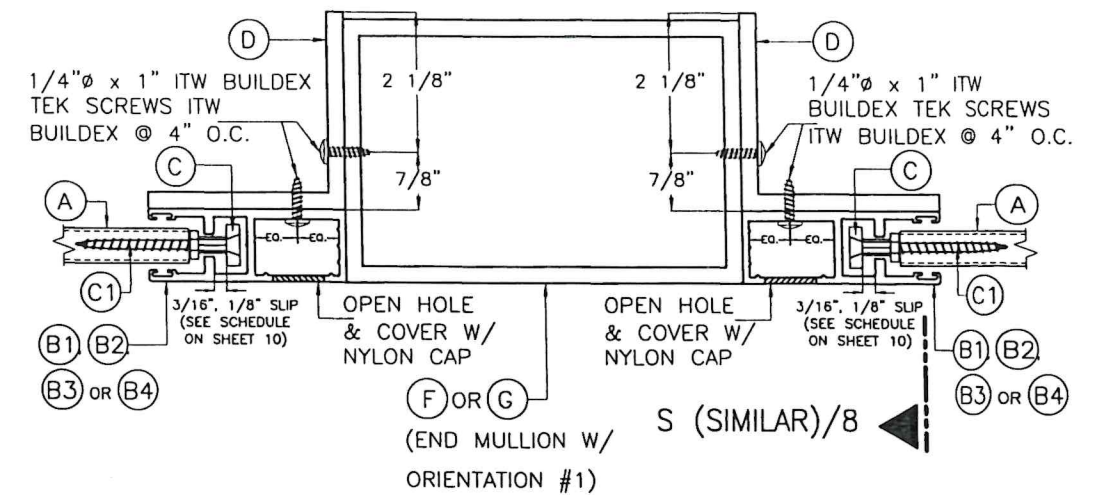
SECTION Q-Q:

MULLION MOUNT (FACE MOUNT)



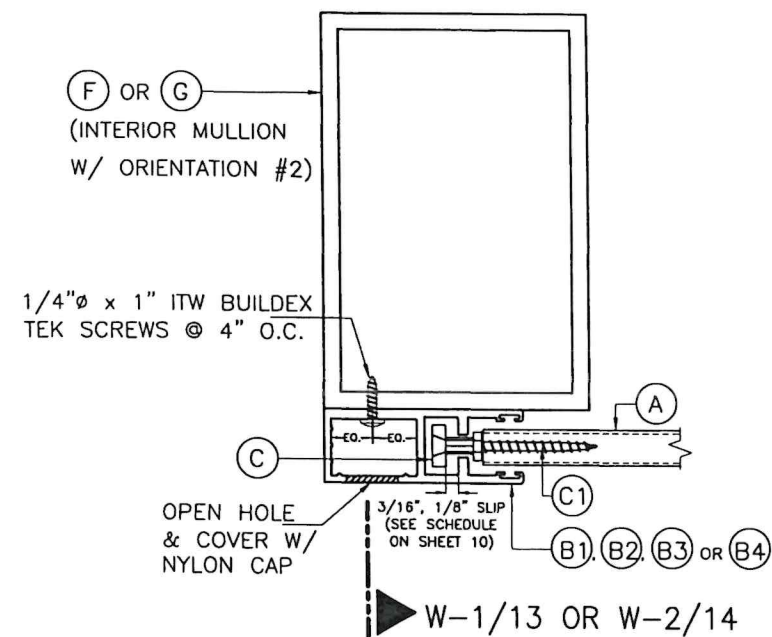
SECTION R-R:

MULLION MOUNT (FACE MOUNT)



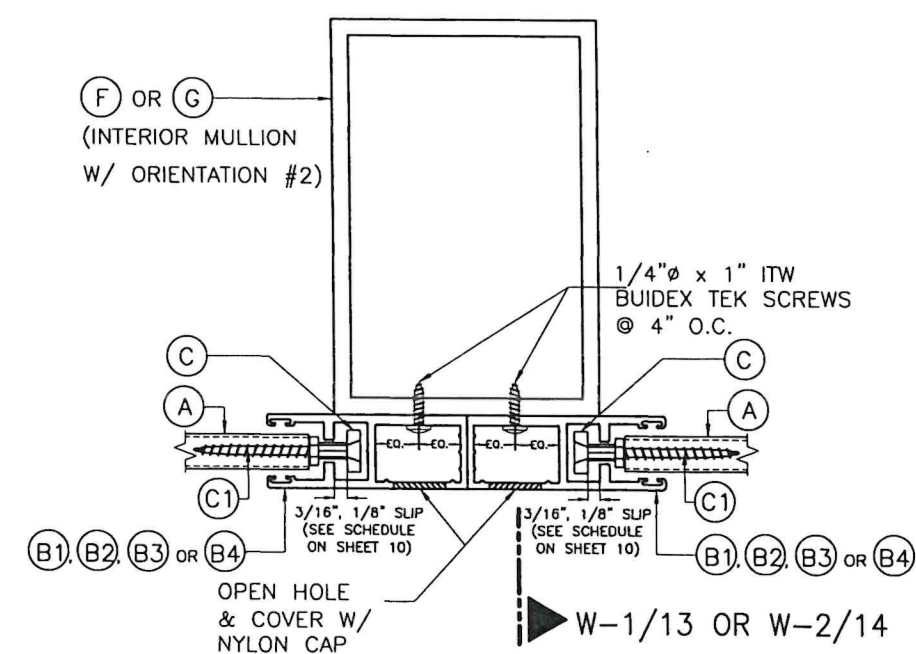
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MULLION MOUNT (INSIDE MOUNT)



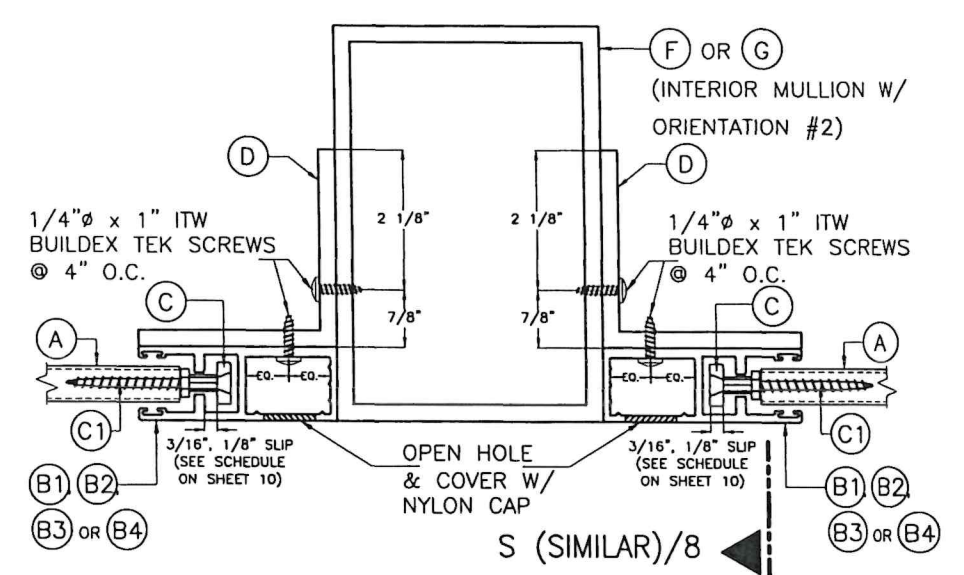
SECTION Q-Q:

MULLION MOUNT (FACE MOUNT)



SECTION R-R:

MULLION MOUNT (FACE MOUNT)

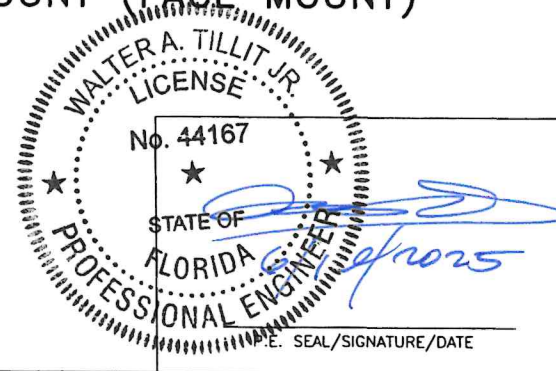


SECTION R'-R':

MULLION MOUNT (INSIDE MOUNT)

SIDE RAIL CONNECTION TO MULLIONS

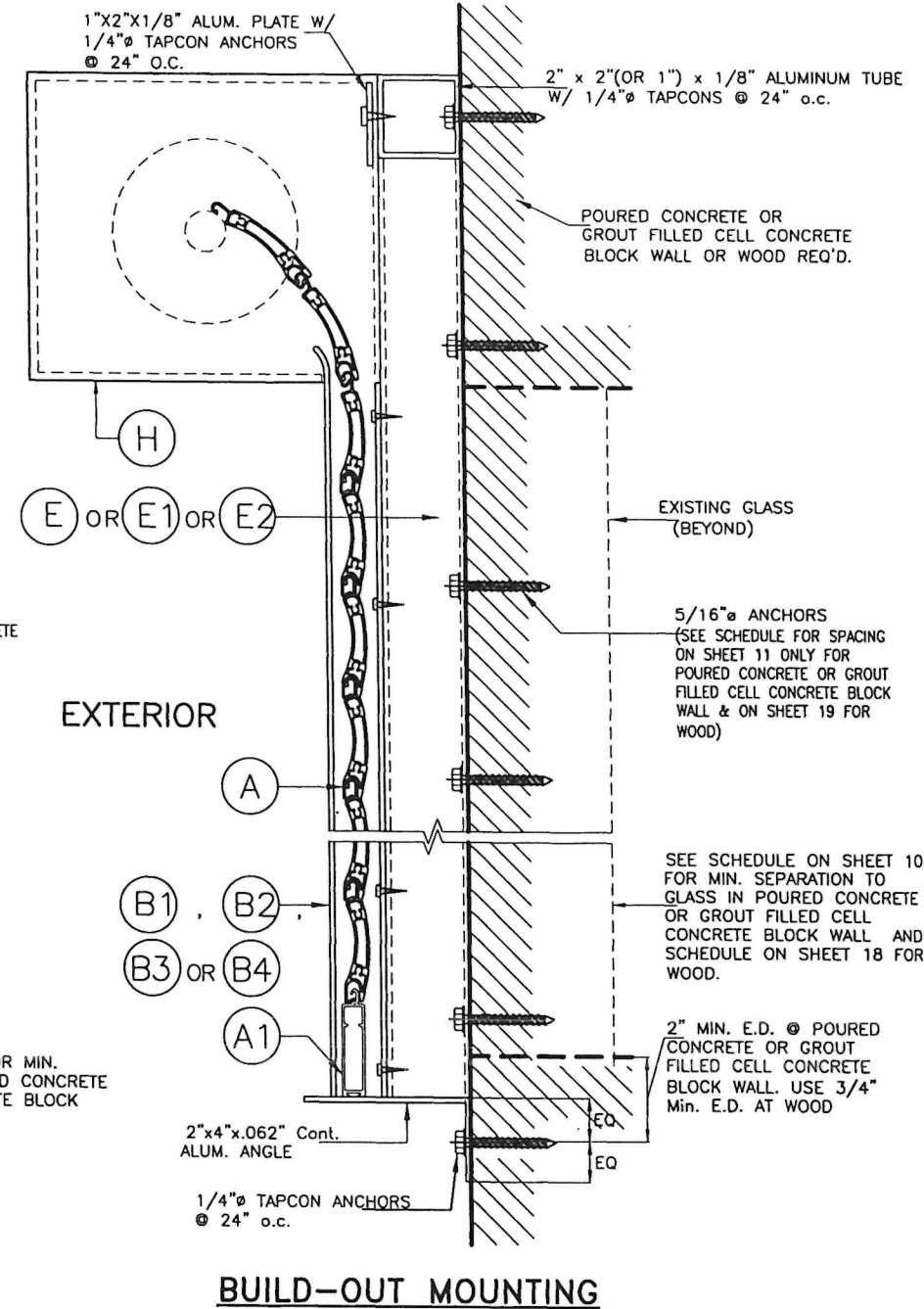
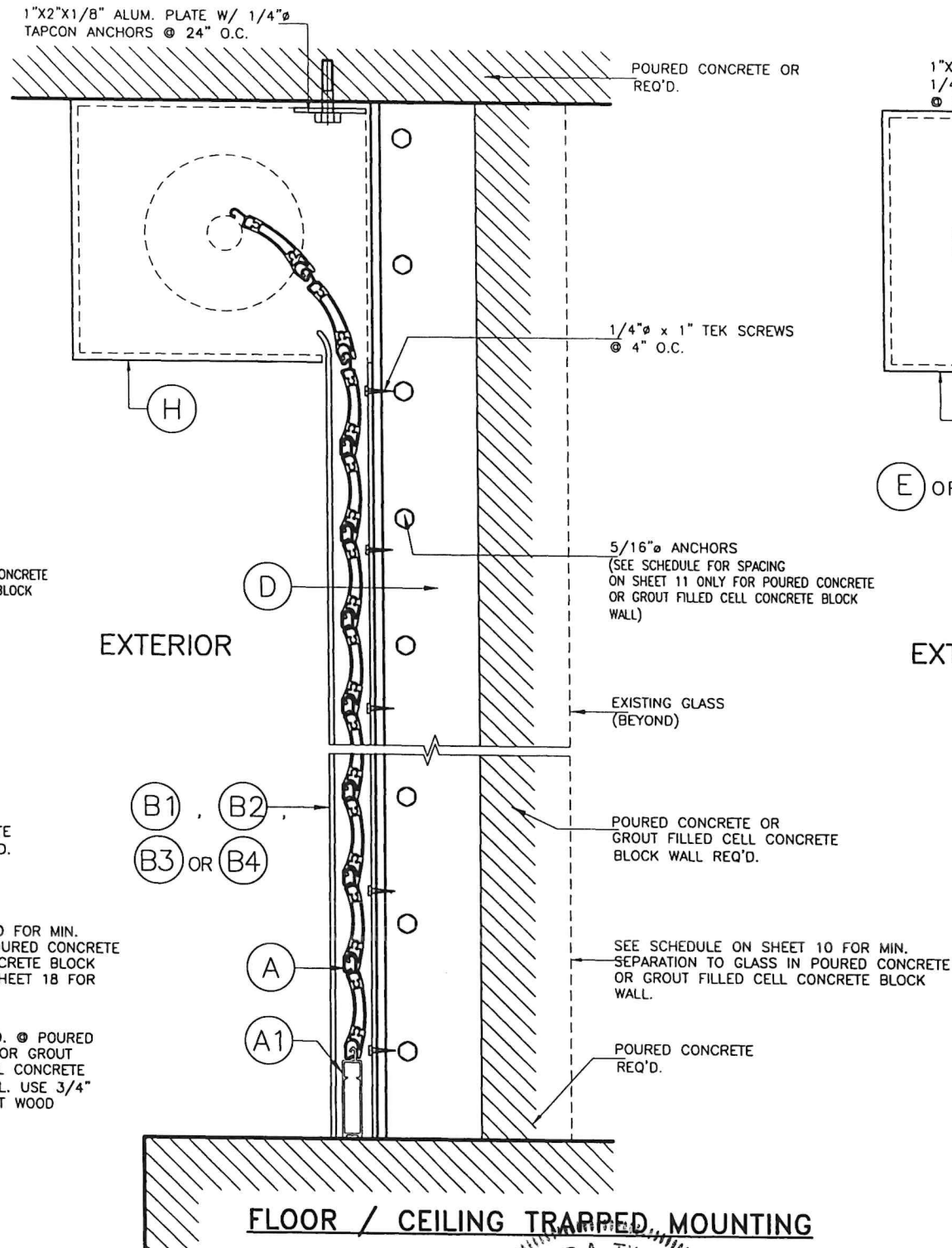
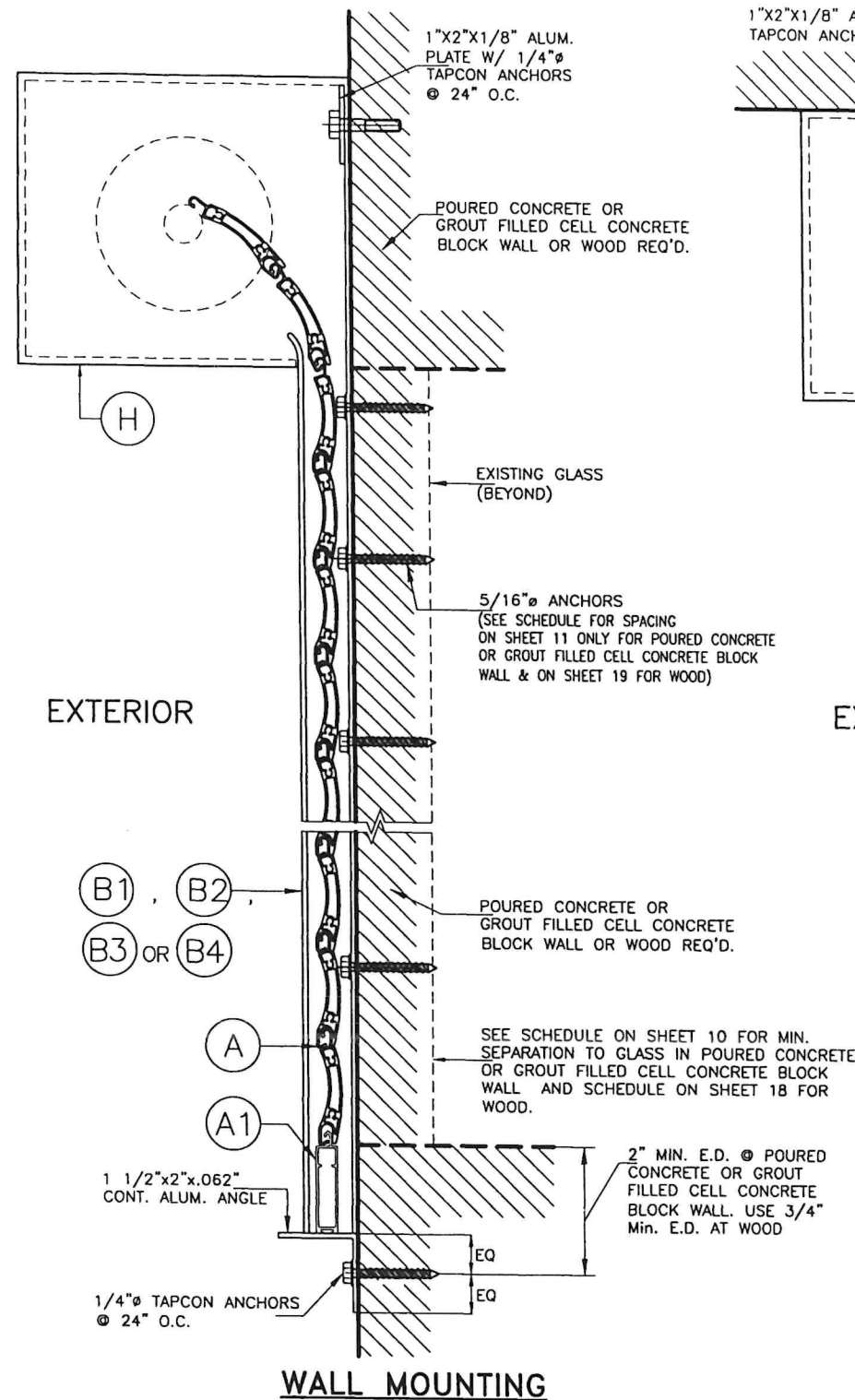
SCALE: 3/8" = 1"



FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

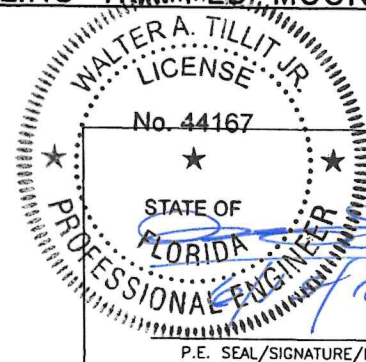
ROLLAC SHUTTER OF TEXAS, INC.					W.H. DRAWN BY	
RLL 55-X SLAT END RETENTION ROLL-UP SHUTTER					06/19/2025 DATE	
5331 ORANGE STREET PEARLAND, TX. 77581 PH: (281) 485-1911, FAX: (281) 485-0839					25-052 DRAWING N°	
REV N°	DESCRIPTION	DATE	REV N°	DESCRIPTION	DATE	
1	OLD 20-242	06/19/23	3			
2			4			

SHEET 7 OF 19



SECTION S-S
N.T.S

INSTALLATION DETAILS ON EXISTING POURED CONCRETE OR
GROUT FILLED CELL CONCRETE BLOCK WALL OR WOOD



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6355 N.W. 36th. St., Ste. 305 - VIRGINIA GARDENS, FL 33166
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e-mail: tilteco@aol.com
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WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. # 44167

FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

RLI 55-X SLAT END RETENTION
ROLL-UP SHUTTER

ROLLAC SHUTTER OF TEXAS, INC.

5331 ORANGE STREET
PEARLAND, TX. 77581
PH: (281) 485-1911, FAX: (281) 485-0839

W.H
DRAWN BY

06/19/2025
DATE

25-052
DRAWING N°

SHEET 8 OF 19

REV N°	DESCRIPTION	DATE	REV N°	DESCRIPTION	DATE
1	OLD 20-242	08/19/25	3		
2			4		

TYPICAL MANDATORY PROCEDURE FOR VERIFYING SHUTTER CODE COMPLIANCE
RELATED TO ITS INSTALLATION INTO EXISTING POURED CONCRETE OR
GROUT FILLED CELL CONCRETE BLOCK STRUCTURES (*)

- STEP 1:**
OBTAIN JOB SITE'S A.S.D. DESIGN LOAD (p.s.f.) FOR THE OPENING AND DESIRED SHUTTER SPAN "L" (ft) TO PROTECT IT (SEE GENERAL NOTE #1, ON SHEET 1).
- STEP 2:**
ENTER TO CHARTS I THRU III ON SHEET 10 TO DETERMINE, BASED ON AN ASSUMED SLAT SLIP (in); A.S.D. DESIGN LOAD (p.s.f.); AND SHUTTER SPAN "L" (ft) ; THE REQUIRED FINAL SLAT SLIP THAT SLATS MUST BE INSTALLED WITH TO MEET THE REQUIRED A.S.D. LOAD AND DESIRED SHUTTER SPAN.
- THE FOLLOWING INFORMATION IS PROVIDED AT CHARTS I THRU III TO PROCEED WITH SHUTTER INSTALLATION VERIFICATION:
- ENTER A.S.D. DESIGN LOAD: SEE STEP (1) ABOVE.
 - FOR A SPECIFIC SHUTTER MOUNTING INSTALLATION TYPE, THE FOLLOWING DEFINITIONS FOR SLAT SPAN SHALL BE CONSIDERED:
- L_{MAX}: THIS IS THE MAXIMUM ALLOWABLE SHUTTER SPAN FOR WHICH A GIVEN SLAT SLIP (3/16", 1/8" OR LESS THAN 1/8") MAY BE USED, FOR A GIVEN A.S.D. DESIGN LOAD.
- L_{MIN}: THIS IS THE MINIMUM ALLOWABLE SHUTTER SPAN FOR WHICH A GIVEN SLIP (3/16", 1/8" OR LESS THAN 1/8") MAY BE USED, FOR A GIVEN A.S.D. DESIGN LOAD. IN CASE JOB SITE DESIRED SHUTTER SPAN (L) WAS SHORTER THAN L_{MIN}, THEN GO TO THE OTHER CHARTS WITH A SHORTER SLAT SLIP AND VERIFY THAT (L) IS ALLOWED FOR THAT OTHER SHORTER SLIP.- MINIMUM REQUIRED SEPARATION TO GLASS IS PROVIDED ON CHARTS I, II & III: PROVIDES SEPARATION TO GLASS FOR SHUTTERS WITH OR WITHOUT MULLIONS BASED ON SHUTTER INSTALLATIONS WITHIN WIND ZONES 1 THRU 4, AS DEFINED BY ASTM E 1996-05, SECTION 6.2.2.

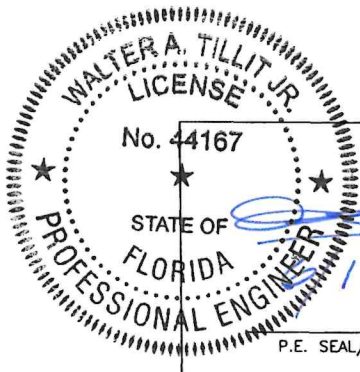
STEP 3:
OBTAIN INFORMATION ON SHUTTER'S SIDE RAIL ANCHOR SPACING REQUIREMENTS FOR CONNECTION TO EXISTING STRUCTURE FROM ANCHOR SCHEDULE IV ON SHEET 11. ENTER SCHEDULE WITH FINALLY DETERMINED SUBSTRATE, MOUNTING TYPE, DESIGN LOAD & SHUTTER SPAN AND OBTAIN MAXIMUM ANCHOR SPACING (INCHES ON CENTERS). SEE GENERAL NOTE 6 ON SHEET 1 FOR ANCHOR SPECS.

STEP 4:
IF SHUTTER INSTALLATION INCLUDES MULLIONS, THE FOLLOWING MANDATORY ADDITIONAL PROCEDURE IS APPLICABLE.

PROCEDURE 4a: IF MULLIONS ARE USED

 - MINIMUM SEPARATION TO GLASS FOR SLATS IF MULLIONS ARE USED SHALL BE BASED ON INSTALLATIONS PERFORMED WITHIN ASTM WIND ZONES 1 THRU 4 INDICATED ON CHARTS I, II & III ON SHEET 10. IT SHALL BE MEASURED FROM BACK OF SLATS TO GLASS. FOR INSTALLATIONS WITHIN ASTM WIND ZONES 1 THRU 3 WHERE MINIMIZING OF THE PROBABILITY OF BREACHING OF GLASS IS DESIRED EVEN THOUGH IT IS NOT REQUIRED BY THE FLORIDA BUILDING CODE, MINIMUM SEPARATION TO GLASS FOR SLATS SHALL BE IDENTICAL TO WIND ZONE 4 VALUES.
 - ENTER SCHEDULES 1a THRU 2c ON SHEETS 15, 16 & 17 W/ A.S.D. DESIGN LOAD ; MAXIMUM MULLION SPACING (MAX., 12' OR 7'), AND DETERMINE MAXIMUM MULLION SPAN (HEIGHT) W/ ALLOWABLE INTERPOLATION IN BETWEEN SPACINGS FOR A GIVEN Ⓕ & Ⓖ, MULLION TYPE & MULLION ORIENTATION.
 - SEE SHEETS 13 & 14 FOR REQUIRED MULLION CONNECTION DETAILS AT TOP & BOTTOM FOR FLOOR TO CEILING (TRAPPED) OR WALL MOUNTINGS OF MULLIONS INTO CONCRETE FOR A GIVEN MULLION TYPE Ⓕ & Ⓖ.

* PROCEDURE PER STEPS 1 THRU 3 IS SIMILAR FOR INSTALLATIONS INTO WOOD FRAME STRUCTURES. SEE SHEETS 18 & 19 FOR LIMITATIONS APPLICABLE TO INSTALLATIONS INTO WOOD FRAME STRUCTURES.



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ROLLAC SHUTTER OF TEXAS, INC.			06/19/2025 DATE		
5331 ORANGE STREET PEARLAND, TX. 77581 PH:(281) 485-1911, FAX:(281) 485-0839			25-052 DRAWING N°		
REV N°	DESCRIPTION	DATE	REV N°	DESCRIPTION	DATE
1	OLD 20-242	06/19/25	3		
2			4		
SHEET 9 OF 19					

SLAT PERFORMANCE CHARTS I, II & III:
VALID FOR INSTALLATION INTO POURED CONCRETE, GROUT FILLED CELL CONCRETE BLOCK OR MULLIONS
FOR A GIVEN A.S.D. DESIGN LOAD (p.s.f.) AND SHUTTER MOUNT CONDITION

CHART I (ONLY VALID FOR 3/16" SLIP)

USE MAXIMUM VALUE BETWEEN POSITIVE AND NEGATIVE A.S.D. LOAD						USE MAXIMUM POSITIVE LOAD VALUE	
MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.)	MAX. SLAT SPAN				REQUIRED MIN. SLAT SPAN	MIN. SEPARATION TO GLASS (in)	
	WALL MOUNT (SEE NOTES*)	TRAPPED MOUNT (SEE NOTES*)	BUILD-OUT MOUNT W/ (E) (SEE NOTES*)	BUILD-OUT MOUNT W/ (E) (SEE NOTES*)	WALL TRAPPED & BUILD-OUT MOUNT W/ (E) & (E) (SEE NOTES*)	WIND ZONE 1, 2 & 3	WIND ZONE 4
30.0	19'-8"	19'-8"	16'-6"	13'-11"	6'-6"	1"	12.00"
35.0	18'-3"	18'-3"	14'-11"	12'-7"	6'-3"	1"	12.00"
40.0	16'-8"	16'-8"	13'-7"	11'-6"	6'-0"	1"	12.00"
45.0	15'-3"	15'-3"	12'-6"	10'-9"	5'-9"	1"	12.00"
50.0	14'-3"	14'-3"	11'-8"	10'-0"	5'-7"	1"	12.00"
55.0	13'-3"	13'-3"	11'-0"	9'-6"	5'-6"	1"	12.00"
60.0	12'-6"	12'-6"	10'-4"	9'-0"	5'-4"	1"	12.00"
65.0	11'-11"	11'-11"	9'-10"	8'-6"	5'-3"	1"	9 3/4"
70.0	11'-5"	11'-5"	9'-5"	8'-2"	5'-1"	1"	9 3/4"
75.0	10'-11"	10'-11"	9'-0"	7'-11"	5'-0"	1"	9 3/4"
80.0	10'-5"	10'-5"	8'-8"	7'-7"	4'-11"	1"	9 3/4"
85.0	10'-0"	10'-0"	8'-3"	7'-4"	4'-10"	1"	9 3/4"
90.0	9'-6"	9'-6"	8'-0"	7'-1"	4'-9"	1"	9 3/4"
95.0	9'-3"	9'-2"	7'-9"	6'-11"	4'-8"	1"	9 3/4"
100.0	8'-11"	8'-10"	7'-6"	6'-9"	4'-7"	1"	9 3/4"
105.0	8'-9"	8'-6"	7'-3"	6'-6"	4'-7"	1"	9 3/4"
110.0	8'-6"	8'-3"	7'-1"	6'-5"	4'-6"	1"	9 3/4"
115.0	8'-3"	8'-0"	6'-11"	6'-3"	4'-5"	1"	9 3/4"
120.0	8'-0"	7'-9"	6'-9"	6'-1"	4'-5"	1"	9 3/4"
125.0	7'-10"	7'-6"	6'-7"	6'-0"	4'-4"	1"	9 3/4"
130.0	7'-8"	7'-5"	6'-5"	5'-10"	4'-3"	1"	9 3/4"
135.0	7'-6"	7'-2"	6'-3"	5'-9"	4'-3"	1"	9 3/4"
140.0	7'-3"	7'-0"	6'-2"	5'-8"	4'-2"	1"	9 3/4"
145.0	7'-2"	6'-10"	6'-0"	5'-6"	4'-2"	1"	9 3/4"
150.0	7'-0"	6'-8"	6'-0"	5'-5"	4'-1"	1"	9 3/4"
155.0	6'-10"	6'-6"	5'-10"	5'-4"	4'-1"	1"	9 3/4"
160.0	6'-9"	6'-5"	5'-9"	5'-3"	4'-1"	1"	7"

CHART II (ONLY VALID FOR 1/8" SLIP)

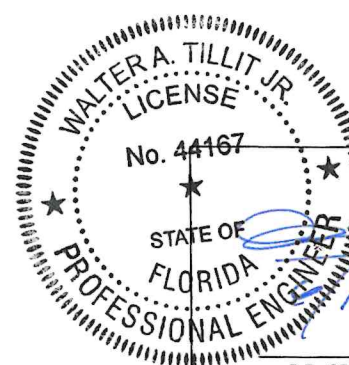
USE MAXIMUM VALUE BETWEEN POSITIVE AND NEGATIVE A.S.D. LOAD						USE MAXIMUM POSITIVE LOAD VALUE	
MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.)	MAX. SLAT SPAN				REQUIRED MIN. SLAT SPAN	MIN. SEPARATION TO GLASS (in)	
	WALL MOUNT (SEE NOTES*)	TRAPPED MOUNT (SEE NOTES*)	BUILD-OUT MOUNT W/ (E) (SEE NOTES*)	BUILD-OUT MOUNT W/ (E) (SEE NOTES*)	WALL TRAPPED & BUILD-OUT MOUNT W/ (E) & (E) (SEE NOTES*)	WIND ZONE 1, 2 & 3	WIND ZONE 4
30.0	18'-3"	18'-3"	15'-0"	12'-7"	6'-2"	1"	12.00"
35.0	16'-4"	16'-4"	13'-5"	11'-5"	5'-10"	1"	12.00"
40.0	14'-11"	14'-11"	12'-3"	10'-5"	5'-8"	1"	12.00"
45.0	13'-9"	13'-9"	11'-4"	9'-9"	5'-6"	1"	12.00"
50.0	12'-9"	12'-9"	10'-7"	9'-1"	5'-4"	1"	12.00"
55.0	12'-0"	12'-0"	9'-11"	8'-7"	5'-2"	1"	12.00"
60.0	11'-4"	11'-4"	9'-5"	8'-2"	5'-0"	1"	9 3/4"
65.0	10'-9"	10'-9"	8'-11"	7'-10"	4'-11"	1"	9 3/4"
70.0	10'-2"	10'-2"	8'-6"	7'-6"	4'-10"	1"	9 3/4"
75.0	9'-9"	9'-9"	8'-2"	7'-2"	4'-9"	1"	9 3/4"
80.0	9'-4"	9'-4"	7'-10"	6'-11"	4'-8"	1"	9 3/4"
85.0	9'-0"	9'-0"	7'-7"	6'-9"	4'-7"	1"	9 3/4"
90.0	8'-8"	8'-8"	7'-4"	6'-6"	4'-6"	1"	9 3/4"
95.0	8'-5"	8'-5"	7'-1"	6'-4"	4'-5"	1"	9 3/4"
100.0	8'-2"	8'-2"	6'-10"	6'-2"	4'-4"	1"	9 3/4"
105.0	7'-11"	7'-10"	6'-8"	6'-0"	4'-4"	1"	9 3/4"
110.0	7'-8"	7'-8"	6'-6"	5'-10"	4'-3"	1"	9 3/4"
115.0	7'-6"	7'-5"	6'-4"	5'-9"	4'-2"	1"	9 3/4"
120.0	7'-3"	7'-2"	6'-2"	5'-7"	4'-2"	1"	9 3/4"
125.0	7'-1"	7'-0"	6'-1"	5'-6"	4'-1"	1"	9 3/4"
130.0	6'-11"	6'-10"	5'-11"	5'-5"	4'-1"	1"	9 3/4"
135.0	6'-9"	6'-8"	5'-10"	5'-3"	4'-0"	1"	7"
140.0	6'-8"	6'-6"	5'-8"	5'-2"	4'-0"	1"	7"
145.0	6'-6"	6'-4"	5'-7"	5'-1"	3'-11"	1"	7"
150.0	6'-5"	6'-2"	5'-6"	5'-0"	3'-11"	1"	7"
155.0	6'-3"	6'-1"	5'-5"	4'-11"	3'-10"	1"	7"
160.0	6'-2"	5'-11"	5'-4"	4'-10"	3'-10"	1"	7"

CHART III (ONLY VALID FOR LESS THAN 1/8" SLIP)

USE MAXIMUM VALUE BETWEEN POSITIVE AND NEGATIVE A.S.D. LOAD			USE MAXIMUM POSITIVE LOAD VALUE	
MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.)	MAX. SLAT SPAN L _{MAX} (ft)	REQUIRED MIN. SLAT SPAN L _{MIN} (ft)	MIN. SEPARATION TO GLASS (in)	
	WALL TRAPPED & BUL-OUT MOUNT W/ (E) & (E1) (SEE NOTES*)	WALL TRAPPED & BUL-OUT MOUNT W/ (E) & (E1) (SEE NOTES*)	WIND ZONE 1, 2 & 3	WIND ZONE 4
30.0	6'-0"	0'-0"	1"	7"
35.0	5'-9"	0'-0"	1"	7"
40.0	5'-5"	0'-0"	1"	7"
45.0	5'-1"	0'-0"	1"	7"
50.0	4'-10"	0'-0"	1"	7"
55.0	4'-7"	0'-0"	1"	7"
60.0	4'-5"	0'-0"	1"	7"
65.0	4'-3"	0'-0"	1"	7"
70.0	4'-1"	0'-0"	1"	7"
75.0	3'-11"	0'-0"	1"	7"
80.0	3'-10"	0'-0"	1"	7"
85.0	3'-8"	0'-0"	1"	7"
90.0	3'-7"	0'-0"	1"	7"
95.0	3'-6"	0'-0"	1"	7"
100.0	3'-5"	0'-0"	1"	7"
105.0	3'-4"	0'-0"	1"	7"
110.0	3'-3"	0'-0"	1"	7"
115.0	3'-2"	0'-0"	1"	7"
120.0	3'-1"	0'-0"	1"	7"
125.0	3'-1"	0'-0"	1"	7"
130.0	3'-0"	0'-0"	1"	7"
135.0	2'-11"	0'-0"	1"	7"
140.0	2'-11"	0'-0"	1"	7"
145.0	2'-10"	0'-0"	1"	7"
150.0	2'-9"	0'-0"	1"	7"
155.0	2'-9"	0'-0"	1"	7"
160.0	2'-8"	0'-0"	1"	7"

* NOTES:

1. ABOVE INDICATED MAX. SLAT SPANS MAY BE USED AS LONG AS ANCHOR SPACING SCHEDULES ON SHEET 11 INDICATE THAT A SPACING IS AVAILABLE FOR THE CORRESPONDING SLAT SPAN AND DESIGN LOAD.
2. REQUIRES SIDE RAILS FASTENED TO EXISTING STRUCTURE WITH 5/16"Ø ITW BUILDDEX TAPCON XL INTO POURED CONCRETE OR GROUT FILLED CELL CONCRETE BLOCK OR 1/4"Ø TEK SCREWS AT MULLIONS CONNECTION VALID FOR WALL MOUNTED, INSIDE MOUNTED, AND BUILD-OUT MOUNTED.
3. MAXIMUM SLAT SPANS FOR INTERMEDIATE LOADS MAY BE DETERMINED BY LINEAR INTERPOLATION BETWEEN END VALUES.



P.E. SEAL/SIGNATURE/DATE

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ROLLAC SHUTTER OF TEXAS, INC.					06/19/2025 DATE
5331 ORANGE STREET PEARLAND, TX. 77581 PH:(281) 485-1911, FAX:(281) 485-0839					25-052 DRAWING N°
REV N°	DESCRIPTION	DATE	REV N°	DESCRIPTION	DATE
1	OLD 20-242	06/19/25	3		
2			4		

SHEET 10 OF 19

MAX. ANCHOR'S SPACING SCHEDULE IV FOR A GIVEN PRODUCT MOUNTING TYPE W/ Ø 5/16" ITW BUILDEX
TAPCON XL ANCHORS TO POURED CONCRETE WALL OR GROUT FILLED CELL CONCRETE BLOCK WALL, A.S.D. DESIGN LOAD & SLAT SPAN ♠
RANGE

WALL MOUNT

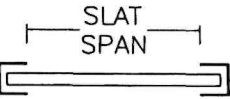
MAXIMUM A.S.D. DESIGN PRESSURE RATING RANGE (p.s.f.)	SLAT SPAN RANGE							
	0' to 4'	> 4' to 5'	> 5' to 6'	> 6' to 7'	> 7' to 9'	> 9' to 12'	> 12' to 16'	> 16' to 19'-8"
≤ 30.0	6.0"	6.0"	6.0"	8"	8"	7"	4 1/2"	4"
>31-40	6.0"	6.0"	6.0"	8"	8"	5"	4"	3 3/4"
>41-60	6.0"	6.0"	6.0"	8"	5 1/2"	4"	4"	—
>61-80	6.0"	6.0"	6.0"	6"	4"	3 3/4"	—	—
>81-105	6.0"	6.0"	6.0"	4 1/2"	3 3/4"	3 3/4"	—	—
>106-120	6.0"	6.0"	5 1/2"	4"	3 3/4"	—	—	—
>121-140	6.0"	6.0"	4 1/2"	3 3/4"	3 3/4"	—	—	—
>141-160	6.0"	6.0"	4"	3 3/4"	3 3/4"	—	—	—

TRAPPED MOUNT

MAXIMUM A.S.D. DESIGN PRESSURE RATING RANGE (p.s.f.)	SLAT SPAN RANGE							
	0' to 4'	> 4' to 5'	> 5' to 6'	> 6' to 7'	> 7' to 9'	> 9' to 12'	> 12' to 16'	> 16' to 19'-8"
≤ 30.0	6"	6"	6"	8"	8"	6 1/2"	4 1/2"	4"
>31-40	6"	6"	6"	8"	7 1/2"	5"	4"	4"
>41-60	6"	6"	6"	7 1/2"	5"	3 3/4"	3 3/4"	—
>61-80	6"	6"	6"	5 1/2"	4"	3 3/4"	—	—
>81-105	6"	6"	6"	4"	3 3/4"	3 3/4"	—	—
>106-120	6"	6"	5 1/2"	4"	3 3/4"	—	—	—
>121-140	6"	6"	1/2"	3 3/4"	3 3/4"	—	—	—
>141-160	6"	6"	4"	3 3/4"	—	—	—	—

4" x 2" OR 4" x 1" BUILD-OUT MOUNT 4"x2" (E) 4"x1" (E)

MAXIMUM A.S.D. DESIGN PRESSURE RATING RANGE (p.s.f.)	SLAT SPAN RANGE							
	0' to 4'	> 4' to 5'	> 5' to 6'	> 6' to 7'	> 7' to 9'	> 9' to 12'	> 12' to 16'	> 16' to 19'-8"
≤ 30.0	6" 6"	6" 6"	6" 6"	8" 8"	7" 8"	4" 5	3 3/4" 3 3/4"	— 3 3/4"
>31-40	6" 6"	6" 6"	6" 6"	8" 8"	5" 6"	3 3/4" 3 3/4"	3 3/4" 3 3/4"	— —
>41-60	6" 6"	6" 6"	6" 6"	5" 6 1/2"	3 3/4" 4"	3 3/4" 3 3/4"	— 3 3/4"	— —
>61-80	6" 6"	6" 6"	5 1/2" 6"	3 3/4" 4 1/2"	3 3/4" 3 3/4"	— 3 3/4"	— —	— —
>81-105	6" 6"	6" 6"	3 3/4" 4 1/2"	3 3/4" 3 3/4"	3 3/4" 3 3/4"	— —	— —	— —
>106-120	6" 6"	6" 6"	3 3/4" 4"	3 3/4" 3 3/4"	— 3 3/4"	— —	— —	— —
>121-140	6" 6"	6" 6"	3 3/4" 3 3/4"	3 3/4" 3 3/4"	— —	— —	— —	— —
>141-160	6" 6"	6" 6"	3 3/4" 3 3/4"	— 3 3/4"	— —	— —	— —	— —



SLAT SPAN DEFINITION

♠ NOTE:
MAX. SPAN FOR SLAT FOR A GIVEN A.S.D. DESIGN LOAD SHALL NEVER EXCEED MAX. SLAT SPAN INDICATED ON SLAT PERFORMANCE CHART ON SHEET 10.

WALTER A. TILLIT JR.
LICENSE
No. 44167
STATE OF FLORIDA
PROFESSIONAL ENGINEER
P.E. SEAL/SIGNATURE/DATE

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TILTECO INC.
TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th St., Ste. 305 - VIRGINIA GARDENS, FL 33166
Phone : (305) 871-1530 , Fax : (305) 871-1531
e-mail: tilteco@aol.com
CA-0006719
WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. # 44167

FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)
RLL 55-X SLAT END RETENTION
ROLL-UP SHUTTER
ROLLAC SHUTTER OF TEXAS, INC.
5331 ORANGE STREET
PEARLAND, TX. 77581
PH: (281) 485-1911, FAX: (281) 485-0839
W.H. DRAWN BY
06/19/2025 DATE
25-052 DRAWING N°
SHEET 11 OF 19

SCHEDULE V:

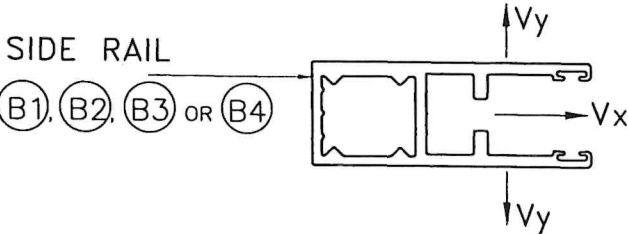
Vx FORCES (Lb/ft) & Vy FORCES (Lb/ft) ACTING AT JAMBS FOR A A.S.D.
DESIGN LOAD RANGE SLAT SPAN RANGE FOR POURED CONCRETE OR GROUT
FILLED CELL CONCRETE BLOCK WALL BUILDINGS

(USE MAXIMUM VALUE BETWEEN POSITIVE AND NEGATIVE A.S.D. LOAD)

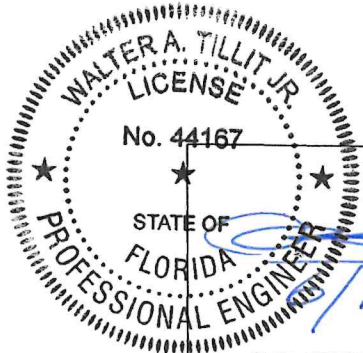
MAXIMUM A.S.D. DESIGN PRESSURE RATING RANGE (p.s.f)	SLAT SPAN RANGE															
	0' to 4'		>4' to 5'		> 5' to 6'		> 6' to 7'		> 7' to 9'		> 9' to 12'		> 12' to 16'		>16' to 19'-8"	
	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
≤ 30.0	10	60	10	75	191	90	141	105	528	135	979	180	1523	240	2011	295
>31-40	10	80	10	100	20	120	319	140	764	180	1314	240	1994	320	2106	333
>41-60	10	120	10	150	312	180	658	210	1219	270	1955	360	2073	375	—	—
>61-80	10	153	26	197	585	240	983	280	1656	360	2094	417	—	—	—	—
>81-105	10	175	58	241	914	315	1375	368	2088	459	2088	425	—	—	—	—
>106-120	10	185	67	265	1106	360	1605	420	2061	480	—	—	—	—	—	—
>121-140	10	204	67	292	1358	420	1907	490	2036	508	—	—	—	—	—	—
>141-160	10	213	96	327	1606	480	2059	540	2055	525	—	—	—	—	—	—

*NOTE:

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OR PERMIT HOLDER TO VERIFY THAT EXISTING STRUCTURE IS DESIGNED TO SUPPORT Vx AND Vy FORCES IN POUNDS PER UNIT FOOT OF SHUTTER HEIGHT AT BOTH JAMBS. SEE THIS SHEET FOR Vx & Vy VALUES.



SLAT SPAN DEFINITION



P.E. SEAL/SIGNATURE/DATE

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TILTECO INC.

TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th. St., Ste. 305 - VIRGINIA GARDENS, FL. 33166
Phone : (305) 871-1530 , Fax : (305) 871-1531
e-mail: tilteco@aol.com
CA-0006719
WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. # 44167

FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

ROLL 55-X SLAT END RETENTION
ROLL-UP SHUTTER

ROLLAC SHUTTER OF TEXAS, INC.

5331 ORANGE STREET
PEARLAND, TX. 77581
PH:(281) 485-1911, FAX:(281) 485-0839

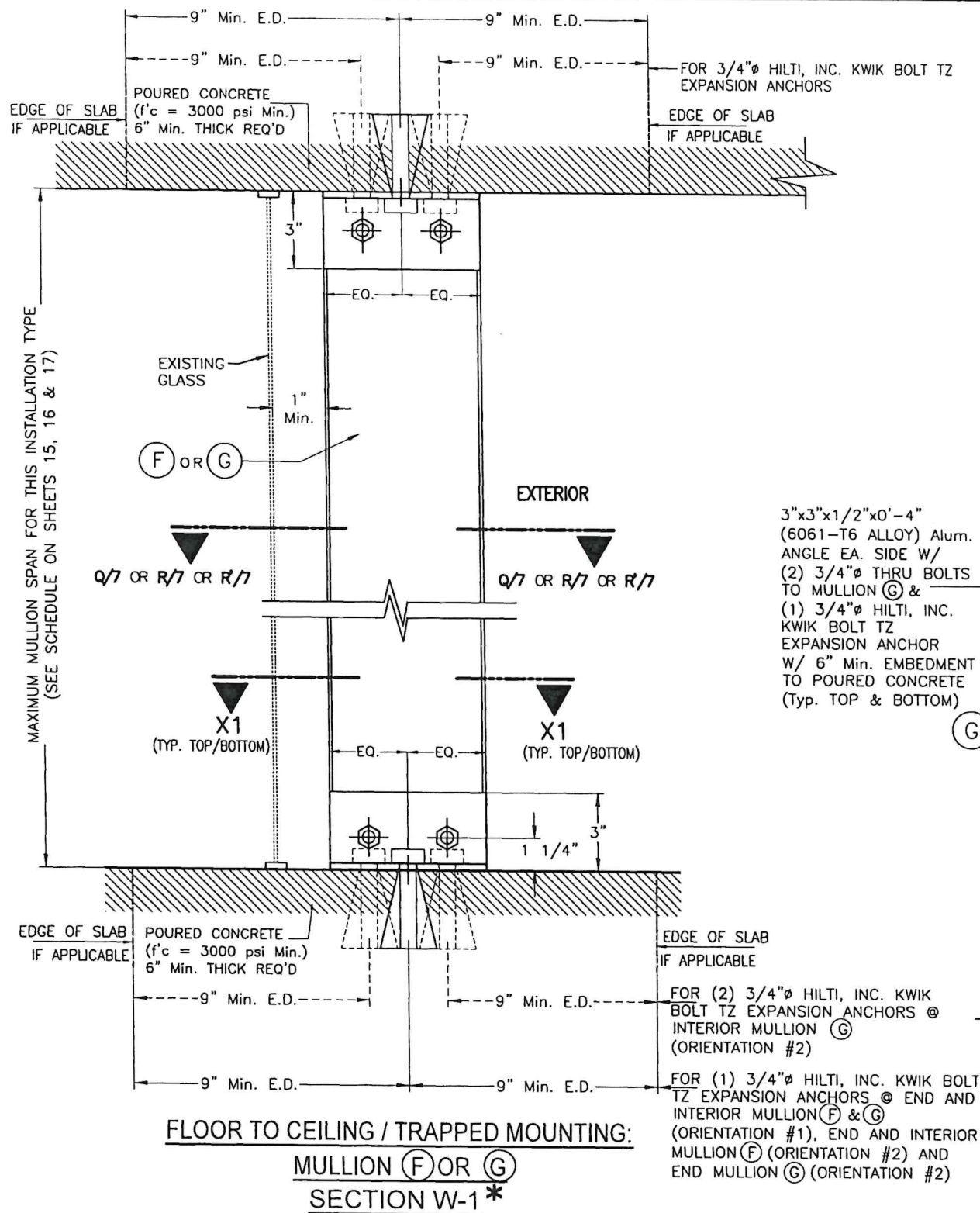
REV #	DESCRIPTION	DATE	REV #	DESCRIPTION	DATE
1	OLD 20-242	06/19/25	3		
2			4		

W.H
DRAWN BY

06/19/2025
DATE

25-052
DRAWING N°

SHEET 12 OF 19



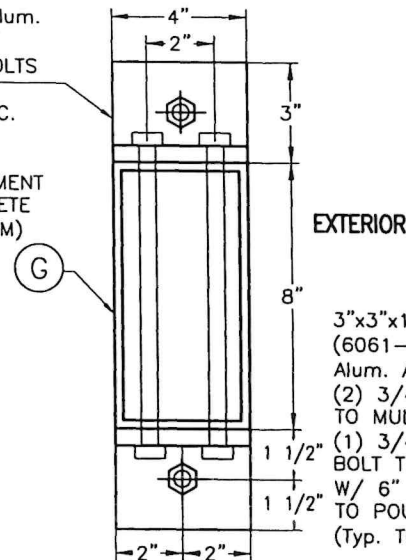
3"x3"x1/2"x0'-4"
(6061-T6 ALLOY)
Alum. ANGLE EA. SIDE W/
(2) 3/4" THRU BOLTS
TO MULLION (F) &
(1) 3/4" HILTI, INC. KWIK
BOLT TZ EXPANSION ANCHOR
W/ 6" Min. EMBEDMENT
TO POURED CONCRETE
(Typ. TOP & BOTTOM)

SECTION X1-X1 W/ (F) *
(END & INTERIOR MULLION
W/ ORIENTATION # 1)

3"x3"x1/2"x0'-6"
(6061-T6 ALLOY)
Alum. ANGLE EA. SIDE W/
(2) 3/4" THRU BOLTS
TO MULLION (F) &
(1) 3/4" HILTI, INC.
KWIK BOLT TZ EXPANSION
ANCHOR
W/ 6" Min. EMBEDMENT
TO POURED CONCRETE
(Typ. TOP & BOTTOM)

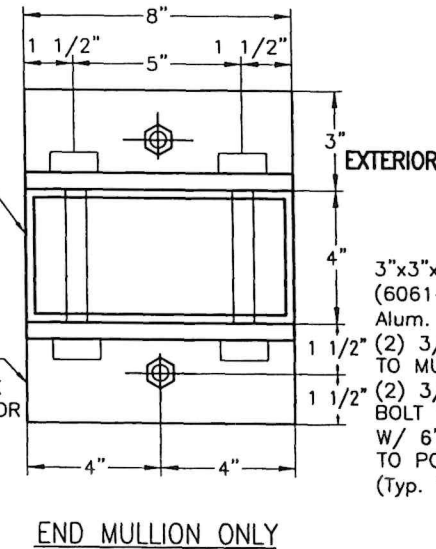
ALTERNATIVE SECTION X1-X1 W/ (F) *
(END & INTERIOR MULLION
W/ ORIENTATION # 2)

3"x3"x1/2"x0'-4"
(6061-T6 ALLOY) Alum.
ANGLE EA. SIDE W/
(2) 3/4" THRU BOLTS
TO MULLION (G) &
(1) 3/4" HILTI, INC.
KWIK BOLT TZ
EXPANSION ANCHOR
W/ 6" Min. EMBEDMENT
TO POURED CONCRETE
(Typ. TOP & BOTTOM)



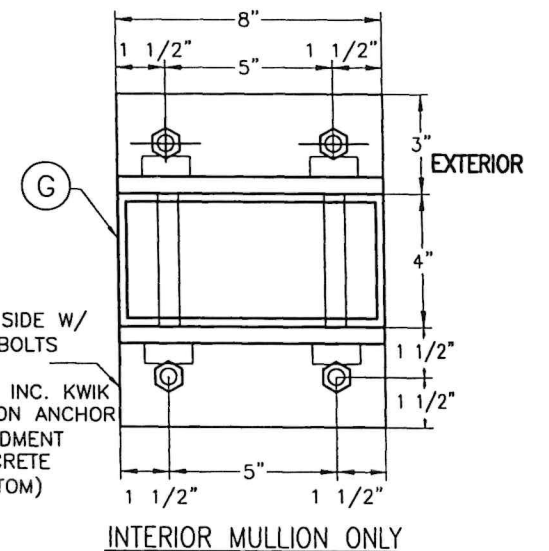
SECTION X1-X1 W/ (G) *
(END & INTERIOR MULLION
W/ ORIENTATION # 1)

3"x3"x1/2"x0'-8"
(6061-T6 ALLOY)
Alum. ANGLE EA. SIDE W/
(2) 3/4" THRU BOLTS
TO MULLION (G) &
(1) 3/4" HILTI, INC. KWIK
BOLT TZ EXPANSION ANCHOR
W/ 6" Min. EMBEDMENT
TO POURED CONCRETE
(Typ. TOP & BOTTOM)



ALTERNATIVE SECTION X1-X1 W/ (G) *
(W/ ORIENTATION # 2)

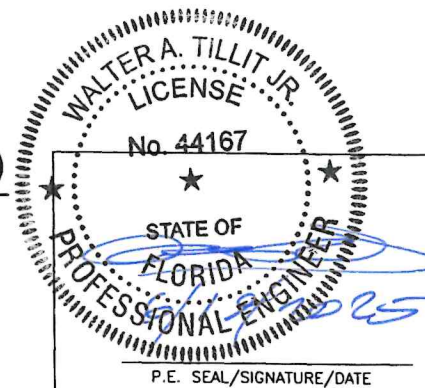
3"x3"x1/2"x0'-8"
(6061-T6 ALLOY)
Alum. ANGLE EA. SIDE W/
(2) 3/4" THRU BOLTS
TO MULLION (G) &
(2) 3/4" HILTI, INC. KWIK
BOLT TZ EXPANSION ANCHOR
W/ 6" Min. EMBEDMENT
TO POURED CONCRETE
(Typ. TOP & BOTTOM)



* SIDE RAILS (B) , (B2) , (B3) OR (B4) AND BOX NOT SHOWN FOR CLARITY.

END & INTERIOR TRAPPED MOUNTED MULLION INSTALLATION

SCALE: 3/16" = 1"



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TILTECO INC.

TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th St., Ste. 305 - VIRGINIA GARDENS, FL 33166
Phone : (305) 871-1530 , Fax : (305) 871-1531
e-mail: tilteco@aol.com
CA-0006719
WALTER A. TILLIT JR., P.E.
FLORIDA Lic. # 44167

FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

RL55-X SLAT END RETENTION
ROLL-UP SHUTTER

ROLLAC SHUTTER OF TEXAS, INC.

5331 ORANGE STREET
PEARLAND, TX. 77581
PH: (281) 485-1911, FAX: (281) 485-0839

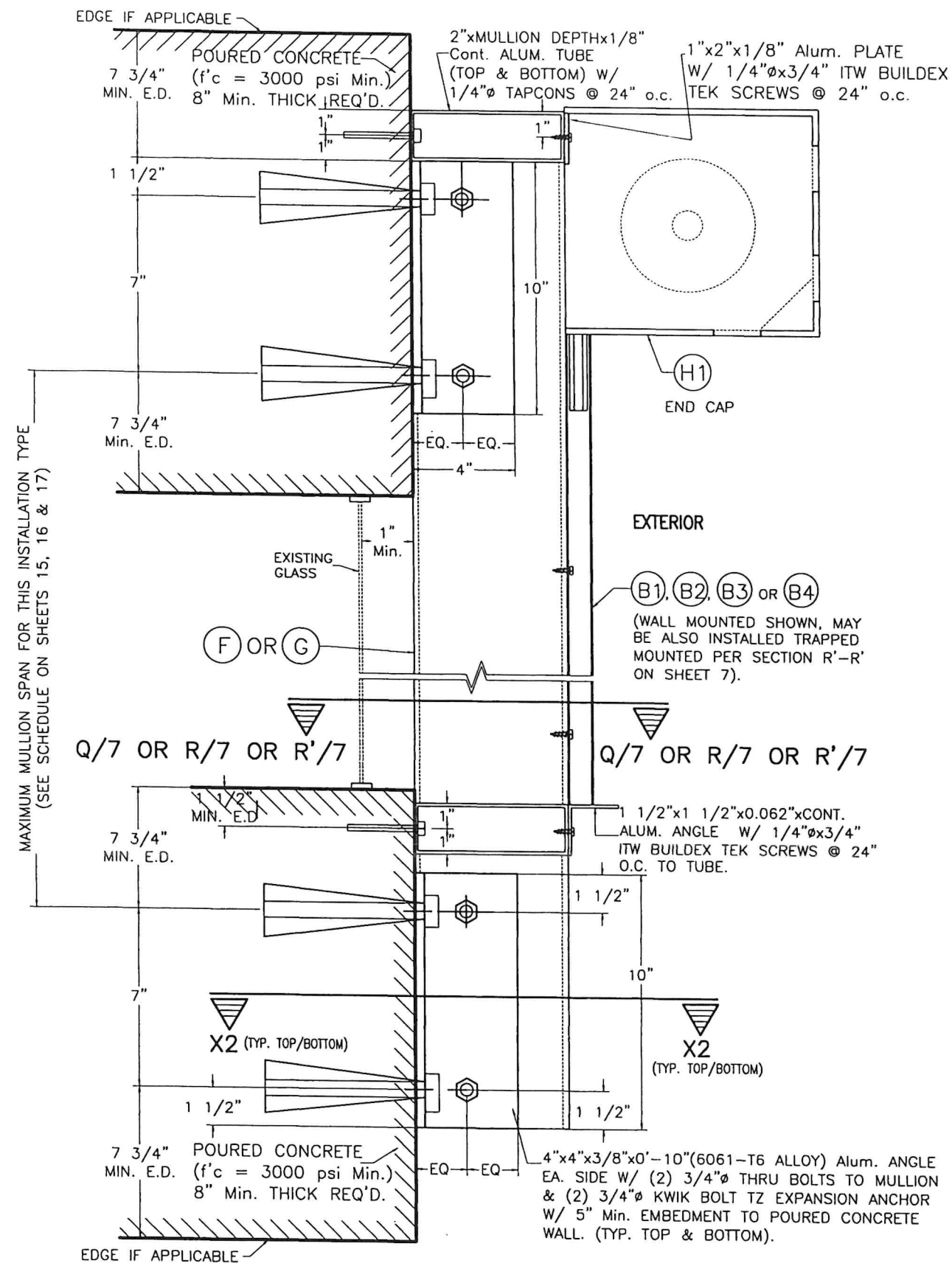
W.H
DRAWN BY

06/19/2025
DATE

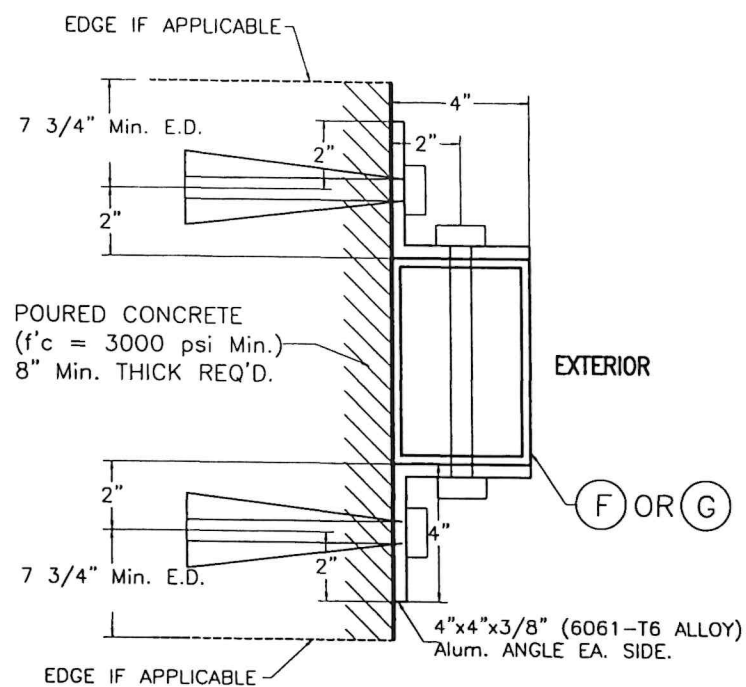
25-052
DRAWING N°

SHEET 13 OF 19

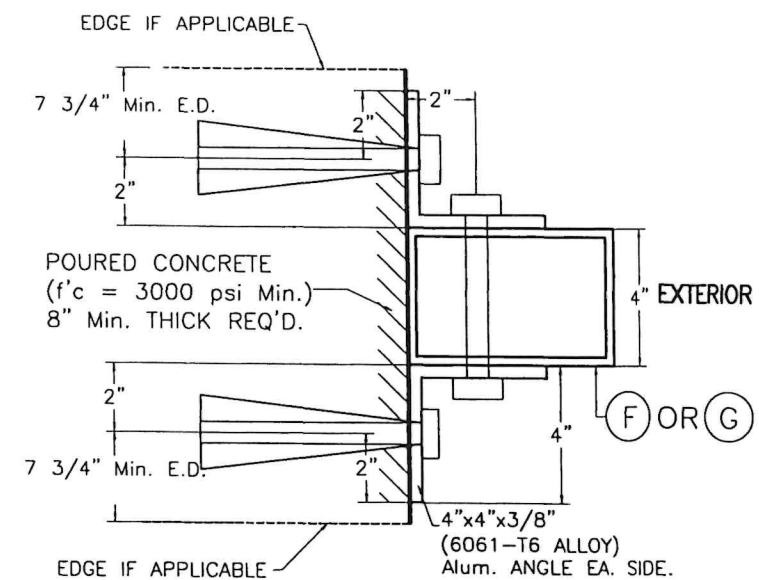
REV #	DESCRIPTION	DATE	REV #	DESCRIPTION	DATE
1	OLD 20-242	06/19/25	3		
2			4		



WALL MOUNTING : MULLION (F) OR (G)
POURED CONCRETE WALL
SECTION W-2



SECTION X2-X2 W/ (F) OR (G) *
(END & INTERIOR MULLION W/ ORIENTATION # 1)
(6"x4" OR 8"x4")

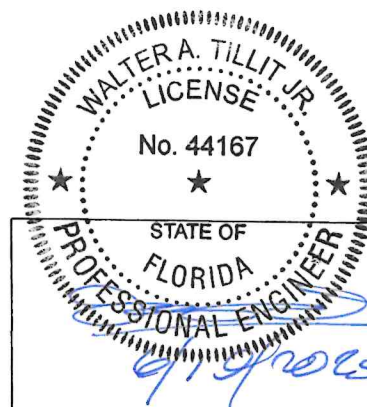


ALTERNATIVE SECTION X2-X2 W/ (F) OR (G) *
(END & INTERIOR MULLION W/ ORIENTATION # 2)
(4"x6" OR 4"x8")

* SIDE RAILS (B1), (B2), (B3) OR (B4) NOT SHOWN FOR CLARITY.

END & INTERIOR WALL MOUNTED MULLION INSTALLATION

SCALE: 1/8" = 1"



P.E. SEAL/SIGNATURE/DATE

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RL55-X SLAT END RETENTION
ROLL-UP SHUTTER

W.H
DRAWN BY

ROLLAC SHUTTER OF TEXAS, INC.

06/19/2025
DATE

5331 ORANGE STREET
PEARLAND, TX. 77581
PH:(281) 485-1911, FAX:(281) 485-0839

25-052
DRAWING N°

REV N°	DESCRIPTION	DATE	REV N°	DESCRIPTION	DATE
1	OLD 20-242	06/19/23	3		
2			4		

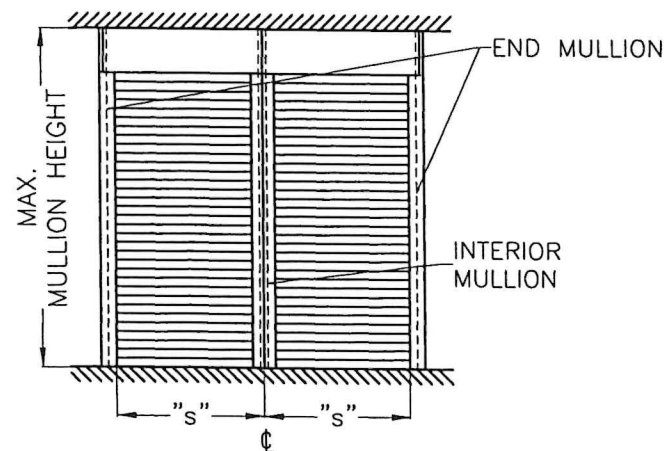
SHEET 14 OF 19

SCHEDULE 1a

FLOOR TO CEILING (TRAPPED) MOUNTING

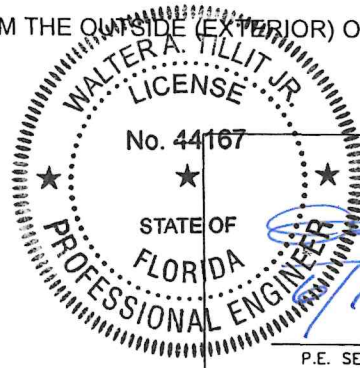
MAX. SPAN (ft.) FOR END AND INTERIOR MULLION FOR A GIVEN
A.S.D. DESIGN LOAD (p.s.f.) AND A MAX. MULLION SPACING (ft.) *
VALID ONLY FOR INSTALLATIONS INTO CONCRETE

MAXIMUM A.S.D. DESIGN PRESSURE RATING RANGE (p.s.f.)	MAXIMUM MULLION SPACING (ft.) *	MAXIMUM MULLION SPAN (ft.)							
		(F) 4"x6"x1/4" MULLION				(G) 4"x8"x1/4" MULLION			
		ORIENTATION #1 (⇐) ‡		ORIENTATION #2 (⇐) ‡		ORIENTATION #1 (⇐) ‡		ORIENTATION #2 (⇐) ‡	
		END	INTERIOR	END	INTERIOR	END	INTERIOR	END	INTERIOR
30.0	19'-8"	6'-9"	9'-9"	6'-2"	12'-0"	8'-1"	10'-7"	7'-1"	12'-0"
35.0	18'-3"	6'-7"	9'-6"	6'-1"	11'-9"	7'-10"	10'-4"	6'-11"	12'-0"
40.0	16'-8"	6'-7"	9'-5"	6'-1"	11'-7"	7'-10"	10'-2"	6'-11"	12'-0"
45.0	15'-3"	6'-7"	9'-3"	6'-1"	11'-6"	7'-10"	10'-1"	6'-11"	12'-0"
50.0	14'-3"	6'-7"	9'-2"	6'-0"	11'-4"	7'-9"	10'-0"	6'-11"	12'-0"
55.0	13'-3"	6'-7"	9'-1"	6'-1"	11'-3"	7'-10"	9'-11"	6'-11"	12'-0"
60.0	12'-6"	6'-7"	9'-0"	6'-0"	11'-2"	7'-9"	9'-10"	6'-11"	12'-0"
65.0	11'-11"	6'-6"	8'-11"	6'-0"	11'-1"	7'-9"	9'-8"	6'-11"	12'-0"
70.0	11'-5"	6'-6"	8'-10"	6'-0"	10'-11"	7'-8"	9'-7"	6'-11"	12'-0"
75.0	10'-11"	6'-6"	8'-9"	6'-0"	10'-10"	7'-8"	9'-6"	6'-10"	12'-0"
80.0	10'-5"	6'-6"	8'-9"	6'-0"	10'-9"	7'-8"	9'-6"	6'-10"	12'-0"
85.0	10'-0"	6'-5"	8'-8"	6'-0"	10'-8"	7'-8"	9'-5"	6'-10"	12'-0"
90.0	9'-6"	6'-6"	8'-8"	6'-0"	10'-8"	7'-9"	9'-5"	6'-11"	12'-0"
95.0	9'-3"	6'-6"	8'-7"	6'-0"	10'-7"	7'-8"	9'-4"	6'-10"	12'-0"
100.0	8'-11"	6'-6"	8'-6"	6'-0"	10'-7"	7'-8"	9'-3"	6'-11"	12'-0"
105.0	8'-9"	6'-5"	8'-5"	5'-11"	10'-5"	7'-7"	9'-2"	6'-10"	12'-0"
110.0	8'-6"	6'-5"	8'-4"	5'-11"	10'-4"	7'-7"	9'-1"	6'-10"	12'-0"
115.0	8'-3"	6'-5"	8'-4"	5'-11"	10'-4"	7'-7"	9'-0"	6'-10"	12'-0"
120.0	8'-0"	6'-5"	8'-4"	5'-11"	10'-3"	7'-7"	9'-0"	6'-10"	12'-0"
125.0	7'-10"	6'-5"	8'-3"	5'-11"	10'-2"	7'-7"	9'-0"	6'-10"	12'-0"
130.0	7'-8"	6'-5"	8'-3"	5'-11"	10'-0"	7'-7"	8'-11"	6'-10"	12'-0"
135.0	7'-6"	6'-4"	8'-2"	5'-11"	9'-10"	7'-6"	8'-10"	6'-9"	12'-0"
140.0	7'-3"	6'-5"	8'-2"	5'-11"	9'-9"	7'-7"	8'-10"	6'-10"	12'-0"
145.0	7'-2"	6'-4"	8'-1"	5'-11"	9'-7"	7'-6"	8'-10"	6'-10"	12'-0"
150.0	7'-0"	6'-4"	8'-1"	5'-11"	9'-5"	7'-6"	8'-9"	6'-10"	12'-0"
155.0	6'-10"	6'-4"	8'-0"	5'-11"	9'-4"	7'-6"	8'-9"	6'-10"	12'-0"
160.0	6'-9"	6'-4"	8'-0"	5'-11"	9'-2"	7'-6"	8'-8"	6'-9"	12'-0"



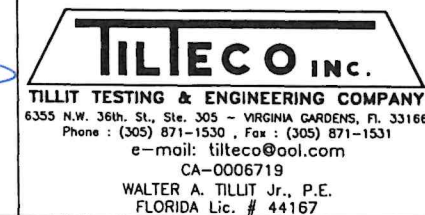
* MAXIMUM MULLION SPACING SHALL BE SUCH THAT MAX SLAT SPAN FOR THAT A.S.D. DESIGN LOAD SHALL NOT BE EXCEEDED.

‡ MULLION ORIENTATION IS AS SEEN FROM THE OUTSIDE (EXTERIOR) OF SHUTTER.



P.E. SEAL/SIGNATURE/DATE

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FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

RLL 55-X SLAT END RETENTION
ROLL-UP SHUTTER

ROLLAC SHUTTER OF TEXAS, INC.

5331 ORANGE STREET
PEARLAND, TX 77581
PH: (281) 485-1911, FAX: (281) 485-0839

REV #	DESCRIPTION	DATE	REV #	DESCRIPTION	DATE
1	OLD 20-242	08/19/25	3		
2			4		

W.H
DRAWN BY

06/19/2025
DATE

25-052
DRAWING N°

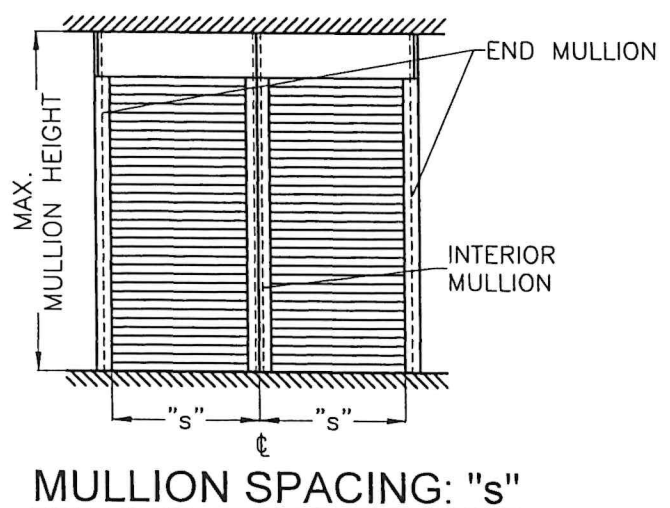
SHEET 15 OF 19

SCHEDULE 1b
FLOOR TO CEILING (TRAPPED) MOUNTING
MAX. SPAN (ft.) FOR END AND INTERIOR MULLION FOR A GIVEN
A.S.D. DESIGN LOAD (p.s.f.) AND A 12'-0" MAX. MULLION SPACING (ft.) *
VALID ONLY FOR INSTALLATIONS INTO CONCRETE

MAXIMUM A.S.D. DESIGN PRESSURE RATING RANGE (p.s.f.)	MAXIMUM MULLION SPACING (ft) *	MAXIMUM MULLION SPAN (ft.)							
		(F) 4"x6"x1/4" MULLION				(G) 4"x8"x1/4" MULLION			
		ORIENTATION #1 (≡) ‡		ORIENTATION #2 (⊐) ‡		ORIENTATION #1 (≡) ‡		ORIENTATION #2 (⊐) ‡	
		END	INTERIOR	END	INTERIOR	END	INTERIOR	END	INTERIOR
30.0	12'-0"	9'-6"	11'-6"	8'-3"	12'-0"	11'-4"	12'-0"	9'-0"	12'-0"
35.0	12'-0"	8'-10"	10'-11"	7'-10"	12'-0"	10'-5"	11'-11"	8'-6"	12'-0"
40.0	12'-0"	8'-3"	10'-5"	7'-6"	12'-0"	9'-9"	11'-4"	9'-6"	12'-0"
45.0	12'-0"	7'-9"	10'-1"	7'-2"	12'-0"	9'-3"	10'-11"	9'-1"	12'-0"
50.0	12'-0"	7'-4"	9'-8"	6'-9"	12'-0"	8'-9"	10'-7"	8'-9"	12'-0"
55.0	12'-0"	7'-0"	9'-5"	6'-6"	11'-8"	8'-4"	10'-3"	8'-6"	12'-0"
60.0	12'-0"	6'-9"	9'-2"	6'-3"	11'-4"	8'-0"	9'-11"	8'-3"	12'-0"
65.0	12'-0"	6'-6"	8'-11"	6'-0"	11'-0"	7'-8"	9'-8"	8'-0"	12'-0"

SCHEDULE 2b
WALL MOUNTING
MAX. SPAN (ft.) FOR END AND INTERIOR MULLION FOR A GIVEN
A.S.D. DESIGN LOAD (p.s.f.) AND A 12'-0" MAX. MULLION SPACING (ft.) *
VALID ONLY FOR INSTALLATIONS INTO CONCRETE

MAXIMUM A.S.D. DESIGN PRESSURE RATING RANGE (p.s.f.)	MAXIMUM MULLION SPACING (ft) *	MAXIMUM MULLION SPAN (ft.)							
		(F) 4"x6"x1/4" MULLION				(G) 4"x8"x1/4" MULLION			
		ORIENTATION #1 (≡) ‡		ORIENTATION #2 (⊐) ‡		ORIENTATION #1 (≡) ‡		ORIENTATION #2 (⊐) ‡	
		END	INTERIOR	END	INTERIOR	END	INTERIOR	END	INTERIOR
30.0	12'-0"	8'-3"	11'-6"	8'-3"	12'-0"	11'-4"	12'-0"	9'-0"	12'-0"
35.0	12'-0"	7'-10"	10'-11"	7'-10"	12'-0"	10'-5"	11'-11"	8'-6"	12'-0"
40.0	12'-0"	7'-6"	10'-5"	7'-6"	12'-0"	9'-9"	11'-4"	8'-2"	12'-0"
45.0	12'-0"	7'-2"	10'-1"	7'-2"	12'-0"	9'-3"	10'-11"	7'-10"	12'-0"
50.0	12'-0"	6'-9"	9'-8"	6'-9"	12'-0"	8'-9"	10'-7"	7'-7"	12'-0"
55.0	12'-0"	6'-6"	9'-5"	6'-6"	11'-8"	8'-4"	10'-3"	7'-4"	12'-0"
60.0	12'-0"	6'-3"	9'-2"	6'-3"	11'-4"	8'-0"	9'-11"	7'-1"	12'-0"
65.0	12'-0"	6'-0"	8'-11"	6'-0"	11'-0"	7'-8"	9'-8"	6'-10"	12'-0"



* MAXIMUM MULLION SPACING SHALL BE SUCH THAT MAX SLAT SPAN FOR THAT A.S.D. DESIGN LOAD SHALL NOT BE EXCEEDED.

‡ MULLION ORIENTATION IS AS SEEN FROM THE OUTSIDE (EXTERIOR) OF SHUTTER.

WALTER A. TILLIT JR.
LICENSE
No. 44167
STATE OF FLORIDA
PROFESSIONAL ENGINEER
P.E. SEAL/SIGNATURE/DATE

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TILTECO INC.
TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th. St., Ste. 305 - VIRGINIA GARDENS, FL 33166
Phone : (305) 871-1530 , Fax : (305) 871-1531
e-mail: tilteco@aol.com
CA-0006719
WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. # 44167

FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

RLL 55-X SLAT END RETENTION
ROLL-UP SHUTTER

ROLLAC SHUTTER OF TEXAS, INC.

5331 ORANGE STREET
PEARLAND, TX. 77581
PH:(281) 485-1911. FAX:(281) 485-0839

W.H
DRAWN BY

06/19/2025
DATE

25-052
DRAWING N°

SHEET 16 OF 19

REV N°	DESCRIPTION	DATE	REV N°	DESCRIPTION	DATE
1	OLD 20-242	06/19/25	3		
2			4		

SCHEDULE 1c

FLOOR TO CEILING (TRAPPED) MOUNTING

MAX. SPAN (ft.) FOR END AND INTERIOR MULLION FOR A GIVEN
A.S.D. DESIGN LOAD (p.s.f.) AND A 7'-0" MAX. MULLION SPACING (ft.) *
VALID ONLY FOR INSTALLATIONS INTO CONCRETE

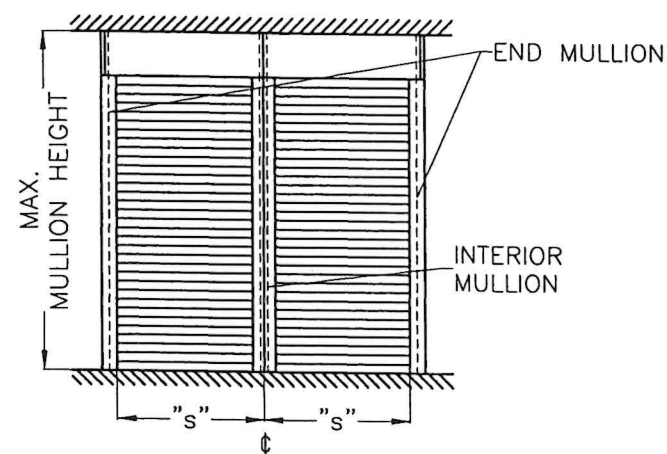
MAXIMUM A.S.D. DESIGN PRESSURE RATING RANGE (p.s.f.)	MAXIMUM MULLION SPACING (ft.) *	MAXIMUM MULLION SPAN (ft.)							
		(F) 4"x6"x1/4" MULLION				(G) 4"x8"x1/4" MULLION			
		ORIENTATION #1 (⇐) ‡		ORIENTATION #2 (⇐) ‡		ORIENTATION #1 (⇐) ‡		ORIENTATION #2 (⇐) ‡	
		END	INTERIOR	END	INTERIOR	END	INTERIOR	END	INTERIOR
30.0	7'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"
35.0	7'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"
40.0	7'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"
45.0	7'-0"	12'-0"	12'-0"	11'-1"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"
50.0	7'-0"	12'-0"	11'-7"	10'-5"	12'-0"	12'-0"	12'-0"	11'-3"	12'-0"
55.0	7'-0"	11'-7"	11'-3"	9'-10"	12'-0"	12'-0"	12'-0"	10'-8"	12'-0"
60.0	7'-0"	10'-11"	10'-11"	9'-5"	12'-0"	12'-0"	11'-11"	10'-3"	12'-0"
65.0	7'-0"	10'-4"	10'-8"	9'-1"	12'-0"	12'-0"	11'-7"	9'-10"	12'-0"
70.0	7'-0"	9'-10"	10'-5"	8'-9"	12'-0"	11'-7"	11'-3"	9'-6"	12'-0"
75.0	7'-0"	9'-5"	10'-2"	8'-6"	12'-0"	11'-2"	11'-0"	9'-3"	12'-0"
80.0	7'-0"	9'-1"	9'-11"	8'-3"	12'-0"	10'-8"	10'-10"	8'-11"	12'-0"
85.0	7'-0"	8'-9"	9'-9"	8'-0"	12'-0"	10'-4"	10'-7"	8'-9"	12'-0"
90.0	7'-0"	8'-5"	9'-7"	7'-10"	11'-10"	10'-0"	10'-5"	8'-6"	12'-0"
95.0	7'-0"	8'-2"	9'-5"	7'-8"	11'-7"	9'-8"	10'-2"	8'-4"	12'-0"
100.0	7'-0"	7'-10"	9'-3"	7'-5"	11'-5"	9'-5"	10'-0"	8'-2"	12'-0"
105.0	7'-0"	7'-9"	9'-1"	7'-2"	11'-3"	9'-1"	9'-10"	8'-0"	12'-0"
110.0	7'-0"	7'-6"	8'-11"	7'-0"	11'-1"	8'-11"	9'-9"	7'-10"	12'-0"
115.0	7'-0"	7'-4"	8'-10"	6'-10"	10'-11"	8'-8"	9'-7"	7'-9"	12'-0"
120.0	7'-0"	7'-2"	8'-8"	6'-8"	10'-9"	8'-6"	9'-5"	7'-7"	12'-0"
125.0	7'-0"	7'-0"	8'-7"	6'-6"	10'-7"	8'-3"	9'-4"	7'-6"	12'-0"
130.0	7'-0"	6'-10"	8'-5"	6'-5"	10'-6"	8'-1"	9'-2"	7'-4"	12'-0"
135.0	7'-0"	6'-9"	8'-4"	6'-3"	10'-4"	7'-11"	9'-1"	7'-2"	12'-0"
140.0	7'-0"	6'-7"	8'-3"	6'-2"	10'-1"	7'-9"	9'-0"	7'-1"	12'-0"
145.0	7'-0"	6'-6"	8'-2"	6'-0"	10'-9"	7'-8"	8'-10"	6'-11"	12'-0"
150.0	7'-0"	6'-4"	8'-1"	5'-11"	10'-5"	7'-6"	8'-9"	6'-10"	12'-0"

SCHEDULE 2c

WALL MOUNTING

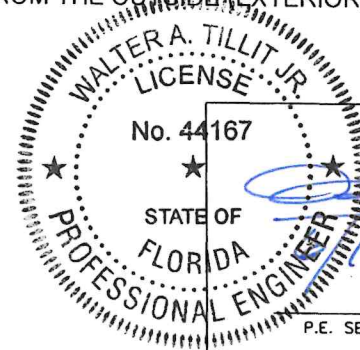
MAX. SPAN (ft.) FOR END AND INTERIOR MULLION FOR A GIVEN
A.S.D. DESIGN LOAD (p.s.f.) AND A 7'-0" MAX. MULLION SPACING (ft.) *
VALID ONLY FOR INSTALLATIONS INTO CONCRETE

MAXIMUM A.S.D. DESIGN PRESSURE RATING RANGE (p.s.f.)	MAXIMUM MULLION SPACING (ft.) *	MAXIMUM MULLION SPAN (ft.)							
		(F) 4"x6"x1/4" MULLION				(G) 4"x8"x1/4" MULLION			
		ORIENTATION #1 (⇐) ‡		ORIENTATION #2 (⇐) ‡		ORIENTATION #1 (⇐) ‡		ORIENTATION #2 (⇐) ‡	
		END	INTERIOR	END	INTERIOR	END	INTERIOR	END	INTERIOR
30.0	7'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"
35.0	7'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"
40.0	7'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"
45.0	7'-0"	12'-0"	12'-0"	11'-1"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"
50.0	7'-0"	12'-0"	11'-7"	10'-5"	12'-0"	12'-0"	12'-0"	11'-3"	12'-0"
55.0	7'-0"	11'-7"	11'-3"	9'-10"	12'-0"	12'-0"	12'-0"	10'-8"	12'-0"
60.0	7'-0"	10'-11"	10'-11"	9'-5"	12'-0"	12'-0"	11'-11"	10'-3"	12'-0"
65.0	7'-0"	10'-4"	10'-8"	9'-1"	12'-0"	12'-0"	11'-7"	9'-10"	12'-0"
70.0	7'-0"	9'-10"	10'-5"	8'-9"	12'-0"	11'-7"	11'-3"	9'-6"	12'-0"
75.0	7'-0"	9'-5"	10'-2"	8'-6"	12'-0"	11'-2"	11'-0"	9'-3"	12'-0"
80.0	7'-0"	9'-1"	9'-11"	8'-3"	12'-0"	10'-8"	10'-10"	8'-11"	12'-0"
85.0	7'-0"	8'-9"	9'-9"	8'-0"	12'-0"	10'-4"	10'-7"	8'-9"	12'-0"
90.0	7'-0"	8'-5"	9'-7"	7'-10"	11'-10"	10'-0"	10'-5"	8'-6"	12'-0"
95.0	7'-0"	8'-2"	9'-5"	7'-8"	11'-7"	9'-8"	10'-2"	8'-4"	12'-0"
100.0	7'-0"	7'-10"	9'-3"	7'-5"	11'-5"	9'-5"	10'-0"	8'-2"	12'-0"
105.0	7'-0"	7'-9"	9'-1"	7'-2"	11'-3"	9'-1"	9'-10"	8'-0"	12'-0"
110.0	7'-0"	7'-6"	8'-11"	7'-0"	11'-1"	8'-11"	9'-9"	7'-10"	12'-0"
115.0	7'-0"	7'-4"	8'-10"	6'-10"	10'-11"	8'-8"	9'-7"	7'-9"	12'-0"
120.0	7'-0"	7'-2"	8'-8"	6'-8"	10'-9"	8'-6"	9'-5"	7'-7"	12'-0"
125.0	7'-0"	7'-0"	8'-7"	6'-6"	10'-7"	8'-3"	9'-4"	7'-6"	12'-0"
130.0	7'-0"	6'-10"	8'-5"	6'-5"	10'-6"	8'-1"	9'-2"	7'-4"	12'-0"
135.0	7'-0"	6'-9"	8'-4"	6'-3"	10'-4"	7'-11"	9'-1"	7'-2"	12'-0"
140.0	7'-0"	6'-7"	8'-3"	6'-2"	10'-3"	7'-9"	9'-0"	7'-1"	12'-0"
145.0	7'-0"	6'-6"	8'-2"	6'-0"	10'-1"	7'-8"	8'-10"	6'-11"	12'-0"
150.0	7'-0"	6'-4"	8'-1"	5'-11"	10'-0"	7'-6"	8'-9"	6'-10"	12'-0"



* MAXIMUM MULLION SPACING SHALL BE SUCH THAT MAX SLAT SPAN FOR THAT A.S.D. DESIGN LOAD SHALL NOT BE EXCEEDED.

‡ MULLION ORIENTATION IS AS SEEN FROM THE OUTSIDE (EXTERIOR) OF SHUTTER.



P.E. SEAL/SIGNATURE/DATE

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TILTECO INC.
TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th St., Ste. 305 - VIRGINIA GARDENS, FL 33166
Phone : (305) 871-1530 , Fax : (305) 871-1531
e-mail: tilteco@aol.com
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WALTER A. TILLIT JR., P.E.
FLORIDA Lic. # 44167

FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

RLL 55-X SLAT END RETENTION
ROLL-UP SHUTTER

ROLLAC SHUTTER OF TEXAS, INC.

5331 ORANGE STREET
PEARLAND, TX. 77581
PH: (281) 485-1911, FAX: (281) 485-0839

REV #	DESCRIPTION	DATE	REV #	DESCRIPTION	DATE
1	OLD 20-242	06/19/25	3		
2			4		

W.H
DRAWN BY

06/19/2025
DATE

25-052
DRAWING N°

SHEET 17 OF 19

SLAT PERFORMANCE CHARTS Ib, IIb & IIIb:

FOR A GIVEN A.S.D. DESIGN LOAD (p.s.f.) AND SHUTTER MOUNT CONDITION PER DETAIL 1 BELOW

CHART Ib: (ONLY VALID FOR 3/16" SLIP)										
SHEATHING & STUDS REQUIREMENTS	USE MAXIMUM VALUE BETWEEN POSITIVE AND NEGATIVE A.S.D. LOAD								USE MAXIMUM POSITIVE LOAD VALUE	
	MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.)	MAX. SLAT SPAN "LMAX." (ft)						REQUIRED MIN. SLAT SPAN "LMIN." (ft)	REQUIRED MIN. SEPARATION TO GLASS MEASURED TO BACK OF SLAT (in)	
		WALL MOUNT (SEE NOTES Δ)			BUILD-OUT MOUNT W/ (SEE NOTES Δ)					
		G=0.55 *	G=0.46 *	G=0.36 *	G=0.55 *	G=0.46 *	G=0.36 *		WALL & BUILD-OUT MOUNT W/ (SEE NOTES Δ)	WIND ZONES 1-3
1/2" PLYWOOD W/ 2"x6" STUDS	30.0	11'-11"	11'-5"	10'-3"	11'-11"	9'-4"	8'-4"	6'-6"	1"	9 3/4"
	35.0	11'-11"	10'-5"	-	11'-11"	8'-7"	-	6'-3"		
	40.0	11'-11"	9'-7"	-	10'-11"	8'-0"	-	6'-0"		
	45.0	11'-11"	-	-	10'-0"	-	-	5'-9"		
	50.0	11'-11"	-	-	9'-6"	-	-	5'-7"		
	55.0	11'-11"	-	-	8'-11"	-	-	5'-6"		
7/16" O.S.B. W/ 2"x6" OR 2"x4" STUDS	60.0	11'-11"	-	-	8'-6"	-	-	5'-4"	1"	8 7/8"
	30.0	10'-0"	10'-0"	10'-0"	10'-0"	9'-4"	8'-4"	6'-6"		
	35.0	10'-0"	10'-0"	-	10'-0"	8'-7"	-	6'-3"		
	40.0	10'-0"	9'-7"	-	10'-0"	8'-0"	-	6'-0"		
	45.0	10'-0"	-	-	10'-0"	-	-	5'-9"		
	50.0	10'-0"	-	-	9'-6"	-	-	5'-7"		

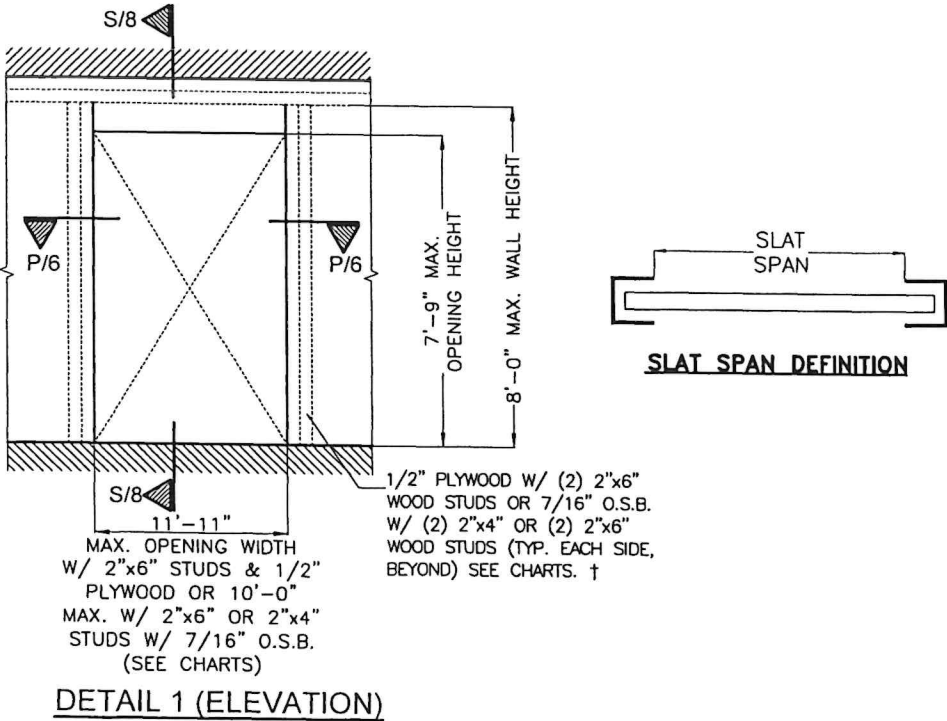
CHART IIb: (ONLY VALID FOR 1/8" SLIP)											
SHEATHING & STUDS REQUIREMENTS	USE MAXIMUM VALUE BETWEEN POSITIVE AND NEGATIVE A.S.D. LOAD							USE MAXIMUM POSITIVE LOAD VALUE			
	MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.)	MAX. SLAT SPAN "LMAX." (ft)						REQUIRED MIN. SLAT SPAN "LMIN." (ft)	REQUIRED MIN. SEPARATION TO GLASS MEASURED TO BACK OF SLAT (in)		
		WALL MOUNT (SEE NOTES Δ)			BUILD-OUT MOUNT W/ (SEE NOTES Δ)						
		G=0.55 *	G=0.46 *	G=0.36 *	G=0.55 *	G=0.46 *	G=0.36 *		WALL & BUILD-OUT MOUNT W/ (SEE NOTES Δ)	WIND ZONES 1-3	WIND ZONE 4
		G=0.36 * G=0.46 * G=0.55 *									
1/2" PLYWOOD W/ 2"x6" STUDS	30.0	10'-8"	10'-3"	9'-4"	10'-8"	8'-6"	7'-8"	6'-2"	1"	9 3/4"	
	35.0	10'-8"	9'-5"	-	10'-8"	7'-10"	-	5'-10"			
	40.0	10'-8"	8'-8"	-	9'-10"	7'-4"	-	5'-8"			
	45.0	10'-8"	-	-	9'-0"	-	-	5'-6"			
	50.0	10'-8"	-	-	8'-7"	-	-	5'-4"			
	55.0	10'-8"	-	-	8'-1"	-	-	5'-2"			
60.0	10'-8"	-	-	7'-8"	-	-	5'-0"				
7/16" O.S.B. W/ 2"x6" OR 2"x4" STUDS	30.0	10'-0"	10'-0"	9'-4"	10'-0"	8'-6"	7'-8"	6'-6"	1"	8 7/8"	
	35.0	10'-0"	10'-0"	-	10'-0"	7'-10"	-	6'-3"			
	40.0	10'-0"	9'-7"	-	10'-0"	7'-4"	-	6'-0"			
	45.0	10'-0"	-	-	10'-0"	-	-	5'-9"			
	50.0	10'-0"	-	-	9'-6"	-	-	5'-7"			

CHART IIIb: (LESS THAN 1/8" SLIP)					
SHEATHING & STUDS REQUIREMENTS	USE MAXIMUM VALUE BETWEEN POSITIVE AND NEGATIVE A.S.D. LOAD			USE MAXIMUM POSITIVE LOAD VALUE	
	MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.)	MAX. SLAT SPAN "LMAX." (FT)	MIN. SLAT SPAN "LMIN." (FT)	REQUIRED MIN. SEPARATION TO GLASS MEASURED TO BACK OF SLAT (in)	
		WALL & BUILD-OUT MOUNT W/ (SEE NOTES Δ)	WALL & BUILD-OUT MOUNT W/ (SEE NOTES Δ)	WIND ZONES 1-3	WIND ZONE 4
		G=0.36*, G=0.46*, G=0.55*	G=0.36*, G=0.46*, G=0.55*		
1/2" PLYWOOD W/ 2"x6" STUDS	30.0	6'-0"	-	0'-0"	1"
	35.0	5'-9"	-		
	40.0	5'-5"	-		
	45.0	5'-1"	-		
	50.0	4'-10"	-		
	55.0	4'-7"	-		
7/16" O.S.B. W/ 2"x6" OR 2"x4" STUDS	30.0	6'-0"	-	0'-0"	1"
	35.0	5'-9"	-		
	40.0	5'-5"	-		
	45.0	5'-1"	-		
	50.0	4'-10"	-		
	55.0	4'-7"	-		

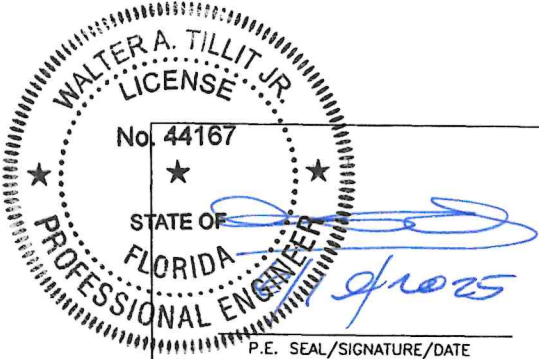
*: G=0.55, APPLICABLE TO SOUTHERN YELLOW PINE #2 WOOD GRADE
G=0.46, APPLICABLE TO DOUGLAS FIR-SOUTH WOOD GRADE
G=0.36, APPLICABLE TO SPRUCE PINE-FIR SOUTH WOOD GRADE

Δ NOTES:

- ABOVE INDICATED MAX. SLAT SPANS MAY BE USED AS LONG AS ANCHOR SPACING SCHEDULES ON SHEET 19 INDICATE THAT A SPACING IS AVAILABLE FOR THE CORRESPONDING SLAT SPAN AND A.S.D. DESIGN LOAD.
- WOOD FRAME WALL TO BE BUILT STRICTLY IN ACCORDANCE WITH SPECS GIVEN ON DETAIL 1 AND PROVISIONS FROM CHAPTER 23 OF THE FLORIDA BUILDING CODE. MIN. WALL LENGTH AT EITHER SIDE OF OPENING MUST BE 33 INCHES.
- INSTALLATIONS VALID ONLY FOR SHUTTERS WITHOUT MULLIONS.



INSTALLATIONS INTO WOOD FRAME STRUCTURES



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TILTECO INC.

TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th St., Ste. 305 - VIRGINIA GARDENS, FL 33166
Phone: (305) 871-1530, Fax: (305) 871-1531
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RLL 55-X SLAT END RETENTION ROLL-UP SHUTTER

ROLLAC SHUTTER OF TEXAS, INC.

5331 ORANGE STREET
PEARLAND, TX. 77581
PH: (281) 485-1911, FAX: (281) 485-0839

REV #	DESCRIPTION	DATE	REV #	DESCRIPTION	DATE
1	OLD 20-242	06/19/23	3		
2			4		

W.H. DRAWN BY

06/19/2025 DATE

25-052 DRAWING #

SHEET 18 OF 19

MAX. ANCHOR'S SPACING SCHEDULE VI FOR A GIVEN PRODUCT MOUNTING TYPE W/ ø 5/16" ELCO CONSTRUCTION
PRODUCTS ULTRACON ANCHORS TO WOOD GRADE, A.S.D. DESIGN LOAD (psf) AND SLAT SPAN RANGE

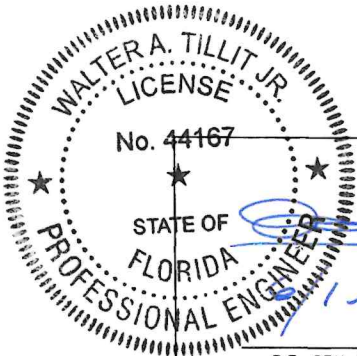
WALL MOUNT
TO 2"x6" WOOD STUD WITH MINIMUM 1/2" PLYWOOD
OR 2"x4"/2"x6" WOOD STUDS WITH MINIMUM 7/16" O.S.B.
(SEE DETAIL 1 ON SHEET 18)

WOOD GRADE	MAXIMUM A.S.D. DESIGN PRESSURE RATING RANGE (p.s.f.)	SLAT SPAN RANGE						
		0' to 4' *	> 4' to 5' *	> 5' to 6' *	> 6' to 7' *	> 7' to 8' *	> 8' to 10' *	> 10' to 11'-11"*
SOUTHERN PINE #2 (G=0.55)	≤ 30.0	6"	6"	6"	6"	6"	6"	6"
	40	6"	6"	6"	6"	6"	6"	5"
	50	6"	6"	6"	6"	6"	5"	4"
	60	6"	6"	6"	6"	5"	4"	3"
DOUGLAS-FIR-SOUTH (G=0.46)	≤ 30.0	6"	6"	6"	6"	5"	4"	3"
	40	6"	6"	6"	6"	3"	3"	-
SPRUCE PINE-FIR-SOUTH (G=0.36)	≤ 30.0	6"	6"	6"	6"	4"	3"	3"

* NOTE:
MAX. SPAN FOR SLAT FOR A
GIVEN DESIGN A.S.D. LOAD
SHALL **NEVER** EXCEED MAX.
SLAT SPAN INDICATED ON SLAT
PERFORMANCE CHARTS ON
SHEET 18.

BUILD-OUT MOUNT
TO 2"x6" WOOD STUD WITH MINIMUM 1/2" PLYWOOD
OR 2"x4"/2"x6" WOOD STUDS WITH MINIMUM 7/16" O.S.B.
(SEE DETAIL 1 ON SHEET 18)

WOOD GRADE	MAXIMUM A.S.D. DESIGN PRESSURE RATING RANGE (p.s.f.)	SLAT SPAN RANGE						
		0' to 4' *	> 4' to 5' *	> 5' to 6' *	> 6' to 7' *	> 7' to 8' *	> 8' to 10' *	> 10' to 11'-11"*
SOUTHERN PINE #2 (G=0.55)	≤ 30.0	6"	6"	6"	6"	6"	5"	3"
	40	6"	6"	6"	6"	4"	3"	3"
	50	6"	6"	6"	6"	3"	3"	-
	60	6"	6"	6"	4"	3"	-	-
DOUGLAS-FIR-SOUTH (G=0.46)	≤ 30.0	6"	6"	6"	6"	3"	3"	3"
	40	6"	6"	6"	5"	3"	-	-
SPRUCE PINE-FIR-SOUTH (G=0.36)	≤ 30.0	6"	6"	6"	6"	3"	-	-



P.E. SEAL/SIGNATURE/DATE

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TILTECO INC.
TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th St., Ste. 305 - VIRGINIA GARDENS, FL 33166
Phone : (305) 871-1530 , Fax : (305) 871-1531
e-mail: tilteco@aol.com
CA-0006719
WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. # 44167

FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

RLL 55-X SLAT END RETENTION
ROLL-UP SHUTTER
ROLLAC SHUTTER OF TEXAS, INC.

5331 ORANGE STREET
PEARLAND, TX. 77581
PH:(281) 485-1911, FAX:(281) 485-0839

REV #	DESCRIPTION	DATE	REV #	DESCRIPTION	DATE
1	OLD 20-242	06/19/23	3		
2			4		

W.H
DRAWN BY

06/19/2025
DATE

25-052
DRAWING N°

SHEET 19 OF 19