

GENERAL NOTES:

1. Gaviota ROLL-UP SHUTTER SYSTEM WITH GV-60 END RETENTION SLAT 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.
gaviota ROLL-UP SHUTTER SYSTEM SHALL NOT BE INSTALLED AT HIGH VELOCITY HURRICANE ZONES (MIAMI-DADE / BROWARD COUNTIES).
2. DESIGN WIND LOADS SHALL BE DETERMINED AS PER SECTION 1609 OF THE ABOVE MENTIONED CODE USING ASCE 7-22 AND SHALL NOT EXCEED THE MAXIMUM (A.S.D.) DESIGN PRESSURE RATINGS INDICATED BELOW AND ON SHEETS 8 THRU 11, 13 THRU 15, 17, 18 AND 19 THRU 21.
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 COMPARE THESE W/MAX. (A.S.D.) DESIGN PRESSURE RATINGS INDICATED BELOW..

MAXIMUM A.S.D. DESIGN PRESSURE RATING + 60.0 psf, -60.0 psf.

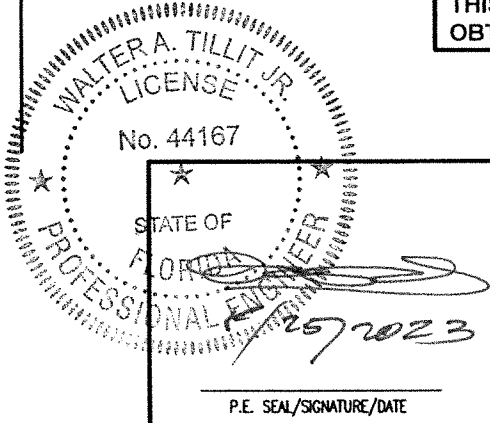
IN ORDER TO VERIFY THAT COMPONENTS AND ANCHORS ON THIS P.E.D. AS TESTED WERE NOT OVER STRESSED, A 33% INCREASE IN ALLOWABLE STRESS FOR WIND LOADS WAS NOT USED IN THEIR ANALYSIS. FASTENERS SPACING TO WOOD HAVE BEEN DETERMINED IN ACCORDANCE WITH N.D.S. 2018. THIS PRODUCT ADEQUACY FOR IMPACT AND WIND RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1609.1.2 OF THE ABOVE MENTIONED CODE AS PER BLACKWATER TEST LAB. REPORT # BT-GIO-22-001 AS PER TAS-201, TAS-202 AND TAS-203 PROTOCOLS.
3. ALL ALUMINUM EXTRUSIONS SHALL BE AS INDICATED ON SHEET 2.
4. ALL ALUMINUM EXTRUSIONS IN CONTACT WITH DISSIMILAR MATERIALS SHALL COMPLY WITH SECTION III-6 OF THE 2020 ALUMINUM DESIGN MANUAL.
5. ALL SCREWS 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.
6. BOLTS TO BE ASTM-307, GALVANIZED OR AISI 304 OR 316 SERIES STAINLESS STEEL WITH 36 KSI MINIMUM YIELD STRENGTH.
7. ANCHORS TO WALL FOR C SIDE RAIL SHALL BE AS FOLLOWS:
A) TO EXISTING POURED CONCRETE: MIN. 3000 p.s.i. COMPRESSIVE STRENGTH.
-5/16" Ø TAPCON XL ANCHORS OR 5/16" Ø ULTRACONS AS MANUFACTURED BY ITW BUILDEX, INC. AND DEWALT, RESPECTIVELY.
-3/8" Ø S.S. KIWI BOLT 3 ANCHORS AS MANUFACTURED BY HILTI, INC
A.1) MINIMUM EMBEDMENT INTO POURED CONCRETE SHALL BE:
2 1/4" FOR 5/16" Ø TAPCON XL OR ULTRACON ANCHORS, 2 3/8" FOR 3/8" Ø KWIK BOLT 3 ANCHORS. NO EMBEDMENT INTO STUCCO SHALL BE CONSIDERED AS PART OF THE REQUIRED EMBEDMENT.
A.2) MINIMUM EDGE DISTANCE (E.D.) INTO POURED CONCRETE SHALL BE:
3" FOR 5/16" Ø TAPCON XL & ULTRACONS & 4" FOR 3/8" Ø KIWI BOLT3. 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 STRUCTURE BEHIND SUCH PANELS.
B) TO EXISTING MIN. Fc=2 KSI GROUT FILLED CELL CONCRETE BLOCK WALL: ASTM C-90
-5/16" Ø TAPCON XL OR 5/16" Ø ULTRACON ANCHORS, AS MANUFACTURED BY ITW BUILDEX, INC.& DEWALT, RESPECTIVELY.
-3/8" Ø S.S. KWIK BOLT 3 ANCHORS AS MANUFACTURED BY HILTI INC.
B.1) MINIMUM EMBEDMENT OF 5/16"Ø TAPCON XL OR ULTRACON ANCHORS INTO GROUT FILLED CELL CONCRETE BLOCK UNIT SHALL BE 2 1/4" & 2 1/2" FOR HILTI BOLT 3.
NO EMBEDMENT INTO STUCCO SHALL BE CONSIDERED AS PART OF THE REQUIRED EMBEDMENT.
B.2) MINIMUM EDGE DISTANCE (E.D.) OF 5/16"Ø TAPCON XL OR ULTRACON ANCHORS & KWIK BOLT 3 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 BRICKS PANELS, VENEER OR PAVERS BE FOUND ON THE EXISTING WALL ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SUCH PANELS.
C) TO EXISTING WOOD FRAME BUILDING: SPRUCE PINE -FIR-SOUTH (G-036). DOUGLAS-FIR-SOUTH (G=0.46) OR SOUTHERN PINE # 2 (G=0.55) MIN.
-5/16" Ø TAPCON XL OR MAXISET ANCHORS, AS MANUFACTURED BY ITW BUILDEX, INC. OR
-5/16" Ø DEWALT ULTRACON.
C.1) MINIMUM EMBEDMENT OF TAPCON XL ANCHORS, MAXISET OR ULTRACONS INTO THE WOOD FRAME UNIT SHALL BE 1 1/2" PHYSICAL THREADED PENETRATION.
NO EMBEDMENT INTO FINISH MATERIAL SHALL BE CONSIDERED AS PART OF THE REQUIRED EMBEDMENT.
C.2) MINIMUM EDGE DISTANT (E.D.) OF TAPCON XL ANCHORS, MAXISET OR ULTRACONS INTO WOOD SHALL BE 2 1/4". 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 STRUCTURE BEHIND SUCH PANELS.
8. ANCHORS SHALL BE INSTALLED FOLLOWING ALL THE RECOMMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER.

9. ANCHORS REQUIRED FOR MULLION CONNECTIONS TO CONCRETE SHALL BE AS SPECIFIED ON APPLICABLE SECTIONS SHOWN ON SHEETS 8, 9, 10 & 11.
-S.S.KWIK BOLT 3 EXPANSION ANCHOR MANUFACTURED BY HILTI, INC.
-CONFLEX SCREW ANCHOR MANUFACTURED BY ELCO CONSTRUCTION PRODUCTS.
- MINIMUM EDGE DISTANCE FOR ABOVE MENTIONED ANCHOR SHALL BE AS INDICATED BELOW OR AT ABOVE MENTIONED SHEETS. EDGE DISTANCE AND EMBEDMENTS ARE BEYOND ANY FINISH MATERIAL

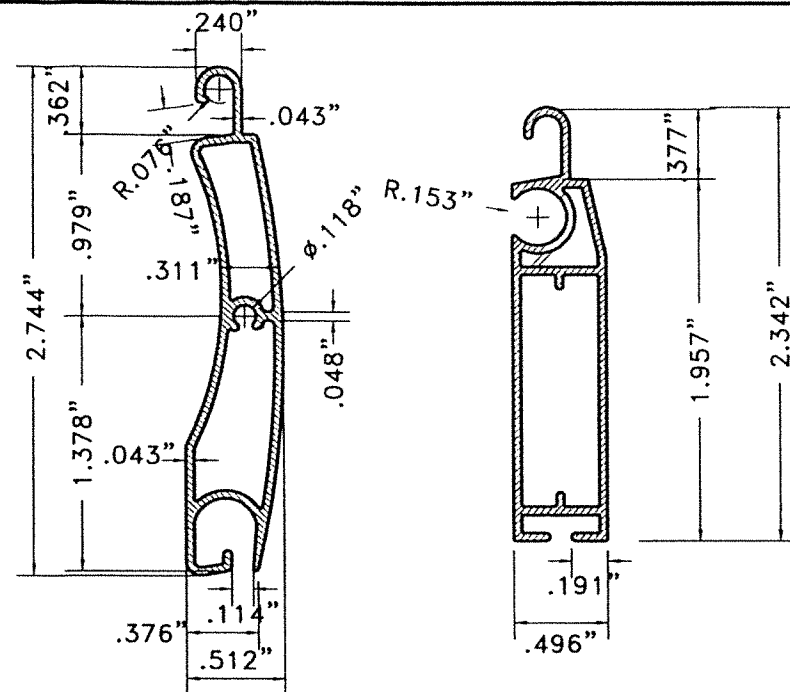
ANCHOR	EDGE DISTANCE @ 100%	EMBEDMENT @ 100% CONCRETE	REQ. MIN. THICKNESS FOR SUBSTRATE
1/2"Ø KWIK BOLT 3	8"	3 1/2" (3000 PSI)	6"
3/8"Ø KWIK BOLT 3	4 1/2"	2 3/8" (3000 PSI)	6"
3/8"Ø CONFLEX SCREW	4"	2 5/8" (3000 PSI)	6"
1/2"Ø CONFLEX	6"	3 1/2" (3000 PSI)	6"
5/8"Ø KWIK BOLT 3	7"	3 1/2" (3000 PSI)	6"

10. THE INSTALLATION CONTRACTOR IS TO SEAL/CAULK ALL PRODUCT COMPONENT EDGES WHICH REMAIN IN CONTINUOUS CONTACT WITH THE BUILDING TO PREVENT WIND/RAIN INTRUSION. CAULK AND SEAL PRODUCT TRACKS ALL AROUND FULL LENGTH.
11. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE WHERE PRODUCT IS TO BE ATTACHED TO INSURE PROPER ANCHORAGE. THIS PRODUCT SHALL ONLY BE ATTACHED TO CONCRETE, GROUTED CONCRETE BLOCK OR WOOD FRAME BUILDINGS.
12. THIS PRODUCT'S INSTALLATION SHALL COMPLY WITH ALL SPECS INDICATED IN THIS DRAWING PLUS ANY BUILDING AND ZONING REGULATIONS PROVIDED BY THE JURISDICTION.
13. LIFTING MECHANISM IS NOT PART OF THIS APPROVAL.
14. a) THIS P.E.D. PREPARED BY THIS ENGINEER IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SITE SPECIFIC PROJECT: ie. 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 CONTRACTORS' RESPONSIBILITY.
c) THIS P.E.D. WILL BE CONSIDERED INVALID IF ALTERED BY ANY MEANS.
d) SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A FLORIDA 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.
15. PRODUCT MANUFACTURER'S LABEL SHALL BE LOCATED ON A READILY VISIBLE LOCATION AT PRODUCT 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

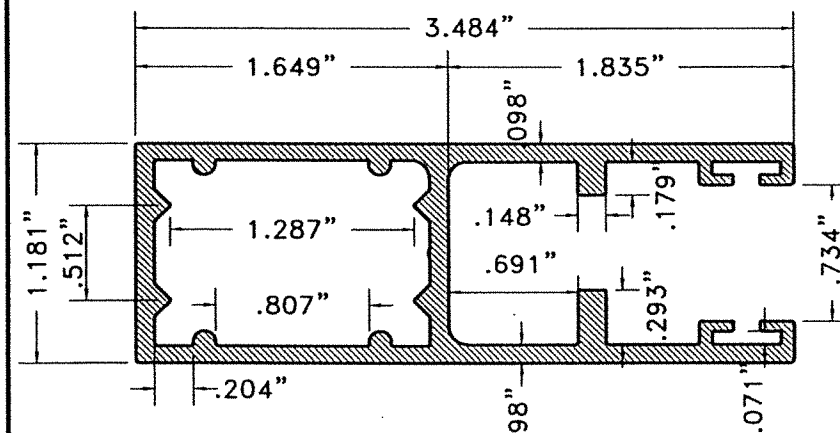


FLORIDA BUILDING CODE (NON HIGH VELOCITY HURRICANE ZONE)											
©2023 TILTECO, INC.  TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 34th St., Ste. 305, VIRGINIA GARDENS, FL 33168 Phone : (305)871-1530 • Fax : (305)871-1531 CA-0006719 WALTER A. TILLIT JR. P.E. FLORIDA Lic. # 44167					ROLL-UP SHUTTER SYSTEM W/ GV-60 END RETENTION SLAT					Y.M. DRAWN BY:	
					 The Sun & Shutter Specialists Cerrada de Acolotenco 237, Bodega 48, Colonia San Sebastian, P.I. Pical Pantaco Ciudad de Mexico-02510					8/25/2023 DATE:	
										23-191 DRAWING No.	
REV. NO		DESCRIPTION		DATE		REV. No		DESCRIPTION		DATE	
1		OLD 22-067		8/25/23		3		-		-	
2		-		-		4		-		-	
										SHEET 1 OF 21	

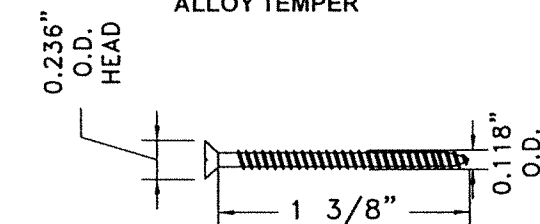


(A) GV-60 SLAT
6063-T5 ALUMINUM
ALLOY TEMPER

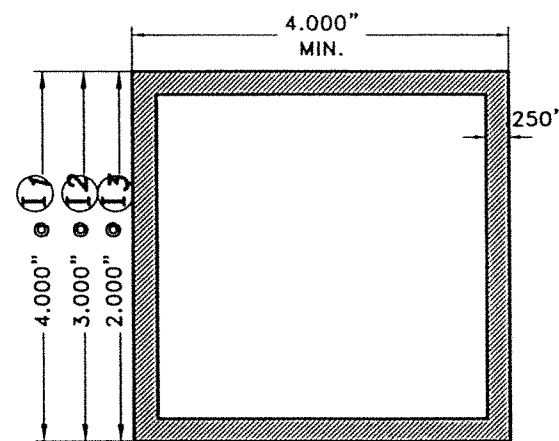
(B) BOTTOM SLAT
6063-T5 ALUMINUM
ALLOY TEMPER



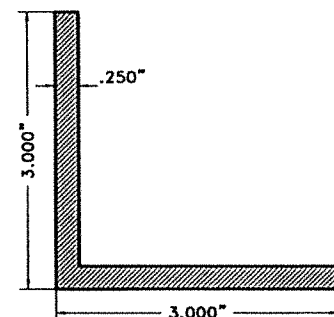
(C) SIDE RAIL
6063-T5 ALUMINUM
ALLOY TEMPER



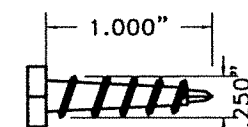
(G) END RETENTION SCREW AT EACH (D)
0.118" O.D. x 1 3/8" AISI 304
STAINLESS STEEL W/
XYLAN COATING



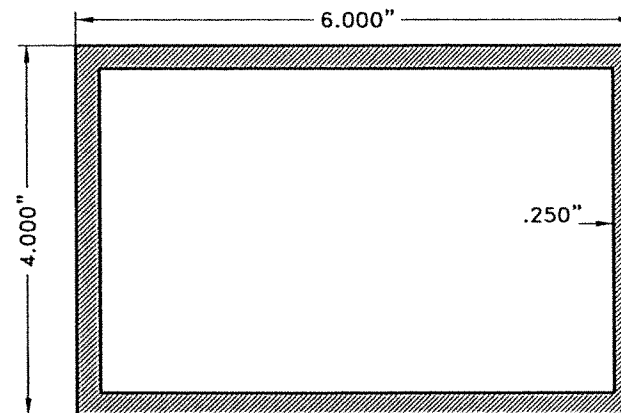
**(I, I2, I3) BUILD-OUT
MOUNTED TUBE (MASONRY)**
6061-T6 ALUMINUM
ALLOY TEMPER



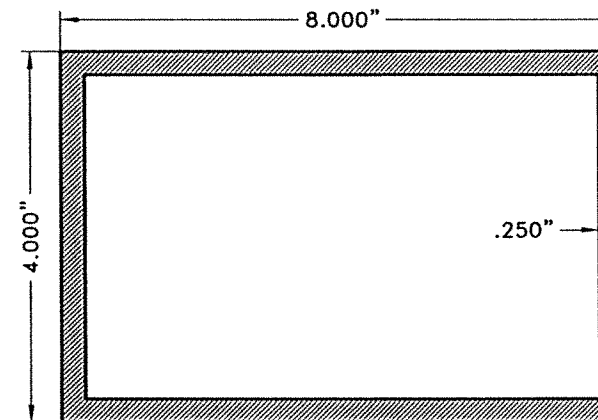
(F) TRAPPED ANGLE
6063-T6 ALUMINUM
ALLOY TEMPER



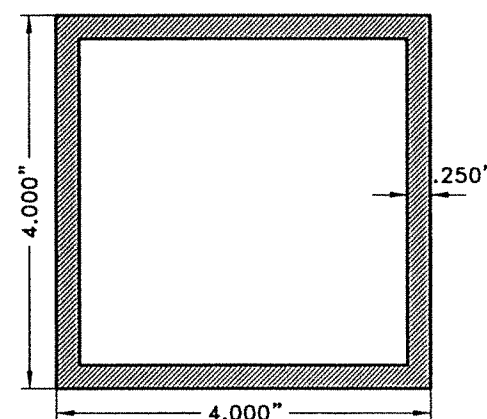
**(H) 1/4"Øx1" ITW/BUILDDEX
TEK SCREW**
STAINLESS STEEL



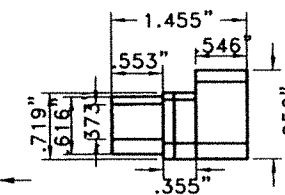
(J) 4" x 6" MULLION
6061-T6 ALUMINUM
ALLOY TEMPER



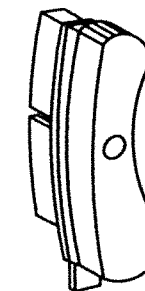
(K) 4" x 8" MULLION
6061-T6 ALUMINUM
ALLOY TEMPER



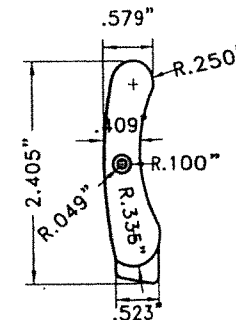
(L) 4" x 4" MULLION
6061-T6 ALUMINUM
ALLOY TEMPER



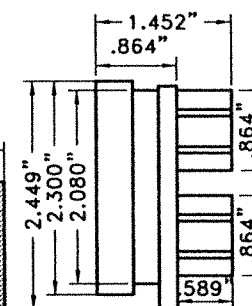
PLAN VIEW



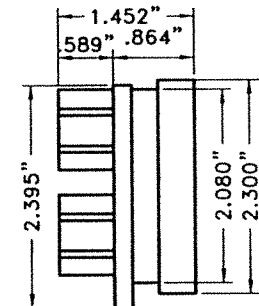
ISOMETRIC VIEW



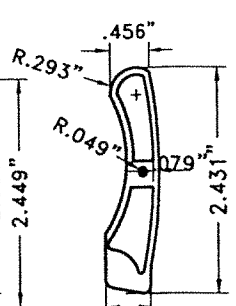
FRONT VIEW



LEFT VIEW

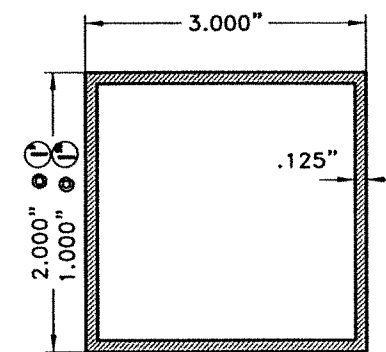


RIGHT VIEW

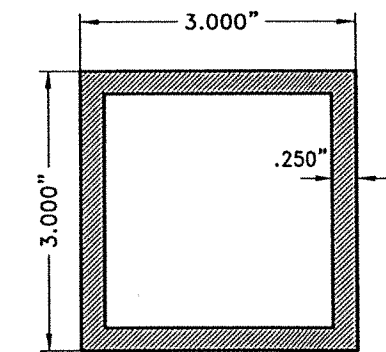


REAR VIEW

(D) SLAT LOCK GUIDE • EVERY SLAT
FOR END RETENTION SYSTEM
AKULON 6-D PA6 POLYAMIDE
9400 psi Yield Stress

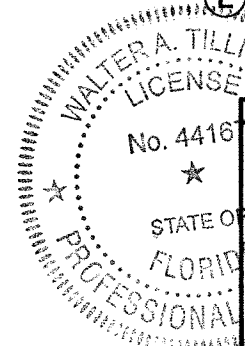


**(I' & I'') BUILD-OUT
MOUNTED TUBE (WOOD)**
6063-T6 ALUMINUM
ALLOY TEMPER



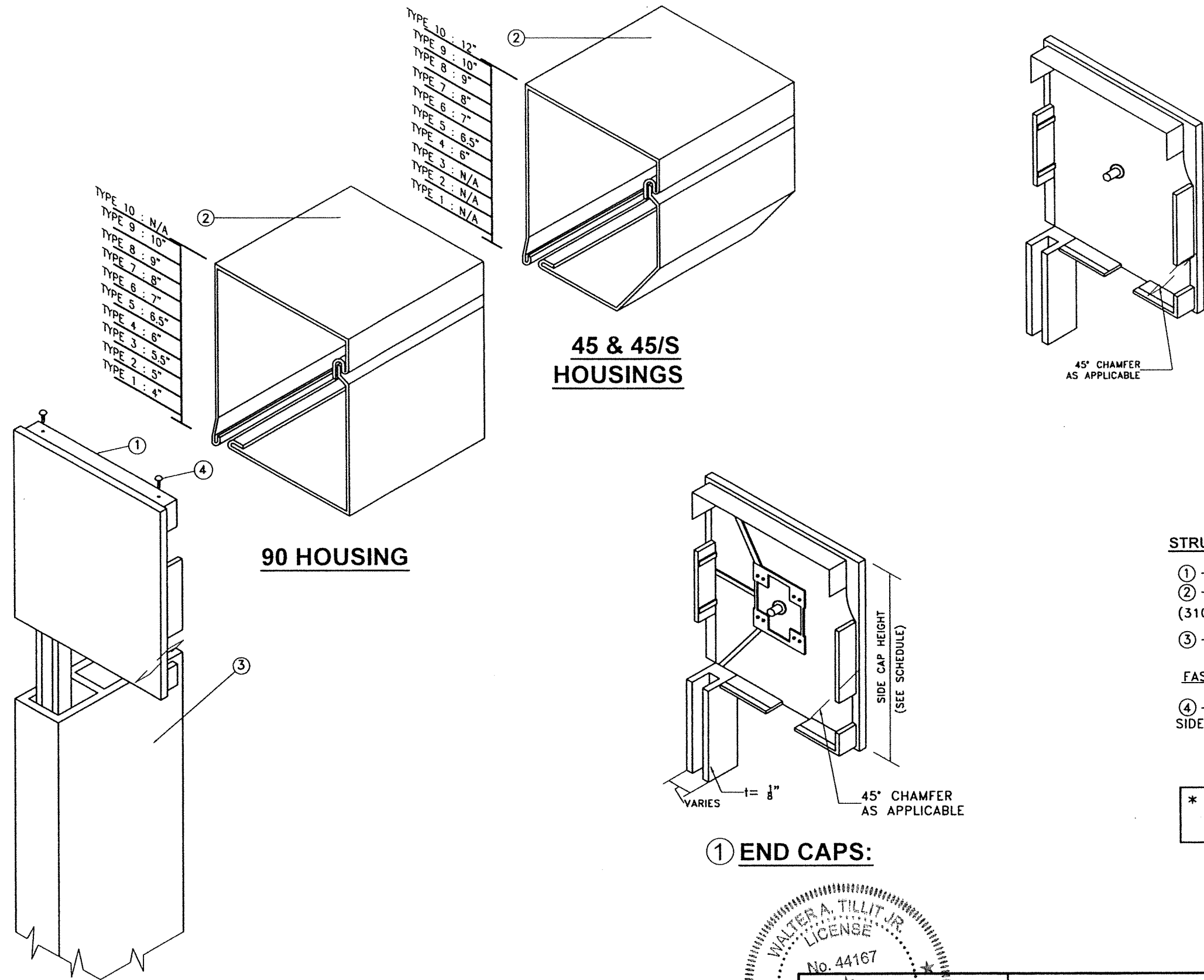
**(I) TRAPPED MOUNTED
TUBE (OPTION TO (F))**
6063-T6 ALUMINUM
ALLOY TEMPER

COMPONENTS
N.T.S.



P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (NON HIGH VELOCITY HURRICANE ZONE)					
TILTECO INC.				ROLL-UP SHUTTER SYSTEM W/ GV-60 END RETENTION SLAT	
6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33186 Phone: (305) 971-1530 Fax: (305) 971-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167				The Sun & Shutter Specialists Cerrada de Acolotenco 237, Bodega 48, Colonia San Sebastian, P.I. Pical Pontaco Ciudad de Mexico-02510	
REV. NO	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE
1	OLD 22-067	8/25/23	3	-	-
2	-	-	4	-	-
Y.M. DRAWN BY: 8/25/2023 DATE: 23-191 DRAWING No.					SHEET 2 OF 21



BOX STRUCTURAL COMPONENTS AND ASSEMBLY DETAIL

**45 & 45/S
HOUSINGS**

90 HOUSING

① END CAPS:

STRUCTURAL COMPONENTS FOR OPERATING SYSTEM

- ① - SIDE/END CAP (CAST ALUMINUM) *
- ② - HOUSING, 0.040" THICK SHEET METAL (3105-H14 OR STRONGER)
- ③ - SIDE RAIL

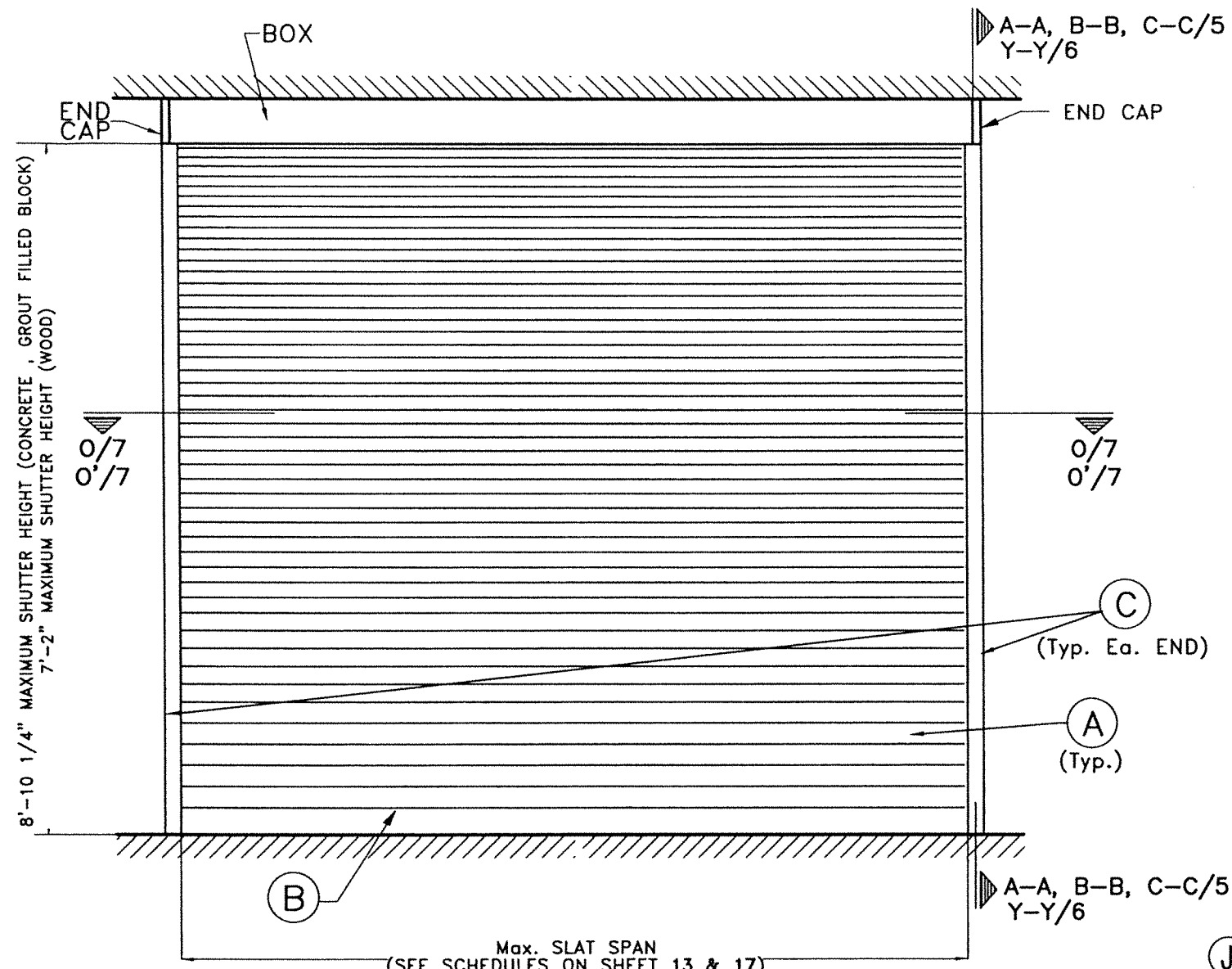
FASTENERS

- ④ - 3/16" ALUMINUM POP RIVETS (6 REQ'D EA. SIDE CAP) : 2 @ TOP, 2 @ REAR, 2 @ BOTTOM

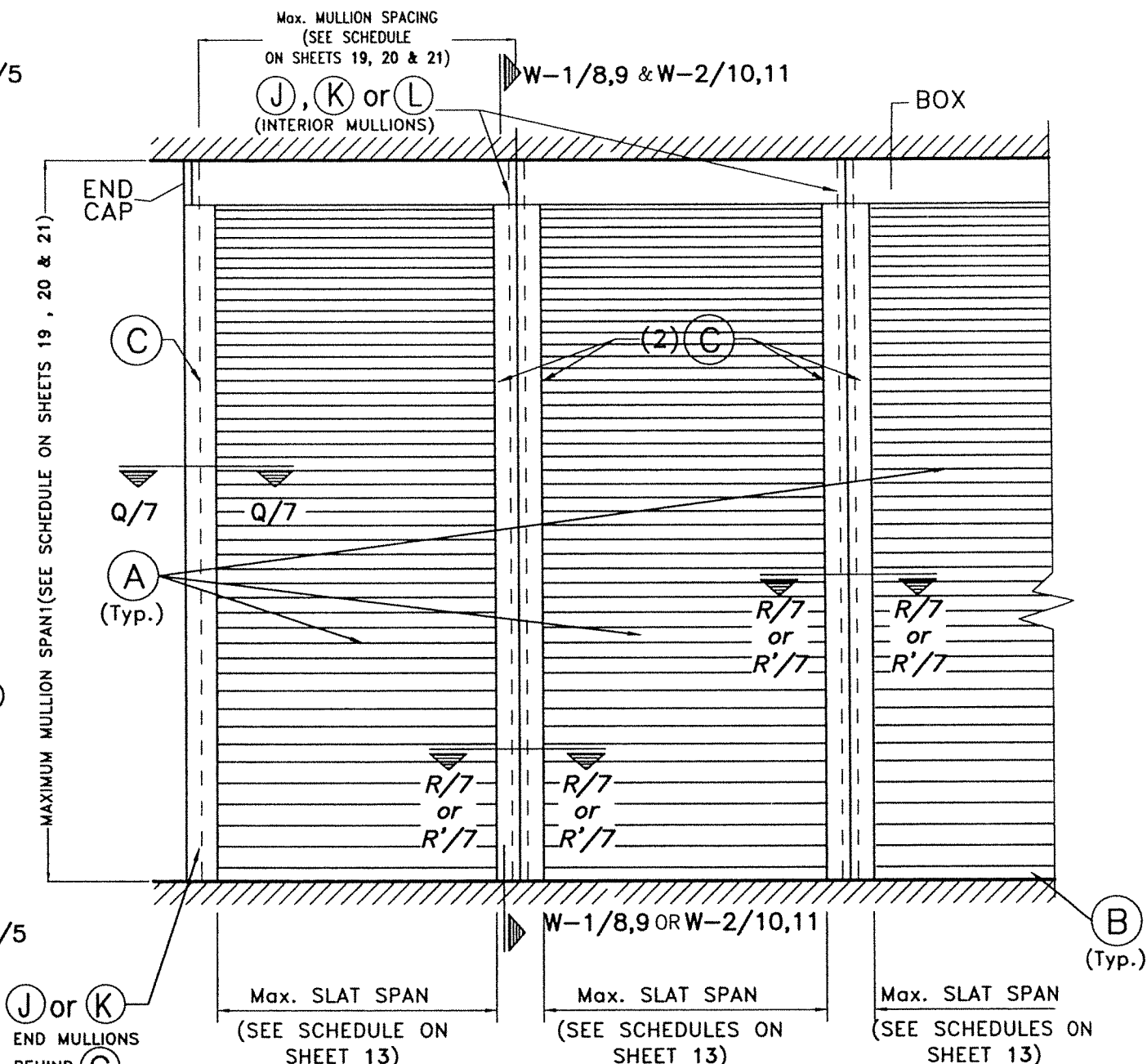
* SHALL BE CAPABLE TO SUSTAIN SLAT'S WEIGHT AND ASSURE LIFTING MECHANISM (SEE NOTE 13/1)

WALTER A. TILLIT JR.
LICENSE
No. 44167
STATE OF FLORIDA
PROFESSIONAL ENGINEER
8/25/2023
P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (NON HIGH VELOCITY HURRICANE ZONE)					
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TILTECO INC.			gaviota		
TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone: (305)871-1530 Fax: (305)871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167			Cerrada de Acolotlenca 237, Bodega 48, Colonla San Sebastian, P.I. Pical Panteco Ciudad de Mexico-02510		
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2	-	-	4	-	-
Y.M. DRAWN BY: 8/25/2023 DATE: 23-191 DRAWING No. SHEET 3 OF 21					



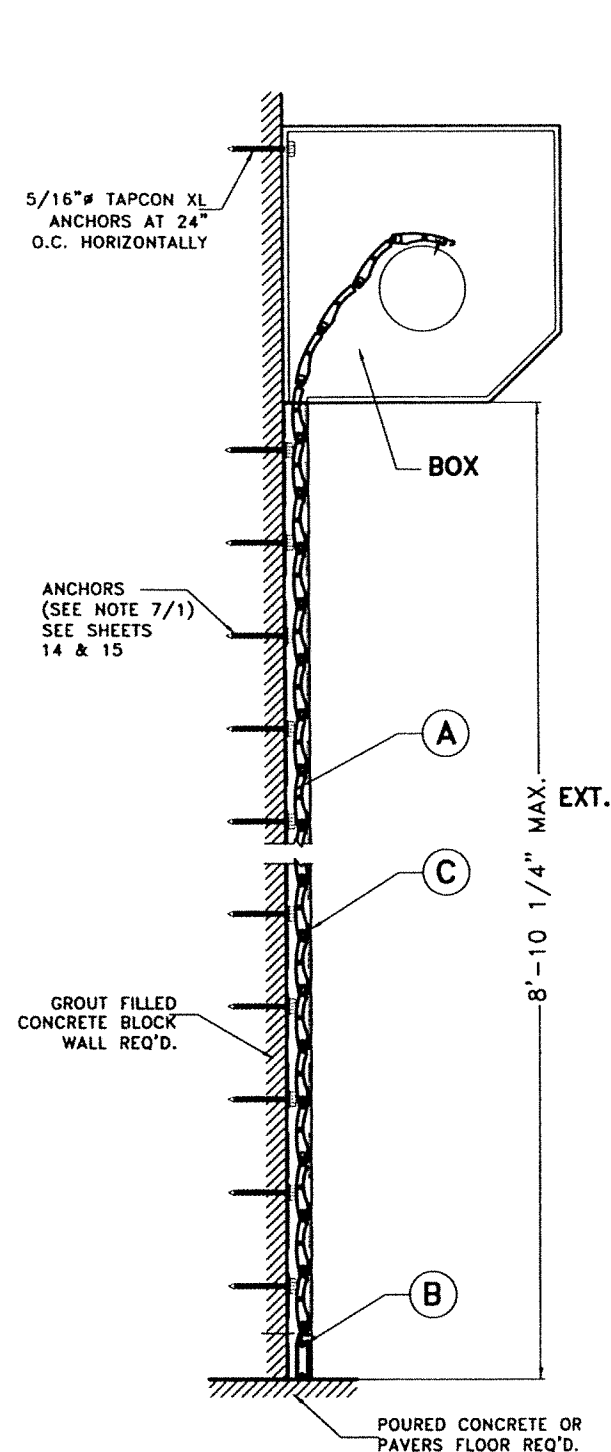
TYPICAL SINGLE UNIT ELEVATION
(CONCRETE, GROUTED BLOCK OR WOOD)
 NOTE: SEE SHEETS 2 & 3 FOR COMPONENTS NOMENCLATURE.
 N.T.S.



TYPICAL CONSECUTIVE SINGLE UNIT ELEVATION
W/ MULLION INTO POURED CONCRETE
 NOTE: SEE SHEETS 2 & 3 FOR COMPONENTS NOMENCLATURE.
 N.T.S.

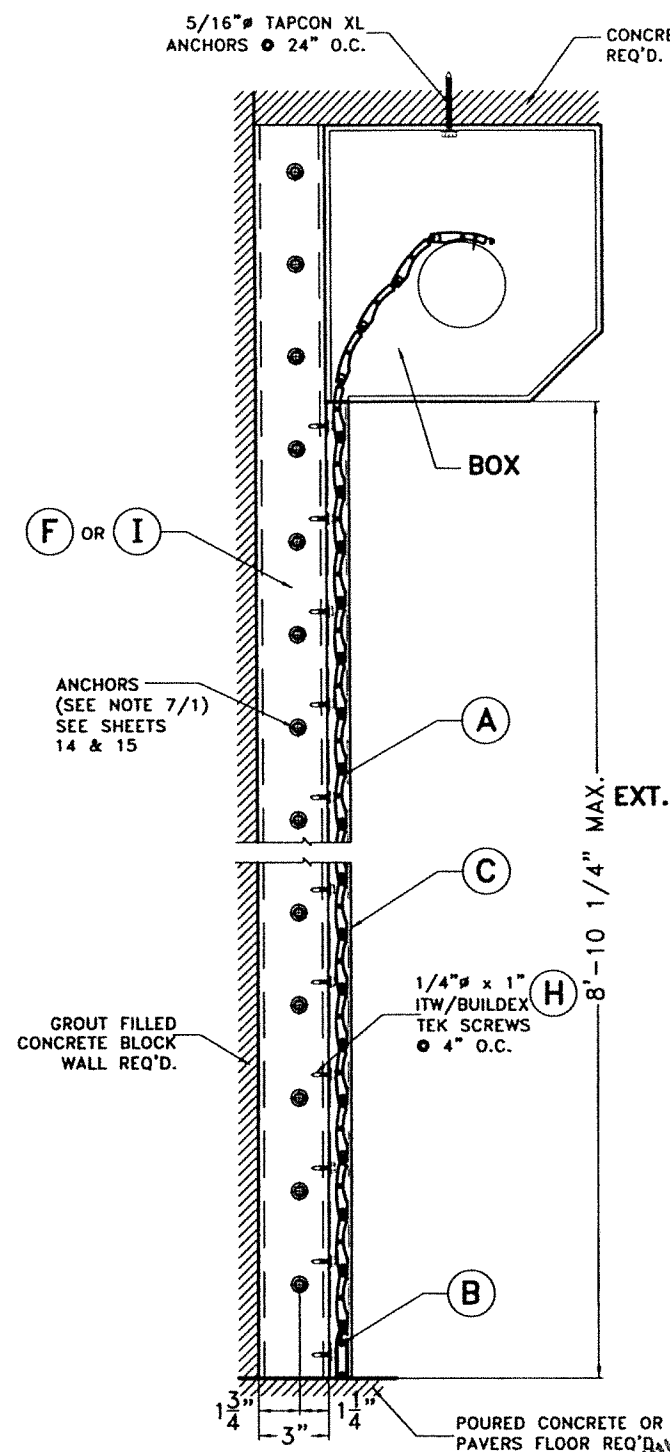
WALTER A. TILLIT JR.
 LICENSE
 No. 44167
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER
 8/25/2023
 P.E. SEAL/SIGNATURE/DATE

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ROLL-UP SHUTTER SYSTEM W/ GV-60 END RETENTION SLAT			gaviota		
The Sun & Shutter Specialists Cerrada de Acolotenco 237, Bodega 48, Colonia San Sebastian, P.I. Pical Panteco Ciudad de Mexico-02510					
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
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2	-	-	4	-	-

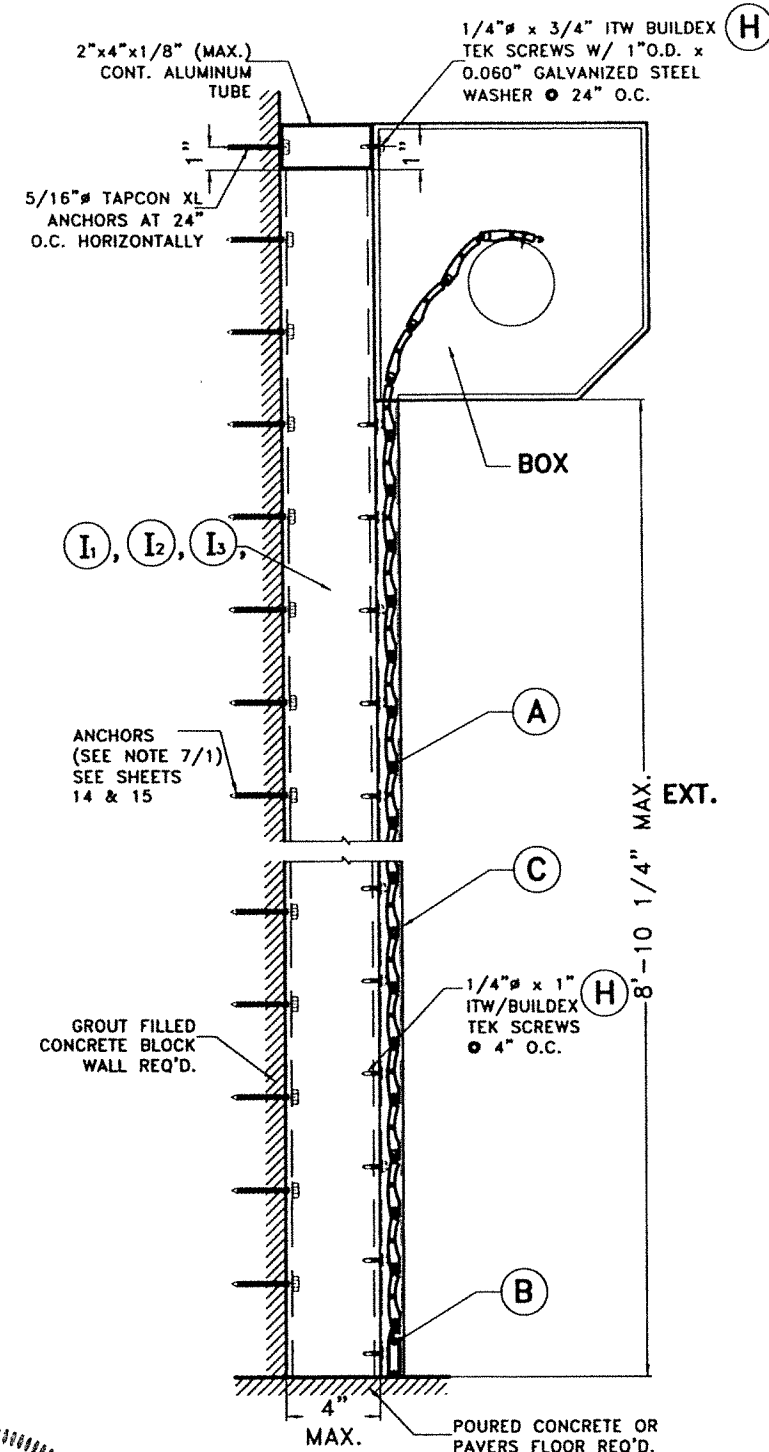


SECTION A-A
(WALL MOUNTED)
SCALE 1/8"=1"

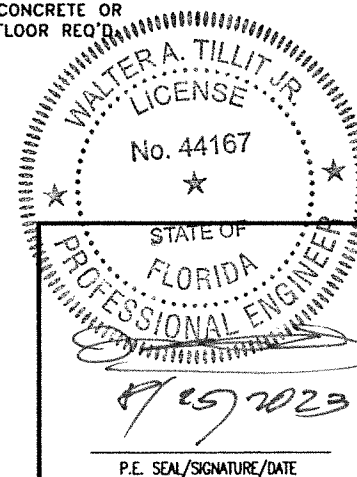
**INSTALLATION DETAILS ON EXISTING
POURED CONCRETE OR GROUT FILLED
CONCRETE BLOCK WALL BUILDINGS**



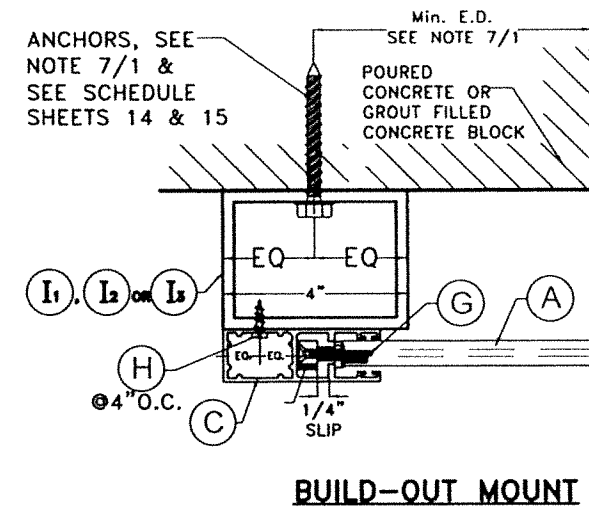
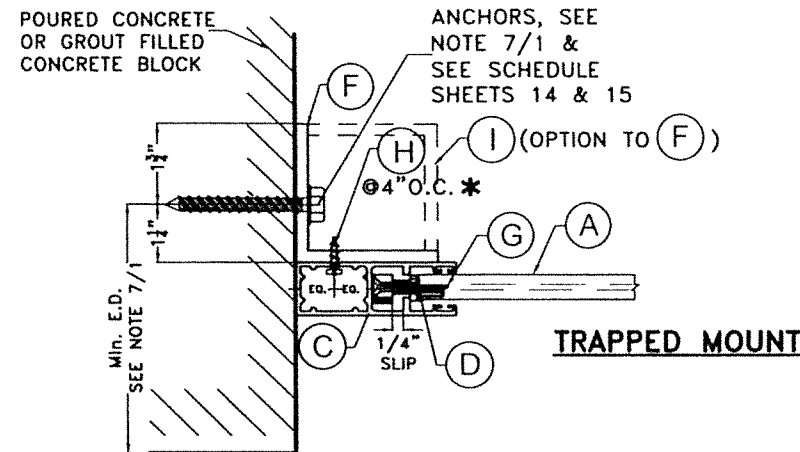
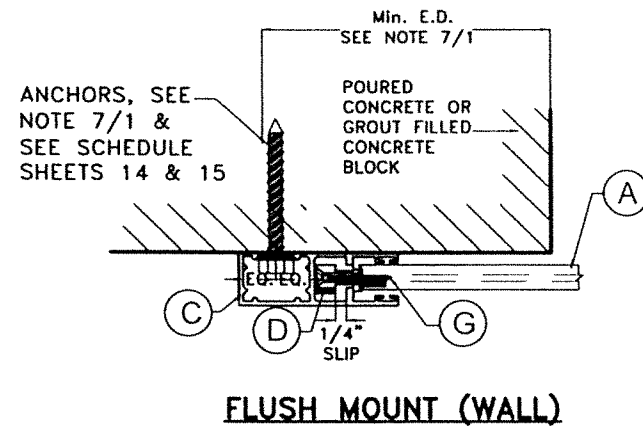
SECTION B-B
(TRAPPED MOUNTED)
SCALE 1/8"=1"



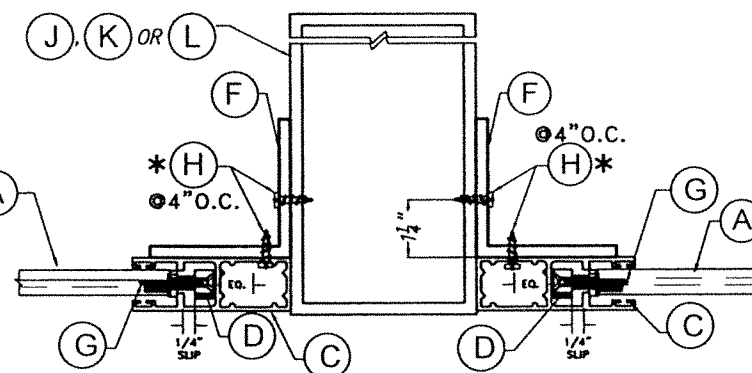
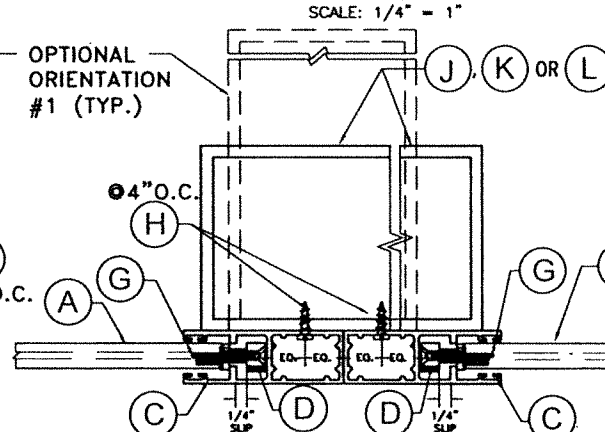
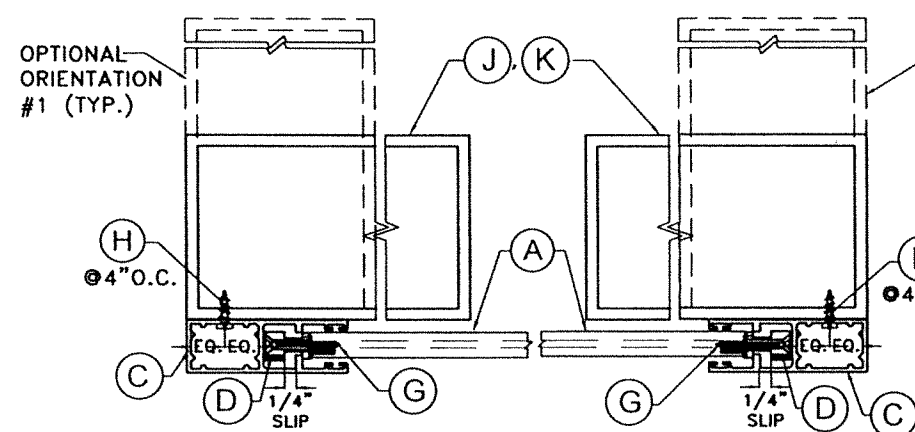
SECTION C-C
(BUILD OUT)
SCALE 1/8"=1"



FLORIDA BUILDING CODE (NON HIGH VELOCITY HURRICANE ZONE)									
©2023 TILTECO, INC.			ROLL-UP SHUTTER SYSTEM W/ GV-60 END RETENTION SLAT					Y.M. DRAWN BY:	
 TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone: (305)871-1530 • Fax: (305)871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167			gaviota The Sun & Shutter Specialists Cerrada de Acolotenco 237, Bodega 48, Colonia San Sebastian, P.I. Pical Panteco Ciudad de Mexico-02510					8/25/2023 DATE:	
								23-191 DRAWING No.	
REV. NO		DESCRIPTION		DATE		REV. No		DATE	
1		OLD 22-087		8/25/23		3		-	
2						4			
								SHEET 5 OF 21	



SECTIONS O-O (PLAN) INSTALLATION DETAILS INTO EXISTING POURED CONCRETE OR GROUT FILLED CONCRETE BLOCK BUILDINGS



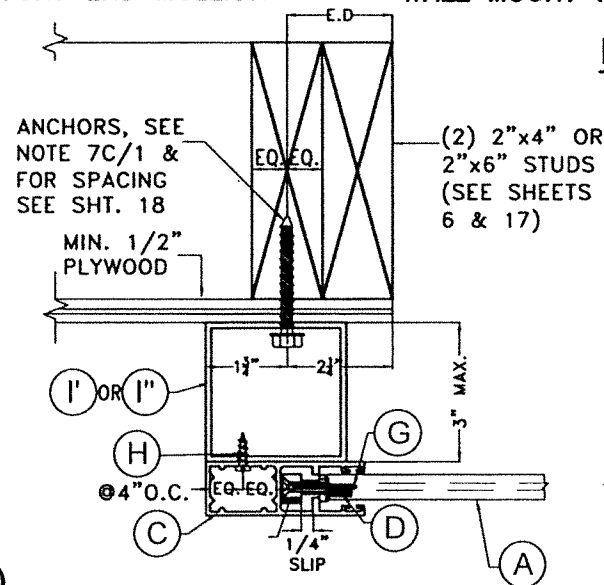
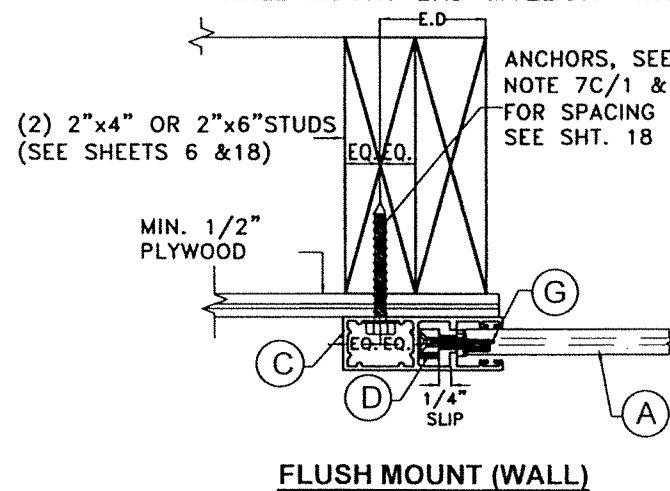
SECTION Q-Q (PLAN)
ORIENTATION #1 & #2
WALL MOUNT END MULLION

SECTION Q-Q (PLAN)
ORIENTATION #1 & #2
WALL MOUNT END MULLION

SECTION R-R (PLAN)
ORIENTATIONS #1 & #2
WALL MOUNT INTERIOR MULLION

SECTION R'-R' (PLAN)
ORIENTATION #1
TRAPPED MOUNT INTERIOR MULLION

INSTALLATION DETAILS INTO MULLIONS J, K, L



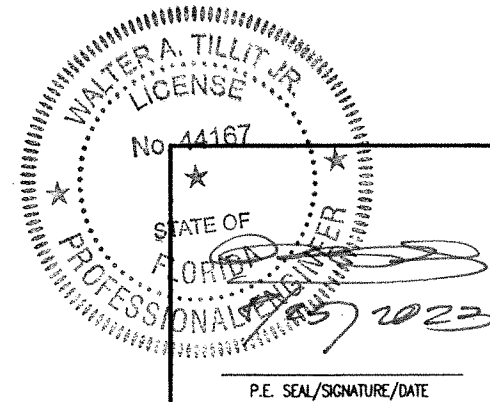
* ALTERNATIVELY TO (H), A 1/4\"/>

SECTIONS O'-O' (PLAN)

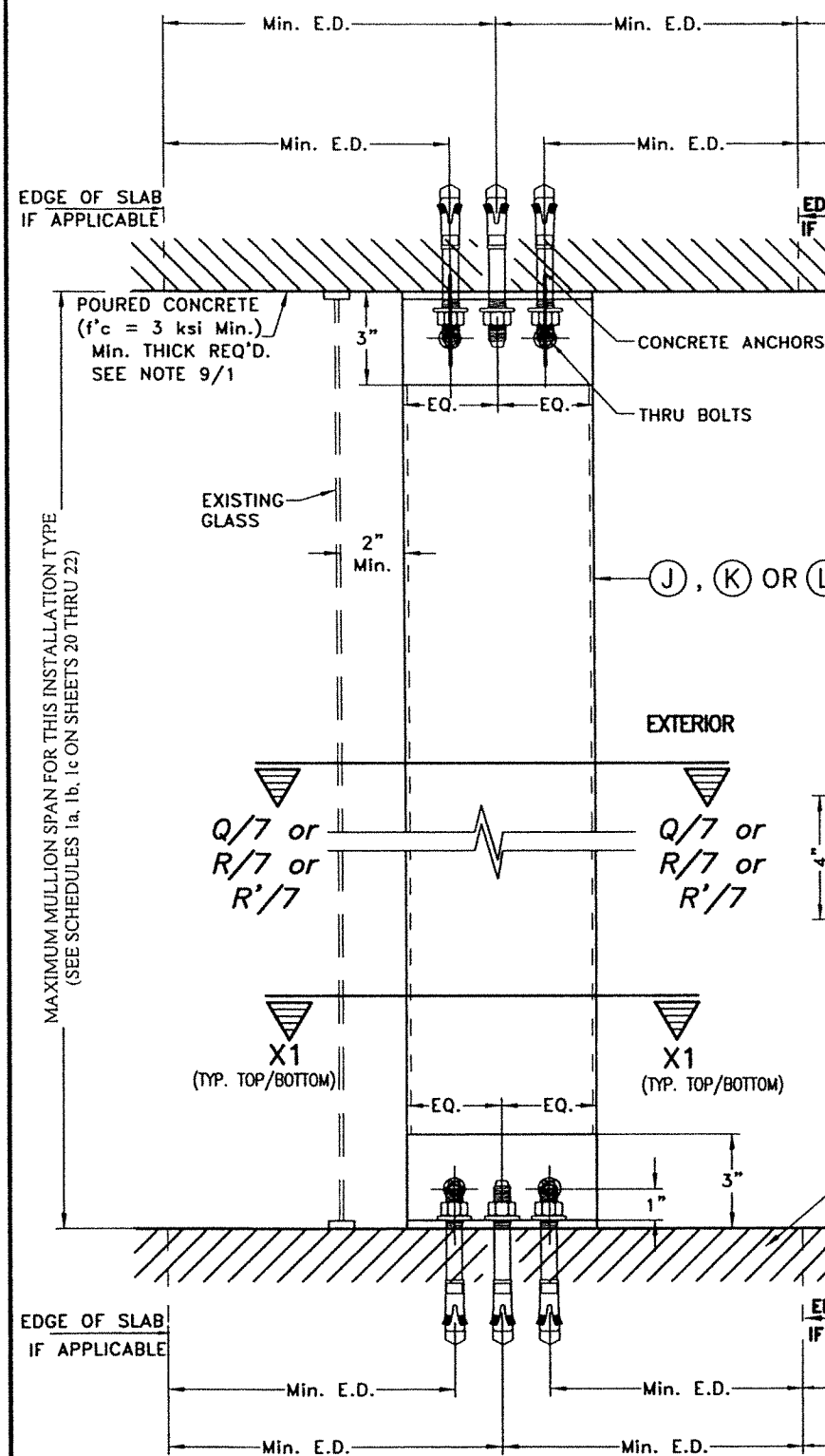
BUILD-OUT MOUNT

INSTALLATION DETAILS INTO EXISTING WOOD BUILDINGS

SCALE: 1/4\"/>



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TILTECO INC. TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Suite 305, Miramar, FL 33186 Phone: (305) 871-1530 Fax: (305) 871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167			ROLL-UP SHUTTER SYSTEM W/ GY-60 END RETENTION SLAT gaviota The Sun & Shutter Specialists Cerrada de Acolotenco 237, Bodega 48, Colonia San Sebastian, P.I. Pical Panteco Ciudad de Mexico-02510		
REV. NO.	DESCRIPTION	DATE	REV. NO.	DESCRIPTION	DATE
1	OLD 22-087	8/25/23	3	-	-
2	-	-	4	-	-
P.E. SEAL/SIGNATURE/DATE					Y.M. DRAWN BY: 8/25/2023 DATE: 23-191 DRAWING No. SHEET 7 OF 21

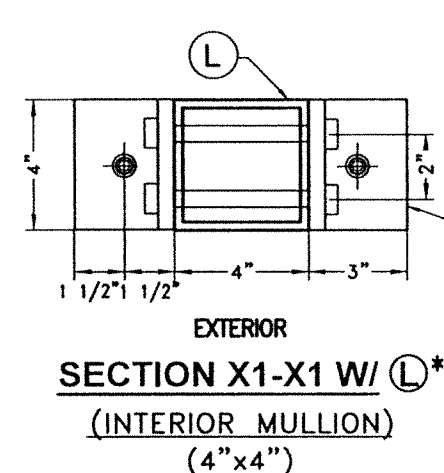


USE 7" FOR 1/2" S.S. KWIK BOLT 3 EXPANSION ANCHOR OR 1/2" CONFLX

USE 7" FOR 1/2" S.S. KWIK BOLT 3 EXPANSION ANCHOR OR 1/2" CONFLX

3"x3"x1/4"x0'-4" (6061-T6 ALLOY) Alum. ANGLE EA. SIDE W/ (2) 1/2" THRU BOLTS TO MULLION (L) & (1) 1/2" KWIK BOLT 3 EXPANSION ANCHOR OR 1/2" CONFLX W/ 3 1/2" Min. EMBED. TO POURED CONCRETE (Typ. TOP & BOTTOM)

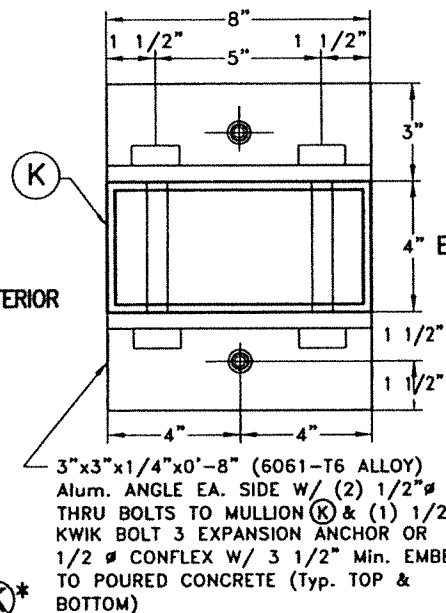
SECTION X1-X1 W/ (L)*
(INTERIOR MULLION)
(4"x4")



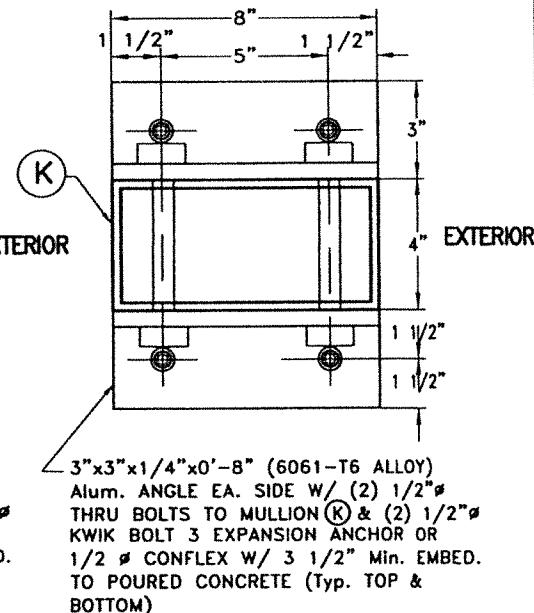
3"x3"x1/4"x0'-4" (6061-T6 ALLOY) Alum. ANGLE EA. SIDE W/ (2) 1/2" THRU BOLTS TO MULLION (K) & (1) 1/2" KWIK BOLT 3 EXPANSION ANCHOR OR 1/2" CONFLX W/ 3 1/2" Min. EMBEDMENT TO POURED CONCRETE (Typ. TOP & BOTTOM)

3"x3"x1/4"x0'-4" (6061-T6 ALLOY) Alum. ANGLE EA. SIDE W/ (2) 1/2" THRU BOLTS TO MULLION (L) & (1) 1/2" KWIK BOLT 3 EXPANSION ANCHOR OR 1/2" CONFLX W/ 3 1/2" Min. EMBED. TO POURED CONCRETE (Typ. TOP & BOTTOM)

SECTION X1-X1 W/ (K)*
(END & INTERIOR MULLION)
(W/ ORIENTATION # 1)
(8"x4")



ALTERNATIVES SECTION X1-X1 W/ (K)*
(W/ ORIENTATION # 2)
(4"x8")



(END MULLION ONLY)

SECTIONS W-1

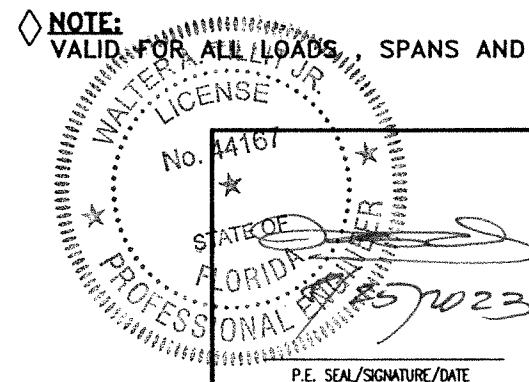
END & INTERIOR TRAPPED MOUNTED MULLION INSTALLATION

(TO BE USED W/ SCHEDULES 1a, 1b, 1c SHEETS 19, 20 & 21)

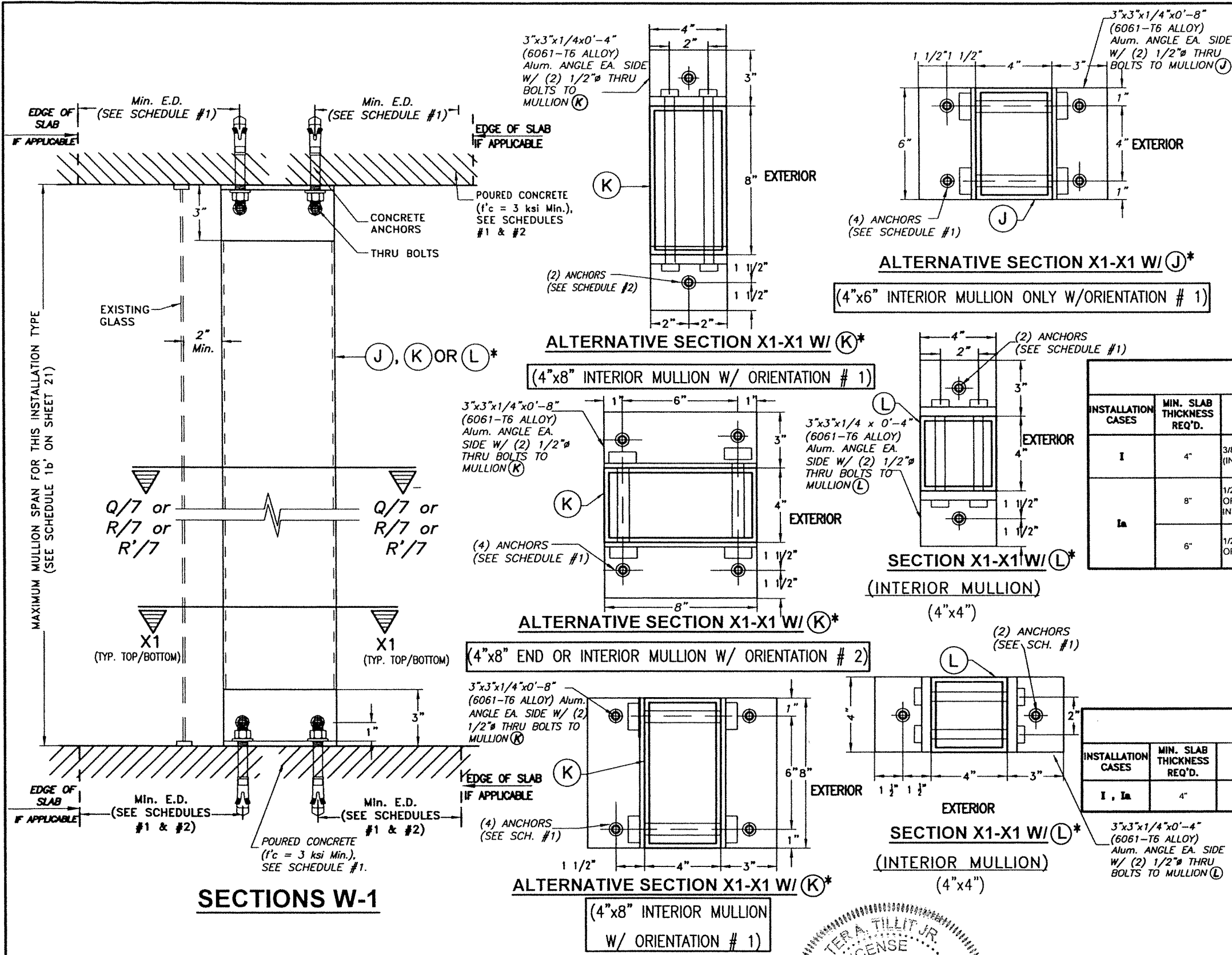
SCALE: 1/8" = 1"

* SIDE RAIL (C) AND BOX NOT SHOWN FOR CLARITY.

NOTE: VALID FOR ALL LOADS, SPANS AND MULLION SPACING, EXCEPT LIMITED CONDITIONS PER SHEET 9.



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REV. NO	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE
1	OLD 22-067	8/25/23	3	-	-
2	-	-	4	-	-
SHEET 8 OF 21					Y.M. DRAWN BY: 8/25/2023 DATE: 23-191 DRAWING No.



SEE MAXIMUM (INTERIOR) & (END & INTERIOR) TRAPPED MOUNTED MULLIONS SPAN COVERED BY SCHEDULE 1b' FOR INSTALLATION CASES I, Ia ON SHEET 21. (LIMITED LOAD, MULLION SPACING AND SPAN INSTALLATION):

INSTALLATION CASE I - RESIDENTIAL AND COMMERCIAL APPLICATIONS WITH ± 60.0 p.s.f. MAXIMUM A.S.D. DESIGN PRESSURE RATING, 12'-0" MAXIMUM MULLION SPACING. SEE SCHEDULES #1 & #2 BELOW FOR ADDITIONAL SPECS.

INSTALLATION CASE Ia - RESIDENTIAL AND COMMERCIAL APPLICATION W/ ± 60.0 p.s.f. MAXIMUM A.S.D. DESIGN PRESSURE RATING, 8'-0" MAXIMUM MULLION SPACING. SEE SCHEDULES #1 & #2 BELOW FOR ADDITIONAL SPECS.

SCHEDULE #1				
INSTALLATION CASES	MIN. SLAB THICKNESS REQ'D.	ANCHOR TYPE & SIZE (TYP. TOP & BOTTOM)	MIN. ANCHOR EMBEDMENT	MIN. EDGE DISTANCE FOR ANCHOR
I	4"	3/8" HILTI INC KWIK BOLT 3 & 3/8" CONFLUX ANCHOR FOR (INTERIOR) MULLIONS W/ ORIENTATION #2, OR INTERIOR MULLION	2 3/8"	4 1/2"
Ia	8"	1/2" HILTI INC KWIK BOLT 3 ONLY FOR (INTERIOR) MULLIONS W/ ORIENTATION #2) & (END MULLION W/ ORIENTATION #1), OR INTERIOR MULLION	3 1/2"	7"
	6"	1/2" CONFLUX SCREW FOR (END OR INTERIOR MULLION) W/ ORIENTATIONS #1 OR #2 OR INTERIOR MULLION	3 1/2"	6"

SCHEDULE #2				
INSTALLATION CASES	MIN. SLAB THICKNESS REQ'D.	ANCHOR TYPE & SIZE (TYP. TOP & BOTTOM)	MIN. ANCHOR EMBEDMENT	MIN. EDGE DISTANCE FOR ANCHOR
I, Ia	4"	5/8" KWIK BOLT 3	2 1/2"	7 1/2"

END & INTERIOR TRAPPED MOUNTED MULLION INSTALLATION
APPLICABLE TO A LIMITED LOAD, LIMITED MULLION SPAN
AND LIMITED MULLION SPACING
(TO BE USED W/ SCHEDULE 1b' ON SHEET 20)
 SCALE: 1/8" = 1"

* SIDE RAIL (C) AND BOX NOT SHOWN FOR CLARITY

WALTER A. TILLIT JR.
 LICENSE
 No. 44167
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER
 8/25/2023
 P.E. SEAL/SIGNATURE/DATE

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 WALTER A. TILLIT Jr. P.E.
 FLORIDA Lic. # 44167

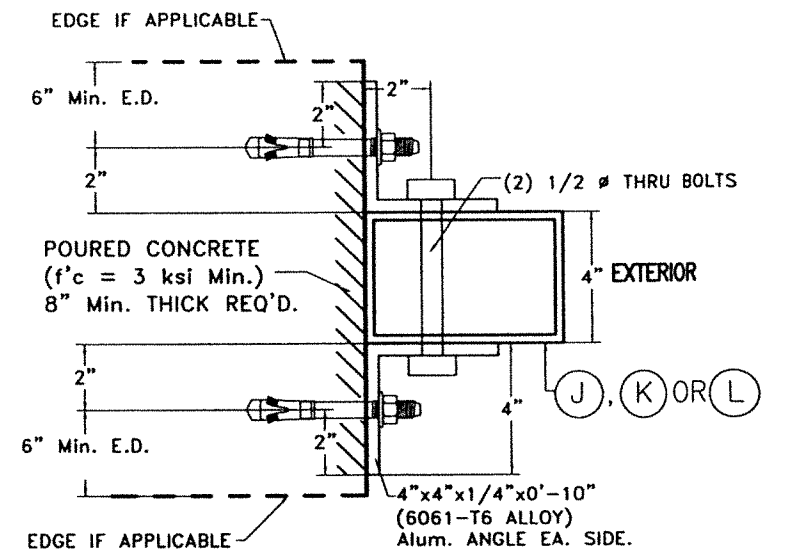
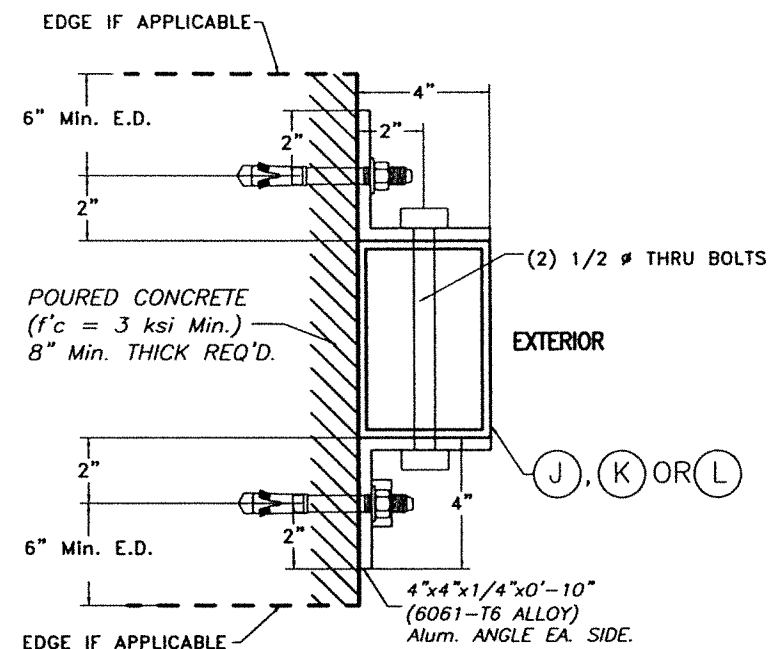
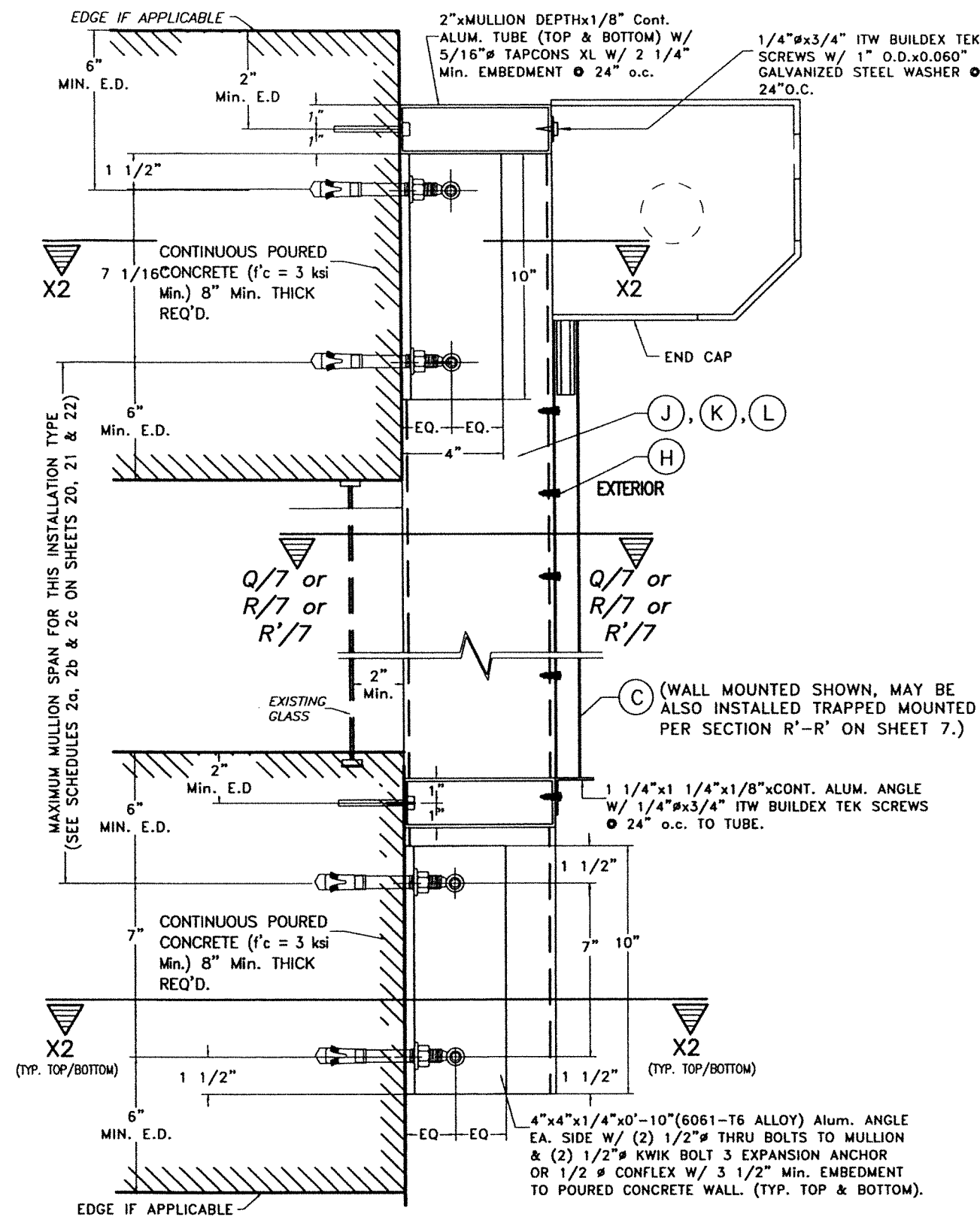
ROLL-UP SHUTTER SYSTEM W/
 GV-60 END RETENTION SLAT

gaviota
 The Sun & Shutter Specialists

Cerrada de Acolotenco 237, Bodega 48,
 Colonia San Sebastian, P.I. Pical Pantaco
 Ciudad de Mexico-02510

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1	OLD 22-067	8/23/23	3	-	-
2	-	-	4	-	-

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 8/25/2023
 DATE:
23-191
 DRAWING No.
 SHEET 9 OF 21



SECTION X2-X2 W/ (J), (K) or (L)*
(END & INTERIOR MULLION (J), (K) or
INTERIOR MULLION (L)
(W/ ORIENTATION # 2)
(6"x4" , 8"x4" or 4"x4")

ALTERNATIVE SECTION X2-X2 W/ (J), (K) or (L)*
(END & INTERIOR MULLION (J), (K) or
INTERIOR MULLION (L)
(W/ ORIENTATION # 1)
(4"x6", 4"x8" or 4"x4")

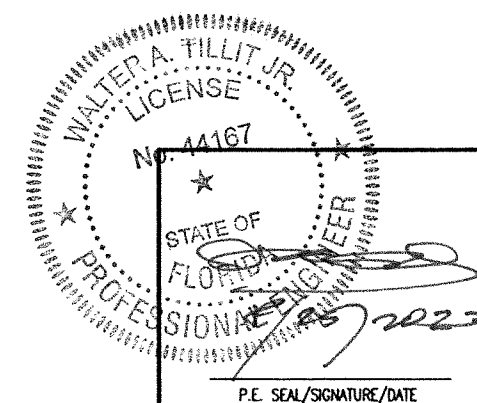
* SIDE RAIL (C) NOT SHOWN FOR CLARITY

◇ **NOTE:**
VALID FOR ALL LOADS, SPANS AND MULLION SPACING EXCEPT LIMITED CONDITIONS PER SHEET 11

SECTION W-2
END & INTERIOR WALL MOUNTED MULLION INSTALLATION ◇

(TO BE USED W/ SCHEDULES 2a, 2b, 2c ON SHEETS 19, 20 & 21)

SCALE: $1/8" = 1'$



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CA-0006719
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FLORIDA Lic. # 44167

**ROLL-UP SHUTTER SYSTEM W/
GY-60 END RETENTION SLAT**

gaviota
The Sun & Shutter Specialists

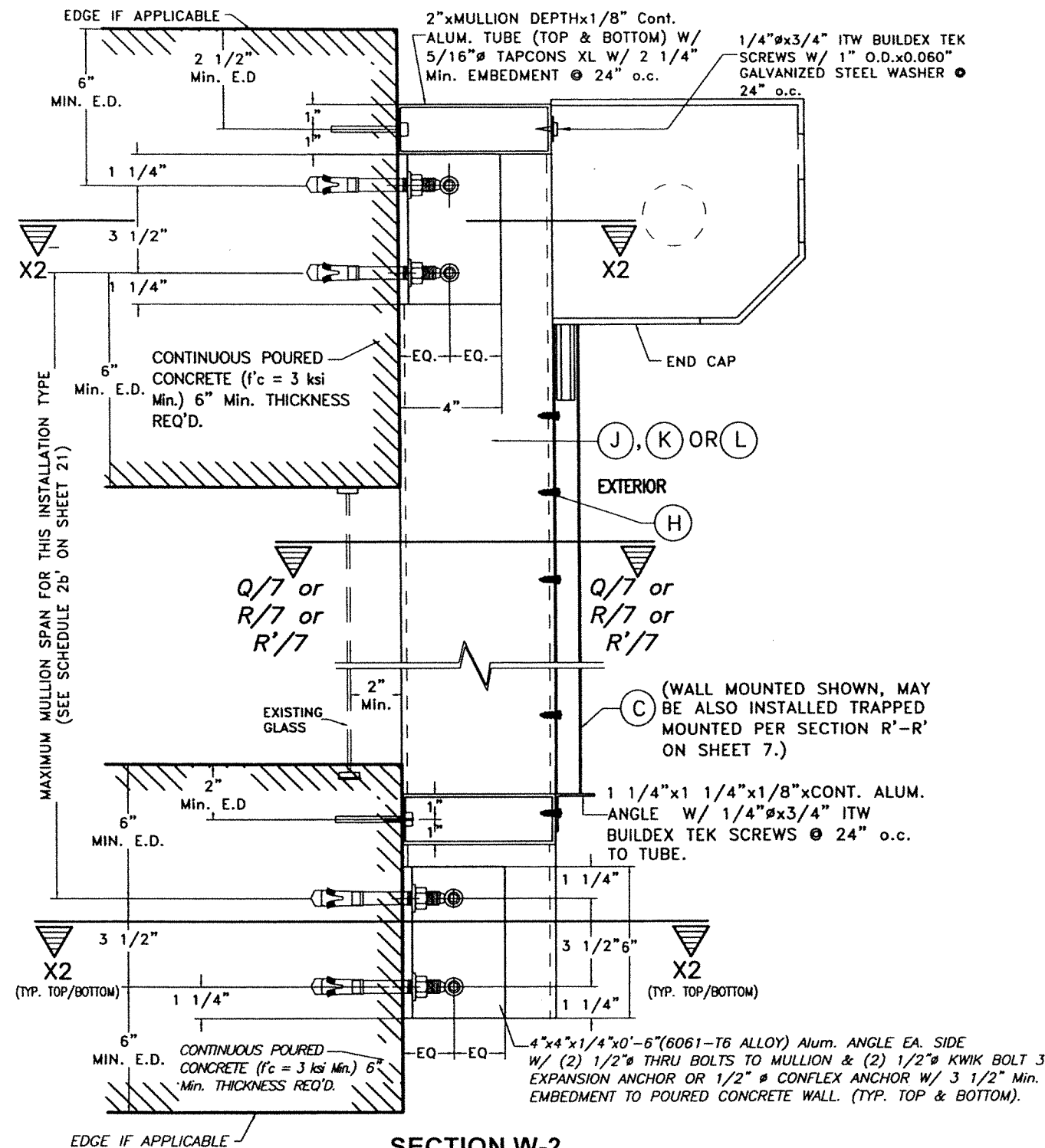
Cerrada de Acolotenco 237, Bodega 48,
Colonia San Sebastian, P.I. Pical Pontaco
Ciudad de Mexico-02510

Y.M.
DRAWN BY:

DATE: 1/25/2023

3-191

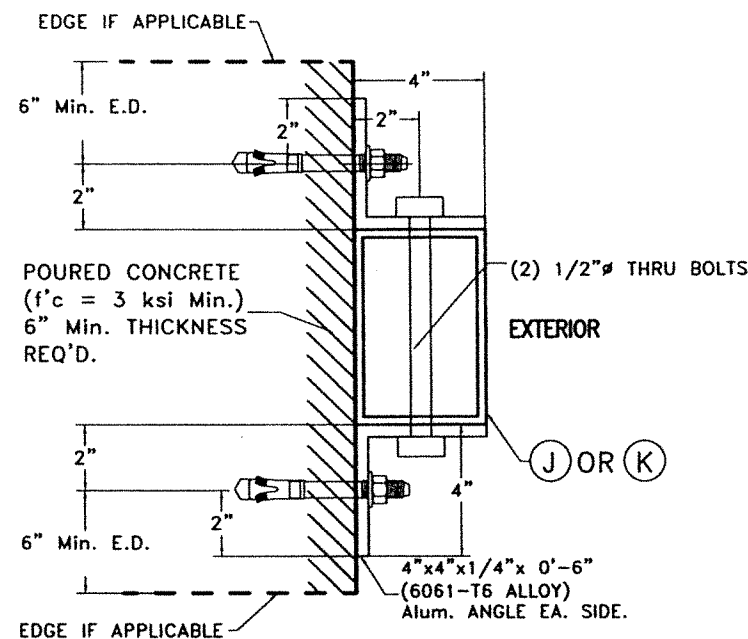
ET 10 OF 21



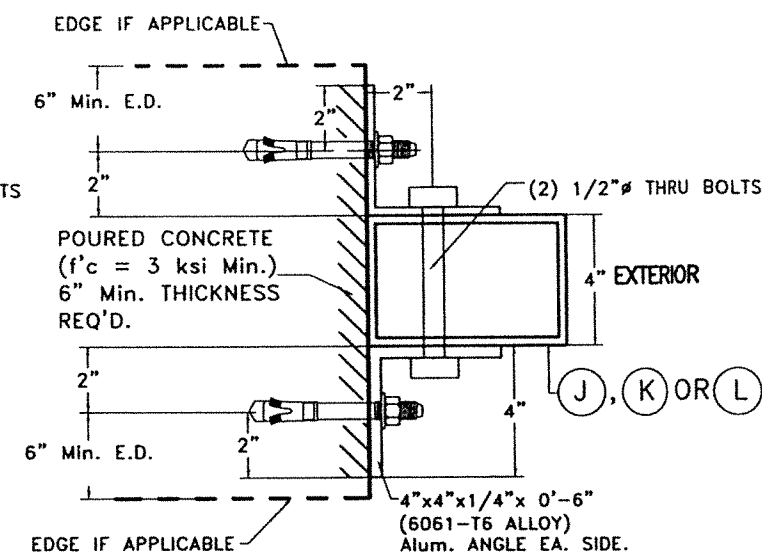
SECTION W-2

WALL MOUNTING MULLIONS (J), (K) or (L)
POURED CONCRETE WALL

END & INTERIOR WALL MOUNTED MULLION INSTALLATION ♦
APPLICABLE TO A LIMITED LOAD, LIMITED MULLION SPAN
AND LIMITED MULLION SPACING
(TO BE USED W/ SCHEDULE 2b' ON SHEET 20)
SCALE: 1/8" = 1"



SECTION X2-X2 W/ (K)*
(END & INTERIOR MULLION (J), (K) W/or
INTERIOR MULLION (L)
(W/ ORIENTATION # 1)
(6"x4" or 8"x4")

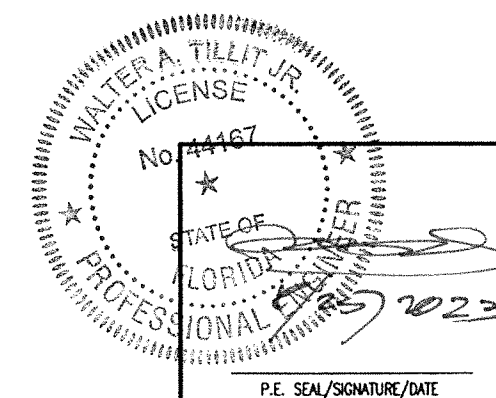


SECTION X2-X2 W/ END AND
INTERIOR MULLION (J), (K) OR
INTERIOR MULLION (L)
(W/ ORIENTATION # 2)
(4"x6", 4"x8" or 4"x4")

♦ SEE MAXIMUM (L) (INTERIOR) & (J) (K) (END & INTERIOR) WALL MOUNTED MULLIONS SPAN COVERED BY SCHEDULE 2b' FOR INSTALLATION CASES I' & II' DEFINED BELOW ON SHEET 21. (LIMITED LOAD, LIMITED MULLION SPACING AND LIMITED SPAN INSTALLATION):

INSTALLATION CASE I' - RESIDENTIAL AND COMMERCIAL APPLICATIONS WITH ±60.0 p.s.f. MAXIMUM A.S.D. DESIGN PRESSURE RATING, 12'-0" MAXIMUM MULLION SPACING. VALID FOR CONNECTION TO CONCRETE W/ 1/2" Ø S.S. KWIK BOLT 3 OR 1/2" Ø CONFLX ANCHOR.

INSTALLATION CASE II' - COMMERCIAL APPLICATION FOR ±60.0 p.s.f. MAXIMUM A.S.D. DESIGN PRESSURE RATING, 8'-0" MAXIMUM MULLION SPACING. VALID FOR CONNECTION TO CONCRETE W/ 1/2" Ø S.S. HILTI INC KWIK BOLT 3 OR 1/2" Ø CONFLX ANCHOR.



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TILTECO INC.						gaviota			
TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 34th St., Ste. 305, VERO BEACH, FL 33166 Phone: (305) 871-1530 - Fax: (305) 871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167						Cerrada de Acolotenco 237, Bodega 48, Colonla San Sebastian, P.I. Pical Pontaco Ciudad de Mexico-02510			
REV. NO	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE	Y.M. DRAWN BY:			
1	OLD 22-067	8/25/23	3	-	-	8/25/2023 DATE:			
2	-	-	4	-	-	23-191 DRAWING No.			
						SHEET 11 OF 21			

TYPICAL MANDATORY PROCEDURE FOR VERIFYING PRODUCT 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 PRESSURE RATING (p.s.f.) FOR THE OPENING AND DESIRED SLAT SPAN "L" (ft) TO PROTECT IT (SEE GENERAL NOTE #2, SHEET 1).

STEP 2: ENTER TO CHARTS **Ia, Ib, Ic & Id** ON SHEET 13 TO DETERMINE, BASED ON AN 1/4" SLAT SLIP (in), ANCHOR TYPE AT SIDE RAILS AND A.S.D. DESIGN PRESSURE RATING (p.s.f.) THE REQUIRED MAX SLAT SPAN "L" ft.

THE FOLLOWING INFORMATION IS PROVIDED AT CHARTS **I** THRU **Id** TO PROCEED WITH PRODUCT INSTALLATION VERIFICATION:

- ENTER A.S.D. DESIGN PRESSURE RATING: SEE STEP (1) ABOVE.
- FOR A SPECIFIC PRODUCT MOUNTING INSTALLATION TYPE, INCLUDING ANCHOR TYPE, THE FOLLOWING DEFINITION FOR SLAT SPAN SHALL BE CONSIDERED:

Lmax: THIS IS THE MAXIMUM ALLOWABLE SLAT SPAN FOR WHICH A GIVEN 1/4" SLAT SLIP MAY BE USED, FOR A GIVEN A.S.D. DESIGN PRESSURE RATING, AND MOUNTING TYPE.

- MINIMUM REQUIRED SEPARATION TO GLASS IS PROVIDED ON CHART **Id**

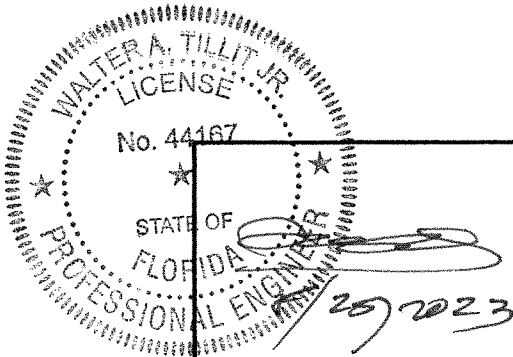
STEP 3: OBTAIN INFORMATION ON PRODUCT'S SIDE RAIL ANCHOR SPACING REQUIREMENTS FOR CONNECTION TO EXISTING STRUCTURE FROM ANCHOR SCHEDULES Va, Vb & Vc ON SHEETS 14 THRU 16. ENTER SCHEDULES WITH ANCHOR TYPE, SUBSTRATE, MOUNTING TYPE, A.S.D. DESIGN PRESSURE RATING & SLAT SPAN AND OBTAIN MAXIMUM ANCHOR SPACING (INCHES ON CENTERS). SEE GENERAL NOTE 7 ON SHEET 1 FOR ANCHOR SPECS.

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

1. MINIMUM SEPARATION TO GLASS FOR SLATS IF MULLIONS ARE USED SHALL BE BASED ON CHART **Id** ON SHEET 13. IT SHALL BE MEASURED FROM BACK OF SLATS TO GLASS.
2. ENTER SCHEDULES 1a THRU 2c ON SHEETS 19, 20 & 21 W/ A.S.D. DESIGN LOAD; MAXIMUM MULLION SPACING (MAX., 12', 8' OR 7'), AND DETERMINE MAXIMUM MULLIONS SPAN (HEIGHT) W/ ALLOWABLE INTERPOLATION IN BETWEEN SPACING'S FOR A GIVEN **(J)(K)&(L)**, MULLION TYPE & MULLION ORIENTATION.

3. SEE SHEETS 8 , 9 FOR TRAPPED MOUNTED MULLIONS AND SHEETS 10 & 11 FOR WALL MOUNTED MULLION CONNECTION DETAILS AT TOP & BOTTOM FOR FLOOR TO CEILING (TRAPPED) OR WALL MOUNTINGS OF MULLIONS INTO CONCRETE FOR A GIVEN MULLION TYPE **(J)(K)&(L)**.

* PROCEDURE PER STEPS 1 THRU 3 IS SIMILAR FOR INSTALLATIONS INTO WOOD FRAME STRUCTURES. SEE SHEETS 17 & 18 FOR LIMITATIONS APPLICABLE TO INSTALLATIONS INTO WOOD FRAME STRUCTURES. (NO MULLIONS ALLOWED, NO TRAPPED MOUNT SHUTTER ALLOWED).



P.E. SEAL/SIGNATURE/DATE

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CA-0006719
WALTER A. TILLIT Jr. P.E.
FLORIDA Lic. # 44167

ROLL-UP SHUTTER SYSTEM W/
GY-60 END RETENTION SLAT

gaviota
The Sun & Shutter Specialists

Carrada de Acolotenco 237, Bodega 48,
Colonia San Sebastian, P.I. Pical Panteco
Ciudad de Mexico-02510

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DRAWN BY:

8/25/2023
DATE:

23-191
DRAWING No.

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 22-067	8/25/23	3	-	-
2	-	-	4	-	-

SHEET 12 OF 21

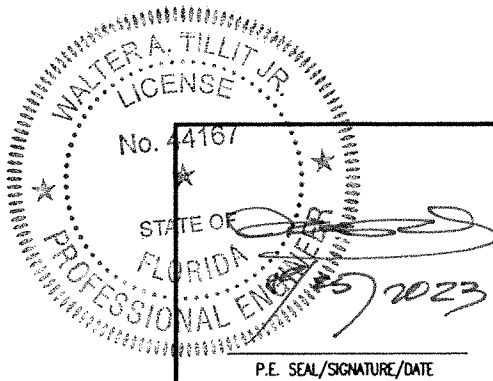
SLAT PERFORMANCE CHARTS **Ia, Ib, Ic & Id**: (ONLY VALID FOR 1/4" SLIP). SEE SHEET 18 FOR WOOD SUBSTRATE

FOR A GIVEN A.S.D. DESIGN PRESSURE RATING (p.s.f), PRODUCT MOUNT CONDITION INCLUDING ANCHOR TYPE

MAX. A.S.D. DESIGN PRESSURE RATING (psf)	CHART Ia				CHART Ib				CHART Ic								CHART Id	
	3/8"Ø KWIK BOLT 3 ANCHOR TO POURED CONCRETE				5/16"Ø TAPCON XL or 5/16" Ø DEWALT ULTRACON ANCHOR TO POURED CONCRETE				5/16"Ø TAPCON XL , 5/16" Ø DEWALT ULTRACON ANCHOR TO GROUT FILLED CELL CONCRETE BLOCK				3/8 " Ø KWIK BOLT 3 TO GROUT FILLED CELL CONCRETE BLOCK				USE MAXIMUM POSITIVE A.S.D. LOAD VALUE	
	MAX. SLAT SPAN "Lmax." (FT)				MAX. SLAT SPAN "Lmax." (FT)				MAX. SLAT SPAN "Lmax." (FT)				MAX. SLAT SPAN "Lmax." (FT)				REQUIRED MIN. SEPARATION TO GLASS MEASURED TO BACK OF SLAT (In)	
	WALL MOUNT SEE NOTES *	TRAPPED MOUNT SEE NOTES *	BUILD-OUT MOUNT W/ ① & ② SEE NOTES *	BUILD-OUT MOUNT W/ ⑬ SEE NOTES *	WALL MOUNT SEE NOTES *	TRAPPED MOUNT SEE NOTES *	BUILD-OUT MOUNT W/ ① & ② SEE NOTES *	BUILD-OUT MOUNT W/ ⑬ SEE NOTES *	WALL MOUNT SEE NOTES *	TRAPPED MOUNT SEE NOTES*	BUILD-OUT MOUNT W/ ① & ② SEE NOTES*	BUILD-OUT MOUNT W/ ⑬ SEE NOTES*	WALL MOUNT SEE NOTES *	TRAPPED MOUNT SEE NOTES*	BUILD-OUT MOUNT W/ ① & ② SEE NOTES*	BUILD-OUT MOUNT W/ ⑬ SEE NOTES		
																	ZONE 1 , 2 & 3	ZONE 4
60.0 or LESS	14'-2 3/16"	14'-2 3/16"	9'-0"	11'-0"	13'-0"	11'-0"	7'-6"	8'-6"	9'-3"	8'-6"	7'-0"	7'-6"	13'-3"	13'-3"	8'-6"	10'-0"	1"	9-1/2"

* **NOTES:**

1. ABOVE INDICATED MAX. SLAT SPANS MAY BE USED AS LONG AS ANCHOR SPACING SCHEDULES ON SHEETS 14, 15 & 16 INDICATE THAT AN ANCHOR SPACING IS AVAILABLE FOR THE CORRESPONDING SLAT SPAN AND A.S.D. DESIGN PRESSURE RATING.
2. REQUIRES SIDE RAILS FASTENED TO EXISTING STRUCTURE WITH 3/8"Ø KWIK BOLT 3 ANCHOR , 5/16"Ø TAPCON XL OR DEWALT 5/16"Ø ULTRACON ANCHOR, INTO POURED CONCRETE OR GROUT FILLED CELL CONCRETE BLOCK, OR WITH (H) AT MULLIONS CONNECTION. VALID FOR WALL MOUNTED, TRAPPED MOUNTED, AND BUILD-OUT MOUNTED SLATS.
3. MAXIMUM SLAT SPANS FOR INTERMEDIATE LOADS MAY BE DETERMINED BY LINEAR INTERPOLATION BETWEEN END VALUES.
4. WIND ZONES 1 THRU 4 AS DEFINED BY ASTM STANDARD E-1996.



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REV. NO. DESCRIPTION DATE					REV. No. DESCRIPTION DATE					DRAWING No.
1 OLD 22-067 8/25/23					3 - - -					23-191
2 - - -					4 - - -					SHEET 13 OF 21

MAX. ANCHOR'S SPACING SCHEDULE **Va**

FOR A GIVEN PRODUCT MOUNTING TYPE, W/ 3/8"Ø KWIK BOLT 3 , 5/16"Ø TAPCON XL & 5/16"Ø ULTRACON ANCHORS TO POURED CONCRETE WALL,
A.S.D. DESIGN PRESSURE RATING & SLAT SPAN RANGE †

WALL MOUNT

MAX. A.S.D. DESIGN PRESSURE RATING RANGE (p.s.f.)	SLAT SPAN RANGE						
	0'-4' †	> 4'-5' †	> 5'-6' †	> 6'-7' †	> 7'-9' †	> 9'-12' †	>12'-(14'-2 3/8")†
≤ 30.0	6"	6"	6"	6"	4"	4"	4"
>31-40	6"	6"	6"	4"	4"	4"	4"
>41-60	6"	6"	6"	4"	4"	4"	4"



SLAT SPAN DEFINITION

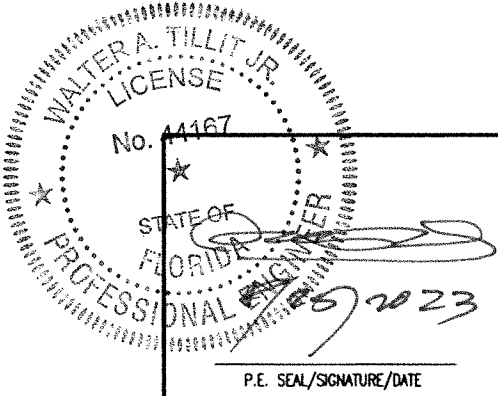
† **NOTE:**
MAX. SLAT SPAN FOR A
GIVEN A.S.D. DESIGN
PRESSURE RATING SHALL
NEVER EXCEED MAX. SLAT
SPAN INDICATED ON SLAT
PERFORMANCE CHART ON
SHEET 13.

TRAPPED MOUNT

MAX. A.S.D. DESIGN PRESSURE RATING RANGE (p.s.f.)	SLAT SPAN RANGE						
	0'-4' †	> 4'-5' †	> 5'-6' †	> 6'-7' †	> 7'-9' †	> 9'-12' †	>12'-(14'-2 3/8")†
≤ 30.0	6"	6"	6"	6"	4"	4"	4"
>31-40	6"	6"	6"	4"	4"	4"	4"
>41-60	6"	6"	6"	4"	4"	4"	4"

BUILD-OUT MOUNT

MAX. A.S.D. DESIGN PRESSURE RATING RANGE (p.s.f.)	SLAT SPAN RANGE																					
	0'-4' †			> 4'-5' †			> 5'-6' †			> 6'-7' †			> 7'-9' †			> 9'-12' †			> 12' - (14'-2 3/8") †			
	(I ₁)	(I ₂)	(I ₃)	(I ₁)	(I ₂)	(I ₃)	(I ₁)	(I ₂)	(I ₃)	(I ₁)	(I ₂)	(I ₃)	(I ₁)	(I ₂)	(I ₃)	(I ₁)	(I ₂)	(I ₃)	(I ₁)	(I ₂)	(I ₃)	
≤ 30.0	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"
>31-40	6"	6"	6"	6"	6"	6"	6"	6"	6"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"
>41-60	6"	6"	6"	6"	6"	6"	6"	6"	6"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"



FLORIDA BUILDING CODE (NON HIGH VELOCITY HURRICANE ZONE)									
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TILTECO INC.									
TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 38th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 • Fax : (305)871-1531 CA-0008719 WALTER A. TILLIT Jr., P.E. FLORIDA Lic. # 44167									
ROLL-UP SHUTTER SYSTEM W/ GV-60 END RETENTION SLAT									
gaviota The Sun & Shutter Specialists Cerrada de Acololenco 237, Bodega 48, Colonia San Sebastian, P.I. Pical Panteco Ciudad de Mexico-02510									
Y.M. DRAWN BY: 8/25/2023 DATE: 23-191 DRAWING No.									
REV. NO	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE	SHEET 14 OF 21			
1	OLD 22-067	8/25/23	3	-	-				
2	-	-	4	-	-				

MAX. ANCHOR'S SPACING SCHEDULE V_C FOR A GIVEN PRODUCT MOUNTING TYPE, W/ 5/16"Ø TAPCON XL ,
5/16" Ø DEWALT ULTRA CON OR 3/8 " Ø KWIK BOLT 3 ANCHORS TO GROUT FILLED CELL CONCRETE BLOCK WALL,
A.S.D. DESIGN PRESSURE RATING & SLAT SPAN RANGE †

WALL MOUNT

MAX. A.S.D. DESIGN PRESSURE RATING RANGE (p.s.f.)	SLAT SPAN RANGE						
	0'-4' †	> 4'-5' †	> 5'-6' †	> 6'-7' †	> 7'-9' †	> 9'-12' †	>12'-(14'-2 1/8") †
≤ 30.0	6"	6"	6"	6"	4"	4"	4"
>31-40	6"	6"	6"	4"	4"	4"	4"
>41-60	6"	6"	6"	4"	4"	4"	4"



SLAT SPAN DEFINITION

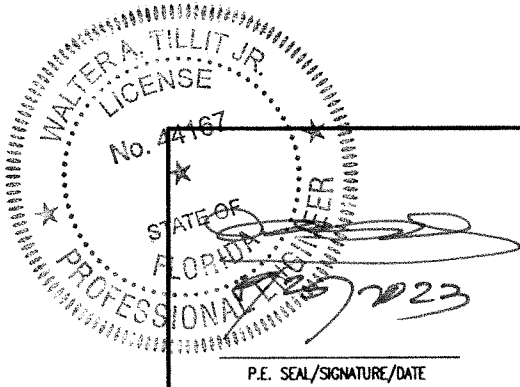
† NOTE:
MAX. SLAT SPAN FOR A GIVEN A.S.D. DESIGN PRESSURE RATING SHALL NEVER EXCEED MAX. SLAT SPAN INDICATED ON SLAT PERFORMANCE CHART ON SHEET 13.

TRAPPED MOUNT

MAX. A.S.D. DESIGN PRESSURE RATING RANGE (p.s.f.)	SLAT SPAN RANGE						
	0'-4' †	> 4'-5' †	> 5'-6' †	> 6'-7' †	> 7'-9' †	> 9'-12' †	>12'-(14'-2 1/8") †
≤ 30.0	6"	6"	6"	6"	4"	4"	4"
>31-40	6"	6"	6"	4"	4"	4"	4"
>41-60	6"	6"	6"	4"	4"	4"	4"

BUILD-OUT MOUNT

MAX. A.S.D. DESIGN PRESSURE RATING RANGE (p.s.f.)	SLAT SPAN RANGE																				
	0'-4' †			> 4'-5' †			> 5'-6' †			> 6'-7' †			> 7'-9' †			> 9'-12' †			> 12' - (14'-2 1/8") †		
	①	②	③	①	②	③	①	②	③	①	②	③	①	②	③	①	②	③	①	②	③
≤ 30.0	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	4"	4"	4"	4"	4"	4"	4"	4"	4"
>31-40	6"	6"	6"	6"	6"	6"	6"	6"	6"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"
>41-60	6"	6"	6"	6"	6"	6"	6"	6"	6"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"



FLORIDA BUILDING CODE (NON HIGH VELOCITY HURRICANE ZONE)														
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TILTECO INC.					gaviota The Sun & Shutter Specialists					8/25/2023 DATE:				
TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 • Fax : (305)871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167					Cerrada de Acolotenco 237, Bodega 48, Colonia San Sebastian, P.I. Pical Pontaco Ciudad de Mexico-02510					23-191 DRAWING No.				
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE
1	OLD 22-067	8/25/23	3	-	-	1	OLD 22-067	8/25/23	3	-	-	1	OLD 22-067	8/25/23
2	-	-	4	-	-	2	-	-	4	-	-	2	-	-
P.E. SEAL/SIGNATURE/DATE										SHEET 15 OF 21				

SCHEDULE Vc:
Vx FORCES (Lb/FT) & Vy FORCES (Lb/FT) ACTING AT JAMBS FOR AN 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 (psf)	SLAT SPAN RANGE													
	0'-4'		> 4'-5'		> 5'-6'		> 6'-7'		> 7'-9'		> 9'-12'		>12'-(14'-2 3/16")	
	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
≤ 30.0	0	60	0	75	20	90	181	105	427	135	739	180	1134	240
>31-40	0	80	0	100	127	120	307	140	599	180	986	240	1485	320
>41-60	0	120	55	150	330	180	551	210	932	270	1461	360	1722	405

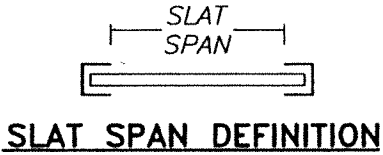
*NOTE:
IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OR PERMIT HOLDER TO VERIFY THAT EXISTING STRUCTURE IS DESIGNED TO SUPPORT Vx AND Vy FORCES IN POUNDS PER UNIT FOOT OF PRODUCT HEIGHT AT BOTH JAMBS. SEE THIS SHEET FOR Vx & Vy VALUES.

SIDE RAIL

Vy

Vy

Vx



WALTER A. TILLIT JR.
LICENSE
No. 44167
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

8/25/2023

P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (NON HIGH VELOCITY HURRICANE ZONE)

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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
CA-0006719
WALTER A. TILLIT Jr. P.E.
FLORIDA Lic. # 44167

ROLL-UP SHUTTER SYSTEM W/
GV-60 END RETENTION SLAT

gaviota

The Sun & Shutter Specialists
Cerrada de Acolotenco 237, Bodega 48,
Colonia San Sebastian, P.I. Pical Ponfoco
Ciudad de Mexico-02510

REV. NO

DESCRIPTION

DATE

REV. No

DESCRIPTION

DATE

1

OLD 22-087

8/25/23

3

-

-

2

-

-

4

-

-

Y.M.
DRAWN BY:

8/25/2023
DATE:

23-191
DRAWING No.

SHEET 16 OF 21

SLAT PERFORMANCE CHART Ib1 & Ic1

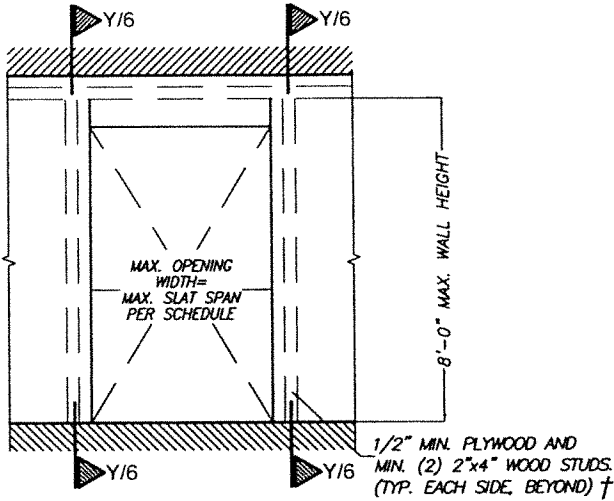
FOR A GIVEN MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f) AND SHUTTER MOUNT CONDITION FOR INSTALLATIONS PER DETAIL 1

CHART Ib1				CHART Ic1	
USE MAXIMUM VALUE BETWEEN POSITIVE AND NEGATIVE A.S.D. LOAD				USE MAXIMUM POSITIVE A.S.D. LOAD VALUE	
5/16"Ø TAPCON XL OR 5/16"Ø DEWALT ULTRACON ANCHOR					
MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)	MAX. SLAT SPAN "L _{MAX.} " (ft)			REQUIRED MIN. SEPARATION TO GLASS MEASURED TO BACK OF SLAT (in)	
	WALL MOUNT (SEE NOTES Δ)	BUILD-OUT MOUNT W/ 1" (SEE NOTES Δ)	BUILD-OUT MOUNT W/ 1" (SEE NOTES Δ)	WIND ZONES 1-3	WIND ZONE 4
30.0 *	12'-0"	10'-0"	11'-0"	1"	9-1/2"
35.0 **	12'-0"	10'-0"	11'-0"	1"	9-1/2"
40.0 **	11'-0"	9'-0"	10'-0"	1"	9-1/2"
45.0 ***	11'-0"	9'-0"	10'-0"	1"	9-1/2"
50.0 ***	11'-0"	9'-0"	10'-0"	1"	9-1/2"
55.0 ***	10'-0"	8'-0"	9'-0"	1"	9-1/2"
60.0 ***	10'-0"	8'-0"	9'-0"	1"	9-1/2"

MAXIMUM A.S.D. DESIGN LOAD VS WOOD GRADE SCHEDULE:

- *VALID FOR DOUGLAS-FIR-SOUTH (G=0.46) SOUTHERN PINE #2 (G=0.55)
SPRUCE PINE-FIR-SITH (G=0.36)
- **VALID FOR DOUGLAS-FIR-SOUTH (G=0.46) SOUTHERN PINE #2 (G=0.55)
- ***VALID FOR SOUTHERN PINE #2 (G=0.55)

INSTALLATIONS INTO WOOD FRAME BUILDINGS



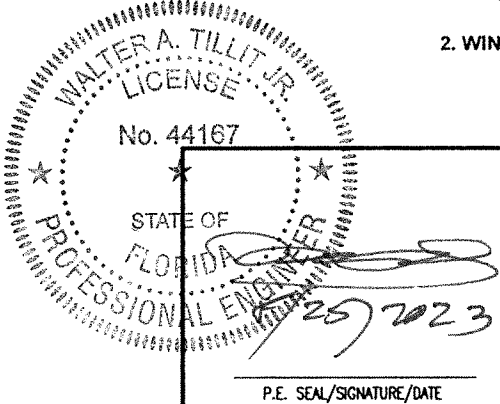
DETAIL 1 (ELEVATION)



SLAT SPAN "L" DEFINITION

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 SHEET 6 AND PROVISIONS FROM CHAPTER 23 OF THE FLORIDA BUILDING CODE. MINIMUM LENGTH OF WALL AT EITHER SIDE OF OPENING SHALL BE 33".
- WIND ZONES 1, 2, 3 & 4 AS DEFINED BY ASTM STANDARD E-1996



FLORIDA BUILDING CODE (NON HIGH VELOCITY HURRICANE ZONE)												
©2023 TILTECO, INC.  TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33168 Phone : (305)871-1530 Fax : (305)871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167					ROLL-UP SHUTTER SYSTEM W/ GY-60 END RETENTION SLAT				Y.M.			
					 The Sun & Shutter Specialists Cerrada de Acacolelenco 237, Bodega 48, Colonia San Sebastian, P.I. Pical Pantaco Ciudad de Mexico-02510				DRAWN BY:			
8/25/2023												
DATE:												
23-191												
					REV. NO			DESCRIPTION			DATE	
					1			OLD 22-087			8/23/23	
					2			-			-	
					3			-			-	
					4			-			-	
					DRAWING No.			SHEET 17 OF 21				

MAX. ANCHOR'S SPACING SCHEDULE VI FOR A GIVEN SHUTTER MOUNTING TYPE, WOOD GRADE, A.S.D.
DESIGN LOAD (psf) AND SLAT SPAN RANGE FOR INSTALLATIONS INTO WOOD BUILDINGS:
(SEE SHT. 7, SECTIONS O'-O' FOR ANCHOR SPEC'S & GENERAL NOTE 7C ON SHT. 1)

WALL MOUNT TO MIN. 2"x4" WOOD STUD WITH MINIMUM 1/2" PLYWOOD
(SEE DETAIL 1 ON SHEET 17)

WOOD GRADE	MAXIMUM A.S.D. DESIGN PRESSURE RATING RANGE (psf)	SLAT SPAN RANGE						
		0' to 4' *	> 4' to 5' *	> 5' to 6' *	> 6' to 7' *	> 7' to 8' *	> 8' to 10' *	> 10' to 12' *
SOUTHERN PINE #2 (G=0.55)	≤ 30.0	6"	6"	6"	6"	6"	6"	6"
	40	6"	6"	6"	6"	6"	4 3/4"	4 1/2"
	50	6"	6"	6"	6"	4 3/4"	3 1/2"	3"
	60	6"	6"	5 3/4"	5 1/4"	3 3/4"	3"	3"
DOUGLAS-FIR-SOUTH (G=0.46)	≤ 30.0	6"	6"	6"	6"	6"	6"	6"
	40	6"	6"	6"	5 1/4"	5 1/4"	4 1/4"	3"
SPRUCE PINE-FIR-SOUTH (G=0.36)	≤ 30.0	6"	6"	6"	6"	6"	5 1/4"	4 1/2"

BUILD-OUT MOUNT TO MIN. 2"x4" WOOD STUD WITH MINIMUM 1/2" PLYWOOD
(SEE DETAIL 1 ON SHEET 17)

WOOD GRADE	MAXIMUM A.S.D. DESIGN PRESSURE RATING RANGE (psf)	SLAT SPAN RANGE													
		0'-4' *		> 4'-5' *		> 5'-6' *		> 6'-7' *		> 7'-9' *		> 9'-10' *		> 10' to 12' *	
		BUILD-OUT MOUNT W/P	BUILD-OUT MOUNT W/P	BUILD-OUT MOUNT W/P	BUILD-OUT MOUNT W/P	BUILD-OUT MOUNT W/P	BUILD-OUT MOUNT W/P	BUILD-OUT MOUNT W/P	BUILD-OUT MOUNT W/P	BUILD-OUT MOUNT W/P	BUILD-OUT MOUNT W/P	BUILD-OUT MOUNT W/P	BUILD-OUT MOUNT W/P	BUILD-OUT MOUNT W/P	BUILD-OUT MOUNT W/P
SOUTHERN PINE #2 (G=0.55)	≤ 30.0	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"
	40	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	5 1/4"	5 1/4"	5 1/4"	5 1/4"
	50	6"	6"	6"	6"	6"	6"	6"	6"	5 1/4"	5 1/4"	4"	4"	4"	4"
	60	6"	6"	6"	6"	6"	6"	5 3/4"	5 3/4"	4"	4"	3"	3"	3"	3"
DOUGLAS-FIR-SOUTH (G=0.46)	≤ 30.0	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"
	40	6"	6"	6"	6"	6"	6"	5 1/2"	5 1/2"	5 1/2"	5 1/2"	4 1/2"	4 1/2"	4 1/2"	4 1/2"
SPRUCE PINE-FIR-SOUTH (G=0.36)	≤ 30.0	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	5 1/4"	5"	5 1/4"	5"

* NOTE:
MAX. SPAN FOR SLAT FOR A
GIVEN A.S.D. DESIGN LOAD
SHALL **NEVER** EXCEED MAX.
SLAT SPAN INDICATED ON
SLAT PERFORMANCE CHARTS
ON SHEET 17.

WALTER A. TILIT JR.
LICENSE
No. 44167
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
8/25/2023
P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (NON HIGH VELOCITY HURRICANE ZONE)

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Phone : (305)871-1530 . Fax : (305)871-1531
CA-0006719
WALTER A. TILIT Jr. P.E.
FLORIDA Lic. # 44167

ROLL-UP SHUTTER SYSTEM W/
GY-60 END RETENTION SLAT

gaviota
The Sun & Shutter Specialists
Cerrada de Acolotenco 237, Bodega 48,
Colonia San Sebastian, P.I. Pical Panteco
Ciudad de Mexico-02510

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 23-067	8/25/23	3	-	-
2	-	-	4	-	-

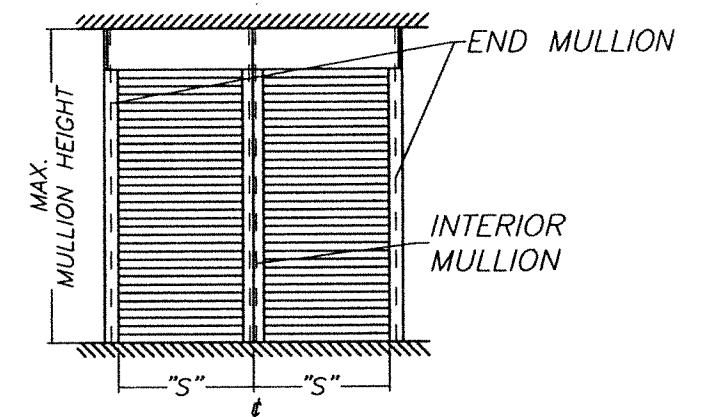
Y.M.
DRAWN BY:
8/25/2023
DATE:
23-191
DRAWING No.
SHEET 18 OF 21

SCHEDULE 1a
FLOOR TO CEILING (TRAPPED) MOUNTING
MAX. SPAN (ft) FOR END AND INTERIOR MULLIONS FOR A GIVEN A.S.D.
DESIGN PRESSURE RATING (p.s.f.), & A MAX. MULLION SPACING (ft) *

MAX. A.S.D. DESIGN PRESSURE RATING (p.s.f.)	MAXIMUM MULLION SPACING (ft) *	MAXIMUM MULLION SPAN (FT)									
		ⓐ 4"x6"x1/4" MULLION				ⓑ 4"x8"x1/4" MULLION				ⓒ 4"x4"x1/4" MULLION	
		ORIENTATION #2 (⇌) †		ORIENTATION #1 (⊐) †		ORIENTATION #2 (⇌) †		ORIENTATION #1 (⊐)			
		END	INTERIOR	END	INTERIOR	END	INTERIOR	END	INTERIOR	INTERIOR	
30.0	14'-2 3/8"	-	8'-2"	-	10'-0"	9'-4"	8'-11"	-	10'-0"	-	
35.0	14'-2 3/8"	-	8'-2"	-	10'-0"	9'-4"	8'-11"	-	10'-0"	-	
40.0	14'-2 3/8"	-	8'-0"	-	10'-0"	9'-4"	8'-10"	-	10'-0"	-	
45.0	14'-2 3/8"	-	8'-0"	-	9'-10"	9'-4"	8'-8"	-	10'-0"	-	
50.0	14'-2 3/8"	-	-	-	9'-9"	9'-4"	8'-7"	-	10'-0"	-	
55.0	14'-2 3/8"	-	-	-	9'-8"	9'-4"	8'-6"	-	10'-0"	-	
60.0	14'-2 3/8"	-	-	-	9'-8"	9'-4"	8'-5"	-	10'-0"	-	

SCHEDULE 2a
WALL MOUNTING
MAX. SPAN (FT) FOR END AND INTERIOR MULLIONS FOR A GIVEN A.S.D.
DESIGN PRESSURE RATING (P.S.F.), & A MAX. MULLION SPACING (FT) *

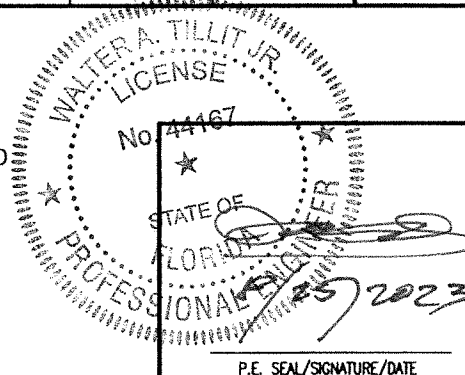
MAX. A.S.D. DESIGN PRESSURE RATING (p.s.f.)	MAXIMUM MULLION SPACING (ft) *	MAXIMUM MULLION SPAN (FT)									
		ⓐ 4"x6"x1/4" MULLION				ⓑ 4"x8"x1/4" MULLION				ⓒ 4"x4"x1/4" MULLION	
		ORIENTATION #2 (⇌) †		ORIENTATION #1 (⊐) †		ORIENTATION #2 (⇌) †		ORIENTATION #1 (⊐) †			
		END	INTERIOR	END	INTERIOR	END	INTERIOR	END	INTERIOR	INTERIOR	
30.0	14'-2 3/8"	7'-10"	9'-0"	6'-6"	10'-6"	9'-4"	8'-11"	7'-0"	12'-0"	7'-4"	
35.0	14'-2 3/8"	7'-7"	8'-4"	6'-3"	10'-3"	9'-4"	8'-11"	6'-9"	12'-0"	7'-3"	
40.0	14'-2 3/8"	7'-6"	8'-0"	6'-2"	10'-0"	9'-4"	8'-10"	6'-9"	12'-0"	7'-2"	
45.0	14'-2 3/8"	7'-6"	8'-0"	6'-1"	9'-10"	9'-4"	8'-8"	6'-8"	12'-0"	7'-1"	
50.0	14'-2 3/8"	7'-6"	7'-10"	6'-1"	9'-9"	9'-4"	8'-7"	6'-8"	12'-0"	7'-1"	
55.0	14'-2 3/8"	7'-6"	7'-10"	6'-0"	9'-9"	9'-4"	8'-6"	6'-7"	12'-0"	7'-0"	
60.0	14'-2 3/8"	7'-6"	7'-10"	6'-0"	9'-9"	9'-4"	8'-5"	6'-7"	12'-0"	7'-0"	



MULLION SPACING: "S"

* MAXIMUM MULLION SPACING SHALL BE SUCH THAT MAX. ALLOWABLE WALL MOUNTED SLAT SPAN FOR THAT A.S.D. DESIGN PRESSURE RATING SHALL NOT BE EXCEEDED.

† MULLION ORIENTATION IS AS SEEN FROM THE OUTSIDE (EXTERIOR) OF PRODUCT.



P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (NON HIGH VELOCITY HURRICANE ZONE)

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TILTECO INC.
TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th St., Ste. 303, VIRGINIA GARDENS, FL 33166
Phone : (305)871-1530 Fax : (305)871-1531
CA-0006719
WALTER A. TILLIT Jr. P.E.
FLORIDA Lic. # 44167

**ROLL-UP SHUTTER SYSTEM W/
GY-60 END RETENTION SLAT**

gaviota
The Sun & Shutter Specialists

Carrada de Acolotenco 237, Bodega 48,
Colonia San Sebastian, P.I. Pico de Panacea
Ciudad de Mexico-02510

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE	Y.M. DRAWN BY:
1	OLD 22-067	8/25/23	3	-	-	8/25/2023 DATE:
2	-	-	4	-	-	23-191 DRAWING No.

SHEET 19 OF 21

SCHEDULE 1b
FLOOR TO CEILING (TRAPPED) MOUNTING MAX. SPAN (ft) FOR END AND INTERIOR MULLIONS FOR A GIVEN
A.S.D. DESIGN PRESSURE RATING (p.s.f.), & A 12'-0" MAX. MULLION SPACING (ft) *

MAX. A.S.D. DESIGN PRESSURE RATING (p.s.f.)	MAXIMUM MULLION SPACING (ft) *	MAXIMUM MULLION SPAN (FT)									
		(J) 4"x6"x1/4" MULLION				(K) 4"x8"x1/4" MULLION				(L) 4"x4"x1/4" MULLION	
		ORIENTATION #2 (⇌)†		ORIENTATION #1 (⊥)†		ORIENTATION #2 (⇌)†		ORIENTATION #1 (⊥)†		INTERIOR	
		END	INTERIOR	END	INTERIOR	END	INTERIOR	END	INTERIOR		
30.0	12'-0"	10'-0"	10'-0"	8'-2"	10'-0"	10'-0"	10'-0"	8'-11"	10'-0"	9'-0"	
35.0	12'-0"	9'-7"	9'-6"	8'-0"	10'-0"	10'-0"	10'-0"	8'-5"	10'-0"	8'-6"	
40.0	12'-0"	9'-1"	9'-1"	8'-0"	10'-0"	10'-0"	10'-0"	8'-0"	10'-0"	8'-2"	
45.0	12'-0"	8'-9"	8'-9"	-	10'-0"	10'-0"	9'-6"	-	10'-0"	-	
50.0	12'-0"	8'-4"	8'-6"	-	10'-0"	10'-0"	9'-2"	-	10'-0"	-	
55.0	12'-0"	8'-1"	8'-2"	-	9'-7"	10'-0"	8'-11"	-	10'-0"	-	
60.0	12'-0"	-	8'-2"	-	9'-7"	10'-0"	8'-8"	-	10'-0"	-	

SCHEDULE 2b
WALL MOUNTING MAX. SPAN (FT) FOR END AND INTERIOR MULLIONS FOR A GIVEN A.S.D. DESIGN PRESSURE RATING (P.S.F.), & A 12'-0" MAX. MULLION SPACING (FT) *

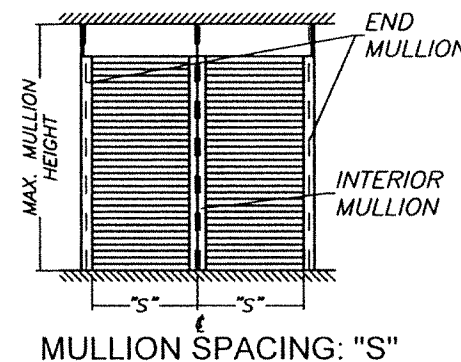
MAX. A.S.D. DESIGN PRESSURE RATING (p.s.f.)	MAXIMUM MULLION SPACING (ft) *	MAXIMUM MULLION SPAN (FT)									
		(J) 4"x6"x1/4" MULLION				(K) 4"x8"x1/4" MULLION				(L) 4"x4"x1/4" MULLION	
		ORIENTATION #2 (⇌)†		ORIENTATION #1 (⊥)†		ORIENTATION #2 (⇌)†		ORIENTATION #1 (⊥)†		INTERIOR	
		END	INTERIOR	END	INTERIOR	END	INTERIOR	END	INTERIOR		
30.0	12'-0"	9'-9"	11'-6"	9'-9"	12'-0"	12'-0"	12'-0"	10'-7"	12'-0"	9'-0"	
35.0	12'-0"	9'-2"	10'-11"	9'-2"	12'-0"	12'-0"	11'-11"	10'-0"	12'-0"	8'-6"	
40.0	12'-0"	8'-9"	10'-5"	8'-9"	12'-0"	11'-8"	11'-4"	9'-6"	12'-0"	8'-2"	
45.0	12'-0"	8'-4"	10'-1"	8'-4"	12'-0"	10'-11"	10'-11"	9'-1"	12'-0"	7'-10"	
50.0	12'-0"	8'-1"	9'-8"	8'-1"	12'-0"	10'-4"	10'-7"	8'-9"	12'-0"	7'-5"	
55.0	12'-0"	7'-10"	9'-5"	7'-10"	11'-8"	9'-10"	10'-3"	8'-6"	12'-0"	7'-4"	
60.0	12'-0"	7'-6"	9'-2"	7'-6"	11'-4"	9'-5"	9'-11"	8'-3"	12'-0"	7'-2"	

SCHEDULE 1b' (LIMITED LOAD, MULLION SPACING & SPAN INSTALLATION)
FLOOR TO CEILING (TRAPPED) MOUNTED MAX. SPAN (ft) FOR END & INTERIOR MULLIONS FOR A GIVEN A.S.D. DESIGN PRESSURE (p.s.f.), AND FOR 12'-0" (CASE I) & 8'-0" (CASE Ia) MAX. MULLION SPACING (ft) *

INSTALLATION CASES	MAX. A.S.D. DESIGN PRESSURE RATING (p.s.f.)	MAXIMUM MULLION SPACING (ft) *	MAXIMUM MULLION SPAN (FT)						
			(J) 4"x6"x1/4" MULLION		(K) 4"x8"x1/4" MULLION			(L) 4"x4"x1/4" MULLION	
			ORIENTATION #2 (⇌)†	ORIENTATION #1 (⊥)†	ORIENTATION #2 (⇌)†	ORIENTATION #2 (⇌)†	ORIENTATION #1 (⊥)†		
			END	INTERIOR	END	INTERIOR	INTERIOR	INTERIOR	
CASE I	30.0	12'-0"	-	10'-0"	10'-0"	10'-0"	10'-0"	9'-0"	
	35.0	12'-0"	-	10'-0"	10'-0"	10'-0"	10'-0"	8'-6"	
	40.0	12'-0"	-	10'-0"	10'-0"	10'-0"	10'-0"	8'-2"	
	45.0	12'-0"	-	10'-0"	10'-0"	9'-6"	10'-0"	-	
	50.0	12'-0"	-	10'-0"	10'-0"	9'-2"	10'-0"	-	
	55.0	12'-0"	-	9'-7"	10'-0"	8'-11"	10'-0"	-	
CASE Ia	60.0	12'-0"	-	9'-7"	10'-0"	8'-8"	12'-6"	-	
	30.0	8'-0"	-	9'-0"	9'-0"	9'-0"	9'-0"	10'-0"	
	35.0	8'-0"	-	9'-0"	9'-0"	9'-0"	9'-0"	9'-9"	
	40.0	8'-0"	-	9'-0"	9'-0"	9'-0"	9'-0"	9'-4"	
	45.0	8'-0"	-	9'-0"	9'-0"	9'-0"	9'-0"	9'-0"	
	50.0	8'-0"	-	9'-0"	9'-0"	9'-0"	9'-0"	8'-7"	
	55.0	8'-0"	-	9'-0"	9'-0"	9'-0"	9'-0"	8'-5"	
	60.0	8'-0"	-	9'-0"	9'-0"	9'-0"	9'-0"	8'-2"	

SCHEDULE 2b' (LIMITED LOAD, MULLION SPACING & SPAN INSTALLATION)
WALL MOUNTED MAX. SPAN (ft) FOR END & INTERIOR MULLIONS FOR A GIVEN A.S.D. DESIGN PRESSURE RATING (p.s.f.), AND FOR 12'-0" (CASE I') & 8'-0" (CASE II') MAX. MULLION SPACING (ft) *

INSTALLATION CASES	MAX. A.S.D. DESIGN PRESSURE RATING (p.s.f.)	MAXIMUM MULLION SPACING (ft) *	MAXIMUM MULLION SPAN (FT)						
			(J) 4"x6"x1/4" MULLION		(K) 4"x8"x1/4" MULLION			(L) 4"x4"x1/4" MULLION	
			ORIENTATION #2 (⇌)†	ORIENTATION #1 (⊥)†	ORIENTATION #2 (⇌)†	ORIENTATION #2 (⇌)†	ORIENTATION #1 (⊥)†		
			END	INTERIOR	END	INTERIOR	INTERIOR	INTERIOR	
CASE I'	30.0	12'-0"	-	10'-0"	10'-0"	10'-0"	10'-0"	9'-0"	
	35.0	12'-0"	-	10'-0"	10'-0"	10'-0"	10'-0"	8'-6"	
	40.0	12'-0"	-	10'-0"	10'-0"	10'-0"	10'-0"	8'-2"	
	45.0	12'-0"	-	10'-0"	10'-0"	9'-6"	10'-0"	7'-10"	
	50.0	12'-0"	-	10'-0"	10'-0"	9'-2"	10'-0"	7'-5"	
	55.0	12'-0"	-	9'-7"	10'-0"	8'-11"	10'-0"	7'-4"	
CASE II'	60.0	12'-0"	-	9'-7"	10'-0"	8'-8"	10'-0"	7'-2"	
	30.0	8'-0"	9'-0"	9'-0"	9'-0"	9'-0"	9'-0"	10'-0"	
	35.0	8'-0"	9'-0"	9'-0"	9'-0"	9'-0"	9'-0"	9'-9"	
	40.0	8'-0"	9'-0"	9'-0"	9'-0"	9'-0"	9'-0"	9'-4"	
	45.0	8'-0"	9'-0"	9'-0"	9'-0"	9'-0"	9'-0"	9'-0"	
	50.0	8'-0"	9'-0"	9'-0"	9'-0"	9'-0"	9'-0"	8'-7"	
	55.0	8'-0"	9'-0"	9'-0"	9'-0"	9'-0"	9'-0"	8'-5"	
	60.0	8'-0"	9'-0"	9'-0"	9'-0"	9'-0"	9'-0"	8'-2"	



* MAXIMUM MULLION SPACING SHALL BE SUCH THAT MAX. ALLOWABLE WALL MOUNTED SLAT SPAN FOR THAT DESIGN LOAD SHALL NOT BE EXCEEDED.

† MULLION ORIENTATION IS AS SEEN FROM THE OUTSIDE (EXTERIOR) OF PRODUCT.

WALTER A. TILLIT JR.
 LICENSE
 No. 44167
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER
 8/23/2023
 P.E. SEAL/SIGNATURE/DATE

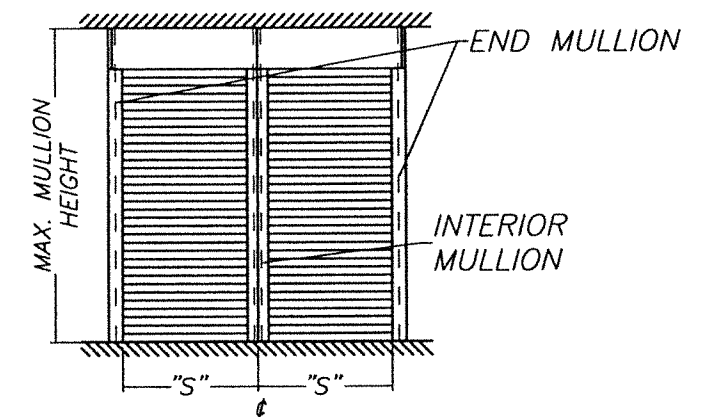
FLORIDA BUILDING CODE (NON HIGH VELOCITY HURRICANE ZONE)											
©2023 TILTECO, INC.				ROLL-UP SHUTTER SYSTEM W/ GY-60 END RETENTION SLAT				Y.M. DRAWN BY:			
 TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA CAROLINA, FL 33166 Phone : (305)871-1530 Fax : (305)871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167				 The Sun & Shutter Specialists Cerrada de Acolotenco 237, Bodega 48, Colonia San Sebastian, P.I. Pical Panteco Ciudad de Mexico-02510				8/25/2023 DATE:			
								23-191			
								DRAWING No.			
REV. NO		DESCRIPTION		DATE		REV. No		DESCRIPTION		DATE	
1		OLD 22-087		8/23/23		3		-		-	
						4					
								SHEET 20 OF 21			

SCHEDULE 1c
FLOOR TO CEILING (TRAPPED) MOUNTING
MAX. SPAN (ft) FOR END AND INTERIOR MULLIONS FOR A GIVEN A.S.D.
DESIGN PRESSURE RATING (p.s.f.), & A 7'-0" MAX. MULLION SPACING (ft) *

MAX. A.S.D. DESIGN PRESSURE RATING (p.s.f.)	MAXIMUM MULLION SPACING (ft) *	MAXIMUM MULLION SPAN (FT)									
		ⓐ 4"x6"x1/4" MULLION				ⓑ 4"x8"x1/4" MULLION				ⓒ 4"x4"x1/4" MULLION	
		ORIENTATION #2 (⇐) †		ORIENTATION #1 (⇨) †		ORIENTATION #2 (⇐) †		ORIENTATION #1 (⇨) †			
		END	INTERIOR	END	INTERIOR	END	INTERIOR	END	INTERIOR	INTERIOR	
30.0	7'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	
35.0	7'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	
40.0	7'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	9'-9"	
45.0	7'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	9'-4"	
50.0	7'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	9'-1"	
55.0	7'-0"	10'-0"	9'-10"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	8'-9"	
60.0	7'-0"	10'-0"	9'-10"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	8'-6"	

SCHEDULE 2c
WALL MOUNTING
MAX. SPAN (FT) FOR END AND INTERIOR MULLIONS FOR A GIVEN A.S.D. DESIGN
PRESSURE RATING (P.S.F.), & AND 7'-0" MAX. MULLION SPACING (FT) *

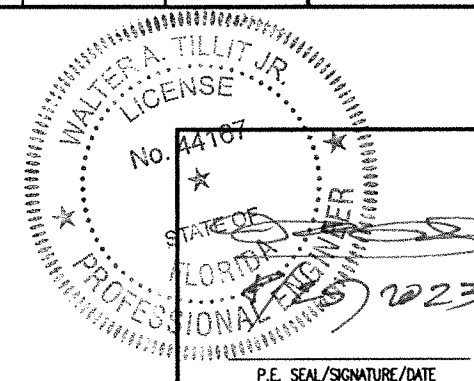
MAX. A.S.D. DESIGN PRESSURE RATING (p.s.f.)	MAXIMUM MULLION SPACING (ft) *	MAXIMUM MULLION SPAN (FT)									
		ⓐ 4"x6"x1/4" MULLION				ⓑ 4"x8"x1/4" MULLION				ⓒ 4"x4"x1/4" MULLION	
		ORIENTATION #2 (⇐) †		ORIENTATION #1 (⇨) †		ORIENTATION #2 (⇐) †		ORIENTATION #1 (⇨) †			
		END	INTERIOR	END	INTERIOR	END	INTERIOR	END	INTERIOR	INTERIOR	
30.0	7'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	10'-0"	
35.0	7'-0"	12'-0"	11'-5"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	10'-0"	
40.0	7'-0"	12'-0"	10'-11"	12'-0"	12'-0"	12'-0"	11'-10"	12'-0"	12'-0"	9'-9"	
45.0	7'-0"	12'-0"	10'-6"	12'-0"	12'-0"	12'-0"	11'-5"	12'-0"	12'-0"	9'-4"	
50.0	7'-0"	12'-0"	10'-2"	12'-0"	12'-0"	12'-0"	11'-0"	12'-0"	12'-0"	9'-1"	
55.0	7'-0"	12'-0"	9'-10"	12'-0"	12'-0"	12'-0"	10'-8"	12'-0"	12'-0"	8'-9"	
60.0	7'-0"	12'-0"	9'-10"	11'-2"	12'-0"	12'-0"	10'-4"	12'-0"	12'-0"	8'-6"	



MULLION SPACING: "S"

* MAXIMUM MULLION SPACING SHALL BE SUCH THAT MAX. ALLOWABLE WALL MOUNTED SLAT SPAN FOR THAT A.S.D. DESIGN PRESSURE RATING SHALL NOT BE EXCEEDED.

† MULLION ORIENTATION IS AS SEEN FROM THE OUTSIDE (EXTERIOR) OF PRODUCT.



FLORIDA BUILDING CODE (NON HIGH VELOCITY HURRICANE ZONE)																							
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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 CA-0006719 WALTER A. TILLIT JR. P.E. FLORIDA Lic. # 44167				ROLL-UP SHUTTER SYSTEM W/ GY-60 END RETENTION SLAT gaviota The Sun & Shutter Specialists Cerrada de Acolotenco 237, Bodega 48, Colonia San Sebastian, P.I. Pical Ponteco Ciudad de Mexico-02510																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>REV. NO</th><th>DESCRIPTION</th><th>DATE</th><th>REV. No</th><th>DESCRIPTION</th><th>DATE</th></tr> <tr> <td>1</td><td>OLD 23-087</td><td>8/25/23</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> </table>				REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE	1	OLD 23-087	8/25/23	3	-	-	2	-	-	4	-	-	23-191 DRAWING No. SHEET 21 OF 21	
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE																		
1	OLD 23-087	8/25/23	3	-	-																		
2	-	-	4	-	-																		