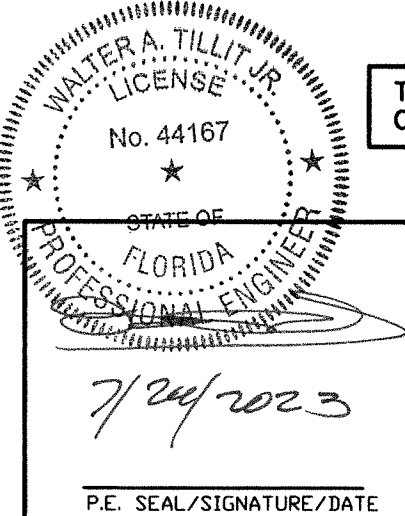


GENERAL NOTES:

1. ROLL UP SHUTTER SYSTEM WITH END RETENTION 55mm (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.
2. THIS PRODUCT SHALL NOT BE INSTALLED AT HIGH VELOCITY HURRICANE ZONES. 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 ON SHEETS 13 THRU 15 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 ABOVE.
- 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. THIS PRODUCT'S ADEQUACY FOR IMPACT AND WIND RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1609.1.2 OF THE ABOVE MENTIONED CODE AS PER FENESTRATION TESTING LAB. REPORTS # 10615, 10616, 5565, 5539, 22-1042 AND MED-1066 AS PER TAS-201, TAS-202 AND TAS-203 PROTOCOLS AND ASTM E-1886 & E-1996 STANDARDS.
3. ALL ALUMINUM EXTRUSIONS SHALL BE AS INDICATED ON SHEETS 2, 3 & 4.
4. ALL SCREWS (EXCEPT WIND LOCK SCREW) 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. ALL ALUMINUM EXTRUSIONS IN CONTACT WITH DISSIMILAR MATERIALS SHALL COMPLY WITH SECTION III-6 OF THE 2020 ALUMINUM DESIGN MANUAL.
7. ANCHORS TO WALL FOR SIDE RAILS SHALL BE AS FOLLOWS:
- (A) TO EXISTING POURED CONCRETE: MIN. 3000 p.s.i. COMPRESSIVE STRENGTH.
- 3/8" CONFLEX ANCHORS, AS MANUFACTURED BY ELCO CONSTRUCTION PRODUCTS, Inc. (CASE I, SHTS. 7 , 13)
- 5/16" ULTRACON ANCHORS AS MANUFACTURED BY DEWALT (CASE I ,II, III & IV, SHTS. 7 , 13) OR 5/16" TAPCON XL, MANUFACTURED FOR ITW/BUILDEX. (CASE I)
- A.1) MINIMUM EMBEDMENT INTO POURED CONCRETE SHALL BE: 3 1/2" FOR 3/8" CONFLEX ANCHORS AND 2 1/4" FOR 5/16" ULTRACON 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: 4" FOR 3/8" CONFLEX ANCHORS AND 3" FOR 5/16" ULTRACON. 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. f'c= 2 ksi GROUT FILLED CELL CONCRETE BLOCK WALL: ASTM C-90
- 3/8" KWIK BOLT 3, AS MANUFACTURED BY HILTI Inc. (CASE I, SHTS. 7, 13)
- 5/16" ULTRACON ANCHORS, AS MANUFACTURED BY DEWALT (CASES I THRU IV, SHTS. 7 , 13).
- B.1) MINIMUM EMBEDMENT OF 5/16" ULTRACON ANCHORS INTO THE GROUT FILLED CELL CONCRETE BLOCK UNIT SHALL BE 2 1/4" AND 2 1/2" FOR KWIK 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" 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 STRUCTURE BEHIND SUCH PANELS.
8. ANCHORS SHALL BE INSTALLED FOLLOWING ALL OF THE RECOMMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER.
9. POLYETHYLENE BLOCKS USED AT SPRING LOADED SYSTEM FOR REMOVABLE STORM BARS SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS:

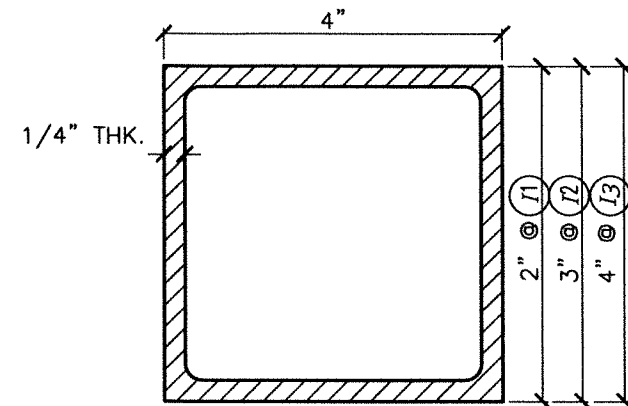
ASTM DESIGNATION	PROPERTIES	VALUE
D256	IMPACT RESISTANCE	7.95 FT-Lb/In (AVERAGE)
D638	TENSILE CAPACITY	4243 psi (AVERAGE)
D790	FLEXURAL CAPACITY	1012 psi (AVERAGE)

11. ANCHORS REQUIRED FOR MULLION CONNECTIONS TO CONCRETE SHALL BE AS SPECIFIED ON APPLICABLE SECTIONS SHOWN ON SHEET 11.
- 3/8" GALVANIZED OR S.S KWIK BOLT 3 EXPANSION ANCHOR MANUFACTURED BY HILTI, INC.
- 3/8" CONFLEX SCREW ANCHOR MANUFACTURED BY ELCO CONSTRUCTION PRODUCTS.
- 5/16" ULTRACON ANCHORS MANUFACTURED BY DEWALT.
- MINIMUM EDGE DISTANCE FOR ABOVE MENTIONED ANCHORS SHALL BE AS INDICATED BELOW. EDGE DISTANCE AND EMBEDMENTS ARE BEYOND ANY FINISH MATERIAL.
- | ANCHOR | EDGE DISTANCE
● 100% | EMBEDMENT ● 100%
CONCRETE/GROUTED BLOCK | REQ'. MIN. THICKNESS
FOR SUBSTRATE |
|--------------------|-------------------------|--|---------------------------------------|
| 3/8" KWIK BOLT 3 | 4" | 2 1/2" (3000 PSI) | 6" |
| 3/8" CONFLEX SCREW | 4" | 2 5/8" (3000 PSI) | 6" |
| 5/16" ULTRACON | 4" | 2 1/4" (3000 PSI) | 4" |
12. 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.
13. 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.
14. THIS PRODUCT'S INSTALLATION SHALL COMPLY WITH ALL SPECS INDICATED IN THIS DRAWING PLUS ANY BUILDING AND ZONING REGULATIONS PROVIDED BY THE JURISDICTION WHERE PERMIT IS APPLIED TO.
15. LIFTING MECHANISM NOT PART OF THIS APPROVAL.
16. (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 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.
17. 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.

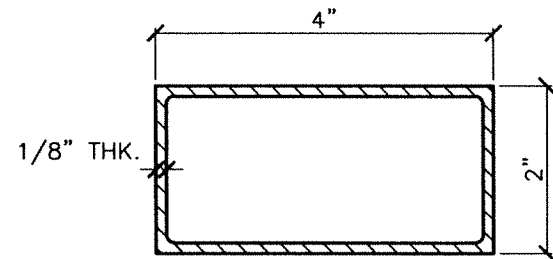


THIS DRAWING SHALL ONLY BE USED TO OBTAIN PERMITS IN THE STATE OF FLORIDA

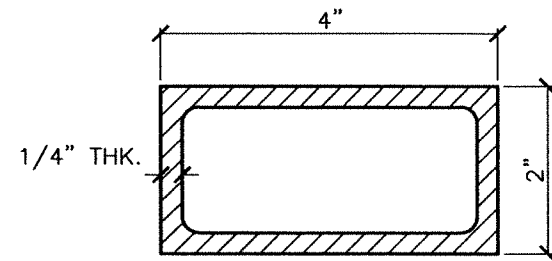
FLORIDA BUILDING CODE (NON HIGH VELOCITY HURRICANE ZONE)					
©2023 TILTECO, INC.			ROLL UP SHUTTER SYSTEM WITH END RETENTION 55mm SLAT LARGE MISSILE IMPACT RESISTANT		
TILTECO INC. TILLIT TESTING & ENGINEERING COMPANY 8355 N.W. 36th. St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 CA-0006719			ROLLINGSHIELD Inc. 9875 NW 79th AVE. HIALEAH GARDENS MIAMI, FL 33016		
REV. NO	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE
1	OLD 23-005	07/24/23	3	-	-
2	-	-	4	-	-
WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167					W.H DRAWN BY: 07/24/2023 DATE: 23-120 DRAWING No. SHEET 1 OF 15



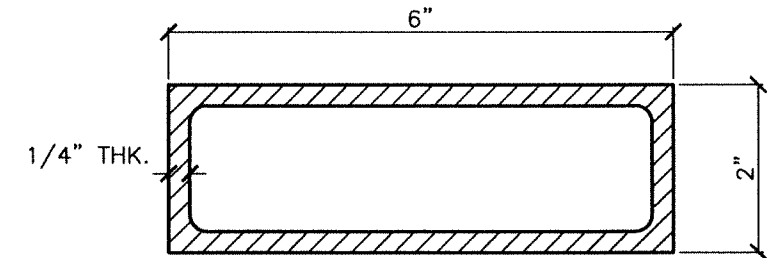
I1, I2, I3 BUILD-OUT TUBE
ALUMINUM 6061-T6 ALLOY & TEMPER



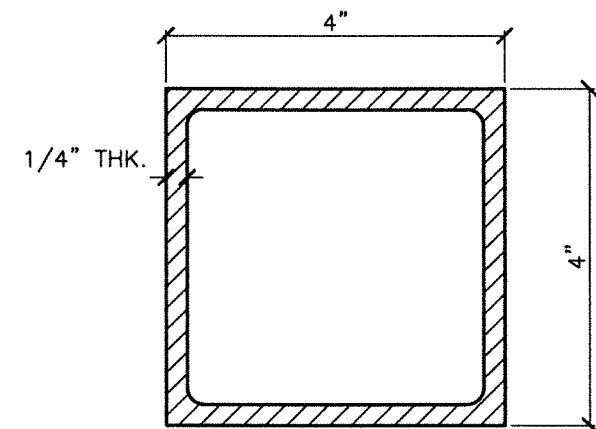
I4 BUILD-OUT HEADER FOR G BOX
ALUMINUM 6063-T5 ALLOY & TEMPER



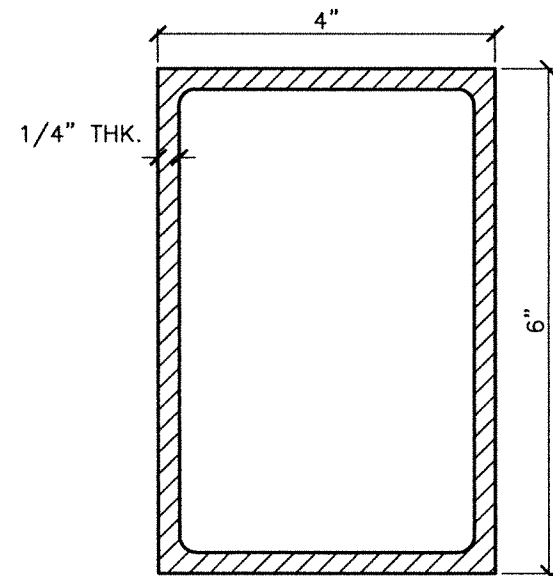
Y1 4"X2"X1/4" HEADER
ALUMINUM 6061-T6 ALLOY & TEMPER



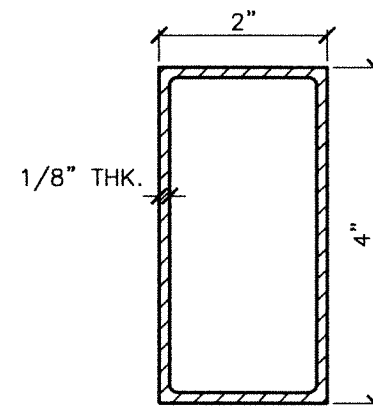
Y2 6"X2"X1/4" HEADER
ALUMINUM 6061-T6 ALLOY & TEMPER



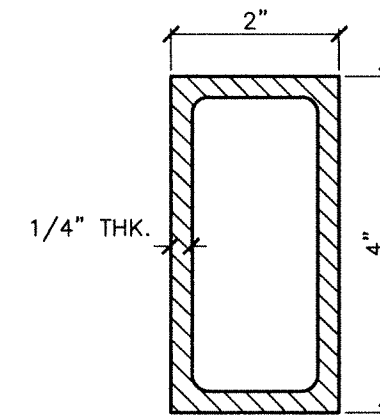
Z3 4"X4"X1/4" MULLION
ALUMINUM 6061-T6 ALLOY & TEMPER



Z4 4"X6"X1/4" MULLION
ALUMINUM 6061-T6 ALLOY & TEMPER



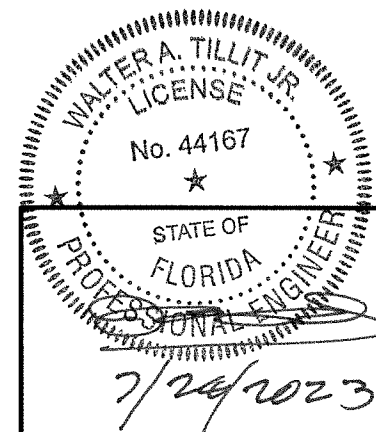
M1 4"X2"X1/8" STORM BAR*
ALUMINUM 6063-T6 ALLOY & TEMPER



M2 4"X2"X1/4" STORM BAR*
ALUMINUM 6061-T6 ALLOY & TEMPER

*SEE SHEET 6 FOR STORM BARS M3 & M4 W/ SPRING LOAD SYSTEM.

COMPONENTS
N.T.S



P.E. SEAL/SIGNATURE/DATE

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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 WITH END RETENTION
55mm SLAT
LARGE MISSILE IMPACT RESISTANT

ROLLINGSHIELD Inc.
9875 NW 79th AVE.
HIALEAH GARDENS MIAMI, FL 33016

W.H
DRAWN BY:

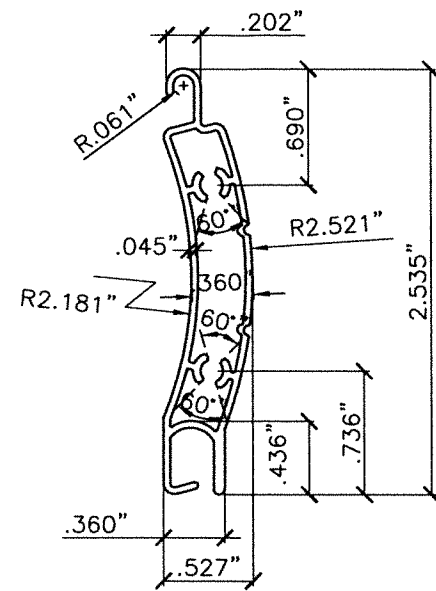
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DATE:

23-120

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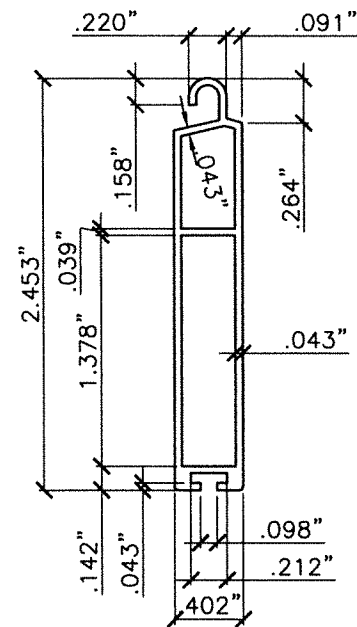
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SHEET 2 OF 15



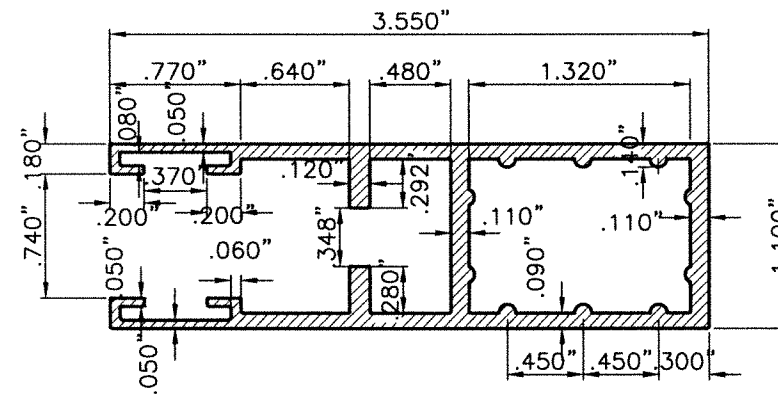
G TYPE 3 SLAT

EXTRUDED ALUMINUM: 6063-T6 ALLOY & TEMPER
55mm SLAT



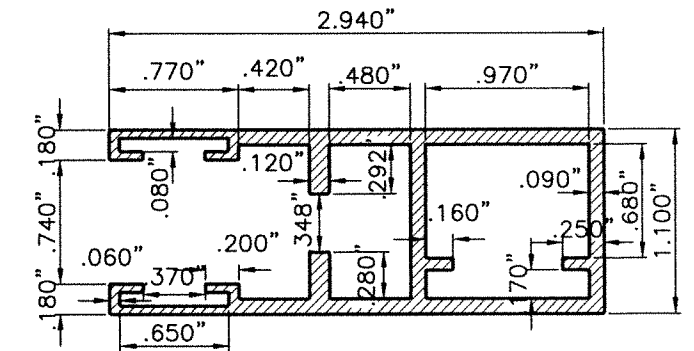
H TYPE 3 SLAT:

EXTRUDED ALUMINUM: 6063-T6 ALLOY & TEMPER
BOTTOM 55mm SLAT



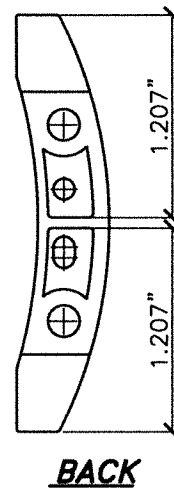
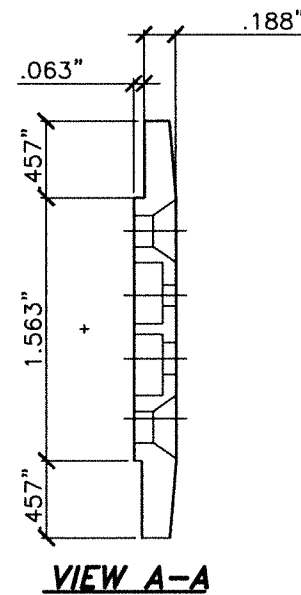
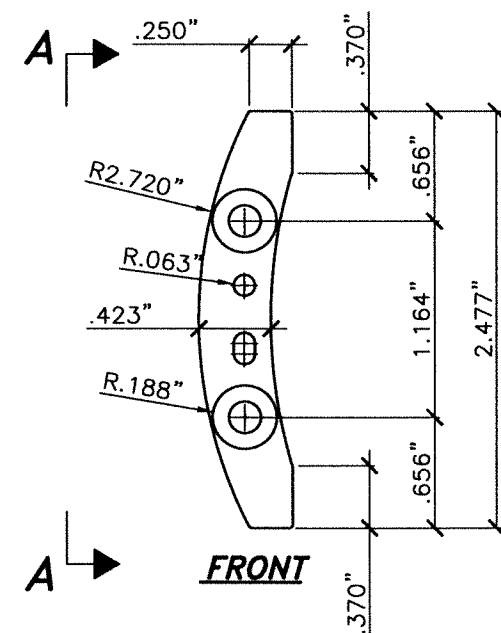
I SIDE RAIL TYPE 2

EXTRUDED ALUMINUM:
6063-T6 ALLOY & TEMPER
SIDE RAIL 55mm SLAT



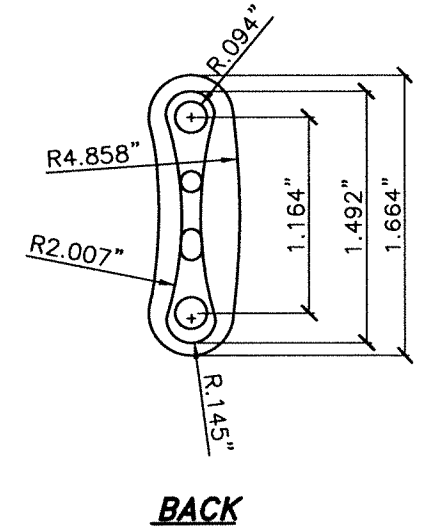
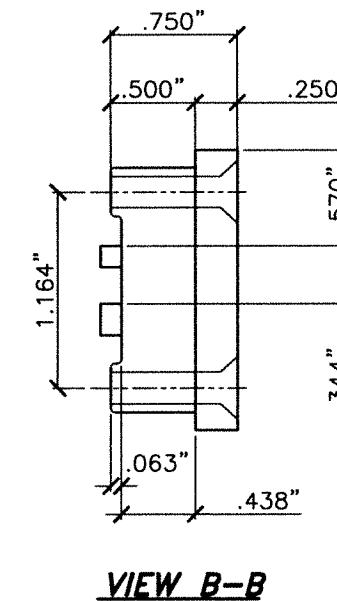
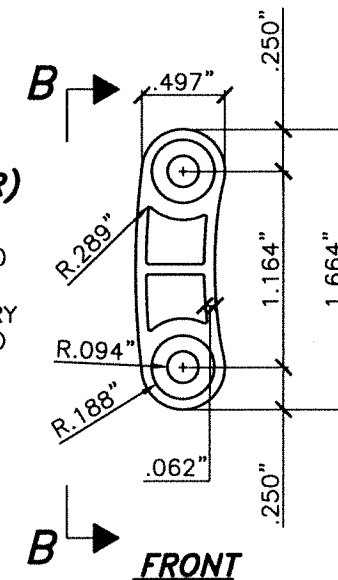
J SIDE RAIL TYPE 3

EXTRUDED ALUMINUM:
6063-T6 ALLOY & TEMPER
SIDE RAIL 55mm SLAT



**K ACETAL POLYMER
(Fu=9.5Ksl., 110 DUROMETER)
END RETAINER CAP**

TWO ACETAL POLYMER (Fu=9.5Ksl., 110 DUROMETER) RETAINER CLIPS FORMING ONE PIECE. ONE AT EACH END OF EVERY OTHER SLAT, EACH FASTENED WITH TWO No. 6 X 2" PAN HEAD S.S S.D.S FOR 55MM SLAT



COMPONENTS (CONTINUED)
N.T.S

WALTER A. TILLIT JR.
LICENSE
No. 44167
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
07/24/2023
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 WITH END RETENTION
55mm SLAT
LARGE MISSILE IMPACT RESISTANT

ROLLINGSHIELD Inc.
9875 NW 79th AVE.
HIALEAH GARDENS MIAMI, FL 33016

W.H
DRAWN BY:

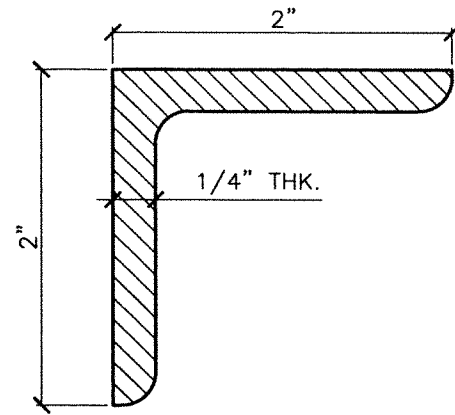
07/24/2023
DATE:

23-120

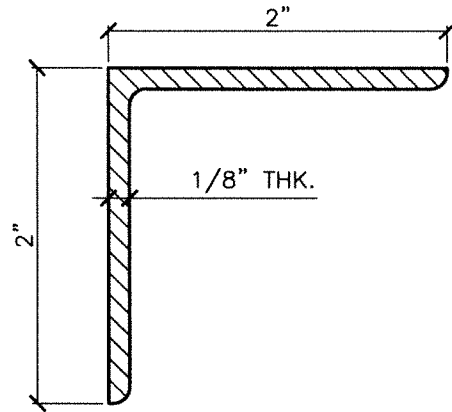
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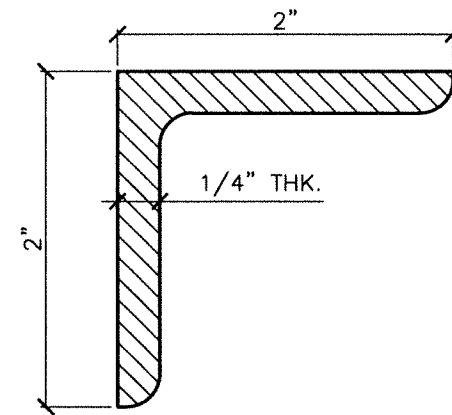
SHEET 3 OF 15



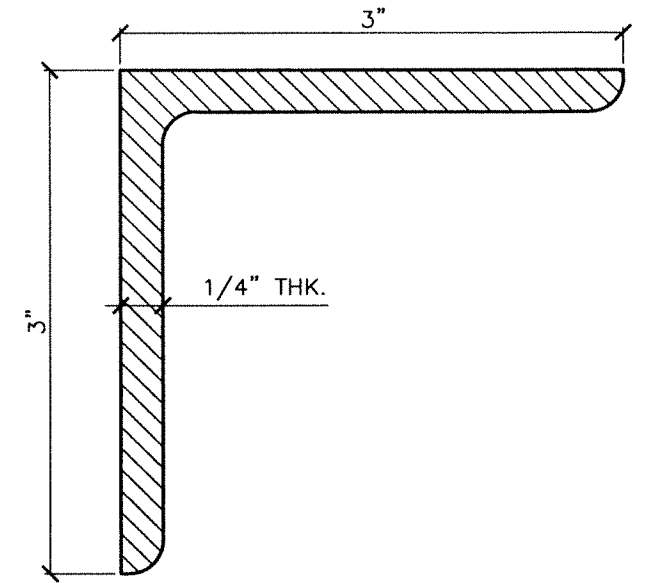
J 2"x2"x1/4" TRAPPED ANGLE
ALUMINUM 6061-T6 ALLOY & TEMPER



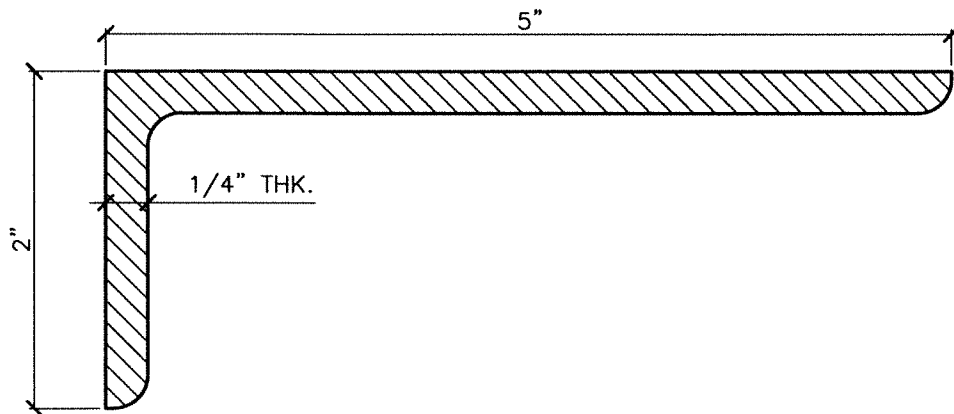
J1 2"x2"x1/8"x0'-4" CLIP ANGLE
ALUMINUM 6061-T6 ALLOY & TEMPER



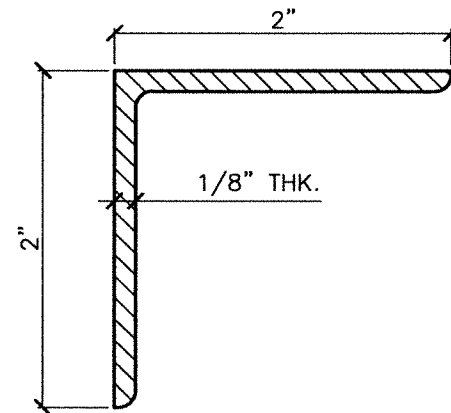
J2 2"x2"x1/4"x0'-6" CLIP ANGLE
ALUMINUM 6061-T6 ALLOY & TEMPER



J3 3"x3"x1/4"x0'-4" CLIP ANGLE
ALUMINUM 6061-T6 ALLOY & TEMPER

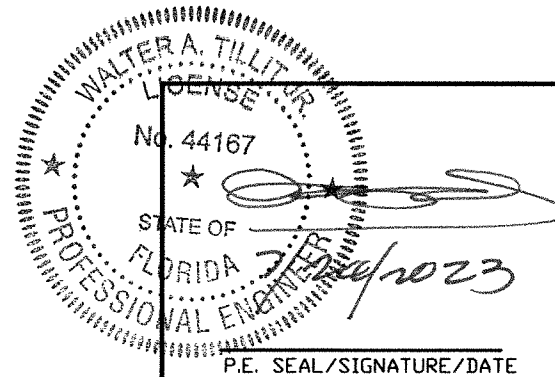


J4 2"x5"x1/4"x0'-6" CLIP ANGLE
ALUMINUM 6061-T6 ALLOY & TEMPER

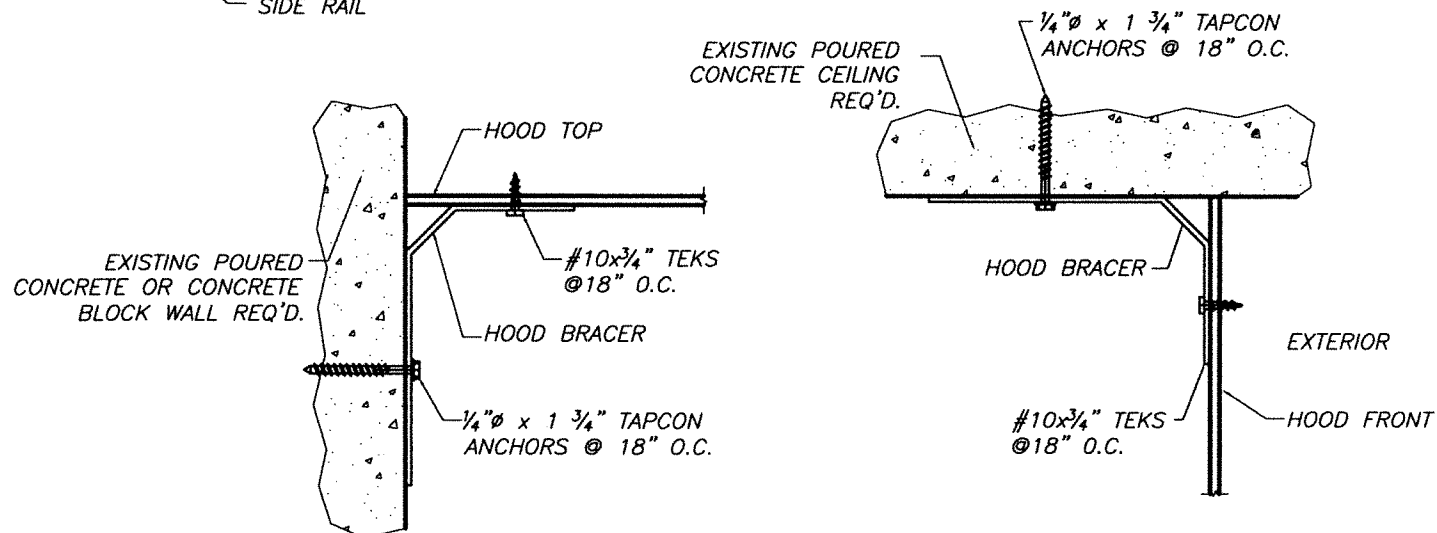
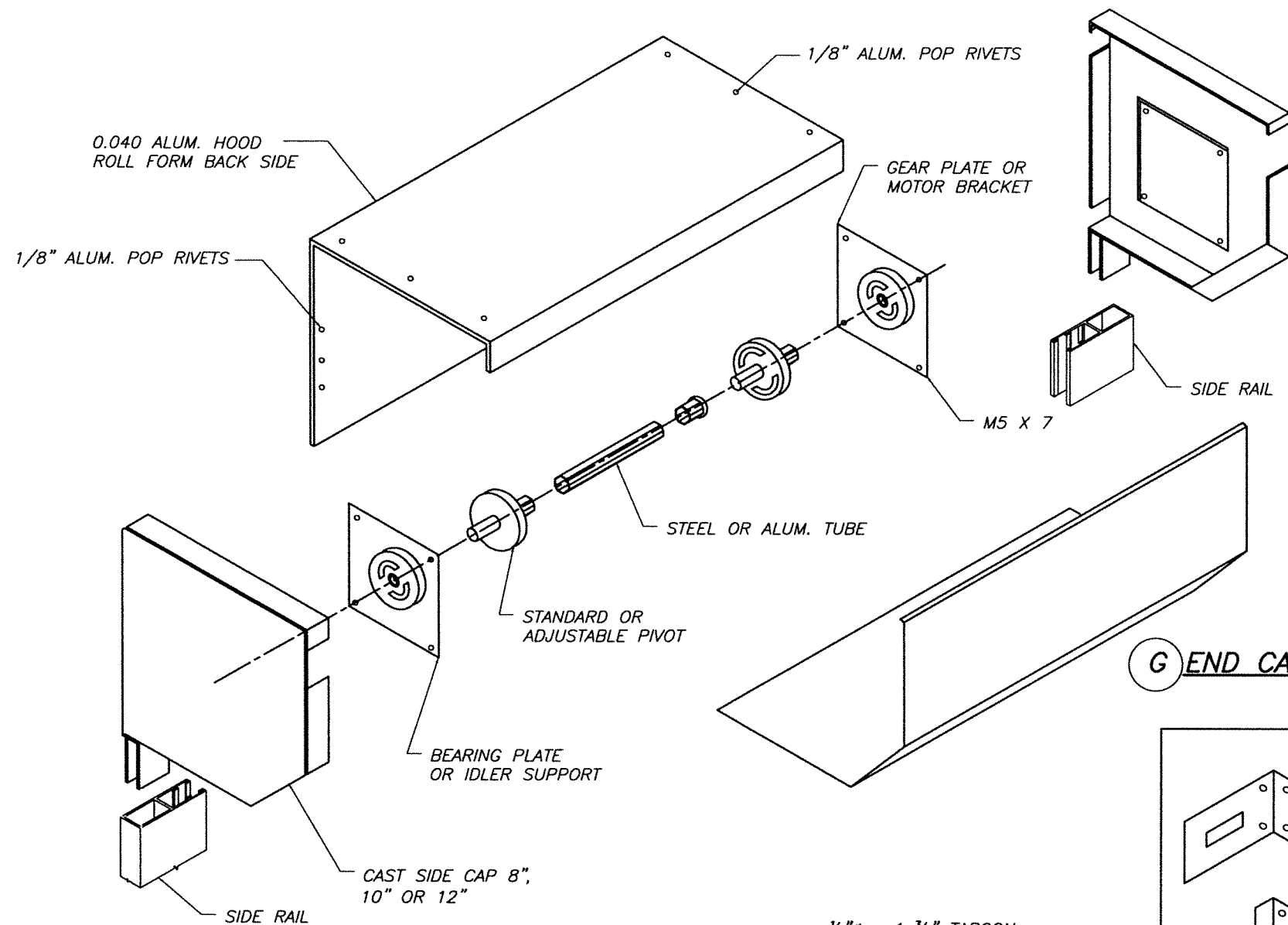


J5 2"x2"x1/8"x0'-2" CLIP ANGLE
ALUMINUM 6061-T6 ALLOY & TEMPER

COMPONENTS (CONTINUED)
N.T.S



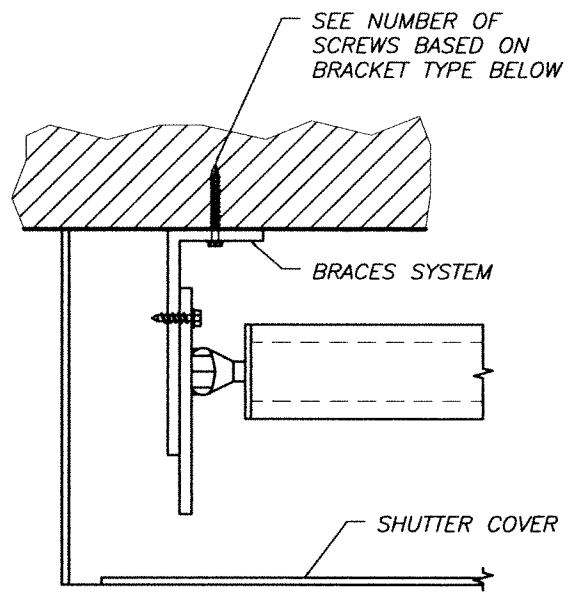
FLORIDA BUILDING CODE (NON HIGH VELOCITY HURRICANE ZONE)					
©2023 TILTECO, INC. TILTECO inc. TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 38th. St., Ste. 305, VIRGINIA GARDENS, FL. 33166 Phone : (305)871-1530 . Fax : (305)871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167			ROLL UP SHUTTER SYSTEM WITH END RETENTION 55mm SLAT LARGE MISSILE IMPACT RESISTANT		W.H DRAWN BY:
			ROLLINGSHIELD Inc. 9875 NW 79th AVE. HIALEAH GARDENS MIAMI, FL. 33016		07/24/2023 DATE:
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 23-005	07/24/23	3	-	-
2	-	-	4	-	-
DRAWING No.					23-120
SHEET 4 OF 15					



**WALL HOOD ATTACHMENT
(SIDE VIEW)**

CUSTOM HOOD ATTACHMENT DETAIL

**CEILING HOOD ATTACHMENT
(SIDE VIEW)**



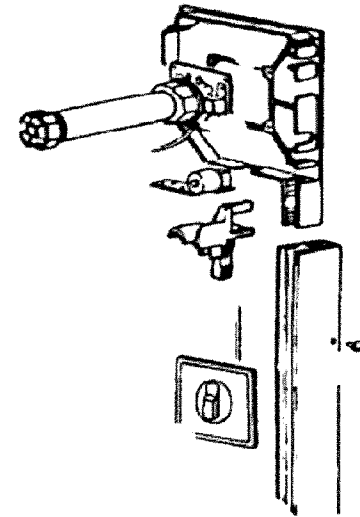
**WALL INSTALLATION
(PLAN)**

G END CAP SYSTEM FOR 40mm & 55mm

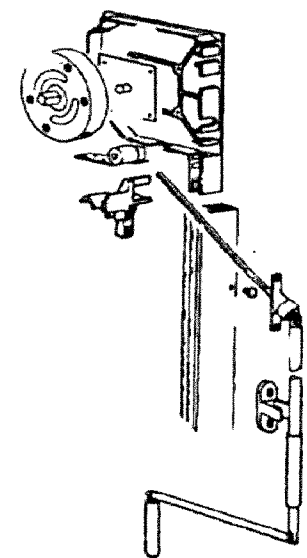
BRACKET SYSTEM

- UP TO 100 LBS SHUTTER WEIGHT
MIN. 2 ANCHORS 1/4"Ø x 1 3/4"
TAPCON OR 3 TEKS. 1/4"Ø x 1"
- UP TO 200 LBS SHUTTER WEIGHT
MIN. 3 ANCHORS 5/16"Ø x 2 1/4"
TAPCON OR 4 TEKS 1/4"Ø x 1"
- UP TO 350 LBS SHUTTER WEIGHT
MIN. 4 ANCHORS 5/16"Ø x 2 1/4"
TAPCON OR 6 TEKS 1/4"Ø x 1"

MOTORIZED ROLL-UP SHUTTER SYSTEM



HAND CRANK ROLL-UP SHUTTER SYSTEM



**ALTERNATE ROLL-UP SHUTTER LIFTING MECHANISMS
(SEE NOTE 15 ON SHEET 1)**

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

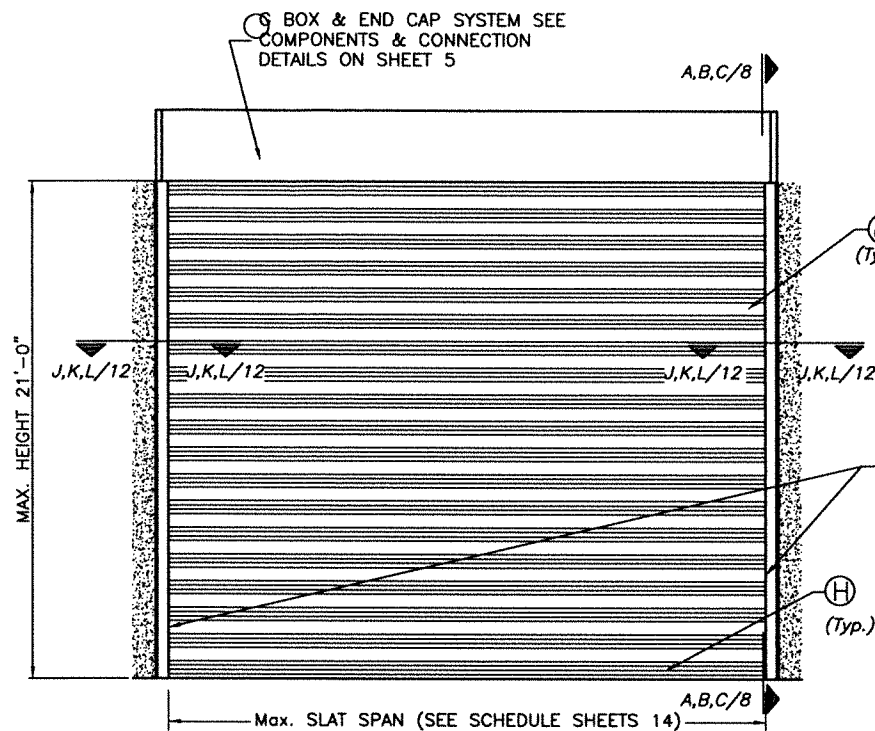
FLORIDA BUILDING CODE (NON HIGH VELOCITY HURRICANE ZONE)

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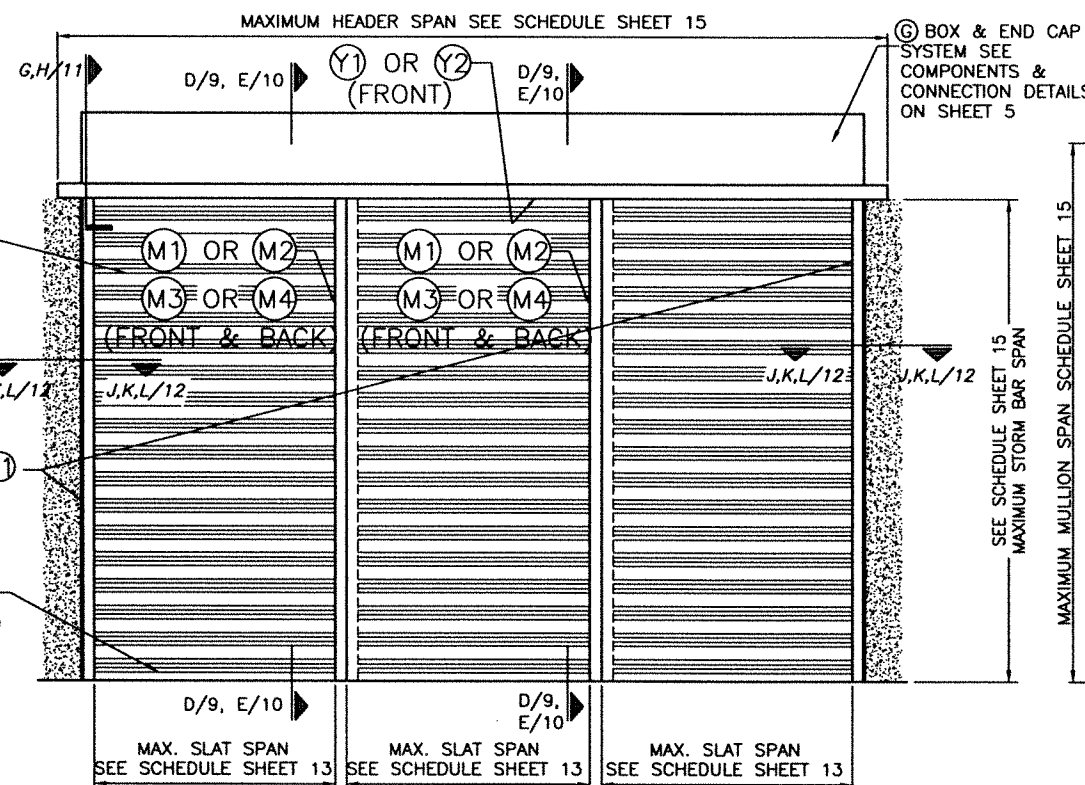
TILTECO INC.

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

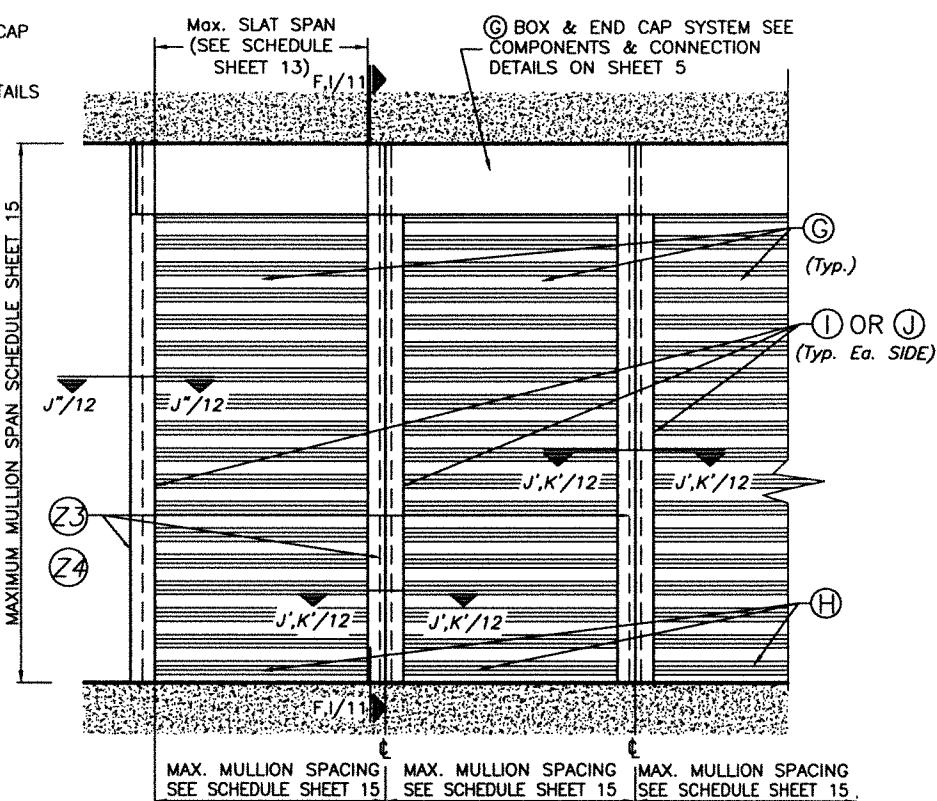
ROLL UP SHUTTER SYSTEM WITH END RETENTION 55mm SLAT LARGE MISSILE IMPACT RESISTANT						W.H DRAWN BY:
ROLLINGSHIELD Inc. 9875 NW 79th AVE. HIALEAH GARDENS MIAMI, FL. 33016						07/24/2023 DATE:
23-120						DRAWING No.
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE	
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2	-	-	4	-	-	



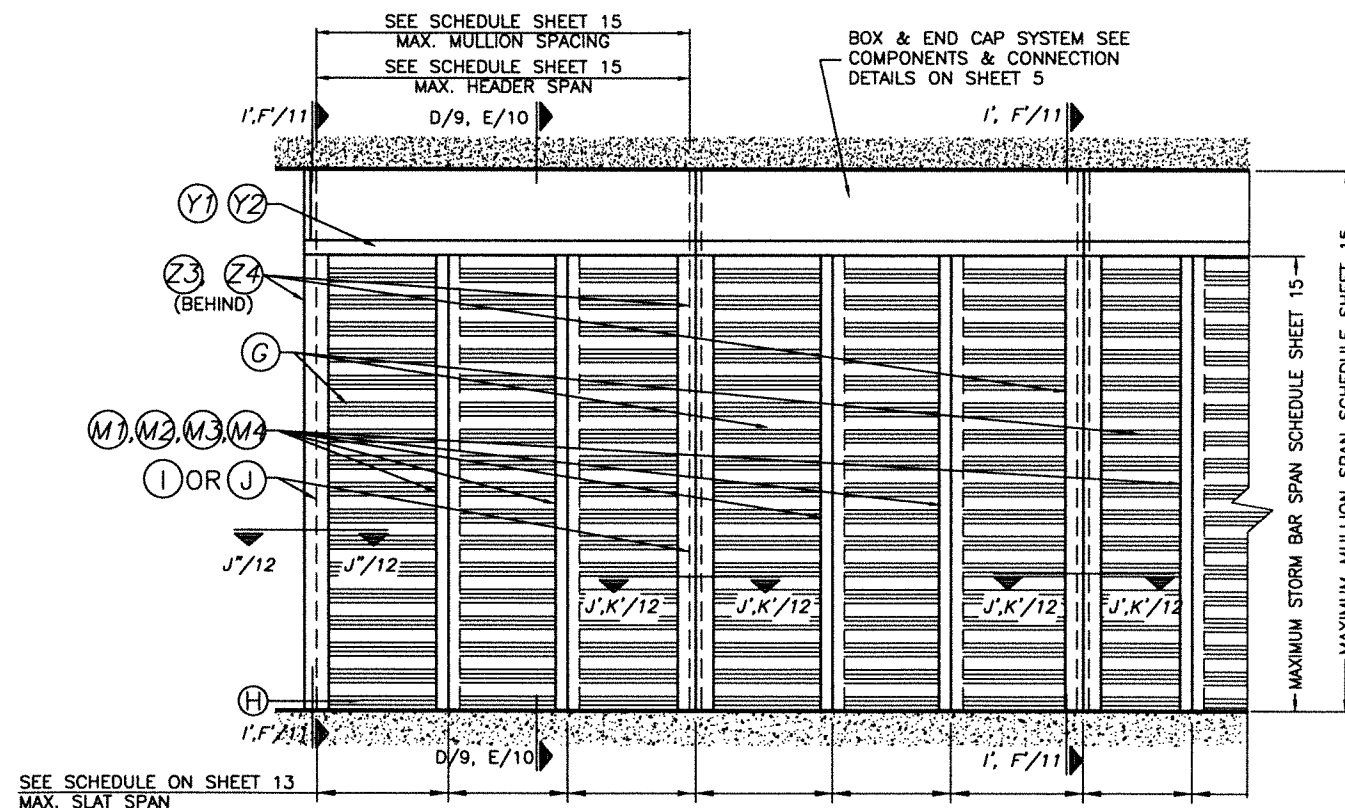
CASE I
END RETENTION SLAT
TYPICAL SINGLE UNIT ELEVATION
WALL TRAPPED AND BUILD-OUT MOUNT
ATTACHED TO EXISTING BUILDING AT ENDS
W/O STORM BARS/HEADERS. NO MULLIONS



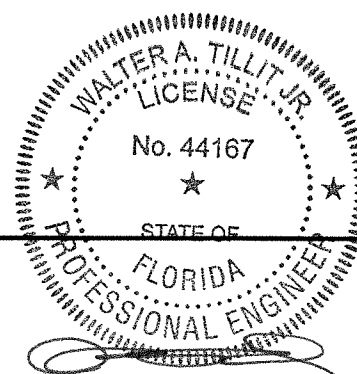
CASE II
TYPICAL SINGLE UNIT ELEVATION (W/ STORM BARS AND HEADER)
ATTACHED TO EXISTING BUILDING AT ENDS. NO MULLIONS



CASE III
TYPICAL MULTIPLE UNIT ELEVATION SINGLE SPAN SLAT
W/MULLIONS BETWEEN UNITS. NO STORM BARS. NO HEADERS



CASE IV
TYPICAL CONSECUTIVE MULTIPLE UNIT ELEVATION (STORM BARS AND HEADER REQUIRED)
AND WITH MULLIONS BETWEEN UNITS



7/24/2023
P.E. SEAL/SIGNATURE/DATE

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

ROLL UP SHUTTER SYSTEM WITH END RETENTION
55mm SLAT
LARGE MISSILE IMPACT RESISTANT

ROLLINGSHIELD Inc.
9875 NW 79th AVE.
HIALEAH GARDENS MIAMI, FL. 33016

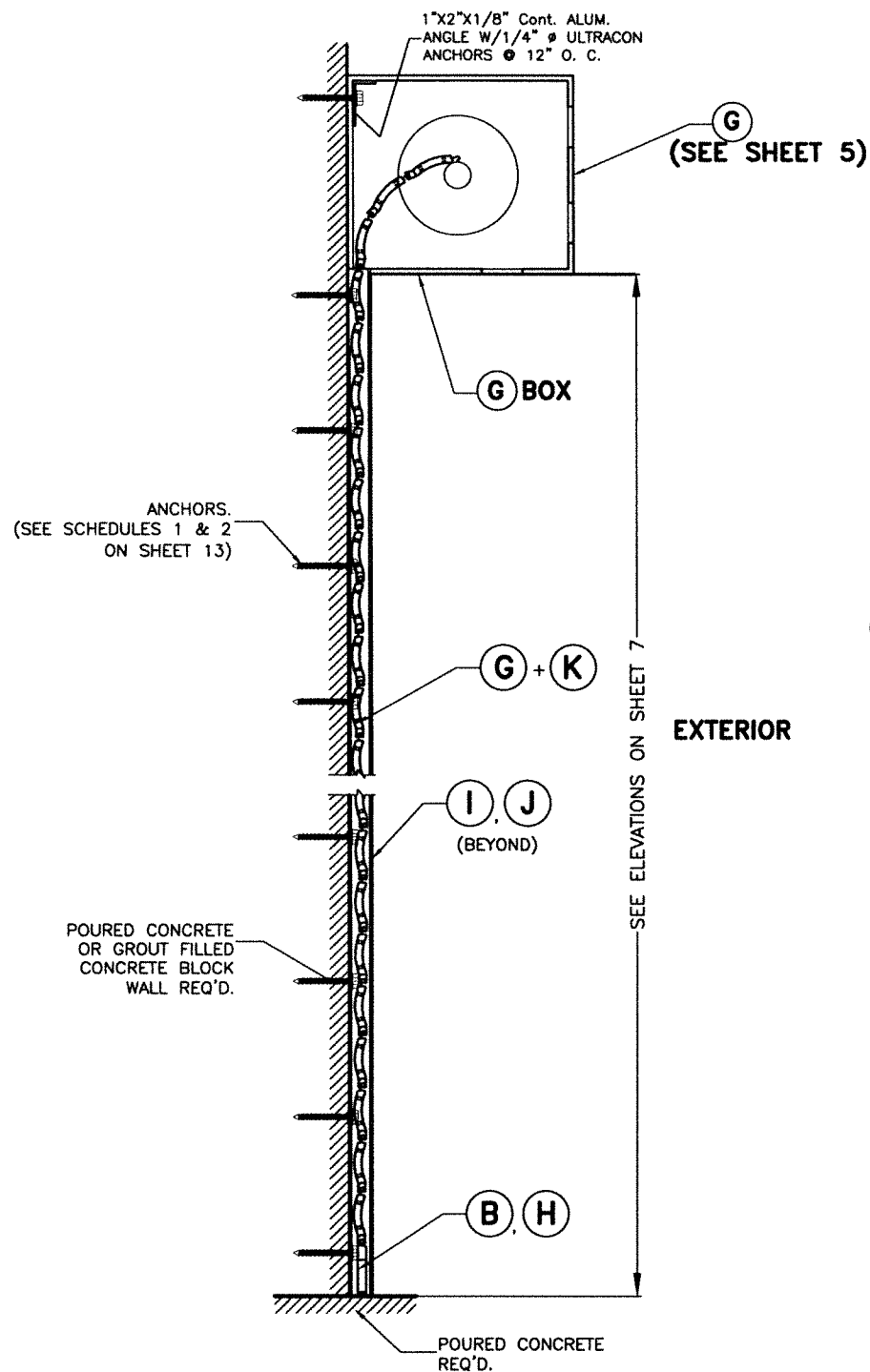
W.H
DRAWN BY:

07/24/2023
DATE:

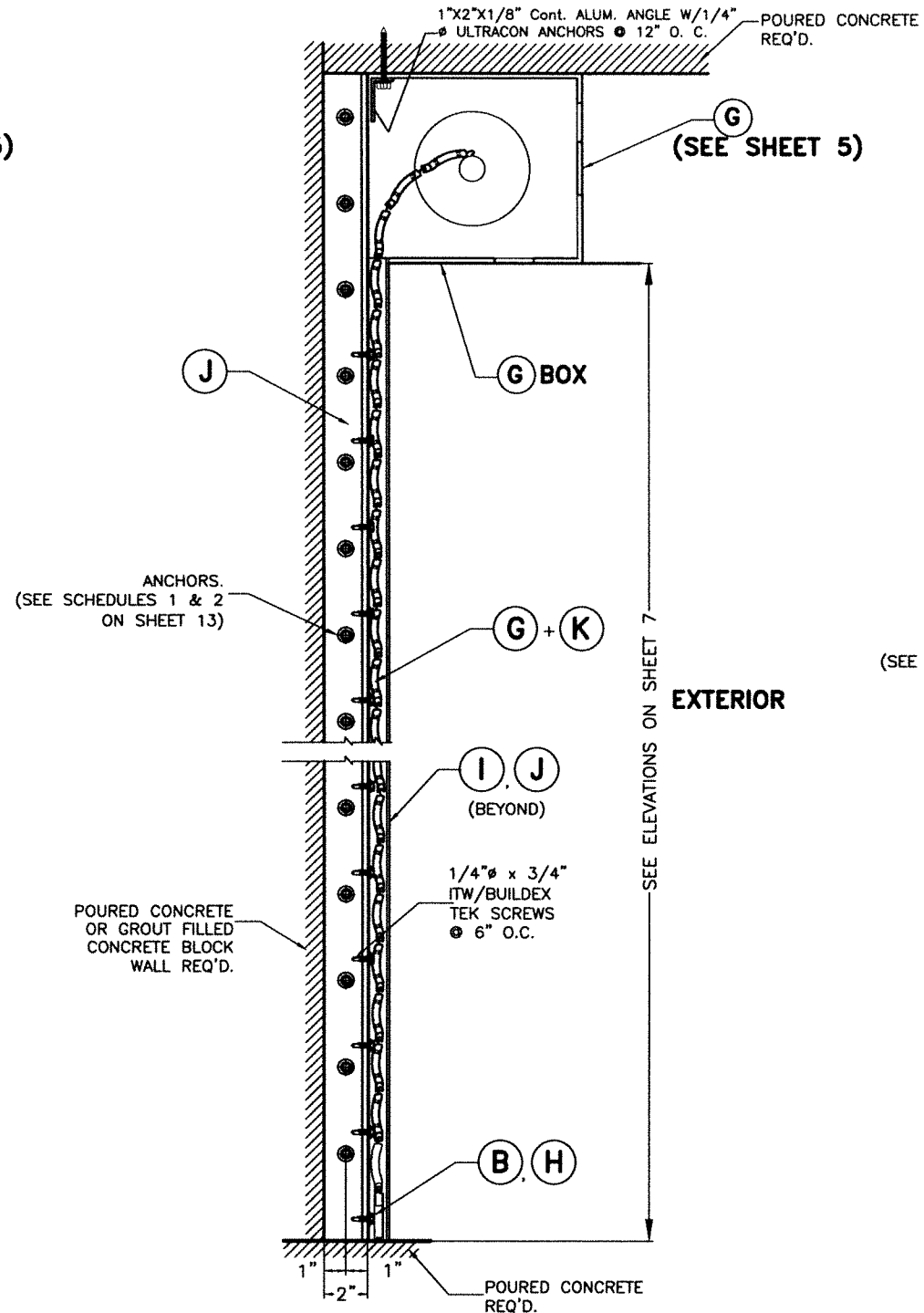
23-120

DRAWING No.

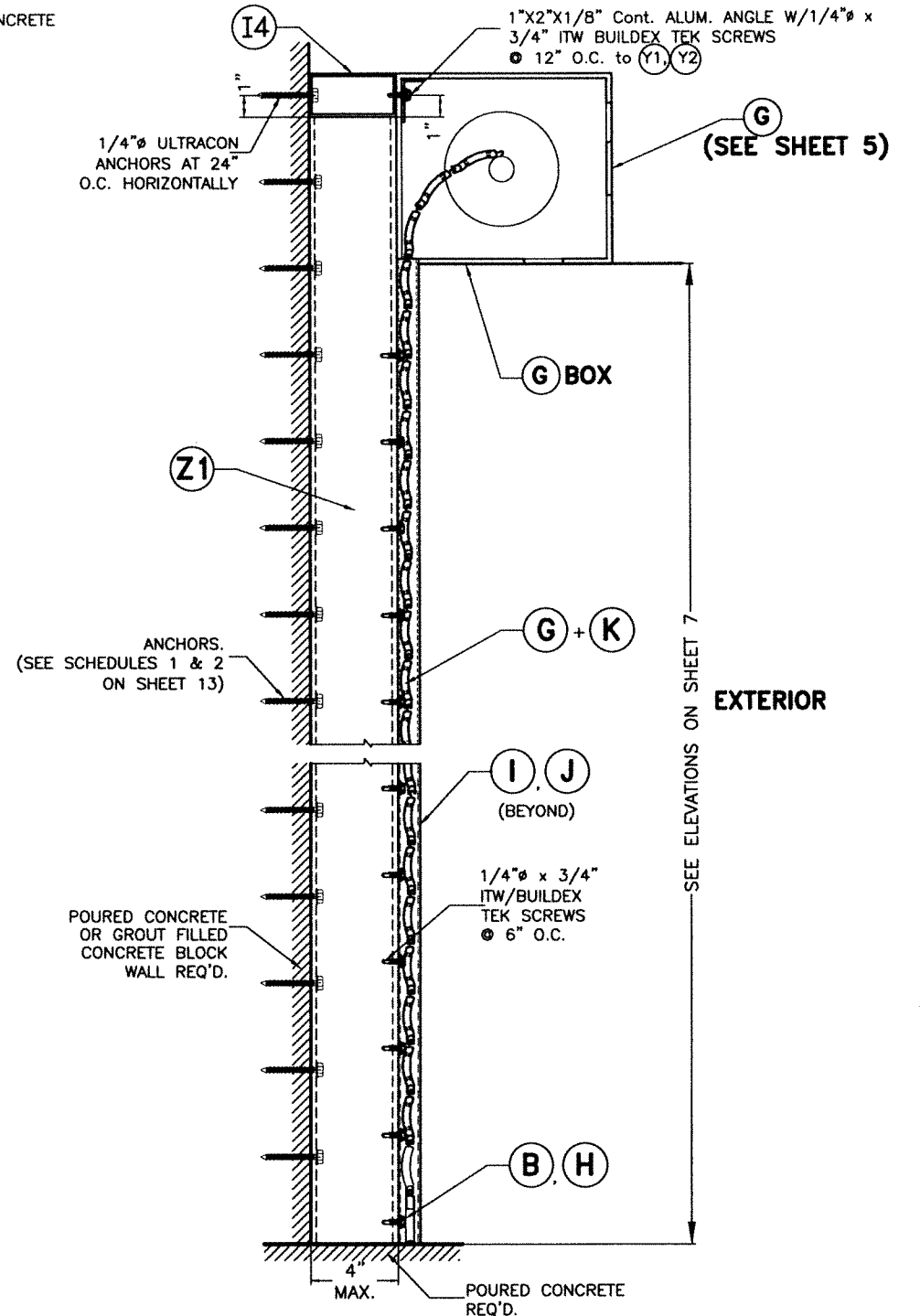
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 23-005	07/24/23	3	-	-
2	-	-	4	-	-



CASES I, II, III & IV
SECTION A-A (WALL MOUNTED)
 SCALE 1-1/2"=1"



CASES I, II, III & IV
SECTION B-B (TRAPPED MOUNTED)
 SCALE 1-1/2"=1"



CASES I, II, III & IV
SECTION C-C (BUILD-OUT MOUNTED)
 SCALE 1-1/2"=1"

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

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

ROLL UP SHUTTER SYSTEM WITH END RETENTION
 55mm SLAT
 LARGE MISSILE IMPACT RESISTANT

ROLLINGSHIELD Inc.
 9875 NW 79th AVE.
 HIALEAH GARDENS MIAMI, FL. 33016

W.H
 DRAWN BY:

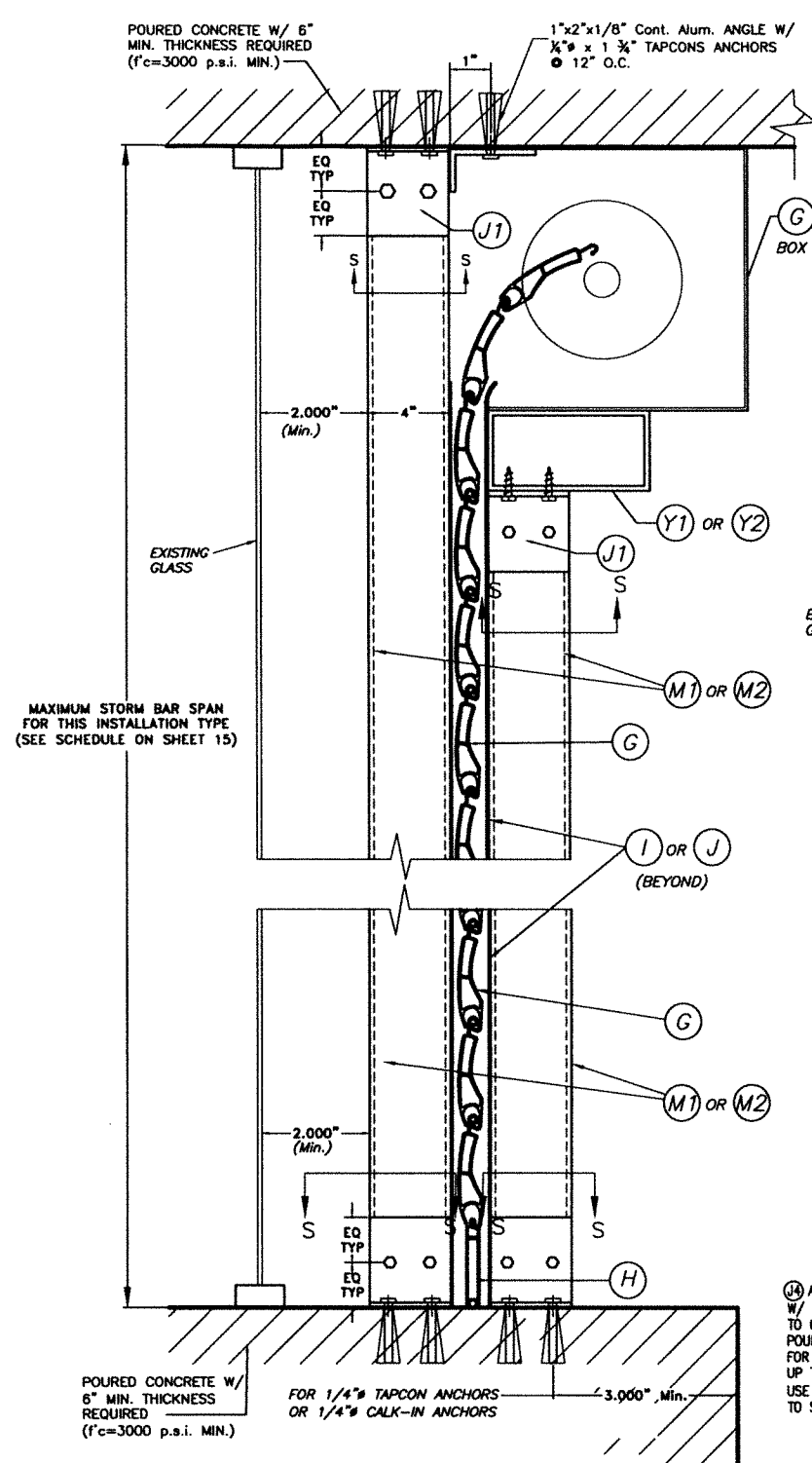
07/24/2023
 DATE:

23-120

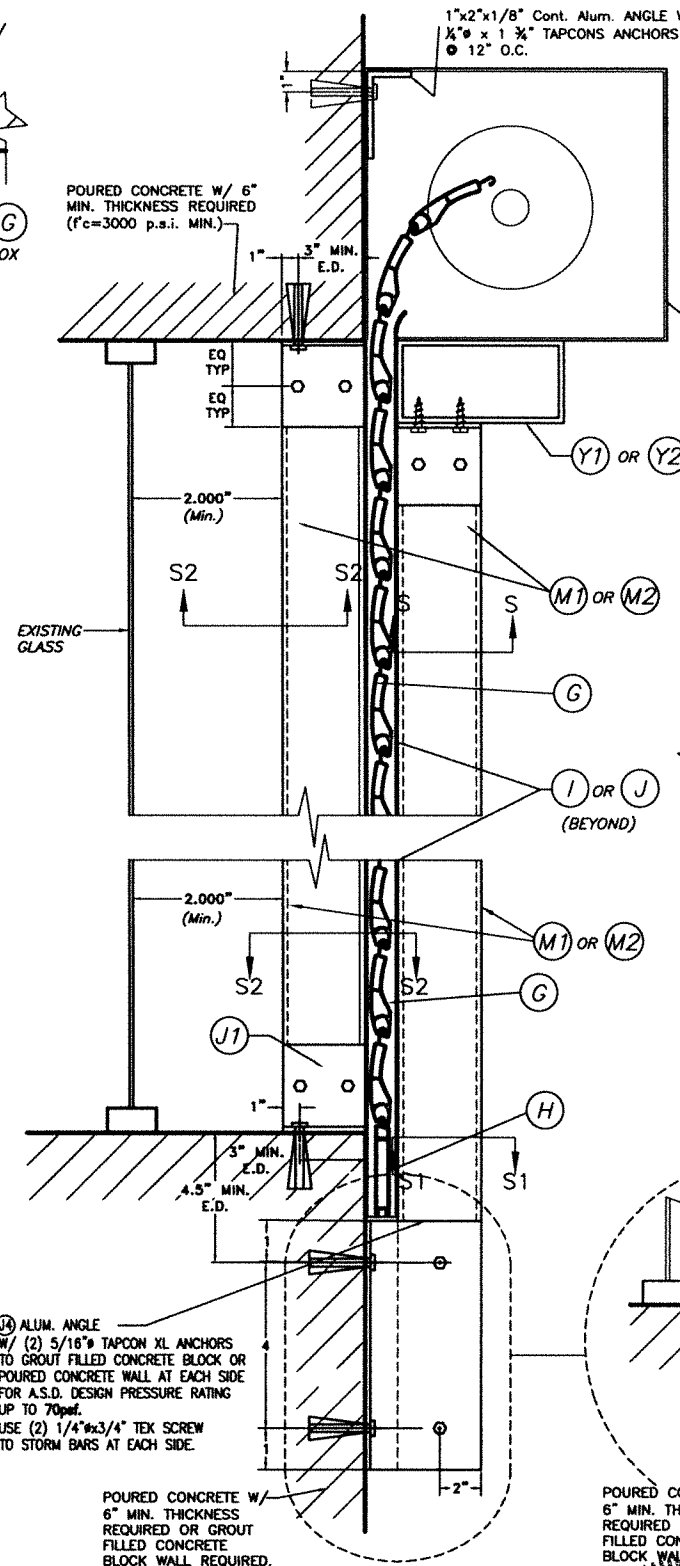
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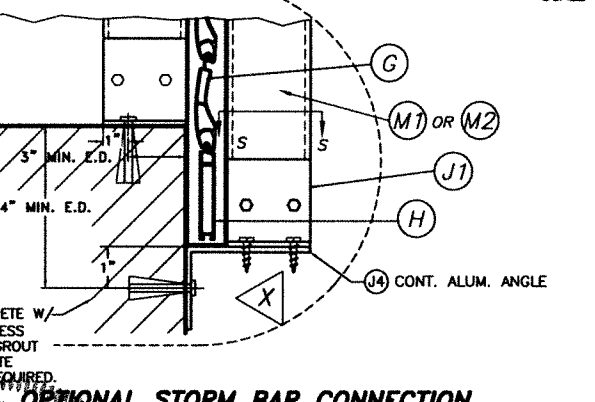
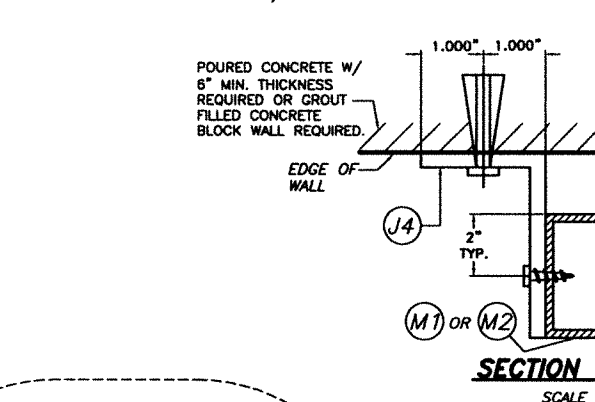
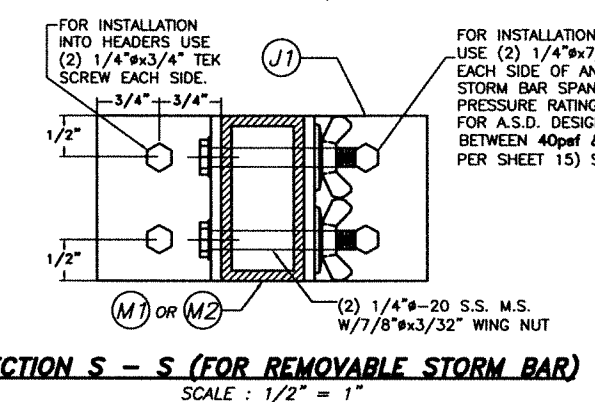
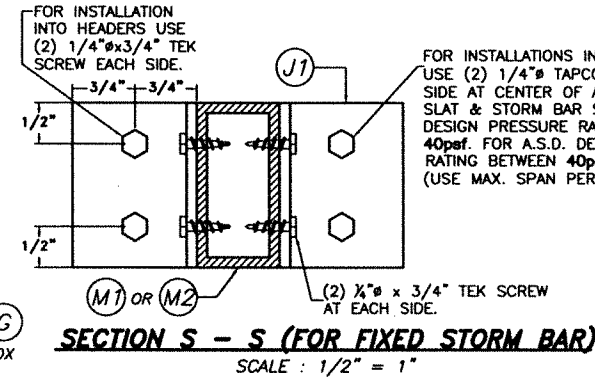
SHEET 8 OF 15



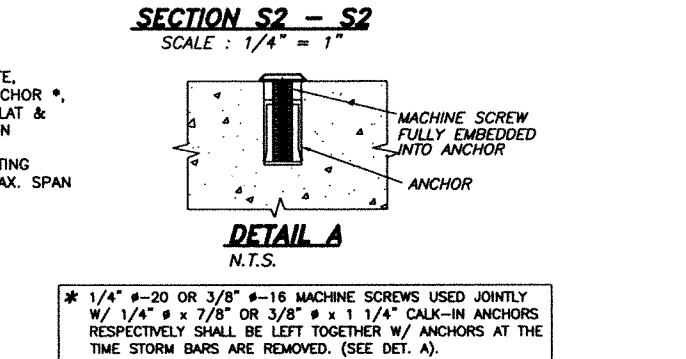
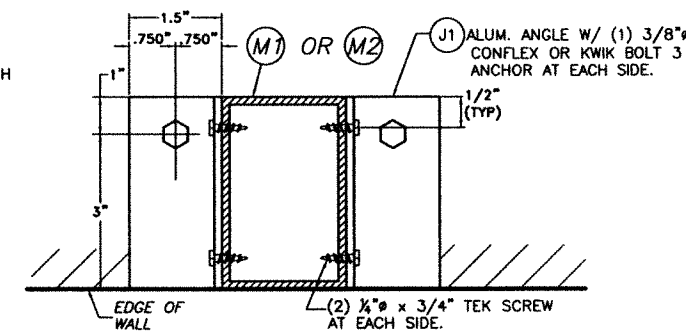
CEILING & FLOOR MOUNTING SECTION D-D INSTALLATION
W/ FIXED OR REMOVABLE STORM BARS W/ CONCRETE ANCHORS
 (SEE SECTION "S" FOR ANCHOR TYPE REQUIREMENT)
 SCALE : N.T.S



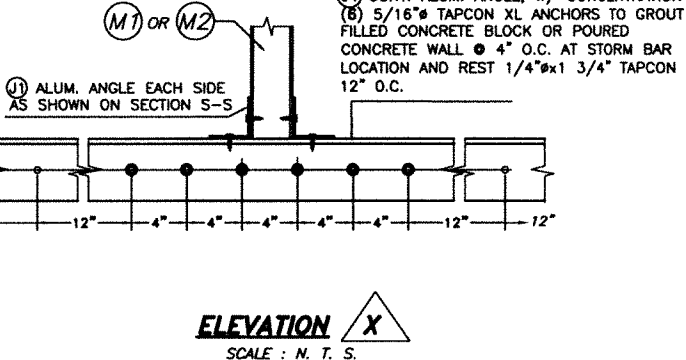
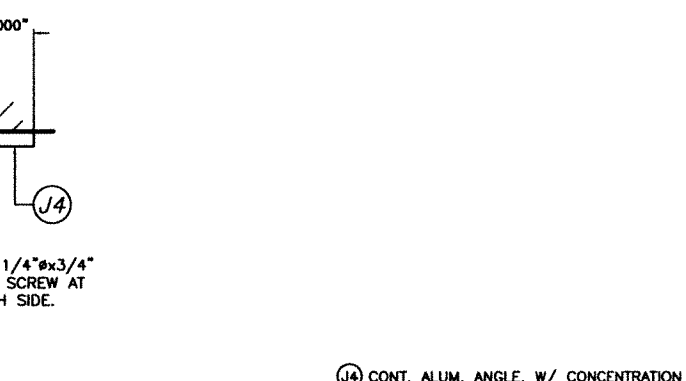
WALL MOUNTING SECTION D-D INSTALLATION
W/ FIXED STORM BARS W/ CONCRETE ANCHORS
 SCALE : N.T.S



OPTIONAL STORM BAR CONNECTION
 SCALE : N.T.S



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

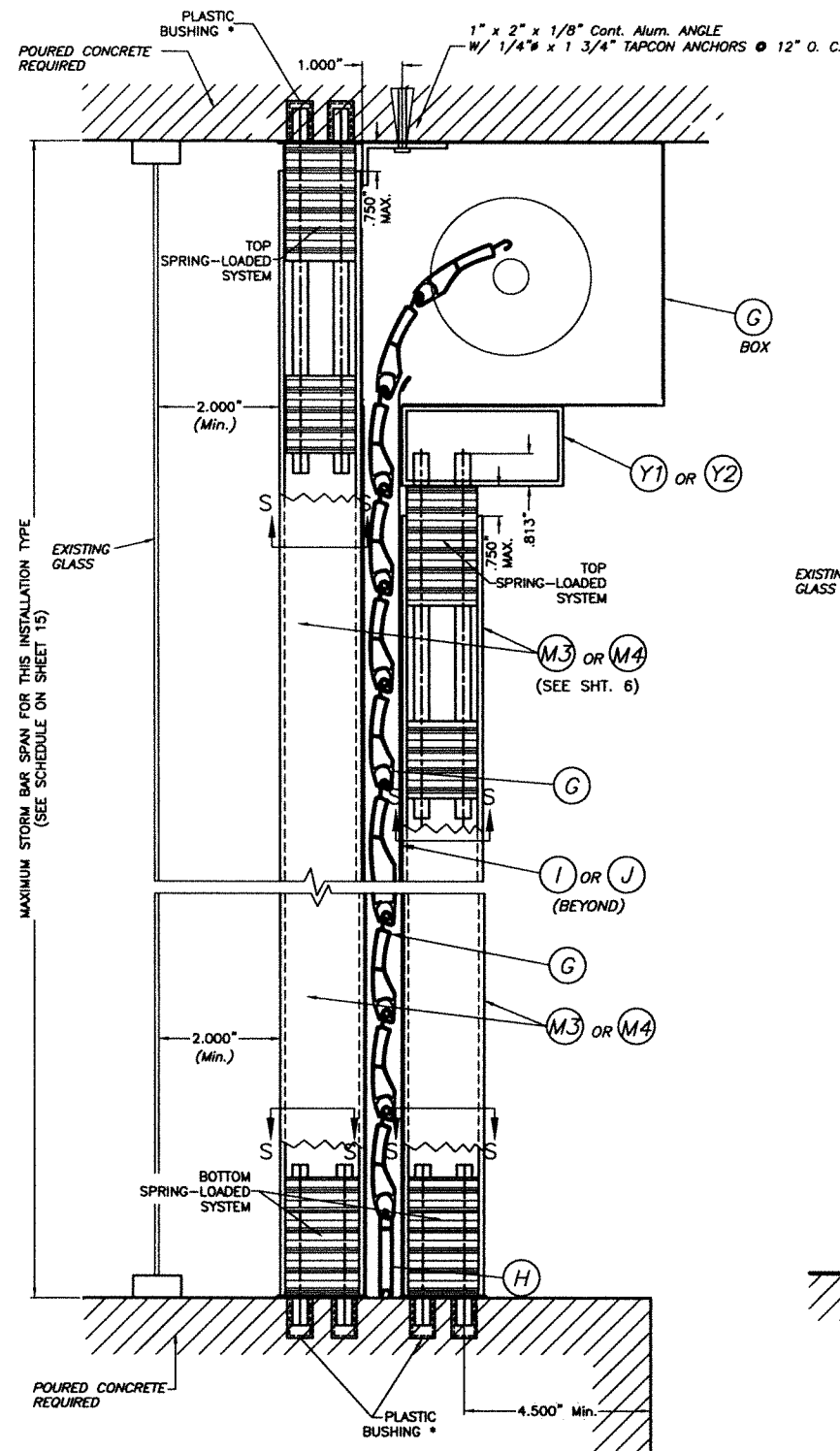


ELEVATION X
 SCALE : N.T.S

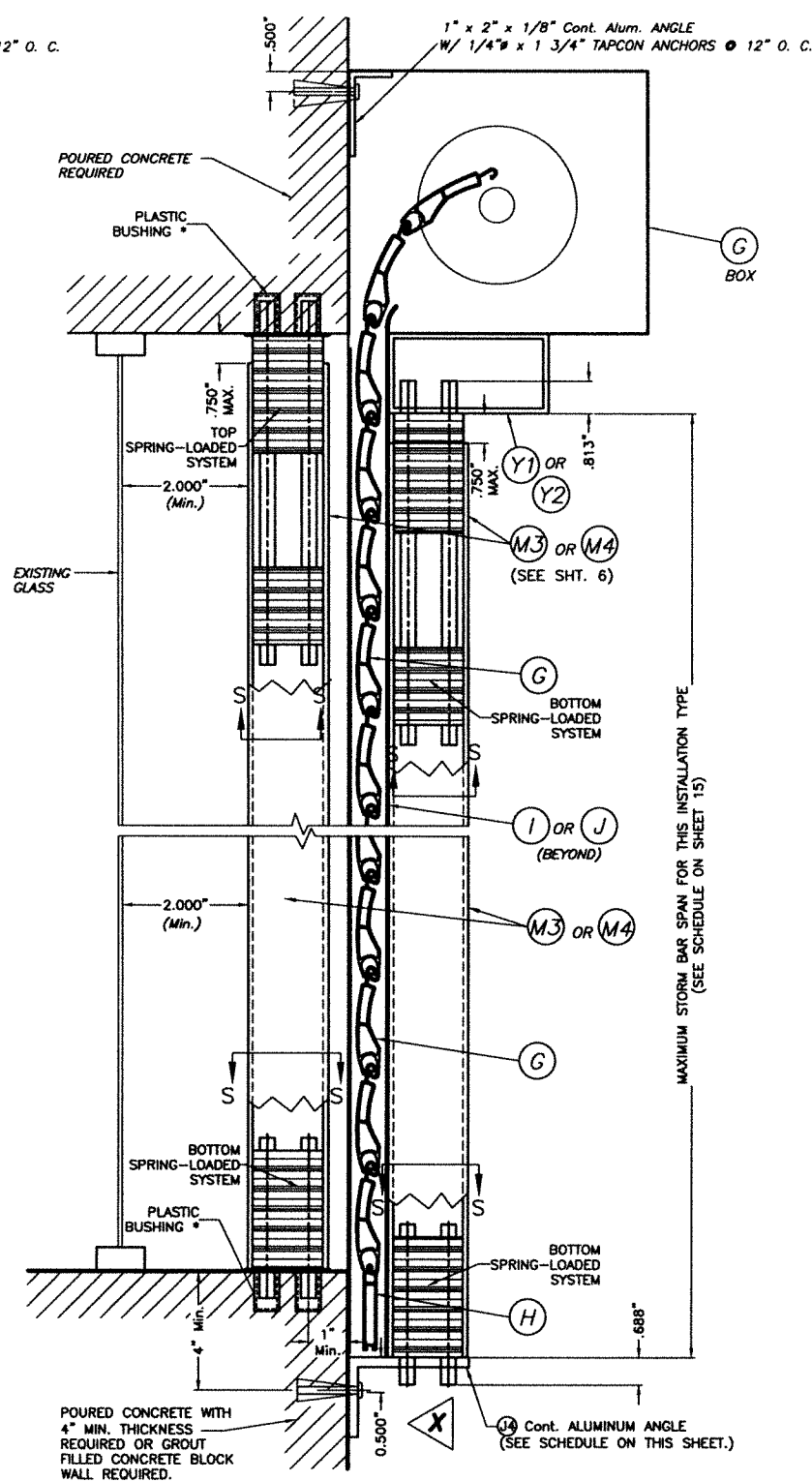
CASES II & IV
SECTIONS D - D

WALTER A. TILLIT
 No. 44167
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER
 4/2023
 P.E. SEAL/SIGNATURE/DATE

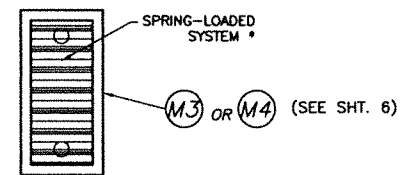
FLORIDA BUILDING CODE (NON HIGH VELOCITY HURRICANE ZONE)					
©2023 TILTECO, INC.			ROLL UP SHUTTER SYSTEM WITH END RETENTION 55mm SLAT LARGE MISSILE IMPACT RESISTANT		
TILTECO INC.			ROLLINGSHIELD Inc.		
TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 38th. St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167			9875 NW 79th AVE. HIALEAH GARDENS MIAMI, FL 33016		
REV. NO	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE
1	OLD 23-005	07/24/23	3	-	-
2	-	-	4	-	-
W.H. DRAWN BY: 07/24/2023 DATE: 23-120 DRAWING No. SHEET 9 OF 15					



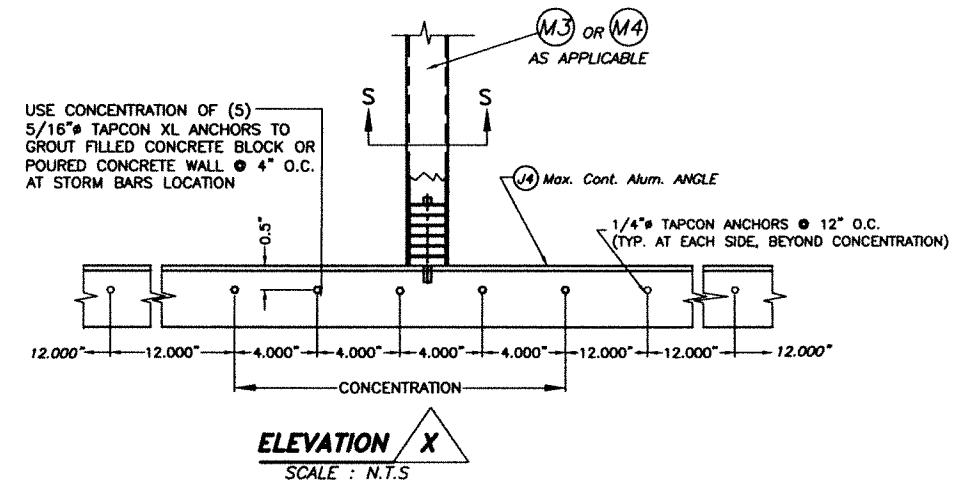
**CEILING & FLOOR MOUNTING SECTION E-E INSTALLATION
W/ REMOVABLE STORM BARS W/SPRING-LOADED SYSTEM ***
SCALE : N.T.S



**WALL MOUNTING SECTION E-E INSTALLATION
W/ REMOVABLE STORM BARS W/SPRING-LOADED SYSTEM ***
SCALE : N.T.S



SECTION S - S :
SINGLE STORM BAR
SCALE : N.T.S



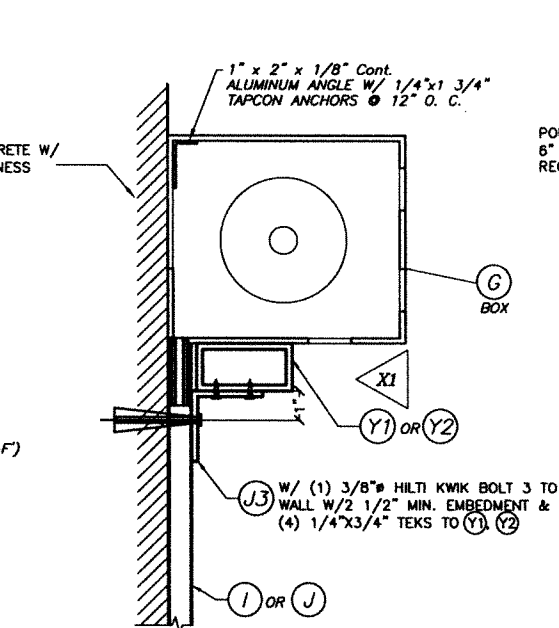
ANCHOR & ANGLE SCHEDULE FOR ELEVATION X			
A.S.D. DESIGN PRESSURE RATING (p.s.f.)	ANCHOR TYPE & QUANTITY	ANGLE	SUBSTRATE
70.0 OR LESS **	(5) 5/16" # TAPCON XL	(J4) 1/4" THICKNESS	GROUT FILLED CONCRETE BLOCK OR POURED CONCRETE

** W/ 4'-0" Max. SLAT SPAN & MAX. STORM BAR SPAN PER SHEET 15

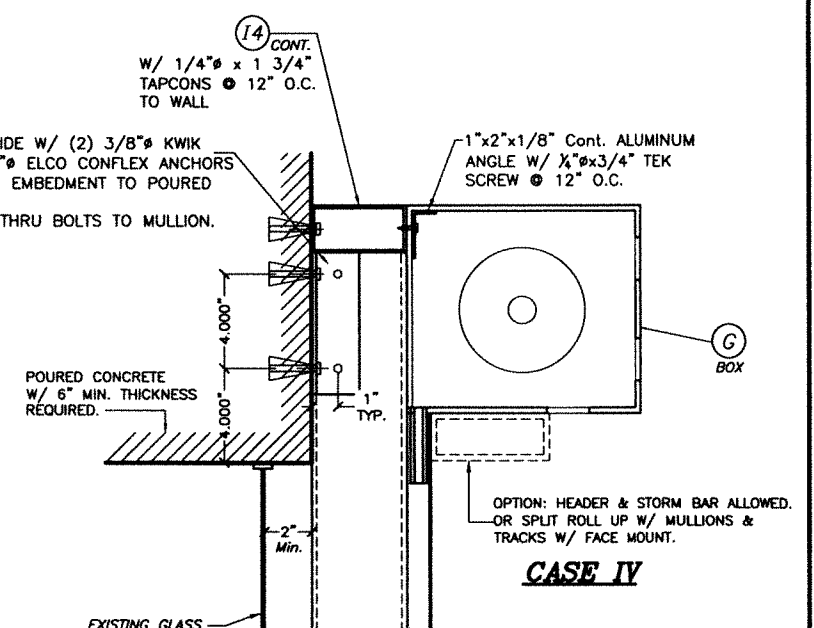
CASES II & IV
SECTIONS E - E

WALTER A. TILLIT JR.
LICENSE
No. 44167
STATE OF FLORIDA
PROFESSIONAL ENGINEER
26/2023
P.E. SEAL/SIGNATURE/DATE

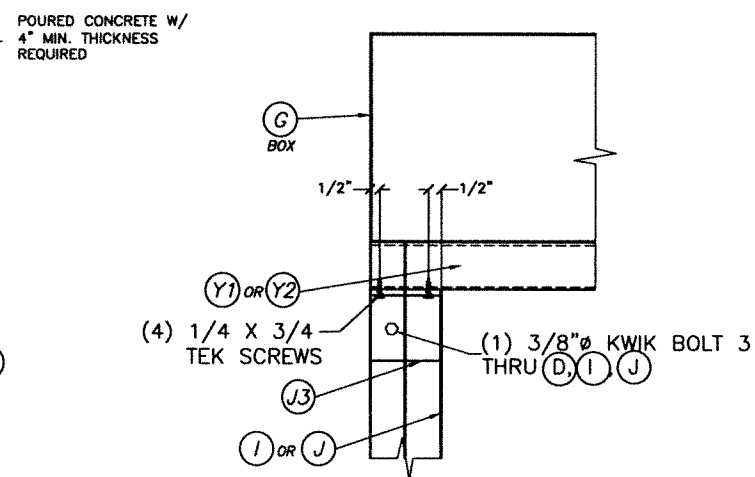
FLORIDA BUILDING CODE (NON HIGH VELOCITY HURRICANE ZONE)					
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TILTECO Inc. TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th. St., Ste. 305, VIRGINIA GARDENS, FL. 33166 Phone : (305)871-1530 . Fax : (305)871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167			ROLLINGSHIELD Inc. 9875 NW 79th AVE. HIALEAH GARDENS MIAMI, FL. 33016		
REV. NO			W.H DRAWN BY:		
1			07/24/2023 DATE:		
2			23-120 DRAWING No.		
DESCRIPTION			SHEET 10 OF 15		
DATE					
REV. No					
3					
4					



NOTE: VALID FOR ALL SPANS AND LOAD COMBINATIONS.



NOTE: VALID FOR ALL SPANS AND LOAD COMBINATIONS.



(2) (J4) W/ (4) 1/4" Ø THRU BOLT TO
 HEADER & (2) 3/8" Ø KWIK BOLT 3 W/
 2 1/2" Min. EMBEDMENT TO WALL.

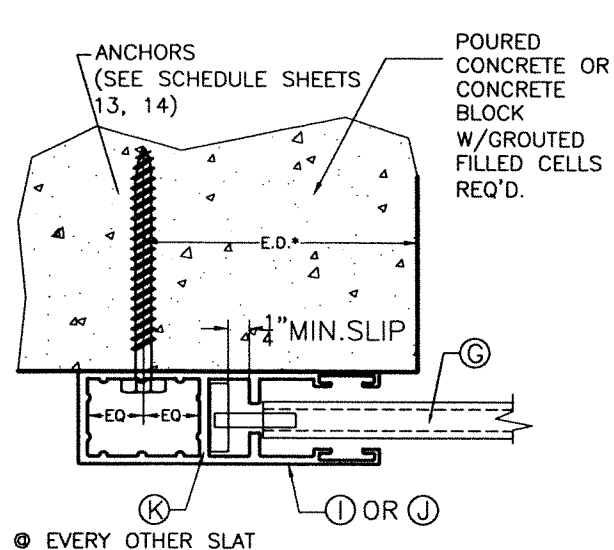
TYPICAL MULLION AND HEADER CONNECTION AT ENDS:
CASES II , III & IV AS APPLICABLE

CASES III & IV : ELEVATION $\triangle X$
SCALE : $1/8" = 1'$

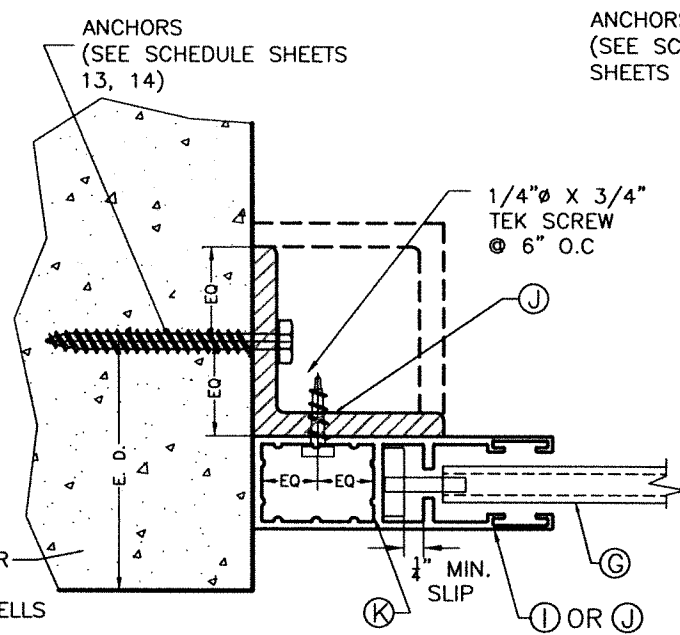
ET 11 OF 15

TILTECO INC.
TILLIT TESTING & ENGINEERING COMPANY
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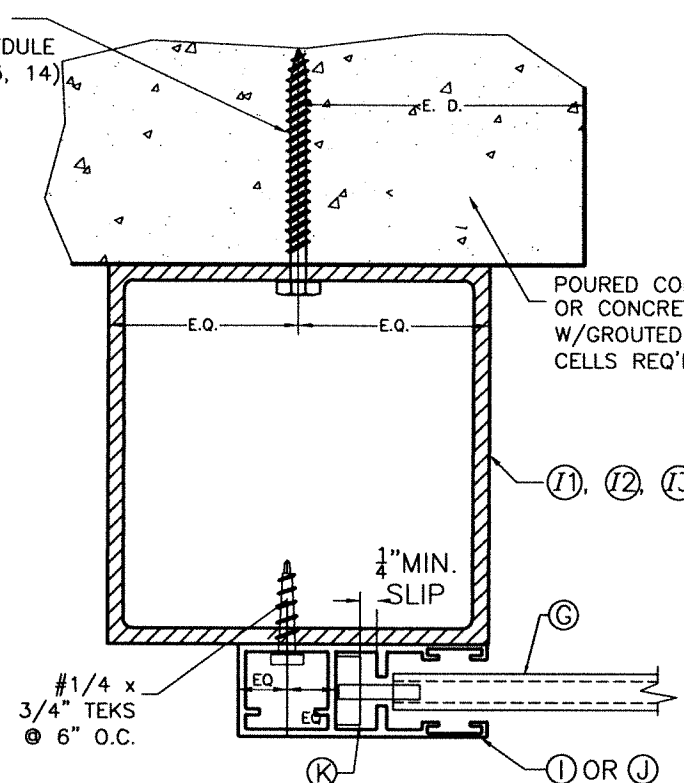
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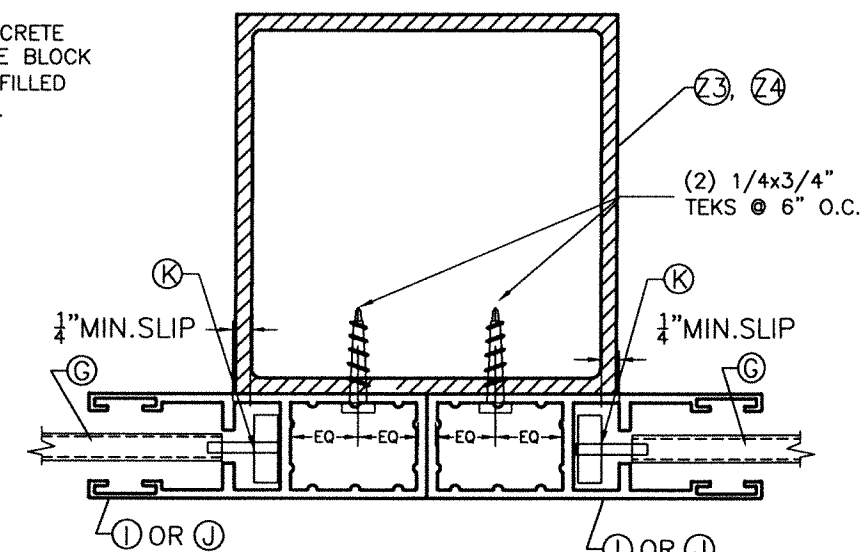
SECTION J-J : WALL MOUNT



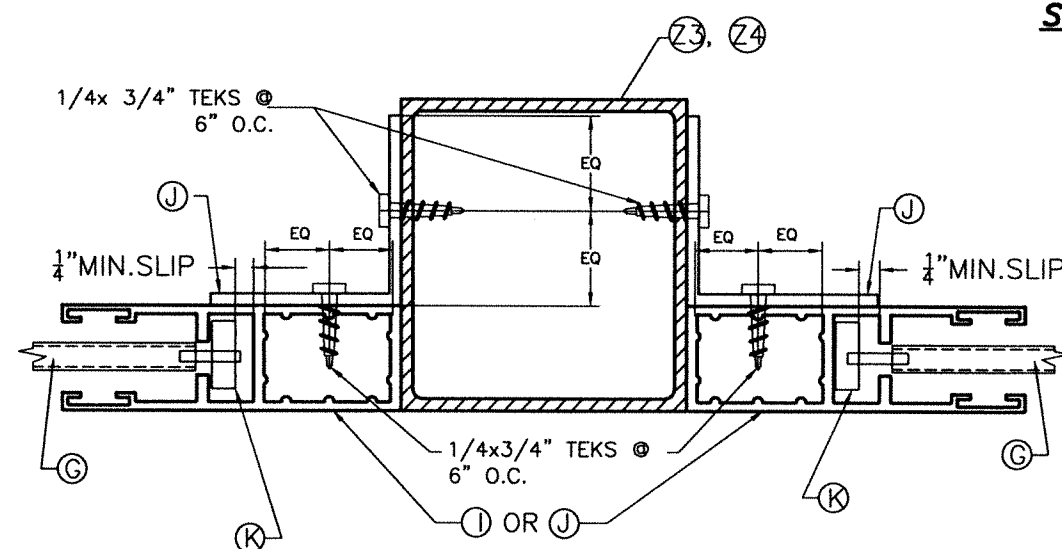
SECTION K-K: INSIDE MOUNT



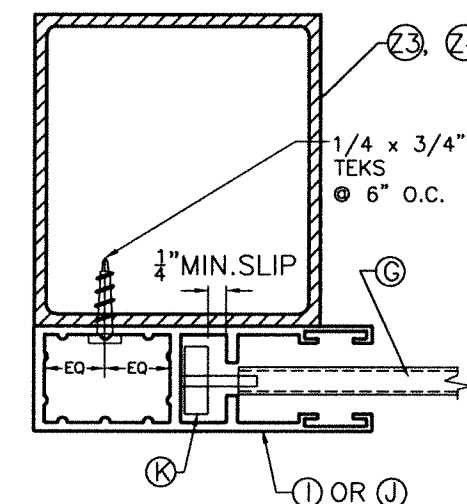
SECTION L-L: BUILD-OUT MOUNT



**SECTION J'-J': MULLION MOUNT
FACE MOUNT**



**SECTION K'-K': MULLION MOUNT
(INSIDE MOUNT)**



**SECTION J''-J'': MULLION MOUNT
(FACE MOUNT)**

WALTER A. TILLIT JR.
LICENSE
No. 44167
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
7/20/2023
P.E. SEAL/SIGNATURE/DATE

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ROLL UP SHUTTER SYSTEM WITH END RETENTION
55mm SLAT
LARGE MISSILE IMPACT RESISTANT

ROLLINGSHIELD Inc.
9875 NW 79th AVE.
HIALEAH GARDENS MIAMI, FL. 33016

W.H
DRAWN BY:

07/24/2023
DATE:

23-120

DRAWING No.

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1	OLD 23-005	07/24/23	3	-	-
2	-	-	4	-	-

SHEET 12 OF 15

CASE I : SIDE RAIL ANCHOR SCHEDULE # 2**
MAXIMUM ALLOWABLE DESIGN PRESSURE RATING "W" (p.s.f.) AND
CORRESPONDING MAXIMUM ANCHOR SPACING (in) * FOR SIDE RAILS (D), (I) & (J) CONNECTIONS TO POURED
CONCRETE OR GROUTED CONCRETE BLOCK WITHOUT STORM BARS OR HEADERS OR MULLIONS
(USE NEGATIVE PRESSURE VALUES AS PER ASCE 7-16)

MAXIMUM ALLOWABLE DESIGN LOAD "W" (p.s.f.)	SIDE RAIL (I, J) FOR 55mm SLAT ONLY		SIDE RAIL (I, J) FOR 55mm SLAT ONLY	
	WALL/TRAPPED/BUILD-OUT MOUNTED		WALL/TRAPPED/BUILD-OUT MOUNTED	
	POURED CONCRETE	GROUTED CONCRETE BLOCK	POURED CONCRETE	GROUTED CONCRETE BLOCK
	3/8" CONFLEX	3/8" KIWK BOLT 3	5/16" ULTRACON OR TAPCON XL	5/16" ULTRACON OR TAPCON XL
200 p.s.f. OR LESS	4" O.C **	4" O.C **	4" O.C **	4" O.C **

NOTE:

** SEE MAXIMUM SPAN FOR SLAT (C) ON SHEET 14 FOR
POURED CONCRETE OR CONCRETE BLOCK WALL W/
GROUTED CELLS AND FOR EACH TYPE OF MOUNTING AND
ANCHOR TYPE GIVEN A DESIGN WIND LOAD.

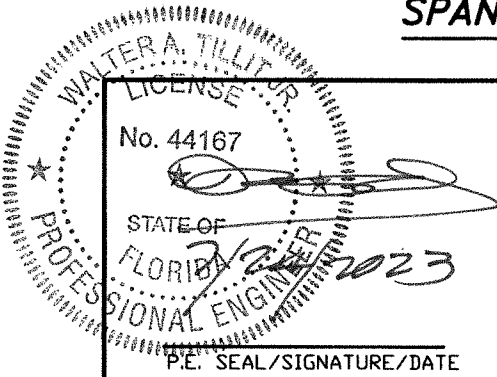
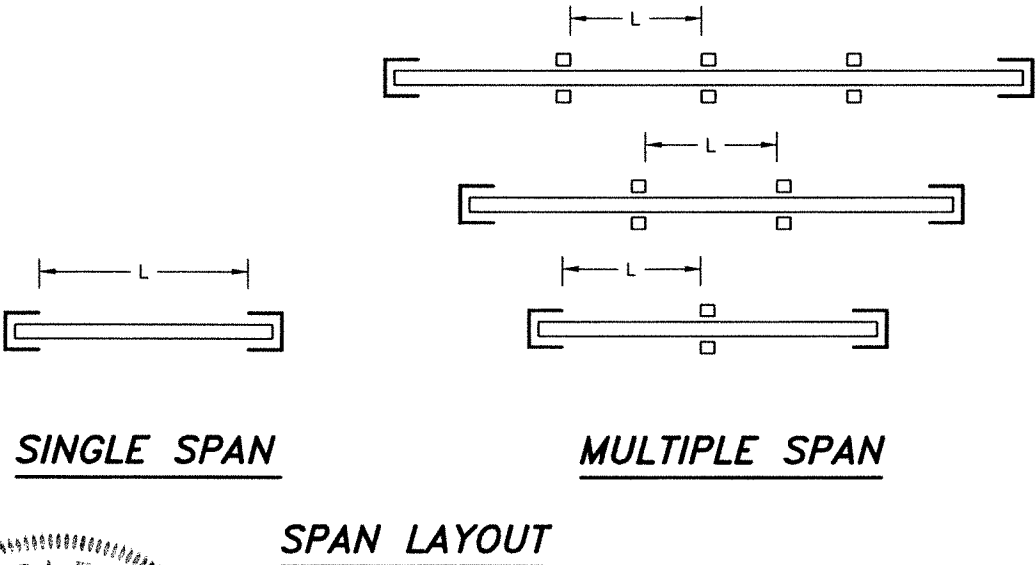
CASES II , III & IV : SIDE RAIL ANCHOR SCHEDULE # 1
MAXIMUM ALLOWABLE DESIGN PRESSURE RATING "W" (p.s.f.) AND
CORRESPONDING MAXIMUM ANCHOR SPACING (in) * FOR SIDE RAILS (I) & (J) CONNECTIONS TO GROUTED FILLED
CONCRETE BLOCK OR POURED CONCRETE FOR INSTALLATIONS WITH STORM BARS & HEADERS OR SINGLE
SPAN BETWEEN MULLIONS WITH MAX. SPAN PER CHART II ON THIS SHEET
(USE NEGATIVE PRESSURE VALUES AS PER ASCE 7-16)

MAXIMUM ALLOWABLE DESIGN LOAD "W" (p.s.f.)	SIDE RAIL (I) & (J) USE ONLY 5/16" TAPCONS FOR 55mm SLAT ONLY ANCHORS SEE NOTE 7/1		
	WALL MOUNT	INSIDE MOUNT	BUILD-OUT MOUNT
	70 OR LESS	6"	6"

CASES II , III & IV : CHART II
SLAT PERFORMANCE CHART FOR 55mm SLATS W/STORM BARS + HEADERS OR
IN BETWEEN MULLIONS (SINGLE SPAN) WITHOUT STORM BARS & HEADER
MAXIMUM A.S.D. DESIGN PRESSURE RATING (p. s. f.)
AND CORRESPONDING MAXIMUM SLAT SPAN "L" FOR (C) SLAT
(USE POSITIVE VALUES AS PER ASCE 7-16)

MAX. A.S.D. DESIGN PRESSURE RATING (p.s.f.)	MAXIMUM SLAT SPAN	MINIMUM SEPARATION TO GLASS			
	SINGLE & MULTIPLE UNIT *	SINGLE & MULTIPLE UNIT **		SINGLE & MULTIPLE UNIT ***	
	(C)	(C)		(C)	
		WIND ZONES		WIND ZONES	
		1,2,3 ****	4 ****	1,2,3 ****	4 ****
70.0 OR LESS	5'-6"	1"	3"	1"	3"

- * SPANS VALID FOR EVERY INSTALLATION LOCATED AT ANY ELEVATION OF
BUILDING MEASURED AT BOTTOM OF SHUTTER.
MINIMUM SEPARATION TO GLASS FOR SINGLE AND MULTIPLE UNITS SHALL
BE MEASURED FROM BACK OF SLAT TO GLASS.
- ** MINIMUM SEPARATION TO GLASS FOR SHUTTERS INSTALLED BELOW 30'-0"
ELEVATION OF BUILDING, MEASURED AT BOTTOM OF SHUTTER.
- *** MINIMUM SEPARATION TO GLASS FOR SHUTTERS INSTALLED ABOVE 30'-0"
ELEVATION OF BUILDING, MEASURED AT BOTTOM OF SHUTTER.
- **** WIND ZONE 4 CORRESPONDS TO 160 mph BASIC WIND SPEED OR LARGER.



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W.H. DRAWN BY: 07/24/2023 DATE: 23-120 DRAWING No. SHEET 13 OF 15					

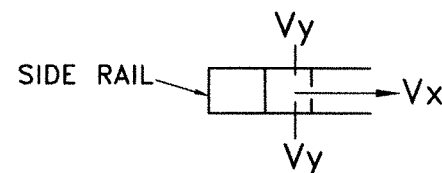
SCHEDULE Vc:

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 *, APPLICABLE ONLY TO CASE I PER SHEET 7

(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'-8'		> 8'-12'		> 12'-16'		> 16'-19'-3"	
	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
≤ 70	0	140	15	175	422	210	739	245	1015	280	1994	420	2929	560	3687	674
>71-80	0	160	116	200	540	240	879	280	1100	320	2262	480	3304	640	-	-
>81-105	0	210	353	263	827	315	1223	368	1584	420	2915	630	-	-	-	-
>106-120	0	240	490	300	995	360	1425	420	1820	480	3296	720	-	-	-	-
>121-140	0	280	689	350	1215	420	1689	490	2130	560	-	-	-	-	-	-
>141-160	76	320	845	400	1432	480	1949	560	2435	640	-	-	-	-	-	-
>161-170	147	340	932	425	1539	510	2078	595	-	-	-	-	-	-	-	-
>171-180	216	360	1018	450	1645	540	2205	630	-	-	-	-	-	-	-	-
>181-190	285	380	1103	475	-	-	-	-	-	-	-	-	-	-	-	-
>191-200	352	400	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* 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.



SLAT SPAN DEFINITION

WALTER A. TILLIT JR.
No. 44167
STATE OF FLORIDA
PROFESSIONAL ENGINEER
24/2023
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. 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 WITH END RETENTION
55mm SLAT
LARGE MISSILE IMPACT RESISTANT

ROLLINGSHIELD Inc.
9875 NW 79th AVE.
HIALEAH GARDENS MIAMI, FL 33016

W.H
DRAWN BY:

07/24/2023
DATE:

23-120

DRAWING No.

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 23-005	07/24/23	3	-	-
2	-	-	4	-	-

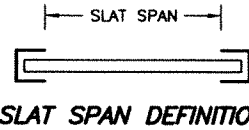
SHEET 13A OF 15

CASE I SINGLE UNIT PRODUCT W/ 55mm SLAT (G) (END RETENTION WITHOUT STORM BARS, HEADERS OR MULLIONS): SEE SHT. 7 FOR ELEVATION

(G) SLAT PERFORMANCE CHARTS (POURED CONCRETE)										
SLAT PERFORMANCE CHARTS Ia, Ib, Ic: (ONLY VALID FOR 1/4" SLIP)										
FOR A GIVEN A.S.D. DESIGN LOAD (p.s.f) PRODUCT MOUNT CONDITION INCLUDING ANCHOR TYPE										
	CHART Ia				CHART Ib				CHART Ic	
	USE MAXIMUM VALUE BETWEEN POSITIVE AND NEGATIVE A.S.D. LOAD								USE MAXIMUM POSITIVE A.S.D. LOAD VALUE	
	<u>3/8"Ø ELCO CONFLEX ANCHOR</u>				<u>5/16"Ø ULTRACON OR 5/16"Ø TAPCON XL ANCHOR</u>					
MAX. A.S.D. DESIGN PRESSURE RATING (psf)	MAX. SLAT SPAN "L _{MAX.} " (FT)				MAX. SLAT SPAN "L _{MAX.} " (FT)				REQUIRED MIN. SEPARATION TO GLASS MEASURED TO BACK OF SLAT (in)	
	WALL MOUNT SEE NOTES *	TRAPPED MOUNT SEE NOTES *	BUILD-OUT MOUNT W/ ⑪ & ⑫ SEE NOTES *	BUILD-OUT MOUNT W/ ⑬ SEE NOTES *	WALL MOUNT SEE NOTES *	TRAPPED MOUNT SEE NOTES *	BUILD-OUT MOUNT W/ ⑪ & ⑫ SEE NOTES *	BUILD-OUT MOUNT W/ ⑬ SEE NOTES *		
									WIND ZONES 1, 2, 3	WIND ZONE 4
70.0	19'-3"	19'-3"	19'-3"	16'-0"	12'-0"	12'-0"	12'-0"	9'-0"	1"	18"
75.0	17'-6"	17'-6"	17'-6"	14'-6"	10'-9"	10'-9"	10'-9"	7'-9"	1"	16"
80.0	16'-0"	16'-0"	16'-0"	13'-6"	9'-10"	9'-3"	9'-3"	7'-3"	1"	14"
85.0	14'-6"	14'-6"	14'-6"	13'-2"	9'-9"	9'-9"	9'-9"	6'-9"	1"	13"
90.0	13'-6"	13'-6"	13'-6"	12'-6"	9'-2"	9'-2"	9'-2"	6'-2"	1"	12"
95.0	12'-6"	12'-6"	12'-6"	11'-6"	9'-1"	9'-1"	9'-1"	6'-1"	1"	11"
100.0	11'-6"	11'-6"	11'-6"	10'-6"	8'-9"	8'-9"	8'-9"	5'-9"	1"	10"
105.0	10'-6"	10'-6"	10'-6"	9'-6"	8'-4"	8'-4"	8'-4"	5'-4"	1"	9"
110.0	9'-10"	9'-10"	9'-10"	9'-2"	8'-0"	8'-0"	8'-0"	5'-0"	1"	8 1/2"
115.0	9'-2"	9'-2"	9'-2"	8'-6"	7'-10"	7'-10"	7'-10"	4'-10"	1"	8"
120.0	8'-6"	8'-6"	8'-6"	7'-10"	7'-10"	7'-10"	7'-10"	4'-8"	1"	7"
130.0	7'-6"	7'-6"	7'-6"	6'-3"	6'-6"	6'-6"	6'-6"	4'-7"	1"	6 1/2"
140.0	7'-3"	7'-3"	7'-3"	6'-3"	6'-3"	6'-3"	6'-3"	4'-6"	1"	6"
150.0	7'-0"	7'-0"	7'-0"	5'-9"	6'-0"	6'-0"	6'-0"	4'-3"	1"	6"
160.0	6'-9"	6'-9"	6'-9"	5'-6"	5'-9"	5'-9"	5'-9"	4'-0"	1"	5 1/2"
170.0	6'-6"	6'-6"	6'-6"	5'-3"	5'-6"	5'-6"	5'-6"	4'-0"	1"	5 1/2"
180.0	6'-3"	6'-3"	6'-3"	5'-0"	5'-3"	5'-3"	5'-3"	4'-0"	1"	5"
190.0	5'-0"	5'-0"	5'-0"	4'-6"	4'-6"	4'-6"	4'-6"	4'-0"	1"	4 1/2"
200.0	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	1"	4"

* NOTES:

- ABOVE INDICATED MAX. SLAT SPANS MAY BE USED AS LONG AS ANCHOR SPACING SCHEDULES ON SHEET 13 (SCHEDULE # 2) INDICATE THAT AN ANCHOR SPACING IS AVAILABLE FOR THE CORRESPONDING SLAT SPAN AND DESIGN LOAD.
- REQUIRES SIDE RAILS FASTENED TO EXISTING STRUCTURE WITH 3/8"Ø ELCO CONFLEX ANCHOR OR 5/16"Ø ULTRACON OR TAPCON XL ANCHOR, INTO POURED CONCRETE. VALID FOR WALL MOUNTED, TRAPPED MOUNTED, AND BUILD-OUT MOUNTED SLATS SEE NOTE 7/1.
- MAXIMUM SLAT SPANS FOR INTERMEDIATE LOADS MAY BE DETERMINED BY LINEAR INTERPOLATION BETWEEN END VALUES.
- WIND ZONE 4 CORRESPONDS TO 160 mph BASIC WIND SPEED OR LARGER.

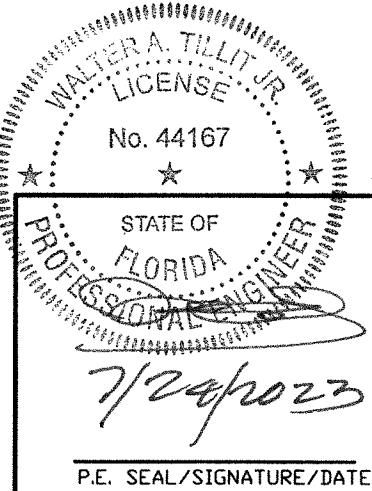


CASE I: END RETENTION SYSTEM W/ SINGLE SPAN SLATS
W/ TRACKS ATTACHED TO EXISTING WALL
W/O STORM BARS/HEADER/MULLION.
(POURED CONCRETE OR GROUT FILLED CONCRETE BLOCK)

G SLAT PERFORMANCE CHARTS (GROUTED POURED CONCRETE)										
SLAT PERFORMANCE CHARTS Ia, Ib, Ic: (ONLY VALID FOR 1/4" SLIP)										
FOR A GIVEN A.S.D. DESIGN LOAD (p.s.f) PRODUCT MOUNT CONDITION INCLUDING ANCHOR TYPE										
	CHART Ia				CHART Ib				CHART Ic	
	USE MAXIMUM VALUE BETWEEN POSITIVE AND NEGATIVE A.S.D. LOAD								USE MAXIMUM POSITIVE A.S.D. LOAD VALUE	
	3/8"Ø HILTI KWIK BOLT 3 ANCHOR				5/16"Ø ULTRACON OR 5/16"Ø TAPCON XL ANCHOR					
MAX. A.S.D. DESIGN PRESSURE RATING (psf)	MAX. SLAT SPAN "L _{MAX.} " (FT)				MAX. SLAT SPAN "L _{MAX.} " (FT)				REQUIRED MIN. SEPARATION TO GLASS MEASURED TO BACK OF SLAT (in)	
	WALL MOUNT SEE NOTES**	TRAPPED MOUNT SEE NOTES**	BUILD-OUT MOUNT W/ ⑪ & ⑫ SEE NOTES**	BUILD-OUT MOUNT W/ ⑬ SEE NOTES**	WALL MOUNT SEE NOTES**	TRAPPED MOUNT SEE NOTES**	BUILD-OUT MOUNT W/ ⑪ & ⑫ SEE NOTES**	BUILD-OUT MOUNT W/ ⑬ SEE NOTES**		
									WIND ZONES 1, 2, 3	WIND ZONE 4
70.0	12'-0"	12'-0"	12'-0"	9'-0"	12'-0"	12'-0"	12'-0"	9'-0"	1"	12"
75.0	11'-3"	11'-3"	11'-3"	8'-3"	11-3"	11-3"	11-3"	8'-3"	1"	11"
80.0	10'-9"	10'-9"	10'-9"	9'-4"	10'-4"	10'-9"	10'-9"	7'-9"	1"	10"
85.0	10'-3"	10'-3"	10'-3"	7'-3"	10'-3"	10'-3"	10'-3"	7'-3"	1"	9 1/2"
90.0	9'-8"	9'-8"	9'-8"	6'-8"	9'-8"	9'-8"	9'-8"	6'-8"	1"	9"
95.0	9'-6"	9'-6"	9'-6"	6'-6"	9'-7"	9'-7"	9'-7"	6'-7"	1"	9"
100.0	9'-3"	9'-3"	9'-3"	6'-3"	9'-3"	9'-3"	9'-3"	6'-3"	1"	9"
105.0	8'-10"	8'-10"	8'-10"	5'-10"	8'-10"	8'-10"	8'-10"	5'-10"	1"	9"
110.0	8'-6"	8'-6"	8'-6"	5'-6"	8'-6"	8'-6"	8'-6"	5'-6"	1"	8"
115.0	8'-4"	8'-4"	8'-4"	5'-4"	8'-4"	8'-4"	8'-4"	5'-4"	1"	8"
120.0	8'-2"	8'-2"	8'-2"	5'-2"	8'-2"	8'-2"	8'-2"	5'-2"	1"	7"
130.0	7'-0"	7'-0"	7'-0"	5'-1"	7'-0"	7'-0"	7'-0"	5'-1"	1"	6 1/2"
140.0	6-9"	6-9"	6-9"	5-0"	6-9"	6-9"	6-9"	5-0"	1"	6"
150.0	6'-6"	6'-6"	6'-6"	4'-9"	6'-6"	6'-6"	6'-6"	4'-9"	1"	6"
160.0	6'-3"	6'-3"	6'-3"	4'-6"	6'-3"	6'-3"	6'-3"	4'-6"	1"	5 1/2"
170.0	6'-0"	6'-0"	6'-0"	4'-5"	6'-0"	6'-0"	6'-0"	4'-5"	1"	5 1/2"
180.0	5'-3"	5'-3"	5'-3"	4'-0"	5'-3"	5'-3"	5'-3"	4'-0"	1"	5"
190.0	4'-6"	4'-6"	4'-6"	4'-0"	4'-6"	4'-6"	4'-6"	4'-0"	1"	4 1/2"
200.0	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	1"	4"

** NOTES:

- ABOVE INDICATED MAX. SLAT SPANS MAY BE USED AS LONG AS ANCHOR SPACING SCHEDULES ON SHEET 13 (SCHEDULE # 2) INDICATE THAT AN ANCHOR SPACING IS AVAILABLE FOR THE CORRESPONDING SLAT SPAN AND DESIGN LOAD.
- REQUIRES SIDE RAILS FASTENED TO EXISTING STRUCTURE WITH 3/8"Ø HILTI KWIK BOLT 3 ANCHOR OR 5/16"Ø ULTRACON OR TAPCON XL INTO f'c=2500 psi. GROUTED CONCRETE BLOCK. VALID FOR WALL MOUNTED, TRAPPED MOUNTED, AND BUILD-OUT MOUNTED SLATS SEE NOTE 7/1.
- MAXIMUM SLAT SPANS FOR INTERMEDIATE LOADS MAY BE DETERMINED BY LINEAR INTERPOLATION BETWEEN END VALUES.
- WIND ZONE 4 CORRESPONDS TO 160 mph BASIC WIND SPEED OR LARGER.



FLORIDA BUILDING CODE (NON HIGH VELOCITY HURRICANE ZONE)									
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TILTECO INC.					ROLLINGSHIELD 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					9875 NW 79th AVE. HIALEAH GARDENS MIAMI, FL. 33016				
REV. NO	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE	W.H DRAWN BY: 07/24/2023 DATE: 23-120 DRAWING No. SHEET 14 OF 15			
1	OLD 23-005	07/24/23	3	-	-				
2	-	-	4	-	-				

CASES II & IV (SEE SHT. 7)

(M1) & (M2) STORM BAR LOADING CHART MAXIMUM A.S.D. DESIGN PRESSURE RATING (p. s. f.) AND CORRESPONDING MAXIMUM SPAN "L" FOR A GIVEN TYPE OF STORM BAR AND STORM BAR SPACING*.
(USE MAXIMUM VALUES BETWEEN POSITIVE AND NEGATIVE A.S.D. LOADS)
MAX. SPAN FOR STORM BARS (M1) OR (M2) W/REGULAR CONCRETE ANCHORS

MAX. A.S.D. DESIGN PRESSURE RATING (p.s.f.)	(M1) TYPE 3 STORM BAR 2" x 4" x 1/8"				(M2) TYPE 4 STORM BAR 2" x 4" x 1/4"			
	* STORM BAR SPACING				* STORM BAR SPACING			
	≤ 3'-0"	3' TO 4'	4' TO 5'	5' TO 6'	≤ 3'-0"	3' TO 4'	4' TO 5'	5' TO 6'
45	10'-0"	9'-5"	8'-5"	7'-8"	10'-0"	10'-0"	10'-0"	10'-0"
50	10'-0"	8'-11"	8'-0"	7'-4"	10'-0"	10'-0"	10'-0"	10'-0"
55	9'-10"	8'-6"	7'-7"	7'-0"	10'-0"	10'-0"	10'-0"	10'-0"
60	9'-5"	8'-2"	7'-4"	6'-8"	10'-0"	10'-0"	10'-0"	10'-0"
65	9'-0"	7'-10"	7'-0"	6'-5"	10'-0"	10'-0"	10'-0"	10'-0"
70	8'-9"	7'-7"	6'-9"	6'-2"	10'-0"	10'-0"	10'-0"	9'-9"

* STORM BAR SPACING SHALL BE SUCH THAT MAXIMUM SLAT SPAN SHALL NOT BE EXCEEDED. THIS TABLE ONLY VALID FOR (M1), (M2) STORM BARS (NOT (M3), (M4) SCHEDULE WHICH ARE BELOW).

CASES II & IV (SEE SHT. 7)

(M3) & (M4) STORM BAR LOADING CHART MAXIMUM A.S.D. DESIGN PRESSURE RATING (p. s. f.) AND CORRESPONDING MAXIMUM SPAN "L" FOR A GIVEN TYPE OF STORM BAR AND STORM BAR SPACING.
(USE MAXIMUM VALUES BETWEEN POSITIVE AND NEGATIVE A.S.D. LOADS)
MAX. SPAN FOR STORM BARS (M3) OR (M4) W/SPRING-LOADED SYSTEM

MAX. A.S.D. DESIGN PRESSURE RATING (p.s.f.)	(M3) TYPE 3 STORM BAR 2" x 4" x 1/8"		(M4) TYPE 4 STORM BAR 2" x 4" x 1/4"	
	* STORM BAR SPACING		* STORM BAR SPACING	
	≤ 3'-0"	3' TO 4'	≤ 3'-0"	3' TO 4'
40 OR LESS	10'-0"	7'-9"	10'-4"	7'-9"
45	9'-2"	6'-11"	9'-2"	6'-11"
50	8'-3"	6'-2"	8'-3"	6'-2"
55	7'-6"	5'-8"	7'-6"	5'-8"
60	6'-11"	5'-2"	6'-11"	5'-2"
65	6'-4"	4'-9"	6'-4"	4'-9"
70	5'-11"	4'-5"	5'-11"	4'-5"

* STORM BAR SPACING SHALL BE SUCH THAT MAXIMUM SLAT SPAN SHALL NOT BE EXCEEDED. THIS TABLE IS ONLY VALID FOR M3 & M4 REMOVABLE STORM BARS WITH SPRING LOADED SYSTEM.

APPLICABLE SCHEDULES FOR CASES II, III & IV (SEE SHT. 7)

CASES II & IV (SEE SHT. 7)

HEADER LOADING CHART MAXIMUM A.S.D. DESIGN PRESSURE RATING (p. s. f.) AND CORRESPONDING MAXIMUM SPAN "L" FOR A GIVEN TYPE OF HEADER.
(USE MAXIMUM VALUES BETWEEN POSITIVE AND NEGATIVE A.S.D. LOADS)

MAX. A.S.D. DESIGN PRESSURE RATING (p.s.f.)	(Y1) TYPE 3 HEADER 2" x 4" x 1/4"			(Y2) TYPE 3 HEADER 2" x 6" x 1/4"		
	STORM BAR HEIGHT *			STORM BAR HEIGHT *		
	≤ 6'-0"	6' TO 8'	8' TO 10'	≤ 6'-0"	6' TO 8'	8' TO 10'
45.0	12'-0"	12'-0"	12'-0"	18'-0"	18'-0"	18'-0"
50.0	12'-0"	12'-0"	12'-0"	18'-0"	18'-0"	17'-10"
55.0	12'-0"	12'-0"	12'-0"	18'-0"	18'-0"	17'-0"
60.0	12'-0"	12'-0"	11'-9"	18'-0"	18'-0"	16'-3"
65.0	12'-0"	12'-0"	11'-4"	18'-0"	17'-6"	15'-8"
70.0	12'-0"	12'-0"	10'-10"	18'-0"	16'-10"	15'-0"

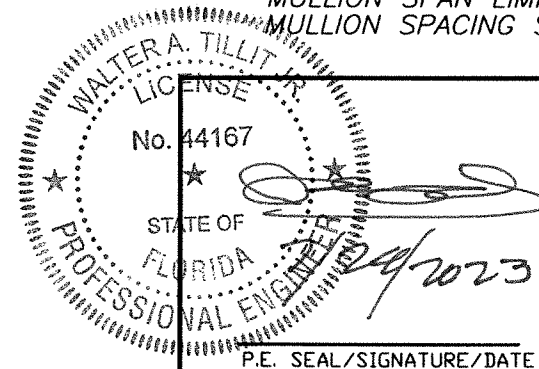
* STORM BAR HEIGHT PER CHART ON THIS SHEET.

CASES III & IV (SEE SHT. 7)

MULLION LOADING CHART MAXIMUM A.S.D. DESIGN PRESSURE RATING (p. s. f.) AND CORRESPONDING MAXIMUM SPAN "L"(Ft) FOR A GIVEN TYPE OF MULLION AND MULLION SPACING (Ft.).
(USE MAXIMUM VALUES BETWEEN POSITIVE AND NEGATIVE A.S.D. LOADS)

MAX. A.S.D. DESIGN PRESSURE RATING (p.s.f.)	(Z3) TYPE 2 MULLION * 4" x 4" x 1/4"			(Z4) TYPE 3 MULLION * 4" x 6" x 1/4"					
	MULLION SPACING			MULLION SPACING					
	< 4'-0"	4' TO 5'	5' TO 6'	< 4'-0"	4' TO 5'	5' TO 6'	6' TO 8'	8' TO 10'	10' TO 12'
45.0	11'-0"	10'-6"	9'-11"	15'-8"	14'-7"	11'-0"	11'-0"	11'-0"	11'-0"
50.0	10'-11"	10'-2"	9'-7"	15'-2"	14'-1"	11'-0"	11'-0"	11'-0"	11'-0"
55.0	10'-7"	9'-10"	9'-3"	14'-8"	13'-7"	11'-0"	11'-0"	11'-0"	11'-0"
60.0	10'-3"	9'-7"	9'-0"	14'-3"	13'-3"	11'-0"	11'-0"	11'-0"	11'-0"
65.0	10'-0"	9'-4"	8'-9"	13'-11"	12'-11"	11'-0"	11'-0"	11'-0"	11'-0"
70.0	9'-9"	9'-1"	8'-6"	13'-7"	12'-7"	11'-0"	11'-0"	11'-0"	11'-0"

* MULLION SPAN LIMITED TO 11'-0" SPAN IF STORM BARS AND HEADERS (CASE IV) USED AT UNIT. MULLION SPACING SHALL NOT EXCEED SLAT SPAN NOR HEADER SPAN.



P.E. SEAL/SIGNATURE/DATE

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ROLL UP SHUTTER SYSTEM WITH END RETENTION
55mm SLAT
LARGE MISSILE IMPACT RESISTANT

ROLLINGSHIELD Inc.
9875 NW 79th AVE.
HIALEAH GARDENS MIAMI, FL 33016

W.H
DRAWN BY:

07/24/2023
DATE:

23-120

DRAWING No.

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 23-005	07/24/23	3	-	-
2	-	-	4	-	-

SHEET 15 OF 15