

GENERAL NOTES:

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

DESIGN WIND LOADS SHALL BE DETERMINED AS PER SECTION 1609 OF THE ABOVE MENTIONED CODE, FOR A WIND SPEED AS REQUIRED REQUIRED BY THE JURISDICTION WHERE THESE SHUTTERS WILL BE INSTALLED AND FOR A DIRECTIONALITY FACTOR $K_d=0.85$, USING ASCE 7-22 SHALL NOT EXCEED THE MAXIMUM (A.S.D.) DESIGN PRESSURE RATINGS INDICATED ON SHEETS 4 THRU 8.

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 ON SHEETS 4 THRU 8.

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. A DURATION FACTOR $CD=1.60$ WAS USED FOR VERIFICATION OF FASTENERS IN WOOD, PER NDS 2018.

STORM PANEL'S ADEQUACY FOR IMPACT AND FATIGUE RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1609.1.2 OF THE ABOVE MENTIONED CODE AS PER ATL REPORTS # 0121.01-98R, # 0329.01-00, #0512.01-03 AND 0617.01-04 AS PER IMPACT TESTING EQUIVALENT TO ASTM E-1996 STANDARD & ASTM E 330-02 STANDARD, LIMITED TO INSTALLATIONS WITHIN WIND ZONES 1, 2 & 3 AS DEFINED BY ASTM E-1996 STANDARD.

2. ALL STEEL SHEET METAL PANELS SHALL HAVE STRUCTURAL QUALITY ASTM A-653, GRADE 40, WITH G-60 GALVANIZED STEEL DESIGNATION.

3. ALL ALUMINUM EXTRUSIONS SHALL BE ALUMINUM ASSOCIATION 6063-T6 ALLOY & TEMPER UNLESS OTHERWISE NOTED. STORM PANEL COMPONENTS (12) STUDDED PLATE AND (13) SNAP CAP ARE PATENT PENDING. ALL ALUMINUM EXTRUSIONS IN CONTACT WITH DISSIMILAR MATERIALS SHALL COMPLY WITH SECTION III-6 OF THE 2020 ALUMINUM DESIGN MANUAL.

4. ALL SCREWS TO BE STAINLESS STEEL 304 OR 316 AISI SERIES OR CORROSION RESISTANT COATED CARBON STEEL AS PER DIN 50018 W/ 50 ksi YIELD STRENGTH AND 90 ksi TENSILE STRENGTH & SHALL COMPLY W/ FLORIDA BUILDING CODE SECTION 2411.3.3.4.

5. BOLTS TO BE ASTM A-307 GALVANIZED STEEL OR AISI 304 SERIES STAINLESS STEEL, WITH 35 ksi MINIMUM YIELD STRENGTH.

6. ANCHORS TO WALL SHALL BE AS FOLLOWS: (UNLESS OTHERWISE NOTED)

(A) TO EXISTING POURED CONCRETE:

- 1/4" ϕ TAPCON ANCHORS AS MANUFACTURED BY I.T.W. BUILDEX.
- 1/4" ϕ CF TAP-GRIP ANCHORS (BERTHA STUD-CON), AS MANUFACTURED BY TRU-FAST CORPORATION.
- 1/4" ϕ ZAMAC NAILIN ANCHORS AS MANUFACTURED BY POWER FASTENERS, INC.
- 1/4" ϕ x 7/8" CALK-IN ANCHORS OR ELCO male & female "PANELMATE" AS MANUFACTURED BY DEWALT, INC. AND ELCO CONSTRUCTION PRODUCTS, RESPECTIVELY.
- 1/4" ϕ x 3/4" ALL POINTS SOLID-SET ANCHORS AS DISTRIBUTED BY ALL POINTS SCREW, BOLT & SPECIALTY COMPANY.

NOTES:

- A.1) MINIMUM EMBEDMENT INTO POURED CONCRETE OF TAPCON ANCHORS IS 1 3/4"; FOR ZAMAC NAILIN ANCHORS IS 1 3/8"; FOR ELCO PANELMATE ANCHORS IS 1 3/4", AND FOR CF TAP-GRIP ANCHORS IS 1 1/4".
- A.2) 7/8" CALK-IN ANCHORS SHALL BE ENTIRELY EMBEDDED INTO THE POURED CONCRETE. NO EMBEDMENT INTO STUCCO SHALL BE PERMITTED. 1/4" ϕ -20 SCREWS USED SHALL BE 1 1/2" LONG MINIMUM SHOULD STUCCO EXIST, AND 1" MINIMUM FOR WALLS WITH NO STUCCO.
- A.3) MINIMUM EMBEDMENT OF 1/4" ϕ x 3/4" ALL POINTS SOLID-SET ANCHORS SHALL BE 7/8" INTO THE POURED CONCRETE. NO EMBEDMENT INTO STUCCO SHALL BE PERMITTED. 1/4" ϕ -20 S.S. MACHINE SCREW USED SHALL BE 1 1/2" LONG MINIMUM SHOULD STUCCO EXIST, AND 1" MINIMUM FOR WALLS WITH NO STUCCO.
- A.4) IN CASE THAT PRECAST STONE, PRECAST CONCRETE PANELS, OR PAVERS BE FOUND ON THE EXISTING WALL OR FLOOR, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SUCH PANELS, ANCHORAGE SHALL BE AS INDICATED ON NOTES A.1) & A.2) ABOVE.

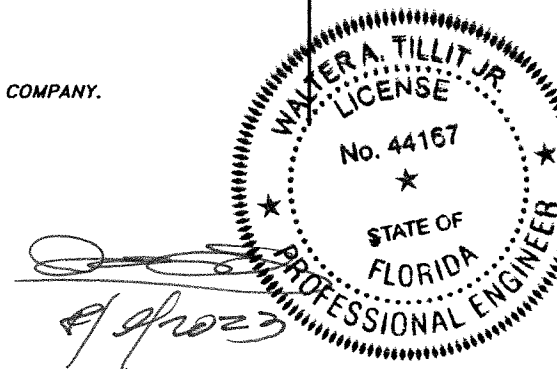
(B) TO EXISTING CONCRETE BLOCK WALL:

- 1/4" ϕ TAPCON ANCHORS AS MANUFACTURED BY I.T.W. BUILDEX.
- 1/4" ϕ CF TAP-GRIP ANCHORS (BERTHA STUD-CON), AS MANUFACTURED BY TRU-FAST CORPORATION.
- 1/4" ϕ ZAMAC NAILIN ANCHORS AS MANUFACTURED BY POWER FASTENERS, INC.
- 1/4" ϕ x 7/8" CALK-IN ANCHORS OR ELCO male & female "PANELMATE" AS MANUFACTURED BY DEWALT, INC. AND ELCO CONSTRUCTION PRODUCTS, RESPECTIVELY.
- 1/4" ϕ x 3/4" ALL POINTS SOLID-SET ANCHORS AS DISTRIBUTED BY ALL POINTS SCREW, BOLT & SPECIALTY COMPANY.
- 1/4" ϕ RED HEAD DYNABOLT SLEEVE ANCHORS AS MANUFACTURED BY I.T.W. BUILDEX.

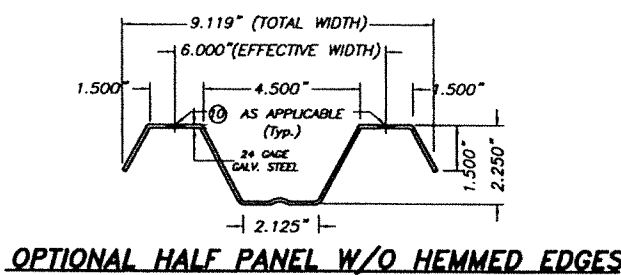
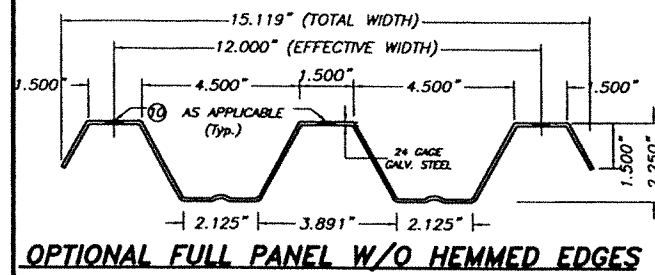
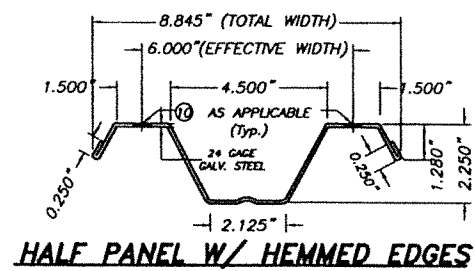
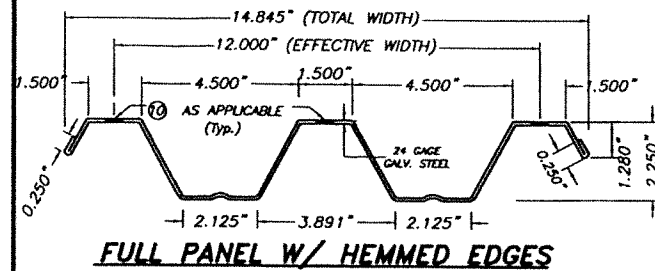
NOTES:

- B.1) MINIMUM EMBEDMENT OF TAPCON, ELCO PANELMATE, AND CF TAP-GRIP ANCHORS INTO CONCRETE BLOCK UNIT SHALL BE 1 1/4"; 1 3/8" FOR ZAMAC NAILIN ANCHORS AND 1 1/8" FOR RED HEAD DYNABOLT SLEEVE ANCHORS
- B.2) 7/8" CALK-IN ANCHORS SHALL BE ENTIRELY EMBEDDED INTO THE CONCRETE BLOCK UNIT. NO EMBEDMENT INTO STUCCO SHALL BE PERMITTED. 1/4" ϕ -20 SCREWS USED SHALL BE 1 1/2" LONG MINIMUM SHOULD STUCCO EXIST, AND 1" MINIMUM FOR WALLS WITH NO STUCCO.
- B.3) MINIMUM EMBEDMENT OF 1/4" ϕ x 3/4" ALL POINTS SOLID-SET ANCHORS SHALL BE 7/8" INTO THE CONCRETE BLOCK. NO EMBEDMENT INTO STUCCO SHALL BE PERMITTED. 1/4" ϕ -20 S.S. MACHINE SCREW USED SHALL BE 1 1/2" LONG MINIMUM SHOULD STUCCO EXIST, AND 1" MINIMUM FOR WALLS WITH NO STUCCO.
- B.4) IN CASE THAT PRECAST STONE OR PRECAST CONCRETE PANELS BE FOUND ON THE EXISTING WALL, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SUCH PANELS. ANCHORAGE SHALL BE AS INDICATED ON NOTES IN B.1) AND B.2) ABOVE.
- (C) ANCHORS SHALL BE INSTALLED FOLLOWING ALL OF THE RECOMMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER.
7. PANELS MAY ALSO BE INSTALLED HORIZONTALLY FOLLOWING INSTALLATION DETAILS SHOWN ON SECTIONS 1 THRU 8 (SHEET 2 & 3 OF 8) EXCEPT THAT HEADERS 2, 3 & 4 SHALL NOT BE USED.
8. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE WHERE SHUTTER IS TO BE ATTACHED TO INSURE PROPER ANCHORAGE. THIS SHUTTER SHALL ONLY BE ATTACHED TO CONCRETE, BLOCK OR WOOD FRAME BUILDINGS.
9. THE INSTALLATION CONTRACTOR IS TO SEAL/CAULK ALL SHUTTER COMPONENT EDGES WHICH REMAIN IN CONTINUOUS CONTACT WITH THE BUILDING TO PREVENT WIND/RAIN INTRUSION. CAULK AND SEAL SHUTTER TRACKS ALL AROUND FULL LENGTH.
10. (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.
11. SHUTTER MANUFACTURER'S LABEL SHALL BE LOCATED ON A READILY VISIBLE LOCATION AT STORM PANEL 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.

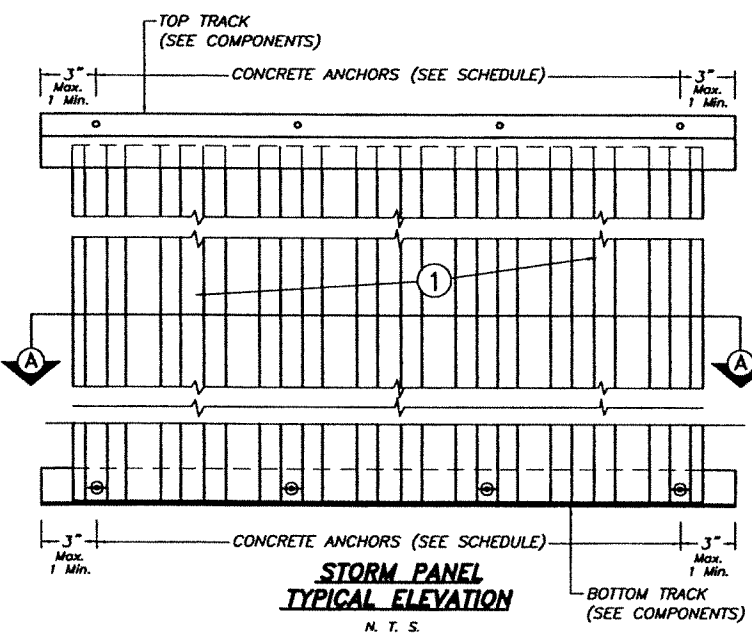
THIS DRAWING SHALL ONLY BE USED TO
OBTAIN PERMITS IN THE STATE OF FLORIDA



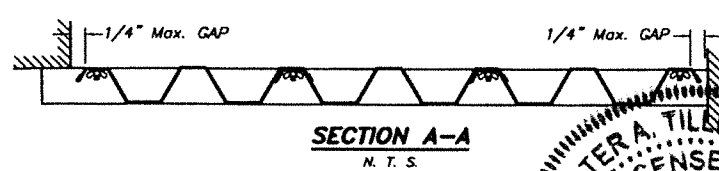
FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)					
© 2023 TILTECO, INC.			24 GAGE GALVANIZED BERTHA STEEL STORM PANEL (2.25" DEEP)		Y.M. DRAWN BY:
TILTECO INC. TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167			EASTERN METAL SUPPLY, INC 4268 WEST ROADS DRIVE WEST PALM BEACH, FL. 33407 PHONE: (561)209-8263 FAX: (561)841-1716		8/9/2023 DATE:
					23-160 DRAWING No
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-181	8/9/2023	3		
2			4		
					SHEET 1 OF 8



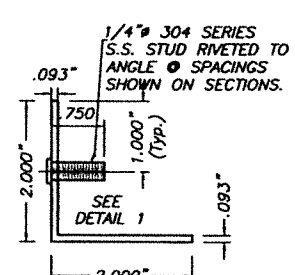
① **SOLID STORM PANEL**
SCALE : 3/16" = 1"



STORM PANEL
TYPICAL ELEVATION
N. T. S.

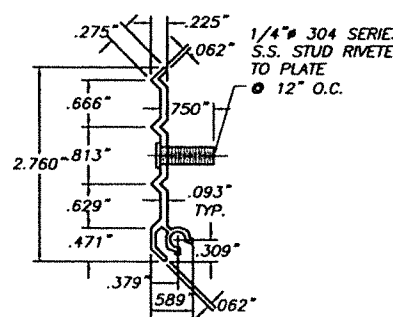


SECTION A-A
N. T. S.

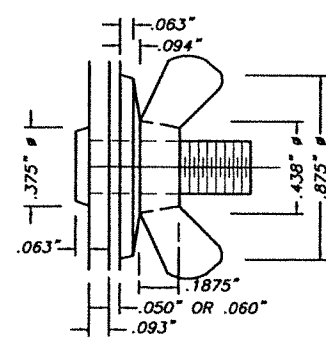


⑨ **STUDDED ANGLE**
6063-T5 ALUM. ALLOY
SCALE : 3/8" = 1"

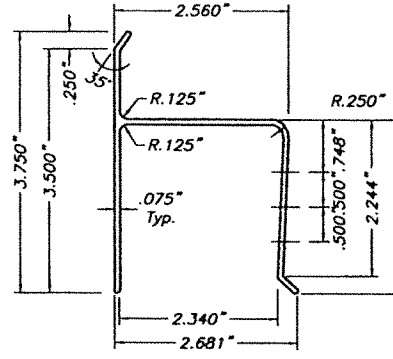
DETAIL 1: STUD W/ DIE CAST ZINC
NICKEL PLATED WING NUT



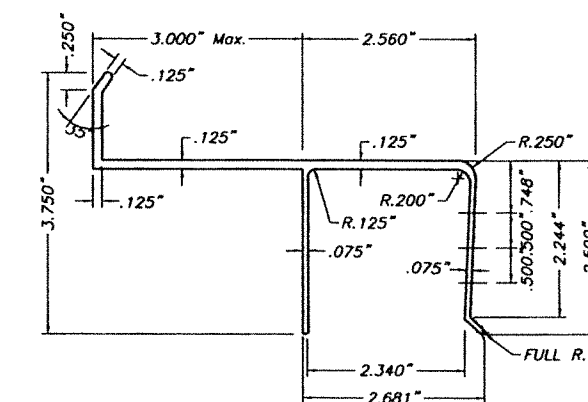
⑫ **STUDDED PLATE**
6063-T6 ALLOY
SCALE : 3/8" = 1"



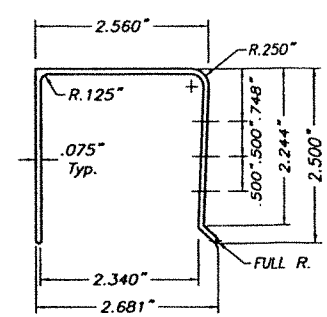
⑬ **SNAP CAP**
6063-T6 ALLOY
SCALE : 3/8" = 1"



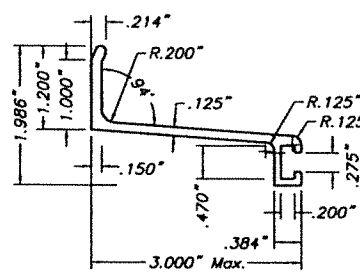
② **"h" HEADER**
SCALE : 3/8" = 1"



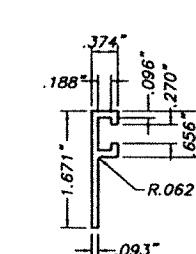
③ **3" Max. "U" BUILD OUT**
SCALE : 3/8" = 1"



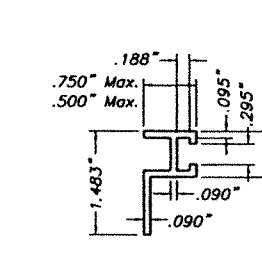
④ **"U" HEADER**
SCALE : 3/8" = 1"



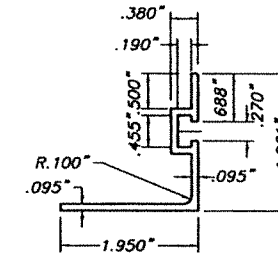
⑤ **3" ANGLE BUILD OUT BRACKET**
SCALE : 3/8" = 1"



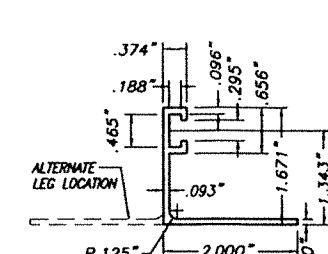
⑥ **3/8" B. O. "F" TRACK**
SCALE : 3/8" = 1"



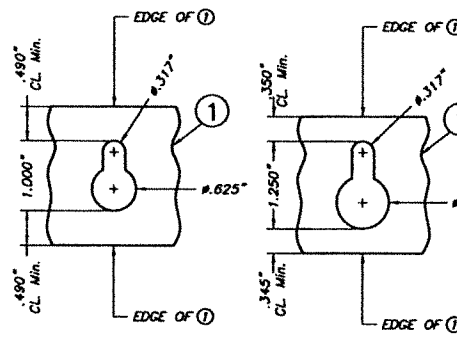
⑥A **3/4" B. O. "F" TRACK**
SCALE : 3/8" = 1"



⑦ **REVERSED "F" ANGLE TRACK**
SCALE : 3/8" = 1"

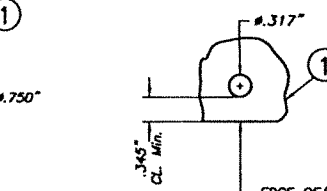


⑧ **"F" TRACK ANGLE**
SCALE : 3/8" = 1"

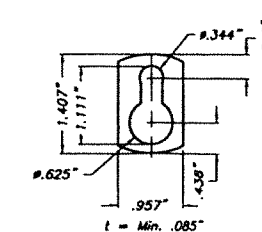


OPTION 1 **OPTION 2**

⑩ **KEY HOLE AT PANEL**



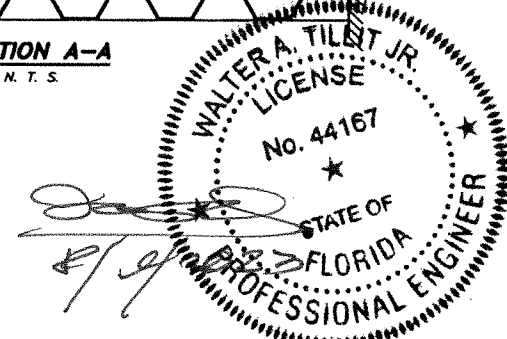
⑩A **ROUND HOLE AT PANEL (OPTION TO 10)**

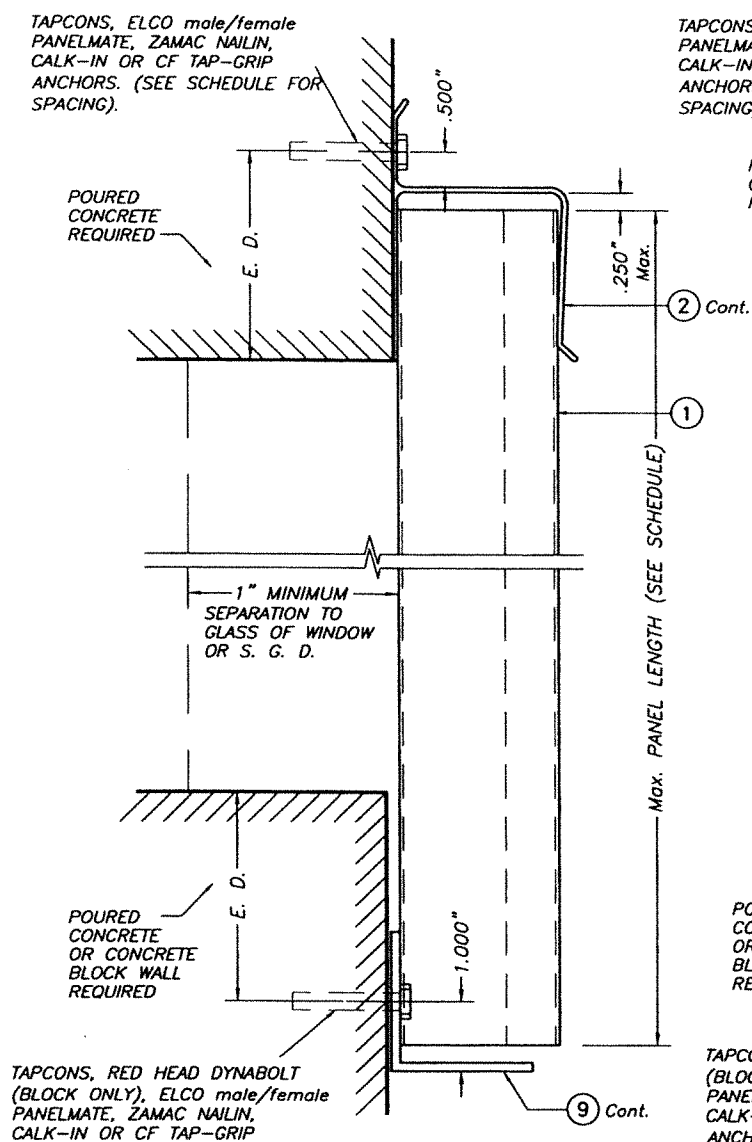


⑪ **KEY HOLE WASHER**
3105-H154 ALUM. ALLOY
SCALE : 3/8" = 1"

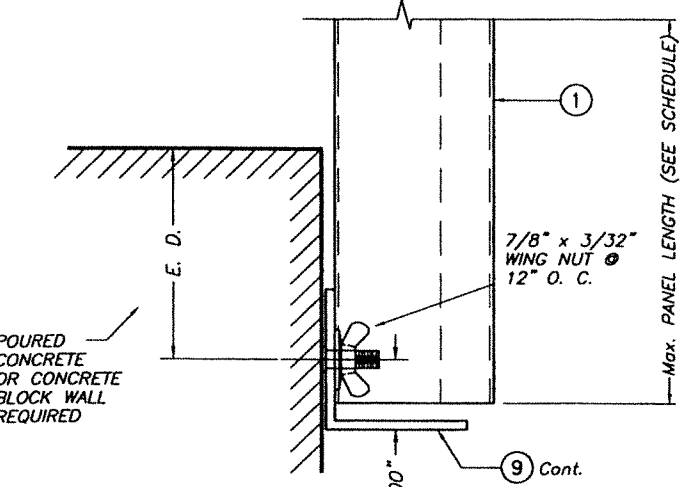
FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

© 2023 TILTECO, INC. TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 CA-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167		24 GAGE GALVANIZED BERTHA STEEL STORM PANEL (2.25" DEEP) EASTERN METAL SUPPLY, INC 4268 WEST ROADS DRIVE WEST PALM BEACH, FL. 33407 PHONE: (561)209-8263 FAX: (561)841-1716		Y.M. DRAWN BY: 8/9/2023 DATE: 23-160 DRAWING No	
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-181	8/9/2023	3		
2			4		





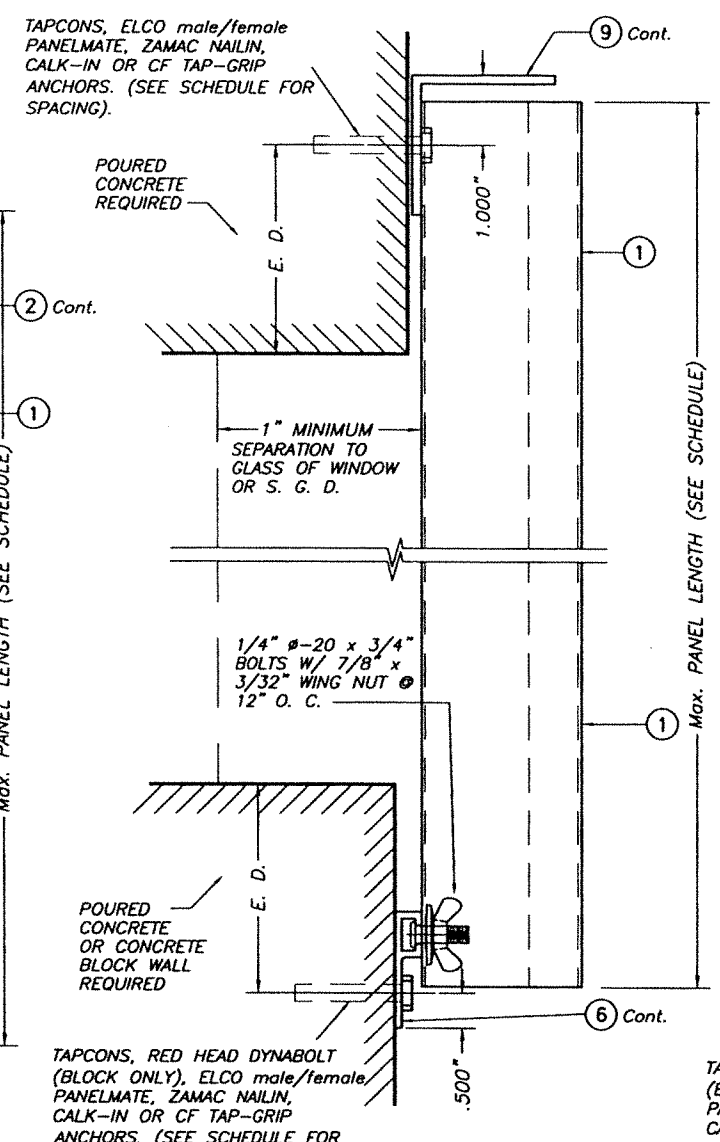
SECTION 1 ANCHOR



SECTION 2 STUD

WALL MOUNTING INSTALLATION
SECTION 1 SCALE: 3/8" = 1"

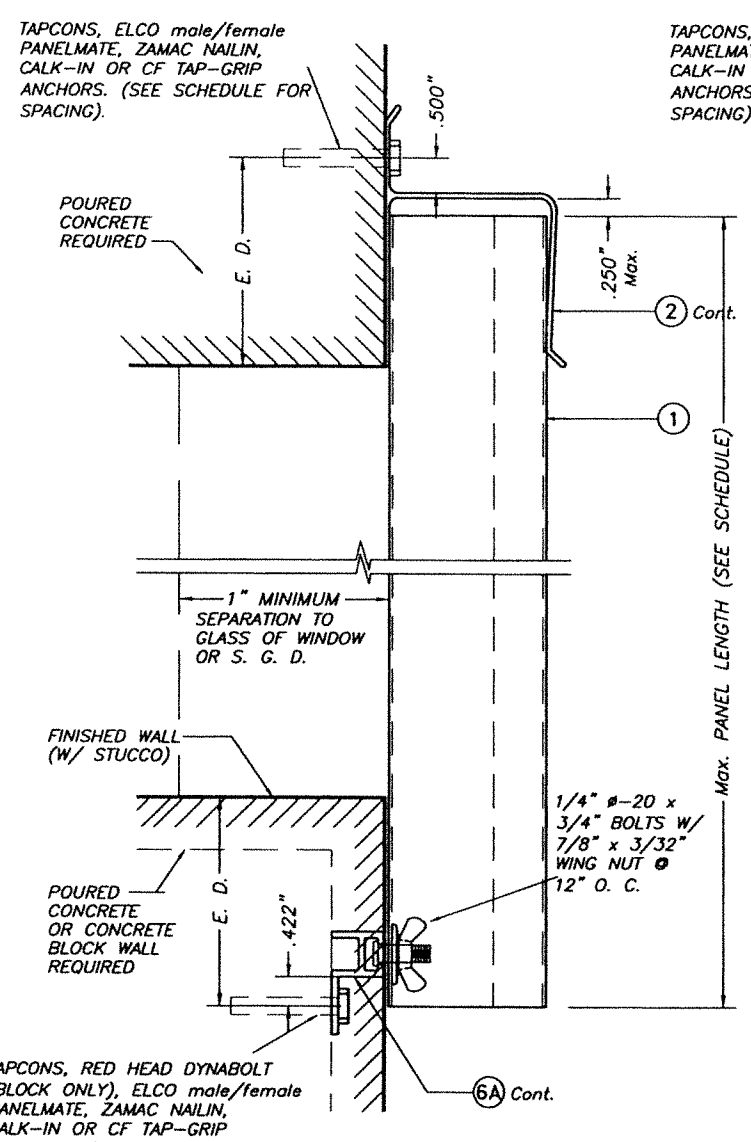
NOTE: DETAIL OF SECTION 1 STUD VALID ALSO FOR WALL MOUNTING INSTALLATION - SECTION 2 (TOP)



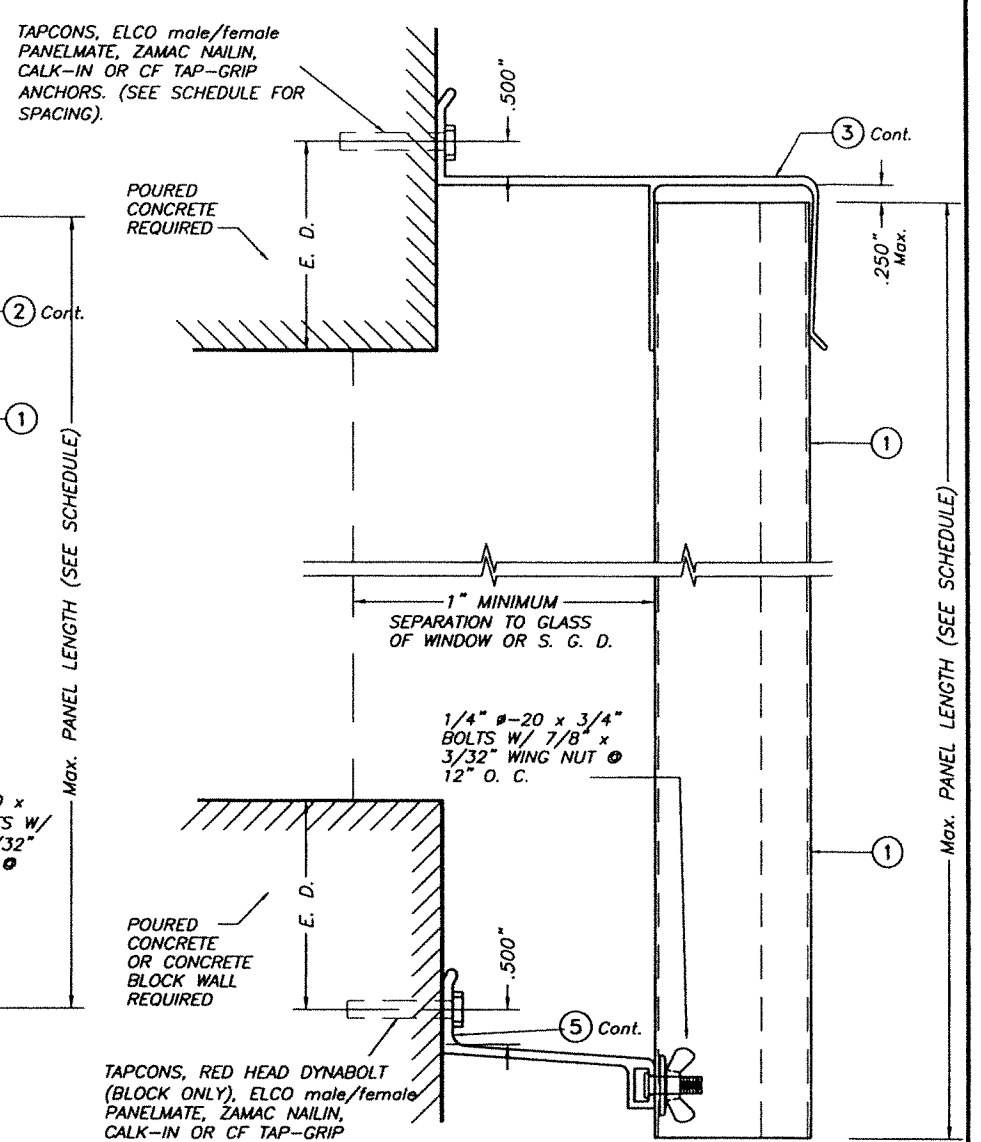
WALL MOUNTING INSTALLATION
SECTION 2 SCALE: 3/8" = 1"

E. D. = EDGE DISTANCE
(SEE SCHEDULE ON
SHEETS 5 & 6 OF 8)

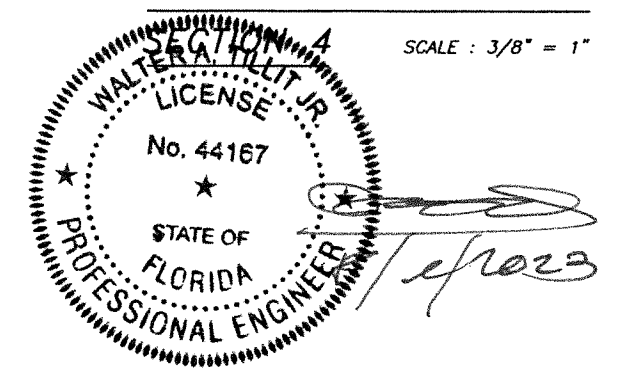
NOTE FOR COMBINATION OF SECTIONS:
WALL/FLOOR/CEILING MOUNTING SECTIONS CAN BE
COMBINED IN ANY WAY TO SUIT ANY INSTALLATION.



WALL MOUNTING INSTALLATION
SECTION 3 SCALE: 3/8" = 1"



BUILD OUT INSTALLATION
SECTION 4 SCALE: 3/8" = 1"



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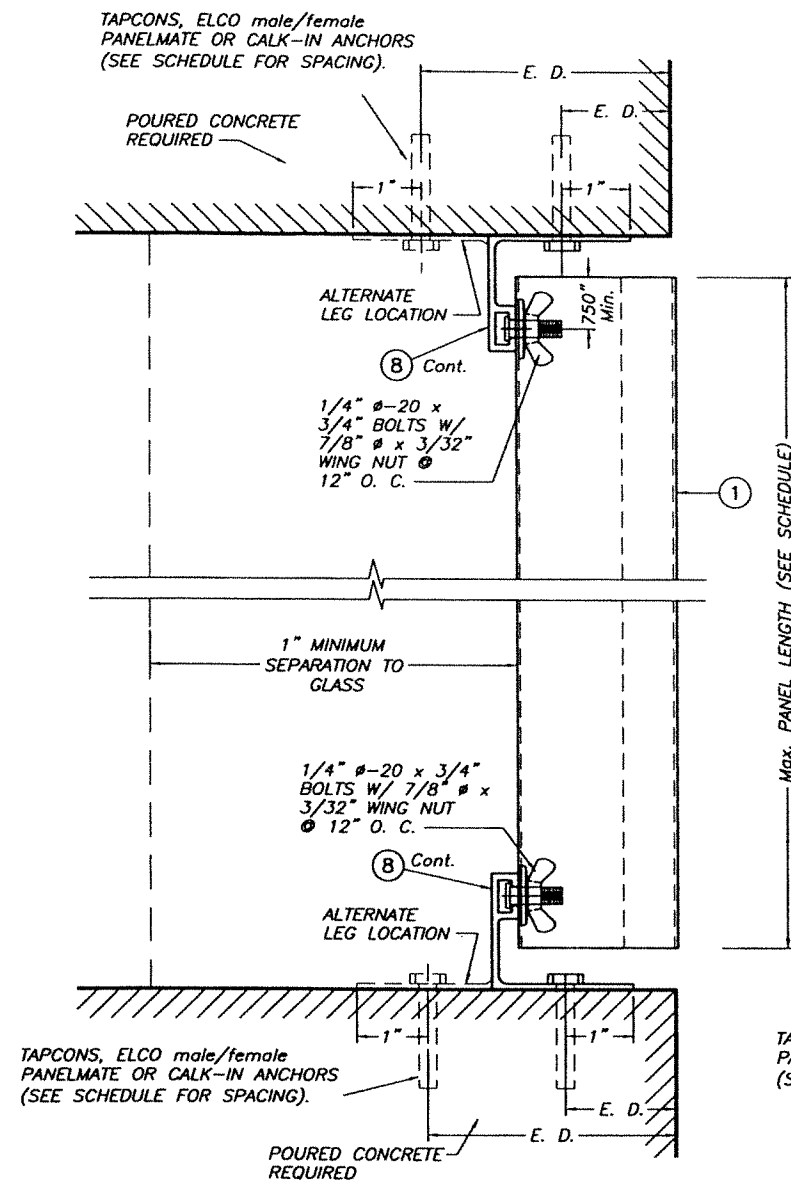
TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166
Phone: (305)871-1530 Fax: (305)871-1531
CA-0006719
WALTER A. TILLIT Jr. P.E.
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24 GAGE GALVANIZED BERTHA STEEL STORM PANEL
(2.25" DEEP)

EASTERN METAL SUPPLY, INC
4268 WEST ROADS DRIVE
WEST PALM BEACH, FL 33407
PHONE: (561)209-8263
FAX: (561)841-1716

REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-181	8/9/2023	3		
2			4		

Y.M.
DRAWN BY:
8/9/2023
DATE:
23-160
DRAWING No
SHEET 2 OF 8

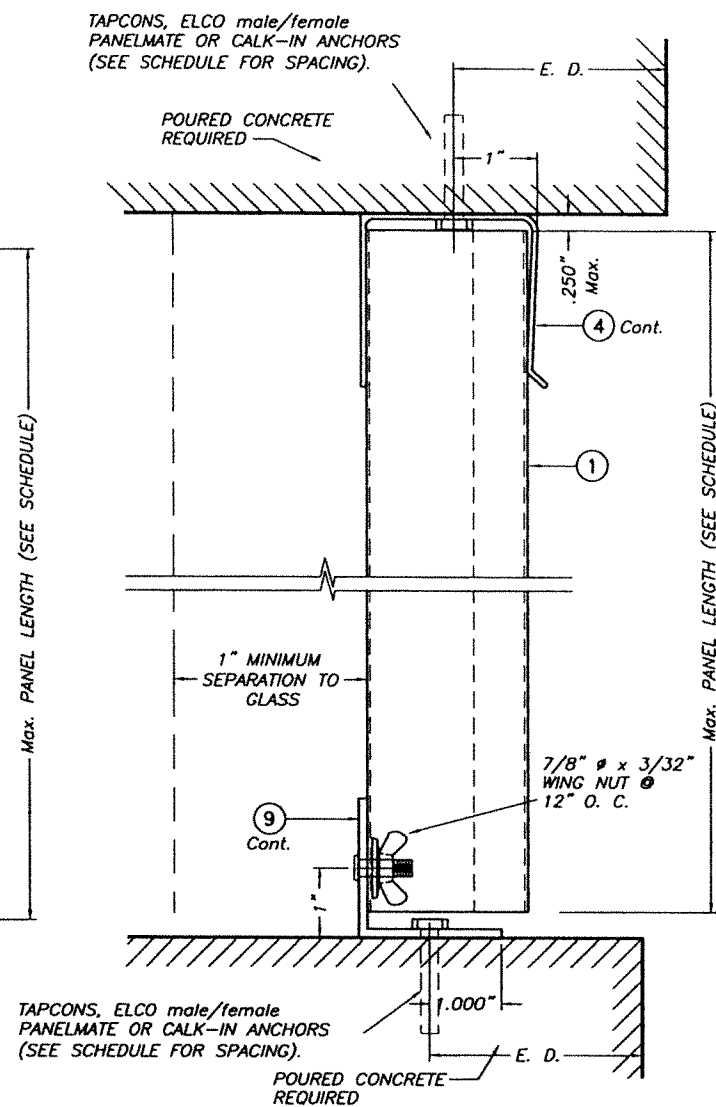


SCALE : $3/8" = 1"$

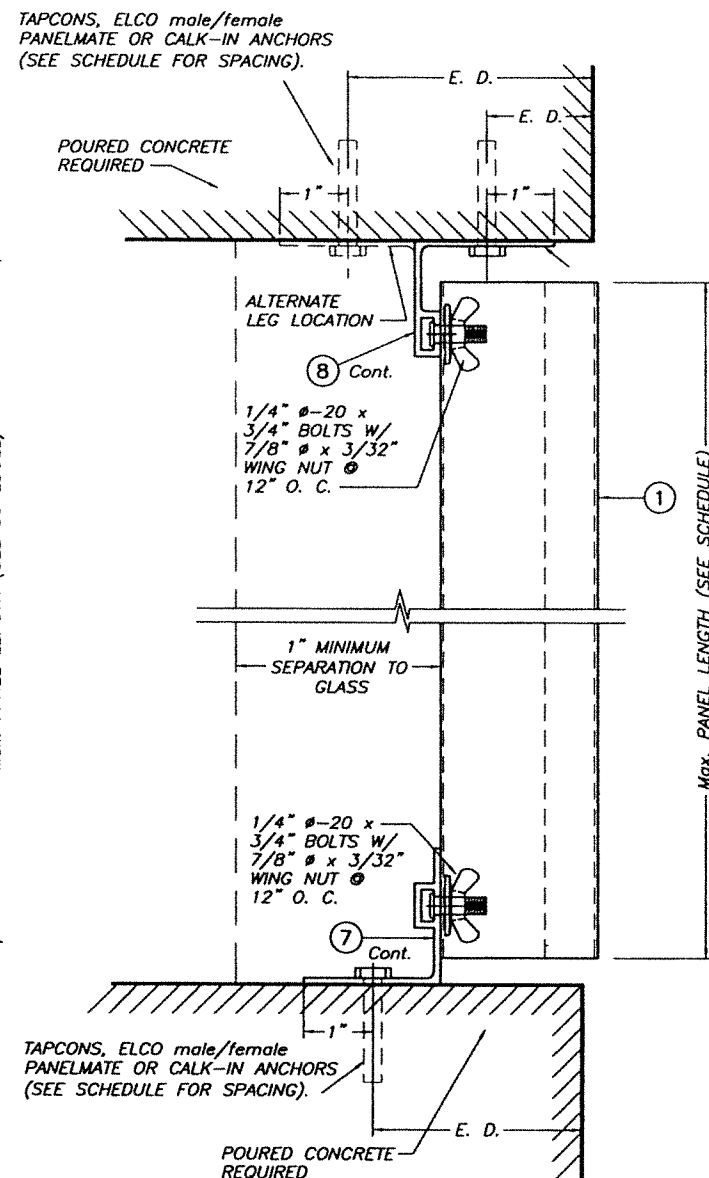
E. D. = EDGE DISTANCE
(SEE SCHEDULE ON
SHEET 5 & 6 OF 8)

NOTE FOR COMBINATION OF SECTIONS :

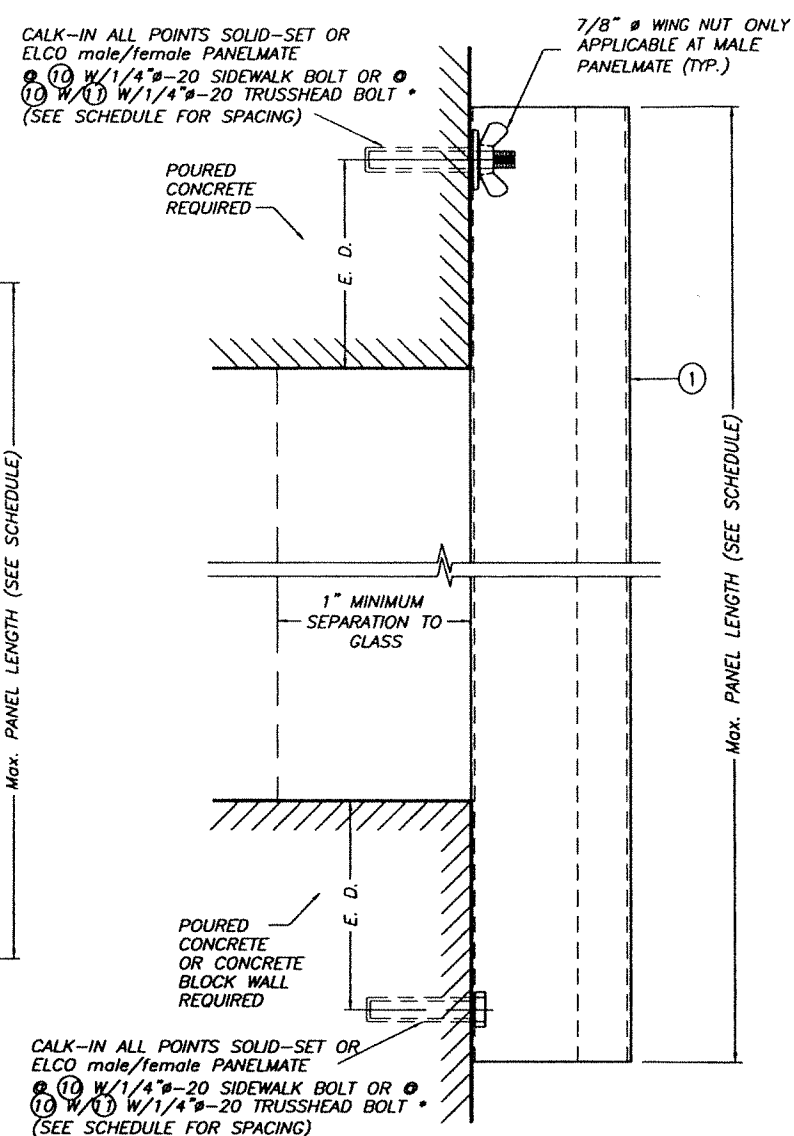
WALL/FLOOR/CEILING MOUNTING SECTIONS CAN BE
COMBINED IN ANY WAY TO SUIT ANY INSTALLATION.



SCALE : $3/8" = 1"$



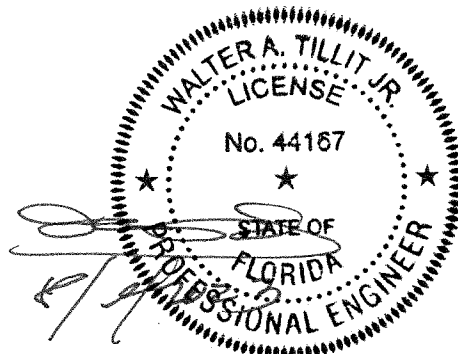
SCALE : $3/8" = 1"$



SCALE : $3/8" = 1"$

SIDE WALK BOLTS ARE 3/4"Øx3/32"THICK
HEAD MACHINE SCREW W/LENGTH
AS PER NOTES A.2 & B.2 (SHEET 1)

TRUSS HEAD BOLTS ARE 1/2"Øx1/8"THICK
HEAD MACHINE SCREW W/LENGTH
AS PER NOTES A.2 & B.2 (SHEET 1)



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WALTER A. TILLIT Jr. P.E.
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FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

24 GAGE GALVANIZED BERTHA STEEL STORM PANEL
(2.25" DEEP)

EASTERN METAL SUPPLY, INC

4268 WEST ROADS DRIVE
WEST PALM BEACH, FL. 33407
PHONE: (561)209-8263
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REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-181	8/9/2023	3		
2			4		

Y.M.
DRAWN BY:

8/9/2023
DATE:

23-160

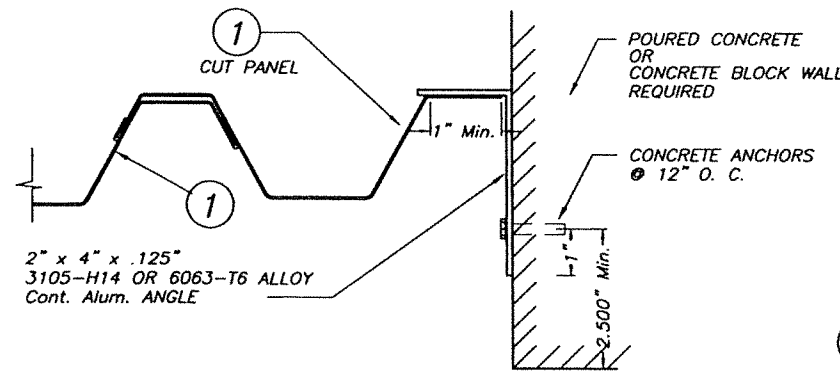
DRAWING No

SHEET 3 OF 8

MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.) AND
CORRESPONDING MAXIMUM PANEL LENGTH "L" (ft.) SCHEDULE

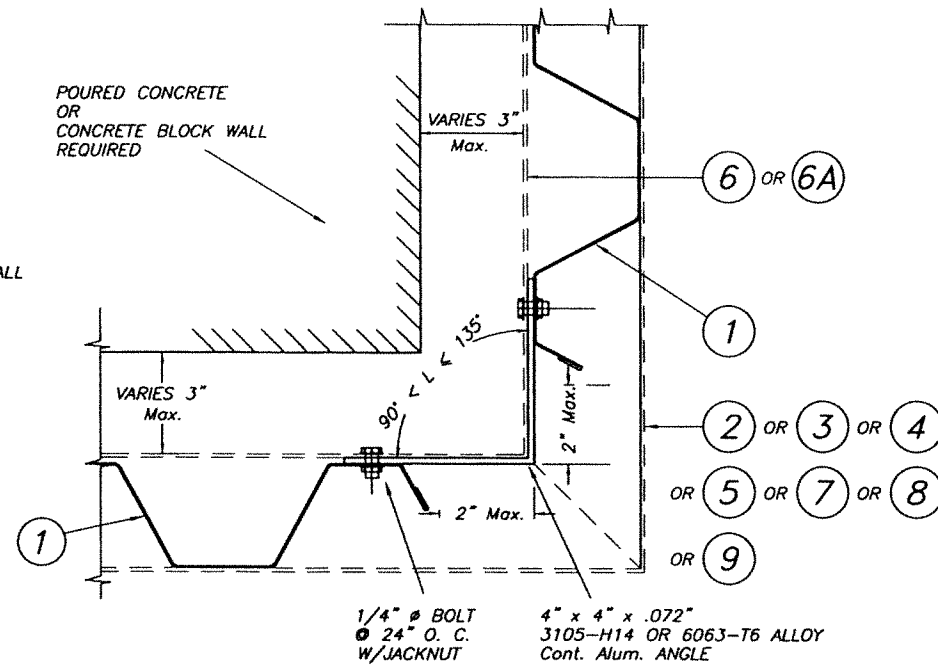
MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.)	Max. PANEL LENGTH L (ft.) 24 GAGE STEEL		
	MOUNTING W/O "h" HEADER (2)	MOUNTING W/ "h" HEADER (2)	MOUNTING W/ COMP. (12) & (13)
+35.0, -40.0	9'-8"	9'-8"	9'-8"
+40.0, -45.0	9'-2"	9'-2"	9'-2"
+45.0, -50.0	8'-9"	8'-9"	8'-9"
+50.0, -55.0	8'-4"	8'-4"	8'-4"
+60.0, -65.0	7'-8"	7'-2"	7'-8"
+70.0, -80.0	7'-2"	6'-3"	7'-2"

NOTE: MINIMUM PANEL LENGTH IS 3'-0".



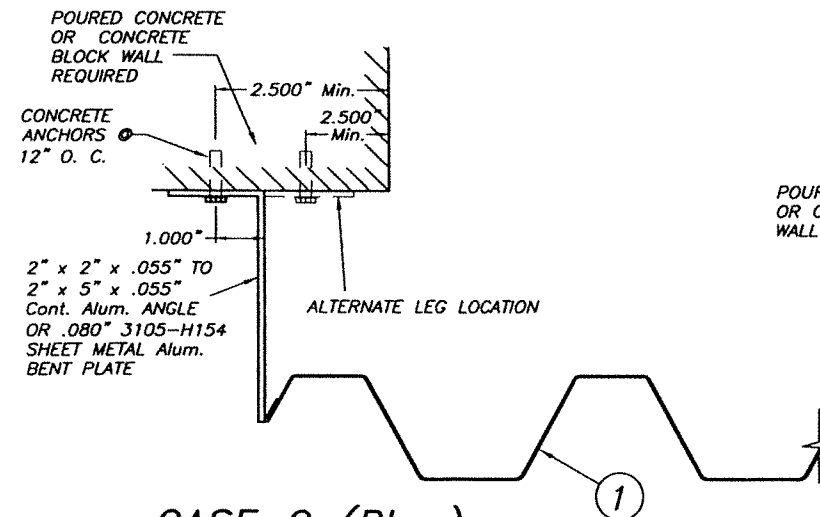
CASE A (Plan)

SCALE: 1/4" = 1"



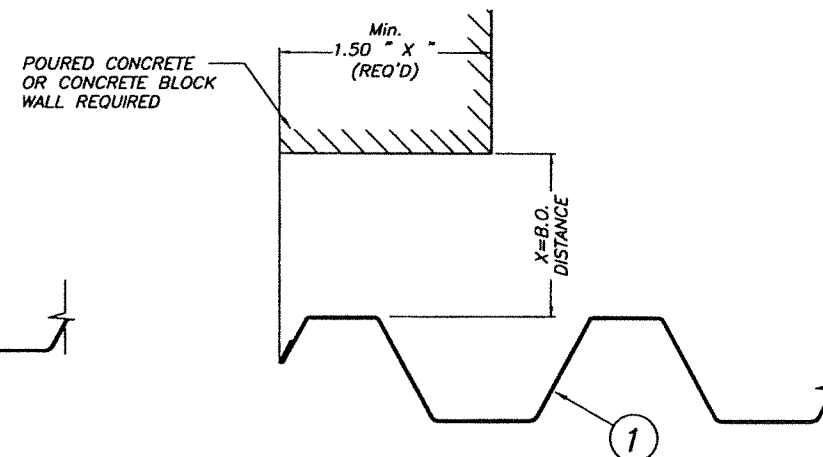
CASE B (Plan)

SCALE: 1/4" = 1"



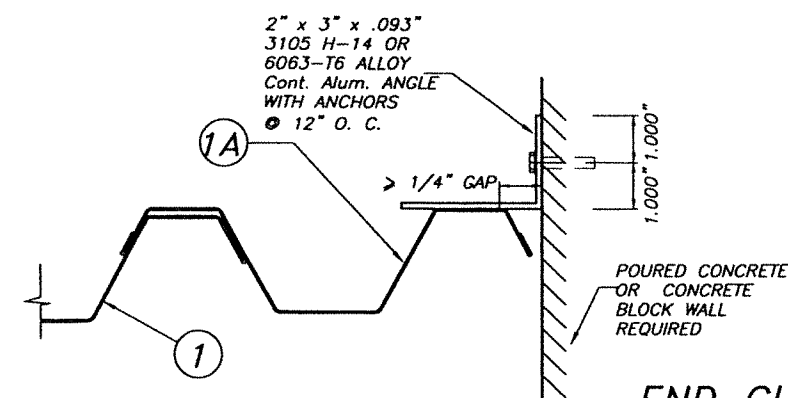
CASE C (Plan)

SCALE: 1/4" = 1"



CASE E (Plan)

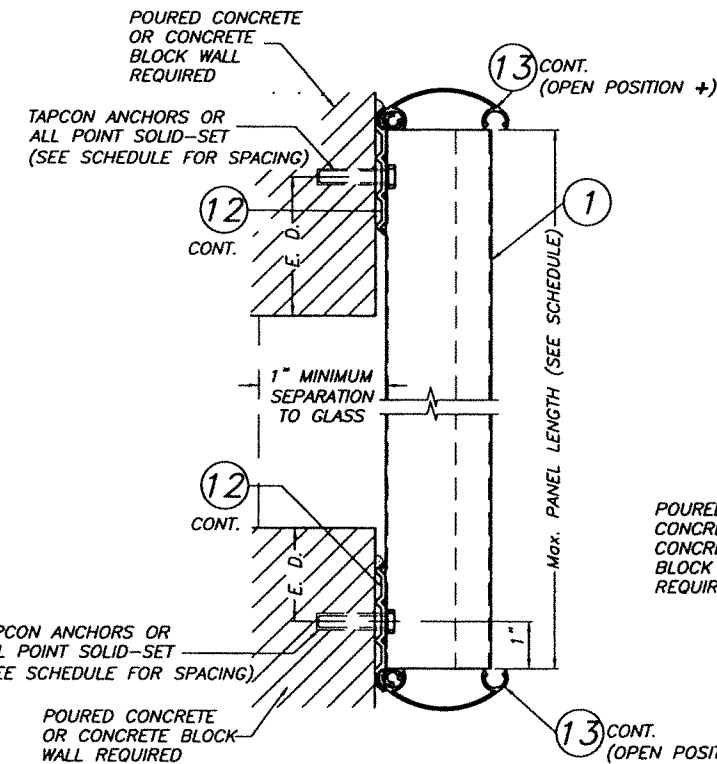
SCALE: 1/4" = 1"



CASE D (Plan)

SCALE: 1/4" = 1"

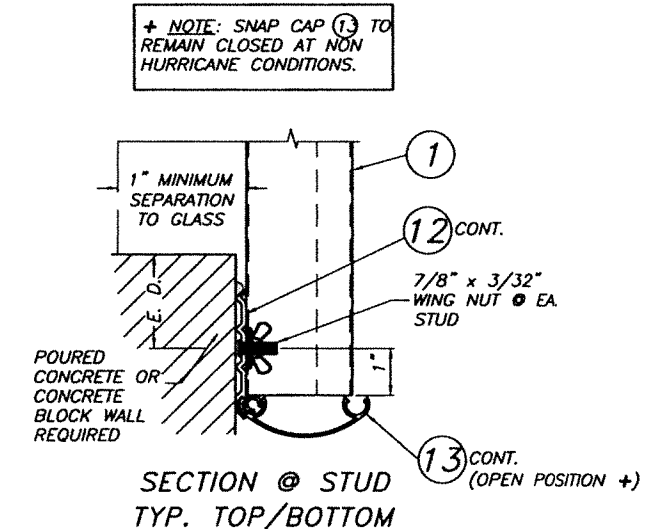
END CLOSURES DETAILS



WALL MOUNTING INSTALLATION

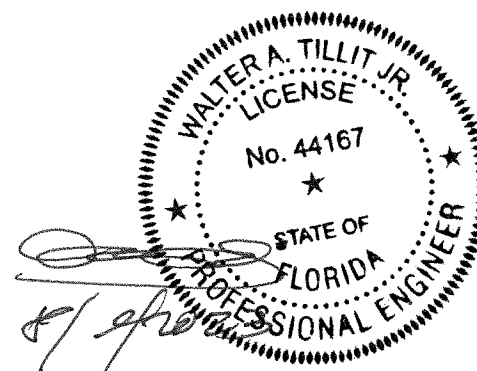
SECTION 9

SCALE: 3/8" = 1"



FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

© 2023 TILTECO, INC.		24 GAGE GALVANIZED BERTHA STEEL STORM PANEL (2.25" DEEP)		Y.M. DRAWN BY:	
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		EASTERN METAL SUPPLY, INC 4268 WEST ROADS DRIVE WEST PALM BEACH, FL 33407 PHONE: (561)209-8263 FAX: (561)841-1716		8/9/2023 DATE:	
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-101	8/9/2023	3		
2			4		
23-160 DRAWING No					SHEET 4 OF 8



THIS SCHEDULE INDICATES REQUIRED ANCHOR SPACING FOR A GIVEN DESIGN LOAD AND PANEL LENGTH. HOWEVER, MAXIMUM PANEL LENGTH FOR A GIVEN DESIGN LOAD MUST BE VERIFIED AS PER SCHEDULE ON SHEET 4 OF 8.

MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.) AND CORRESPONDING MAXIMUM ANCHOR SPACING SCHEDULE FOR INSTALLATIONS INTO CONCRETE AND CONCRETE BLOCK STRUCTURES *

E. D. = EDGE DISTANCE

MAXIMUM A.S.D. DESIGN PRESSURE RATING(p.s.f.)	MAXIMUM ANCHORS SPACING FOR E. D. = 3 1/2" **												APPLICABLE TO SECTIONS # & ANY COMBINATION OF THEM	MAXIMUM PANEL LENGTH "L" (ft.)
	TAPCONS		ZAMAC NAILIN/ RED HD. DYNABOLT		CALK-IN		SOLID-SET		PANELMATES		CF TAP-GRIP			
	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY		
+40.0, -45.0 OR LESS	12"	-	12"++	-	12"	-	-	-	12"	-	12"	-	1 & 3 (TOP)	8'-0" OR LESS
	12"	9"	12"++	12"	12"	7"	12"	12"	12"	12"	12"	9 1/2"	1, 9 ⁺ (BOTTOM)	
	12"	-	12"++	-	12"	-	12"	12"	12"	-	12"	-	2, 9 ⁺ (TOP)	
	12"	9"	12"++	12"	12"	7"	-	-	12"	12"	12"	9 1/2"	2 (BOTTOM)	
	12"	9"	12"++	12"	12"	7"	-	-	12"	12"	12"	9 1/2"	3 (BOTTOM)	
	12"	-	12"++	-	12"	-	-	-	12"	-	12"	-	4 (TOP)	
	12"	9"	12"++	12"	12"	7"	-	-	12"	12"	12"	9 1/2"	4 (BOTTOM)	
	9"	-	-	-	10"	-	-	-	12"	-	-	-	5 (TOP/BOTTOM) 7 (TOP)	
	12"	-	-	-	12"	-	-	-	12"	-	-	-	6 (TOP)	
	11"	-	-	-	11"	-	-	-	12"	-	-	-	6 (BOTTOM)	
	10"	-	-	-	11"	-	-	-	12"	-	-	-	7 (BOTTOM)	
	-	-	-	-	12"	6"	12"	12"	12"	12"	-	-	8 (TOP/BOTTOM)	
+40.0, -45.0 OR LESS	12"	-	12"++	-	12"	-	-	-	12"	-	12"	-	1 & 3 (TOP)	>8'-0" TO 9'-8"
	12"	6"	12"++	12"	12"	5"	12"	12"	12"	12"	12"	6 1/2"	1, 9 ⁺ (BOTTOM)	
	12"	-	12"++	-	12"	-	12"	12"	12"	-	12"	-	2, 9 ⁺ (TOP)	
	12"	6"	12"++	12"	12"	5"	-	-	12"	12"	12"	6 1/2"	2 (BOTTOM)	
	12"	6"	12"++	12"	12"	5"	-	-	12"	12"	12"	6 1/2"	3 (BOTTOM)	
	12"	-	12"	-	12"	-	-	-	12"	-	12"	-	4 (TOP)	
	12"	6"	12"	12"	12"	5"	-	-	12"	12"	12"	6 1/2"	4 (BOTTOM)	
	7"	-	-	-	7"	-	-	-	10"	-	-	-	5 (TOP/BOTTOM) 7 (TOP)	
	10"	-	-	-	10"	-	-	-	12"	-	-	-	6 (TOP)	
	8"	-	-	-	8"	-	-	-	11 1/2"	-	-	-	6 (BOTTOM)	
	8"	-	-	-	8"	-	-	-	11"	-	-	-	7 (BOTTOM)	
	-	-	-	-	12"	-	12"	12"	12"	6"	-	-	8 (TOP/BOTTOM)	

MAXIMUM A.S.D. DESIGN PRESSURE RATING(p.s.f.)	MAXIMUM ANCHORS SPACING FOR E. D. = 3 1/2" **												APPLICABLE TO SECTIONS # & ANY COMBINATION OF THEM	MAXIMUM PANEL LENGTH "L" (ft.)
	TAPCONS		ZAMAC NAILIN/ RED HD. DYNABOLT		CALK-IN		SOLID-SET		PANELMATES		CF TAP-GRIP			
	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY		
>+40.0, -45.0 TO +50.0, -55.0	12"	-	12"++	-	12"	-	-	-	12"	-	12"	-	1 & 3 (TOP)	8'-0" OR LESS
	12"	6"	12"++	12"	12"	5"	12"	12"	12"	12"	12"	7"	1, 9 ⁺ (BOTTOM)	
	12"	-	12"++	-	12"	-	12"	12"	12"	-	12"	-	2, 9 ⁺ (TOP)	
	12"	6"	12"++	12"	12"	5"	-	-	12"	12"	12"	7"	2 (BOTTOM)	
	12"	6"	12"++	12"	12"	5"	-	-	12"	12"	12"	7"	3 (BOTTOM)	
	12"	-	12"++	-	12"	-	-	-	12"	-	12"	-	4 (TOP)	
	12"	6"	12"++	12"	12"	5"	-	-	12"	12"	12"	7"	4 (BOTTOM)	
	7"	-	-	-	7"	-	-	-	10 1/2"	-	-	-	5 (TOP/BOTTOM) 7 (TOP)	
	10"	-	-	-	10"	-	-	-	12"	-	-	-	6 (TOP)	
	8"	-	-	-	8"	-	-	-	12"	-	-	-	6 (BOTTOM)	
	8"	-	-	-	8"	-	-	-	11 1/2"	-	-	-	7 (BOTTOM)	
-	-	-	-	12"	-	12"	12"	12"	6"	-	-	8 (TOP/BOTTOM)		
>+40.0, -45.0 TO +50.0, -55.0	8"	-	7"++	-	8"	-	-	-	12"	-	5 1/2"	-	1 & 3 (TOP)	>8'-0" TO 9'-8"
	12"	5"	11"++	10"	12"	4"	12"	12"	12"	9 1/2"	9"	5"	1, 9 ⁺ (BOTTOM)	
	12"	-	11"++	-	12"	-	12"	12"	12"	-	9"	-	2, 9 ⁺ (TOP)	
	12"	5"	11"++	10"	12"	4"	-	-	12"	9 1/2"	9"	5"	2 (BOTTOM)	
	12"	5"	11"++	10"	12"	4"	-	-	12"	9 1/2"	9"	5"	3 (BOTTOM)	
	12"	-	11"++	-	12"	-	-	-	12"	-	9"	-	4 (TOP)	
	12"	5"	11"++	10"	12"	4"	-	-	12"	9 1/2"	9"	5"	4 (BOTTOM)	
	5"	-	-	-	5"	-	-	-	7 1/2"	-	-	-	5 (TOP/BOTTOM) 7 (TOP)	
	8"	-	-	-	7"	-	-	-	10 1/2"	-	-	-	6 (TOP)	
	6"	-	-	-	6"	-	-	-	8 1/2"	-	-	-	6 (BOTTOM)	
	6"	-	-	-	6"	-	-	-	8"	-	-	-	7 (BOTTOM)	
	-	-	-	-	12"	-	12"	12"	12"	6"	-	-	8 (TOP/BOTTOM)	

ACTUAL E. D.	FACTOR				
	TAPCON	ZAMAC NAILIN /DYNABOLT /PANELMATES	CALK-IN	SOLID-SET	CF TAP-GRIP
3"	-	.86	.75	.78	1.00
2 1/2"	-	.71	.50	-	.80
2"	-	.50	-	-	-
1 1/2"	.35	-	-	-	-

+ ONLY TAPCON ANCHORS OR ALL POINT SOLID-SET ALLOWED FOR MOUNTING SECTION 9.

++ ANCHORS SPACING ONLY APPLICABLE TO ZAMAC NAILIN ANCHORS

* SEE SHEET 7 & 8 OF 8 FOR ANCHORS TYPE & SPACING FOR INSTALLATIONS INTO WOOD FRAME BUILDINGS.

** MAXIMUM ANCHOR SPACINGS ARE VALID FOR 3 1/2" EDGE DISTANCE. FOR E. D. LESS THAN 3 1/2", REDUCE ANCHOR SPACING BY MULTIPLYING SPACINGS SHOWN ON SCHEDULE BY THE FOLLOWING FACTORS. (Min. E. D. FOR CALK-IN ANCHORS & ELCO PANELMATE IS 2 1/2", AND 3 1/2" FOR SOLID-SET ANCHORS). FOR THIS OPERATION TO BE MADE REDUCED SPACINGS RESULTING FROM APPLYING ABOVE FACTORS SHALL NOT RESULT ON SPACINGS LESS THAN 3" FOR ALL ANCHORS (EXCEPT +4.5" FOR RED HD. DYNABOLT ANCHORS).

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TILTECO INC.

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

FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

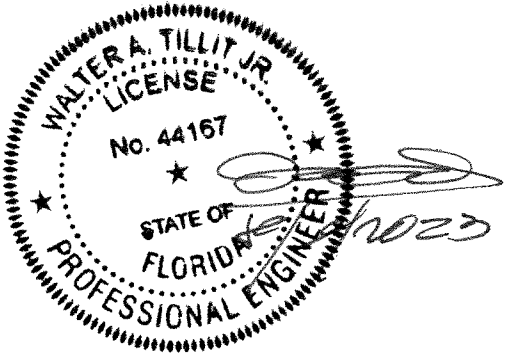
24 GAGE GALVANIZED BERTHA STEEL STORM PANEL (2.25" DEEP)						Y.M. DRAWN BY:
EASTERN METAL SUPPLY, INC						8/9/2023 DATE:
4268 WEST ROADS DRIVE WEST PALM BEACH, FL. 33407 PHONE: (561)209-8263 FAX: (561)841-1716						23-160 DRAWING No
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE	SHEET 5 OF 8
1	OLD 20-181	8/9/2023	3			
2			4			

MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.) AND CORRESPONDING MAXIMUM ANCHOR
SPACING SCHEDULE FOR INSTALLATIONS INTO CONCRETE AND CONCRETE BLOCK STRUCTURES *

E. D. = EDGE DISTANCE

THIS SCHEDULE INDICATES REQUIRED ANCHOR SPACING
FOR A GIVEN DESIGN LOAD AND PANEL LENGTH.
HOWEVER MAXIMUM PANEL LENGTH FOR A GIVEN
DESIGN LOAD MUST BE VERIFIED AS PER SCHEDULE
ON SHEET 4 OF 8.

MAXIMUM A.S.D. DESIGN PRESSURE RATING(p.s.f.)	MAXIMUM ANCHORS SPACING FOR E. D. = 3 1/2" **												APPLICABLE TO SECTIONS # & ANY COMBINATION OF THEM	MAXIMUM PANEL LENGTH "L" (ft.)
	TAPCONS		ZAMAC NAILIN/ RED HD. DYNABOLT		CALK-IN		SOLID-SET		PANELMATES		CF TAP-GRIP			
	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY		
>+50.0,-55.0 TO +70.0,-80.0	8"	-	7"	-	9"	-	-	-	12"	-	6"	-	1 & 3 (TOP)	8'-0" OR LESS
	12"	12"	11"++	10"	12"	4"	12"	12"	12"	9 1/2"	9"	5"	1, 9 ⁺ (BOTTOM)	
	12"	-	11"++	-	12"	-	12"	12"	12"	-	9"	-	2, 9 ⁺ (TOP)	
	12"	5"	11"++	10"	12"	4"	-	-	12"	9 1/2"	9"	5"	2 (BOTTOM)	
	12"	5"	11"++	10"	12"	4"	-	-	12"	9 1/2"	9"	5"	3 (BOTTOM)	
	12"	-	11"++	-	12"	-	-	-	12"	-	9"	-	4 (TOP)	
	12"	5"	11"++	10"	12"	4"	-	-	12"	9 1/2"	9"	5"	4 (BOTTOM)	
	5"	-	-	-	5"	-	-	-	8"	-	-	-	5 (TOP/BOTTOM) 7 (TOP)	
	8"	-	-	-	8"	-	-	-	10 1/2"	-	-	-	6 (TOP)	
	6"	-	-	-	6"	-	-	-	9"	-	-	-	6 (BOTTOM)	
	6"	-	-	-	6"	-	-	-	8 1/2"	-	-	-	7 (BOTTOM)	
	-	-	-	-	12"	-	12"	12"	12"	6"	-	-	8 (TOP/BOTTOM)	



MAXIMUM A.S.D. DESIGN PRESSURE RATING(p.s.f.)	MAXIMUM ANCHORS SPACING FOR E. D. = 3 1/2" **												APPLICABLE TO SECTIONS # & ANY COMBINATION OF THEM	MAXIMUM PANEL LENGTH "L" (ft.)
	TAPCONS		ZAMAC NAILIN/ RED HD. DYNABOLT		CALK-IN		SOLID-SET		PANELMATES		CF TAP-GRIP			
	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY		
>+50.0,-55.0 TO +70.0,-80.0	6"	-	5" ++	-	6"	-	-	-	9 1/2"	-	4"	-	1 & 3 (TOP)	>8'-0" TO 8'-4"
	11"	12"	9" ++	8"	11"	3"	12"	12"	12"	8"	7 1/2"	4"	1, 9 ⁺ (BOTTOM)	
	11"	-	9" ++	-	11"	-	12"	12"	12"	-	7 1/2"	-	2, 9 ⁺ (TOP)	
	11"	4"	9" ++	8"	11"	3"	-	-	12"	8"	7 1/2"	4"	2 (BOTTOM)	
	11"	4"	9" ++	8"	11"	3"	-	-	12"	8"	7 1/2"	4"	3 (BOTTOM)	
	11"	-	9" ++	-	11"	-	-	-	12"	-	7 1/2"	-	4 (TOP)	
	11"	4"	9" ++	8"	11"	3"	-	-	12"	8"	7 1/2"	4"	4 (BOTTOM)	
	4"	-	-	-	4"	-	-	-	6 1/2"	-	-	-	5 (TOP/BOTTOM) 7 (TOP)	
	6"	-	-	-	6"	-	-	-	8 1/2"	-	-	-	6 (TOP)	
	5"	-	-	-	5"	-	-	-	7"	-	-	-	6 (BOTTOM)	
	5"	-	-	-	5"	-	-	-	7"	-	-	-	7 (BOTTOM)	
	-	-	-	-	6"	-	12"	12"	12"	6"	-	-	8 (TOP/BOTTOM)	

MAXIMUM A.S.D. DESIGN PRESSURE RATING(p.s.f.)	MAXIMUM ANCHORS SPACING FOR E. D. = 3 1/2" **												APPLICABLE TO SECTIONS # & ANY COMBINATION OF THEM	MAXIMUM PANEL LENGTH "L" (ft.)
	TAPCONS		ZAMAC NAILIN/ RED HD. DYNABOLT		CALK-IN		SOLID-SET		PANELMATES		CF TAP-GRIP			
	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY		
>+50.0,-55.0 TO +70.0,-80.0	5"	-	4"++	-	5"	-	-	-	8"	-	3"	-	1 & 3 (TOP)	>8'-4" TO 9'-8"
	10"	3"	8"++	7"	10"	3"	12"	12"	12"	7"	6 1/2"	3 1/2"	1, 9 ⁺ (BOTTOM)	
	10"	-	8"++	-	10"	-	12"	12"	12"	-	6 1/2"	-	2, 9 ⁺ (TOP)	
	10"	3"	8"++	7"	10"	3"	-	-	12"	7"	6 1/2"	3 1/2"	2 (BOTTOM)	
	10"	3"	8"++	7"	10"	3"	-	-	12"	7"	6 1/2"	3 1/2"	3 (BOTTOM)	
	10"	-	8"++	-	10"	-	-	-	12"	-	6 1/2"	-	4 (TOP)	
	10"	3"	8"++	7"	10"	3"	-	-	12"	7"	6 1/2"	3 1/2"	4 (BOTTOM)	
	4"	-	-	-	4"	-	-	-	5 1/2"	-	-	-	5 (TOP/BOTTOM) 7 (TOP)	
	6"	-	-	-	6"	-	-	-	7 1/2"	-	-	-	6 (TOP)	
	5"	-	-	-	5"	-	-	-	6 1/2"	-	-	-	6 (BOTTOM)	
	4"	-	-	-	4"	-	-	-	6"	-	-	-	7 (BOTTOM)	
	-	-	-	-	6"	-	12"	12"	12"	-	-	-	8 (TOP/BOTTOM)	

ACTUAL E. D.	FACTOR				
	TAPCON	ZAMAC NAILIN /DYNABOLT /PANELMATES	CALK-IN	SOLID-SET	CF TAP-GRIP
3"	-	.86	.75	.78	1.00
2 1/2"	-	.71	.50	-	.80
2"	-	.50	-	-	-
1 1/2"	.35	-	-	-	-

+ ONLY TAPCON ANCHORS OR ALL POINT SOLID-SET ALLOWED FOR MOUNTING SECTION 9.

++ ANCHORS SPACING ONLY VALID FOR ZAMAC NAILIN ANCHORS.

* SEE SHEET 7 & 8 OF 8 FOR ANCHORS TYPE & SPACING FOR INSTALLATIONS INTO WOOD
FRAME BUILDINGS.

** MAXIMUM ANCHOR SPACINGS ARE VALID FOR 3 1/2" EDGE DISTANCE.
FOR E. D. LESS THAN 3 1/2", REDUCE ANCHOR SPACING BY MULTIPLYING SPACINGS SHOWN
ON SCHEDULE BY THE FOLLOWING FACTORS. (MIN. E. D. FOR CALK-IN ANCHORS & ELCO
PANELMATE IS 2 1/2", AND 3 1/2" FOR SOLID-SET ANCHORS).
FOR THIS OPERATION TO BE MADE REDUCED SPACINGS RESULTING FROM APPLYING ABOVE
FACTORS SHALL NOT RESULT ON SPACINGS LESS THAN 3" FOR ALL ANCHORS (EXCEPT +4.5"
FOR RED HD. DYNABOLT ANCHORS).

FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

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TILTECO INC.

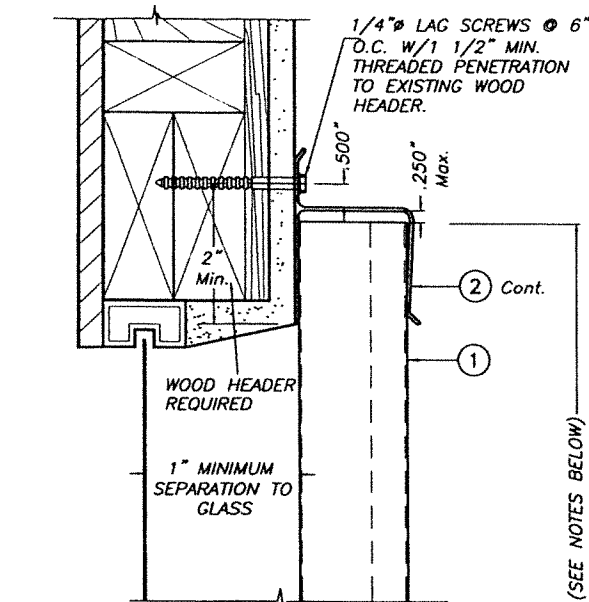
TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166
Phone : (305)871-1530 . Fax : (305)871-1531
CA-0006719
WALTER A. TILLIT Jr. P.E.
FLORIDA Lic. # 44167

**24 GAGE GALVANIZED BERTHA STEEL STORM PANEL
(2.25" DEEP)**

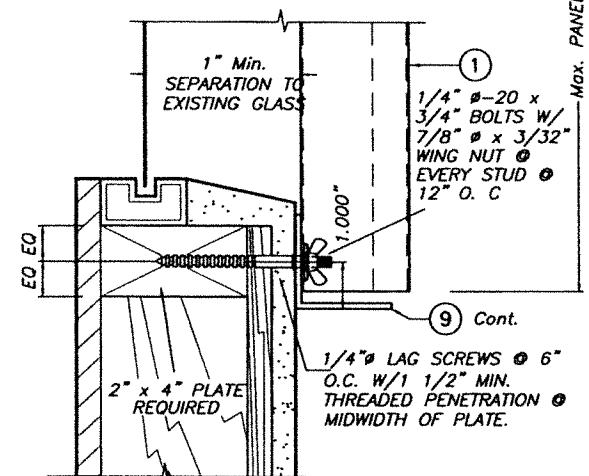
EASTERN METAL SUPPLY, INC
4268 WEST ROADS DRIVE
WEST PALM BEACH, FL. 33407
PHONE: (561)209-8263
FAX: (561)841-1716

Y.M.
DRAWN BY:
8/9/2023
DATE:
23-160
DRAWING No
SHEET 6 OF 8

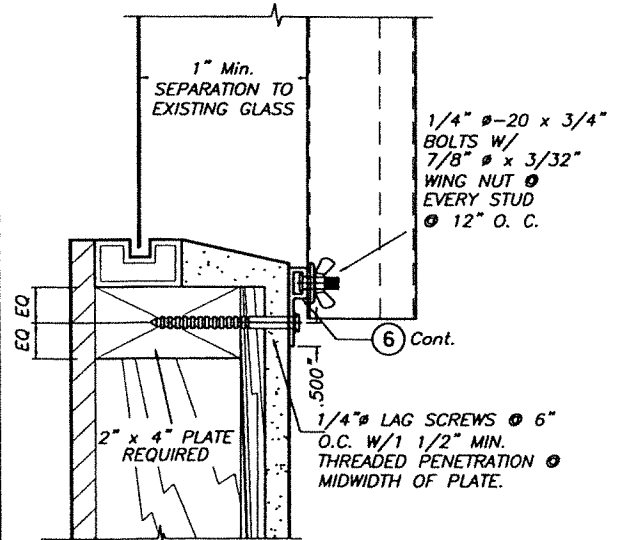
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-181	8/9/2023	3		
2			4		



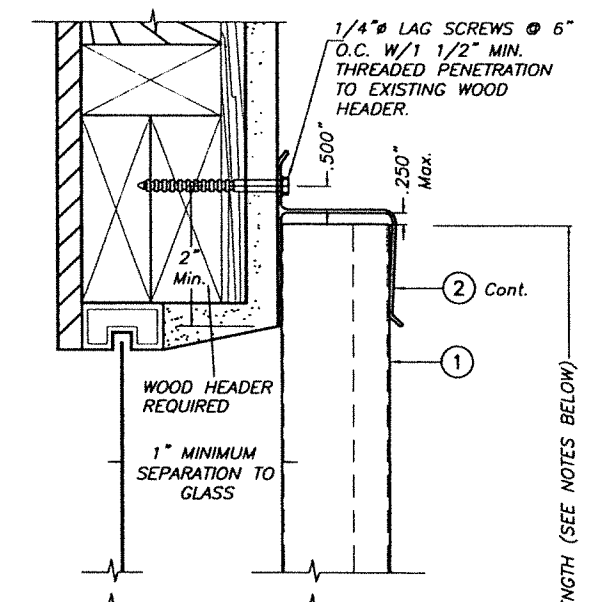
ALTERNATIVE 1



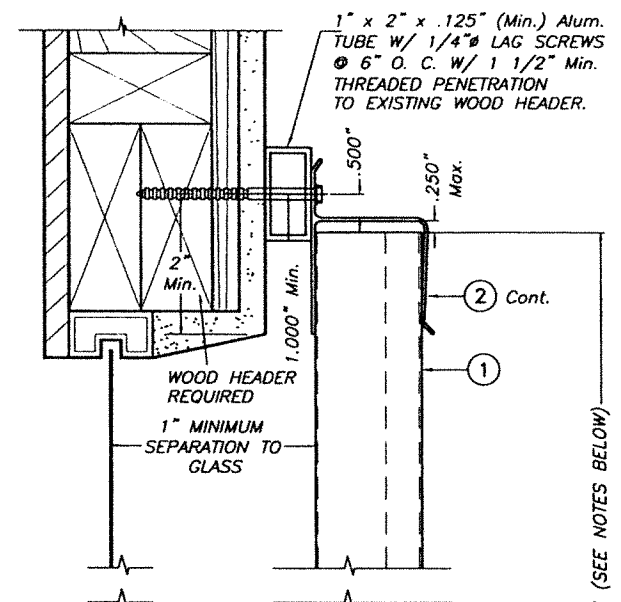
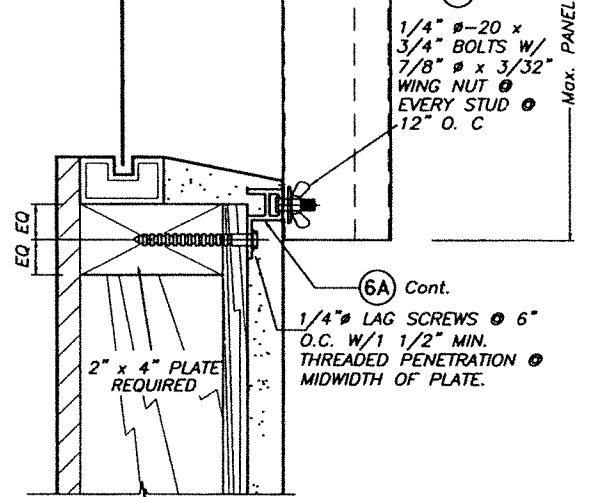
ALTERNATIVE 2



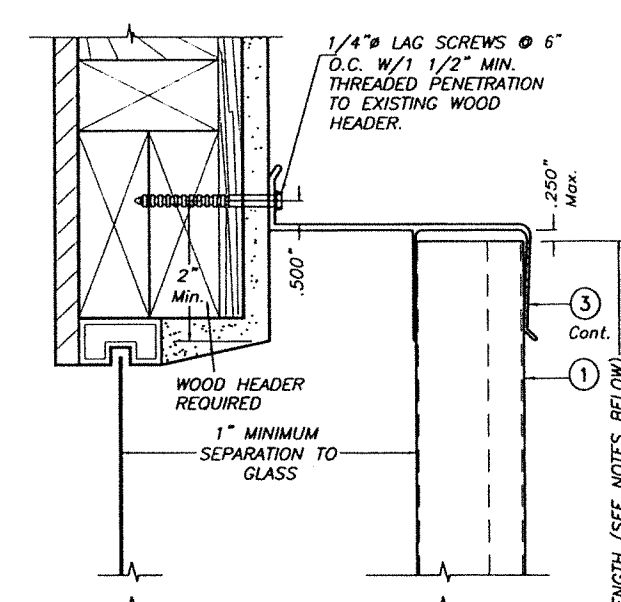
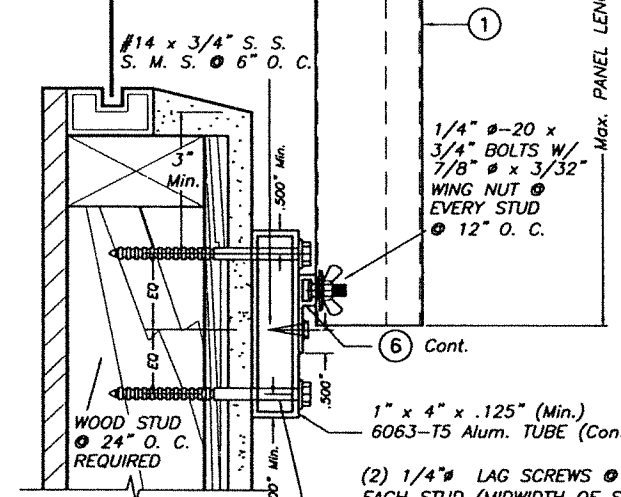
ALTERNATIVE 3



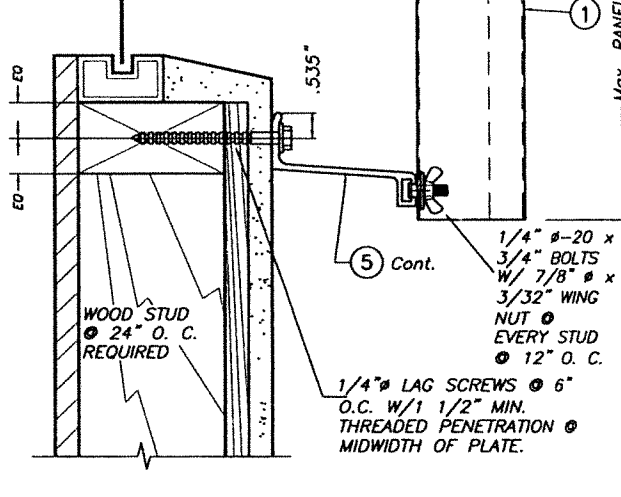
ALTERNATIVE 4



ALTERNATIVE 5



ALTERNATIVE 6



WALL MOUNTING INSTALLATIONS

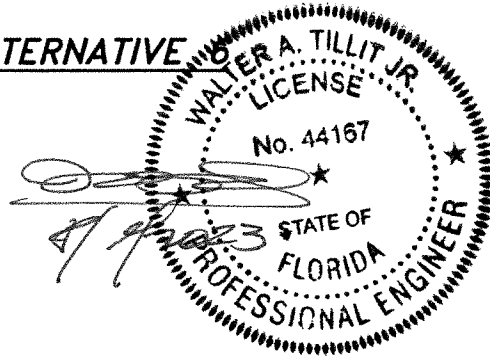
SECTIONS A

SCALE : 1/4" = 1"

INSTALLATION DETAILS ON EXISTING WOOD BUILDINGS

NOTE FOR COMBINATION OF SECTIONS:
WALL MOUNTING SECTIONS CAN BE COMBINED IN ANY WAY TO SUIT ANY INSTALLATION.

NOTES:
1. INSTALLATIONS ARE ONLY VALID FOR MAX. A.S.D. DESIGN PRESSURE RATING UP TO +60.0, -65.0 psf AND PANEL'S LENGTHS UP TO 7'-8".
2. FOR WOOD FRAME CONSTRUCTION: WOOD MEMBERS TO BE SOUTHERN PINE No. 2, W/ SPECIFIC DENSITY OF 0.55 OR EQUAL.



FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

© 2023 TILTECO, INC. 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		24 GAGE GALVANIZED BERTHA STEEL STORM PANEL (2.25" DEEP) EASTERN METAL SUPPLY, INC 4268 WEST ROADS DRIVE WEST PALM BEACH, FL 33407 PHONE: (561)209-8263 FAX: (561)841-1716		Y.M. DRAWN BY: 8/9/2023 DATE: 23-160 DRAWING No SHEET 7 OF 8	
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-181	8/9/2023	3		
2			4		

