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Florida Department of
Business & Professional Regulation



Product Approval
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FL # **FL11964-R1**
Application Type **Revision**
Code Version **2010**
Application Status **Approved**
Comments
Archived

Product Manufacturer
Address/Phone/Email

Eastern Metal Supply
4268 Westroads Drive
West Palm Beach, FL 33407
(800) 432-2204
lrdriguez@easternmetal.com

Authorized Signature

Bill Feeley
lrdriguez@easternmetal.com

Technical Representative
Address/Phone/Email

Quality Assurance Representative
Address/Phone/Email

Category
Subcategory

Shutters
Storm Panels

Compliance Method

Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer
Evaluation Report - Hardcopy Received

Florida Engineer or Architect Name who developed the Evaluation Report
Walter A. Tillit, Jr

Florida License
PE-44167
Quality Assurance Entity
National Accreditation and Management Institute
Quality Assurance Contract Expiration Date
12/31/2013
Validated By
John Henry Kampmann Jr.
Validation Checklist - Hardcopy Received

Certificate of Independence

FL11964_R1_COI_EASTERN METAL_Certification of Independence
[drwg_11-226.pdf](#)

Referenced Standard and Year (of Standard)

Standard	Year
ASTM E1886	2002
ASTM E1996	2002
ASTM E330	2002

Equivalence of Product Standards
Certified By

Sections from the Code

Product Approval Method

Method 1 Option D

Date Submitted
Date Validated
Date Pending FBC Approval
Date Approved

12/16/2011
12/16/2011
01/03/2012
01/31/2012

Summary of Products

FL #	Model, Number or Name	Description
11964.1	0.050" Bertha Aluminum Storm Panel (2 inch) - Drawing number 11-221	Corrugated aluminum Storm Panels retained or not by tracks to provide hurricane protection.
Limits of Use Approved for use in HVHZ: No Approved for use outside HVHZ: Yes Impact Resistant: Yes Design Pressure: N/A Other: Large missile. Max. span is 13'-0" for +30, -30 p.s.f. ASD and 4'-0" for +90, -130 p.s.f. ASD for retained panels. See sheet 2 of installation drawing for other spans and pressures.		Installation Instructions FL11964_R1_II_EASTERN METAL_DRWG 11-221.pdf Verified By: American Test Lab of South Florida Inc. Created by Independent Third Party: Yes Evaluation Reports FL11964_R1_AE_EASTERN METAL_Product evaluation report drwg 11-221.pdf Created by Independent Third Party: Yes
11964.2	24 Gage Bertha Galvanized Steel Panel (2 inch) - Drawing number 11-226	Corrugated steel storm panels retained or not by tracks to provide hurricane protection.
Limits of Use Approved for use in HVHZ: No Approved for use outside HVHZ: Yes Impact Resistant: Yes Design Pressure: N/A Other: Large Missile. Max. span is 9'-10" for +32.6, -32.6 p.s.f. ASD and 2'-8" for +58.0, -58.0 p.s.f. ASD See sheet 2 of installation drawing number 08-149 for other spans and pressures.		Installation Instructions FL11964_R1_II_EASTERN METAL_DRWG 11-226.pdf Verified By: American Test Lab of South Florida Inc. Created by Independent Third Party: Yes Evaluation Reports FL11964_R1_AE_EASTERN METAL_Product evaluation report drwg 11-226.pdf Created by Independent Third Party: Yes

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[Next](#)

Contact Us :: 1940 North Monroe Street, Tallahassee, FL 32399 Phone: 850-487-1824

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Product Approval Accepts:



GENERAL NOTES:

1. 24 GAGE BERTHA GALVANIZED STEEL STORM PANEL (2" DEEP) SHOWN ON THIS PRODUCT EVALUATION DOCUMENT (P.E.D.) HAS BEEN VERIFIED FOR COMPLIANCE IN ACCORDANCE WITH THE 2010 FLORIDA BUILDING CODE. THIS 24 GAGE BERTHA GALVANIZED STEEL STORM PANEL (2" DEEP) 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 BY THE JURISDICTION WHERE THESE SHUTTERS WILL BE INSTALLED AND FOR A DIRECTIONALITY FACTOR $K_d=0.85$. USING ASCE 7-10 FOR INSTALLATIONS UNDER 2010 FBC AND SHALL NOT EXCEED THE MAXIMUM (A.S.D.) DESIGN PRESSURE RATINGS INDICATED ON SHEETS 2, 6 THRU 10. IN ORDER TO VERIFY THE ABOVE CONDITION, ULTIMATE DESIGN WIND LOADS DETERMINED PER ASCE 7-10 SHALL BE FIRST REDUCED TO A.S.D. DESIGN WIND LOADS BY MULTIPLYING THEM BY 0.6 IN ORDER TO TO COMPARE THESE W/ MAX. (A.S.D.) DESIGN PRESSURE RATINGS INDICATED ON SHEETS 2, 6 THRU 10.

24 GAGE BERTHA GALVANIZED STEEL STORM PANEL (2" DEEP) ADEQUACY FOR IMPACT AND CYCLIC RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1609.1.2 OF THE ABOVE MENTIONED CODE, AS PER AMERICAN TESTING LAB OF SOUTH FLORIDA; REPORT # 0304.01-08, AS PER ASTM E 1886-05, ASTM E 1996-05 AND ASTM E 330-02 STANDARDS; AS WELL AS REPORT # 1220.01-05 AS PER ASTM E 1886-02, ASTM E 1996-02 AND ASTM E 330-02 STANDARDS AND REPORT # 0926.01-03 AS PER ASTM E 1886-97, E 1996-02 AND ASTM E 330-02 STANDARDS, QUALIFIED FOR WIND ZONES 1, 2 AND 3, MISSILE TYPE D (BASIC PROTECTION ONLY) AND FOR INSTALLATIONS AT NON ESSENTIAL FACILITIES AS DEFINED BY SECTIONS 6.2.1.1 AND 6.2.1.2 OF ASTM E 1996-02 AND ASTM E 1996-05.

2. ALL STEEL SHEET METAL PANELS SHALL HAVE STRUCTURAL QUALITY ASTM A-653, GRADE 80 WITH MIN $F_y = 106.0$ ksi, WITH G-90 GALVANIZED STEEL DESIGNATION.

3. ALL ALUMINUM EXTRUSIONS SHALL BE ALUMINUM ASSOCIATION 6063-T6 ALLOY & TEMPER UNLESS OTHERWISE NOTED. THE THICKNESS OF ALL EXTRUSIONS SHALL BE AS SHOWN ON THIS DRAWING. STORM PANEL COMPONENTS 10 STUDDED SNAP TRACK AND 11 FEMALE COVER CAP ARE PATENT PENDING.

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, $f'_c = 3192$ psi, MIN.
- 1/4" # TAPCON ANCHORS AS MANUFACTURED BY I.T.W. BUILDEX.
 - 1/4" # S.G. TAPCONS AS MANUFACTURED BY I.T.W. BUILDEX.
 - 1/4" # 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".

A.2) MINIMUM EMBEDMENT OF 1/4" # 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" #-20 S.S. MACHINE SCREW (SIDEWALK BOLT OR TRUSS HEAD) USED SHALL BE 1 1/2" LONG MINIMUM SHOULD STUCCO EXIST, AND 1" MINIMUM FOR WALLS WITH NO STUCCO.

A.3) 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, ASTM C-90 UNITS:

- 1/4" # TAPCON ANCHORS AS MANUFACTURED BY I.T.W. BUILDEX.
- 1/4" # S.G. TAPCONS AS MANUFACTURED BY I.T.W. BUILDEX W/ $f'_m = 1500$ psi, MIN.
- 1/4" # x 3/4" ALL POINTS SOLID-SET ANCHORS AS DISTRIBUTED BY ALL POINTS SCREW, BOLT & SPECIALTY COMPANY W/ $f'_m = 1800$ psi, MIN.

NOTES:

B.1) MINIMUM EMBEDMENT OF TAPCON INTO CONCRETE BLOCK UNIT SHALL BE 1 1/4".

B.2) MINIMUM EMBEDMENT OF 1/4" # 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" #-20 S.S. MACHINE SCREW (SIDEWALK BOLT OR TRUSS HEAD) USED SHALL BE 1 1/2" LONG MINIMUM SHOULD STUCCO EXIST, AND 1" MINIMUM FOR WALLS WITH NO STUCCO.

B.3) 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 B.1) AND B.2) ABOVE.

- (C) TO EXISTING WOOD FRAME BUILDINGS, WITH SPECIFIC GRAVITY $G = 0.55$
- 1/4" # TAPCON ANCHORS AS MANUFACTURED BY I.T.W. BUILDEX.
 - 1/4" # S.G. TAPCONS AS MANUFACTURED BY I.T.W. BUILDEX.
 - 1/4" # SAMMYS SCREW ANCHORS (SSC) AS MANUFACTURED BY ITW BUILDX.

NOTES:

C.1) MINIMUM THREADED PENETRATION OF TAPCONS, S.G. OR SAMMYS SCREW ANCHORS (SSC) INTO WOOD UNIT SHALL BE 1 1/2".

C.2) ANCHORAGE SHALL BE PERFORMED BEYOND ANY FINISH MATERIAL AT WALL LIKE BRICK VENEER, STUCCO OR ANY OTHER FINISH. ANCHORAGE SHALL BE AS INDICATED ON NOTE C.1) ABOVE.

(D) 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 5 (SHEETS 4 & 5 FOR CONCRETE/BLOCK SUBSTRATES) AND ALTERNATIVES 1 THRU 6 (SHEETS 8 & 9 FOR WOOD SUBSTRATES) EXCEPT THAT HEADERS 2, 2A, 3 & 4 SHALL NOT BE USED.

8. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE WHERE PANEL IS TO BE ATTACHED TO INSURE PROPER ANCHORAGE. THIS PANEL SHALL ONLY BE ATTACHED TO POURED CONCRETE, CONCRETE BLOCK OR WOOD FRAME BUILDINGS.

9. THE INSTALLATION CONTRACTOR IS TO SEAL/CAULK ALL PANEL 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. 24 GAGE BERTHA GALVANIZED STEEL STORM PANEL (2" DEEP) SHALL COMPLY WITH SPECIFICATIONS INDICATED IN THIS DRAWING PLUS ANY BUILDING AND ZONING REGULATIONS PROVIDED BY THE JURISDICTION WHERE PERMIT IS APPLIED TO.

11. SHUTTER MANUFACTURER'S LABEL SHALL BE LOCATED ON A READILY VISIBLE LOCATION AT PANEL IN ACCORDANCE WITH SECTION 1715.8.3 OF FLORIDA BUILDING CODE. ONE LABEL SHALL BE PLACED FOR EVERY OPENING. LABELING TO COMPLY WITH SECTION 1715.8.2 OF THE FLORIDA BUILDING CODE.

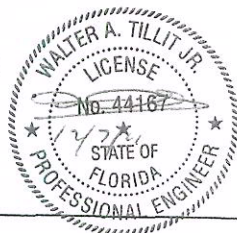
12. (a) THIS P.E.D. PREPARED BY THIS ENGINEER IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SITE SPECIFIC PROJECT; I.e. WHERE THE SITE CONDITIONS DEVIATE FROM THE P.E.D.

(b) CONTRACTOR TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION INCLUDING LIFE SAFETY OF THIS PRODUCT, BASED ON THIS P.E.D. PROVIDED HE/SHE DOES NOT DEVIATE FROM THE CONDITIONS DETAILED ON THIS DOCUMENT. CONSTRUCTION SAFETY AT SITE IS THE CONTRACTOR'S RESPONSIBILITY.

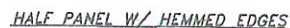
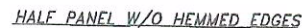
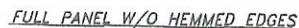
(c) THIS P.E.D. WILL BE CONSIDERED INVALID IF ALTERED BY ANY MEANS.

(d) SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A PROFESSIONAL ENGINEER OR REGISTERED ARCHITECT WHICH WILL BECOME THE ENGINEER OF RECORD (E.O.R.) FOR THE PROJECT AND WHO WILL BE RESPONSIBLE FOR THE PROPER USE OF THE P.E.D. ENGINEER OF RECORD, ACTING AS A DELEGATED ENGINEER TO THE P.E.D. ENGINEER, SHALL SUBMIT TO THIS LATTER THE SITE SPECIFIC DRAWINGS FOR REVIEW.

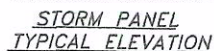
(e) THIS P.E.D. SHALL BEAR THE DATE AND ORIGINAL SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT.



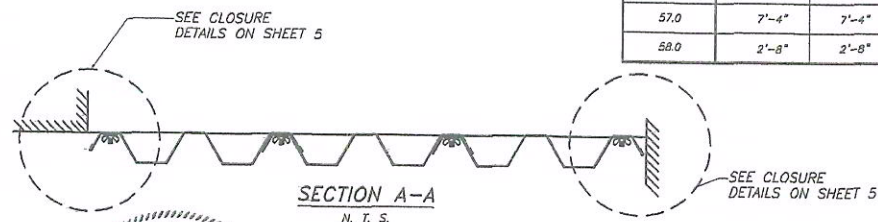
FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)			
24 GAGE GALVANIZED BERTHA STEEL STORM PANEL (2" DEEP)			F.S./R.E./A.G. DRAWN BY:
EASTERN METAL SUPPLY, INC.			12/06/11 DATE:
4268 WEST ROADS DRIVE WEST PALM BEACH, FL 33407 PH: (561) 533-5061 FAX: (561) 588-4780			11-226 DRAWING No.
REV. No.	DESCRIPTION	DATE	REV. No.
1	GLB CR-119	12/06/11	3
2	-	-	4



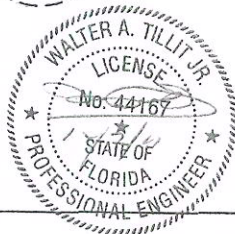
① STORM PANEL
SCALE 3/8" = 1"



N. T. S.



N. T. S.



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

0 NOTES:

(1) L+: MAXIMUM ALLOWABLE PANEL LENGTH FOR A GIVEN POSITIVE A.S.D. DESIGN LOAD.
L-: MAX. ALLOWABLE PANEL LENGTH FOR A GIVEN NEGATIVE A.S.D. DESIGN LOAD.

(2) PROCEDURE TO DETERMINE MAXIMUM PANEL LENGTH FOR WALL MOUNTINGS OR FLOOR/CEILING:
GIVEN A POSITIVE A.S.D. DESIGN LOAD, DETERMINE MAXIMUM PANEL LENGTH "L+" FROM SCHEDULE.
GIVEN A NEGATIVE A.S.D. DESIGN LOAD, DETERMINE MAXIMUM PANEL LENGTH "L-" FROM SCHEDULE.
FINAL MAXIMUM ALLOWABLE PANEL LENGTH IS EQUAL TO THE MINIMUM DETERMINED PANEL LENGTH BETWEEN "L+" AND "L-"

(3) MINIMUM PANEL LENGTH TO BE 48"

SCHEDULE # 1

VALID FOR POURED CONCRETE, CONCRETE BLOCK AND
WOOD SUBSTRATE INSTALLATIONS*

MAXIMUM PANEL LENGTH "L+" OR "L-" (ft.) 0		
MAXIMUM A.S.O. DESIGN PRESSURE RATING (p.s.i.) (+ or -)	CONCRETE, CONCRETE BLOCK & WOOD INSTALLATIONS	
	Max. PANEL LENGTH L+ (ft.)	Max. PANEL LENGTH L- (ft.)
32.6	9'-10"	9'-10"
34.0	9'-7"	9'-10"
36.0	9'-4"	9'-10"
38.0	9'-1"	9'-10"
40.0	8'-10"	9'-10"
42.0	8'-7"	9'-10"
44.0	8'-5"	9'-6"
46.0	8'-3"	9'-1"
48.0	8'-1"	8'-8"
50.0	7'-11"	8'-4"
52.0	7'-9"	8'-0"
54.0	7'-7"	7'-8"
56.0	7'-5"	7'-5"
57.0	7'-4"	7'-4"
58.0	2'-8"	2'-8"

FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

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

F.S./R.E./A.G.
DRAWN BY

EASTERN METAL SUPPLY, INC.

12/06/11

4268 WEST ROADS DRIVE
WEST PALM BEACH, FL 33407
PH: (561) 533-6061 FAX: (561) 588-4780

DATE: _____

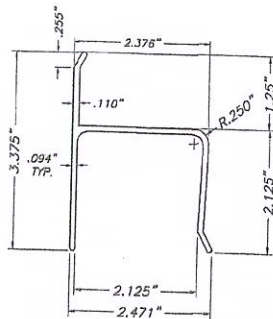
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD CB-149	12/08/11	3	-	-

11-226
DRAWING No

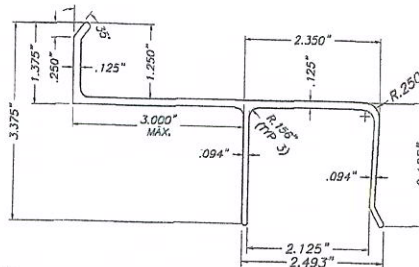
SHEET 2 OF 1



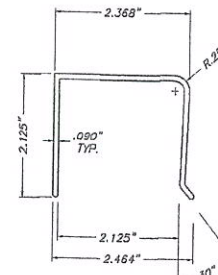
② "h" HEADER



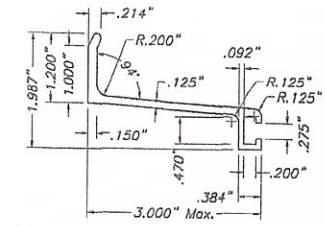
②A "h" HEADER (OPTIONAL)



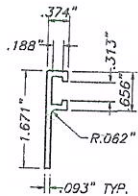
③ BUILD OUT "h" HEADER (3" MAX.)



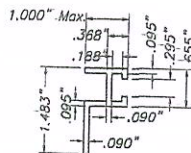
④ "U" HEADER



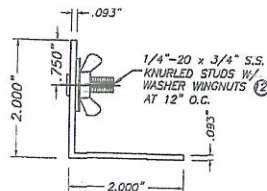
⑤ 3" ANGLE BUILD OUT BRACKET



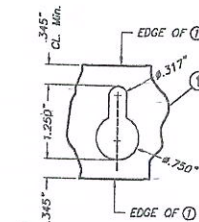
⑥ "F" TRACK



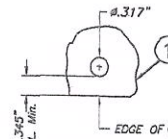
⑦ 1" STUCCO TRACK



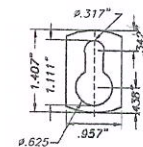
⑧ STUDDED ANGLE



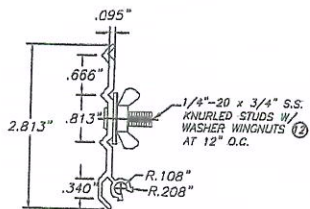
⑨ LARGE KEY HOLE



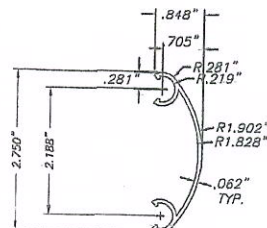
⑨A ROUND HOLE AT PANEL



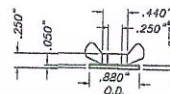
⑨B KEY HOLE WASHER
3105-H154 ALUM. ALLOY



⑩ STUDDED SNAP TRACK



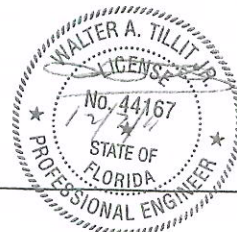
⑪ FEMALE COVER CAP



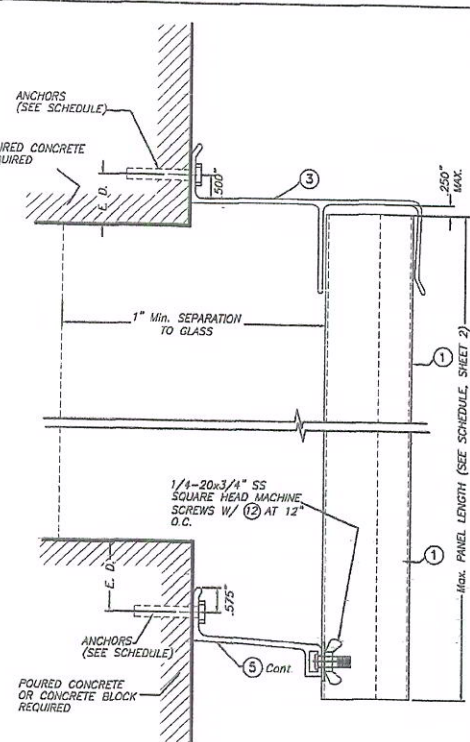
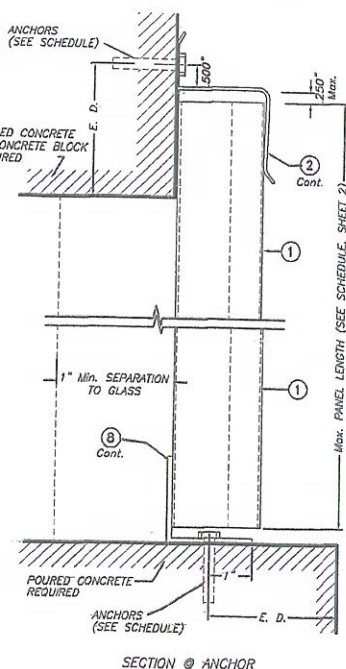
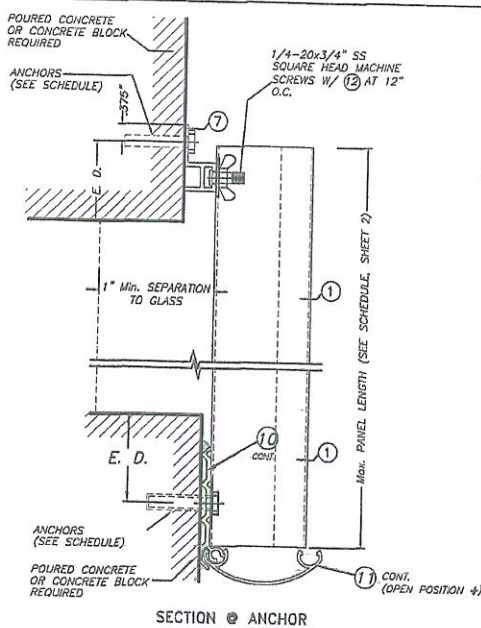
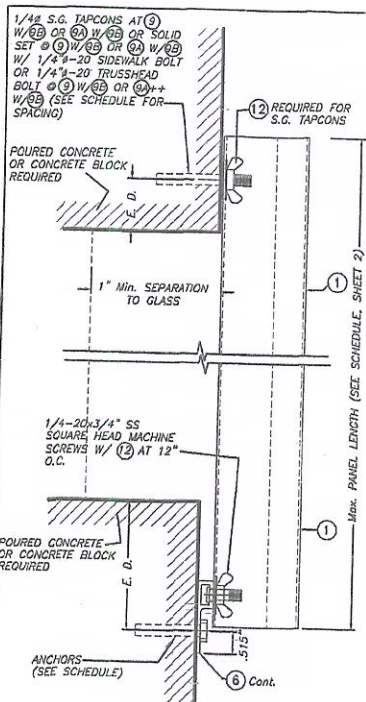
⑫ WASHERED WING NUT
DIE CAST (ZINC # 7)
NICKEL PLATED

COMPONENTS

SCALE: 1/2" = 1"



FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)			
24 GAGE GALVANIZED BERTHA STEEL STORM PANEL (2" DEEP)		F.S./R.E./A.G. DRAWN BY:	
EASTERN METAL SUPPLY, INC.		12/06/11 DATE:	
4268 WEST ROADS DRIVE WEST PALM BEACH, FL 33407 PH: (561) 533-6061 FAX: (561) 598-4780		11-226 DRAWING No	
REV. No	DESCRIPTION	DATE	SHEET 3 OF 10
1	OLD DR-149	12/04/11	
2			

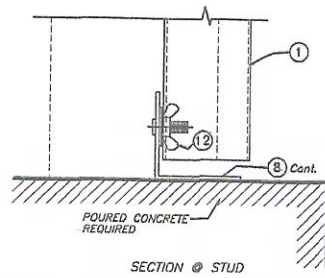
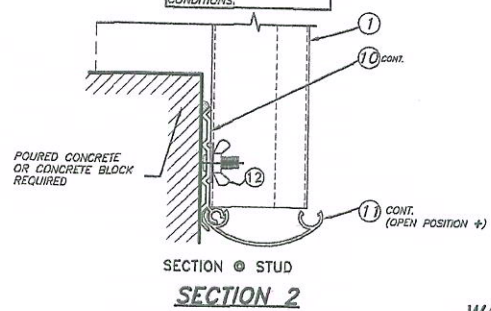


BUILD OUT INSTALLATION SECTION 4

++ SIDE WALK BOLTS ARE 3/4"x3/32" THICK HEAD MACHINE SCREW W/LENGTH AS PER NOTES A.2 & B.2 (SHEET 1)

++ TRUSS HEAD BOLTS ARE 1/2"x1/8" THICK HEAD MACHINE SCREW W/LENGTH AS PER NOTES A.2 & B.2 (SHEET 1)

SECTION 1

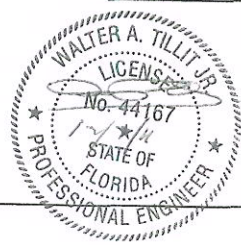


WALL MOUNTING INSTALLATION

WALL & FLOOR MOUNTING INSTALLATION SECTION 3

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

E. D. = EDGE DISTANCE
(SEE SCHEDULE ON SHEET 7)



FLORIDA BUILDING CODE (Non High Velocity Hurricanes Zone)

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TILTECO INC.

TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 20th St., Suite 200, Fort Lauderdale, FL 33309
Phone: (561) 588-1130, Fax: (561) 588-1131

WALTER A. TILLIT JR., P.E.
FLORIDA Lic. # 44167

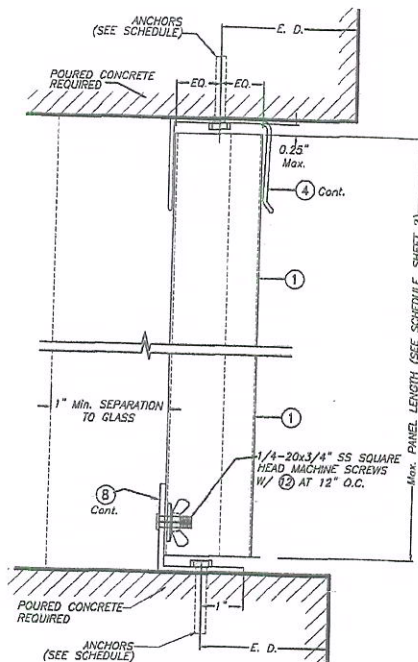
24 GAGE GALVANIZED BERTHA STEEL STORM PANEL (2" DEEP)

EASTERN METAL SUPPLY, INC.

4288 WEST ROADS DRIVE
WEST PALM BEACH, FL 33407
PH: (561) 633-6001 FAX: (561) 588-4780

F.S./R.E./A.G.
DRAWN BY:
DATE:
11-226
DRAWING No
SHEET 4 OF 10

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE
1	OLD 09-119	12/06/11	2		

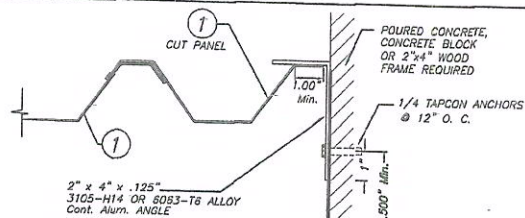


CEILING & FLOOR MOUNTING INSTALLATION - SECTION 5

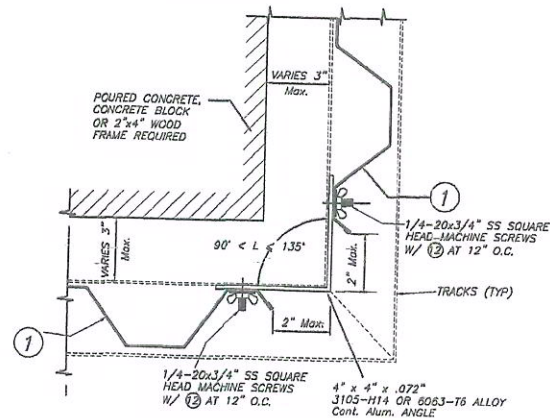
SCALE : 3/8" = 1"

E. D. = EDGE DISTANCE
(SEE SCHEDULE ON
SHEET 6)

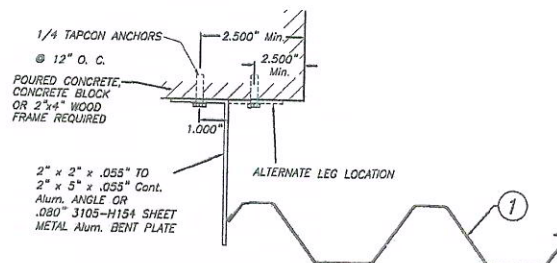
NOTE FOR COMBINATION OF SECTIONS :
WALL/FLOOR/CEILING MOUNTING SECTIONS CAN BE
COMBINED IN ANY WAY TO SUIT ANY INSTALLATION.



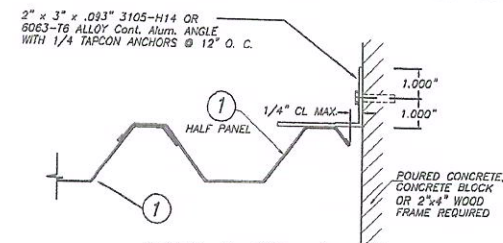
CASE A (Plan)



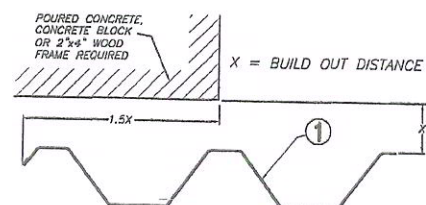
CASE B (Plan)



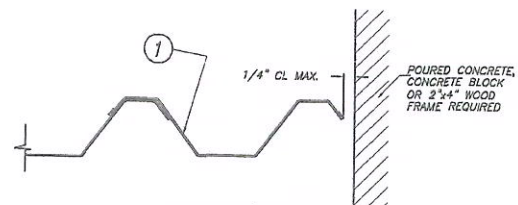
CASE C (Plan)



CASE D (Plan)



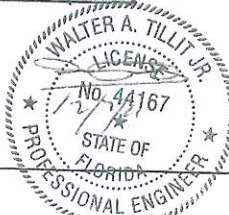
CASE E (Plan)



CASE F (Plan)

END CLOSURES DETAILS

SCALE: 1/4" = 1"



FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

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TILTECO INC.

TILLIT TESTING & ENGINEERING COMPANY
6355 ALK 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166
Phone: (305) 871-1530 Fax: (305) 871-1531
ED-0008719
WALTER A. TILLIT JR., P.E.
FLORIDA Lic. # 44167

24 GAGE GALVANIZED BERTHA STEEL STORM PANEL (2" DEEP)

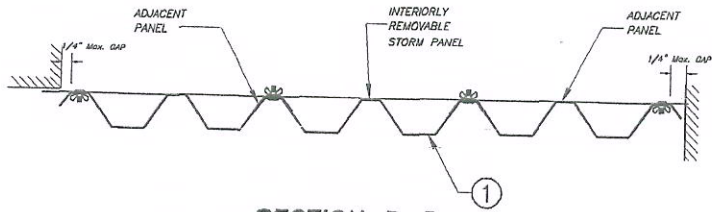
EASTERN METAL SUPPLY, INC.

1268 WEST ROADS DRIVE
WEST PALM BEACH, FL 33407
PH: (561) 533-6061 FAX: (561) 588-4780

F.S./R.E./A.G.
DRAWN BY:
12/06/11
DATE:
11-226
DRAWING No

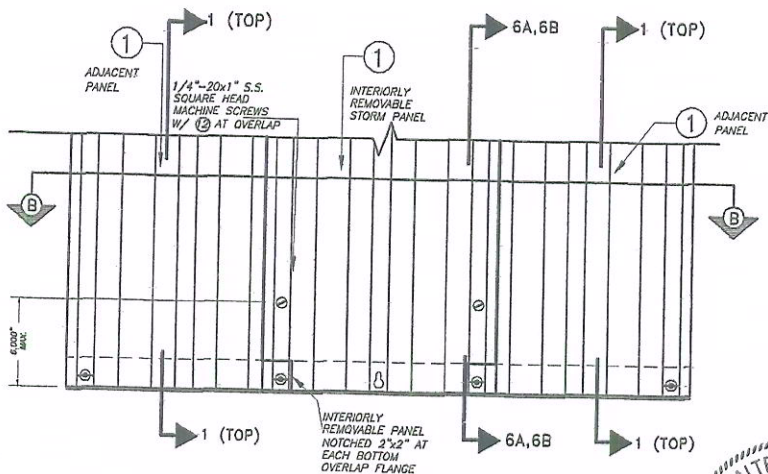
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD CR-149	12/06/11	3		
2			4		

SHEET 5 OF 10



SECTION B-B

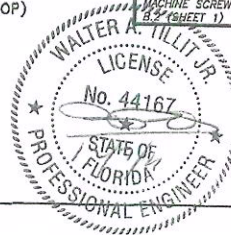
SCALE : N.T.S.



INTERIORLY REMOVABLE STORM PANEL

PARTIAL ELEVATION

SCALE : N.T.S.

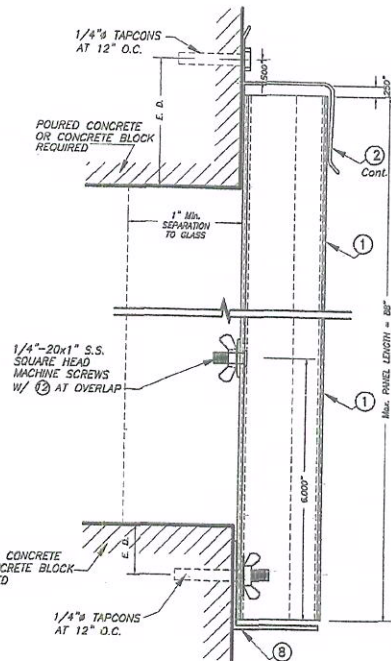


++
SIDE WALK BOLTS ARE 3/4"x3/32" THICK HEAD
MACHINE SCREW W/LENGTH AS PER NOTES A.2 &
B.2 (SHEET 1)
++
TRUSS HEAD BOLTS ARE 1/2"x1/8" THICK HEAD
MACHINE SCREW W/LENGTH AS PER NOTES A.2 &
B.2 (SHEET 1)

WALL MOUNTING INSTALLATION

SECTION 6A

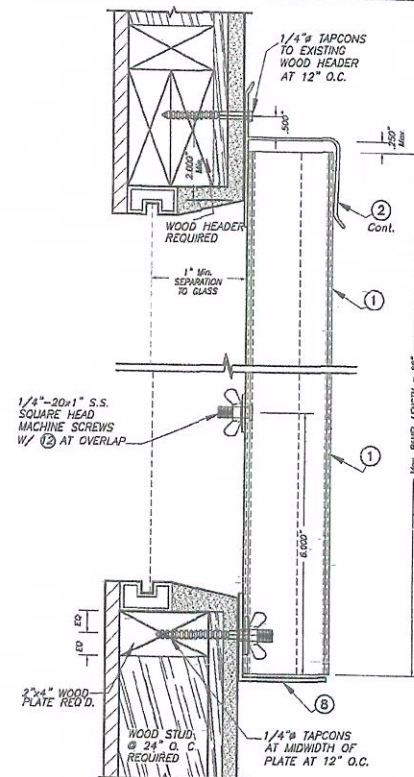
SCALE : 3/8" = 1"



WALL MOUNTING INSTALLATION

SECTION 6B

SCALE : 3/8" = 1"



INTERIORLY REMOVABLE STORM PANEL SECTIONS

MAX. A.S.D. DESIGN PRESSURE RATING = +57.0, -57.0 p.s.f.

FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

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TILTECO INC.
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6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166
Phone : (305) 871-1530 ; Fax : (305) 871-1531
EB-0008719
WALTER A. TILLIT JR. P.E.
FLORIDA Lic. # 44167

24 GAGE GALVANIZED BERTHA STEEL STORM PANEL (2" DEEP)				F.S./R.E./A.G.
EASTERN METAL SUPPLY, INC.				DRAWN BY:
4358 WEST ROADS DRIVE WEST PALM BEACH, FL 33407 PH: (561) 533-6061 FAX: (561) 588-4780				12/06/11 DATE:
REV. No. DESCRIPTION DATE DESIGNED BY DATE				11-226 DRAWING No.
1	OLD 08-149	12/06/11	J	-
2	-	-	-	-

SHEET 6 OF 10

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

MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.)	MAXIMUM ANCHOR SPACING FOR E. D. = 3 1/2" ±						APPLICABLE TO SECTIONS 7 & 8 ANY COMBINATION OF THEM	MAXIMUM PANEL LENGTH "L" (ft.)
	REGULAR TAPCONS		SOLID SET		S.G. TAPCON			
	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY		
+40.0, -40.0 OR LESS	N/A	N/A	12"	12"	12"	12"	1 (TOP)	6'-0" OR LESS
	12"	12"	12"	12"	12"	12"	1 (BOTTOM)	
	12"	12"	12"	12"	12"	12"	2 (TOP)	
	12"	12"	12"	12"	12"	12"	2 (BOTTOM)	
	12"	12"	12"	12"	12"	12"	3 (TOP)	
	12"	N/A	12"	N/A	12"	N/A	3 (BOTTOM)	
	12"	N/A	12"	N/A	12"	N/A	4 (TOP)	
	12"	12"	12"	12"	12"	12"	4 (BOTTOM)	
	12"	12"	12"	12"	12"	12"	5 (TOP)	
	12"	12"	12"	12"	12"	12"	5 (BOTTOM)	

MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.)	MAXIMUM ANCHORS SPACING FOR E. D. = 3 1/2" ±						APPLICABLE TO SECTION 7 & ANY COMBINATION OF THEM	MAXIMUM PANEL LENGTH "L" (ft.)
	REGULAR TAPCONS		SOLID SET		S.G. TAPCON			
	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY		
+40.0, -40.0 OR LESS	N/A	N/A	12"	12"	12"	12"	1 (TOP)	2'-0" UP TO 9'-10"
	12"	11"	12"	12"	12"	12"	1 (BOTTOM)	
	12"	11"	12"	12"	12"	12"	2 (TOP)	
	12"	12"	12"	12"	12"	12"	2 (BOTTOM)	
	12"	11"	12"	12"	12"	12"	3 (TOP)	
	12"	N/A	12"	N/A	12"	N/A	3 (BOTTOM)	
	12"	N/A	12"	N/A	12"	N/A	4 (TOP)	
	12"	11"	12"	12"	12"	12"	4 (BOTTOM)	
	12"	12"	12"	12"	12"	12"	5 (TOP)	
	12"	12"	12"	12"	12"	12"	5 (BOTTOM)	

MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.)	MAXIMUM ANCHORS SPACING FOR E. D. = 3 1/2"±						APPLICABLE TO SECTIONS 7 & ANY COMBINATION OF THEM	MAXIMUM PANEL LENGTH "L" (ft.)
	REGULAR TAPCONS		SOLID SET		S.S.TAPCON			
	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY		
+40.0, -40.0 UP TO +50.0, -50.0	N/A	N/A	12"	12"	12"	12"	1 (TOP)	6'-0" OR LESS
	12"	12"	12"	12"	12"	12"	1 (BOTTOM)	
	12"	12"	12"	12"	12"	12"	2 (TOP)	
	12"	12"	12"	12"	12"	12"	2 (BOTTOM)	
	12"	12"	12"	12"	12"	12"	3 (TOP)	
	12"	N/A	12"	N/A	12"	N/A	3 (BOTTOM)	
	12"	N/A	12"	N/A	12"	N/A	4 (TOP)	
	12"	12"	12"	12"	12"	12"	4 (BOTTOM)	
	12"	12"	12"	12"	12"	12"	5 (TOP)	
	12"	12"	12"	12"	12"	12"	5 (BOTTOM)	

ANCHORS LEGEND

ANCHOR TYPE	MIN. ANCHOR SPACING
TAPCON (REGULAR OR S.G.)	3.0"
SOLID SET	2.5"

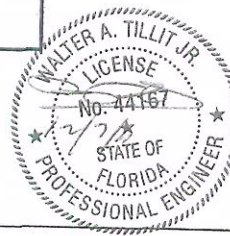
E. D. = EDGE DISTANCE

MAXIMUM A.S.D. DESIGN PRESSURE RATING (P.S.F.)	MAXIMUM ANCHORS SPACING FOR E. D. = 3 1/2" ±						APPLICABLE TO SECTIONS 7 & 8 ANY COMBINATION OF THEM	MAXIMUM PANEL LENGTH "L" (ft.)
	REGULAR TAPCONS		SOLID SET		S.G. TAPCON			
	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY		
+40.0, -40.0 UP TO +57.0, -57.0	N/A	N/A	12"	12"	12"	12"	1 (TOP)	2'-0" UP TO 7'-4"
	12"	11"	12"	12"	12"	12"	1 (BOTTOM)	
	12"	11"	12"	12"	12"	12"	2 (TOP)	
	12"	12"	12"	12"	12"	12"	2 (BOTTOM)	
	12"	11"	12"	12"	12"	12"	3 (TOP)	
	12"	N/A	12"	N/A	12"	N/A	3 (BOTTOM)	
	12"	N/A	12"	N/A	12"	N/A	4 (TOP)	
	12"	11"	12"	12"	12"	12"	4 (BOTTOM)	
	12"	12"	12"	12"	12"	12"	5 (TOP)	
	12"	12"	12"	12"	12"	12"	5 (BOTTOM)	

MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.)	MAXIMUM ANCHORS SPACING FOR E. D. = 3 1/2" ±						APPLICABLE TO SECTIONS 7 & ANY COMBINATION OF THEM	MAXIMUM PANEL LENGTH "L" (ft.)
	REGULAR TAPCONS		SOLID SET		S.G. TAPCON			
	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY		
+58.0, -58.0 OR LESS	N/A	N/A	12"	12"	12"	12"	1 (TOP)	2'-0" OR LESS
	12"	12"	12"	12"	12"	12"	1 (BOTTOM)	
	12"	12"	12"	12"	12"	12"	2 (TOP)	
	12"	12"	12"	12"	12"	12"	2 (BOTTOM)	
	12"	12"	12"	12"	12"	12"	3 (TOP)	
	12"	N/A	12"	N/A	12"	N/A	3 (BOTTOM)	
	12"	N/A	12"	N/A	12"	N/A	4 (TOP)	
	12"	12"	12"	12"	12"	12"	4 (BOTTOM)	
	12"	12"	12"	12"	12"	12"	5 (TOP)	
	12"	12"	12"	12"	12"	12"	5 (BOTTOM)	

** MAXIMUM ANCHOR SPACINGS ARE VALID FOR 3" EDGE DISTANCE FOR E. D. LESS THAN 3". REDUCE ANCHOR SPACING BY MULTIPLYING SPACING SHOWN ON SCHEDULE BY THE FOLLOWING FACTORS. (NOTE: MIN E. D. FOR SOLIDSET ANCHORS IS 3") FOR THIS OPERATION TO BE POSSIBLE, REDUCED SPACING OBTAINED USING FACTOR SHALL NOT BE LESS THAN MINIMUM SPACING INDICATED FOR EACH ANCHOR TYPE AT ANCHORS LEGEND.

ACTUAL E. D.	FACTOR	
	TAPCON (REGULAR OR S.G.)	SOLID SET
3"	.88	.75
2 1/2"	.71	.50
2"	.50	-



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TILTECO INC.

TILLIT TESTING & ENGINEERING COMPANY
6338 N.W. 56th St., Box 305, Virginia Gardens, FL 33166
Phone: (561) 533-8061 Fax: (561) 568-4780
E-mail: info@tillit.com
WALTER A. TILLIT JR., P.E.
FLORIDA Lic. # 44167

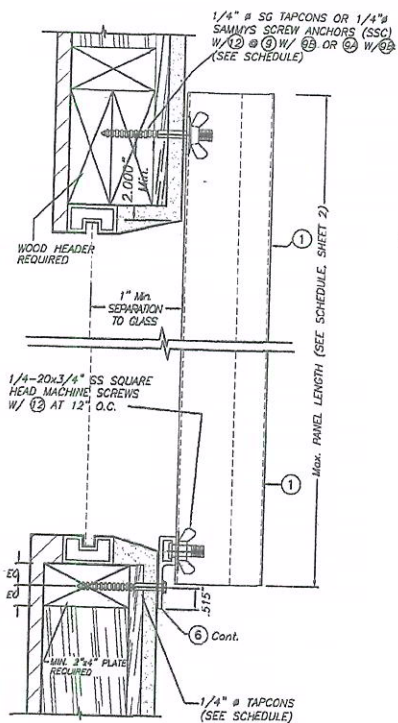
FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

24 GAGE GALVANIZED BERTHA STEEL STORM PANEL (2" DEEP)

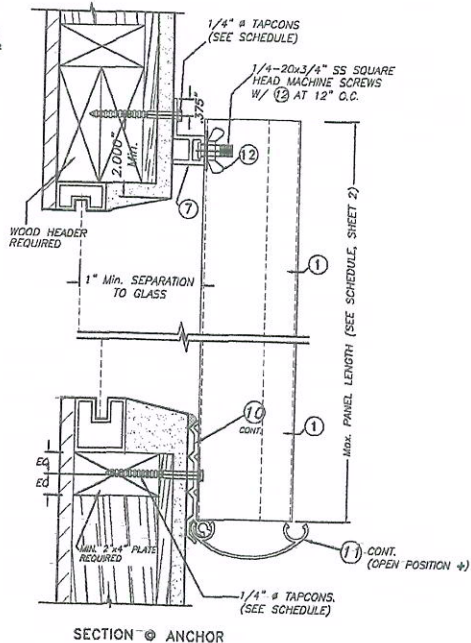
F.S./R.E./A.G.
DRAWN BY:
12/06/11
DATE:
11-226
DRAWING NO.
SHEET 7 OF 10

EASTERN METAL SUPPLY, INC.
4268 WEST ROADS DRIVE
WEST PALM BEACH, FL 33407
PH: (561) 533-8061 FAX: (561) 568-4780

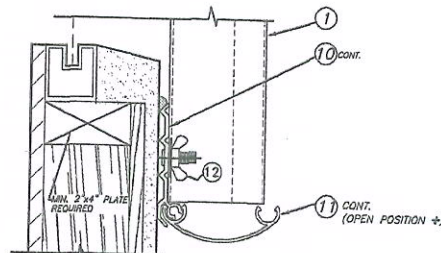
REV. NO.	DESCRIPTION	DATE	REV. NO.	DESCRIPTION	DATE
1	OLD 08-148	12/06/11	2	-	-



ALTERNATIVE 1



SECTION 1 - ANCHOR



SECTION 2 - STUD

ALTERNATIVE 2

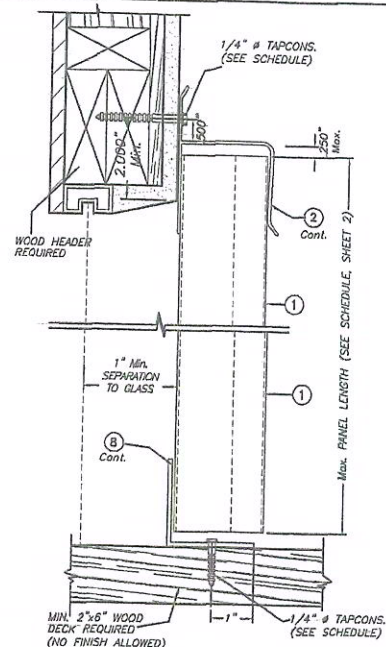
* NOTE: FEMALE COVER CAP (1) TO REMAIN CLOSED AT NON HURRICANE CONDITIONS.

WALL MOUNTING INSTALLATION

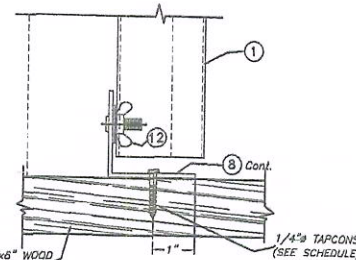
NOTES:

1. INSTALLATIONS ARE ONLY VALID FOR MAX. A.S.D. DESIGN PRESSURE RATING AND PANEL'S LENGTHS AS PER SCHEDULES ON SHEET 2 (EXCEPT AS NOTED)
2. SEE ANCHOR SCHEDULE ON SHEET 10.
3. FOR NEW WOOD FRAME CONSTRUCTION: WOOD MEMBERS TO BE SOUTHERN PINE No. 2, W/ SPECIFIC DENSITY (G) OF 0.55 OR EQUAL.

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



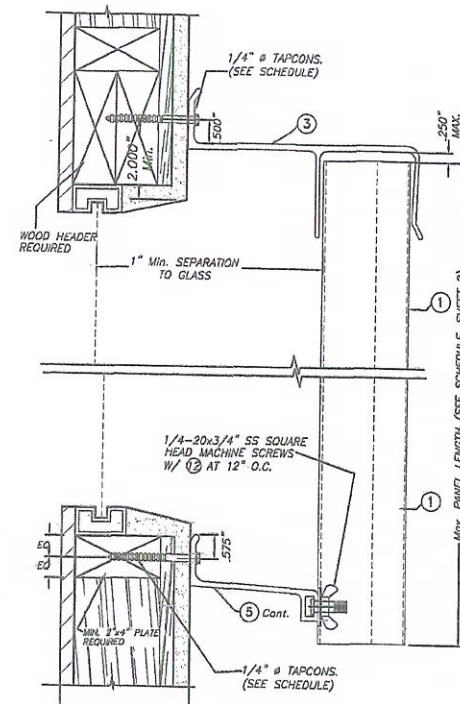
SECTION 1 - ANCHOR



SECTION 2 - STUD

WALL & FLOOR MOUNTING INSTALLATION

ALTERNATIVE 3

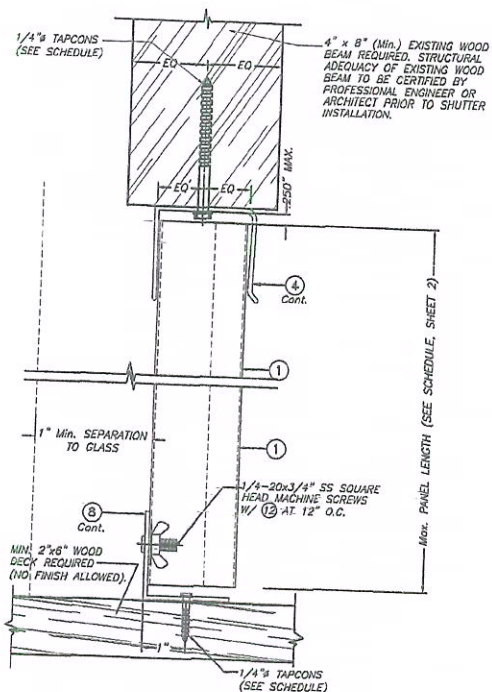


BUILD OUT INSTALLATION
ALTERNATIVE 4

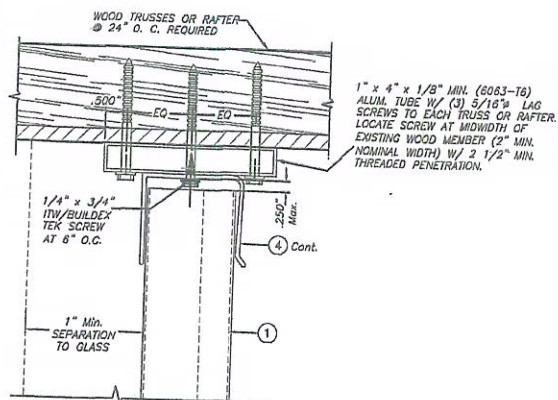


FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

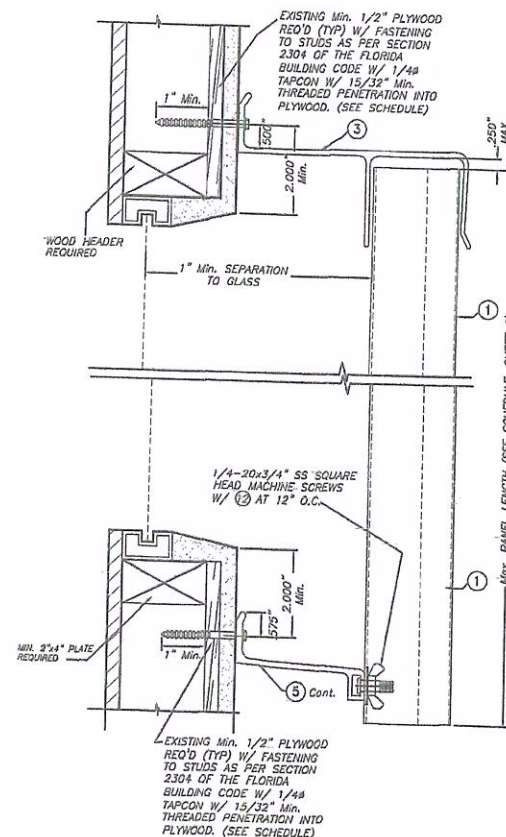
© 2011 TILTECO, INC.		24 GAGE GALVANIZED BERTHA STEEL STORM PANEL (2" DEEP)		F.S./R.E./A.G.	
TILTECO inc.		EASTERN METAL SUPPLY, INC.		DRAWN BY:	
TILLIT TESTING & ENGINEERING COMPANY		4268 WEST ROADS DRIVE		DATE:	
8353 N.W. 36th St., Ste. 303, VIRGINIA GARDENS, FL 33166		WEST PALM BEACH, FL 33407		11-226	
Phone: (561) 471-1530, Fax: (561) 971-1531		PH: (561) 533-6051 FAX: (561) 588-4780		DRAWING No	
EB-0008719				SHEET 8 OF 10	
WALTER A. TILLIT JR. P.E.					
FLORIDA Lic. # 44167					
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 04-149	12/08/11	3	-	-
2	-	-	4	-	-



**CEILING & FLOOR MOUNTING INSTALLATION
ALTERNATIVE 5**



**OPTION TO
ALTERNATIVE 5
(TOP)**

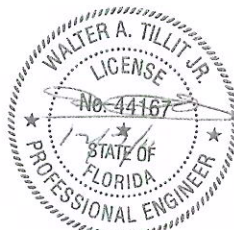


**BUILD OUT INSTALLATION
ALTERNATIVE 6**

NOTE FOR COMBINATION OF SECTIONS :
WALL/FLOOR/CEILING 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
AND PANEL'S LENGTHS AS PER SCHEDULES ON SHEET 2 (EXCEPT AS NOTED)
2. SEE ANCHOR SCHEDULE ON SHEET 10.
3. FOR NEW WOOD FRAME CONSTRUCTION: WOOD MEMBERS TO BE SOUTHERN
PINE No. 2, W/ SPECIFIC DENSITY (G) OF 0.55 OR EQUAL.



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FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

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

F.S./R.F./A.G.
DRAWN BY:

TILTECO INC.

TILLIT TESTING & ENGINEERING COMPANY
6355 ALW. 30th. St., Ste. 305, VIRGINIA BEACH, FL 33506
Phone : (352)871-1830 • Fax : (352)871-1831
ED-0006719

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

EASTERN METAL SUPPLY, INC.

4268 WEST ROADS DRIVE

WEST PALM BEACH, FL 33407

PH: (561) 533-5061 FAX: (561) 588-4780

12/06/11
DATE:

11-226

DRAWING NO

REV. NO.	DESCRIPTION	DATE	REV. NO.	DESCRIPTION	DATE
1	OLD CR-148	12/06/11	1		
2			2		
3			3		

SHEET 9 OF 10

**MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.) AND CORRESPONDING MAXIMUM ANCHOR
SPACING SCHEDULE FOR INSTALLATIONS INTO WOOD FRAME BUILDINGS**

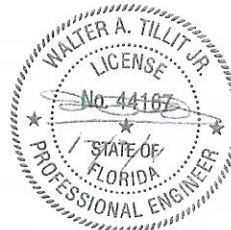
MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.)	WOOD FASTENERS			APPLICABLE TO ALTERNATIVES # 1 & ANY COMBINATION OF THEM	MAXIMUM PANEL LENGTH "L" (ft.)
	REGULAR TAPCONS	S.S. TAPCON	SHIMMS SEC		
+10.0, -40.0 OR LESS	N/A	12"	12"	1 (TOP)	6'-0" OR LESS
	12"	12"	N/A	1 (BOTTOM)	
	12"	12"	N/A	2 (TOP)	
	12"	N/A	N/A	2 (BOTTOM)	
	12"	12"	N/A	3 (TOP)	
	12"	12"	N/A	3 (BOTTOM)	
	12"	12"	N/A	4 (TOP)	
	12"	12"	N/A	4 (BOTTOM)	
	11"	11"	N/A	5 (TOP)	
	12"	12"	N/A	5 (BOTTOM)	
	8"	N/A	N/A	6 (TOP)	
	8"	N/A	N/A	6 (BOTTOM)	

MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.)	WOOD FASTENERS			APPLICABLE TO ALTERNATIVES # 1 & ANY COMBINATION OF THEM	MAXIMUM PANEL LENGTH "L" (ft.)
	REGULAR TAPCONS	S.S. TAPCON	SHIMMS SEC		
+10.0, -40.0 UP TO +57.0	N/A	12"	12"	1 (TOP)	> 6'-0" UP TO 7'-4"
	12"	12"	N/A	1 (BOTTOM)	
	12"	12"	N/A	2 (TOP)	
	12"	N/A	N/A	2 (BOTTOM)	
	12"	12"	N/A	3 (TOP)	
	12"	12"	N/A	3 (BOTTOM)	
	12"	12"	N/A	4 (TOP)	
	12"	12"	N/A	4 (BOTTOM)	
	6.5"	6.5"	N/A	5 (TOP)	
	7"	7"	N/A	5 (BOTTOM)	
	8"	N/A	N/A	6 (TOP)	
	8"	N/A	N/A	6 (BOTTOM)	

MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.)	WOOD FASTENERS			APPLICABLE TO ALTERNATIVES # 1 & ANY COMBINATION OF THEM	MAXIMUM PANEL LENGTH "L" (ft.)
	REGULAR TAPCONS	S.S. TAPCON	SHIMMS SEC		
+10.0, -40.0 OR LESS	N/A	12"	12"	1 (TOP)	> 6'-0" UP TO 9'-10"
	12"	12"	N/A	1 (BOTTOM)	
	12"	12"	N/A	2 (TOP)	
	12"	N/A	N/A	2 (BOTTOM)	
	12"	12"	N/A	3 (TOP)	
	7.5"	7.5"	N/A	3 (BOTTOM)	
	12"	12"	N/A	4 (TOP)	
	12"	12"	N/A	4 (BOTTOM)	
	7"	7"	N/A	5 (TOP)	
	7.5"	7.5"	N/A	5 (BOTTOM)	
	8"	N/A	N/A	6 (TOP)	
	8"	N/A	N/A	6 (BOTTOM)	

MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.)	WOOD FASTENERS			APPLICABLE TO ALTERNATIVES # 1 & ANY COMBINATION OF THEM	MAXIMUM PANEL LENGTH "L" (ft.)
	REGULAR TAPCONS	S.S. TAPCON	SHIMMS SEC		
+58.0, -58.0 OR LESS	N/A	12"	12"	1 (TOP)	2'-8" OR LESS
	12"	12"	N/A	1 (BOTTOM)	
	12"	12"	N/A	2 (TOP)	
	12"	N/A	N/A	2 (BOTTOM)	
	12"	12"	N/A	3 (TOP)	
	12"	12"	N/A	3 (BOTTOM)	
	12"	12"	N/A	4 (TOP)	
	12"	12"	N/A	4 (BOTTOM)	
	12"	12"	N/A	5 (TOP)	
	12"	12"	N/A	5 (BOTTOM)	
	6"	N/A	N/A	6 (TOP)	
	6"	N/A	N/A	6 (BOTTOM)	

MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.)	WOOD FASTENERS			APPLICABLE TO ALTERNATIVES # 1 & ANY COMBINATION OF THEM	MAXIMUM PANEL LENGTH "L" (ft.)
	REGULAR TAPCONS	S.S. TAPCON	SHIMMS SEC		
+10.0, -40.0 UP TO +50.0, -50.0	N/A	12"	12"	1 (TOP)	8'-0" OR LESS
	12"	12"	N/A	1 (BOTTOM)	
	12"	12"	N/A	2 (TOP)	
	12"	N/A	N/A	2 (BOTTOM)	
	12"	12"	N/A	3 (TOP)	
	10"	10"	N/A	3 (BOTTOM)	
	12"	12"	N/A	4 (TOP)	
	12"	12"	N/A	4 (BOTTOM)	
	9"	9"	N/A	5 (TOP)	
	10"	10"	N/A	5 (BOTTOM)	
	6"	N/A	N/A	6 (TOP)	
	6"	N/A	N/A	6 (BOTTOM)	



FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

©2011 TILTECO, INC.		24 GAGE GALVANIZED BERTHA STEEL STORM PANEL (2" DEEP)		F.S./R.E./A.G. DRAWN BY:	
TILTECO INC. TILLIT TESTING & ENGINEERING COMPANY 4255 N.W. 30th St., Ste. 305, Hialeah, Florida, FL 33150 Phone: (305) 971-1530, Fax: (305) 971-1531 ED-0005710 WALTER A. TILLIT JR., P.E. FLORIDA Lic. # 44167		EASTERN METAL SUPPLY, INC. 4268 WEST ROADS DRIVE WEST PALM BEACH, FL 33407 PH: (561) 533-8081 FAX: (561) 588-4780		12/08/11 DATE:	
		11-226 DRAWING No		SHEET 10 OF 10	
REV. NO.	DESCRIPTION	DATE	REV. NO.	DESCRIPTION	DATE
1	OLD 08-118	12/06/11	3	-	-
2	-	-	4	-	-