



MIAMI-DADE COUNTY
BUILDING CODE COMPLIANCE OFFICE (BCCO)
PRODUCT CONTROL DIVISION

MIAMI-DADE COUNTY, FLORIDA
METRO-DADE FLAGLER BUILDING

140 WEST FLAGLER STREET, SUITE 1603
MIAMI, FLORIDA 33130-1563
(305) 375-2901 FAX (305) 375-2908

NOTICE OF ACCEPTANCE (NOA)

www.miamidade.gov

Alufab Hurricane Shutters, Inc.
13000 N.W. 38th Avenue
Opa-Locka, Florida 33054

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed by Miami-Dade County Product Control Division and accepted by the Board of Rules and Appeals (BORA) to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Division (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Division that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: 0.063" Aluminum Storm Panels Shutter

APPROVAL DOCUMENT: Drawing No. **05-146**, titled "0.063" Aluminum Storm Panel", sheets 1 through 8 of 8, prepared by Tilteco, Inc., dated June 19, 2005, last revision #1 dated June 19, 2005, signed and sealed by Walter A. Tillit Jr., P.E., bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and expiration date by the Miami-Dade County Product Control Division.

MISSILE IMPACT RATING: Large and Small Missile Impact

LABELING: Each panel shall bear a permanent label with the manufacturer's name or logo, city, state and the following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA **revises NOA # 03-0515.02** and consists of this page 1, evidence submitted pages E-1, E-2, & E-3 as well as approval document mentioned above.

The submitted documentation was reviewed by **Helmy A. Makar, P.E., M.S.**



Helmy A. Makar
 12/14/2006

NOA No 05-1003.16
Expiration Date: 07/17/2008
Approval Date: 12/14/2006
Page 1

Alufab Hurricane Shutters, Inc.

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #96-1107.03

A. DRAWINGS

1. *Drawing No. 96-279, Alufab Hurricane Shutters, Inc., 0.063" Aluminum Storm Panel, Sheets 1, 2, 3, 4, 5, 6, 7, and 8 of 8, prepared by Tilteco, Inc., dated 06/25/97, signed and sealed by Walter A. Tillit Jr., P.E.*

B. TESTS

1. *Test report on Uniform Static Air Pressure Test, Large Missile Impact Test, and Cyclic Wind Pressure Test of 0.063" thick Aluminum (5052-H32 Alloy) storm panels, prepared by American Test Lab of South Florida, Report No. ATL # 0822.02-96, dated Sept. 24, 1996, signed and sealed by Gerard B. Sullivan, P.E.*

C. CALCULATIONS

1. *Storm panel shutter calculations, Sheets 1 through 14L by Tilteco, Inc., signed and sealed by Walter A. Tillit Jr., P.E., dated 09/18/96.*
2. *Storm panel shutter calculations, Sheets 1 through 24 by Tilteco, Inc., signed and sealed by Walter A. Tillit Jr., P.E., dated 05/12/97.*

D. MATERIAL CERTIFICATIONS

1. *Mill Certified Inspection Report, dated 04/30/96, for Aluminum 5052-H32 Alloy by Mario A. Carrasco of MSC Metals, a Fabwel Company, with chemical composition and physical properties.*
2. *Tensile Test Reports from Certified Testing Laboratories, Job No. CTL-766B dated 09/23/96 for Aluminum, tested per ASTM E8-93, signed and sealed by Ramesh Patel, P.E.*

2. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #00-0128.05

A. DRAWINGS

1. *None.*

B. TESTS

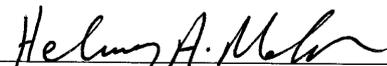
1. *None.*

C. CALCULATIONS

1. *None.*

D. MATERIAL CERTIFICATIONS

1. *None.*



Helmy A. Makar, P. E., M.S.
Product Control Examiner
NOA No 05-1003.16
Expiration Date: 07/17/2008
Approval Date: 12/14/2006

Alufab Hurricane Shutters, Inc.

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

OTHERS

1. *Letter from Alufab Hurricane Shutters, Inc., signed by Bobby Andrade certifies that the product has not changed from the existing drawings of Product Control No. 96-1107.03.*

3. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 03-0225.03

A. DRAWINGS

1. *Drawing No. 03-031, titled " 0.063" Aluminum Storm Panel ", sheets 1 through 8 of 8, prepared by Tilteco, Inc., dated February 10, 2003, last revision #1 dated February 10, 2003 signed and sealed Walter A. Tillit, Jr., P.E.*

B. TESTS

1. *None.*

C. CALCULATIONS

1. *None.*

D. MATERIAL CERTIFICATIONS

1. *None.*

E. STATEMENTS

1. *Letter issued by Mr. Walter A. Tillit, Jr., P.E., dated February 12, 2003, indicating that the only change is update General Note numbers 1 & 10 to reference the Florida Building Code and ASCE 7-98.*

4. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 03-0515.02

A. DRAWINGS

1. *None.*

B. TESTS

1. *None.*

C. CALCULATIONS

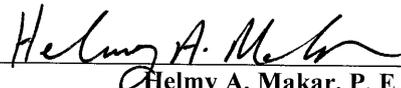
1. *None.*

D. MATERIAL CERTIFICATIONS

1. *None.*

E. STATEMENTS

1. *Letter issued by Mr. Walter A. Tillit, Jr., P.E., dated May 12, 2003, stating that he is still the engineer of record and he is still in the engineering business.*
2. *Letter from Alufab Hurricane Shutters, Inc., dated May 1, 2003, signed by Bobby Andrade, stating that there is no change from existing drawings.*



Helmy A. Makar, P. E., M.S.

Product Control Examiner

NOA No 05-1003.16

Expiration Date: 07/17/2008

Approval Date: 12/14/2006

Alufab Hurricane Shutters, Inc.

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

5. NEW EVIDENCE SUBMITTED

A. DRAWINGS

1. *Drawing No. 05-146, titled " 0.063" Aluminum Storm Panel ", sheets 1 through 8 of 8, prepared by Tilteco, Inc., dated June 19, 2005, last revision #1 dated June 19, 2005, signed and sealed by Walter A. Tillit Jr., P.E.*

B. TESTS

1. *None.*

C. CALCULATIONS

1. *Revised Anchor Calculations and details for 0.063" Aluminum Storm Panels, dated September 23, 2006, pages 1 through 73, prepared by Tilteco, Inc., signed and sealed by Walter A. Tillit Jr., P.E.*

D. QUALITY ASSURANCE

1. *By Miami-Dade County Building Code Compliance Office.*

E. MATERIAL CERTIFICATIONS

1. *None.*



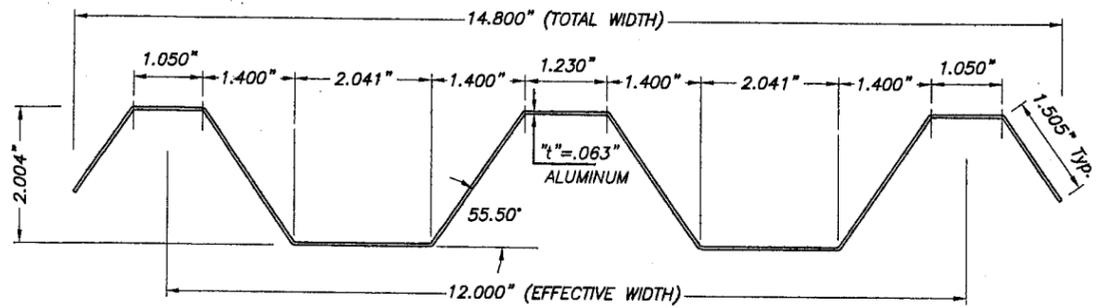
Helmy A. Makar, P. E., M.S.

Product Control Examiner

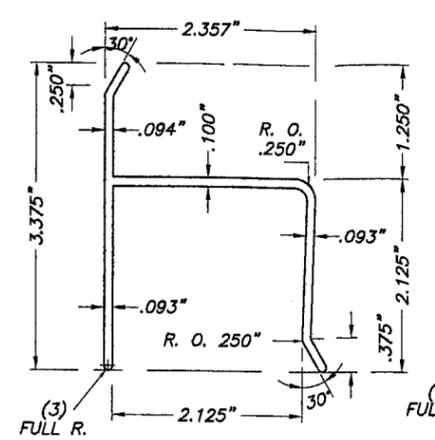
NOA No 05-1003.16

Expiration Date: 07/17/2008

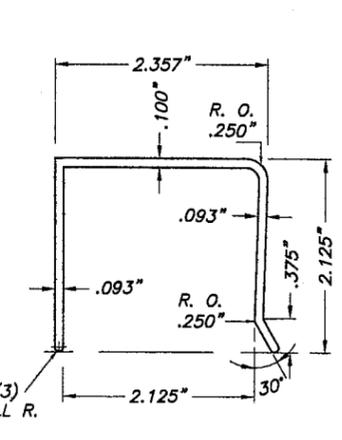
Approval Date: 12/14/2006



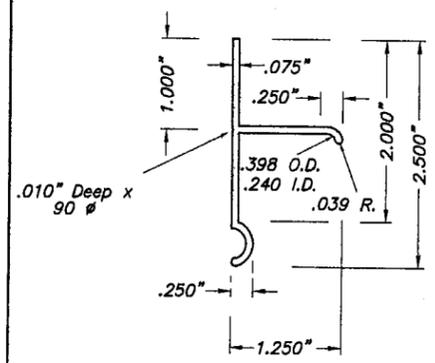
① PANEL
SCALE: 3/8" = 1"



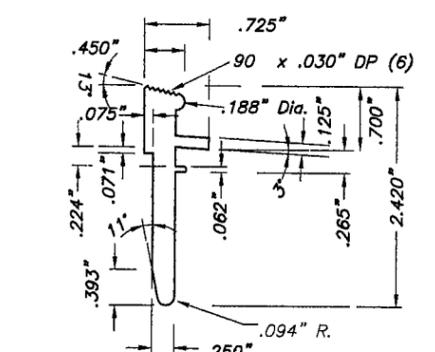
② HEADER
(6005-T5 ALUMINUM ALLOY)
SCALE: 1/2" = 1"



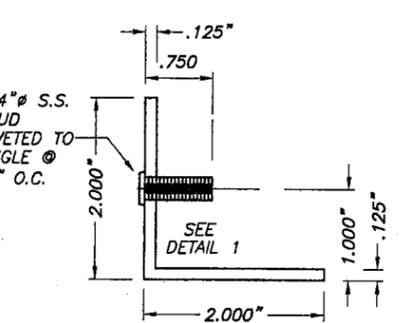
③ HEADER
(6005-T5 ALUMINUM ALLOY)
SCALE: 1/2" = 1"



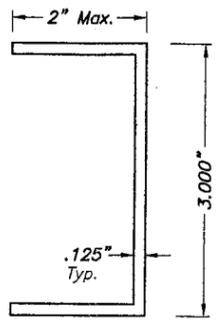
④ "T" TRACK
SCALE: 1/2" = 1"



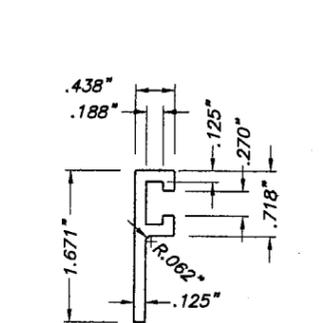
⑤ WEDGE PIN (1" LONG)
(6005-T5 ALUMINUM ALLOY)
SCALE: 1/2" = 1"



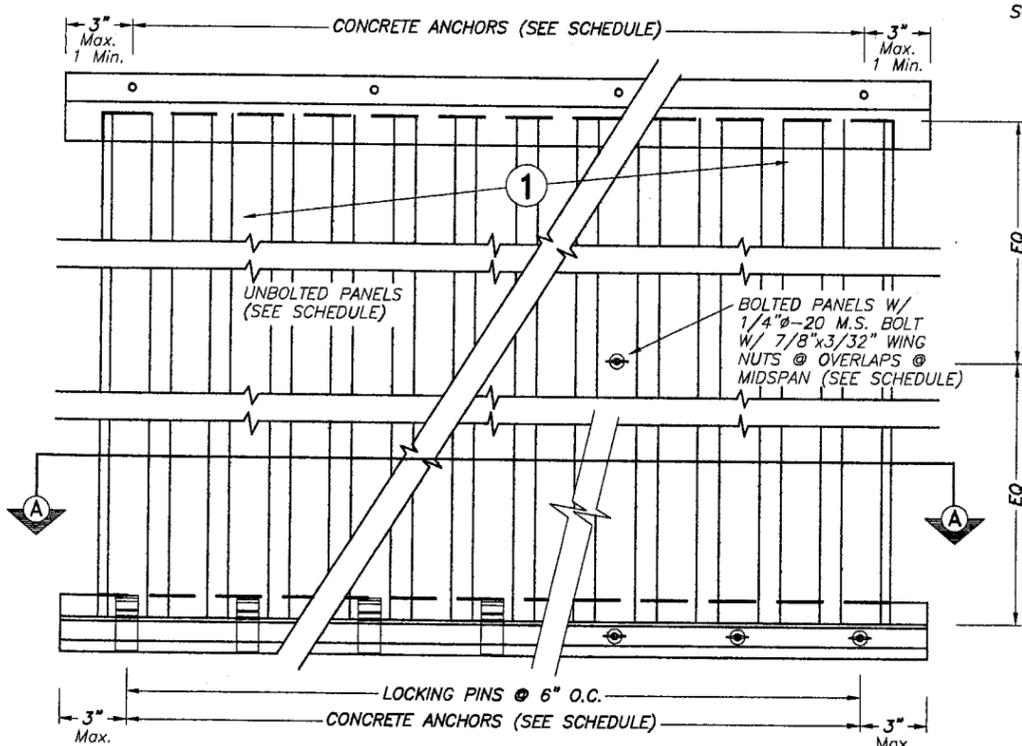
⑥ ANGLE WITH STUD
SCALE: 1/2" = 1"



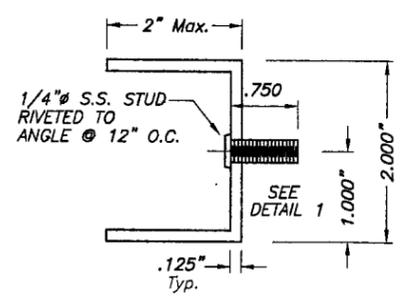
⑦ CHANNEL
SCALE: 1/2" = 1"



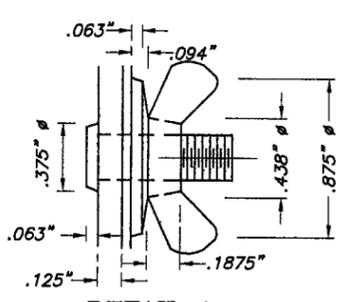
⑧ "F" TRACK
SCALE: 1/2" = 1"



STORM PANEL ELEVATION
SCALE 1 1/2" = 1'-0"
SECTION A-A
SCALE 1 1/2" = 1'-0"



⑨ CHANNEL WITH STUD
SCALE: 1/2" = 1"



⑩ 2" x 4" (Max.) x .125" ANGLE
SCALE: 1/2" = 1"

GENERAL NOTES:
1. STORM PANEL SHOWN ON THIS PRODUCT APPROVAL DOCUMENT (P.A.D.) HAS BEEN VERIFIED FOR COMPLIANCE IN ACCORDANCE WITH THE 2004 EDITION OF THE FLORIDA BUILDING CODE. DESIGN WIND LOADS SHALL BE DETERMINED AS PER SECTION 1820 OF THE ABOVE MENTIONED CODE, IN ORDER TO VERIFY THAT COMPONENTS AND ANCHORS ON THIS P.A.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. STORM PANEL'S ADEQUACY FOR IMPACT AND FATIGUE RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTIONS 1609.1.4 OF THE ABOVE MENTIONED CODE AS PER TAS-201, TAS-202 AND TAS-203 PROTOCOLS AS PER AMERICAN TEST LAB REPORT # 0822.01-96.
2. ALL ALUMINUM SHEET METAL PANELS SHALL HAVE 5052-H32 ALLOY.
3. ALL ALUMINUM EXTRUSIONS SHALL BE 6063-T6 ALLOY UNLESS OTHERWISE NOTED.
4. ALL SCREWS TO BE STAINLESS STEEL 304 OR 316 SERIES W/ 50 KSI YIELD STRENGTH AND 90 KSI TENSILE STRENGTH OR CORROSION RESISTANT COATED CARBON STEEL AS PER DIN 50018.
5. BOLTS TO BE A.S.T.M. A-307 GALVANIZED OR STAINLESS STEEL, WITH 36 KSI MINIMUM YIELD STRENGTH.
6. ANCHORS TO WALL SHALL BE AS FOLLOWS: (UNLESS OTHERWISE NOTED)

(A) TO EXISTING POURED CONCRETE:
- 1/4" TAPCON ANCHORS AS MANUFACTURED BY ELCO TEXTRON, INC.
- 1/4" ZAMAC NAILIN ANCHORS AS MANUFACTURED BY POWERS FASTENERS, INC.
- 1/4"x7/8" CALK-IN ANCHORS OR ELCO male & female "PANELMATE" AS MANUFACTURED BY POWERS FASTENERS, INC. AND ELCO TEXTRON, INC. RESPECTIVELY.
NOTES:
A.1) MINIMUM EMBEDMENT INTO POURED CONCRETE OF TAPCON ANCHORS IS 1 3/4"; FOR ZAMAC NAILIN IS 1 3/8"; & FOR ELCO PANELMATES IS 1 3/4".
A.2) 7/8" CALK-IN ANCHORS SHALL BE ENTIRELY EMBEDDED INTO THE POURED CONCRETE. NO EMBEDMENT INTO STUCCO SHALL BE PERMITTED.
1/4"-20 SCREWS 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.

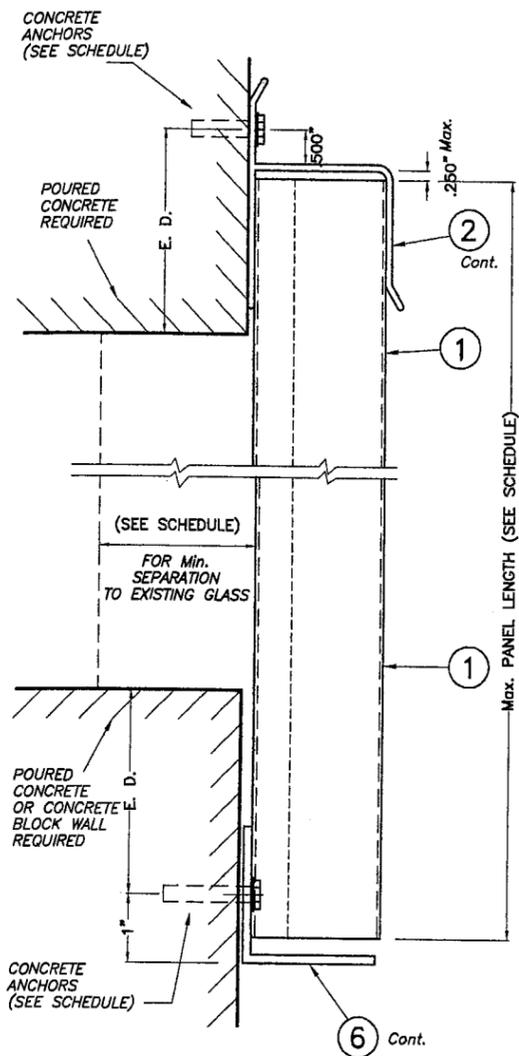
(B) TO EXISTING A.S.T.M. C-90 CONCRETE BLOCK WALL:
- 1/4" TAPCON ANCHORS AS MANUFACTURED BY I.T.W. BUILDEX OR ELCO TEXTRON, INC.
- 1/4" ZAMAC NAILIN ANCHORS AS MANUFACTURED BY POWERS FASTENERS, INC.
- 1/4"x7/8" CALK-IN ANCHORS OR ELCO male & female "PANELMATE" AS MANUFACTURED BY POWERS FASTENERS, INC. AND ELCO TEXTRON, INC. RESPECTIVELY.
NOTES:
B.1) MINIMUM EMBEDMENT OF TAPCON ANCHORS, ZAMAC NAILIN & ELCO PANELMATE INTO THE CONCRETE BLOCK UNIT SHALL BE 1 1/4".
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"-20 SCREWS 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 1 1/4" MINIMUM FOR ANCHORS MENTIONED IN B.1) & 7/8" FOR ANCHORS MENTIONED IN B.2)

(C) ANCHORS SHALL BE INSTALLED FOLLOWING ALL OF THE RECOMMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER.
7. PANELS WITH LENGTHS OVER 9'-0" SHALL BE BOLTED W/ 1/4"-20 BOLT AND WINGNUT AT OVERLAP AND MIDLENGTH.
8. PANELS MAY ALSO BE INSTALLED HORIZONTALLY FOLLOWING INSTALLATION DETAILS SHOWN ON SECTIONS 1 THRU 8 (SHEET 2 & 3 OF 8) WITH END COMPONENTS (4), (5), (6), (7), (8) & (9) EXCEPT THAT HEADERS (2) & (3) SHALL NOT BE USED.
9. 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.
10. (a) THIS PRODUCT APPROVAL DOCUMENT (P.A.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.A.D.
(b) CONTRACTOR TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION INCLUDING LIFE SAFETY OF THIS PRODUCT, BASED ON THIS P.A.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 PRODUCT APPROVAL DOCUMENT WILL BE CONSIDERED INVALID IF MODIFIED.
(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.A.D. ENGINEER OF RECORD, ACTING AS A DELEGATED ENGINEER TO THE P.A.D. ENGINEER, SHALL SUBMIT TO THIS THE SITE SPECIFIC DRAWINGS FOR REVIEW.
(e) THIS P.A.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 PLACED ON THE EXPOSED SURFACE OF THE CENTER FLANGE OF EVERY PANEL APPROXIMATELY 4" ABOVE THE BOTTOM OF SUCH PANEL. LABEL SHALL READ AS FOLLOWS:
ALUFAB HURRICANE SHUTTERS, INC.
OPA LOCKA, FL.
MIAMI-DADE COUNTY PRODUCT APPROVED.

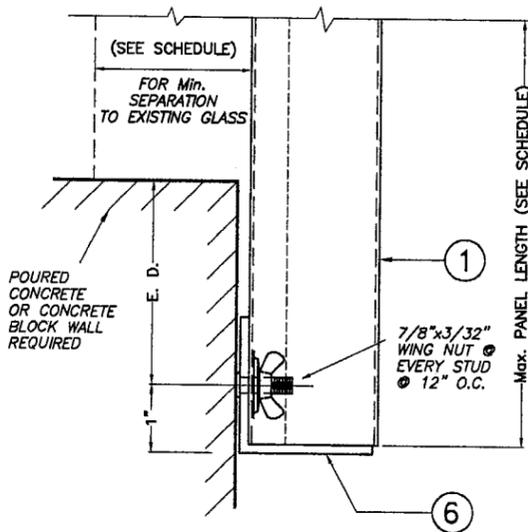
PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No. 05-1003.16
Expiration Date 07/17/2008
By *Helmut A. Moller*
Miami-Dade Product Control
Division

F.B.C.(High Velocity Hurricane Zone)

 TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 38th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone: (305)871-1530 . Fax: (305)871-1531 EB-0006719 WALTER A. TILLIT JR., P. E. FLORIDA Lic. 44167		0.063" ALUMINUM STORM PANEL		DRAWN BY: J.V.	
		ALUFAB HURRICANE SHUTTERS, INC. 13000 N.W. 38th AVENUE OPA LOCKA, FLORIDA 33054		6/19/05 DATE	
		05-146		DRAWING No	
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 03-031	6/19/05	3	-	-
2	-	-	4	-	-
					SHEET 1 OF 8



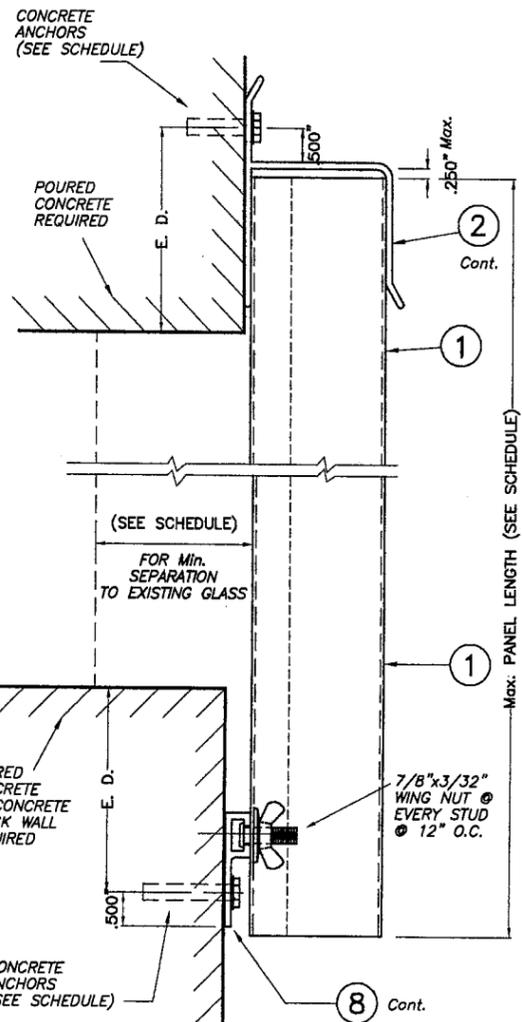
SECTION @ ANCHOR



SECTION @ STUD

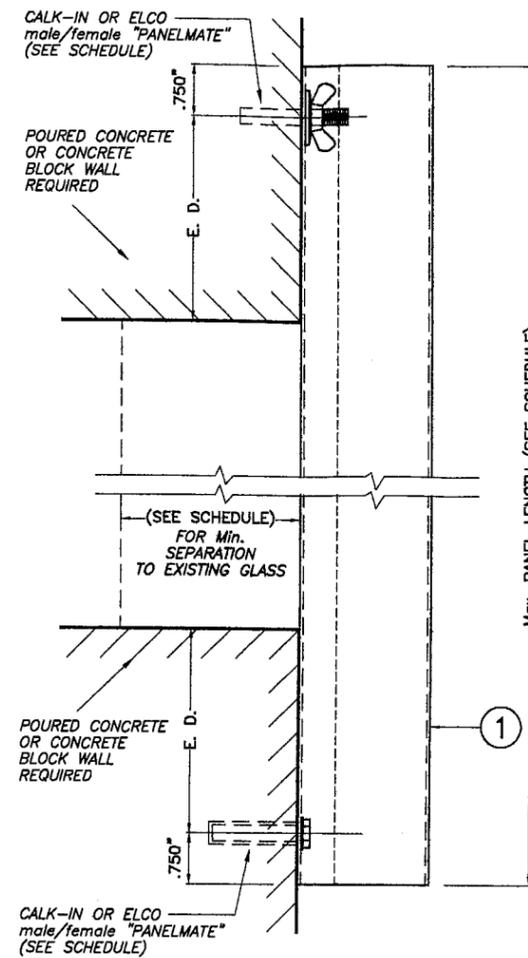
WALL MOUNT. INSTALL. - SECTION 1

SCALE: 3/8" = 1"



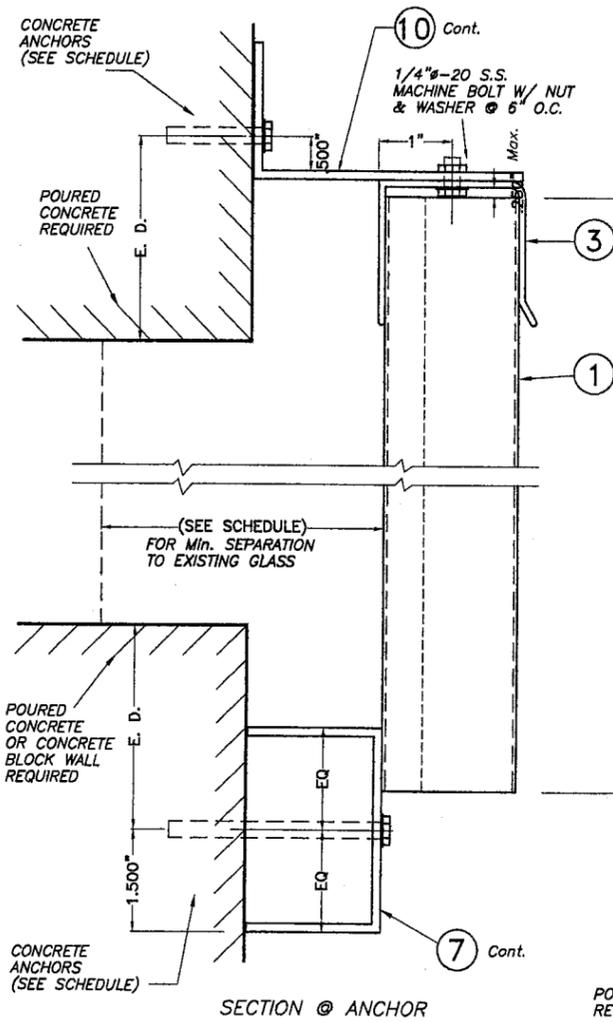
WALL MOUNTING INSTALLATION - SECTION 2

SCALE: 3/8" = 1"



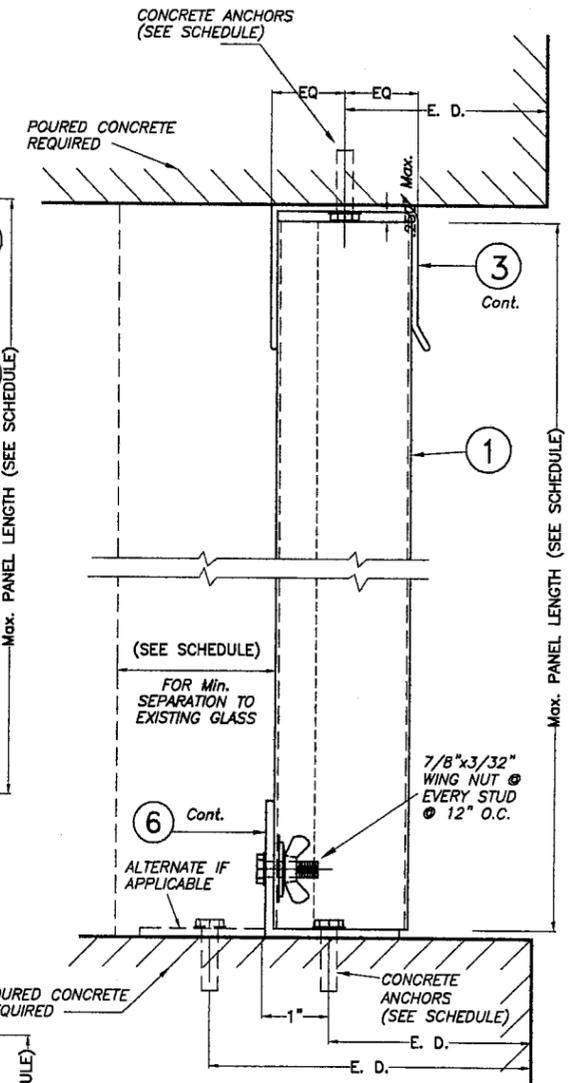
WALL MOUNTING INSTALLATION (D. M.) - SECTION 3

SCALE: 3/8" = 1"



BUILD-OUT INSTALLATION - SECTION 4

SCALE: 3/8" = 1"



FLOOR/CEILING MOUNTING INSTALLATION - SECTION 5

SCALE: 3/8" = 1"

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

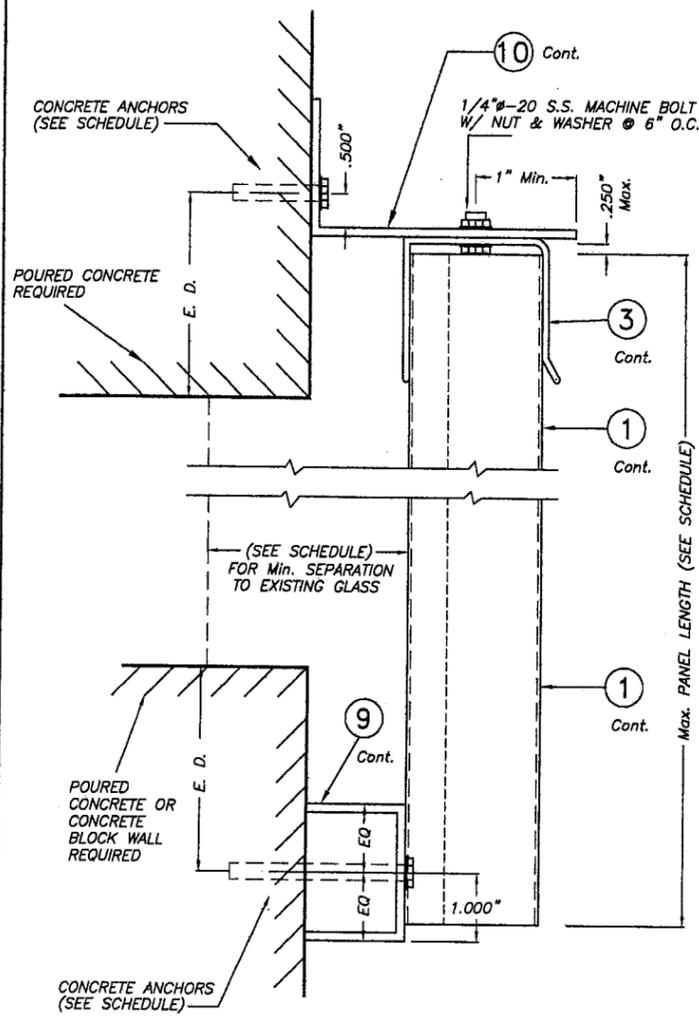
NOTE FOR COMBINATION OF SECTIONS :
WALL/FLOOR/CEILING MOUNTING SECTIONS CAN BE COMBINED IN ANY WAY TO SUIT ANY INSTALLATION.

PRODUCT REVIEWED
in accordance with the Florida
Building Code
Acceptance No. 05-1003.16
Expiration Date 07/17/2008
By *Heilyn A. Miller*
Miami-Dade District Engineer

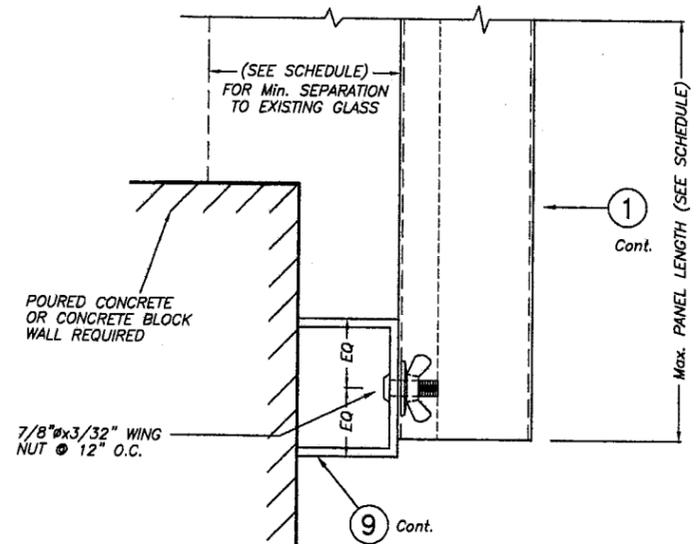
F.B.C.(High Velocity Hurricane Zone)

 TILTECO INC. TILLIT TESTING & ENGINEERING COMPANY 8355 N.W. 38th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 EB-0006719 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. 44167		0.063" ALUMINUM STORM PANEL		DRAWN BY: J.V.	
		ALUFAB HURRICANE SHUTTERS, INC. 13000 N.W. 38th AVENUE OPA LOCKA, FLORIDA 33054		6/19/05 DATE	
05-146 DRAWING No		SHEET 2 OF 8		10/23/05	

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 03-031	6/19/05	3	-	-
2	-	-	4	-	-



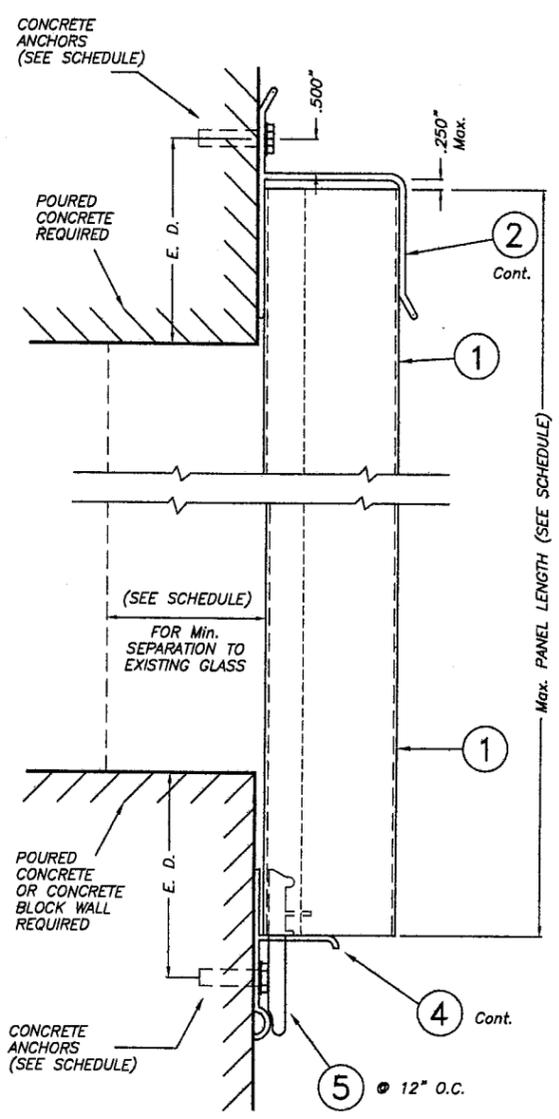
SECTION @ ANCHOR



SECTION @ STUD

BUILD-OUT INSTALLATION
- SECTION 6

SCALE: 3/8" = 1"



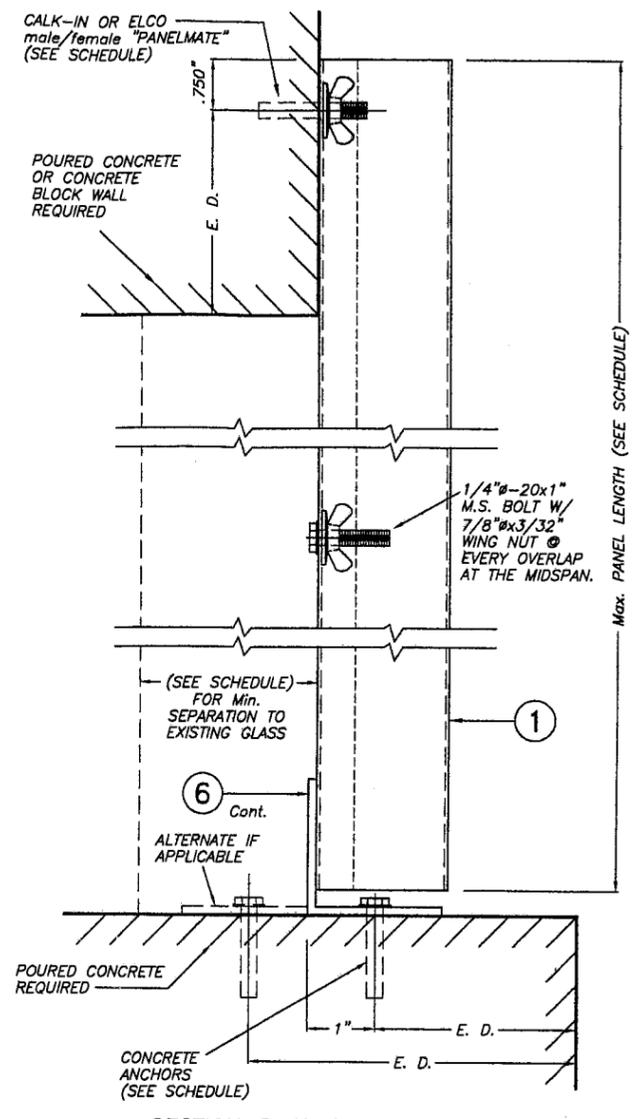
WALL MOUNT INSTALL - SECTION 7

SCALE: 3/8" = 1"

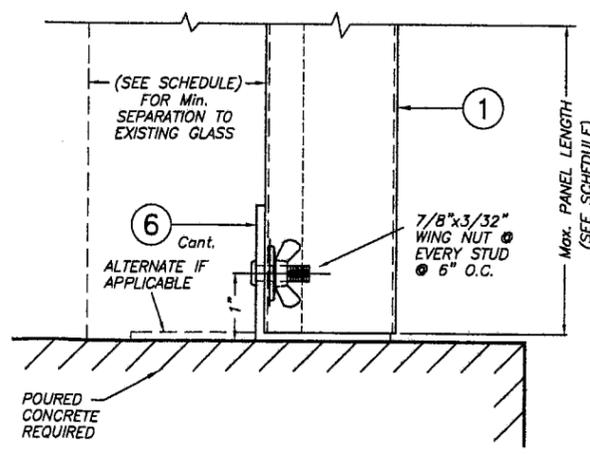
E. D. = EDGE DISTANCE
(SEE SCHEDULE ON SHEETS 5 & 6 OF 8)

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

[Handwritten signature]
4/23/05



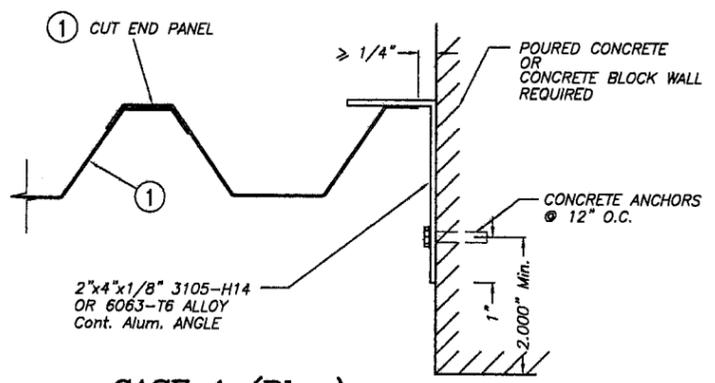
SECTION @ ANCHOR



SECTION @ STUD

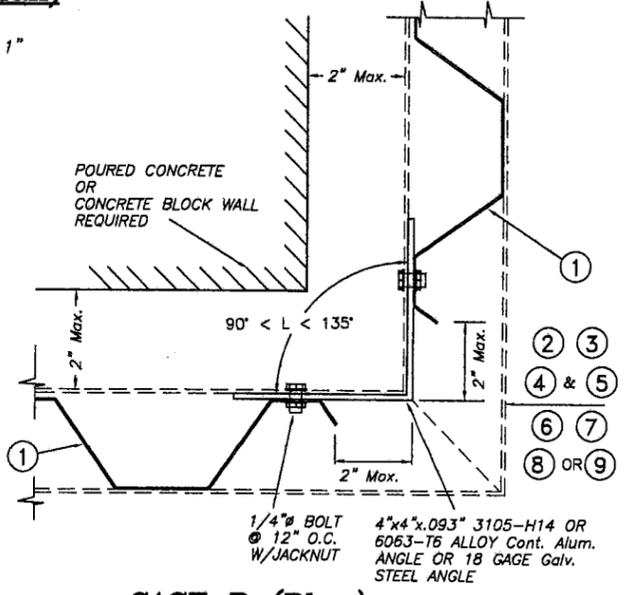
WALL/FLOOR MOUNTING
INSTALLATION - SECTION 8

SCALE: 3/8" = 1"



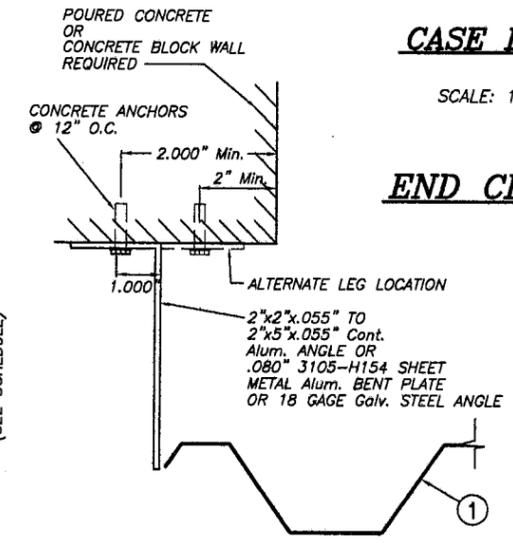
CASE A (Plan)

SCALE: 1/4" = 1"



CASE B (Plan)

SCALE: 1/4" = 1"



CASE C (Plan)

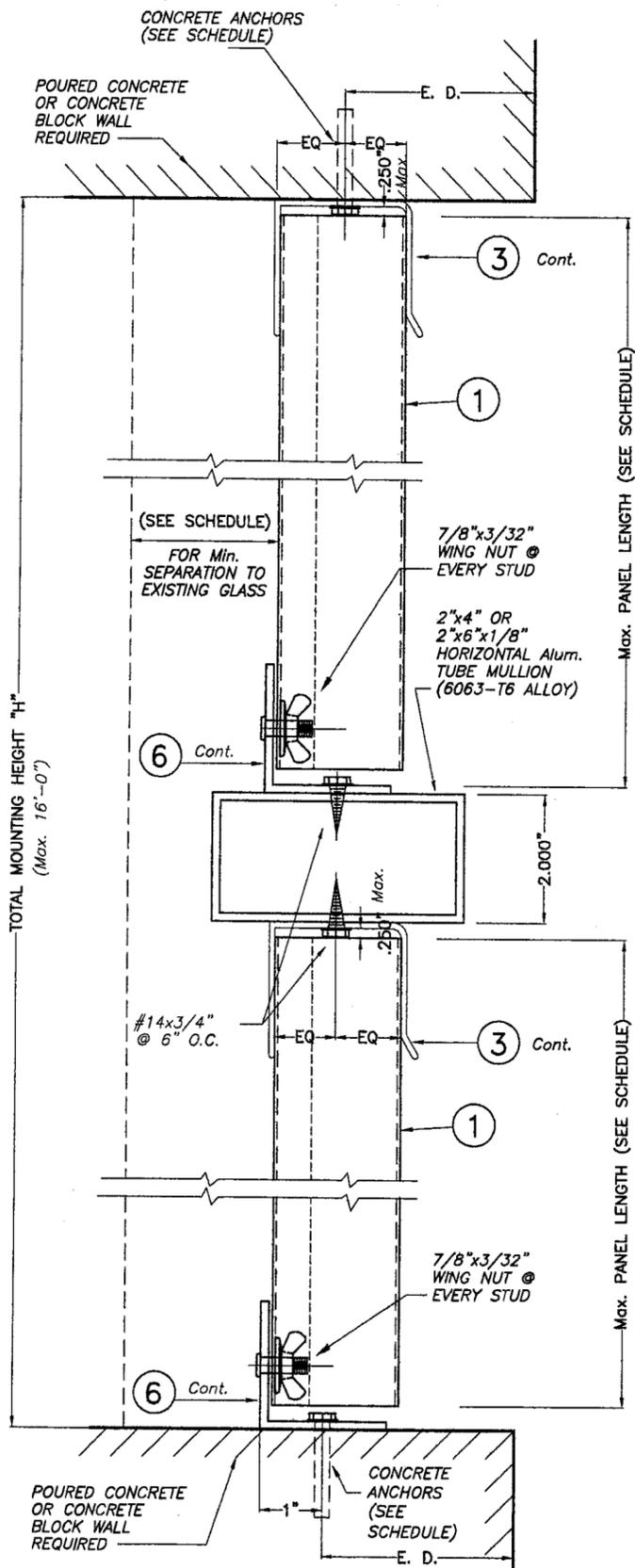
SCALE: 1/4" = 1"

END CLOSURES DETAILS

PRODUCT REVISED
as complying with the Florida
Building Code
Approved No. 05-1003.16
Expiration Date 07/17/2008
By *[Handwritten Signature]*
Miami-Dade Flood Control
Division

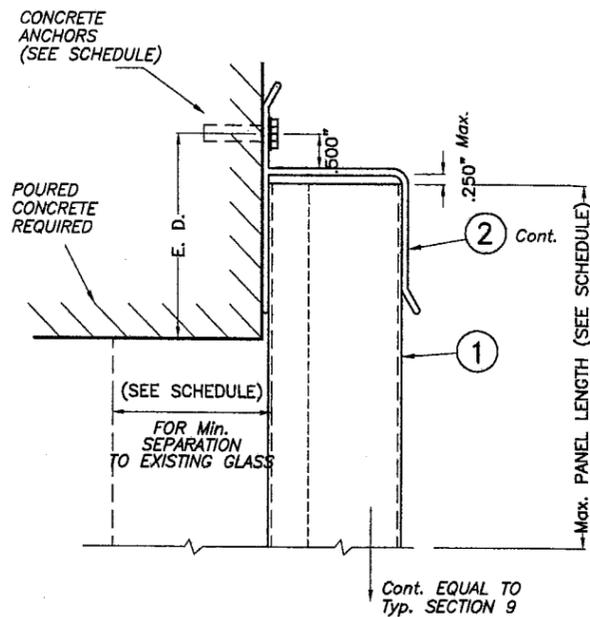
F.B.C. (High Velocity Hurricane Zone)

 TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone: (305)871-1530 Fax: (305)871-1531 EB-0006719 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. 44167		0.063" ALUMINUM STORM PANEL		DRAWN BY: J.V.	
		ALUFAB HURRICANE SHUTTERS, INC. 13000 N.W. 38th AVENUE OPA LOCKA, FLORIDA 33054		6/19/05 DATE	
				05-146 DRAWING No	
				SHEET 3 OF 8	
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 03-031	6/19/05	3	-	-
2	-	-	4	-	-



ALTERNATIVE 1
SPLIT PANEL MOUNTING INSTALLATION
 - SECTION 9 SCALE: 3/8" = 1"

NOTE: FLOOR & CEILING MOUNT INSTALLATIONS SHOWN FOR DIFFERENT MOUNTING INSTALLATIONS SEE TYPICAL SECTIONS ON SHEET 2 & 3 OF 8.



ALTERNATIVE 2 (TOP)

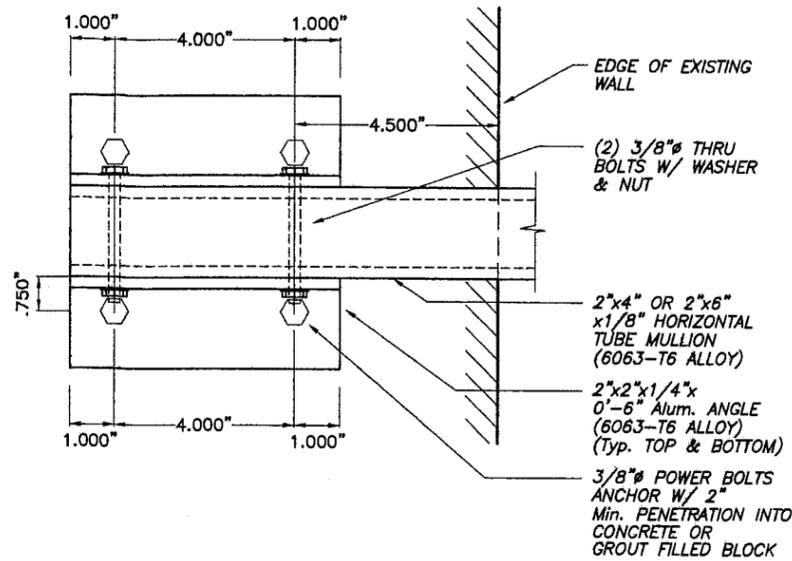
MAXIMUM MULLION SPAN (HORIZONTALLY) SCHEDULE FOR SPLIT PANEL INSTALLATION

MAXIMUM DESIGN LOAD "W" (p.s.f.)	TOTAL MOUNTING HEIGHT "H"			
	≤ 10'-0"	10' < H < 12'	12' < H < 14'	14' < H < 16'
50	7'-0"	6'-7"	6'-3"	6'-0"
	9'-11"	9'-3"	8'-7"	8'-0"
60	6'-7"	6'-3"	5'-11"	5'-6"
	9'-3"	8'-6"	7'-10"	7'-4"
66	6'-5"	6'-0"	5'-7"	5'-3"
	8'-10"	8'-1"	7'-6"	7'-0"

2"x4" TUBE
 2"x6" TUBE

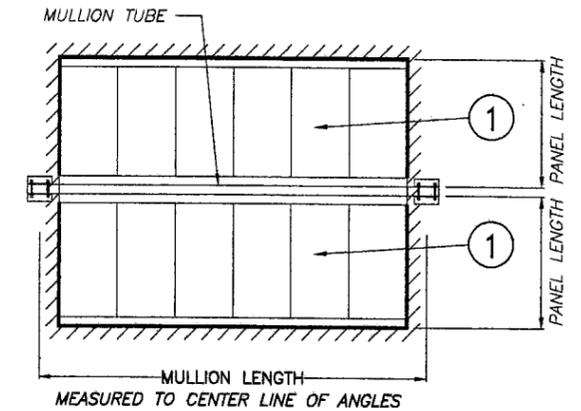
E. D. = EDGE DISTANCE (SEE SCHEDULE ON SHEET 5 & 6 OF 8)

Handwritten signature and date: 9/23/05



HORIZONTAL TUBE MULLION CONNECTION TO WALL

SCALE: 1/4" = 1"



TYPICAL SPLIT PANEL INSTALLATION ELEVATION W/ MULLION TUBE ON FACE MOUNT

N. T. S.

MAXIMUM DESIGN PRESSURE RATING "W" (p.s.f.) AND CORRESPONDING MAXIMUM PANEL LENGTH "L" SCHEDULE

MAXIMUM DESIGN PRESSURE RATING W (p.s.f.)	Max. PANEL LENGTH L (ft.) (SEE SECTIONS)	MINIMUM SEPARATION TO GLASS	PANEL CONDITION
+55.5, -66.0	9'-0"	3"	UNBOLTED
+30.0, -40.0	>9'-0" TO 12'-0"	2 7/8"	BOLTED *

* BOLTED W/ 1/4" S.S. M.S. & WINGNUT AT OVERLAP & MIDLENGTH OF PANEL.

PRODUCT REVISED to comply with the Florida Building Code Acceptance No 05-1003.16 Expiration Date 07/17/2008 By *Handwritten signature* Miami Dade Product Control Division

F.B.C.(High Velocity Hurricane Zone)

 TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone: (305)871-1530 Fax: (305)871-1531 EB-0006719 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. 44167	0.063" ALUMINUM STORM PANEL	DRAWN BY: J.V.
	ALUFAB HURRICANE SHUTTERS, INC. 13000 N.W. 38th AVENUE OPA LOCKA, FLORIDA 33054	6/19/05 DATE
		05-146 DRAWING No
		SHEET 4 OF 8

MAXIMUM DESIGN PRESSURE RATING "W" (p.s.f.) AND CORRESPONDING MAXIMUM ANCHOR SPACING SCHEDULE FOR INSTALLATIONS INTO CONCRETE AND MASONRY STRUCTURES *

E. D. = EDGE DISTANCE

MAXIMUM DESIGN LOAD W (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		CALK-IN		PANELMATES			
	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY		
+55.5, -66.0	12"	N/A	12"	N/A	12"	N/A	12"	N/A	1 (TOP)	8'-0" OR LESS
	12"	9"	12"	11"	12"	10"	12"	12"	1 (BOTTOM)	
	12"	N/A	12"	N/A	12"	N/A	12"	N/A	2 (TOP)	
	12"	9"	12"	11"	12"	10"	12"	12"	2 (BOTTOM)	
	N/A	N/A	N/A	N/A	12"	10"	12"	12"	3 (TOP/BOTTOM)	
	6"	N/A	6"	N/A	6"	N/A	6"	N/A	4 (TOP)	
	6"	6"	6"	6"	6"	6"	6"	6"	4 (BOTTOM)	
	6"	N/A	6"	N/A	6"	N/A	6"	N/A	5 (TOP)	
	10 1/2"	N/A	7"	N/A	8 1/2"	N/A	7"	N/A	5 (BOTTOM)	
	6"	N/A	6"	N/A	6"	N/A	6"	N/A	6 (TOP)	
	6"	6"	6"	6"	6"	6"	6"	6"	6 (BOTTOM)	
	12"	N/A	12"	N/A	12"	N/A	12"	N/A	7 (TOP)	
	8"	6"	8"	7"	8"	8"	8"	8"	7 (BOTTOM)	
	N/A	N/A	N/A	N/A	12"	10"	12"	12"	8 (TOP)	
10 1/2"	N/A	7"	N/A	8 1/2"	N/A	7"	N/A	8 (BOTTOM)		

* 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"). FOR THIS OPERATION TO BE POSSIBLE, REDUCE SPACING OBTAINED USING FACTOR SHALL NOT BE LESS THAN MINIMUM SPACING INDICATED FOR EACH ANCHOR TYPE AT ANCHORS LEGEND.

ACTUAL E. D.	FACTOR	
	TAPCON/ZAMAC NAILIN/PANELMATES	CALK-IN
3"	.86	.75
2 1/2"	.71	.50
2"	.50	-

ANCHORS LEGEND

ANCHOR TYPE	MIN. ANCHOR SPACING
TAPCON/ ZAMAC NAILIN/ PANELMATES	3"
CALK-IN	2 1/2"

PRODUCT REVISED as complying with the Florida Building Code
 Acceptance No 05-1003.16
 Expiration Date 07/17/2008
 By *Helmut A. Mohr*
 Miami Dade District Control Division

F.B.C.(High Velocity Hurricane Zone)

[Signature]
6/23/05

 TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 Fax : (305)871-1531 EB-0006719 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. 44167	0.063" ALUMINUM STORM PANEL	DRAWN BY: J.V.																		
	ALUFAB HURRICANE SHUTTERS, INC. 13000 N.W. 38th AVENUE OPA LOCKA, FLORIDA 33054	6/19/05 DATE																		
		05-146 DRAWING No																		
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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE															
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MAXIMUM DESIGN PRESSURE RATING "W" (p.s.f.) AND CORRESPONDING MAXIMUM ANCHOR SPACING SCHEDULE FOR INSTALLATIONS INTO CONCRETE AND MASONRY STRUCTURES *

E. D. = EDGE DISTANCE

MAXIMUM DESIGN LOAD W (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		CALK-IN		PANELMATES			
	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY		
+55.5, -66.0	12"	N/A	8 1/2"	N/A	12"	N/A	8"	N/A	1 (TOP)	>8'-0" TO 9'-0"
	12"	8"	11 1/2"	9 1/2"	12"	8 1/2"	11"	10 1/2"	1 (BOTTOM)	
	12"	N/A	8 1/2"	N/A	12"	N/A	8"	N/A	2 (TOP)	
	12"	8"	11 1/2"	9 1/2"	12"	8 1/2"	11"	10 1/2"	2 (BOTTOM)	
	N/A	N/A	N/A	N/A	12"	6"	6"	6"	3 (TOP/BOTTOM)	
	6"	N/A	6"	N/A	6"	N/A	6"	N/A	4 (TOP)	
	6"	6"	6"	6"	6"	6"	6"	6"	4 (BOTTOM)	
	6"	N/A	6"	N/A	6"	N/A	6"	N/A	5 (TOP)	
	9 1/2"	N/A	6"	N/A	7 1/2"	N/A	6"	N/A	5 (BOTTOM)	
	6"	N/A	6"	N/A	6"	N/A	6"	N/A	6 (TOP)	
	6"	6"	6"	6"	6"	6"	6"	6"	6 (BOTTOM)	
	12"	N/A	8 1/2"	N/A	12"	N/A	8"	N/A	7 (TOP)	
	8"	5 1/2"	8"	6 1/2"	8"	6 1/2"	7 1/2"	7 1/2"	7 (BOTTOM)	
	N/A	N/A	N/A	N/A	12"	6"	6"	6"	8 (TOP)	
9 1/2"	N/A	6"	N/A	7 1/2"	N/A	6"	N/A	8 (BOTTOM)		
+30.0, -40.0	6"	6"	6"	6"	6"	6"	6"	8 (TOP)	>9'-0" TO 12'-0"	
	6"	N/A	6"	N/A	6"	N/A	5"	N/A		8 (BOTTOM)

* 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"). FOR THIS OPERATION TO BE POSSIBLE, REDUCE SPACING OBTAINED USING FACTOR SHALL NOT BE LESS THAN MINIMUM SPACING INDICATED FOR EACH ANCHOR TYPE AT ANCHORS LEGEND.

ACTUAL E. D.	FACTOR	
	TAPCON/ZAMAC NAILIN/PANELMATES	CALK-IN
3"	.86	.75
2 1/2"	.71	.50
2"	.50	-

ANCHORS LEGEND

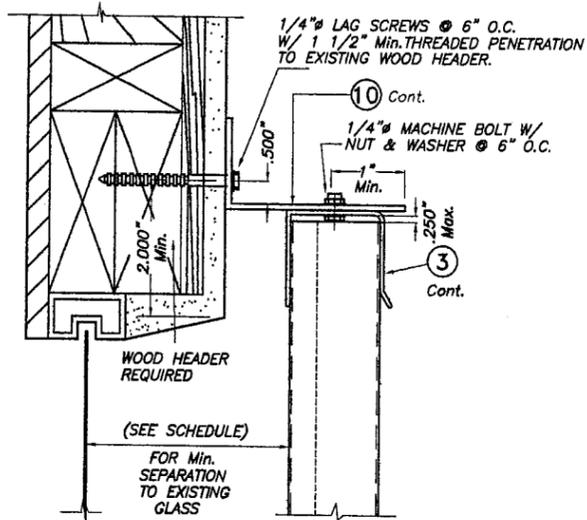
ANCHOR TYPE	MIN. ANCHOR SPACING
TAPCON/ ZAMAC NAILIN/ PANELMATES	3"
CALK-IN	2 1/2"

PRODUCT REVISED as complying with the Florida Building Code
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 Expiration Date 07/17/2008
 By *Heather A. Mabe*
 Miami Building Code Control Division

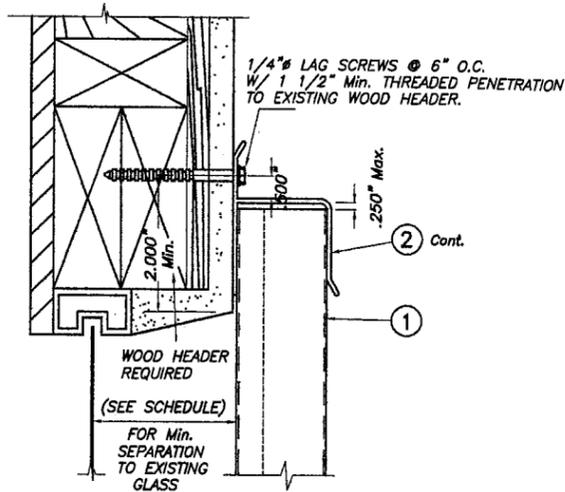
F.B.C.(High Velocity Hurricane Zone)

[Signature]
 2/23/05

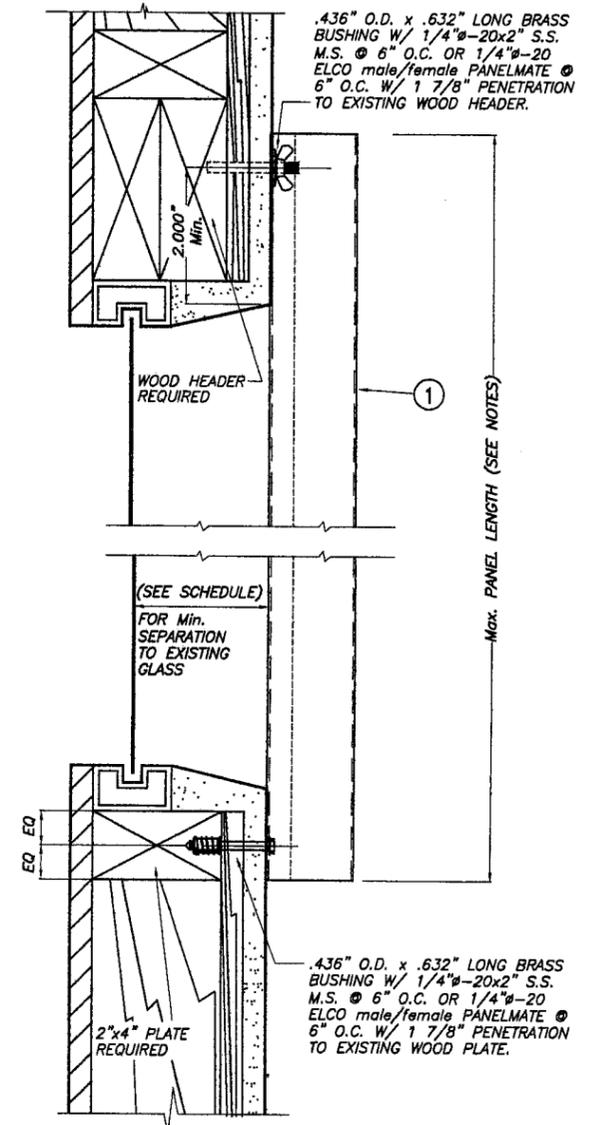
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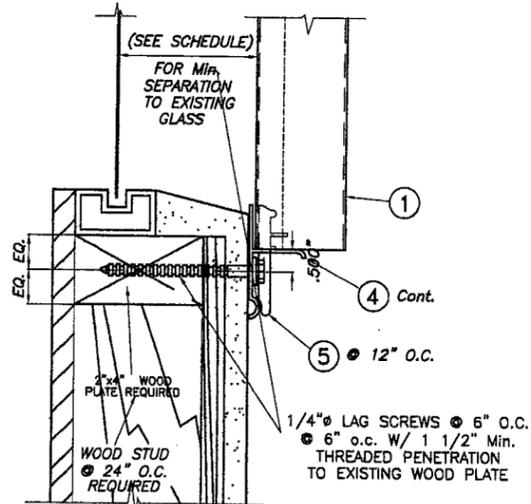
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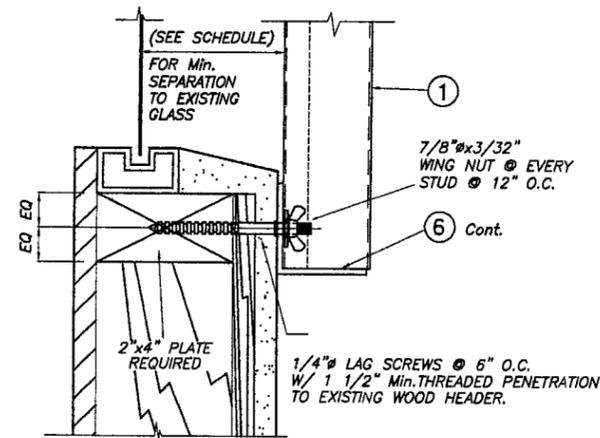
ALTERNATIVE 3



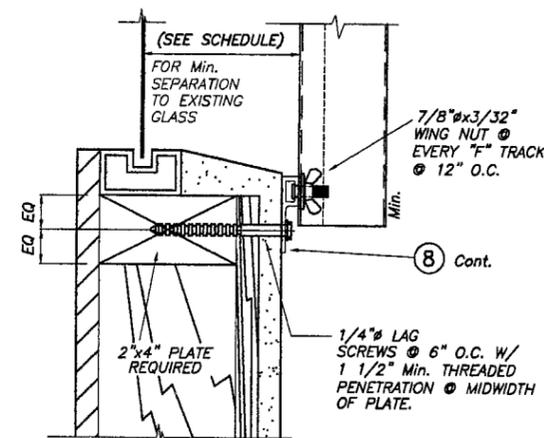
ALTERNATIVE 6



ALTERNATIVE 2



ALTERNATIVE 4



ALTERNATIVE 5

WALL MOUNTING INSTALLATION - SECTION A

SCALE: 1/4" = 1"

INSTALLATION DETAILS ON EXISTING WOOD BUILDINGS

NOTES:

- INSTALLATIONS ARE ONLY VALID FOR BUILDINGS WITH DESIGN LOADS UP TO 66.0 psf AND PANEL LENGTHS UP TO 9'-0".
- FOR NEW WOOD FRAME CONSTRUCTION: WOOD MEMBERS TO BE SOUTHERN PINE No. 2, W/ SPECIFIC DENSITY OF 0.55 OR EQUAL.

NOTE FOR COMBINATION OF SECTIONS:

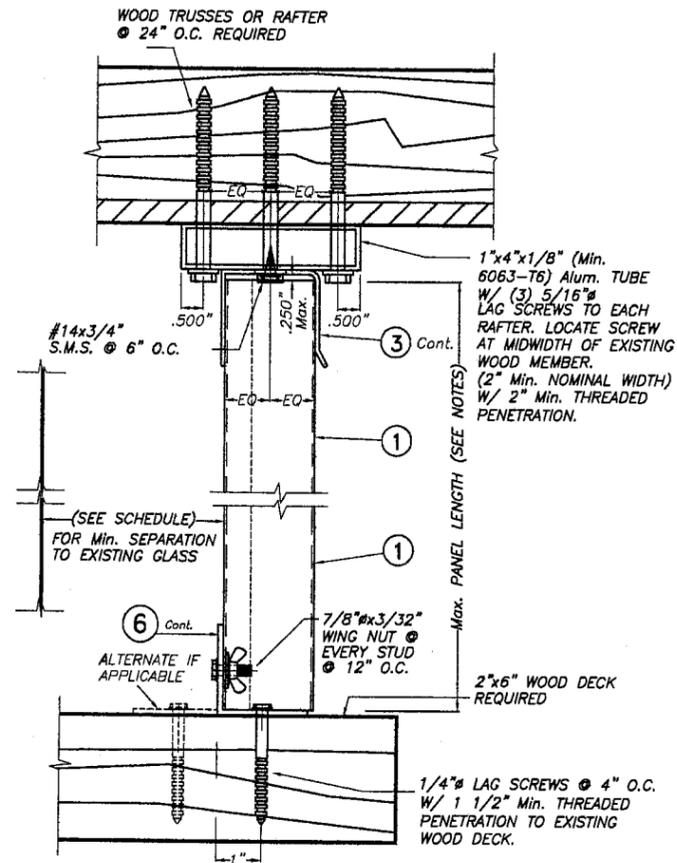
WALL MOUNTING SECTIONS CAN BE COMBINED IN ANY WAY TO SUIT ANY INSTALLATION.

PRODUCT REVISED
 as complying with the Florida
 Building Code
 Acceptance No. 05-1003.16
 Expiration Date 07/17/2008
 By *Helmy A. Mohr*
 Miami Dept. Product Control
 Division

F.B.C.(High Velocity Hurricane Zone)

<p>TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 38th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone: (305)871-1530 Fax: (305)871-1531 EB-0006719 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. 44167</p>		0.063" ALUMINUM STORM PANEL		DRAWN BY: J.V.	
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Handwritten signature and date: 4/23/05



ALTERNATIVE 2

CEILING & FLOOR MOUNTING INSTALLATION - SECTION B

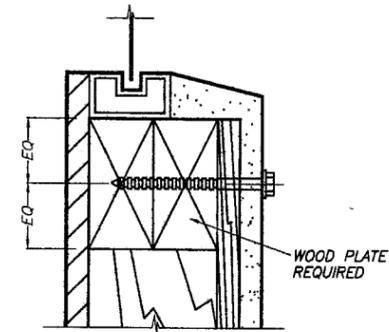
SCALE: 1/4" = 1"

NOTES:

- INSTALLATIONS ARE ONLY VALID FOR BUILDINGS WITH DESIGN LOADS UP TO 66 psf AND PANEL LENGTHS UP TO 9'-0"
- FOR NEW WOOD FRAME CONSTRUCTION: WOOD MEMBERS TO BE SOUTHERN PINE No. 2, W/ SPECIFIC DENSITY OF 0.55 OR EQUAL.

NOTE FOR COMBINATION OF SECTIONS:

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



ALTERNATIVE WOOD FRAME CONDITION & ANCHOR LOCATION AT BOTTOM

SCALE: 1/4" = 1"

NOTE: SHUTTER TRACKS NOT SHOWN FOR CLARITY

INSTALLATION DETAILS ON EXISTING WOOD BUILDINGS

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No. 05-1003.16
Expiration Date 07/17/2008
By *Helmut A. Miller*
Miami Code Product Control
Division

F.B.C.(High Velocity Hurricane Zone)

Handwritten signature and date 9/23/05

 TILECO INC. TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone: (305)871-1530, Fax: (305)871-1531 EB-0006719 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. 44167	0.063" ALUMINUM STORM PANEL	DRAWN BY: J.V.																		
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