



**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)

**Alufab Hurricane Shutter, 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: 0.050" (min.) Galvanized Steel Storm Panels Shutter

APPROVAL DOCUMENT: Drawing No. 03-026, titled " 18 gage Galvanized Steel Storm Panel ", sheets 1 through 6 of 6, prepared by Tilteco, Inc., dated February 05, 2003, last revision #1 dated February 05, 2003 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.

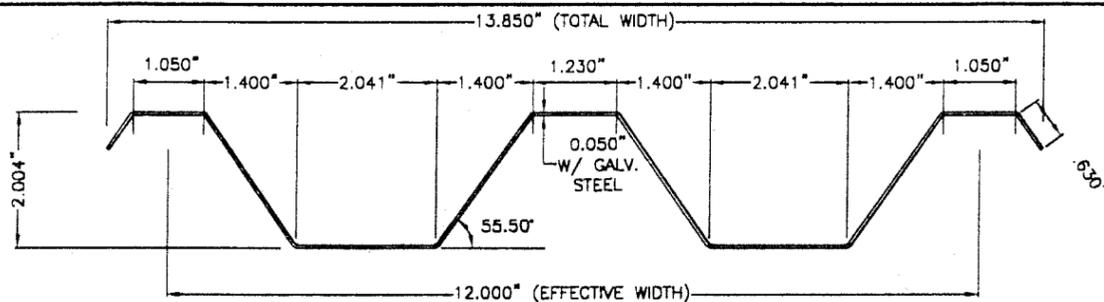
ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

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.

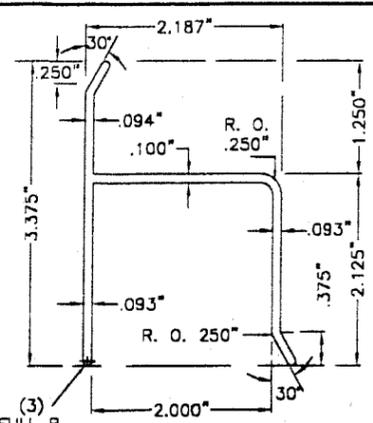
This NOA revises & renews NOA # 00-0128.03 & consists of this page 1 & approval document mentioned above. The submitted documentation was reviewed by **Helmy A. Makar, P.E.**



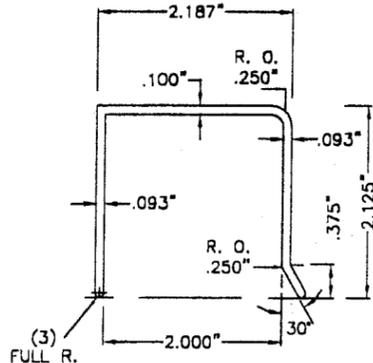
**NOA No 03-0303.15
Expiration Date: 03/06/2008
Approval Date: 04/10/2003
Page 1**



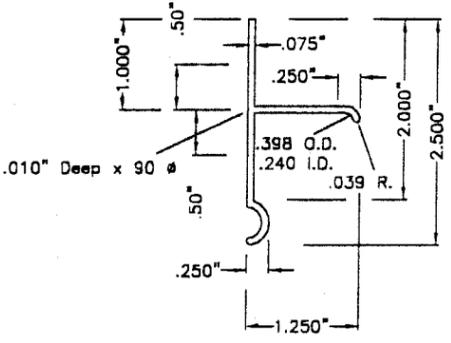
1 PANEL
SCALE: 3/8" = 1"



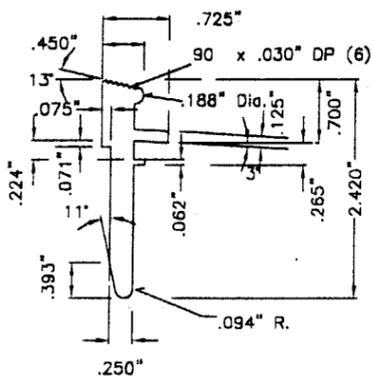
2 HEADER
8005-T5 Alum. ALLOY
SCALE: 1/2" = 1"



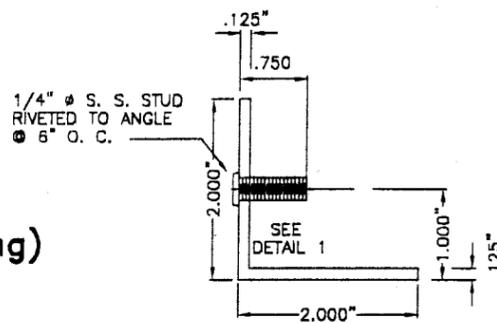
3 HEADER
8005-T5 Alum. ALLOY
SCALE: 1/2" = 1"



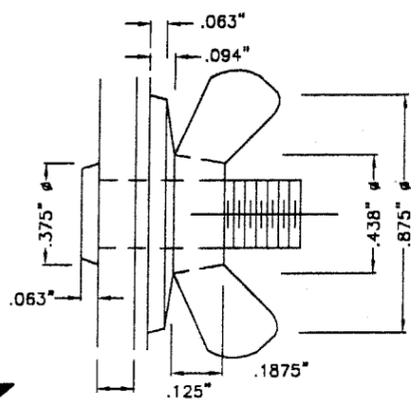
4 SILL
6063-T6 Alum. ALLOY
SCALE: 1/2" = 1"



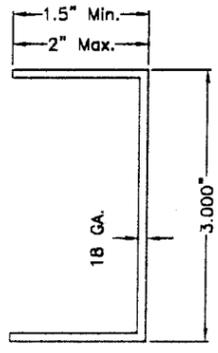
5 LOCKING PIN (1" long)
6005-T5 ALLOY
SCALE: 1/2" = 1"



6 ANGLE WITH STUD
SCALE: 1/2" = 1"



DETAIL 1:
STUD W/ WING NUT
SCALE: 3" : 1"



7 CHANNEL
SCALE: 1/2" = 1"
ASTM A-525 DESIGNATION
G-90 GALVANIZED STEEL W/FY=40 ksi

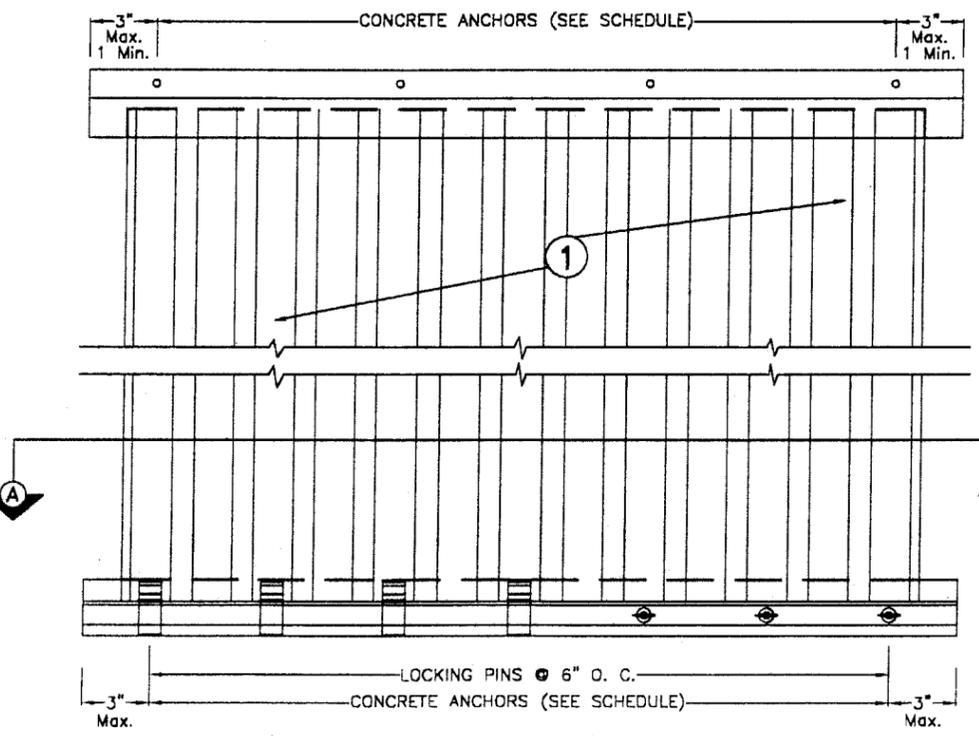
COMPONENTS

GENERAL NOTES:

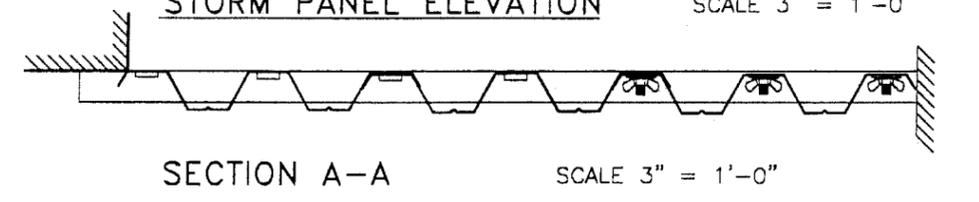
- STORM PANEL SHOWN ON THIS PRODUCT APPROVAL DOCUMENT HAS BEEN DESIGNED IN ACCORDANCE WITH THE 2001 EDITION OF THE FLORIDA BUILDING CODE. DESIGN WIND LOADS SHALL BE DETERMINED AS PER SECTION 1619 OF THE ABOVE MENTIONED CODE, FOR A BASIC WIND SPEED OF 146 m.p.h., AND IN ACCORDANCE W/ ASCE 7-98 STANDARD. STORM PANEL'S ADEQUACY FOR IMPACT AND FATIGUE RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTIONS 1608.1.4 OF THE ABOVE MENTIONED CODE AS PER PA-201, PA-202 AND PA-203 AS PER MTL REPORT # 95-1193.
- ALL STEEL SHEET METAL PANELS SHALL HAVE STRUCTURAL QUALITY ASTM A446-91, GRADE C, GALVANIZED STEEL DESIGNATION W/FY=49 ksi (AFTER ROLLED).
- ALL ALUMINUM EXTRUSIONS SHALL BE 6063-T6 ALLOY UNLESS OTHERWISE NOTED.
- ALL SCREWS TO BE STAINLESS STEEL 304 OR 316 SERIES W/ 50 ksi YIELD POINT AND 90 ksi TENSILE STRENGTH OR CORROSION RESISTANT COATED CARBON STEEL AS PER DIN 50018.
- BOLTS TO BE 2024-T4 ALUMINUM ALLOY, GALVANIZED OR STAINLESS STEEL, WITH 36 ksi MINIMUM YIELD POINT.
- ANCHORS TO WALL SHALL BE AS FOLLOWS: (UNLESS OTHERWISE NOTED)
 - (A) TO EXISTING POURED CONCRETE:
 - 1/4"x1 1/4" OR 1/4"x1 3/4" TAPCON ANCHORS, AS MANUFACTURED BY I.T.W. BUILDX OR ELCO TEXTRON.
 - 1/4"x7/8" CALK-IN ANCHORS AS MANUFACTURED BY POWERS FASTENING, INC.
 - (B) TO EXISTING CONCRETE BLOCK WALL:
 - 1/4"x1 1/4" OR 1/4"x1 3/4" TAPCON ANCHORS, AS MANUFACTURED BY I.T.W. BUILDX OR ELCO TEXTRON.
 - 1/4"x7/8" CALK-IN ANCHORS AS MANUFACTURED BY POWERS FASTENING, INC.
 - (C) ANCHORS SHALL BE INSTALLED FOLLOWING ALL OF THE RECOMMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER.
 - (D) ANCHORAGE TO WOOD FRAME BUILDINGS NOT COVERED ON THIS DRAWING SHALL BE ENGINEERED ON A JOB BY JOB BASIS.
- PANELS MAY ALSO BE INSTALLED HORIZONTALLY FOLLOWING INSTALLATION DETAILS SHOWN ON SECTIONS 1A, 1B & 3 (SHEET 2 OF 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.
- (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 OF THIS PRODUCT BASED ON THIS PRODUCT APPROVAL PROVIDED HE/SHE DOES NOT DEVIATE FROM THE CONDITIONS DETAILED ON THIS DOCUMENT.
- (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 PROFESSIONAL OF RECORD (P.O.R.) FOR THE PROJECT AND WHO WILL BE RESPONSIBLE FOR THE PROPER USE OF THE P.A.D. PROFESSIONAL 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 THAT PREPARED IT.
- SHUTTER MANUFACTURER'S STICKER SHALL BE PLACED ON THE EXPOSED SURFACE OF THE CENTER FLANGE OF EVERY PANEL APPROXIMATELY 4" ABOVE THE BOTTOM OF SUCH PANEL. STICKER SHALL READ AS FOLLOWS:
ALUFAB HURRICANE SHUTTERS, INC.
OPA LOCKA, FL.
MIAMI-DADE COUNTY PRODUCT CONTROL APPROVED.

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 03-0303.15
Expiration Date 03/06/2008
By *Helmut A. Miller*
Miami Dade Product Control Division

F.B.C.(H.V.H.Z)/MIAMI DADE COUNTY



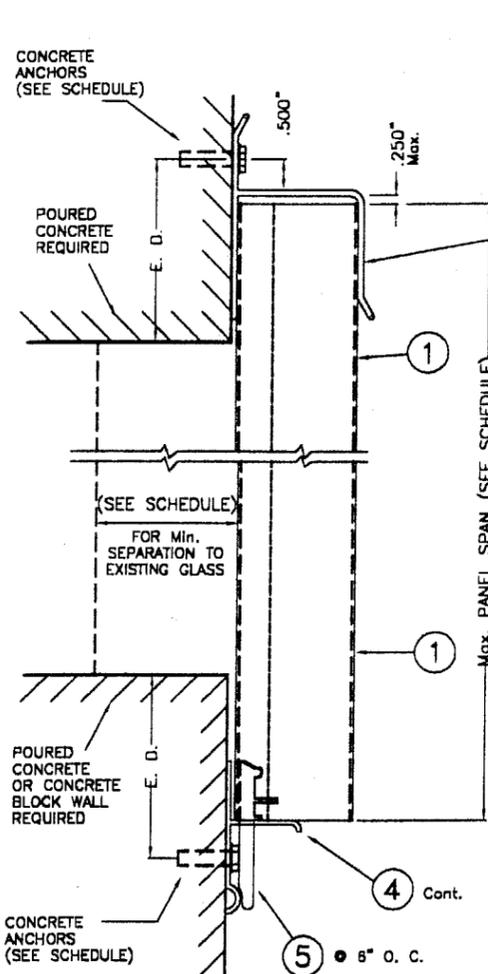
STORM PANEL ELEVATION SCALE 3" = 1'-0"



SECTION A-A SCALE 3" = 1'-0"

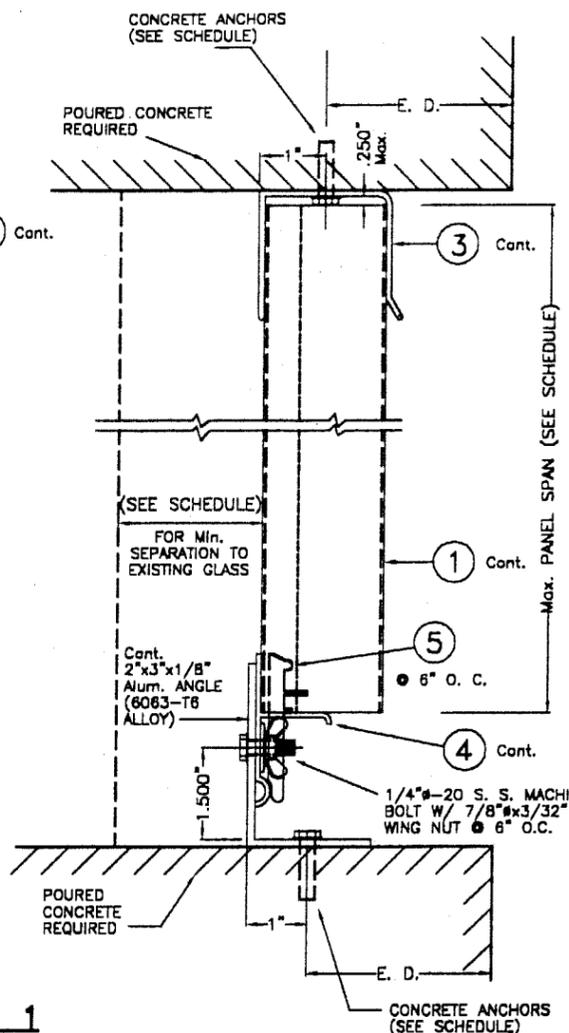
 TILLIT TESTING & ENGINEERING COMPANY 2635 N.W. 38th St., Ste. 217, VIRGINIA GARDENS, FL 33168 Phone: (305)871-1530 Fax: (305)871-1531 EB-0006719 WALTER A. TILLIT, Jr., P. E. FLORIDA Lic. # 44167		18 GAGE GALVANIZED STEEL STORM PANEL		AS SHOWN SCALE	
		ALUFAB HURRICANE SHUTTERS, INC. 13000 N.W. 38th AVENUE OPA LOCKA, FLORIDA 33054		2/5/03 DATE	
		03-026 DRAWING No			
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 94-69	2-5-03	3		
2			4		

FEB 10 2003



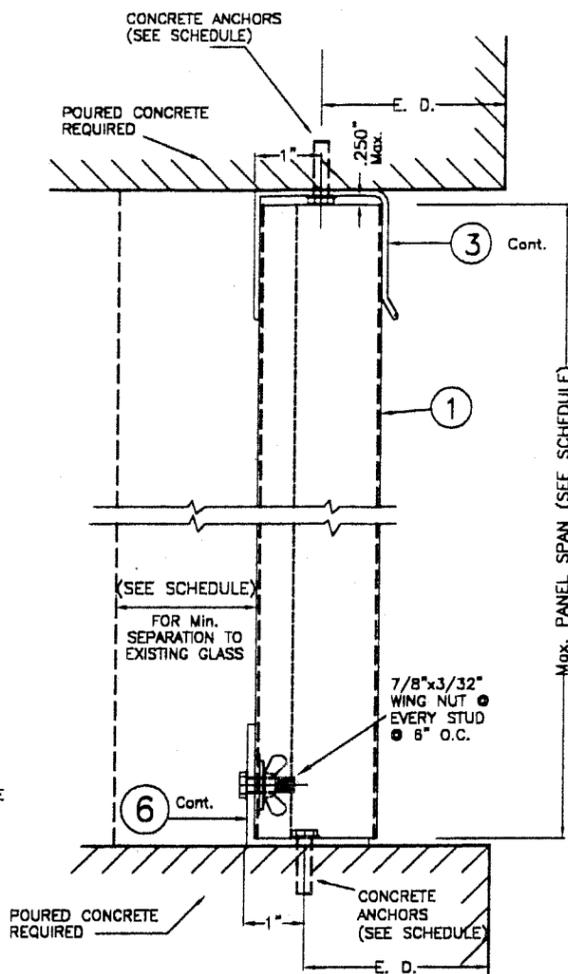
WALL MOUNT. INSTALL. - SECTION 1

SCALE: N.T.S.



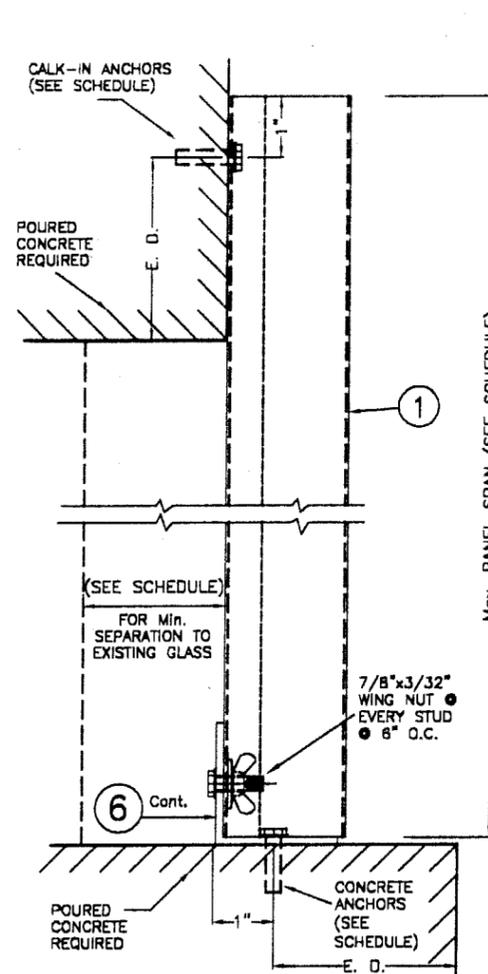
CEILING & FLOOR MOUNT. INSTALL. - SECTION 2

SCALE: N.T.S.



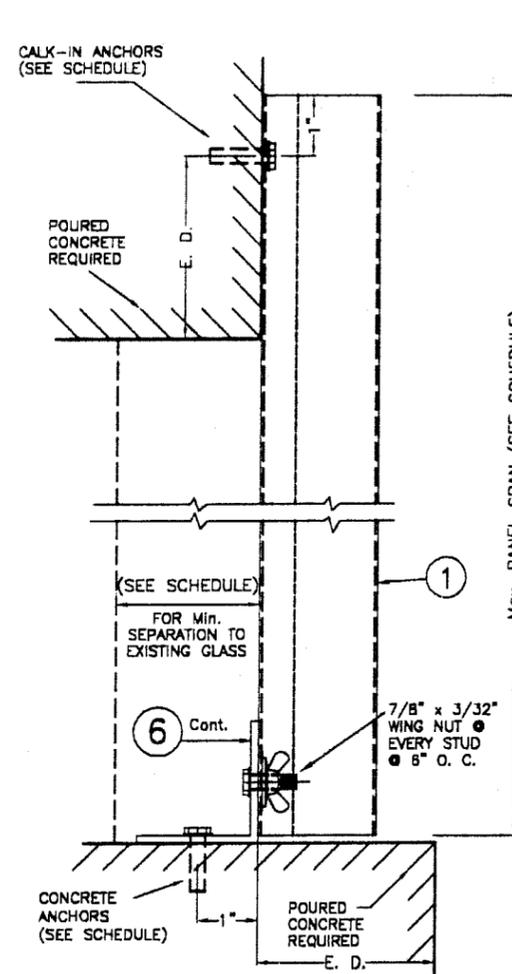
CEILING & FLOOR MOUNT. INSTALL. - SECTION 2A

SCALE: N.T.S.



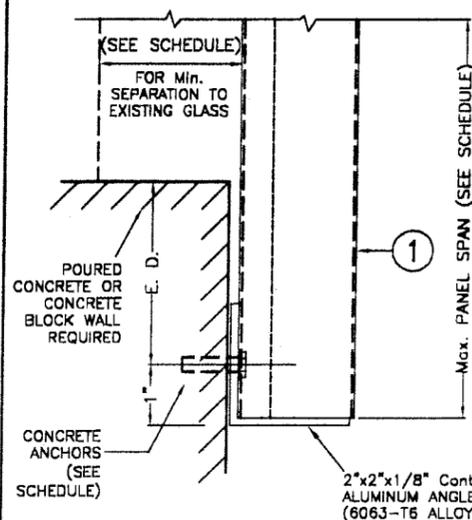
WALL & FLOOR MOUNT. INSTALL. - SECTION 3

SCALE: N.T.S.



WALL & FLOOR MOUNT. INSTALL. - SECTION 3A

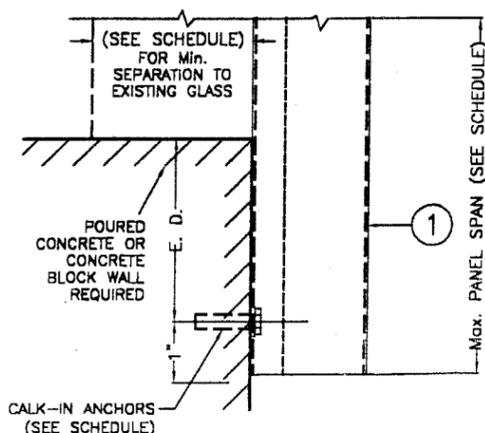
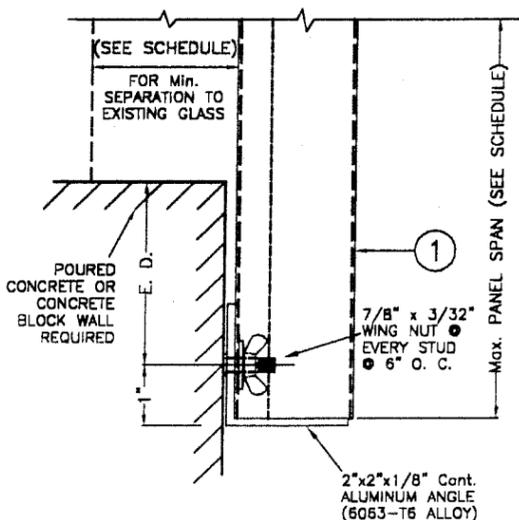
SCALE: N.T.S.



WALL MOUNTING INSTALLATION - SECTION 1A

NOTE: TOP MOUNTING AS ON SECTION 1 OR ALTERNATIVELY, IN CASE THAT HEADER WAS NOT USED ATTACH PANEL TO WALL USING SPECS AS INDICATED FOR BOTTOM CONNECTION DETAIL.

SCALE: N.T.S.



WALL MOUNTING INSTALLATION - SECTION 1B

SCALE: N.T.S.

NOTE: ALTERNATIVELY, IN CASE THAT HEADER WAS NOT USED ATTACH PANEL TO WALL USING SPECS AS INDICATED FOR BOTTOM CONNECTION DETAIL.

E. D. = EDGE DISTANCE (SEE SCHEDULE)

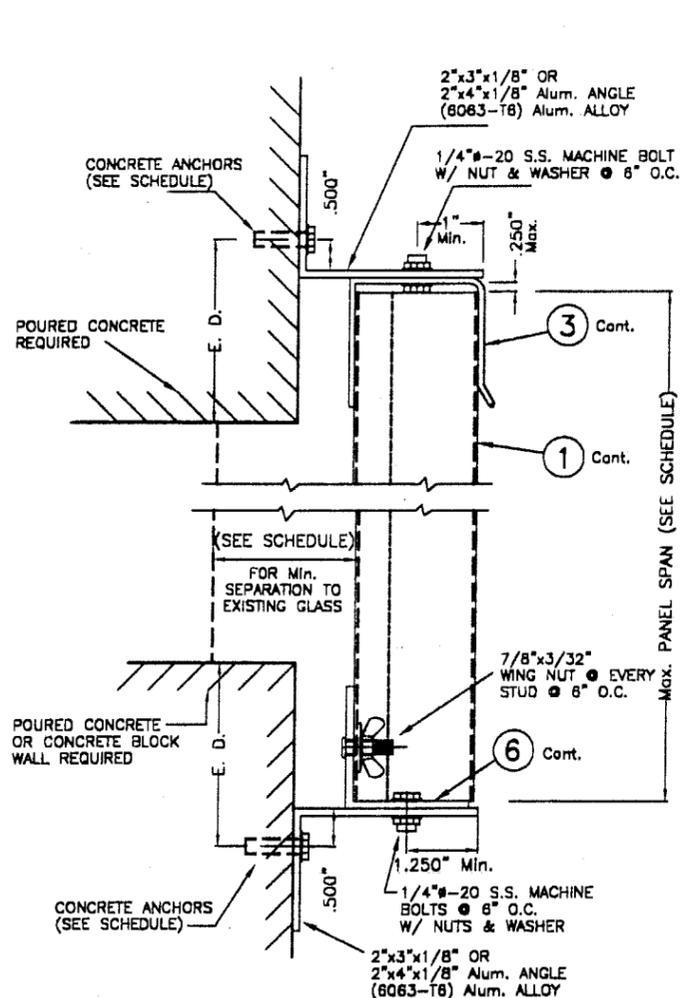
PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 03-0303.15
Expiration Date 03/06/2008
By *Heather A. Miller*
Miami Dade Product Control Division

F.B.C.(H.V.H.Z)/MIAMI DADE COUNTY

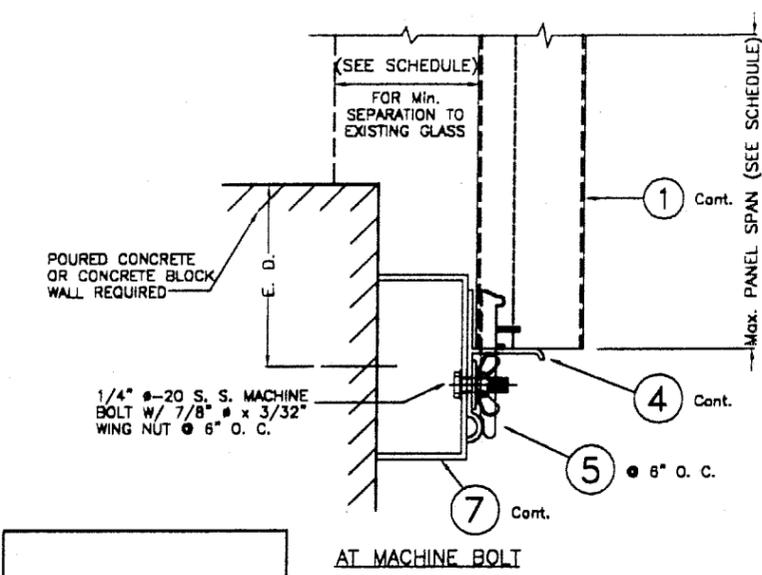
TILECO INC.
TILLIT TESTING & ENGINEERING COMPANY
6585 N.W. 38th St., Ste. 217, VIRGINIA GARDENS, FL 33188
Phone: (305)871-1530 Fax: (305)871-1531
EB-0006719
WALTER A. TILLIT Jr. P. E.
FLORIDA Lic. # 44167

18 GAGE GALVANIZED STEEL STORM PANEL		AS SHOWN SCALE
ALUFAB HURRICANE SHUTTERS, INC.		2/5/03 DATE
13000 N.W. 38th AVENUE OPA LOCKA, FLORIDA 33054		03-026 DRAWING No
REV. No	DESCRIPTION	DATE
1	OLD 94-69	2-5-03
2		4

FEB 10 2003

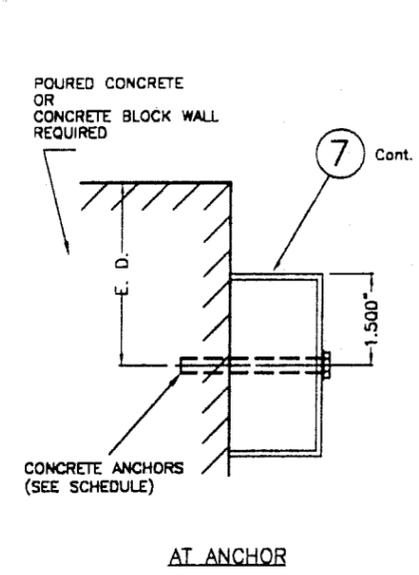


WALL MOUNTING INSTALLATION - OFFSET
- SECTION 4 SCALE: N.T.S.

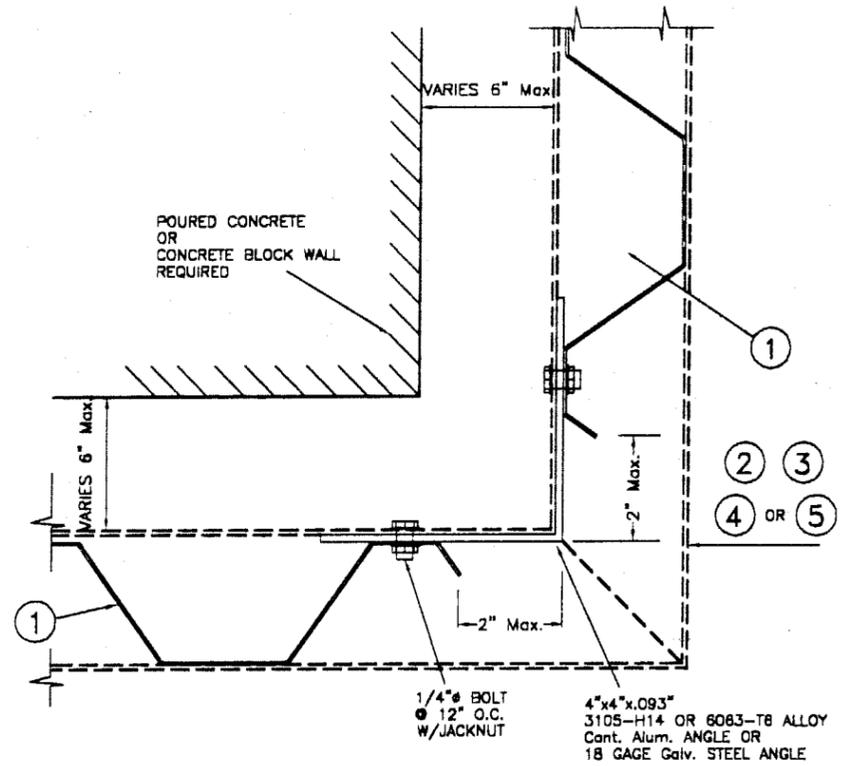


ALTERNATE WALL MOUNT. INSTALLAT. - SECTION 4A
SCALE: N.T.S.

E. D. = EDGE DISTANCE
(SEE SCHEDULE)

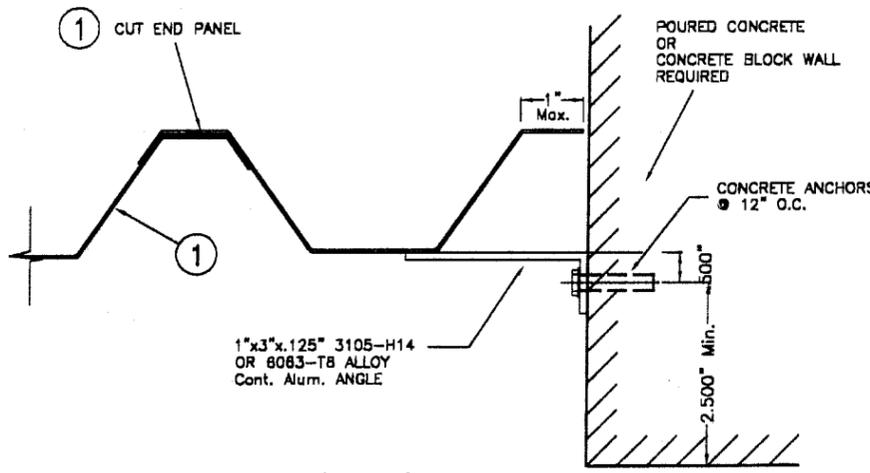


AT ANCHOR



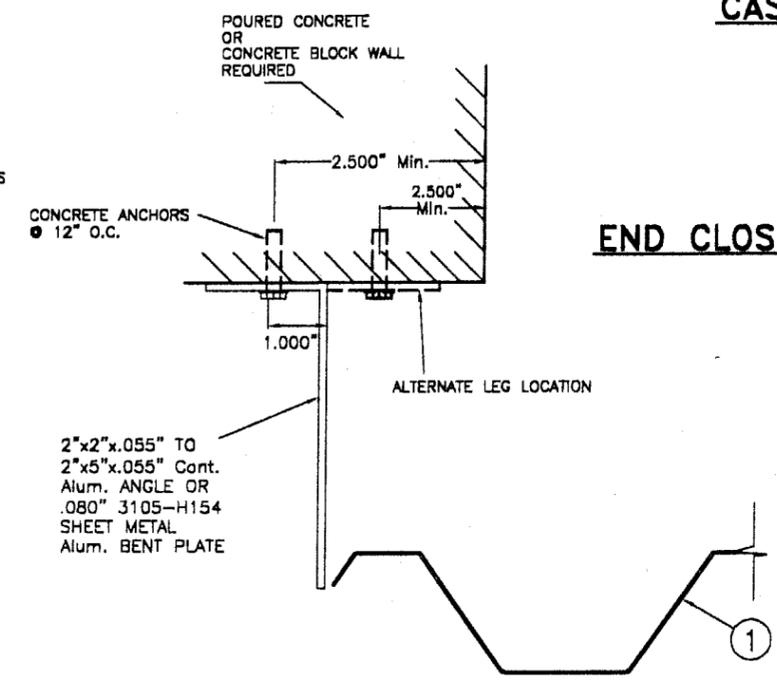
CASE A (Plan)

SCALE: N.T.S.

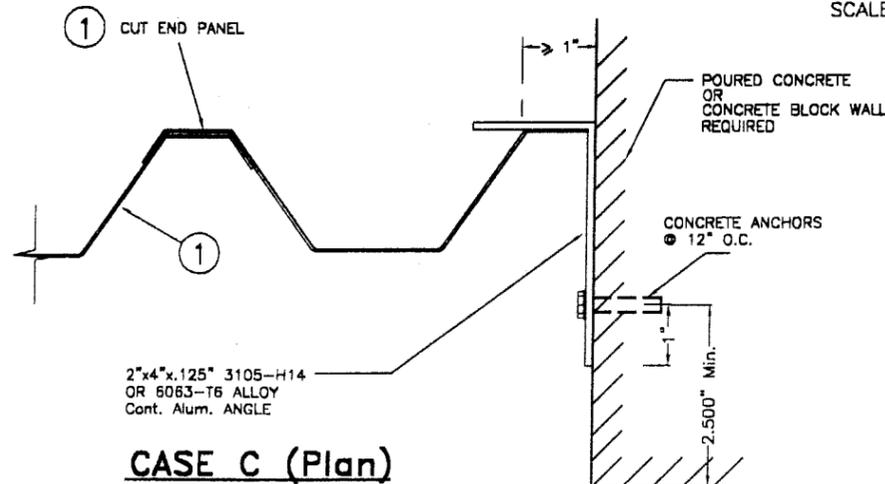


CASE B (Plan)

SCALE: N.T.S.



CASE D (Plan)



CASE C (Plan)

SCALE: N.T.S.

END CLOSURES DETAILS

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 03-0303.15
Expiration Date 03/06/2008
By *Helmut A. Miller*
Miami Dade Product Control
Division

F.B.C.(H.V.H.Z)/MIAMI DADE COUNTY

FEB 10 2003

TILTECO INC.
TILLET TESTING & ENGINEERING COMPANY
8595 N.W. 36th St., Ste. 217, VIRGINIA GARDENS, FL 33186
Phone: (305)871-1530 Fax: (305)871-1531
EB-0006719
WALTER A. TILLET Jr., P. E.
FLORIDA Lic. # 44167

18 GAGE GALVANIZED STEEL STORM PANEL			AS SHOWN SCALE		
ALUFAB HURRICANE SHUTTERS, INC.			2/5/03 DATE		
13000 N.W. 38th AVENUE OPA LOCKA, FLORIDA 33054			03-026 DRAWING No		
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 94-69	2-5-03	3		
2			4		

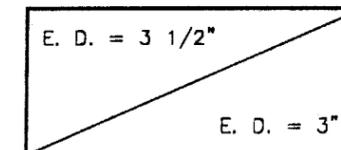
SHEET 3 OF 6

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

MAXIMUM DESIGN LOAD W (p.s.f.)	Max. PANEL SPAN L (ft.)	MINIMUM SEPARATION TO GLASS	APPLICABLE TO SECTIONS # (SEE SHEET 2 & 3 OF 6)
+50.0, -66.0	> 8'-3" TO 12'-4"	3"	1, 1A, 1B, 3, 3A, 4 & 4A
+60.0, -80.0	8'-3" OR LESS	2 1/4"	1, 1A, 1B, 3, 3A, 4 & 4A
+60.0, -80.0	5'-7" OR LESS	1 1/4"	1
+60.0, -80.0	7'-10" OR LESS	2 1/4"	2 & 2A

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

MAXIMUM DESIGN LOAD W (p.s.f.)	MAXIMUM ANCHORS SPACING				APPLICABLE TO SECTIONS #	MAX. PANEL SPAN "L" (Ft.)
	TAPCONS		CALK-INS			
	TO CONCRETE	TO MASONRY	TO CONCRETE	TO MASONRY		
+50.0, -66.0	6" O.C.	6" O.C.	6" O.C.	6" O.C.	1, 1A, 1B, 3, 3A, 4 & 4A	>8'-3" TO 12'-4"
	6" O.C.	5" O.C.	6" O.C.	6" O.C.		
+60.0, -80.0	6" O.C.	6" O.C.	12" O.C. **	12" O.C. **	1, 1A, 1B, 3, 3A, 4 & 4A	8'-3" OR LESS
	6" O.C.	6" O.C.	6" O.C. **	6" O.C. **		
+60.0, -80.0	6" O.C.	6" O.C.	6" O.C.	6" O.C.	2 & 2A	7'-10" OR LESS
	6" O.C.	6" O.C.	6" O.C.	6" O.C.		



PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No. 03-0303.15
Expiration Date 03/06/2008
By *Helmer A. Miller*
Miami Dade Product Control
Division

* SEE SHEETS 5 & 6 OF 6 FOR ANCHORS
TYPE & SPACING FOR INSTALLATIONS
INTO WOOD FRAME BUILDINGS.

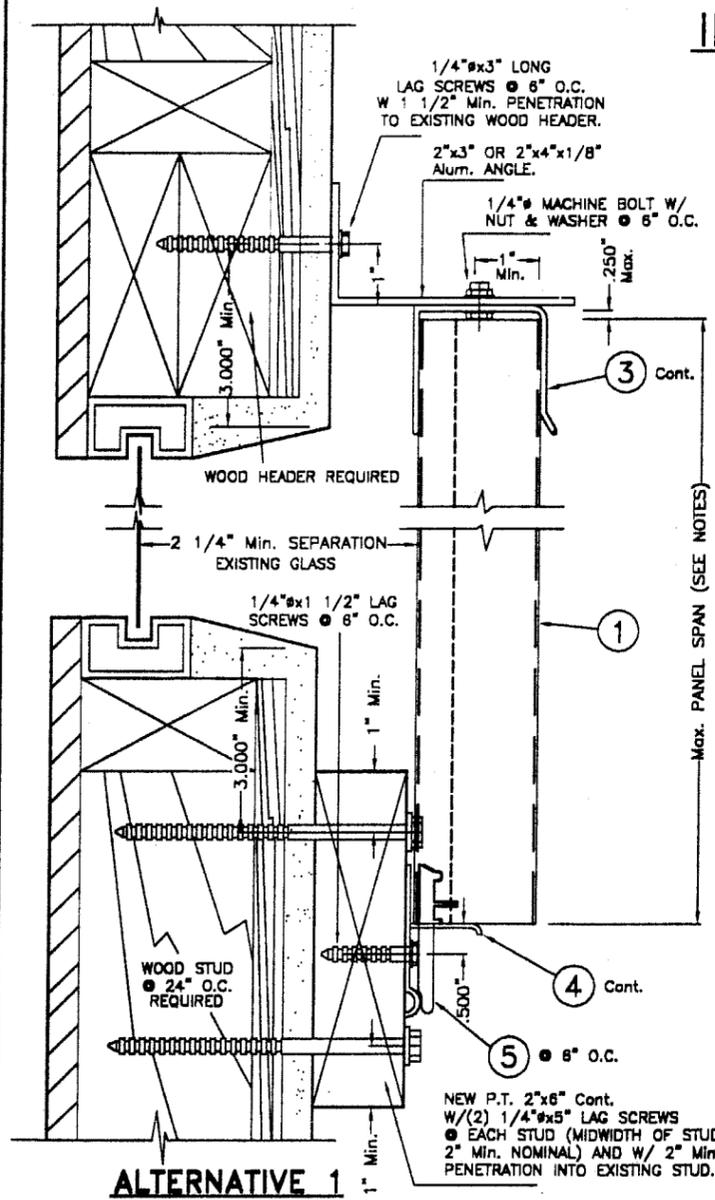
** DIRECT MOUNT CONNECTION TO WALL W/
CALK-IN ANCHORS AT 12" O.C., AND
8'-3" PANEL SPANS SHALL ALWAYS BE
PERFORMED W/ 3 1/2" EDGE DISTANCE (E. D.).
USE MAXIMUM CALK-IN ANCHORS SPACING OF
6" O.C. FOR DIRECT MOUNT INSTALLATION
WHERE E. D. = 3".

[Signature]
FEB 10 2003

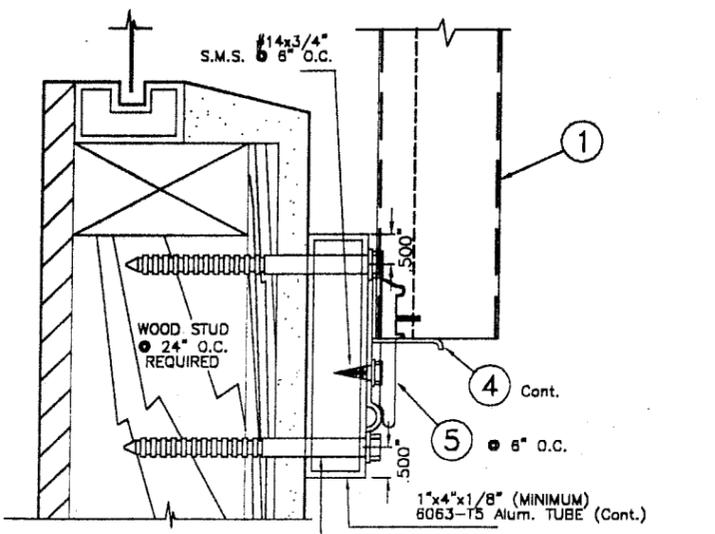
 TILTECO INC. <small>TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 38th St., Ste. 217, VIRGINIA GARDENS, FL 33188 Phone: (305)871-1530 Fax: (305)871-1531 EB-0006719 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44167</small>		ALUFAB HURRICANE SHUTTERS, INC. <small>13000 N.W. 38th AVENUE OPA LOCKA, FLORIDA 33054</small>		AS SHOWN SCALE	
18 GAGE GALVANIZED STEEL STORM PANEL				2/5/03 DATE	
DRAWING No 03-026				SHEET 4 OF 6	
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 94-69	2-5-03	3		
2			4		

F.B.C.(H.V.H.Z)/MIAMI DADE COUNTY

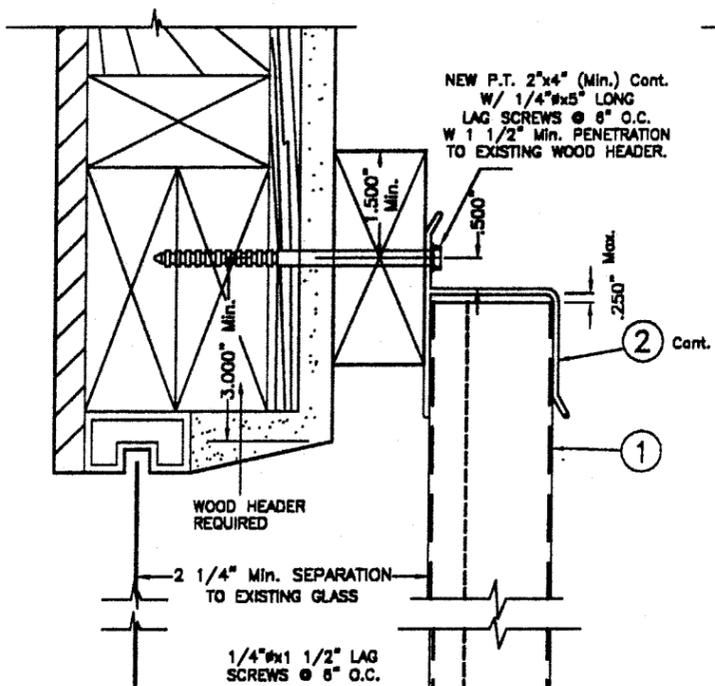
INSTALLATION DETAILS ON EXISTING WOOD BUILDINGS



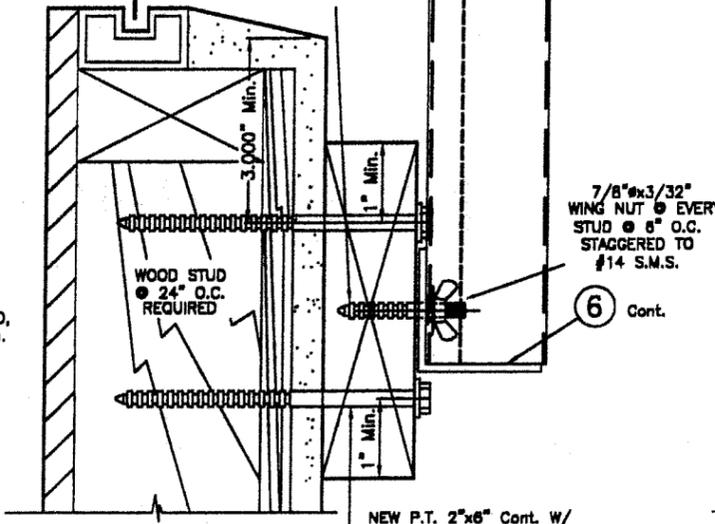
ALTERNATIVE 1



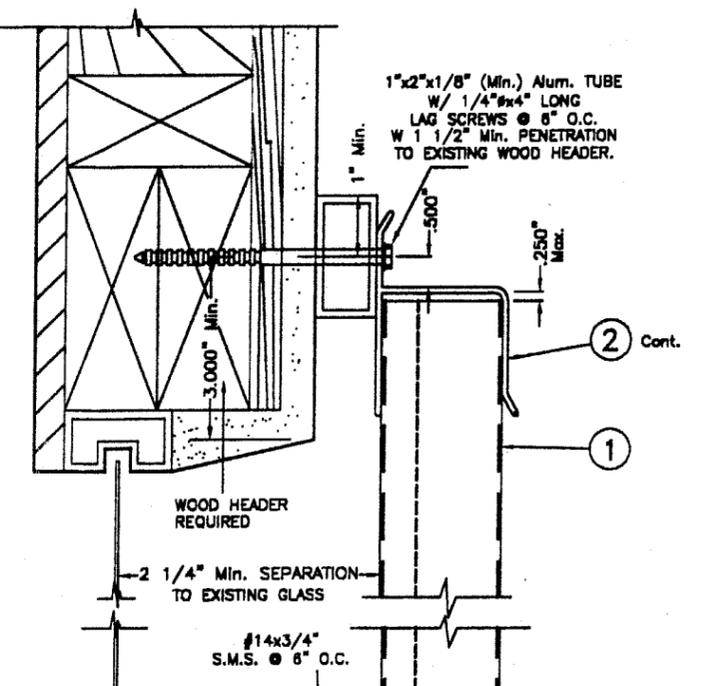
ALTERNATIVE 2



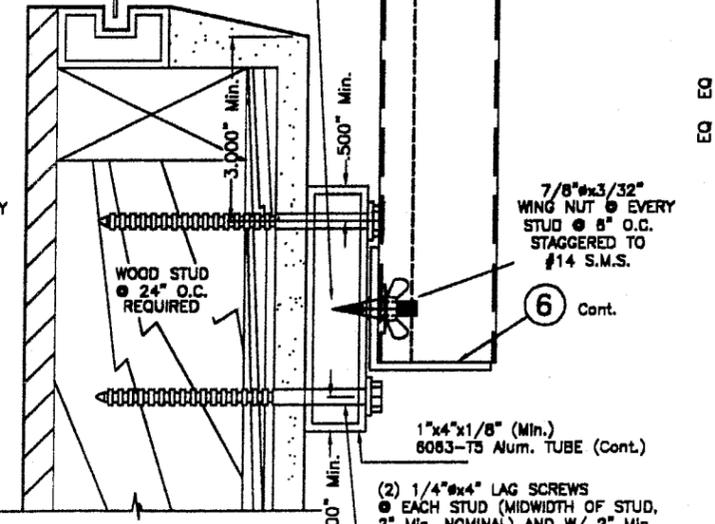
ALTERNATIVE 3



ALTERNATIVE 4



ALTERNATIVE 5



ALTERNATIVE 6

Max. PANEL SPAN (SEE NOTES)

WALL MOUNTING INSTALLATION - SECTIONS A

SCALE: 3/4" = 1"

- NOTES:**
- INSTALLATIONS ARE ONLY VALID FOR BUILDINGS WITH MEAN ROOF HEIGHT LESS OR EQUAL THAN 30 FEET, AND FOR PANEL'S SPANS OF 8'-3" MAXIMUM (FOR SECTION A & B) & 7'-10" MAXIMUM (FOR SECTION C).
 - NEW 2"x8" P.T. TO BE SOUTHERN PINE No. 2, SURFACED DRY WITH 19% M.M.C. W/ SPECIFIC DENSITY OF 0.55.
 - 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 03-0303.15
Expiration Date 03/06/2008
By *Helmut A. Miller*
Miami Dade Product Control
Division

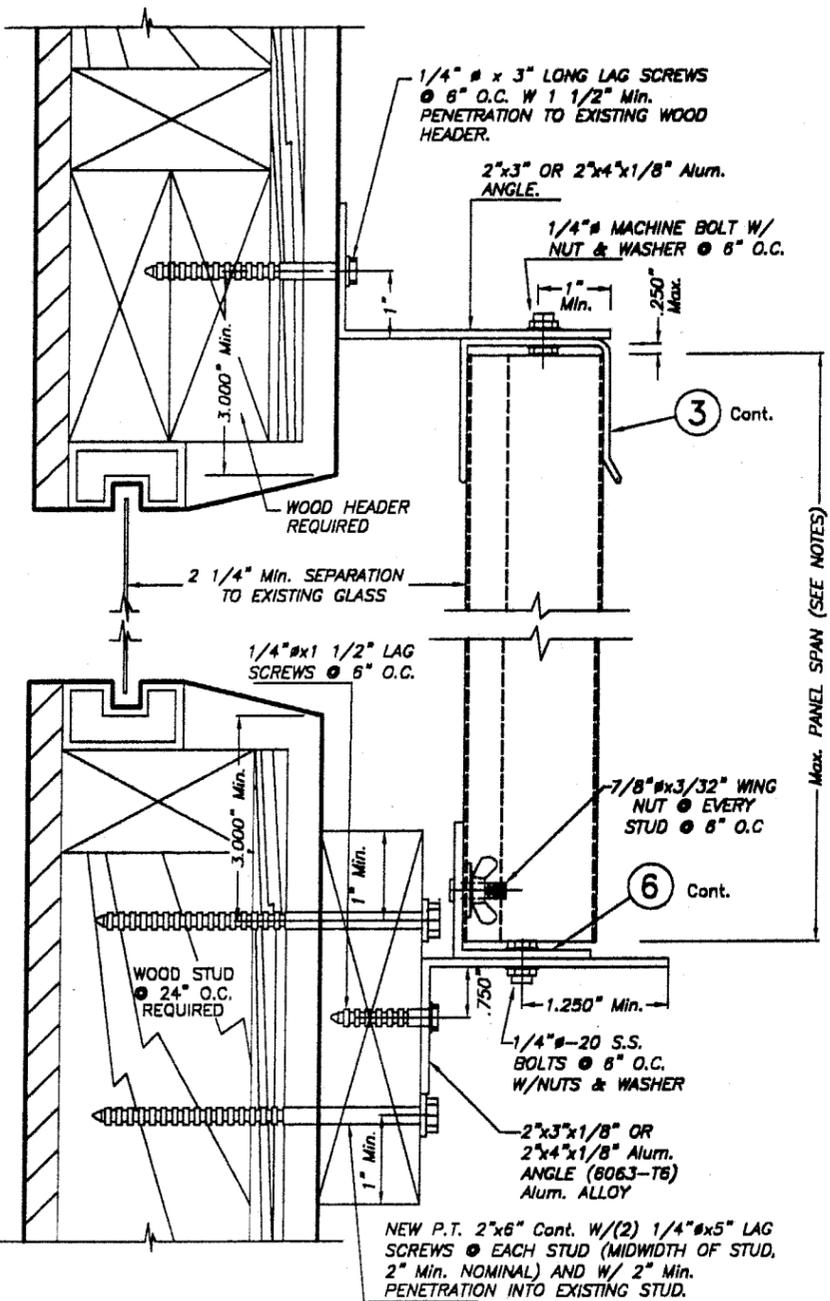
F.B.C.(H.V.H.Z)/MIAMI DADE COUNTY

<p>TILLIT TESTING & ENGINEERING COMPANY 6585 N.W. 38th St., Ste. 217, VIRGINIA GARDENS, FL 33188 Phone: (305)871-1530 Fax: (305)871-1531 EB-0006719 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44167</p>		18 GAGE GALVANIZED STEEL STORM PANEL		AS SHOWN SCALE	
		<p>ALUFAB HURRICANE SHUTTERS, INC. 13000 N.W. 38th AVENUE OPA LOCKA, FLORIDA 33054</p>		2/5/03 DATE	
		03-026 DRAWING No			
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 94-88	2-5-03	3		
2			4		

FEB 10 2003

NOTE FOR COMBINATION OF SECTIONS:

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



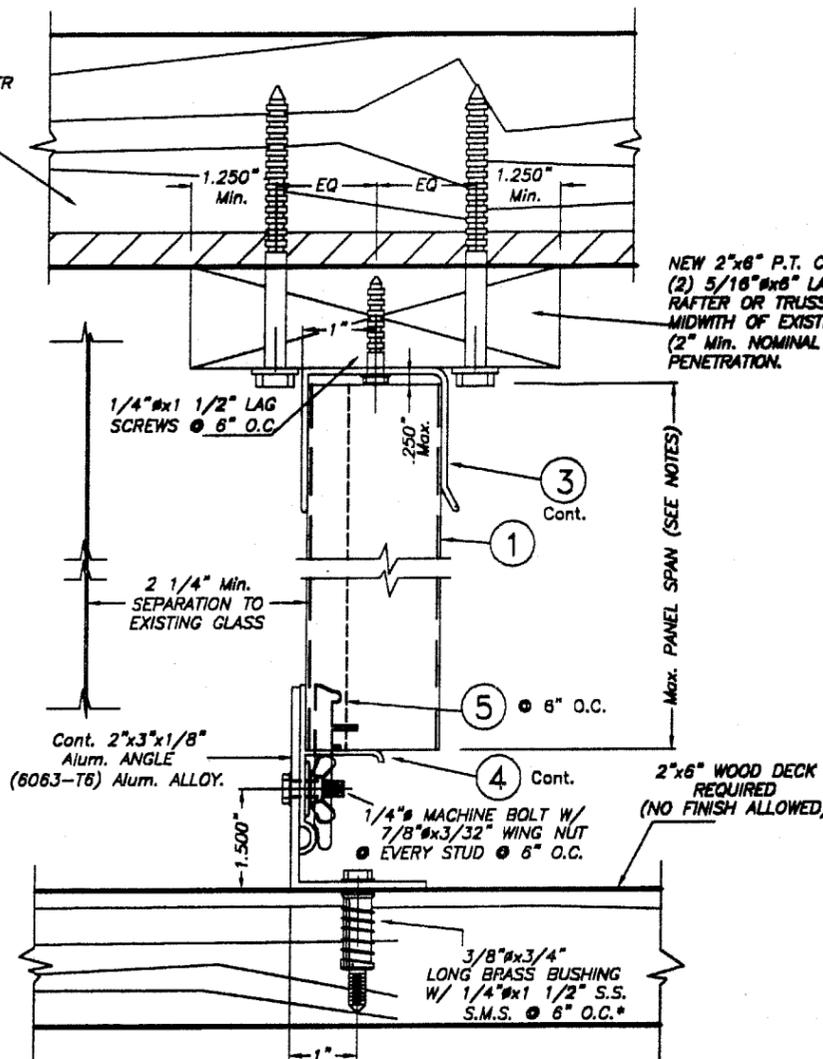
WALL MOUNTING INSTALLATION & (OFFSET)

- SECTION B

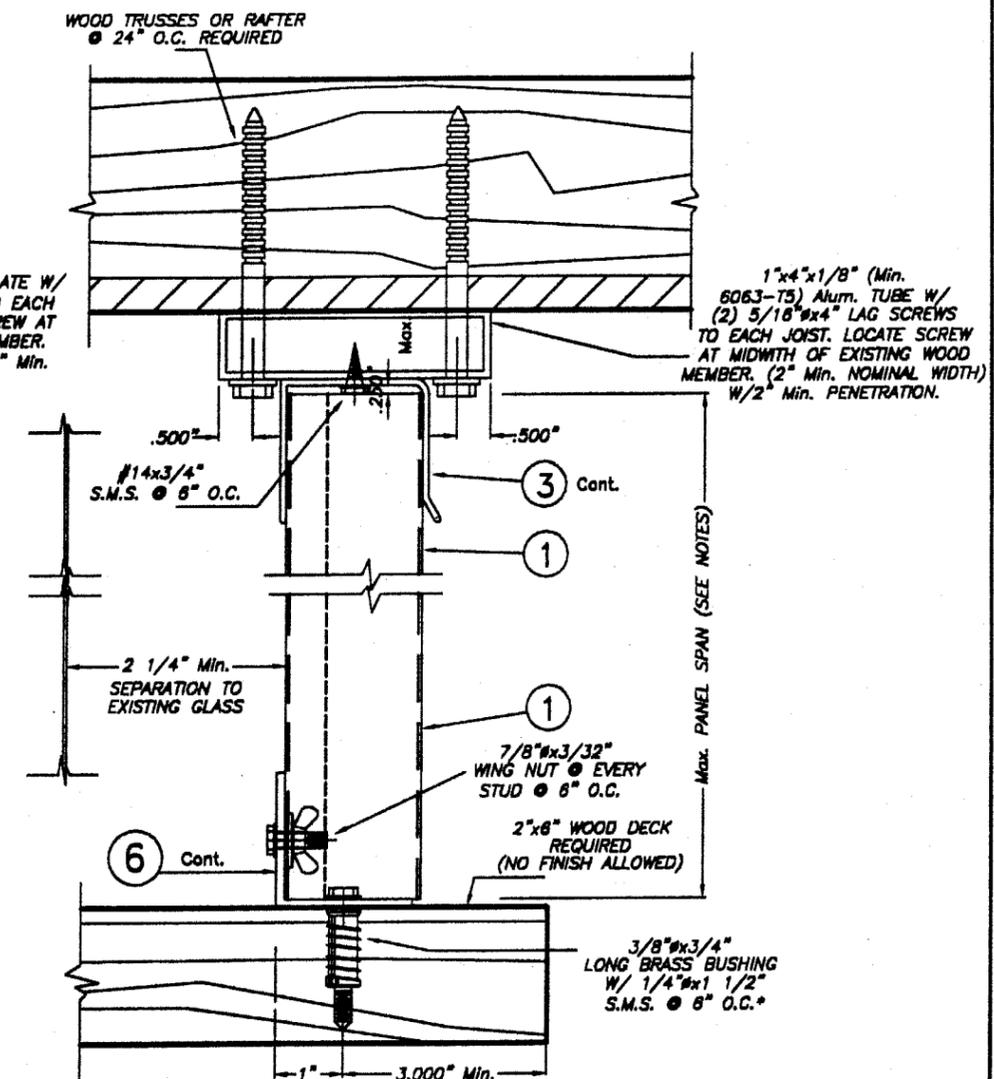
SCALE: N.T.S.

NOTES:

- INSTALLATIONS ARE ONLY VALID FOR BUILDINGS WITH MEAN ROOF HEIGHT LESS OR EQUAL THAN 30 FEET, AND FOR PANEL'S SPANS OF 8'-3" MAXIMUM (FOR SECTIONS A & B) & 7'-10" MAXIMUM (FOR SECTION C).
- NEW 2" x 6" P. T. TO BE SOUTHERN PINE No. 2, SURFACED DRY WITH 19 % M. C. W/ SPECIFIC DENSITY OF 0.55.
- FOR NEW WOOD FRAME CONSTRUCTION: WOOD MEMBERS TO BE SOUTHERN PINE No. 2, W/ SPECIFIC DENSITY OF 0.55 OR EQUAL.



ALTERNATIVE 1



ALTERNATIVE 2

* NOTE: FOR INSTALLATIONS THAT NEED NOT TO BE REMOVABLE, USE 1/4" x 1 1/2" LAG SCREWS @ 6" O.C.

* NOTE: FOR INSTALLATIONS THAT NEED NOT TO BE REMOVABLE, USE 1/4" x 1 1/2" LAG SCREWS @ 6" O.C.

CEILING & REMOVABLE FLOOR MOUNTING INSTALLATION - SECTION C

SCALE: N.T.S.

INSTALLATION DETAILS ON EXISTING WOOD BUILDINGS

PRODUCT REVISED as complying with the Florida Building Code Acceptance No 03-0303.15 Expiration Date 03/06/08
By *Helmut A. Miller*
Miami Dade Product Control Division

F.B.C.(H.V.H.Z)/MIAMI DADE COUNTY

<p>TILLIT TESTING & ENGINEERING COMPANY 4385 N.W. 38th St., Ste. 217, VIRGINIA GARDENS, FL 33188 Phone: (305)871-1530 Fax: (305)871-1531 EB-0006719 WALTER A. TILLIT Jr. P. E. FLORIDA Lic. # 44167</p>		18 GAGE GALVANIZED STEEL STORM PANEL		AS SHOWN SCALE	
		ALUFAB HURRICANE SHUTTERS, INC. 13000 N.W. 38th AVENUE OPA LOCKA, FLORIDA 33054		2/5/03 DATE	
		03-026 DRAWING No			
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 94-89	2-5-03	3		
2			4		

FEB 10 2003