

GENERAL NOTES:

1. EXTRUDED BERTHA BAHAMA SHUTTER SHOWN ON THIS PRODUCT EVALUATION DOCUMENT (P. E. D.) HAS BEEN VERIFIED FOR COMPLIANCE IN ACCORDANCE WITH THE 2004 EDITION OF THE FLORIDA BUILDING CODE.
THIS BAHAMA SHUTTER SYSTEM MAY BE INSTALLED AT HIGH VELOCITY HURRICANE ZONES CORRESPONDING TO BROWARD COUNTY.
DESIGN WIND LOADS SHALL BE DETERMINED AS PER SECTION 1620 OF THE ABOVE MENTIONED CODE. IN ORDER TO VERIFY THAT ANCHORS ON THIS P.E.D., AS TESTED, WERE NOT OVERSTRESSED, A 33% INCREASE IN ALLOWABLE LOADS FOR WIND LOADS WAS NOT USED IN THEIR ANALYSIS. HOWEVER, FOR LAG SCREWS INTO WOOD, A 1.60 WIND LOAD DURATION FACTOR WAS USED TO CALCULATE SCREWS SPACINGS.

EXTRUDED BERTHA BAHAMA SHUTTER'S ADEQUACY FOR HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1609.1.4 OF THE ABOVE MENTIONED CODE AS PER ATL REPORTS #0923.01-97 AND #0309.01-04 AS PER PROTOCOLS TAS-201, TAS-202 AND TAS-203.

2. ALL ALUMINUM EXTRUSIONS SHALL BE ALUMINUM ASSOCIATION 6063-T6 ALLOY AND TEMPER, WITH Fy = 25.0 ksi MINIMUM (UNLESS OTHERWISE NOTED).

3. 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.

4. BOLTS TO BE ALUMINUM ASSOCIATION 2024-T4 ALLOY AND TEMPER, ASTM A-307 GALVANIZED STEEL, OR AISI 304 SERIES STAINLESS STEEL WITH 36 ksi MINIMUM YIELD STRENGTH.

5. ALL ALUMINUM POP RIVETS TO BE 5052 ALUMINUM ALLOY WITH ALUMINUM MANDREL.

6. ANCHORS TO WALL SHALL BE AS FOLLOWS: (UNLESS OTHERWISE NOTED)
(A) TO EXISTING POURED CONCRETE: (Min. f'c=3145 p.s.i.)
- 1/4" Ø TAPCON ANCHORS AS MANUFACTURED BY I.T.W. BUILDEX.
- 1/4" Ø x 7/8" GALK-IN ANCHORS AS MANUFACTURED BY THE POWERS FASTENERS, INC.

NOTES:
A.1) MINIMUM EMBEDMENT OF TAPCON ANCHORS INTO POURED CONCRETE IS 1 1/2"

A.2) GALK-IN ANCHORS SHALL BE ENTIRELY EMBEDDED INTO THE POURED CONCRETE. NO EMBEDMENT INTO STUCCO SHALL BE PERMITTED.
1/4" Ø-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 PANELS BE FOUND ON THE EXISTING WALL OR FLOOR, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SUCH PANELS. ANCHORAGE SHALL BE AS INDICATED ON NOTES A.1) & A.2) ABOVE.

(B) TO EXISTING CONCRETE BLOCK WALL:
- 1/4" Ø TAPCON ANCHORS AS MANUFACTURED BY I.T.W. BUILDEX.
- 1/4" Ø x 7/8" GALK-IN ANCHORS AS MANUFACTURED BY THE POWERS FASTENERS, INC.

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

B.2) GALK-IN ANCHORS SHALL BE ENTIRELY EMBEDDED INTO THE CONCRETE BLOCK UNIT. NO EMBEDMENT INTO STUCCO SHALL BE PERMITTED. 1/4" Ø-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 AS INDICATED ON NOTES B.1) & B.2) ABOVE.

(C) ANCHORS SHALL BE INSTALLED FOLLOWING ALL OF THE RECOMMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER.

7. EACH SHUTTER SHALL HAVE A LEGIBLE AND READILY VISIBLE MARKING INSTRUCTING OWNER OR TENANT TO SECURE SHUTTER WITH SIDE & SILL BRACKETS DURING PERIODS OF HURRICANE WARNINGS.

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. CONTRACTOR TO SEAL/CAULK ALL SHUTTER COMPONENT EDGES WHICH REMAIN IN PERMANENT AND CONTINUOUS CONTACT WITH THE BUILDING TO PREVENT WIND/RAIN INTRUSION. CAULK AND SEAL SHUTTER TRACKS ALL AROUND FULL LENGTH. THIS SHUTTER SHALL ONLY BE ATTACHED TO CONCRETE, BLOCK OR WOOD FRAME BUILDINGS.

9. EXTRUDED BERTHA BAHAMA SHUTTER'S INSTALLATION SHALL COMPLY WITH SPECS INDICATED IN THIS DRAWING PLUS ANY BUILDING AND ZONING REGULATIONS PROVIDED BY THE JURISDICTION WHERE PERMIT IS APPLIED TO.

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

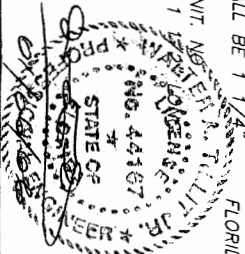
(b) CONTRACTOR TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION INCLUDING LIFE SAFETY OF THIS PRODUCT, BASED ON THIS P.E.D., PROVIDED HE/SHE DOES NOT DEVIATE FROM THE CONDITIONS DETAILED ON THIS DOCUMENT. CONSTRUCTION SAFETY AT SITE IS THE CONTRACTOR'S RESPONSIBILITY.

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

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

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

11. SHUTTER'S MANUFACTURER LABEL SHALL BE PLACED ON THE EXPOSED SURFACE OF THE BAHAMA FRAME (A) OR (B) ONE LABEL SHALL BE PLACED FOR EVERY OPENING. LABEL SHALL READ AS FOLLOWS:
AMERICAN SHUTTER SYSTEMS ASSOC., INC.
WEST PALM BEACH, FL.
FLORIDA STATEWIDE PRODUCT APPROVED.



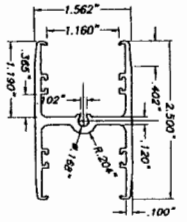
TILTECO INC.
TILTE TESTING & ENGINEERING COMPANY
4506 WESTROADS DRIVE
WEST PALM BEACH, FL 33407
TEL: 561-839-1100 FAX: 561-839-1101
FLORIDA LIC. # 14167

AMERICAN SHUTTER SYSTEMS ASSOC., INC.
4506 WESTROADS DRIVE
WEST PALM BEACH, FL 33407

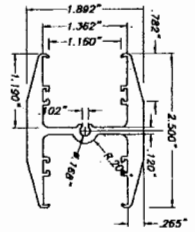
| | | | | | |
|----------|-------------|------|----------|-------------|------|
| REV. NO. | DESCRIPTION | DATE | REV. NO. | DESCRIPTION | DATE |
| 1 | | | 2 | | |

06-001
DRAWING NO.
SHEET 1 OF 9

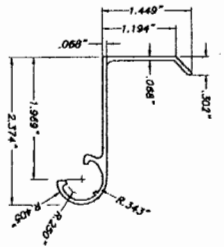
F.B.C. (High Velocity Hurricane Zone)



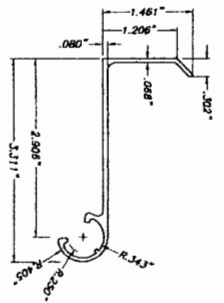
A1 REGULAR INTERIOR MULLION
6005-15 Alum. Alloy
SCALE: 1/2" = 1"



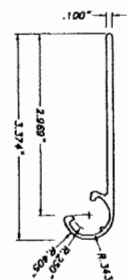
A2 HEAVY INTERIOR MULLION
6005-15 Alum. Alloy
SCALE: 1/2" = 1"



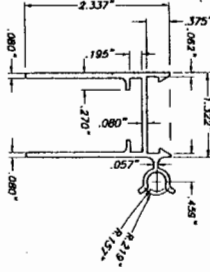
B FEMALE HINGE
SCALE: 1/2" = 1"



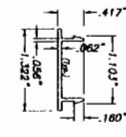
C 1" B.O. FEMALE HINGE
SCALE: 1/2" = 1"



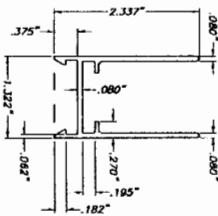
D FLAT FEMALE HINGE
SCALE: 1/2" = 1"



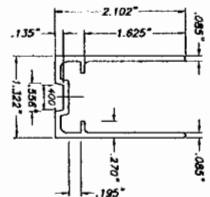
E BAHAMA MALE TOP FRAME
SCALE: 1/2" = 1"



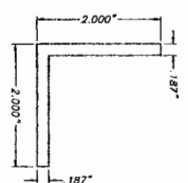
F SNAP CAP
SCALE: 1/2" = 1"



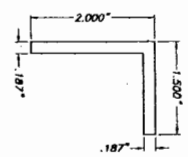
G BAHAMA FRAME
SCALE: 1/2" = 1"



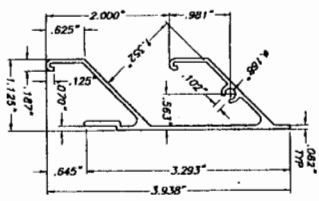
G1 ALTERNATE BAHAMA FRAME
SCALE: 1/2" = 1"



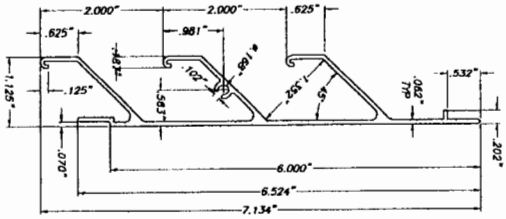
H CORNER KEY
1" LONG
SCALE: 1/2" = 1"



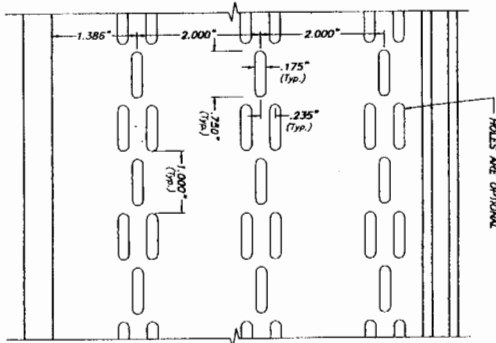
N WALL MOUNT ALUM. BRACKET
7" LONG
SCALE: 1/2" = 1"



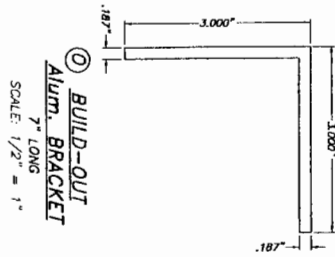
I HALF SHUTTER BLADE
SCALE: 1/2" = 1"



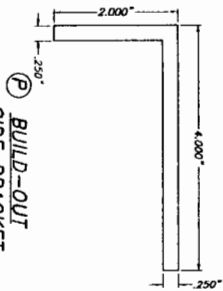
J SHUTTER BLADE
SCALE: 1/2" = 1"



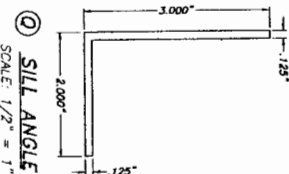
SHUTTER BLADE ELEVATION
SCALE: 1/2" = 1"



O BUILD-OUT ALUM. BRACKET
7" LONG
SCALE: 1/2" = 1"



P BUILD-OUT SIDE BRACKET
7" LONG
SCALE: 1/2" = 1"



Q SILL ANGLE
SCALE: 1/2" = 1"

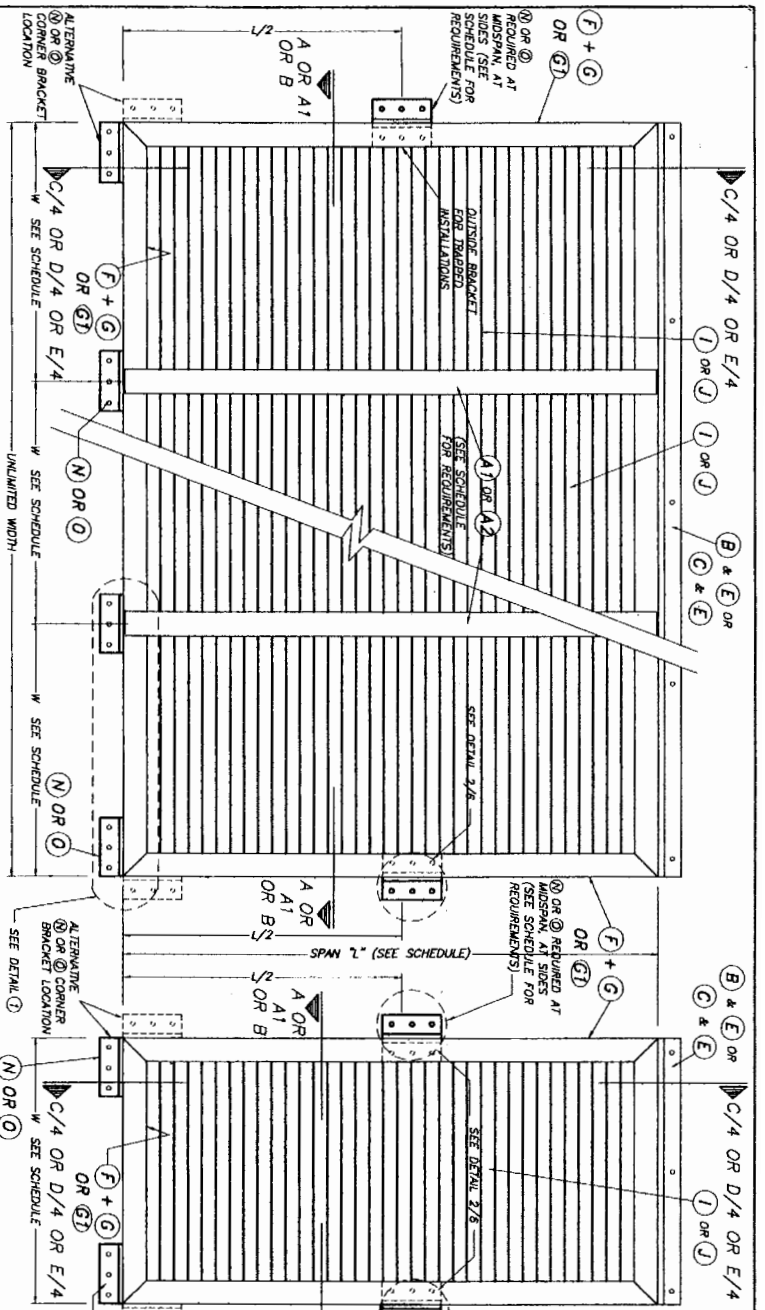
COMPONENTS



TILECO INC.
TILLET TESTING & ENGINEERING COMPANY
4284 WESTRIDGE DRIVE
WEST PALM BEACH, FL 33407
TEL: 561-833-7119 FAX: 561-833-1307
WWW.TILECO.COM
© 2006 TILECO INC.

| | | |
|---------------------------------------|-------------|-----------|
| ASSN / EXTRUDED BERTHA BAHAMA SHUTTER | | DRWING BY |
| AMERICAN SHUTTER SYSTEMS ASSOC., INC. | | DATE |
| 4284 WESTRIDGE DRIVE | | 06-001 |
| WEST PALM BEACH, FL 33407 | | DATE |
| REV. NO. | DESCRIPTION | DATE |
| 1 | | |
| 2 | | |
| SHEET 2 OF 9 | | |

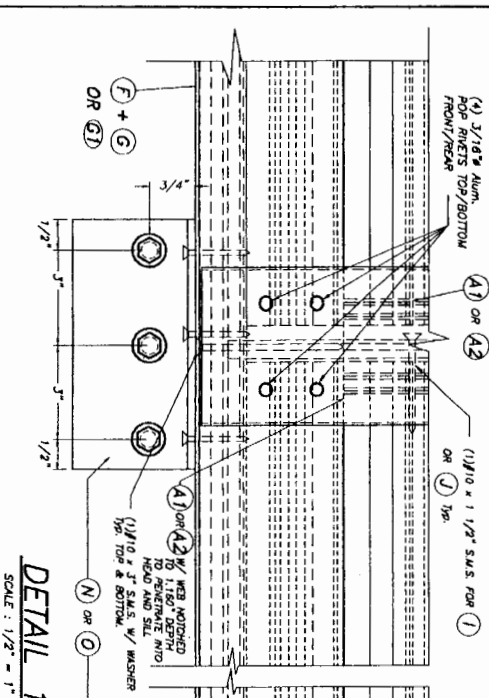
F.B.C. (High Velocity Hurricane Zone)



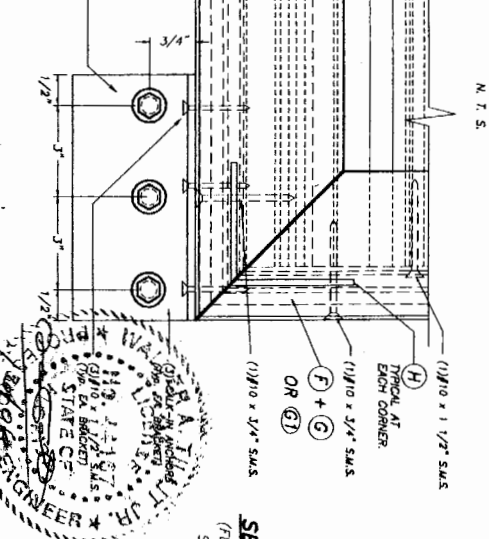
MULTIPLE UNIT

ELEVATIONS

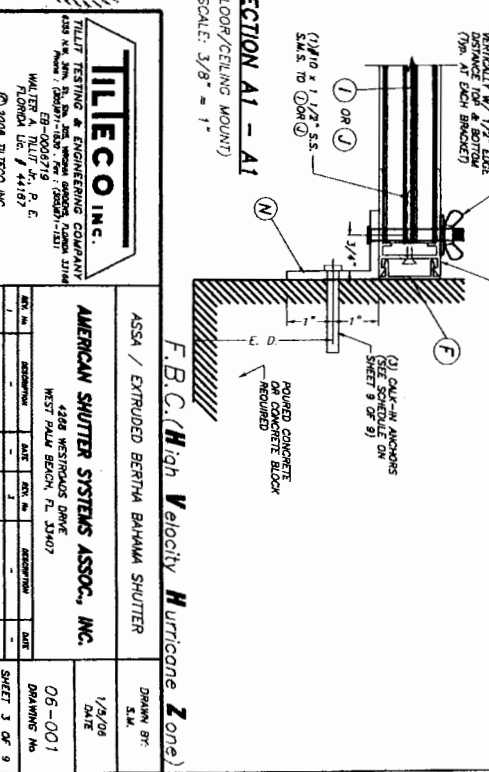
SINGLE UNIT



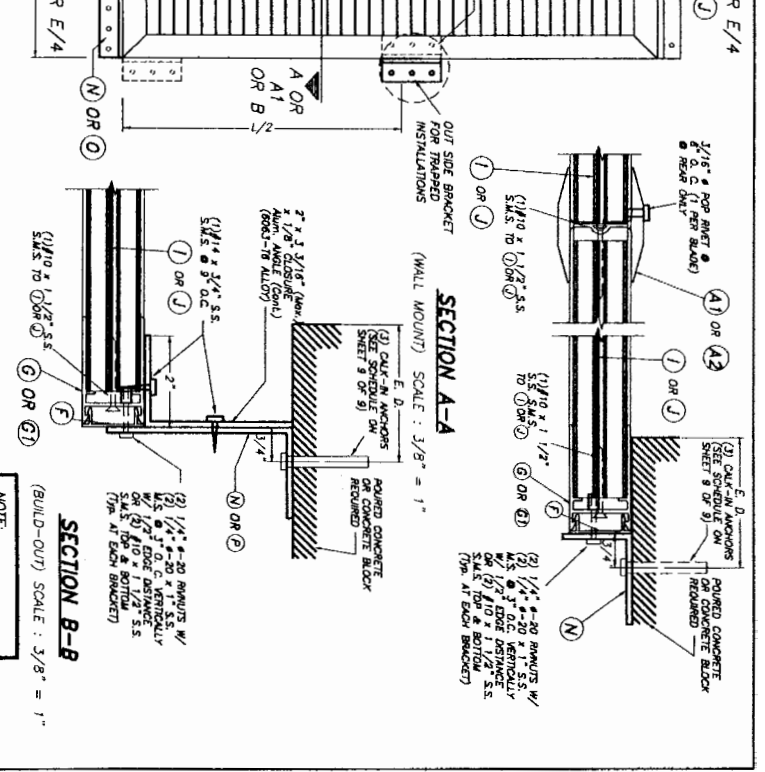
DETAIL 1
SCALE: 1/2" = 1"



DETAIL 2
SCALE: 1/2" = 1"



SECTION A-A
SCALE: 3/8" = 1"



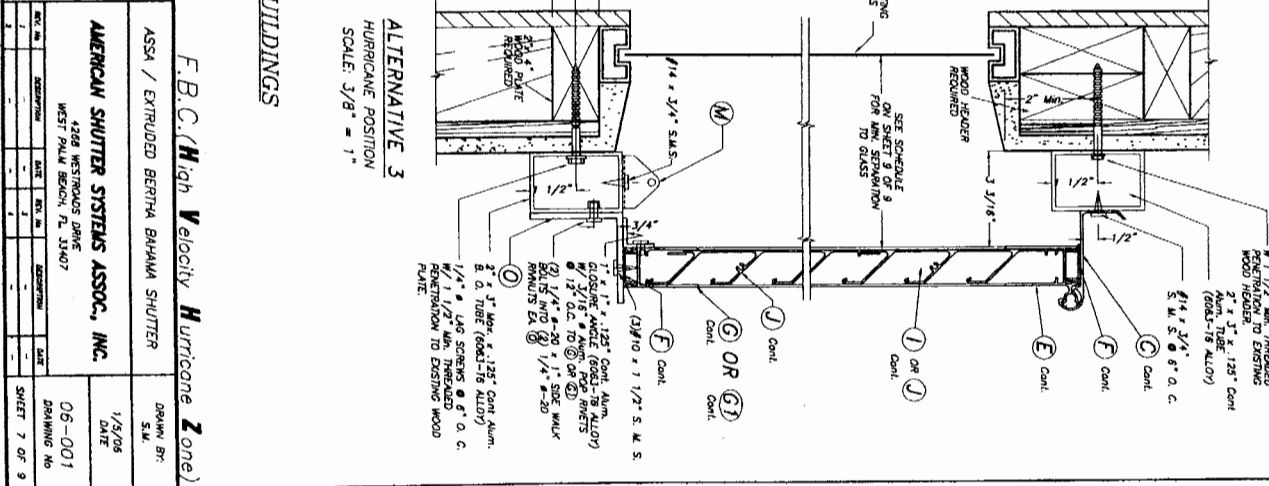
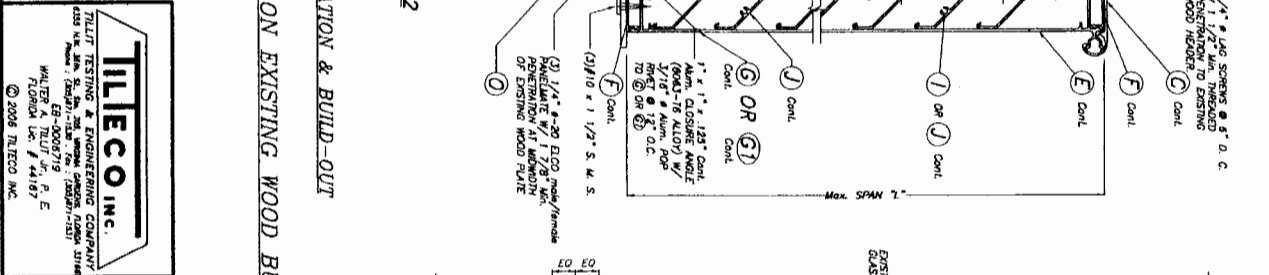
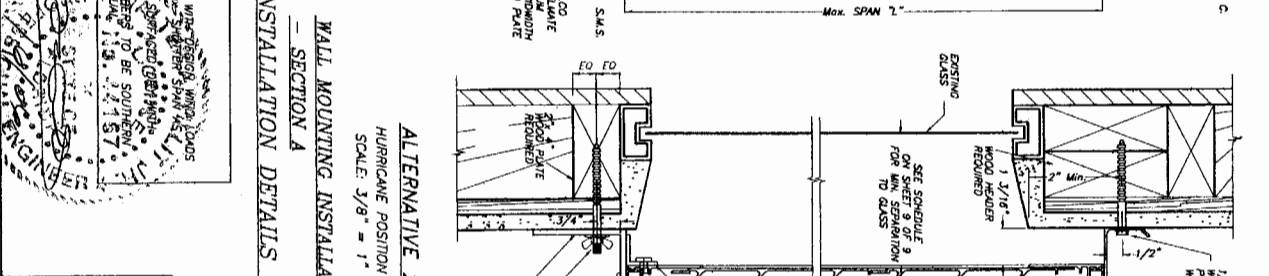
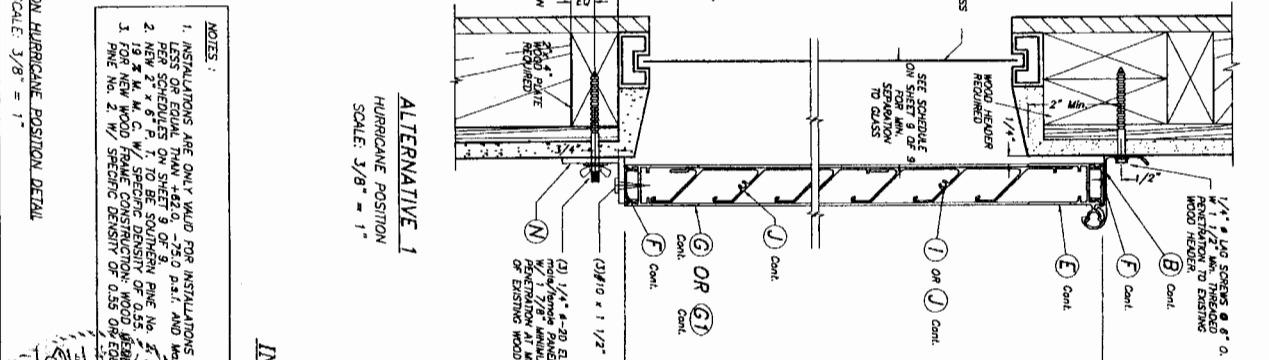
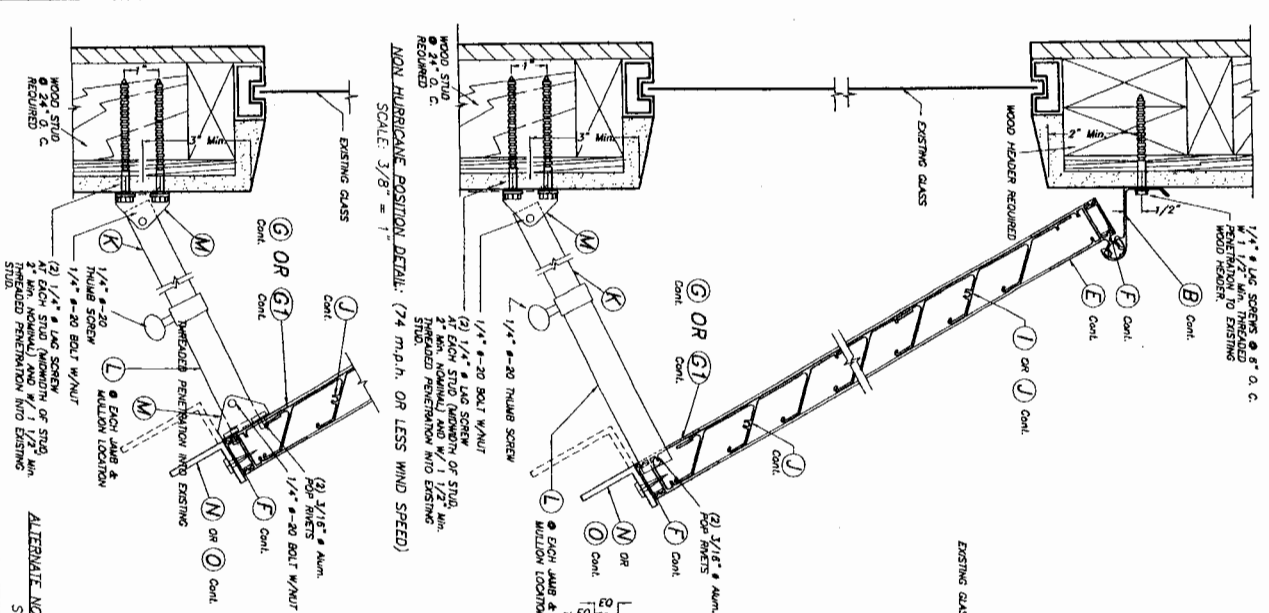
SECTION B-B
SCALE: 3/8" = 1"



TILECO INC.
TILT TESTING & ENGINEERING COMPANY
4330 N.W. 11th Ave., Suite 200
West Palm Beach, FL 33407
Tel: 561-833-7119
Fax: 561-833-7120

AMERICAN SHUTTER SYSTEMS ASSOC., INC.
4338 WESTINGHOUSE DRIVE
WEST PALM BEACH, FL 33407
Tel: 561-833-7119
Fax: 561-833-7120

| | |
|-------------|---------|
| DATE | 1/23/06 |
| BY | S.M. |
| DRWN BY | S.M. |
| CHKD BY | |
| DATE | |
| DESIGNED BY | |
| DATE | |
| APPROVED BY | |
| DATE | |
| DRAWING NO. | 06-001 |
| SHEET | 3 OF 9 |



ALTERNATIVE 1
HURRICANE POSITION
SCALE: 3/8" = 1"

ALTERNATIVE 2
HURRICANE POSITION
SCALE: 3/8" = 1"

ALTERNATIVE 3
HURRICANE POSITION
SCALE: 3/8" = 1"

RAIL MOUNTING INSTALLATION & BUILD-OUT
SECTION A
INSTALLATION DETAILS ON EXISTING WOOD BUILDINGS

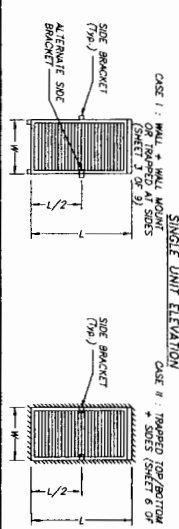
- NOTES:
1. INSTALLATIONS ARE ONLY VALID FOR INSTALLATIONS WITH 2500 MPH WINDS LESS OR EQUAL THAN 45.0 - 75.0 p.s.f. AND MAX. WIND SPEED 130 MPH.
 2. NEW 2" x 8" P. 1. TO BE SOUTHERN PINE No. 1 SPECIFIC GRADE (S.P.G.) OR BETTER.
 3. 1 1/2" x 1/2" M. C. W/ SPECIFIC GRADE OF 0.55 OR BETTER TO BE SOUTHERN PINE No. 2 W/ SPECIFIC GRADE OF 0.55 OR EQUAL.

TILECO INC.
TILECO TESTING & ENGINEERING COMPANY
4000 W. US HWY. 1, SUITE 100
MULLEN, FLORIDA 32061
TEL: 904-329-1100 FAX: 904-329-1101
WWW.TILECO.COM

F.B.C. (High Velocity Hurricane Zone)
ASSA / EXTRUDED BERTHA BAHAMA SHUTTER
AMERICAN SHUTTER SYSTEMS ASSOC., INC.
4388 WESTBROOK DRIVE
WEST PALM BEACH, FL 33407
DRAWN BY: S.M.
DATE: 1/3/06
06-001
DRAWING NO.
SHEET 7 OF 9

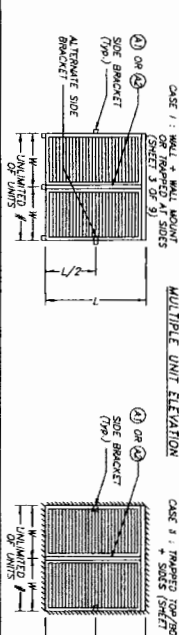
SCHEDULE # 1
MAXIMUM SINGLE UNIT FOR A CORRESPONDING DESIGN PRESSURE AND MOUNTING TYPE

| DESIGN PRESSURE RATING (p.s.f.) AND CASE # | MAXIMUM UNIT WIDTH "W" (IN) | MAXIMUM SPAN "L" (IN) | | MINIMUM SEPARATION TO GLASS (IN) |
|--|-----------------------------|-----------------------|-----------------|----------------------------------|
| | | W/O SIDE BRACKET | W/ SIDE BRACKET | |
| CASES I & II +56.0, -63.0 | 42" | 52" | N/A | 3 1/8" |
| CASES I & II +75.0, -100.0 | 42" | N/A | 96" | 2 1/8" |



SCHEDULE # 1A
MAXIMUM MULTIPLE UNIT FOR A CORRESPONDING DESIGN PRESSURE AND MOUNTING TYPE

| DESIGN PRESSURE RATING (p.s.f.) AND CASE # | MAXIMUM UNIT WIDTH "W" (IN) | MAXIMUM SPAN "L" (IN) | | INTERIOR MULLION TYPE REQUIRED | MINIMUM SEPARATION TO GLASS (IN) |
|--|-----------------------------|-----------------------|-----------------|--------------------------------|----------------------------------|
| | | W/O SIDE BRACKET | W/ SIDE BRACKET | | |
| CASE I +56.0, -43.3 | 36 1/2" | 72 1/2" | N/A | A1 | 2 1/2" |
| CASE I +62.0, -75.0 | 36 1/2" | N/A | 83" | A2 | 2 3/8" |
| CASE II +62.0, -75.0 | 36 1/2" | N/A | 84" | A2 | 2 3/8" |



SCHEDULE # 2
LIMITATIONS FOR SINGLE AND MULTIPLE UNITS BAHAMA SHUTTERS UNIT WIDTH (IN), SPAN L (IN) AND CORRESPONDING MAXIMUM DESIGN PRESSURE (p.s.f.) FOR THE INSTALLATION OF SIDE & SILL BRACKETS INTO CONCRETE & MASONRY BUILDINGS BY MEANS OF (3) 1/4" Ø x 7/8" CALK-IN ANCHORS *

| MAXIMUM NEGATIVE DESIGN PRESSURE RATING (p.s.f.) | SINGLE UNITS | | | | MULTIPLE UNITS | | | |
|--|-------------------------|-------------|-------------|-------------|-------------------------|-------------|-------------|-------------|
| | SIDE & SILL BRACKETS ** | | TO BLOCK | | SIDE & SILL BRACKETS ** | | TO BLOCK | |
| | TO CONCRETE | TO CONCRETE | TO CONCRETE | TO CONCRETE | TO CONCRETE | TO CONCRETE | TO CONCRETE | TO CONCRETE |
| -55.7 | 42" | 96" | 42" | 96" | 36 1/2" | 84" | 36" | 84" |
| -65.0 | 42" | 96" | 42" | 96" | 36 1/2" | 84" | 36" | 72" |
| -75.0 | 42" | 96" | 42" | 96" | 36 1/2" | 83" | 31" | 84" |
| -83.0 | 42" | 96" | 42" | 96" | 36 1/2" | 83" | 27" | 82" |
| -100.0 | 42" | 96" | 42" | 96" | 36 1/2" | N/A | 27" | 83" |
| | | | | | | | | |

* FOR EICO PANELMATES (3) 1/4" Ø W/ 1 7/8" PENETRATION USED AT SILL & SIDE BRACKETS FOR INSTALLATIONS INTO WOOD. SEE SCHEDULES # 1 & # 1A FOR SHUTTER SIZE.
 ** IN ANY CASE, MAXIMUM "W" & "L" VALUES W/ CORRESPONDING DESIGN LOADS SHALL NOT EXCEED MAXIMUM VALUES INDICATED ON SCHEDULES # 1 & 1A.

SCHEDULE # 3
MAXIMUM ANCHOR SPACING AT TOP FEMALE HINGES (A), (B), OR (C) AS WELL AS SILL ANGLE (D) AT BOTTOM (AS APPLICABLE) FOR INSTALLATIONS INTO Poured CONCRETE HEADERS AND SILL ***

| DESIGN PRESSURE RATING (p. s. f.) | SINGLE & MULTIPLE UNITS |
|--|-------------------------------|
| ALL PRESSURES COVERED IN SCHEDULE # 1 & # 1A | TOP & BOTTOM TO CONCRETE |
| | 9" O.C. TOP & 7" O.C. BOTTOM. |

*** SEE SHEETS 7 & 8 OF 9 FOR ANCHOR SPACING FOR INSTALLATIONS INTO WOOD FRAME BUILDINGS.



TILTECO INC.
 TILT TESTING & ENGINEERING COMPANY
 439 N.W. 20th Street, Suite 200, Fort Lauderdale, FL 33304
 WALTER A. TILTY, P.E.
 FLORIDA LIC. # 44157

AMERICAN SHUTTER SYSTEMS ASSOC., INC.
 4384 WESTWOODS DRIVE
 WEST PALM BEACH, FL 33417

ASSA / EXTRUDED BERTHA BAHAMA SHUTTER

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

DATE: 1/2/08
 SHEET: 9 OF 9