

GENERAL NOTES:

1. ALUMINIUM BAHAMA SHUTTER SHOWN ON THIS PRODUCT EVALUATION DOCUMENT (P.E.D.) HAS BEEN VERIFIED FOR COMPLIANCE IN ACCORDANCE WITH THE 2017 (6th EDITION) OF THE FLORIDA BUILDING CODE. THIS ALUMINIUM BAHAMA SHUTTER SHALL **NOT** BE INSTALLED AT HIGH VELOCITY HURRICANE ZONES (MIAMI DADE/ BROWARD COUNTY).

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 AND SHALL NOT EXCEED THE MAXIMUM (A.S.D.) DESIGN PRESSURE RATINGS INDICATED ON SHEET 9.

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 SHEET 9.

IN ORDER TO VERIFY THAT ANCHORS ON THIS P.E.D., AS TESTED, WERE NOT OVERSTRESSED, A 33% INCREASE IN ALLOWABLE STRESS FOR WIND LOADS WAS NOT USED IN THEIR ANALYSIS. HOWEVER, FOR CONNECTIONS INTO WOOD, A 1.60 WIND LOAD DURATION FACTOR WAS USED TO CALCULATE SCREWS SPACINGS.

ALUMINIUM BAHAMA SHUTTER'S ADEQUACY FOR IMPACT AND FATIGUE 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 # 1120.02-07 AS PER ASTM E 1886-05, ASTM E 1996-05 AND ASTM E 330-02 STANDARDS, QUALIFIED FOR WIND ZONE 3, MISSILE TYPE D, AND FOR INSTALLATIONS AT NON ESSENTIAL FACILITIES AS DEFINED BY SECTIONS 6.2.1.1, 6.2.1.2 AND 8.3 OF ASTM E 1996-05.

2. SEE MAXIMUM PRESSURE RATINGS & MAXIMUM SHUTTER DIMENSIONS ON SCHEDULE ON SHEET 9.

3. ALL ALUMINIUM EXTRUSIONS SHALL BE ALUMINIUM ASSOCIATION 6063-T6 ALLOY AND TEMPER, WITH $F_y = 25.0$ ksi MINIMUM (UNLESS OTHERWISE NOTED).

4. ALL SHEET METAL SCREWS TO BE STAINLESS STEEL 304 OR 316 AISI SERIES WITH 50 ksi YIELD STRENGTH AND 90 ksi TENSILE STRENGTH OR CORROSION RESISTANT COATED CARBON STEEL AS PER DIN 50018. ALL MACHINE SCREWS TO BE STAINLESS STEEL 304 OR 316 AISI SERIES WITH 36 ksi YIELD STRENGTH & SHALL COMPLY W/ FLORIDA BUILDING CODE SECTION 2411.3.3.4.

5. BOLTS TO BE AISI 304 SERIES STAINLESS STEEL WITH 35 ksi MINIMUM YIELD STRENGTH.

6. ALL ALUMINIUM POP RIVETS TO BE 5052 ALUMINIUM ALLOY WITH ALUMINIUM MANDREL.

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

- (A) TO EXISTING WOOD FRAME BUILDING: SOUTHERN PINE No.2, $G=0.55$.
 - 1/4" ϕ MALE PANELMATE ANCHOR AS MANUFACTURED BY ELCO CONSTRUCTION PRODUCTS.
 - 1/4" ϕ CRETE-FLEX TAPCON AS MANUFACTURED BY ELCO CONSTRUCTION PRODUCTS.

- NOTES:
- A.1) MINIMUM THREADED PENETRATION OF MALE PANELMATE ANCHOR INTO WOOD SHALL BE 1 7/8".
 - A.2) MINIMUM THREADED PENETRATION OF CRETE-FLEX TAPCONS INTO WOOD SHALL BE 1 1/2".
 - A.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 A.1 & A.2).

- (B) TO EXISTING POURED CONCRETE:
 - 1/4" ϕ MALE PANELMATE ANCHOR AS MANUFACTURED BY ELCO CONSTRUCTION PRODUCTS. (MIN. $f'_c=3350$ psi)
 - 1/4" ϕ CRETE-FLEX TAPCON AS MANUFACTURED BY ELCO CONSTRUCTION PRODUCTS. (MIN. $f'_c=3350$ psi.)

- NOTES:
- B.1) MINIMUM EMBEDMENT OF MALE PANELMATE ANCHOR INTO POURED CONCRETE SHALL BE 1 1/4".
 - B.2) MINIMUM EMBEDMENT OF CRETE-FLEX TAPCONS INTO POURED CONCRETE SHALL BE 1 3/4".

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).

- (C) TO EXISTING CONCRETE ASTM C-90 BLOCK WALL:
 - 1/4" ϕ MALE PANELMATE ANCHOR AS MANUFACTURED BY ELCO CONSTRUCTION PRODUCTS. (MIN. $f'_m = 2000$ psi.)
 - 1/4" ϕ CRETE-FLEX TAPCON AS MANUFACTURED BY ELCO CONSTRUCTION PRODUCTS.

- NOTES:
- C.1) MINIMUM EMBEDMENT OF MALE PANELMATE ANCHOR INTO CONCRETE BLOCK UNIT SHALL BE 1 1/4".
 - C.2) MINIMUM EMBEDMENT OF CRETE-FLEX TAPCONS INTO CONCRETE BLOCK UNIT SHALL BE 1 1/4".
 - C.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 C.1 & C.2).

- (D) ANCHORS SHALL BE INSTALLED FOLLOWING ALL OF THE RECOMMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER.
- 8. EACH SHUTTER SHALL HAVE A LEGIBLE AND READILY VISIBLE MARKING INSTRUCTING OWNER OR TENANT TO SECURE SHUTTER WITH SILL BRACKETS AND ALUMINIUM BACK UP SHEET DURING PERIODS OF HURRICANE WARNINGS.

- 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. CONTRACTOR TO SEAL/CAULK ALL SHUTTER COMPONENT EDGES WHICH REMAIN IN CONTINUOUS CONTACT WITH THE BUILDING TO PREVENT WIND/RAIN INTRUSION.

- 10. OWNER TO BE RESPONSIBLE FOR PROVIDING A SUITABLE PLATFORM OR BALCONY WHEN SECURING UNIT DURING HURRICANE WARNINGS.

- 11. ALUMINIUM 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.

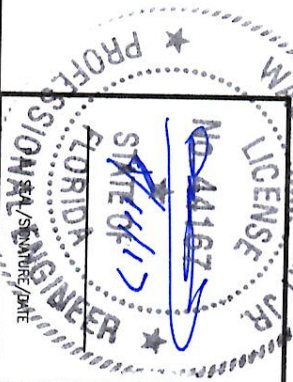
- 12. (a) THIS PRODUCT EVALUATION DOCUMENT (P.E.D.) PREPARED BY THIS ENGINEER IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SITE SPECIFIC PROJECT; i. e. WHERE THE SITE CONDITIONS DEVIATE FROM THE P.E.D.

- (b) CONTRACTOR TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION INCLUDING LIFE SAFETY OF THIS PRODUCT, BASED ON THIS PRODUCT EVALUATION DOCUMENT, 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 EVALUATION DOCUMENT WILL BE CONSIDERED INVALID IF ALTERED BY ANY MEANS.

- (d) SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A FLORIDA PROFESSIONAL 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.

- 13. SHUTTER MANUFACTURER'S LABEL SHALL BE LOCATED ON A READILY VISIBLE LOCATION AT PANEL IN ACCORDANCE WITH SECTION 1709.9.3 OF FLORIDA BUILDING CODE. ONE LABEL SHALL BE PLACED FOR EVERY OPENING. LABELING TO COMPLY WITH SECTION 1709.9.2 OF THE FLORIDA BUILDING CODE.

FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

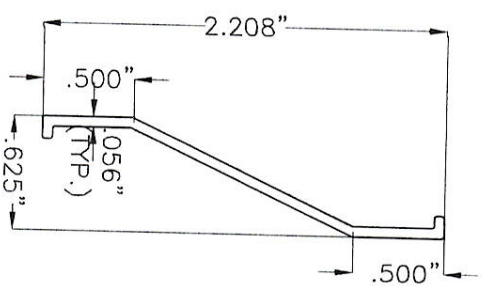


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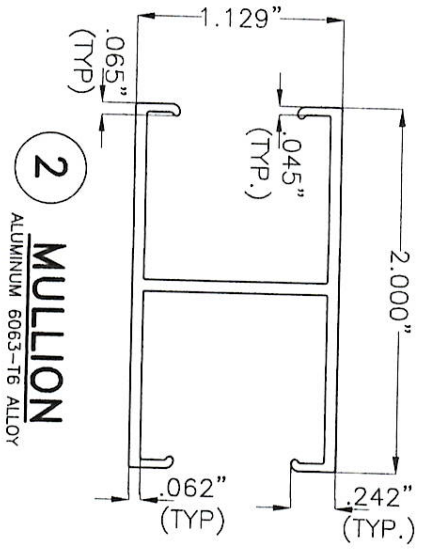
TILTECO INC.

TILTIT TESTING & ENGINEERING COMPANY
 6355 N.W. 35th St., Suite 305, Virginia Gardens, Florida 33166
 Phone: (305)971-1530 Fax: (305)971-1531
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 EB-0006719
 WALTER A. TILTIT Jr., P.E.
 FLORIDA Lic. # 44167

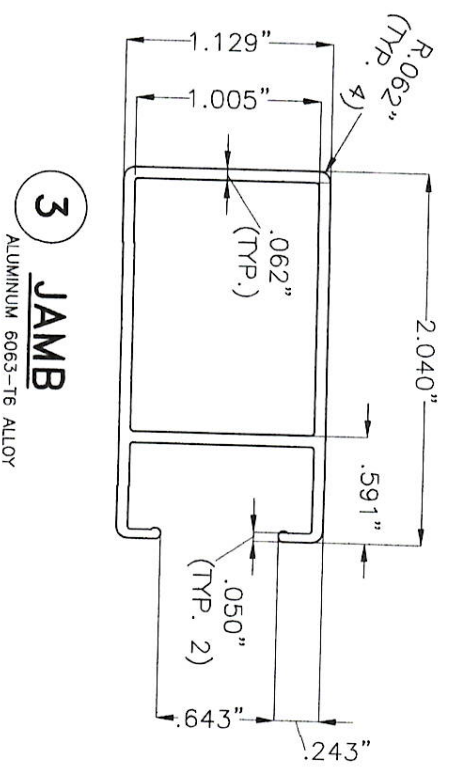
ALUMINIUM BAHAMA SHUTTER		L.C.	07/26/17
DRAWN BY:			DATE
EASTERN METAL SUPPLY, INC		4268 WESTROADS DRIVE	WEST PALM BEACH, FL 33407
Phone: (800)432-2204 Fax: (561)209-8380			
REV. No	DESCRIPTION	DATE	REV. No
1	03/08/17	07/26/17	4
2	04/15/17		
DRAWING No		17-101	
SHEET		1 OF 9	



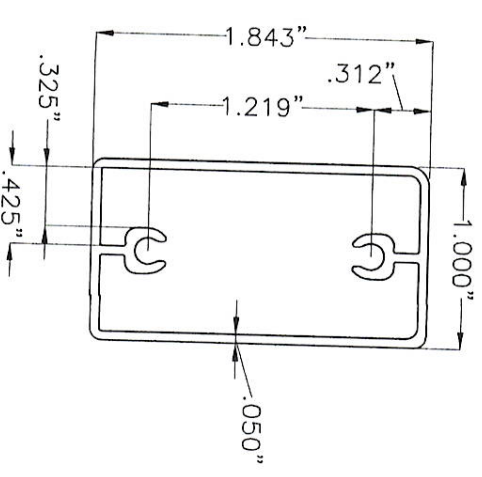
1 LOUVER BLADE
ALUMINUM 6063-T6 ALLOY



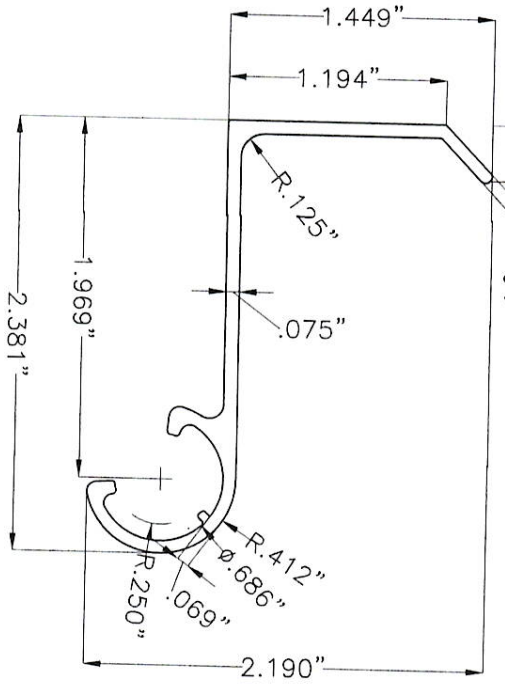
2 MULLION
ALUMINUM 6063-T6 ALLOY



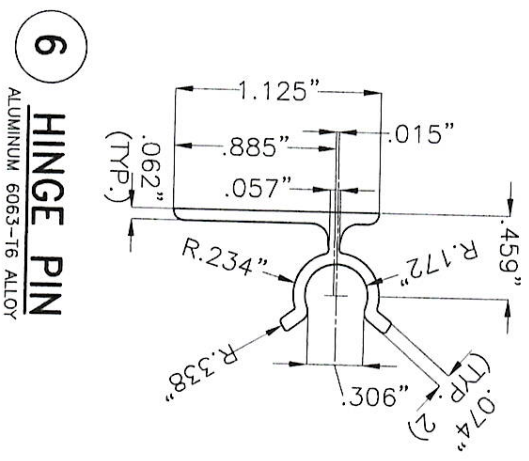
3 JAMB
ALUMINUM 6063-T6 ALLOY



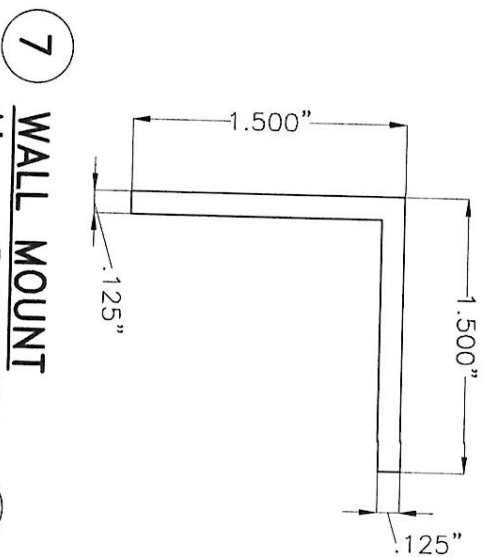
4 HORIZONTAL
ALUMINUM 6063-T6 ALLOY



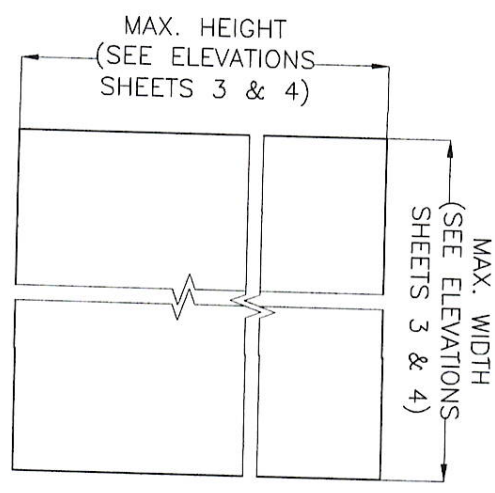
5 HINGE
ALUMINUM 6063-T6 ALLOY



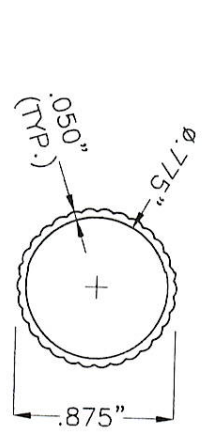
6 HINGE PIN
ALUMINUM 6063-T6 ALLOY



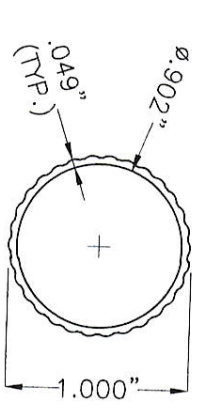
7 WALL MOUNT
ALUM. BRACKET
ALUMINUM 6063-T6 ALLOY
2" LONG



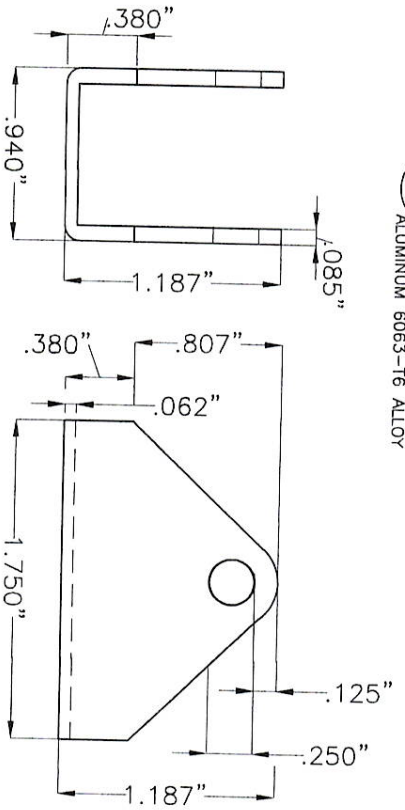
8 ALUMINUM BACK UP SHEET
3004-H34 OR 5052-H32 ALLOY
0.050" THICK



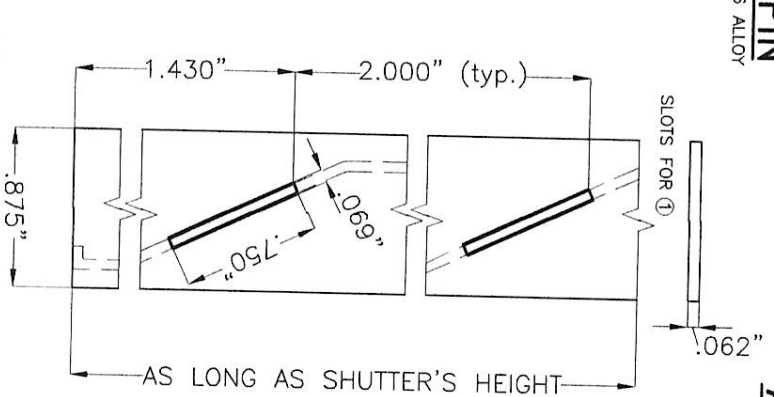
9 .875" SERRATED TUBE
INSIDE ARM
ALUMINUM 6063-T6 ALLOY



10 1" SERRATED TUBE
OUTSIDE ARM
ALUMINUM 6063-T6 ALLOY

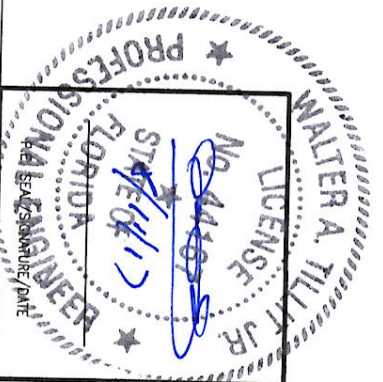


11 CAMEL BACK HINGE
ALUMINUM 6063-T6 ALLOY



12 JAMB STRIP
ALUMINUM 6063-T6 ALLOY

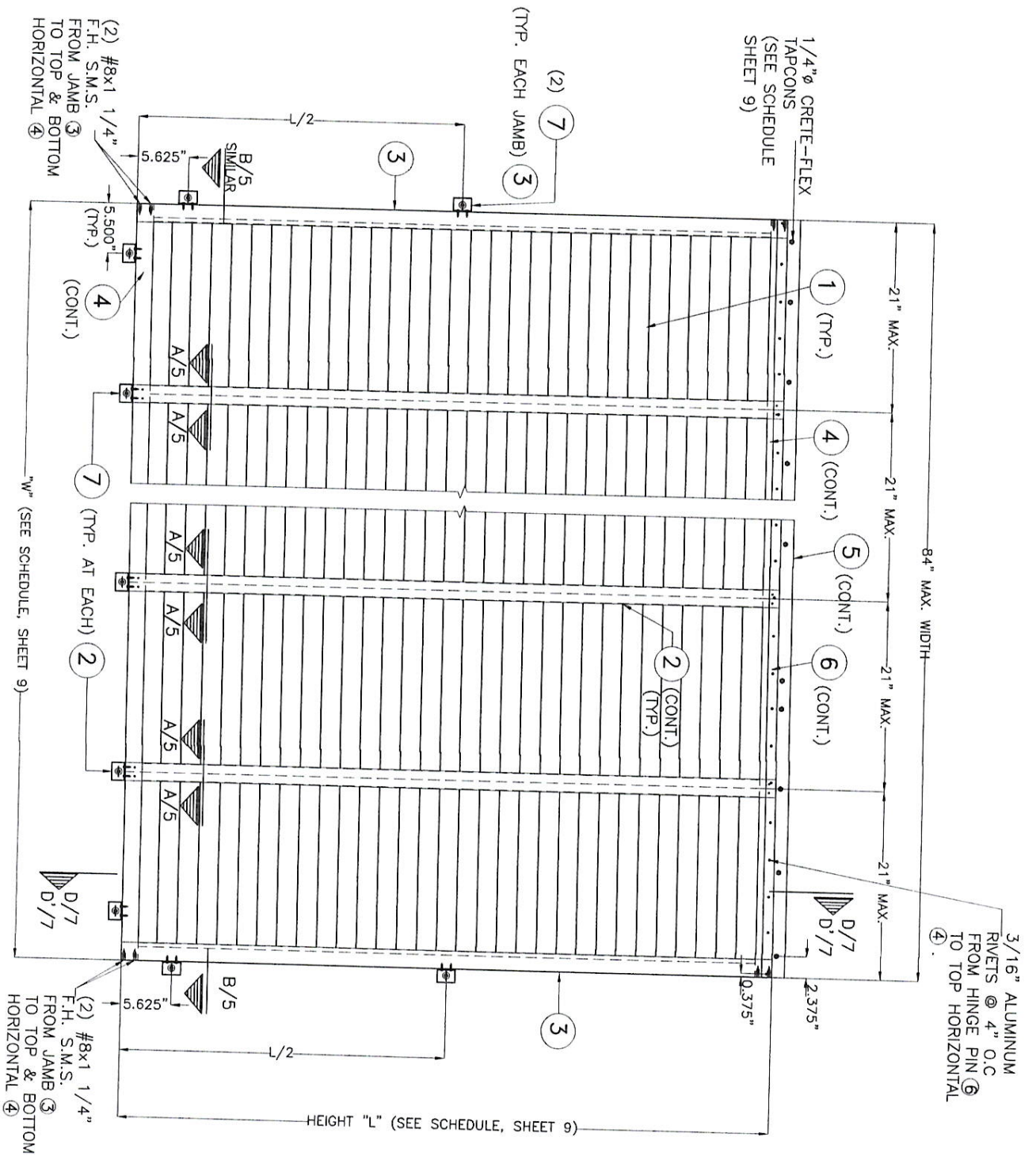
COMPONENTS
SCALE: 1" = 1"



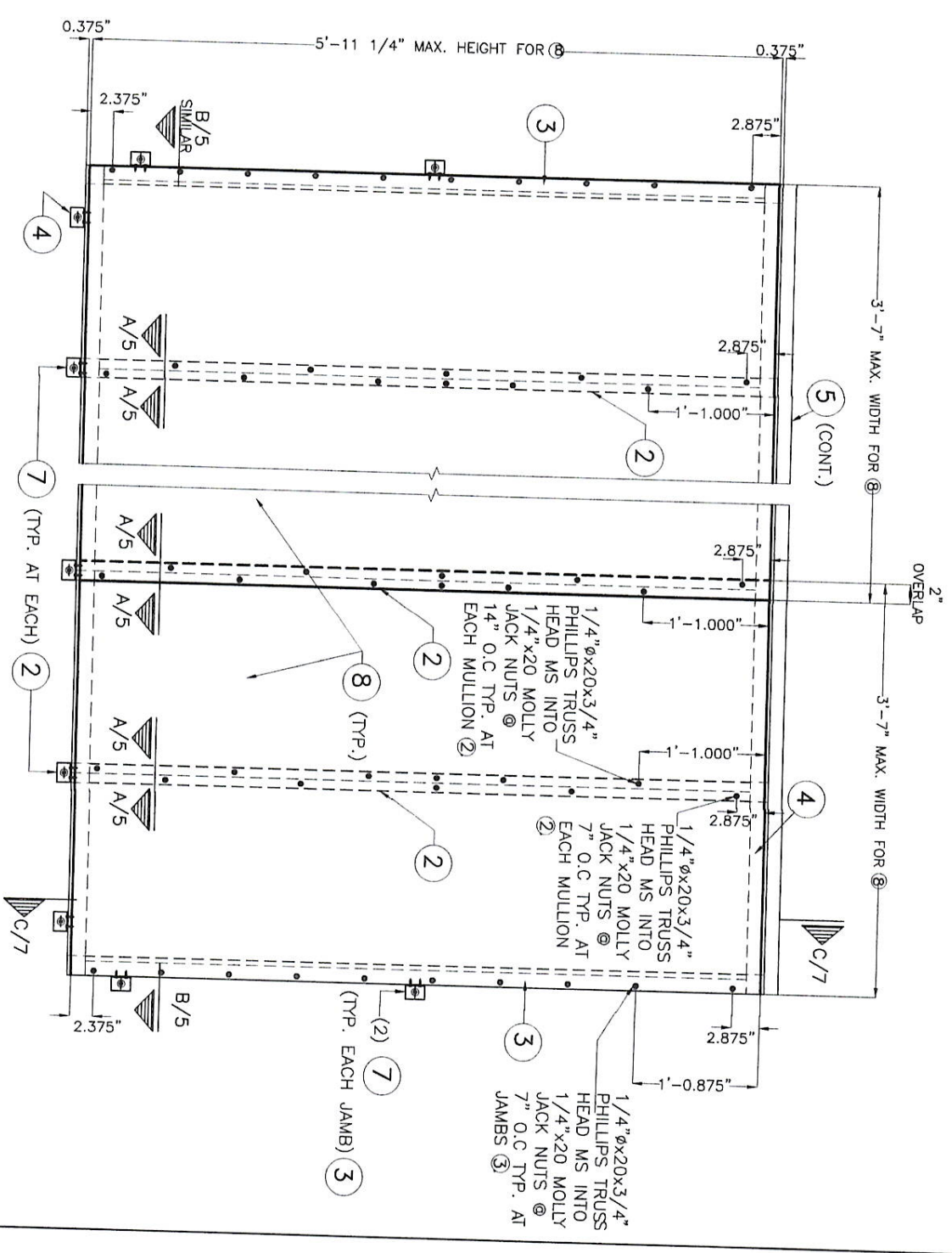
TILECO INC.
TILLET TESTING & ENGINEERING COMPANY
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e-mail: tileco@aol.com
WALTER A. TILLET JR., P.E.
FLORIDA Lic. # 44167

ALUMINUM BAHAMA SHUTTER		L.C.
EASTERN METAL SUPPLY, INC		DRAWN BY:
4268 WESTROADS DRIVE		DATE
WEST PALM BEACH, FL 33407		17-101
Phone: (800)432-2204, Fax: (561)209-8380		DRAWING No
REV. No	DESCRIPTION	DATE
1	OLD 15-167	07/26/17
2		

FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)



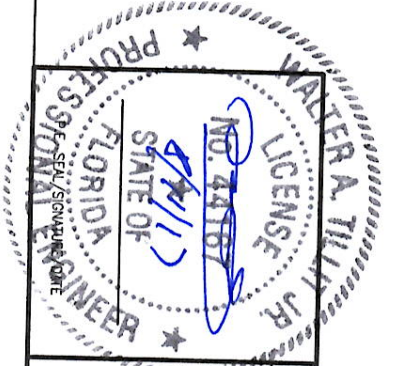
FRONT ELEVATION W/O ALUMINUM BACK UP SHEET ⑧
(NON HURRICANE POSITION)



FRONT ELEVATION W/ ALUMINUM BACK UP SHEET ⑧
CONNECTION TO SHUTTER FRAME
(HURRICANE POSITION)

**ELEVATIONS FOR INSTALLATIONS
INTO WOOD SUBSTRATE**

SCALE = 3/4" = 1'-0"



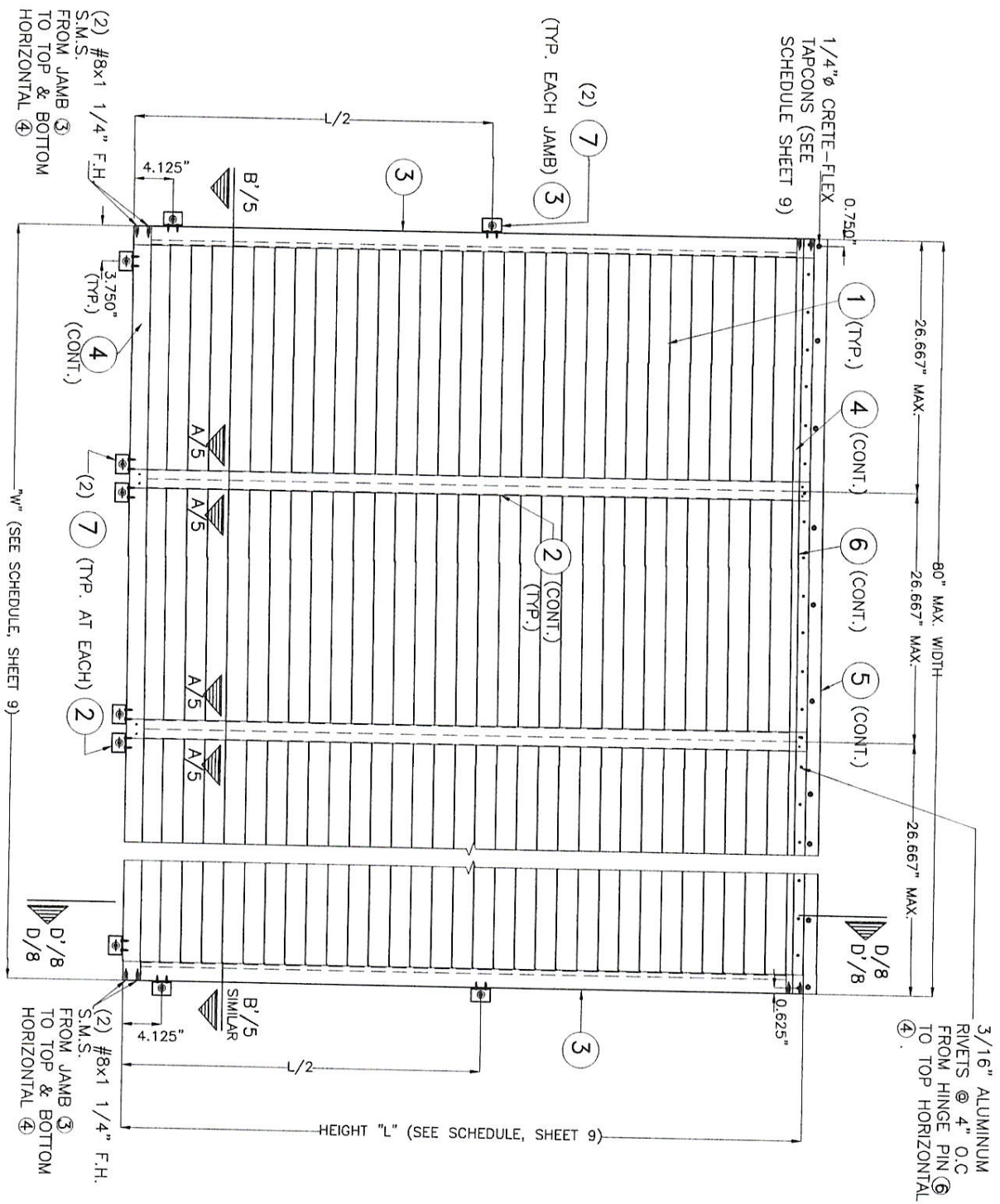
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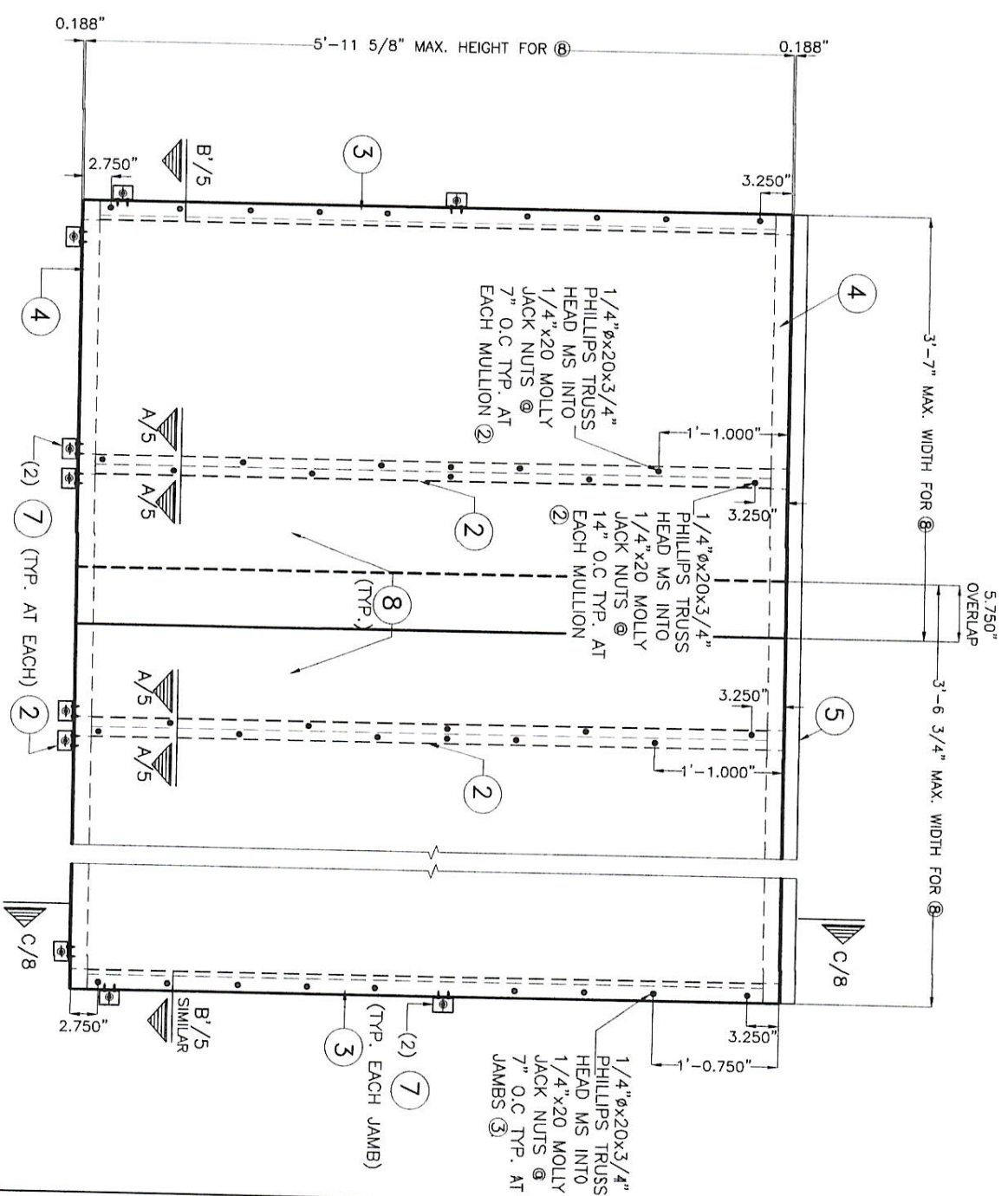
TILLIT TESTING & ENGINEERING COMPANY
6335 NW 36th St., Ste. 305 VIRGINIA GARDENS, FLORIDA 33166
Phone: (305)871-1530 Fax: (305)871-1531
e-mail: tilteco@aol.com
EB-0006719
WALTER A. TILLITT Jr., P.E.
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ALUMINUM BAHAMA SHUTTER		EASTERN METAL SUPPLY, INC	
L.C.	07/26/17	4268 WESTROADS DRIVE	17-101
DRAWN BY:	DATE	WEST PALM BEACH, FL 33407	DRAWING No
		Phone: (800)432-2204 Fax: (561)209-8380	
REV. No	DESCRIPTION	DATE	DATE
1		07/26/17	
2			

SHEET 3 OF 9



FRONT ELEVATION W/O ALUMINUM BACK UP SHEET 8
(NON HURRICANE POSITION)



FRONT ELEVATION W/ ALUMINUM BACK UP SHEET 8
CONNECTION TO SHUTTER FRAME
(HURRICANE POSITION)

ELEVATIONS FOR INSTALLATIONS INTO
CONCRETE OR CONCRETE BLOCK SUBSTRATES

SCALE = 3/4" = 1'-0"

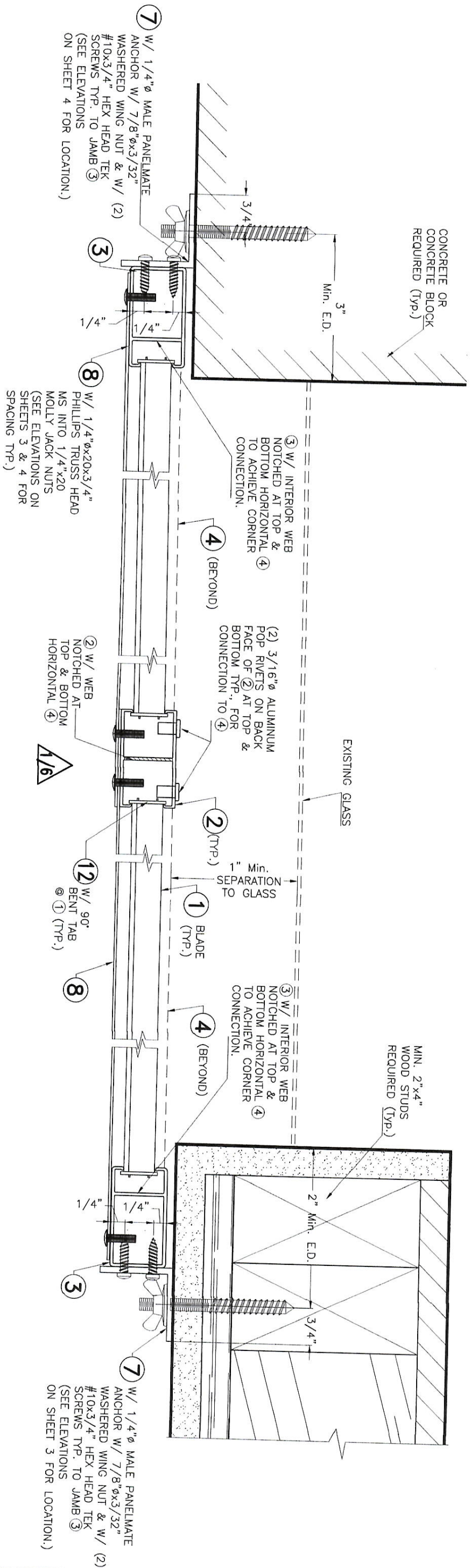
FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

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TILIT TESTING & ENGINEERING COMPANY
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e-mail: tilteco@aol.com

WALTER A. TILIT JR.
P.E. License No. 44167
PROFESSIONAL ENGINEER
FLORIDA

ALUMINUM BAHAMA SHUTTER	EASTERN METAL SUPPLY, INC	L.C.
	4268 WESTROADS DRIVE WEST PALM BEACH, FL 33407 Phone: (800) 432-2204 Fax: (561) 209-8380	DRAWN BY:
	07/26/17	DATE
	17-101	DRAWING NO
	07/26/17	DATE
	4	SHEET 4 OF 9



SECTION B'-B'

SECTION A-A

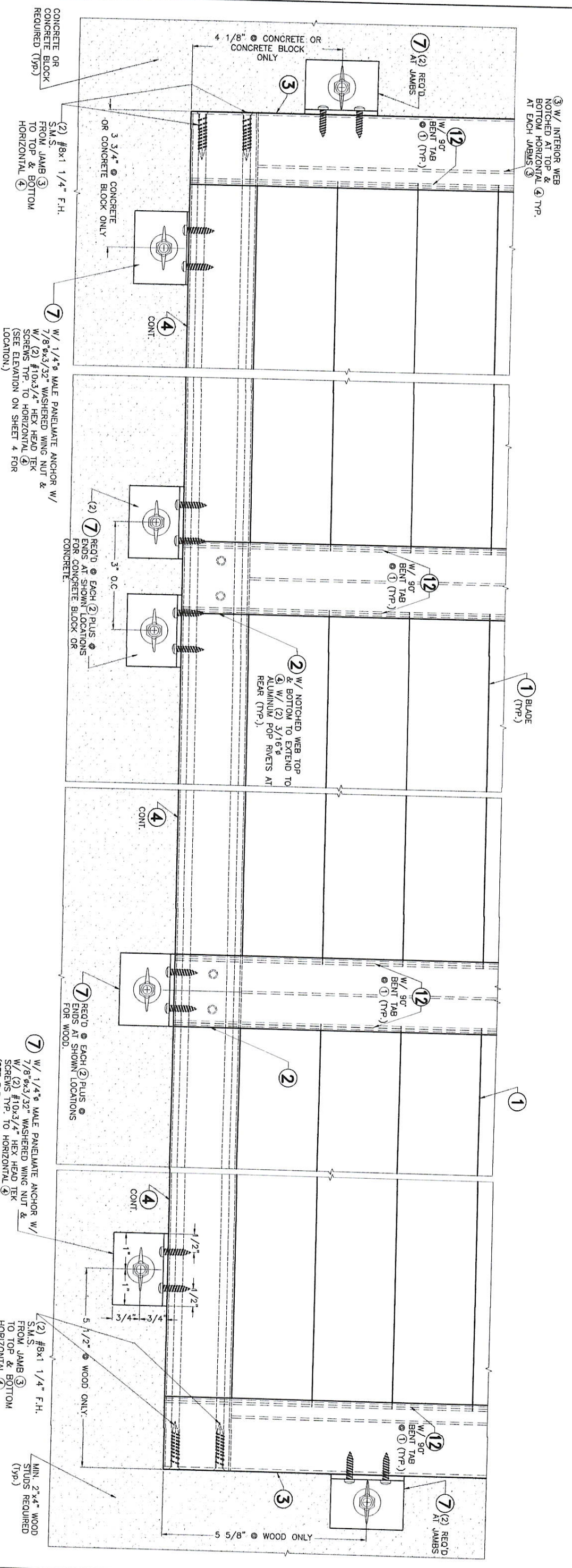
SECTION B-B

FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)



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

ALUMINUM BAHAMA SHUTTER		L.C.
DRAWN BY:		
EASTERN METAL SUPPLY, INC		07/26/17
4268 WESTROADS DRIVE		DATE
WEST PALM BEACH, FL 33407		
Phone: (800)432-2204, Fax: (561)209-8380		17-101
		DRAWING No
REV. No	DESCRIPTION	DATE
1	OLD 15-167	07/26/17
2		



PARTIAL ELEVATION 1 AT BOTTOM

SCALE: 3/8" = 1"

FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

ALUMINUM BAHAMA SHUTTER

EASTERN METAL SUPPLY, INC

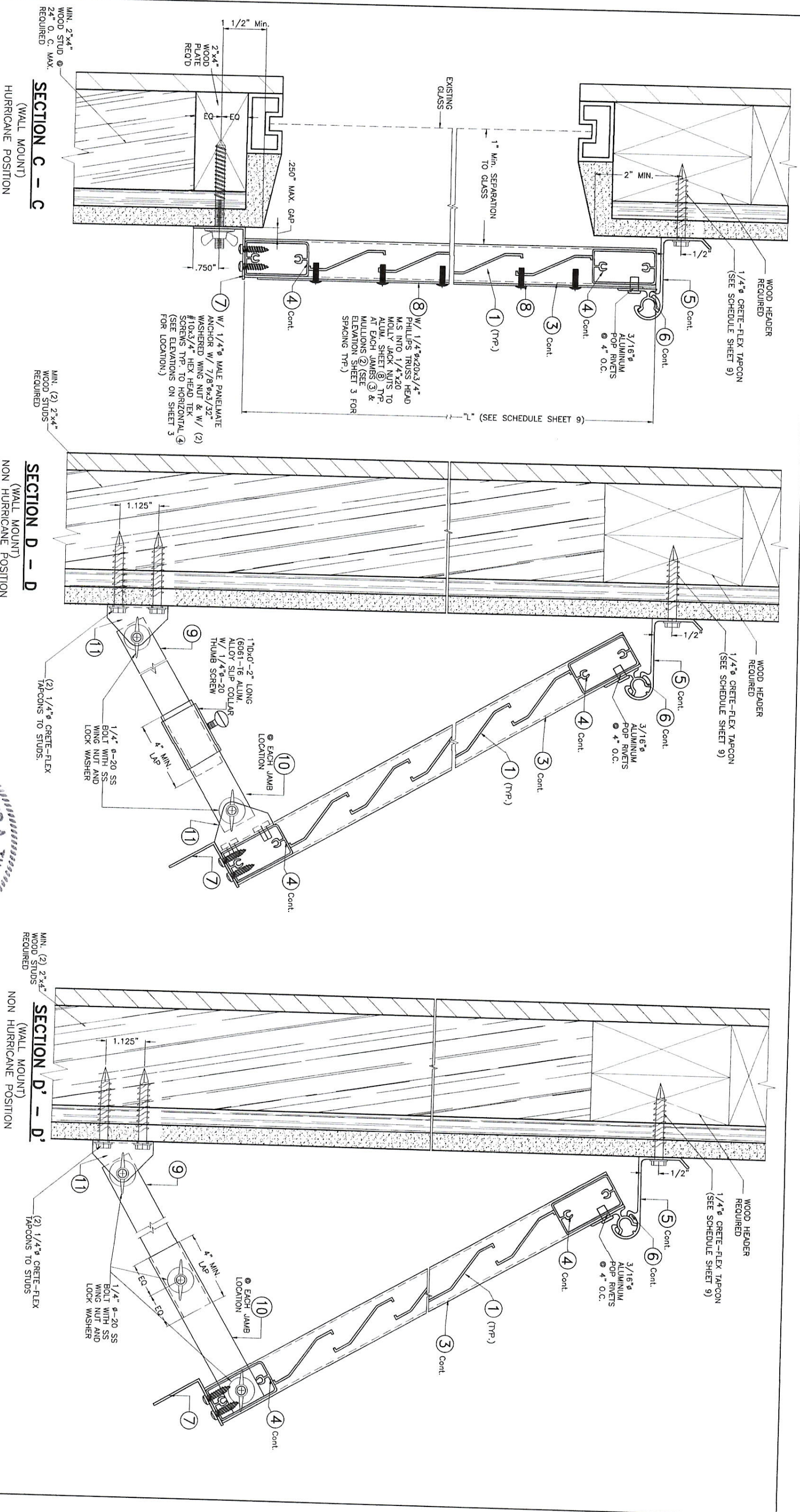
TILECO INC.

TILITESTING & ENGINEERING COMPANY
 6355 N.W. 36th St., Ste. 305 VIRGINIA GARDENS, FLORIDA 33166
 Phone: (305)971-1530, Fax: (305)971-1531
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REV. NO.	DESCRIPTION	DATE	REV. NO.	DESCRIPTION	DATE
1		07/26/17	3		
2		07/26/17	4		

L.C.
 DRAWN BY:
 07/26/17
 DATE
 17-101
 DRAWING No
 SHEET 6 OF 9



SECTION C - C
(WALL MOUNT)
HURRICANE POSITION

SECTION D - D
(WALL MOUNT)
NON HURRICANE POSITION

CONNECTION TO WOOD
SCALE: 3/8" = 1"

FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

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e-mail: tilteco@ttilco.com
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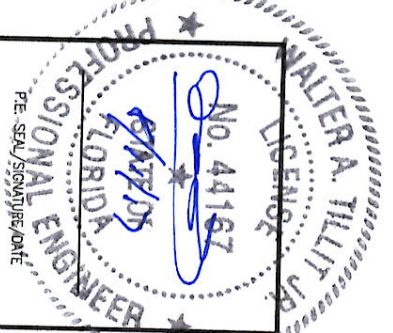
ALUMINUM BAHAMA SHUTTER
EASTERN METAL SUPPLY, INC
4268 WESTROADS DRIVE
WEST PALM BEACH, FL 33407
Phone: (800)432-2204, Fax: (561)209-8380

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DRAWN BY:

07/26/17
DATE

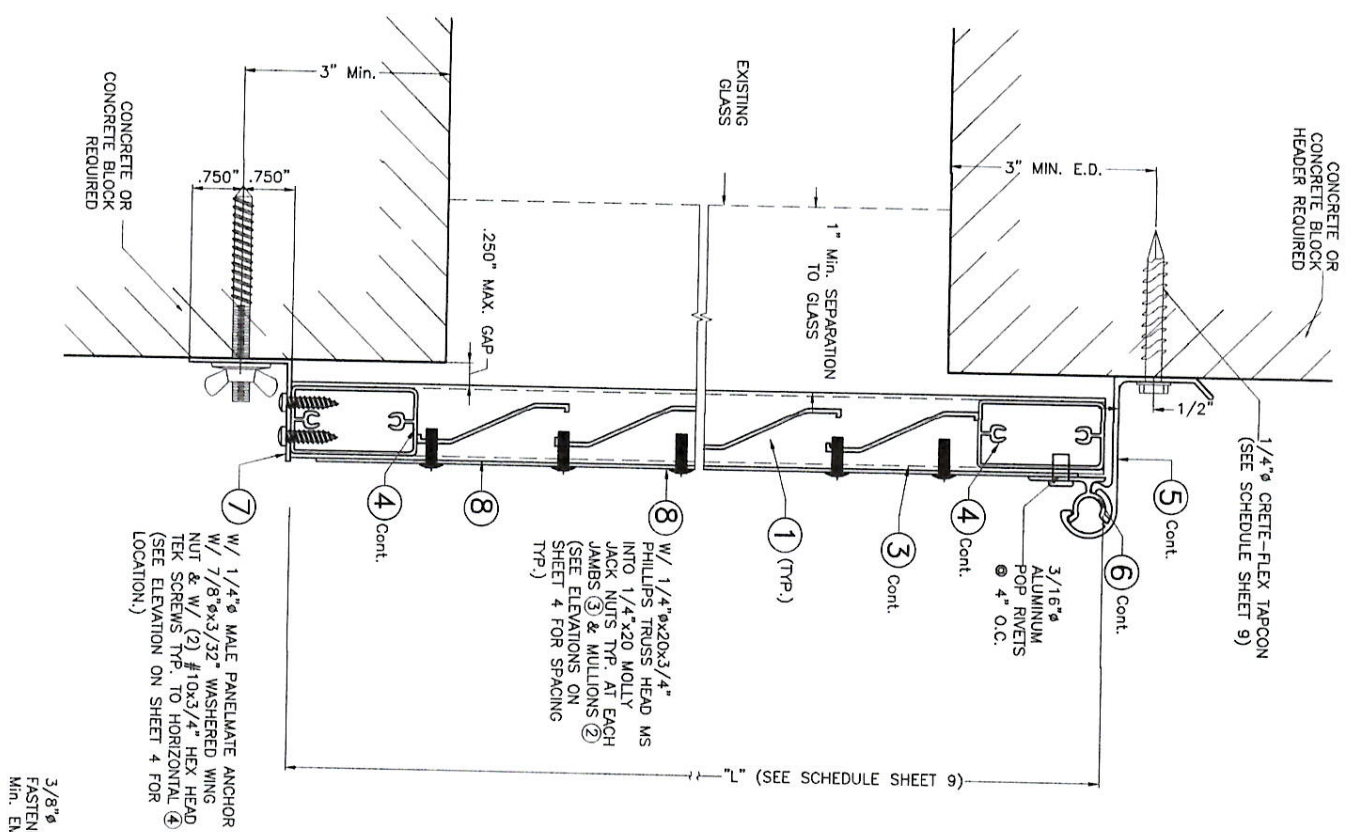
17-101
DRAWING No

SHEET 7 OF 9

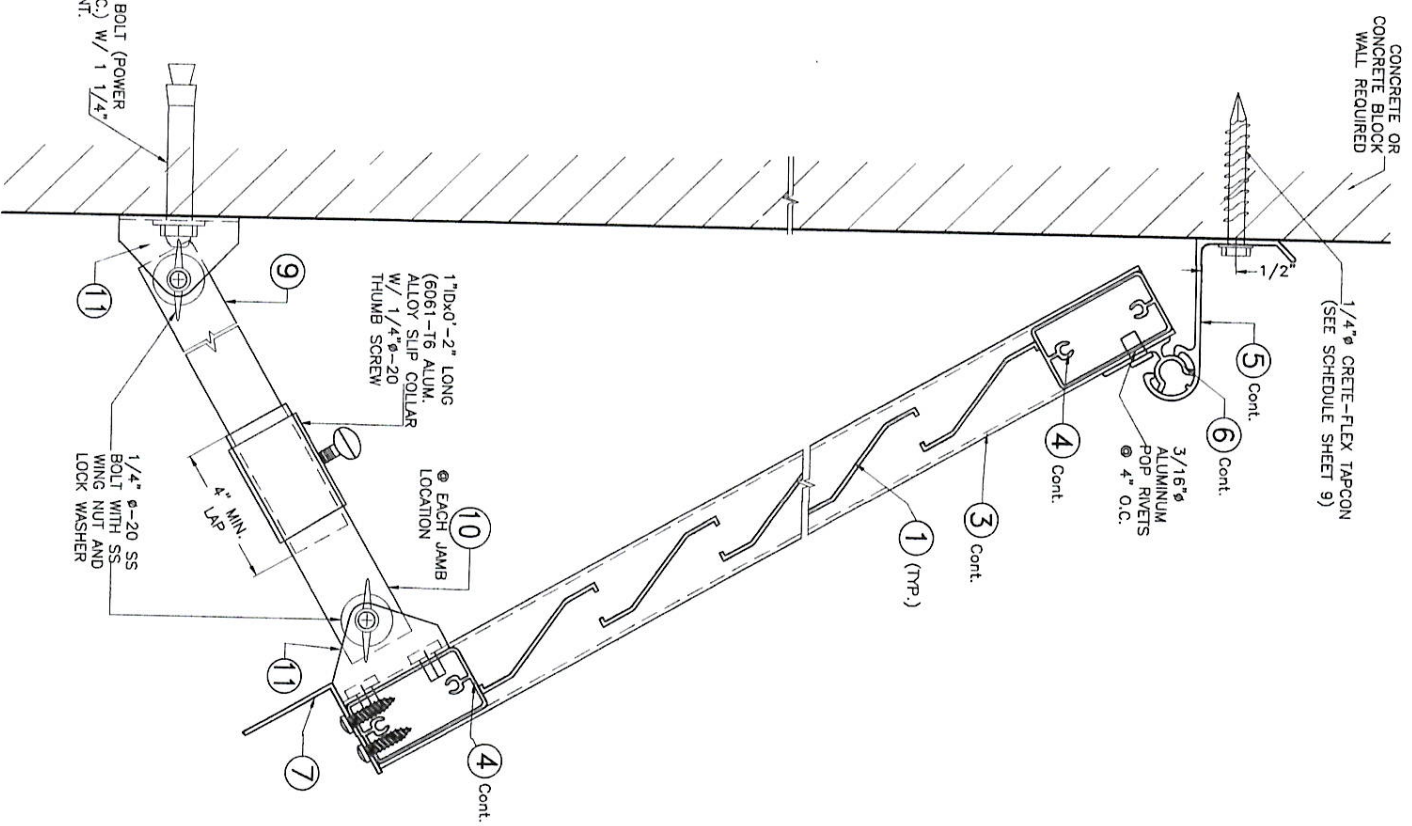


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2			4		

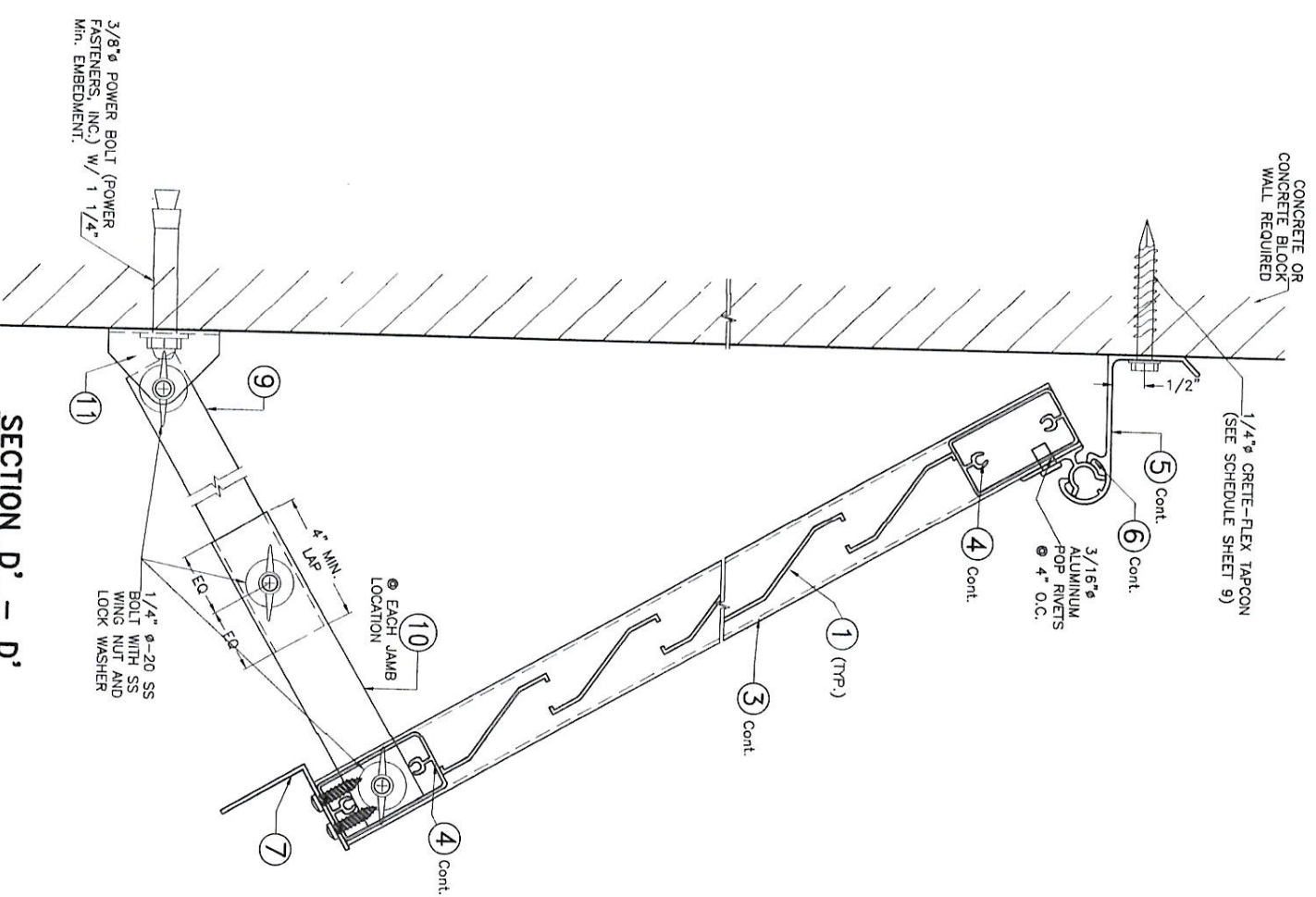
SECTION C - C
(WALL MOUNT)
HURRICANE POSITION



SECTION D - D
(WALL MOUNT)
NON HURRICANE POSITION



SECTION D' - D'
(WALL MOUNT)
NON HURRICANE POSITION



**CONNECTION TO CONCRETE
OR CONCRETE BLOCK**

SCALE: 3/8" = 1"



FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

ALUMINUM BAHAMA SHUTTER

L.C.

DRAWN BY:

EASTERN METAL SUPPLY, INC

DATE

4268 WESTROADS DRIVE
WEST PALM BEACH, FL 33407
Phone: (800)432-2204 Fax: (561)209-8380

17-101

Phone: (800)432-2204 Fax: (561)209-8380

DRAWING No

REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 15-167	07/26/17	3		
2			4		

SHEET 8 OF 9

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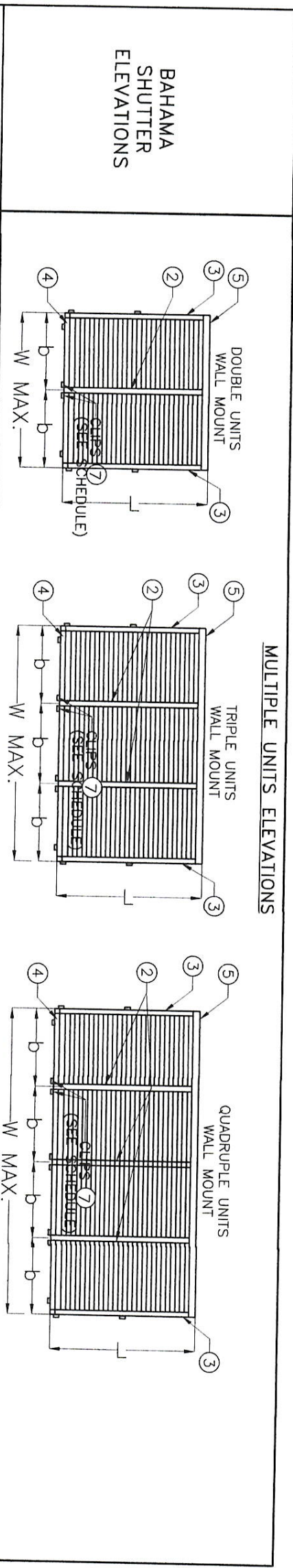
Phone: (305)971-1530 Fax: (305)971-1531

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EB-0006719

WALTER A. TILIT Jr., P.E.
FLORIDA LIC. # 44167

SCHEDULE # 1
MAXIMUM SHUTTER HEIGHT "L" (in), MAXIMUM SHUTTER PANEL WIDTH "p" (in) AND MAX. OVERALL SHUTTER WIDTH "W" (in) FOR A CORRESPONDING A.S.D DESIGN PRESSURE RATING & SUBSTRATES TYPE INSTALLATION.

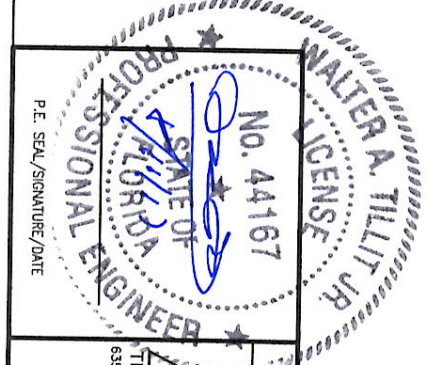


SUBSTRATE CASE	MAX. A.S.D. DESIGN PRESSURE RATING (p.s.f.)	MAXIMUM UNIT WIDTH "p" (IN)	MAXIMUM OVERALL WIDTH "W" MAX. (IN)	MAXIMUM HEIGHT "L" (IN)	INTERIOR MULLION TYPE REQUIRED	MINIMUM SEPARATION TO GLASS (IN)	# OF CLIP (7) REQ'D @ EACH MULLION (2) *
WOOD	+29.0 , -39.0	21"	84"	72"	(2)	1"	1
CONCRETE OR CONCRETE BLOCK	+42.0 , -53.0	26 5/8"	80"	72"	(2)	1"	2

*SEE SHEETS 3, 4 & 6 FOR EXACT CLIP (7) LOCATION FOR EACH SUBSTRATE.

SCHEDULE # 2
MAXIMUM ANCHOR SPACING AT TOP FEMALE HINGE (5) FOR A CORRESPONDING A.S.D. DESIGN PRESSURE RATING & SUBSTRATE TYPE INSTALLATION

SUBSTRATE CASE	MAX. A.S.D. DESIGN PRESSURE RATING (p.s.f.)	SUBSTRATE	
		WOOD	POURED CONCRETE
WOOD	+29.0 , -39.0	7"	N/A
CONCRETE OR CONCRETE BLOCK	+42.0 , -53.0	N/A	7"



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TILTECO inc.
 TILLIT TESTING & ENGINEERING COMPANY
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 FB-0006719
 WALTER A. TILLIT JR., P.E.
 FLORIDA Lic. # 44167

ALUMINUM BAHAMA SHUTTER		L.C.
EASTERN METAL SUPPLY, INC		DRAWN BY:
4268 WESTROADS DRIVE WEST PALM BEACH, FL 33407 Phone: (800)432-2204 . Fax: (561)209-8380		07/26/17 DATE
REV. No	DESCRIPTION	DATE
1	OLD 15-167	07/26/17
2		
REV. No	DESCRIPTION	DATE
3		
4		
17-101 DRAWING No		SHEET 9 OF 9