

GENERAL NOTES:

1. BERTHA H.V. BOARD & BATTEN SHUTTER SHOWN ON THIS PRODUCT EVALUATION DOCUMENT (P.E.D.) HAS BEEN VERIFIED FOR COMPLIANCE IN ACCORDANCE WITH THE 2014 (5th EDITION) OF THE FLORIDA BUILDING CODE. THIS 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 FOR INSTALLATIONS UNDER 2014 FBC AND SHALL NOT EXCEED THE MAXIMUM (A.S.D.) DESIGN PRESSURE RATINGS INDICATED ON NOTE 2 BELOW. 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 NOTE 2 BELOW.

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. BERTHA H.V. BOARD & BATTEN SHUTTER'S ADEQUACY FOR IMPACT AND WIND RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1609.1.2 OF THE ABOVE MENTIONED CODE AS PER ATL REPORT # 0809.01-07, 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 PER PROTOCOL TAS 202.

- 2. SEE ELEVATIONS ON SHEETS 3 & 7 FOR MAX. A.S.D. DESIGN PRESSURE RATING & MAX. SHUTTER DIMENSIONS.
- 3. ALL ALUMINUM EXTRUSIONS SHALL BE ALUMINUM ASSOCIATION 6063-T6 ALLOY AND TEMPER, WITH $F_y = 25.0$ ksi MINIMUM (UNLESS OTHERWISE NOTED).
- 4. ALL SCREWS TO BE STAINLESS STEEL 304 OR 316 AISI SERIES WITH 50 ksi YIELD POINT AND 90 ksi TENSILE 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 ALUMINUM POP RIVETS TO BE 5052 ALUMINUM ALLOY WITH ALUMINUM MANDREL.
- 7. ANCHORS TO WALL SHALL BE AS FOLLOWS: (UNLESS OTHERWISE NOTED)

- (A) TO EXISTING WOOD FRAME WALL: SOUTHERN PINE No.2, $G=0.55$.
- 1/4" ϕ TAPCON ANCHORS AS MANUFACTURED BY I.T.W. BUILDEX, INC.

NOTES:

A.1) MINIMUM THREADED PENETRATION OF TAPCON ANCHORS INTO WOOD SHALL BE 1 1/2".

A.2) 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).

- (B) TO EXISTING POURED CONCRETE MIN. ($f'_c = 3192$ p.s.i.) OR ASTM C-90 CONCRETE BLOCK
- 1/4" ϕ TAPCON ANCHORS AS MANUFACTURED BY I.T.W./BUILDEX.

NOTES:

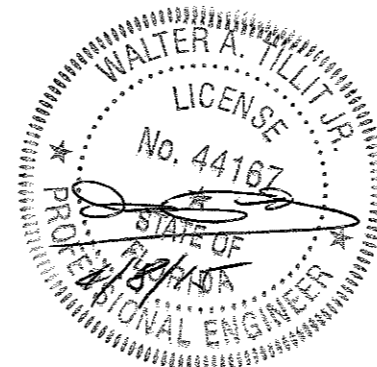
B.1) MINIMUM EMBEDMENT OF TAPCON ANCHORS INTO THE POURED CONCRETE UNIT SHALL BE 1 3/4" AND IN CONCRETE BLOCK UNIT SHALL BE 1 1/4".

B.2) 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).

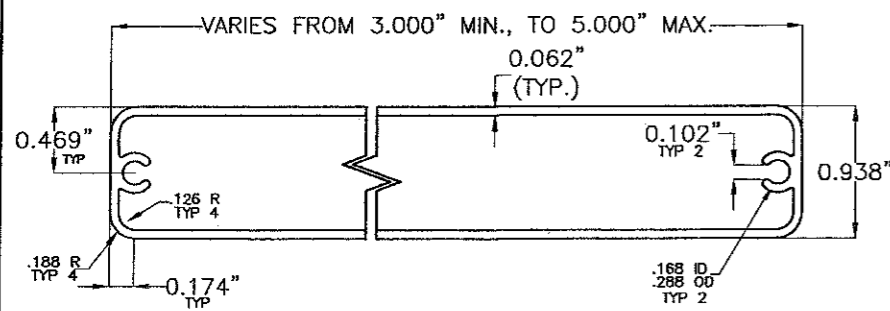
- (C) ANCHORS SHALL BE INSTALLED FOLLOWING ALL OF THE RECOMMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER.

- 8. EACH SHUTTER SHALL HAVE A LEGIBLE AND READILY VISIBLE MARKING INSTRUCTING OWNER OR TENANT TO SECURE SHUTTER WITH STORM BARS & SAFETY PINS 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. BERTHA H.V. BOARD & BATTEN 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. SHUTTER MANUFACTURER'S LABEL SHALL BE LOCATED ON A READILY VISIBLE LOCATION AT SURFACE OF THE SHUTTERS FRAME IN ACCORDANCE WITH SECTION 1710.8.3 OF FLORIDA BUILDING CODE. ONE LABEL SHALL BE PLACED FOR EVERY OPENING. LABELING TO COMPLY WITH SECTION 1710.8.2 OF THE FLORIDA BUILDING CODE.
- 13. (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 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.

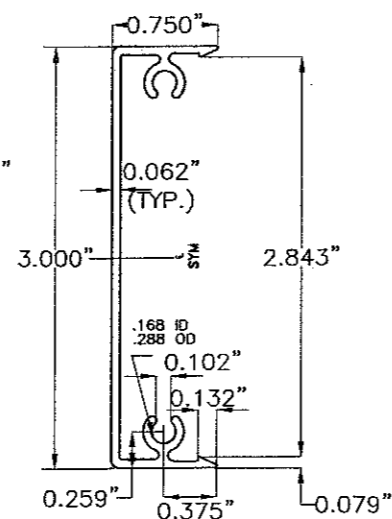
THIS DRAWING SHALL ONLY BE USED TO OBTAIN PERMITS IN THE STATE OF FLORIDA



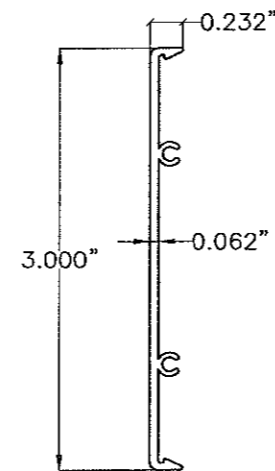
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TILTECO INC.		BERTHA HV BOARD AND BATTEN SHUTTER	
TILLIT TESTING & ENGINEERING COMPANY 6595 N.W. 36th. St., Ste. 217, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 e-mail: tilteco@aol.com EB-0006719 WALTER A. TILLIT Jr. P.E. FLORIDA Lic. # 44167		EASTERN METAL SUPPLY, INC 4268 WEST ROADS DRIVE WEST PALM BEACH, FL. 33407 PHONE: (561)209-8263, FAX: (561)841-1716	
F.R.L. DRAWN BY:			03/24/15 DATE:
		15-047 DRAWING No	
SHEET 1 OF 13			



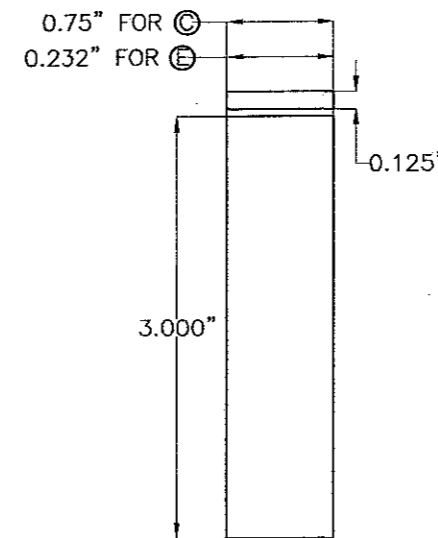
(A) 0.938" x VARIES SLAT (BOARD)
 6063-T6 Alum. ALLOY



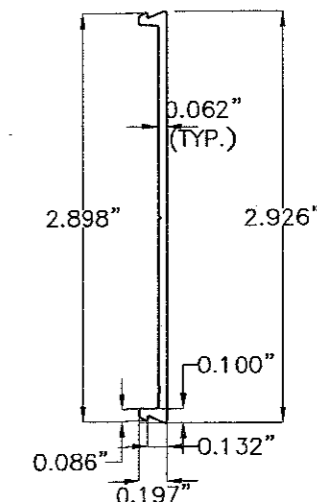
(C) 3" x 0.75" SNAP CHANNEL FOR WOOD WALL
 6063-T6 Alum. ALLOY



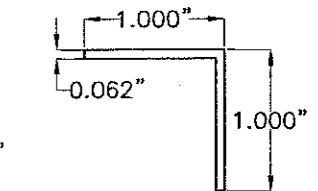
(E) 3" x 0.232" SNAP CHANNEL FOR CONCRETE BLOCK OR WOOD WALL
 6063-T6 Alum. ALLOY



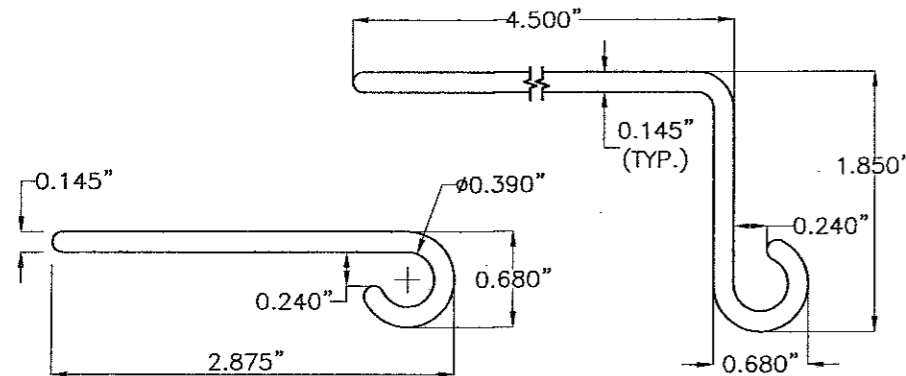
(C), (E) SNAP CHANNEL CAP
 6063-T5 Alum. ALLOY



(D) SNAP PLATE (BATTEN)
 6063-T6 Alum. ALLOY

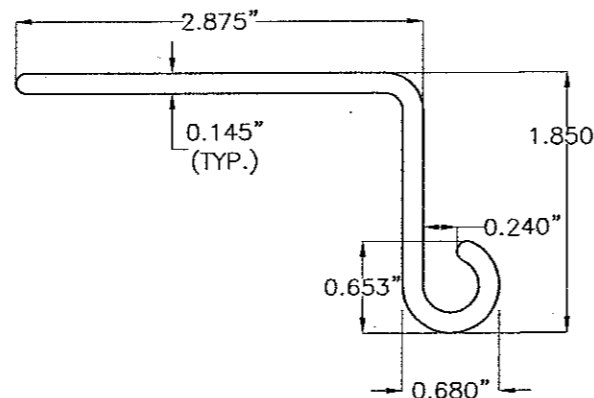


(F) TOP & BOTTOM CAP ANGLE
 6063-T6 Alum. ALLOY

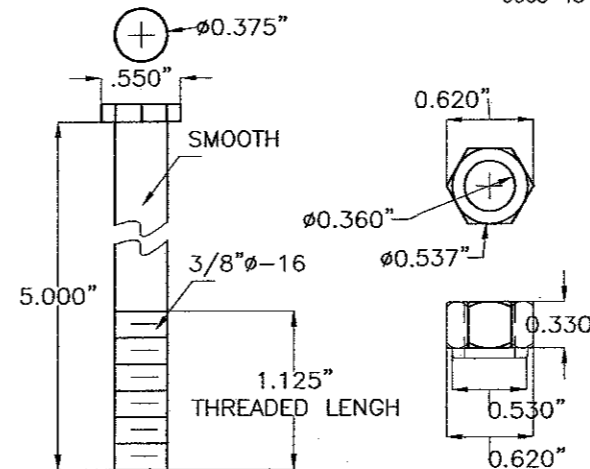


(FOR WOOD & POURED CONC. OR CONC. BLOCK WALL)

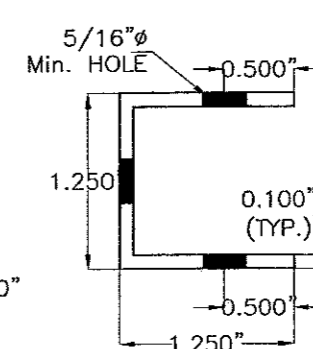
(G) FLAT HINGE
 6063-T6 Alum. ALLOY
 2" LONG.



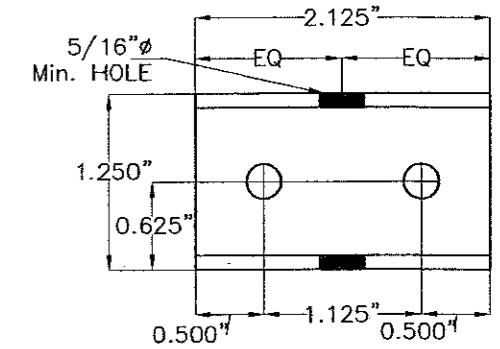
(H) SINGLE HINGE FOR WOOD
 6063-T6 Alum. ALLOY
 2" LONG.



(I) 3/8" x 5" S.S. HEX HEAD BOLT HINGE PIN W/ LOCK NUT.

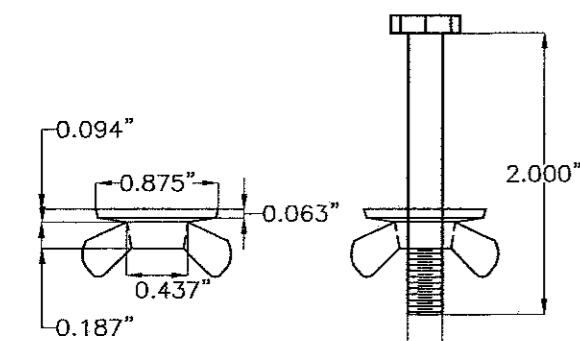


SIDE VIEW

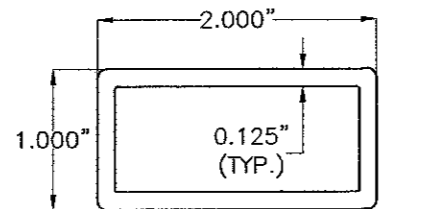


FRONT VIEW

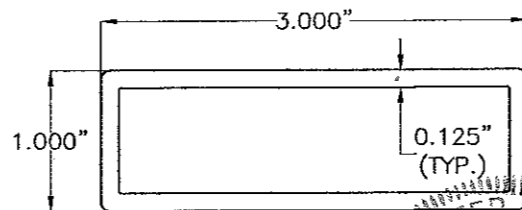
(J) H.V. STORM BAR CLIP
 6063-T6 Alum. ALLOY
 2 1/8" LONG.



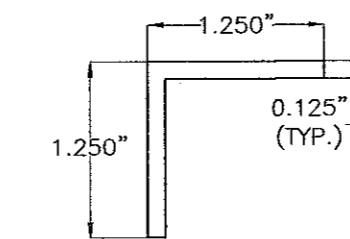
(K) 1/4" - 20 x 2" S.S. HEX HEAD BOLT W/A WASHER WINGNUT



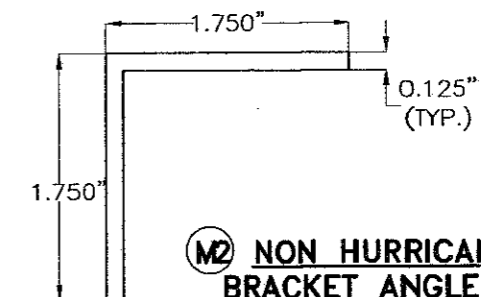
(L) STORM BAR TYPE 1
 6063-T6 Alum. ALLOY



(L1) STORM BAR TYPE 2
 6063-T6 Alum. ALLOY



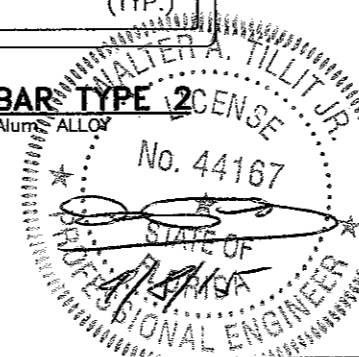
(M) NON HURRICANE BRACKET ANGLE
 6063-T6 Alum. ALLOY
 2 1/8" LONG.



(M2) NON HURRICANE BRACKET ANGLE
 6063-T6 Alum. ALLOY
 2 1/8" LONG.

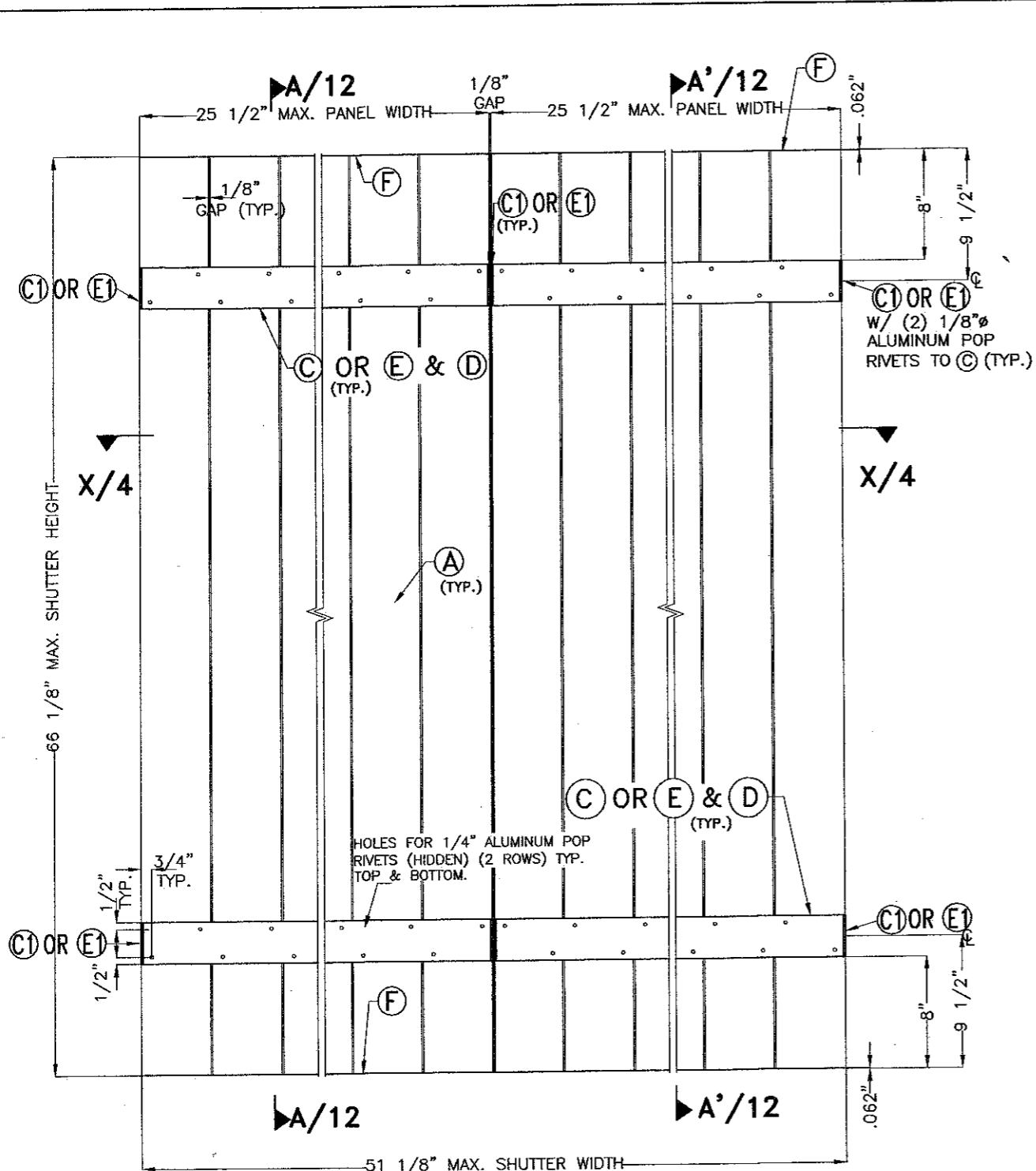
COMPONENTS

SCALE: 3/4" = 1"



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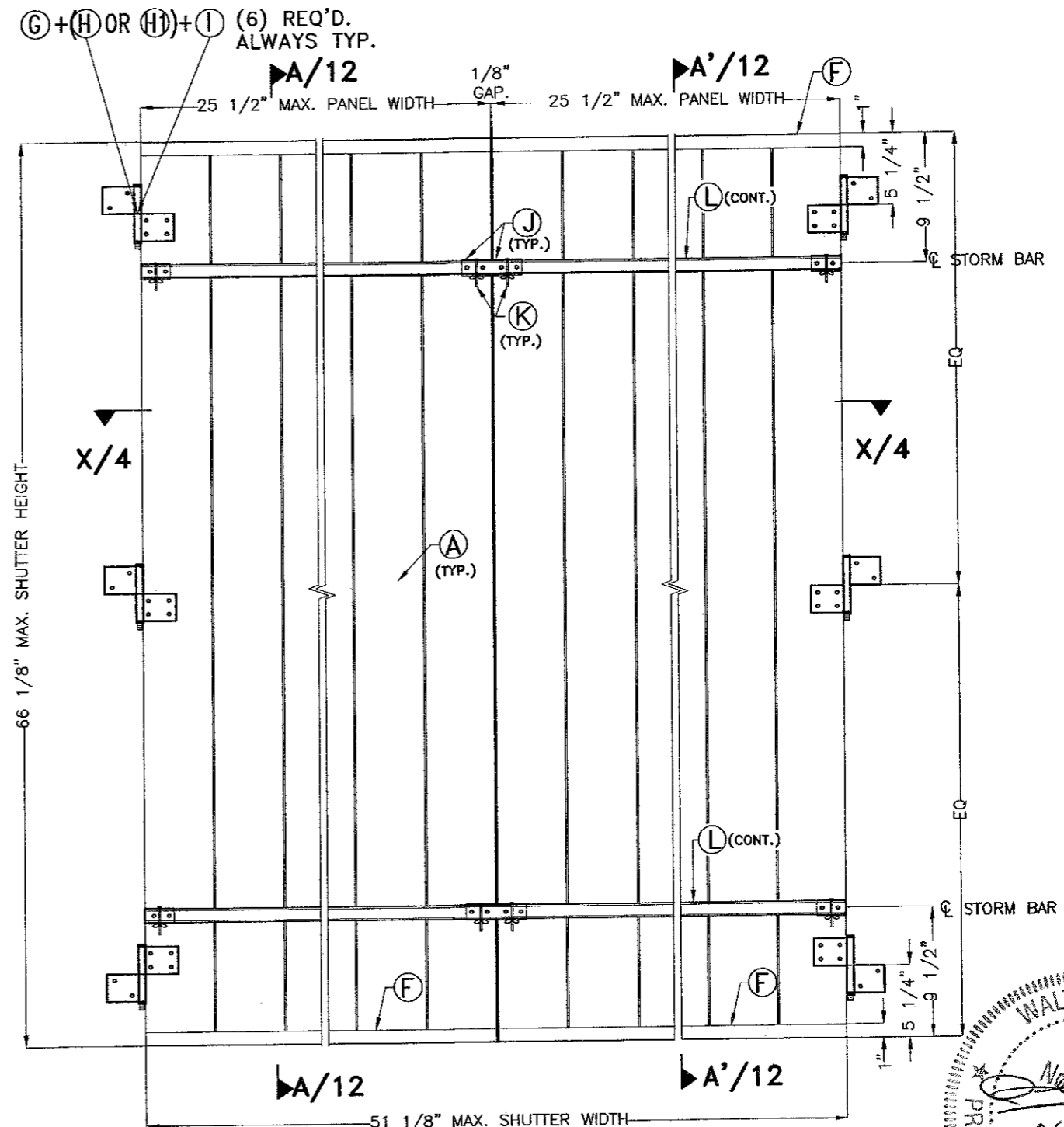
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		4268 WEST ROADS DRIVE WEST PALM BEACH, FL 33407 PHONE: (561)209-8263, FAX: (561)841-1716		DATE:	
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 11-218	03/24/15	3		
2			4		
DRAWING No 15-047					
SHEET 2 OF 13					



**TYPICAL INTERIOR ELEV. DOUBLE PANEL
FOR WOOD OR CONCRETE INSTALLATION
(HURRICANE POSITION)**

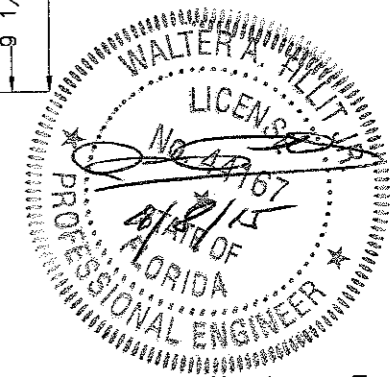
SCALE: 3/32" = 1"

MAX. A.S.D. DESIGN PRESSURE RATING: +50, -60 psf.



**TYPICAL EXTERIOR ELEV. DOUBLE PANEL
FOR WOOD OR CONCRETE INSTALLATION
(HURRICANE POSITION)**

SCALE: 3/32" = 1"



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Phone: (305)871-1530, Fax: (305)871-1531
e-mail: tilteco@aol.com
EB-0008719
WALTER A. TILLIT JR. P.E.
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SHUTTER**

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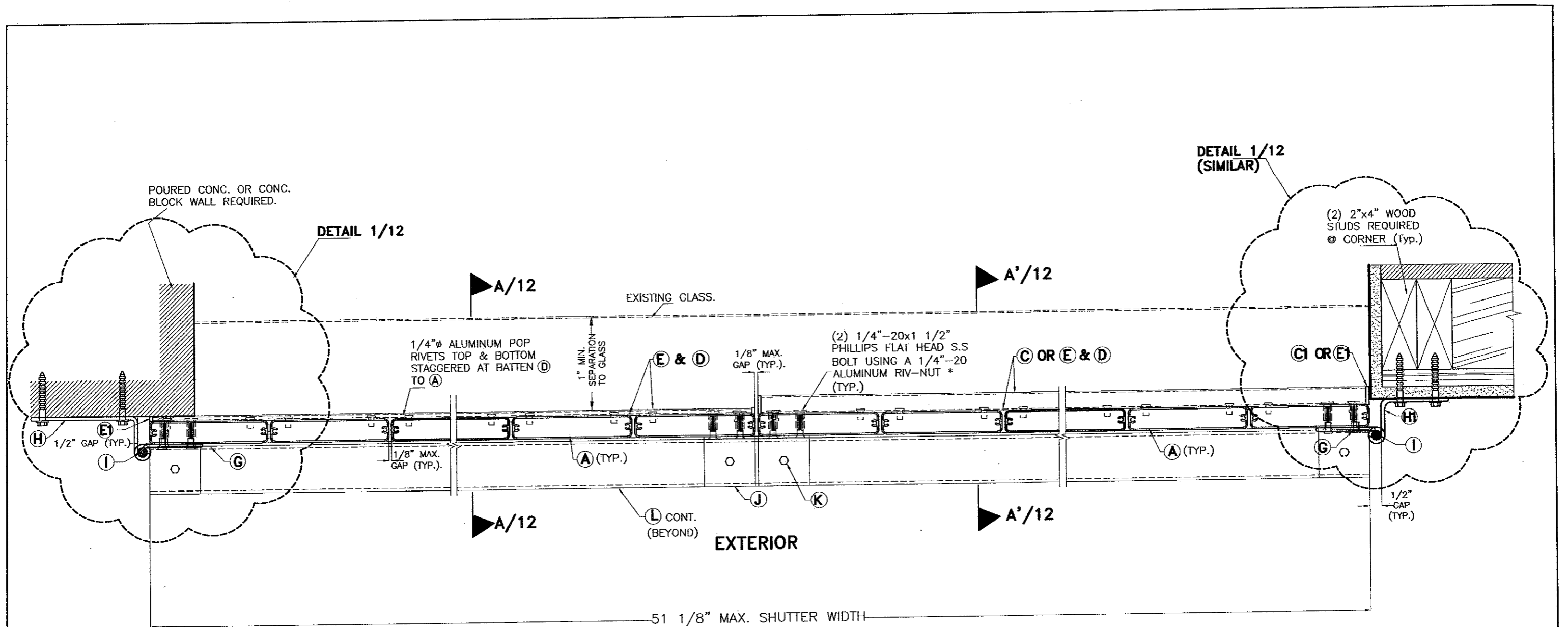
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03/24/15
DATE:

15-047
DRAWING No

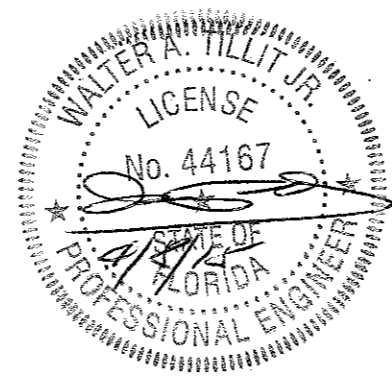
SHEET 3 OF 13



SECTION X-X @ DOUBLE PANEL

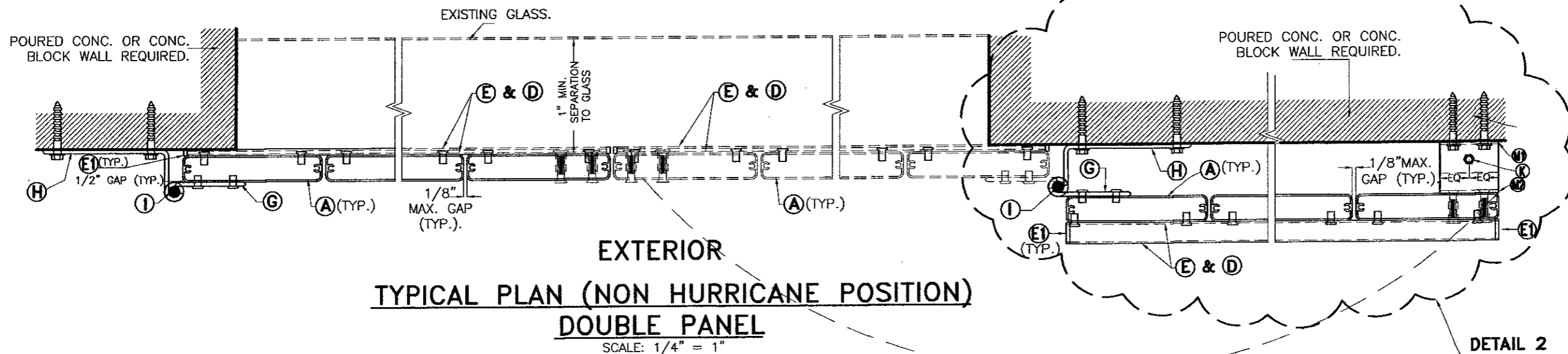
SCALE: 1/4" = 1"

* ALUMINUM RIV-NUT AS MANUFACTURED BY AVDEL CHERRY TEXTORN, PARSIPPENY NEW JERSEY 07054 OR EQUAL.



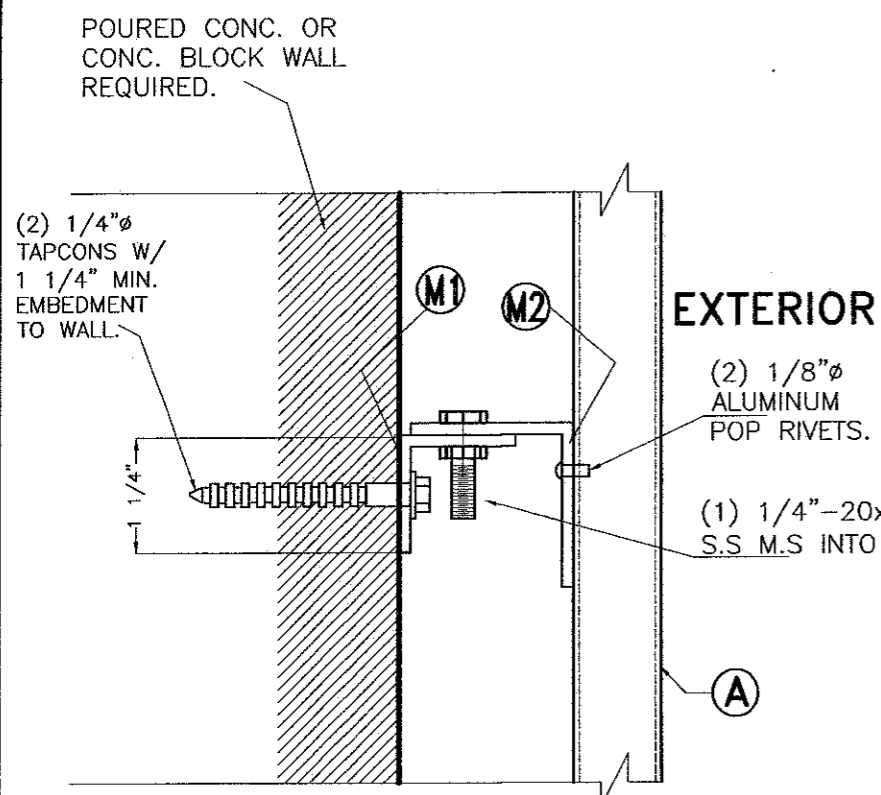
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<table border="1"> <thead> <tr> <th>REV. No</th> <th>DESCRIPTION</th> <th>DATE</th> <th>REV. No</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>OLD 11-218</td> <td>03/24/15</td> <td>3</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td>4</td> <td></td> <td></td> </tr> </tbody> </table>	REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE	1	OLD 11-218	03/24/15	3			2			4			SHEET 4 OF 13		
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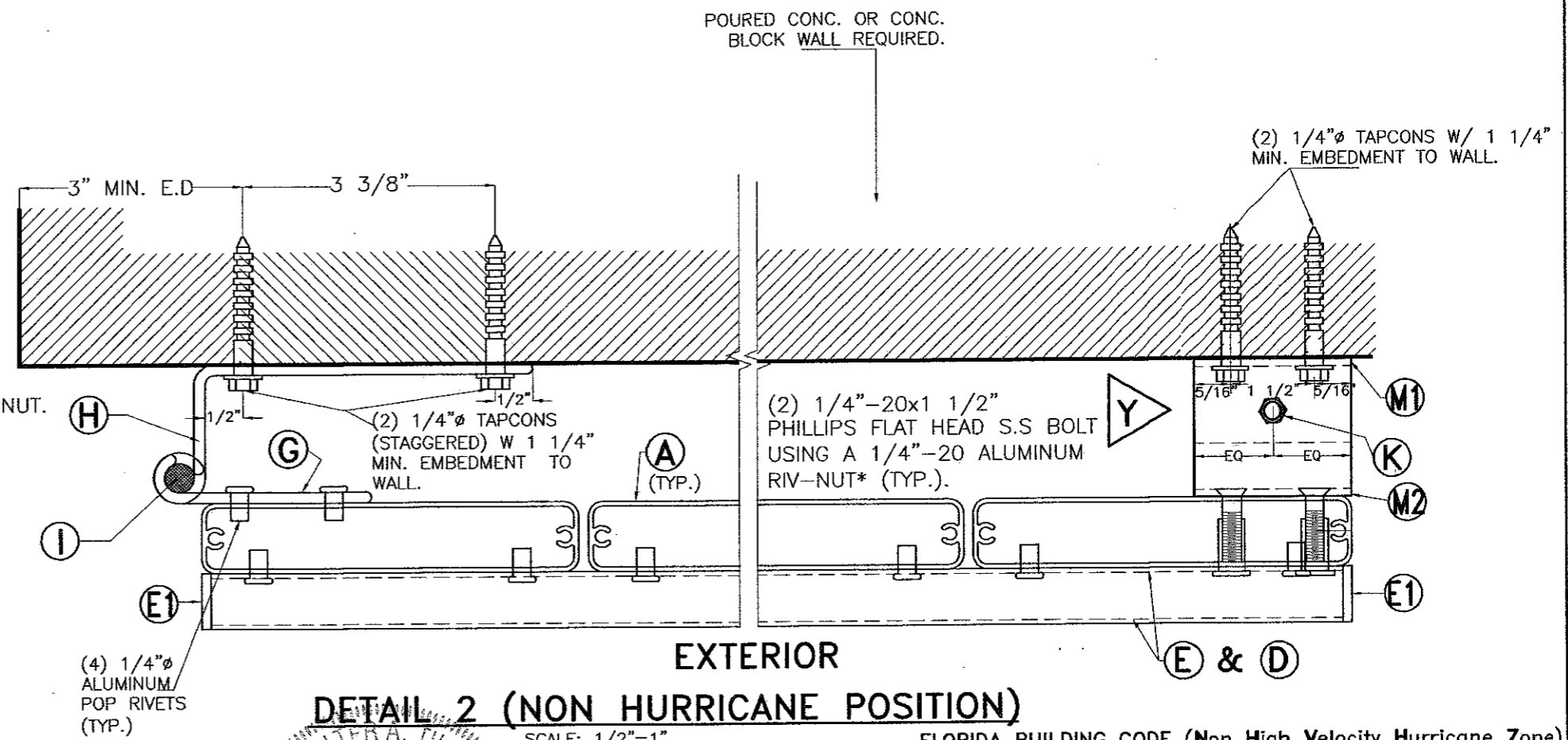


**TYPICAL PLAN (NON HURRICANE POSITION)
DOUBLE PANEL**
SCALE: 1/4" = 1"

DETAIL 2

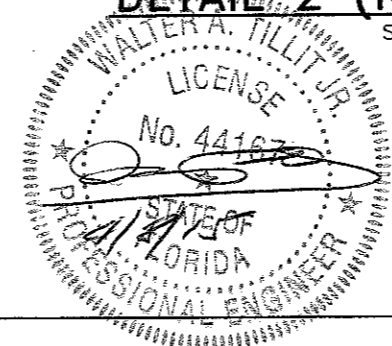


ELEVATION Y-Y
SCALE: 1/2" = 1"



DETAIL 2 (NON HURRICANE POSITION)
SCALE: 1/2" = 1"

FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

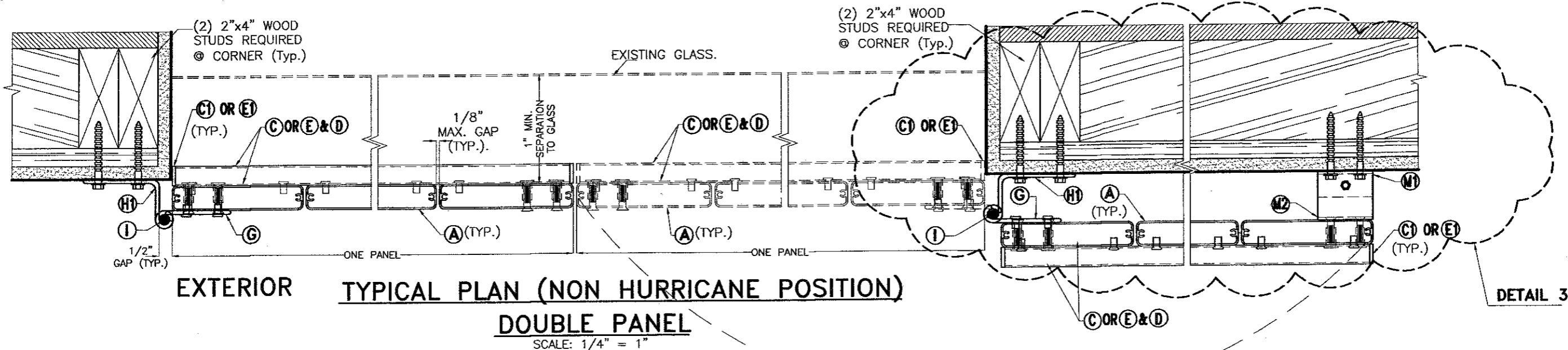


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6595 N.W. 36th St., Ste. 217, VIRGINIA GARDENS, FL 33166
Phone : (305)871-1530 . Fax : (305)871-1531
e-mail: tiltco@aol.com
EG-0006719
WALTER A. TILLIT Jr. P.E.
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BERTHA HV BOARD AND BATTEN SHUTTER		F.R.L. DRAWN BY:	
EASTERN METAL SUPPLY, INC		03/24/15 DATE:	
4268 WEST ROADS DRIVE WEST PALM BEACH, FL. 33407 PHONE: (561)209-8263, FAX: (561)841-1716		15-047 DRAWING No	
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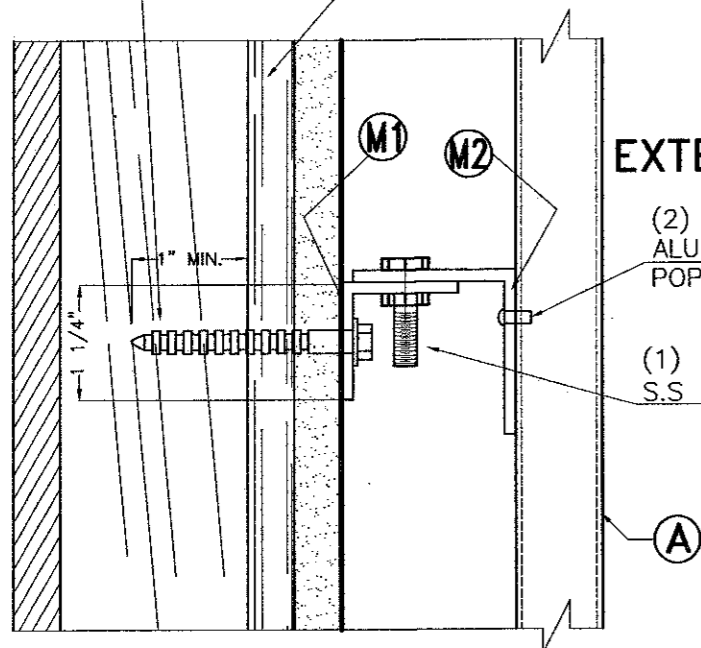
(2) 1/4"Ø TAPCONS W/ 1 1/2" Min. THREADED PENETRATION TO PLYWOOD SHEATHING REQ'D. W/ 1" EXTRA DISTANCE PASSED PLYWOOD.

WOOD HEADER, WOOD PLATES, WOOD STUDS OR 1/2" (MIN.) PLYWOOD SHEATHING REQUIRED.

(2) 2"x4" WOOD STUDS REQUIRED @ CORNER (Typ.)

(2) 1/4" TAPCONS (STAGGERED) W/ 1 1/2" Min. THREADED PENETRATION TO WOOD.

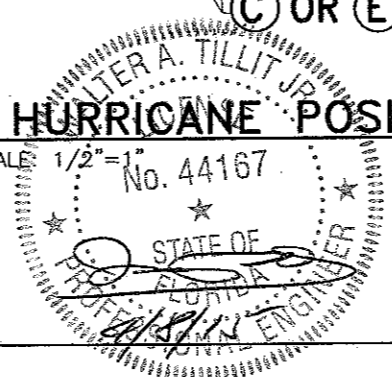
(2) 1/4"Ø TAPCONS W/ 1 1/2" Min. THREADED PENETRATION TO PLYWOOD SHEATHING REQ'D. W/ 1" EXTRA DISTANCE PASSED PLYWOOD.



ELEVATION Y
SCALE: 1/2"=1"

DETAIL 3 (NON HURRICANE POSITION)

SCALE: 1/2"=1"



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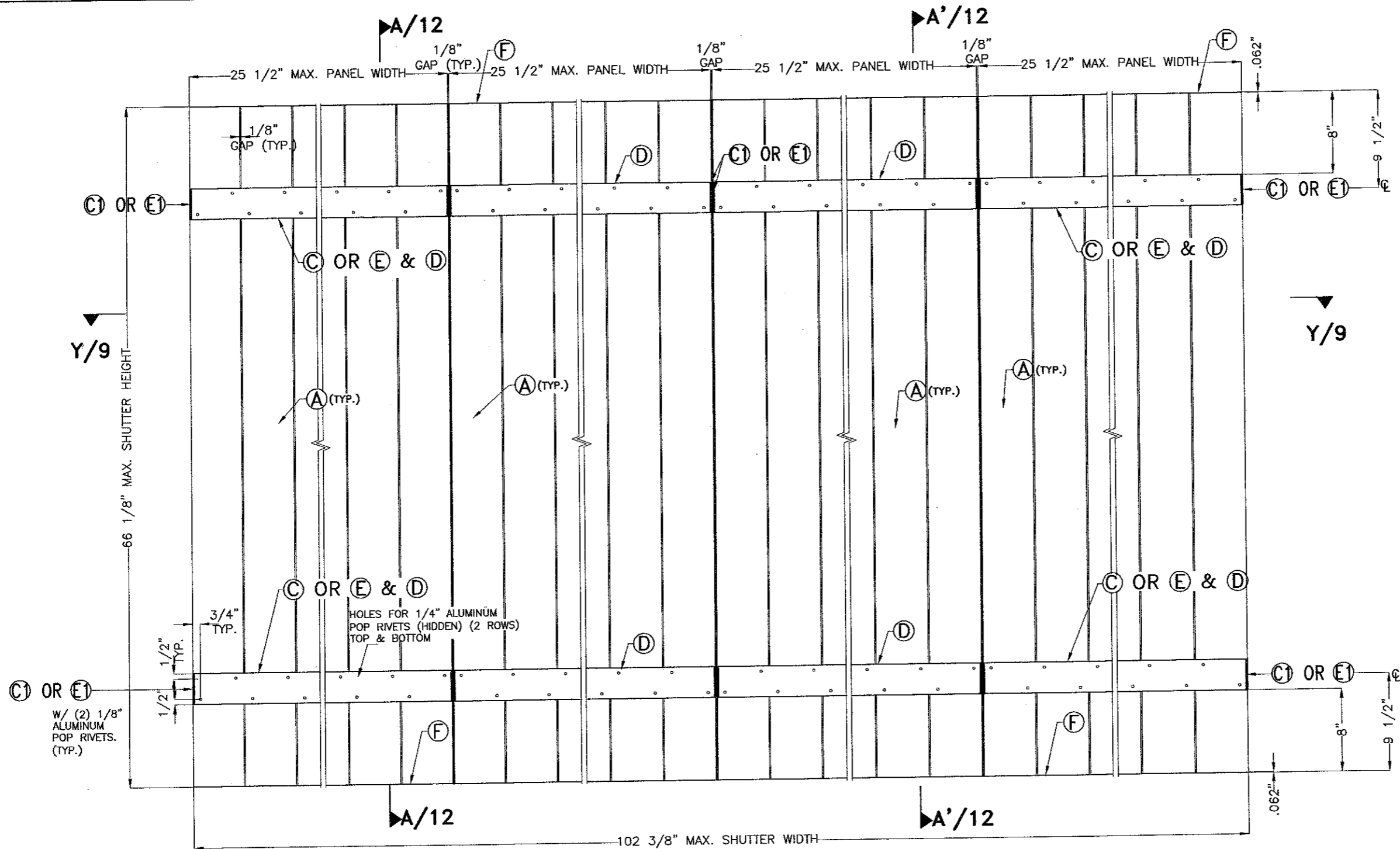
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DRAWN BY:

03/24/15
DATE:

15-047

DRAWING No

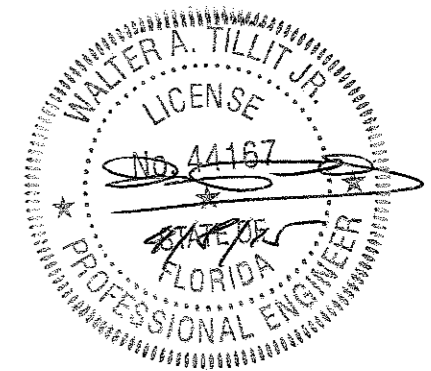
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2			4		



**TYPICAL INTERIOR ELEV. QUADRUPLE PANEL
FOR WOOD OR CONCRETE INSTALLATIONS
(HURRICANE POSITION)**

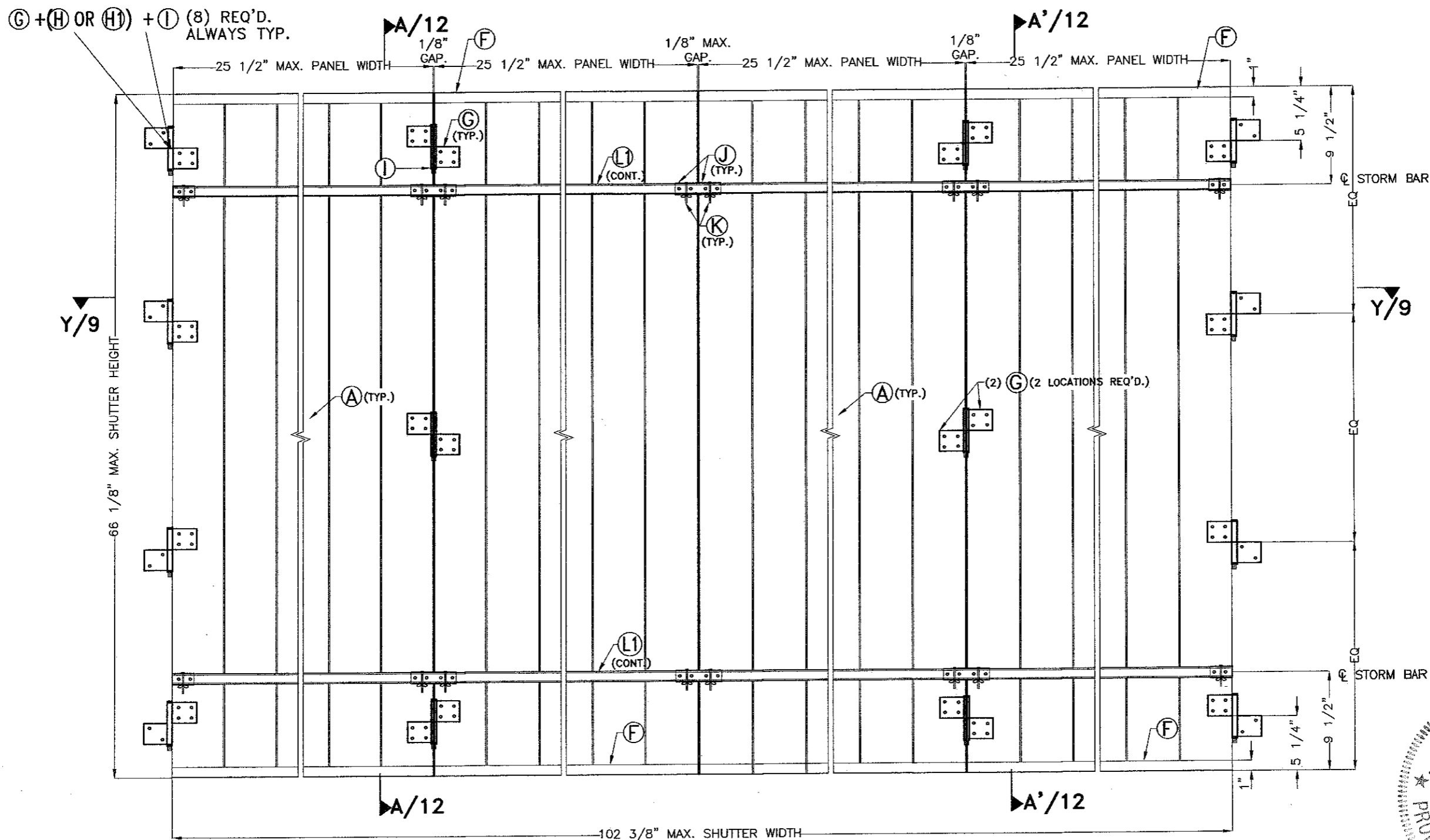
SCALE: 3/32" = 1"

MAX. A.S.D. DESIGN PRESSURE RATING: +40, -45 psf.



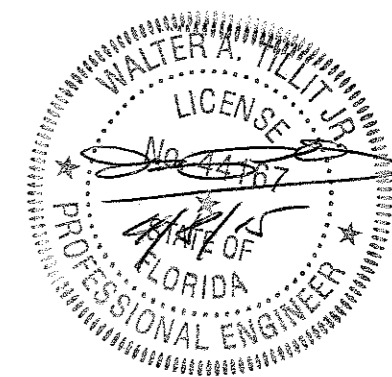
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REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE																
1	OLD 11-218	03/24/15	3																		
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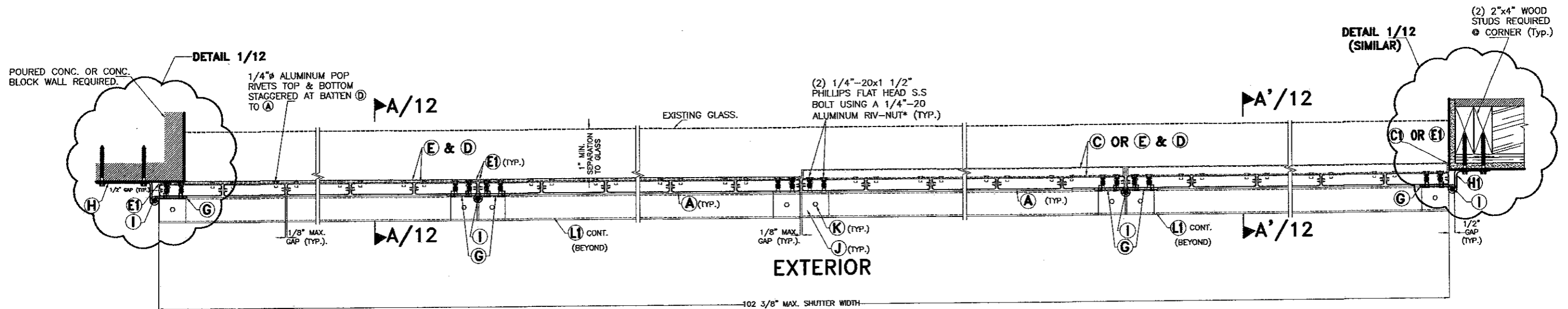
**TYPICAL EXTERIOR ELEV. QUADRUPLE PANEL
FOR WOOD OR CONCRETE
(HURRICANE POSITION)**

SCALE: 3/32" = 1"



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2			4		



SECTION Y-Y @ QUADRUPLE PANEL

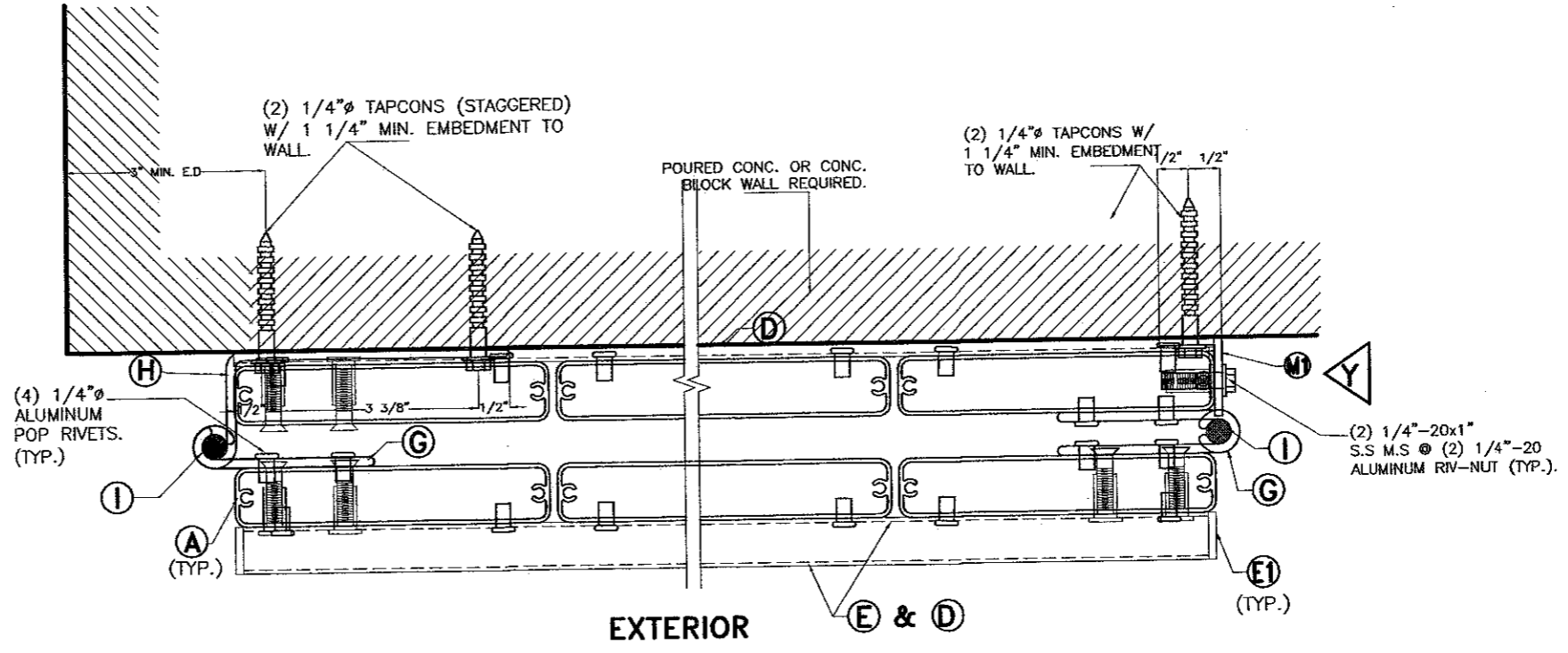
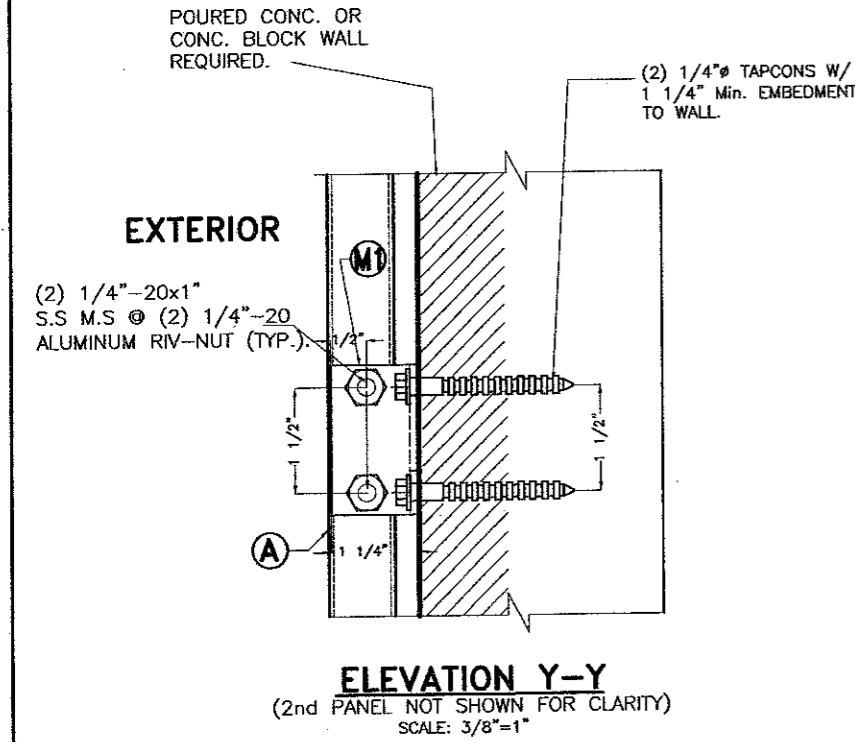
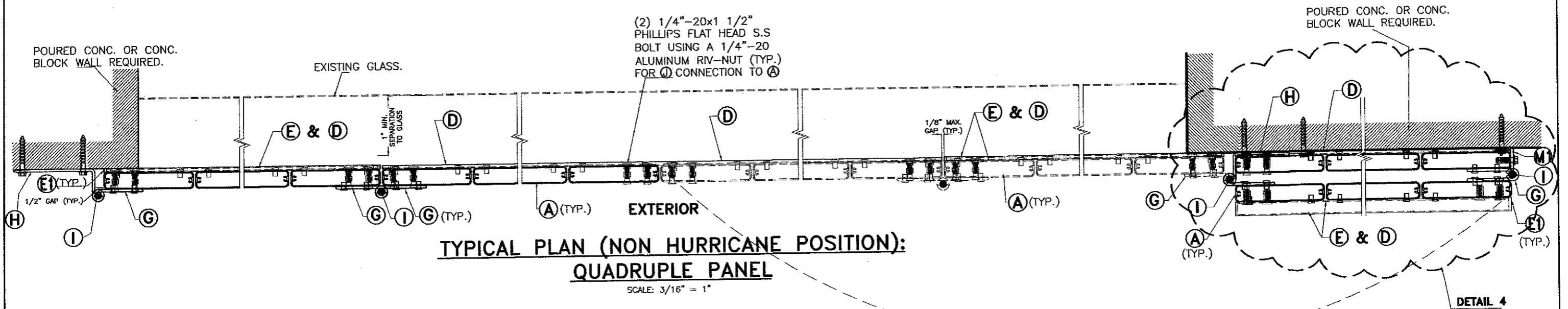
SCALE: 1/8" = 1"

* ALUMINUM RIV-NUT AS MANUFACTURED BY AVDEL CHERRY TEXTORN, PARSIPPENY NEW JERSEY 07054 OR EQUAL.

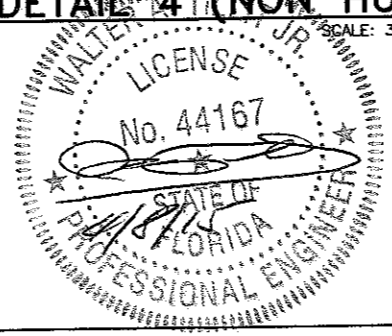


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REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE																
1	OLD 11-218	03/24/15	3																		
2			4																		



DETAIL 4 (NON HURRICANE POSITION)
SCALE: 3/8" = 1"



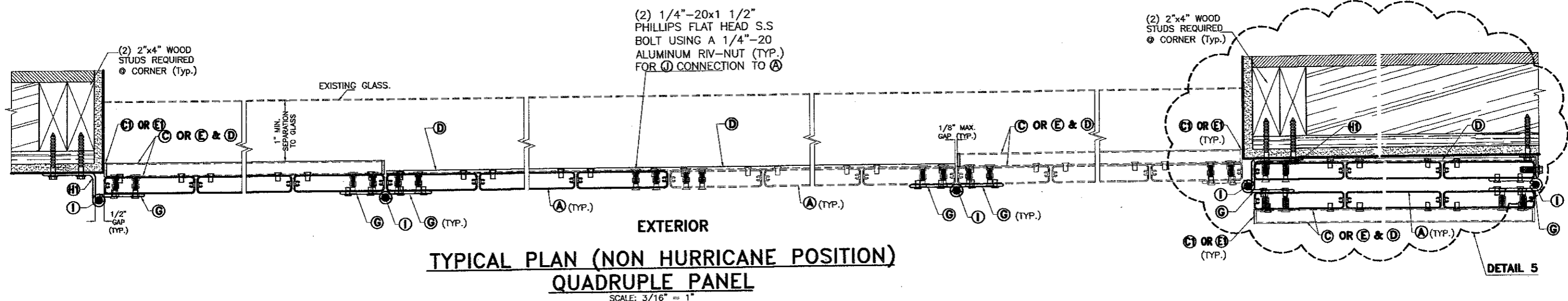
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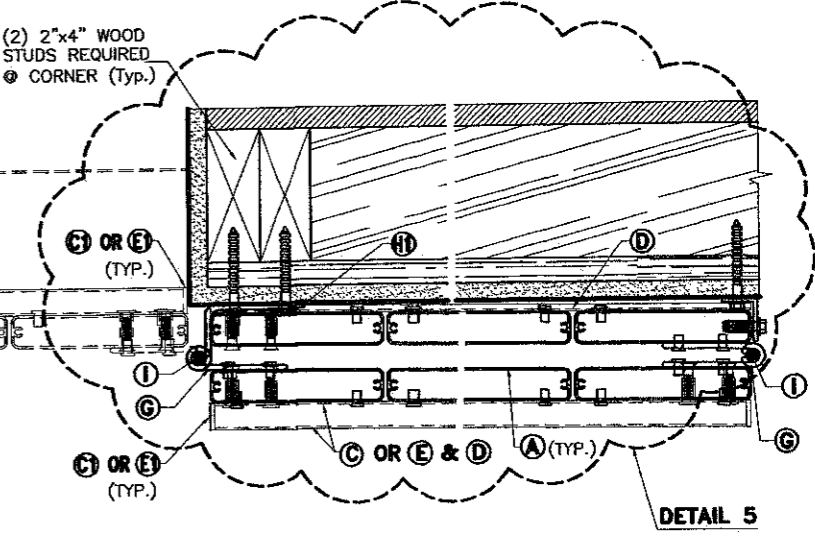
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2			4		



**TYPICAL PLAN (NON HURRICANE POSITION)
QUADRUPLE PANEL**
SCALE: 3/16" = 1"

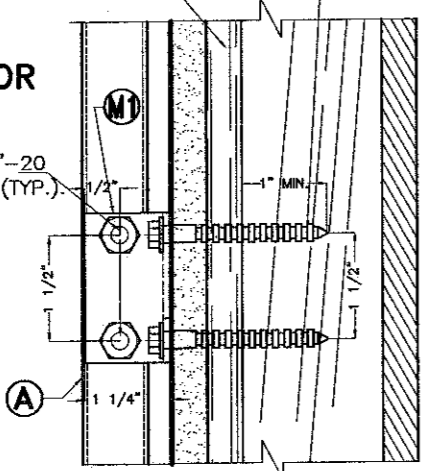


DETAIL 5

WOOD HEADER, WOOD PLATES, WOOD STUDS OR 1/2" (MIN.) PLYWOOD SHEATHING REQUIRED.
(2) 1/4" TAPCONS W/ 1 1/2" Min. THREADED PENETRATION TO PLYWOOD SHEATHING REQ'D. W/ 1" EXTRA DISTANCE PASSED PLYWOOD.

EXTERIOR

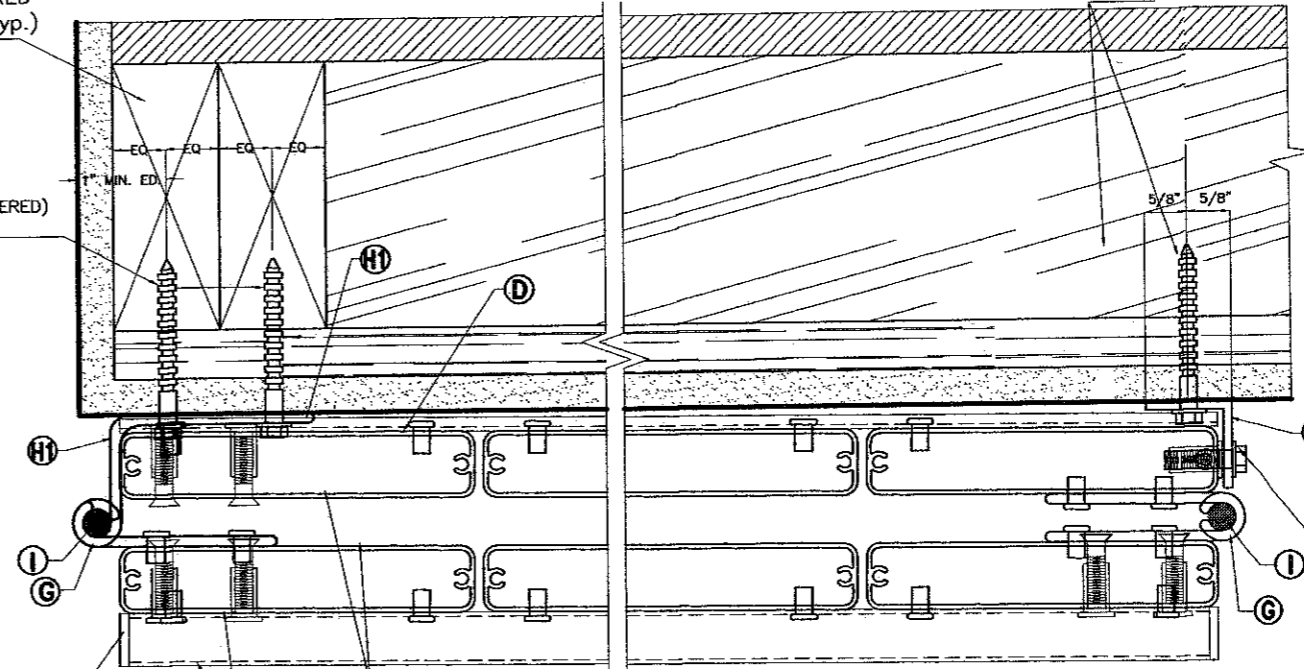
(2) 1/4"-20x1" S.S M.S @ (2) 1/4"-20 ALUMINUM RIV-NUT (TYP.)



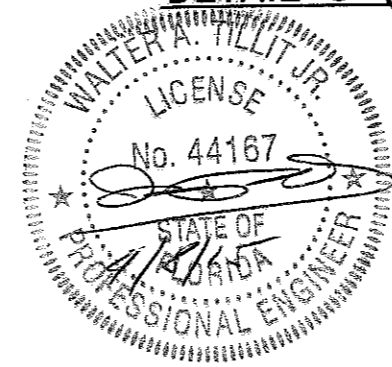
ELEVATION Y'
SCALE: 3/8"=1"

(2) 2"x4" WOOD STUDS REQUIRED @ CORNER (Typ.)

(2) 1/4" TAPCONS (STAGGERED) W/ 1 1/2" Min. THREADED PENETRATION TO WOOD.



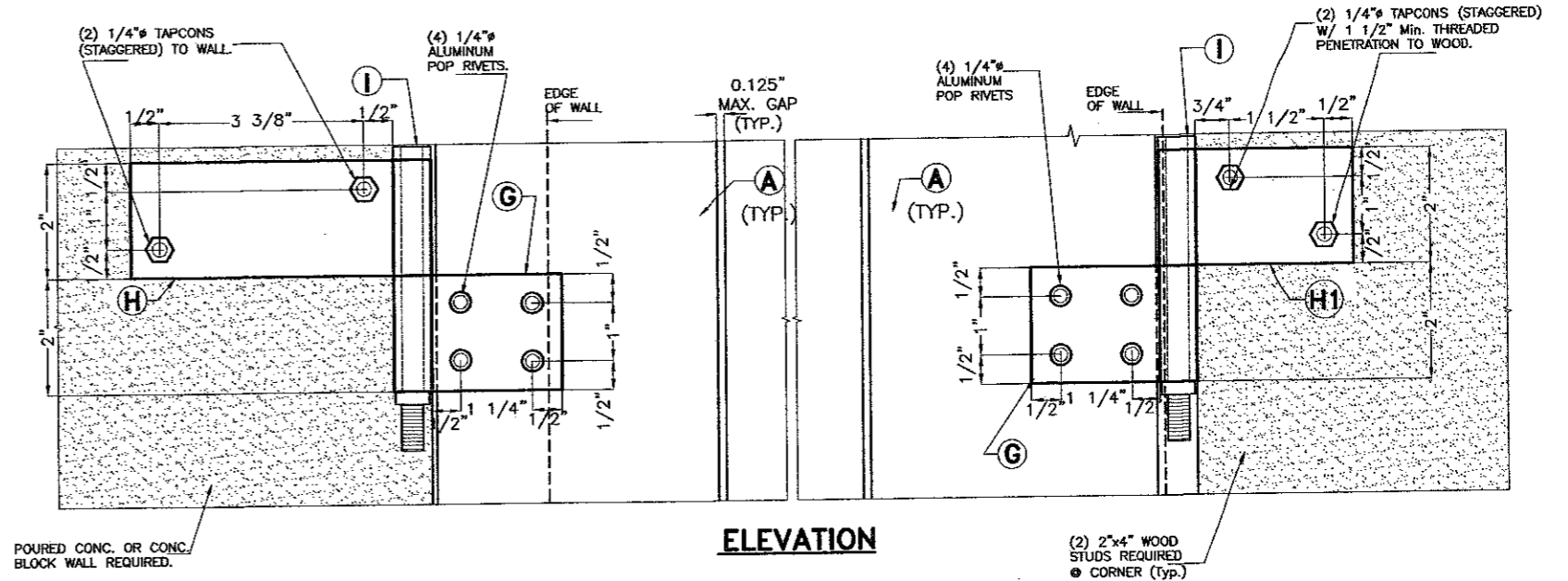
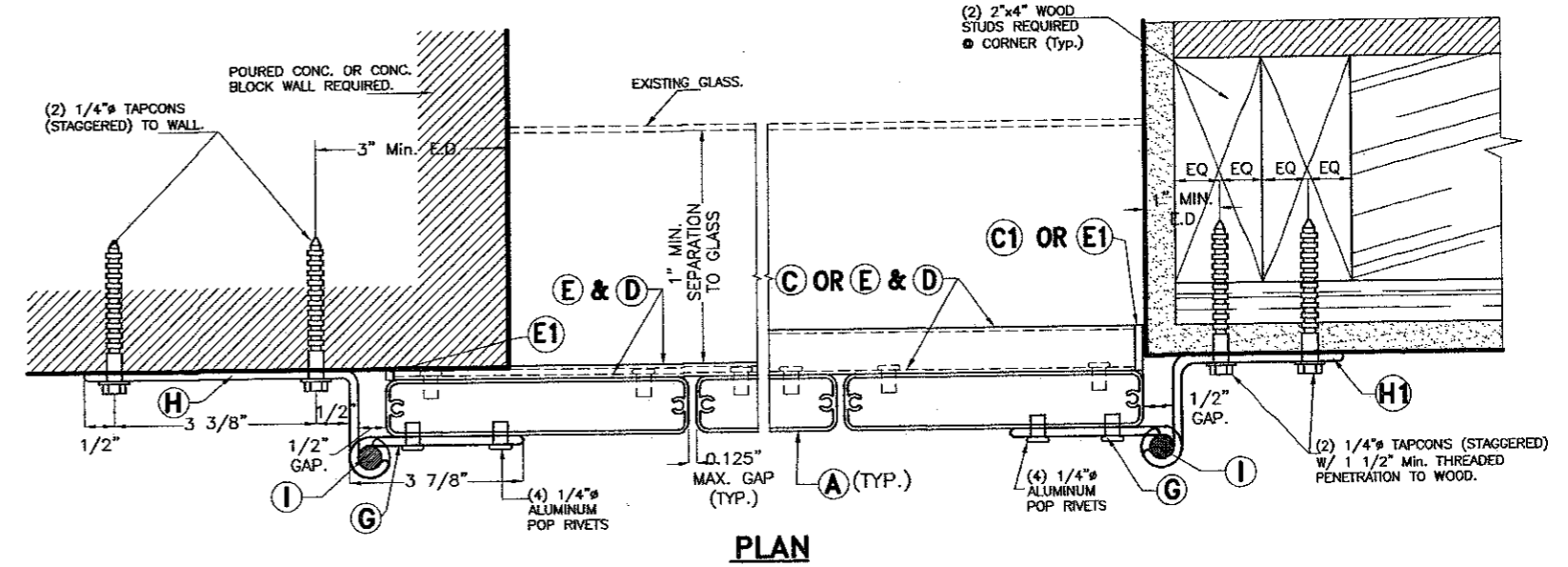
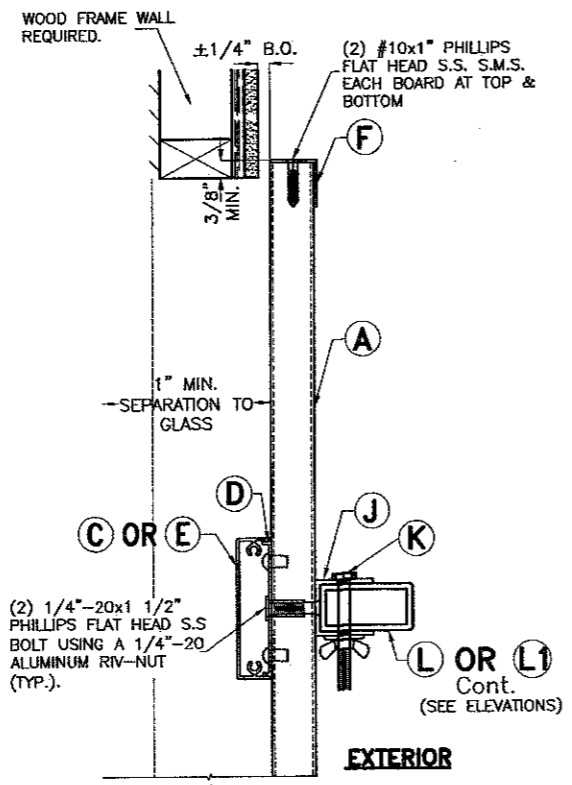
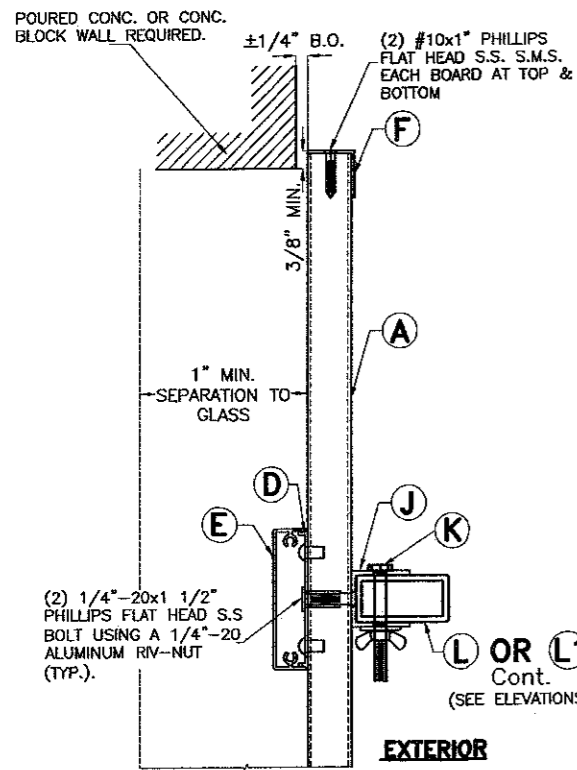
DETAIL 5 (NON HURRICANE POSITION)
SCALE: 3/8"=1"



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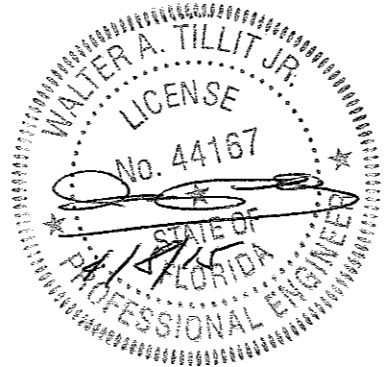
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2		



SECTION A-A
SCALE: 1/4" = 1"

SECTION A'-A'
SCALE: 1/4" = 1"

DETAIL 1
SCALE: 3/8" = 1"



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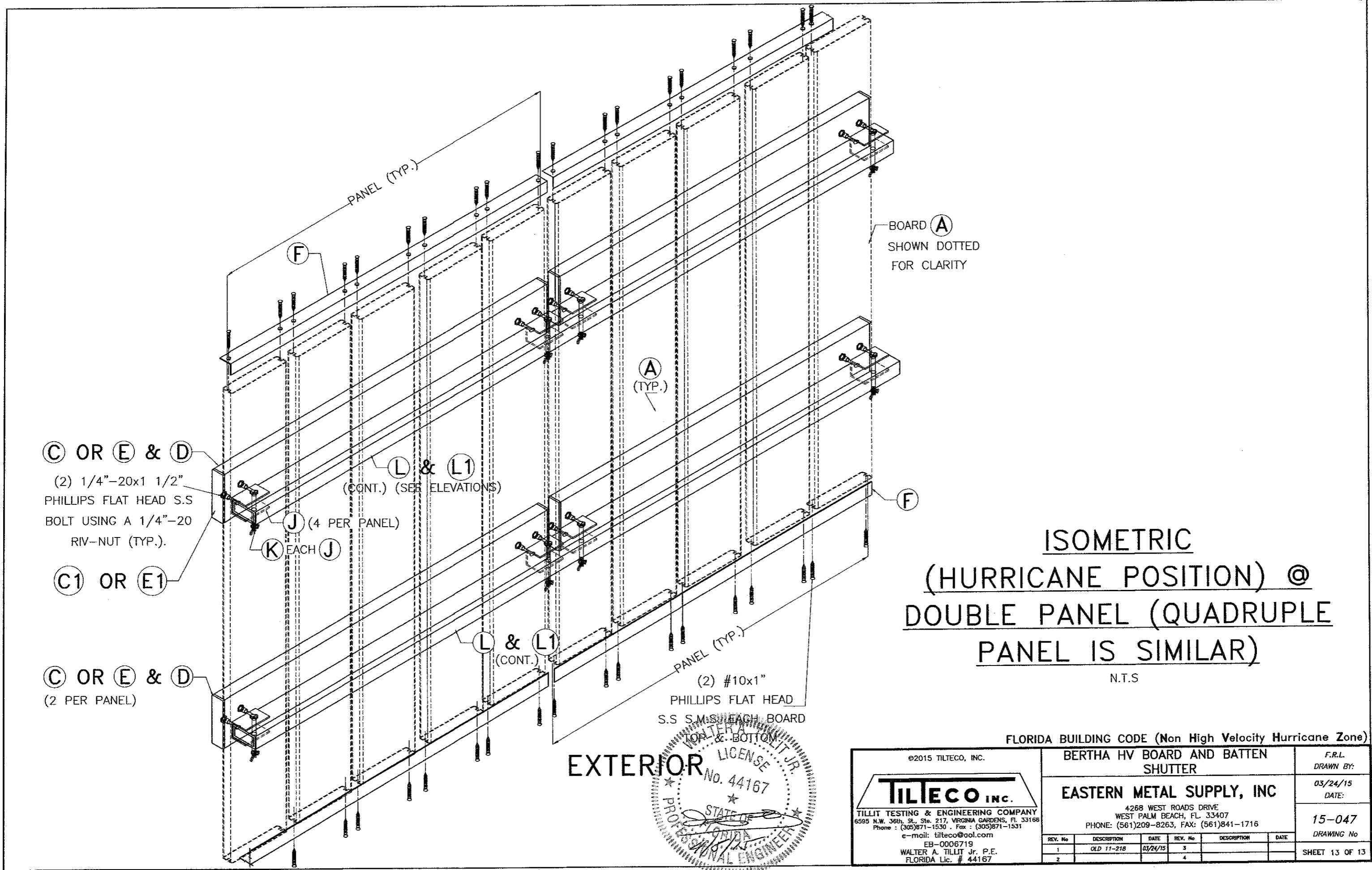
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SHEET 12 OF 13



BOARD (A)
SHOWN DOTTED
FOR CLARITY

(C OR E & D)
(2) 1/4"-20x1 1/2"
PHILLIPS FLAT HEAD S.S
BOLT USING A 1/4"-20
RIV-NUT (TYP.).

(C1 OR E1)

(C OR E & D)
(2 PER PANEL)

(L & L1)
(CONT.) (SEE ELEVATIONS)

(J) (4 PER PANEL)
(K) EACH (J)

(L & L1)
(CONT.)

(2) #10x1"
PHILLIPS FLAT HEAD
S.S S.M.S. WASH. BOARD
TOP & BOTTOM

**ISOMETRIC
(HURRICANE POSITION) @
DOUBLE PANEL (QUADRUPLE
PANEL IS SIMILAR)**

N.T.S

EXTERIOR
LICENSE
No. 44167
WALTER A. TILIT JR.
PROFESSIONAL ENGINEER
STATE OF FLORIDA

FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

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