



# Opaque Fiberglass Door

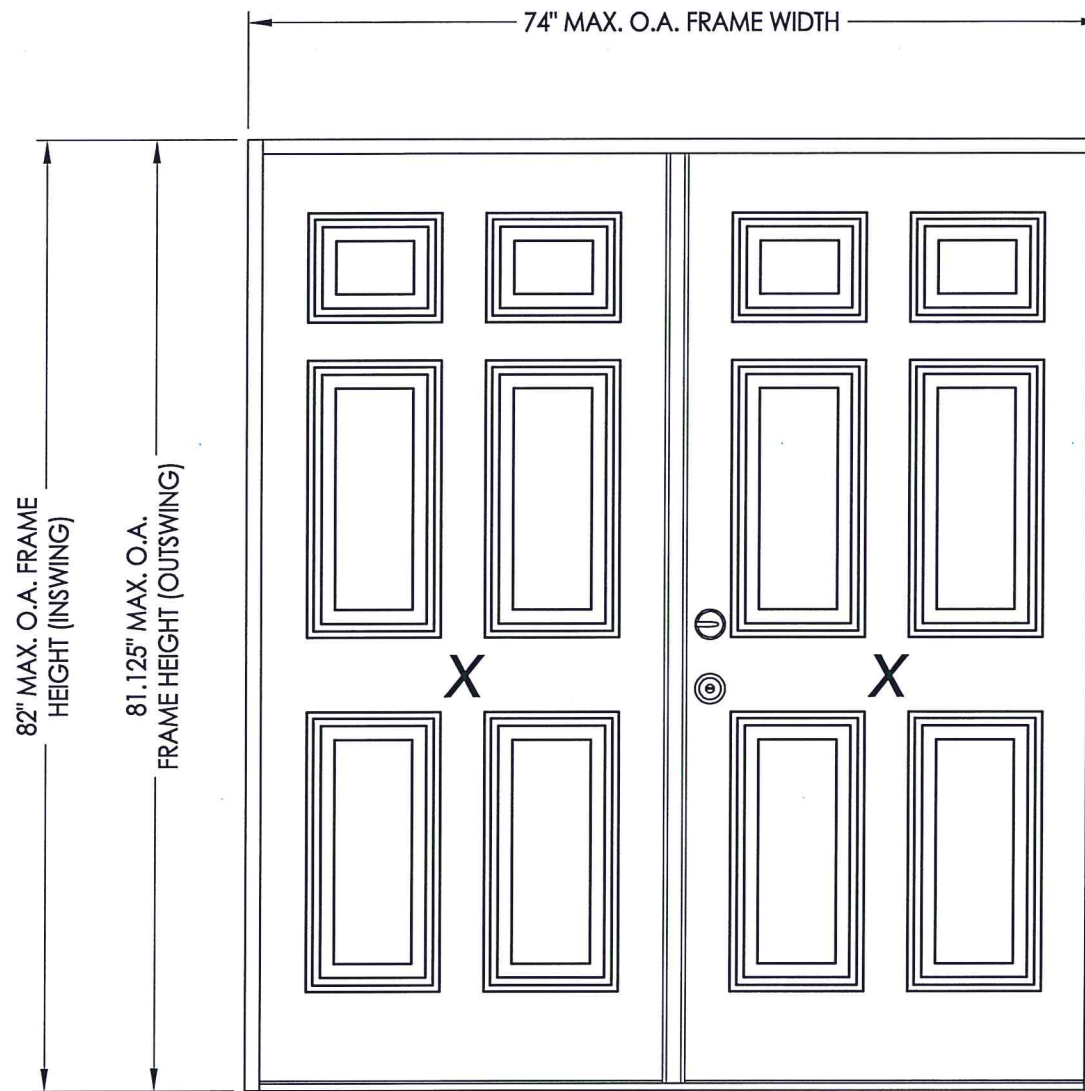
"NON-IMPACT"  
IN SWING / OUT SWING

**EVALUATED FOR USE IN THE STATE OF TEXAS**

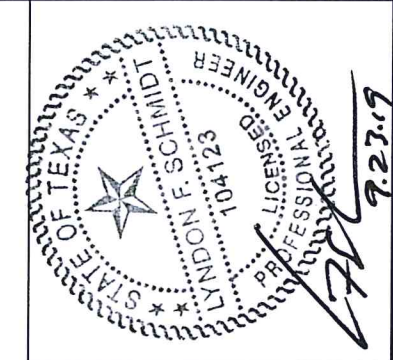
The Fiberglass Door system described herein complies with the 2018 International Residential Code (IRC), Sections R301 & R609 and the 2018 International Building Code (IBC), Sections 1404.13, 1609, 1709.5, 2403 and 2404 subject to the following conditions:

1. Anchors shall be as listed and spaced as shown in the details. Anchor embedment to base material shall be beyond wall dressing or stucco.
2. When used in areas requiring wind-borne debris protection this product is required to be protected with an impact resistant covering that complies with Section R301.2.1.2 of the IRC and Section 1609.2 of the IBC.
3. Allowable design pressure requirements must be equal to or less than the design pressure rating shown in the design pressure chart, sheet 1 of this drawing.
4. Conditions not covered by this drawing are subject to further engineering analysis.

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5	Horizontal & vertical cross sections
6	Vertical cross sections
7	Frame anchoring



CONFIG.	FRAME TYPE	MODEL	DESIGN PRESSURE (PSF) ULTIMATE HURRICANE ASTRAGAL		DESIGN PRESSURE (PSF) ULTIMATE MULTIPOINT ASTRAGAL	
			POSITIVE	NEGATIVE	POSITIVE	NEGATIVE
XX	PINE	IN SWING	+50.0	-55.0	+40.0	-40.0
XX		OUT SWING	+60.0	-60.0	+55.0	-55.0
XX	"FusionFrame"	IN SWING	+50.0	-50.0	+40.0	-40.0
XX		OUT SWING	+50.0	-50.0	+50.0	-50.0



Documents Prepared By: Lyndon F. Schmidt, P.E.  
TEXAS P.E. #104123

**R.W.** BUILDING CONSULTANTS, INC.  
P.O. Box 230 Valrico FL 33595  
Phone No.: 813.659.9197

TEXAS BOARD OF PROFESSIONAL ENGINEERS  
CERTIFICATE OF REGISTRATION # F-11852

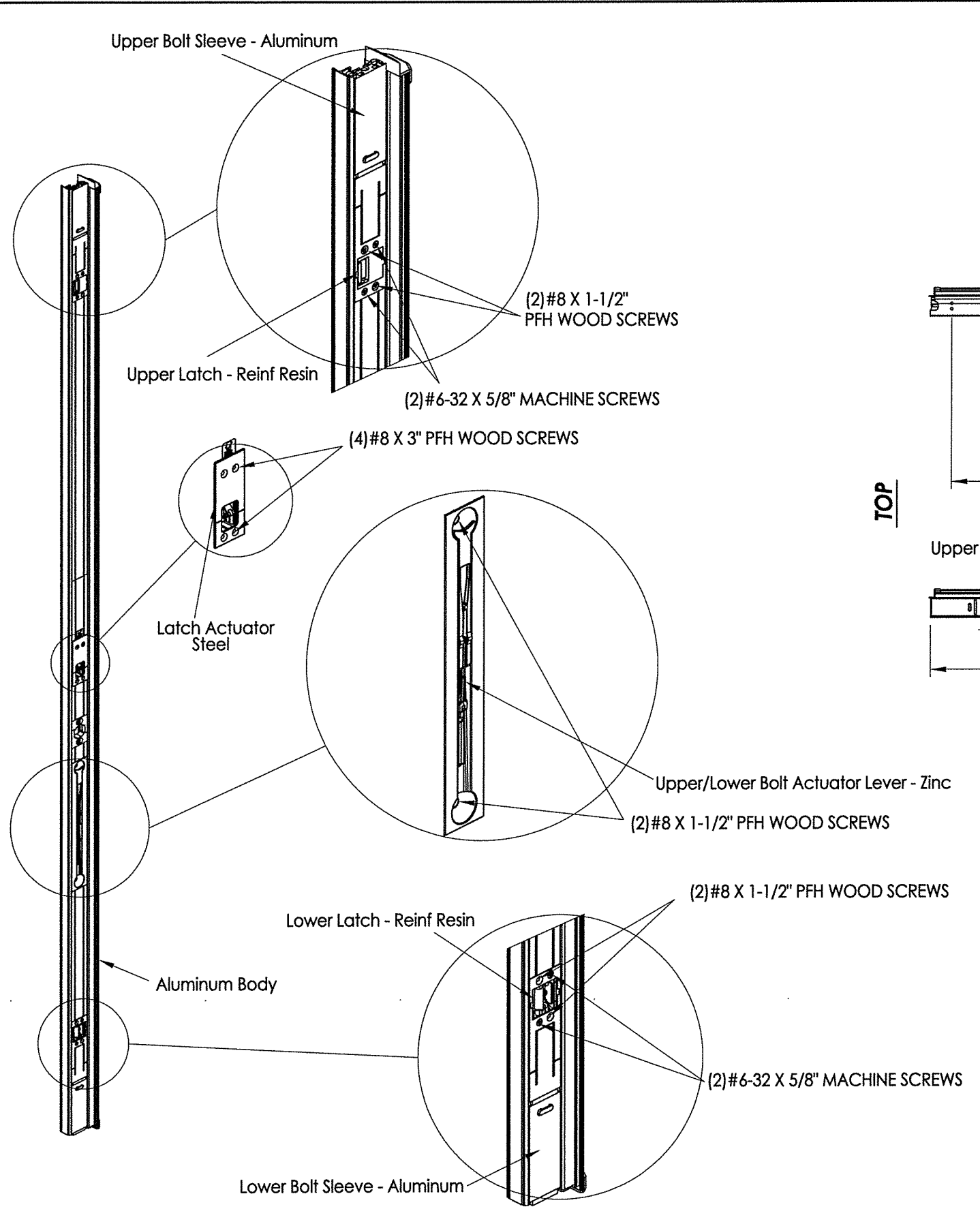
PRODUCT: ENDURA

PART OR ASSEMBLY: TYPICAL ELEVATION, DESIGN PRESSURES & GENERAL NOTES

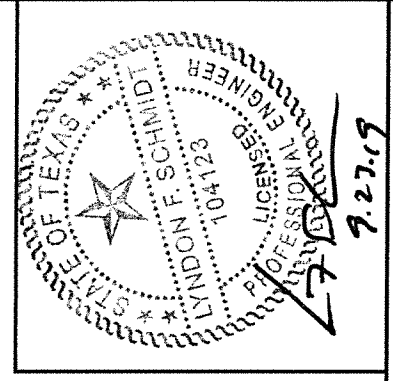
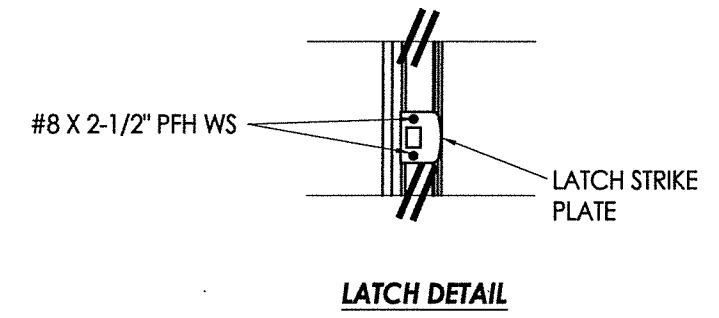
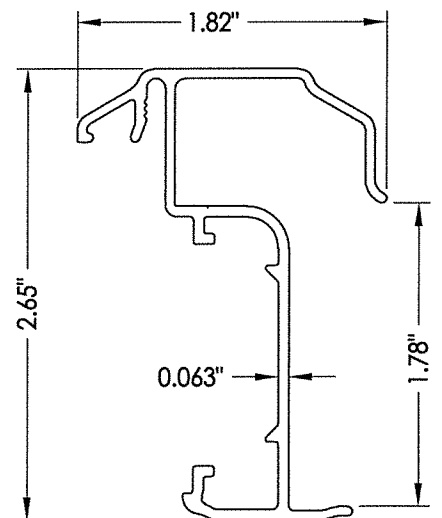
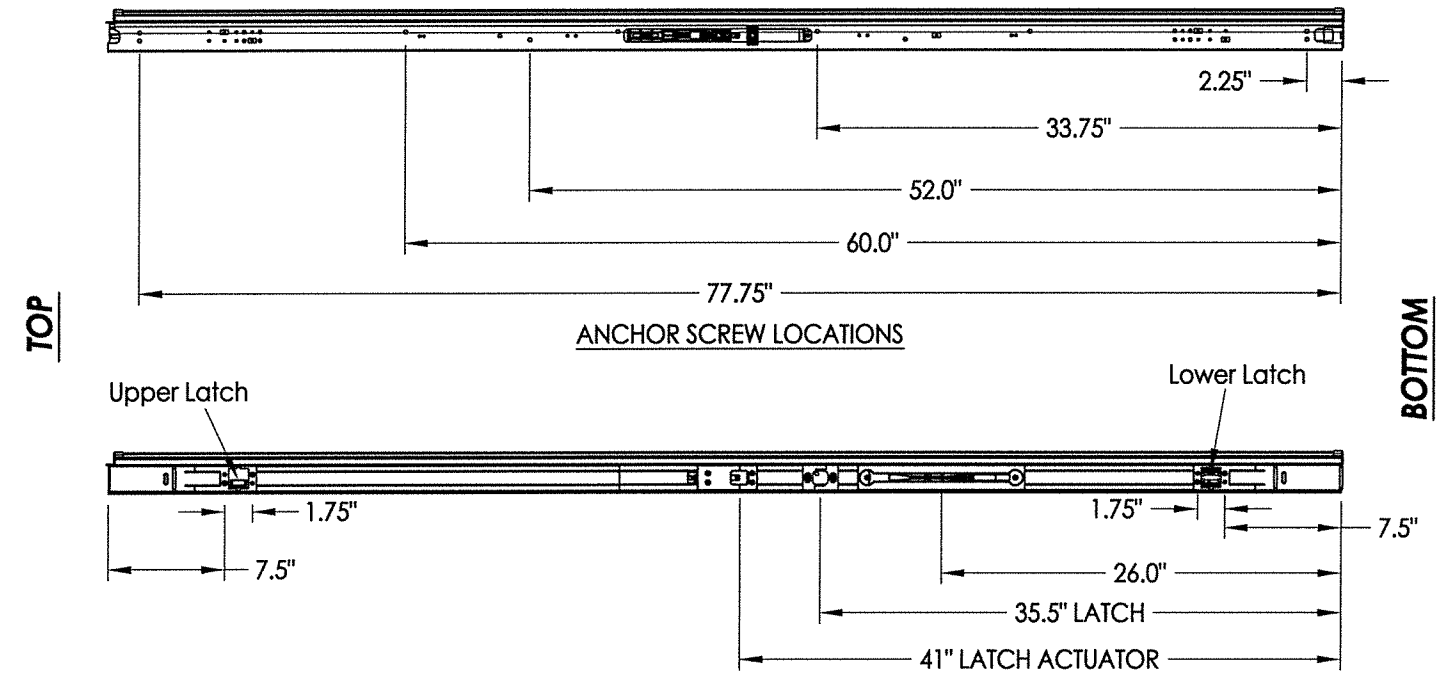
NO.	DATE	REVISIONS
2	9/19/19	ADD "FusionFrame" OPTION & UPDATE TO 2018 IBC/IRC CODE
1	10/01/18	UPDATE FOR NEW TESTING

DATE: 8/31/16  
SCALE: N.T.S.  
DWG. BY: JK  
CHK. BY: LFS  
DRAWING NO.: TX-4633  
SHEET 1 OF 7

R:\Clients\Endura PERMANENT\B - Texas Dept of Ins\TDI - DR-855 Masonite FG Opaque (LK,DB)\C - Drawings\TX-4633.36.dwg, 1.2



**ULTIMATE MULTIPOINT ASTRAGAL**

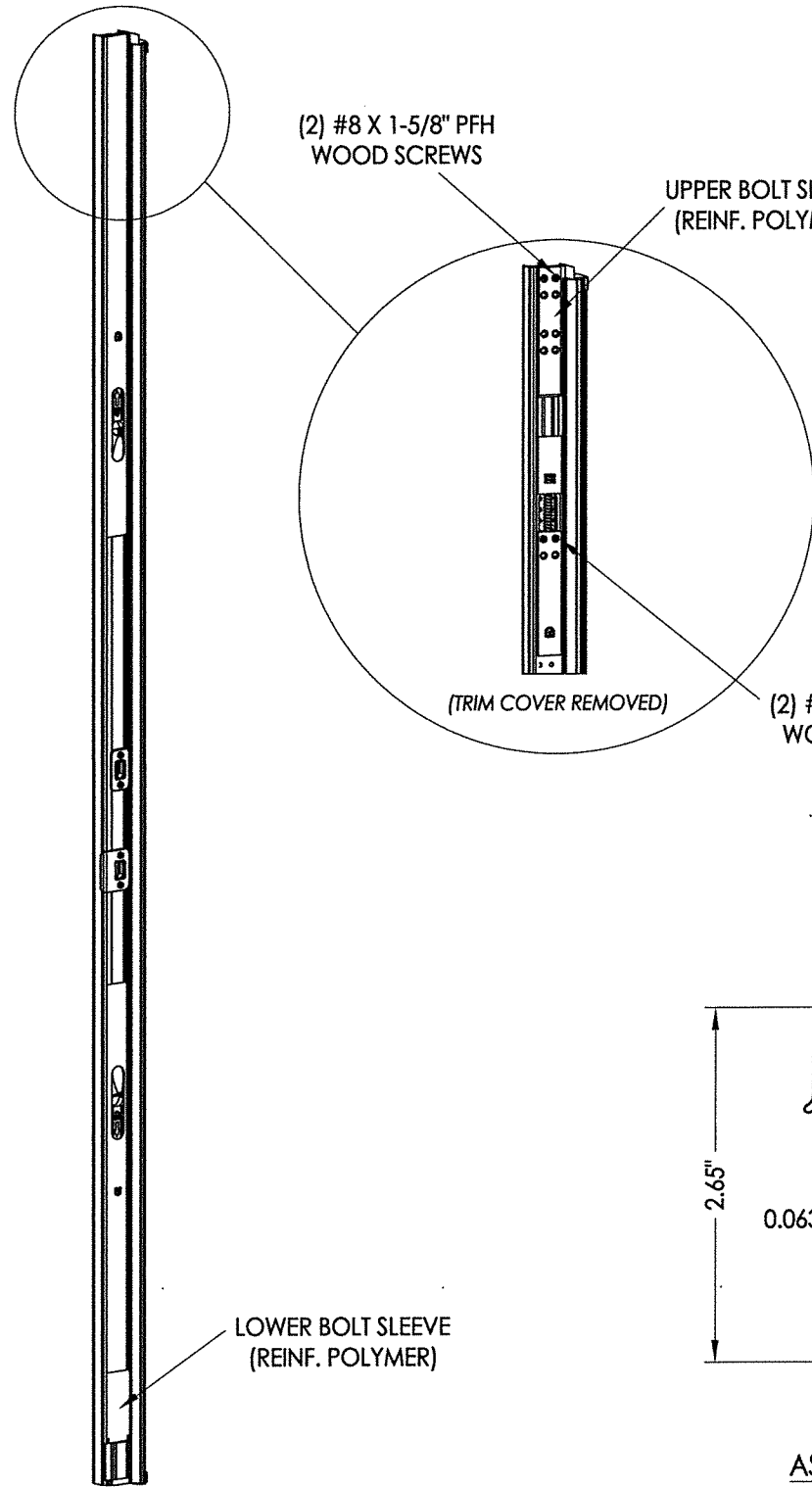


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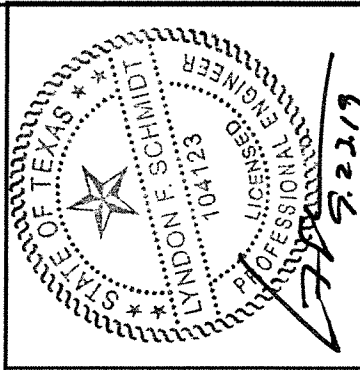
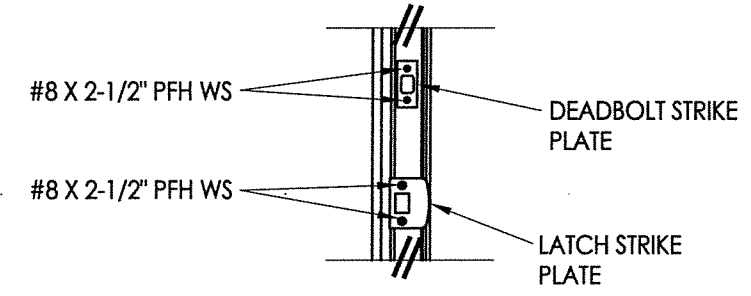
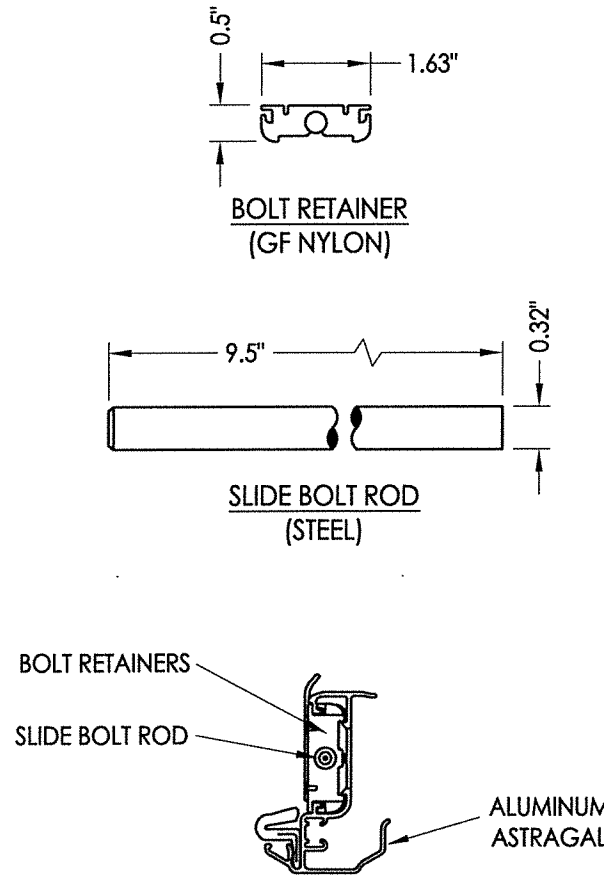
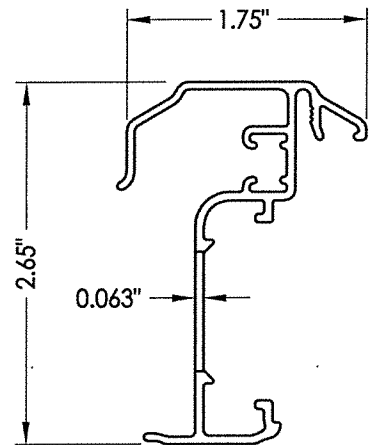
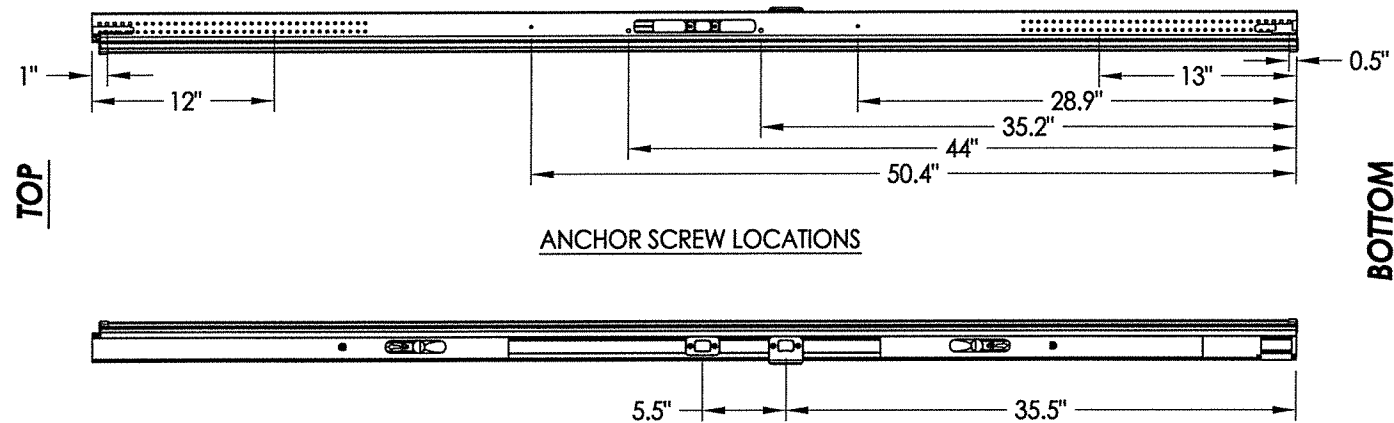
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 TEXAS BOARD OF PROFESSIONAL ENGINEERS  
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PRODUCT:	ENDURA	
PART OR ASSEMBLY:	ASTRAGAL DETAILS (ULTIMATE MULTI-POINT)	
NO.	DATE	BY
2	9/19/19	LFS
1	10/01/18	LFS
REVISIONS		

DATE:	8/31/16
SCALE:	N.T.S.
DWG. BY:	JK
CHK. BY:	LFS
DRAWING NO.:	TX-4633
SHEET	2 OF 7



**ULTIMATE HURRICANE ASTRAGAL**



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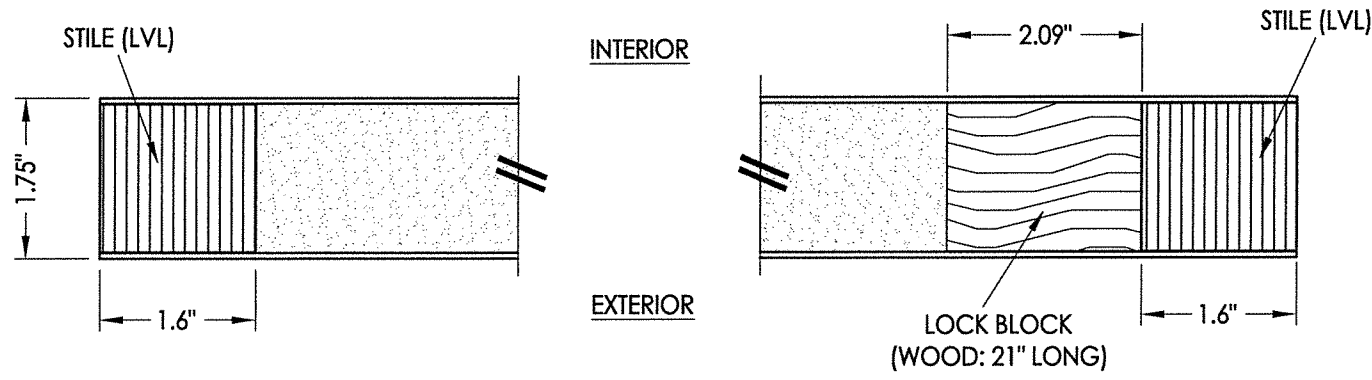
TEXAS BOARD OF PROFESSIONAL ENGINEERS  
CERTIFICATE OF REGISTRATION # F-11852

PRODUCT:	ENDURA
PART OR ASSEMBLY:	ASTRAGAL DETAILS (ULTIMATE HURRICANE)

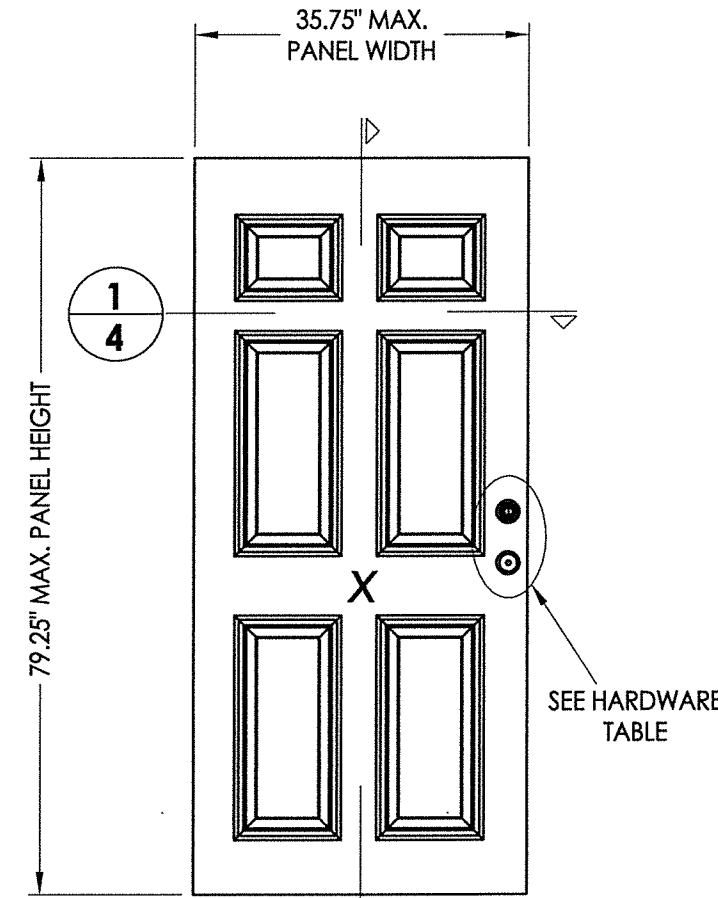
NO.	DATE	REVISIONS
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1	10/01/18	UPDATE FOR NEW TESTING
		BY

DATE:	8/31/16
SCALE:	N.T.S.
DWG. BY:	JK
CHK. BY:	LFS
DRAWING NO.:	TX-4633
SHEET	3 OF 7

R:\Clients\Endura PERMANENT\B - Texas Dept of Ins\TDI - DR-855 Masonite FG Opaque (LK,DB)\C - Drawings\TX-4633.36.dwg, 1.4



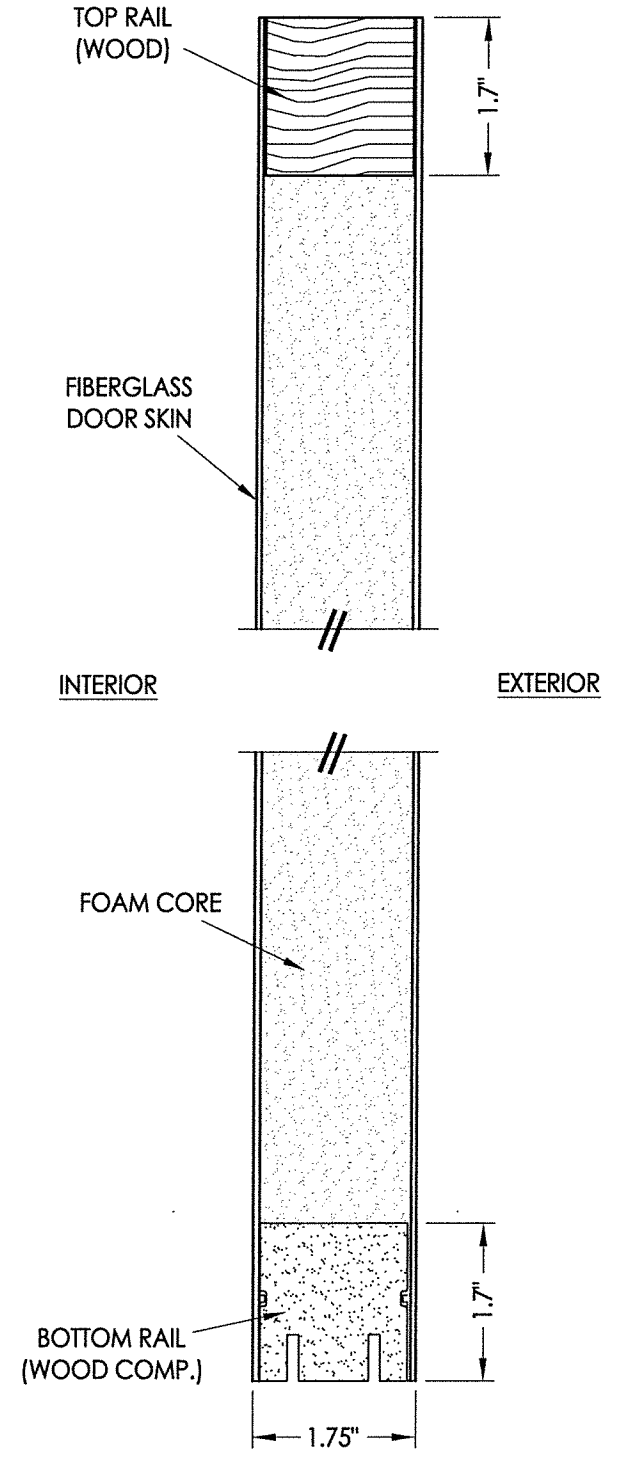
**1**  
**4** HORIZONTAL CROSS SECTION



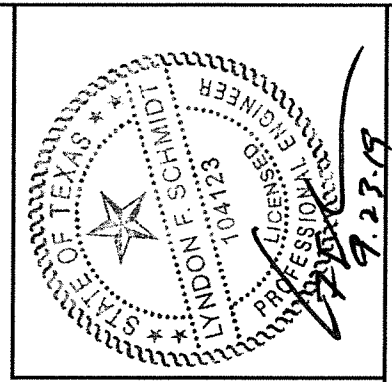
**2**  
**4** DOOR PANEL  
Masonite  
Fiberglass

DOOR SKIN: FIBERGLASS (0.075" MIN. THICKNESS)  
CORE MATERIAL: POLYURETHANE FOAM (1.9 PCF MIN.)

HARDWARE TABLE	
MANUFACTURER	MODEL
KWIKSET	LATCH: KWIKSET SIGNATURE SERIES (991) DEADBOLT: KWIKSET SIGNATURE SERIES (980/985)



**2**  
**4** VERTICAL CROSS SECTION

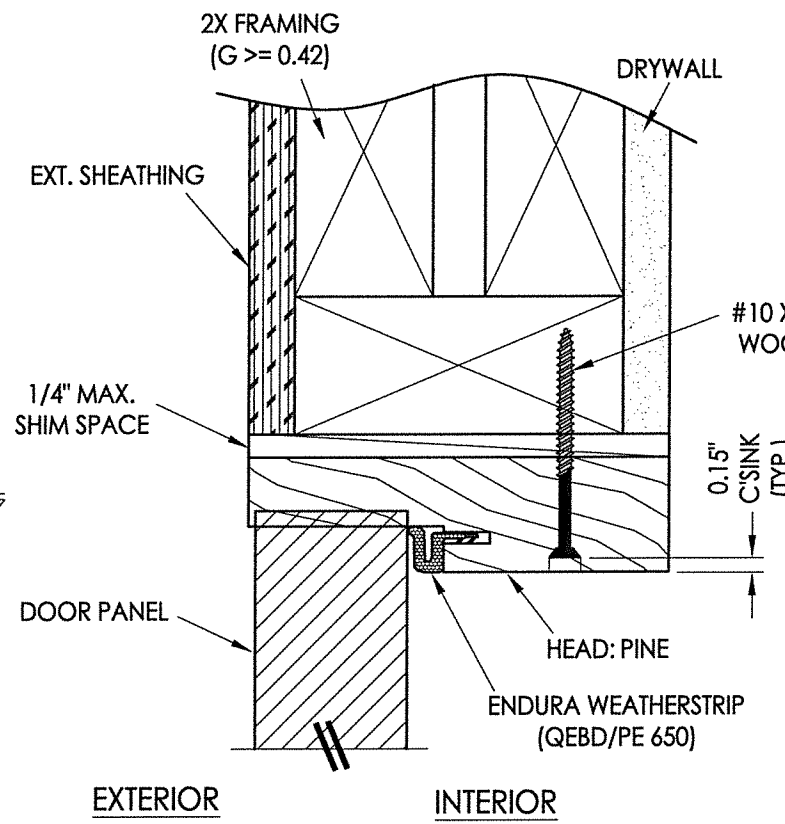
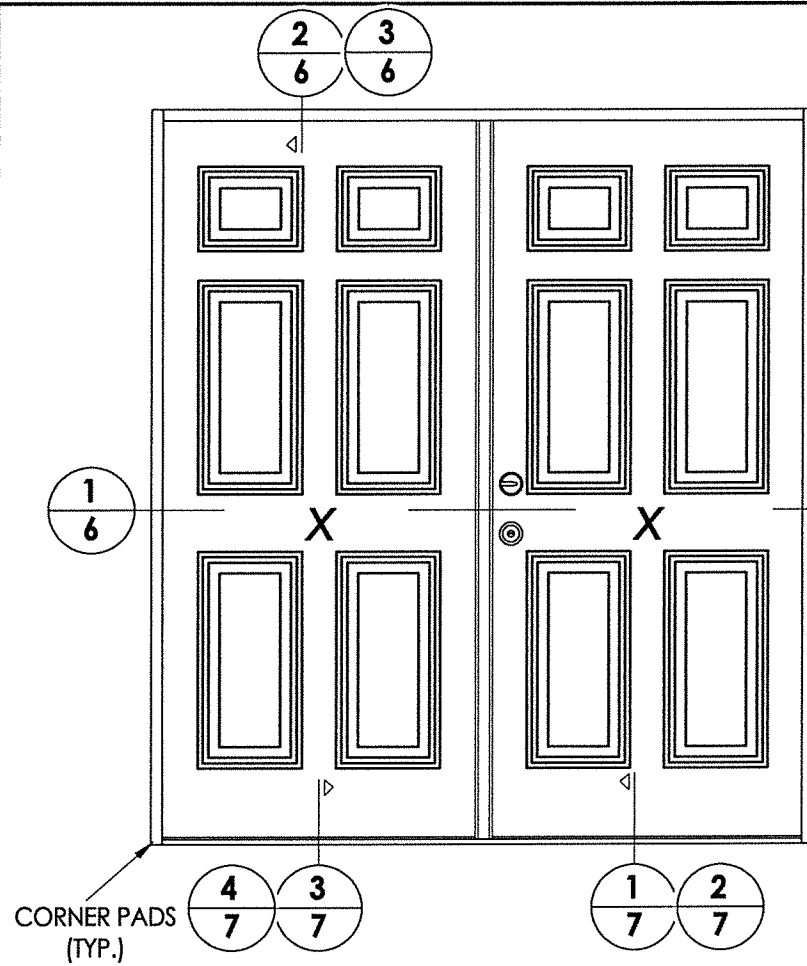


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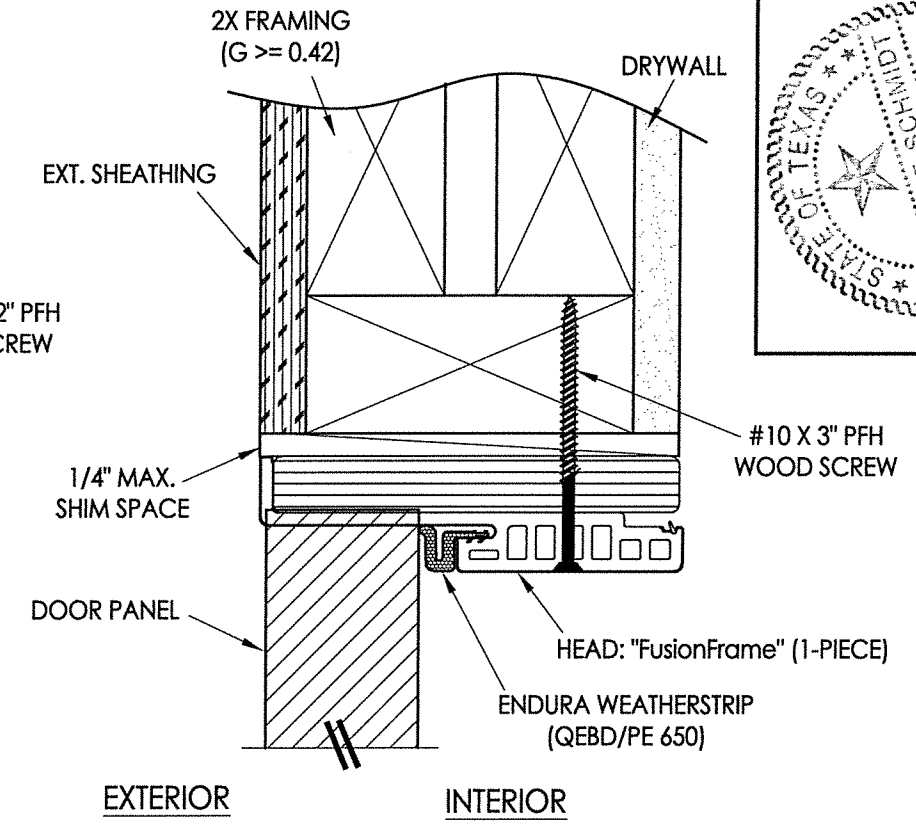
**RW** BUILDING CONSULTANTS, INC.  
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Phone No.: 813.659.9197  
TEXAS BOARD OF PROFESSIONAL ENGINEERS  
CERTIFICATE OF REGISTRATION # F-11852

PRODUCT:	ENDURA
PART OR ASSEMBLY:	DOOR PANEL DETAILS & GLAZING DETAIL
DATE:	8/31/16
SCALE:	N.T.S.
DWG. BY:	JK
CHK. BY:	LFS
DRAWING NO.:	TX-4633
SHEET	4 OF 7
REVISIONS	
NO.	DATE
2	9/19/19
1	10/01/18

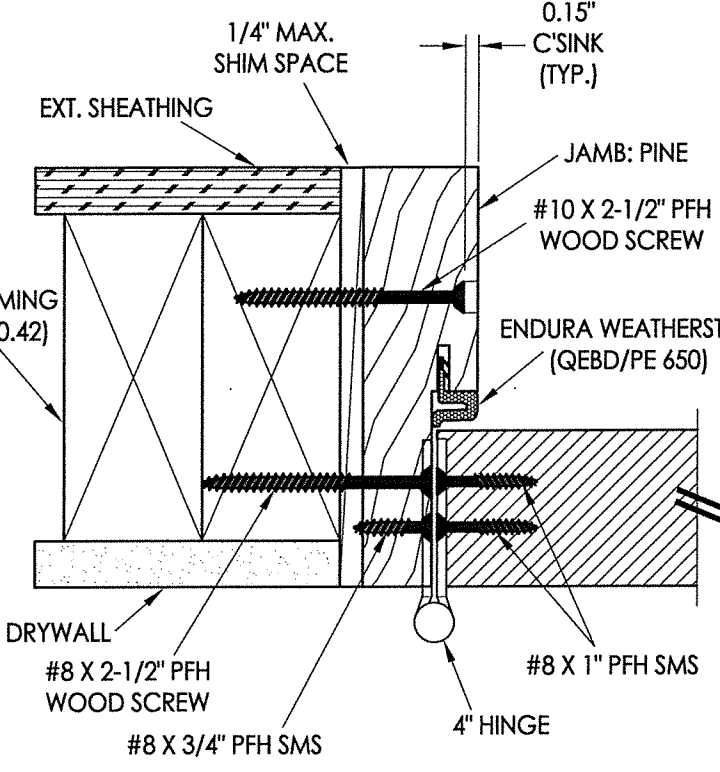
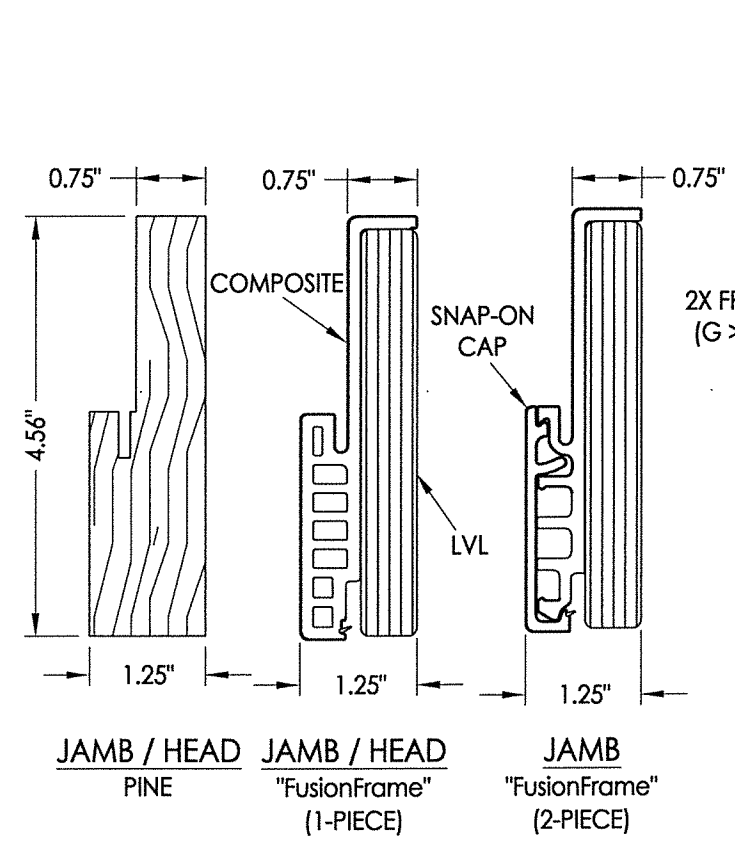
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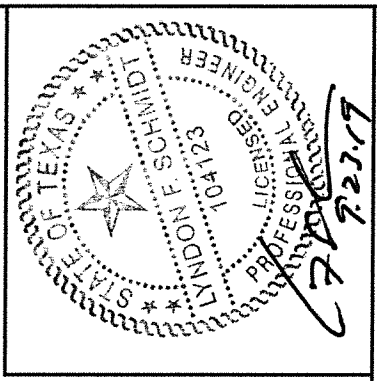
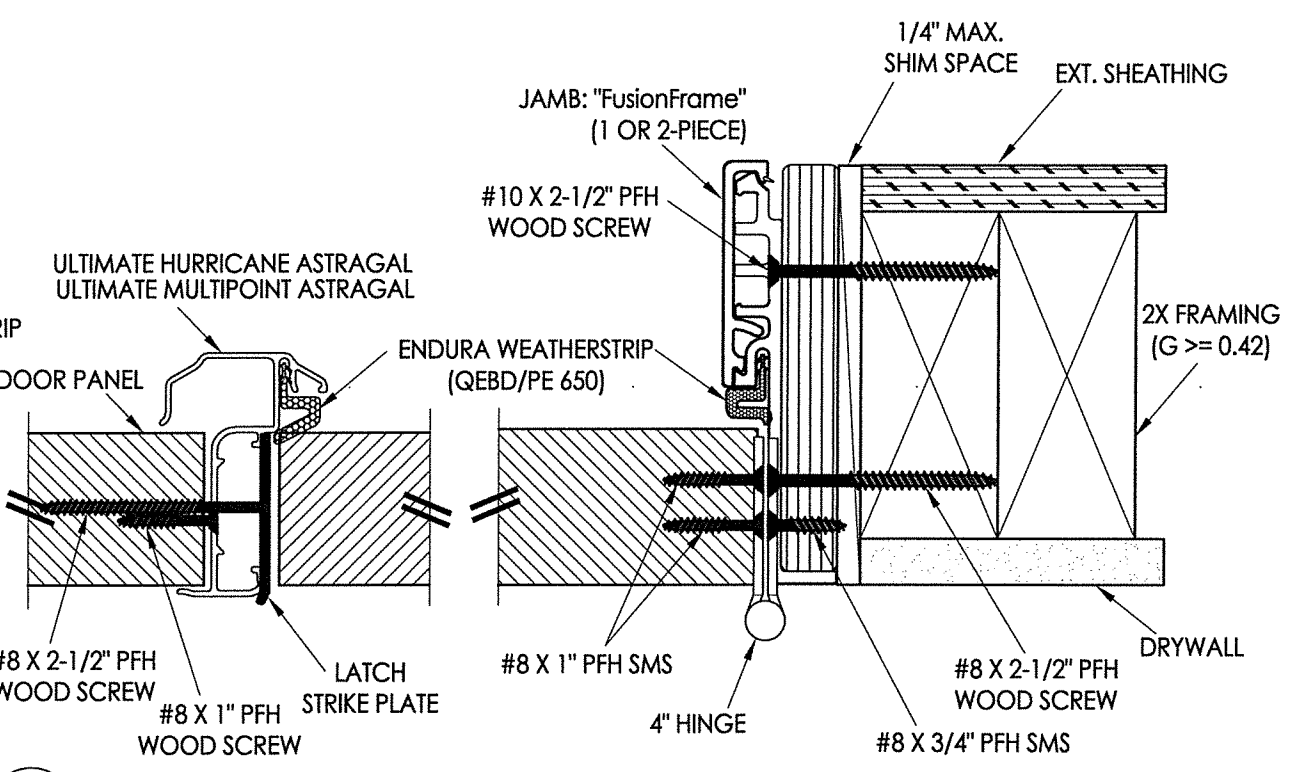
**2** **VERTICAL CROSS SECTION**  
6 Outswing shown - inswing also approved



**3** **VERTICAL CROSS SECTION**  
6 Outswing shown - inswing also approved



**1** **HORIZONTAL CROSS SECTION**  
6 Inswing shown - Outswing also approved



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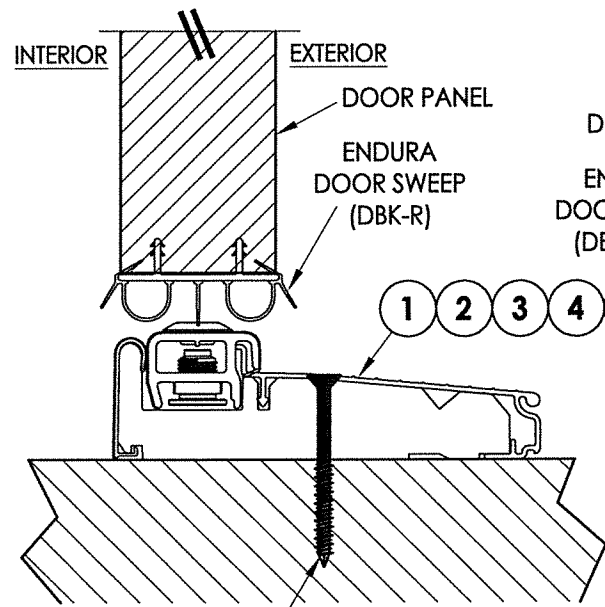
PRODUCT: ENDURA

PART OR ASSEMBLY: HORIZONTAL & VERTICAL CROSS SECTIONS

NO.	DATE	REVISIONS
2	9/19/19	ADD "FusionFrame" OPTION & UPDATE TO 2018 IBC/IRC CODE
1	10/01/18	UPDATE FOR NEW TESTING

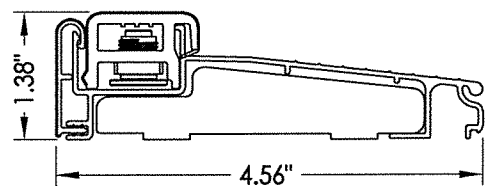
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SCALE: N.T.S.  
DWG. BY: JK  
CHK. BY: LFS  
DRAWING NO.: TX-4633  
SHEET 5 OF 7

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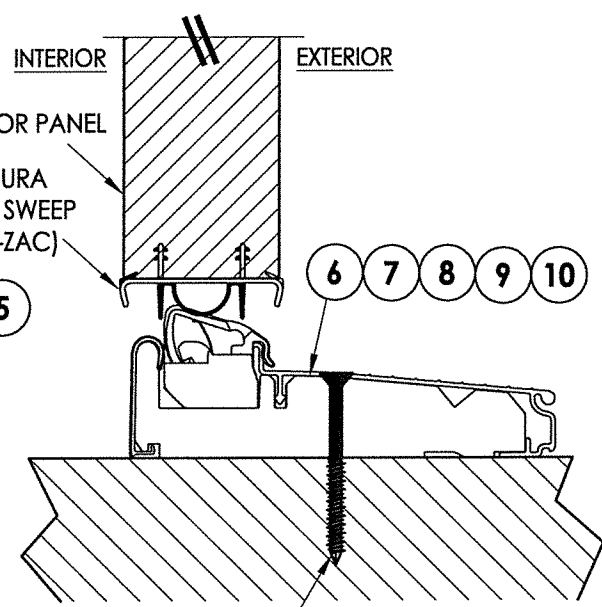


#10 X 2.5" PFH WOOD SCREW OR  
1/4" X 2-3/4" ELCO OR ITW CONCRETE SCREW

**1 VERTICAL CROSS SECTION**  
6 Inswing Adjustable Threshold

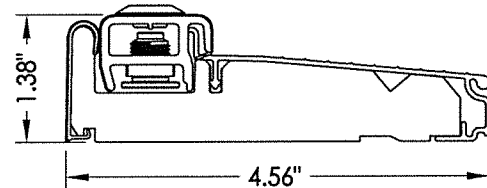


**1 INSWING ADJUSTABLE THRESHOLD**  
ZAIL4565



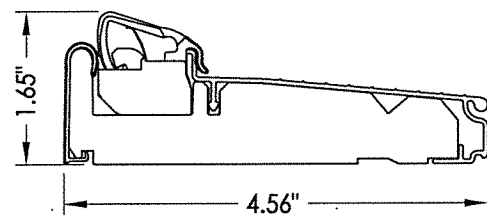
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1/4" X 2-3/4" ELCO OR ITW CONCRETE SCREW

**2 VERTICAL CROSS SECTION**  
6 Inswing Articulating Threshold  
w/ Pin Capture



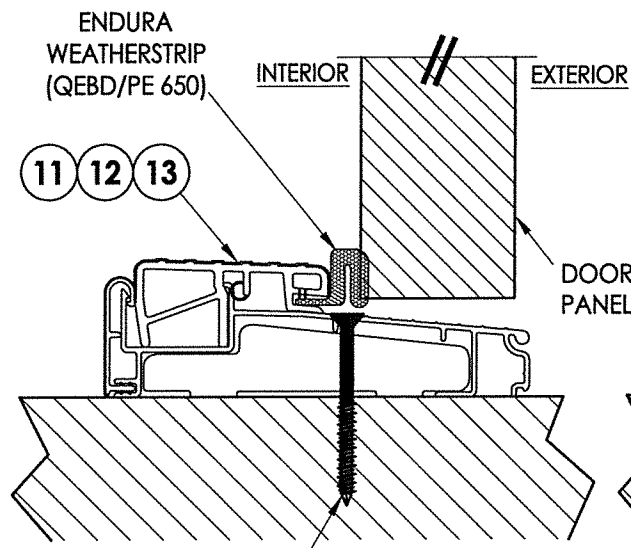
**2 INSWING ADJUSTABLE THRESHOLD**  
ZAI4565FN

MAX. DESIGN PRESSURE = ±50 PSF



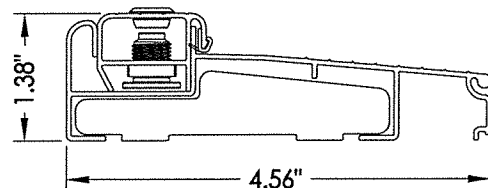
**7 INSWING ARTICULATING THRESHOLD**  
ZAC4565FN

MAX. DESIGN PRESSURE = ±35 PSF

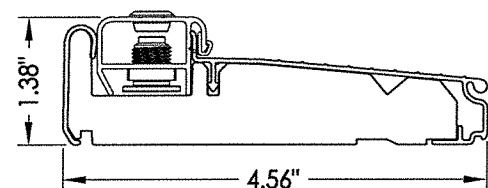


#10 X 2.5" PFH WOOD SCREW OR  
1/4" X 2-3/4" ELCO OR ITW CONCRETE SCREW

**3 VERTICAL CROSS SECTION**  
6 Outswing Bump Threshold

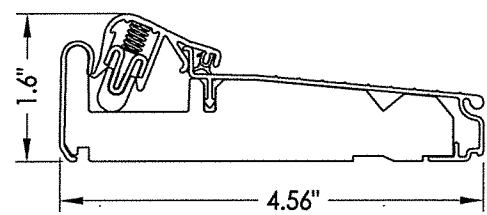


**3 INSWING ADJUSTABLE THRESHOLD**  
ZAILAA4565



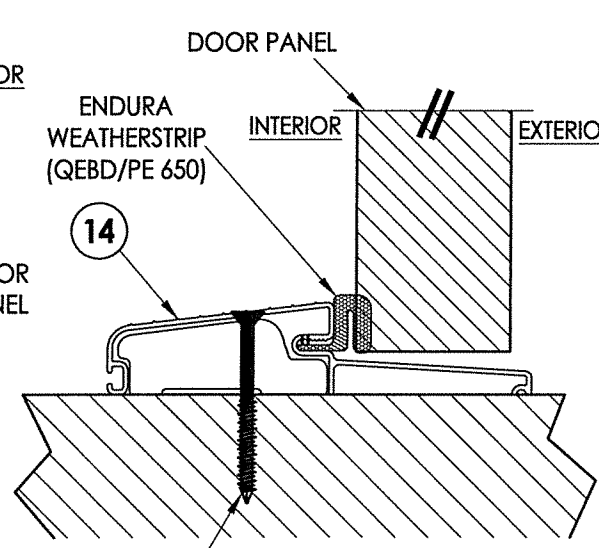
**4 INSWING ADJUSTABLE THRESHOLD**  
ZAI4565FN

MAX. DESIGN PRESSURE = ±50 PSF



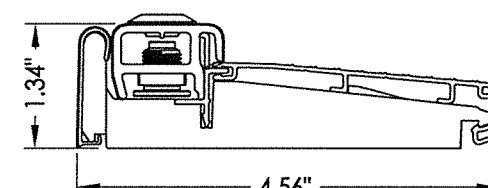
**9 INSWING ARTICULATING THRESHOLD**  
ZACAA4565FN

MAX. DESIGN PRESSURE = ±35 PSF



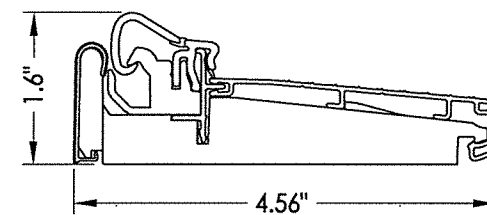
#10 X 2.5" PFH WOOD SCREW OR  
1/4" X 2-3/4" ELCO OR ITW CONCRETE SCREW

**4 VERTICAL CROSS SECTION**  
6 Outswing Bump Threshold



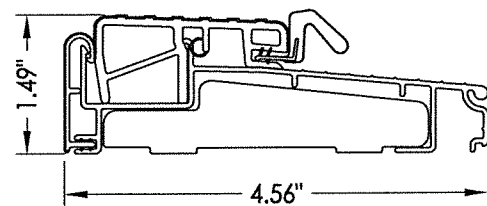
**5 INSWING ADJUSTABLE THRESHOLD**  
ZAI4565RDS

MAX. DESIGN PRESSURE = ±50 PSF

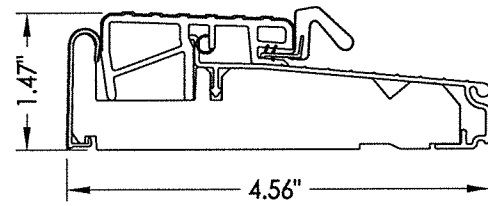


**10 INSWING ARTICULATING THRESHOLD**  
ZAC4565RDS

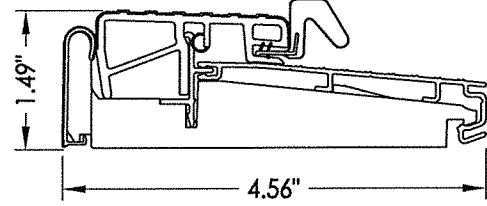
MAX. DESIGN PRESSURE = ±45 PSF



**11 OUTSWING THRESHOLD**  
ZOBL4565

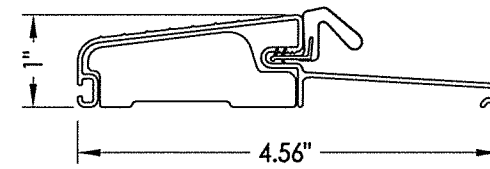


**12 OUTSWING THRESHOLD**  
ZOB4565FN

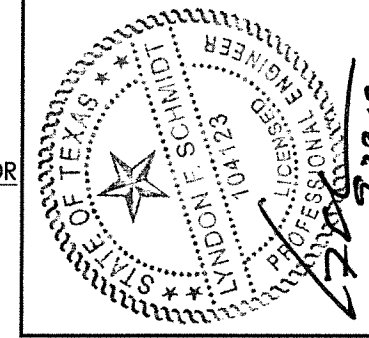


**13 OUTSWING THRESHOLD**  
ZOB4565RDS

MAX. DESIGN PRESSURE = ±55 PSF



**14 OUTSWING THRESHOLD**  
FOB4566



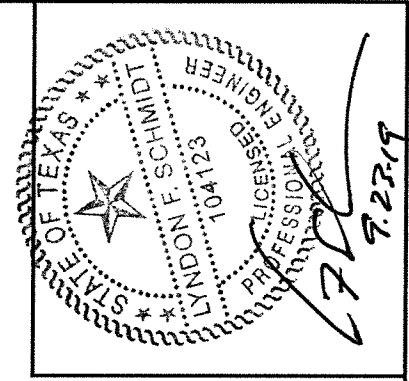
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TEXAS P.E. #104123

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Phone No.: 813.659.9197  
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CERTIFICATE OF REGISTRATION # F-11852

PRODUCT: ENDURA  
PART OR ASSEMBLY: VERTICAL CROSS SECTIONS

NO.	DATE	REVISIONS
2	9/19/19	ADD "FusionFrame" OPTION & UPDATE TO 2018 IBC/IRC CODE
1	10/01/18	UPDATE FOR NEW TESTING

DATE: 8/31/16  
SCALE: N.T.S.  
DWG. BY: JK  
CHK. BY: LFS  
DRAWING NO.: TX-4633  
SHEET 6 OF 7



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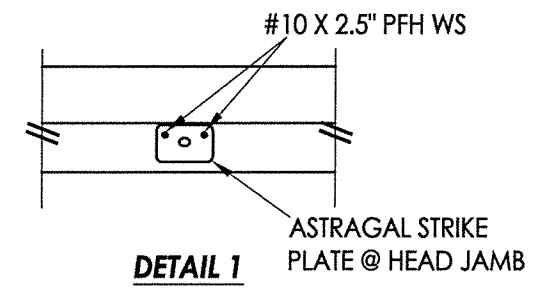
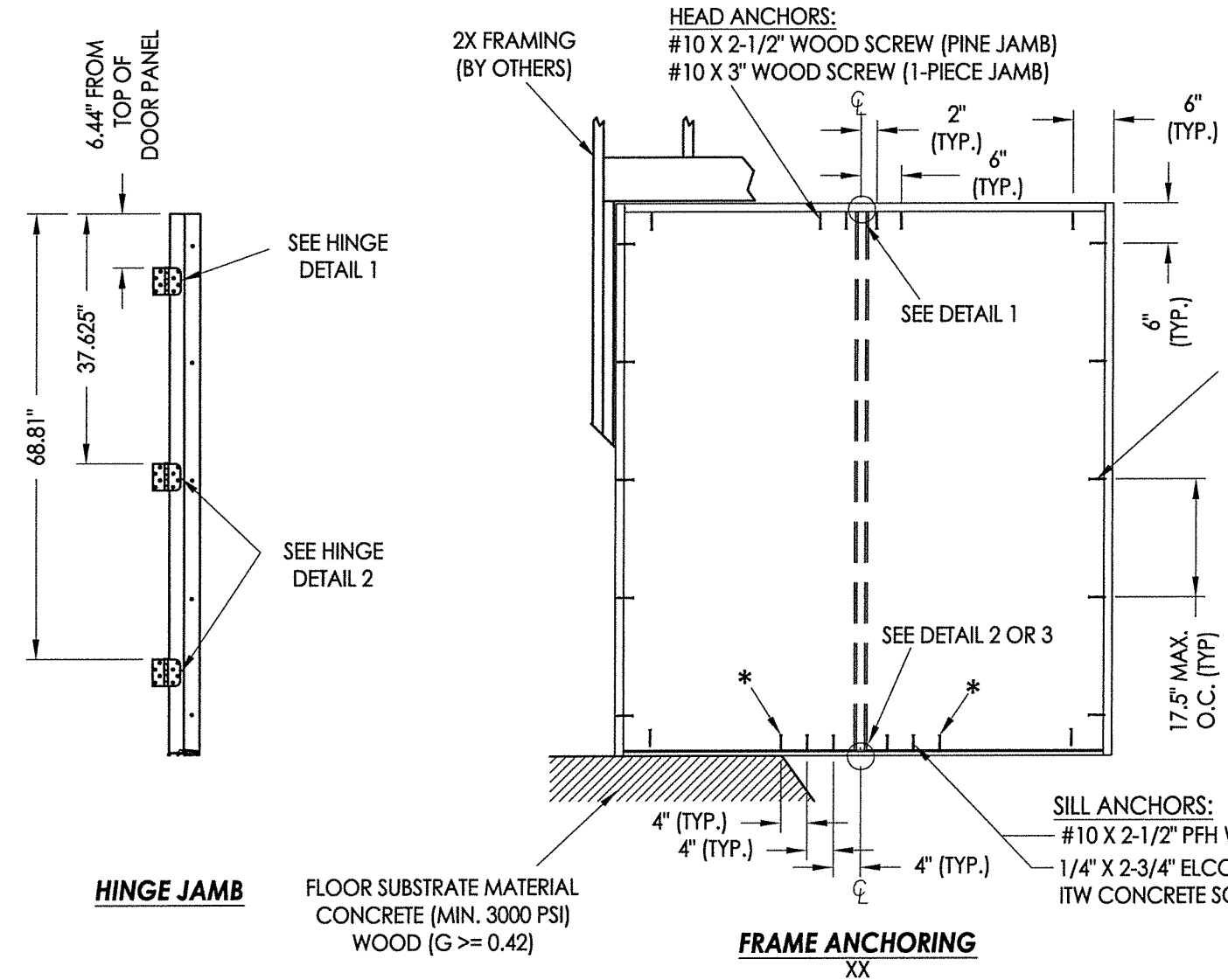
TEXAS BOARD OF PROFESSIONAL ENGINEERS  
CERTIFICATE OF REGISTRATION # F-11852

PRODUCT: ENDURA

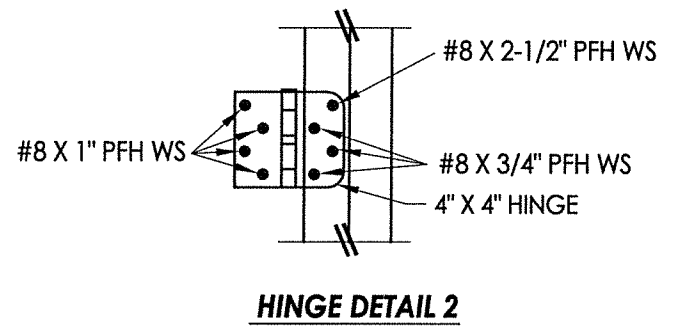
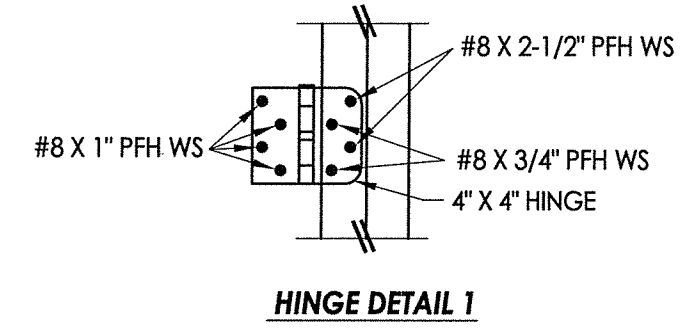
PART OR ASSEMBLY: FRAME ANCHORING

NO.	DATE	REVISIONS
2	9/19/19	ADD "FusionFrame" OPTION & UPDATE TO 2018 IBC/IRC CODE
1	10/01/18	UPDATE FOR NEW TESTING

DATE: 8/31/16  
SCALE: N.T.S.  
DWG. BY: JK  
CHK. BY: LFS  
DRAWING NO.: TX-4633  
SHEET 7 OF 7

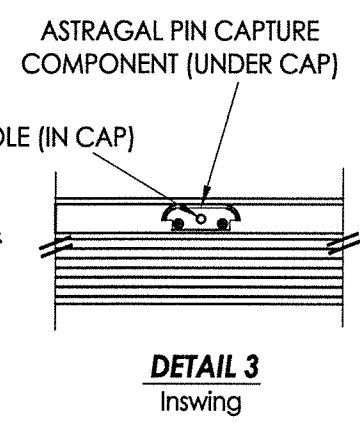
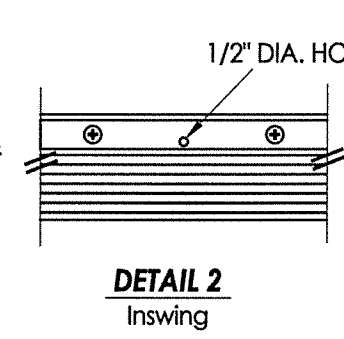
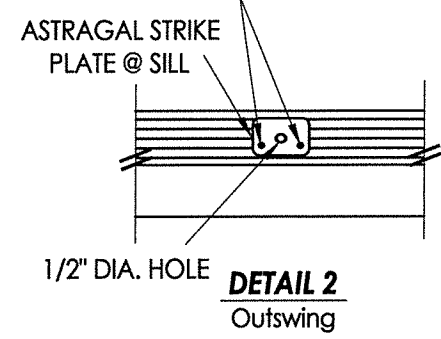


**JAMB ANCHORS:**  
#10 X 2-1/2" WOOD SCREW (PINE/2-PIECE JAMB)  
#10 X 3" WOOD SCREW (1-PIECE JAMB)



**SILL ANCHORS:**  
#10 X 2-1/2" PFH WOOD SCREW  
1/4" X 2-3/4" ELCO OR ITW CONCRETE SCREW

3/16" X 2-3/4" ITW CONCRETE SCREW  
OR  
#8 X 3" PFH WOOD SCREW



\* NOTE: THESE ANCHORS REQUIRED FOR D.P. > 40 PSF.

**JAMB NOTES:**  
THE PINE OR "FusionFrame" 1-PIECE JAMB MAY BE INSTALLED @ THE HEAD OR SIDE JAMB.  
THE "FusionFrame" 2-PIECE JAMB MAY BE INSTALLED @ THE SIDE JAMBS ONLY.

- CONCRETE ANCHOR NOTES:**
- Concrete anchor locations at the corners may be adjusted to maintain the min. edge distance to mortar joints.
  - Concrete anchor locations noted as "MAX. ON CENTER" must be adjusted to maintain the min. edge distance to mortar joints, additional concrete anchors may be required to ensure the "MAX. ON CENTER" dimension are not exceeded.
  - Concrete anchor table:

ANCHOR TYPE	ANCHOR SIZE	MIN. EMBEDMENT	MIN. CLEARANCE TO MASONRY EDGE	MIN. CLEARANCE TO ADJACENT ANCHOR
ITW TAPCON®	3/16"	1-3/4"	3"	1-1/2"
ITW TAPCON®	1/4"	1-3/4"	1-1/2"	4"
ELCO ULTRACON®	1/4"	1-3/4"	1"	4"

**WOOD SCREW INSTALLATION NOTES:**

- Maintain a minimum 5/8" edge distance, 1" end distance, & 1" o.c. spacing of wood screws to prevent the splitting of wood.