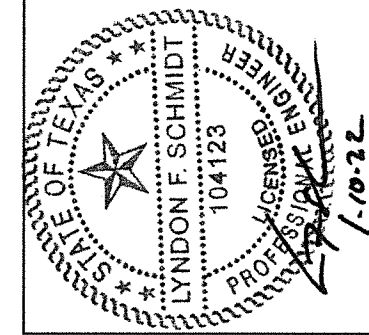
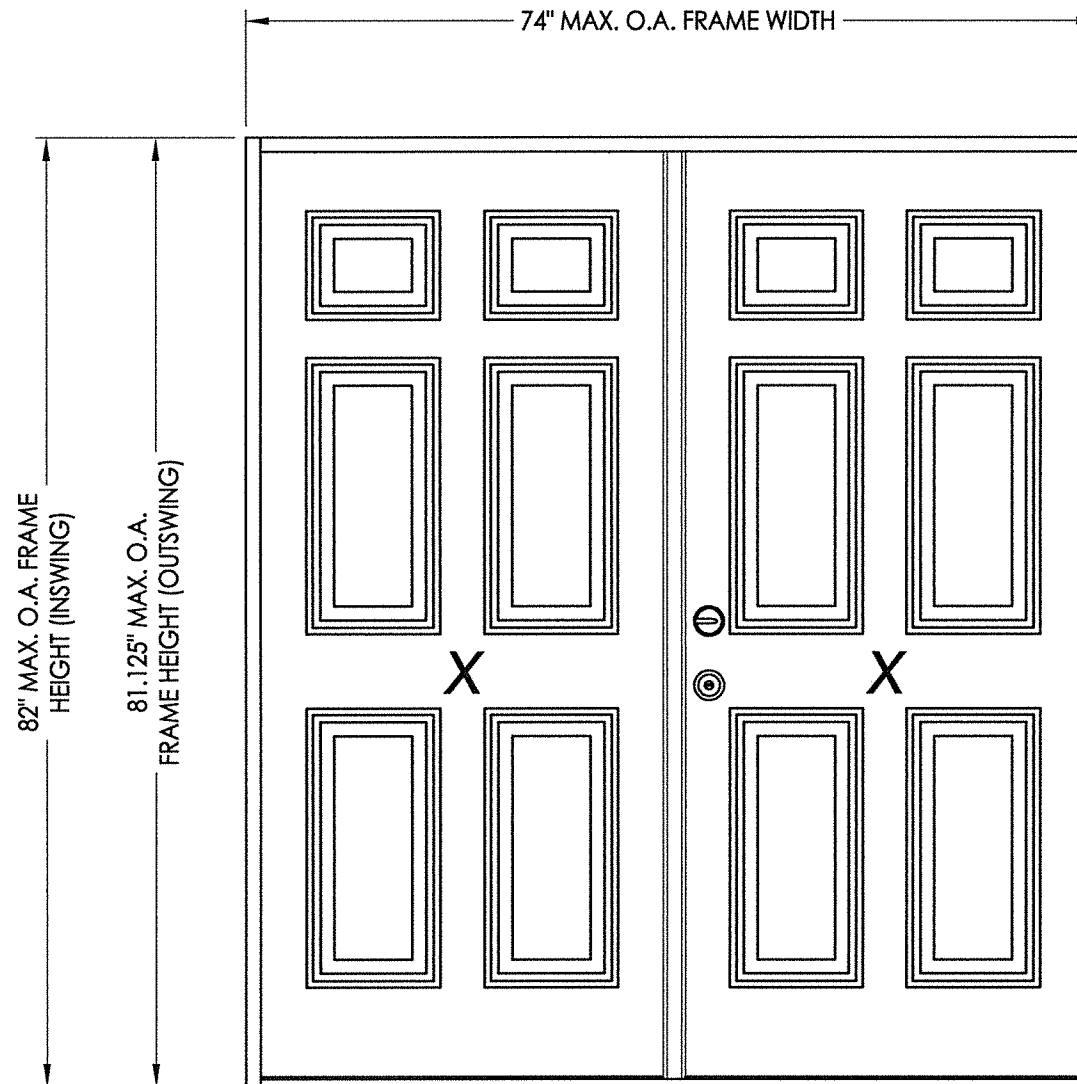


# Opaque Steel Door

"NON-IMPACT"  
INSWING / OUTSWING



EVALUATED FOR USE IN THE STATE OF TEXAS

**TDI DR-852**

The Steel 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 1609.1.2 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.

TABLE OF CONTENTS	
SHEET #	DESCRIPTION
1	Typical elevations, design pressures & general notes
2	Astragal details (Ultimate Multipoint)
3	Astragal details (Ultimate Hurricane)
4	Door panel details
5	Horizontal & vertical cross sections
6	Vertical cross sections
7	Frame anchoring

CONFIG.	MODEL	DESIGN PRESSURE (PSF) ULTIMATE HURRICANE ASTRAGAL		DESIGN PRESSURE (PSF) ULTIMATE MULTIPOINT ASTRAGAL	
		POSITIVE	NEGATIVE	POSITIVE	NEGATIVE
XX	INSWING	+50.0	-55.0	+65.0	-65.0
XX	OUTSWING	+55.0	-55.0	+45.0	-45.0

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

**RW** 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	BY	REVISIONS
2	11/10/21	LFS	UPDATE TO 2018 IBC/IRC CODE
1	9/10/18	LFS	UPDATE FOR NEW TESTING

DATE: 10/27/16

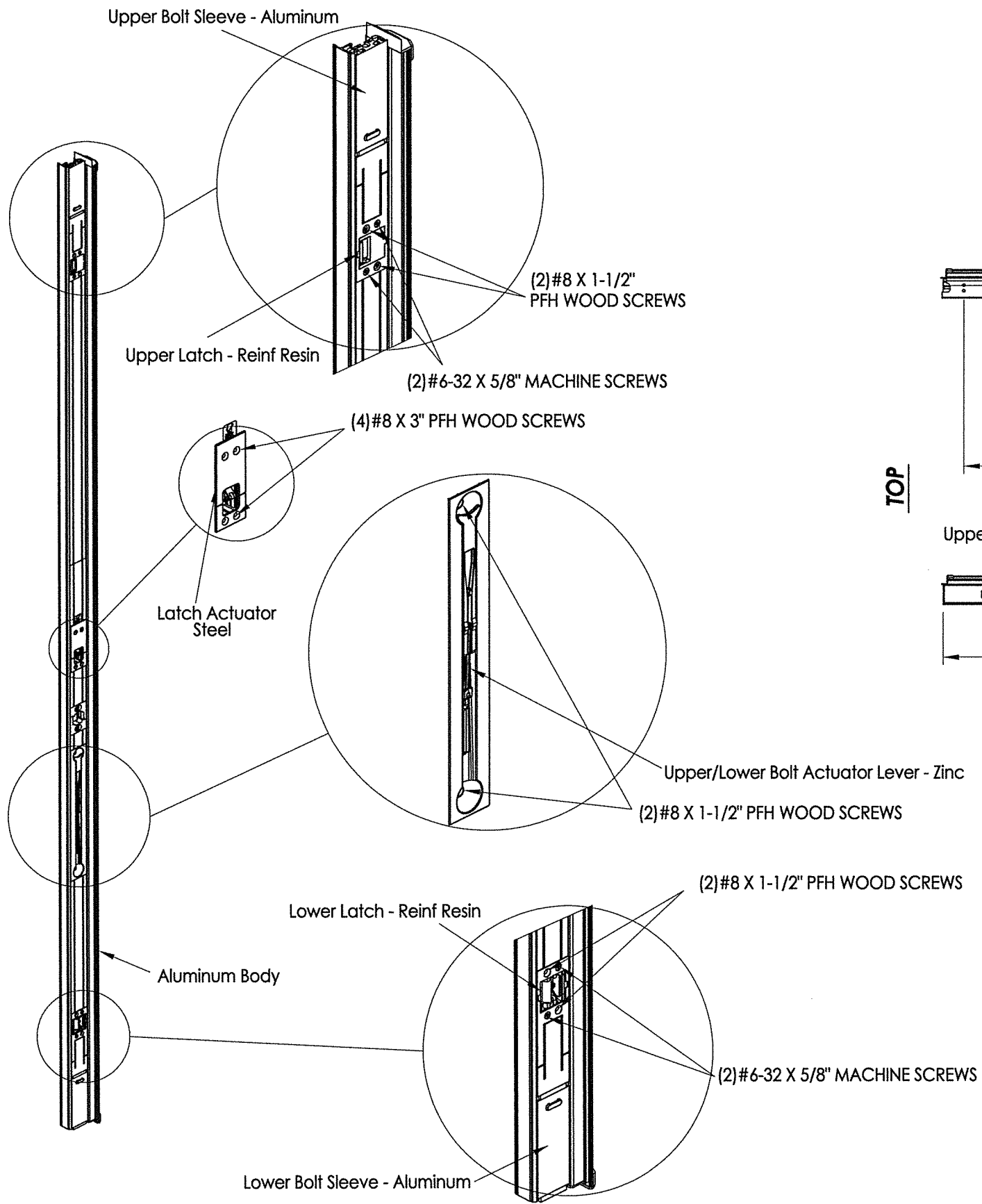
SCALE: N.T.S.

DWG. BY: JK

CHK. BY: LFS

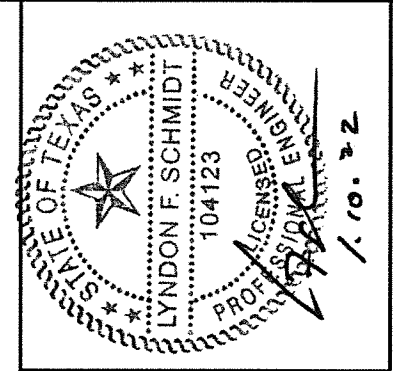
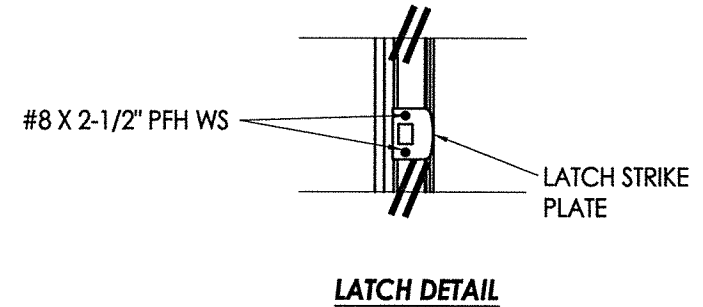
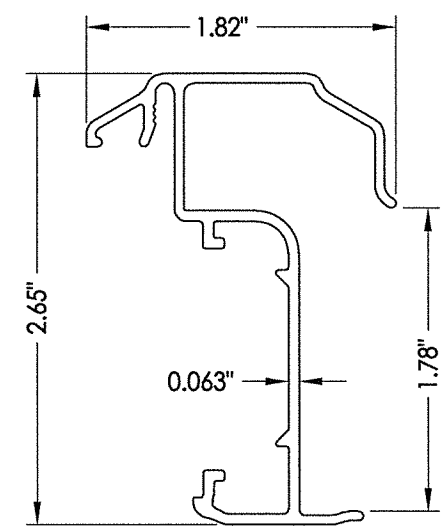
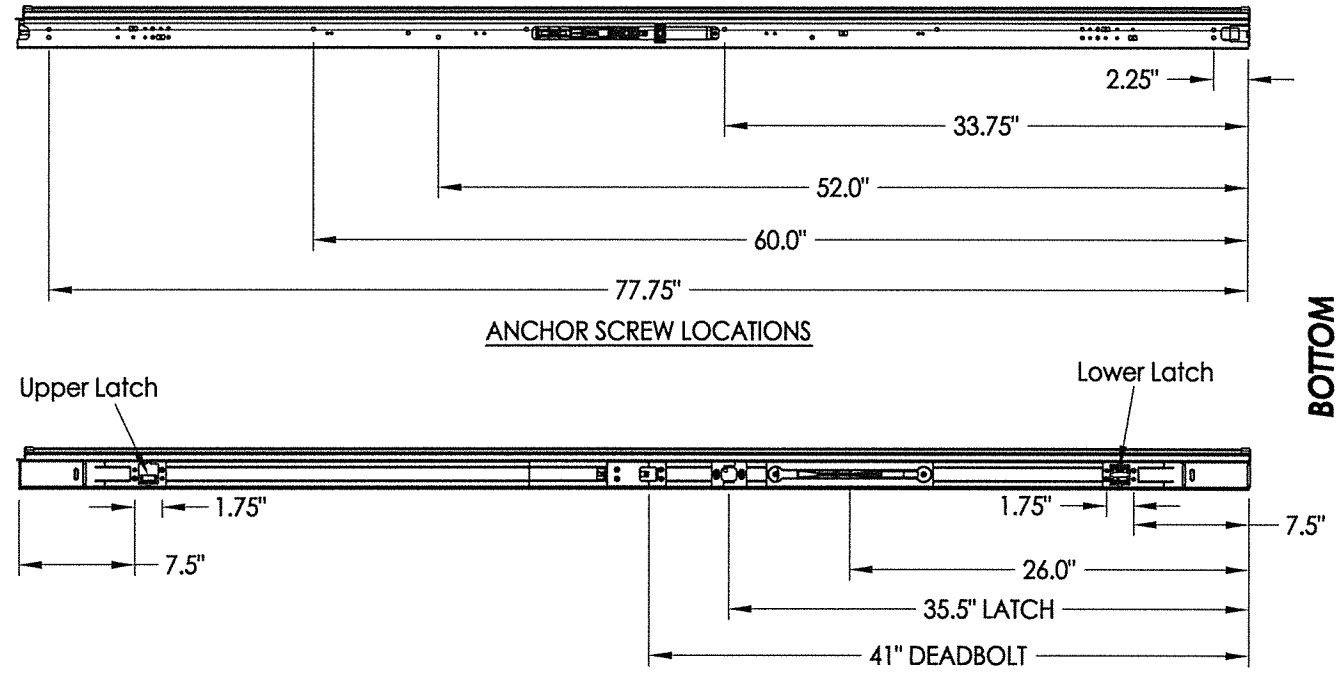
DRAWING NO.: TX-4641

SHEET 1 OF 7



**ULTIMATE MULTIPOINT ASTRAGAL**

**TOP**



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P.O. Box 230 Vairico FL 33595  
Phone No.: 813.659.9197

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

PRODUCT: ENDURA

PART OR ASSEMBLY: ASTRAGAL DETAILS (ULTIMATE MULTI-POINT)

NO.	DATE	REVISIONS
2	11/10/21	UPDATE TO 2018 IBC/IRC CODE
1	9/10/18	UPDATE FOR NEW TESTING
LFS		BY

DATE: 10/27/16

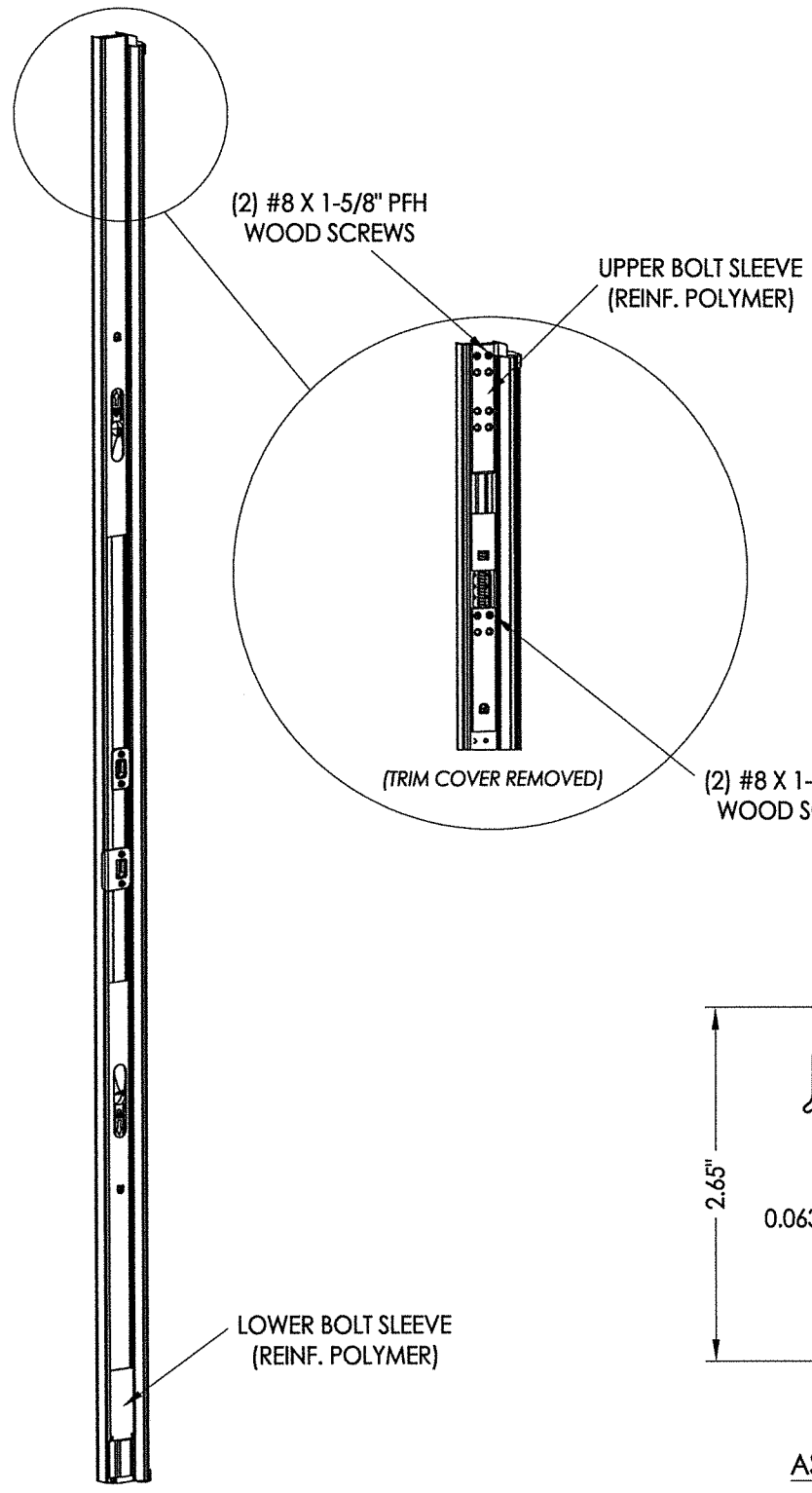
SCALE: N.T.S.

DWG. BY: JK

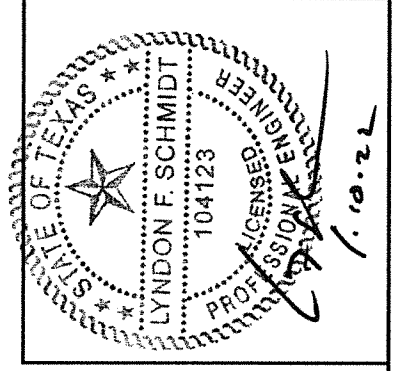
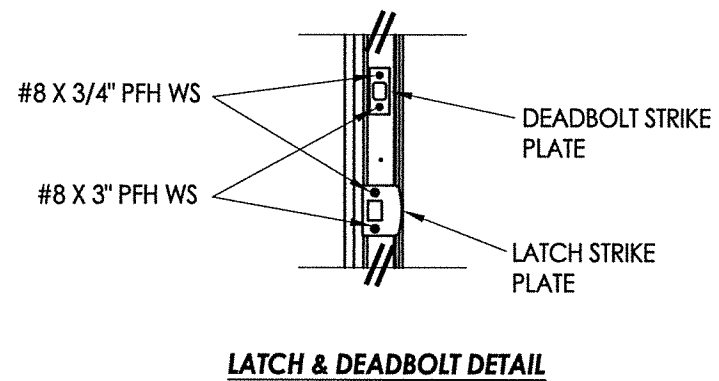
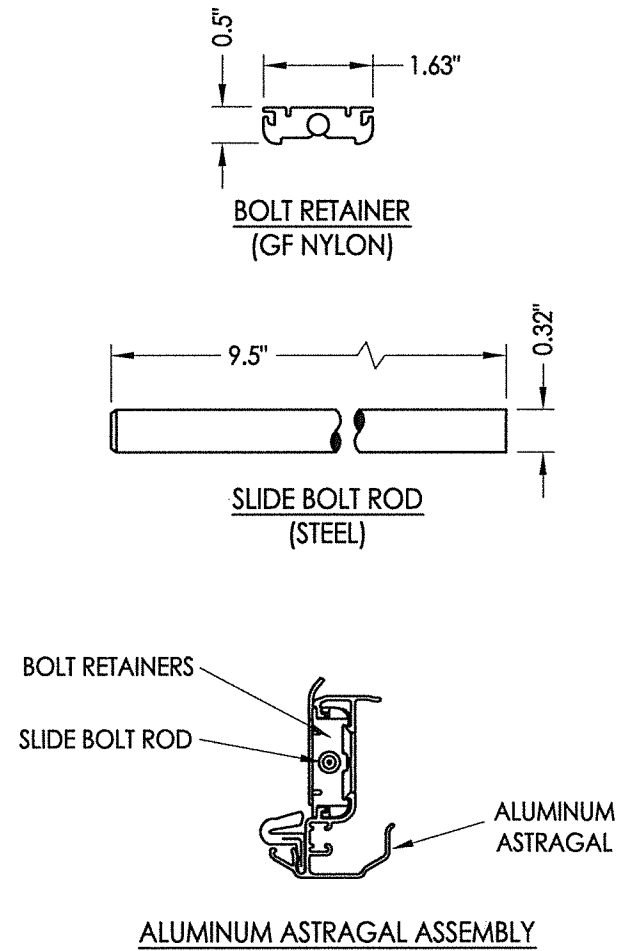
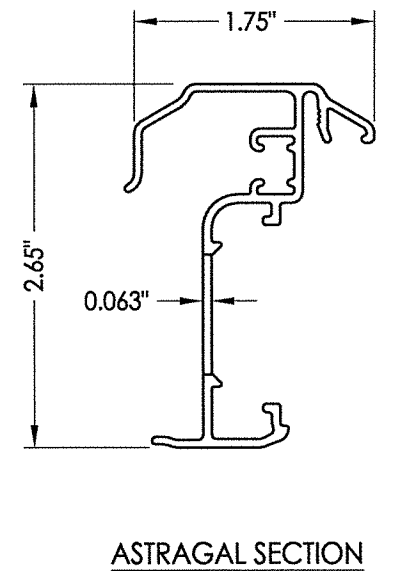
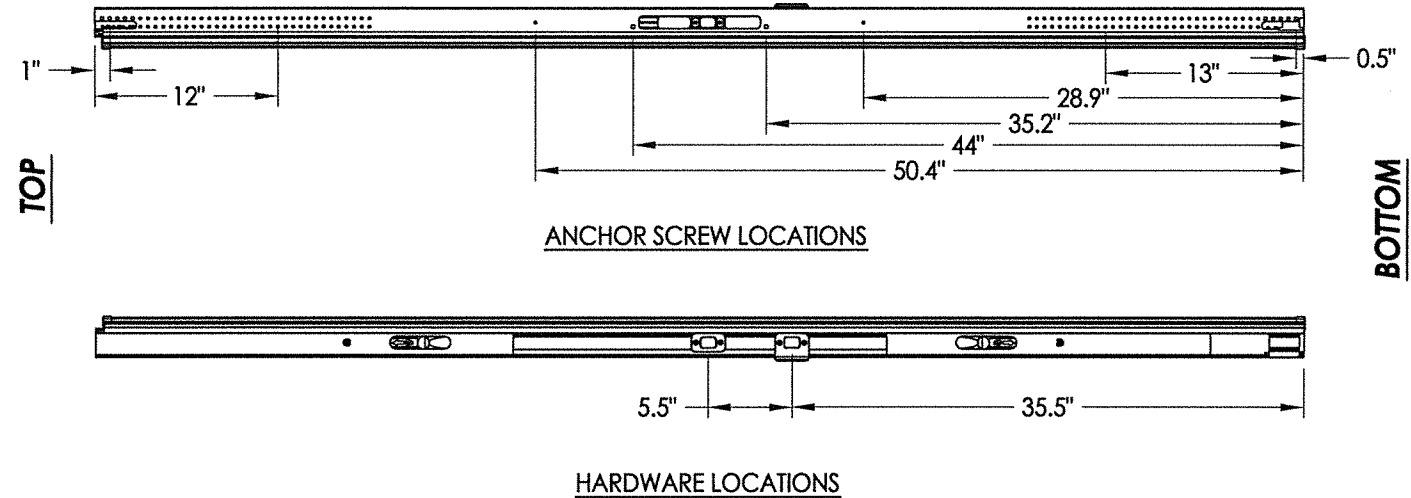
CHK. BY: LFS

DRAWING NO.: TX-4641

SHEET 2 OF 7



**ULTIMATE HURRICANE ASTRAGAL**



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

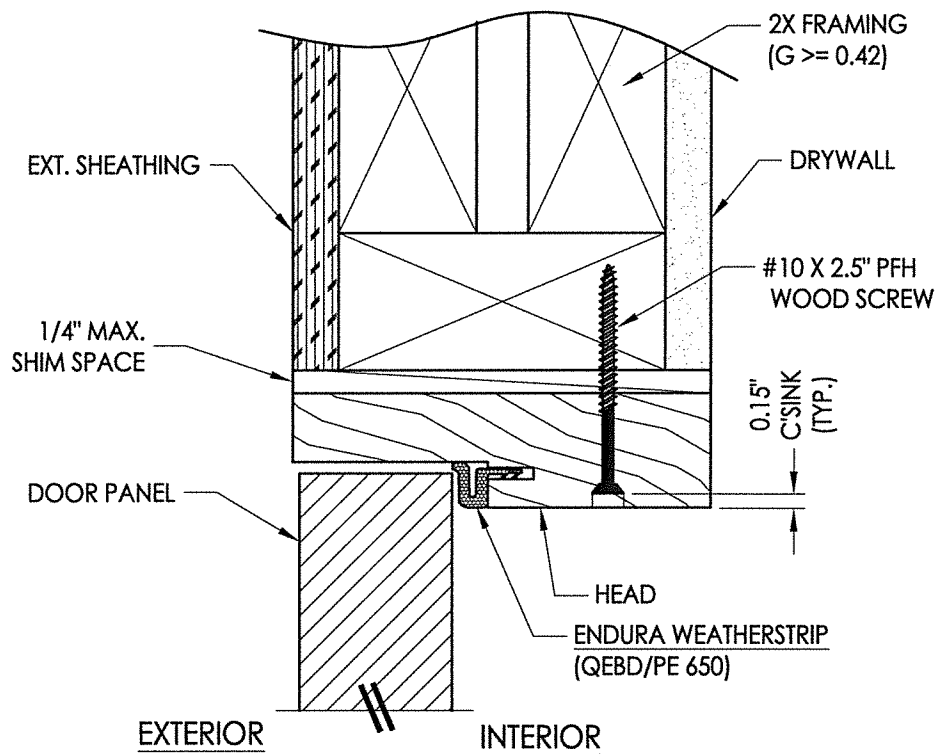
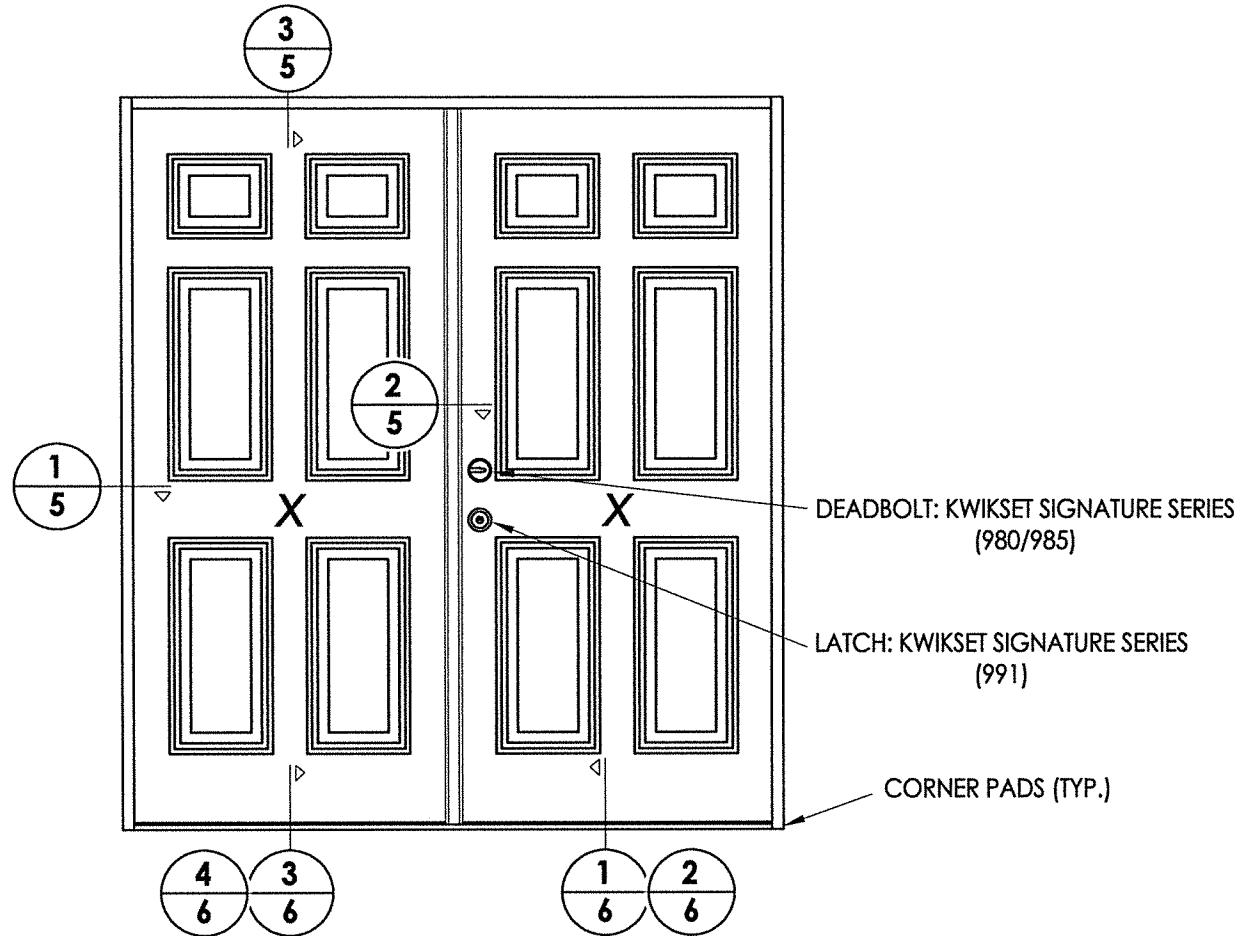
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 Phone No.: 813.659.9197

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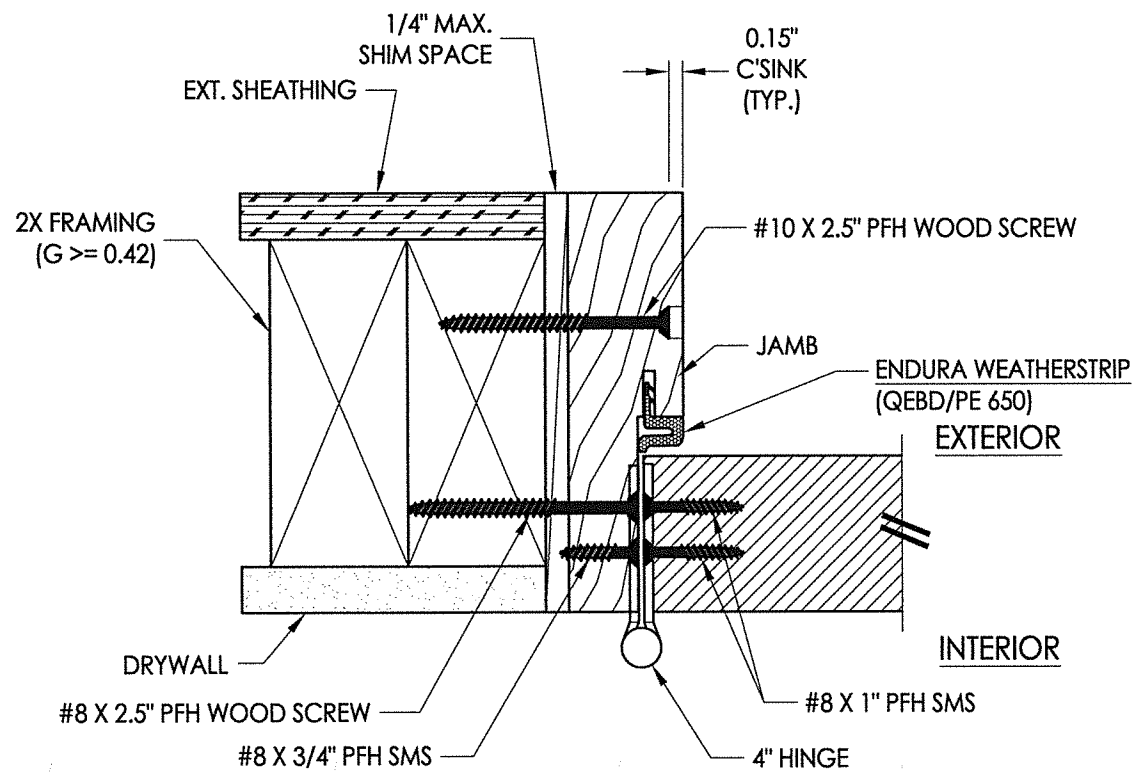
PRODUCT:	ENDURA	
PART OR ASSEMBLY:	ASTRAGAL DETAILS (ULTIMATE HURRICANE)	
NO.	DATE	REVISIONS
2	11/10/21	UPDATE TO 2018 IBC/IRC CODE
1	9/10/18	UPDATE FOR NEW TESTING
LFS		BY
LFS		
DATE: 10/27/16		
SCALE: N.T.S.		
DWG. BY: JK		
CHK. BY: LFS		
DRAWING NO.: TX-4641		
SHEET 3 OF 7		



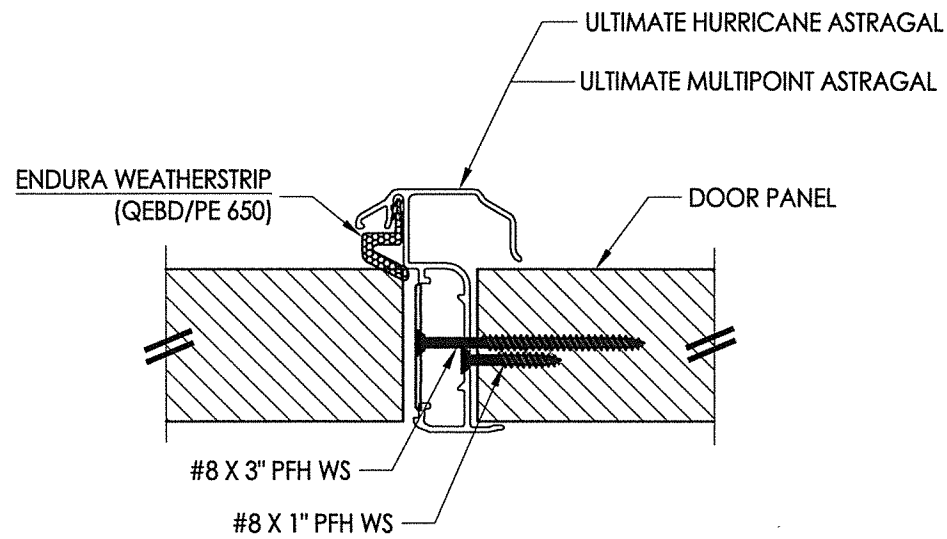
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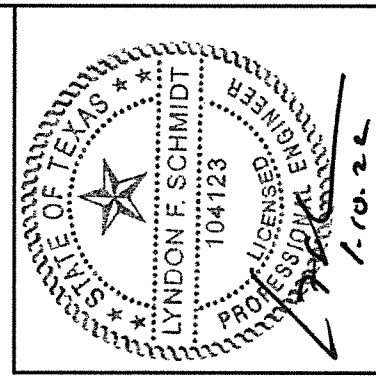
**3** VERTICAL CROSS SECTION  
**5** Outswing shown - inswing also approved



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



**2** HORIZONTAL CROSS SECTION  
**5**



Documents Prepared By: Lyndon F. Schmidt, P.E.  
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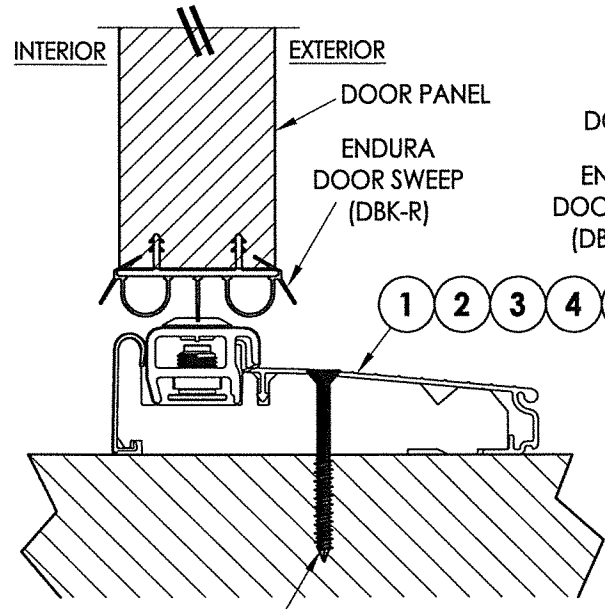
PRODUCT:	ENDURA
PART OR ASSEMBLY:	HORIZONTAL & VERTICAL CROSS SECTIONS

NO.	DATE	BY	REVISIONS
2	11/10/21	LFS	UPDATE TO 2018 IBC/IRC CODE
1	9/10/18	LFS	UPDATE FOR NEW TESTING

DATE:	10/27/16
SCALE:	N.T.S.
DWG. BY:	JK
CHK. BY:	LFS
DRAWING NO.:	TX-4641
SHEET	5 OF 7

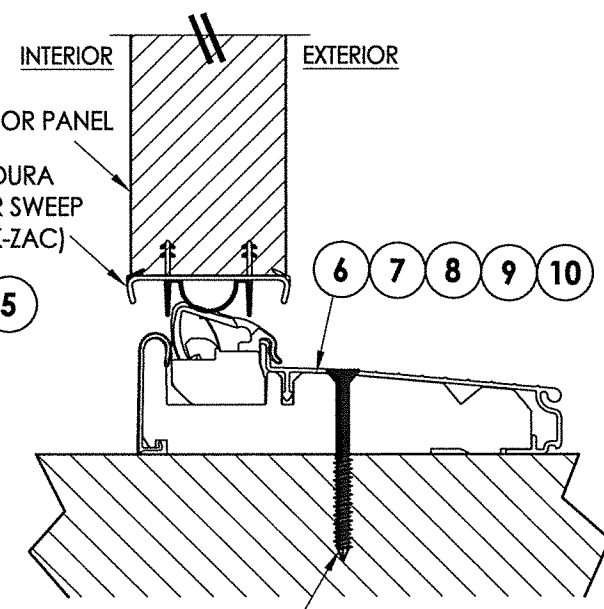
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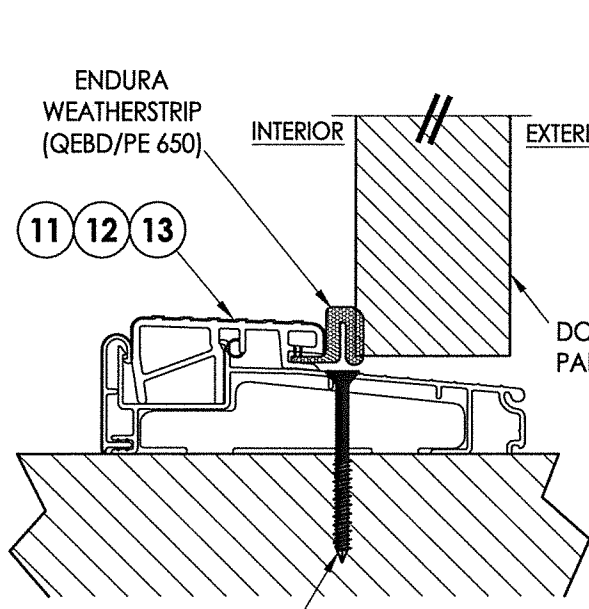
#10 X 2.5" PFH WOOD SCREW OR  
1/4" X 2-3/4" DeWALT OR ITW CONCRETE SCREW

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



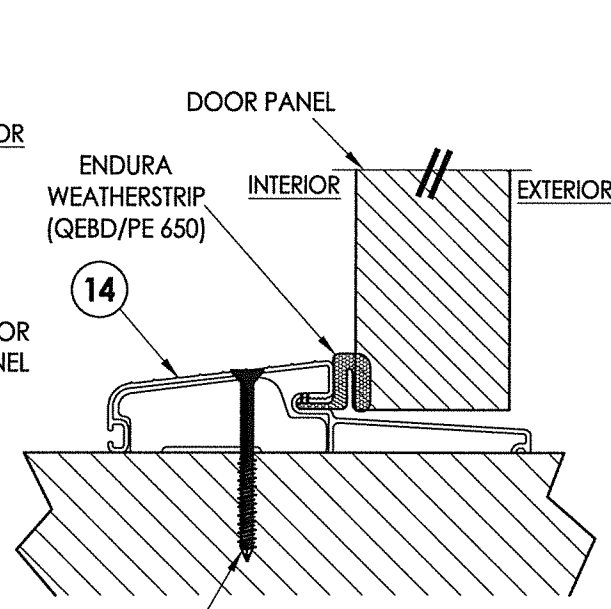
#10 X 2.5" PFH WOOD SCREW OR  
1/4" X 2-3/4" DeWALT OR ITW CONCRETE SCREW

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



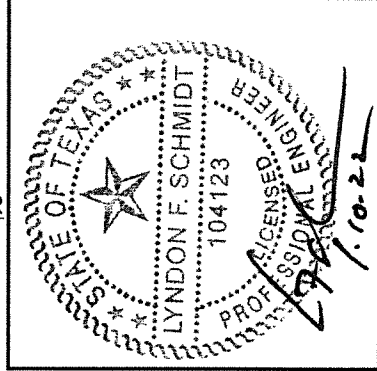
#10 X 2.5" PFH WOOD SCREW OR  
1/4" X 2-3/4" DeWALT OR ITW CONCRETE SCREW

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



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

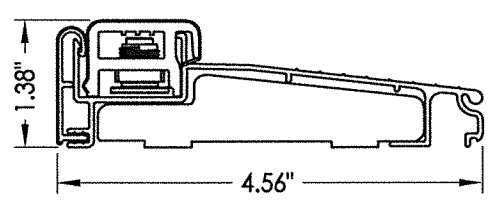
**4** VERTICAL CROSS SECTION  
**6** Outswing Bump Threshold



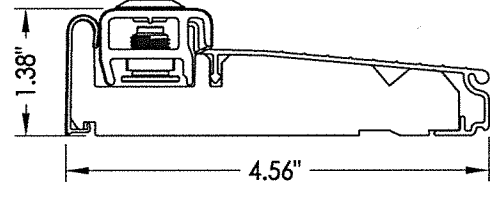
Documents Prepared By: Lyndon F. Schmidt, P.E.  
TEXAS P.E. #104123

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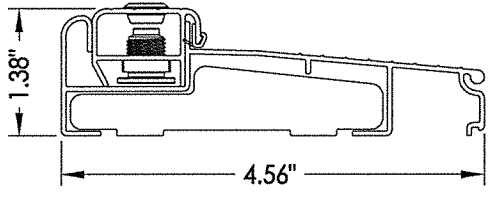
TEXAS BOARD OF PROFESSIONAL ENGINEERS  
CERTIFICATE OF REGISTRATION # F-11852



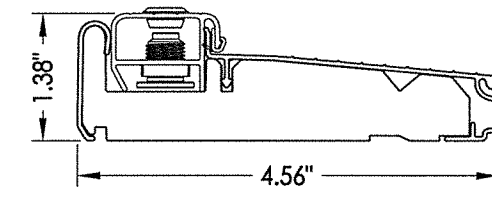
**1** INSWING ADJUSTABLE THRESHOLD  
ZAIL4565



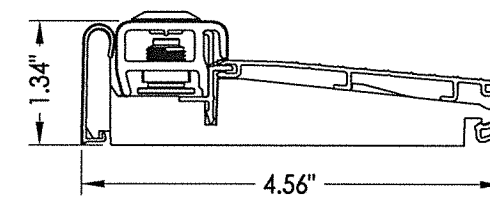
**2** INSWING ADJUSTABLE THRESHOLD  
ZAI4565FN  
MAX. DESIGN PRESSURE = ±50 PSF  
(ULTIMATE HURRICANE ASTRAGAL)



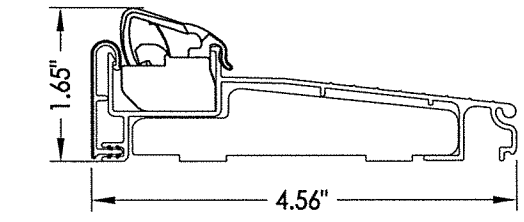
**3** INSWING ADJUSTABLE THRESHOLD  
ZAILAA4565



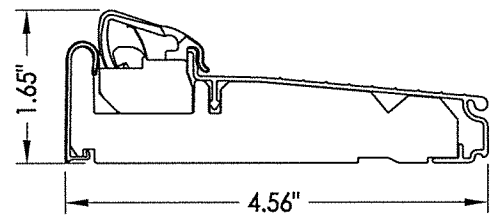
**4** INSWING ADJUSTABLE THRESHOLD  
ZAI4565FN  
MAX. DESIGN PRESSURE = ±50 PSF  
(ULTIMATE HURRICANE ASTRAGAL)



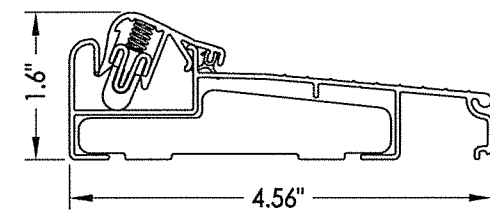
**5** INSWING ADJUSTABLE THRESHOLD  
ZAI4565RDS  
MAX. DESIGN PRESSURE = ±50 PSF



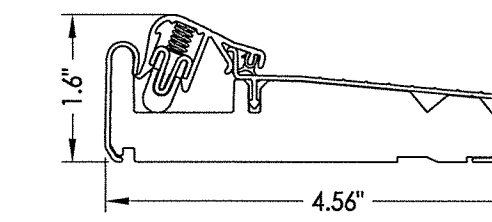
**6** INSWING ARTICULATING THRESHOLD  
ZACL4565



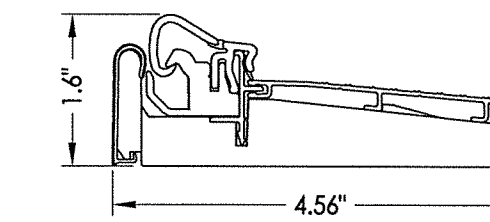
**7** INSWING ARTICULATING THRESHOLD  
ZAC4565FN  
MAX. DESIGN PRESSURE = ±45 PSF



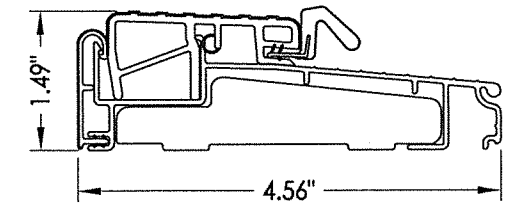
**8** INSWING ARTICULATING THRESHOLD  
ZACAA4565



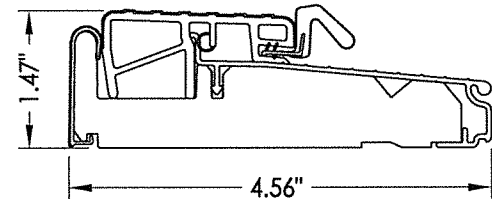
**9** INSWING ARTICULATING THRESHOLD  
ZACAA4565FN  
MAX. DESIGN PRESSURE = ±45 PSF



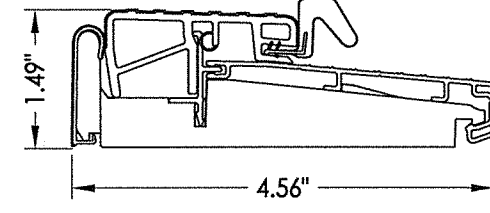
**10** INSWING ARTICULATING THRESHOLD  
ZAC4565RDS  
MAX. DESIGN PRESSURE = ±45 PSF



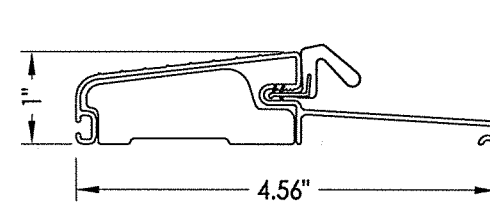
**11** OUTSWING THRESHOLD  
ZOBL4565



**12** OUTSWING THRESHOLD  
ZOB4565FN



**13** OUTSWING THRESHOLD  
ZOB4565RDS

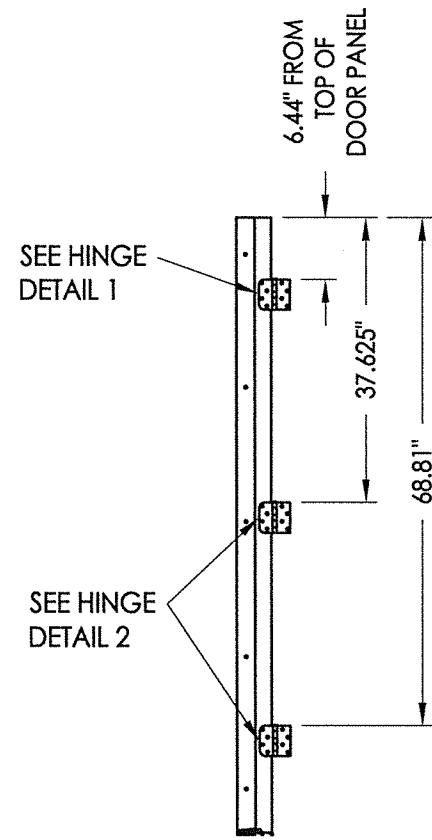


**14** OUTSWING THRESHOLD  
FOB4566

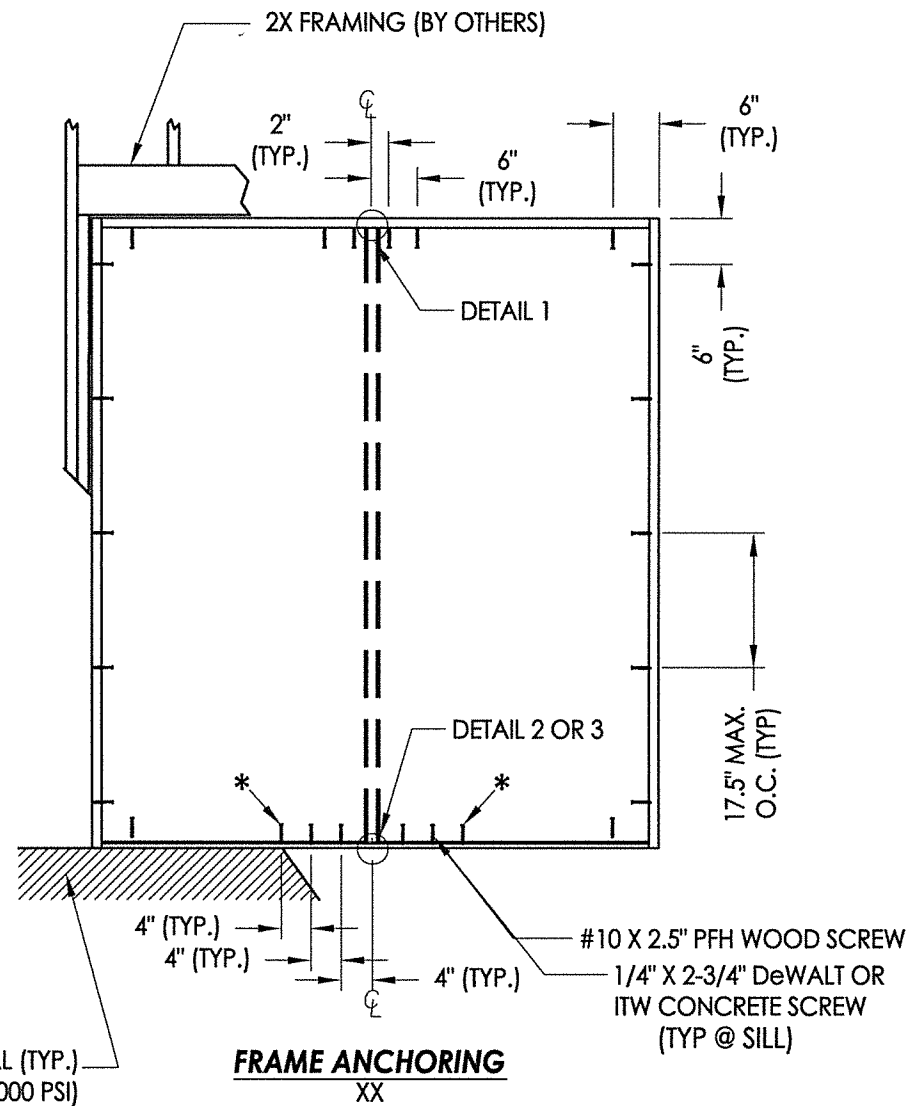
PRODUCT:		ENDURA	
PART OR ASSEMBLY:		VERTICAL CROSS SECTIONS	
NO.	DATE	REVISIONS	BY
2	11/10/21	UPDATE TO 2018 IBC/IRC CODE	LFS
1	9/10/18	UPDATE FOR NEW TESTING	LFS

DATE: 10/27/16  
SCALE: N.T.S.  
DWG. BY: JK  
CHK. BY: LFS  
DRAWING NO.: TX-4641  
SHEET 6 OF 7

Z:\Clients\Endura PERMANENT\B - Texas Dept of Ins\TDI - DR-852 JELD-WEN Steel Opaque (L,KB)\C - Drawings\TX-4641.44.dwg

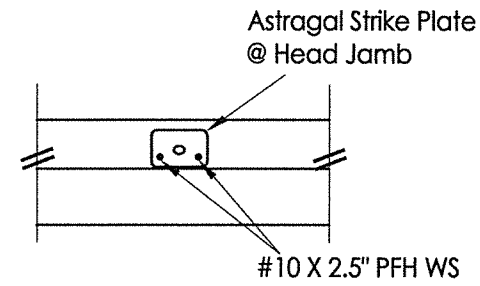


**HINGE JAMB**

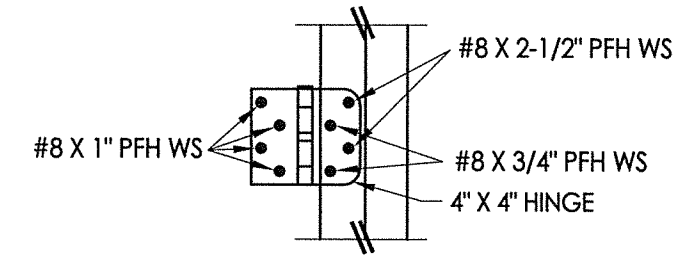


**FRAME ANCHORING**  
XX

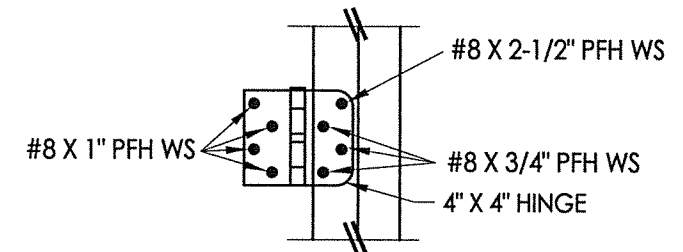
FLOOR SUBSTRATE MATERIAL (TYP.)  
CONCRETE (MIN. 3000 PSI)  
WOOD (G >= 0.42)



**DETAIL 1**



**HINGE DETAIL 1**



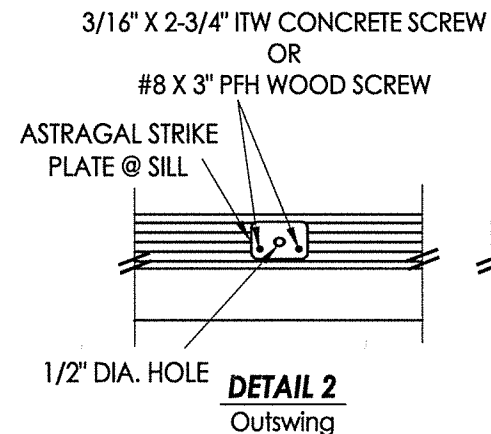
**HINGE DETAIL 2**

\*NOTE: These additional anchors required for D.P. > 40 PSF.

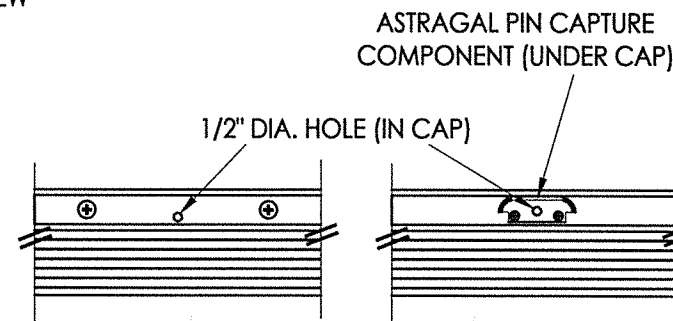
**CONCRETE ANCHOR NOTES:**

- 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:

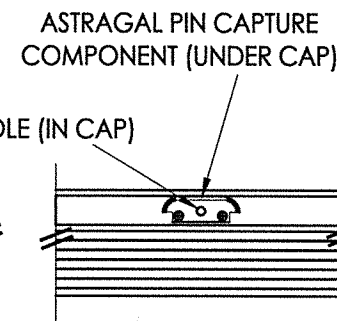
ANCHOR TYPE	ANCHOR SIZE	MIN. EMBEDMENT	MIN. CLEARANCE TO MASONRY EDGE	MIN. CLEARANCE TO ADJACENT ANCHOR
ITW TAPCON®	3/16"	1-3/4"	3"	1-1/2"
	1/4"	1-3/4"	1-1/2"	4"
DeWALT ULTRACON®	1/4"	1-3/4"	1"	4"



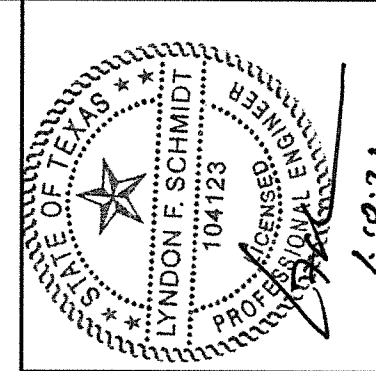
**DETAIL 2**  
Outswing



**DETAIL 2**  
Inswing



**DETAIL 3**  
Inswing



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

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Phone No.: 813.659.9197

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

PRODUCT: ENDURA

PART OR ASSEMBLY: FRAME ANCHORING

NO.	DATE	REVISIONS
2	11/10/21	UPDATE TO 2018 IBC/IRC CODE
1	9/10/18	UPDATE FOR NEW TESTING

DATE: 10/27/16  
SCALE: N.T.S.  
DWG. BY: JK  
CHK. BY: LFS  
DRAWING NO.: TX-4641  
SHEET 7 OF 7

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