

# STEVE'S AND SONS

203 Humble Ave.  
San Antonio, TX 78225

## OPAQUE STEEL DOUBLE DOOR w/ or w/o SIDELITES

**INSWING / OUTSWING  
"NON-IMPACT"**

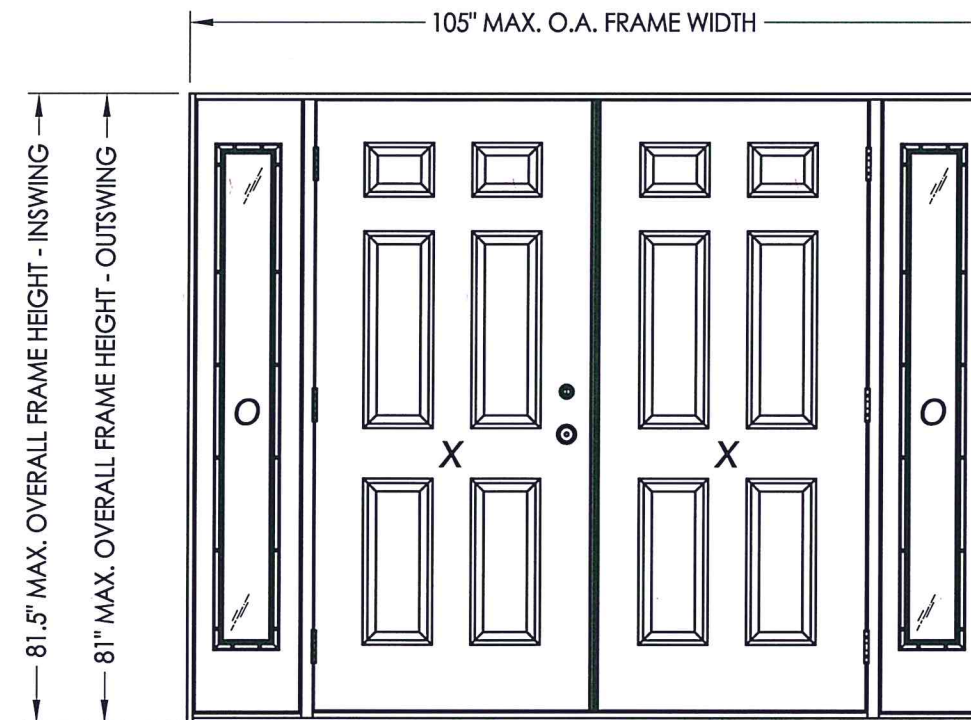
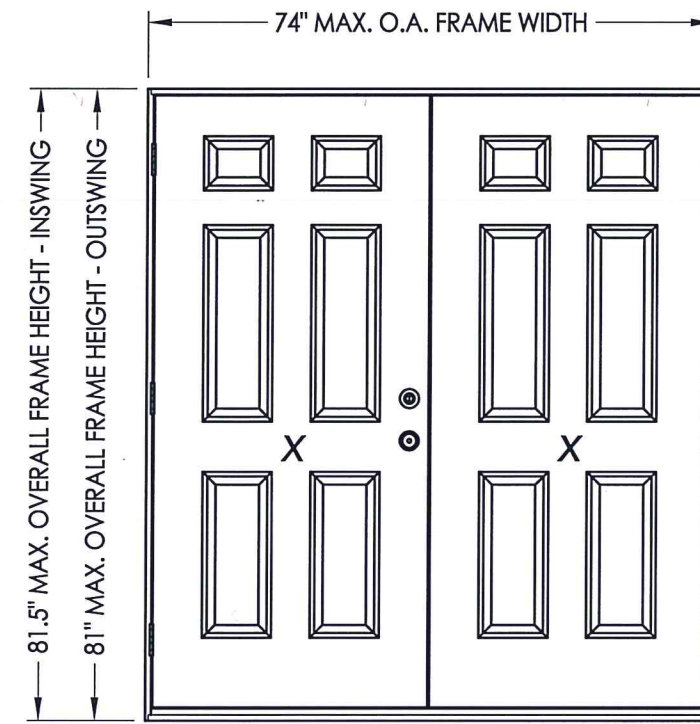
### EVALUATED FOR USE IN THE STATE OF TEXAS

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:

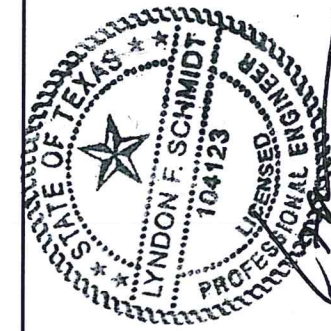
1. Anchors shall be as listed and spaced as shown in the details. Anchor embedment to base material shall be beyond wall dressing or stucco.
2. When used in areas requiring wind-borne debris protection this product is required to be protected with an impact resistant covering that complies with Section 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.

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| 4      | Elevations   |
| 5      | Horizontal cross sections                            |
| 6      | Vertical cross sections                              |
| 7      | Vertical cross sections                              |
| 8      | Frame anchoring                                      |
| 9      | Frame anchoring                                      |
| 10     | Components and bill of materials                     |



| CONFIG. | MAX. FRAME DIMENSION | MAX. SIDELITE D.L.O. DIMENSION | DESIGN PRESSURE (PSF) INSWING (ENDURA ASTRAGAL) |          | DESIGN PRESSURE (PSF) OUTSWING (WORLDWIDE ASTRAGAL) |          |
|---------|----------------------|--------------------------------|---|----------|---|----------|
|         |                      |                                | POSITIVE  | NEGATIVE | POSITIVE  | NEGATIVE |
| XX      | 74.0" x 81.5"        | N/A                            | +50.0   | -55.0    | +40.0   | -40.0    |
| OXXO    | 105.0" x 81.5"       | 6.12" x 63.12"                 | +50.0   | -55.0    | +40.0   | -40.0    |



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

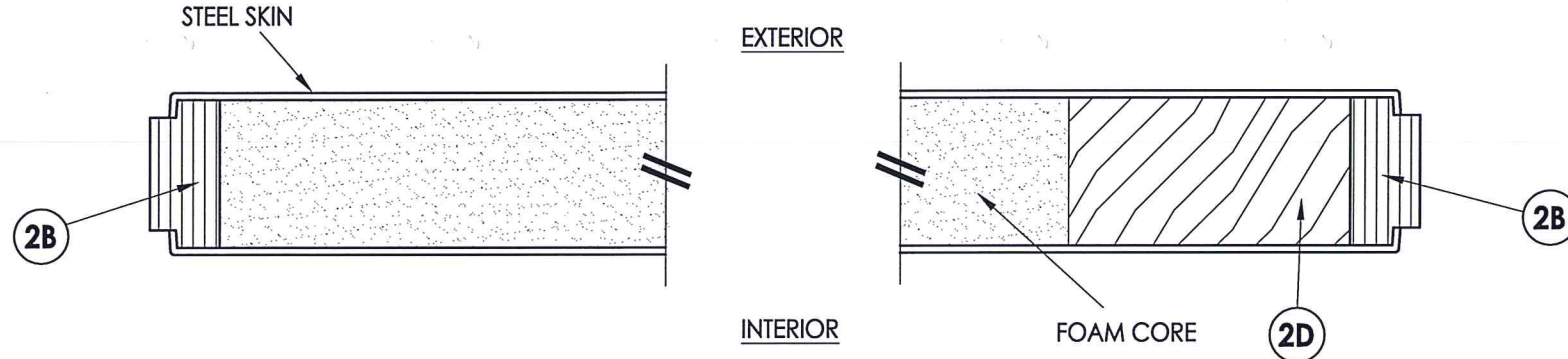
**RW** BUILDING CONSULTANTS, INC.  
P.O. Box 230 Valrico FL 33595  
Phone No.: 813.659.9197  
TEXAS BOARD OF PROFESSIONAL ENGINEERS  
CERTIFICATE OF REGISTRATION # F-11852

PRODUCT: STEVE'S AND SONS STEEL DOOR  
PART OR ASSEMBLY: TYPICAL ELEVATION, DESIGN PRESSURES & GENERAL NOTES

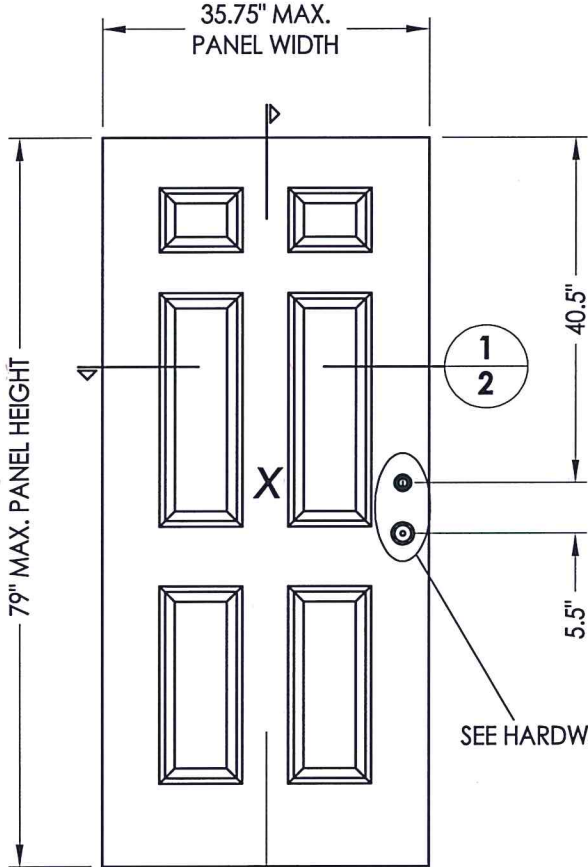
| NO. | DATE    | REVISIONS  |
|-----|---------|--|
| 1   | 6/02/20 | UPDATE TO 2018 IBC/IRC CODE & REV. DESIGN PRESSURE TABLE |

DATE: 09/14/16  
SCALE: N.T.S.  
DWG. BY: JK  
CHK. BY: LFS  
DRAWING NO.: TX-4638  
SHEET 1 of 10

R:\Clients\Steves and Sons - Permanent\B - Texas Dept of Ins\Hinged Doors-Steel\DR 433 Opaque Steel Doors\C - Drawings\TX-4638.dwg, 4-2

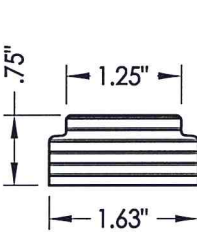


1 HORIZONTAL CROSS SECTION  
2

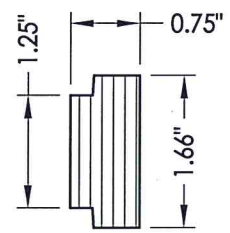


40 DOOR PANEL  
Steel

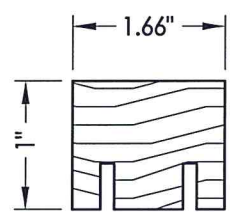
STEEL DOOR SKIN: MIN. 0.019\"/>



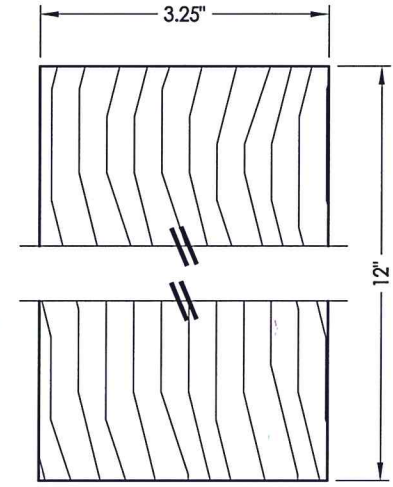
2A TOP RAIL  
LVL



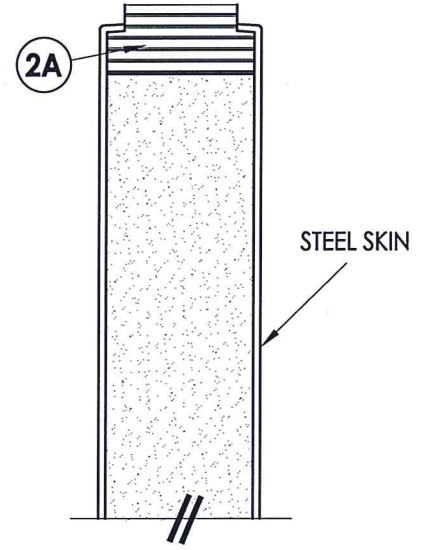
2B HINGE & LATCH STILE  
LVL



2C BOTTOM RAIL  
Wood (S.G.>= 0.42)



2D LOCK BLOCK  
Wood (S.G.>= 0.42)



2 VERTICAL CROSS SECTION  
2

| HARDWARE TABLE |  |
|----------------|--|
| MANUFACTURER   | MODEL                                    |
| KWIKSET        | KNOB: 400 SERIES<br>DEADBOLT: 660 SERIES |



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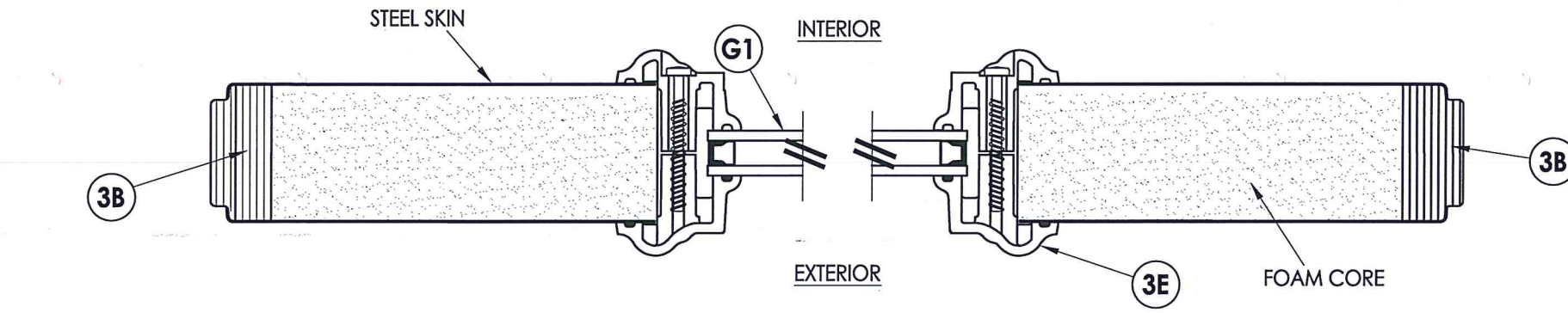
TEXAS BOARD OF PROFESSIONAL ENGINEERS  
CERTIFICATE OF REGISTRATION # F-11852

PRODUCT: STEVES AND SONS  
STEEL DOOR

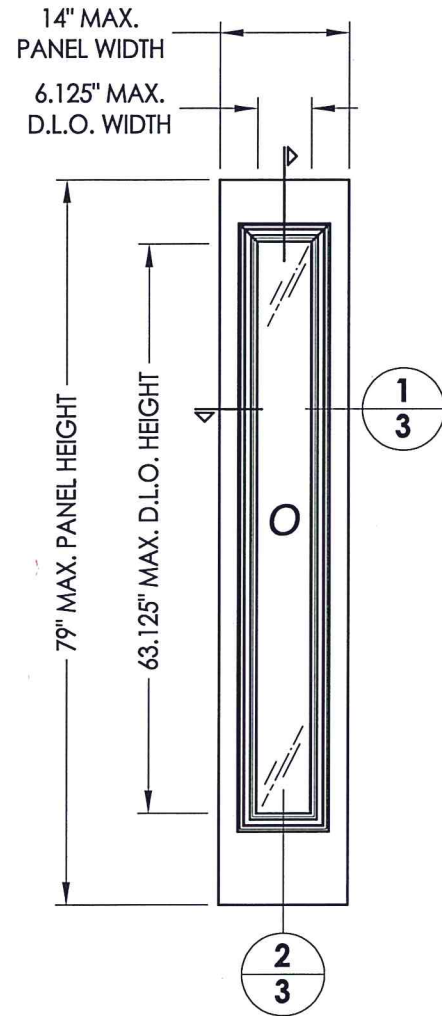
PART OR ASSEMBLY: DOOR PANEL  
DETAILS

| NO. | DATE    | BY  | REVISIONS   |
|-----|---------|-----|---|
| 1   | 6/02/20 | LFS | UPDATE TO 2018 IBC/IRC CODE<br>& REV. DESIGN PRESSURE TABLE |

DATE: 9/14/16  
SCALE: N.T.S.  
DWG. BY: JK  
CHK. BY: LFS  
DRAWING NO.: TX-4638  
SHEET 2 OF 10

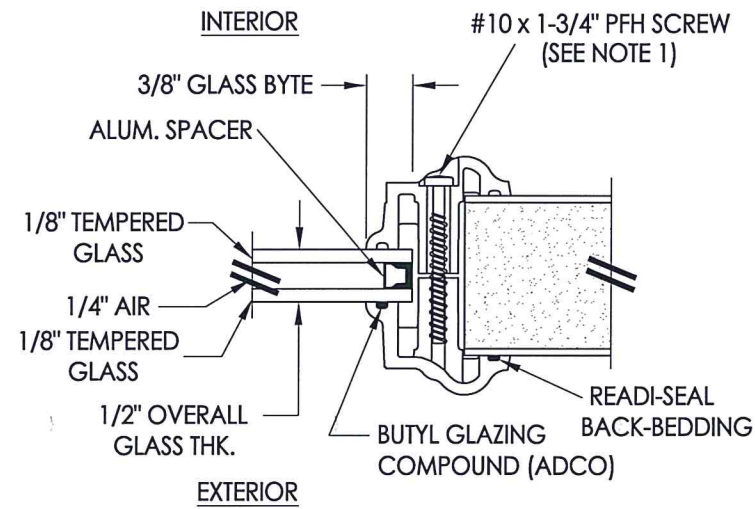


**1**  
**3** **HORIZONTAL CROSS SECTION**

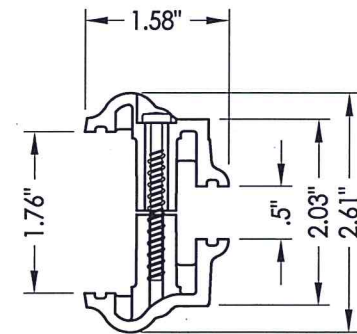


**50** **SIDELITE PANEL**  
Steel

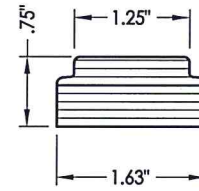
STEEL DOOR SKIN: MIN. 0.019" THK.  
CORE MATERIAL: EPS FOAM (POLYSTYRENE)



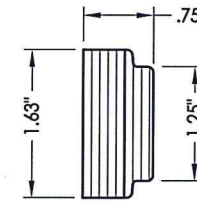
**G1** **GLAZING DETAIL**  
ODL Lite Frame



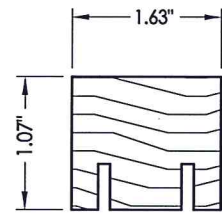
**3E** **ODL LITE FRAME**  
HP Polypropylene



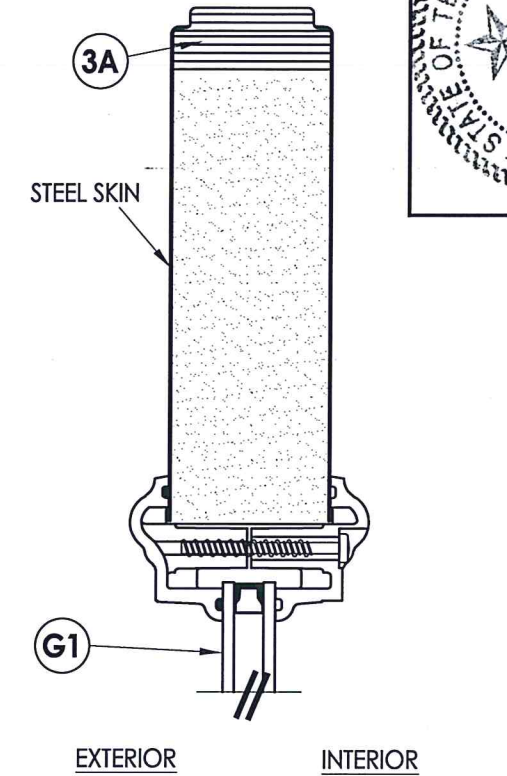
**3A** **TOP RAIL**  
LVL



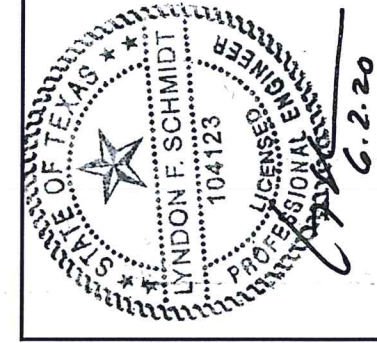
**3B** **HINGE & LATCH STILE**  
LVL



**3C** **BOTTOM RAIL**  
Wood [S.G.>= 0.42]



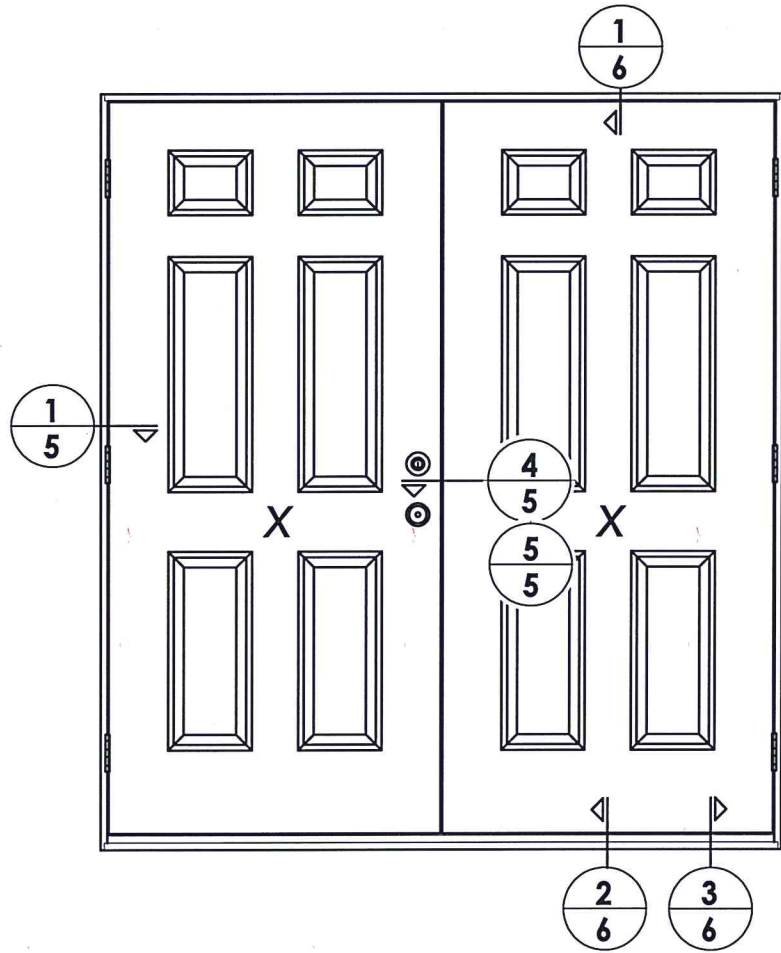
**2**  
**3** **VERTICAL CROSS SECTION**



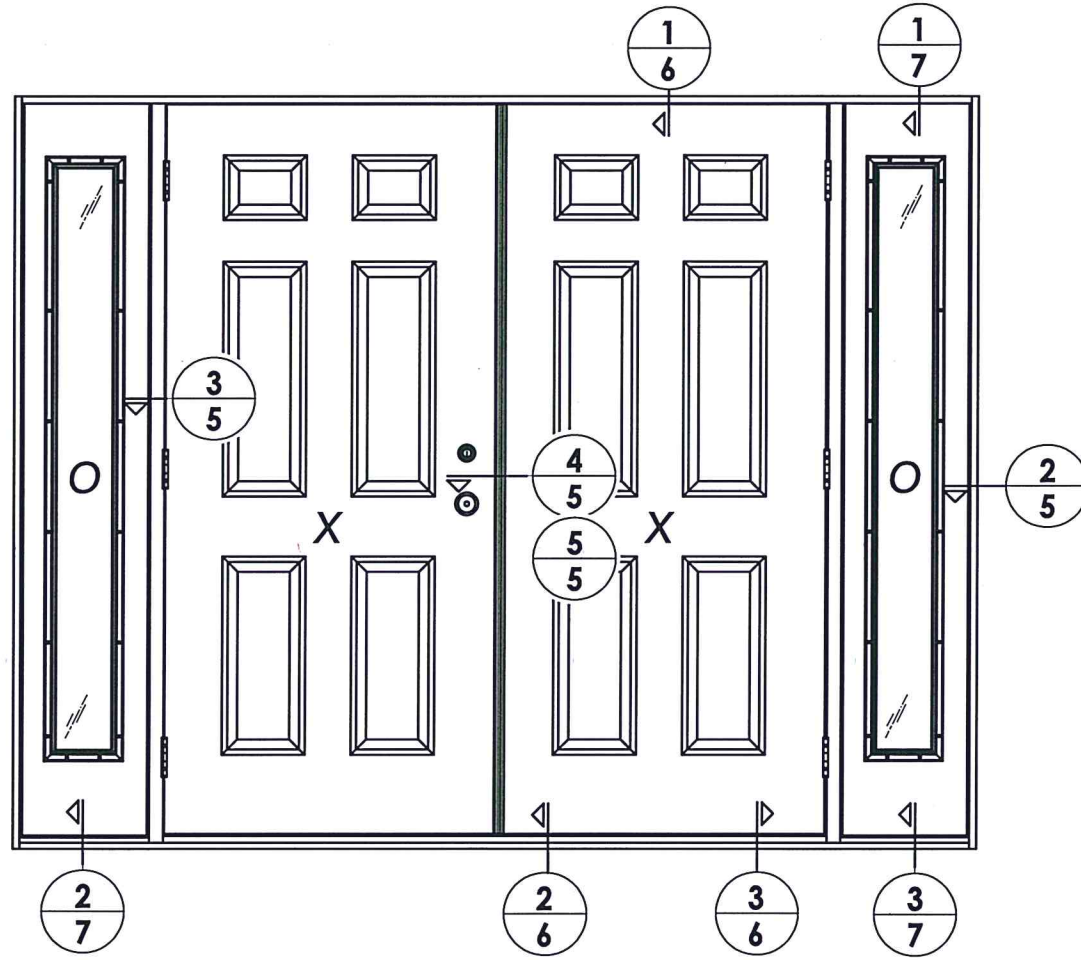
Documents Prepared By: Lyndon F. Schmidt, P.E.  
TEXAS P.E. #104123

**RW** BUILDING CONSULTANTS, INC.  
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TEXAS BOARD OF PROFESSIONAL ENGINEERS  
CERTIFICATE OF REGISTRATION # F-11852

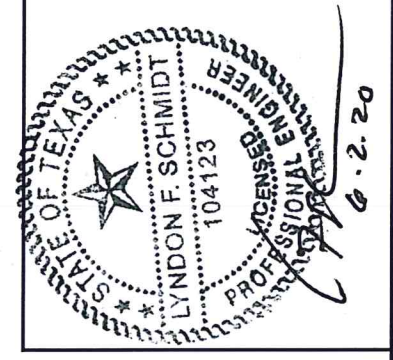
|  |                                     |     |
|--|-------------------------------------|-----|
| PRODUCT:   | STEVES AND SONS<br>STEEL DOOR       |     |
| PART OR ASSEMBLY:  | SIDELITE PANEL &<br>GLAZING DETAILS |     |
| DATE:  | 09/14/16                            |     |
| SCALE:   | N.T.S.                              |     |
| DWG. BY:   | JK                                  |     |
| CHK. BY:   | LFS                                 |     |
| DRAWING NO.:   | TX-4638                             |     |
| SHEET  | 3 OF 10                             |     |
| NO.  | DATE                                | BY  |
| 1  | 6/02/20                             | LFS |
| UPDATE TO 2018 IBC/IRC CODE & REV. DESIGN PRESSURE TABLE |                                     |     |
| REVISIONS  |                                     |     |



ELEVATION (XX)



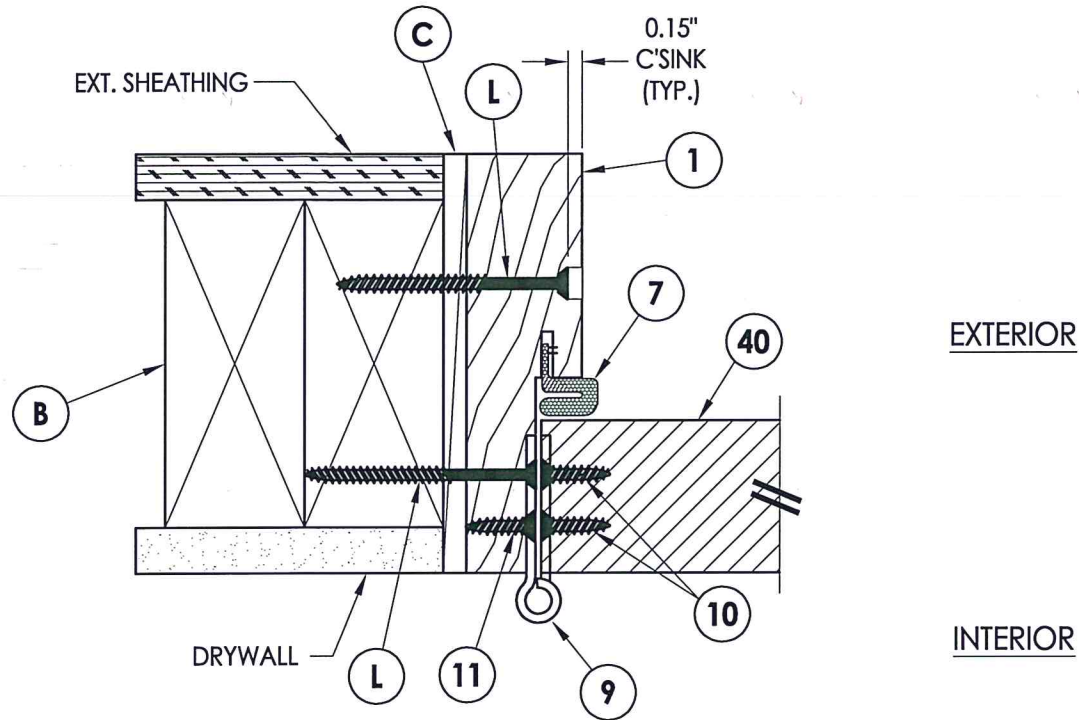
ELEVATION (OXXO)  
CONTINUOUS HEAD & SILL



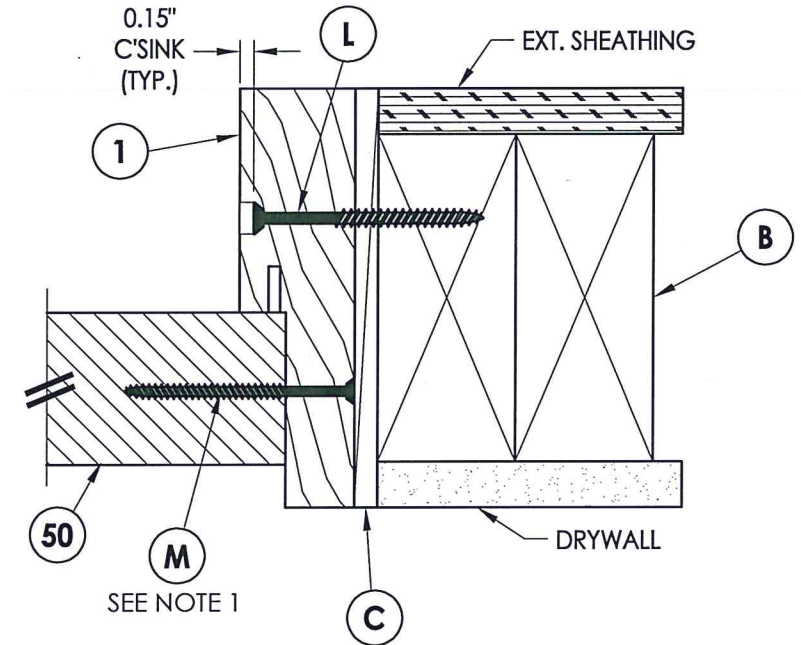
Documents Prepared By: Lyndon F. Schmidt, P.E.  
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|  |         |
|--|---------|
| PRODUCT: STEVES AND SONS STEEL DOOR                      |         |
| PART OR ASSEMBLY: ELEVATIONS                             |         |
| NO.  | DATE    |
| 1  | 6/02/20 |
| UPDATE TO 2018 IBC/IRC CODE & REV. DESIGN PRESSURE TABLE |         |
| LFS  | BY      |
| REVISIONS  |         |
| DATE: 09/14/16   |         |
| SCALE: N.T.S.  |         |
| DWG. BY: JK  |         |
| CHK. BY: LFS   |         |
| DRAWING NO.: TX-4638                                     |         |
| SHEET 4 OF 10  |         |

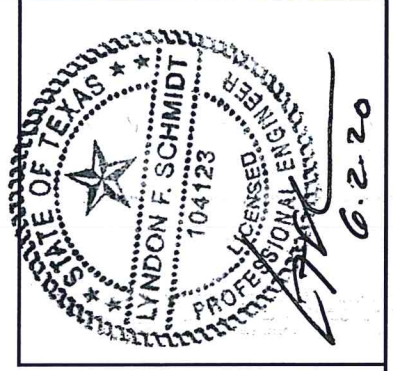


**1** HORIZONTAL CROSS SECTION  
**5** Inswing shown - outswing also approved

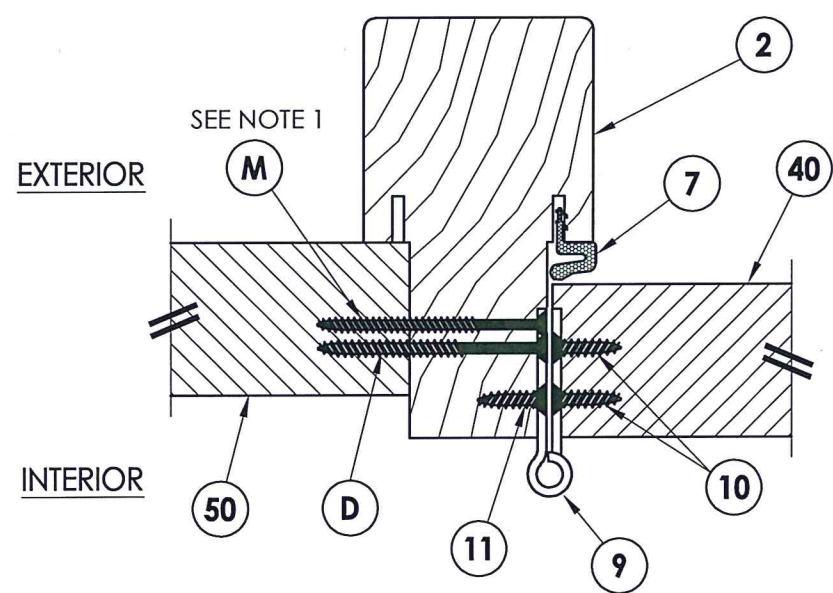


**2** HORIZONTAL CROSS SECTION  
**5** Inswing shown - outswing also approved

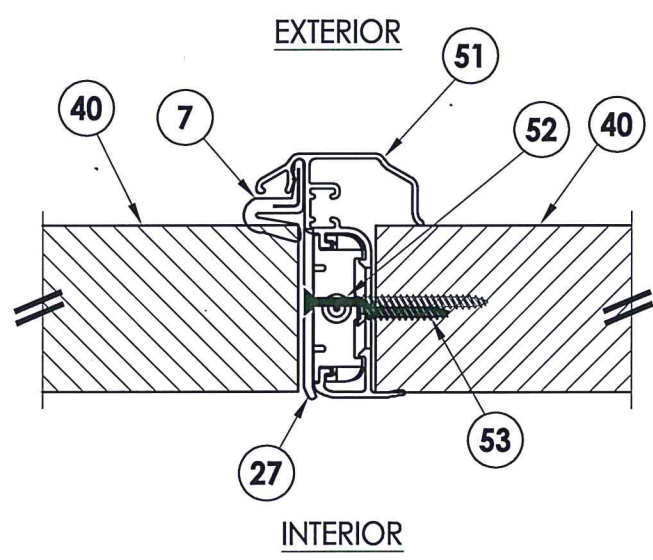
NOTE:  
 1. Sidelite ass'y fasteners located 6" from each end plus 3 more screws equally spaced between (5 screws total per jamb).



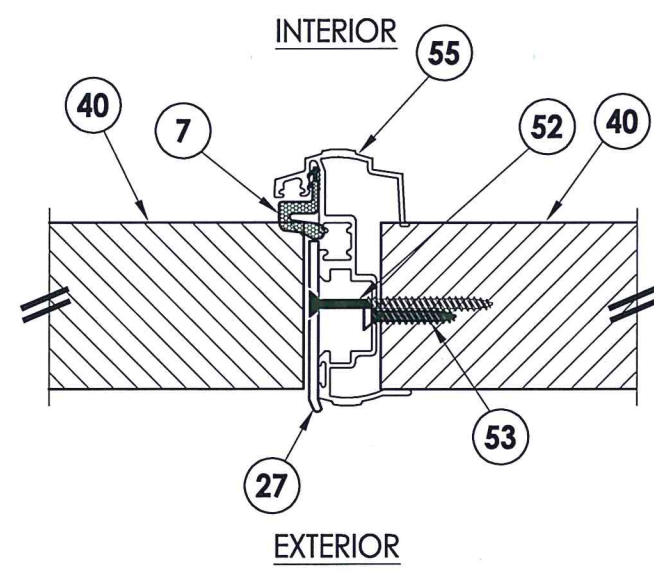
Documents Prepared By: Lyndon F. Schmidt, P.E.  
 TEXAS P.E. #104123  
**RW** BUILDING CONSULTANTS, INC.  
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 Phone No.: 813.659.9197  
 TEXAS BOARD OF PROFESSIONAL ENGINEERS  
 CERTIFICATE OF REGISTRATION # F-11852



**3** HORIZONTAL CROSS SECTION  
**5** Inswing shown - outswing also approved

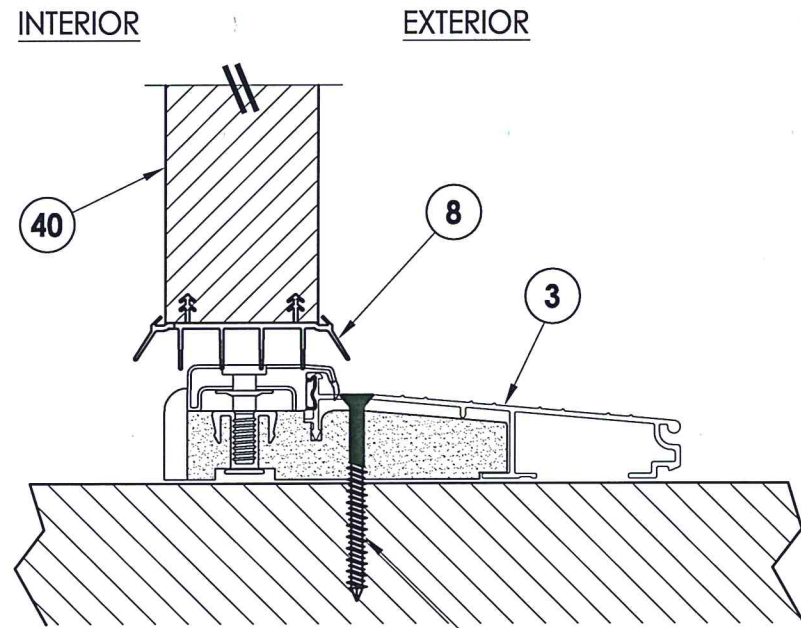


**4** HORIZONTAL CROSS SECTION  
**5** Inswing shown



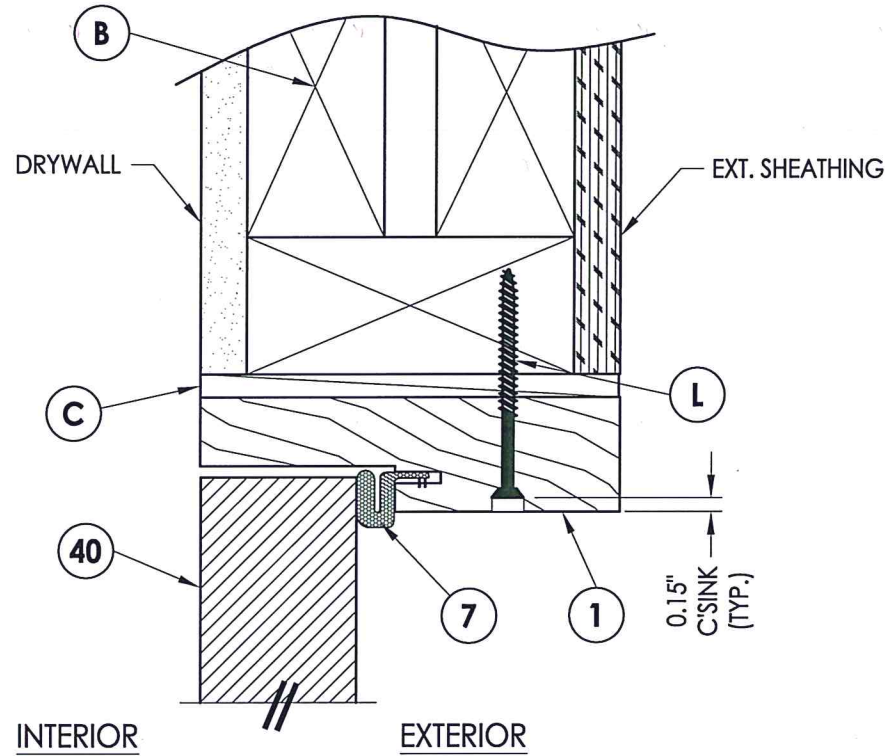
**5** HORIZONTAL CROSS SECTION  
**5** Outswing shown

|                                     |         |  |     |
|-------------------------------------|---------|--|-----|
| PRODUCT: STEVES AND SONS STEEL DOOR |         | PART OR ASSEMBLY: HORIZONTAL CROSS SECTIONS              |     |
| DATE: 09/14/16                      |         | SCALE: N.T.S.  |     |
| DWG. BY: JK                         |         | CHK. BY: LFS   |     |
| DRAWING NO.: TX-4638                |         | SHEET 5 OF 10  |     |
| NO. DATE                            |         | REVISIONS  |     |
| 1                                   | 6/02/20 | UPDATE TO 2018 IBC/IRC CODE & REV. DESIGN PRESSURE TABLE | LFS |

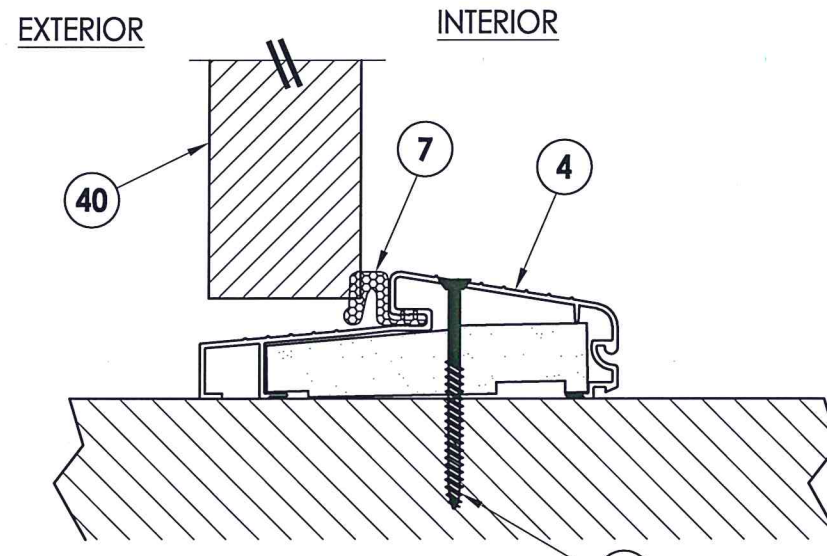


**2 VERTICAL CROSS SECTION**  
6 Inswing configuration

**J** WOOD  
**P** CONCRETE

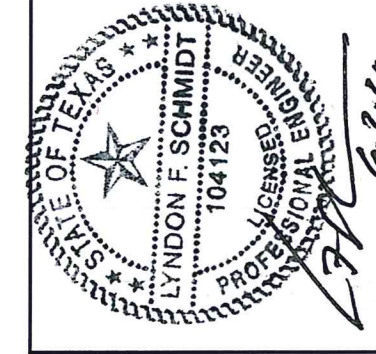


**1 VERTICAL CROSS SECTION**  
6 Inswing shown - outswing also approved



**3 VERTICAL CROSS SECTION**  
6 Outswing configuration

**J** WOOD  
**P** CONCRETE



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

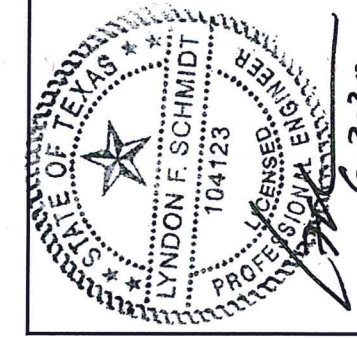
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Phone No.: 813.659.9197  
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CERTIFICATE OF REGISTRATION # F-11852

PRODUCT: STEVES AND SONS  
STEEL DOOR

PART OR ASSEMBLY:  
VERTICAL CROSS SECTIONS

| NO. | DATE    | REVISIONS  | BY  |
|-----|---------|--|-----|
| 1   | 6/02/20 | UPDATE TO 2018 IBC/IRC CODE & REV. DESIGN PRESSURE TABLE | LFS |

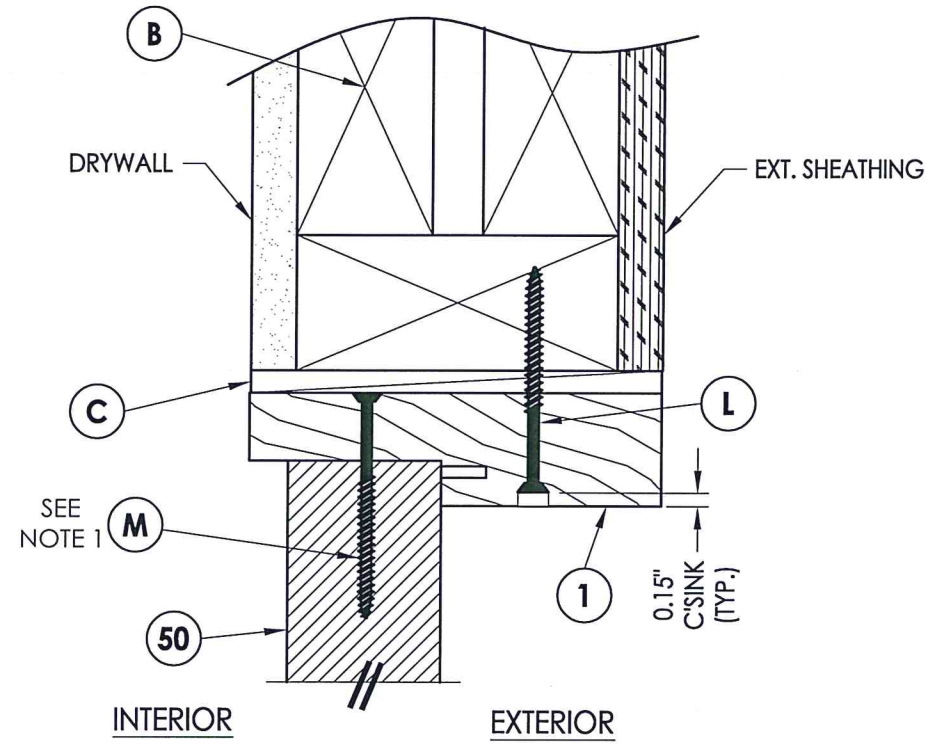
DATE: 09/14/16  
SCALE: N.T.S.  
DWG. BY: JK  
CHK. BY: LFS  
DRAWING NO.: TX-4638  
SHEET 6 OF 10



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TEXAS P.E. #104123

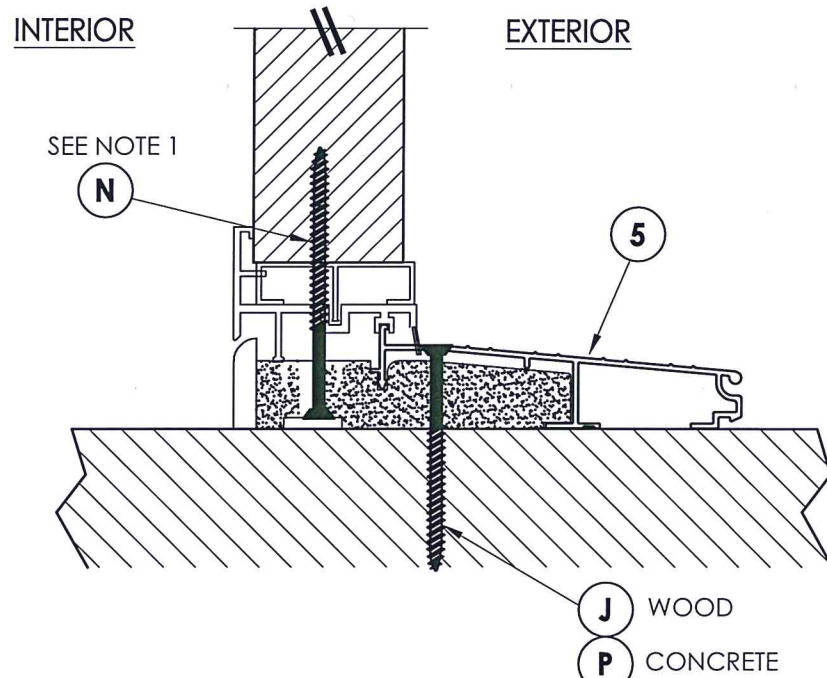
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CERTIFICATE OF REGISTRATION # F-11852

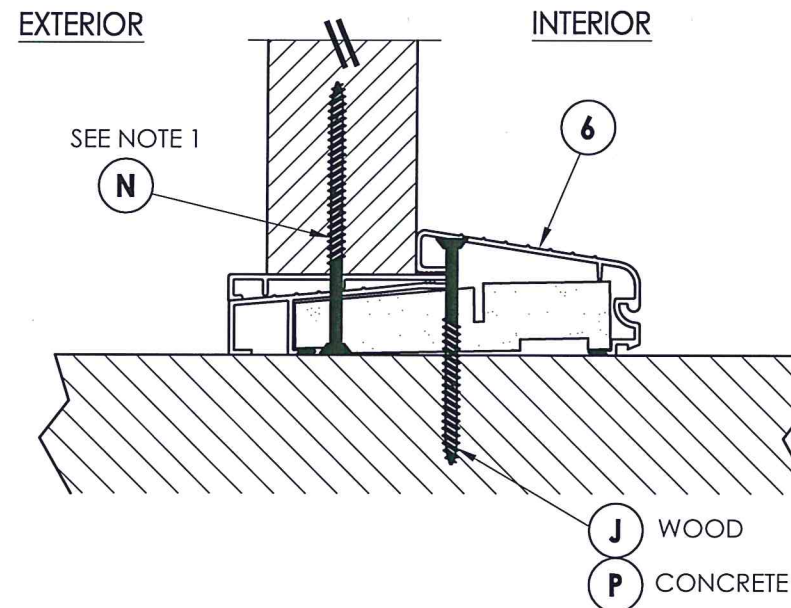


**1** VERTICAL CROSS SECTION  
**7** Inswing shown - outswing also approved

NOTE:  
1. Sidelite ass'y fasteners located 3" from each end plus 1 more located 6" from mullion (3 screws total per head/sill).

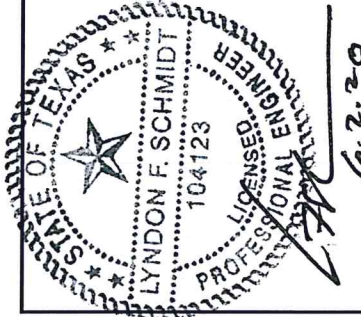
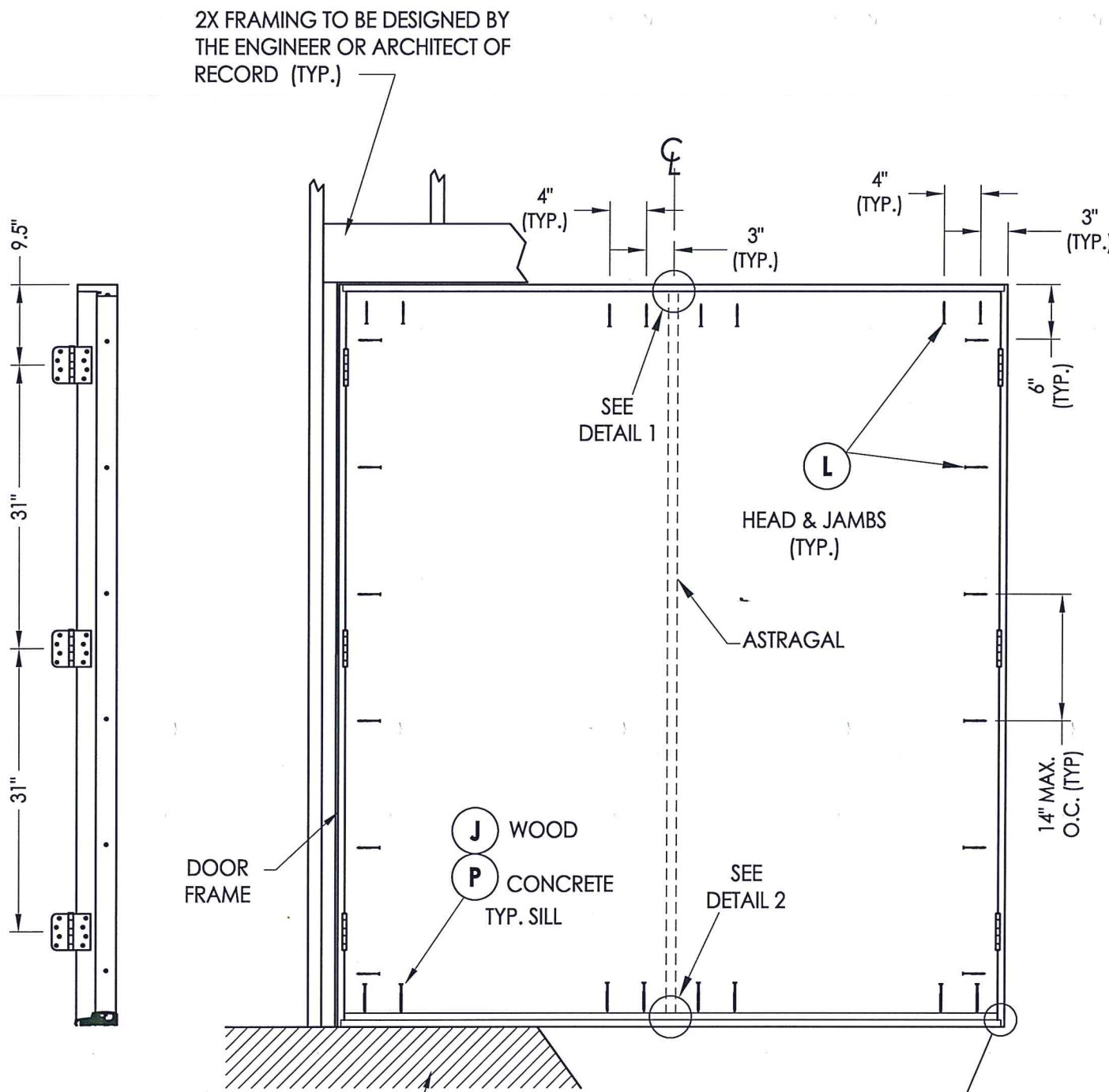


**2** VERTICAL CROSS SECTION  
**7** Inswing configuration



**3** VERTICAL CROSS SECTION  
**7** Outswing configuration

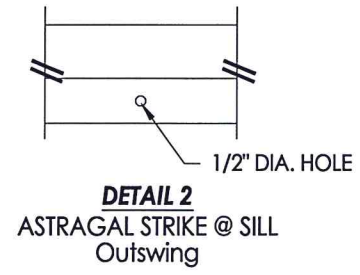
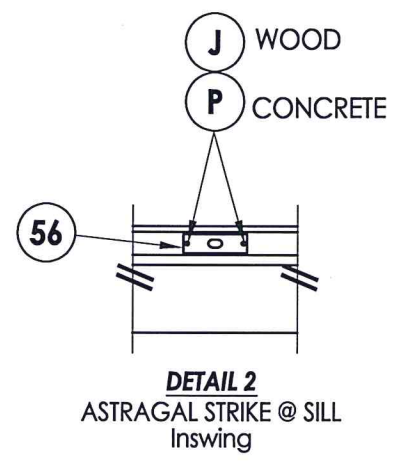
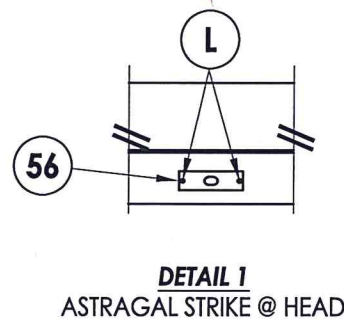
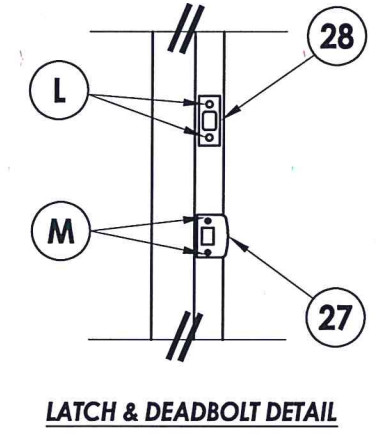
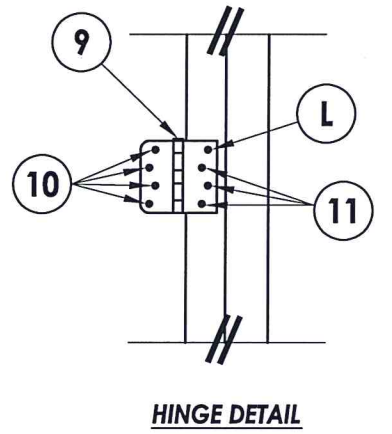
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|-------------------------------------|---------|---|--|
| PRODUCT: STEVES AND SONS STEEL DOOR |         | PART OR ASSEMBLY: VERTICAL CROSS SECTIONS |  |
| NO.                                 | DATE    | BY  | REVISIONS  |
| 1                                   | 6/02/20 | LFS                                       | UPDATE TO 2018 IBC/IRC CODE & REV. DESIGN PRESSURE TABLE |
| DATE: 9/14/16                       |         | SCALE: N.T.S.                             |  |
| DWG. BY: JK                         |         | CHK. BY: LFS                              |  |
| DRAWING NO.: TX-4638                |         | SHEET 7 OF 10                             |  |



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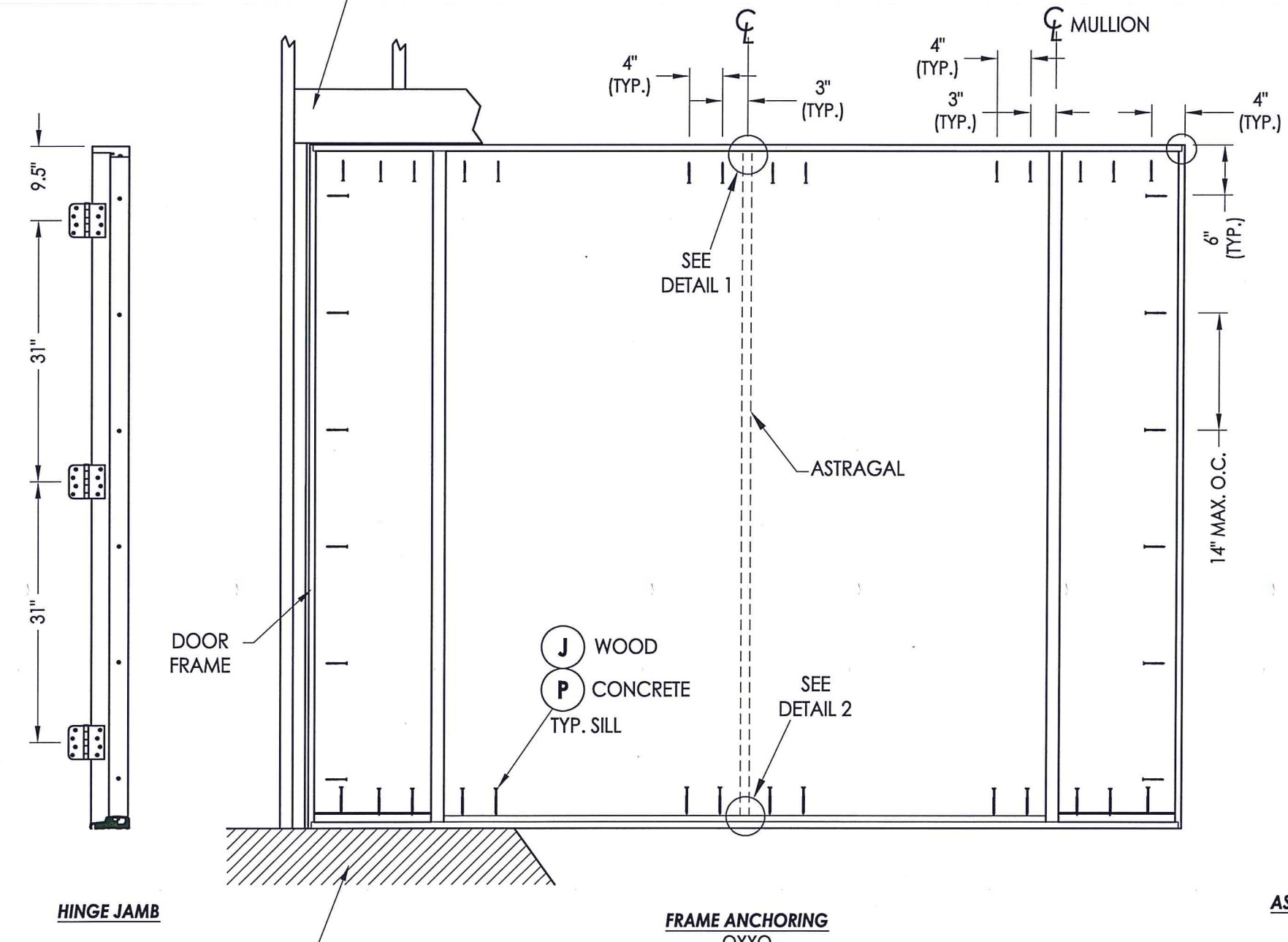
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CERTIFICATE OF REGISTRATION # F-11852



|  |  |                                   |  |
|--|--|-----------------------------------|--|
| PRODUCT: STEVES AND SONS STEEL DOOR                                |  | PART OR ASSEMBLY: FRAME ANCHORING |  |
| DATE: 09/14/16   |  | SCALE: N.T.S.                     |  |
| DWG. BY: JK  |  | CHK. BY: LFS                      |  |
| DRAWING NO.: TX-4638   |  | SHEET 8 OF 10                     |  |
| NO. DATE   |  | BY                                |  |
| 1 6/02/20 UPDATE TO 2018 IBC/IRC CODE & REV. DESIGN PRESSURE TABLE |  | LFS                               |  |
| REVISIONS  |  |                                   |  |



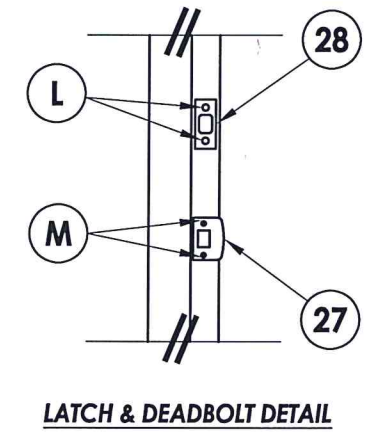
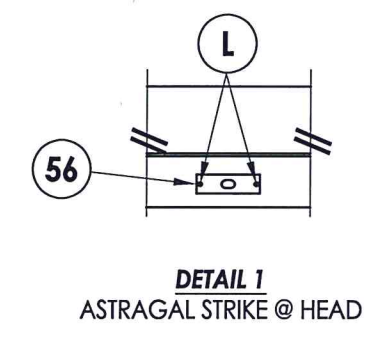
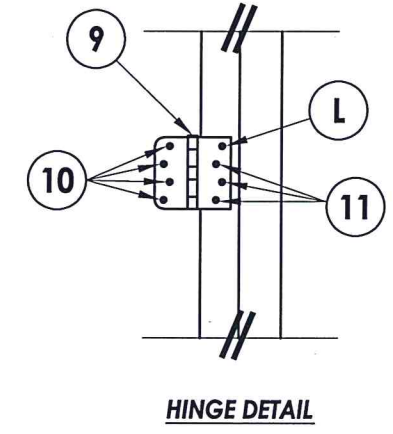
2X FRAMING TO BE DESIGNED BY THE ENGINEER OR ARCHITECT OF RECORD (TYP.)



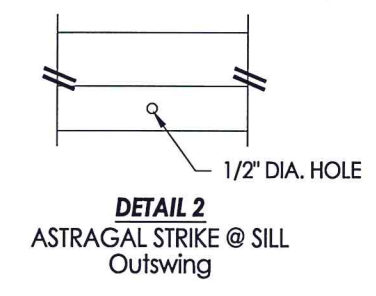
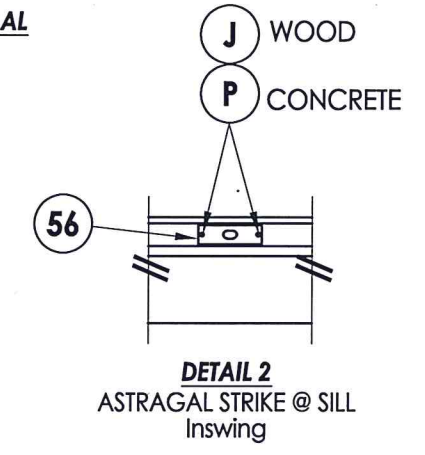
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TEXAS BOARD OF PROFESSIONAL ENGINEERS  
CERTIFICATE OF REGISTRATION # F-11852



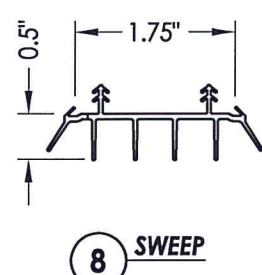
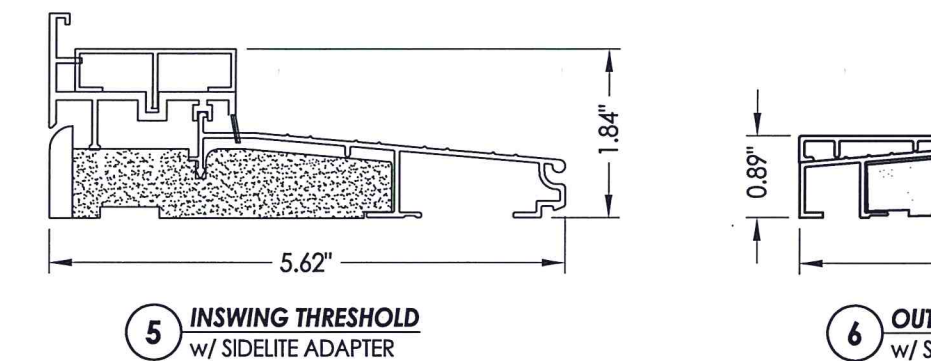
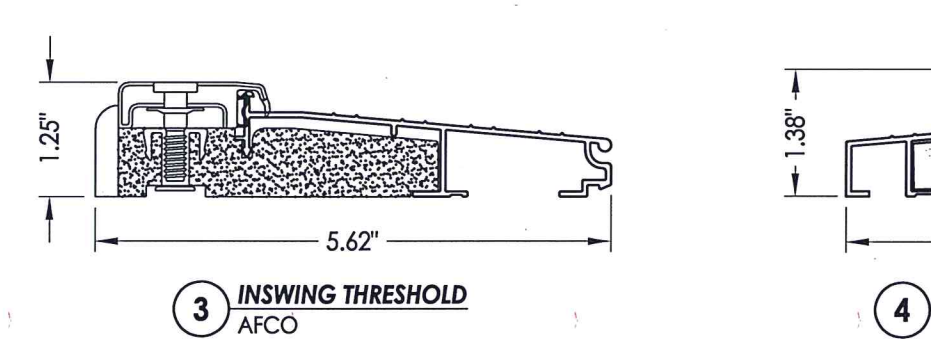
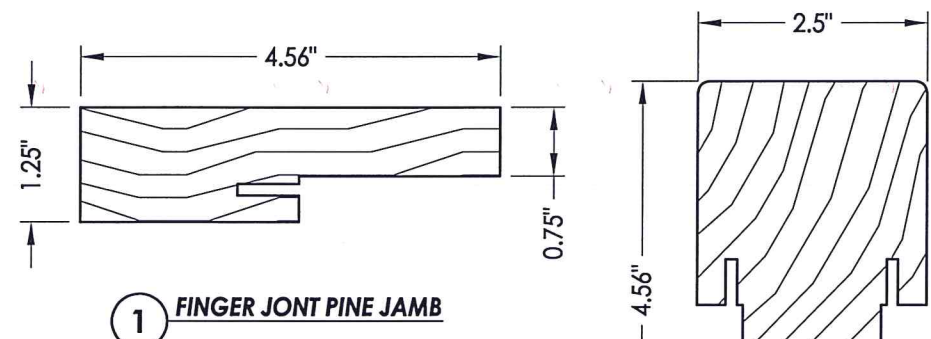
**ASTRAGAL**



|                                      |         |  |     |
|--------------------------------------|---------|--|-----|
| PRODUCT: STEVE'S AND SONS STEEL DOOR |         | PART OR ASSEMBLY: FRAME ANCHORING                        |     |
| NO.                                  | DATE    | REV.   | BY  |
| 1                                    | 6/02/20 | UPDATE TO 2018 IBC/IRC CODE & REV. DESIGN PRESSURE TABLE | LFS |
| REVISIONS                            |         |  | BY  |
| DATE: 09/14/16                       |         | SCALE: N.T.S.  |     |
| DWG. BY: JK                          |         | CHK. BY: LFS   |     |
| DRAWING NO.: TX-4638                 |         | SHEET 9 OF 10  |     |

**BILL OF MATERIALS**

| ITEM # | DESCRIPTION   | MATERIAL   |
|--------|---|------------|
| B      | 2X FRAMING (SG >= 0.42)   | WOOD       |
| C      | 1/4" MAX. SHIM SPACE  | -          |
| J      | #10 X 3" PFH WOOD SCREW   | STEEL      |
| L      | #10 X 2-1/2" PFH WOOD SCREW   | STEEL      |
| M      | #8 X 2-1/2" PFH WOOD SCREW  | STEEL      |
| N      | #8 X 3" PFH WOOD SCREW  | STEEL      |
| P      | 1/4" PFH ELCO OR ITW CONCRETE SCREW (1-3/4" MIN. EMB.)                    | STEEL      |
| 1      | JAMB - FINGER JOINT PINE (SG >= 0.42)                                     | WOOD       |
| 2      | MULLION - PINE (SG >= 0.42)   | WOOD       |
| 3      | INSWING THRESHOLD   | ALUM/COMP. |
| 4      | OUTSWING THRESHOLD  | ALUM/COMP. |
| 5      | INSWING THRESHOLD w/ SIDELITE ADAPTER                                     | ALUM/COMP. |
| 6      | OUTSWING THRESHOLD w/ SIDELITE ADAPTER                                    | ALUM/COMP. |
| 7      | WEATHERSTRIP (Q-LON)  | FOAM       |
| 8      | DOOR SWEEP  | PVC        |
| 9      | 4" X 4" HINGE   | STEEL      |
| 10     | #10 X 1" PFH WOOD SCREW   | STEEL      |
| 11     | #10 X 3/4" PFH WOOD SCREW   | STEEL      |
| 27     | LATCH STRIKE PLATE  | STEEL      |
| 28     | DEADBOLT STRIKE PLATE   | STEEL      |
| 40     | DOOR PANEL - SEE DOOR PANEL DETAIL SHEET FOR CONSTRUCTION DETAILS         | -          |
| 50     | SIDELITE PANEL - SEE SIDELITE PANEL DETAIL SHEET FOR CONSTRUCTION DETAILS | -          |
| 51     | ALUMINUM ASTRAGAL (ENDURA ULTIMATE HURRICANE)                             | ALUM       |
| 52     | #8 x 2-1/4" PFH WOOD SCREW  | STEEL      |
| 53     | #8 x 1" PFH WOOD SCREW  | STEEL      |
| 55     | ALUMINUM ASTRAGAL (WORLDWIDE)   | ALUM       |
| 56     | ASTRAGAL STRIKE PLATE   | STEEL      |



**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®    | 1/4"        | 1-3/4"         | 1-1/2"                         | 4"                                |
| ELCO ULTRACON® | 1/4"        | 1-3/4"         | 1"                             | 4"                                |



Documents Prepared By: Lyndon F. Schmidt, P.E.  
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CERTIFICATE OF REGISTRATION # F-11852

PRODUCT: STEVES AND SONS STEEL DOOR

PART OR ASSEMBLY: COMPONENTS AND B.O.M.

| NO. | DATE    | REVISIONS  |
|-----|---------|--|
| 1   | 6/02/20 | UPDATE TO 2018 IBC/IRC CODE & REV. DESIGN PRESSURE TABLE |

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SHEET 10 OF 10