

STEVE'S AND SONS

203 Humble Ave.
San Antonio, TX 78225

OPAQUE STEEL SINGLE DOOR w/ or w/o SIDELITES

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

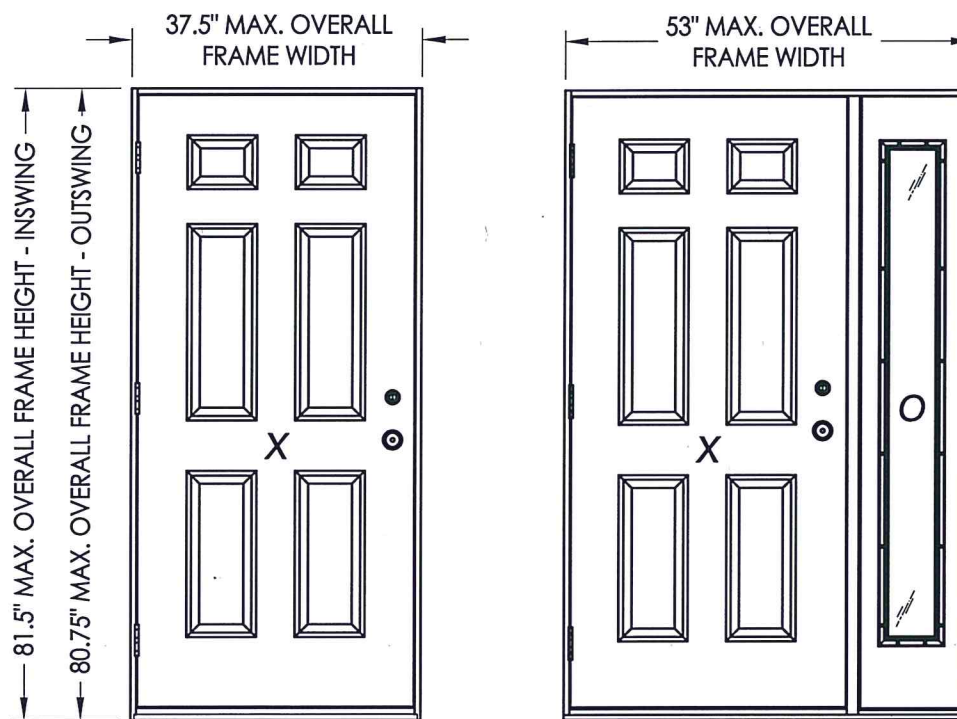
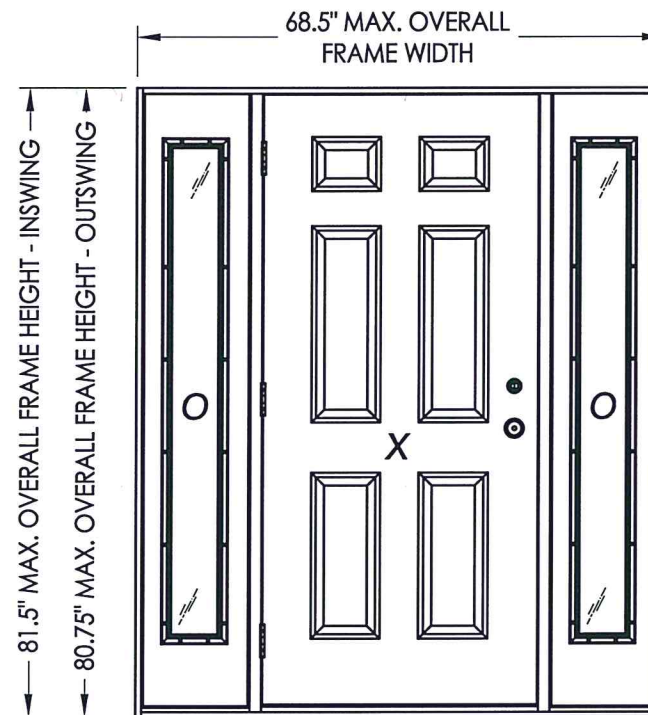
EVALUATED FOR USE IN THE STATE OF TEXAS

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.

TABLE OF CONTENTS

SHEET#	DESCRIPTION
1	Typical elevations, design pressures & general notes
2	Door panel details
3	Sidelite panel & glazing details
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



CONFIGURATION	MAX. FRAME DIMENSION	MAX. SIDELITE D.L.O. DIMENSION	DESIGN PRESSURE (PSF) INSWING		DESIGN PRESSURE (PSF) OUTSWING	
			POSITIVE	NEGATIVE	POSITIVE	NEGATIVE
X	37.5" x 81.5"	N/A	+70.0	-75.0	+70.0	-70.0
OX / XO	53.0" x 81.5"	6.12" x 63.12"	+55.0	-60.0	+55.0	-55.0
OXO	68.5" x 81.5"	6.12" x 63.12"	+55.0	-60.0	+55.0	-55.0



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 ELEVATIONS, DESIGN PRESSURES & GENERAL NOTES

NO.	DATE	UPDATE TO 2018 IBC/IRC CODE	LFS	BY
1	6/02/20	UPDATE TO 2018 IBC/IRC CODE	LFS	BY

DATE: 9/14/16

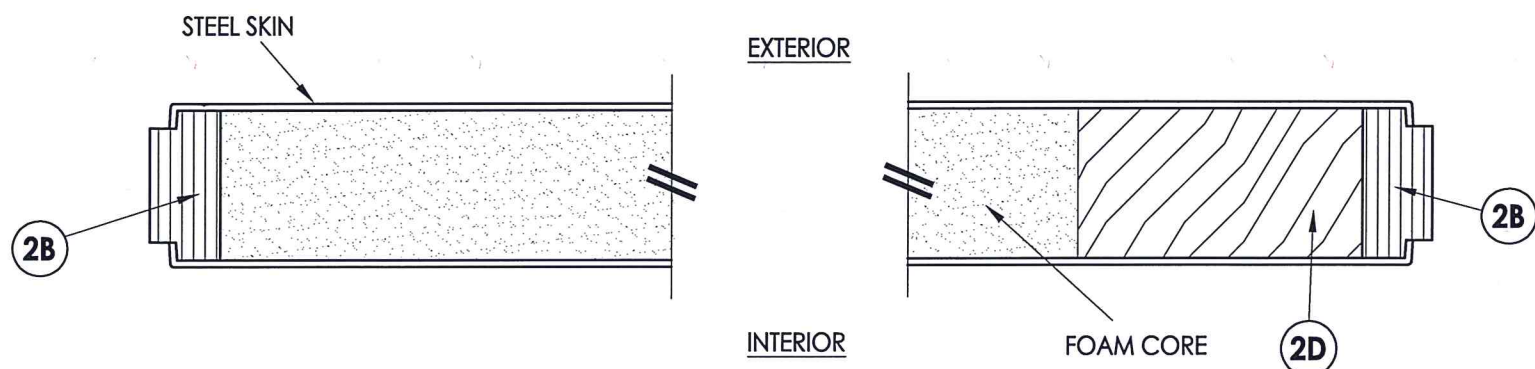
SCALE: N.T.S.

DWG. BY: JK

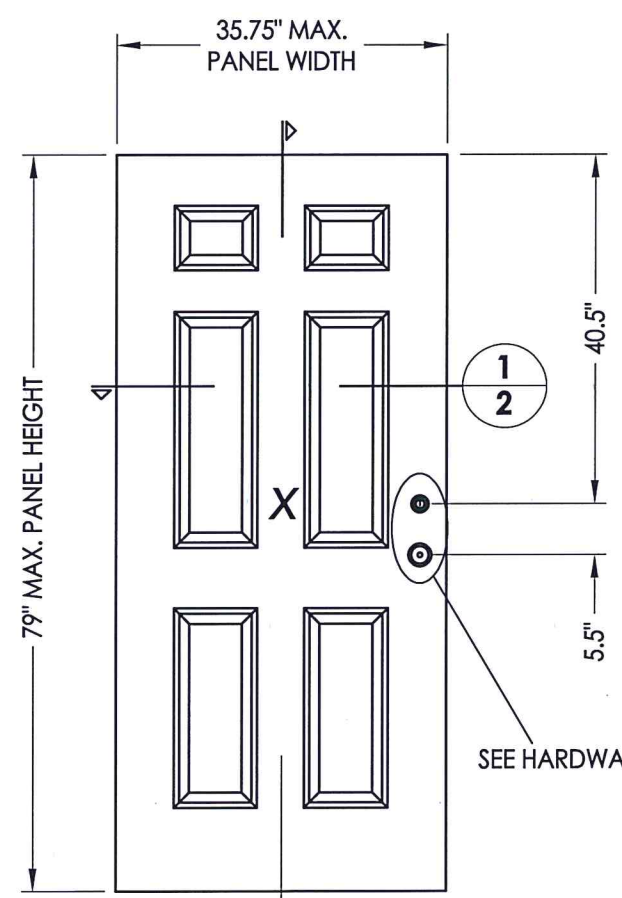
CHK. BY: LFS

DRAWING NO.: TX-4637

SHEET 1 OF 10

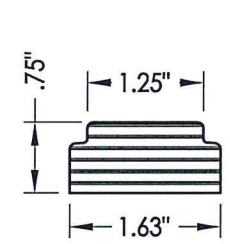


1
2 **HORIZONTAL CROSS SECTION**

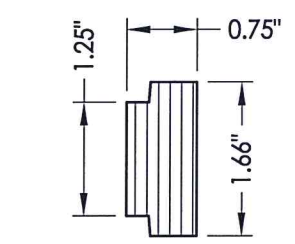


40 **DOOR PANEL**
Steel

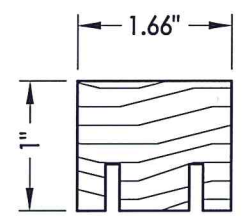
STEEL DOOR SKIN: MIN. 0.019\"/>



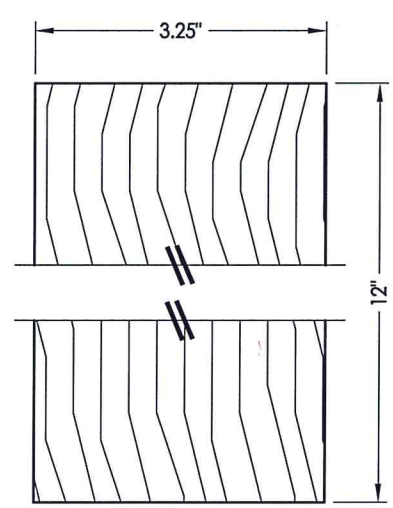
2A **TOP RAIL**
LVL



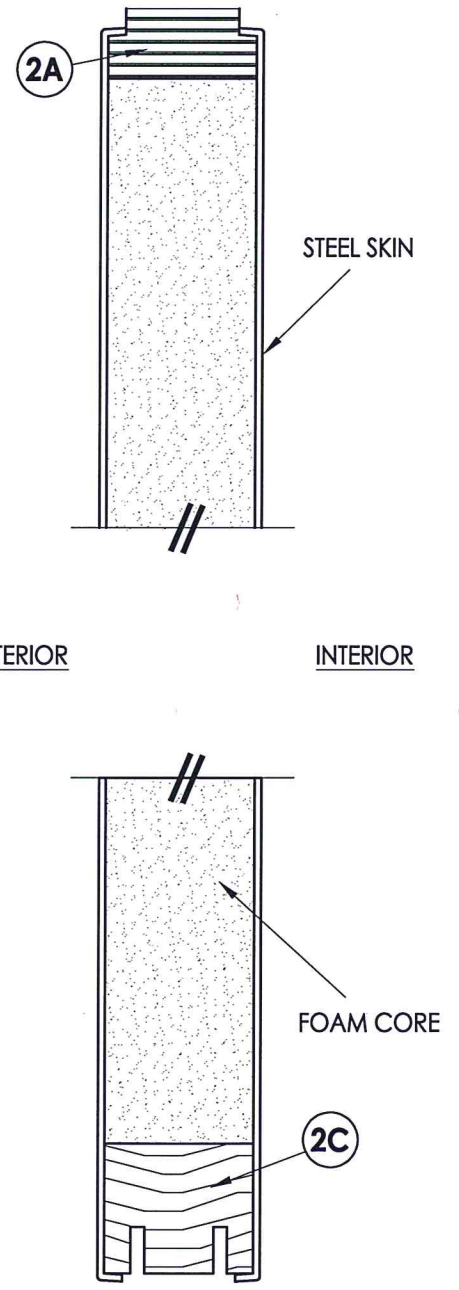
2B **HINGE & LATCH STILE**
LVL



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

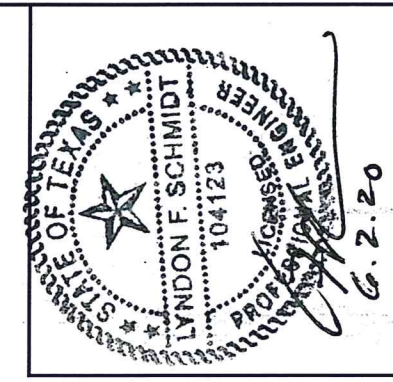


2D **LOCK BLOCK**
Wood (S.G.>= 0.42)



2
2 **VERTICAL CROSS SECTION**

HARDWARE TABLE		
MANUFACTURER	MODEL	
KWIKSET	KNOB:	400 SERIES
	DEADBOLT:	660 SERIES



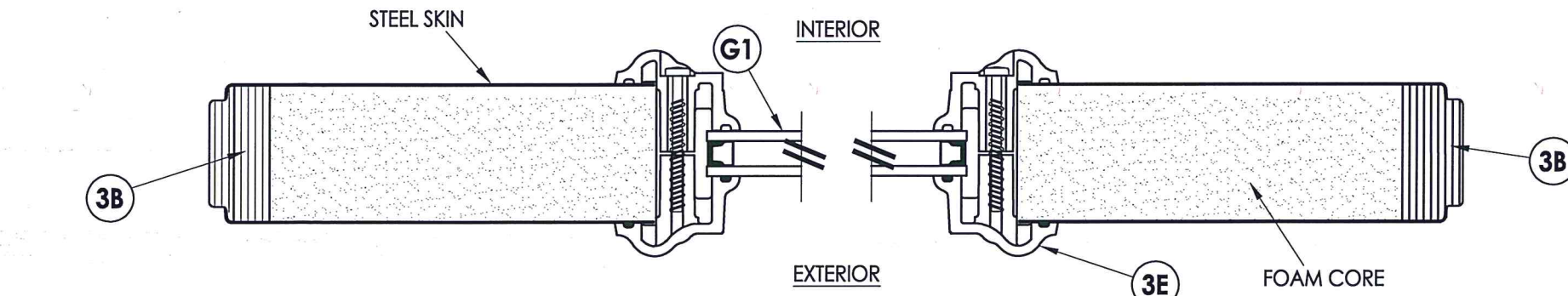
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PRODUCT: STEVES AND SONS
STEEL DOOR
PART OR ASSEMBLY:
DOOR PANEL
DETAILS

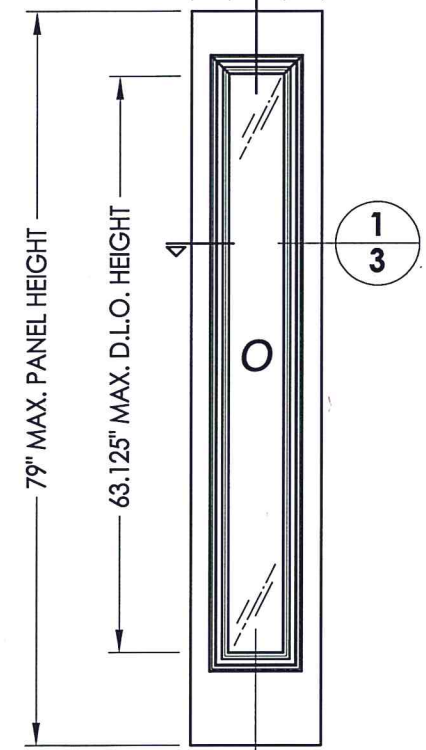
NO.	DATE	DESCRIPTION	BY
1	6/02/20	UPDATE TO 2018 IBC/IRC CODE	LFS

DATE: 9/14/16
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: TX-4637
SHEET 2 OF 10



1
3 **HORIZONTAL CROSS SECTION**

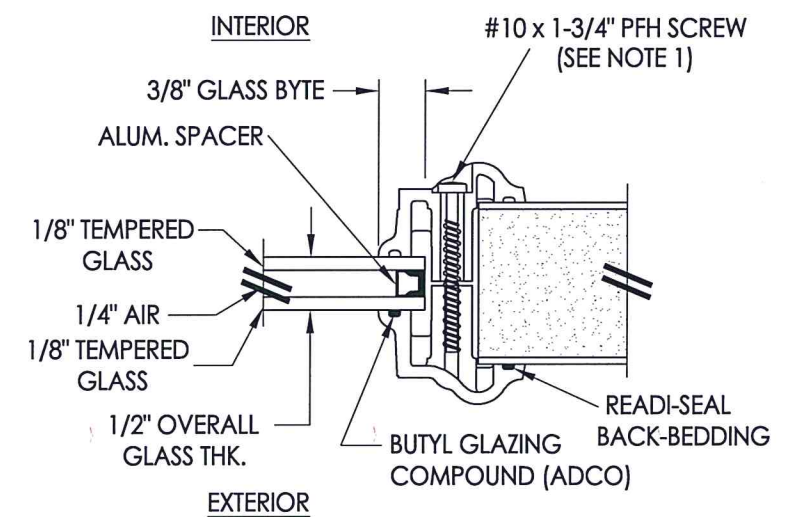
14" MAX. PANEL WIDTH
6.125" MAX. D.L.O. WIDTH



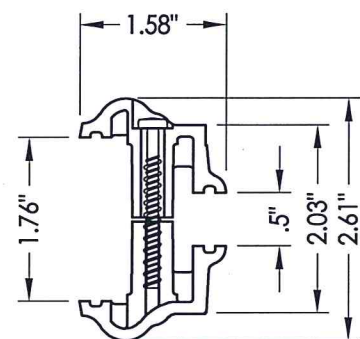
79" MAX. PANEL HEIGHT
63.125" MAX. D.L.O. HEIGHT

50 **SIDELITE PANEL**
Steel

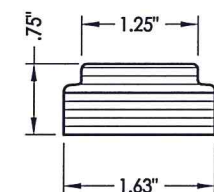
STEEL DOOR SKIN: MIN. 0.019" THK.
CORE MATERIAL: EPS FOAM (POLYSTYRENE)



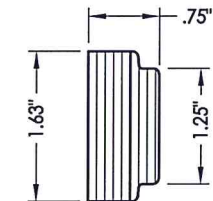
G1 **GLAZING DETAIL**
ODL Lite Frame



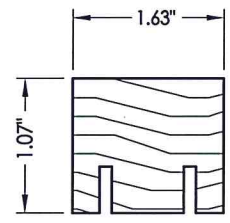
3E **ODL LITE FRAME**
HP Polypropylene



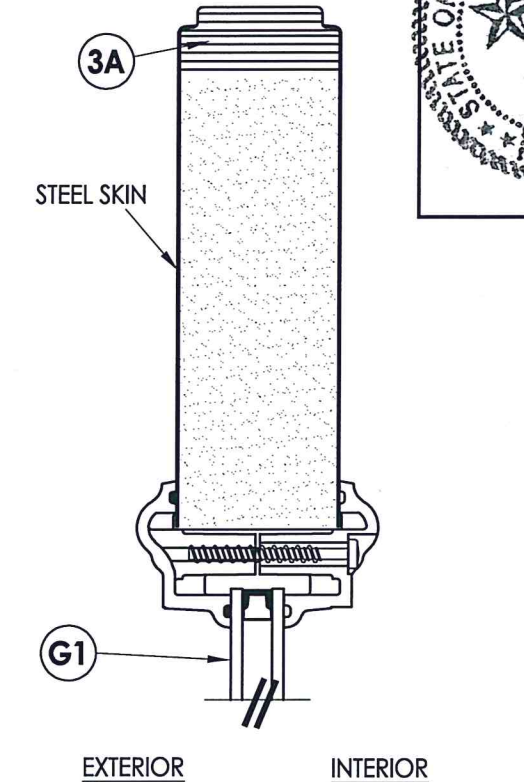
3A **TOP RAIL**
LVL



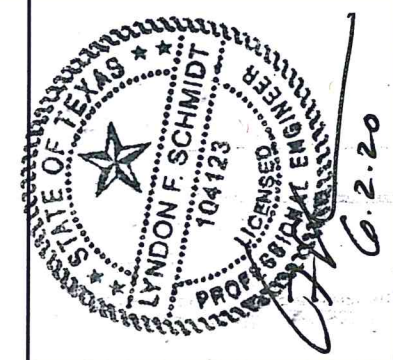
3B **HINGE & LATCH STILE**
LVL



3C **BOTTOM RAIL**
Wood (S.G.>= 0.42)



2
3 **VERTICAL CROSS SECTION**



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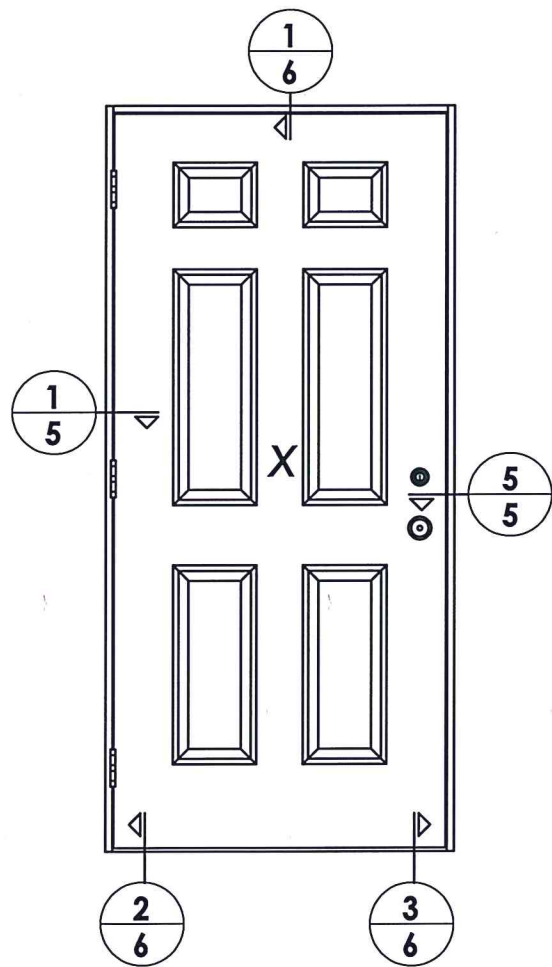
TEXAS BOARD OF PROFESSIONAL ENGINEERS
CERTIFICATE OF REGISTRATION # F-11852

PRODUCT: STEVES AND SONS STEEL DOOR

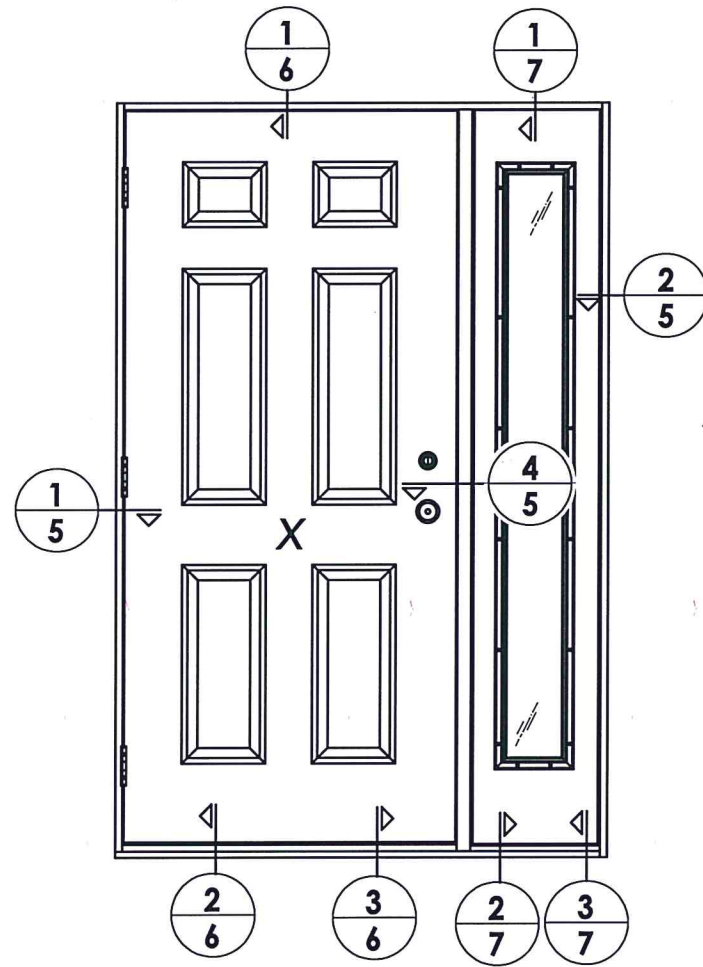
PART OR ASSEMBLY: SIDELITE PANEL & GLAZING DETAILS

NO.	DATE	DESCRIPTION	BY
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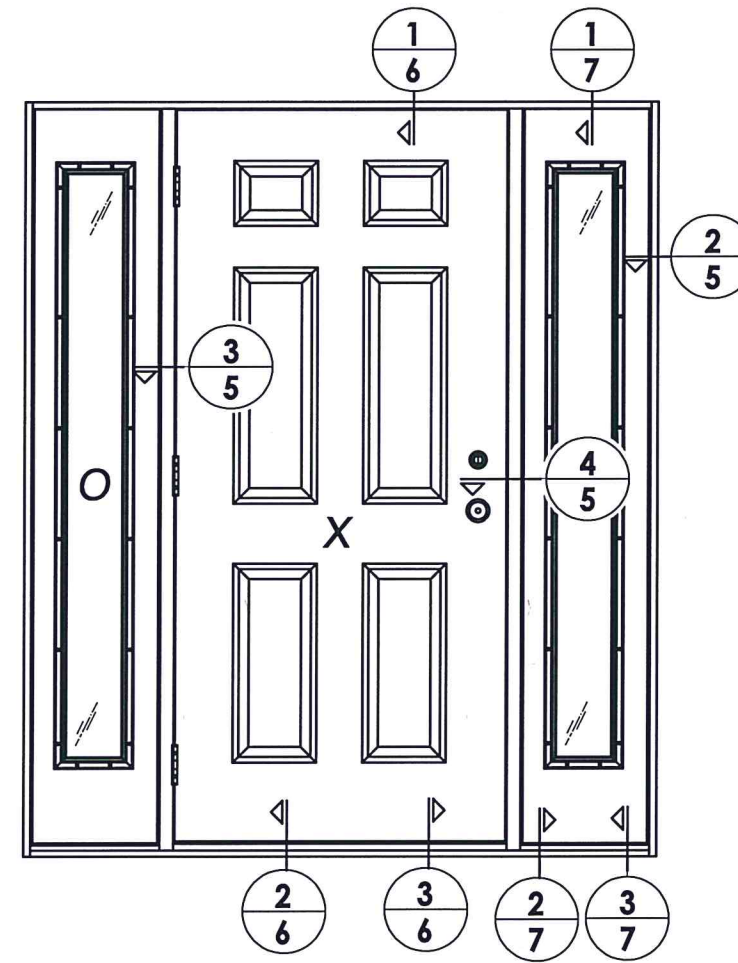
DATE: 9/14/16
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: TX-4637
SHEET 3 OF 10



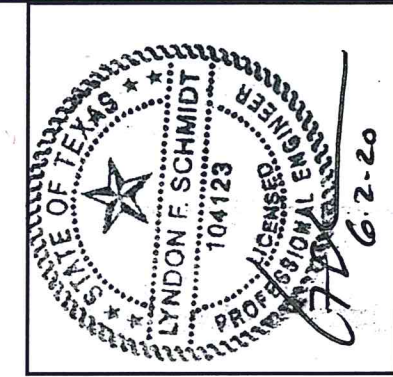
ELEVATION (X)



ELEVATION (XO / OX)
CONTINUOUS HEAD & SILL



ELEVATION (OXO)
CONTINUOUS HEAD & SILL



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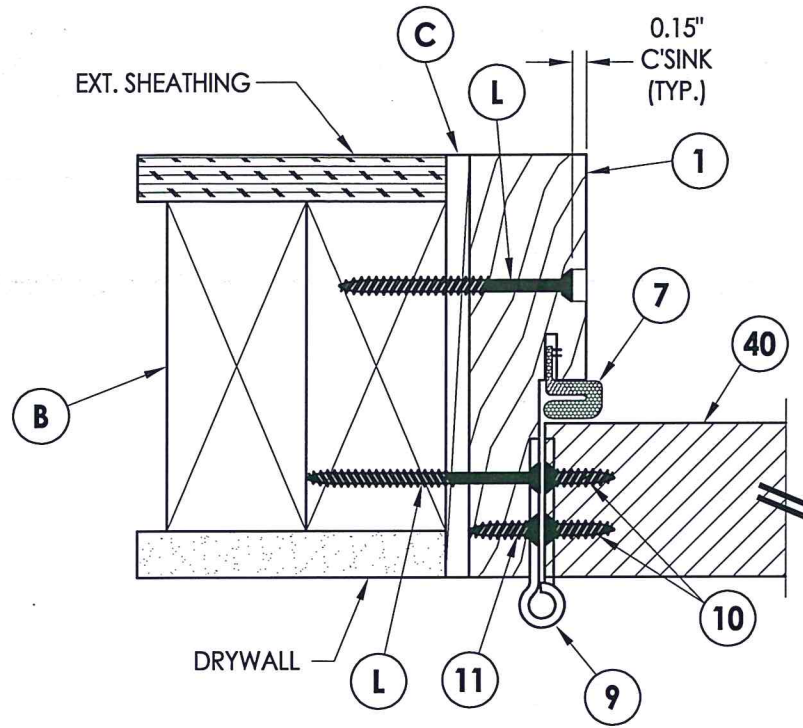
RW BUILDING CONSULTANTS, INC.
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TEXAS BOARD OF PROFESSIONAL ENGINEERS
CERTIFICATE OF REGISTRATION # F-11852

PRODUCT: STEVES AND SONS
STEEL DOOR
PART OR ASSEMBLY:
ELEVATIONS

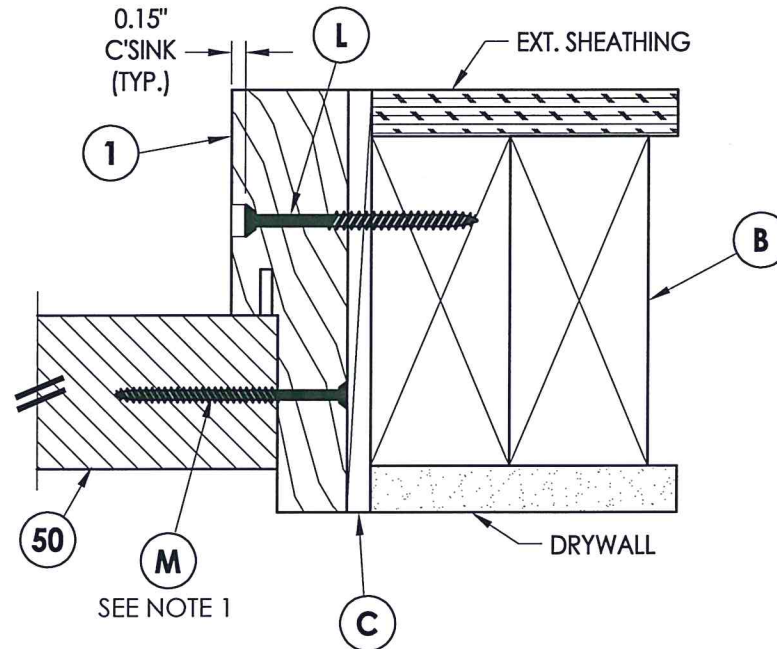
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1	6/02/20	UPDATE TO 2018 IBC/IRC CODE	LFS	

DATE: 9/14/16
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: TX-4637
SHEET 4 OF 10

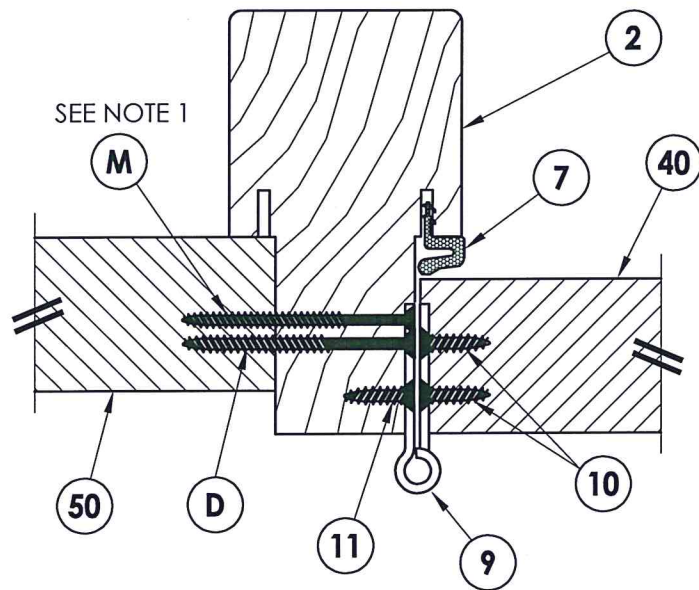
R:\Clients\Steves and Sons - Permanent\B - Texas Dept of Ins\Hinged Doors-Steel\DR 433 Opaque Steel Doors\C - Drawings\TX-4637.dwg, 3-5



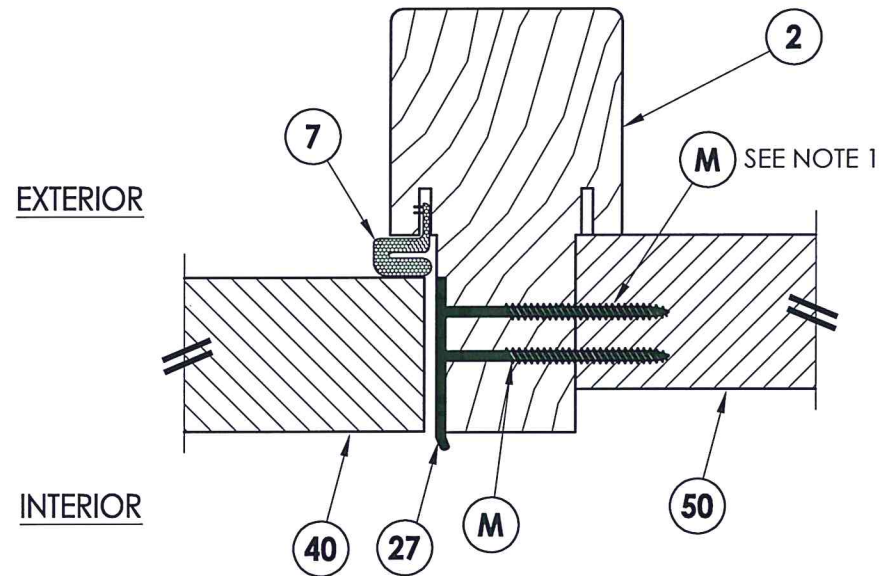
1 HORIZONTAL CROSS SECTION
5 Inswing shown - outswing also approved



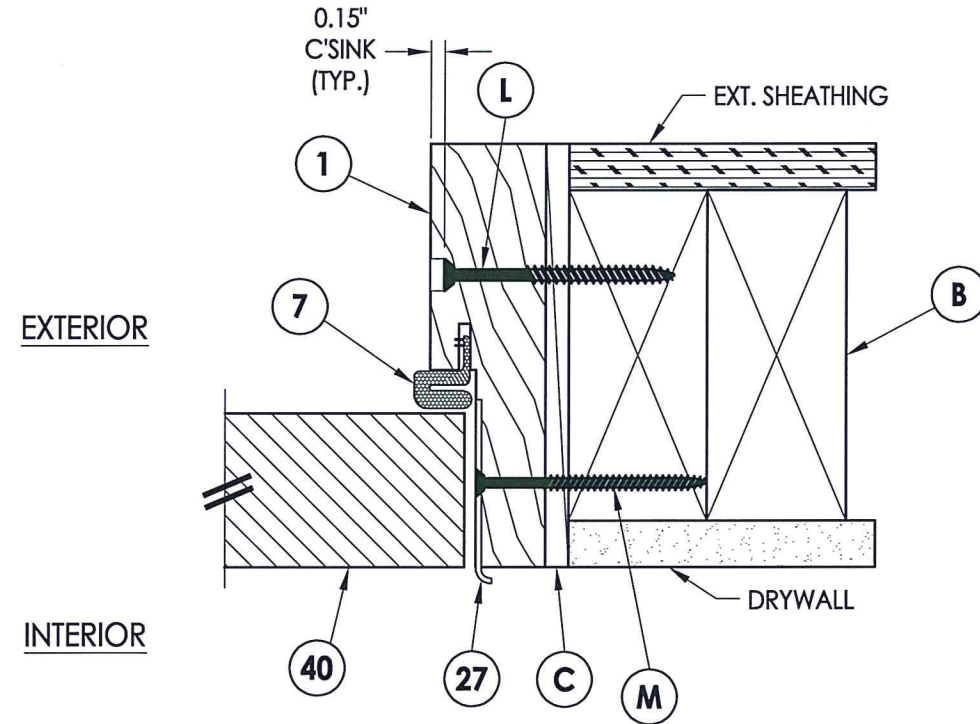
2 HORIZONTAL CROSS SECTION
5 Inswing shown - outswing also approved



3 HORIZONTAL CROSS SECTION
5 Inswing shown - outswing also approved



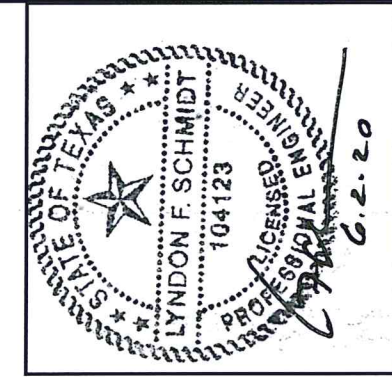
4 HORIZONTAL CROSS SECTION
5 Inswing shown - outswing also approved



5 HORIZONTAL CROSS SECTION
5 Inswing shown - outswing also approved

NOTE:

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



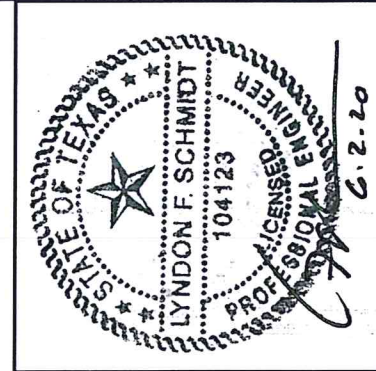
Documents Prepared By: Lyndon F. Schmidt, P.E.
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PRODUCT: STEVES AND SONS
 STEEL DOOR
 PART OR ASSEMBLY:
 HORIZONTAL CROSS SECTIONS

NO.	DATE	DESCRIPTION	LFS	BY
1	6/02/20	UPDATE TO 2018 IBC/IRC CODE		

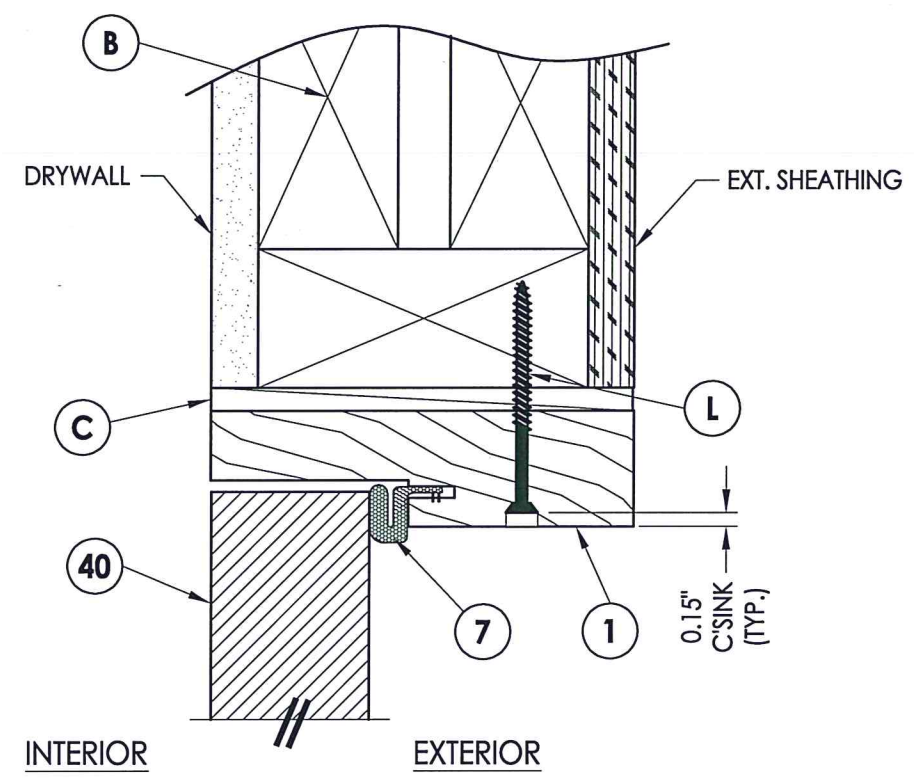
DATE: 9/14/16
 SCALE: N.T.S.
 DWG. BY: JK
 CHK. BY: LFS
 DRAWING NO.: TX-4637
 SHEET 5 of 10



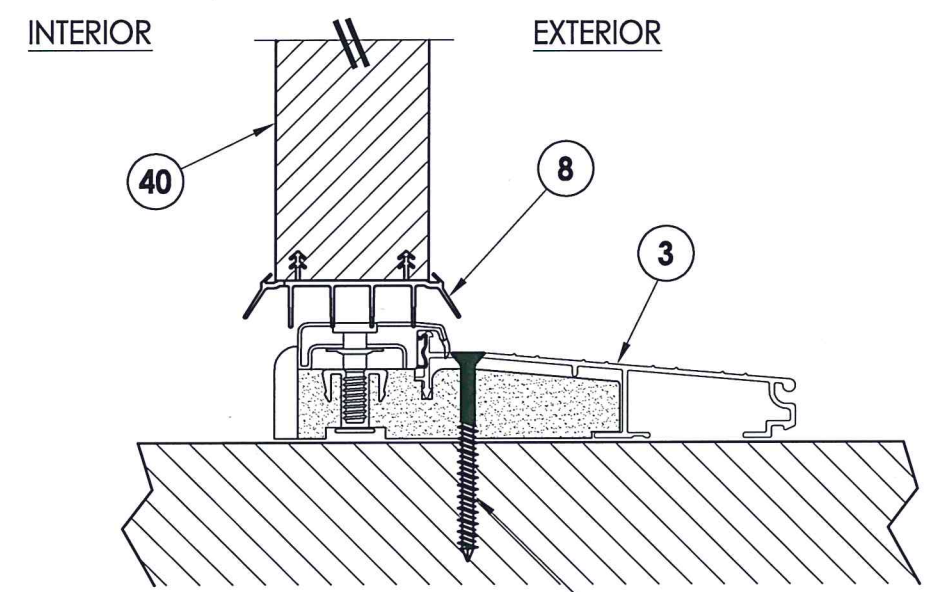
Documents Prepared By: Lyndon F. Schmidt, P.E.
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TEXAS BOARD OF PROFESSIONAL ENGINEERS
CERTIFICATE OF REGISTRATION # F-11852



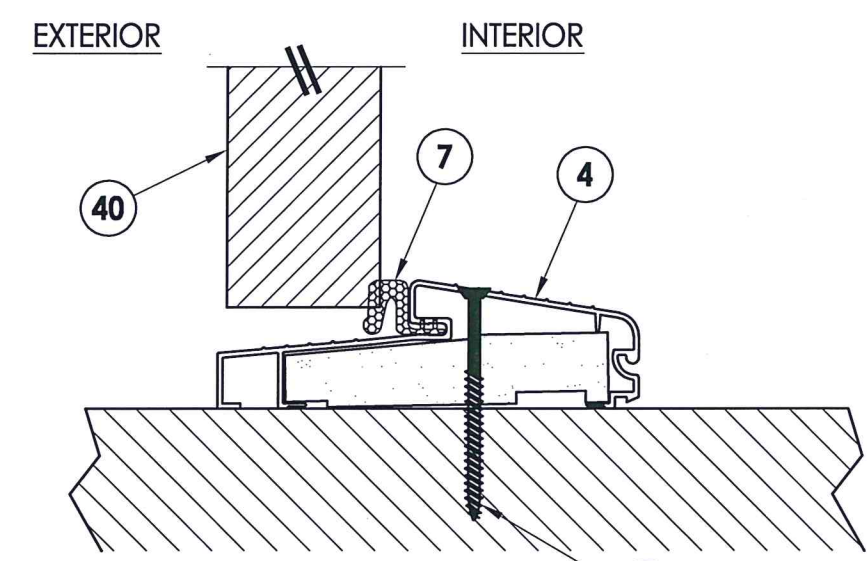
1 VERTICAL CROSS SECTION
6 Inswing shown - outswing also approved



NOTE: SILL ANCHOR NOT REQUIRED FOR SINGLE (X) CONFIGURATION

J WOOD
P CONCRETE

2 VERTICAL CROSS SECTION
6 Inswing configuration



NOTE: SILL ANCHOR NOT REQUIRED FOR SINGLE (X) CONFIGURATION

J WOOD
P CONCRETE

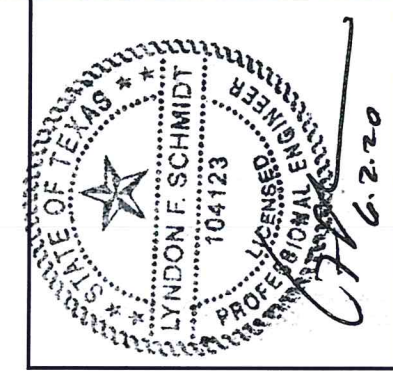
3 VERTICAL CROSS SECTION
6 Outswing configuration

PRODUCT: STEVES AND SONS STEEL DOOR

PART OR ASSEMBLY: VERTICAL CROSS SECTIONS

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1	6/02/20	UPDATE TO 2018 IBC/IRC CODE	LFS	

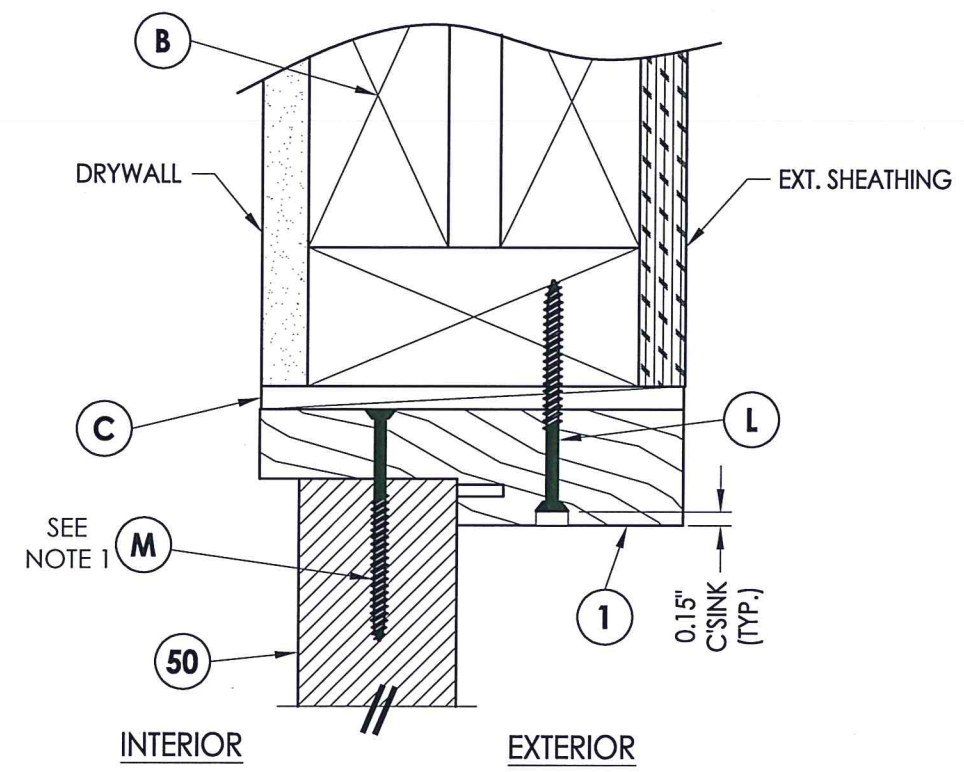
DATE: 9/14/16
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: TX-4637
SHEET 6 of 10



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TEXAS P.E. #104123

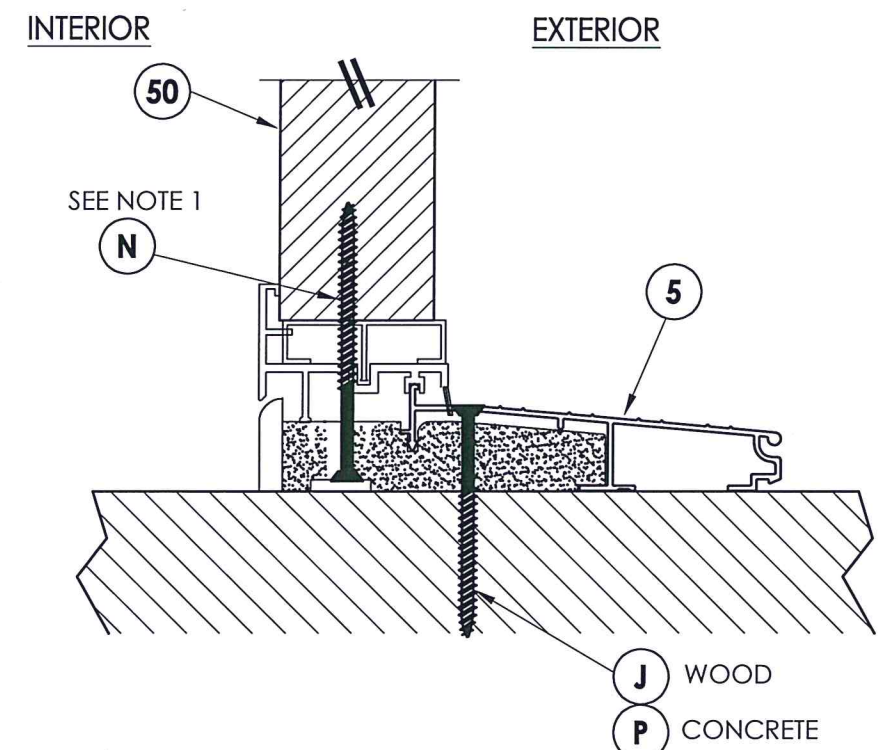
RW BUILDING CONSULTANTS, INC.
P.O. Box 230 Valrico FL 33595
Phone No.: 813.659.9197

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

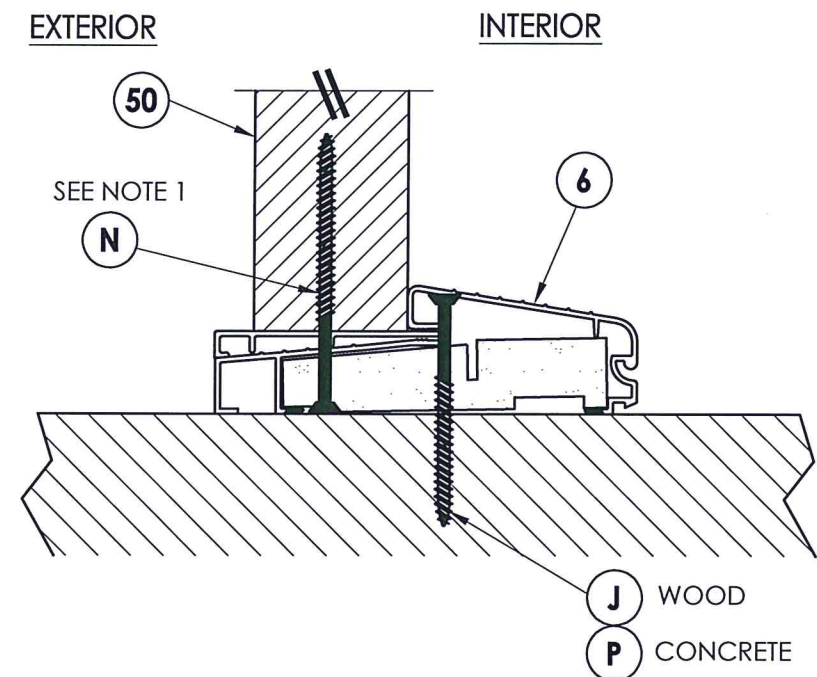


NOTE:
1. Sidelite ass'y fasteners located 3" from each end plus 1 more located 6" from mullion (3 screws total per head/sill).

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

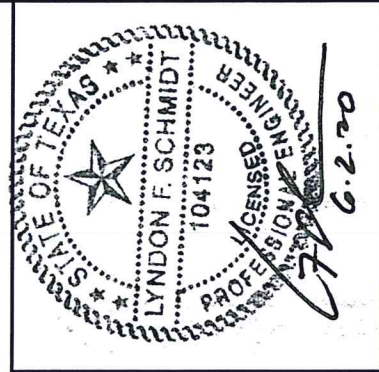


2 **VERTICAL CROSS SECTION**
7 Inswing configuration



3 **VERTICAL CROSS SECTION**
7 Outswing configuration

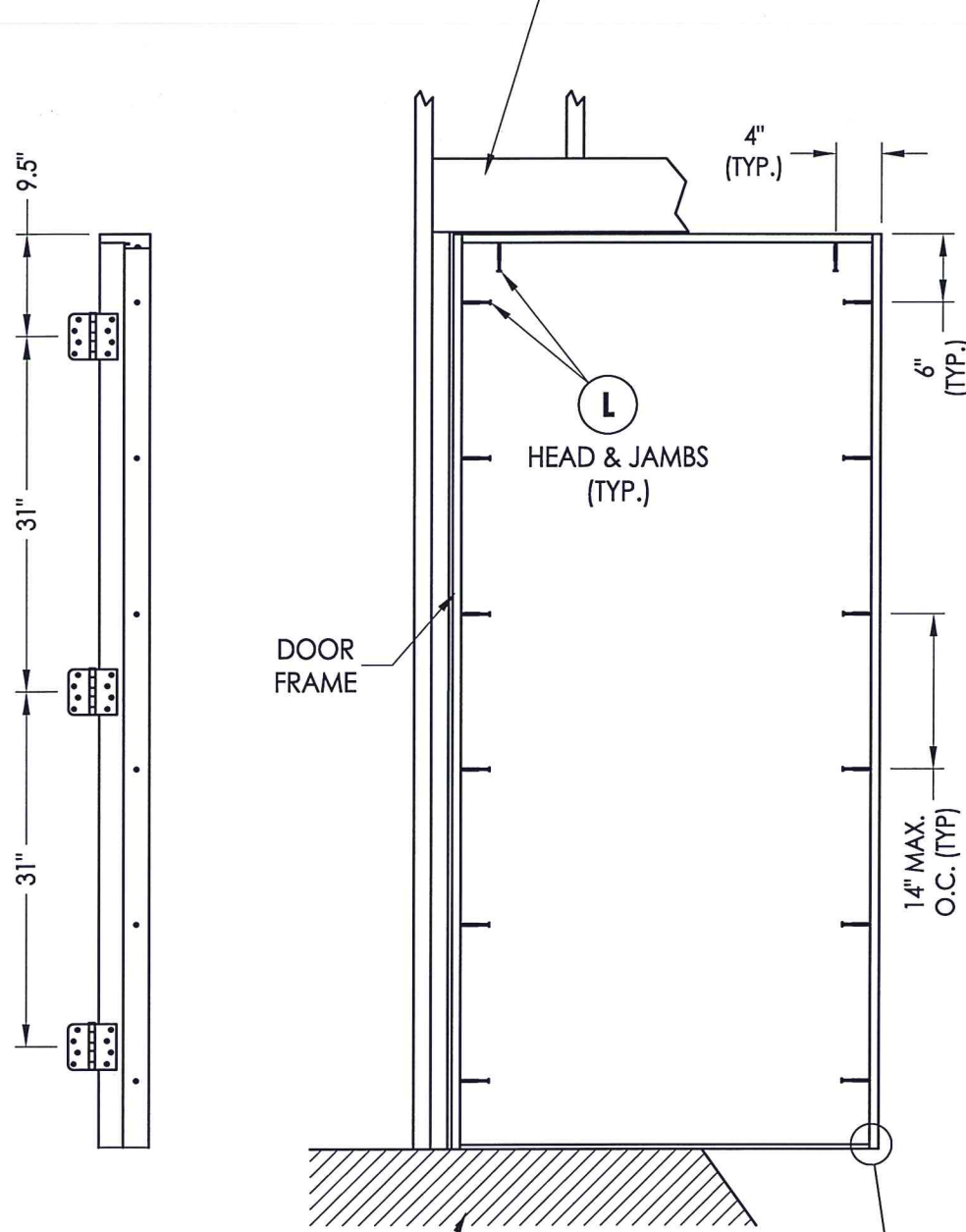
PRODUCT: STEVES AND SONS STEEL DOOR		PART OR ASSEMBLY: VERTICAL CROSS SECTIONS	
NO.	DATE	DESCRIPTION	BY
1	6/02/20	UPDATE TO 2018 IBC/IRC CODE	LFS
			REVISIONS
DATE: 9/14/16			
SCALE: N.T.S.			
DWG. BY: JK			
CHK. BY: LFS			
DRAWING NO.: TX-4637			
SHEET 7 OF 10			



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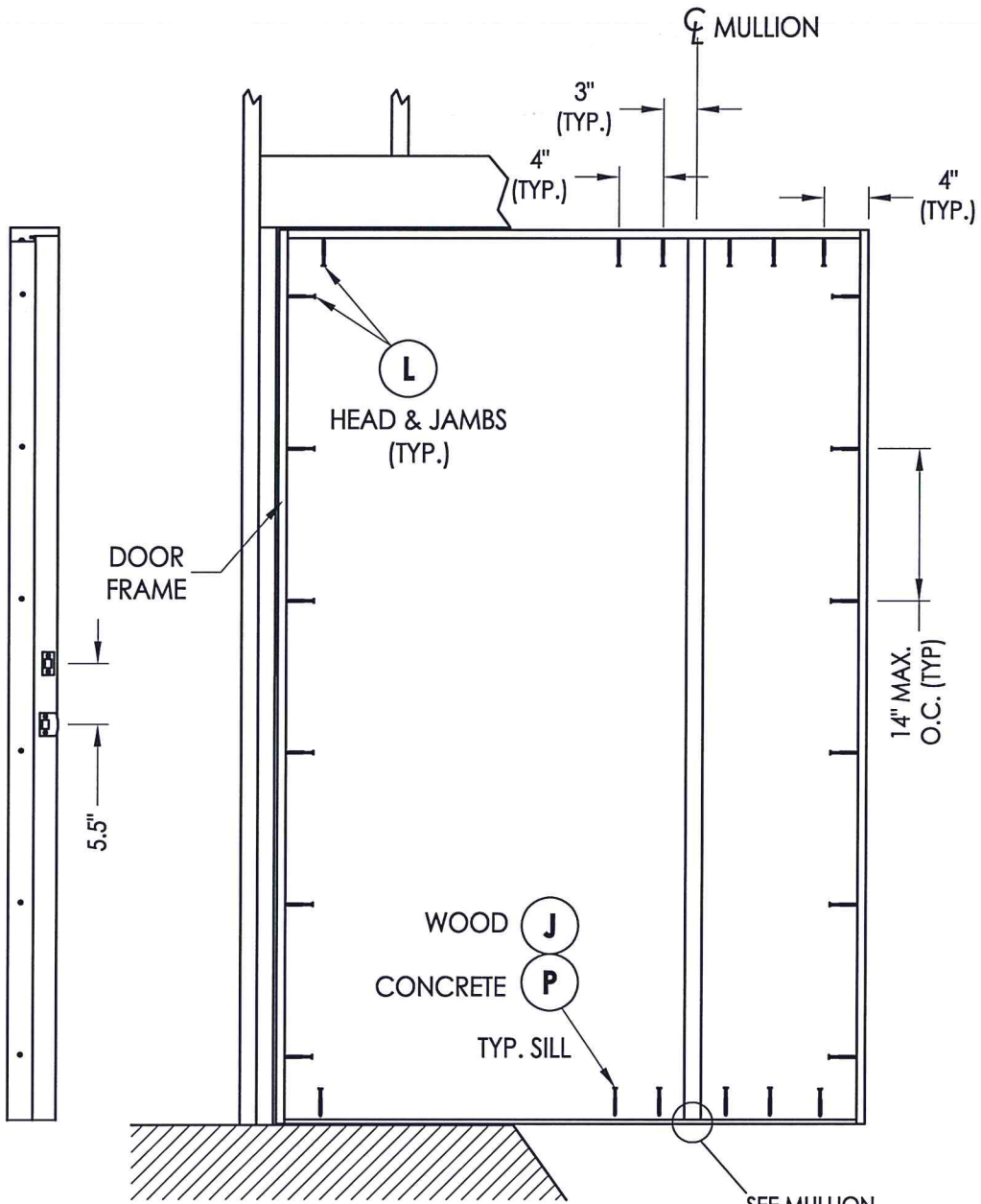
2X FRAMING TO BE DESIGNED BY
THE ENGINEER OR ARCHITECT OF
RECORD (TYP.)



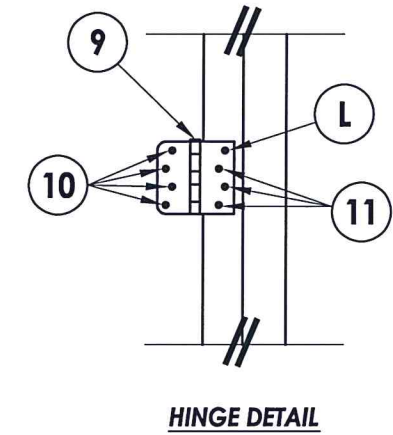
HINGE JAMB

FRAME ANCHORING
X

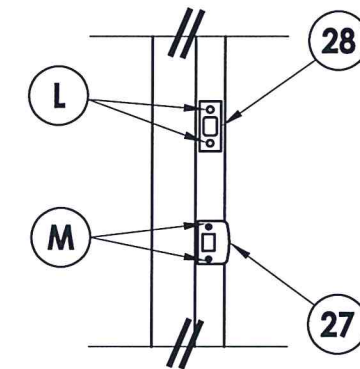
STRIKE JAMB



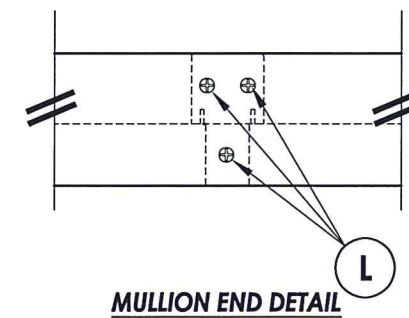
FRAME ANCHORING
XO / OX



HINGE DETAIL



LATCH & DEADBOLT DETAIL



MULLION END DETAIL

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

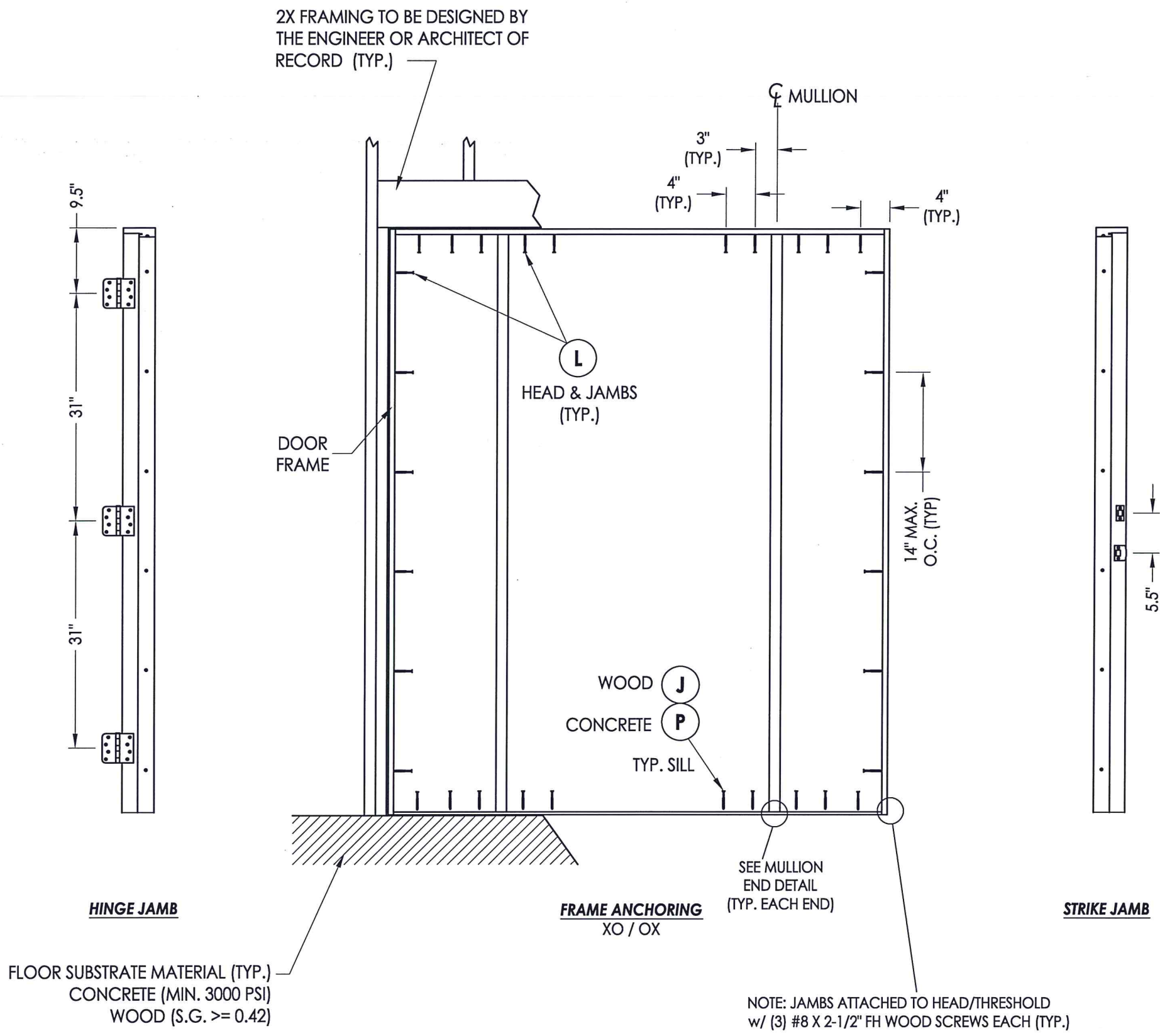
NOTE: JAMBS ATTACHED TO HEAD/THRESHOLD
w/ (3) #8 X 2-1/2" FH WOOD SCREWS EACH (TYP.)

PRODUCT: STEVES AND SONS
STEEL DOOR
PART OR ASSEMBLY:
FRAME ANCHORING

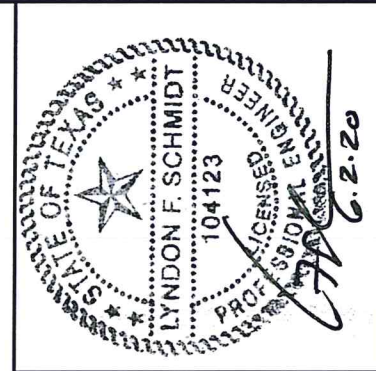
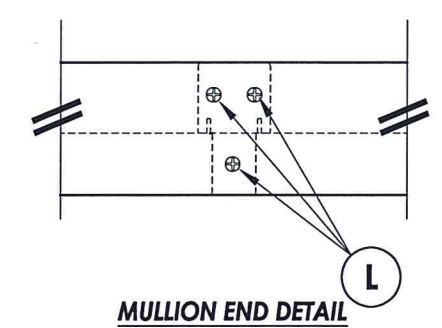
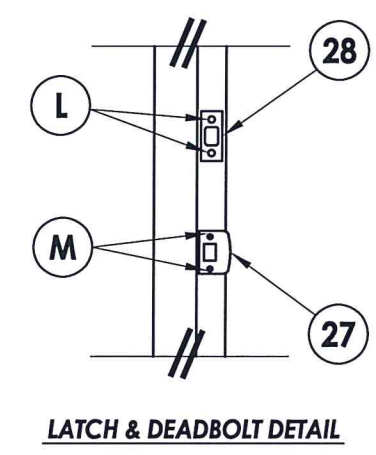
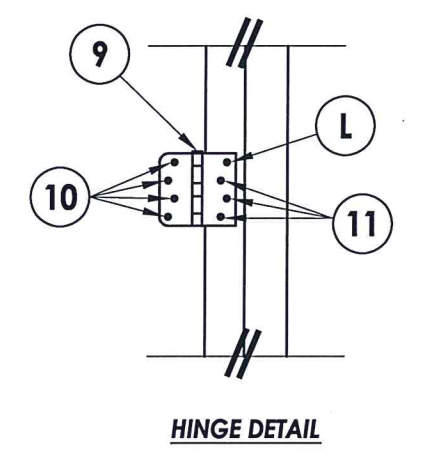
NO.	DATE	BY	REVISIONS
1	6/02/20	LFS	UPDATE TO 2018 IBC/IRC CODE

DATE: 9/14/16
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: TX-4637
SHEET 8 OF 10

R:\Clients\Steves and Sons - Permanent\B - Texas Dept of Ins\Hinged Doors-Steel\DR 433 Opaque Steel Doors\C - Drawings\TX-4637.dwg, 3-9



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



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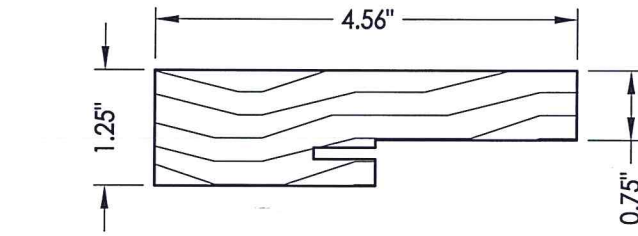
PRODUCT: STEVES AND SONS STEEL DOOR
 PART OR ASSEMBLY: FRAME ANCHORING

NO.	DATE	REVISIONS
1	6/02/20	UPDATE TO 2018 IBC/IRC CODE
		LFS
		BY

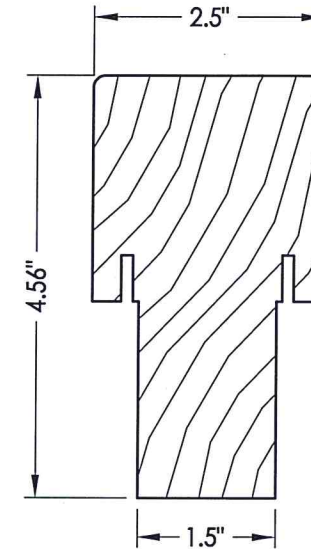
DATE: 9/14/16
 SCALE: N.T.S.
 DWG. BY: JK
 CHK. BY: LFS
 DRAWING NO.: TX-4637
 SHEET 9 OF 10

BILL OF MATERIALS

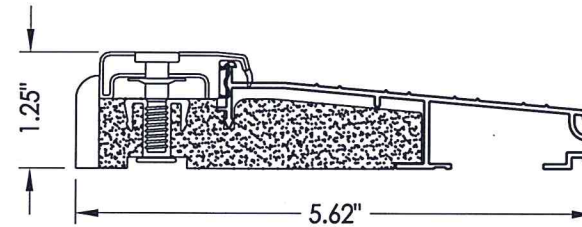
ITEM #	DESCRIPTION	MATERIAL
B	2X FRAMING (SG >= 0.42)	WOOD
C	1/4" MAX. SHIM SPACE	-
J	#10 X 3" PFH WOOD SCREW	STEEL
L	#10 X 2-1/2" PFH WOOD SCREW	STEEL
M	#8 X 2-1/2" PFH WOOD SCREW	STEEL
N	#8 X 3" PFH WOOD SCREW	STEEL
P	1/4" PFH ELCO OR ITW CONCRETE SCREW (1-3/4" MIN. EMB.)	STEEL
1	JAMB - FINGER JOINT 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	-



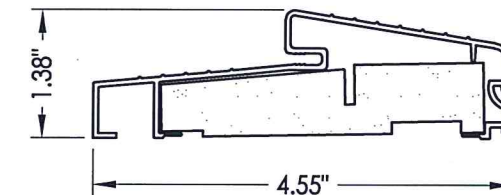
1 FINGER JOINT PINE JAMB



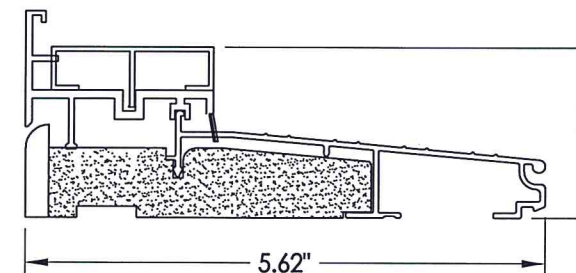
2 MULLION



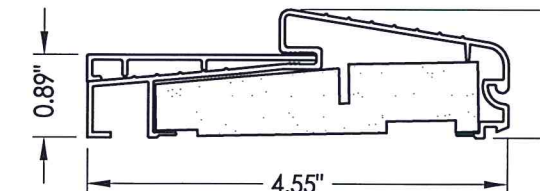
3 INSWING THRESHOLD AFco



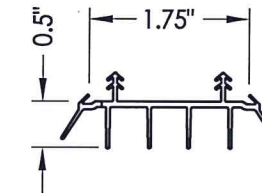
4 OUTSWING THRESHOLD AFco



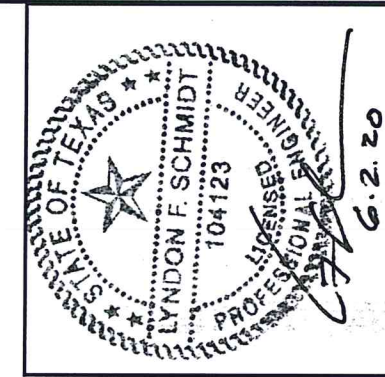
5 INSWING THRESHOLD w/ SIDELITE ADAPTER



6 OUTSWING THRESHOLD w/ SIDELITE ADAPTER



8 SWEEP



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

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PRODUCT: STEVES AND SONS
STEEL DOOR

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

NO.	DATE	REVISIONS	LFS	BY
1	6/02/20	UPDATE TO 2018 IBC/IRC CODE	LFS	BY

DATE: 9/14/16

SCALE: N.T.S.

DWG. BY: JK

CHK. BY: LFS

DRAWING NO.: TX-4637

SHEET 10 of 10

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"