



6605 Flotilla Street  
City of Commerce  
CA 90040

## DKS SERIES 1800 STEEL COMMERCIAL SINGLE DOOR IN SWING / OUT SWING "IMPACT"

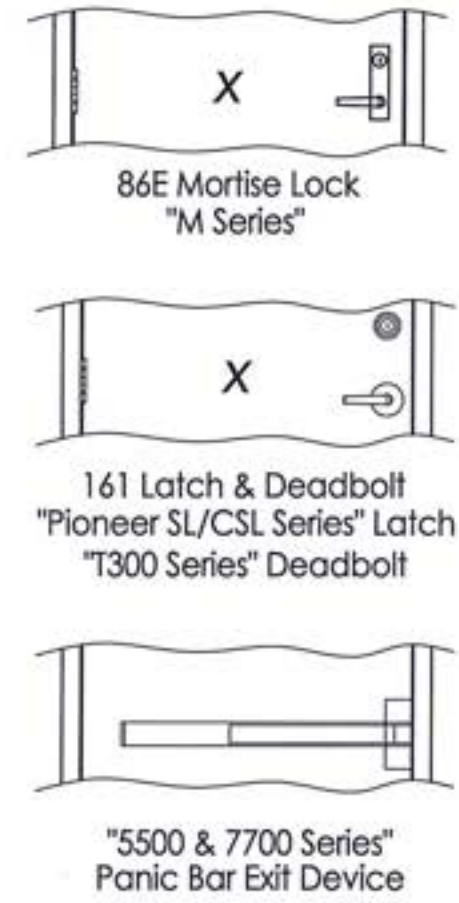
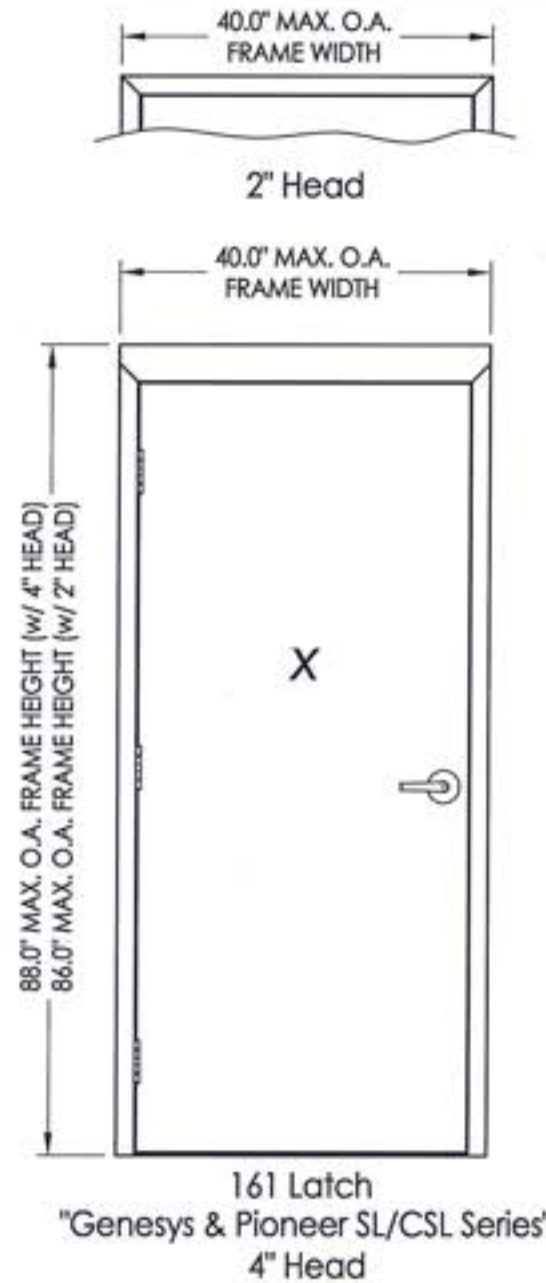
### EVALUATED FOR USE IN THE STATE OF TEXAS

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, the opaque door does not require impact protection while the sidelites are 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.

TABLE OF CONTENTS

SHEET#	DESCRIPTION
1	Typical elevation, design pressures & general notes
2	Door panel details
3	Horizontal cross sections
4	Vertical cross sections
5	Frame anchoring
6	Frame anchoring details
7	Components
8	Bill of materials and components



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

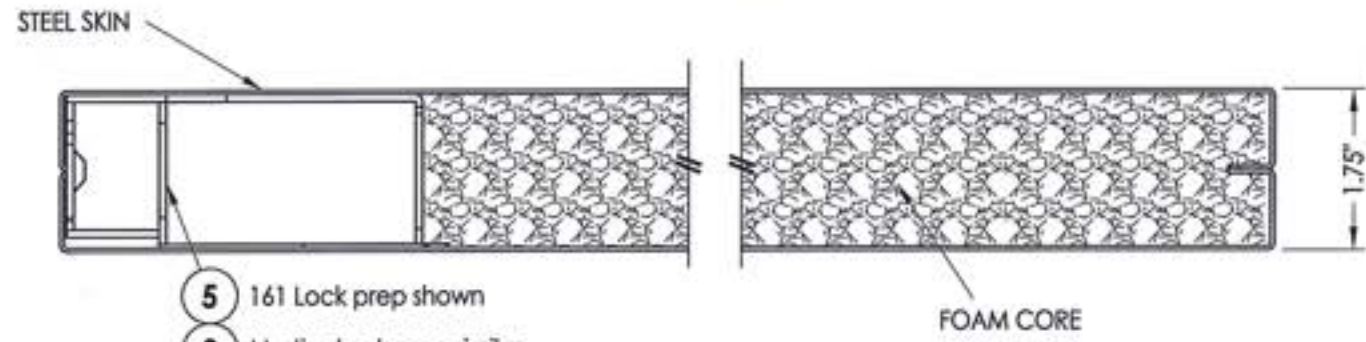
PRODUCT: CAL-ROYAL STEEL COMMERCIAL DOOR

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

MAX FRAME DIMENSION	LOCK TYPE	DESIGN PRESSURE (PSF) IN SWING		DESIGN PRESSURE (PSF) OUT SWING	
		POSITIVE	NEGATIVE	POSITIVE	NEGATIVE
40.0" x 88.0"	161 LATCH "Pioneer SL/CSL Series"	+55.0	-55.0	+55.0	-55.0
40.0" x 88.0"	161 LATCH & DEADBOLT "Pioneer SL/CSL & T300 Series"	+55.0	-55.0	+55.0	-55.0
40.0" x 88.0"	161 LATCH "Genesys Series"	+70.0	-70.0	+70.0	-70.0
40.0" x 88.0"	PANIC BAR EXIT DEVICE "5500 Series"	N/A	N/A	+50.0	-50.0
40.0" x 88.0"	PANIC BAR EXIT DEVICE "7700 Series"	N/A	N/A	+70.0	-70.0
40.0" x 88.0"	86E Mortise Lock "M Series"	+80.0	-80.0	+80.0	-80.0

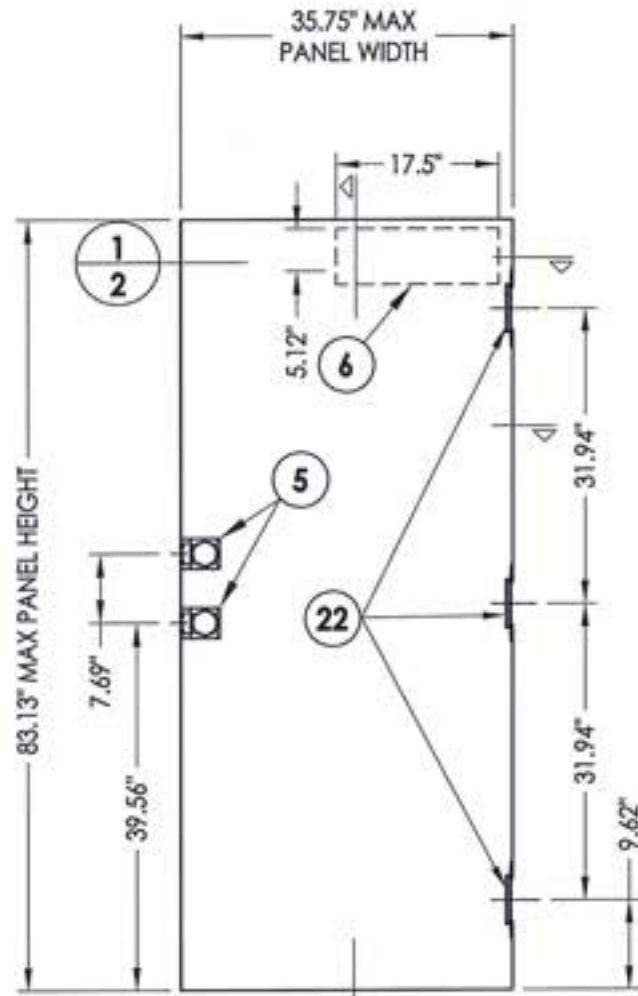
NO.	DATE	REVISIONS
1	7/02/20	UPDATE TO 2018 IBC/IRC CODE

DATE: 10/1/14  
SCALE: N.T.S.  
DWG. BY: JK  
CHK. BY: LFS  
DRAWING NO.: TX-4484  
SHEET 1 OF 8

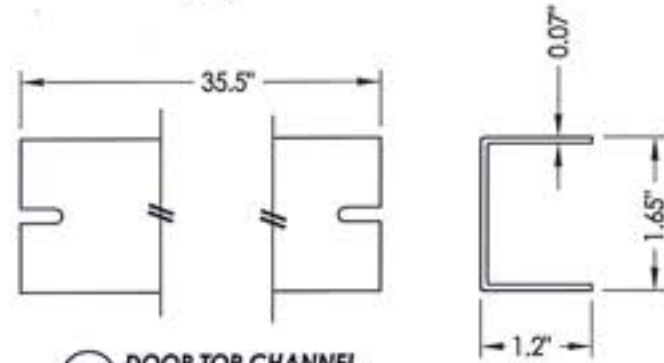


- 5 161 Lock prep shown
- 3 Mortise Lock prep similar

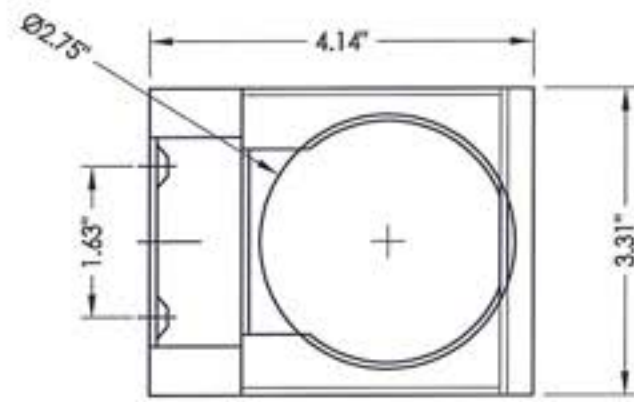
1 HORIZONTAL CROSS SECTION  
2



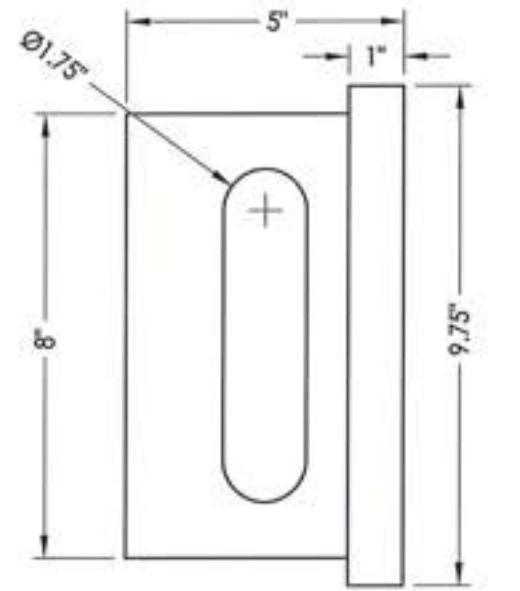
1 CAL-ROYAL DOOR PANEL  
2



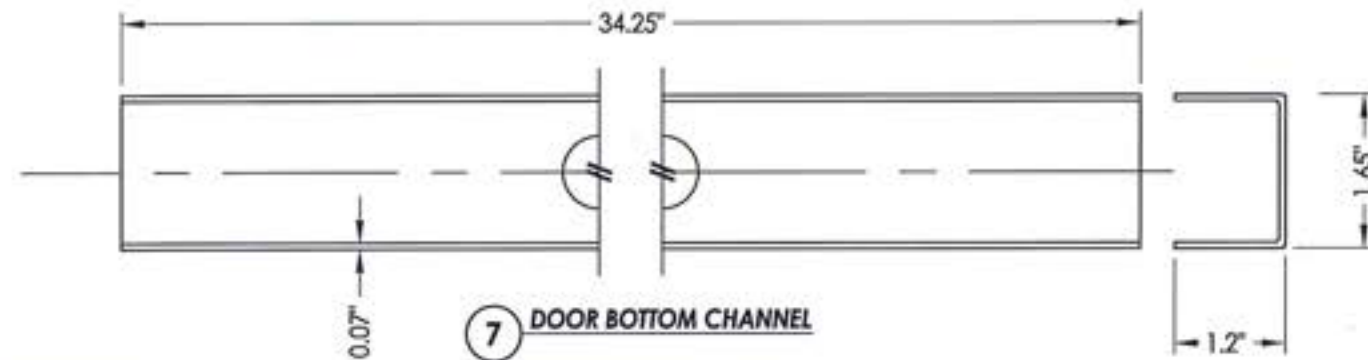
4 DOOR TOP CHANNEL



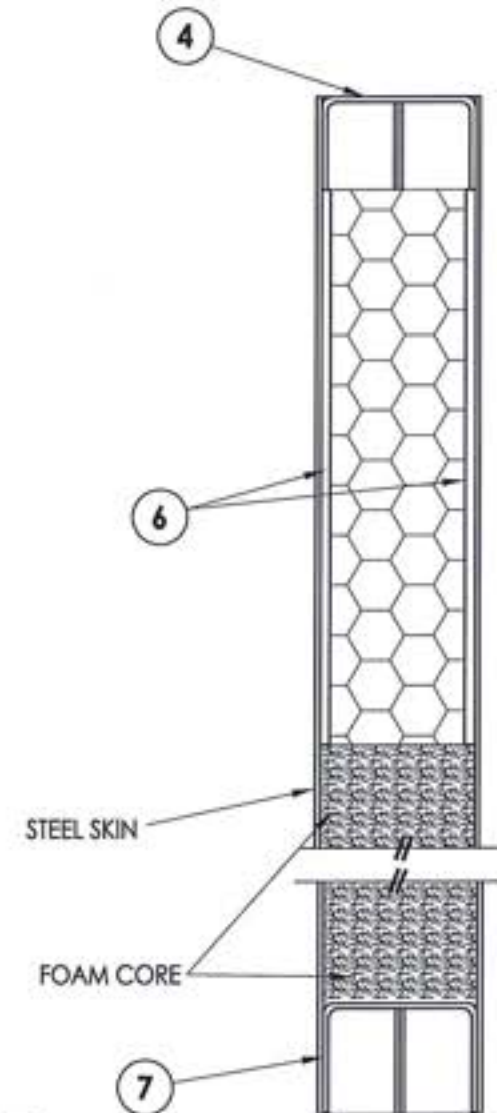
5 STEEL LOCK BOX REINFORCEMENT  
161 Lock prep only



3 STEEL LOCK BOX REINFORCEMENT  
Mortise Lock prep only



7 DOOR BOTTOM CHANNEL



2 VERTICAL CROSS SECTION  
2

STEEL DOOR SKIN (18 GA.): MIN. 0.045" THK.  
STEEL GRADE: ASTM A1008 GALV. STEEL (Fy = 33,000 PSI MIN.)  
CORE MATERIAL: EPS FOAM (POLYSTYRENE - 1.0 PCF MIN. DENSITY)



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CERTIFICATE OF REGISTRATION # F-11852

PRODUCT: CAL-ROYAL  
STEEL COMMERCIAL DOOR  
PART OR ASSEMBLY:  
DOOR PANEL DETAILS

NO.	DATE	REVISIONS
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		LFS
		BY

DATE: 10/1/14

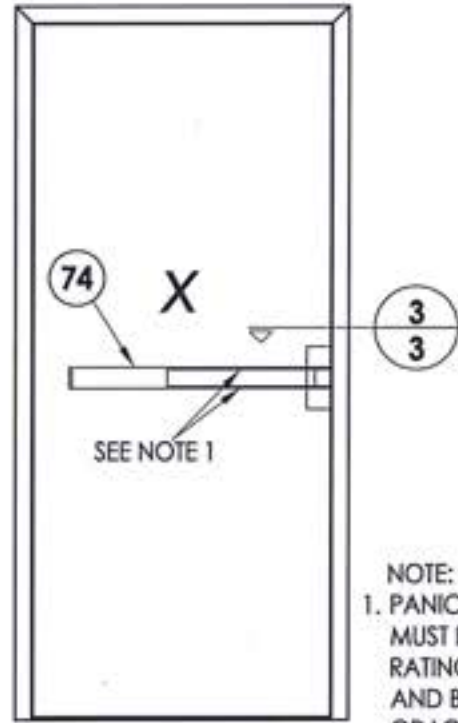
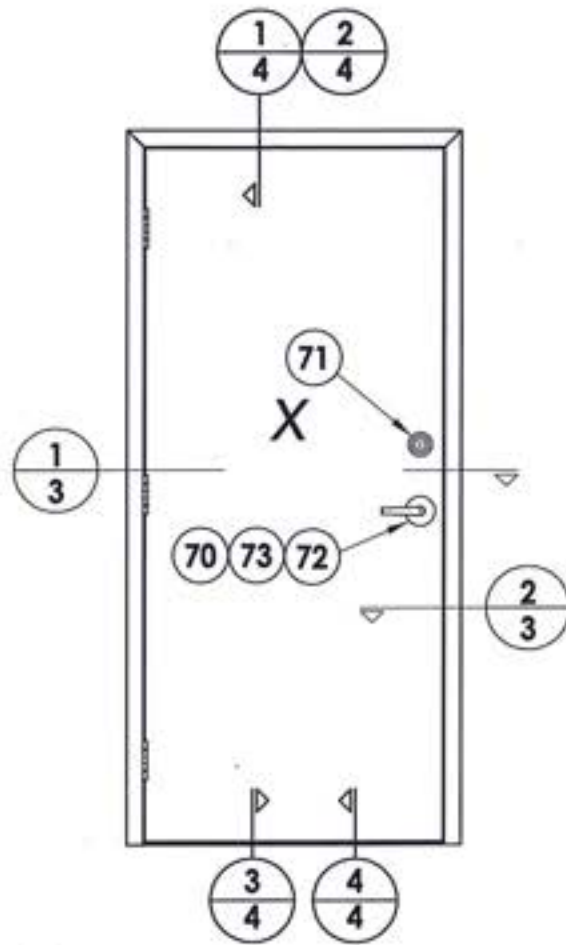
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DWG. BY: JK

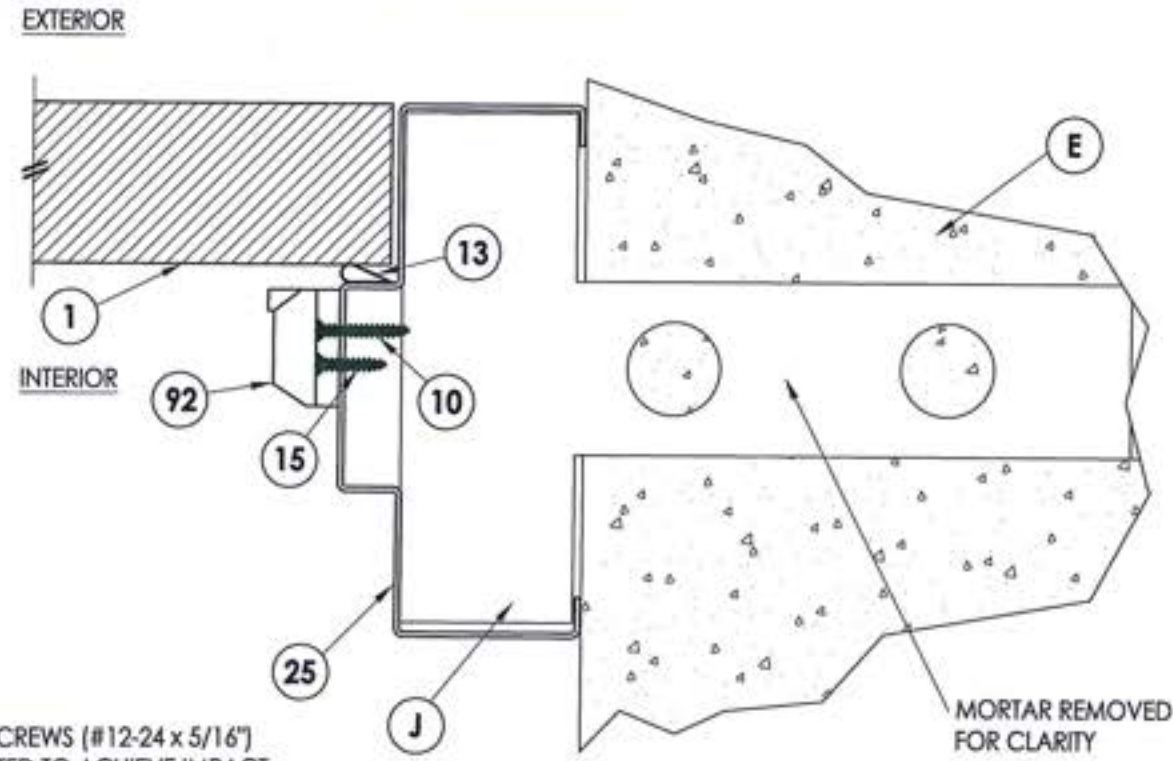
CHK. BY: LFS

DRAWING NO.: TX-4484

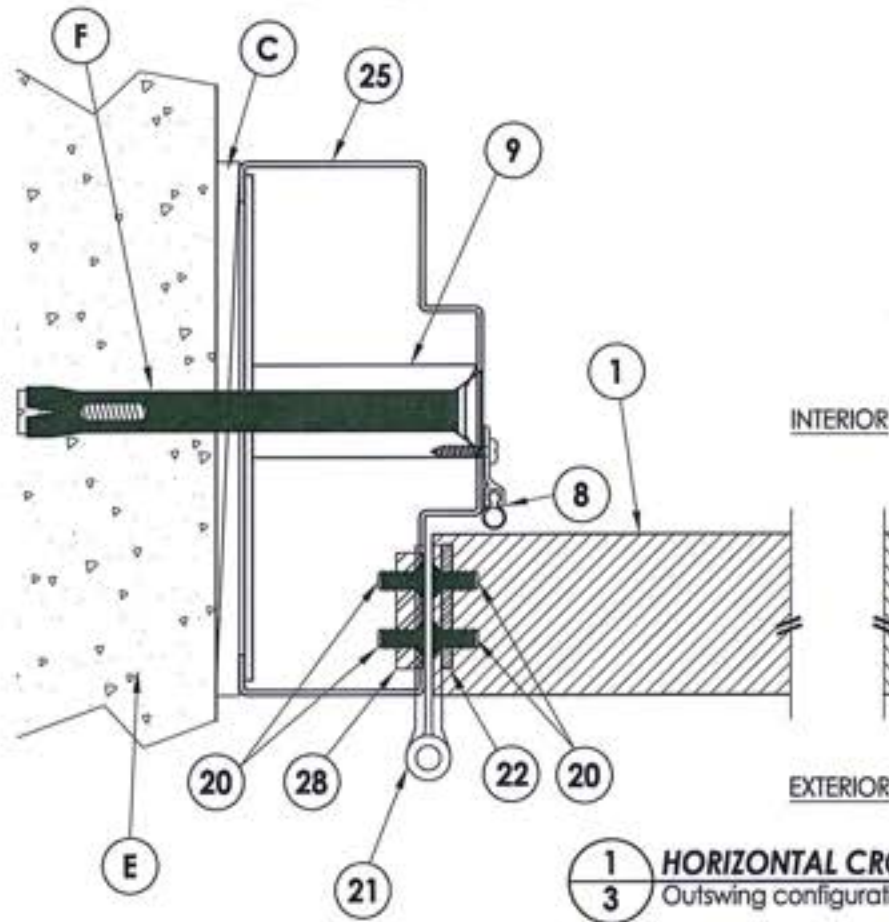
SHEET 2 OF 8



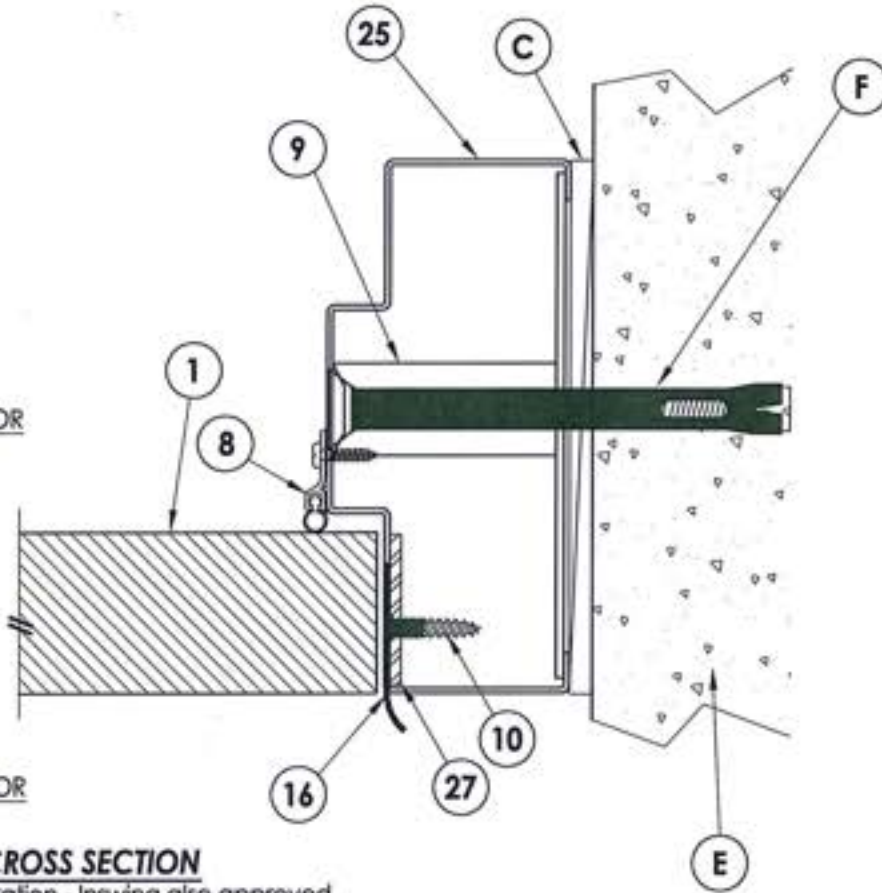
NOTE:  
 1. PANIC BAR SET SCREWS (#12-24 x 5/16")  
 MUST BE ACTIVATED TO ACHIEVE IMPACT  
 RATING. LOCATE ONE SCREW AT TOP  
 AND BOTTOM AT CENTER OF PUSH RAIL  
 OR LOCATE ONE SCREW AT EACH END OF BAR.



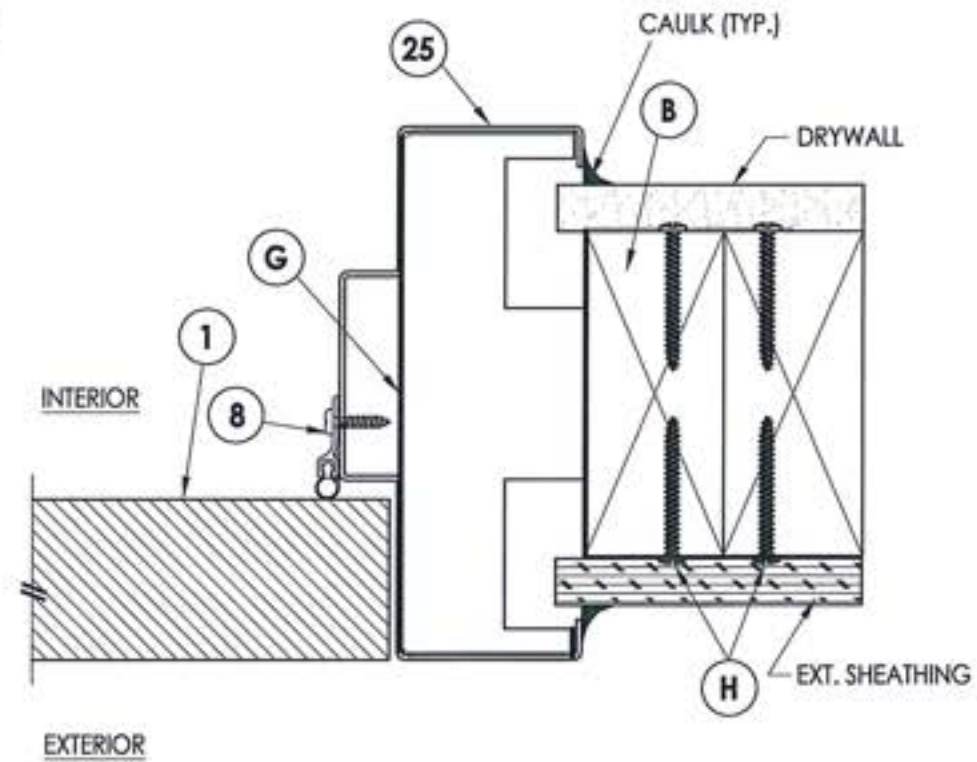
**3 HORIZONTAL CROSS SECTION**  
 3 Masonry Construction  
 Masonry "Tee" Anchor



**1 HORIZONTAL CROSS SECTION**  
 3 Outswing configuration - Inswing also approved



**2 HORIZONTAL CROSS SECTION**  
 3 2X Stud Construction  
 Wood Stud Anchor



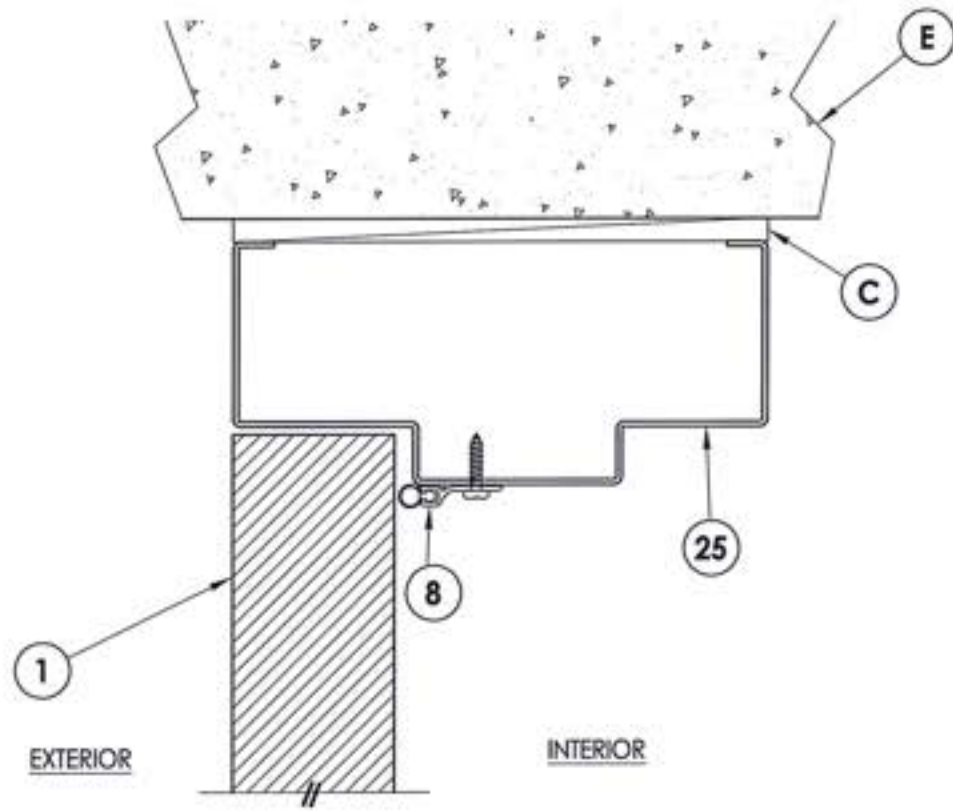
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 TEXAS P.E. #104123

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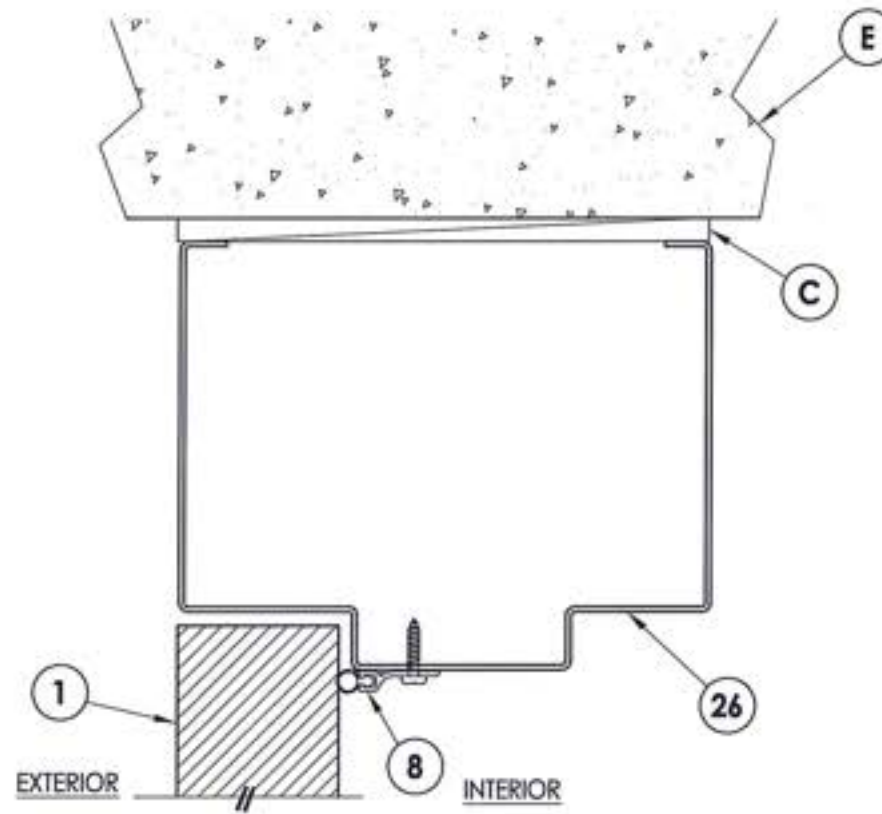
PRODUCT: CAL-ROYAL  
 STEEL COMMERCIAL DOOR  
 PART OR ASSEMBLY:  
 HORIZONTAL CROSS SECTIONS

NO.	DATE	DESCRIPTION	LFS	BY
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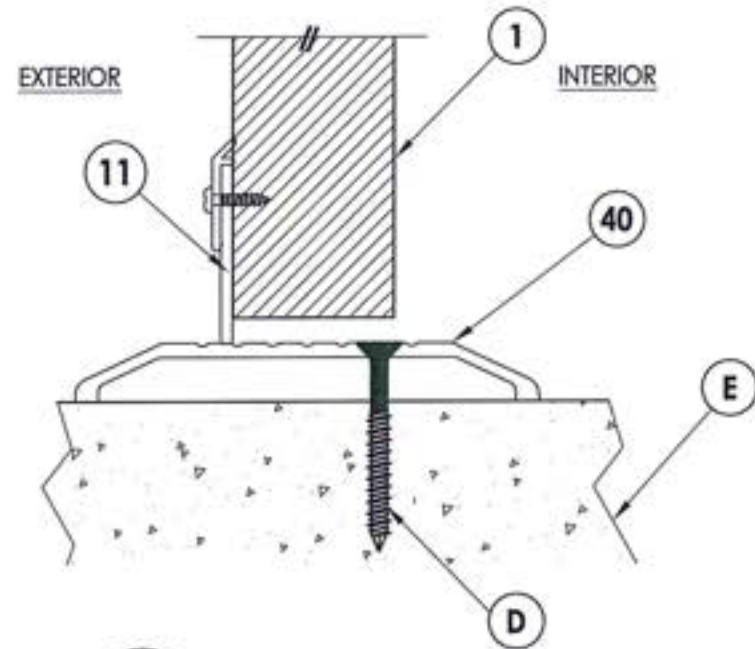
DATE: 10/1/14  
 SCALE: N.T.S.  
 DWG. BY: JK  
 CHK. BY: LFS  
 DRAWING NO.: TX-4484  
 SHEET 3 OF 8



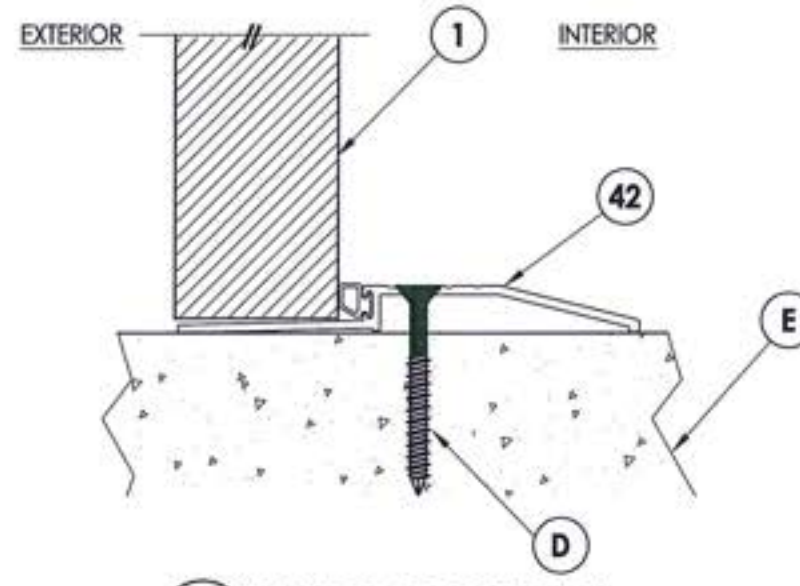
**1**  
**4** **VERTICAL CROSS SECTION**  
Outswing configuration - Inswing also approved



**2**  
**4** **VERTICAL CROSS SECTION**  
Outswing configuration - Inswing also approved



**3**  
**4** **VERTICAL CROSS SECTION**  
Inswing configuration



**4**  
**4** **VERTICAL CROSS SECTION**  
Outswing configuration



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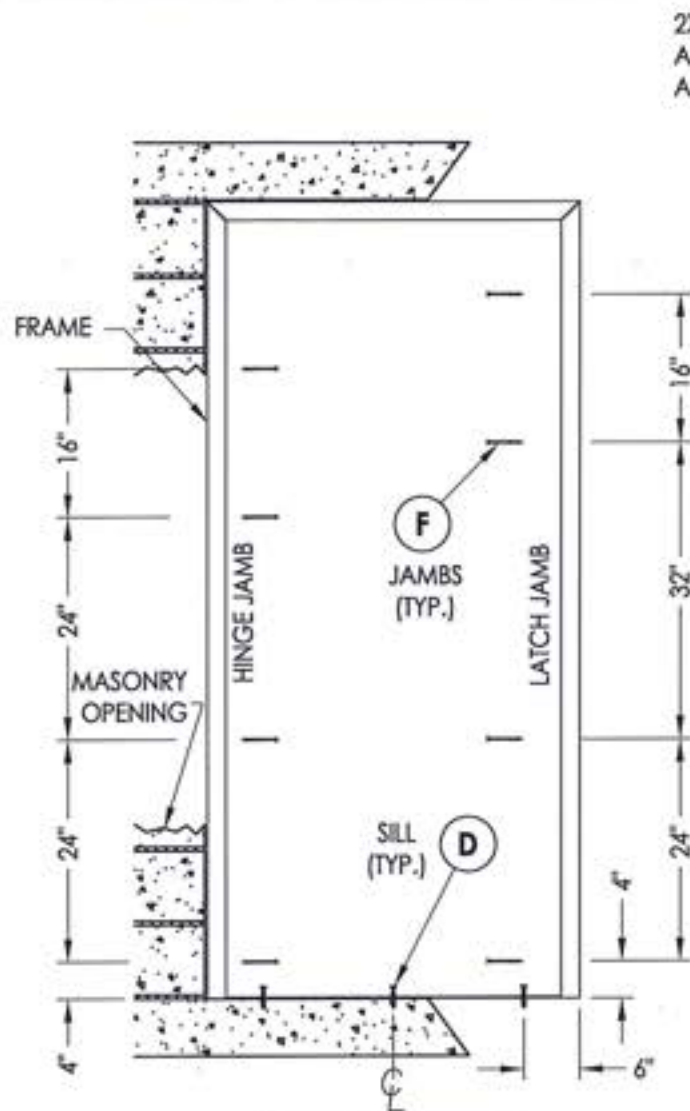
TEXAS BOARD OF PROFESSIONAL ENGINEERS  
CERTIFICATE OF REGISTRATION # F-11852

PRODUCT: CAL-ROYAL  
STEEL COMMERCIAL DOOR

PART OR ASSEMBLY:  
VERTICAL CROSS SECTIONS

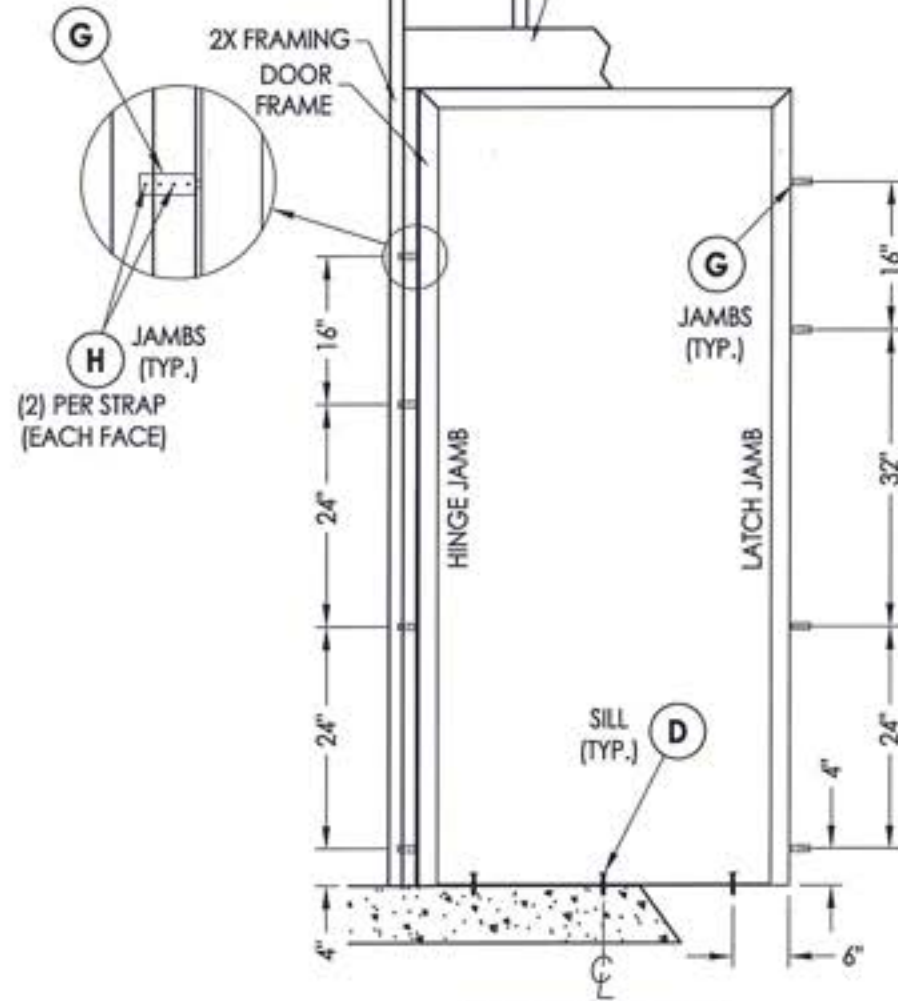
NO.	DATE	DESCRIPTION	BY
1	7/02/20	UPDATE TO 2018 IBC/IRC CODE	LFS

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SCALE: N.T.S.  
DWG. BY: JK  
CHK. BY: LFS  
DRAWING NO.: TX-4484  
SHEET 4 OF 8

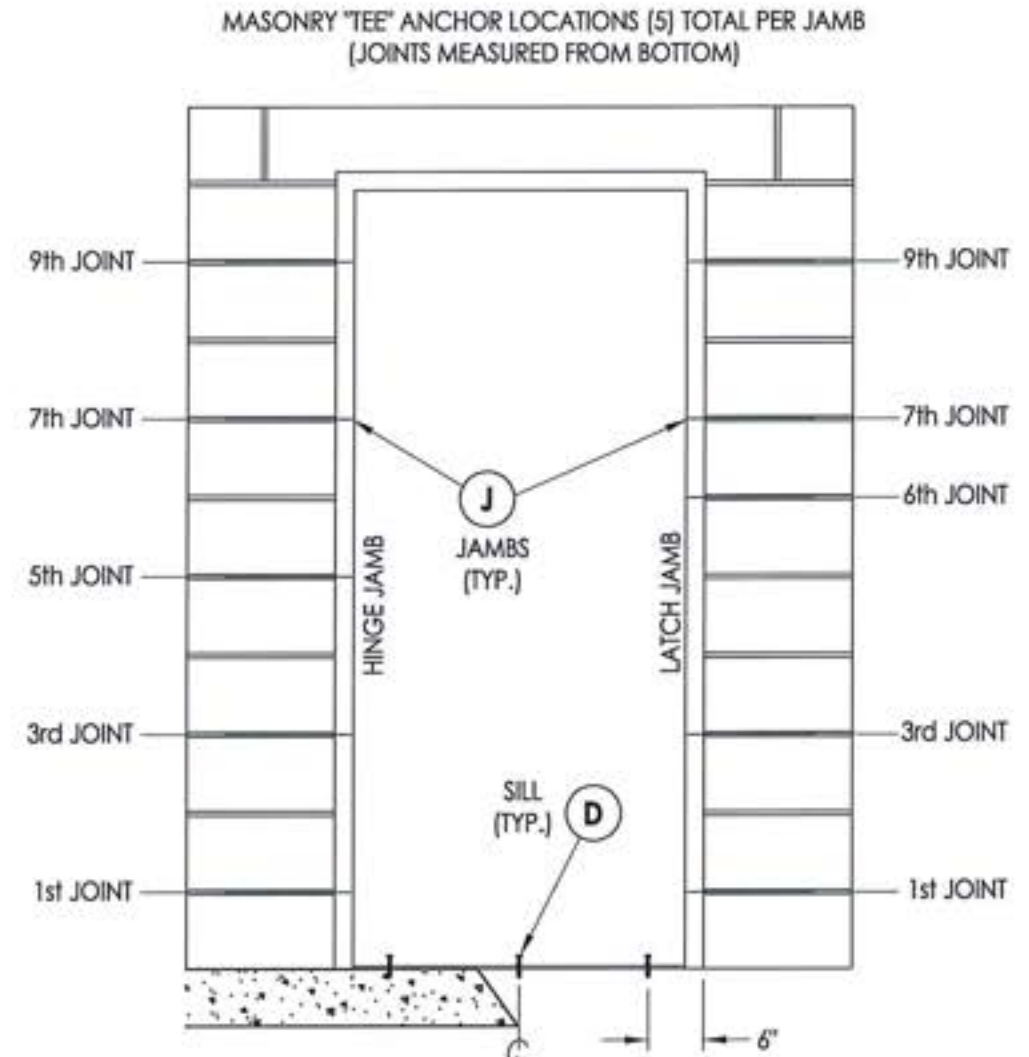


**FRAME ANCHORING**  
Masonry Construction  
Concrete Anchors

2X FRAMING TO BE DESIGNED BY THE ENGINEER OR ARCHITECT OF RECORD BASED ON WIND LOADS AND THE CLADDING BEING USED.



**FRAME ANCHORING**  
2X Stud Construction  
Strap Anchors



**FRAME ANCHORING**  
Masonry Construction  
Masonry Tee Anchors



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

PRODUCT: CAL-ROYAL STEEL COMMERCIAL DOOR

PART OR ASSEMBLY: FRAME ANCHORING

NO.	DATE	REVISIONS
1	7/02/20	UPDATE TO 2018 IBC/IRC CODE
		LFS
		BY

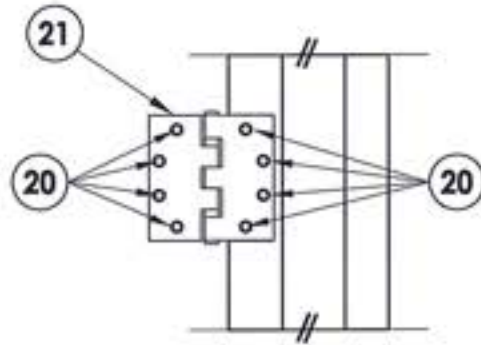
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SCALE: N.T.S.  
DWG. BY: JK  
CHK. BY: LFS  
DRAWING NO.: TX-4484  
SHEET 5 OF 8

**CONCRETE ANCHOR NOTES:**

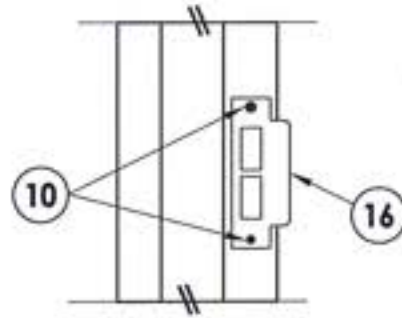
1. Substitution of equal concrete screws from a different supplier may have different edge distance and center distance requirements.
2. Concrete screw locations at the corners may be adjusted to maintain the minimum edge distance to mortar joints. If concrete screw locations noted as "MAX. ON CENTER" must be adjusted to maintain the minimum edge distance to mortar joints, additional concrete screws may be required to ensure the maximum on center dimension is not exceeded.
3. 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"	2-1/2"	4"
ELCO ULTRACON®	1/4"	1-3/4"	1"	4"
DYNABOLT SLEEVE ANCHOR	3/8"	1-1/2"	2-1/4"	4-1/2"

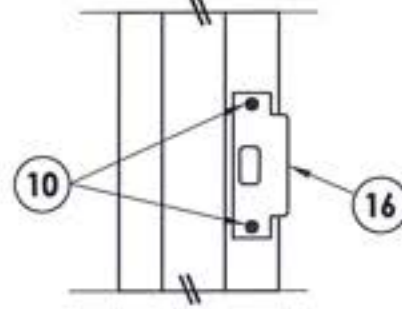
4. Embedment may be through 1-1/4" face shell of hollow block.



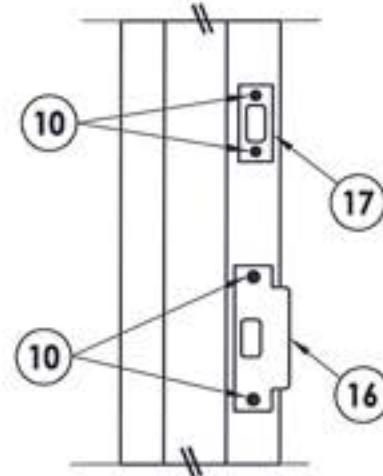
**HINGE DETAIL**



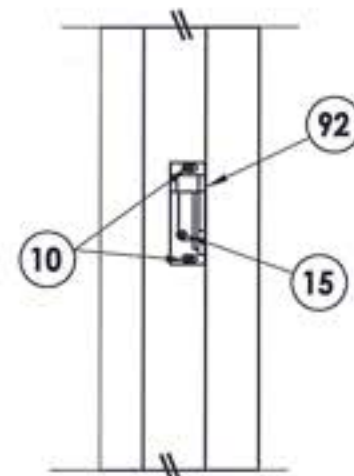
**LATCH DETAIL**  
Mortise Lock



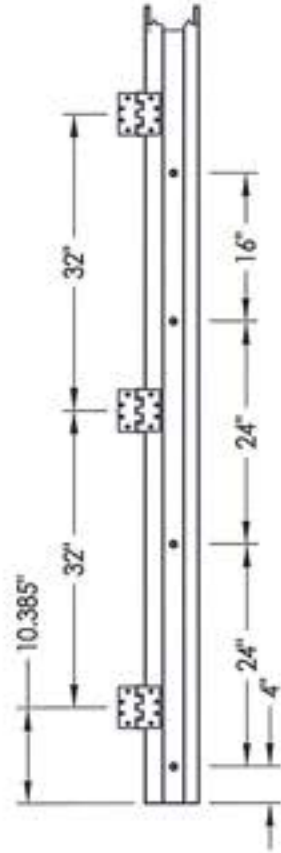
**LATCH DETAIL**  
161 Latch



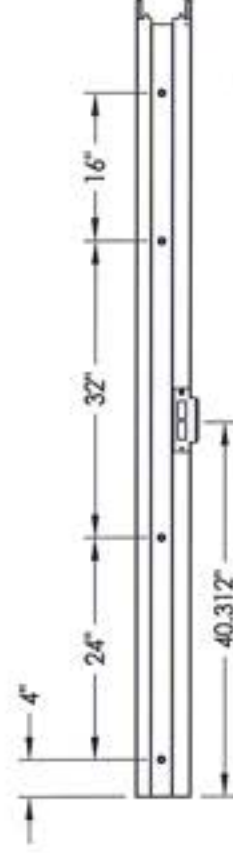
**LATCH & DEADBOLT DETAIL**  
161 Latch & Deadbolt



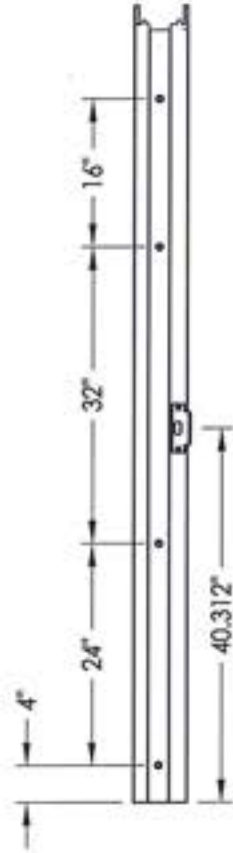
**LATCH DETAIL**  
Panic Bar



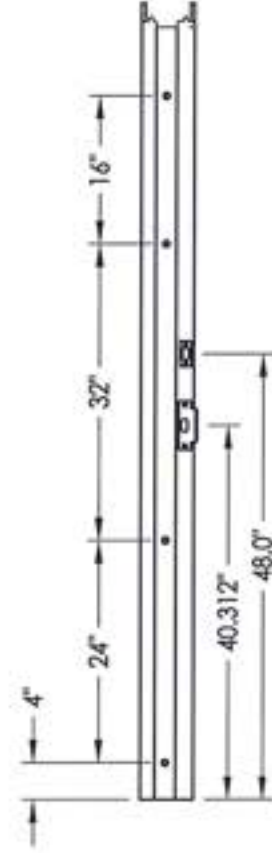
**HINGE JAMB**



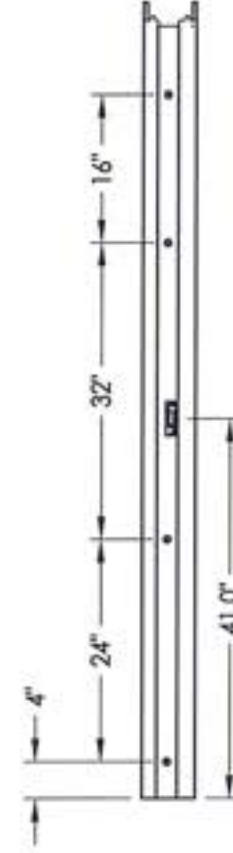
**STRIKE JAMB**  
Mortise Lock



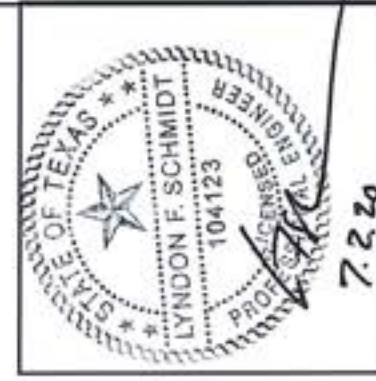
**STRIKE JAMB**  
161 Latch



**STRIKE JAMB**  
161 Latch & Deadbolt



**STRIKE JAMB**  
Panic Bar



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

PRODUCT: CAL-ROYAL  
STEEL COMMERCIAL DOOR

PART OR ASSEMBLY:  
FRAME ANCHORING  
DETAILS

NO.	DATE	REVISIONS
1	7/02/20	UPDATE TO 2018 IBC/IRC CODE
		LFS
		BY

DATE: 10/1/14

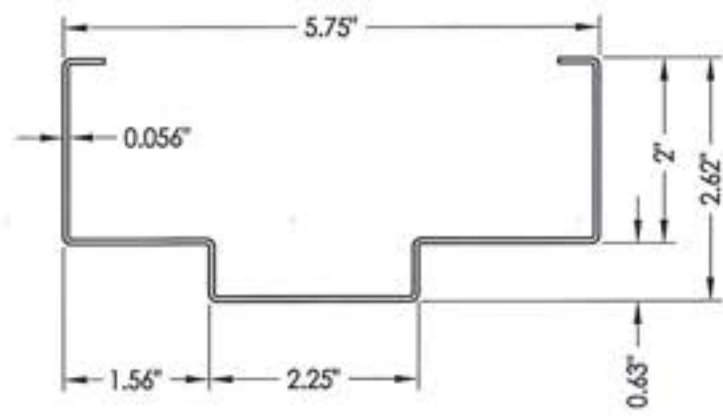
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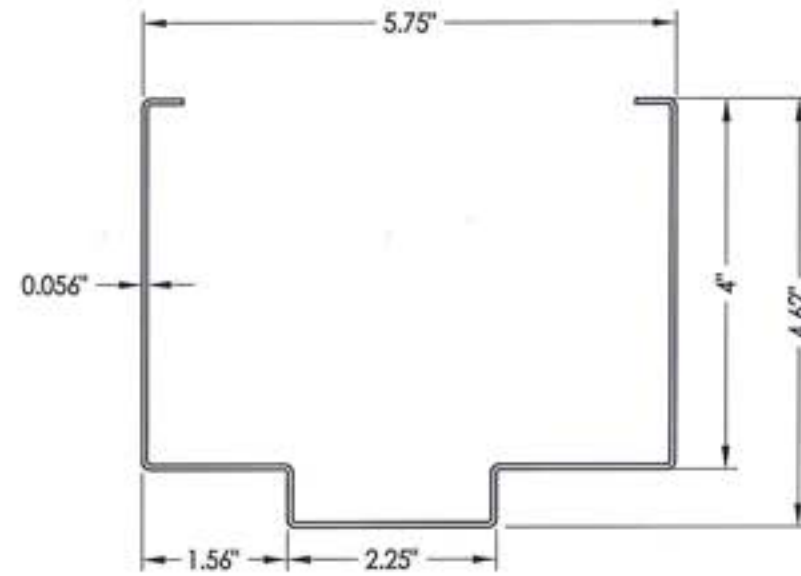
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DRAWING NO.: TX-4484

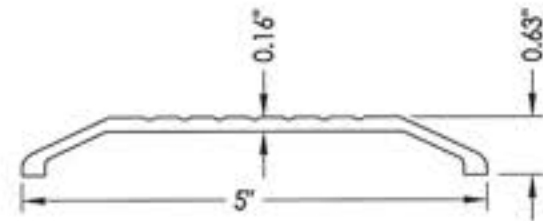
SHEET 6 OF 8



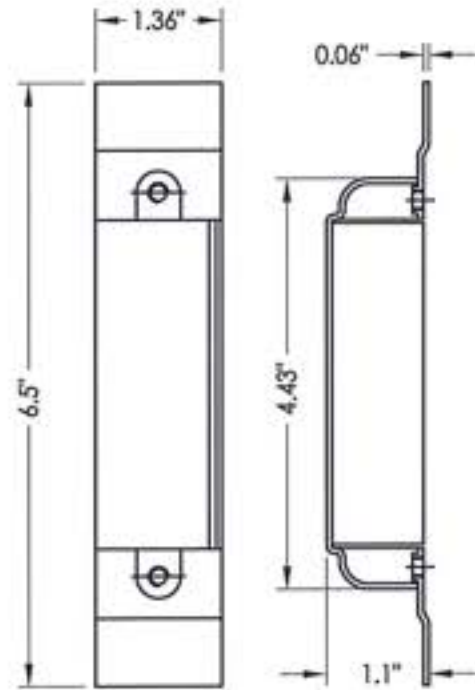
**26 HOLLOW METAL FRAME**  
2" HEAD



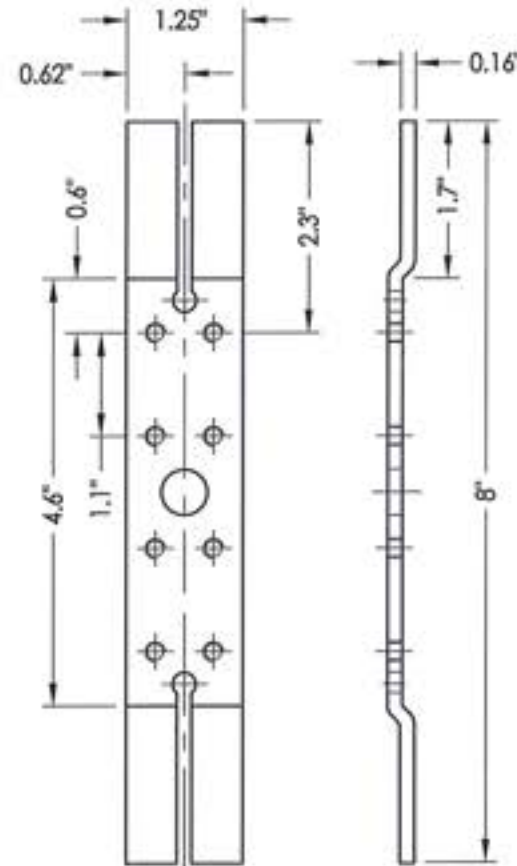
**26 HOLLOW METAL FRAME**  
4" HEAD



**40 THRESHOLD**  
Pemko 156



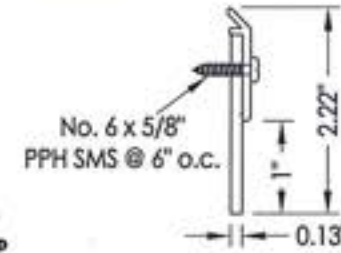
**30 DOOR LATCH REINFORCEMENT**  
Mortise Lock only



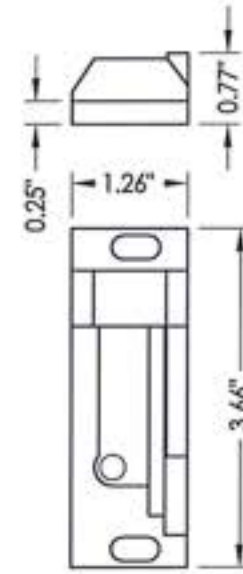
**22 DOOR HINGE REINFORCEMENT**



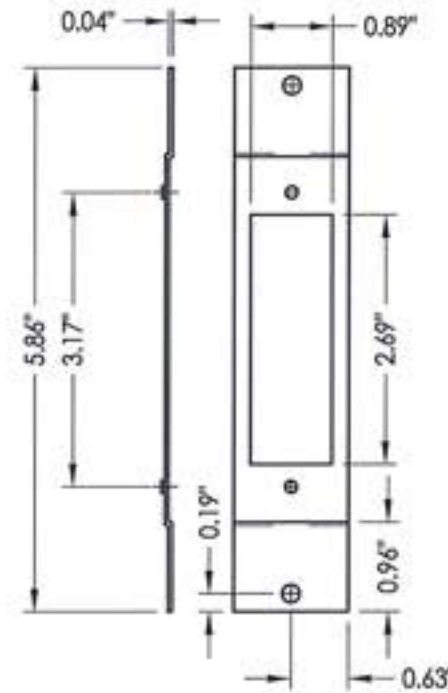
**8 WEATHERSTRIP**  
Pemko 303A



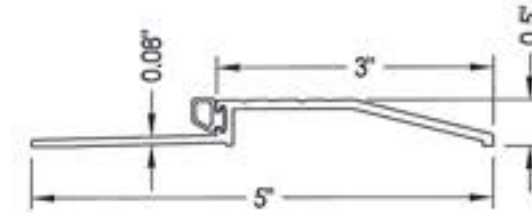
**11 DOOR SWEEP**  
Pemko 3151



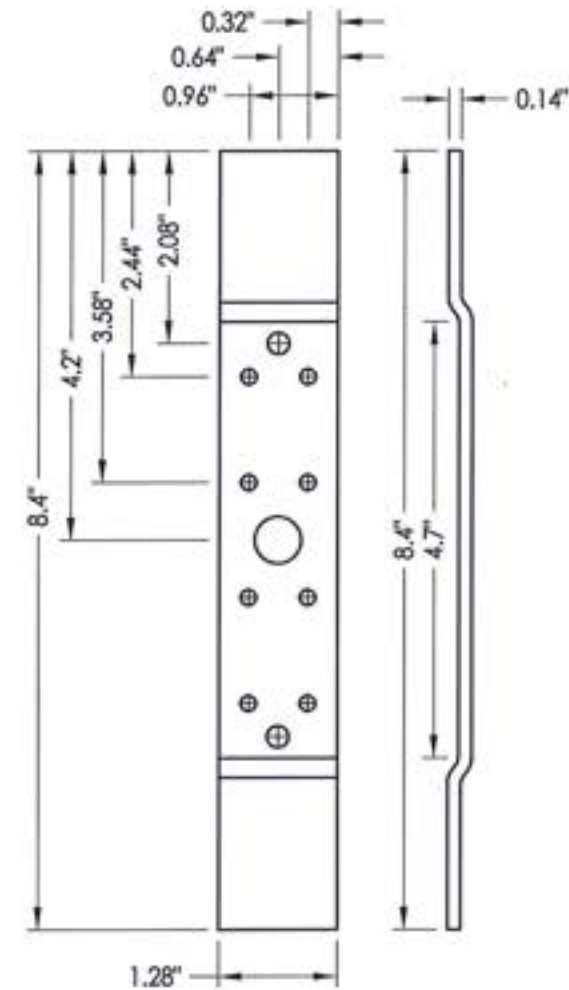
**92 PANIC BAR LATCH STRIKE PLATE**  
@ Jamb



**27 FRAME LATCH STRIKE REINFORCEMENT**



**42 THRESHOLD**  
Pemko 2001P



**28 FRAME HINGE REINFORCEMENT**



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PRODUCT: CAL-ROYAL  
STEEL COMMERCIAL DOOR

PART OR ASSEMBLY: COMPONENTS

NO.	DATE	REVISIONS	LFS	BY
1	7/02/20	UPDATE TO 2018 IBC/IRC CODE	LFS	BY

DATE: 10/1/14

SCALE: N.T.S.

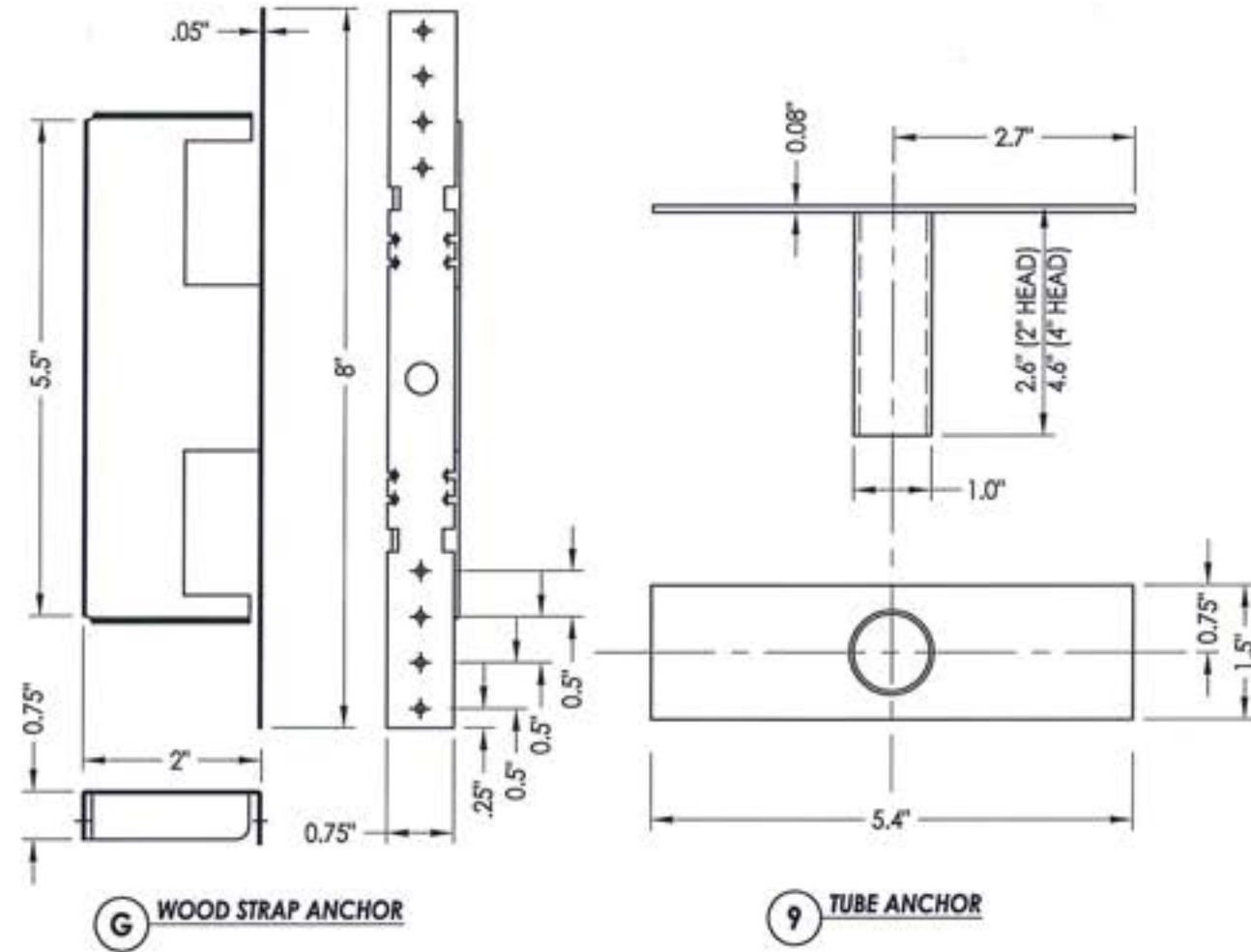
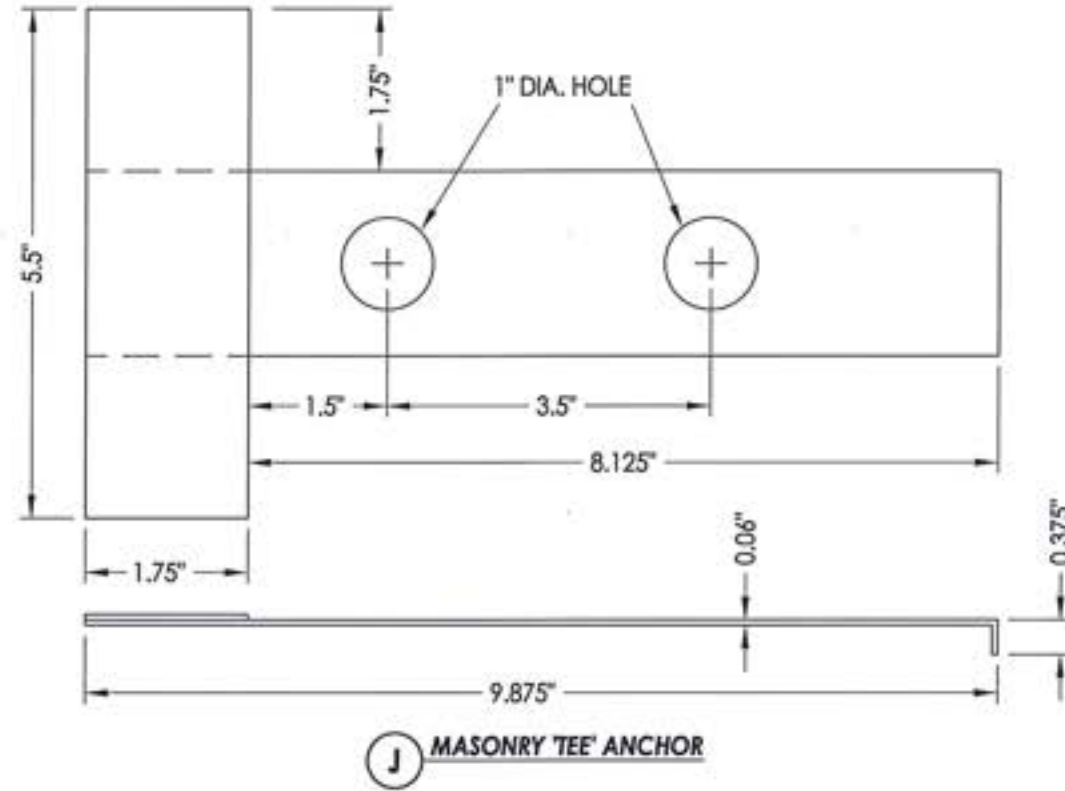
DWG. BY: JK

CHK. BY: LFS

DRAWING NO.: TX-4484

SHEET 7 OF 8

BILL OF MATERIALS		
ITEM #	DESCRIPTION	MATERIAL
B	2 X 4 FRAMING (SG >= 0.42)	WOOD
C	1/4" MAX. SHIM SPACE	-
D	1/4" X 2-3/4" PFH ELCO OR ITW CONCRETE SCREW	STEEL
E	MASONRY - 3,000 PSI MIN. CONCRETE CONFORMING TO ACI 301 OR HOLLOW BLOCK CONFORMING TO ASTM C90	CONCRETE
F	3/8" PFH ITW DYNABOLT SLEEVE ANCHOR	STEEL
G	WOOD STRAP ANCHOR	STEEL
H	#8 X 1-1/2" PH WOOD SCREW	STEEL
J	MASONRY "TEE" ANCHOR	STEEL
1	CAL-ROYAL DOOR PANEL	-
4	DOOR TOP CHANNEL	STEEL
5	LOCK BOX REINFORCEMENT	STEEL
6	CLOSER REINFORCEMENT (11 gauge)	STEEL
7	DOOR BOTTOM CHANNEL	STEEL
8	WEATHERSTRIP - PEMKO 303A	NEOPRENE
9	TUBE ANCHOR	STEEL
10	#12-24 X 1" COMBINATION MACHINE / WOOD SCREW	STEEL
11	DOOR SWEEP- PEMKO 3151	PVC
13	WEATHERSTRIP - COMPRESSION BULB 1/4" X 1/2" (PEMKO S88)	NEOPRENE
15	#8-24 X 3/4" COMBINATION MACHINE / WOOD SCREW	STEEL
16	ANSI LATCH STRIKE	STEEL
17	DEAD BOLT STRIKE	STEEL
20	#12-24 X 1/2" PFH MACHINE SCREW	STEEL
21	4-1/2" X 4-1/2" X 0.125" TEMPLATE HINGE	STEEL
22	DOOR HINGE REINFORCEMENT	STEEL
25	HOLLOW FRAME 2"	STEEL
26	HOLLOW FRAME 4" HEAD	STEEL
27	FRAME LATCH STRIKE REINFORCEMENT	STEEL
28	FRAME HINGE REINFORCEMENT	STEEL
30	FRAME LATCH STRIKE REINFORCEMENT (MORTISE LOCK)	STEEL
40	INSWING THRESHOLD - PEMKO 156	ALUM
42	OUTSWING THRESHOLD - PEMKO 2001P	ALUM
70	CAL-ROYAL M SERIES MORTISE LOCK	-
71	CAL-ROYAL T300 SERIES DEADBOLT	-
72	CAL-ROYAL PIONEER SL/CSL SERIES CYLINDRICAL LOCK	-
73	CAL-ROYAL GENESYS SERIES CYLINDRICAL LOCK	-
74	CAL-ROYAL 7700 SERIES PANIC BAR	-
92	PANIC BAR LATCH STRIKE PLATE	STEEL



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

**R.W.** BUILDING CONSULTANTS, INC.  
P.O. Box 230 Volrico FL 33996  
Phone No.: 813.659.9197

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

PRODUCT: CAL-ROYAL COMMERCIAL DOOR  
STEEL COMMERCIAL DOOR

PART OR ASSEMBLY: BILL OF MATERIALS AND COMPONENTS

NO.	DATE	UPDATE TO 2018 IBC/IRC CODE	LFS	BY
1	7/02/20			

REVISIONS

DATE: 10/1/14  
SCALE: N.T.S.  
DWG. BY: JK  
CHK. BY: LFS  
DRAWING NO.: TX-4484  
SHEET 8 OF 8