

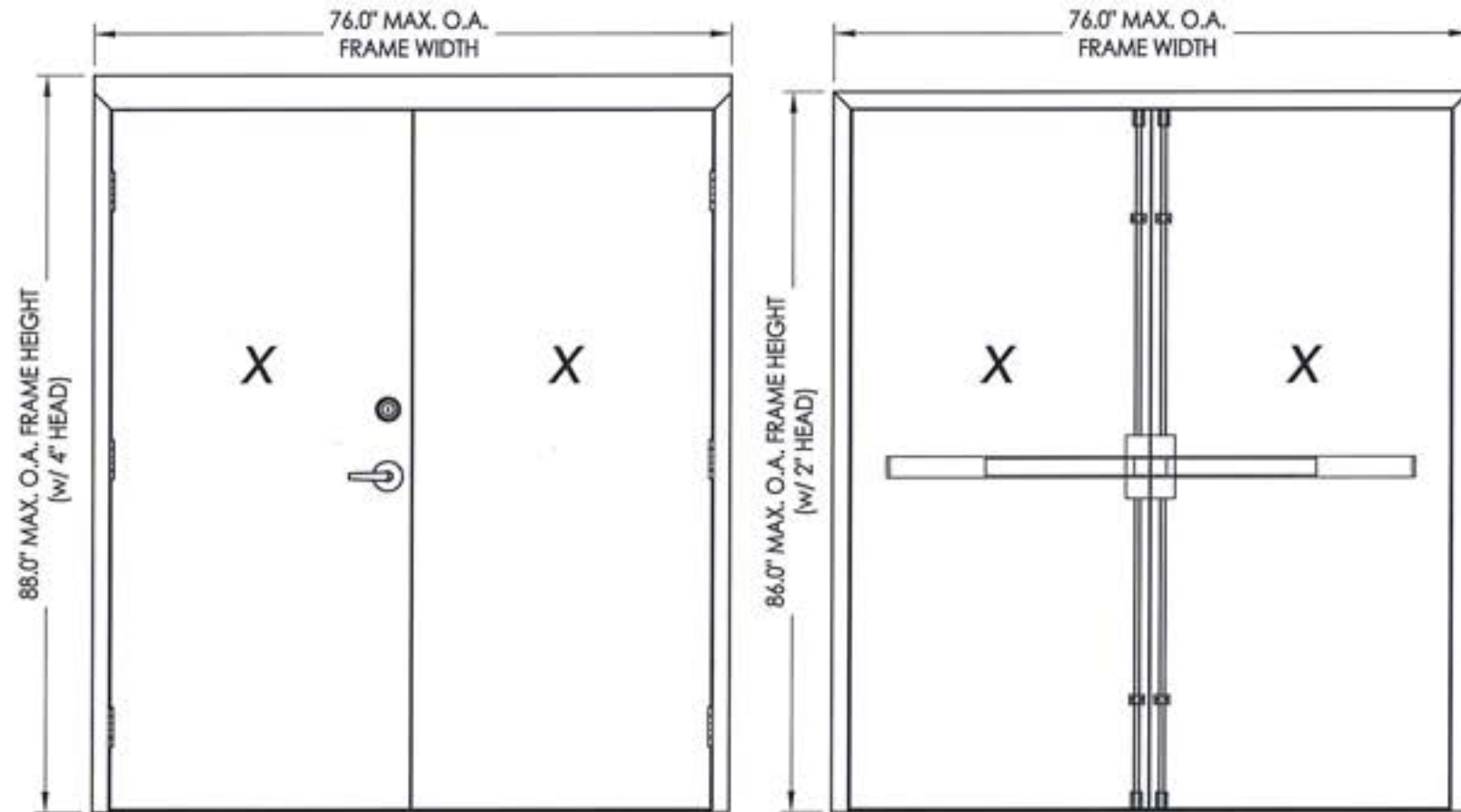


6605 Flotilla Street  
City of Commerce  
CA 90040



Documents Prepared By: Lyndon F. Schmidt, P.E.  
TEXAS P.E. #104123  
**RW** BUILDING CONSULTANTS, INC.  
P.O. Box 230 Valrico FL 33595  
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TEXAS BOARD OF PROFESSIONAL ENGINEERS  
CERTIFICATE OF REGISTRATION # F-11852

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



161 Latch & Deadbolt  
"Pioneer SL/CSL Series" Latch  
"T300 Series" Deadbolt

Panic Bar Exit Device w/ Vertical Rods  
"7700-V Series"

### 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:

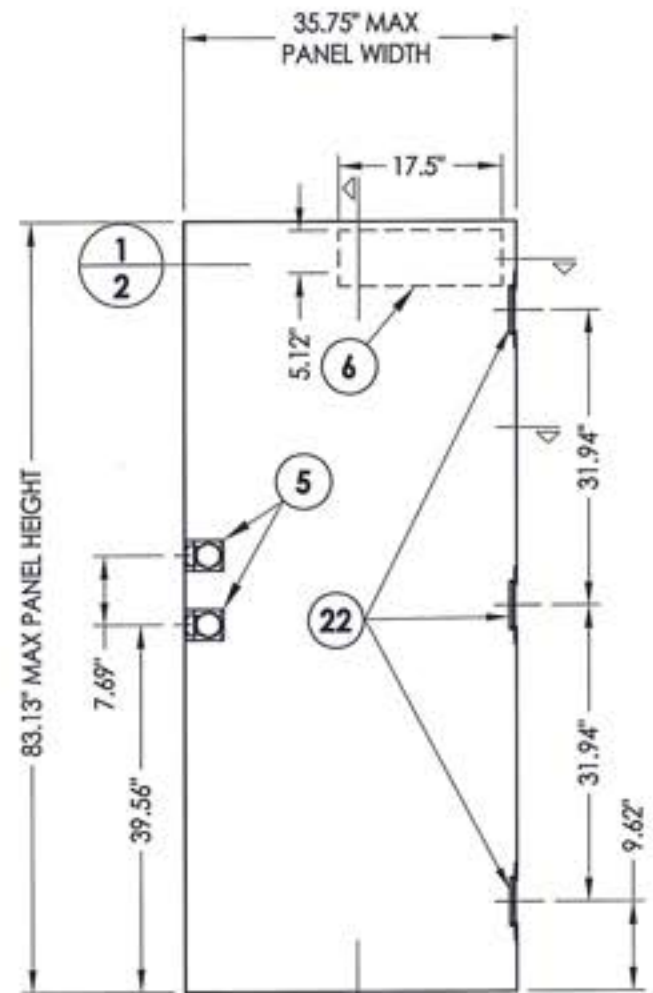
1. Anchors shall be as listed and spaced as shown in the details. Anchor embedment to base material shall be beyond wall dressing or stucco.
2. When used in areas requiring wind-borne debris protection, the opaque door does not require impact protection while the sidelites are required to be protected 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	Door panel details
4	Horizontal cross sections
5	Vertical cross sections
6	Frame anchoring
7	Frame anchoring
8	Components
9	Bill of materials and components

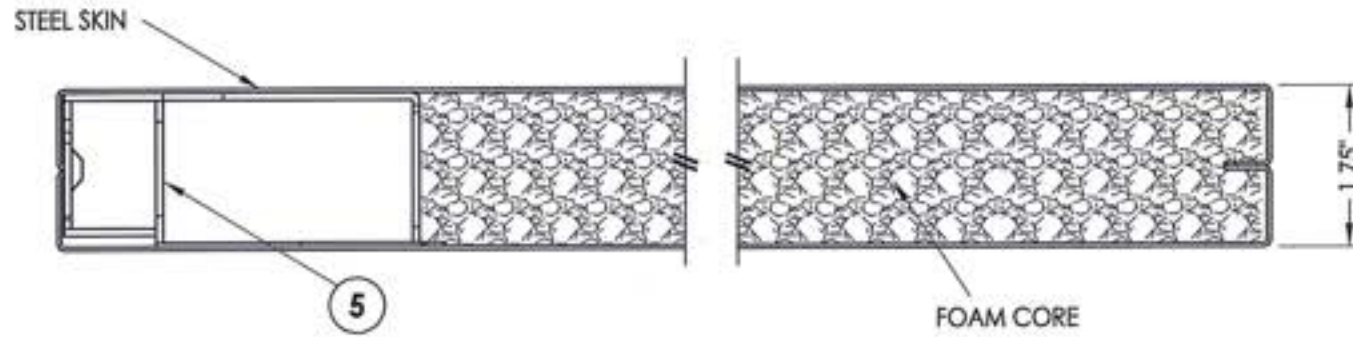
MAX FRAME DIMENSION	LOCK TYPE	DESIGN PRESSURE (PSF) INSWING		DESIGN PRESSURE (PSF) OUTSWING	
		POSITIVE	NEGATIVE	POSITIVE	NEGATIVE
76.0" x 88.0"	161 LATCH & DEADBOLT "Pioneer SL/CSL & T300 Series"	+55.0	-55.0	+55.0	-55.0
76.0" x 88.0"	PANIC BAR EXIT DEVICE w/ VERTICAL RODS "7700-V Series"	N/A	N/A	+70.0	-70.0

PRODUCT:	CAL-ROYAL STEEL COMMERCIAL DOOR	
PART OR ASSEMBLY:	TYPICAL ELEVATION, DESIGN PRESSURES & GENERAL NOTES	
NO.	DATE	BY
1	7/02/20	LFS
UPDATE TO 2018 IBC/IRC CODE REVISIONS		
DATE:	10/1/14	
SCALE:	N.T.S.	
DWG. BY:	JK	
CHK. BY:	LFS	
DRAWING NO.:	TX-4485	
SHEET	1 of 9	

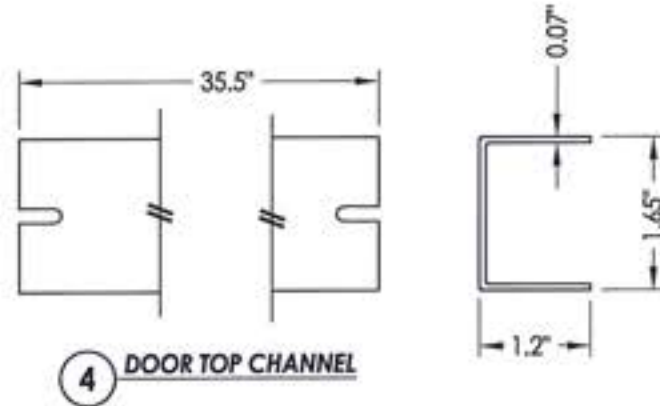


**1 CAL-ROYAL DOOR PANEL**  
Active door

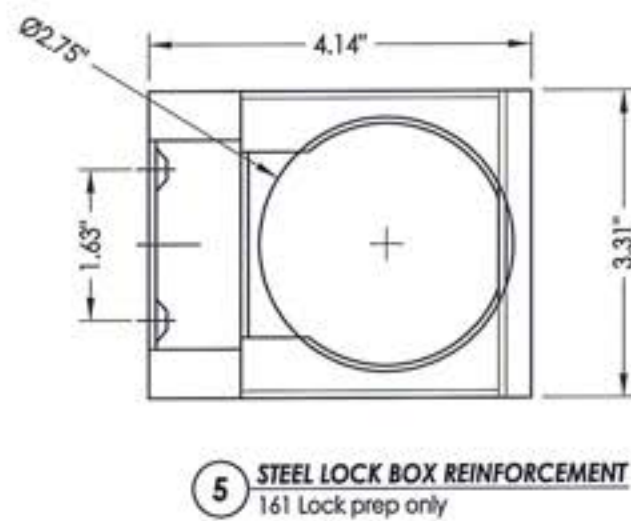
STEEL DOOR SKIN (18 GA.): MIN. 0.045" THK.  
STEEL GRADE: ASTM A1008 GALV. STEEL (Fy = 33,000 PSI MIN.)  
CORE MATERIAL: EPS FOAM (POLYSTYRENE - 1.0 PCF MIN. DENSITY)



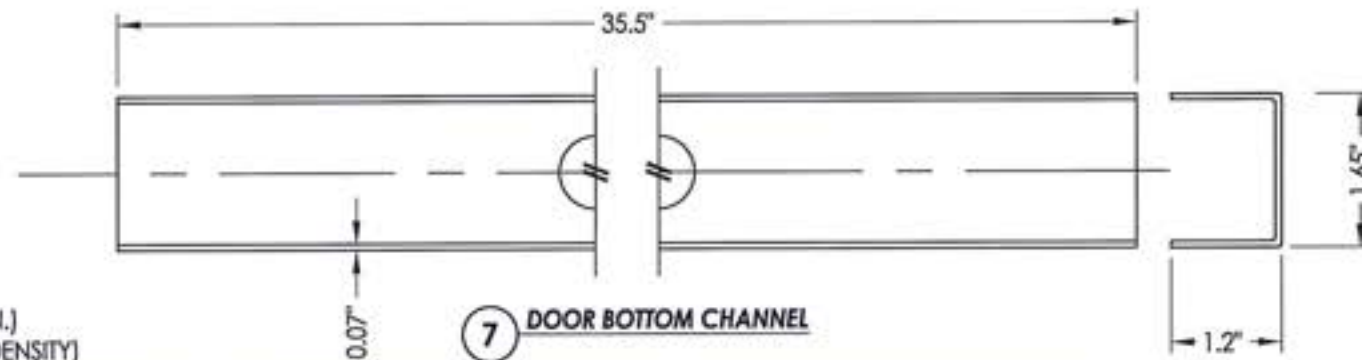
**1 HORIZONTAL CROSS SECTION**



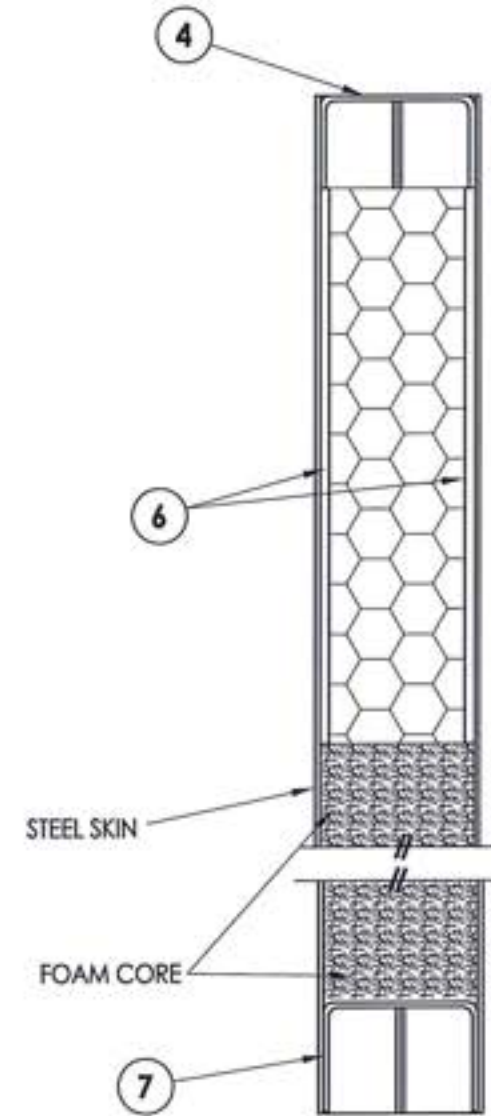
**4 DOOR TOP CHANNEL**



**5 STEEL LOCK BOX REINFORCEMENT**  
161 Lock prep only



**7 DOOR BOTTOM CHANNEL**



**2 VERTICAL CROSS SECTION**



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

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

NO.	DATE	DESCRIPTION	LFS	BY
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REVISIONS				

DATE: 10/1/14

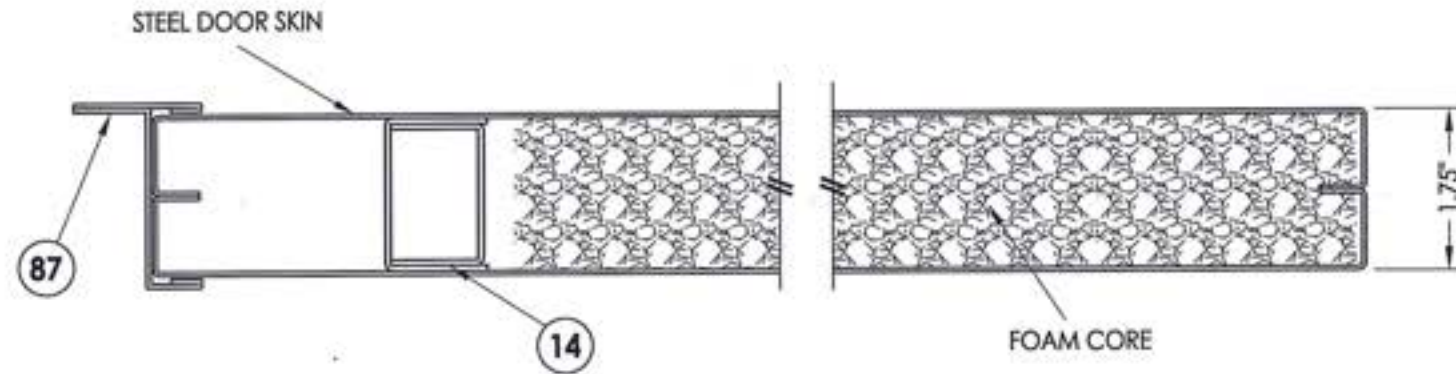
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DWG. BY: JK

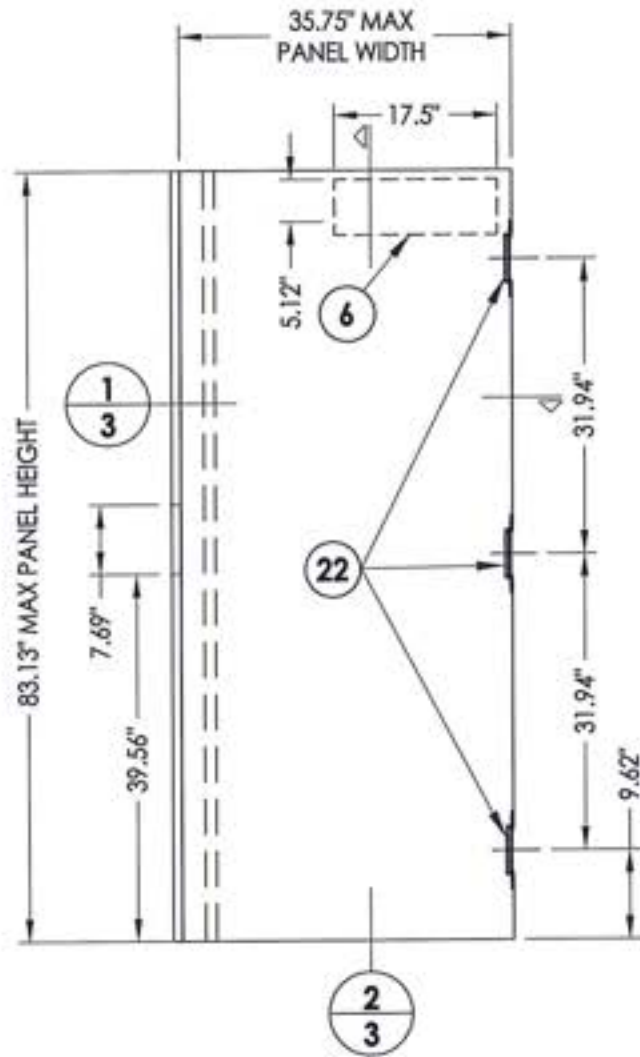
CHK. BY: LFS

DRAWING NO.: TX-4485

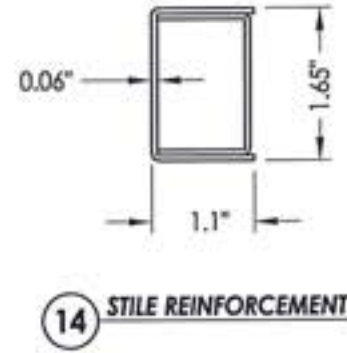
SHEET 2 of 9



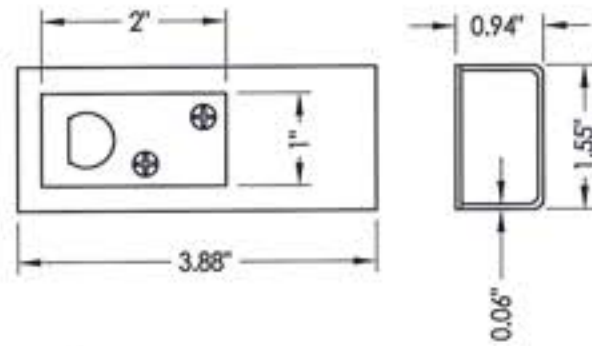
1  
3 HORIZONTAL CROSS SECTION



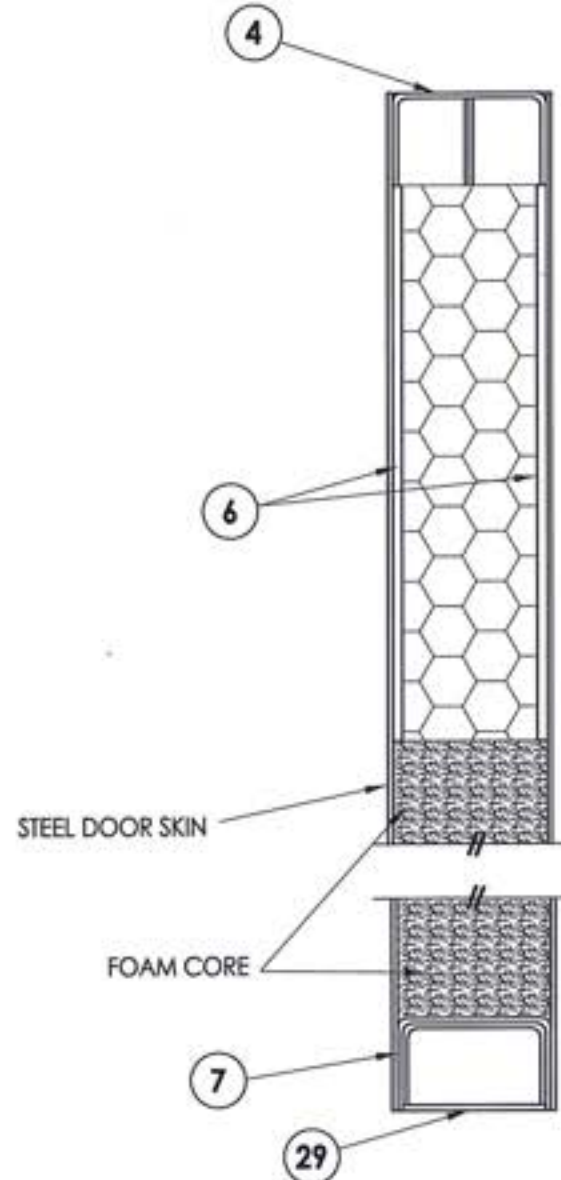
2 CAL-ROYAL DOOR PANEL  
Inactive Door



14 STILE REINFORCEMENT



29 DOOR BOTTOM REINFORCEMENT  
w/ Strike Plate



2  
3 VERTICAL CROSS SECTION

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

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

DATE: 10/1/14

SCALE: N.T.S.

DWG. BY: JK

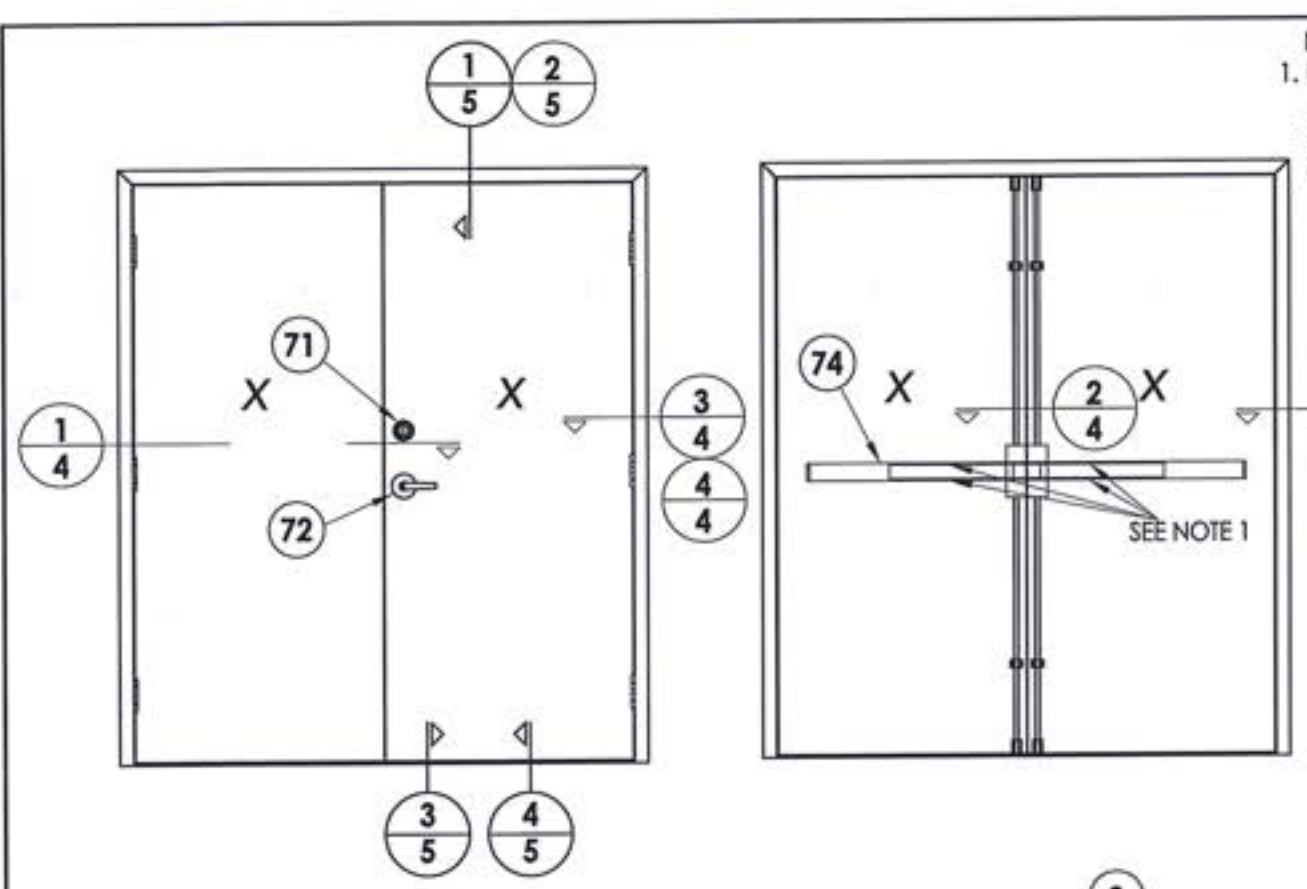
CHK. BY: LFS

DRAWING NO.:

TX-4485

SHEET 3 of 9

R:\Clients\Cal-Royal PERMANENT\B - Texas Dept of Ins\TDI - 472\Drawings\TX-4483-86.dwg, 6.4



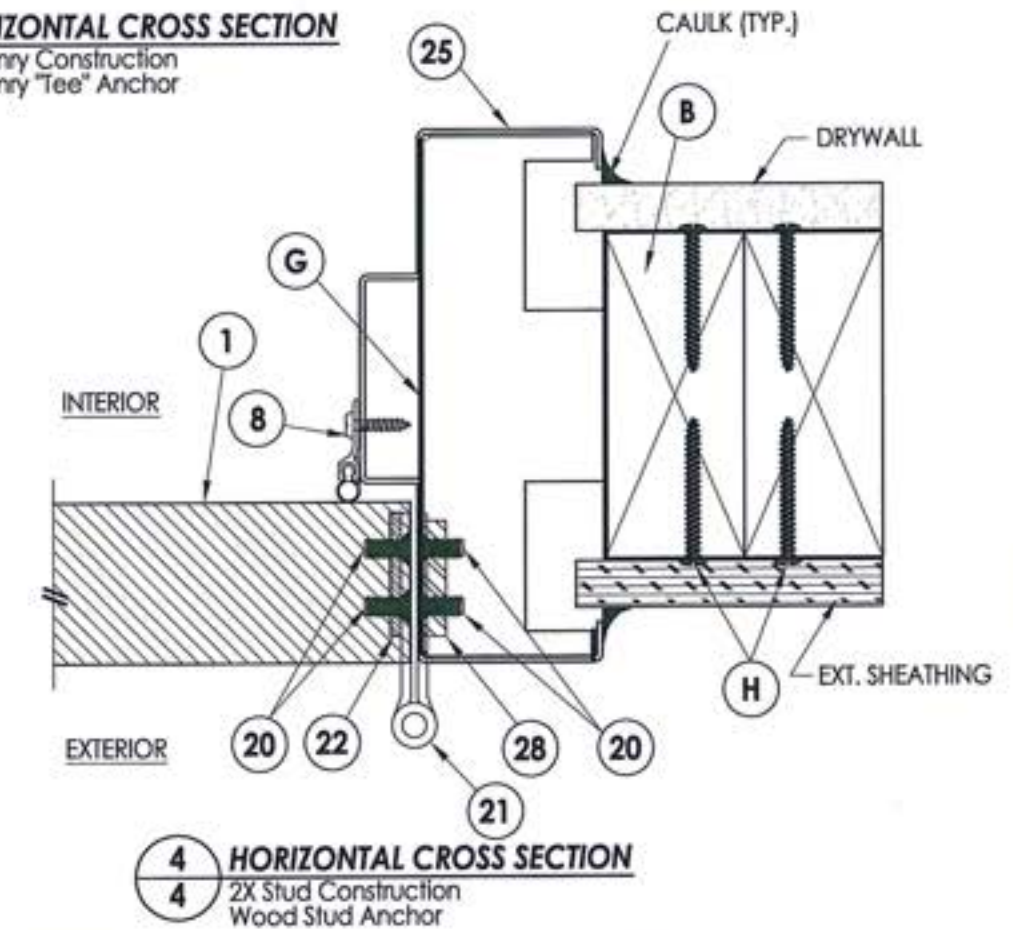
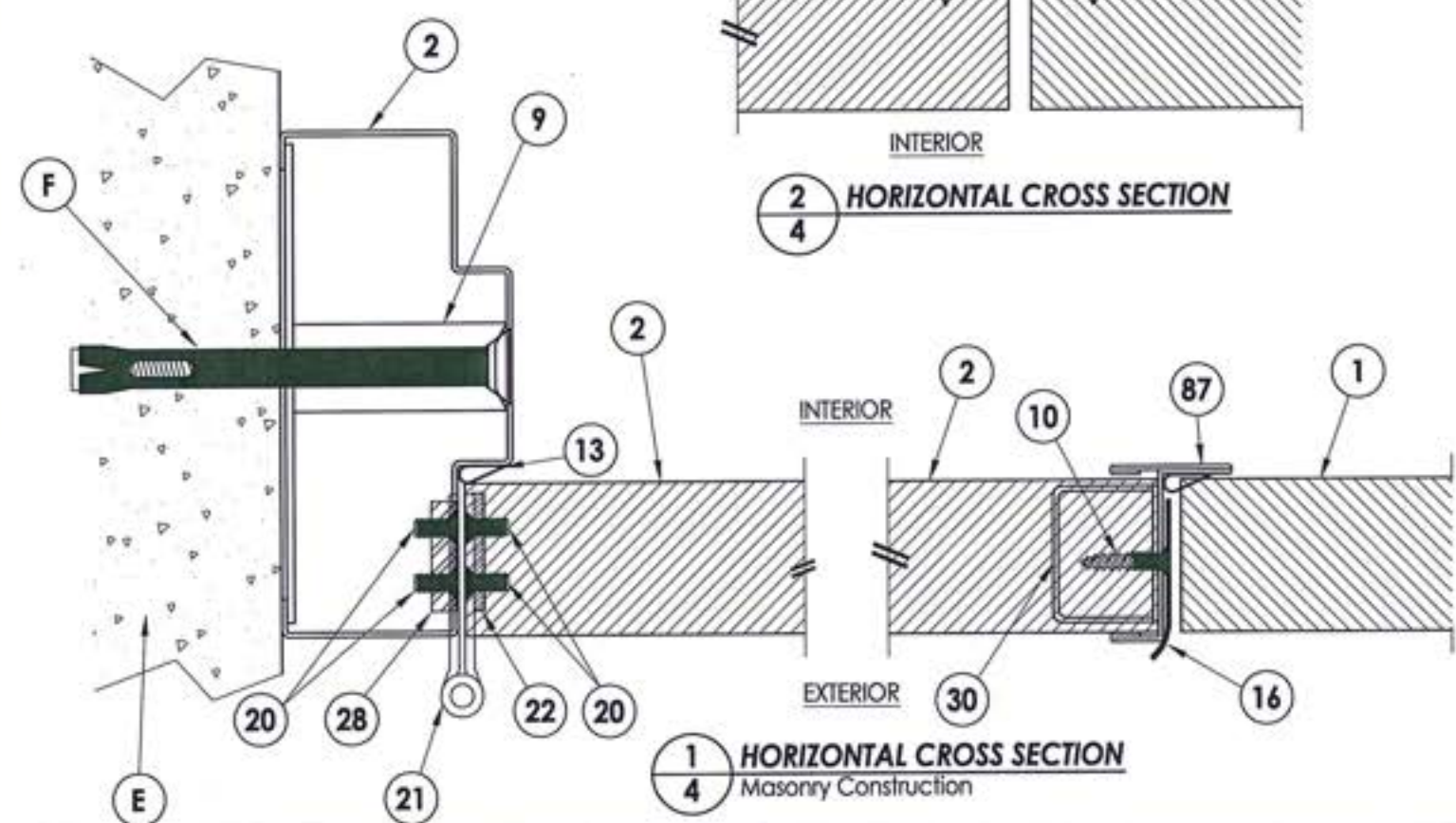
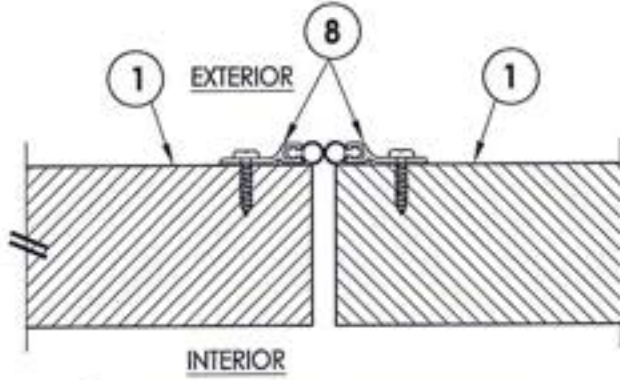
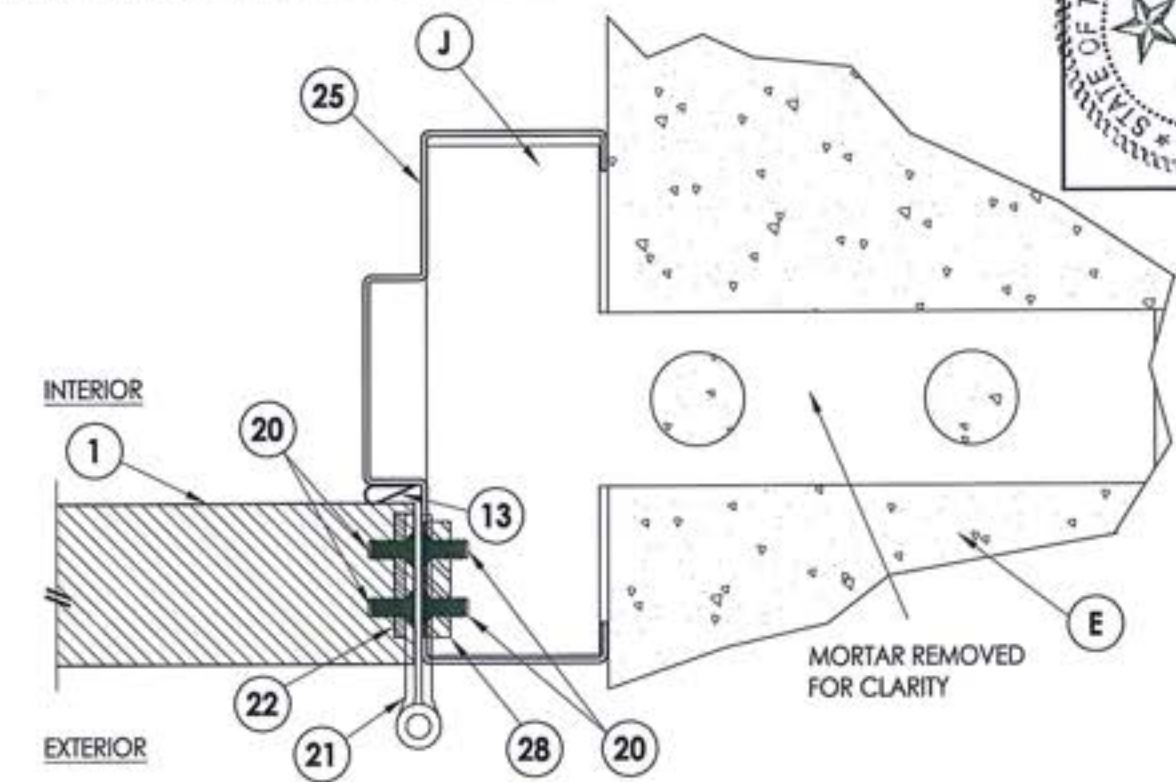
NOTE:  
 1. PANIC BAR SET SCREWS (#12-24 x 5/16") MUST BE ACTIVATED TO ACHIEVE IMPACT RATING. LOCATE ONE SCREW AT TOP AND BOTTOM AT CENTER OF EACH PUSH RAIL OR LOCATE ONE SCREW AT EACH END OF EACH BAR.



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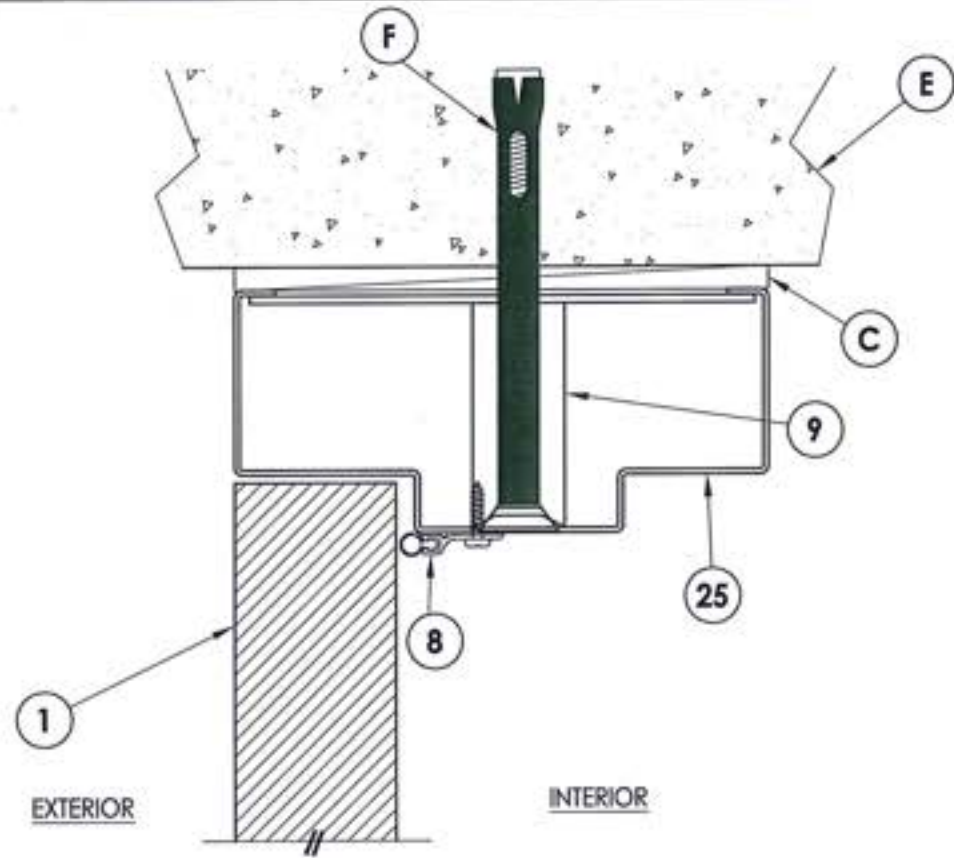
RW BUILDING CONSULTANTS, INC.  
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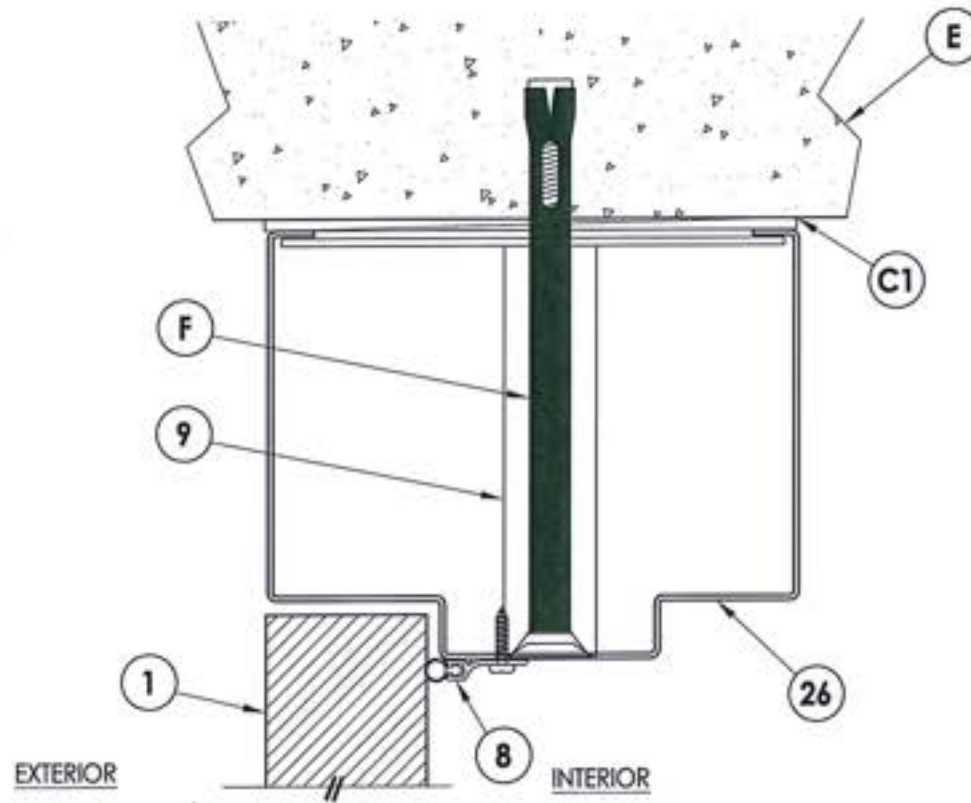


PRODUCT:	CAL-ROYAL STEEL COMMERCIAL DOOR	
PART OR ASSEMBLY:	HORIZONTAL CROSS SECTIONS	
DATE:	10/1/14	
SCALE:	N.T.S.	
DWG. BY:	JK	
CHK. BY:	LFS	
DRAWING NO.:	TX-4485	
SHEET	4 of 9	
NO.	DATE	REVISIONS
1	7/02/20	UPDATE TO 2018 IBC/IRC CODE
		LFS
		BY

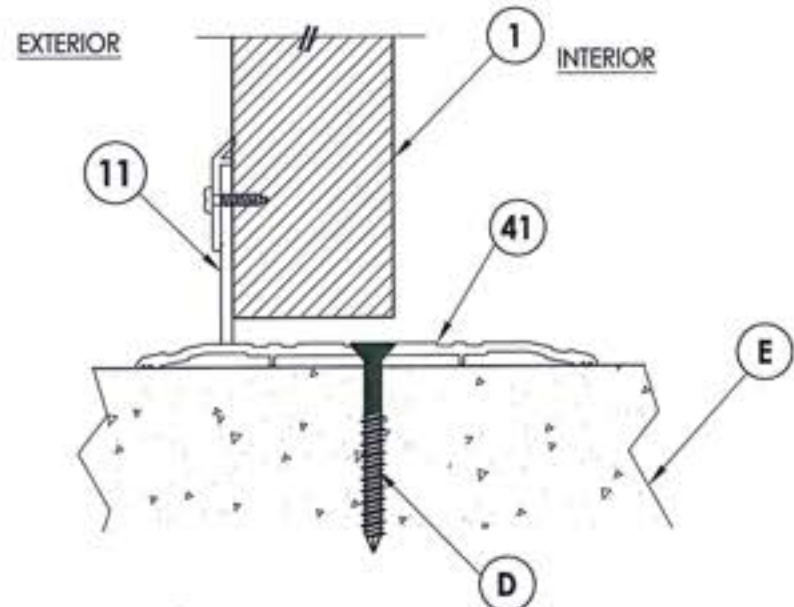
© 2014 R.W. BUILDING CONSULTANTS INC.



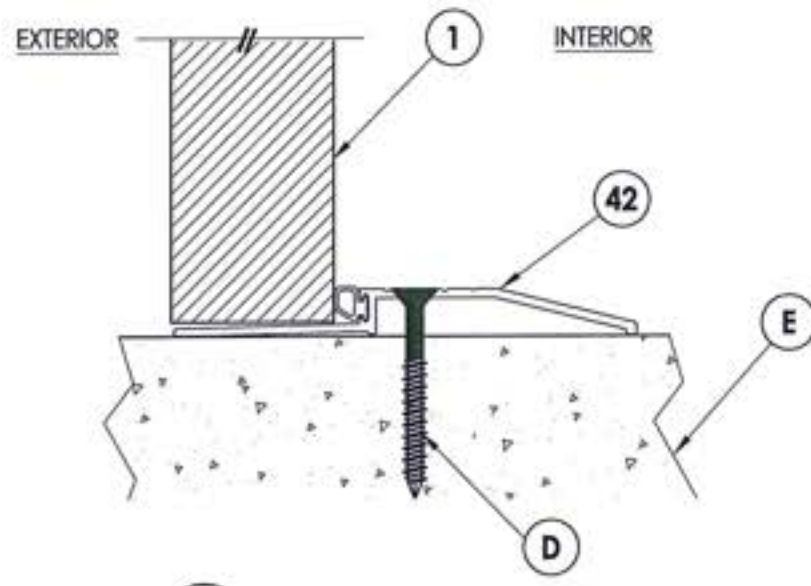
**1 VERTICAL CROSS SECTION**  
**5** Outswing configuration - inswing also approved



**2 VERTICAL CROSS SECTION**  
**5** Outswing configuration - inswing also approved



**3 VERTICAL CROSS SECTION**  
**5** Inswing configuration



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



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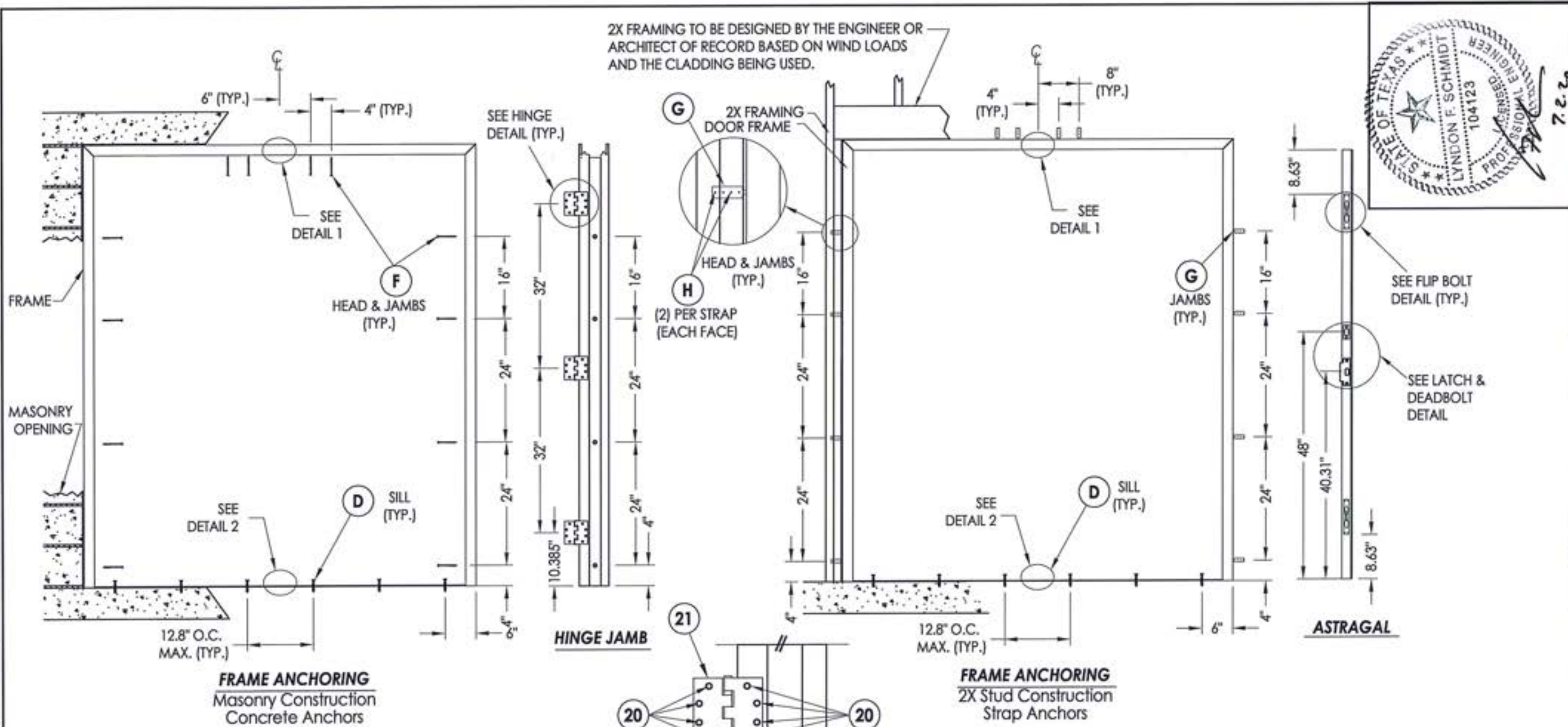
TEXAS BOARD OF PROFESSIONAL ENGINEERS  
 CERTIFICATE OF REGISTRATION # F-11852

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

DATE: 10/1/14  
 SCALE: N.T.S.  
 DWG. BY: JK  
 CHK. BY: LFS  
 DRAWING NO.: TX-4485  
 SHEET 5 OF 9

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



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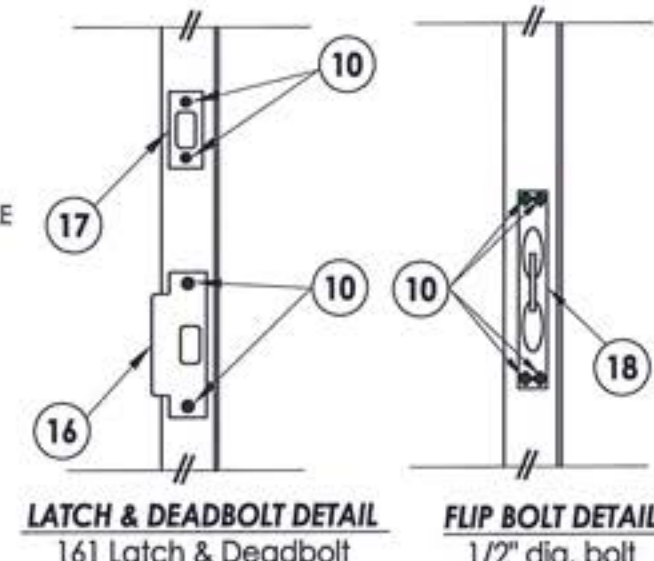
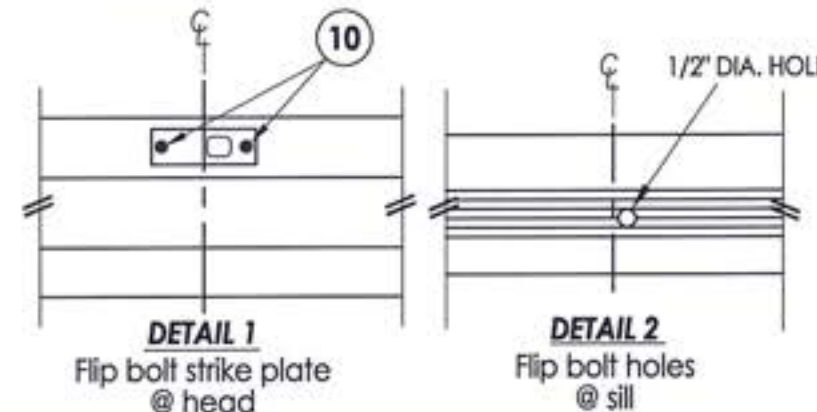
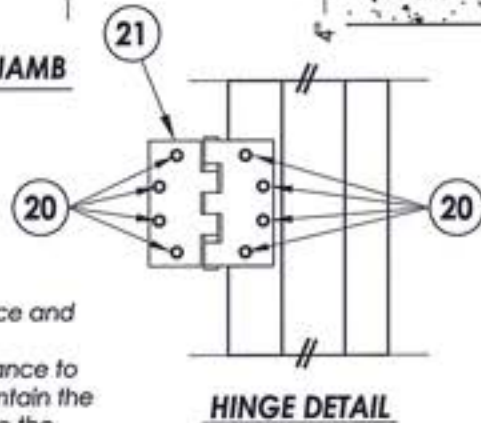
PRODUCT: CAL-ROYAL STEEL COMMERCIAL DOOR  
 PART OR ASSEMBLY: FRAME ANCHORING

**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:

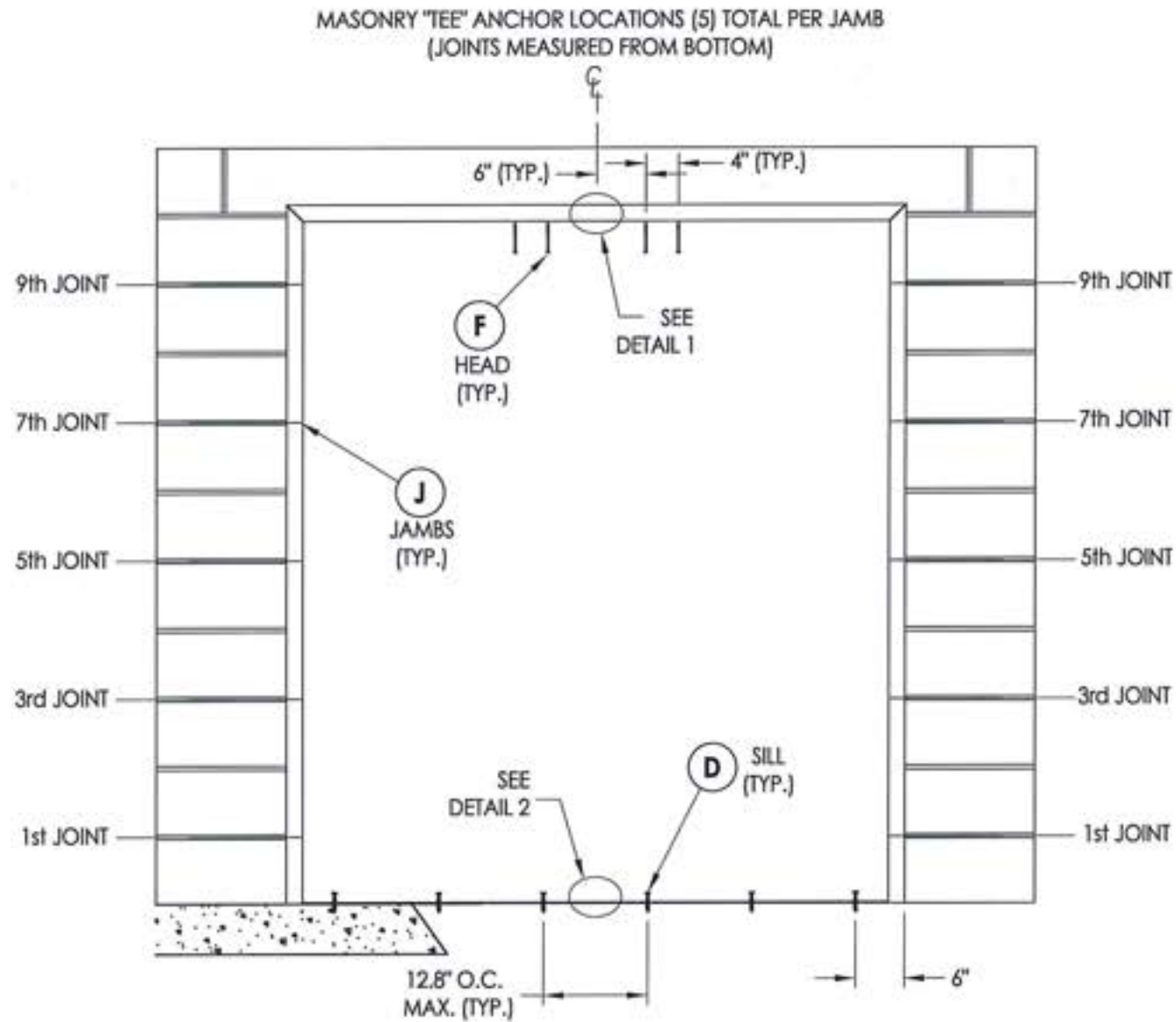
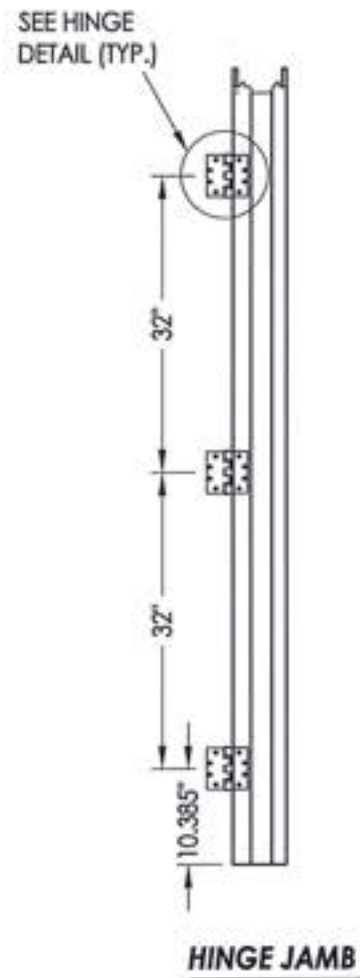
ANCHOR TYPE	ANCHOR SIZE	MIN. EMBEDMENT	MIN. CLEARANCE TO MASONRY EDGE	MIN. CLEARANCE TO ADJACENT ANCHOR
ITW TAPCON®	1/4"	1-3/4"	2-1/2"	4"
ELCO ULTRACON®	1/4"	1-3/4"	1"	4"
DYNABOLT SLEEVE ANCHOR	3/8"	1-1/2"	2-1/4"	4-1/2"

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

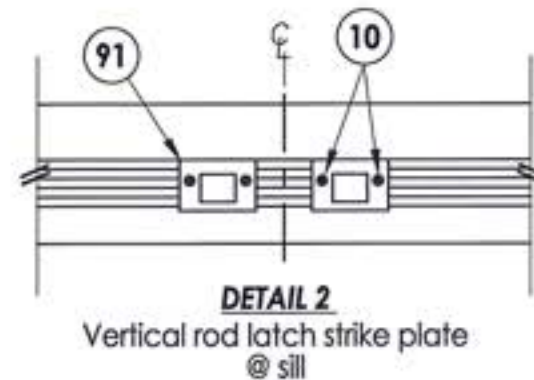
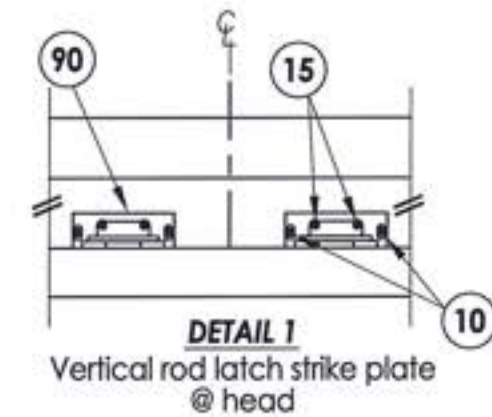
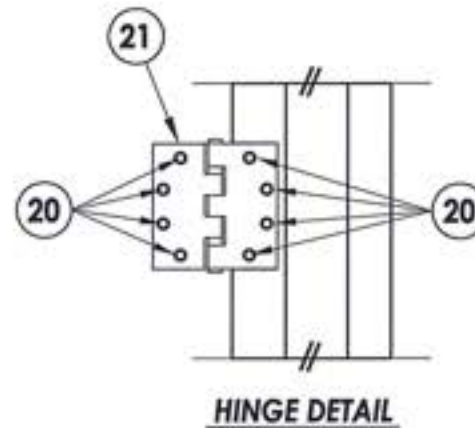


NO.	DATE	REVISIONS
1	7/02/20	UPDATE TO 2018 IBC/IRC CODE
		LFS
		BY

DATE: 10/1/14  
 SCALE: N.T.S.  
 DWG. BY: JK  
 CHK. BY: LFS  
 DRAWING NO.: TX-4485  
 SHEET 6 OF 9



**FRAME ANCHORING**  
Masonry Construction  
Masonry "Tee" Anchors



**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
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DYNABOLT SLEEVE ANCHOR	3/8"	1-1/2"	2-1/4"	4-1/2"

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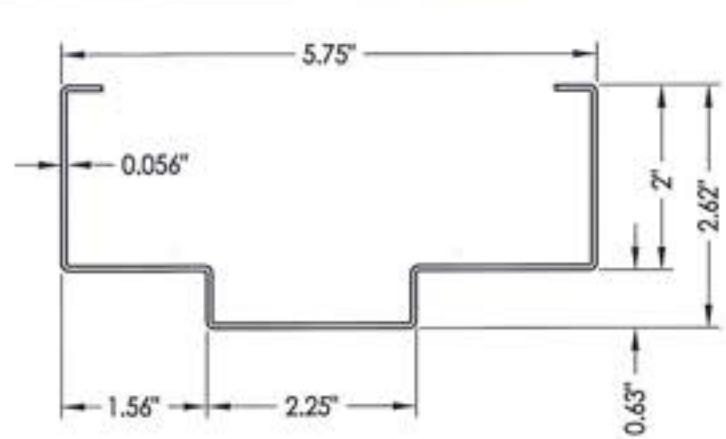
**RW** BUILDING CONSULTANTS, INC.  
P.O. Box 230 Valrico FL 33595  
Phone No.: 813.659.9197  
TEXAS BOARD OF PROFESSIONAL ENGINEERS  
CERTIFICATE OF REGISTRATION # F-11852

PRODUCT: CAL-ROYAL COMMERCIAL DOOR  
STEEL COMMERCIAL DOOR

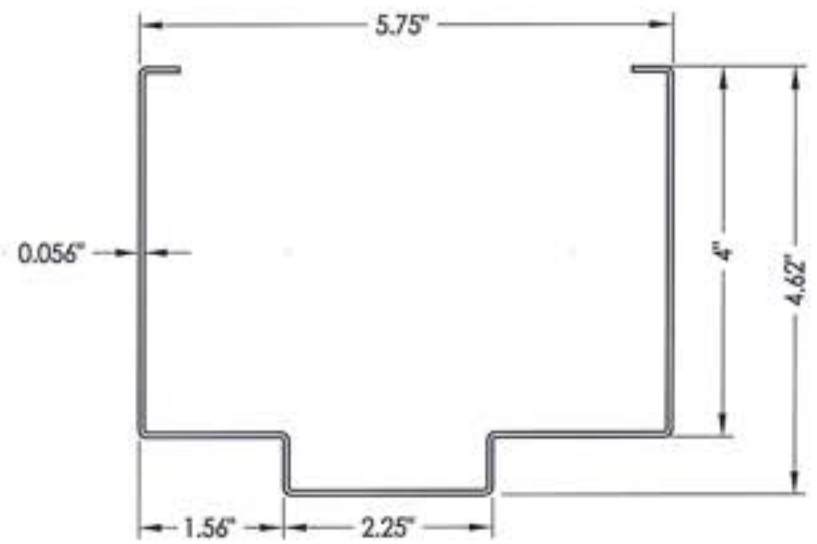
PART OR ASSEMBLY: FRAME ANCHORING

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

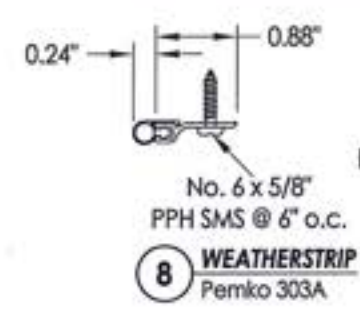
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SCALE: N.T.S.  
DWG. BY: JK  
CHK. BY: LFS  
DRAWING NO.: TX-4485  
SHEET 7 OF 9



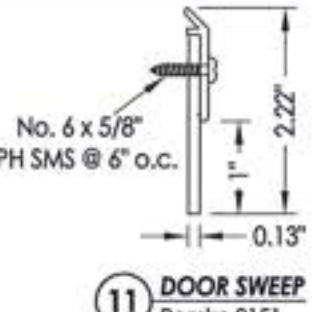
**26 HOLLOW METAL FRAME**  
2" HEAD



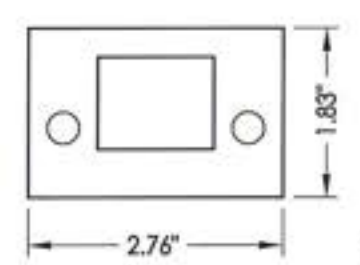
**26 HOLLOW METAL FRAME**  
4" HEAD



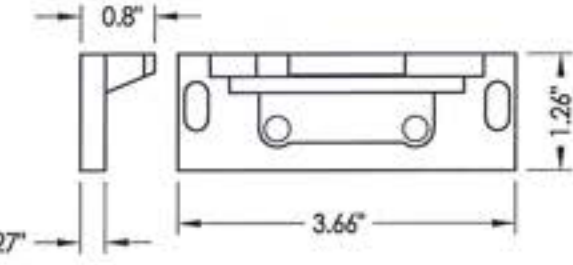
**8 WEATHERSTRIP**  
Pemko 303A



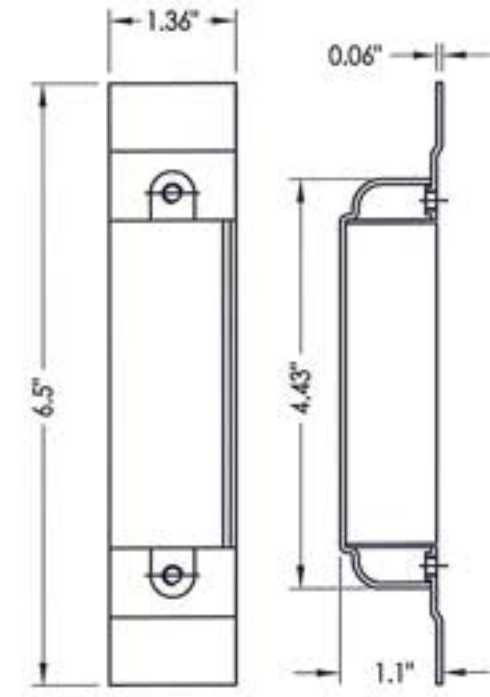
**11 DOOR SWEEP**  
Pemko 3151



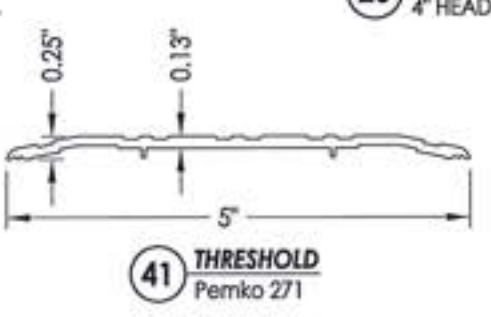
**91 VERTICAL ROD LATCH STRIKE PLATE**  
@ Sill



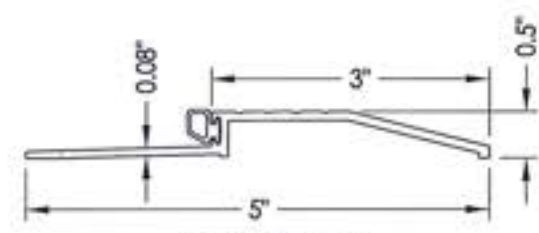
**90 VERTICAL ROD LATCH STRIKE PLATE**  
@ Head



**30 DOOR LATCH REINFORCEMENT**



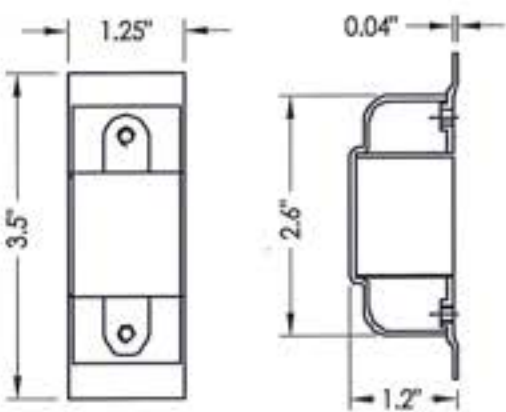
**41 THRESHOLD**  
Pemko 271



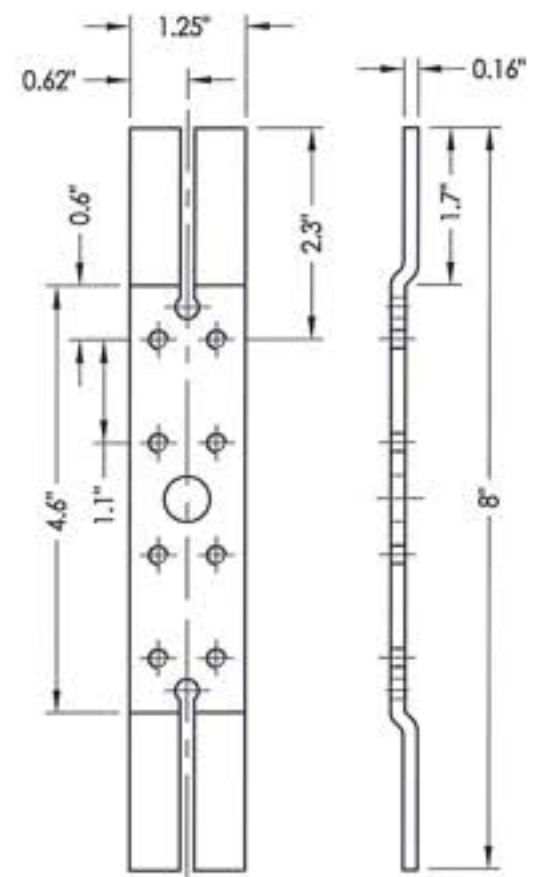
**42 THRESHOLD**  
Pemko 2001P



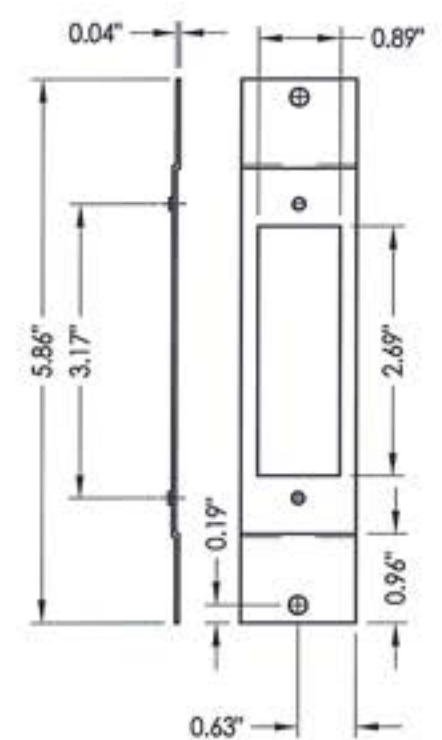
**87 ASTRAGAL**



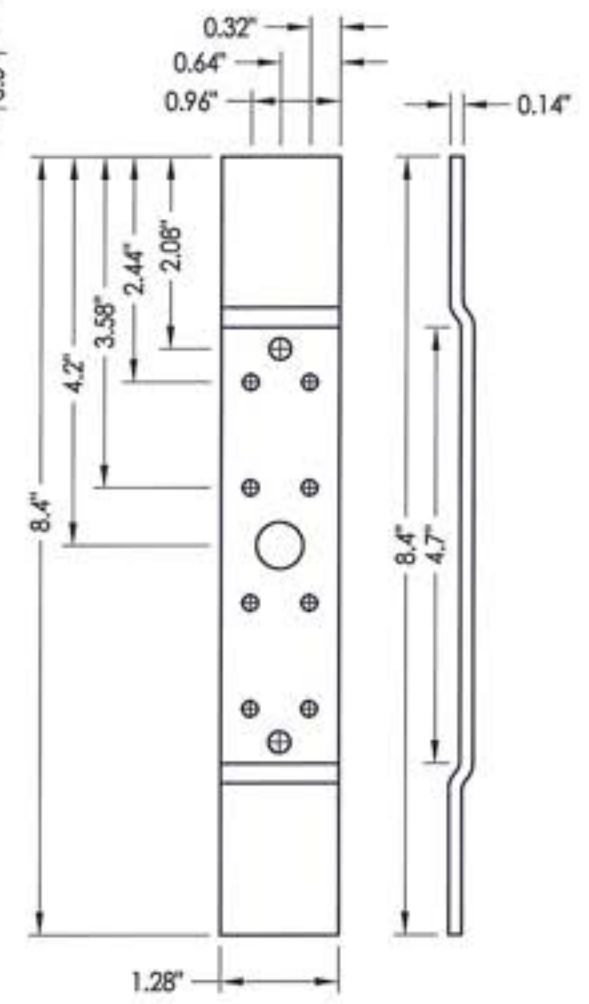
**31 DOOR DEADBOLT REINFORCEMENT**



**22 DOOR HINGE REINFORCEMENT**



**27 FRAME LATCH STRIKE REINFORCEMENT**



**28 FRAME HINGE REINFORCEMENT**



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

PRODUCT: CAL-ROYAL STEEL COMMERCIAL DOOR

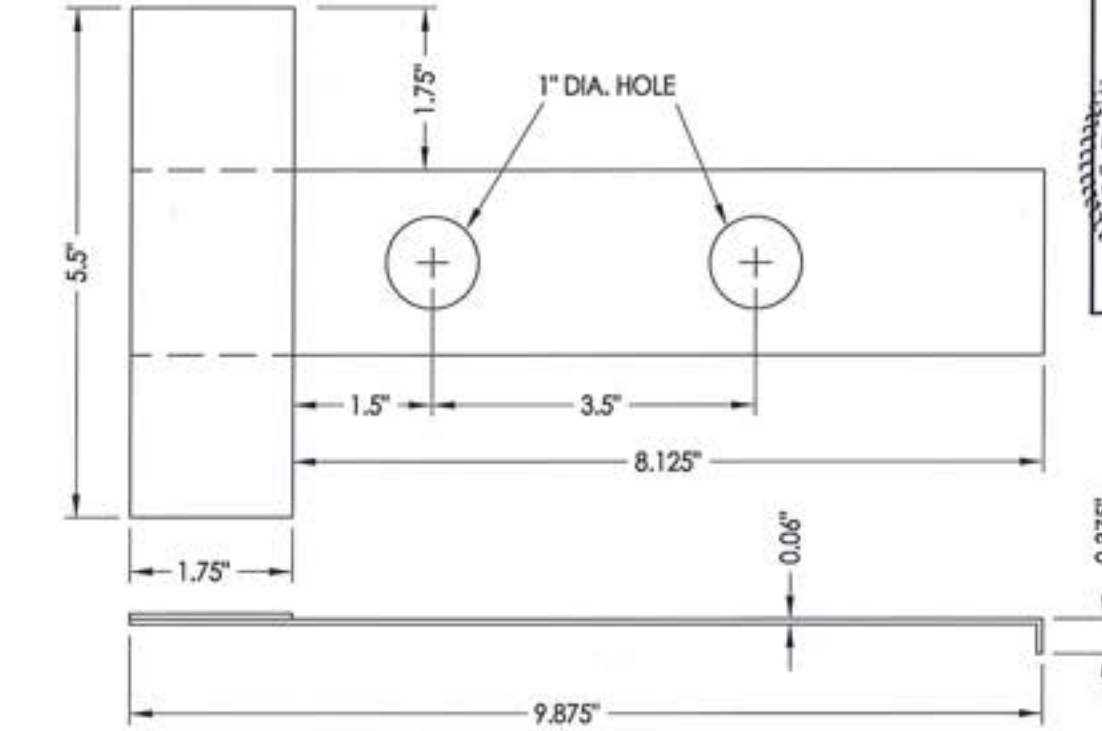
PART OR ASSEMBLY: COMPONENTS

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

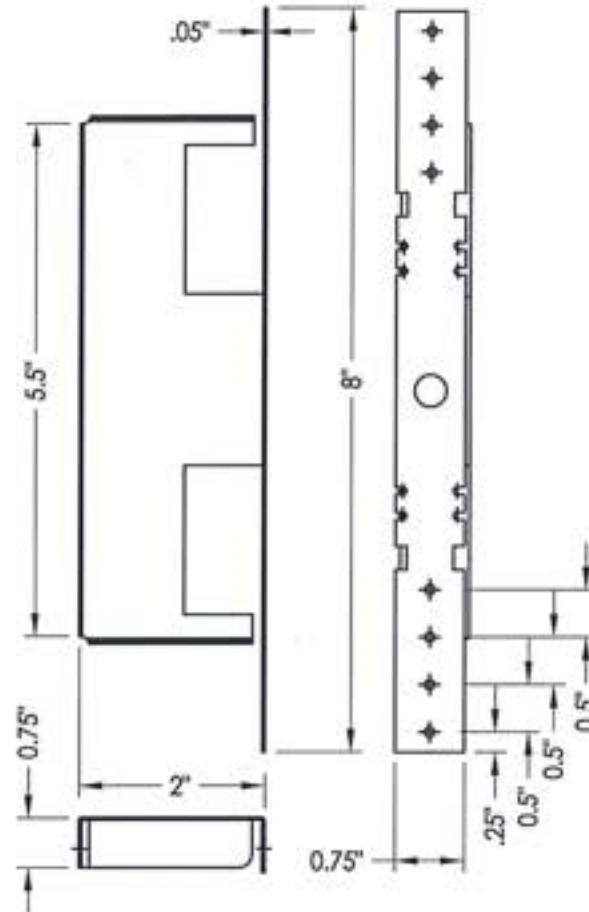
DATE: 10/1/14  
SCALE: N.T.S.  
DWG. BY: JK  
CHK. BY: LFS  
DRAWING NO.: TX-4485  
SHEET 8 OF 9



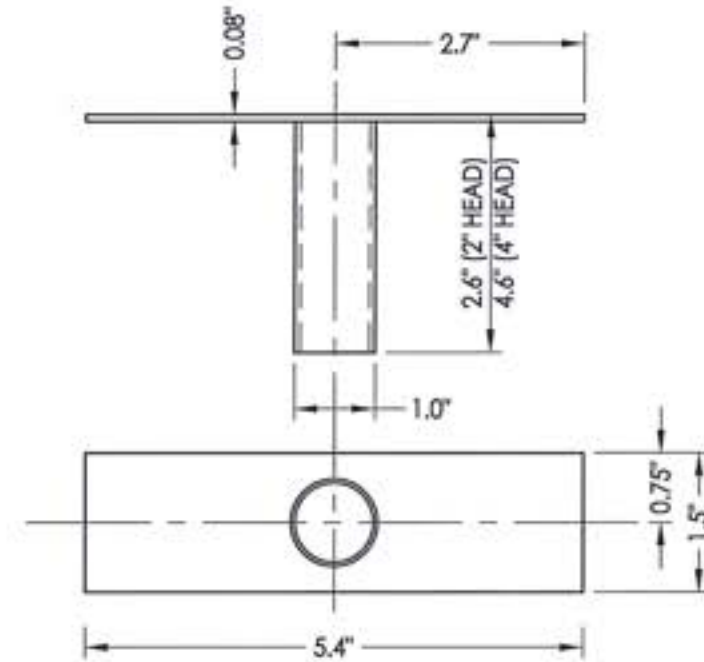
BILL OF MATERIALS		
ITEM #	DESCRIPTION	MATERIAL
B	2 X 4 FRAMING (SG >= 0.42)	-
C	1/4" MAX. SHIM SPACE	-
C1	1/8" MAX. SHIM SPACE	-
D	1/4" X 2-3/4" PFH ELCO OR ITW CONCRETE SCREW	STEEL
E	MASONRY - 3,000 PSI MIN. CONCRETE CONFORMING TO ACI 301 OR HOLLOW BLOCK CONFORMING TO ASTM C90	CONCRETE
F	3/8" PFH ITW 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 (ACTIVE DOOR)	-
2	CAL-ROYAL DOOR PANEL (INACTIVE DOOR)	-
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
14	STILE REINFORCEMENT	STEEL
15	#8-24 X 3/4" COMBINATION MACHINE / WOOD SCREW	STEEL
16	ANSI LATCH STRIKE	STEEL
17	DEAD BOLT STRIKE	STEEL
18	FLIP BOLT - CAL-ROYAL	-
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
29	DOOR BOTTOM REINFORCEMENT w/ STRIKE PLATE	STEEL
30	DOOR LATCH REINFORCEMENT	STEEL
31	DOOR DEADBOLT REINFORCEMENT	STEEL
41	INSWING THRESHOLD - PEMKO 271	ALUM
42	OUTSWING THRESHOLD - PEMKO 2001P	ALUM
71	CAL-ROYAL PIONEER SL/CSL SERIES CYLINDRICAL LOCK	-
72	CAL-ROYAL T300 SERIES DEADBOLT	-
74	CAL-ROYAL 7700-V SERIES VERTICAL ROD EXIT DEVICE	-
87	ASTRAGAL	STEEL
90	VERTICAL ROD LATCH STRIKE PLATE @ HEAD	STEEL
91	VERTICAL ROD LATCH STRIKE PLATE @ SILL	STEEL



**J MASONRY TEE ANCHOR**



**G WOOD STRAP ANCHOR**



**9 TUBE ANCHOR**



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

PRODUCT: CAL-ROYAL  
STEEL COMMERCIAL DOOR

PART OR ASSEMBLY: BILL OF MATERIALS AND COMPONENTS

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

DATE: 10/1/14

SCALE: N.T.S.

DWG. BY: JK

CHK. BY: LFS

DRAWING NO.:

TX-4485

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