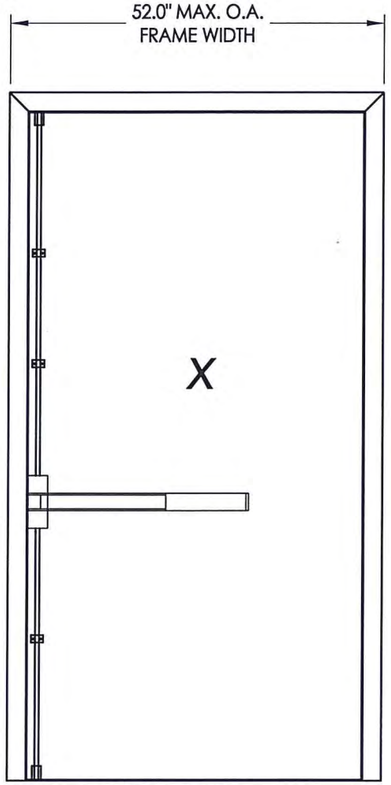
CAL-ROYAL PRODUCTS, INC
6605 Flotilla Street
City of Commerce
CA 90040

DKS SERIES 1800
STEEL COMMERCIAL DOOR
OUTSWING
"IMPACT"



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 2021 International Residential Code (IRC), Sections R301 & R609 and the 2021 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.

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

OVERALL FRAME DIMENSION	LOCK TYPE	DESIGN PRESSURE (PSF) OUTSWING	
		POSITIVE	NEGATIVE
40.0" x 98.0"	PANIC BAR EXIT DEVICE w/ VERTICAL RODS "7700-V Series"	+70.0	-70.0
52.0" x 98.0"	PANIC BAR EXIT DEVICE w/ VERTICAL RODS "7700-V Series"	+50.0	-50.0

STATE OF TEXAS
LYNDON F. SCHMIDT
104123
LICENSED PROFESSIONAL ENGINEER
7.2.20

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CERTIFICATE OF REGISTRATION # F-11852

PRODUCT: CAL-ROYAL STEEL COMMERCIAL DOOR

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

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

DATE: 10/1/14
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: TX-4483
SHEET 1 OF 6

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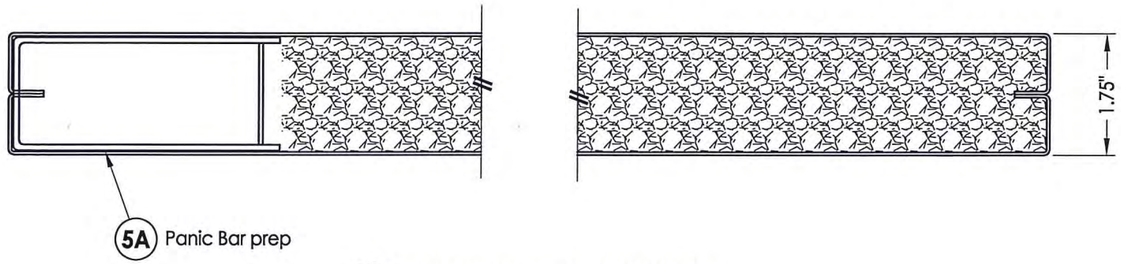
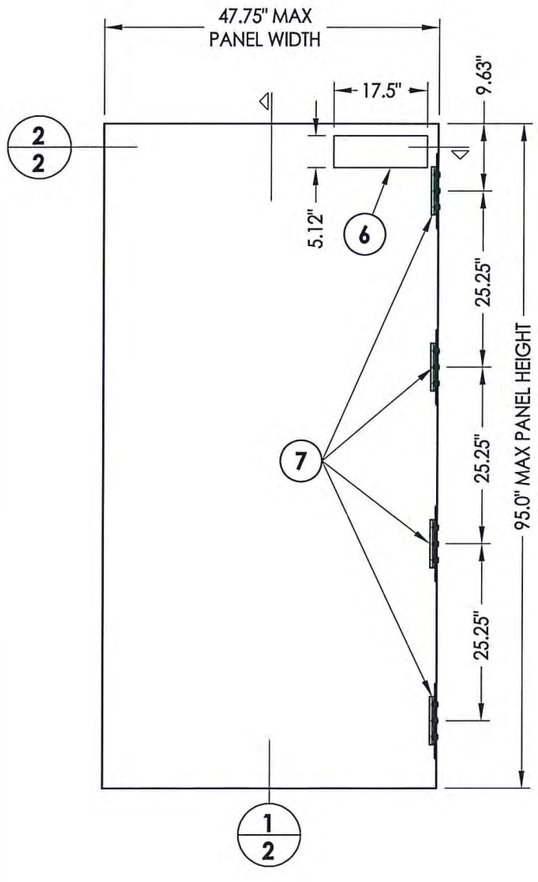
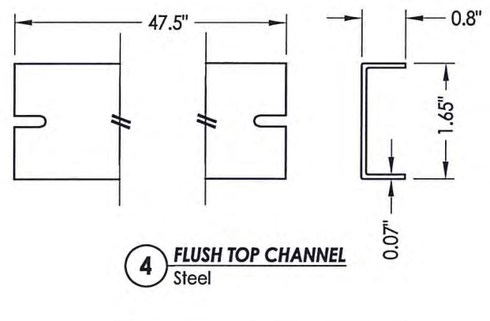


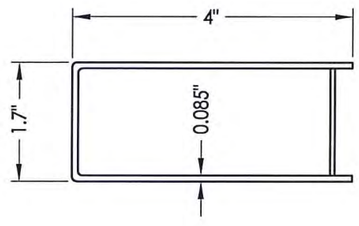
2/2 HORIZONTAL CROSS SECTION
Door panel



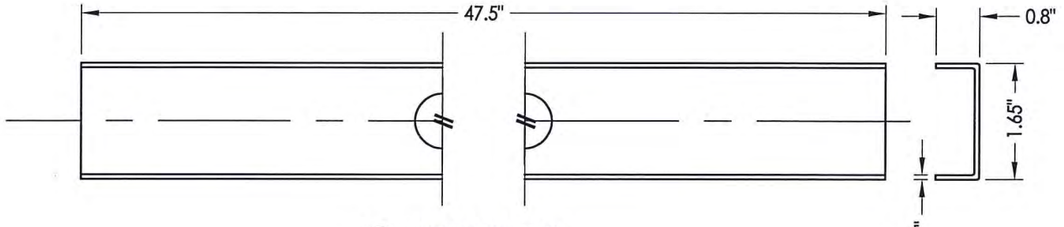
1 CAL-ROYAL STEEL DOOR PANEL



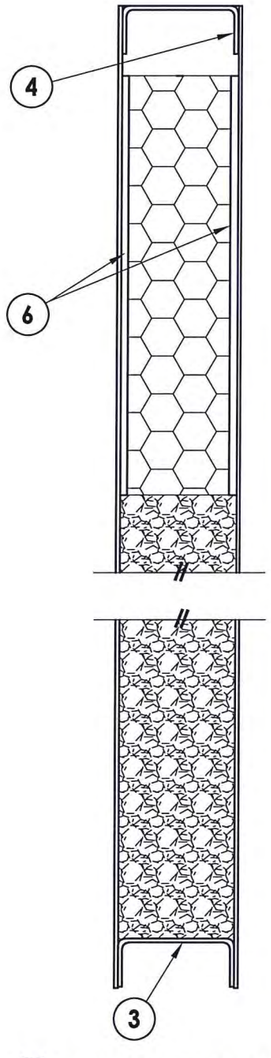
4 FLUSH TOP CHANNEL
Steel



5A STEEL LOCK BOX REINFORCEMENT
Panic Bar Prep



3 BOTTOM CHANNEL
Steel



1/2 VERTICAL CROSS SECTION
Door panel

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)

STATE OF TEXAS
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CERTIFICATE OF REGISTRATION # F-11852

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

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

DATE: 10/1/14
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: TX-4483
SHEET 2 OF 6

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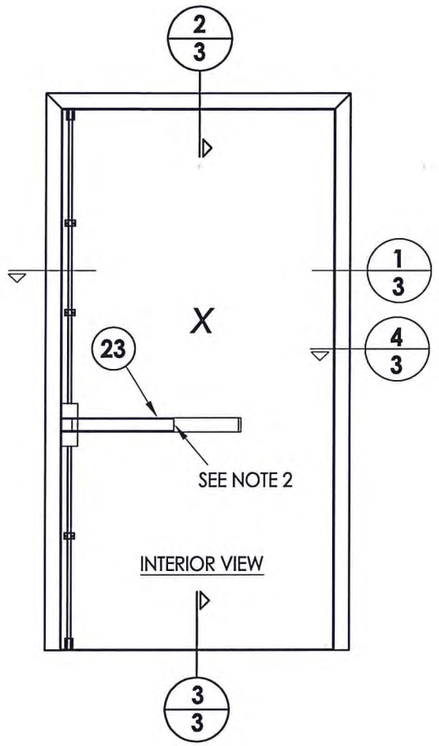
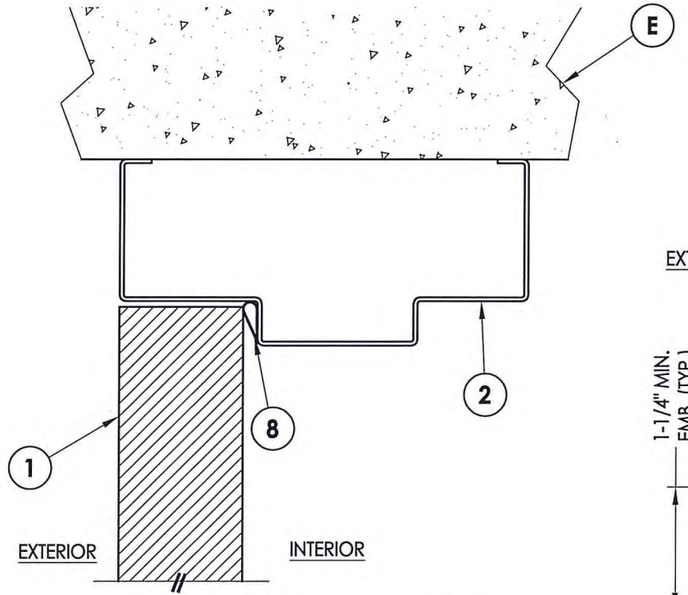
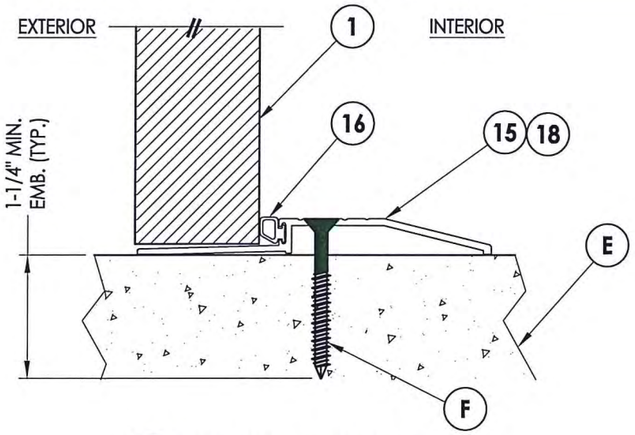
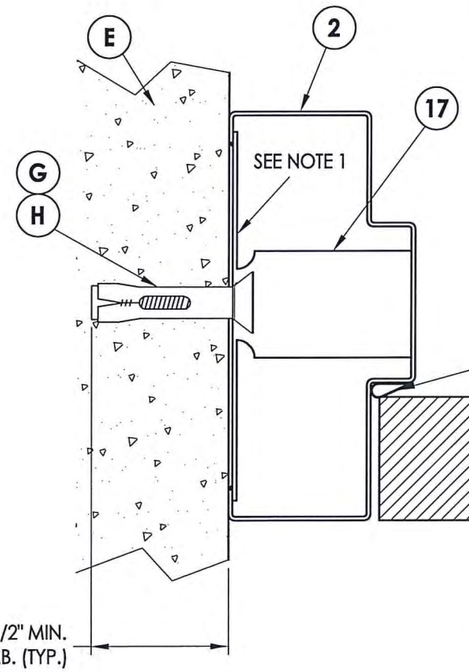




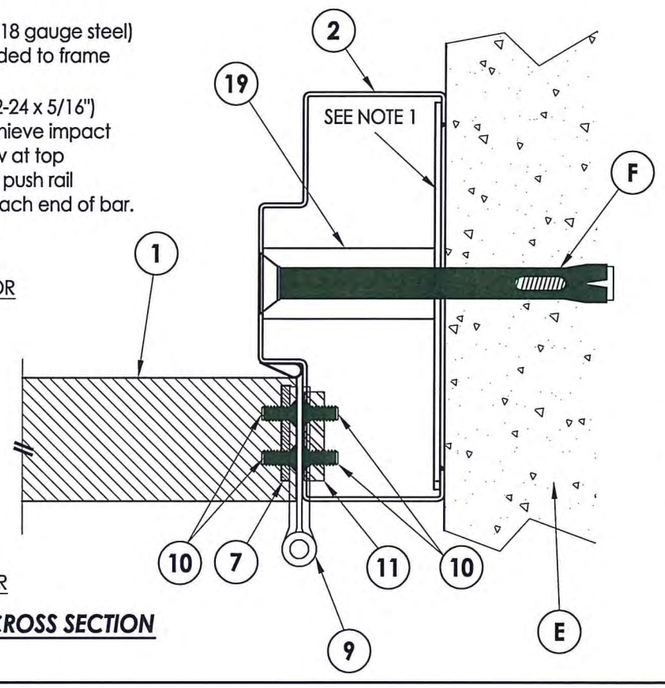
2/3 VERTICAL CROSS SECTION
Outswing configuration



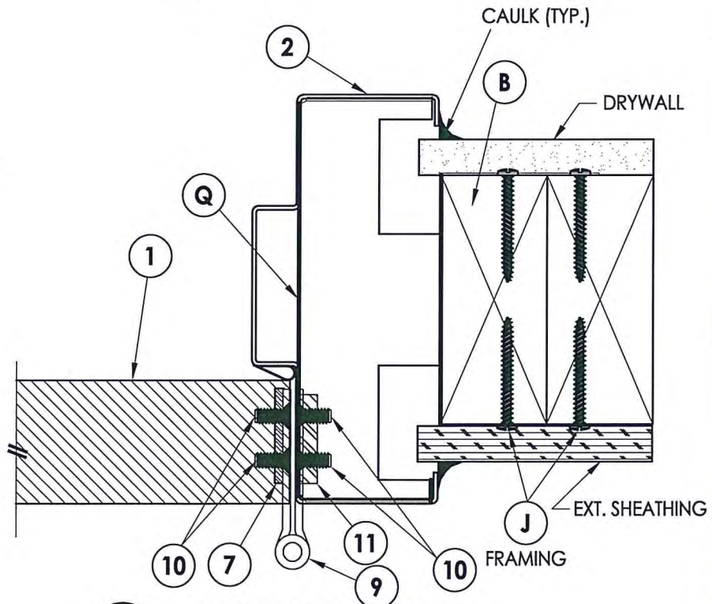
3/3 VERTICAL CROSS SECTION
Outswing configuration



NOTES:
1. Anchor strap (3/4" wide, 18 gauge steel) or Tube Anchor tack welded to frame along each end.
2. 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.



1/3 HORIZONTAL CROSS SECTION



4/3 HORIZONTAL CROSS SECTION
2X Stud Construction
Wood Stud Anchor

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

PRODUCT: CAL-ROYAL STEEL COMMERCIAL DOOR

PART OR ASSEMBLY: HORIZONTAL AND VERTICAL CROSS SECTIONS

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

DATE: 10/1/14
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: TX-4483
SHEET 3 OF 6

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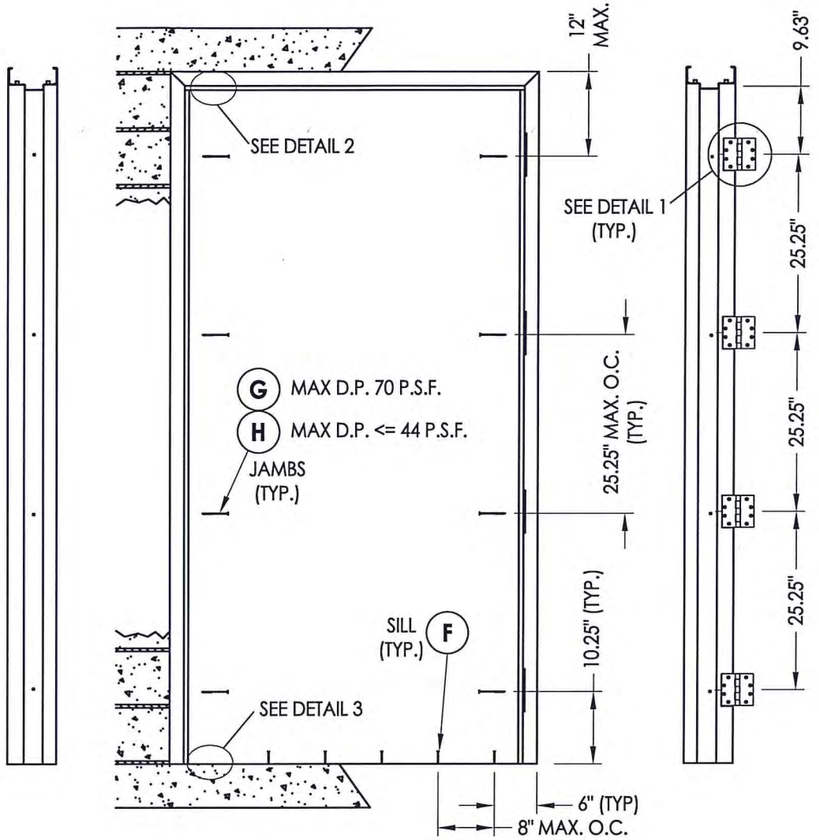
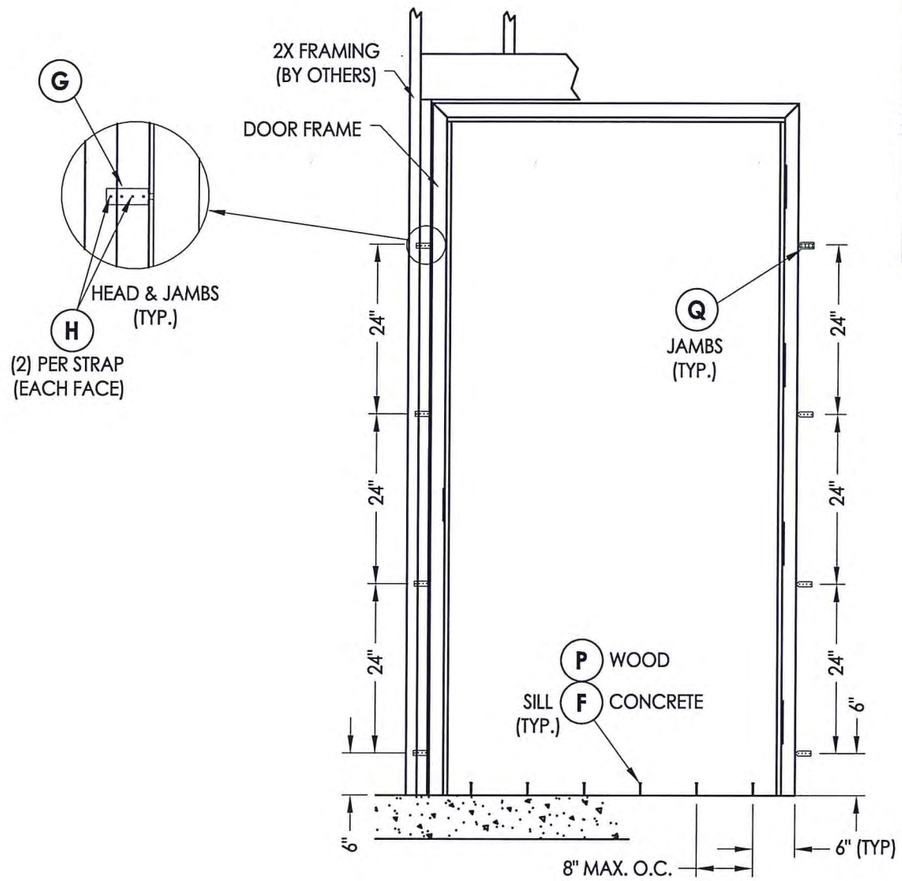


STRIKE JAM **FRAME ANCHORING** **HINGE JAM**

Masonry Construction



FRAME ANCHORING

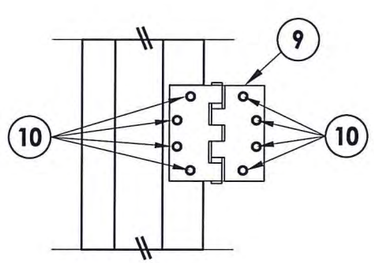
2X Stud Construction
Strap Anchors

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:*

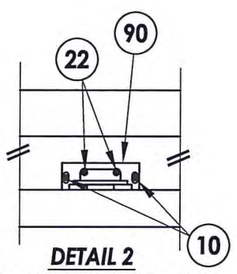
ANCHOR TYPE	ANCHOR SIZE	MIN. EMBEDMENT	MIN. CLEARANCE TO MASONRY EDGE	MIN. CLEARANCE TO ADJACENT ANCHOR
ITW TAPCON®	1/4"	1-1/4"	4"	2"
TAPPER	3/8"	1-1/2"	4-1/4"	3-3/4"
DYNABOLT SLEEVE ANCHOR	3/8"	1-1/2"	2-1/4"	4-1/2"

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



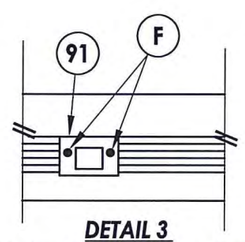
DETAIL 1

Hinges



DETAIL 2

Vertical Rod Latch Strike Plate @ head



DETAIL 3

Vertical Rod Latch Strike Plate @ sill

STATE OF TEXAS
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LICENSED PROFESSIONAL ENGINEER
7-2-20

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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*

NO.	DATE	BY
1	7/02/20	LFS

REVISIONS

UPDATE TO 2018 IBC/IRC CODE & REMOVE LATCH & DEADBOLT

DATE: 10/1/14
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: TX-4483
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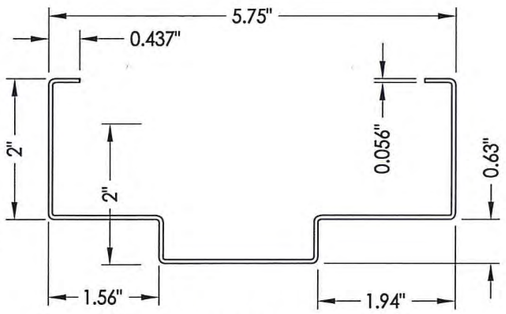
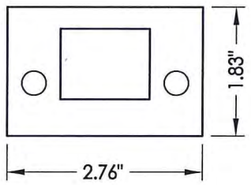
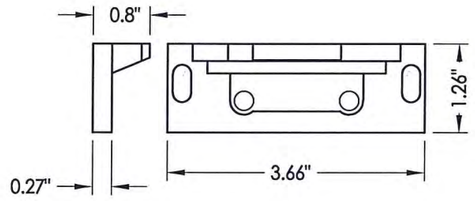


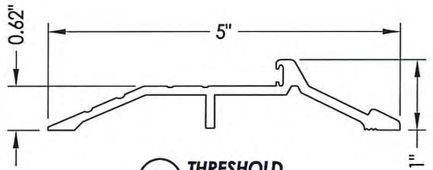
2 ***FRAME***
16 Ga. Steel



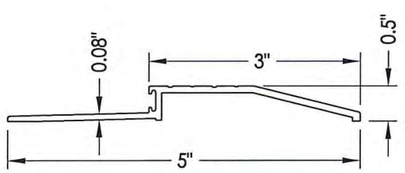
91 ***VERTICAL ROD LATCH STRIKE PLATE***
@ Sill



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



15 ***THRESHOLD***



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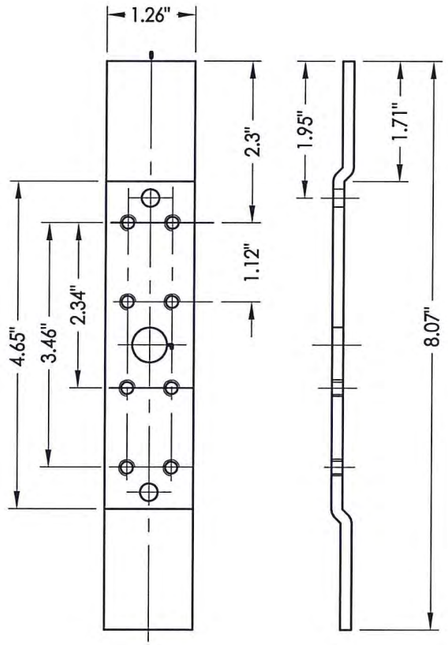
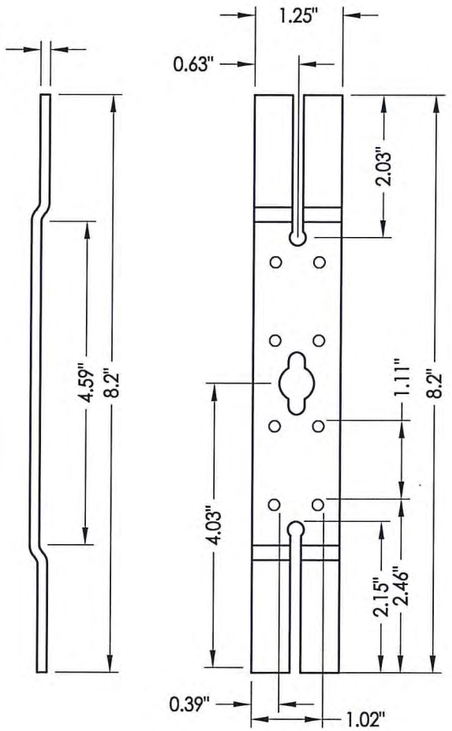


11 ***FRAME HINGE REINFORCEMENT***
8 Ga. Steel



7 ***DOOR HINGE REINFORCEMENT***
8 Ga. Steel

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

STATE OF TEXAS
LYNDON F. SCHMIDT
104123
LICENSED
PROFESSIONAL ENGINEER

7-2-20

PRODUCT: *CAL-ROYAL STEEL COMMERCIAL DOOR*

PART OR ASSEMBLY: *BILL OF MATERIALS AND COMPONENTS*

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

DATE: 10/1/14
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: TX-4483
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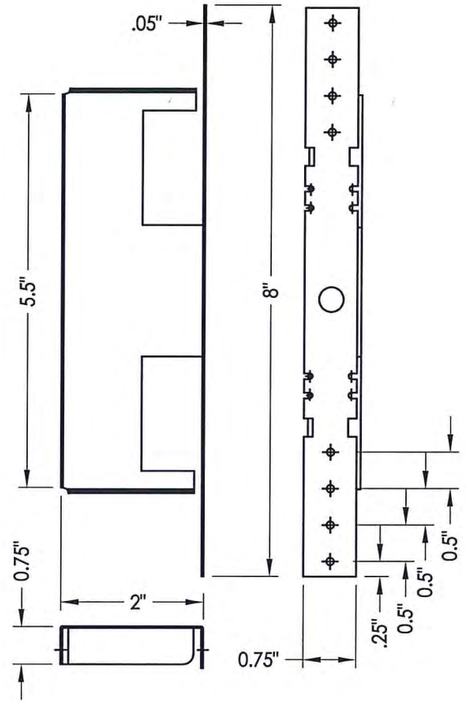
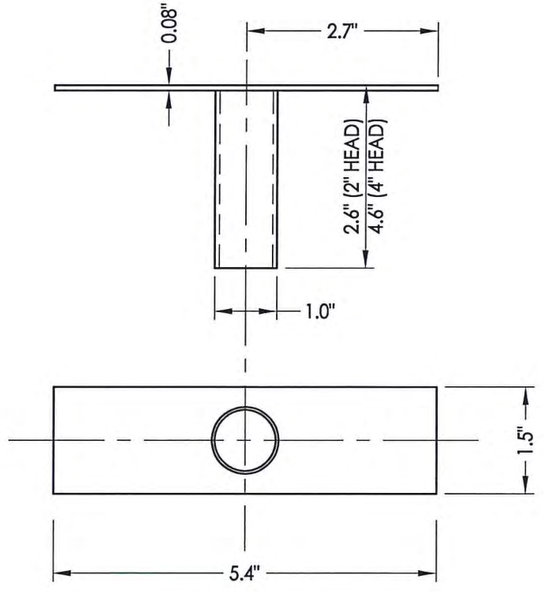
BILL OF MATERIALS

ITEM #	DESCRIPTION	MATERIAL
B	2 X 4 FRAMING (SG >= 0.42)	WOOD
E	MASONRY - 3,000 PSI MIN. CONCRETE CONFORMING TO ACI 301 OR HOLLOW BLOCK CONFORMING TO ASTM C90	CONCRETE
F	1/4" X 2-1/4" ITW PFH CONCRETE SCREW	STEEL
G	3/8" X 2" PFH ITW DYNABOLT SLEEVE ANCHOR	STEEL
H	3/8" X 2" PFH TAPPER CONCRETE SCREW BY POWERS FASTENERS	STEEL
P	#12 X 2-1/2" PFH WOOD SCREW	STEEL
Q	WOOD STRAP ANCHOR	STEEL
1	DOOR PANEL	STEEL
2	HOLLOW FRAME 2"	STEEL
3	BOTTOM CHANNEL	STEEL
4	FLUSH TOP CHANNEL	STEEL
5A	LOCK BOX REINFORCEMENT	STEEL
6	DOOR CLOSER REINFORCEMENT (11 GA.)	STEEL
7	DOOR HINGE REINFORCEMENT	STEEL
8	WEATHERSTRIP - COMPRESSION BULB 1/4" X 1/2" (PEMKO S88)	NEOPRENE
9	4-1/2" X 4-1/2" X 0.125" TEMPLATE HINGE	STEEL
10	#12-24 X 1/2" PFH MACHINE SCREW	STEEL
11	FRAME HINGE REINFORCEMENT	STEEL
15	THRESHOLD (PEMKO #181_T)	ALUM
16	WEATHERSTRIP (THERMOSEAL™)	NEOPRENE
17	UNIVERSAL WALL ANCHOR REINFORCEMENT	STEEL
18	THRESHOLD (PEMKO 2001P)	ALUM
19	TUBE ANCHOR REINFORCEMENT	STEEL
22	#8-24 X 3/4" COMB. MACHINE / WOOD SCREW	STEEL
23	CAL-ROYAL 7700-V SERIES VERTICAL ROD EXIT DEVICE	-
90	VERTICAL ROD LATCH STRIKE PLATE @ HEAD	STEEL
91	VERTICAL ROD LATCH STRIKE PLATE @ SILL	STEEL



Q ***WOOD STRAP ANCHOR***



19 ***TUBE ANCHOR***

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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	REVISIONS	BY
1	7/02/20	UPDATE TO 2018 IBC/IRC CODE & REMOVE LATCH & DEADBOLT	LFS

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SHEET 6 OF 6

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