CAL-ROYAL PRODUCTS, INC

6605 Flotilla Street
City of Commerce
CA 90040

DKS SERIES 1800
STEEL COMMERCIAL SINGLE DOOR
OUTSWING
"IMPACT"

EVALUATED FOR USE IN THE STATE OF TEXAS

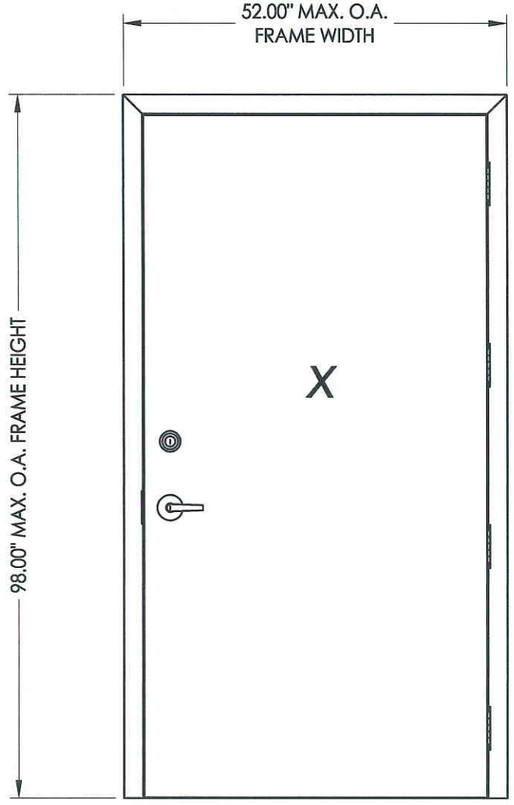
The Cal-Royal Door described herein complies with the 2006 International Residential Code (IRC), Sections R301 and the 2006 International Building Code (IBC), Sections 1405.12, 1609 & 1714.5 (including Texas revisions) subject to the following conditions:

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. This system has been tested and evaluated as a large missile impact protective system for installation in the Seaward, Inland I and Inland II areas. This product meets missile level "D" and includes Wind Zone 4 as defined in ASTM E1996.
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.

SUPPORTING DOCUMENTS & EVIDENCE

1. Testing per ASTM E 330-02 & ASTM E 1886/1996-05:
   Architectural Testing, Inc. test report(s) #: ATI 95951.01-201-18.
2. Fire Testing per UL 10B & UL 10C: Intertek Testing Services test report #: 3053378.
3. Calculations (Anchoring) prepared by Lyndon F. Schmidt, P.E.
4. Certificate of Participation issued by the National Accreditation and Management Institute, Inc., certifying that Cal-Royal Products, Inc. is manufacturing products within a Quality Assurance program.

TABLE OF CONTENTS	
SHEET#	DESCRIPTION
1	Typical elevation, design pressures & general notes
2	Door panel details
3	Horizontal and vertical cross section
4	Frame anchoring
5	Bill of materials and components



OVERALL FRAME DIMENSION	LOCK TYPE	DESIGN PRESSURE (PSF)	
		POSITIVE	NEGATIVE
52.00" x 98.00"	161 LATCH & DEADBOLT "SL / T300 Series"	+80.0	-80.0

STATE OF TEXAS
LYNDON F. SCHMIDT
104123
LICENSED PROFESSIONAL ENGINEER
8.19.16

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

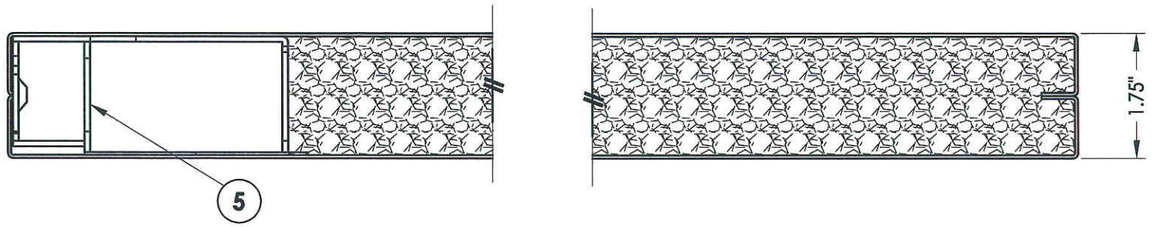
NO.	DATE	BY

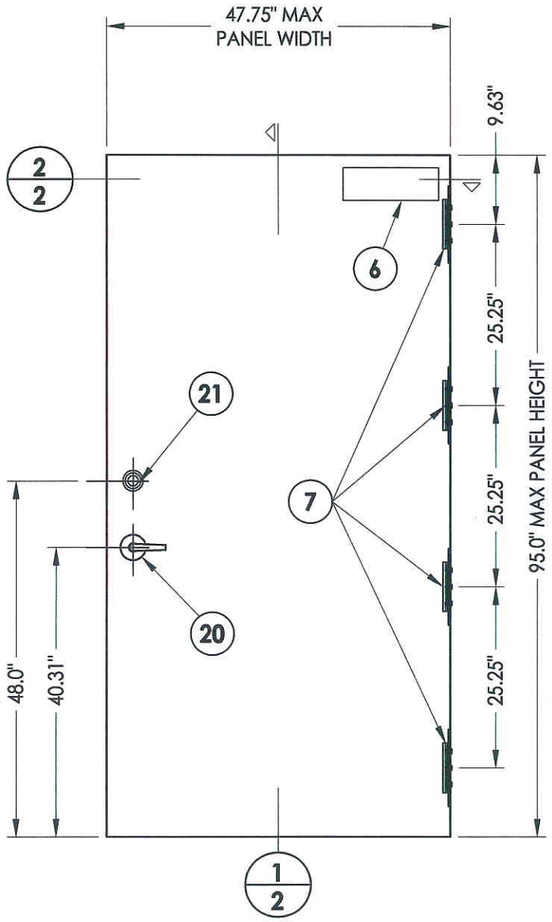
REVISIONS

DATE: 8/12/10
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: TX-4104
SHEET 1 OF 5

© 2010 R.W. BUILDING CONSULTANTS INC.

R:\A - Projects\Project Folders\proj 1501 - 1600\PF 1536\D. RWBC Drawings\TEXAS.dwg, FL-13624 .2

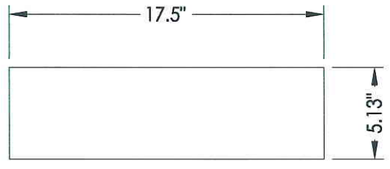




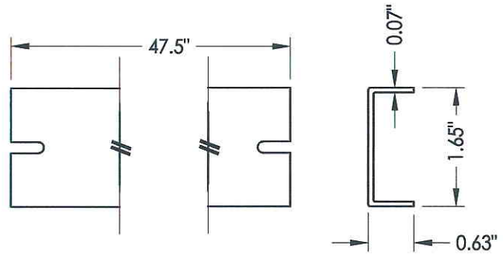
1 2 CAL-ROYAL DOOR PANEL

STEEL DOOR SKIN: MIN. 0.048" THK. (18 GA.)
CORE MATERIAL: EPS FOAM (POLYSTYRENE - 1.0 PCF MIN. DENSITY)

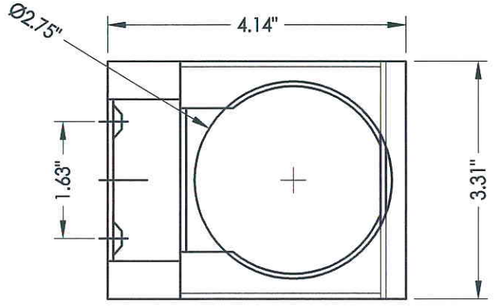
2 2 HORIZONTAL CROSS SECTION
Door panel



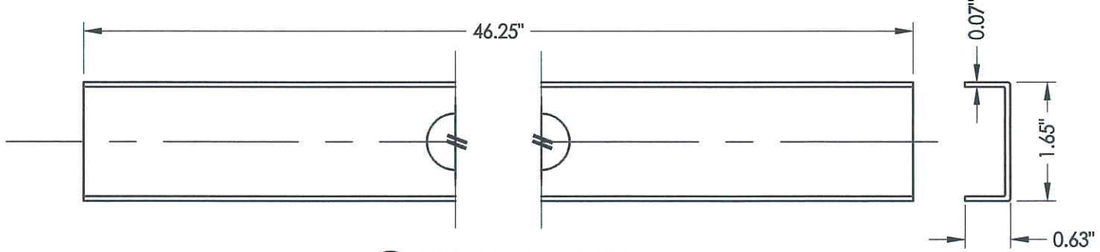
6 DOOR CLOSER REINFORCEMENT



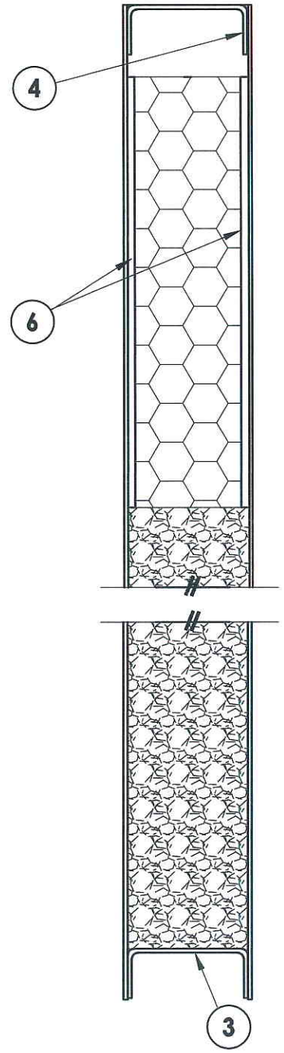
4 DOOR TOP CHANNEL



5 LOCK BOX REINFORCEMENT



3 DOOR BOTTOM CHANNEL



1 2 VERTICAL CROSS SECTION
Door panel

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

STATE OF TEXAS
LYNDON F. SCHMIDT
104123
LICENSED PROFESSIONAL ENGINEER
8.19.10

PRODUCT: CAL-ROYAL STEEL COMMERCIAL DOOR

PART OR ASSEMBLY: DOOR PANEL DETAILS

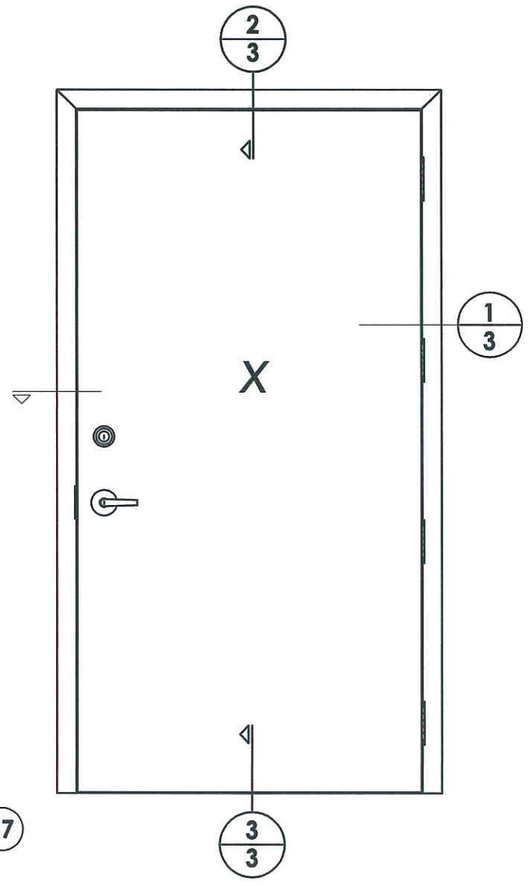
NO.	DATE	REVISIONS	BY
.			

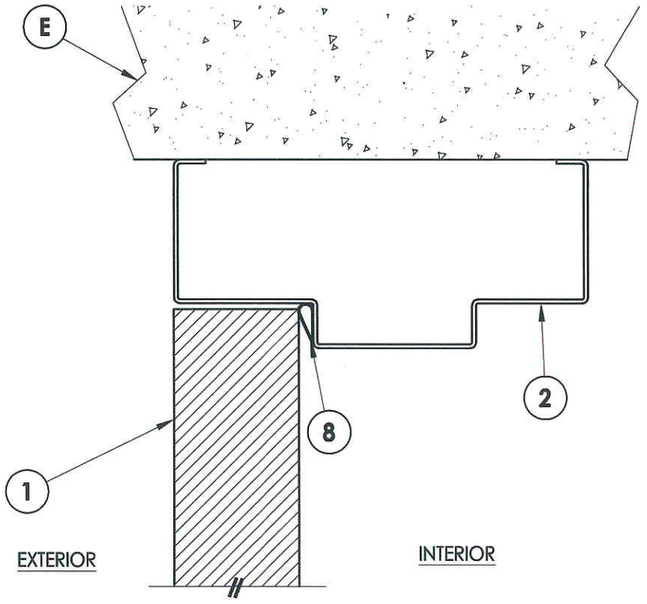
DATE: 8/12/10
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: TX-4104
SHEET 2 OF 5

© 2010 R.W. BUILDING CONSULTANTS INC.

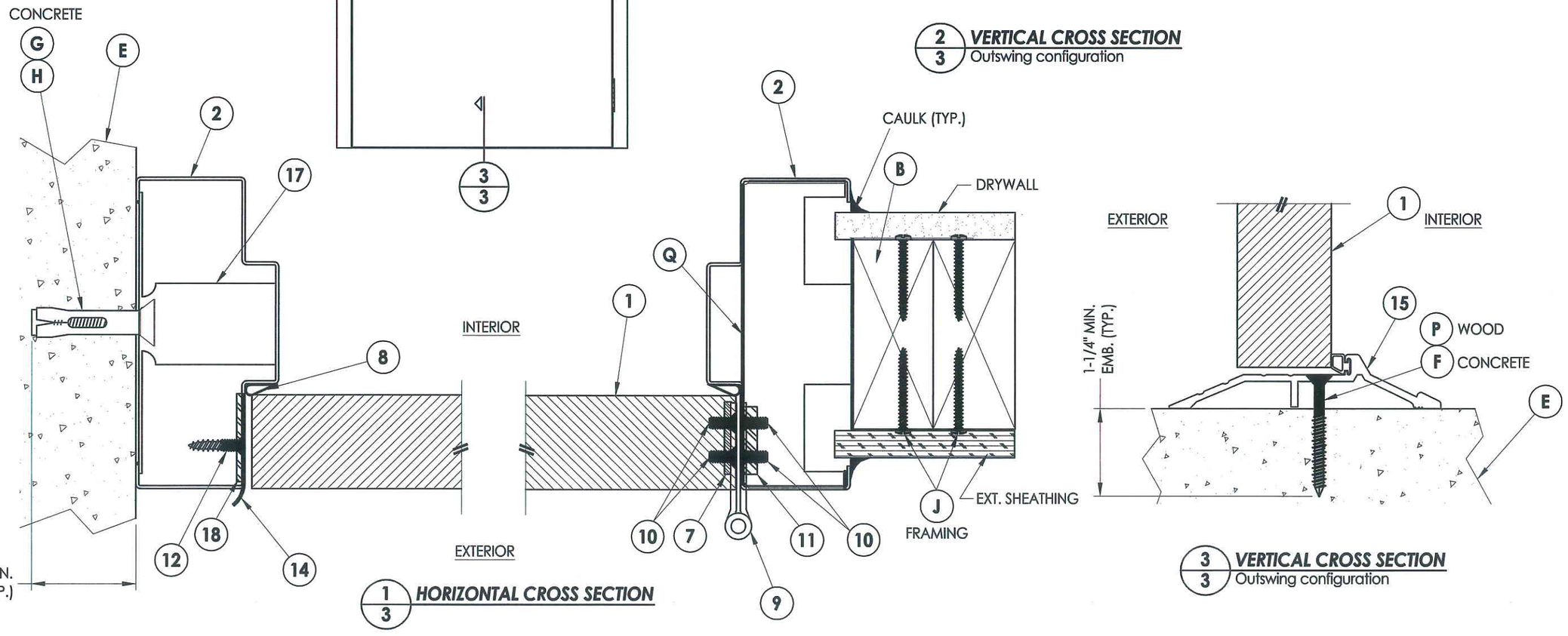
R:\A - Projects\Project Folders\proj 1501 - 1600\PF 1536\D. RWBC Drawings\TEXAS.dwg, 2-2

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





2/3 VERTICAL CROSS SECTION
Outswing configuration



1/3 HORIZONTAL CROSS SECTION

3/3 VERTICAL CROSS SECTION
Outswing configuration

STATE OF TEXAS
LYNDON F. SCHMIDT
104123
LICENSED
PROFESSIONAL
ENGINEER
8.19.10

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

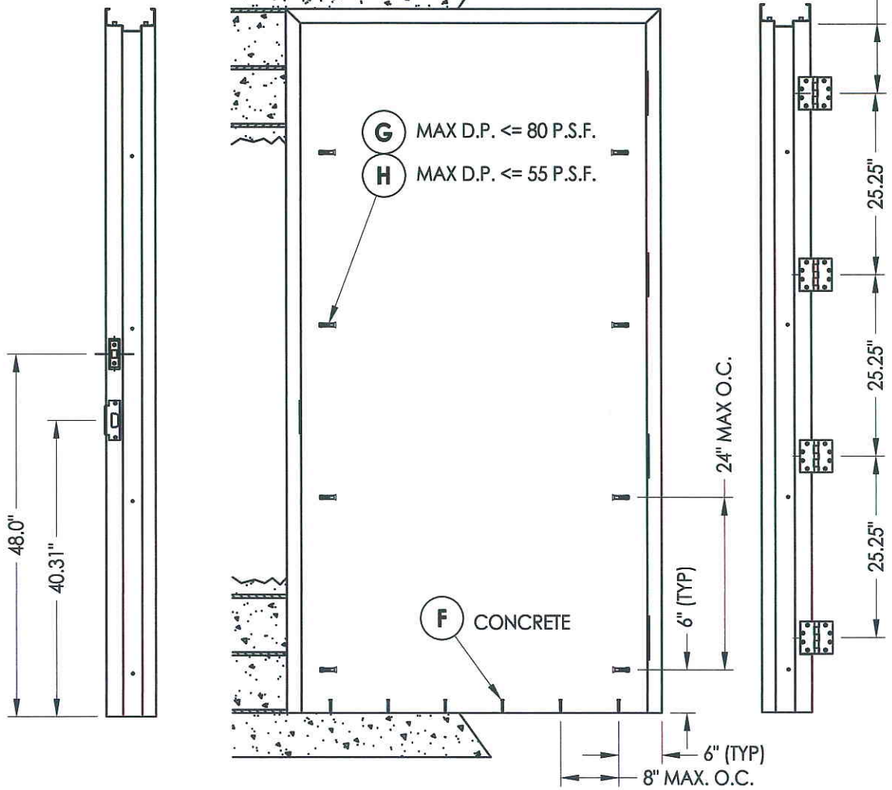
PART OR ASSEMBLY: HORIZONTAL AND VERTICAL CROSS SECTIONS

NO.	DATE	REVISIONS	BY
.			

DATE: 8/12/10
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: TX-4104
SHEET 3 OF 5

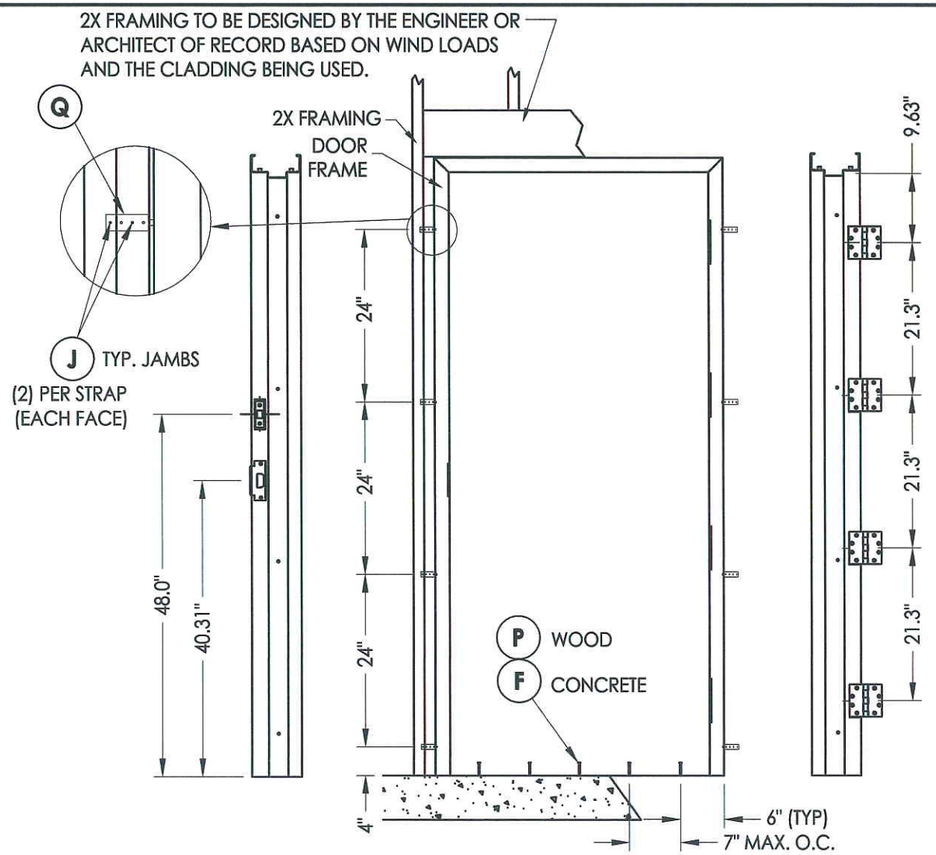
© 2010 R.W. BUILDING CONSULTANTS INC.

R:\A - Projects\Project Folders\proj 1501 - 1600\PF 1536\D. RWBC Drawings\TEXAS.dwg, 2-3



STRIKE JAM **FRAME ANCHORING (4'-0" X 8'-0" DOOR)** **HINGE JAM**

Masonry Construction
Concrete Anchors



STRIKE JAM **FRAME ANCHORING (4'-0" X 7'-0" DOOR)** **HINGE JAM**

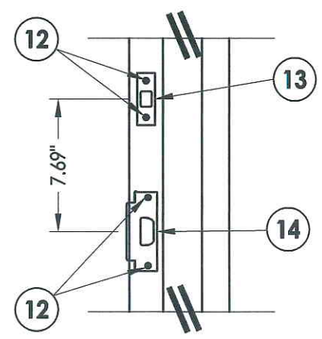
2X Stud Construction
Strap Anchors

CONCRETE ANCHOR NOTES:

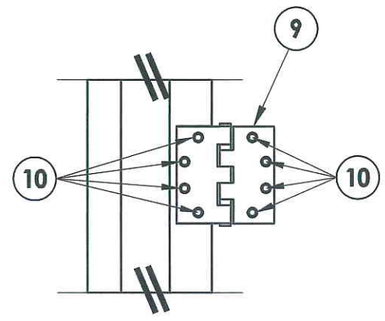
1. *Substitution of equal concrete screws from a different supplier may have different edge distance and center distance requirements.*
2. *Concrete screw locations at the corners may be adjusted to maintain the minimum edge distance to mortar joints. If concrete screw locations noted as "MAX. ON CENTER" 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	1/4"	1-1/4"	2-1/2"	3"
ELCO	1/4"	1-1/4"	1"	4"
TAPPER	3/8"	1-1/2"	4-1/2"	6"
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



DETAIL 2

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: FRAME ANCHORING

NO.	DATE	BY	REVISIONS

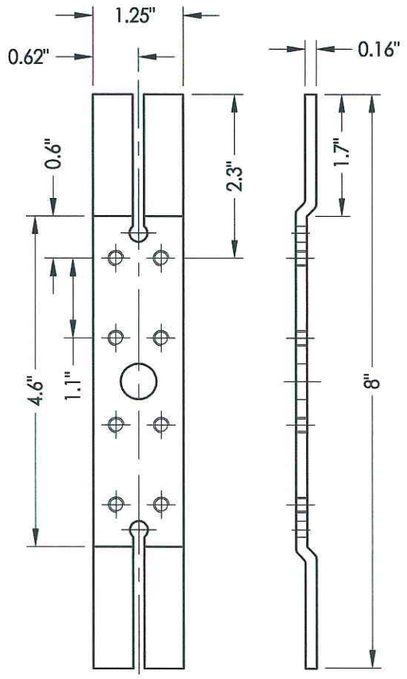
DATE: 8/12/10
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: TX-4104
SHEET 4 OF 5

© 2010 R.W. BUILDING CONSULTANTS INC.

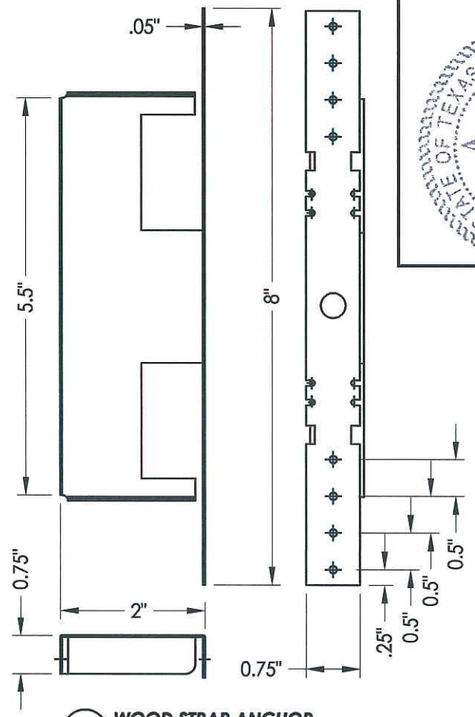
R:\A - Projects\Project Folders\proj 1501 - 1600\PF 1536\D. RWBC Drawings\TEXAS.dwg, 2-4

BILL OF MATERIALS

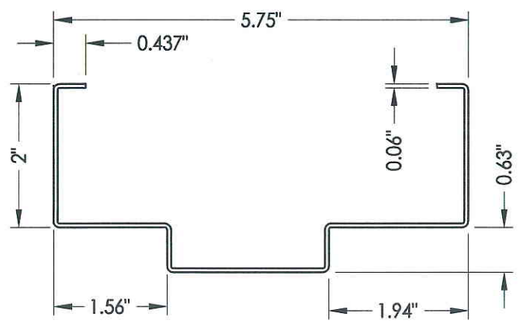
ITEM #	DESCRIPTION	MATERIAL
B	2 X 4 FRAMING (SG >= 0.42)	WOOD
D	1/4" X 2-3/4" ELCO OR ITW CONCRETE SCREW	STEEL
E	MASONRY - 3,192 PSI MIN. CONCRETE CONFORMING TO ACI 301 OR HOLLOW BLOCK CONFORMING TO ASTM C90	CONCRETE
F	1/4" X 1-3/4" ITW OR ELCO PFH CONCRETE SCREW	STEEL
G	3/8" X 2" PFH ITW DYNABOLT SLEEVE ANCHOR	STEEL
H	3/8" X 2" PFH TAPPER CONCRETE SCREW BY POWERS FASTENERS	STEEL
J	#8 X 1-1/2" PPH WOOD SCREW	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	DOOR BOTTOM CHANNEL	STEEL
4	DOOR TOP CHANNEL	STEEL
5	LOCK BOX REINFORCEMENT	STEEL
6	DOOR CLOSER REINFORCEMENT (11 gauge steel)	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
12	#12-24 X 1" COMBINATION MACHINE / WOOD SCREW	STEEL
13	DEAD BOLT STRIKE	STEEL
14	ANSI LATCH STRIKE	STEEL
15	THRESHOLD (PEMKO 181T)	ALUM
17	UNIVERSAL WALL ANCHOR REINFORCEMENT	STEEL
18	FRAME LATCH STRIKE REINFORCEMENT	STEEL
20	CAL-ROYAL T300 SERIES DEADBOLT	-
21	CAL-ROYAL SL SERIES CYLINDRICAL LOCK	-



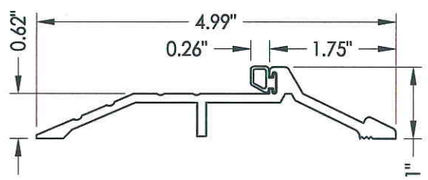
7 DOOR HINGE REINFORCEMENT



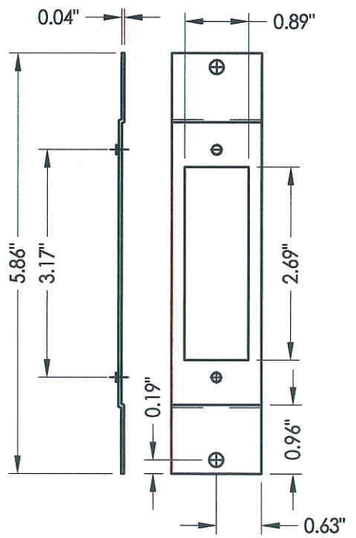
Q WOOD STRAP ANCHOR



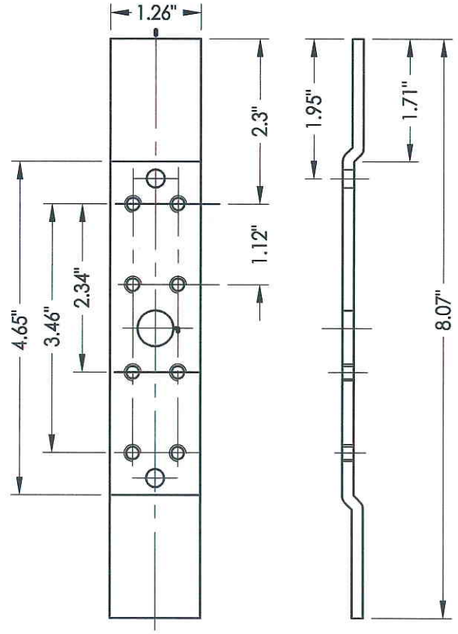
2 HOLLOW METAL FRAME
2" HEAD



15 THRESHOLD
Pemko 181T
w/ Thermoseal ™ Weatherstrip



18 FRAME LATCH STRIKE REINFORCEMENT



11 FRAME HINGE REINFORCEMENT

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

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

6-19-10

PRODUCT: CAL-ROYAL STEEL COMMERCIAL DOOR

PART OR ASSEMBLY: BILL OF MATERIALS AND COMPONENTS

NO.	DATE	REVISIONS	BY

DATE: 8/12/10
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: TX-4104
SHEET 5 OF 5

© 2010 R.W. BUILDING CONSULTANTS INC.

R:\A - Projects\Project Folders\proj 1501 - 1600\PF 1536\D. RWBC Drawings\TEXAS.dwg, 2-5