

Anchor: ITW Tapcon or Tapcon LDT or Simpson Strong-Tie.

ITW Ramset/ Redhead Tapcon, 1/4" diameter, minimum 3.5" long with washer that conforms to ANSI B18.22.1 type B.

ITW Ramset/ Redhead Large Diameter Tapcon, 3/8" diameter, minimum 4" long with washer that conforms to ANSI B18.22.1 type B.

Simpson Titen HD, 3/8" diameter, minimum 4" long with washer that conforms to ANSI B18.22.1 type B.

Simpson Wedge-All, 3/8" diameter, minimum 4" long with washer that conforms to ANSI B18.22.1 type B.

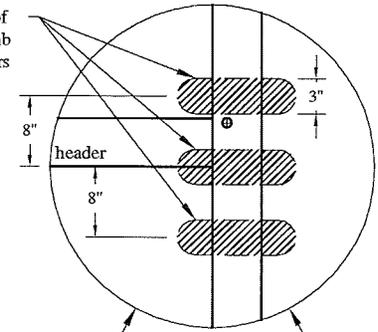
When applying back jamba over dry wall or other non structural wall covering, use longer fasteners to insure minimum embedment required.

This chart applies to wood species with specific gravity greater than or equal to 0.42 including spruce pine fir (SPF) and southern pine (SP).

See chart for minimum washer diameter. Washer diameters in chart are based on use of Spruce Pine Fir. Washers may be 10% smaller when Southern Pine is used.

See chart for minimum edge distance required. Lowest anchor to be greater than the minimum edge distance up from the floor and less than 10-inches from the floor.

keep each area clear of any back jamb attachment fasteners



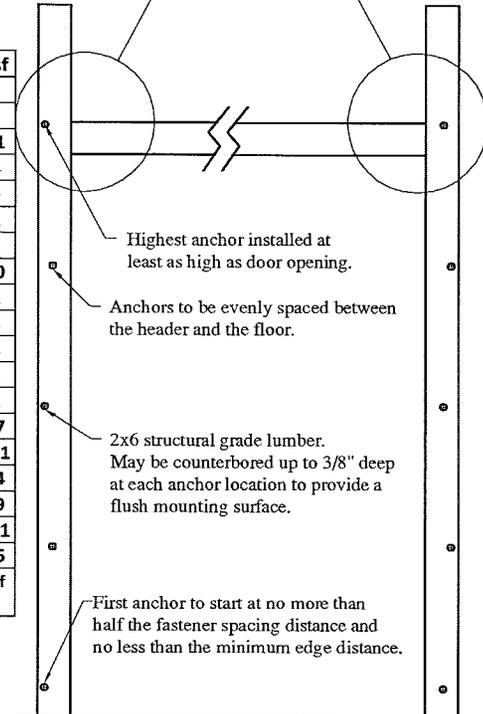
FASTENER SPACING (inches)

2500 psi concrete Filled CMU

ITW Tapcon Simpson Strong-Tie

DOOR WIDTH (feet and inches) at a given DESIGN PRESSURE (PSF)

| 1/4" | 1/4" | 3/8" | 3/8" | 3/8" | 3/8" | 14psf | 17psf | 20psf | 24psf | 28psf | 32psf | 36psf | 40psf | 44psf | 48psf | 53psf | 58psf | 63psf | 69psf | 75psf | 81psf | 87psf | 93psf | | | | | | |
|-------------------|------|------|------|------|------|------------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|-------|--------|--------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
| 24 | 24 | 24 | 24 | 24 | 24 | 22'-9 | 18'-9 | 15'-11 | 13'-3 | 11'-4 | 9'-11 | 8'-10 | 7'-11 | 7'-3 | 6'-7 | 6'-0 | 5'-6 | 5'-0 | 4'-7 | 4'-3 | 3'-11 | n/a | n/a | | | | | | |
| 24 | 22 | 24 | 24 | 24 | 24 | 24'-3 | 20'-0 | 17'-0 | 14'-1 | 12'-1 | 10'-7 | 9'-5 | 8'-6 | 7'-8 | 7'-0 | 6'-4 | 5'-10 | 5'-4 | 4'-11 | 4'-6 | 4'-2 | n/a | n/a | | | | | | |
| 24 | 20 | 24 | 24 | 24 | 16 | 26'-6 | 21'-9 | 18'-6 | 15'-5 | 13'-3 | 11'-7 | 10'-3 | 9'-3 | 8'-5 | 7'-8 | 7'-0 | 6'-4 | 5'-10 | 5'-4 | 4'-11 | 4'-6 | 4'-3 | 3'-11 | | | | | | |
| 24 | 18 | 24 | 22 | 24 | 16 | 28'-10 | 23'-9 | 20'-2 | 16'-10 | 14'-5 | 12'-7 | 11'-2 | 10'-1 | 9'-2 | 8'-5 | 7'-7 | 6'-11 | 6'-5 | 5'-10 | 5'-4 | 4'-11 | 4'-7 | 4'-4 | | | | | | |
| 24 | 17 | 24 | 20 | 24 | 16 | 31'-9 | 26'-2 | 22'-3 | 18'-6 | 15'-10 | 13'-10 | 12'-4 | 11'-1 | 10'-1 | 9'-3 | 8'-4 | 7'-8 | 7'-0 | 6'-5 | 5'-11 | 5'-5 | 5'-1 | 4'-9 | | | | | | |
| 24 | 15 | 24 | 18 | 24 | 16 | 34'-3 | 28'-2 | 24'-0 | 20'-0 | 17'-1 | 15'-0 | 13'-4 | 12'-0 | 10'-10 | 10'-0 | 9'-0 | 8'-3 | 7'-7 | 6'-11 | 6'-4 | 5'-11 | 5'-6 | 5'-1 | | | | | | |
| 24 | 15 | 24 | 17 | 16 | 16 | 36'-3 | 29'-10 | 25'-4 | 21'-2 | 18'-1 | 15'-10 | 14'-1 | 12'-8 | 11'-6 | 10'-7 | 9'-7 | 8'-9 | 8'-0 | 7'-4 | 6'-9 | 6'-3 | 5'-10 | 5'-5 | | | | | | |
| 22 | 13 | 24 | 16 | 16 | 8 | n/a | 32'-3 | 27'-5 | 22'-10 | 19'-7 | 17'-1 | 15'-2 | 13'-8 | 12'-5 | 11'-5 | 10'-4 | 9'-5 | 8'-8 | 7'-11 | 7'-3 | 6'-9 | 6'-3 | 5'-10 | | | | | | |
| 21 | 13 | 24 | 15 | 16 | 8 | n/a | 33'-10 | 28'-9 | 24'-0 | 20'-6 | 18'-0 | 16'-0 | 14'-4 | 13'-1 | 12'-0 | 10'-10 | 9'-11 | 9'-1 | 8'-4 | 7'-8 | 7'-1 | 6'-7 | 6'-2 | | | | | | |
| 19 | 12 | 24 | 14 | 16 | 8 | n/a | n/a | 31'-4 | 26'-1 | 22'-5 | 19'-7 | 17'-5 | 15'-8 | 14'-3 | 13'-0 | 11'-10 | 10'-9 | 9'-11 | 9'-1 | 8'-4 | 7'-8 | 7'-2 | 6'-8 | | | | | | |
| 16 | 10 | 24 | 12 | 16 | 8 | n/a | n/a | 36'-0 | 30'-0 | 25'-8 | 22'-6 | 20'-0 | 18'-0 | 16'-4 | 15'-0 | 13'-7 | 12'-4 | 11'-5 | 10'-5 | 9'-7 | 8'-10 | 8'-3 | 7'-8 | | | | | | |
| 16 | 10 | 24 | 11 | 8 | 8 | n/a | n/a | n/a | 31'-9 | 27'-2 | 23'-9 | 21'-2 | 19'-0 | 17'-3 | 15'-10 | 14'-4 | 13'-1 | 12'-1 | 11'-0 | 10'-1 | 9'-4 | 8'-9 | 8'-2 | | | | | | |
| 14 | 8 | 24 | 10 | 8 | 8 | n/a | n/a | n/a | 35'-9 | 30'-8 | 26'-10 | 23'-10 | 21'-5 | 19'-6 | 17'-10 | 16'-2 | 14'-9 | 13'-7 | 12'-5 | 11'-5 | 10'-7 | 9'-10 | 9'-2 | | | | | | |
| 12 | 7 | 20 | 9 | 8 | 8 | n/a | n/a | n/a | n/a | n/a | 30'-11 | 27'-5 | 24'-8 | 22'-5 | 20'-7 | 18'-8 | 17'-0 | 15'-8 | 14'-4 | 13'-2 | 12'-2 | 11'-4 | 10'-7 | | | | | | |
| 11 | 7 | 20 | 8 | 8 | 8 | n/a | n/a | n/a | n/a | n/a | 31'-10 | 28'-3 | 25'-6 | 23'-2 | 21'-3 | 19'-2 | 17'-7 | 16'-2 | 14'-9 | 13'-7 | 12'-7 | 11'-8 | 10'-11 | | | | | | |
| 10 | 6 | 17 | 7 | 8 | n/a | n/a | n/a | n/a | n/a | n/a | 32'-0 | 28'-9 | 26'-2 | 24'-0 | 21'-8 | 19'-10 | 18'-3 | 16'-8 | 15'-4 | 14'-2 | 13'-2 | 12'-4 | | | | | | | |
| 9 | n/a | 16 | 6 | 8 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 32'-0 | 29'-1 | 26'-8 | 24'-1 | 22'-0 | 20'-3 | 18'-6 | 17'-0 | 15'-9 | 14'-8 | 13'-9 | | | | | | | |
| 8 | n/a | 13 | 6 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 30'-11 | 28'-0 | 25'-7 | 23'-6 | 21'-6 | 19'-9 | 18'-3 | 17'-0 | 15'-11 | | | | | | |
| n/a | n/a | 12 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 32'-4 | 29'-7 | 27'-3 | 24'-10 | 22'-10 | 21'-2 | 19'-8 | 18'-5 | | | | | | | |
| 2500 psi concrete | | | | | | Filled CMU | | | | | | 14psf | 17psf | 20psf | 24psf | 28psf | 32psf | 36psf | 40psf | 44psf | 48psf | 53psf | 58psf | 63psf | 69psf | 75psf | 81psf | 87psf | 93psf |



Supporting structural elements shall be designed by a registered professional engineer for wind loads in addition to other loads. This drawing does not address the jamb/wall design, but only door attachment. Jamb/wall construction is shown only for illustration purposes. The building designer is responsible for ensuring that the jamb/wall is sufficient to carry the door live and static loads. This drawing does not address the spring pad connections. Registered professional engineer may approved an alternative design.

Manufacturer's installation instructions must be followed.

Maximum spacing shown in chart.

Lesser spacing may be used to avoid interference with door hardware and or fastening system, but not less than 6".

Load per jamb = 0.5 x door width x max positive pressure x door height.

8" CMU block walls shall comply with ASTM C90.

Use minimum 2000 psi grout or concrete when filling CMU.

CMU fastener spacing distance may vary +/-1".

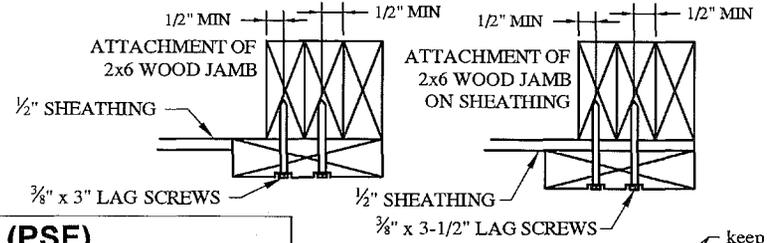
John E. Scates
 John E. Scates, P.E.
 3121 Fairgate Drive
 Carrollton, Texas 75007
 Florida P.E. # 51737
 TXPE 56308, F-2203



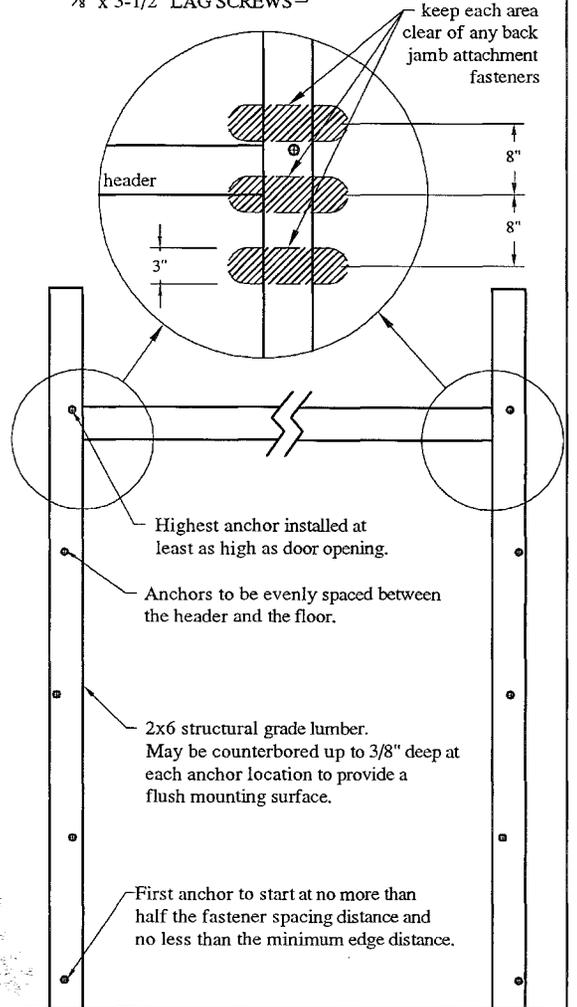
Professional Engineer's seal provided only for verification of windload construction details.

| | | |
|---|-------|-----------|
| | SCALE | none |
| | DATE | 2-18-2015 |
| Back Jamb Attachment Detail Concrete Anchors | | |
| C.H.I. Drawing: BJA-101 | | Rev.-07 |

Southern Pine (SP) specific gravity = 0.55; allowable load per anchor = 620 pounds.
 Spruce Pine Fir (SPF) specific gravity = 0.42; allowable load per anchor = 482 pounds.
 Use SP values only if both structure and jamb are southern pine.
 Use SPF values when spruce pine fir is present in structure or jamb material.
 Lag screw: 3/8" diameter x 3" minimum long; must conform to ANSI/ASME B18.2.1
 Washer: 1-1/8" minimum outside diameter, must conform to ANSI B18.22.1 type A.
 Pre-drill 1/4" diameter pilot holes for lag screw insertion. 1-1/2" minimum lag screw edge distance required.



| FASTENER SPACING | | DOOR WIDTH (feet and inches) at a given DESIGN PRESSURE (PSF) | | | | | | | | | | | | | | | | | |
|------------------|----|---|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| SPF | SP | 14psf | 17psf | 20psf | 24psf | 28psf | 32psf | 36psf | 40psf | 44psf | 48psf | 53psf | 58psf | 63psf | 69psf | 75psf | 81psf | 87psf | 93psf |
| 24 | 24 | 34'-5" | 28'-4" | 24'-1" | 20'-0" | 17'-2" | 15'-0" | 13'-4" | 12'-0" | 10'-11" | 10'-0" | 9'-1" | 8'-3" | 7'-7" | 6'-11" | 6'-5" | 5'-11" | 5'-6" | 5'-2" |
| 22 | 24 | n/a | 32'-4" | 27'-6" | 22'-11" | 19'-8" | 17'-2" | 15'-3" | 13'-9" | 12'-6" | 11'-5" | 10'-4" | 9'-5" | 8'-8" | 7'-11" | 7'-4" | 6'-9" | 6'-3" | 5'-11" |
| 20 | 24 | n/a | 34'-0" | 28'-11" | 24'-1" | 20'-7" | 18'-0" | 16'-0" | 14'-5" | 13'-1" | 12'-0" | 10'-10" | 9'-11" | 9'-2" | 8'-4" | 7'-8" | 7'-1" | 6'-7" | 6'-2" |
| 18 | 24 | n/a | 36'-5" | 31'-0" | 25'-10" | 22'-1" | 19'-4" | 17'-2" | 15'-6" | 14'-1" | 12'-11" | 11'-8" | 10'-8" | 9'-10" | 8'-11" | 8'-3" | 7'-7" | 7'-1" | 6'-8" |
| 18 | 23 | n/a | n/a | 32'-1" | 26'-9" | 22'-11" | 20'-0" | 17'-10" | 16'-0" | 14'-7" | 13'-4" | 12'-1" | 11'-0" | 10'-2" | 9'-3" | 8'-6" | 7'-11" | 7'-4" | 6'-10" |
| 16 | 21 | n/a | n/a | 35'-5" | 29'-6" | 25'-3" | 22'-1" | 19'-8" | 17'-8" | 16'-1" | 14'-9" | 13'-4" | 12'-2" | 11'-2" | 10'-3" | 9'-5" | 8'-8" | 8'-1" | 7'-7" |
| 16 | 20 | n/a | n/a | 36'-1" | 30'-1" | 25'-9" | 22'-7" | 20'-0" | 18'-0" | 16'-5" | 15'-0" | 13'-7" | 12'-5" | 11'-5" | 10'-5" | 9'-7" | 8'-11" | 8'-3" | 7'-9" |
| 15 | 20 | n/a | n/a | n/a | 31'-0" | 26'-6" | 23'-3" | 20'-8" | 18'-7" | 16'-10" | 15'-6" | 14'-0" | 12'-9" | 11'-9" | 10'-9" | 9'-11" | 9'-2" | 8'-6" | 8'-0" |
| 14 | 18 | n/a | n/a | n/a | 34'-5" | 29'-6" | 25'-9" | 22'-11" | 20'-7" | 18'-9" | 17'-2" | 15'-7" | 14'-2" | 13'-1" | 11'-11" | 11'-0" | 10'-2" | 9'-5" | 8'-10" |
| 13 | 16 | n/a | n/a | n/a | n/a | 31'-9" | 27'-9" | 24'-8" | 22'-2" | 20'-2" | 18'-6" | 16'-9" | 15'-4" | 14'-1" | 12'-10" | 11'-10" | 10'-11" | 10'-2" | 9'-6" |
| 12 | 16 | n/a | n/a | n/a | n/a | 33'-2" | 29'-0" | 25'-10" | 23'-3" | 21'-1" | 19'-4" | 17'-6" | 16'-0" | 14'-9" | 13'-5" | 12'-4" | 11'-5" | 10'-8" | 10'-0" |
| 12 | 15 | n/a | n/a | n/a | n/a | n/a | 30'-1" | 26'-9" | 24'-1" | 21'-10" | 20'-0" | 18'-2" | 16'-7" | 15'-3" | 13'-11" | 12'-10" | 11'-10" | 11'-0" | 10'-4" |
| 11 | 14 | n/a | n/a | n/a | n/a | n/a | 32'-10" | 29'-2" | 26'-3" | 23'-10" | 21'-10" | 19'-10" | 18'-1" | 16'-8" | 15'-2" | 14'-0" | 12'-11" | 12'-1" | 11'-3" |
| 10 | 14 | n/a | n/a | n/a | n/a | n/a | 33'-2" | 29'-6" | 26'-6" | 24'-1" | 22'-1" | 20'-0" | 18'-3" | 16'-10" | 15'-4" | 14'-2" | 13'-1" | 12'-2" | 11'-5" |
| 10 | 12 | n/a | n/a | n/a | n/a | n/a | n/a | 32'-1" | 28'-11" | 26'-3" | 24'-1" | 21'-9" | 19'-11" | 18'-4" | 16'-9" | 15'-5" | 14'-3" | 13'-3" | 12'-5" |
| 9 | 12 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 31'-0" | 28'-2" | 25'-10" | 23'-4" | 21'-4" | 19'-8" | 17'-11" | 16'-6" | 15'-3" | 14'-3" | 13'-4" |
| 9 | 11 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 32'-1" | 29'-2" | 26'-9" | 24'-3" | 22'-1" | 20'-4" | 18'-7" | 17'-1" | 15'-10" | 14'-9" | 13'-9" |
| 8 | 11 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 30'-8" | 28'-2" | 25'-6" | 23'-3" | 21'-5" | 19'-7" | 18'-0" | 16'-8" | 15'-6" | 14'-6" |
| 8 | 10 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 32'-10" | 30'-1" | 27'-3" | 24'-11" | 22'-11" | 20'-11" | 19'-3" | 17'-10" | 16'-7" | 15'-6" |
| 7 | 10 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 31'-0" | 28'-0" | 25'-7" | 23'-7" | 21'-6" | 19'-10" | 18'-4" | 17'-1" | 16'-0" |
| 7 | 9 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 31'-2" | 28'-5" | 26'-2" | 23'-11" | 22'-0" | 20'-4" | 18'-11" | 17'-9" |
| 6 | 8 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 32'-0" | 29'-6" | 26'-11" | 24'-9" | 22'-11" | 21'-4" | 20'-0" |
| 4 | 6 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 33'-0" | 30'-7" | 28'-6" | 26'-8" |



Maximum load per jamb = 0.5 x (door height) x (door width) x (maximum positive pressure)
 When applying back jambs over dry wall or other non structural wall covering, use longer lags screws to insure 1-1/2" minimum embedment required.

Lesser spacing may be used to avoid interference with door hardware and or fastening system.
 Maximum spacing shown in chart.

These charts do not address spring pad connections to the building.

Alternative design may be approved by a registered professional engineer.

Supporting structural elements shall be designed by a registered professional engineer for wind loads in addition to other loads.

John E. Scates, P.E.
 3121 Fairgate Drive
 Carrollton, Texas 75007
 Florida P.E. # 51737
 TXPE 56308, F-2203

John E. Scates
 2/24/15



Professional Engineer's seal provided only for verification of windload construction details

| | | |
|--|-------|-----------|
| | SCALE | none |
| | DATE | 2-18-2015 |
| Back Jamb Attachment Detail Lag Screw | | |
| C.H.I. Drawing: BJA-102 | | Rev.-05 |

Simpson Titen HD; 3/8" diameter x 3" long (minimum).
 Simpson Wedge-All; 3/8" diameter x 3" long (minimum).

ITW Ramset/ Redhead Large Diameter Tapcon, 3/8" diameter, minimum 2" long with washer that conforms to ANSI B18.22.1 type B.

Use a fastener for every track bracket unless the quantity of fasteners determined from this chart is more than the quantity of track brackets specified on the door drawing.

Add track brackets as required to satisfy fastener spacing in these charts. Maximum spacing shown in chart.

Lesser spacing may be used to avoid interference with door hardware and or fastening system, but not less than 6".

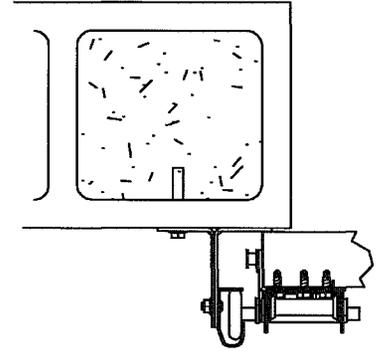
See chart for minimum edge distance required.

Load per jamb = 0.5 x door width x max positive pressure x door height

Manufacturer's installation instructions must be followed.

8" CMU block walls shall comply with ASTM C90. Use minimum 2000 psi grout or concrete when filling CMU.

Fastener spacing distance may vary +/-1".



**FASTENER
SPACING
(inches)**

Filled CMU DOOR WIDTH (feet and inches) at a given DESIGN PRESSURE (PSF)

| Simpson Titen HD | Simpson Wedge-All | 14psf | 17psf | 20psf | 24psf | 28psf | 32psf | 36psf | 40psf | 44psf | 48psf | 53psf | 58psf | 63psf | 69psf | 75psf | 81psf | 87psf | 93psf |
|------------------|-------------------|-------|-------|-------|-------|-------|--------|-------|-------|--------|-------|-------|-------|--------|--------|-------|-------|-------|--------|
| n/a | 24 | 24'-3 | 20'-0 | 17'-0 | 14'-2 | 12'-1 | 10'-7 | 9'-5 | 8'-6 | 7'-8 | 7'-1 | 6'-4 | 5'-10 | 5'-4 | 4'-11 | 4'-6 | 4'-2 | n/a | n/a |
| 24 | 16 | 34'-3 | 28'-2 | 24'-0 | 20'-0 | 17'-1 | 15'-0 | 13'-4 | 12'-0 | 10'-10 | 10'-0 | 9'-0 | 8'-3 | 7'-7 | 6'-11 | 6'-4 | 5'-11 | 5'-6 | 5'-1 |
| 16 | 16 | 36'-5 | 30'-0 | 25'-6 | 21'-3 | 18'-2 | 15'-11 | 14'-2 | 12'-9 | 11'-7 | 10'-7 | 9'-7 | 8'-9 | 8'-1 | 7'-4 | 6'-9 | 6'-3 | 5'-10 | 5'-5 |
| 16 | 8 | n/a | n/a | 36'-0 | 30'-0 | 25'-8 | 22'-6 | 20'-0 | 18'-0 | 16'-4 | 15'-0 | 13'-7 | 12'-4 | 11'-5 | 10'-5 | 9'-7 | 8'-10 | 8'-3 | 7'-8 |
| 8 | 8 | n/a | n/a | n/a | n/a | n/a | 31'-10 | 28'-4 | 25'-6 | 23'-2 | 21'-3 | 19'-2 | 17'-7 | 16'-2 | 14'-9 | 13'-7 | 12'-7 | 11'-8 | 10'-11 |
| 8 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 32'-8 | 30'-0 | 27'-2 | 24'-9 | 22'-10 | 20'-10 | 19'-2 | 17'-9 | 16'-6 | 15'-5 |

| Simpson Titen HD | Simpson Wedge-All | 14psf | 17psf | 20psf | 24psf | 28psf | 32psf | 36psf | 40psf | 44psf | 48psf | 53psf | 58psf | 63psf | 69psf | 75psf | 81psf | 87psf | 93psf |
|------------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|------------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|

DOOR WIDTH (feet and inches) at a given DESIGN PRESSURE (PSF)

3/8" 3/8" FASTENER DIAMETER

2.75" 2.68" EMBEDMENT LENGTH

4" 4" EDGE DISTANCE

480# 340# FASTENER LOAD CAPACITY

These charts do not address spring pad connections to building.

Alternative design may be approved by a registered professional engineer.

Supporting structural elements shall be designed by a registered professional engineer for wind loads in addition to other loads.

This drawing does not address the wall design, but only door attachment. Wall construction is shown only for illustration purposes. The building designer is responsible for ensuring that the wall is sufficient to carry the door live and static loads.

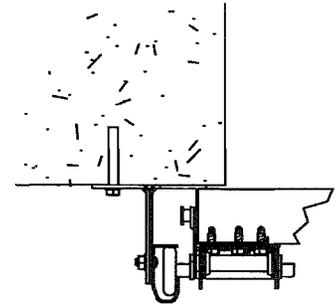
John E. Scates
 John E. Scates, P.E.
 3121 Fairgate Drive
 Carrollton, Texas 75007
 Florida P.E. # 51737
 TXPE 56308, F-2203



Professional Engineer's seal provided only for verification of windload construction details.

| | | |
|---|-------|-----------|
| | SCALE | none |
| | DATE | 2-18-2015 |
| CMU Block Wall Attachment Detail | | |
| C.H.I. Drawing: BJA-104 | | Rev.-07 |

Anchor: ITW Tapcon or Tapcon LDT or Simpson Strong-Tie Wedge-All.
 ITW Ramset/ Redhead Tapcon, 1/4" diameter, 2" long (minimum)
 ITW Ramset/ Redhead Large Diameter Tapcon, 3/8" diameter, 2-3/4" long (minimum)
 Simpson Wedge-All; 3/8" diameter x 2" long (minimum).
 Use a fastener for every track bracket unless the quantity of fasteners determined from this chart is more than the quantity of track brackets specified on the door drawing.
 Add track brackets as required to satisfy fastener spacing in these charts. Maximum spacing shown in chart.
 Lesser spacing may be used to avoid interference with door hardware and or fastening system, but not less than 6".
 See chart for minimum edge distance required.
 Concrete walls shall be minimum 2500 psi concrete and shall be of sufficient strength to resist loads.
 Load per jamb = 0.5 x door width x max positive pressure x door height.
 Manufacturer's installation instructions must be followed.



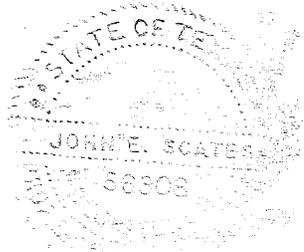
| FASTENER SPACING 2500 psi concrete | | |
|---------------------------------------|------|--------------------|
| ITW Tapcon | | Simpson Strong-Tie |
| 1/4" | 3/8" | 3/8" Wedge-All |
| 24 | 36 | 24 |
| 24 | 36 | 22 |
| 24 | 36 | 20 |
| 24 | 36 | 18 |
| 24 | 36 | 16 |
| 22 | 34 | 15 |
| 21 | 32 | 14 |
| 19 | 30 | 13 |
| 17 | 26 | 11 |
| 15 | 24 | 10 |
| 13 | 20 | 8 |
| 10 | 16 | n/a |
| 9 | 14 | n/a |
| 8 | 12 | n/a |
| ITW Tapcon | | Simpson Strong-Tie |
| 1/4" | 3/8" | 3/8" |
| 1.75" | 2.5" | 2.68" |
| 2.5" | 3" | 4" |
| 508# | 764# | 340# |

| DOOR WIDTH (feet and inches) at a given DESIGN PRESSURE (PSF) | | | | | | | | | | | | | | | | | | | | |
|---|---------|---------|---------|--------|---------|---------|---------|---------|---------|--------|--------|---------|--------|--------|--------|--------|--------|--|--|--|
| 14psf | 17psf | 20psf | 24psf | 28psf | 32psf | 36psf | 40psf | 44psf | 48psf | 53psf | 58psf | 63psf | 69psf | 75psf | 81psf | 87psf | 93psf | | | |
| 24'-3" | 20'-0" | 17'-0" | 14'-2" | 12'-1" | 10'-7" | 9'-5" | 8'-6" | 7'-8" | 7'-1" | 6'-4" | 5'-10" | 5'-4" | 4'-11" | 4'-6" | 4'-2" | n/a | n/a | | | |
| 26'-5" | 21'-9" | 18'-6" | 15'-5" | 13'-2" | 11'-7" | 10'-3" | 9'-3" | 8'-5" | 7'-8" | 6'-11" | 6'-4" | 5'-10" | 5'-4" | 4'-11" | 4'-6" | 4'-3" | 3'-11" | | | |
| 29'-1" | 24'-0" | 20'-4" | 17'-0" | 14'-6" | 12'-9" | 11'-4" | 10'-2" | 9'-3" | 8'-6" | 7'-8" | 7'-0" | 6'-5" | 5'-10" | 5'-5" | 5'-0" | 4'-8" | 4'-4" | | | |
| 32'-4" | 26'-8" | 22'-8" | 18'-10" | 16'-2" | 14'-2" | 12'-7" | 11'-4" | 10'-3" | 9'-5" | 8'-6" | 7'-9" | 7'-2" | 6'-6" | 6'-0" | 5'-7" | 5'-2" | 4'-10" | | | |
| 36'-3" | 29'-10" | 25'-4" | 21'-2" | 18'-1" | 15'-10" | 14'-1" | 12'-8" | 11'-6" | 10'-7" | 9'-7" | 8'-9" | 8'-0" | 7'-4" | 6'-9" | 6'-3" | 5'-10" | 5'-5" | | | |
| n/a | 31'-8" | 26'-11" | 22'-5" | 19'-3" | 16'-10" | 14'-11" | 13'-5" | 12'-3" | 11'-2" | 10'-2" | 9'-3" | 8'-6" | 7'-9" | 7'-2" | 6'-7" | 6'-2" | 5'-9" | | | |
| n/a | 33'-8" | 28'-7" | 23'-10" | 20'-5" | 17'-10" | 15'-11" | 14'-3" | 13'-0" | 11'-11" | 10'-9" | 9'-10" | 9'-1" | 8'-3" | 7'-7" | 7'-0" | 6'-7" | 6'-1" | | | |
| n/a | 35'-11" | 30'-6" | 25'-5" | 21'-9" | 19'-1" | 16'-11" | 15'-3" | 13'-10" | 12'-8" | 11'-6" | 10'-6" | 9'-8" | 8'-10" | 8'-1" | 7'-6" | 7'-0" | 6'-6" | | | |
| n/a | n/a | 35'-3" | 29'-4" | 25'-2" | 22'-0" | 19'-7" | 17'-7" | 16'-0" | 14'-8" | 13'-3" | 12'-1" | 11'-2" | 10'-2" | 9'-4" | 8'-8" | 8'-1" | 7'-6" | | | |
| n/a | n/a | n/a | 31'-9" | 27'-3" | 23'-10" | 21'-2" | 19'-1" | 17'-4" | 15'-11" | 14'-4" | 13'-2" | 12'-1" | 11'-0" | 10'-2" | 9'-5" | 8'-9" | 8'-2" | | | |
| n/a | n/a | n/a | n/a | 32'-8" | 28'-7" | 25'-5" | 22'-11" | 20'-10" | 19'-1" | 17'-3" | 15'-9" | 14'-6" | 13'-3" | 12'-2" | 11'-3" | 10'-6" | 9'-10" | | | |
| n/a | n/a | n/a | n/a | n/a | 31'-9" | 28'-7" | 26'-0" | 23'-10" | 21'-7" | 19'-9" | 18'-2" | 16'-7" | 15'-3" | 14'-1" | 13'-2" | 12'-3" | 11'-0" | | | |
| n/a | n/a | n/a | n/a | n/a | n/a | 32'-8" | 29'-9" | 27'-3" | 24'-8" | 22'-6" | 20'-9" | 18'-11" | 17'-5" | 16'-2" | 15'-0" | 14'-0" | 12'-3" | | | |
| n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 31'-9" | 28'-9" | 26'-3" | 24'-2" | 22'-1" | 20'-3" | 18'-9" | 17'-6" | 16'-4" | | | |

| DOOR WIDTH (feet and inches) at a given DESIGN PRESSURE (PSF) | | | | | | | | | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|--|
| 14psf | 17psf | 20psf | 24psf | 28psf | 32psf | 36psf | 40psf | 44psf | 48psf | 53psf | 58psf | 63psf | 69psf | 75psf | 81psf | 87psf | 93psf | | | |

Supporting structural elements shall be designed by a registered professional engineer for wind loads in addition to other loads. This drawing does not address the wall design, but only door attachment. Wall construction is shown only for illustration purposes. The building designer is responsible for ensuring that the wall is sufficient to carry the door live and static loads. This drawing does not address the spring pad connections. Registered professional engineer may approved an alternative design.

John E. Scates
 John E. Scates, P.E.
 3121 Fairgate Drive
 Carrollton, Texas 75007
 Florida P.E. # 51737
 TXPE 56308, F-2203



| | | |
|---------------------------------|-------|-----------|
| | SCALE | none |
| | DATE | 2-18-2015 |
| Concrete Wall Attachment Detail | | |
| C.H.I. Drawing: BJA-105 | | Rev.-06 |

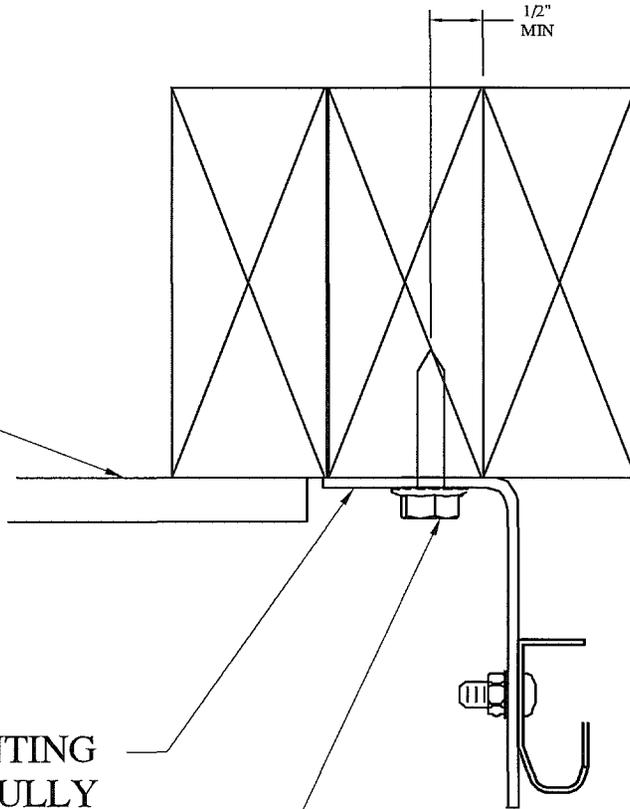
Professional Engineer's seal provided only for verification of windload construction details.

Southern Pine (SP) specific gravity = 0.55; allowable load per anchor = 607 pounds.
 Spruce Pine Fir (SPF) specific gravity = 0.42; allowable load per anchor = 439 pounds.
 1/2" minimum lag screw edge distance required.
 1-1/2" minimum lag screw embedment into structural wood.
 Lag screws must be seated in full height frame members.
 Lag screw: 5/16" diameter x 1-5/8" minimum long;
 must conform to ANSI/ASME B18.2.1

DRY WALL / SHEATHING

TRACK BRACKET MOUNTING
 SURFACE MUST BE FULLY
 SUPPORTED BY WALL STUDS

5/16" X 1-5/8" LAG SCREWS



Maximum load per jamb = 0.5 x (door height) x (door width) x (maximum positive pressure)
 Alternative design may be approved by a licensed professional engineer.
 Supporting structural elements shall be designed by a licensed professional engineer for wind loads in addition to other loads.
 The suitability of the structural building components must be verified by the engineer of record for the building.

John E. Scates
 2/24/15
 John E. Scates, P.E.
 3121 Fairgate Drive
 Carrollton, Texas 75007
 Florida P.E. # 51737
 TXPE 56308, F-2203

| | | |
|-----------------------------|-------|-----------|
| | SCALE | none |
| | DATE | 2-18-2015 |
| Attachment Detail Lag Screw | | |
| C.H.I. Drawing: BJA-106 | | Rev.-03 |

Professional Engineer's seal provided only for verification of windload construction details.