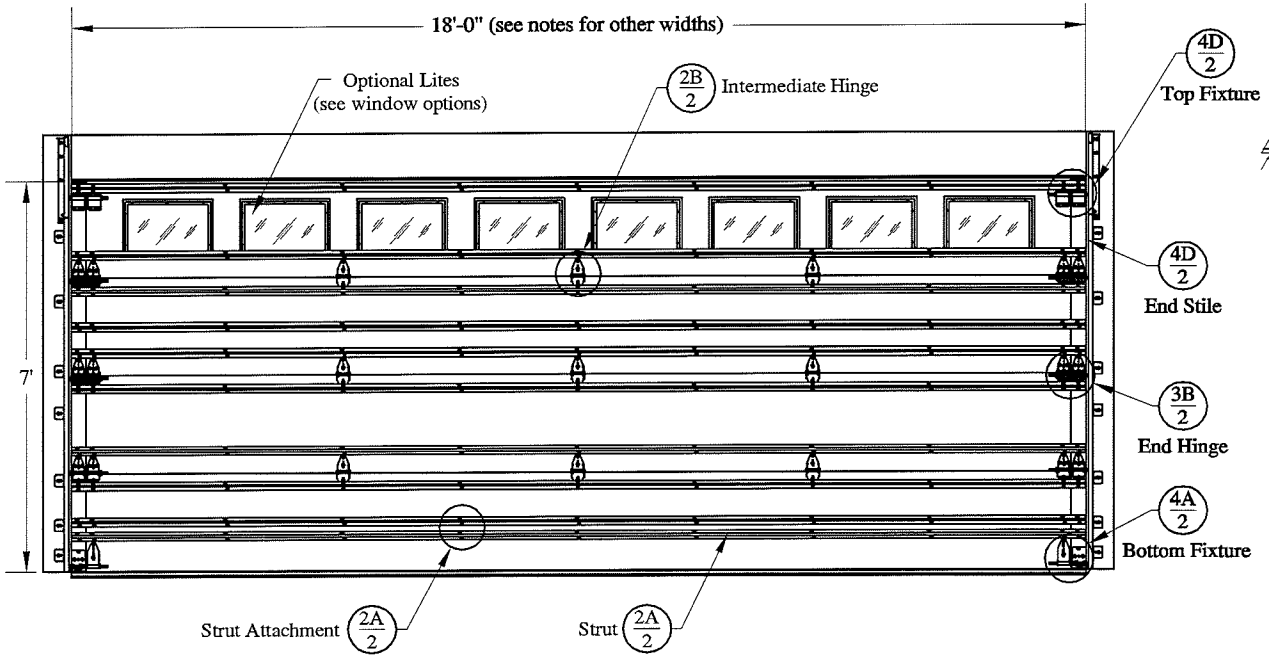
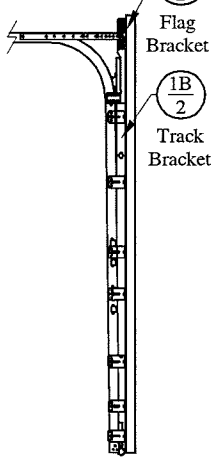




Window Options:
1/4" Lexan with Aluminum Frame
max daylight opening 16-9/16" x 10-1/8"

Door Height	Section Quantity	Strut Quantity	Trk Brkt Per Side
6'-6" to 7'-0"	4	10	7
7'-6" to 8'-0"	5	12	8
8'-3" to 8'-9"	5	13	9
9'-0" to 10'-6"	6	15	11
10'-9" to 12'-3"	7	18	13
12'-6" to 14'-0"	8	20	14
14'-3" to 15'-9"	9	23	16
16'-0" to 17'-6"	10	25	18
17'-9" to 19'-3"	11	28	20
19'-6" to 20'-0"	12	30	20

Track bracket quantities shown are for use with grade 2 or better southern pine jambs. When using softer wood species like spruce-pine-fir (SPF) use the quantity of track brackets specified in the chart plus three track brackets per side or seven track brackets per side for doors taller than 14 feet.

Supplemental Instructions contain details for doors up to 20'-0" high. These are required in addition to this drawing for installation. Always use supplemental instructions in addition to this drawing during door installation.

This door has been evaluated per ASCE 7-02 & 7-05 as referenced by 2006 IBC 1609 & 2006 IRC 301, in accordance with ASTM E330-02 & ANSI/DASMA 108-02, 108-05 and for windborne debris in accordance with ASTM E1886-05/E1996-09 & ANSI/DASMA 115-05 (9 pound missile)
Design Pressures (DP) typically meet requirements for the following exposure B wind speeds.
These exposure B wind speeds are for 7' high doors on buildings with mean roof height less than 30 feet.

Door	With windows		No windows		Backer
Width	Design Pressure	Exp B	Design Pressure	Exp B	Plates
20'-02"	33.5 / - 37.4 (psf)	150 (mph)	33.5 / - 37.4 (psf)	150 (mph)	11
20'-00"	34.1 / - 38.0 (psf)	151 (mph)	34.1 / - 38.0 (psf)	151 (mph)	11
19'-06"	35.9 / - 40.0 (psf)	155 (mph)	35.9 / - 40.0 (psf)	155 (mph)	9
19'-00"	37.8 / - 42.1 (psf)	159 (mph)	37.8 / - 42.1 (psf)	159 (mph)	9
18'-00"	42.1 / - 46.9 (psf)	167 (mph)	42.1 / - 46.9 (psf)	167 (mph)	7
16'-00"	42.1 / - 46.9 (psf)	166 (mph)	43.0 / - 48.3 (psf)	168 (mph)	7
15'-00"	42.1 / - 46.9 (psf)	166 (mph)	43.0 / - 48.3 (psf)	168 (mph)	6
14'-00"	42.1 / - 46.9 (psf)	165 (mph)	43.0 / - 48.3 (psf)	167 (mph)	6
13'-00"	42.1 / - 46.9 (psf)	165 (mph)	43.0 / - 48.3 (psf)	167 (mph)	5
12'-00"	42.1 / - 46.9 (psf)	164 (mph)	43.0 / - 48.3 (psf)	166 (mph)	5
11'-00"	42.1 / - 46.9 (psf)	164 (mph)	43.0 / - 48.3 (psf)	166 (mph)	4
10'-02"	42.1 / - 46.9 (psf)	163 (mph)	43.0 / - 48.3 (psf)	165 (mph)	4

Backer plate quantity is minimum per section, not including backer plates at each end of sections.

Supporting structural elements to be designed by registered professional engineer for specified wind loads. If door is not electrically operated, a lock must be installed.
Door height: 20'-0" max
Section height: 21" max

STATE OF TEXAS
JOHN E. SCATES
56308
REGISTERED
PROFESSIONAL ENGINEER

John E. Scates 4/1/13

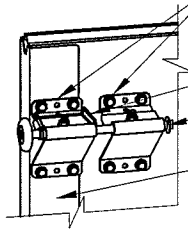
Professional Engineer's seal provided only for verification of windload construction details

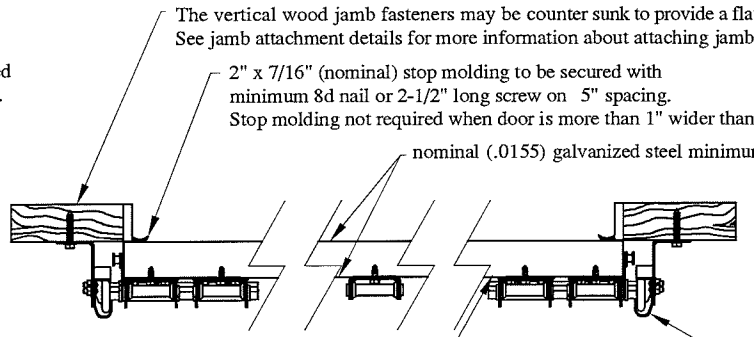
John E. Scates, P.E.
3121 Fairgate Drive
Carrollton, Texas 75007
TXPE 56308, F-2203

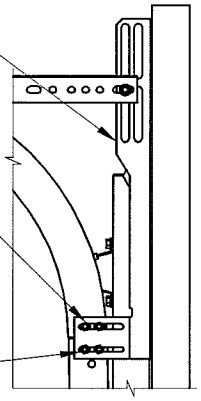
C.H.I. OVERHEAD DOORS
SCALE nts
DATE 3-18-2013
Models: 221X, 228X, 421X, 428X, 521X, 528X, 591X, 598X
43.0 (psf) / - 48.3 (psf) at 10'-02" through 33.5 (psf) / - 37.4 (psf) at 20'-02"
C.H.I. Drawing: TZ9i-18-02513
page 1_of_2

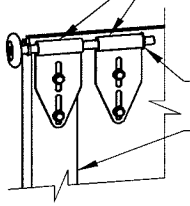
Strut (if applicable) not shown for clarity.

Details on some views may have been omitted for clarity.

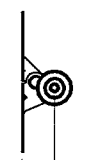


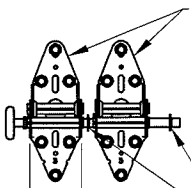


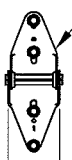


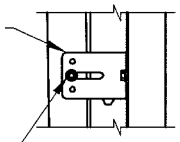


Optional low head room top bracket









End Hinge
galvanized steel fastened to section with six 1/4" x 3/4" screws each.

push nut

additional push nut (on #2 hinge only)

Intermediate Hinge
(.058) galvanized steel fastened to section with four 1/4" x 3/4" screws.

2" (max. for .069 thick)
4" (max. for .109 thick)

2-3/4"

2 3/4"

9" (min.) stem

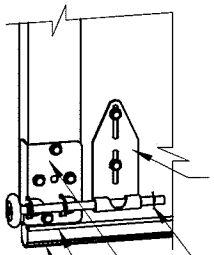
nominal Ø 2" (min.)
10 (min.) ball roller with nylon or steel tread.

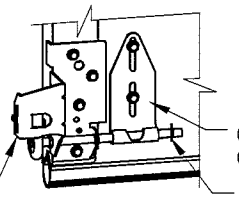
1/2"

3"

1 7/8"

(.051) 50 ksi galvanized steel 3" strut attached with two 1/4" x 3/4" screws per stile or hinge plate.





Optional low head room bottom bracket

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