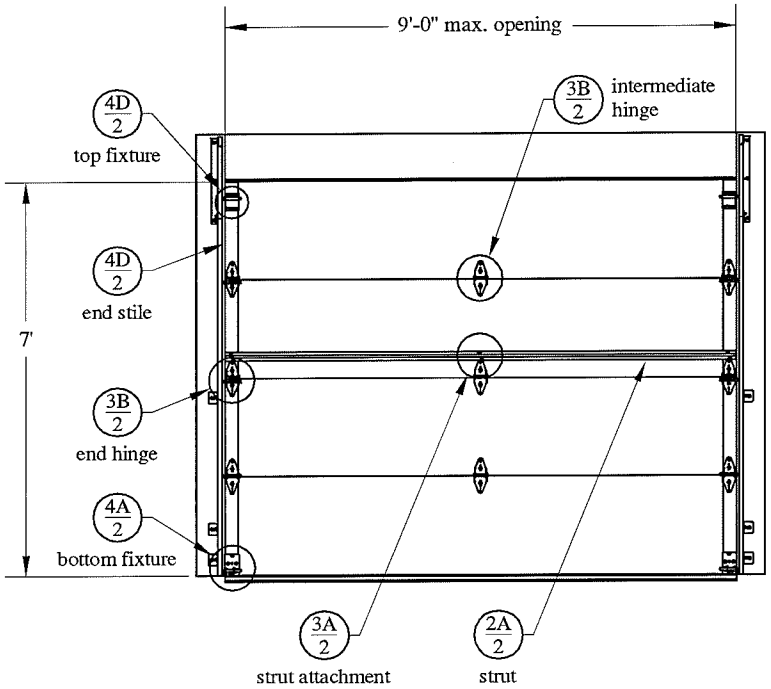
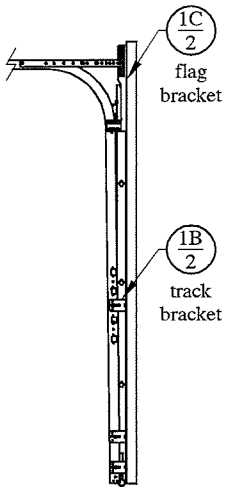




Door Height	Section Quantity	Strut Quantity	Trk Brkt Per Side
6'-6" to 7'-0"	4	1	3
7'-6" to 8'-0"	5	2	4
8'-3" to 8'-9"	5	2	4
9'-0" to 10'-6"	6	3	5
10'-9" to 12'-3"	7	4	6
12'-6" to 14'-0"	8	5	7
14'-3" to 15'-9"	9	6	8
16'-0" to 17'-6"	10	7	9
17'-9" to 19'-3"	11	8	10
19'-6" to 20'-0"	12	9	11

Track bracket quantities shown are for use with grade 2 or better spruce-pine-fir (SPF) or southern pine jambs.

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 Width	Without Windows Design Pressure	Exp B	Backer Plates
09'-00"	23.2 / - 26.2 (psf)	121 (mph)	1
08'-00"	23.2 / - 26.2 (psf)	120 (mph)	1
07'-00"	23.2 / - 26.2 (psf)	119 (mph)	1
06'-00"	23.2 / - 26.2 (psf)	118 (mph)	1

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

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

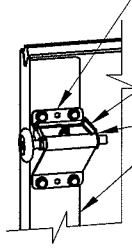
John E. Scates 4/1/13

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
23.2 (psf) / - 26.2 (psf) at 06'-00" through 23.2 (psf) / - 26.2 (psf) at 09'-00"
C.H.I. Drawing: TZ4i-09-02513

Strut (if applicable) not shown for clarity.

Details on some views may have been omitted for clarity.



(.097) galvanized steel top fixture. Each fixture attached with four 1/4" x 3/4" screws.

carrier and carrier support

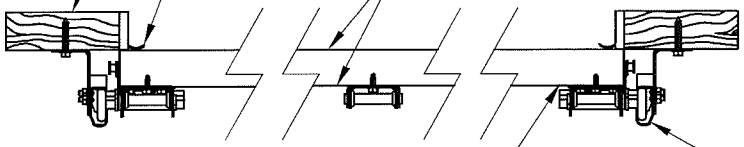
push nut

(.034) end stile manufactured by C.H.I.

The vertical wood jamb fasteners may be counter sunk to provide a flat mounting surface. See jamb attachment details for more information about attaching jambs to structure.

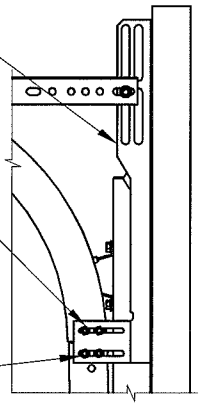
2" x 7/16" (nominal) stop molding to be secured with minimum 8d nail or 2-1/2" long screw on 8" spacing. Stop molding not required when door is more than 1" wider than opening.

nominal (.0155) galvanized steel minimum



(.023) backer plate at each hinge location & mid-point between hinges (if required).

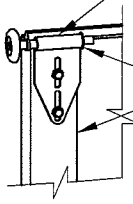
2" (min) x .058 (min) galvanized steel track



(.086) galvanized steel flag bracket fastened to wood jamb with three 5/16" x 1-5/8" wood lag screws.

Flag bracket attached to horizontal track with two 1/4" x 5/8" track bolts and nuts.

Flag bracket attached to vertical track with two 1/4" x 5/8" track bolts and nuts. Or two 1/4" x 11/32" rivets.

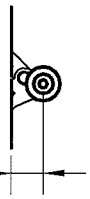


(.109) galvanized steel top fixture. Each fixture attached with two 1/4" x 3/4" screws.

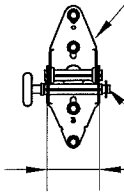
push nut

(.034) end stile manufactured by C.H.I.

Optional low head room top bracket



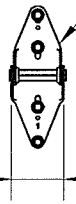
2" (max. for .069 thick)
4" (max. for .109 thick)



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

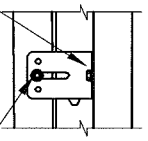
push nut

2-3/4"



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

2-3/4"

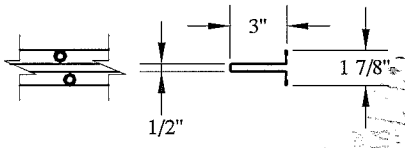


(.102) galvanized steel track bracket fastened to wood jamb with one 5/16" x 1-5/8" wood lag screw per bracket.

Each track bracket attached with one 1/4" x 5/8" track bolt and nut. Or two 1/4" x 11/32" rivets.

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

3-1/2" (min.) stem

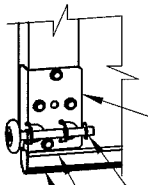


3"

1 7/8"

1/2"

(.040) 50 ksi galvanized steel 3" strut attached with two 1/4" x 3/4" screws per stile or hinge plate.

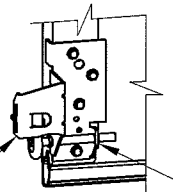


(.102) galvanized steel bottom bracket manufactured by C.H.I. Each bracket attached with four red 1/4" x 3/4" screws.

push nut

Vinyl weatherstrip

Aluminum extrusion



push nut

(.109) galvanized steel bottom bracket manufactured by C.H.I. Each bracket attached with four red 1/4" x 3/4" screws.

Optional low head room bottom bracket

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

John E Scates 4/1/13

C.H.I. OVERHEAD DOORS	SCALE nts
	DATE 3-18-2013
Models: 221X, 228X, 421X, 428X, 521X, 528X, 591X, 598X	
23.2 (psf) / - 26.2 (psf) at 06'-00" through 23.2 (psf) / - 26.2 (psf) at 09'-00"	
C.H.I. Drawing: TZ4i-09-02513 page_2_of_2	