

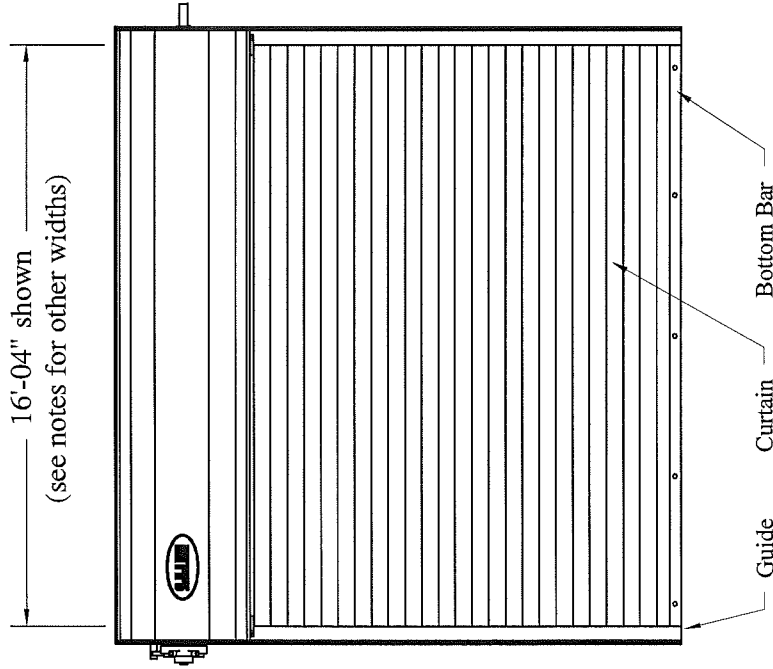
opening width	20" spacing		17" spacing		13" spacing		11" spacing or less	
	psf	mph	psf	mph	psf	mph	spacing	psf
10'-04"	56.0/-53.0	182	56.0/-56.0	187				
11'-04"	48.9/-42.0	163	52.8/-45.3	169	56.0 / -52.2	182	11" 56.0 / -56.0	188
12'-04"	39.6/-34.2	148	43.0/-37.1	154	50.0 / -43.2	166	11" 55.5 / -47.9	175
13'-04"	32.8/-28.4	135	35.8/-31.1	141	42.1 / -36.5	153	11" 46.9 / -40.7	162
14'-04"	27.6/-24.1	125	30.4/-26.4	131	36.0 / -31.3	142	11" 40.3 / -35.1	151
15'-04"	23.6/-20.7	116	26.1/-22.8	122	31.2 / -27.3	133	10" 37.7 / -33.0	146
16'-04"	20.5/-18.0	108	22.8/-20.0	114	27.4 / -24.1	126	10" 33.3 / -29.3	138

Install door on 2000psi concrete jambs with spacing as above.

This door has been evaluated in accordance with ASTM E 330-02 and ANSI/DASMA 108-05, and ANSI/DASMA 115-05 (9 pound missile).

Per ASCE 7-05, design Pressures (DP) as charted on this drawing typically meet or exceed requirements for corresponding wind speeds.

These ASCE 7-05 exposure B wind speeds are for 8' high doors on fully enclosed flat roof buildings with dimensions 60' x 40' x 30'.



width	fastener	spacing	psf (+/-)	Exposure "B"
10'-04"	3/8"	20"	56.0/-56.0	187 (mph)
11'-04"	3/8"	20"	56.0/-56.0	188 (mph)
12'-04"	3/8"	20"	56.0/-55.7	188 (mph)
13'-04"	3/8"	20"	56.0/-56.0	190 (mph)
14'-04"	3/8"	20"	56.0/-56.0	190 (mph)
15'-04"	3/8"	20"	56.0/-56.0	191 (mph)
16'-04"	3/8"	20"	56.0/-56.0	191 (mph)

Use 3/8" self threading screws or welds with spacing above to install door on 3/16" thick A500 structural steel or equivalent.



This page is for 2000psi concrete jamb and steel jamb fastener spacing details.

See Page 2 for 3000psi concrete jamb fastener spacing details.

*John E. Scates*  
5/19/14

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

Date: 5-4-2014

Models: 6181, 6201, 6221, 6266

10'-04" through 16'-04"

C.H.I. Drawing: TZ11i-16-R1001

width	fastener	spacing	psf	Exposure "B"	spacing	psf	Exposure "B"
10'-04"	1/2"	20"	56.0/-56.0	187 (mph)			
11'-04"	1/2"	20"	56.0/-50.5	179 (mph)	16"	56.0/-56.0	188 (mph)
12'-04"	1/2"	20"	48.4/-41.8	163 (mph)	12"	56.0/-56.0	189 (mph)
13'-04"	1/2"	20"	40.6/-35.2	150 (mph)	10"	56.0/-56.0	190 (mph)
14'-04"	1/2"	20"	34.6/-30.2	140 (mph)	8"	56.0/-56.0	190 (mph)
15'-04"	1/2"	20"	30.0/-26.2	131 (mph)	8"	56.0/-53.0	186 (mph)
16'-04"	1/2"	20"	26.3/-23.1	123 (mph)	8"	54.2/-47.6	176 (mph)

**C.H.I.**

ROLLING STEEL DOORS

485 Sunrise Drive, Arthur, IL 61911

Date: 5-4-2014

Models: 6181, 6201, 6221, 6266

10'-04" through 16'-04"

C.H.I. Drawing: TZ11i-16-R1001

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

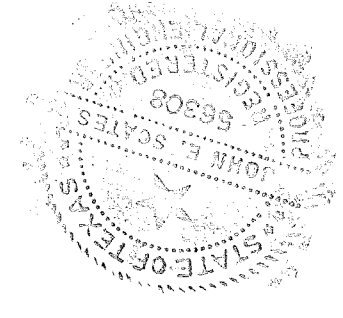
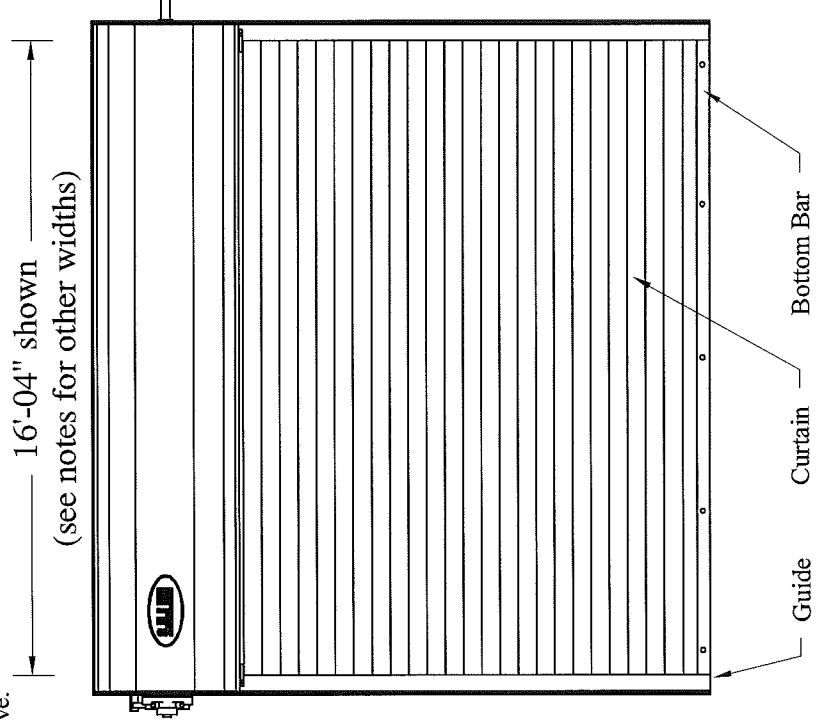
opening width	fastener size	20" spacing		17" spacing		13" spacing		11" spacing or less		mph	psf	spacing	mph	psf	spacing	mph	psf	spacing	mph	psf						
		psf	mph	psf	mph	psf	mph	psf	mph												psf	mph	psf	mph		
10'-04"	3/8"	56.0/-56.0	187																							
11'-04"	3/8"	53.2/-45.7	170	56.0 / -49.7	177	56.0 / -56.0	188																			
12'-04"	3/8"	43.4/-37.5	155	47.5 / -41.0	162	55.9 / -48.2	175	11" 56.0 / -53.8	185	10" 56.0 / -56.0	189															
13'-04"	3/8"	36.1/-31.3	142	39.8 / -34.5	149	47.3 / -41.0	162	11" 53.0 / -46.0	172	10" 56.0 / -49.3	178	9" 56.0 / -53.2	185	8" 56.0 / -51.0	182	7" 56.0 / -56.0	190									
14'-04"	3/8"	30.6/-26.7	131	33.9 / -29.6	138	40.6 / -35.4	151	11" 45.8 / -39.9	161	10" 49.2 / -42.9	167	9" 53.3 / -46.5	173	8" 56.0 / -51.0	182	7" 56.0 / -56.0	190									
15'-04"	3/8"	26.4/-23.1	123	29.3 / -25.7	129	35.4 / -31.0	142	11" 40.1 / -35.1	151	10" 43.2 / -37.8	157	9" 46.9 / -41.1	163	8" 51.6 / -45.1	171	6" 56.0 / -56.0	191									
16'-04"	3/8"	23.0/-20.2	115	25.7 / -22.6	122	31.2 / -27.4	134	10" 38.3 / -33.6	148	9" 41.7 / -36.6	155	8" 46.0 / -40.4	163	7" 51.4 / -45.2	172	6" 56.0 / -51.6	184									

Install door on 3000psi concrete jambs with spacing as above.

This door has been evaluated in accordance with ASTM E 330-02 and ANSI/DASMA 108-05, and ANSI/DASMA 115-05 (9 pound missile).

Per ASCE 7-05, design Pressures (DP) as charted on this drawing typically meet or exceed requirements for corresponding wind speeds.

These ASCE 7-05 exposure B wind speeds are for 8' high doors on fully enclosed flat roof buildings with dimensions 60' x 40' x 30'.



*John E. Seates*  
5/17/14

This page is for 3000psi concrete jamb fastener spacing details.

See Page 1 for 2000psi concrete jamb and steel jamb fastener spacing details.



Date: 5-4-2014  
Models: 6181, 6201, 6221, 6266

10'-04" through 16'-04"

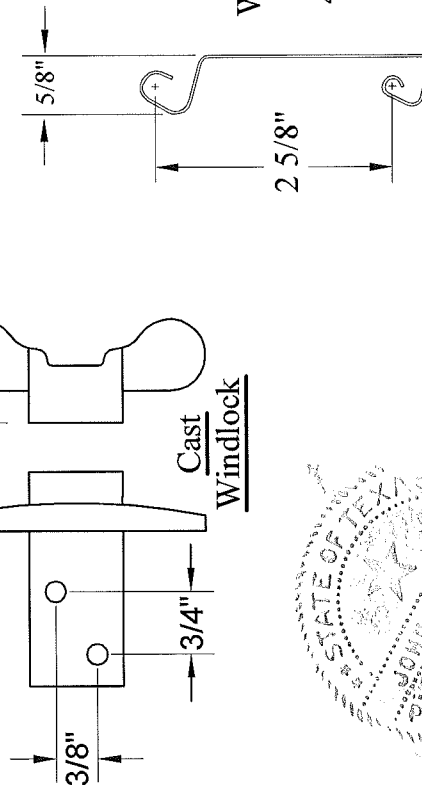
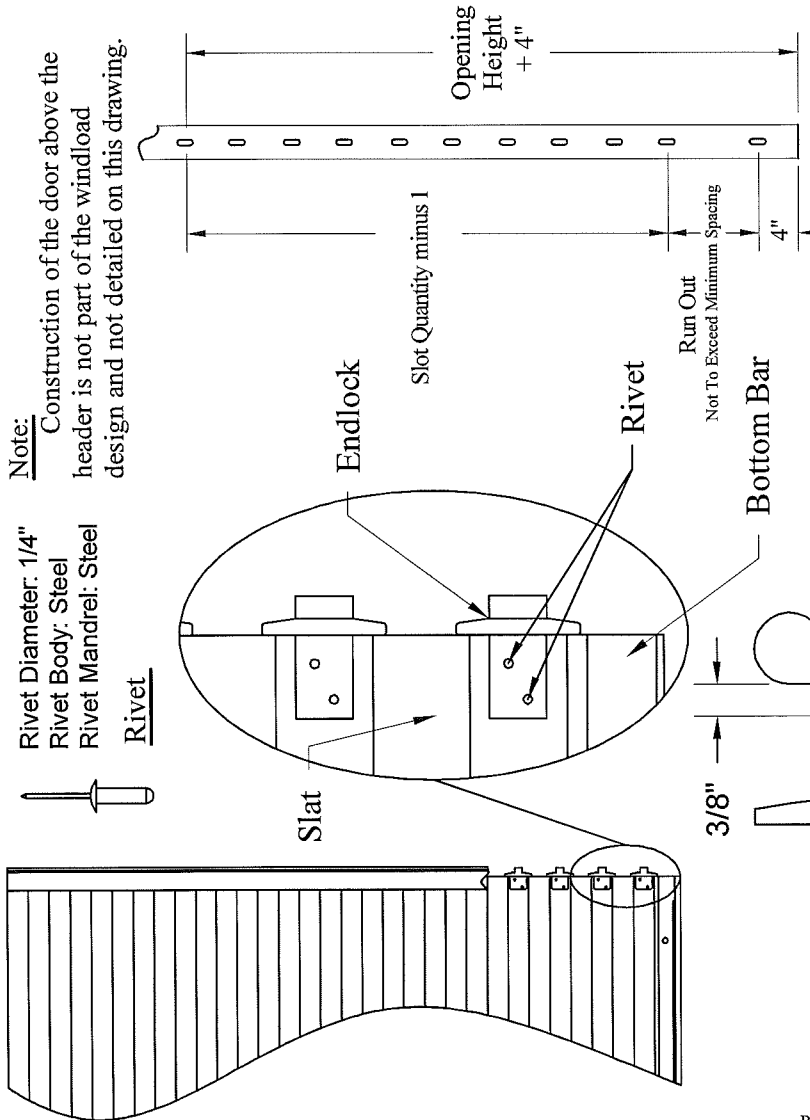
C.H.I. Drawing: TZ11i-16-R1001

John E. Seates, P.E.  
3121 Fairgate Drive  
Carrollton, Texas 75007  
TX P.E. # 56308 F-2203

width	fastener	spacing	psf	Exposure "B"	spacing	psf (+/-)	Exposure "B"
10'-04"	1/2"	20"	56.0/-56.0	187 (mph)			
11'-04"	1/2"	20"	56.0/-56.0	188 (mph)			
12'-04"	1/2"	20"	55.7/-48.1	175 (mph)	16"	56.0/-55.7	188 (mph)
13'-04"	1/2"	20"	47.1/-40.9	162 (mph)	12"	56.0/-56.0	190 (mph)
14'-04"	1/2"	20"	40.5/-35.3	151 (mph)	10"	56.0/-56.0	190 (mph)
15'-04"	1/2"	20"	35.3/-30.9	142 (mph)	9"	56.0/-56.0	191 (mph)
16'-04"	1/2"	20"	31.1/-27.3	134 (mph)	8"	56.0/-56.0	191 (mph)

Rivet Diameter: 1/4"  
 Rivet Body: Steel  
 Rivet Mandrel: Steel  
 Rivet

**Note:**  
 Construction of the door above the header is not part of the windload design and not detailed on this drawing.



Starter Slat 5/16" x 1"  
 Grade 2 Carriage Bolt With Flange Nut Not To Exceed 45" On Centers.

A36 Structural Steel Angle 2" x 2" x 3/16"

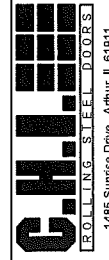
Astragal

Bottom Bar

Opening Height	MAXIMUM SPACING															Slot Quantity	
	6"	7"	8"	9"	10"	11"	12"	13"	14"	16"	17"	18"	20"				
08'-00"	17	15	13	12	11	10	9	8	7	7	7	7	6				
09'-00"	19	17	15	13	12	11	10	10	9	8	8	8	7	7			
10'-00"	21	19	16	15	13	12	11	11	10	9	9	9	8	7			
11'-00"	23	20	18	16	15	13	12	12	11	10	9	9	8				
12'-00"	25	22	19	17	16	15	13	13	12	10	10	9	9				
13'-00"	27	24	21	19	17	16	14	13	13	11	11	10	9				
14'-00"	29	25	22	20	18	17	15	14	13	12	11	11	10				
15'-00"	31	27	24	21	19	18	16	15	14	13	12	11	10				
16'-00"	33	29	25	23	21	19	17	16	15	13	13	12	11				
17'-00"	35	31	27	24	22	20	18	17	16	14	13	13	12				
18'-00"	37	32	28	25	23	21	19	18	17	15	14	13	12				
19'-00"	39	34	30	27	24	22	20	19	18	16	15	14	13				
20'-00"	41	36	31	28	25	23	21	20	19	16	16	15	13				
21'-00"	43	37	33	29	27	24	22	21	19	17	16	15	14				
22'-00"	45	39	34	31	28	25	23	22	20	18	17	16	15				
23'-00"	47	41	36	32	29	27	24	23	21	19	18	17	15				
24'-00"	49	43	37	33	30	28	25	24	22	19	18	17	16				
25'-00"	51	44	39	35	31	29	26	25	23	20	19	18	16				
26'-00"	53	46	40	36	33	30	27	25	24	21	20	19	17				
27'-00"	55	48	42	37	34	31	28	26	25	22	21	19	18				
28'-00"	57	49	43	39	35	32	29	27	25	22	21	20	18				
29'-00"	59	51	45	40	36	33	30	28	26	23	22	21	19				
30'-00"	61	53	46	41	37	34	31	29	27	24	23	21	19				

See charts on Pages 1 and 2 for maximum fastener spacing.  
 See Page 4 for fastener descriptions.

Maximum door height: 30'-0"



Date: 5-4-2014

Models: 6181, 6201, 6221, 6266

10'-04" through 16'-04"

C.H.I. Drawing: TZ11i-16-R1001

## Guide Details

### 1. Jamb Material:

- Steel (3/16" thick, A500 Structural, see page 1) or
- Concrete (2000psi, see page 1) or (3000psi, see page 2)

### 2. Wall Angle: (A36 Structural Steel Angle)

- 3-1/2" x 3-1/2" x 1/4"  
"E" Guide Configuration For Steel Jamb.
- 3-1/2" x 3-1/2" x 1/4"  
"Z" Guide Configuration For concrete Jamb.

### 3. Jamb Fastener: (Quantity Shown On Page 3)

- Steel: 3/8"-16 x 1" Self Tapping Bolt (ASME B18.6.3)  
An alternative to self tapping bolts is  
Welding of Guides: 3/16" Fillet Weld  
Along Perimeter of Slots Utilizing an E60 Electrode.  
Slot Quantity and Spacing Same as Steel Fasteners (see page 3).
- Concrete: Simpson Strong-Tie  
Titen HD 3/8" x 4" or Titen HD 1/2" x 6"

### 4. Guide to Guide Fastener:

1/2"-13 x 1-1/4" Grade 5 Carriage Bolt  
with Steel Serrated-Flange Hex Locknut 1/2"-13  
not to exceed 20" on centers.

### 5. Back Angle: (A36 Structural Steel Angle)

2" x 3" x 3/16"

### 6. Face Angle: (A36 Structural Steel Angle)

3-1/2" x 3-1/2" x 1/4"

### 7. Windlock Bar:

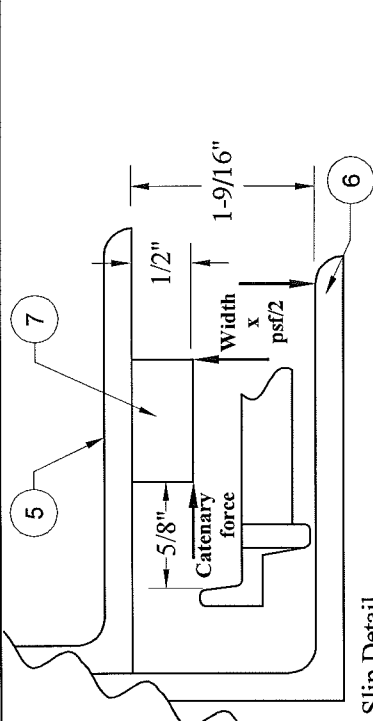
1/2" x 1" Hot Rolled Steel  
1/2" Diameter Plug Welds  
every 16" maximum or  
3/16" Fillet x 3/8" Long Welds  
every 16" maximum on  
Alternating Sides of Windlock Bar

### 8. Slat Cut-Length:

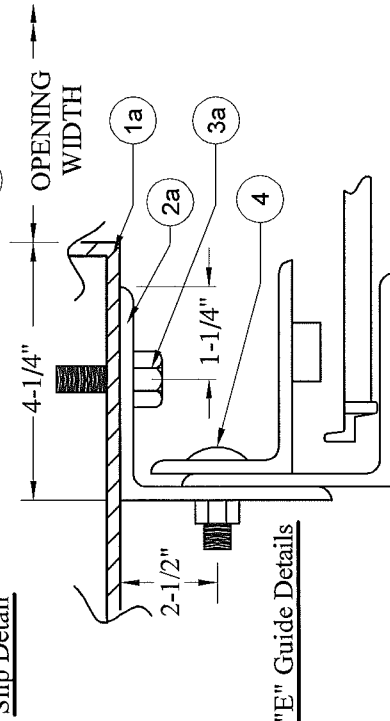
Slat Length =  
Opening Width plus 4-3/4"

The jambs must be designed (by others) to withstand the catenary and direct wind (width x psf/2) forces created by this door. The forces are in units of "lbs per ft tall".  
Catenary is always in the direction shown. Direct wind pressure occurs in both (+) and (-) directions. The theoretical catenary forces are tabulated below. Lower psf will generate lesser forces.

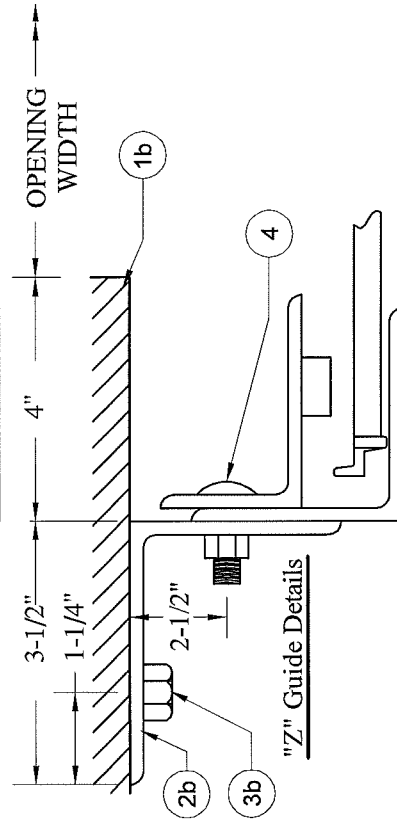
width	dp max	catenary force
10'-04"	56.0 (psf)	600 (lbs/ft)
11'-04"	56.0 (psf)	900 (lbs/ft)
12'-04"	56.0 (psf)	1200 (lbs/ft)
13'-04"	56.0 (psf)	1400 (lbs/ft)
14'-04"	56.0 (psf)	1700 (lbs/ft)
15'-04"	56.0 (psf)	2000 (lbs/ft)
16'-04"	56.0 (psf)	2200 (lbs/ft)



Slip Detail



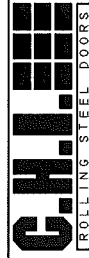
"E" Guide Details



"Z" Guide Details



John E. Scates  
5/19/14



ROD L L I R G S T I E E L P O O R S I  
1485 Sunrise Drive, Arthur, IL 61911

Date: 5-4-2014

Models:  
6181, 6201, 6221, 6266

10'-04" through 16'-04"

C.H.I. Drawing: TZ11i-16-R1001

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