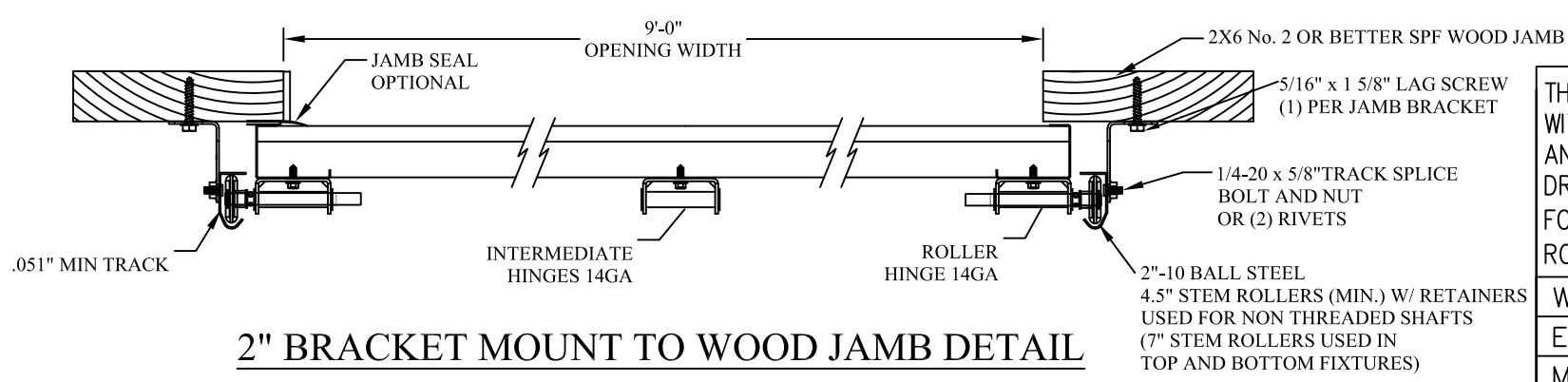
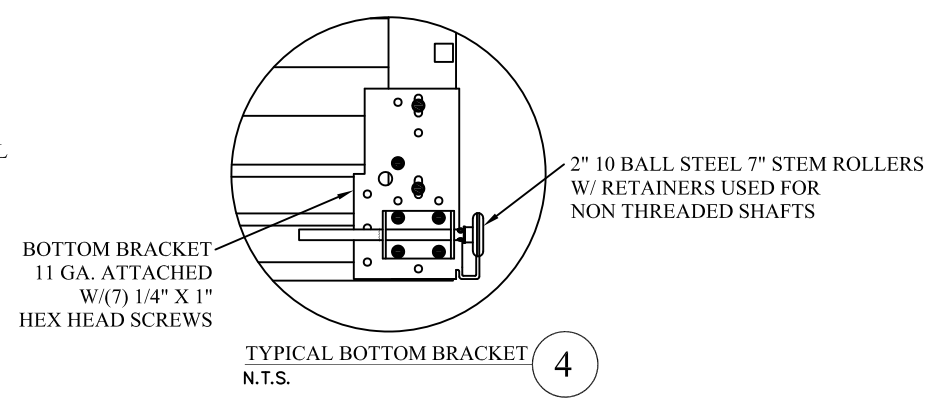
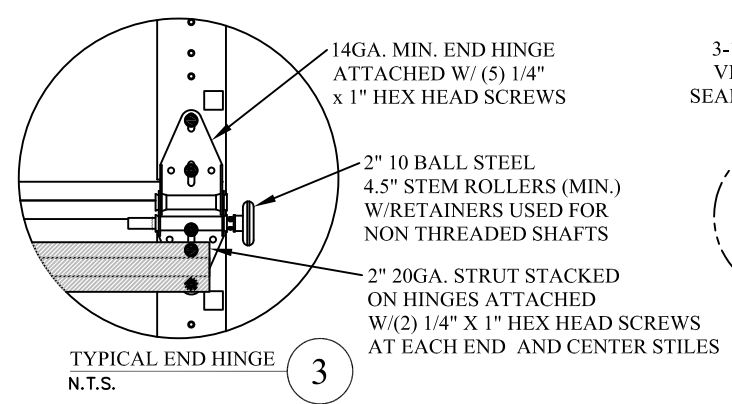
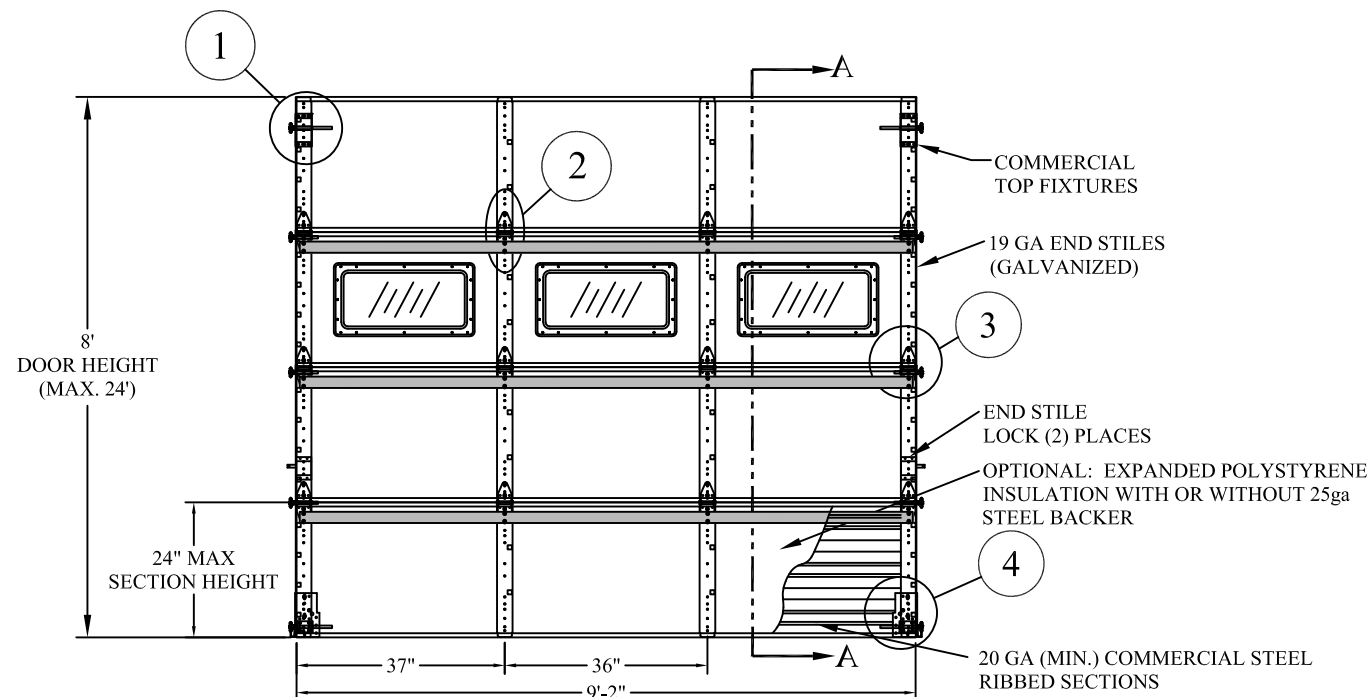
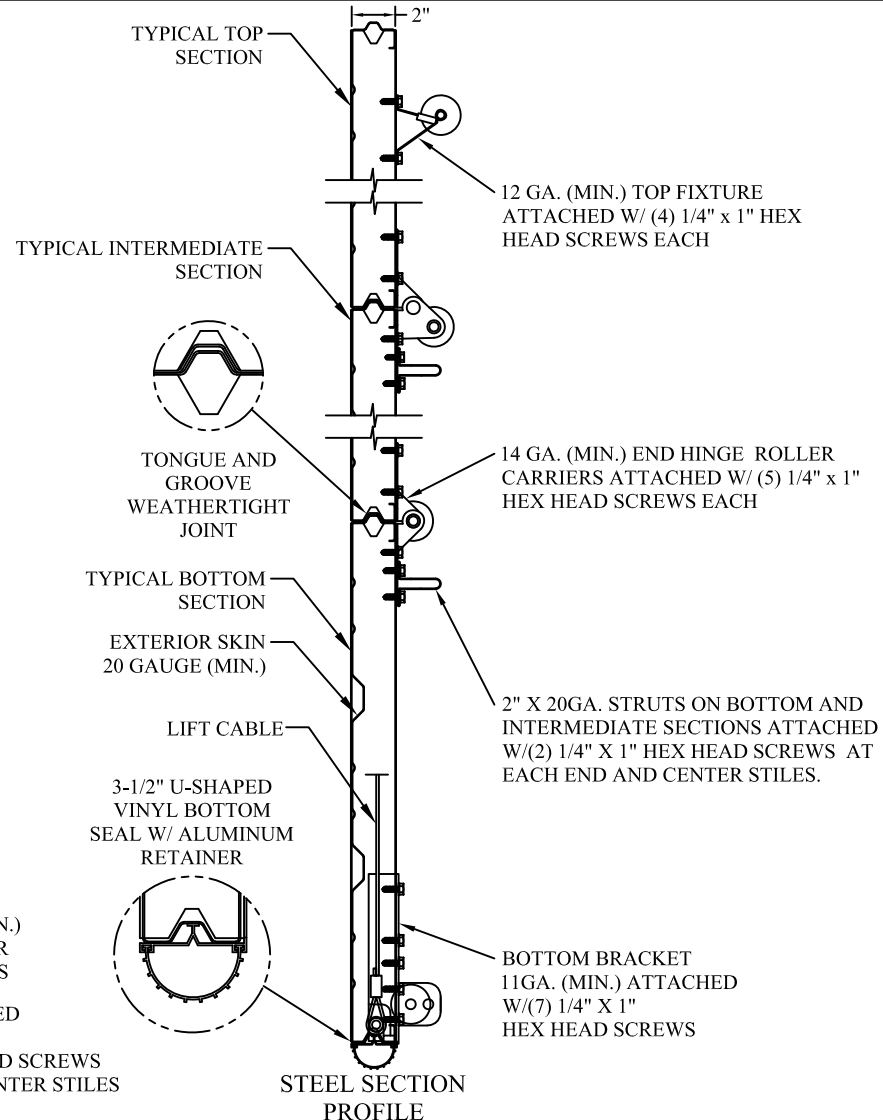
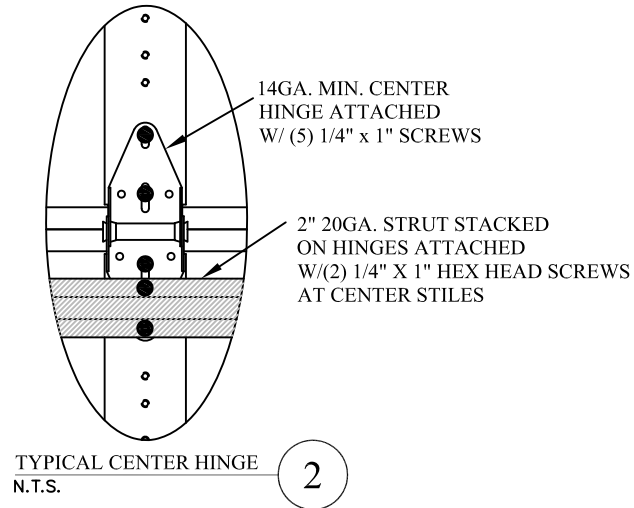
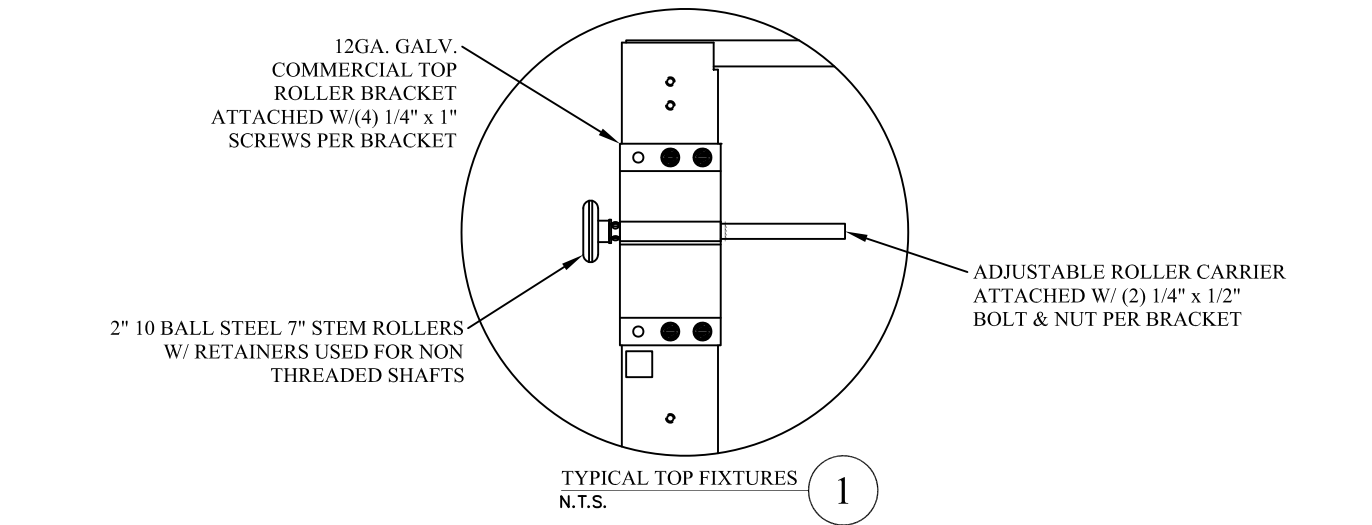




THE METHOD OF TESTING WAS IN SUBSTANTIAL CONFORMANCE WITH THE PROCEDURES DESCRIBED IN ASTM E1886, E1996, F588, AND DASMA 108, 115. THE PRESSURES SHOWN ON THE DRAWINGS WERE CALCULATED USING ASCE 7-22 WITH THE FOLLOWING PARAMETERS (5 FEET OF DOOR WIDTH IN END ZONE, ROOF SLOPE 10° OR LESS):

|                  |     |     |     |     |     |
|------------------|-----|-----|-----|-----|-----|
| WIND SPEED (MPH) | 172 | 156 | 148 | 142 | 136 |
| EXPOSURE LEVEL   | B   | C   | C   | D   | D   |
| MEAN ROOF HEIGHT | 30' | 15' | 25' | 15' | 25' |

| REV | DESCRIPTION OF REVISIONS | DATE | BY |
|-----|--------------------------|------|----|
|     |                          |      |    |

MAX SIZE 9'2" x 24'

DESIGN LOADS +25.5 PSF -30.0 PSF

TEST LOADS +38.3 PSF -45.0 PSF

THOMAS L. SHELDERDINE  
LICENSE No. 48579  
STATE OF FLORIDA  
PROFESSIONAL ENGINEER

This document has been digitally signed & sealed by Thomas L. Shelmerdine, PE on the date shown. Printed copies of this document are not considered signed & sealed, and the signature must be verified on any electronic copies.

Thomas L. Shelmerdine, PE (FL PE #0048579)  
Structural Solutions, PA (FL Firm #29412)  
dba Structural Solutions of North Carolina, Inc.  
5921-G W. Friendly Ave., Greensboro, NC 27410

FL

**Amarr**

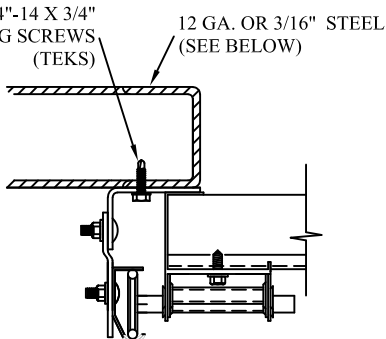
AMARR 2002, 2012, 2022

|        |                |               |                                |
|--------|----------------|---------------|--------------------------------|
| SIZE B | DRAWN BY DRD   | DATE 6/12/18  | DRAWING NUMBER IBC-2009-133-11 |
|        | CHECKED BY DLJ | DATE 10/02/18 |                                |

AMARR COMPANY  
165 CARRIAGE COURT WINSTON-SALEM, N.C. 27105

SHEET 1 OF 4

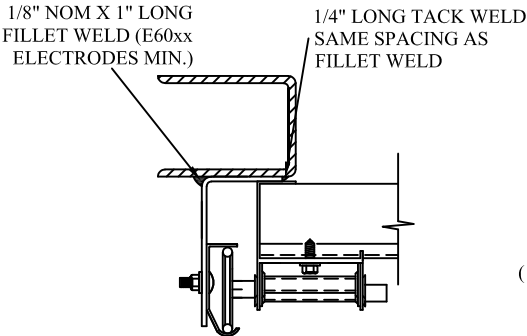
## TRACK CONNECTION DIRECTLY TO STRUCTURE OPTIONS



CLIP STYLE REVERSE ANGLE MOUNT SHOWN  
BRACKET, CONTINUOUS AND TAPERED ANGLE  
MOUNT AVAILABLE

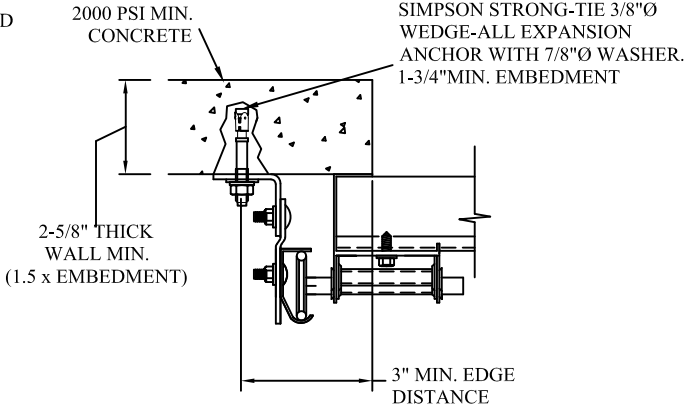
12 GA. STEEL FRAMING  
232 LBS./SCREW ALLOWABLE LOAD - 6" FROM ENDS  
AND 22" O.C.  
REFER TO NOTES: 1, 2 AND 5

3/16" STEEL FRAMING  
569 LBS./SCREW ALLOWABLE LOAD - 6" FROM ENDS  
AND 24" O.C.  
REFER TO NOTES: 1, 2 AND 5



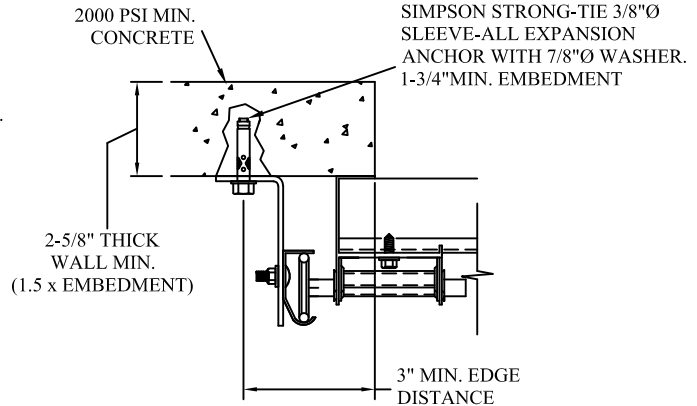
REVERSE ANGLE MOUNT SHOWN  
BRACKET, CONTINUOUS AND TAPERED  
ANGLE MOUNT AVAILABLE

**STEEL FRAMING 12GA OR BETTER**  
**1590 LBS./IN. ALLOWABLE LOAD - 6"**  
**FROM ENDS AND 24" O.C.**  
**REFER TO NOTES: 1, 2, 5, 6, 7, 8 AND 9**



CLIP STYLE CONTINUOUS ANGLE MOUNT SHOWN  
BRACKET, REVERSE AND TAPERED ANGLE MOUNT  
AVAILABLE

2000 PSI CONCRETE OR GREATER  
351 LBS./EXPANSION ANCHOR ALLOWABLE LOAD - 6"  
FROM ENDS AND 24" O.C.  
REFER TO NOTES: 1, 2, 3, 4 AND 5



CONTINUOUS ANGLE MOUNT SHOWN  
BRACKET, CONTINUOUS AND TAPERED ANGLE  
MOUNT AVAILABLE

2000 PSI CONCRETE OR GREATER  
336 LBS./EXPANSION ANCHOR ALLOWABLE LOAD - 6"  
FROM ENDS AND 24" O.C.  
REFER TO NOTES: 1, 2, 3, 4 AND 5

## SPECIFICATIONS AND NOTES

1. ALL THE LOAD FROM THE DOOR IS TRANSFERRED TO THE VERTICAL TRACK, FROM THE TRACK THE LOAD IS TRANSFERRED TO THE VERTICAL JAMBS. THE HORIZONTAL JAMB OR HEADER RECEIVES NO PORTION OF THE LOAD TRANSFERRED FROM THE DOOR.
2. EACH VERTICAL JAMBS RECEIVES MAXIMUM DESIGN LOADS OF:  
+116.9 LBS/FT AND -137.5 LBS/FT
3. DOOR AND HARDWARE WILL BE DESIGNED, MANUFACTURED AND INSTALLED WITH STANDARDS AS SET FORTH BY DASMA.
4. DOOR SECTIONS SHALL BE 20 GA. (.033) MIN. EXTERIOR SKIN ROLLED FORMED, GALVANIZATION W/ BAKED ON POLYESTER FINISH
5. DOORS UP TO 24' HIGH USE (1) 2" 20GA STRUTS ON INTERMEDIATE AND BOTTOM SECTIONS.
6. SUPPORTING STRUCTURAL ELEMENTS SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER FOR WIND LOADS INDICATED ON THIS DRAWING IN ADDITION TO OTHER LOADINGS.

## WOOD JAMB ATTACHMENT TO STRUCTURE (OPTIONAL)

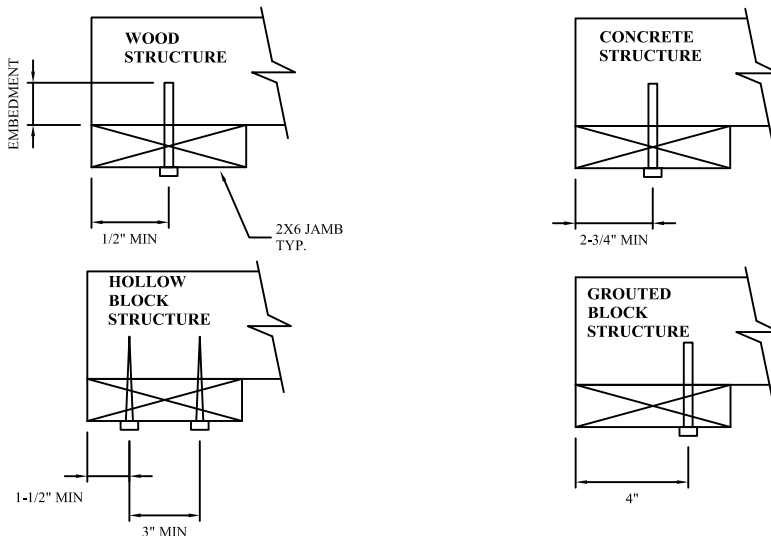
**2 X 6 VERTICAL JAMB ATTACHMENT TO WOOD FRAME STRUCTURE**  
**5/16" X 3" LAG SCREWS STARTING 6" FROM ENDS THEN 24" O.C. (1 1/2" EMBEDMENT)**

**2 X 6 VERTICAL JAMB ATTACHMENT TO 2,000 PSI CONCRETE**  
**HILTI KWIK BOLT 3/8" X 4" STARTING 6" FROM ENDS THEN 24" O.C. (2 1/2" EMBEDMENT)**  
**HILTI SLEEVE ANCHOR 3/8" X 2-3/4" STARTING 6" FROM ENDS THEN 24" O.C. (1 1/4" EMBEDMENT)**  
**ITW/RAMSEY REDHEAD (TRU-BOLT) 3/8" X 4" STARTING 6" FROM ENDS THEN 24" O.C. (2 1/2" EMBEDMENT)**

**2 X 6 VERTICAL JAMB ATTACHMENT TO HOLLOW C-90 BLOCK**  
**SIMPSON 1/4" X 3" TITEN SCREWS STARTING 6" FROM ENDS, USE PAIRS OF FASTENERS**  
**(3" APART) AT 24" O.C. (1 1/2" EMBEDMENT)**  
**HILTI 1/4" X 2-3/4" KWIK-CON II+ SCREWS STARTING 6" FROM ENDS, USE PAIRS OF FASTENERS**  
**(3" APART) AT 24" O.C. (1 1/4" EMBEDMENT)**

**2 X 6 VERTICAL JAMB ATTACHMENT TO GROUTED C-90 BLOCK (2000 PSI GROUT)**  
**HILTI SLEEVE ANCHOR 3/8" X 2-3/4" STARTING 6" FROM ENDS THEN 24" O.C. (1 1/4" EMBEDMENT)**  
**(OR, USE FASTENERS FOR HOLLOW C-90 BLOCK)**

**\*LAGS AND BOLTS CAN BE COUNTERSUNK TO PROVIDE A FLUSH MOUNTING SURFACE.**  
**\*PREPARATION OF WOOD JAMBS BY OTHERS**

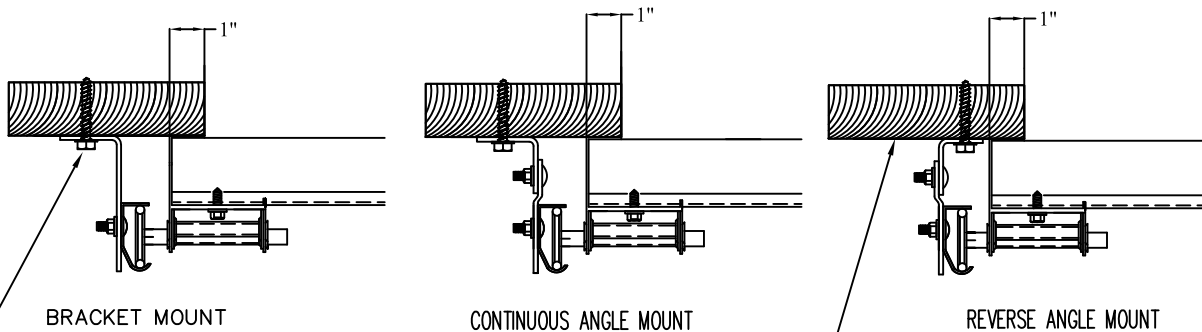


- NOTES:

1. ANCHORS TO BE EVENLY SPACED BETWEEN THE HEADER AND FLOOR.
2. FIRST (BOTTOM) ANCHOR STARTING AT NO MORE THAN HALF OF THE MAXIMUM ON-CENTER DISTANCE. HIGHEST ANCHOR INSTALLED AT LEAST AS HIGH AS THE DOOR OPENING.
3. MIN. EDGE DISTANCE OF 3" REQUIRED.
4. USE WASHERS PROVIDED BY THE ANCHOR MANUFACTURER.
5. SUPPORTING STRUCTURAL ELEMENTS SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER FOR WIND LOADS IN ADDITION TO OTHER LOADS.
6. MOST GARAGE DOOR TRACK IS GALVANIZED STEEL. USE ALL NECESSARY PRECAUTIONS WHEN WELDING GALVANIZED STEEL.
7. ALL WELDS SHOULD BE PERFORMED BY A CERTIFIED WELDER OR INSPECTED BY A CERTIFIED WELDING INSPECTOR TO VERIFY THE INTEGRITY OF THE WELD.
8. FILLET WELDS TO HAVE A STRAIGHT OR CONVEX FACE SURFACE.
9. TACK WELD TOE OF ANGLE AT SAME SPACING TO PREVENT ROTATION OF TRACK ANGLE.

## TRACK CONNECTION TO WOOD JAMB OPTIONS

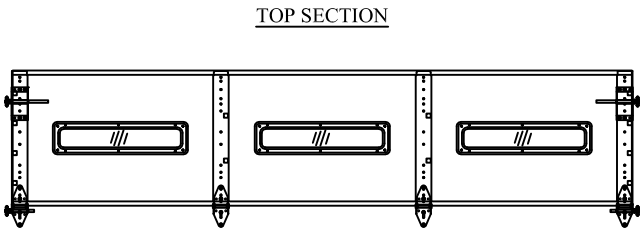
FOR LAG SCREWS & BRACKET SPACING SEE PAGE 4 FOR TRACK CONFIGURATION DETAILS



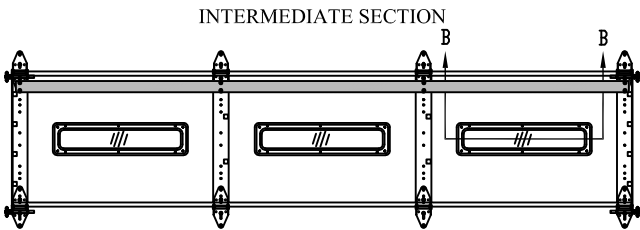
5/16" x 1 5/8" LAG SCREW (1) PER  
JAMB BRACKET (1-1/2" EMBEDMENT  
MINIMUM) (TYP.)

2x6 WOOD JAMB SYP  
(NO.2) OR BETTER (TYP.)

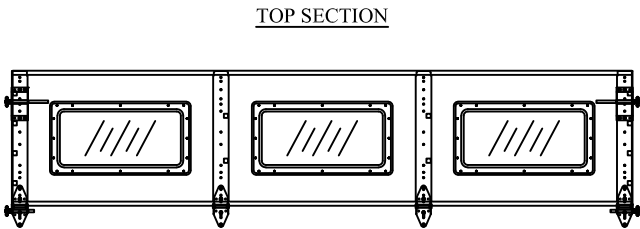
|                                                                                                                             |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                   |
|-----------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| REV                                                                                                                         | DESCRIPTION OF REVISIONS | DATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | BY                                |
|                                                                                                                             |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                   |
| <p>MAX SIZE<br/>9'2 x 24'</p> <p>DESIGN LOADS<br/>+25.5 PSF<br/>-30.0 PSF</p> <p>TEST LOADS<br/>+38.3 PSF<br/>-45.0 PSF</p> |                          |  <p>This document has been digitally signed &amp; sealed by Thomas L. Shelmerdine, PE on the date shown. Printed copies of this document are not considered signed &amp; sealed, and the signature must be verified on any electronic copies.</p> <p>Thomas L. Shelmerdine, PE (FL PE #0048579)<br/>Structural Solutions, PA (FL Firm #29412)<br/>dba Structural Solutions of North Carolina, Inc.<br/>5921-G W. Friendly Ave., Greensboro, NC 27410</p> <p><b>FL</b></p> |                                   |
|                                        |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                   |
| <p align="center"><b>AMARR 2002, 2012, 2022</b></p>                                                                         |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                   |
| SIZE<br>B                                                                                                                   | DRAWN BY DRD             | DATE 6/12/18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | DRAWING NUMBER<br>IBC-2009-133-11 |
|                                                                                                                             | CHECKED BY DLJ           | DATE 10/02/18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                   |
| AMARR COMPANY<br>165 CARRIAGE COURT WINSTON-SALEM, NC 27105                                                                 |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SHEET 2 OF 4                      |



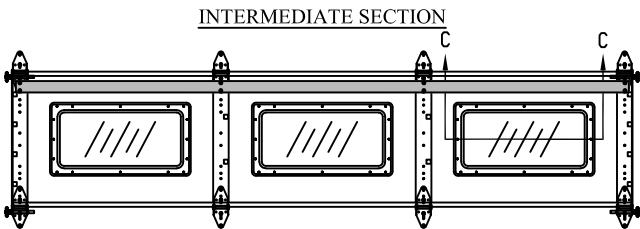
OPTIONAL GLAZED SECTION W/ 24" X 6" WINDOWS AND STRUT LAYOUT  
N.T.S.



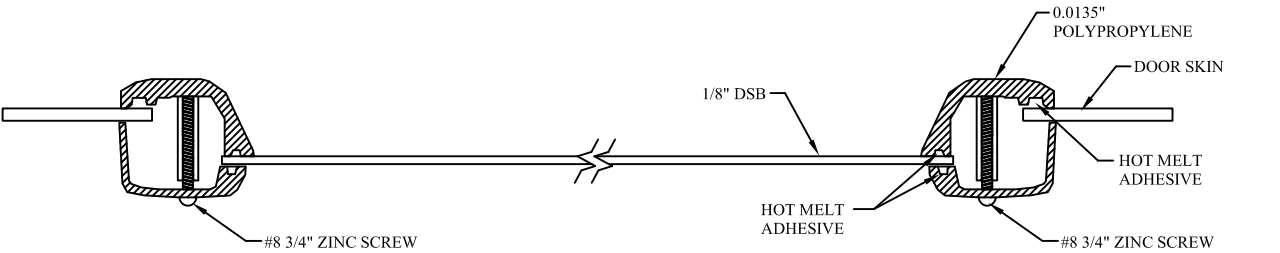
OPTIONAL GLAZED SECTION W/ 24" X 6" WINDOWS AND STRUT LAYOUT  
N.T.S.



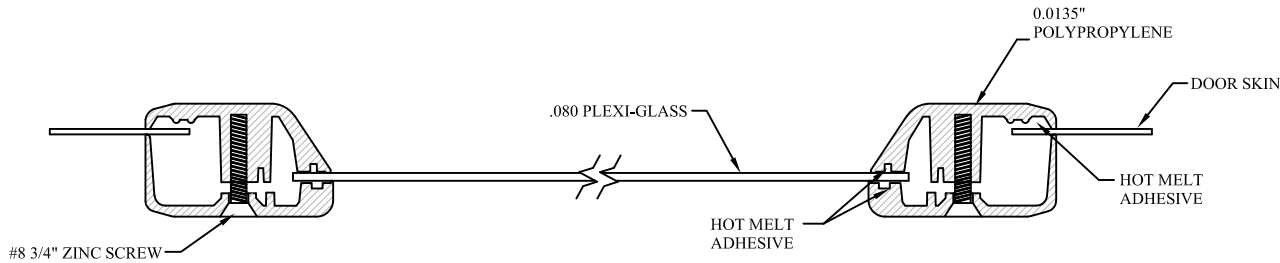
OPTIONAL GLAZED SECTION W/ 24" X 12" WINDOWS AND STRUT LAYOUT  
N.T.S.



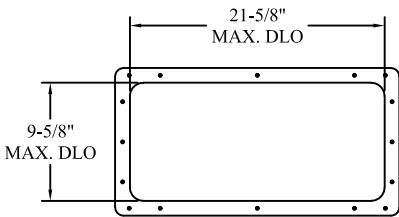
OPTIONAL GLAZED SECTION W/ 24" X 12" WINDOWS AND STRUT LAYOUT  
N.T.S.



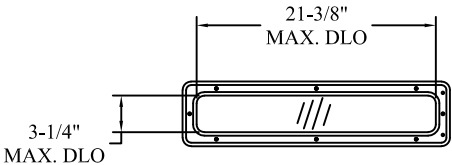
SECTION B-B 24" X 6" WINDOW DETAIL W/ 1/8" DSB  
N.T.S. (ALSO AVAILABLE WITH .080" PLEXI-GLASS)



SECTION C-C 24" X 12" WINDOW DETAIL W/ .080 PLEXI-GLASS  
N.T.S.



24" X 12" DAY LIGHT OPENING AND FASTENER DETAIL  
N.T.S.



24" X 6" DAY LIGHT OPENING AND FASTENER DETAIL  
N.T.S.

| REV                                                                                                                                              | DESCRIPTION OF REVISIONS | DATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | BY                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
|                                                                                                                                                  |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                   |
| <div><div>MAX SIZE<br/>9'2 x 24'</div><div>DESIGN LOADS<br/>+25.5 PSF<br/>-30.0 PSF</div><div>TEST LOADS<br/>+38.3 PSF<br/>-45.0 PSF</div></div> |                          | <div><div><div>THOMAS L. SHELMEKDINE</div><div>LICENSE</div><div>No. 48579</div><div>See Digital Signature</div><div>STATE OF FLORIDA</div><div>PROFESSIONAL ENGINEER</div></div><div>This document has been digitally signed &amp; sealed by Thomas L. Shelmerdine, PE on the date shown. Printed copies of this document are not considered signed &amp; sealed, and the signature must be verified on any electronic copies.</div></div> <div>Thomas L. Shelmerdine, PE (FL PE #0048579)<br/>Structural Solutions, PA (FL Firm #29412)<br/>dba Structural Solutions of North Carolina, Inc.<br/>5921-G W. Friendly Ave., Greensboro, NC 27410</div> <div>FL</div> |                                                   |
| <div><div>Amarr</div><div>AMARR 2002, 2012, 2022</div></div>                                                                                     |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                   |
| SIZE                                                                                                                                             | DRAWN BY                 | DRD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | DATE 6/12/18                                      |
| B                                                                                                                                                | CHECKED BY               | DLJ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | DATE 10/02/18                                     |
| AMARR COMPANY<br>165 CARRIAGE COURT WINSTON-SALEM, N.C. 27105                                                                                    |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | DRAWING NUMBER<br>IBC-2009-133-11<br>SHEET 3 OF 4 |

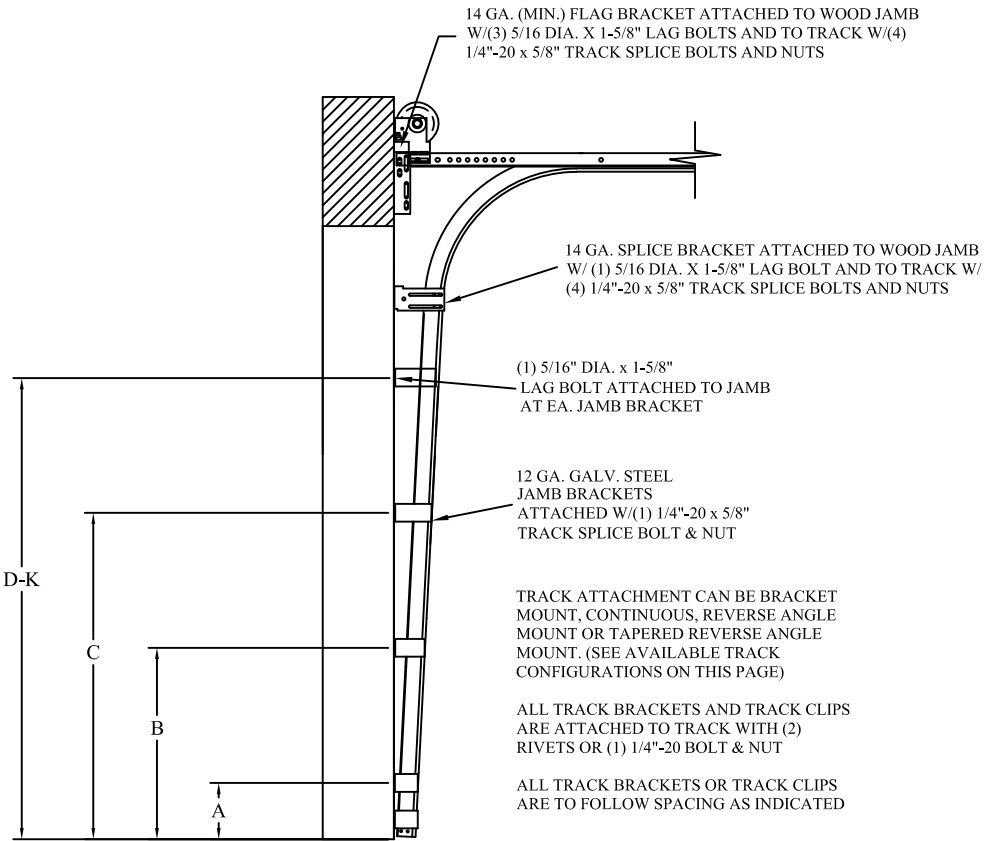
TABLE 1

| Section | Center Stile Locations |          | Max Design Loads Allowed |                               |
|---------|------------------------|----------|--------------------------|-------------------------------|
|         | Width (ft)             | 1st (in) | 2nd (in)                 | Positive (PSF) Negative (PSF) |
| 6'0     | 36"                    |          |                          | 25.8 30.4                     |
| 6'2     | 37"                    |          |                          | 25.1 29.5                     |
| 6'4     | 23"                    | 53"      |                          | 35.1 41.3                     |
| 6'6     | 24"                    | 54"      |                          | 34.4 40.5                     |
| 6'8     | 25"                    | 55"      |                          | 33.8 39.8                     |
| 6'10    | 26"                    | 56"      |                          | 33.2 39.1                     |
| 7'0     | 27"                    | 57"      |                          | 32.6 38.4                     |
| 7'2     | 28"                    | 58"      |                          | 32.0 37.7                     |
| 7'4     | 27"                    | 61"      |                          | 30.5 35.9                     |
| 7'6     | 28"                    | 62"      |                          | 30.0 35.3                     |
| 7'8     | 29"                    | 63"      |                          | 29.5 34.7                     |
| 7'10    | 30"                    | 64"      |                          | 29.0 34.2                     |
| 8'0     | 31"                    | 65"      |                          | 28.6 33.6                     |
| 8'2     | 32"                    | 66"      |                          | 28.2 33.1                     |
| 8'4     | 32"                    | 68"      |                          | 27.3 32.2                     |
| 8'6     | 33"                    | 69"      |                          | 26.9 31.7                     |
| 8'8     | 34"                    | 70"      |                          | 26.5 31.2                     |
| 8'10    | 35"                    | 71"      |                          | 26.2 30.8                     |
| 9'0     | 36"                    | 72"      |                          | 25.8 30.3                     |
| 9'2     | 37"                    | 73"      |                          | 25.5 30.0                     |

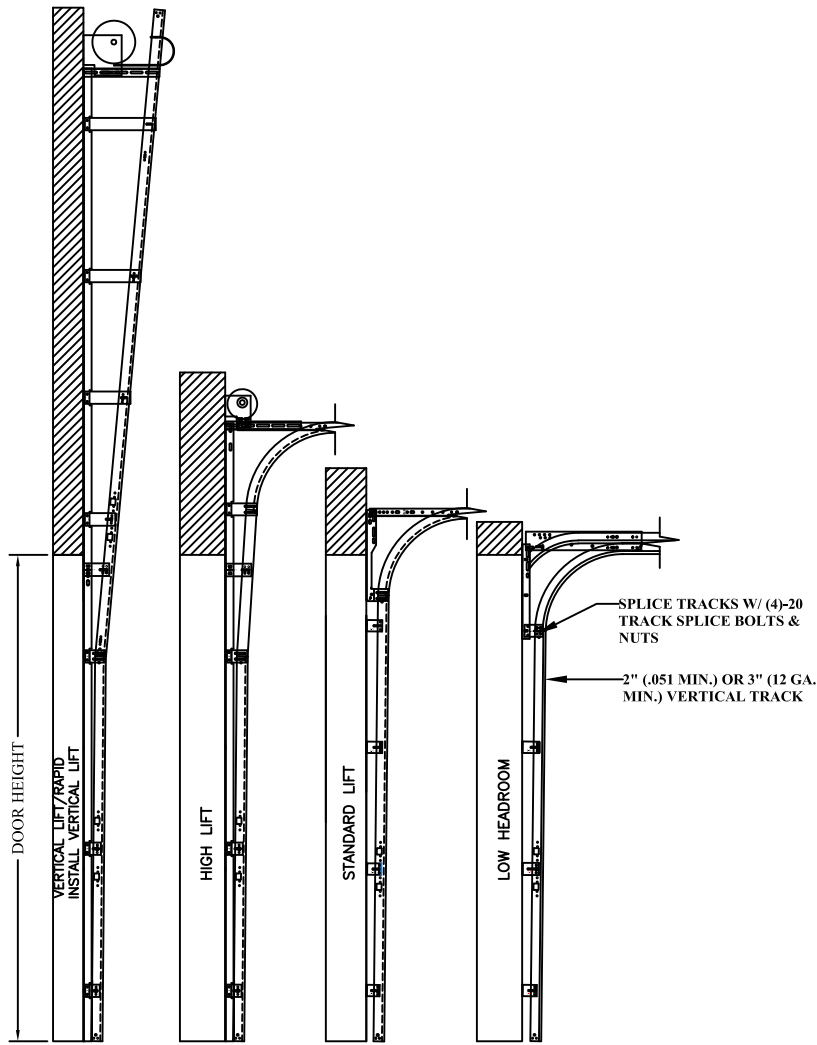
TABLE 2

| DOOR HEIGHT | TRACK ATTACHMENT |     |     |     |      |      |      |      |      |      |      | SPlice |
|-------------|------------------|-----|-----|-----|------|------|------|------|------|------|------|--------|
|             | A                | B   | C   | D   | E    | F    | G    | H    | I    | J    | K    |        |
| 6'6         | 10"              | 34" | 58" |     |      |      |      |      |      |      |      | 70"    |
| 7'0         | 10"              | 34" | 58" |     |      |      |      |      |      |      |      | 76"    |
| 7'6         | 10"              | 34" | 58" |     |      |      |      |      |      |      |      | 82"    |
| 8'0         | 10"              | 34" | 58" |     |      |      |      |      |      |      |      | 88"    |
| 8'6         | 10"              | 34" | 58" | 82" |      |      |      |      |      |      |      | 94"    |
| 9'0         | 10"              | 34" | 58" | 82" |      |      |      |      |      |      |      | 100"   |
| 9'6         | 10"              | 34" | 58" | 82" |      |      |      |      |      |      |      | 106"   |
| 10'0        | 10"              | 34" | 58" | 82" |      |      |      |      |      |      |      | 112"   |
| 10'6        | 10"              | 34" | 58" | 82" | 100" |      |      |      |      |      |      | 118"   |
| 11'0        | 10"              | 34" | 58" | 82" | 106" |      |      |      |      |      |      | 124"   |
| 11'6        | 10"              | 34" | 58" | 82" | 100" |      |      |      |      |      |      | 130"   |
| 12'0        | 10"              | 34" | 58" | 82" | 106" |      |      |      |      |      |      | 136"   |
| 12'6        | 10"              | 34" | 58" | 82" | 98"  | 124" |      |      |      |      |      | 142"   |
| 13'0        | 10"              | 34" | 58" | 82" | 106" | 130" |      |      |      |      |      | 148"   |
| 13'6        | 10"              | 34" | 58" | 82" | 98"  | 124" |      |      |      |      |      | 154"   |
| 14'0        | 10"              | 34" | 58" | 82" | 106" | 130" |      |      |      |      |      | 160"   |
| 15'0        | 10"              | 34" | 58" | 82" | 106" | 130" | 154" |      |      |      |      | 172"   |
| 16'0        | 10"              | 34" | 58" | 82" | 106" | 130" | 154" |      |      |      |      | 184"   |
| 17'0        | 10"              | 34" | 58" | 82" | 106" | 130" | 154" | 178" |      |      |      | 196"   |
| 18'0        | 10"              | 34" | 58" | 82" | 106" | 130" | 154" | 178" |      |      |      | 208"   |
| 19'0        | 10"              | 34" | 58" | 82" | 106" | 130" | 154" | 178" | 202" |      |      | 220"   |
| 20'0        | 10"              | 34" | 58" | 82" | 106" | 130" | 154" | 178" | 202" |      |      | 232"   |
| 21'0        | 10"              | 34" | 58" | 82" | 106" | 130" | 154" | 178" | 202" | 226" |      | 244"   |
| 22'0        | 10"              | 34" | 58" | 82" | 106" | 130" | 154" | 178" | 202" | 226" |      | 256"   |
| 23'0        | 10"              | 34" | 58" | 82" | 106" | 130" | 154" | 178" | 202" | 226" | 250" | 268"   |
| 24'0        | 10"              | 34" | 58" | 82" | 106" | 130" | 154" | 178" | 202" | 226" | 250" | 280"   |

ALL TRACK ATTACHMENTS +/- 2" ALLOWED USING SYP OR SPF NO.2 OR BETTER ONLY.



TRACK CONFIGURATION FOR UP TO 24' TALL DOORS  
SEE TABLE 2



AVAILABLE TRACK CONFIGURATIONS  
N.T.S.

TABLE 3

| SECTION |    |
|---------|----|
| TOP     |    |
| 11TH    | 2" |
| 10TH    | 2" |
| 9TH     | 2" |
| 8TH     | 2" |
| 7TH     | 2" |
| 6TH     | 2" |
| 5TH     | 2" |
| 4TH     | 2" |
| 3RD     | 2" |
| 2ND     | 2" |
| BTM     | 2" |

REV

DESCRIPTION OF REVISIONS

DATE

BY

MAX SIZE  
9'2 x 24'

DESIGN LOADS  
+25.5 PSF  
-30.0 PSF

TEST LOADS  
+38.3 PSF  
-45.0 PSF

THOMAS L. SHELMERDINE  
LICENSE  
No. 48579  
See Digital Signature  
STATE OF FLORIDA  
PROFESSIONAL ENGINEER

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