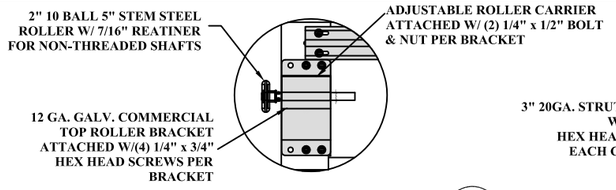
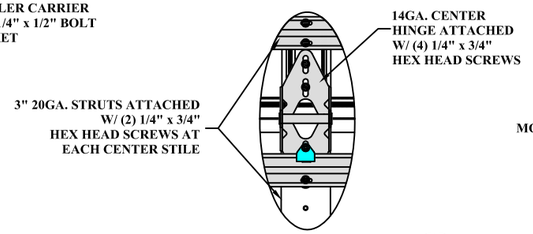
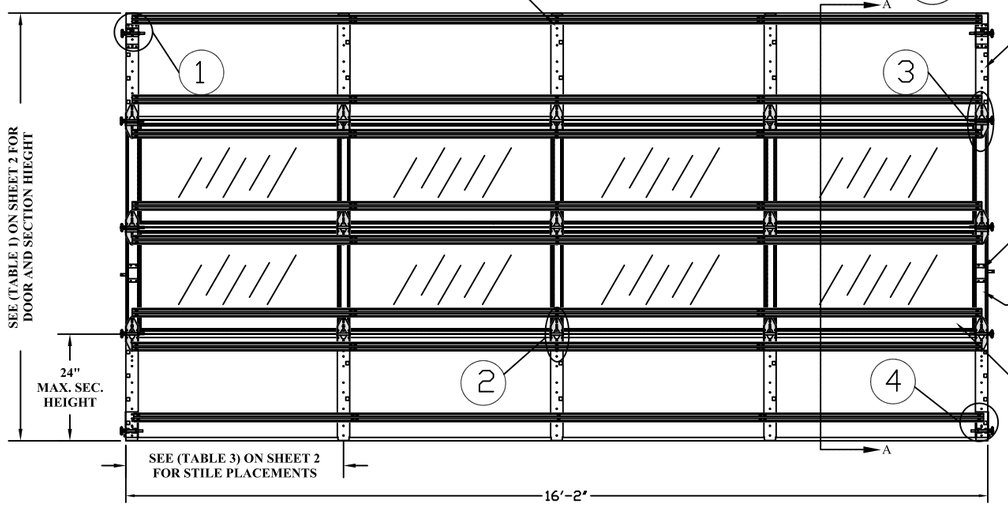


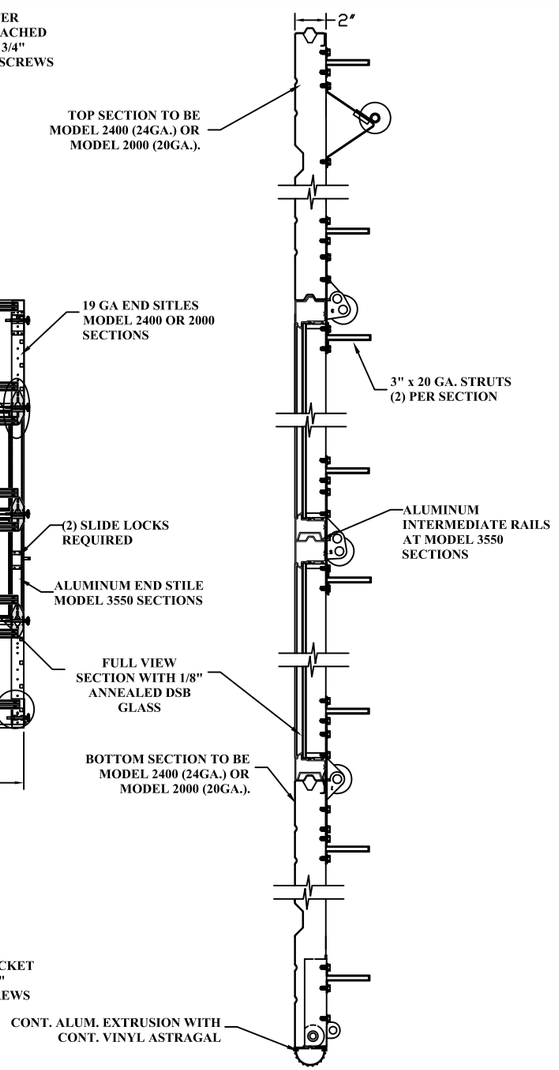

TYPICAL TOP FIXTURES 1
N.T.S.



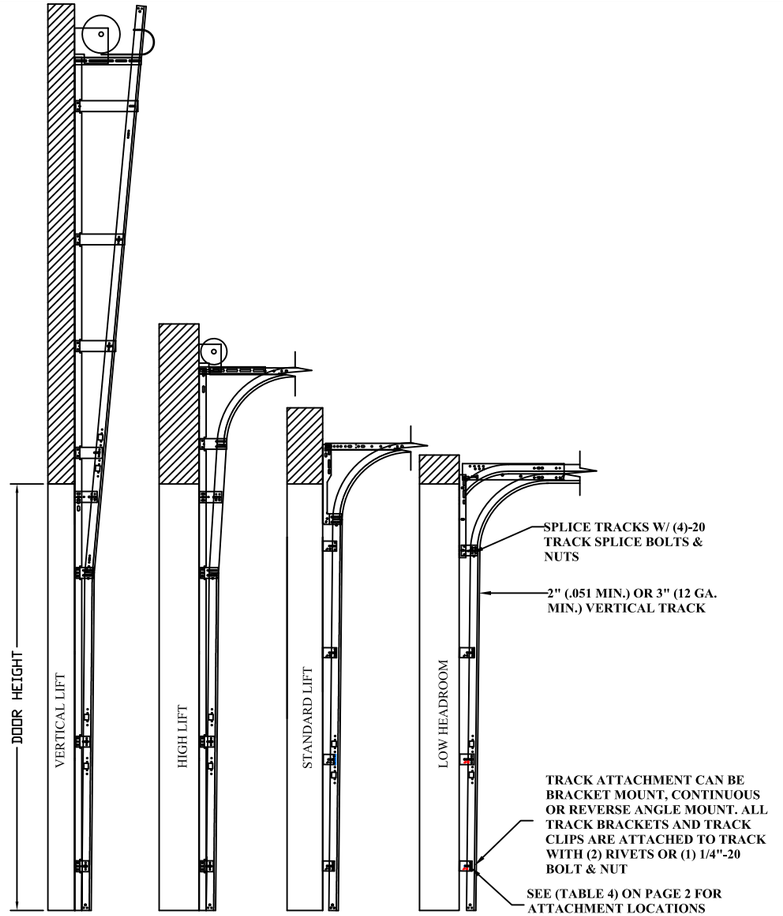

TYPICAL CENTER HINGE 2
N.T.S.



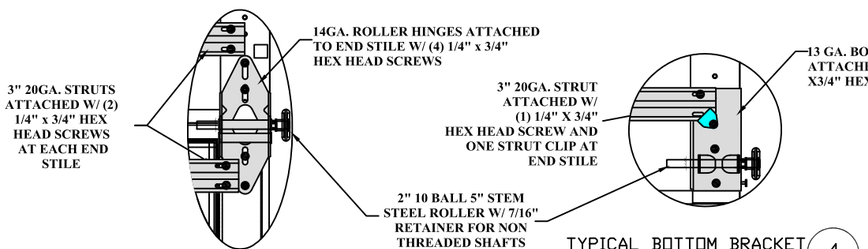

INSIDE ELEVATION
N.T.S.
GLAZING NOT AVAILABLE IN WIND-BORNE DEBRIS REGION
DOOR TESTED WITH GLAZING




SECTION A-A (SIDE VIEW)
N.T.S.




AVAILABLE TRACK CONFIGURATIONS
N.T.S.




TYPICAL END HINGE 3
N.T.S.




TYPICAL BOTTOM BRACKET 4
N.T.S.

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

MAX SIZE
16'2 x 24'

DESIGN LOADS
+16.7 PSF
-18.9 PSF

TEST LOADS
(1.5 x DESIGN LOADS)
+25.05 PSF
-28.35 PSF

STATE OF TEXAS
See Digital Signature
THOMAS L. SHELMERDINE
85829
LICENSED
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

Digitally signed by Thomas L Shelmerdine
DN: c=US, o=North Carolina, dnQualifier=A01410D0000017E7DCF965F0002DE45, cn=Thomas L Shelmerdine
Date: 2022.04.21 10:20:25 -04'00'

Thomas L. Shelmerdine, PE (TX PE #85829)
Structural Solutions, PA (TX Firm #F-004063)
5921-G W. Friendly Ave., Greensboro, NC 27410 TX

Amarr

**MODEL 2000 AMARR 2002, 2012, 2022**
**MODEL 2400 AMARR 2402, 2412, 2422**
**MODEL 3550HD AMARR 3552**

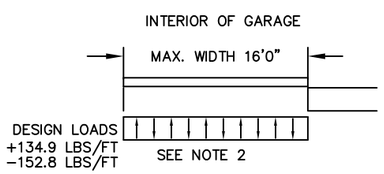
| SIZE | DRAWN BY | BHG | DATE | 9/30/10 | DRAWING NUMBER |
|---|---|---|---|---|---|
| B | CHECKED BY | DWC | DATE | 9/30/10 | IBC-2456-110-15 |

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

SHEET 1 OF 3

THE METHOD OF TESTING WAS IN SUBSTANTIAL CONFORMANCE WITH THE PROCEDURES DESCRIBED IN ASTM E330, AND DASMA 108. THE PRESSURES SHOWN ON THE DRAWINGS WERE CALCULATED USING ASCE 7-16 WITH THE FOLLOWING PARAMETERS
(5 FEET OF DOOR WIDTH IN END ZONE, ROOF SLOPE 10° OR LESS):

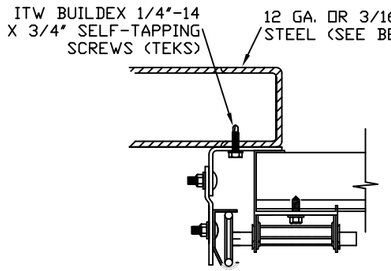
| WIND SPEED (MPH) | 141 | 128 | 122 | 117 | 112 |
|---|---|---|---|---|---|
| EXPOSURE LEVEL | B | C | C | D | D |
| MEAN ROOF HEIGHT | 30' | 15' | 25' | 15' | 25' |




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: +134.9 LBS/FT & -152.8 LBS/FT
3. DOORS AND HARDWARE WILL BE DESIGNED, MANUFACTURED AND INSTALLED WITH STANDARDS AS SET FORTH BY DASMA.
4. SUPPORTING STRUCTURAL ELEMENTS SHALL BE DESIGNED BY A REGISTRED PROFESSIONAL ENGINEER FOR WIND LOADS INDICATED ON THIS DRAWING IN ADDITION TO OTHER LOADINGS.
5. REFER TO (TABLE 2) ON SHEET 2 FOR ADDITIONAL DOOR WIDTHS AND THEIR DESIGN PRESSURES
6. GLAZING MEETS ASTM E1300-04
7. DOOR IS MANUFACTURED AND TESTED IN ACCORDANCE WITH THE 2018 IRC/IBC

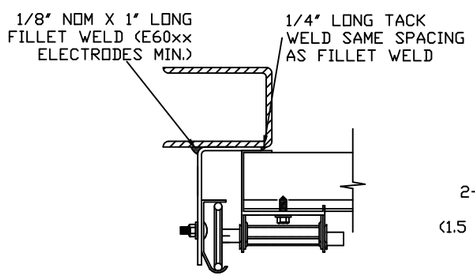
# TRACK CONNECTION DIRECTLY TO STRUCTURE OPTIONS




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

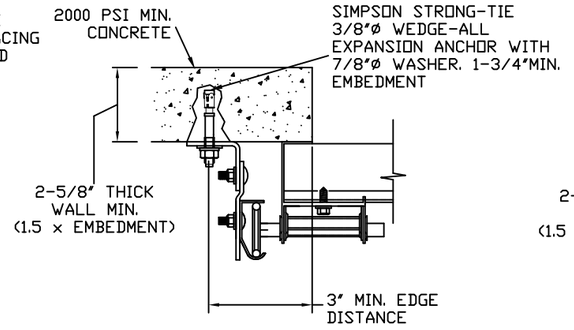
12 GA. STEEL FRAMING
232 LBS./SCREW ALLOWABLE LOAD - 6" FROM ENDS AND 18" O.C.
REFER TO NOTES: 1, 2 AND 5

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



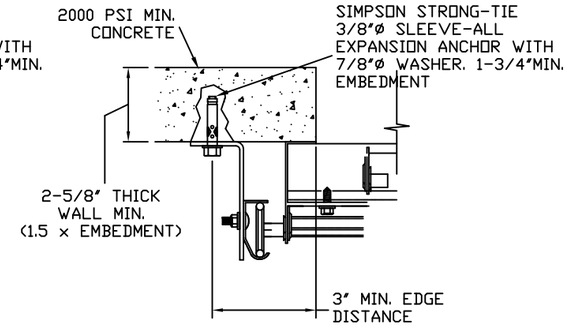

REVERSE ANGLE MOUNT SHOWN
BRACKET, CONTINUOUS AND TAPERED ANGLE MOUNT AVAILABLE

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



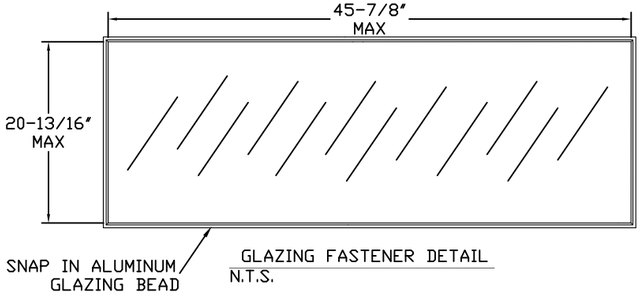

CLIP STYLE CONTINUOUS ANGLE MOUNT SHOWN
BRACKET, REVERSE AND TAPERED ANGLE MOUNT AVAILABLE

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




GLAZING FASTENER DETAIL
N.T.S.

# WOOD JAMB ATTACHMENT TO STRUCTURE (OPTIONAL)

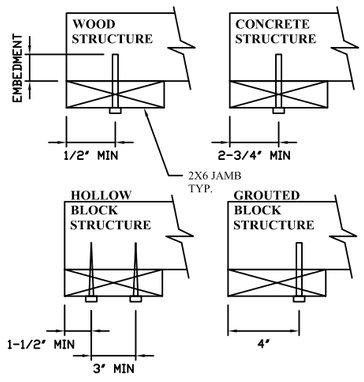
**2 X 6 VERTICAL JAMB ATTACHMENT TO WOOD FRAME STRUCTURE**
**5/16" X 3" LAG SCREWS STARTING 6" FROM ENDS THEN 24" O.C. (1 1/2" EMBEDMENT)**

**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/RAMSET 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**

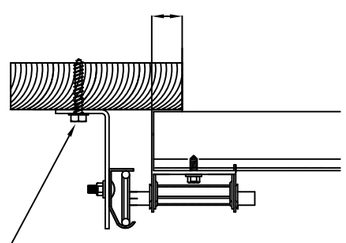



NOTES:

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. EGDE 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.

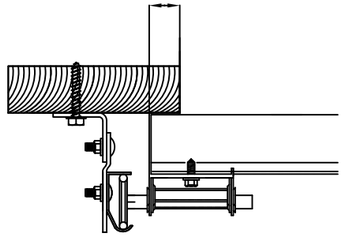
# TRACK CONNECTION TO WOOD JAMB OPTIONS

FOR LAG SCREWS & BRACKET SPACING SEE TABLE 4

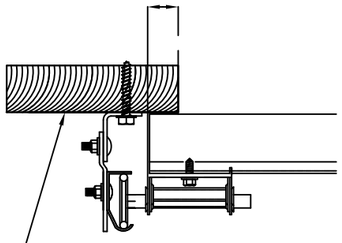


BRACKET MOUNT

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



CONTINUOUS ANGLE MOUNT



REVERSE ANGLE MOUNT

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

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

MAX SIZE
16'2 x 24'

DESIGN LOADS
+16.7 PSF
−18.9 PSF

TEST LOADS
(1.5 x DESIGN LOADS)
+25.05 PSF
−28.35 PSF

STATE OF TEXAS
See Digital Signature
THOMAS L. SHELMERDINE
85829
LICENSED
PROFESSIONAL ENGINEER

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Thomas L. Shelmerdine, PE (TX PE #85829)
Structural Solutions, PA (TX Firm #F-004063)
5921-G W. Friendly Ave., Greensboro, NC 27410


TX

Amarr

**MODEL 2000 AMARR 2002, 2012, 2022**
**MODEL 2400 AMARR 2402, 2412, 2422**
**MODEL 3550HD AMARR 3552**

| SIZE | DRAWN BY | BHG | DATE | 9/30/10 | DRAWING NUMBER |
|---|---|---|---|---|---|
| B | CHECKED BY | DWC | DATE | 9/30/10 | IBC-2456-110-15 |
| AMARR COMPANY 165 CARRIAGE COURT WINSTON-SALEM, N.C. 27105 | | | | | SHEET 2 OF 3 |

## TABLE 1

| Door Height | 21" Bottom | 21" Intermediate | 24" Bottom | 24" Intermediate |
|---|---|---|---|---|
| 7'0" | 1 | 3 | | |
| 7'3" | | 3 | 1 | |
| 7'6" | | 2 | 1 | 1 |
| 7'9" | | 1 | 1 | 2 |
| 8'0" | | | | 4 |
| 8'3" | Not Available | | | |
| 8'6" | Not Available | | | |
| 8'9" | 1 | 4 | | |
| 9'0" | | 4 | 1 | |
| 9'3" | | 3 | 1 | 1 |
| 9'6" | | 2 | 1 | 2 |
| 9'9" | | 1 | 1 | 3 |
| 10'0" | | | 1 | 4 |
| 10'3" | Not Available | | | |
| 10'6" | 1 | 5 | | |
| 10'9" | | 5 | 1 | |
| 11'0" | | 4 | 1 | 1 |
| 11'3" | | 3 | 1 | 2 |
| 11'6" | | 2 | 1 | 3 |
| 11'9" | | 1 | 1 | 4 |
| 12'0" | | | 1 | 5 |
| 12'3" | 1 | 6 | | |
| 12'6" | | 6 | 1 | |
| 12'9" | | 5 | 1 | 1 |
| 13'0" | | 4 | 1 | 2 |
| 13'3" | | 3 | 1 | 3 |
| 13'6" | | 2 | 1 | 4 |
| 13'9" | | 1 | 1 | 5 |
| 14'0" | | | 1 | 6 |
| 14'0" | 1 | 7 | | |
| 14'3" | | 7 | 1 | |
| 14'6" | | 6 | 1 | 1 |
| 14'9" | | 5 | 1 | 2 |
| 15'0" | | 4 | 1 | 3 |
| 15'3" | | 3 | 1 | 4 |
| 15'6" | | 2 | 1 | 5 |
| 15'9" | | 1 | 1 | 6 |
| 15'9" | 1 | 8 | | |
| 16'0" | | | 1 | 7 |
| 16'0" | | 8 | 1 | |
| 16'3" | | 7 | 1 | 1 |
| 16'6" | | 6 | 1 | 2 |
| 16'9" | | 5 | 1 | 3 |
| 17'0" | | 4 | 1 | 4 |
| 17'3" | | 2 | 1 | 5 |
| 17'6" | | 2 | 1 | 6 |
| 17'9" | | 1 | 1 | 7 |
| 18'0" | | | 1 | 8 |
| 18'3" | | 7 | 1 | 2 |
| 18'6" | | 6 | 1 | 3 |
| 18'9" | | 5 | 1 | 4 |
| 19'0" | | 4 | 1 | 5 |
| 19'3" | | 3 | 1 | 6 |
| 19'6" | | 2 | 1 | 7 |
| 19'9" | | 1 | 1 | 8 |
| 20'0" | | | 1 | 9 |

## *TABLE 2

| Section Width (ft) | Max Design Loads Allowed | |
|---|---|---|
| | Positve (PSF) | Negative (PSF) |
| 9' 4 | 21.2 | 24.0 |
| 9' 6 | 20.9 | 23.7 |
| 9' 8 | 20.7 | 23.4 |
| 9' 10 | 20.4 | 23.1 |
| 10' 0 | 20.1 | 22.8 |
| 10' 2 | 19.9 | 22.5 |
| 10' 4 | 19.7 | 22.2 |
| 10' 6 | 19.4 | 22.0 |
| 10' 8 | 19.2 | 21.7 |
| 10' 10 | 19.0 | 21.5 |
| 11' 0 | 18.7 | 21.2 |
| 11' 2 | 18.5 | 21.0 |
| 11' 4 | 18.3 | 20.7 |
| 11' 6 | 18.1 | 20.5 |
| 12' 0 | 22.4 | 25.3 |
| 12' 2 | 22.1 | 25.0 |
| 12' 4 | 21.8 | 24.7 |
| 12' 6 | 21.5 | 24.3 |
| 12' 8 | 21.2 | 24.0 |
| 12' 10 | 20.9 | 23.7 |
| 13' 0 | 19.2 | 21.7 |
| 13' 2 | 19.2 | 21.7 |
| 13' 4 | 19.2 | 21.7 |
| 13' 6 | 19.2 | 21.7 |
| 13' 8 | 19.2 | 21.7 |
| 13' 10 | 19.2 | 21.7 |
| 14' 0 | 19.2 | 21.7 |
| 14' 2 | 19.0 | 21.5 |
| 14' 4 | 18.7 | 21.2 |
| 14' 6 | 18.5 | 21.0 |
| 14' 8 | 18.3 | 20.7 |
| 14' 10 | 18.1 | 20.5 |
| 15' 0 | 17.9 | 20.3 |
| 15' 2 | 17.5 | 19.8 |
| 16' 0 | 16.8 | 19.0 |
| 16' 2 | 16.7 | 18.9 |

***CONTACT AMARR'S ENGINEERING DEPARTMENT FOR THE FOLLOWING DOOR WIDTHS; 11'8", 11'10", 15'4",15'6",15'8" AND 15'10"**

## TABLE 3

| Section Width (ft) | Center Stile Locations (Measured from Left Edge) | | |
|---|---|---|---|
| | 1st (in) | 2st (in) | 3rd (in) |
| 9' 4 | 36" | 76" | |
| 9' 6 | 37" | 77" | |
| 9' 8 | 38" | 78" | |
| 9' 10 | 39" | 79" | |
| 10' 0 | 40" | 80" | |
| 10' 2 | 41" | 81" | |
| 10' 4 | 42" | 82" | |
| 10' 6 | 43" | 83" | |
| 10' 8 | 44" | 84" | |
| 10' 10 | 45" | 85" | |
| 11' 0 | 46" | 86" | |
| 11' 2 | 47" | 87" | |
| 11' 4 | 48" | 88" | |
| 11' 6 | 49" | 89" | |
| 12' 0* | 36" | 72" | 108" |
| 12' 2* | 37" | 73" | 109" |
| 12' 4* | 38" | 74" | 110" |
| 12' 6* | 39" | 75" | 111" |
| 12' 8* | 40" | 76" | 112" |
| 12' 10 | 41" | 77" | 113" |
| 13' 0 | 36" | 78" | 120" |
| 13' 2 | 37" | 79" | 121" |
| 13' 4 | 38" | 80" | 122" |
| 13' 6 | 39" | 81" | 123" |
| 13' 8 | 40" | 82" | 124" |
| 13' 10 | 41" | 83" | 125" |
| 14' 0 | 42" | 84" | 126" |
| 14' 2 | 43" | 85" | 127" |
| 14' 4 | 44" | 86" | 128" |
| 14' 6 | 45" | 87" | 129" |
| 14' 8 | 46" | 88" | 130" |
| 14' 10 | 47" | 89" | 131" |
| 15' 0 | 48" | 90" | 132" |
| 15' 2 | 49" | 91" | 133" |
| 16' 0 | 48" | 96" | 144" |
| 16' 2 | 49" | 97" | 145" |

***SPECIAL STILE PLACEMENT REQUIRED FOR THE FOLLOWING DOOR WIDTHS: 12'0", 12'2", 12'4", 12'6" AND 12'8"**

## TABLE 4

| DOOR HEIGHT | TRACK ATTACHMENT | | | | | | | | | | *SPLICE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | I | J | S |
| 6' 6" | 10" | 38" | 58" | | | | | | | | 70" |
| 7' | 10" | 38" | 58" | | | | | | | | 76" |
| 7' 6" | 4" | 28" | 52" | 76" | | | | | | | 82" |
| 8' | 10" | 34" | 58" | 82" | | | | | | | 88" |
| 8' 6" | 4" | 28" | 52" | 76" | | | | | | | 94" |
| 9' | 10" | 34" | 58" | 82" | | | | | | | 100" |
| 9' 6" | 4" | 28" | 52" | 76" | 100" | | | | | | 106" |
| 10' | 10" | 34" | 58" | 82" | 106" | | | | | | 112" |
| 10' 6" | 4" | 28" | 52" | 76" | 100" | | | | | | 118" |
| 11' | 10" | 34" | 58" | 82" | 106" | | | | | | 124" |
| 11' 6" | 4" | 28" | 52" | 76" | 100" | 124" | | | | | 130" |
| 12' | 10" | 34" | 58" | 82" | 106" | 130" | | | | | 136" |
| 12'6" | 4" | 28" | 52" | 76" | 100" | 124" | | | | | 142" |
| 13' | 10" | 34" | 58" | 82" | 106" | 130" | | | | | 148" |
| 13' 6" | 4" | 28" | 52" | 76" | 100" | 124" | 148" | | | | 154" |
| 14' | 10" | 34" | 58" | 82" | 106" | 130" | 154" | | | | 160" |
| 14' 6" | 4" | 28" | 52" | 76" | 100" | 124" | 148" | | | | 166" |
| 15' | 10" | 34" | 58" | 82" | 106" | 130" | 154" | | | | 172" |
| 15' 6" | 4" | 28" | 52" | 76" | 100" | 124" | 148" | 172" | | | 178" |
| 16' | 10" | 34" | 58" | 82" | 106" | 130" | 154" | 178" | | | 184" |
| 16' 6" | 4" | 28" | 52" | 76" | 100" | 124" | 148" | 172" | | | 190" |
| 17' | 10" | 34" | 58" | 82" | 106" | 130" | 154" | 178" | | | 196" |
| 17' 6" | 4" | 28" | 52" | 76" | 100" | 124" | 148" | 172" | 196" | | 202" |
| 18' | 10" | 34" | 58" | 82" | 106" | 130" | 154" | 178" | 202" | | 208" |
| 18' 6" | 4" | 28" | 52" | 76" | 100" | 124" | 148" | 172" | 196" | | 214" |
| 19' | 10" | 34" | 58" | 82" | 106" | 130" | 154" | 178" | 202" | | 220" |
| 19' 6" | 4" | 28" | 52" | 76" | 100" | 124" | 148" | 172" | 196" | 220" | 226" |
| 20' | 10" | 34" | 58" | 82" | 106" | 130" | 154" | 178" | 202" | 226" | 232" |

***SPLICE LOCATION FOR STANDARD LIFT. WILL VARY FOR OTHER LIFT APPLICATIONS**

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

MAX SIZE
16'2 x 24'

DESIGN LOADS
+16.7 PSF
−18.9 PSF

TEST LOADS
(1.5 x DESIGN LOADS)
+25.05 PSF
−28.35 PSF

STATE OF TEXAS
See Digital Signature
THOMAS L. SHELMERDINE
85829
LICENSED
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.

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Structural Solutions, PA (TX Firm #F-004063)
5921-G W. Friendly Ave., Greensboro, NC 27410

TX

Amarr

**MODEL 2000 AMARR 2002, 2012, 2022**
**MODEL 2400 AMARR 2402, 2412, 2422**
**MODEL 3550HD AMARR 3552**

| SIZE | DRAWN BY | BHG | DATE | 9/30/10 | DRAWING NUMBER |
|---|---|---|---|---|---|
| B | CHECKED BY | DWC | DATE | 9/30/10 | IBC-2456-110-15 |
| AMARR COMPANY 165 CARRIAGE COURT WINSTON-SALEM, N.C. 27105 | | | | | SHEET 3 OF 3 |