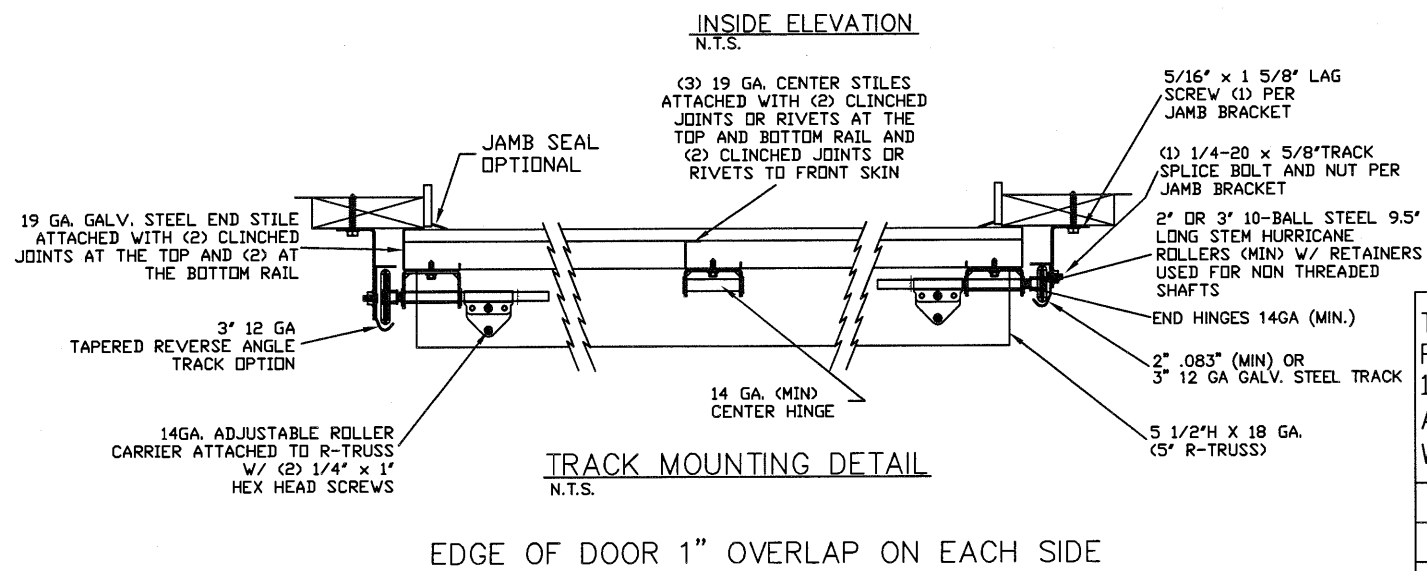
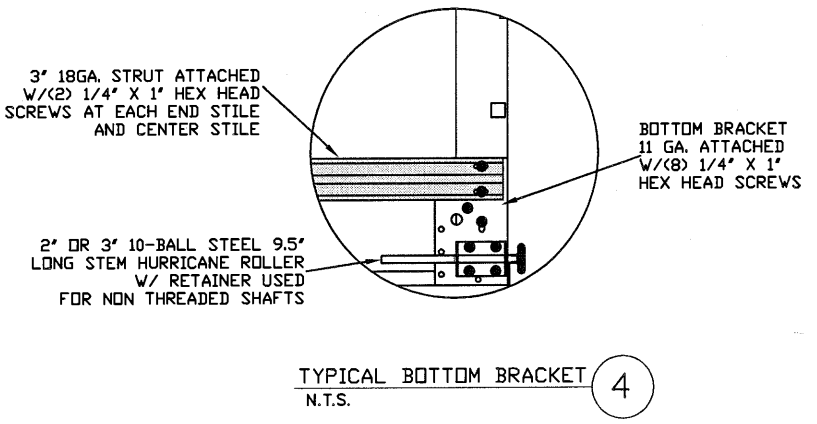


LARGE MISSILE IMPACT RESISTANT



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 7-98/02/05 WITH THE FOLLOWING PARAMETERS (5 FEET OF DOOR WIDTH IN END ZONE, ROOF SLOPE 10° OR LESS, AND I=1.0):

WIND SPEED (MPH)	151	137	130	124	119
EXPOSURE LEVEL	B	C	C	D	D
MEAN ROOF HEIGHT	30'	15'	25'	15'	25'

REV	DESCRIPTION OF REVISIONS	DATE	BY

MAX SIZE 16'2 x 24'

DESIGN LOADS +31.4 PSF -35.5 PSF

TEST LOADS +47.1 PSF -53.3 PSF

LARGE MISSILE IMPACT RESISTANCE

Thomas L. Shelmerdine, PE (TX PE #85829) Structural Solutions, PA (TX Firm #F-004063)

STATE OF TEXAS  
THOMAS L. SHELMERDINE  
85829  
LICENSED PROFESSIONAL ENGINEER

TX

5921-G W. Friendly Ave., Greensboro, NC 27410

**ENTREMATIC**

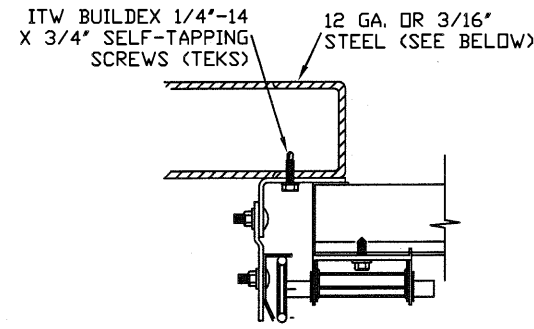
165 CARRIAGE COURT WINSTON-SALEM, N.C. 27105

AMARR MODEL 2500 (25GA)  
AMARR MODEL 2400 (24GA)  
AMARR MODEL 2000 (20GA)

SIZE	DRAWN BY	RS	DATE	2/10/15	DRAWING NUMBER
B	CHECKED BY	RLR	DATE	2/10/15	IBC-2516-150-26-1

SHEET 1 OF 3

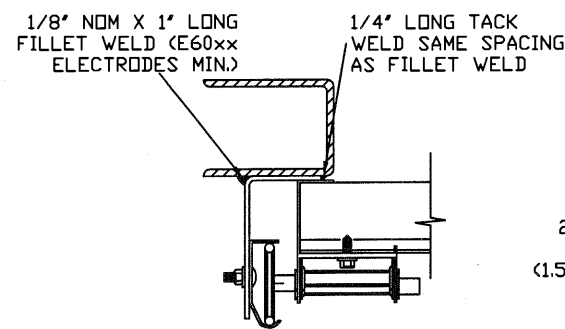
## TRACK CONNECTION DIRECTLY TO STRUCTURE OPTIONS



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

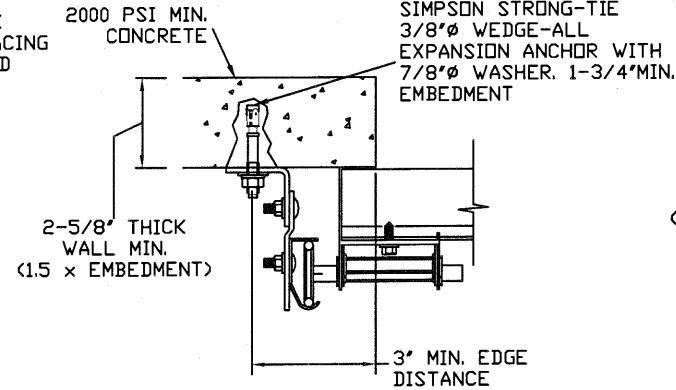
**12 GA. STEEL FRAMING**  
232 LBS./SCREW ALLOWABLE LOAD - 6'  
FROM ENDS AND 10' O.C.  
REFER TO NOTES: 1, 2 AND 5

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



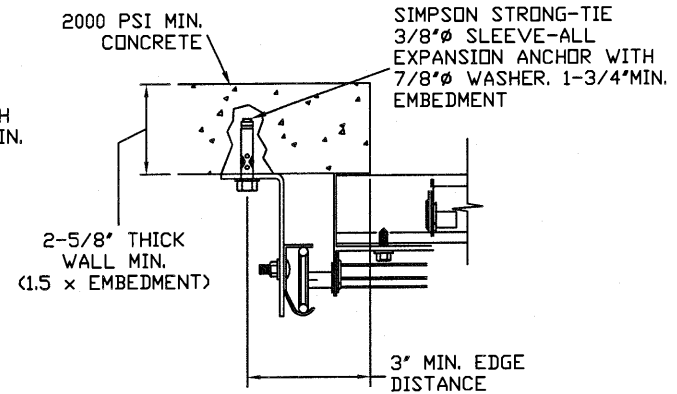
REVERSE ANGLE MOUNT SHOWN  
BRACKET, CONTINUOUS AND  
TAPERED ANGLE MOUNT AVAILABLE

**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 12' 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 12' O.C.  
REFER TO NOTES: 1, 2, 3, 4 AND 5

### 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.

## WOOD JAMB ATTACHMENT TO STRUCTURE (OPTIONAL)

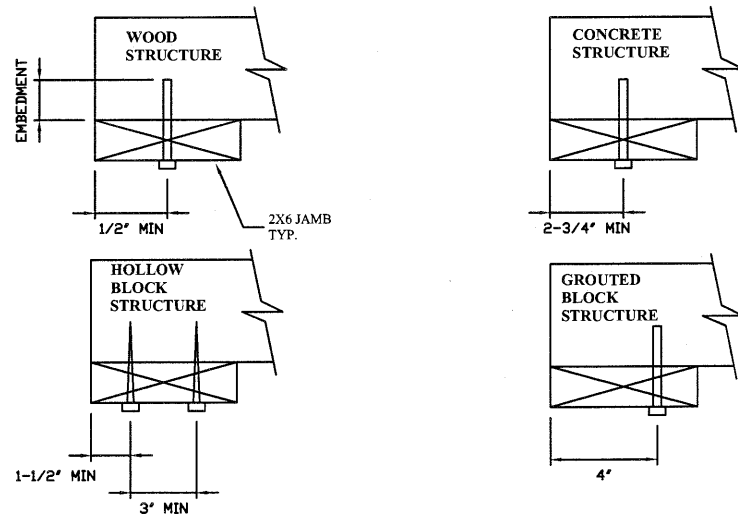
**2 X 6 VERTICAL JAMB ATTACHMENT TO WOOD FRAME STRUCTURE**  
5/16" X 3" LAG SCREWS STARTING 6" FROM ENDS THEN 18" O.C. (1 1/2" EMBEDMENT)

**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 16" 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 8" 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 8" O.C. (1 1/4" EMBEDMENT)

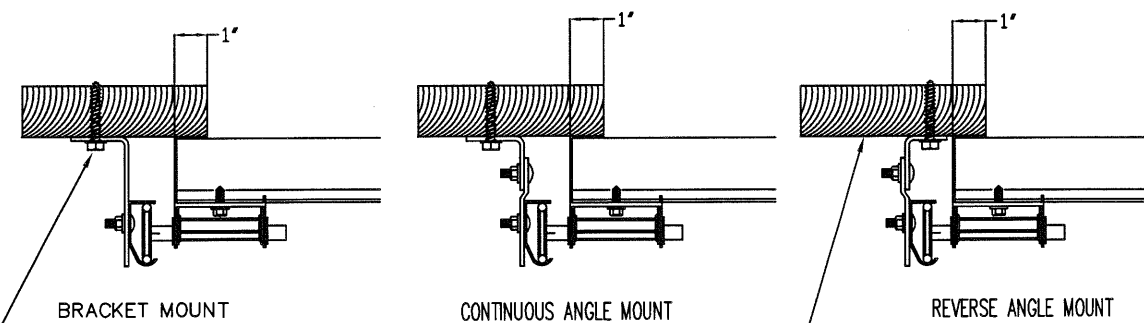
**2 X 6 VERTICAL JAMB ATTACHMENT TO GROUTED C-90 BLOCK (2000 PSI GROUT)**  
HILTI SLEEVE ANCHOR 3/8" X 2-3/4" STARTING 6" FROM ENDS THEN 20" O.C. (1 1/4" EMBEDMENT)  
(OR, USE FASTENERS FOR HOLLOW C-90 BLOCK)

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



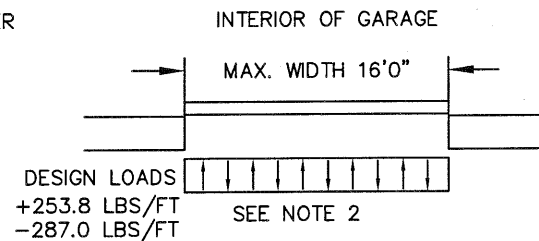
## TRACK CONNECTION TO WOOD JAMB OPTIONS

FOR LAG SCREWS & BRACKET SPACING SEE PAGE 3 FOR TRACK CONFIGURATION DETAIL



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.)



### 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 JAMB RECEIVES MAXIMUM DESIGN LOADS OF:  
+253.8 LBS/FT AND -287.0 LBS/FT
3. DOOR AND HARDWARE WILL BE DESIGNED, MANUFACTURED AND INSTALLED WITH STANDARDS AS SET FORTH BY DASHA.
4. DOOR SECTIONS SHALL BE 25 GA. (.018) MIN. EXTERIOR SKIN ROLLED FORMED, GALVANIZATION W/ BAKED ON POLYESTER FINISH
5. DOORS UP TO 24' HIGH USE (1) 5 1/2" R-TRUSS PER SECTION AND (1) 3" 18GA STRUT ON TOP OF THE BOTTOM BRACKET.
6. SUPPORTING STRUCTURAL ELEMENTS SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER FOR WIND LOADS INDICATED ON THIS DRAWING IN ADDITION TO OTHER LOADINGS.

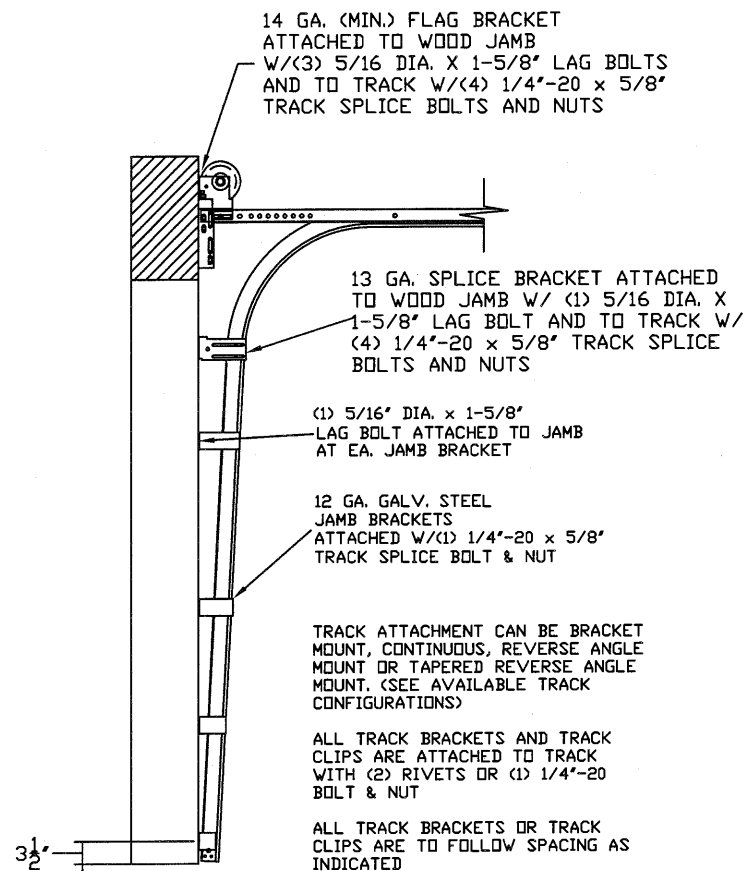
REV	DESCRIPTION OF REVISIONS	DATE	BY
	<p>MAX SIZE, 16'2" x 24'</p> <p>DESIGN LOADS +31.4 PSF -35.5 PSF</p> <p>TEST LOADS +47.1 PSF -53.3 PSF</p> <p>LARGE MISSILE IMPACT RESISTANCE</p>		
	<p><b>TX</b></p> <p><b>ENTRE//MATIC</b></p> <p>165 CARRIAGE COURT WINSTON-SALEM, N.C. 27105</p> <p>AMARR MODEL 2500 (25GA) AMARR MODEL 2400 (24GA) AMARR MODEL 2000 (20GA)</p>		
	<p>SIZE B</p> <p>DRAWN BY RS</p> <p>CHECKED BY RLR</p>	<p>DATE 2/10/15</p> <p>DATE 2/10/15</p>	<p>DRAWING NUMBER</p> <p>IBC-2516-150-26-1</p>
			SHEET 2 OF 3

5921-G W. Friendly Ave., Greensboro, NC 27410

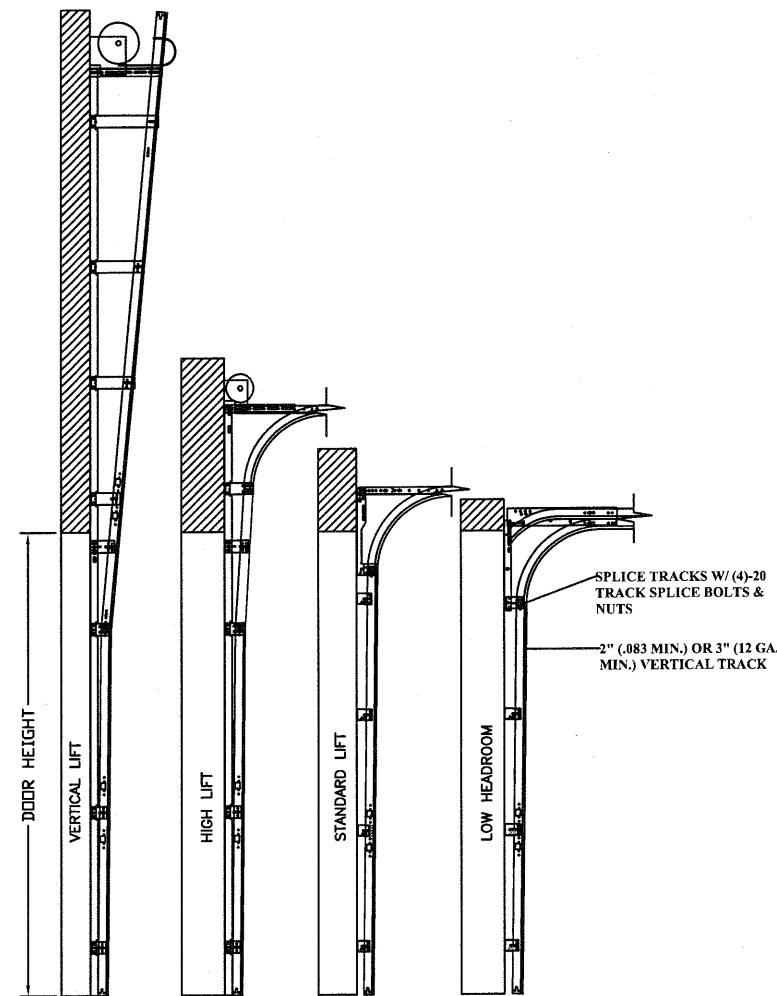
TABLE 1

Section Width (ft)		Center Stile Locations (Measured from Left)		
		1st (in)	2nd (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"	-
11'	8"	50"	90"	-
11'	10"	51"	91"	-
12'	0"	48"	96"	-
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"
15'	4"	50"	92"	134"
15'	6"	51"	93"	135"
15'	8"	52"	94"	136"
15'	10"	53"	95"	137"
16'	0"	48"	96"	144"
16'	2"	49"	97"	145"

\*FOR WIDTHS 12'-2" TO 12'-10" CONTACT ENGINEERING FOR STILE PLACEMENT



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



AVAILABLE TRACK CONFIGURATIONS  
N.T.S.

TABLE 2

DOOR HEIGHT	TRACK ATTACHMENT												TYPICAL SPLICE
	A	B	C	D	E	F	G	H	I	J	K	I	
7' 0"	3.5"	22"	46"	70"									76"
7' 6"	3.5"	22"	46"	70"									82"
8' 0"	3.5"	22"	46"	70"									88"
8' 6"	3.5"	22"	46"	70"									94"
9' 0"	3.5"	22"	46"	70"	94"								100"
9' 6"	3.5"	22"	46"	70"	94"								106"
10' 0"	3.5"	22"	46"	70"	94"								112"
11' 0"	3.5"	22"	46"	70"	94"	118"							124"
12' 0"	3.5"	22"	46"	70"	94"	118"							136"
13' 0"	3.5"	22"	46"	70"	94"	118"	142"						148"
14' 0"	3.5"	22"	46"	70"	94"	118"	142"						160"
15' 0"	3.5"	22"	46"	70"	94"	118"	142"	166"					172"
16' 0"	3.5"	22"	46"	70"	94"	118"	142"	166"					184"
17' 0"	3.5"	22"	46"	70"	94"	118"	142"	166"	190"				196"
18' 0"	3.5"	22"	46"	70"	94"	118"	142"	166"	190"				208"
19' 0"	3.5"	22"	46"	70"	94"	118"	142"	166"	190"	214"			220"
20' 0"	3.5"	22"	46"	70"	94"	118"	142"	166"	190"	214"			232"
21' 0"	3.5"	22"	46"	70"	94"	118"	142"	166"	190"	214"	238"		244"
22' 0"	3.5"	22"	46"	70"	94"	118"	142"	166"	190"	214"	238"		256"
23' 0"	3.5"	22"	46"	70"	94"	118"	142"	166"	190"	214"	238"	262"	268"
24' 0"	3.5"	22"	46"	70"	94"	118"	142"	166"	190"	214"	238"	262"	280"

ALL TRACK ATTACHMENTS +/- 2" ALLOWED USING SYP NO.2 OR BETTER ONLY.  
AMARR MODEL 2500 ONLY AVAILABLE UP TO 14'

REV	DESCRIPTION OF REVISIONS	DATE	BY

MAX SIZE 16'2 x 24'

DESIGN LOADS  
+31.4 PSF  
-35.5 PSF

TEST LOADS  
+47.1 PSF  
-53.3 PSF

LARGE MISSILE IMPACT RESISTANCE

Thomas L. Shelmerdine, PE (TX PE #85829)  
Structural Solutions, PA (TX Firm #F-004063)

STATE OF TEXAS  
THOMAS L. SHELMERDINE  
85829  
LICENSED PROFESSIONAL ENGINEER  
TX

ENTRE//MATIC

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

AMARR MODEL 2500 (25GA)  
AMARR MODEL 2400 (24GA)  
AMARR MODEL 2000 (20GA)

SIZE	DRAWN BY RS	DATE 2/10/15	DRAWING NUMBER
B	CHECKED BY RLR	DATE 2/10/15	IBC-2516-150-26-1

SHEET 3 OF 3

5921-G W. Friendly Ave., Greensboro, NC 27410