

(1) 20 GA STRUT AT THE TOP OF TOP SECTION ATTACHED W/ (2) 1/4" X 3/4" HEX HEAD SCREWS AT EACH END STILE AND CENTER STILE LOCATIONS

12 GA. (MIN.) GALV. COMMERCIAL TOP ROLLER BRACKET ATTACHED W/ (4) 1/4" X 3/4" HEX HEAD SCREWS

ADJUSTABLE SLIDE BRACKET ATTACHED W/ (2) 5/16" X 3/4" CARRIAGE BOLTS AND NUT

3-1/4" X 20 GA CONTINUOUS BACKER PLATE BEHIND BACK SKIN AT TOP AND BOTTOM OF EACH SECTION

(1) 20 GA STRUT STACKED ON THE HINGES OF EACH INTERMEDIATE SECTION ATTACHED W/ (2) 1/4" X 3/4" HEX HEAD SCREWS AT EACH END STILE, AND CENTER STILE

14GA. (MIN.) CENTER HINGE ATTACHED W/ A TOTAL OF (5) 1/4" X 3/4" HEX HEAD SCREWS

3-1/4" X 20 GA CONTINUOUS BACKER PLATE BEHIND BACK SKIN AT TOP AND BOTTOM OF EACH SECTION

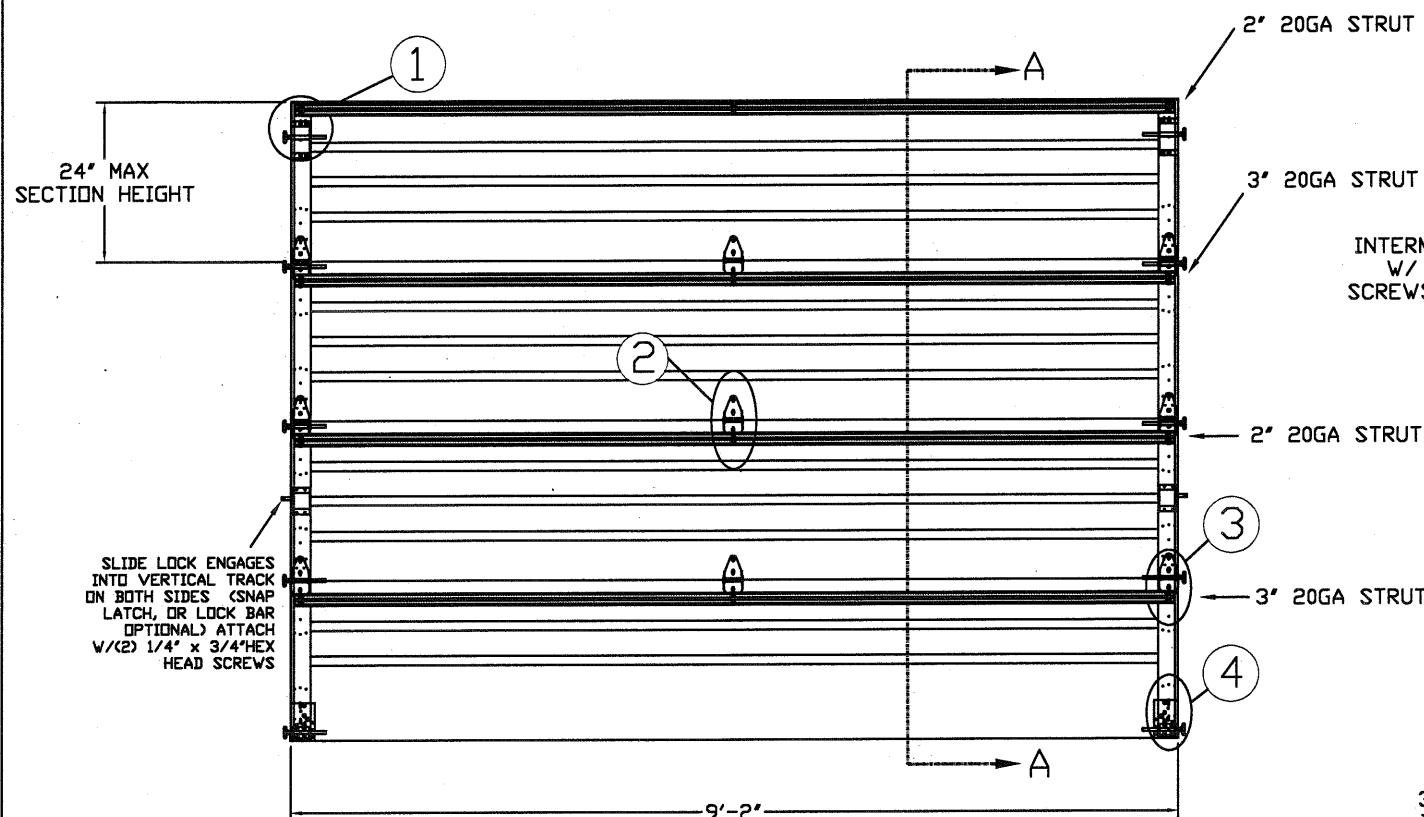
TYPICAL TOP FIXTURES
N.T.S.

1

TYPICAL CENTER HINGE
N.T.S.

2

LARGE MISSILE IMPACT RESISTANCE



INSIDE ELEVATION
N.T.S.

2"-10 BALL STEEL 7" STEM ROLLERS (MIN) W/ 7/16" RETAINERS FOR NON-THREADED SHAFTS

(1) 20 GA STRUT ON EACH INTERMEDIATE SECTION ATTACHED W/ (2) 1/4" X 3/4" HEX HEAD SCREWS AT EACH END STILE, AND CENTER STILE LOCATIONS

14 GA. (MIN.) END HINGE ROLLER CARRIER ATTACHED W/ (5) 1/4" X 3/4" HEX HEAD SCREWS

3-1/4" X 20 GA CONTINUOUS BACKER PLATE BEHIND BACK SKIN AT TOP AND BOTTOM OF EACH SECTION

TYPICAL END HINGE
N.T.S.

3

3-1/4" X 20 GA CONTINUOUS BACKER PLATE BEHIND BACK SKIN AT TOP AND BOTTOM OF EACH SECTION

BB-4 BOTTOM BRACKET 13 GA. (MIN.) ATTACHED W/ A TOTAL OF (7) 1/4" X 3/4" HEX HEAD SCREWS

2"-10 BALL STEEL 7" STEM ROLLERS (MIN) W/ 7/16" RETAINERS FOR NON-THREADED SHAFTS

TYPICAL BOTTOM BRACKET
N.T.S.

4

19 GA. GALV. STEEL END STILE ATTACHED TO DOORS SKIN WITH (2) #8 X 1/2" SCREWS PER STILE

JAMB SEAL OPTIONAL

5/16" X 1 5/8" LAG SCREW (1) PER JAMB BRACKET

(1) 1/4"-20 X 5/8" TRACK SPLICE BOLT AND NUT PER JAMB BRACKET

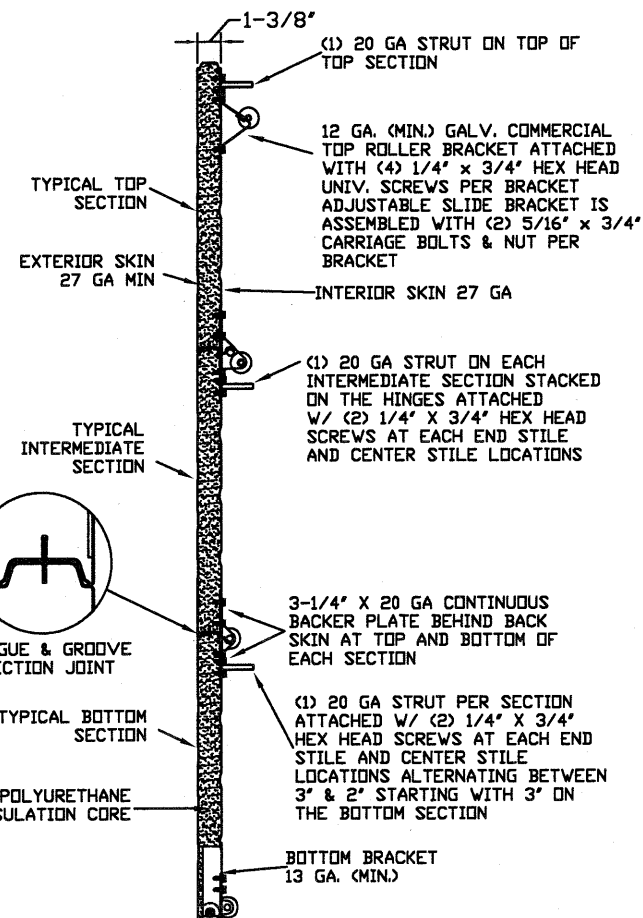
2" GALV. STEEL TRACK THICKNESS .063" (MIN.)

INTERMEDIATE HINGES 14GA (MIN.)

2"-10 BALL STEEL 7" STEM ROLLERS (MIN) W/ 7/16" RETAINER CLIPS FOR NON THREADED SHAFTS

TRACK MOUNTING DETAIL
N.T.S.

EDGE OF DOOR 1" OVERLAP ON EACH SIDE



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

REV	DESCRIPTION OF REVISIONS	DATE	BY
A	CHANGED STRUT CONFIGURATION CHANGE COMPANY NAME TO ENTREMATIC PRESSURE CHANGE	03/03/15	RWS

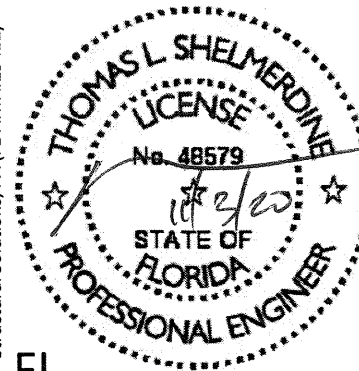
MAX SIZE
9'2" X 14'

DESIGN LOADS
+32.6 PSF
-38.3 PSF

TEST LOADS
+48.9 PSF
-57.45 PSF

LARGE MISSILE
IMPACT
RESISTANCE

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

Amarr

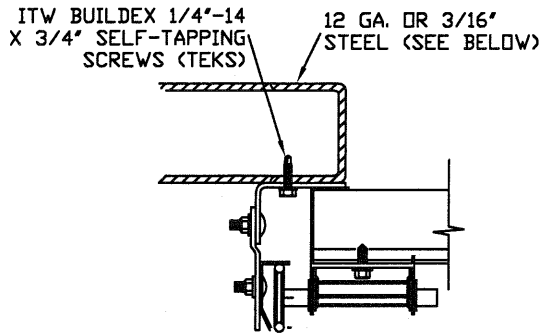
MODEL 1350 AMARR 2741 (27GA)
MODEL 2700 AMARR 2742 (27GA)
MODEL 2720 AMARR 2042 (20GA)
MODEL 2743 AMARR 2043 (27GA)

SIZE	DRAWN BY	RS	DATE	03/03/15	DRAWING NUMBER
B	CHECKED BY	RLR	DATE	03/03/15	IBC-1309-150-15-1
ENTREMATIC 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 ANSI/DASMA 115, ASTM E1886, ASTM E1996 AND ASTM F588. 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)	194	176	168	160	154
EXPOSURE LEVEL	B	C	C	D	D
MEAN ROOF HEIGHT	30'	15'	25'	15'	25'

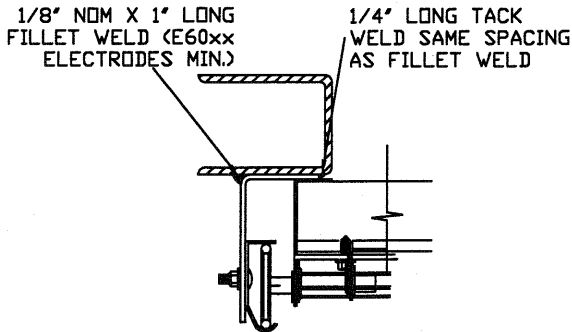
TRACK CONNECTION DIRECTLY TO STRUCTURE OPTIONS



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

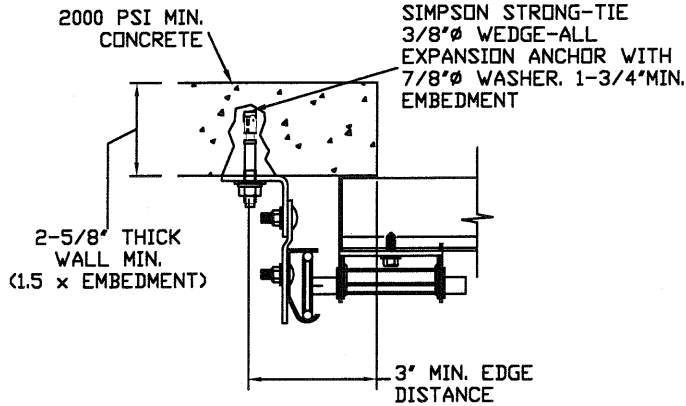
12 GA. STEEL FRAMING
232 LBS./SCREW ALLOWABLE LOAD - 6'
FROM ENDS AND 18" O.C.
REFER TO NOTES: 1, 2 AND 5

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



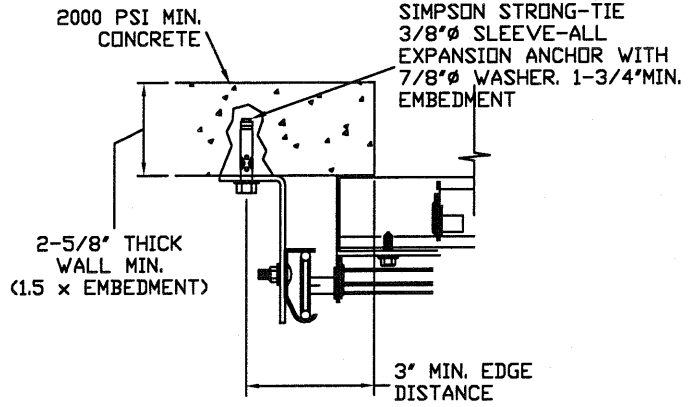
REVERSE ANGLE MOUNT SHOWN
BRACKET, CONTINUOUS AND
TAPERED ANGLE MOUNT AVAILABLE

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

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: +149.4 LBS/FT & -175.5 LBS/FT
3. DOOR AND HARDWARE WILL BE DESIGNED, MANUFACTURED AND INSTALLED WITH STANDARDS AS SET FORTH BY DASMA.
4. DOOR SECTIONS SHALL BE 27 GA. MIN. EXTERIOR SKIN ROLLED FORMED, W/ BAKED ON POLYESTER FINISH
5. DOORS UP TO 14'0" HIGH HAVE (1) 3" 20GA STRUT ON BOTTOM SECTION AND ALTERNATING (1) 2" 20GA STRUT AND (1) 3" 20GA STRUT ON EACH INTERMEDIATE SECTION AFTER THAT.
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)

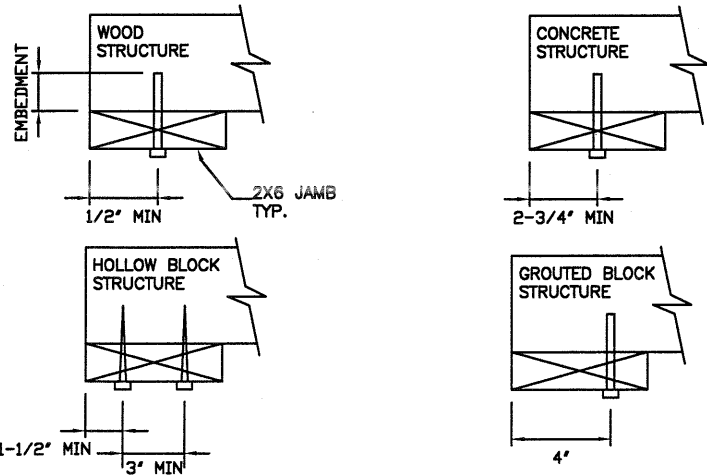
2 X 6 VERTICAL JAMB ATTACHMENT TO 2,000 PSI CONCRETE

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/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

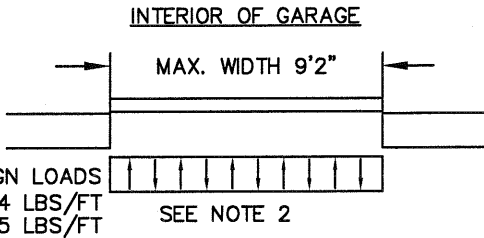
SIMPSON 1/4" X 3" TITEN SCREWS STARTING 6" FROM ENDS,
USE PAIRS OF FASTENERS (3" APART)
AT 24" O.C. (1 1/2" EMBEDMENT)
HILTI 1/4" X 2-3/4" KWIK-CON II+ SCREWS STARTING 6" FROM ENDS,
USE PAIRS OF FASTENERS (3" APART) AT 24" O.C. (1 1/4" EMBEDMENT)
2 X 6 VERTICAL JAMB ATTACHMENT TO GROUTED C-90 BLOCK (2000 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



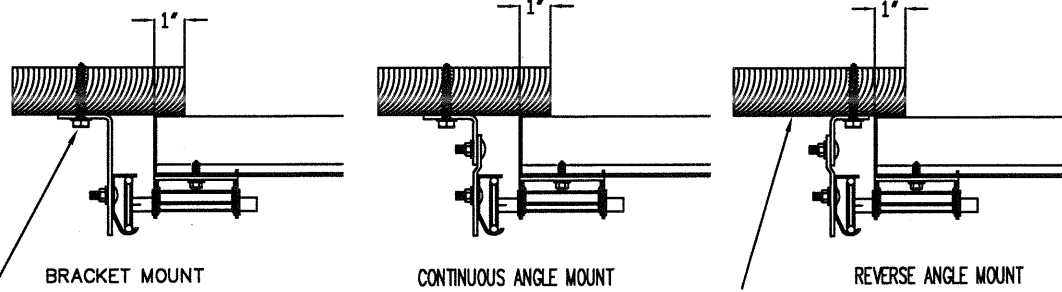
NOTES:

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. 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 DETAIL



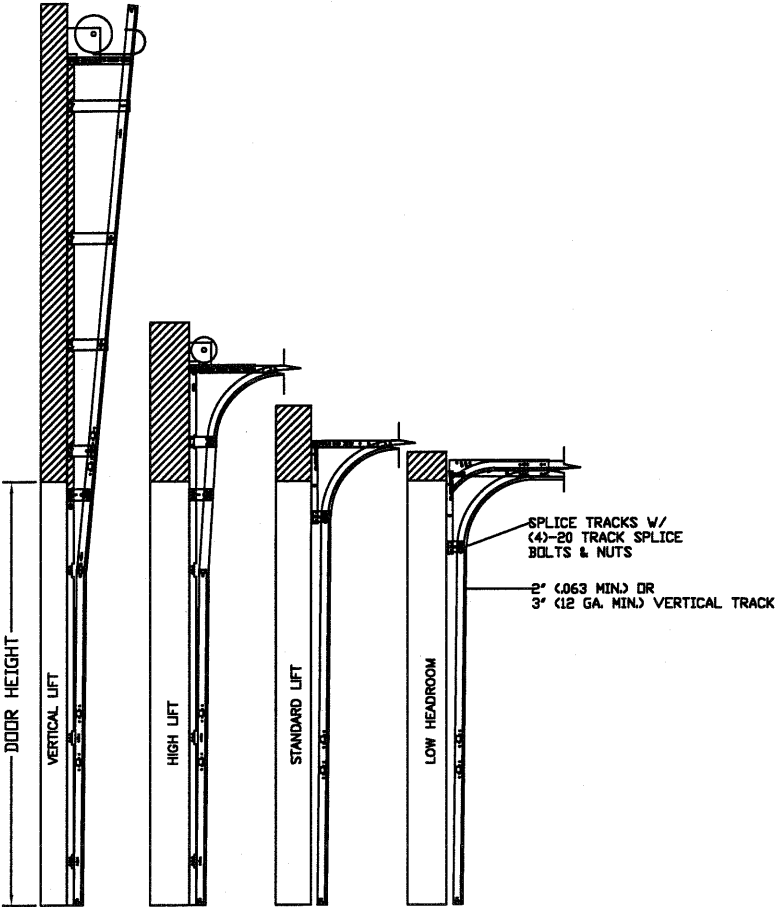
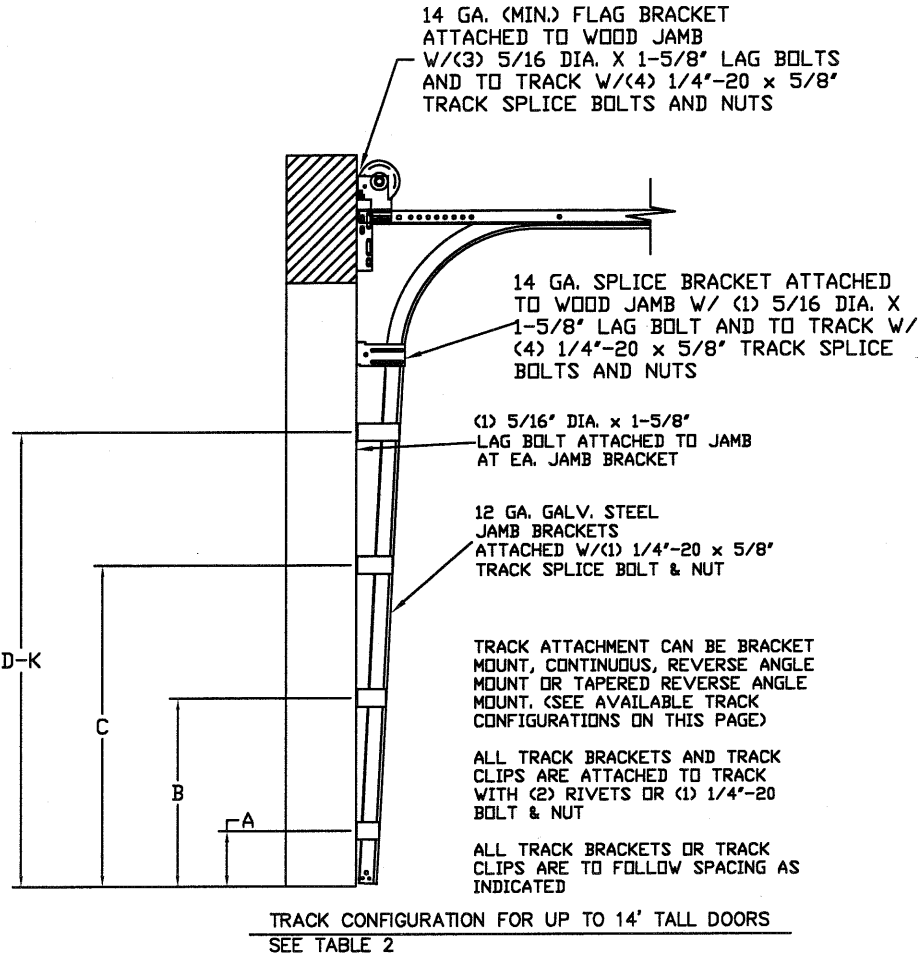
5/16" x 1 5/8" LAG SCREW (1)
PER JAMB BRACKET (1-1/2"
EMBEDMENT MINIMUM) (TYP.)

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

REV	DESCRIPTION OF REVISIONS	DATE	BY
A	CHANGED STRUT CONFIGURATION CHANGE COMPANY NAME TO ENTREMATICS PRESSURE CHANGE	03/03/15	RWS
MAX SIZE 9'2" x 14' DESIGN LOADS +32.6 PSF -38.3 PSF TEST LOADS +48.9 PSF -57.45 PSF LARGE MISSILE IMPACT RESISTANCE Thomas L. Shelmerdine, PE (FL PE #0048579) Structural Solutions, PA (FL Firm #29412) FL THOMAS L. SHELMERDINE LICENSE No. 48579 STATE OF FLORIDA PROFESSIONAL ENGINEER dba Structural Solutions of North Carolina, Inc. 5921-G W. Friendly Ave., Greensboro, NC 27410			
Amarr MODEL 1350 AMARR 2741 (27GA) MODEL 2700 AMARR 2742 (27GA) MODEL 2720 AMARR 2042 (20GA) MODEL 2743 AMARR 2043 (27GA)			
SIZE	DRAWN BY RS	DATE 03/03/15	DRAWING NUMBER
B	CHECKED BY RLR	DATE 03/03/15	IBC-1309-150-15-1
ENTREMATICS 165 CARRIAGE COURT WINSTON-SALEM, NC 27105			SHEET 2 OF 3

TABLE 1

Section	Center Stile	Max Design Loads Allowed	
Width (ft)	1st (in)	Positive (PSF)	Negative (PSF)
6' 0	36"	49.6	58.2
6' 2	37"	48.2	56.6
6' 4	38"	46.9	55.1
6' 6	39"	45.7	53.7
6' 8	40"	44.6	52.3
6' 10	41"	43.5	51.0
7' 0	42"	42.4	49.8
7' 2	43"	41.4	48.7
7' 4	44"	40.5	47.6
7' 6	45"	39.6	46.6
7' 8	46"	38.7	45.5
7' 10	47"	37.9	44.6
8' 0	48"	37.1	43.6
8' 2	49"	36.3	42.7
8' 4	50"	35.6	41.9
8' 6	51"	34.9	41.1
8' 8	52"	34.2	40.3
8' 10	53"	33.6	39.5
9' 0	54"	33.0	38.8
9' 2	55"	32.6	38.3



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	
7'	0"	10.0"	34"	58"									76"
7'	6"	10.0"	34"	58"									82"
8'	0"	10.0"	34"	58"									88"
8'	6"	10.0"	34"	58"	82"								94"
9'	0"	10.0"	34"	58"	82"								100"
9'	6"	10.0"	34"	58"	82"								106"
10'	0"	10.0"	34"	58"	82"								112"
11'	0"	10.0"	34"	58"	82"	106"							124"
12'	0"	10.0"	34"	58"	82"	106"							136"
13'	0"	10.0"	34"	58"	82"	106"	130"						148"
14'	0"	10.0"	34"	58"	82"	106"	130"						160"

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

REV

DESCRIPTION OF REVISIONS

DATE

BY

A

CHANGED STRUT CONFIGURATION
CHANGE COMPANY NAME TO ENTREMATIC
PRESSURE CHANGE

03/03/15

RWS

MAX SIZE
9'2 x 14'

DESIGN LOADS
+32.6 PSF
-38.3 PSF

TEST LOADS
+48.9 PSF
-57.45 PSF

LARGE MISSILE
IMPACT
RESISTANCE

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Structural Solutions, PA (FL Firm #29412)

THOMAS L. SHELMERDINE

LICENSE

No. 48579

STATE OF FLORIDA

PROFESSIONAL ENGINEER

FL

dba Structural Solutions of North Carolina, Inc.
5921-G W. Friendly Ave., Greensboro, NC 27410

Amarr

MODEL 1350 AMARR 2741 (27GA)
MODEL 2700 AMARR 2742 (27GA)
MODEL 2720 AMARR 2042 (20GA)
MODEL 2743 AMARR 2043 (27GA)

SIZE

DRAWN BY

RS

DATE

03/03/15

CHECKED BY

RJR

DATE

03/03/15

ENTREMATIC

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

DRAWING NUMBER

IBC-1309-150-15-I

SHEET 3 OF 3