

(1) 5.5" X 18 GA. R-TRUSS AT CENTER OF EACH SECTION. EACH ATTACHED W/(2) 1/4" X 1" HEX HEAD SCREWS AT EACH END STILE

(2) 12 GA. (MIN.) GALV. COMMERCIAL TOP ROLLER BRACKET ATTACHED W/(4) 1/4" X 1/2" HEX HEAD SCREWS PER BRACKET

2"-10 BALL STEEL 9.5" LONG STEM HURRICANE ROLLERS W/ RETAINERS USED FOR NON THREADED SHAFTS

TYPICAL TOP FIXTURES
N.T.S.

1

14GA. (MIN.) CENTER HINGE ATTACHED W/ (4) 1/4" X 1" HEX HEAD SCREWS

TYPICAL CENTER HINGE
N.T.S.

2

(1) 5.5" X 18 GA. R-TRUSS AT CENTER OF EACH SECTION EACH ATTACHED W/(2) 1/4" X 1" HEX HEAD SCREWS AT EACH END AND CENTER STILE

TYPICAL END HINGE
N.T.S.

3

14 GA. (MIN.) END HINGE ROLLER CARRIERS ATTACHED W/ (4) 1/4" X 1" HEX HEAD SCREWS EACH

2"-10 BALL STEEL 9.5" LONG STEM HURRICANE ROLLERS W/ RETAINERS USED FOR NON THREADED SHAFTS

SLIDE LOCK ENGAGES VERTICAL TRACK ON EACH SIDE OF SECOND FROM BOTTOM SECTION (MIN. 5/8") (SNAP LATCH, OR LOCK BAR OPTIONAL) ATTACHED W/(2) 1/4" X 1" HEX HEAD SCREWS

(1) 5.5" X 18 GA. R-TRUSS AT CENTER OF EACH SECTION. EACH ATTACHED W/(2) 1/4" X 1" HEX HEAD SCREWS AT EACH END AND CENTER STILE

BOTTOM BRACKET 11 GA. (MIN.) ATTACHED W/(7) 1/4" X 1" HEX HEAD SCREWS

2" 10-BALL STEEL 9.5" LONG STEM HURRICANE ROLLER W/ RETAINER USED FOR NON THREADED SHAFTS

TYPICAL BOTTOM BRACKET
N.T.S.

4

TYPICAL INTERMEDIATE SECTION

24 GA. (.022" MIN) OR 20 GA. PREPAINTED STEEL

12 GA. (MIN.) GALV. COMMERCIAL TOP ROLLER BRACKET ATTACHED WITH (4) 1/4" X 1" HEX HEAD UNIV. SCREWS PER BRACKET ADJUSTABLE SLIDE BRACKET IS ASSEMBLED WITH (2) 1/4" X 1/2" BOLT & NUT PER BRACKET

(1) 5.5" X 18 GA. R-TRUSS AT CENTER OF EACH SECTION EACH ATTACHED W/(2) 1/4" X 1" HEX HEAD SCREWS AT EACH END STILE

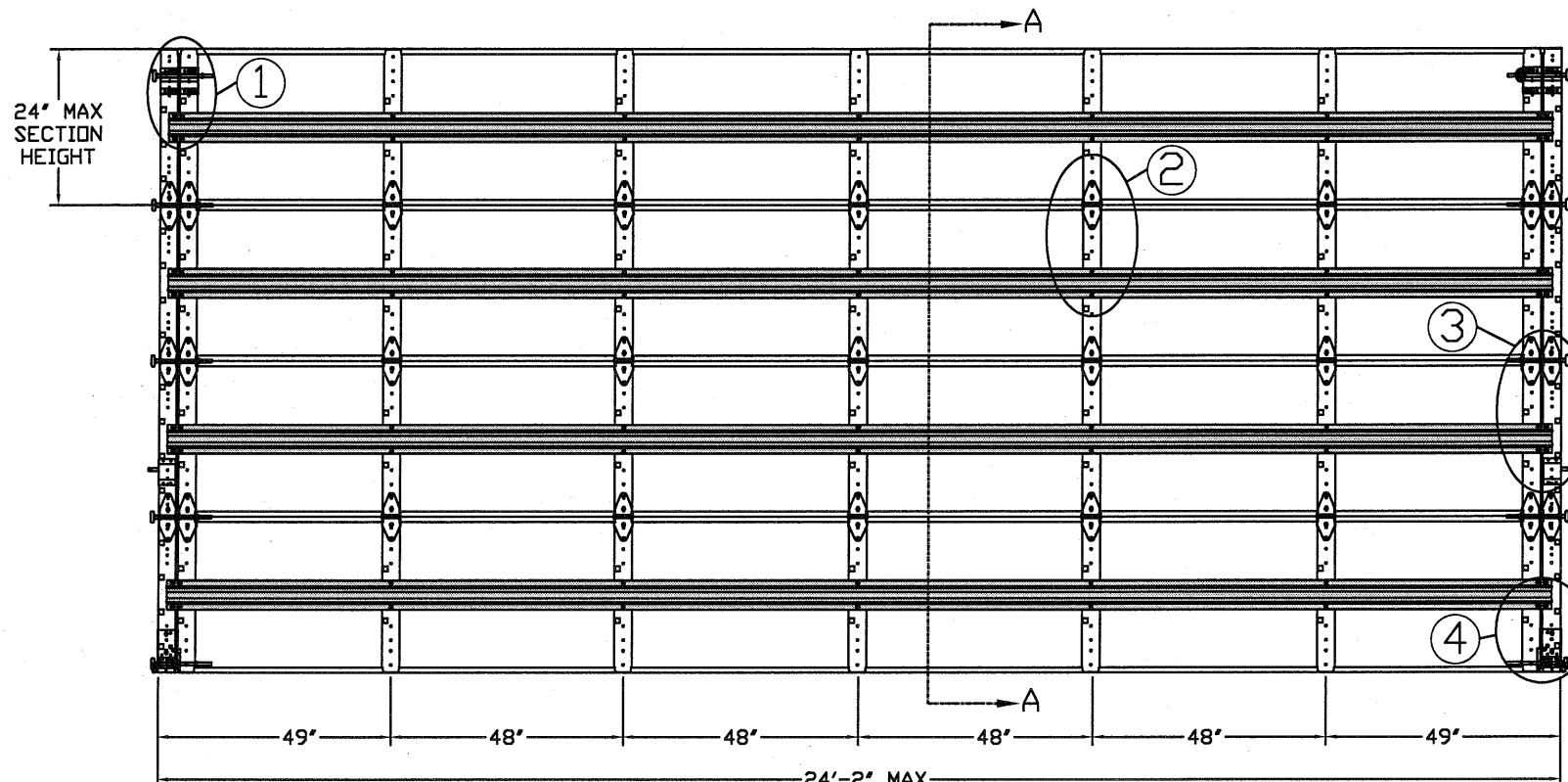
14 GA. (MIN.) END HINGE ROLLER CARRIERS ATTACHED W/ (4) 1/4" X 1" HEX HEAD SCREWS EACH

2" 10 BALL STEEL 9.5" LONG STEM HURRICANE ROLLER W/ RETAINER USED FOR NON THREADED SHAFTS

BOTTOM BRACKET 11 GA. (MIN.) ATTACHED W/(7) 1/4" X 1" HEX HEAD SCREWS

CONT. ALUM EXTRUSION WITH CONT. VINYL ASTRAGAL

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



INSIDE ELEVATION
N.T.S.

(1) 19 GA. (MIN.) GALV. COMMERCIAL CENTER STILE USED FOR A DOUBLE ENDSTILE ATTACHED WITH ATTACHED W/ (4) CLINCHED JOINTS (2) TOP AND (2) BOTTOM

JAMB SEAL OPTIONAL

(5) 19 GA. CENTER STILES ATTACHED WITH (2) CLINCHED JOINTS OR RIVETS AT THE TOP AND BOTTOM RAIL AND (2) CLINCHED JOINTS OR RIVETS TO FRONT SKIN

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"-10 BALL STEEL 9.5" LONG STEM HURRICANE ROLLERS W/ RETAINERS USED FOR NON THREADED SHAFTS

END HINGES 14GA. (MIN.)

2" GALV. STEEL TRACK THICKNESS .083" (MIN.)

5 1/2" H X 18 GA. (5" R-TRUSS)

19 GA. GALV. STEEL END STILE ATTACHED WITH (2) CLINCHED JOINTS AT THE TOP AND BOTTOM RAIL

14 GA. (MIN) CENTER HINGE

TRACK MOUNTING DETAIL
N.T.S.

THE METHOD OF TESTING WAS IN SUBSTANTIAL CONFORMANCE WITH THE PROCEDURES DESCRIBED IN 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)	152	138	131	125	120
EXPOSURE LEVEL	B	C	C	D	D
MEAN ROOF HEIGHT	30'	15'	25'	15'	25'

REV	DESCRIPTION OF REVISIONS	DATE	BY

MAX SIZE
24'2" x 24'

DESIGN LOADS
+18.5 PSF
-20.7 PSF

TEST LOADS
+27.8 PSF
-31.1 PSF

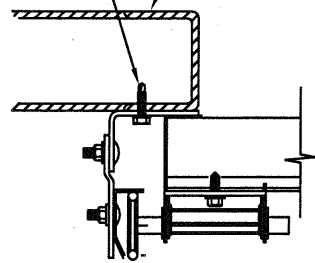
FL

Thomas L. Shelmerdine, PE (FL PE #0048579)
Structural Solutions, PA (FL Firm #29412)

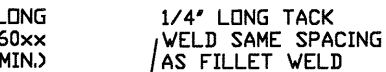
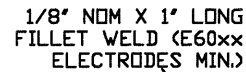
dba Structural Solutions of North Carolina, Inc.
5921-G W. Friendly Ave., Greensboro, NC 27410

MODEL 2400 AMARR 2402, 2412, 2422			
MODEL 2000 AMARR 2002, 2012, 2022			
SIZE	DRAWN BY	RWS	DATE 08/27/14
B	CHECKED BY	RLR	DATE 08/27/14
ENTREMATIC 165 CARRIAGE COURT WINSTON-SALEM, N.C. 27105			DRAWING NUMBER IBC-2424-118-26
SHEET 1 OF 4			

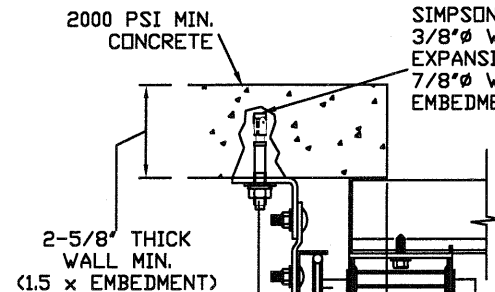
ITW BUILDEX 1/4"-14 X 3/4" SELF-TAPPING SCREWS (TEKS) 12 GA. OR 3/16" STEEL (SEE BELOW)



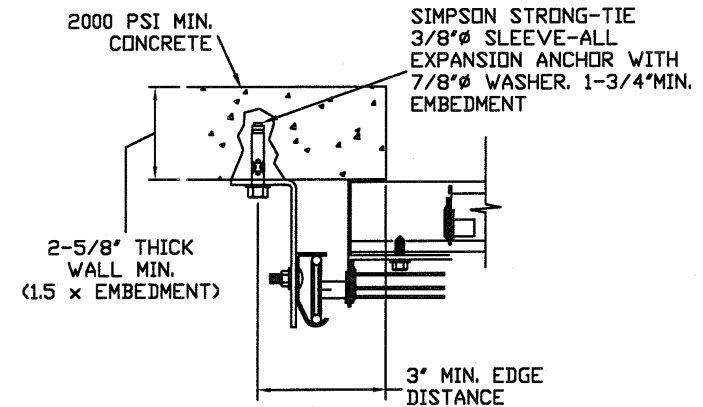
3/16" STEEL FRAMING
569 LBS./SCREW ALLOWABLE LOAD - 6"
FROM ENDS AND 24" O.C.
REFER TO NOTES: 1, 2 AND 5



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



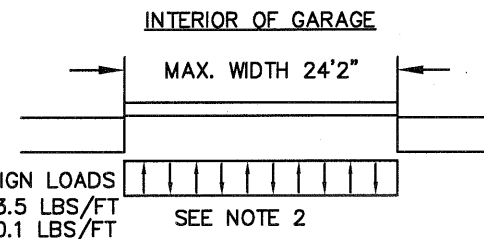
2000 PSI CONCRETE OR GREATER
351 LBS./EXPANSION ANCHOR ALLOWABLE LOAD -
6" FROM ENDS AND 18" O.C.
REFER TO NOTES 1, 2, 3, 4 AND 5



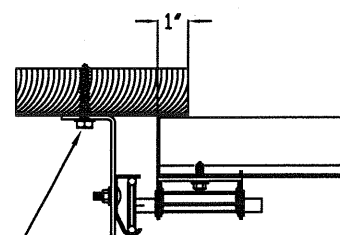
2000 PSI CONCRETE OR GREATER
336 LBS./EXPANSION ANCHOR ALLOWABLE
LOAD - 6" FROM ENDS AND 18" O.C.
REFER TO NOTES: 1, 2, 3, 4 AND 5

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: +223.5 LBS/FT & -250.1 LBS/FT
3. DOOR AND HARDWARE WILL BE DESIGNED, MANUFACTURED AND INSTALLED WITH STANDARDS AS SET FORTH BY DASMA.
4. DOOR SECTIONS SHALL BE 24 GA. (.022) MIN. EXTERIOR SKIN ROLLED FORMED, W/ BAKED ON POLYESTER FINISH
5. DOORS UP TO 24'0" HIGH USE (1) 5 1/2" X 18 GA R-TRUSS AT CENTER OF EACH SECTION
6. SUPPORTING STRUCTURAL ELEMENTS SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER FOR WIND LOADS INDICATED ON THIS DRAWING IN ADDITION TO OTHER LOADINGS.

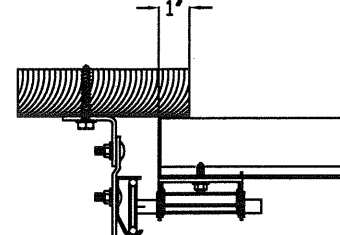
1. ANCHORS TO BE EVENLY SPACED BETWEEN THE HEADER AND FLOOR.
2. FIRST (BOTTOM) ANCHOR STARTING AT NO MORE THAN HALF OF THE MAXIMUM ON-CENTER DISTANCE. HIGHEST ANCHOR INSTALLED AT LEAST AS HIGH AS THE DOOR OPENING.
3. MIN. EDGE DISTANCE OF 3" REQUIRED.
4. USE WASHERS PROVIDED BY THE ANCHOR MANUFACTURER.
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.



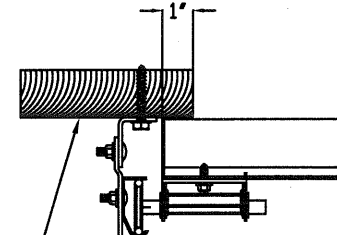
FOR LAG SCREWS & BRACKET SPACING SEE PAGE 4 FOR TRACK CONFIGURATION DETAIL



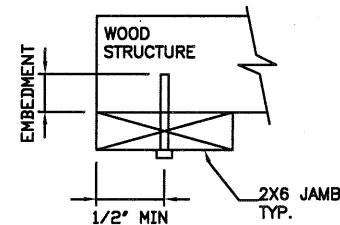
5/16" x 1 5/8" LAG SCREW (1)
PER JAMB BRACKET (1-1/2"
EMBEDMENT MINIMUM) (TYP.)



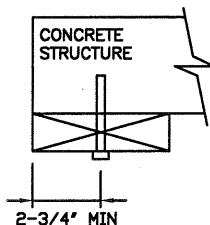
CONTINUOUS ANGLE MOUNT



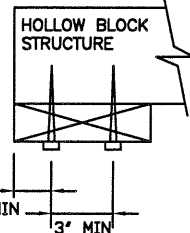
REVERSE ANGLE MOUNT



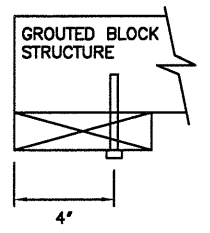
2X6 JAMB
TYP.



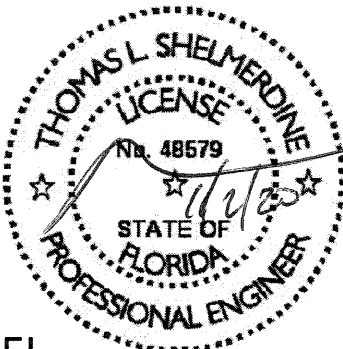
2-3/4" MIN

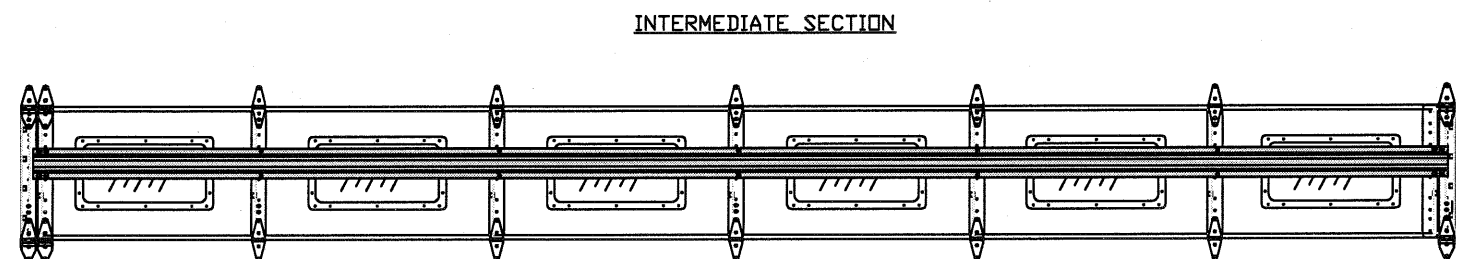
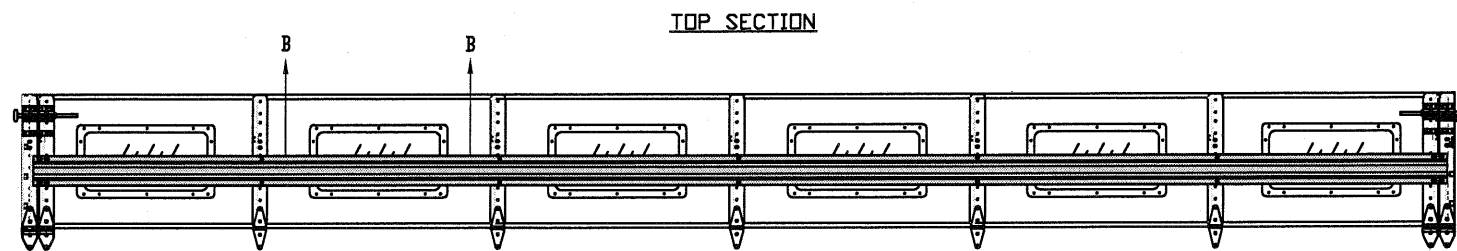


1-1/2' MIN 3' MIN

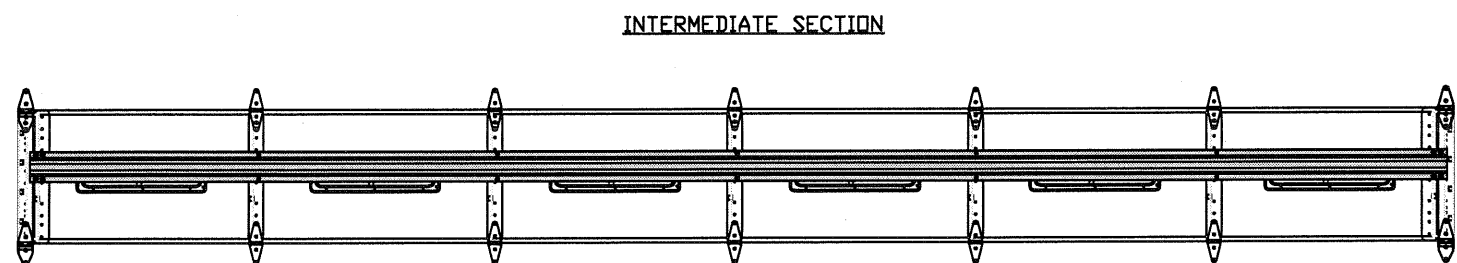
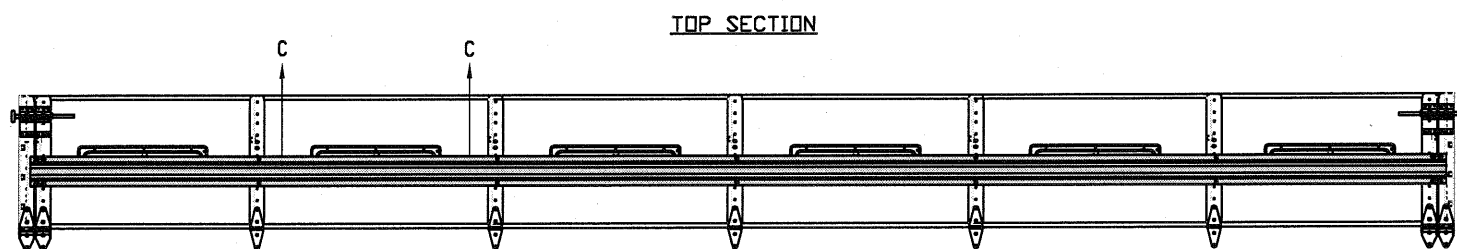


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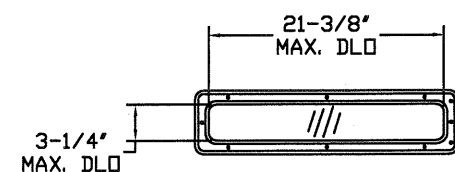
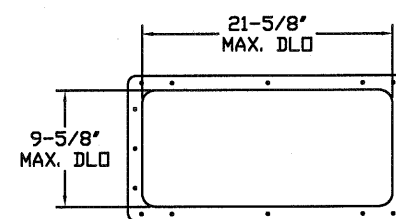
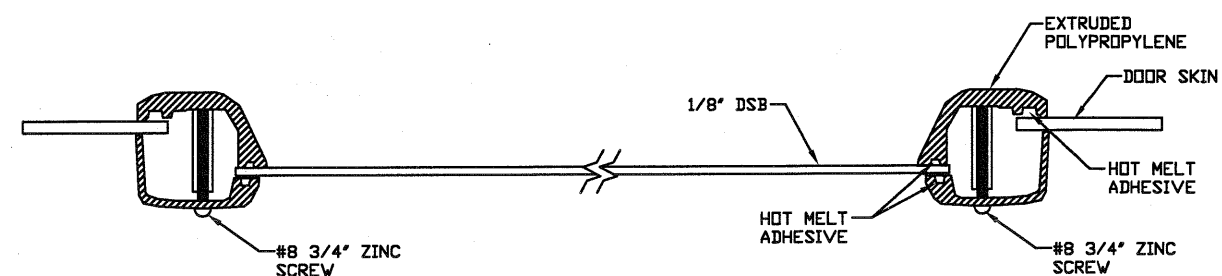
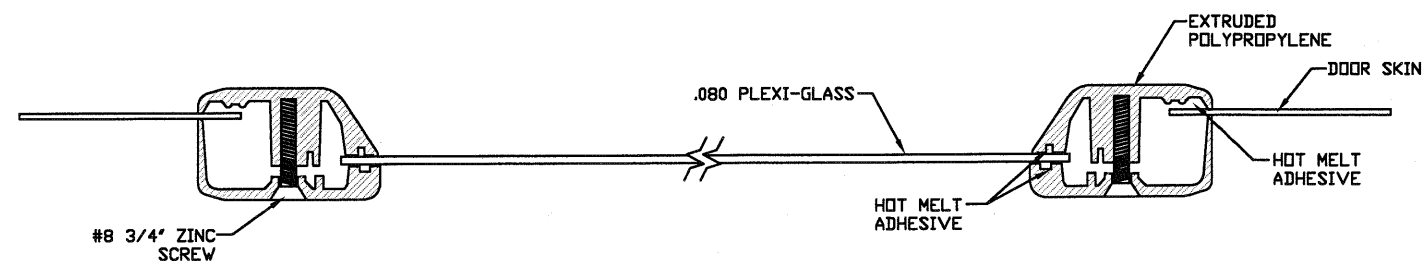
REV	DESCRIPTION OF REVISIONS	DATE	BY
MAX SIZE 24'2" x 24' DESIGN LOADS +18.5 PSF -20.7 PSF TEST LOADS +27.8 PSF -31.1 PSF		 Thomas L. Shelmerdine, PE (FL PE #0048579) Structural Solutions, PA (FL Firm #29412) FL dba Structural Solutions of North Carolina, Inc. 5921-G W. Friendly Ave., Greensboro, NC 27410	
			
MODEL 2400 AMARR 2402, 2412, 2422 MODEL 2000 AMARR 2002, 2012, 2022			
SIZE	DRAWN BY	RWS	DATE 08/27/14
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ENTRENATIC 165 CARRIAGE COURT WINSTON-SALEM, N.C. 27105			DRAWING NUMBER IBC-2424-118-26 SHEET 2 OF 4



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



OPTIONAL GLAZED SECTION W/ 24' X 6' WINDOWS AND STRUT LAYOUT
N.T.S.



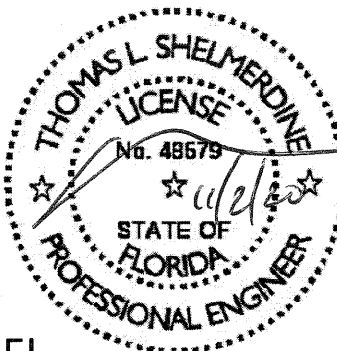
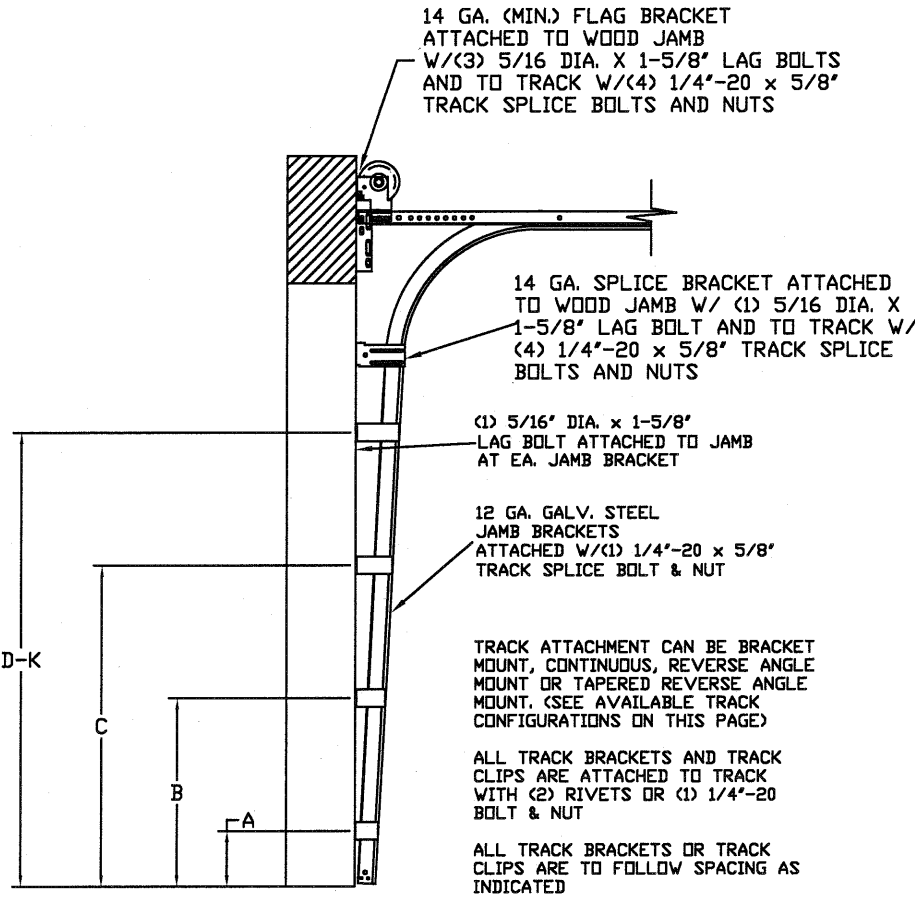
REV	DESCRIPTION OF REVISIONS	DATE	BY
MAX SIZE 24'2" x 24' DESIGN LOADS +18.5 PSF -20.7 PSF TEST LOADS +27.8 PSF -31.1 PSF		Thomas L. Shelmerdine, PE (FL PE #0048579) Structural Solutions, PA (FL Firm #29412) FL  d/b/a Structural Solutions of North Carolina, Inc. 5921-G W. Friendly Ave. Greensboro, NC 27410	
			
MODEL 2400 AMARR 2402, 2412, 2422 MODEL 2000 AMARR 2002, 2012, 2022			
SIZE B	DRAWN BY	RWS	DATE 08/27/14
	CHECKED BY	RLR	DATE 08/27/14
			DRAWING NUMBER IBC-2424-118-26
ENTREMATIC 165 CARRIAGE COURT WINSTON-SALEM, N.C. 27105			SHEET 3 OF 4

TABLE 1

Section Width		Center Stile Locations (Measured from Left Edge)					Max Design Loads Allowed	
(ft)	(in)	1st (in)	2nd (in)	3rd (in)	4th (in)	5th (in)	Positive (PSF)	Negative (PSF)
19'	4	36	76	116	156	196	22.4	25
19'	6	37	77	117	157	197	22.4	25
19'	8	38	78	118	158	198	22.4	25
19'	10	39	79	119	159	199	22.4	25
20'	0	40.0	80	120	160	200	22.3	25
20'	2	41.0	81	121	161	201	22.1	24.7
20'	4	42	82	122	162	202	21.8	24.4
20'	6	43	83	123	163	203	21.6	24.1
20'	8	44	84	124	164	204	21.3	23.9
20'	10	45	85	125	165	205	21.1	23.6
21'	0	46	86	126	166	206	20.8	23.3
21'	2	47	87	127	167	207	20.6	23
21'	4	48	88	128	168	208	20.3	22.8
21'	6	49	89	129	169	209	20.1	22.5
21'	8	50	90	130	170	210	19.9	22.3
21'	10	51	91	131	171	211	19.7	22
22'	0	44	88	132	176	220	20.3	22.7
22'	2	45	89	133	177	221	20.1	22.5
22'	4	46	90	134	178	222	19.9	22.3
22'	6	47	91	135	179	223	19.7	22
22'	8	48	92	136	180	224	19.5	21.8
22'	10	49	93	137	181	225	19.2	21.5
23'	0	50	94	138	182	226	19	21.3
23'	2	51	95	139	183	227	18.8	21.1
23'	4	44	92	140	188	236	18.6	20.9
23'	6	45	93	141	189	237	18.6	20.9
23'	8	46	94	142	190	238	18.6	20.9
23'	10	47	95	143	191	239	18.6	20.9
24'	0	48	96	144	192	240	18.6	20.8
24'	2	49	97	145	193	241	18.5	20.7



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

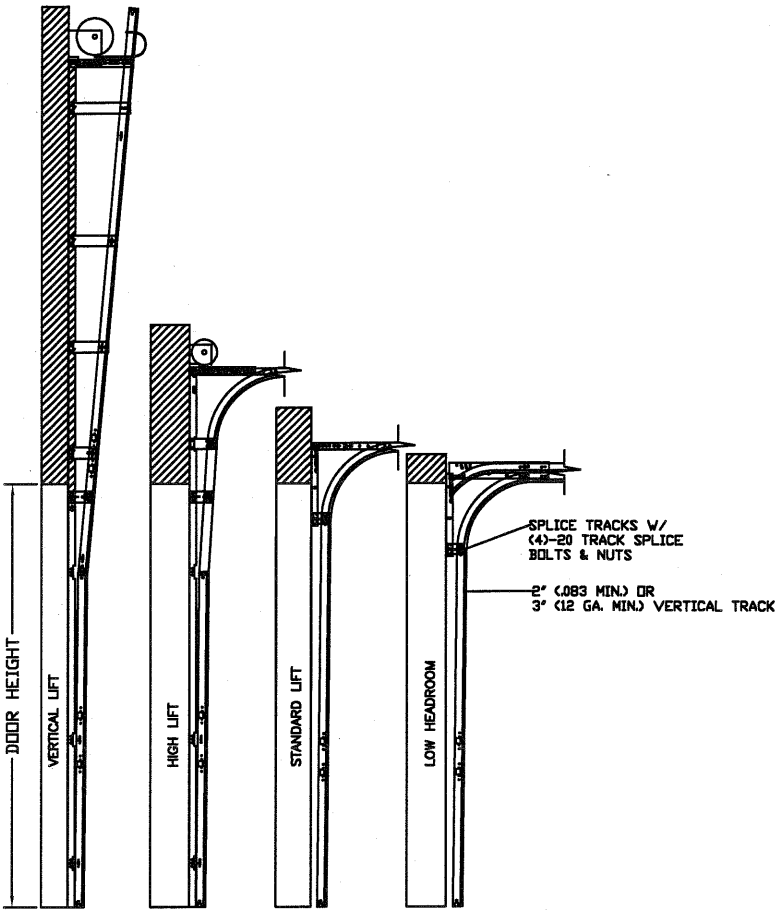


TABLE 2

DOOR	TRACK ATTACHMENT																								SPLICE
HEIGHT	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W		S
7'	3.5"	10"	22"	34"	46"	58"	70"																		76"
8'	3.5"	10"	22"	34"	46"	58"	70"	82"																	88"
9'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"																100"
10'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"															112"
11'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"														124"
12'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"													136"
13'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"												148"
14'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"	154"											160"
15'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"	154"	166"										172"
16'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"	154"	166"	178"									184"
17'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"	154"	166"	178"	190"								196"
18'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"	154"	166"	178"	190"	202"							208"
19'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"	154"	166"	178"	190"	202"	214"						220"
20'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"	154"	166"	178"	190"	202"	214"	226"					232"
21'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"	154"	166"	178"	190"	202"	214"	226"	238"				244"
22'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"	154"	166"	178"	190"	202"	214"	226"	238"	250"			256"
23'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"	154"	166"	178"	190"	202"	214"	226"	238"	250"	262"		268"
24'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"	154"	166"	178"	190"	202"	214"	226"	238"	250"	262"		280"

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

REV	DESCRIPTION OF REVISIONS	DATE	BY

MAX SIZE
24'2 x 24'

DESIGN LOADS
+18.5 PSF
-20.7 PSF

TEST LOADS
+27.8 PSF
-31.1 PSF

Thomas L. Shelmerdine, PE (FL PE #0048579)
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 2400 AMARR 2402, 2412, 2422
MODEL 2000 AMARR 2002, 2012, 2022

SIZE	DRAWN BY	RWS	DATE	08/27/14	DRAWING NUMBER
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ENTREMATIC
165 CARRIAGE COURT WINSTON-SALEM, N.C. 27105

SHEET 4 OF 4