

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

2" 10 BALL STEEL
4 1/2" (MIN) STEM ROLLER
W/ 7/16" RETAINER FOR
NON-THREADED SHAFTS

ADJUSTABLE ROLLER CARRIER
ATTACHED W/ (2) 5/16" x 3/4"
BOLT & NUT PER BRACKET

TYPICAL TOP FIXTURES
N.T.S.

4 1/2" H X 20 GA. R-TRUSS
ATTACHED W/ (2) 1/4" x 3/4"
HEX HEAD SCREWS AT ENDSTILES AND
EACH CENTER STILE ON TOP SECTION

14GA. (MIN.) CENTER HINGE ATTACHED
W/ A TOTAL OF (5) 1/4" x 3/4"
HEX HEAD SCREWS
(2) SCREWS IN THE TOP LEAF
(3) SCREWS IN THE BOTTOM LEAF

2" 10 BALL STEEL ROLLER
W/ 4 1/2" STEM (MIN)
W/ BOLT RETAINER USED
FOR NON-THREADED SHAFT

14 GA. (MIN.)
END HINGE ROLLER
CARRIERS ATTACHED
W/ (5) TOTAL 1/4" x 3/4"
HEX HEAD SCREWS
(2) SCREWS UPPER LEAF
(3) SCREWS LOWER LEAF

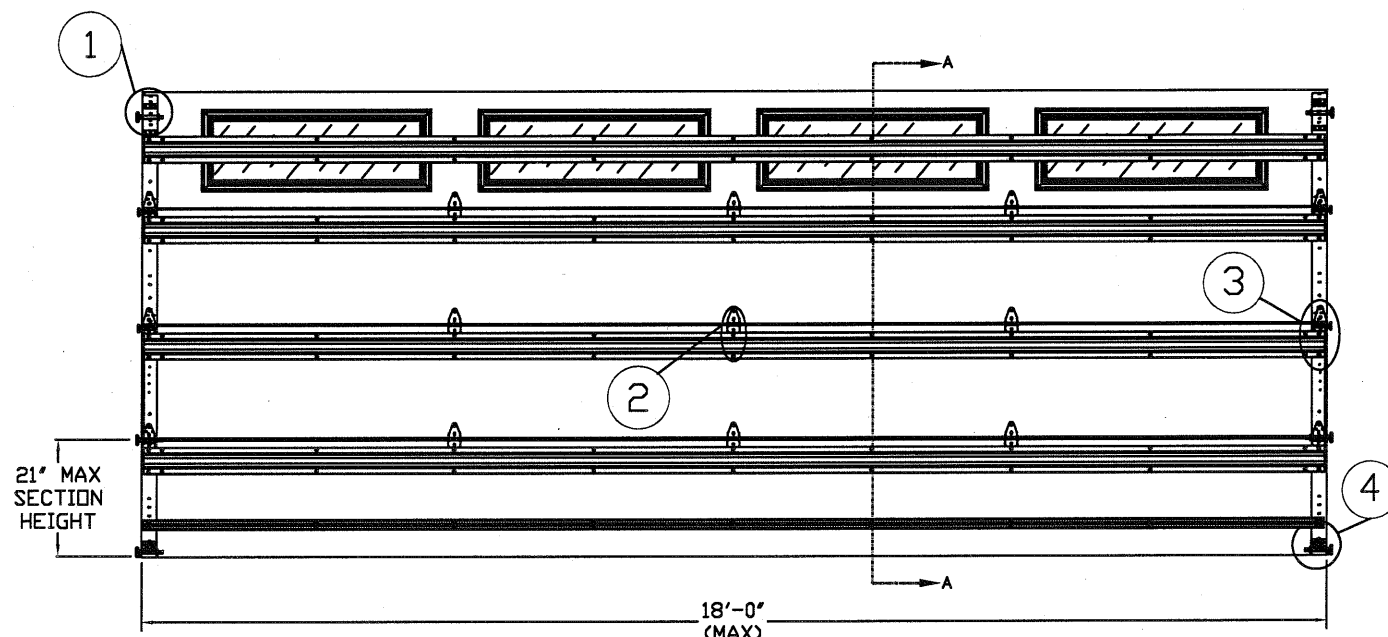
TYPICAL END HINGE
N.T.S.

THE METHOD OF TESTING WAS IN SUBSTANTIAL CONFORMANCE
WITH THE PROCEDURE DESCRIBED IN DASMA 108 & 115, ASTM
E330, E1886, E1996, & F588. THE PRESSURES SHOWN ON
THE DRAWINGS WERE CALCULATED USING ASCE 7-16 WITH
THE FOLLOWING PARAMETERS (5 FEET OF DOOR WIDTH IN THE
END ZONE, ROOF AT ANY SLOPE):

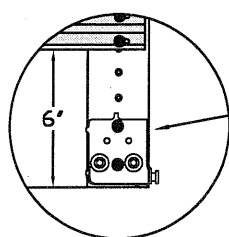
WIND SPEED (MPH)	168	152	145	138	133
EXPOSURE LEVEL	B	C	C	D	D
MEAN ROOF HEIGHT	30'	15'	25'	15'	25'

SPECIFICATIONS AND NOTES

- DOORS AND HARDWARE WILL BE DESIGNED, MANUFACTURED
AND INSTALLED WITH STANDARDS AS SET FORTH BY DASMA.
EACH VERTICAL JAMBS RECEIVES MAXIMUM DESIGN LOADS OF:
+228.6 LBS/FT & -258.3 LBS/FT
- DOOR SECTIONS SHALL BE 27 GA. MIN. (.0151")
ROLLED FORMED LIGHT COMMERCIAL QUALITY
- SUPPORTING STRUCTURAL ELEMENTS SHALL BE DESIGNED
BY A REGISTERED PROFESSIONAL ENGINEER FOR WIND LOADS
INDICATED ON THIS DRAWING IN ADDITION TO OTHER LOADINGS.

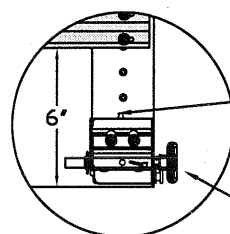


INSIDE ELEVATION
N.T.S.



TRBB-375 BOTTOM BRACKET
N.T.S.

13 GA. BOTTOM BRACKET BASE
ATTACHED W/ (2) 1/4" x 3/4"
HEX HEAD SCREWS



TRBB-375 BOTTOM BRACKET
N.T.S.

13 GA. BOTTOM BRACKET
ASSEMBLY ATTACHED
W/ (4) 1/4" x 3/4"
HEX HEAD SCREWS
(2 ON BASE AND
2 ON ROLLER FLANGE)

2" 10 BALL STEEL 4 1/2"
(MIN) STEM ROLLER
W/ 7/16" RETAINER FOR
NON-THREADED SHAFTS

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

JAMB SEAL
OPTIONAL

2 X 6 SYP
(NO. 2 OR BETTER)

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

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

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

INTERMEDIATE
HINGES 14GA. (MIN.)

TRACK MOUNTING DETAIL
N.T.S.

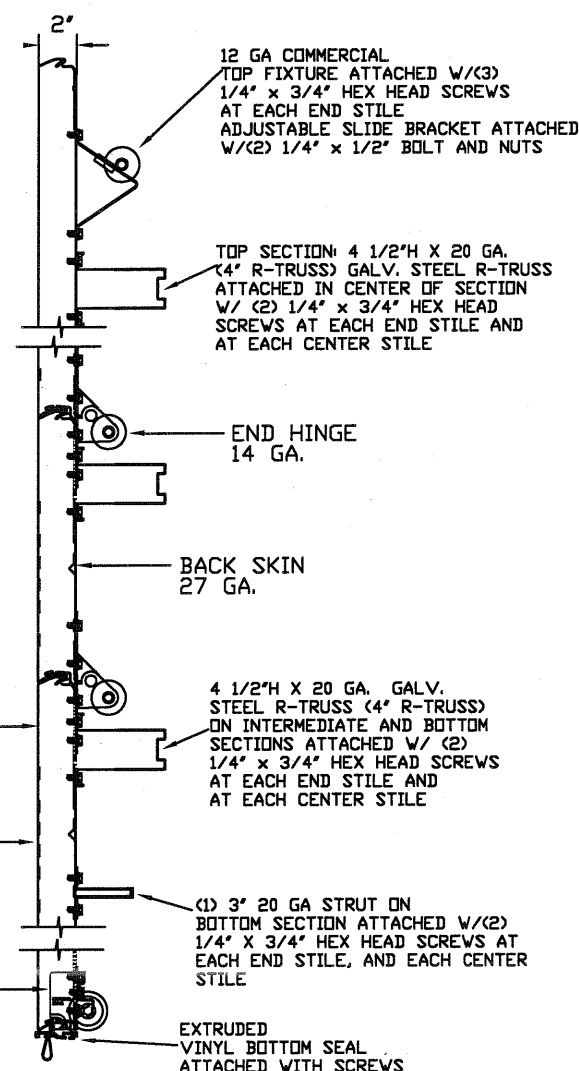
LARGE MISSILE IMPACT RESISTANT

CFC-FREE EXPANDED
POLYSTYRENE INSULATED
R=5.73, U=0.17

FRONT SKIN
27 GA.

BOTTOM BRACKET
ATTACHED
W/ (4) 1/4" x 3/4"
HEX HEAD SCREWS

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



12 GA COMMERCIAL
TOP FIXTURE ATTACHED W/ (3)
1/4" x 3/4" HEX HEAD SCREWS
AT EACH END STILE
ADJUSTABLE SLIDE BRACKET ATTACHED
W/ (2) 1/4" x 1/2" BOLT AND NUTS

TOP SECTION: 4 1/2" H X 20 GA.
(4" R-TRUSS) GALV. STEEL R-TRUSS
ATTACHED IN CENTER OF SECTION
W/ (2) 1/4" x 3/4" HEX HEAD
SCREWS AT EACH END STILE AND
AT EACH CENTER STILE

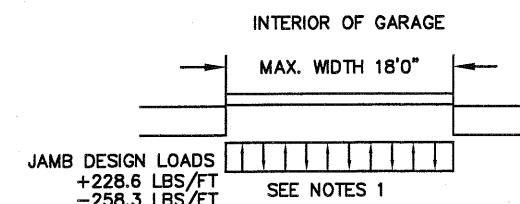
END HINGE
14 GA.

BACK SKIN
27 GA.

4 1/2" H X 20 GA. GALV.
STEEL R-TRUSS (4" R-TRUSS)
ON INTERMEDIATE AND BOTTOM
SECTIONS ATTACHED W/ (2)
1/4" x 3/4" HEX HEAD SCREWS
AT EACH END STILE AND
AT EACH CENTER STILE

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

EXTRUDED
VINYL BOTTOM SEAL
ATTACHED WITH SCREWS



REV	DESCRIPTION OF REVISIONS	DATE	BY
A	ADDED GLAZING OPTIONS	10/21/13	RLR

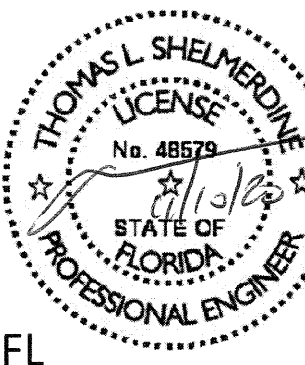
MAX SIZE
18' WIDTH
14' HEIGHT

DESIGN LOADS
+25.4 PSF
-28.7 PSF

TEST LOADS
+38.1 PSF
-43.05 PSF

LARGE
MISSILE
IMPACT
RESISTANT

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



Amarr

MODEL #1600 AMARR LINCOLN 3000
MODEL #1650 AMARR HILLCREST 3000

SIZE	DRAWN BY	RLR	DATE	12/15/11	DRAWING NUMBER
B	CHECKED BY	RLR	DATE	12/15/11	IRC-1618-130-24-1
ENTREMATICS 165 CARRIAGE COURT WINSTON-SALEM, N.C. 27105					SHEET 1 OF 3

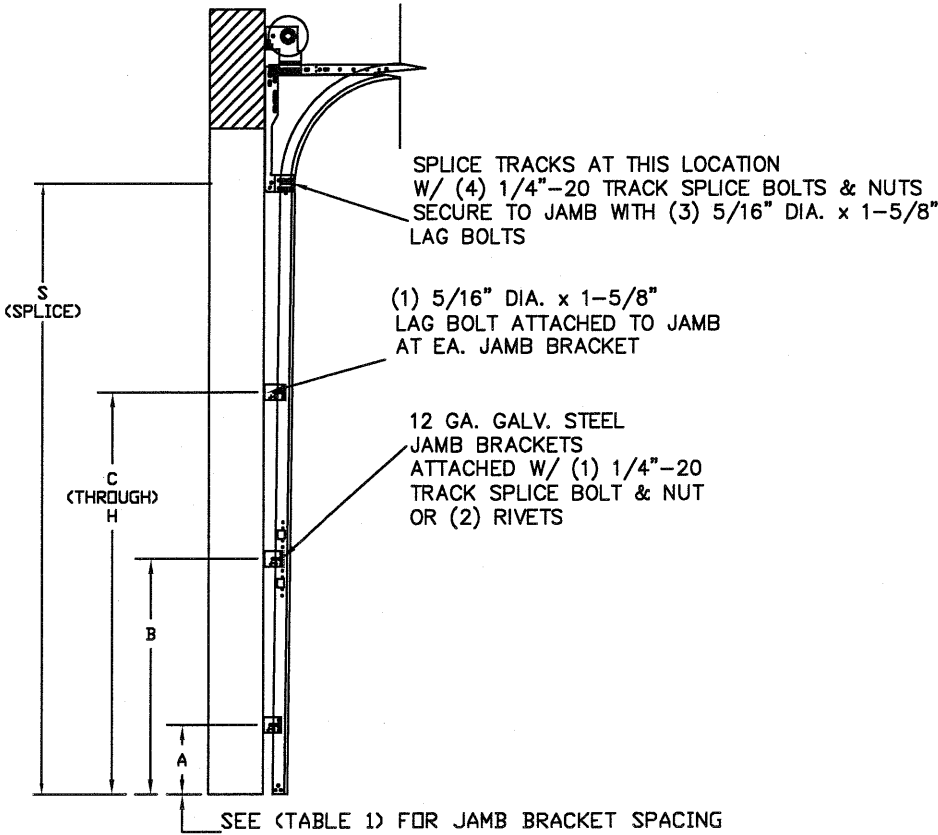
TABLE 1

DOOR HEIGHT	TRACK ATTACHMENT								SPLICE
	A	B	C	D	E	F	G	H	
6' 6"	3.5"	21"	39"	57"					70"
7'	3.5"	21"	42"	63"					76"
7' 6"	3.5"	18"	36"	54"	72"				82"
8'	3.5"	21"	39"	57"	75"				88"
8' 6"	3.5"	21"	42"	63"	81"				94"
9'	3.5"	18"	36"	54"	72"	90"			100"
9' 6"	3.5"	21"	39"	57"	75"	93"			106"
10'	3.5"	21"	42"	63"	81"	99"			112"
10' 6"	3.5"	21"	42"	63"	84"	105"			118"
11'	3.5"	21"	39"	57"	75"	93"	111"		124"
11' 6"	3.5"	21"	42"	63"	81"	99"	117"		130"
12'	3.5"	21"	42"	63"	84"	105"	123"		136"
12' 6"	3.5"	21"	39"	57"	75"	93"	111"	129"	142"
13'	3.5"	21"	42"	63"	81"	99"	117"	135"	148"
13' 6"	3.5"	21"	42"	63"	84"	105"	123"	141"	154"
14'	3.5"	21"	42"	63"	84"	105"	126"	147"	160"

ALL TRACK ATTACHMENT SPACING +/-2" WITH SYP NO. 2 OR BETTER ONLY

TABLE 2

DOOR HEIGHT	SECTION HEIGHTS							
	Btm	#2	#3	#4	#5	#6	#7	#8
14' 0"	21"	21"	21"	21"	21"	21"	21"	21"
13' 6"	21"	21"	21"	21"	21"	18"	18"	21"
13' 0"	21"	21"	21"	18"	18"	18"	18"	21"
12' 6"	21"	18"	18"	18"	18"	18"	18"	21"
12' 0"	21"	21"	21"	21"	21"	18"	21"	
11' 6"	21"	21"	21"	18"	18"	18"	21"	
11' 0"	21"	18"	18"	18"	18"	18"	21"	
10' 6"	21"	21"	21"	21"	21"	21"		
10' 0"	21"	21"	21"	18"	18"	21"		
9' 6"	21"	18"	18"	18"	18"	21"		
9' 0"	18"	18"	18"	18"	18"	18"		
8' 6"	21"	21"	21"	18"	21"			
8' 0"	21"	18"	18"	18"	21"			
7' 6"	18"	18"	18"	18"	18"			
7' 0"	21"	21"	21"	21"				
6' 6"	21"	18"	18"	21"				



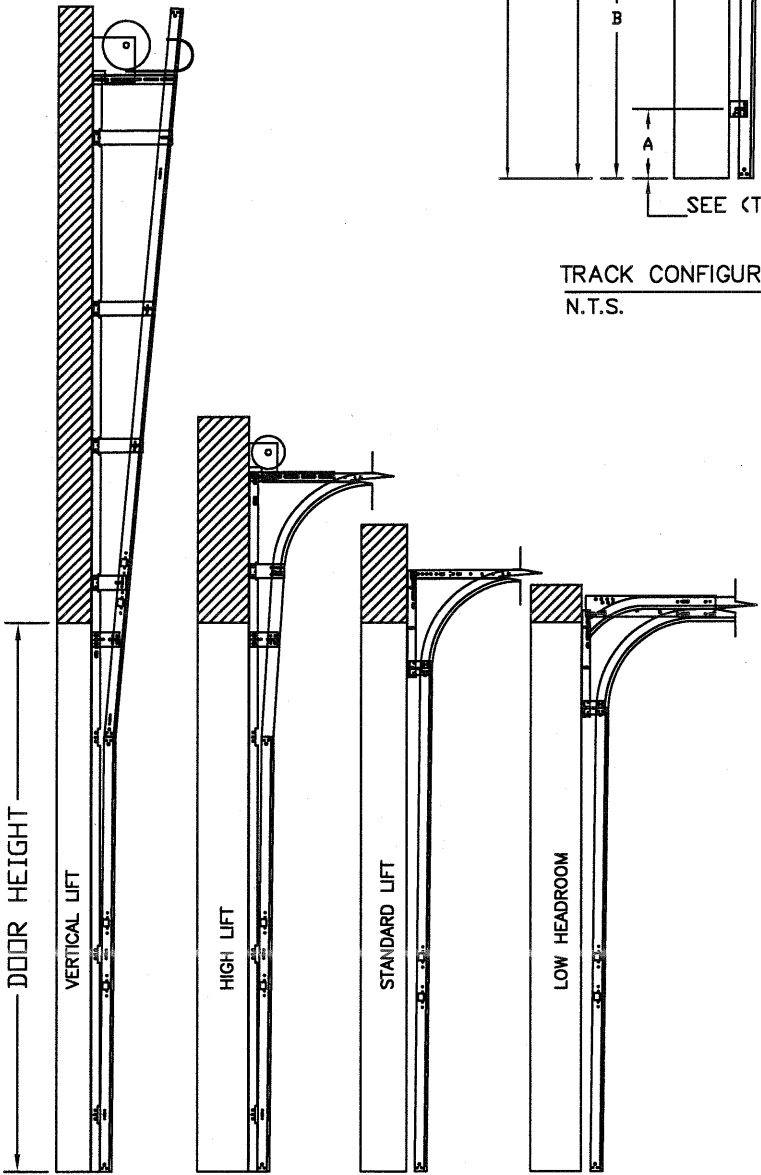
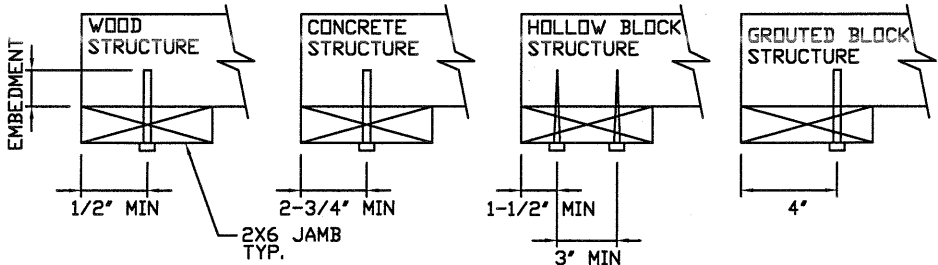
TRACK CONFIGURATION FOR 6'6" UP TO 14' TALL DOORS
N.T.S.

WOOD JAMB ATTACHMENT TO STRUCTURE

2 X 6 VERTICAL JAMB ATTACHMENT TO WOOD FRAME STRUCTURE
5/16" X 3" LAG SCREWS STARTING 6" FROM ENDS THEN 20" 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 18" 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 22" 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



AVAILABLE TRACK CONFIGURATIONS
N.T.S.

REV	DESCRIPTION OF REVISIONS	DATE	BY
A	ADDED GLAZING OPTIONS	10/21/13	RLR

MAX SIZE
18' WIDTH
14' HEIGHT

DESIGN LOADS
+25.4 PSF
-28.7 PSF

TEST LOADS
+38.1 PSF
-43.05 PSF

LARGE
MISSILE
IMPACT
RESISTANT

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Professional Engineer
No. 48579
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5921-G W. Friendly Ave., Greensboro, NC 27410

Amarr

MODEL #1600 AMARR LINCOLN 3000
MODEL #1650 AMARR HILLCREST 3000

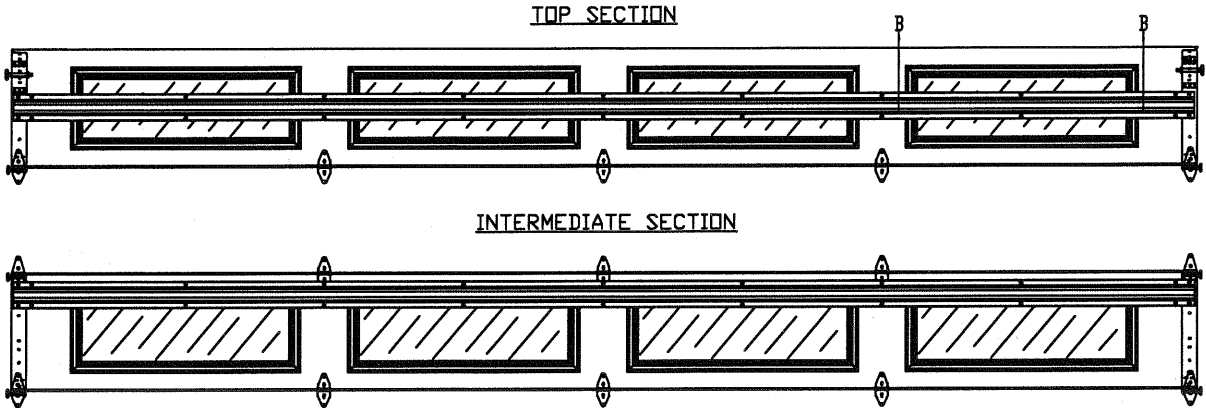
SIZE	DRAWN BY	RLR	DATE	12/15/11	DRAWING NUMBER
B	CHECKED BY	RLR	DATE	12/15/11	IRC-1618-130-24-1

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

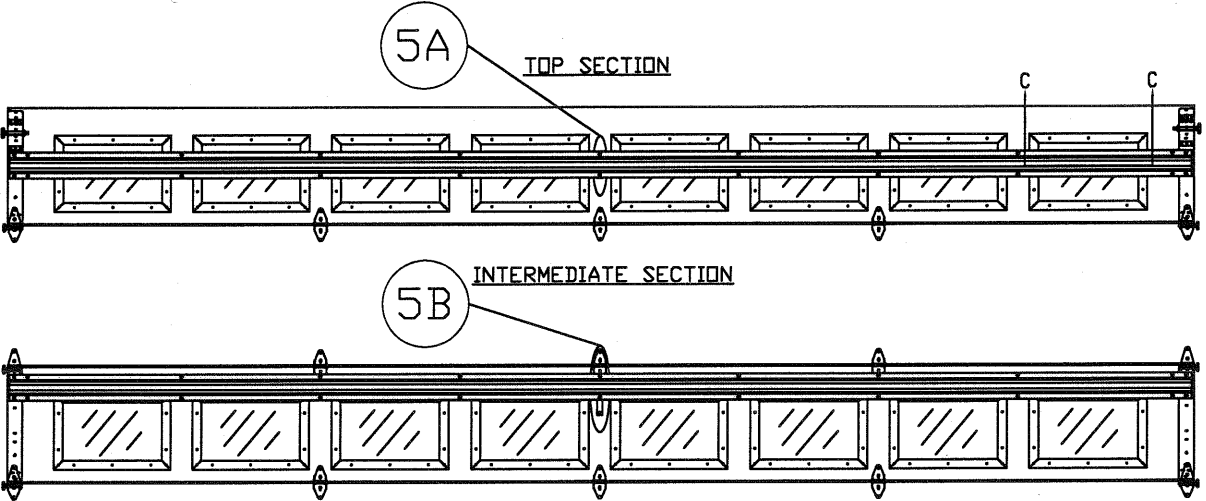
SHEET 2 OF 3

TABLE 3

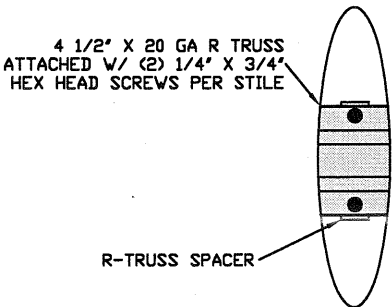
Section	Width (ft)	Center Stile Locations (Measured from Left)			Max Design Loads Allowed	
		1st (in)	2st (in)	3rd (in)	Positive (PSF)	Negative (PSF)
16'	2	50.27	97.00	143.73	28.1	31.8
16'	4	51.27	98.00	144.73	27.9	31.5
16'	6	52.27	99.00	145.73	27.6	31.2
16'	8	51.34	100.00	148.66	27.3	30.8
16'	10	51.50	101.00	150.50	27.0	30.5
17'	0	53.34	102.00	150.66	26.8	30.2
17'	2	53.00	103.00	153.00	26.5	29.9
17'	4	54.00	104.00	154.00	26.2	29.7
17'	6	55.00	105.00	155.00	26.0	29.4
17'	8	54.80	106.00	157.20	25.7	29.1
17'	10	55.80	107.00	158.20	25.5	28.8
18'	0	57.25	108.00	158.75	25.4	28.7



OPTIONAL LONG PANEL GLAZED SECTION R-TRUSS AND STILE LAYOUT
N.T.S.

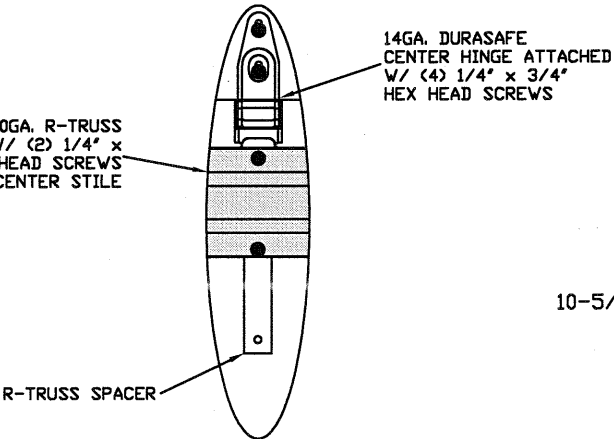


OPTIONAL SHORT PANEL GLAZED SECTION R-TRUSS AND STILE LAYOUT
N.T.S.

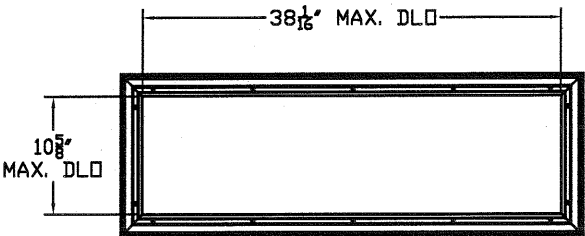


R-TRUSS SPACER
N.T.S.

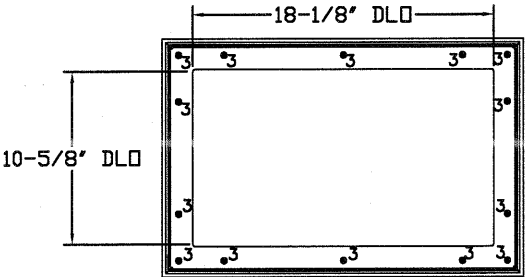
4 1/2" 20GA. R-TRUSS
ATTACHED W/ (2) 1/4" X
3/4" HEX HEAD SCREWS
AT EACH CENTER STILE



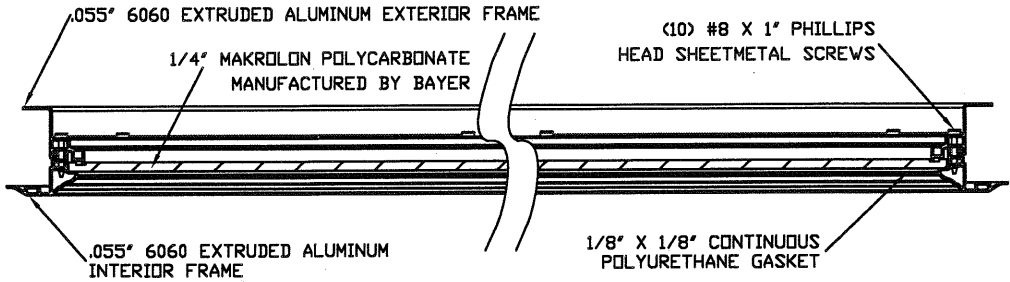
R-TRUSS SPACER
N.T.S.



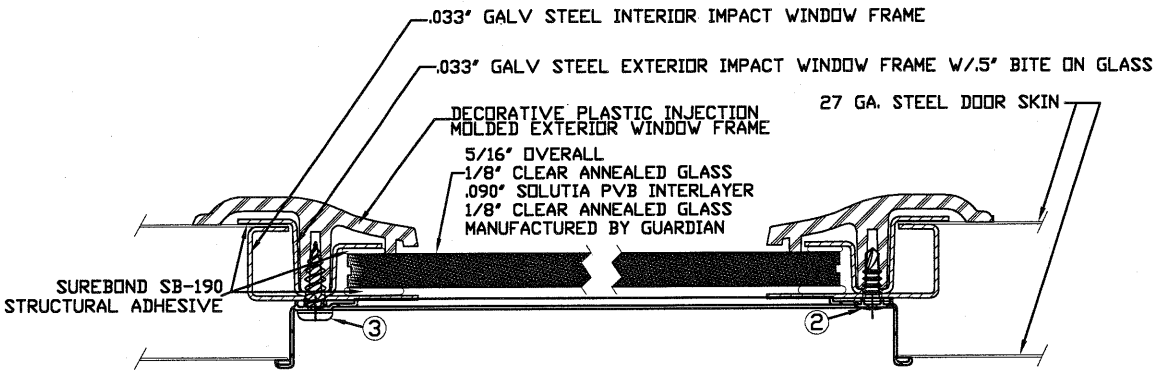
LONG PANEL GLAZING FASTENER DETAIL
N.T.S.



IMPACT GLAZING FASTENER DETAIL
N.T.S.
GLAZING MEETS ASTM E1300-04



SECTION B-B IMPACT WINDOW DETAIL
N.T.S.



2. 3/16" X 1/2" SCREW - USED TO
FASTEN THE STEEL EXTERIOR IMPACT WINDOW FRAME TO
THE STEEL INTERIOR IMPACT WINDOW FRAME.
3. 11/64" X 1/2" SCREW - USED TO FASTEN DECORATIVE PLASTIC MOLDED
WINDOW FRAME TO THE ASSEMBLY

SECTION C-C IMPACT WINDOW DETAIL
N.T.S.

REV	DESCRIPTION OF REVISIONS	DATE	BY
A	ADDED GLAZING OPTIONS	10/21/13	RLR
MAX SIZE 18' WIDTH 14' HEIGHT DESIGN LOADS +25.4 PSF -28.7 PSF TEST LOADS +38.1 PSF -43.05 PSF LARGE MISSILE IMPACT RESISTANT Thomas L. Shelmerdine, PE (FL PE #0048579) Structural Solutions, PA (FL Firm #29412) THOMAS L. SHELMERDINE LICENSE No. 48579 10/10/20 STATE OF FLORIDA PROFESSIONAL ENGINEER FL dba Structural Solutions of North Carolina, Inc. 5921-G W. Friendly Ave., Greer, S.C. 29615			
Amarr MODEL #1600 AMARR LINCOLN 3000 MODEL #1650 AMARR HILLCREST 3000			
SIZE	DRAWN BY RLR	DATE 12/15/11	DRAWING NUMBER
B	CHECKED BY RLR	DATE 12/15/11	IRC-1618-130-24-1
ENTREMATIC 165 CARRIAGE COURT WINSTON-SALEM, N.C. 27105			SHEET 3 OF 3