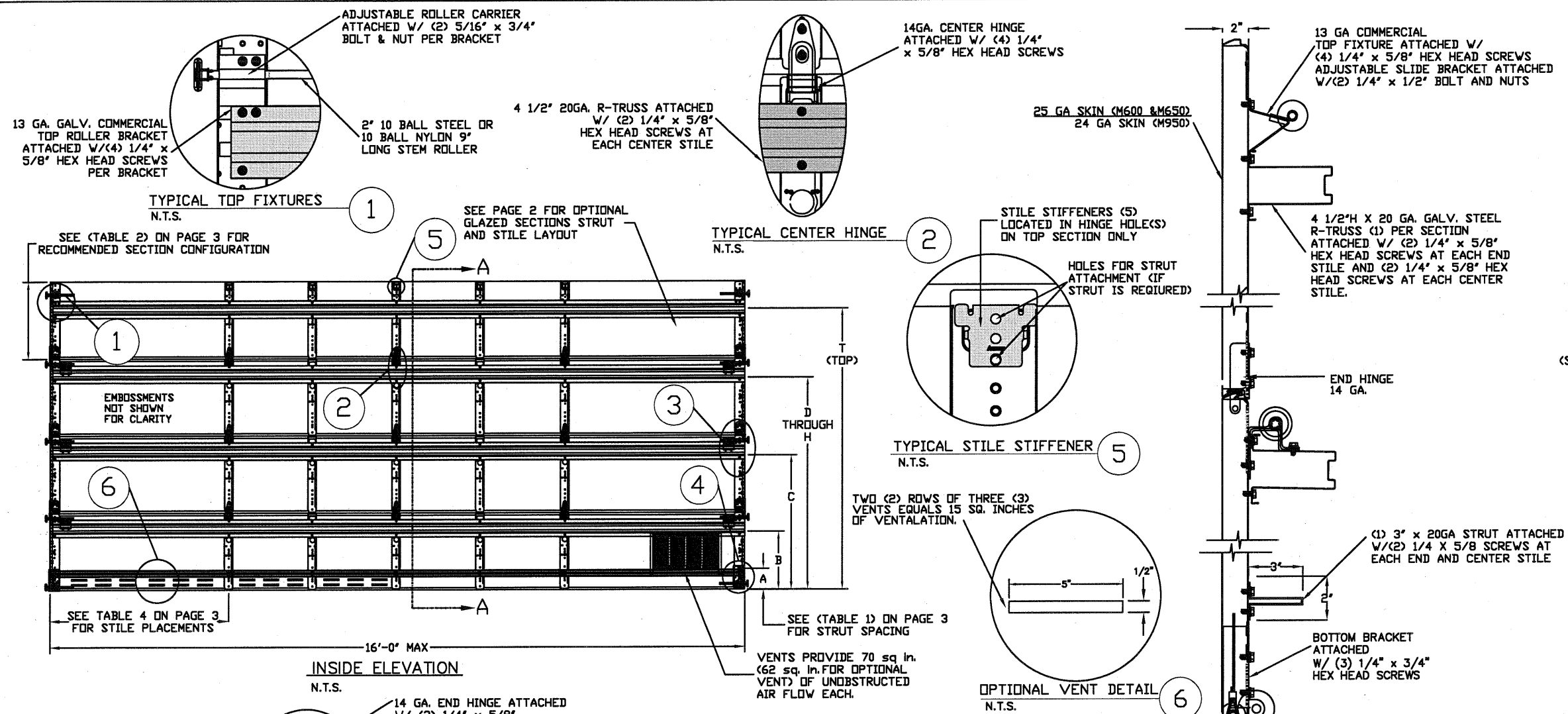
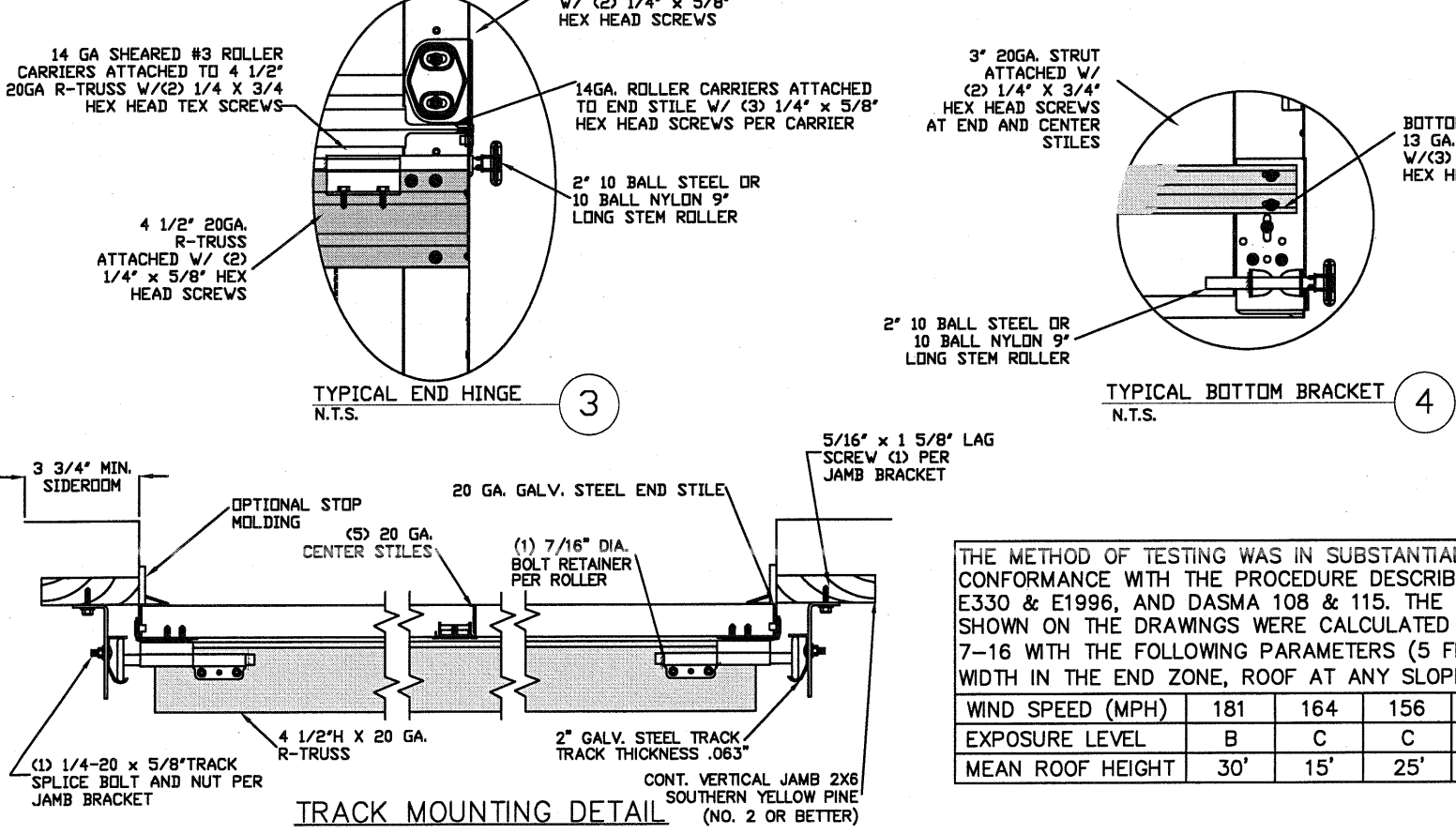
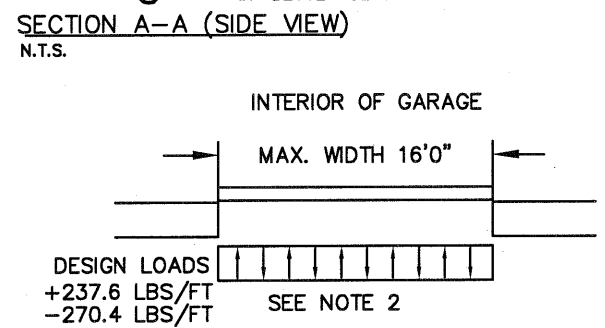
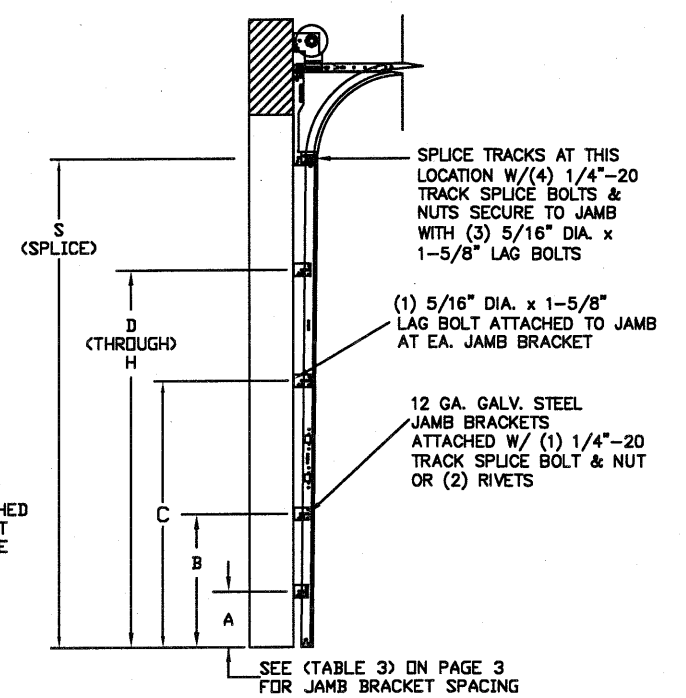




LARGE MISSILE IMPACT RESISTANT



THE METHOD OF TESTING WAS IN SUBSTANTIAL CONFORMANCE WITH THE PROCEDURE DESCRIBED IN ASTM E330 & E1996, AND DASMA 108 & 115. 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)	181	164	156	149	143
EXPOSURE LEVEL	B	C	C	D	D
MEAN ROOF HEIGHT	30'	15'	25'	15'	25'

- SPECIFICATIONS AND NOTES**
- 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.
 - EACH VERTICAL JAMBS RECEIVES MAXIMUM DESIGN LOADS OF: +237.6 LBS/FT & -270.4 LBS/FT
 - DOORS AND HARDWARE WILL BE DESIGNED, MANUFACTURED AND INSTALLED WITH STANDARDS AS SET FORTH BY DASMA.
 - DOOR SECTIONS SHALL BE 25 GA. MIN. (.019") 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.
 - AMARR MANUFACTURES AND DISTRIBUTES GARAGE DOORS UNDER MANY BRAND LABELS. PLEASE SEE AMARR-MANUFACTURED PRIVATE LABEL CHART FOR REFERENCE OF EQUIVALENT PRODUCTS FOR WINDLOAD APPROVAL.
 - REFER TO TABLES ON THE PAGE 3 FOR ADDITIONAL DOOR WIDTHS AND THEIR DESIGN PRESSURES
 - PANEL STAMP DOES NOT EFFECT WINDLOAD CAPABILITIES.

REV	DESCRIPTION OF REVISIONS	DATE	BY
A	ADDED GLAZING NOTE	12/19/12	RLR

MAX SIZE
16' WIDTH
14' HEIGHT
(DOOR HEIGHT
SUBJECT TO
WEIGHT LIMITATIONS)

DESIGN LOADS
+29.7 PSF
-33.8 PSF

TEST LOADS
+44.5 PSF
-50.7 PSF

LARGE
MISSILE
IMPACT
RESISTANT

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

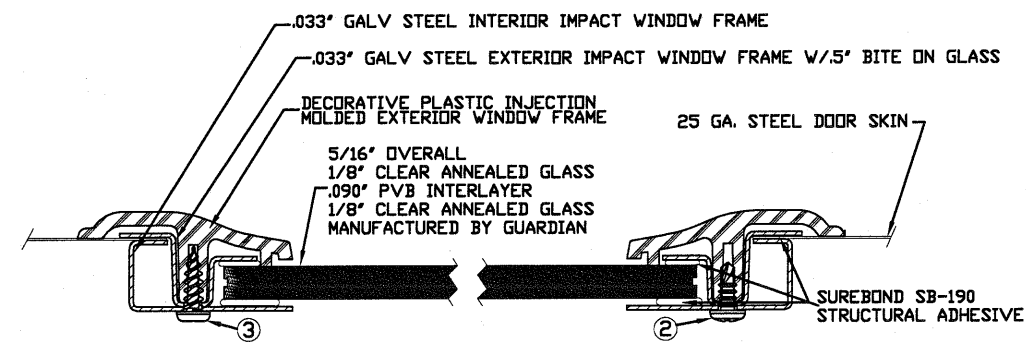
dba Structural Solutions of North Carolina, Inc.
5921-G W. Friendly Ave., Greenboro, NC 27410

MODEL #650 AMARR OAK SUMMIT SERIES 1000 & 2000
MODEL #600 AMARR STRATFORD SERIES 1000 & 2000
MODEL #950 AMARR HERITAGE SERIES 1000 & 2000

SIZE	DRAWN BY	BHG	DATE	11/20/09	DRAWING NUMBER
B	CHECKED BY	DLJ	DATE	11/20/09	IRC-6016-140-24-G

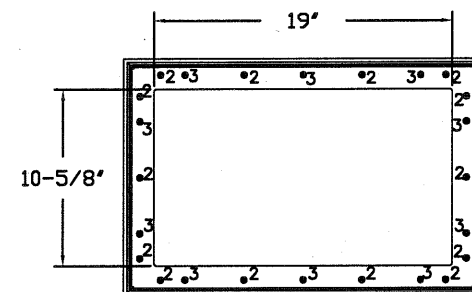
ENTREMATICS
165 CARRIAGE COURT WINSTON-SALEM, N.C. 27105

SHEET 1 OF 3

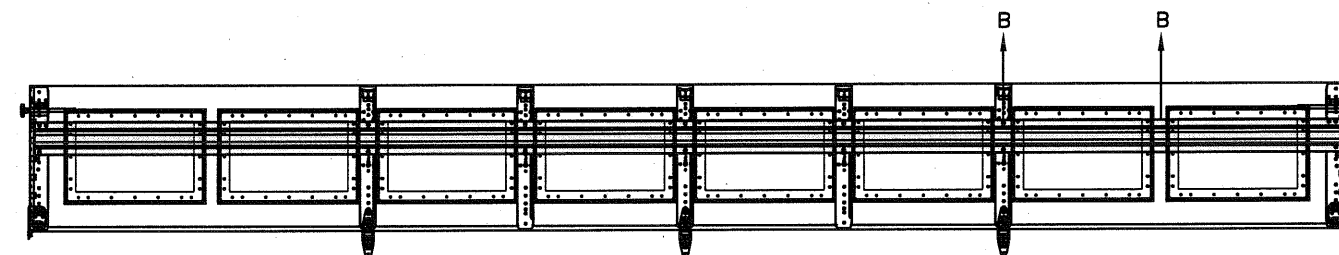


2. 3/16" X 1/2" SCREW - USED TO FASTEN THE STEEL EXTERIOR IMPACT WINDOW FRAME TO THE STEEL INTERIOR IMPACT WINDOW FRAME.
3. 11/64" X 1/2" SCREW - USED TO FASTEN DECORATIVE PLASTIC MOLDED WINDOW FRAME TO THE ASSEMBLY

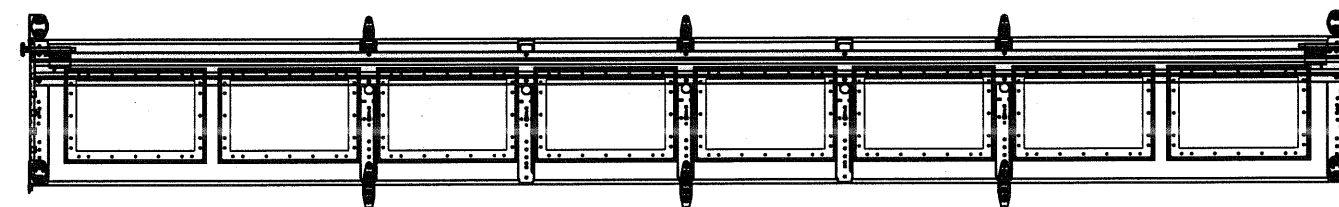
SECTION B-B IMPACT WINDOW DETAIL
N.T.S.



IMPACT GLAZING FASTENER DETAIL
N.T.S.



TOP SECTION



INTERMEDIATE SECTION

OPTIONAL SHORT PANEL GLAZED SECTION STRUT AND STILE LAYOUT

WOOD JAMB ATTACHMENT TO STRUCTURE

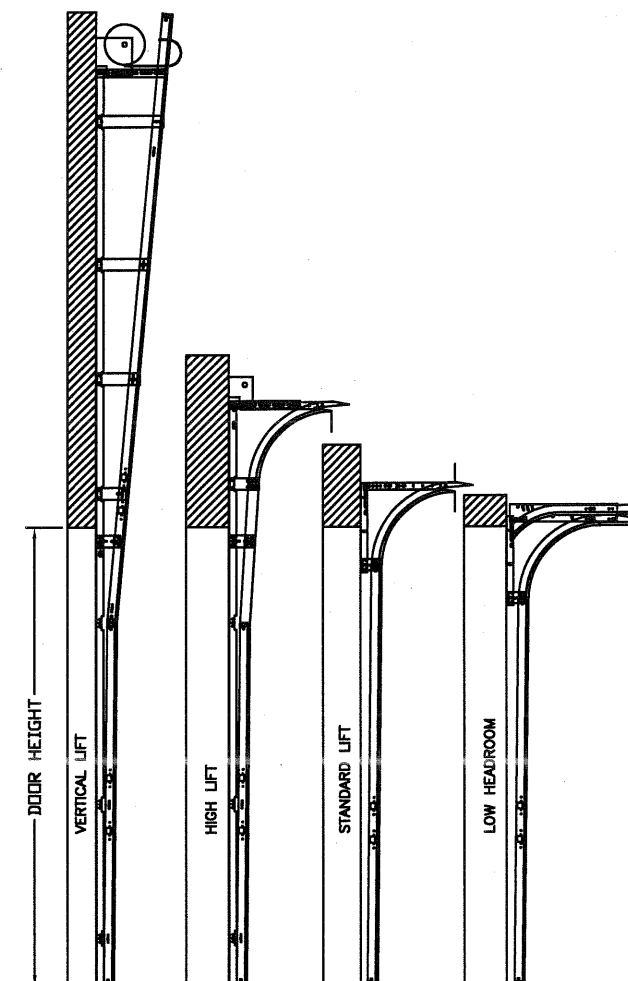
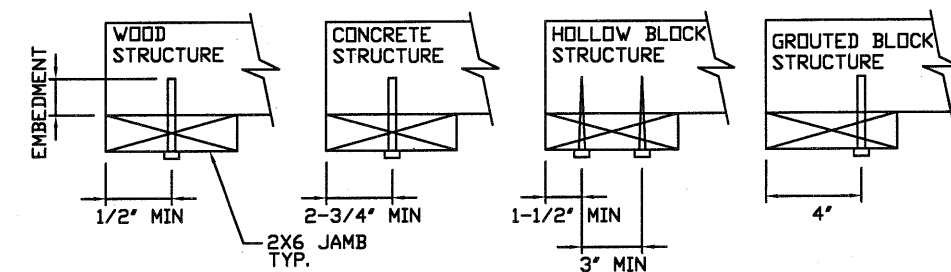
2 X 6 VERTICAL JAMB ATTACHMENT TO WOOD FRAME STRUCTURE
5/16" X 3" LAG SCREWS STARTING 6" FROM ENDS THEN 20" O.C. (1 1/2" EMBEDMENT)

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 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



AVAILABLE TRACK CONFIGURATIONS
N.T.S.

REV	DESCRIPTION OF REVISIONS	DATE	BY
A	ADDED GLAZING NOTE	12/19/12	RLR

MAX SIZE 16' WIDTH 14' HEIGHT (DOOR HEIGHT SUBJECT TO WEIGHT LIMITATIONS) DESIGN LOADS +29.7 PSF -33.8 PSF TEST LOADS +44.5 PSF -50.7 PSF LARGE MISSILE IMPACT RESISTANT	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
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Amarr

MODEL #850 AMARR OAK SUMMIT SERIES 1000 & 2000
MODEL #800 AMARR STRATFORD SERIES 1000 & 2000
MODEL #850 AMARR HERITAGE SERIES 1000 & 2000

SIZE	DRAWN BY	BHG	DATE	11/20/09	DRAWING NUMBER
B	CHECKED BY	DLJ	DATE	11/20/09	IRC-6016-140-24-G

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

SHEET 2 OF 3

TABLE 1

DOOR HEIGHT	STRUT SPACING (BASED ON RECOMMENDED SECTION CONFIGURATION)								TOP T
	A	B	C	D	E	F	G	H	
6' 6"	5 1/2"	16"	34"	52"					70 1/2"
7'	5 1/2"	16"	37"	58"					76 1/2"
7' 6"	5 1/2"	13"	31"	49"	67"				82 1/2"
8'	5 1/2"	16"	34"	52"	70"				88 1/2"
8' 6"	5 1/2"	16"	37"	58"	76"				94 1/2"
9'	5 1/2"	13"	31"	49"	67"	85"			100 1/2"
9' 6"	5 1/2"	16"	34"	52"	70"	88"			106 1/2"
10'	5 1/2"	16"	37"	58"	76"	94"			112 1/2"
10' 6"	5 1/2"	16"	37"	58"	79"	100"			118 1/2"
11'	5 1/2"	16"	34"	52"	70"	88"	106"		124 1/2"
11' 6"	5 1/2"	16"	37"	58"	76"	94"	112"		130 1/2"
12'	5 1/2"	16"	37"	58"	79"	100"	118"		136 1/2"
12' 6"	5 1/2"	16"	34"	52"	70"	88"	106"	124"	142 1/2"
13'	5 1/2"	16"	37"	58"	76"	94"	112"	130"	148 1/2"
13' 6"	5 1/2"	16"	37"	58"	79"	100"	118"	136"	154 1/2"
14'	5 1/2"	16"	37"	58"	79"	100"	121"	142"	160 1/2"

* ADDITIONAL STRUTS MAY BE ADDED TO DOOR WHEN GLAZED FOR COUNTERBALANCE PURPOSES

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"				

TABLE 3

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

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

TABLE 4

Section Width (ft)	Panel Type	Center Stile Locations (Measured from Left Edge)				
		1st (in)	2st (in)	3rd (in)	4th (in)	5th (in)
10' 0	Long	30.00	60.00	90.00		
10' 0	Oak Summit	30.63	60.00	89.38		
10' 0	Short	48.41	71.59			
12' 0	Long	49.63	72.00	94.38		
12' 0	Oak Summit	48.31	72.00	95.69		
12' 0	Short	48.81	72.00	95.19		
12' 2	Long	50.08	73.00	95.92		
12' 2	Oak Summit	49.06	73.00	96.94		
12' 2	Short	49.64	73.00	96.36		
12' 4	Long	51.08	74.00	96.92		
12' 4	Oak Summit	49.81	74.00	98.19		
12' 4	Short	50.64	74.00	97.36		
12' 6	Long	51.17	75.00	98.83		
12' 6	Oak Summit	50.56	75.00	99.44		
12' 6	Short	50.67	75.00	99.33		
12' 8	Long	52.10	76.00	99.90		
12' 8	Oak Summit	51.31	76.00	100.69		
12' 8	Short	51.67	76.00	100.33		
12' 10	Long	53.10	77.00	100.90		
12' 10	Oak Summit	52.06	77.00	101.94		
12' 10	Short	52.25	77.00	101.75		
13' 0	Long	54.10	78.00	101.90		
13' 0	Oak Summit	52.81	78.00	103.19		
13' 0	Short	53.00	78.00	103.00		
13' 2	Long	55.10	79.00	102.90		
13' 2	Oak Summit	53.56	79.00	104.44		
13' 2	Short	54.00	79.00	104.00		
13' 4	Long	54.90	80.00	105.10		
13' 4	Oak Summit	54.31	80.00	105.69		
13' 4	Short	54.40	80.00	105.60		
13' 6	Long	55.90	81.00	106.10		
13' 6	Oak Summit	55.06	81.00	106.94		
13' 6	Short	55.40	81.00	106.60		
13' 8	Long	56.63	82.00	107.38		
13' 8	Oak Summit	55.81	82.00	108.19		
13' 8	Short	56.40	82.00	107.60		
13' 10	Long	57.17	83.00	108.83		
13' 10	Oak Summit	56.56	83.00	109.44		
13' 10	Short	57.16	83.00	108.71		
14' 0	Long	58.63	84.00	109.38		
14' 0	Oak Summit	57.31	84.00	110.69		
14' 0	Short	57.76	84.00	110.11		
14' 2	Long	59.17	85.00	110.83		
14' 2	Oak Summit	58.06	85.00	111.94		
14' 2	Short	58.85	85.00	111.41		
14' 4	Long	60.17	86.00	111.83		
14' 4	Oak Summit	58.81	86.00	113.19		
14' 4	Short	59.16	86.00	112.71		
14' 6	Long	61.17	87.00	112.83		
14' 6	Oak Summit	59.56	87.00	114.44		
14' 6	Short	59.86	87.00	114.01		
14' 8	Long	64.81	88.00	110.59	131.19	
14' 8	Oak Summit	60.31	88.00	115.69		
14' 8	Short	60.56	88.00	115.31		
14' 10	Long	65.60	89.00	110.70	132.40	
14' 10	Oak Summit	61.06	89.00	116.94		
14' 10	Short	61.26	89.00	116.61		
15' 0	Long	66.60	90.00	111.70	133.40	
15' 0	Oak Summit	63.63	90.00	118.19	146.38	
15' 0	Short	61.94	90.00	110.97	117.94	
15' 2	Long	67.60	91.00	112.70	134.40	
15' 2	Oak Summit	64.13	91.00	119.44	147.88	
15' 2	Short	62.66	91.00	110.51	119.21	
15' 4	Long	67.25	92.00	114.38	136.75	
15' 4	Oak Summit	64.63	92.00	120.69	149.38	
15' 4	Short	63.60	92.00	110.40		
15' 6	Long	67.60	93.00	115.70	138.40	
15' 6	Oak Summit	64.42	93.00	115.79	138.58	
15' 6	Short	66.62	93.00	116.19	139.38	
15' 8	Long	68.60	94.00	116.70	139.40	
15' 8	Oak Summit	68.02	94.00	116.99	139.98	
15' 8	Short	67.62	94.00	117.19	140.38	
15' 10	Long	69.17	95.00	117.92	140.83	
15' 10	Oak Summit	68.62	95.00	118.19	141.38	
15' 10	Short	68.62	95.00	118.19	141.38	
16' 0	Long	70.60	96.00	118.70	141.40	
16' 0	Oak Summit	68.42	96.00	119.79	143.58	
16' 0	Short	69.62	96.00	119.19	142.38	

^ Stiles do not need to be hinged

TABLE 5

Section Width (ft)	Panel Type	Max Design Loads Allowed	
		Positive (PSF)	Negative (PSF)
10' 0	Long	47.5	54.0
10' 0	Oak Summit	47.5	54.0
10' 0	Short	39.8	45.3
12' 0	Long	39.6	45.0
12' 0	Oak Summit	39.6	45.0
12' 0	Short	39.6	45.0
12' 2	Long	39.0	44.4
12' 2	Oak Summit	39.0	44.4
12' 2	Short	39.0	44.4
12' 4	Long	38.5	43.8
12' 4	Oak Summit	38.5	43.8
12' 4	Short	38.5	43.8
12' 6	Long	38.0	43.2
12' 6	Oak Summit	38.0	43.2
12' 6	Short	38.0	43.2
12' 8	Long	37.5	42.6
12' 8	Oak Summit	37.5	42.6
12' 8	Short	37.5	42.6
12' 10	Long	37.0	42.1
12' 10	Oak Summit	37.0	42.1
12' 10	Short	37.0	42.1
13' 0	Long	36.5	41.6
13' 0	Oak Summit	36.5	41.6
13' 0	Short	36.5	41.6
13' 2	Long	36.0	41.0
13' 2	Oak Summit	36.0	41.0
13' 2	Short	36.0	41.0
13' 4	Long	35.6	40.5
13' 4	Oak Summit	35.6	40.5
13' 4	Short	35.6	40.5
13' 6	Long	35.2	40.0
13' 6	Oak Summit	35.2	40.0
13' 6	Short	35.2	40.0
13' 8	Long	34.7	39.5
13' 8	Oak Summit	34.7	39.5
13' 8	Short	34.7	39.5
13' 10	Long	34.3	39.0
13' 10	Oak Summit	34.3	39.0
13' 10	Short	34.3	39.0
14' 0	Long	33.9	38.6
14' 0	Oak Summit	33.9	38.6
14' 0	Short	33.9	38.6
14' 2	Long	33.5	38.1
14' 2	Oak Summit	33.5	38.1
14' 2	Short	33.5	38.1
14' 4	Long	33.1	37.7
14' 4	Oak Summit	33.1	37.7
14' 4	Short	33.1	37.7
14' 6	Long	32.7	37.2
14' 6	Oak Summit	32.7	37.2
14' 6	Short	32.7	37.2
14' 8	Long	32.4	36.8
14' 8	Oak Summit	32.4	36.8
14' 8	Short	32.4	36.8
14' 10	Long	32.0	36.4
14' 10	Oak Summit	32.0	36.4
14' 10	Short	32.0	36.4
15' 0	Long	31.6	36.0
15' 0	Oak Summit	25.2	28.7
15' 0	Short	31.6	36.0
15' 2	Long	31.3	35.6
15' 2	Oak Summit	25.0	28.5
15' 2	Short	31.3	35.6
15' 4	Long	30.9	35.2
15' 4	Oak Summit	24.8	28.2
15' 4	Short	27.2	30.9
15' 6	Long	30.6	34.8
15' 6	Oak Summit	30.6	34.8
15' 6	Short	30.6	34.8
15' 8	Long	30.3	34.5
15' 8	Oak Summit	30.3	34.5
15' 8	Short	30.3	34.5
15' 10	Long	30.0	34.1
15' 10	Oak Summit	30.0	34.1
15' 10	Short	30.0	34.1
16' 0	Long	29.7	33.8
16' 0	Oak Summit	29.7	33.8
16' 0	Short	29.7	33.8