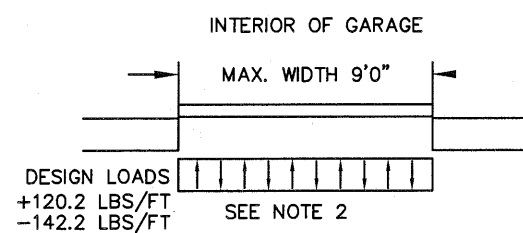


# LARGE MISSILE IMPACT RESISTANT

THE METHOD OF TESTING WAS IN SUBSTANTIAL CONFORMANCE WITH THE PROCEDURE DESCRIBED IN ASTM E330 AND DASMA 108. THE PRESSURES SHOWN ON THE DRAWINGS WERE CALCULATED USING ASCE 7-98/02/05 WITH THE FOLLOWING PARAMETERS (5 FEET OF DOOR WIDTH IN THE END ZONE, ROOF AT ANY SLOPE, AND I=1.0):

WIND SPEED (MPH)	130	118	112	107	102
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: +120.2 LBS/FT & -142.2 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	WIND SPEED TABLE & TRACK CONFIGURATIONS	04/30/12	RLR
B	ADDED GLAZING NOTE	12/20/12	RLR

MAX SIZE 9' x 14'

DESIGN LOADS +26.7 PSF -31.6 PSF

TEST LOADS +40.1 PSF -47.4 PSF

LARGE MISSILE IMPACT RESISTANT

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

TX

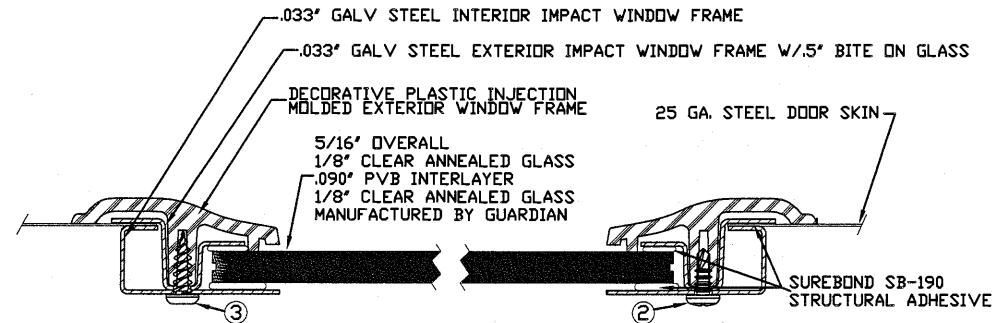
dba Structural Solutions of North Carolina, Inc. 5921-G W. Friendly Ave., Greensboro, NC 27410

165 CARRIAGE COURT WINSTON-SALEM, NC. 27105 WWW.AMARR.COM

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

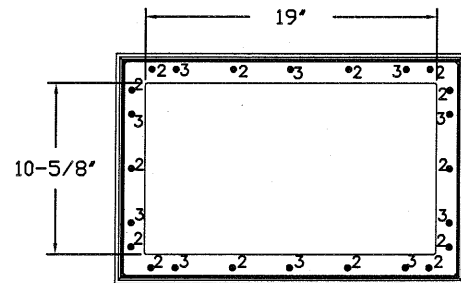
SIZE	DRAWN BY	DRC	DATE	11/18/09	DRAWING NUMBER
B	CHECKED BY	BHG	DATE	11/18/09	IRC-6009-130-15-1

SHEET 1 OF 3

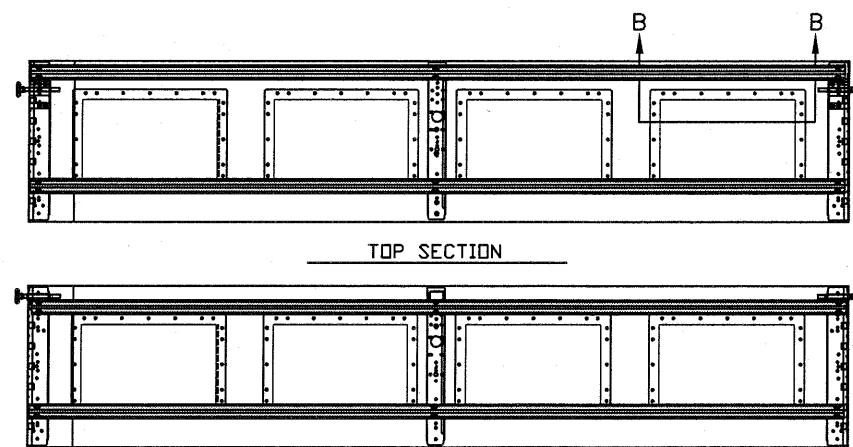


2. 3/16" X 1/2" SCREW - USED TO FASTEN THE STEEL EXTERIOR IMPACT WINDOW FRAME TO THE STEEL INTERIOR IMPACT WINDOW FRAME.
3. 11/64" X 1/2" SCREW - USED TO FASTEN DECORATIVE PLASTIC MOLDED WINDOW FRAME TO THE ASSEMBLY

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



IMPACT GLAZING FASTENER DETAIL  
N.T.S.



3" 20GA. STRUT LOCATED AT THE TOP AND BOTTOM OF GLAZED SECTION ATTACHED W/(2) 1/4" X 3/4" HEX HEAD SCREWS AT END AND CENTER STILES

INTERMEDIATE SECTION

GLAZING OPTION DETAIL  
N.T.S.

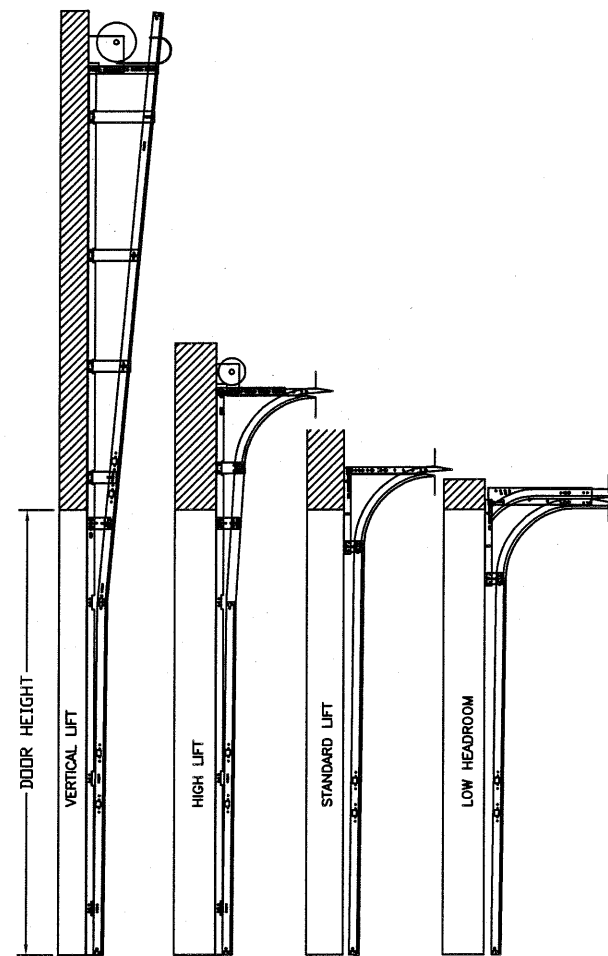
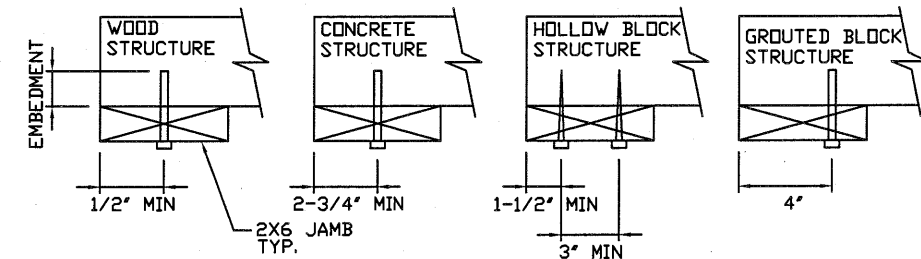
OPTIONAL SHORT PANEL GLAZED SECTION STRUT AND STILE LAYOUT

## 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 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

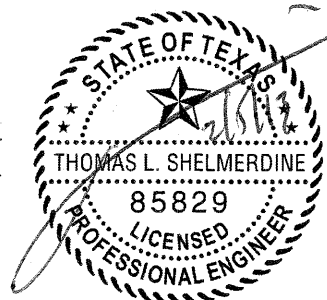


AVAILABLE TRACK CONFIGURATIONS  
N.T.S.

REV	DESCRIPTION OF REVISIONS	DATE	BY
A	WIND SPEED TABLE & TRACK CONFIGURATIONS	04/30/12	RLR
B	ADDED GLAZING NOTE	12/20/12	RLR

MAX SIZE  
9' x 14'  
 DESIGN LOADS  
+26.7 PSF  
-31.6 PSF  
 TEST LOADS  
+40.1 PSF  
-47.4 PSF  
 LARGE MISSILE IMPACT RESISTANT

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



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

TX

**Amarr**

165 CARRIAGE COURT WINSTON-SALEM, NC. 27105 WWW.AMARR.COM

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

SIZE	DRAWN BY	DRC	DATE	DRAWING NUMBER
B	CHKD BY	BHG	DATE 11/18/09	IRC-6009-130-15-1

SHEET 2 OF 3

TABLE 1

DOOR HEIGHT	STRUT SPACING (BASED ON RECOMMENDED SECTION CONFIGURATION)								TOP
	A	B	C	D	E	F	G	H	T
6' 6"	5 1/2"	18 1/4"	36 1/4"	54 1/4"					67 1/2"
7'	5 1/2"	18 1/4"	39 1/4"	60 1/4"					73 1/2"
7' 6"	5 1/2"	15 1/4"	33 1/4"	51 1/4"	69 1/4"				81"
8'	5 1/2"	18 1/4"	36 1/4"	54 1/4"	72 1/4"				85 1/2"
8' 6"	5 1/2"	18 1/4"	39 1/4"	60 1/4"	78 1/4"				91 1/2"
9'	5 1/2"	15 1/4"	33 1/4"	51 1/4"	69 1/4"	87 1/4"			99"
9' 6"	5 1/2"	18 1/4"	36 1/4"	54 1/4"	72 1/4"	90 1/4"			103 1/2"
10'	5 1/2"	18 1/4"	39 1/4"	60 1/4"	78 1/4"	96 1/4"			109 1/2"
10' 6"	5 1/2"	18 1/4"	39 1/4"	60 1/4"	81 1/4"	102 1/4"			115 1/2"
11'	5 1/2"	18 1/4"	36 1/4"	54 1/4"	72 1/4"	90 1/4"	108 1/4"		121 1/2"
11' 6"	5 1/2"	18 1/4"	39 1/4"	60 1/4"	78 1/4"	96 1/4"	114 1/4"		127 1/2"
12'	5 1/2"	18 1/4"	39 1/4"	60 1/4"	81 1/4"	102 1/4"	120 1/4"		133 1/2"
12' 6"	5 1/2"	18 1/4"	36 1/4"	54 1/4"	72 1/4"	90 1/4"	108 1/4"	126 1/4"	139 1/2"
13'	5 1/2"	18 1/4"	39 1/4"	60 1/4"	78 1/4"	96 1/4"	114 1/4"	132 1/4"	145 1/2"
13' 6"	5 1/2"	18 1/4"	39 1/4"	60 1/4"	81 1/4"	102 1/4"	120 1/4"	138 1/4"	151 1/2"
14'	5 1/2"	18 1/4"	39 1/4"	60 1/4"	81 1/4"	102 1/4"	123 1/4"	144 1/4"	157 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
	A	B	C	D	E	F	G	H	S
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" ALLOWED WITH SYP OR SPF NO. 2 OR BETTER ONLY

TABLE 4

Section Width (ft)	Panel Type	Center Stile Location (Measured from Left Edge)
8' 0"	Short, Oak Summit	48.000
8' 0"	Long	48.000
8' 2"	Short, Oak Summit	49.000
8' 2"	Long	49.000
8' 4"	Short, Oak Summit	50.000
8' 4"	Long	50.000
8' 6"	Short, Oak Summit	51.000
8' 6"	Long	51.000
8' 8"	Short, Oak Summit	52.000
8' 8"	Long	52.000
8' 10"	Short, Oak Summit	53.000
8' 10"	Long	53.000
9' 0"	Short, Oak Summit	54.000
9' 0"	Long	54.000

REV	DESCRIPTION OF REVISIONS	DATE	BY
A	WIND SPEED TABLE & TRACK CONFIGURATIONS	04/30/12	RLR
B	ADDED GLAZING NOTE	12/20/12	RLR

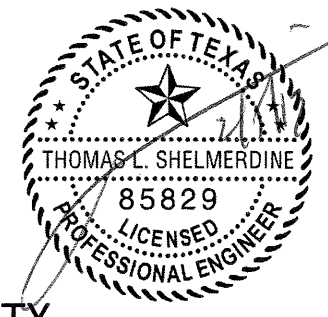
MAX SIZE 9' x 14'

DESIGN LOADS +26.7 PSF -31.6 PSF

TEST LOADS +40.1 PSF -47.4 PSF

LARGE MISSILE IMPACT RESISTANT

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



TX

**Amarr**

165 CARRIAGE COURT WINSTON-SALEM, N.C. 27105 WWW.AMARR.COM

MODEL #650 OAK SUMMIT SERIES 1000 & 2000  
 MODEL #800 STRATFORD SERIES 1000 & 2000  
 MODEL #950 HERITAGE SERIES 1000 & 2000

SIZE	DRAWN BY	DRC	DATE	DRAWING NUMBER
B	BHG	BHG	11/18/09	IRC-6009-130-15-1

SHEET 3 OF 3