

LARGE MISSILE IMPACT RESISTANCE

THE METHOD OF TESTING WAS IN SUBSTANTIAL CONFORMANCE WITH THE PROCEDURE DESCRIBED IN ASTM E330, E1886, E1996, F588 AND DASMA 108, 115. 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) | 166 | 150 | 143 | 136 | 131 |
| EXPOSURE LEVEL | B | C | C | D | D |
| MEAN ROOF HEIGHT | 30' | 15' | 25' | 15' | 25' |

| REV | DESCRIPTION OF REVISIONS | DATE | BY |
|-----|--------------------------|------|----|
| | | | |

MAX SIZE 9' x 14'
 DESIGN LOADS +45.3 PSF -51.2 PSF
 LARGE MISSILE IMPACT RESISTANCE

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STATE OF TEXAS
 THOMAS L. SHELMERDINE
 85829
 LICENSED PROFESSIONAL ENGINEER
 TX

Amarr

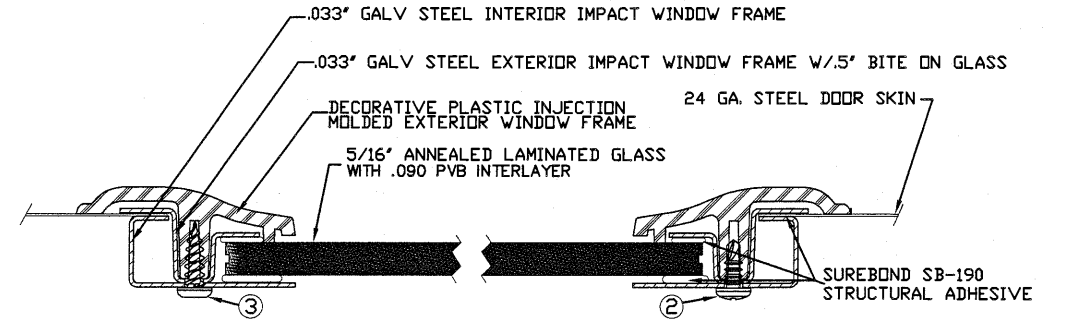
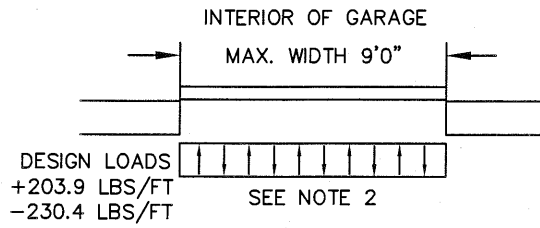
165 CARRIAGE COURT WINSTON-SALEM, N.C. 27105 WWW.AMARR.COM
 MODEL 950 HERITAGE (24 GA) 1000, 2000
 MODEL 655 OAK SUMMIT (24 GA) 1000, 2000
 SHORT, LONG, FLUSH, AND OAK SUMMIT PANELS

| | | | | | |
|------|------------|-----|------|----------|-------------------|
| SIZE | DRAWN BY | RLR | DATE | 03/12/13 | DRAWING NUMBER |
| B | CHECKED BY | | DATE | | IRC-9509-169-15-G |

SHEET 1 OF 3

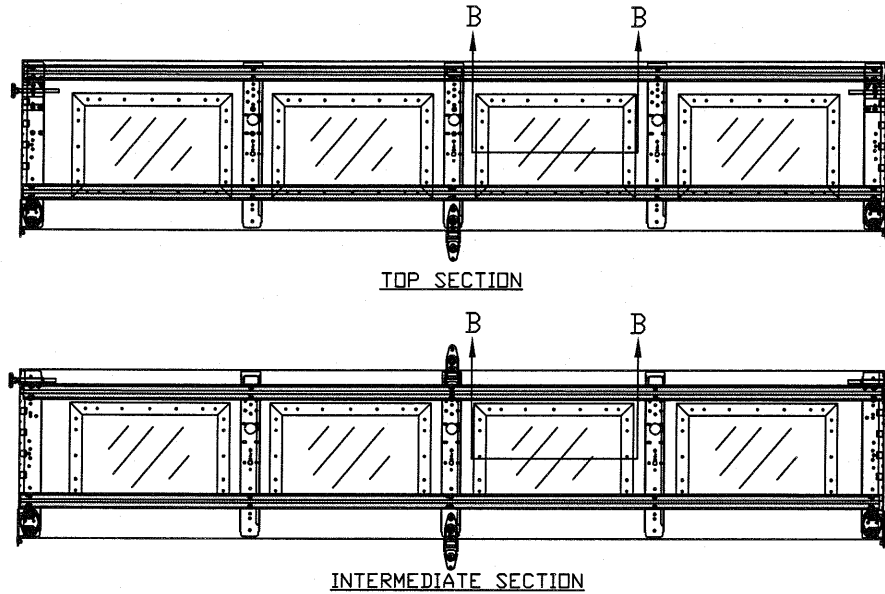
SPECIFICATIONS AND NOTES

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: +203.9 LBS/FT & -230.4 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. (.0216) MIN. EXTERIOR SKIN ROLLED FORMED, W/ BAKED ON POLYESTER FINISH
5. DOORS UP TO 7'0" HIGH CONSIST OF (4) SECTIONS AS SHOWN. USE (2) 3" 20 GA STRUTS PER SECTION
6. DOORS OVER (4) SECTIONS REFER TO TABLES 1 AND 2 ON PAGE 3.
7. SUPPORTING STRUCTURAL ELEMENTS SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER FOR WIND LOADS INDICATED ON THIS DRAWING IN ADDITION TO OTHER LOADINGS.

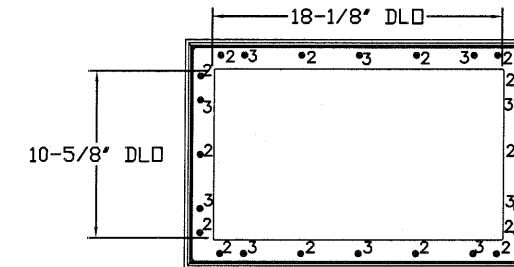


2. 3/16" X 1/2" SCREW - USED TO FASTEN THE STEEL EXTERIOR IMPACT WINDOW FRAME TO THE STEEL INTERIOR IMPACT WINDOW FRAME.
3. 11/64" X 1/2" SCREW - USED TO FASTEN DECORATIVE PLASTIC MOLDED WINDOW FRAME TO THE ASSEMBLY

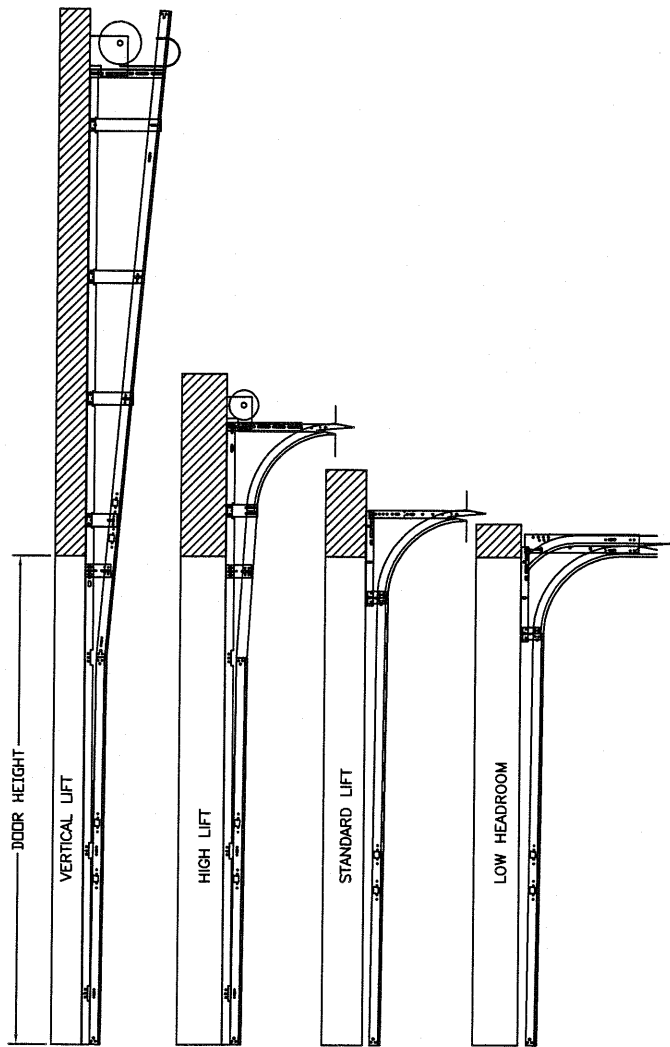
OPTIONAL SHORT PANEL GLAZED SECTION STRUT AND STILE LAYOUTS
N.T.S.



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



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



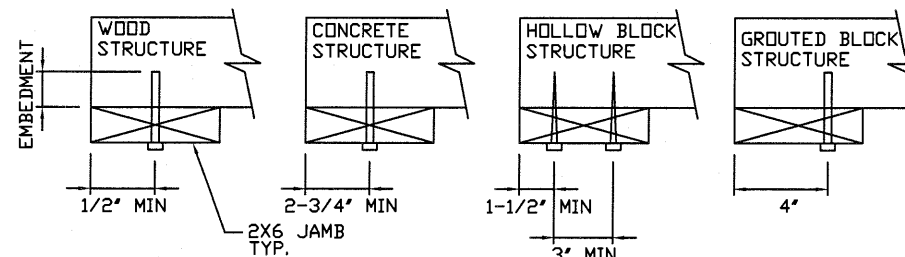
AVAILABLE TRACK CONFIGURATIONS
N.T.S.

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 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 20" 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 16" 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 16" 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



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| | LARGE MISSILE IMPACT RESISTANCE | | |

TX

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MODEL 950 HERITAGE (24 GA) 1000, 2000
MODEL 655 OAK SUMMIT (24 GA) 1000, 2000
SHORT, LONG, FLUSH, AND OAK SUMMIT PANELS

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SHEET 2 OF 3

TABLE 1

| DOOR HEIGHT | STRUT SPACING (BASED ON RECOMMENDED SECTION CONFIGURATION) | | | | | | | | | | | | | | | TOP |
|-------------|--|-----|---------|-----|---------|-----|---------|-----|---------|------|----------|------|----------|------|----------|----------|
| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | |
| 6' 6" | 5 1/2" | 18" | 25 3/8" | 36" | 43 3/8" | 54" | 61 3/8" | | | | | | | | | 76 1/4" |
| 7' | 5 1/2" | 18" | 25 3/8" | 39" | 46 3/8" | 60" | 67 3/8" | | | | | | | | | 82 1/4" |
| 7' 6" | 5 1/2" | 15" | 22 3/8" | 33" | 40 3/8" | 51" | 58 3/8" | 69" | 76 3/8" | | | | | | | 88 1/4" |
| 8' | 5 1/2" | 18" | 25 3/8" | 36" | 43 3/8" | 54" | 61 3/8" | 72" | 79 3/8" | | | | | | | 94 1/4" |
| 8' 6" | 5 1/2" | 18" | 25 3/8" | 39" | 46 3/8" | 60" | 67 3/8" | 78" | 85 3/8" | | | | | | | 100 1/4" |
| 9' | 5 1/2" | 15" | 22 3/8" | 33" | 40 3/8" | 51" | 58 3/8" | 69" | 76 3/8" | 87" | 94 3/8" | | | | | 106 1/4" |
| 9' 6" | 5 1/2" | 18" | 25 3/8" | 36" | 43 3/8" | 54" | 61 3/8" | 72" | 79 3/8" | 90" | 97 3/8" | | | | | 112 1/4" |
| 10' | 5 1/2" | 18" | 25 3/8" | 39" | 46 3/8" | 60" | 67 3/8" | 78" | 85 3/8" | 96" | 103 3/8" | | | | | 118 1/4" |
| 10' 6" | 5 1/2" | 18" | 25 3/8" | 39" | 46 3/8" | 60" | 67 3/8" | 81" | 88 3/8" | 102" | 109 3/8" | | | | | 124 1/4" |
| 11' | 5 1/2" | 18" | 25 3/8" | 36" | 43 3/8" | 54" | 61 3/8" | 72" | 79 3/8" | 90" | 97 3/8" | 108" | 115 3/8" | | | 130 1/4" |
| 11' 6" | 5 1/2" | 18" | 25 3/8" | 39" | 46 3/8" | 60" | 67 3/8" | 78" | 85 3/8" | 96" | 103 3/8" | 114" | 121 3/8" | | | 136 1/4" |
| 12' | 5 1/2" | 18" | 25 3/8" | 39" | 46 3/8" | 60" | 67 3/8" | 81" | 88 3/8" | 102" | 109 3/8" | 120" | 127 3/8" | | | 142 1/4" |
| 12' 6" | 5 1/2" | 18" | 25 3/8" | 36" | 43 3/8" | 54" | 61 3/8" | 72" | 79 3/8" | 90" | 97 3/8" | 108" | 115 3/8" | 126" | 133 3/8" | 148 1/4" |
| 13' | 5 1/2" | 18" | 25 3/8" | 39" | 46 3/8" | 60" | 67 3/8" | 78" | 85 3/8" | 96" | 103 3/8" | 114" | 121 3/8" | 132" | 139 3/8" | 154 1/4" |
| 13' 6" | 5 1/2" | 18" | 25 3/8" | 39" | 46 3/8" | 60" | 67 3/8" | 81" | 88 3/8" | 102" | 109 3/8" | 120" | 127 3/8" | 138" | 145 3/8" | 160 1/4" |
| 14' | 5 1/2" | 18" | 25 3/8" | 39" | 46 3/8" | 60" | 67 3/8" | 81" | 88 3/8" | 102" | 109 3/8" | 123" | 130 3/8" | 144" | 151 3/8" | 166 1/4" |

TABLE 4

| Section Width (ft) | Panel Type | Center Stile Location (Measured from Left Edge) | | |
|--------------------|------------|---|----------|----------|
| | | 1st (in) | 2st (in) | 3rd (in) |
| 8' 0" | Short | 24.812 | 48.000 | 71.188 |
| 8' 0" | Long | 24.000 | 48.000 | 72.000 |
| 8' 0" | Bead | 24.625 | 48.000 | 71.375 |
| 8' 2" | Short | 24.316 | 49.000 | 73.684 |
| 8' 2" | Long | 24.500 | 49.000 | 73.500 |
| 8' 2" | Bead | 25.125 | 49.000 | 72.875 |
| 8' 4" | Short | 24.580 | 50.000 | 75.420 |
| 8' 4" | Long | 25.000 | 50.000 | 75.000 |
| 8' 4" | Bead | 25.625 | 50.000 | 74.375 |
| 8' 6" | Short | 26.029 | 51.000 | 75.971 |
| 8' 6" | Long | 25.500 | 51.000 | 76.500 |
| 8' 6" | Bead | 26.125 | 51.000 | 75.875 |
| 8' 8" | Short | 26.659 | 52.000 | 77.341 |
| 8' 8" | Long | 26.000 | 52.000 | 78.000 |
| 8' 8" | Bead | 26.625 | 52.000 | 77.375 |
| 8' 10" | Short | 27.034 | 53.000 | 78.966 |
| 8' 10" | Long | 26.500 | 53.000 | 79.500 |
| 8' 10" | Bead | 27.125 | 53.000 | 78.875 |
| 9' 0" | Short | 27.596 | 54.000 | 80.404 |
| 9' 0" | Long | 27.000 | 54.000 | 81.000 |
| 9' 0" | Bead | 27.625 | 54.000 | 80.375 |

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 | |
| 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 +/- 1" ALLOWED WITH SYP OR SPF NO.2 OR BETTER ONLY

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MAX SIZE 9' x 14'
DESIGN LOADS +45.3 PSF -51.2 PSF
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SHEET 3 OF 3