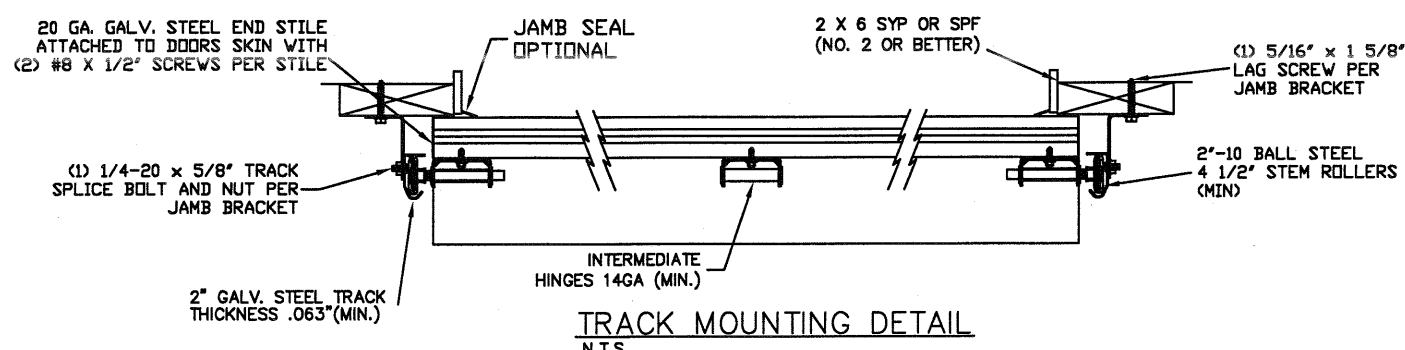
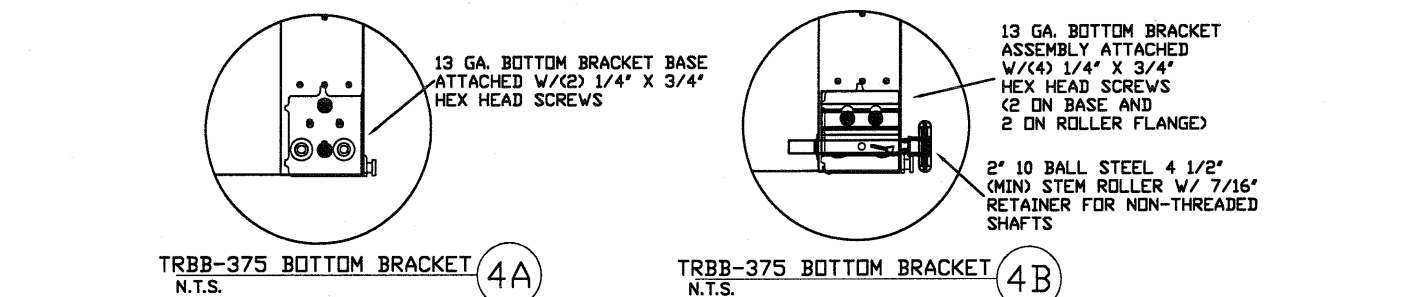
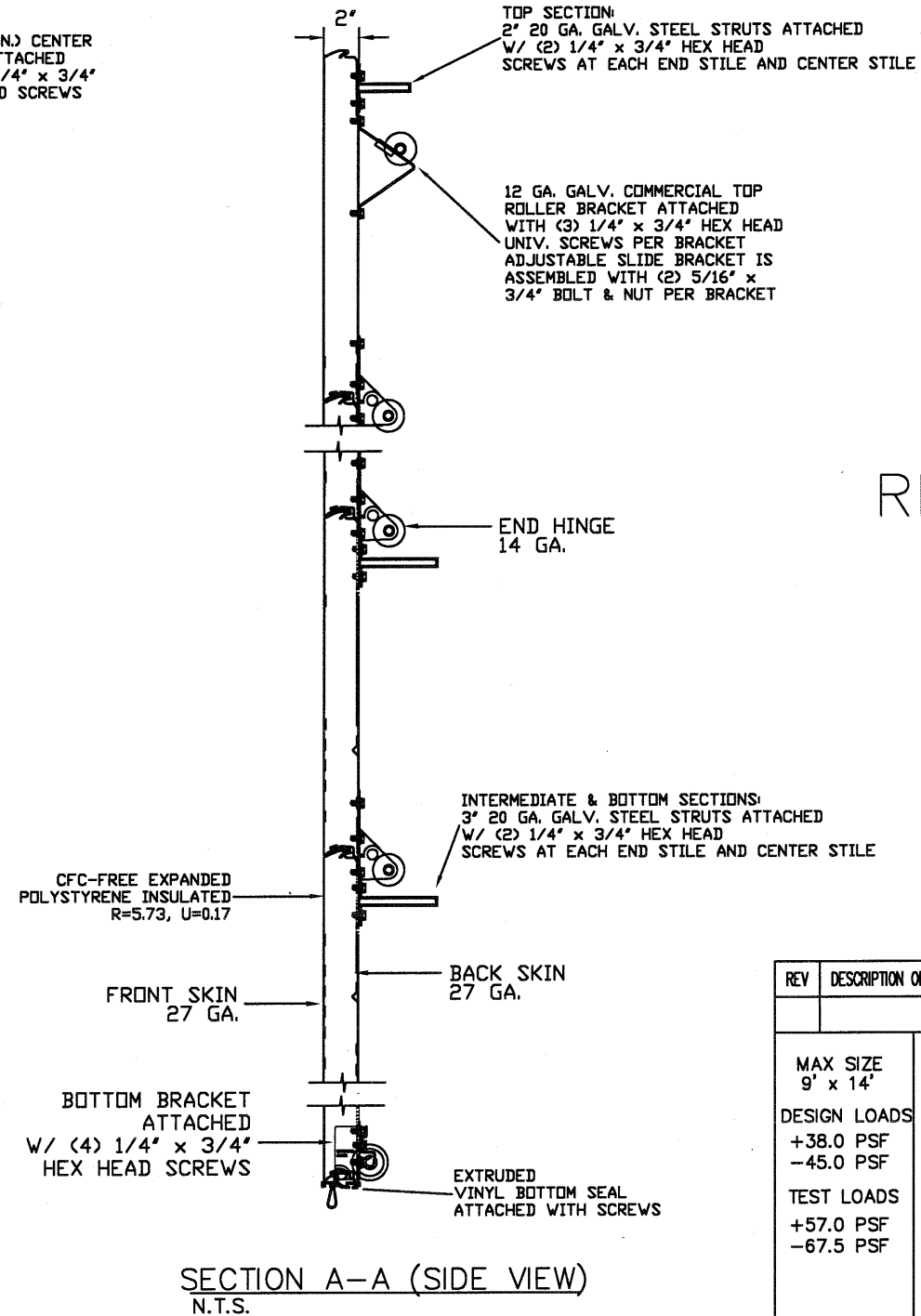
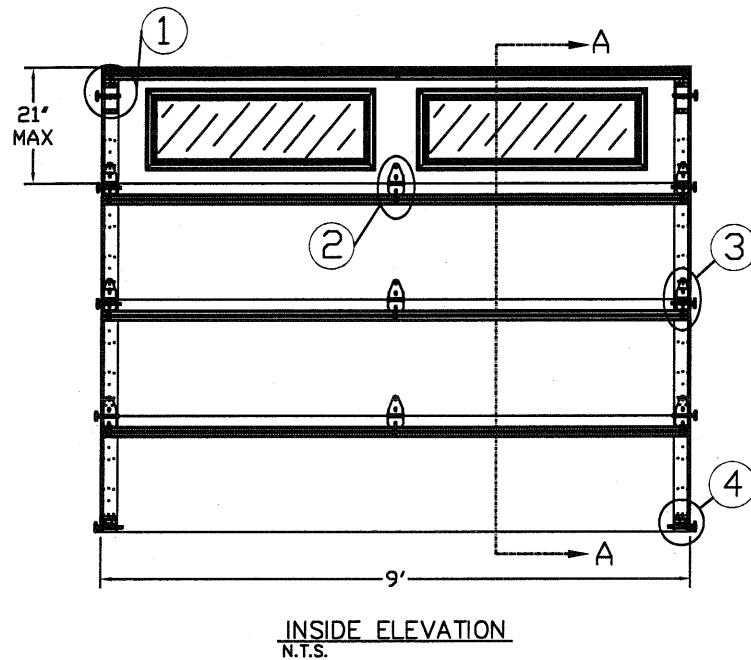
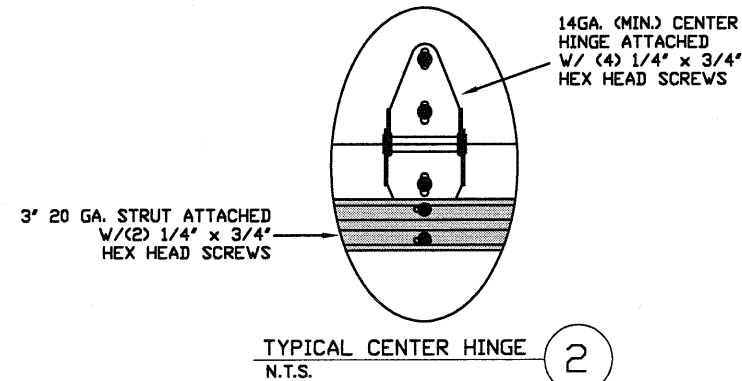
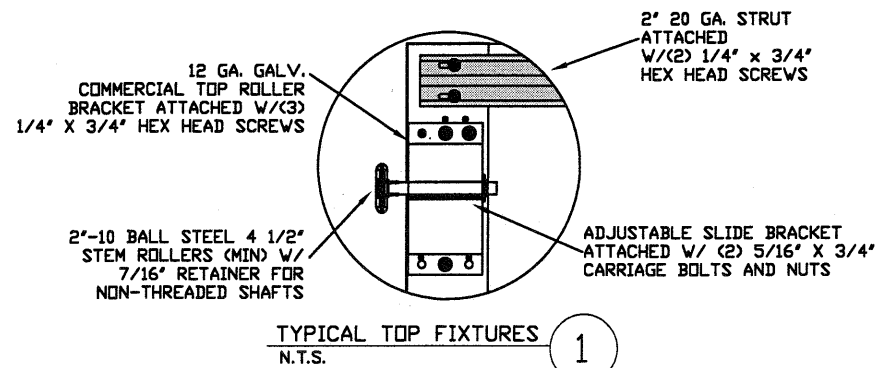


# LARGE MISSILE IMPACT RESISTANCE



THE METHOD OF TESTING WAS IN SUBSTANTIAL CONFORMANCE WITH THE PROCEDURE DESCRIBED IN DASMA 105 & 115, AND 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) | 200 | 182 | 173 | 165 | 158 |
| 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  
+38.0 PSF  
-45.0 PSF

TEST LOADS  
+57.0 PSF  
-67.5 PSF

LARGE MISSILE  
IMPACT  
RESISTANCE

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., Greerboro, NC 27410

|                                                           |            |      |                   |
|-----------------------------------------------------------|------------|------|-------------------|
| MODEL #1600 AMARR LINCOLN 3000                            |            |      |                   |
| MODEL #1650 AMARR HILLCREST 3000                          |            |      |                   |
| SIZE                                                      | DRAWN BY   | RLR  | DATE 02/6/14      |
| B                                                         | CHECKED BY | DATE | DRAWING NUMBER    |
| ENTREMATIC<br>165 CARRIAGE COURT WINSTON-SALEM, NC. 27105 |            |      | IRC-1609-155-15-1 |
| SHEET 1 OF 3                                              |            |      |                   |

| HEIGHT | TRACK ATTACHMENT |     |     |     |     |      |      |      | SPLICE |
|--------|------------------|-----|-----|-----|-----|------|------|------|--------|
|        | A                | B   | C   | D   | E   | F    | G    | H    |        |
| 6' 0"  | 3.5"             | 21" | 42" |     |     |      |      |      | 64"    |
| 6' 6"  | 3.5"             | 21" | 42" | 63" |     |      |      |      | 70"    |
| 7' 0"  | 3.5"             | 21" | 42" | 63" |     |      |      |      | 76"    |
| 7' 6"  | 3.5"             | 21" | 42" | 63" |     |      |      |      | 82"    |
| 8' 0"  | 3.5"             | 21" | 42" | 63" | 84" |      |      |      | 88"    |
| 8' 6"  | 3.5"             | 21" | 42" | 63" | 84" |      |      |      | 94"    |
| 9' 0"  | 3.5"             | 21" | 42" | 63" | 84" |      |      |      | 100"   |
| 9' 6"  | 3.5"             | 21" | 42" | 63" | 84" |      |      |      | 106"   |
| 10' 0" | 3.5"             | 21" | 42" | 63" | 84" | 105" |      |      | 112"   |
| 10' 6" | 3.5"             | 21" | 42" | 63" | 84" | 105" |      |      | 118"   |
| 11' 0" | 3.5"             | 21" | 42" | 63" | 84" | 105" |      |      | 124"   |
| 11' 6" | 3.5"             | 21" | 42" | 63" | 84" | 105" | 126" |      | 130"   |
| 12' 0" | 3.5"             | 21" | 42" | 63" | 84" | 105" | 126" |      | 136"   |
| 12' 6" | 3.5"             | 21" | 42" | 63" | 84" | 105" | 126" |      | 142"   |
| 13' 0" | 3.5"             | 21" | 42" | 63" | 84" | 105" | 126" |      | 148"   |
| 13' 6" | 3.5"             | 21" | 42" | 63" | 84" | 105" | 126" | 147" | 154"   |
| 14' 0" | 3.5"             | 21" | 42" | 63" | 84" | 105" | 126" | 147" | 160"   |

19" 14 GA (MIN.) VERTICAL ANGLE ATTACHED TO WOOD JAMB W/ (3) 5/16 DIA. X 1-5/8" LAG BOLTS AND TO TRACK W/ (4) 1/4"-20 X 5/8" TRACK SPLICE BOLTS AND NUTS

SPLICE TRACKS AT THIS LOCATION W/ (4) 1/4"-20 TRACK SPLICE BOLTS & NUTS SECURE TO JAMB WITH (3) 5/16" DIA. X 1-5/8" LAG BOLTS

(1) 5/16" DIA. X 1-5/8" LAG BOLT ATTACHED TO JAMB AT EA. JAMB BRACKET

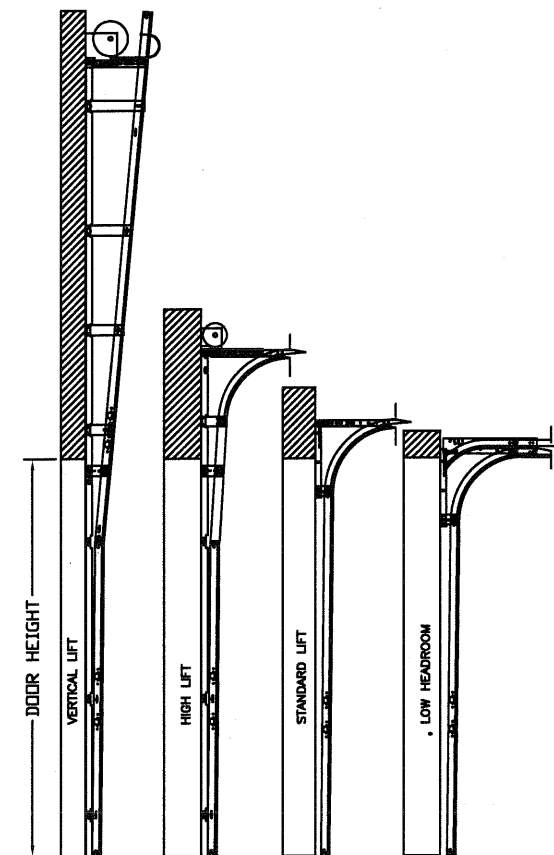
12 GA. GALV. STEEL JAMB BRACKETS ATTACHED W/ (1) 1/4"-20 X 5/8" TRACK SPLICE BOLT & NUT

TRACK ATTACHMENT CAN BE BRACKET MOUNT, CONTINUOUS, REVERSE ANGLE MOUNT OR TAPERED REVERSE ANGLE MOUNT. (SEE AVAILABLE TRACK CONFIGURATIONS)

ALL TRACK BRACKETS AND TRACK CLIPS ARE ATTACHED TO TRACK WITH (2) RIVETS OR (1) 1/4"-20 BOLT & NUT

ALL TRACK BRACKETS OR TRACK CLIPS ARE TO FOLLOW SPACING AS INDICATED IN TABLE 1

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:  
+171.0 LBS/FT & -202.5 LBS/FT.
3. DOOR AND HARDWARE WILL BE DESIGNED, MANUFACTURED AND INSTALLED WITH STANDARDS AS SET FORTH BY DASMA.
4. DOOR SECTIONS SHALL BE 27GA MIN. INTERIOR AND 27GA MIN. EXTERIOR SKIN ROLLED FORMED, W/ BAKED ON POLYESTER FINISH.
5. SUPPORTING STRUCTURAL ELEMENTS SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER FOR WIND LOADS INDICATED ON THIS DRAWING IN ADDITION TO OTHER LOADINGS.
6. PANEL STAMP DOES NOT AFFECT WINDLOAD CAPABILITIES.



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 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)

WOOD STRUCTURE

CONCRETE STRUCTURE

HOLLOW BLOCK STRUCTURE

GROUTED BLOCK STRUCTURE

EMBEDMENT

1/2" MIN

2-3/4" MIN

1-1/2" MIN

3" MIN

4"

2X6 JAMB TYP.

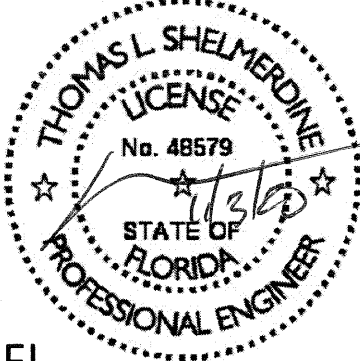
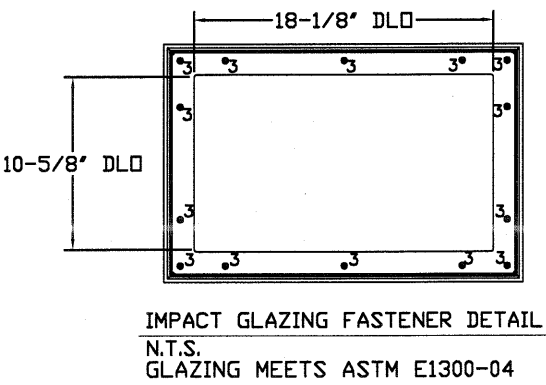
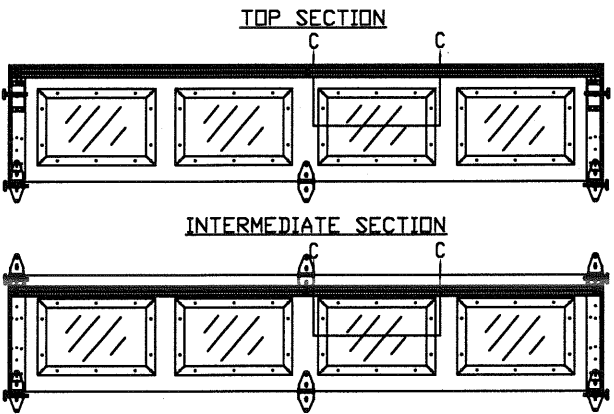
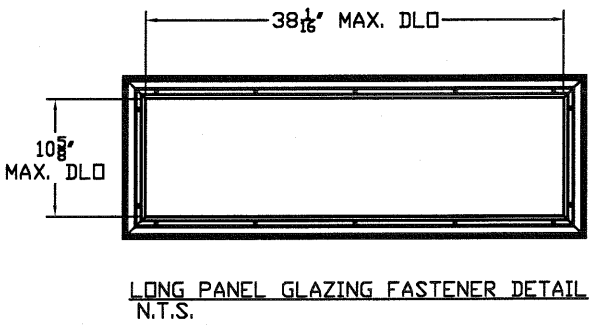
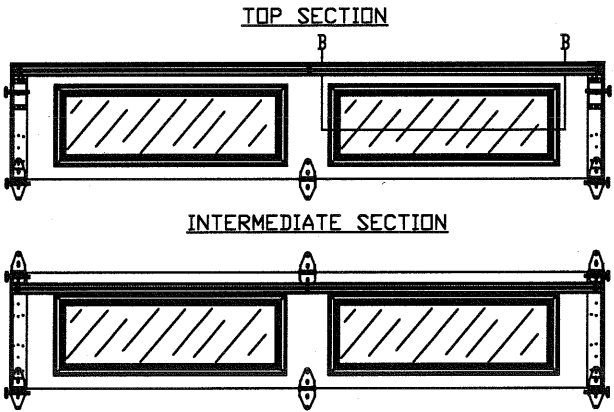
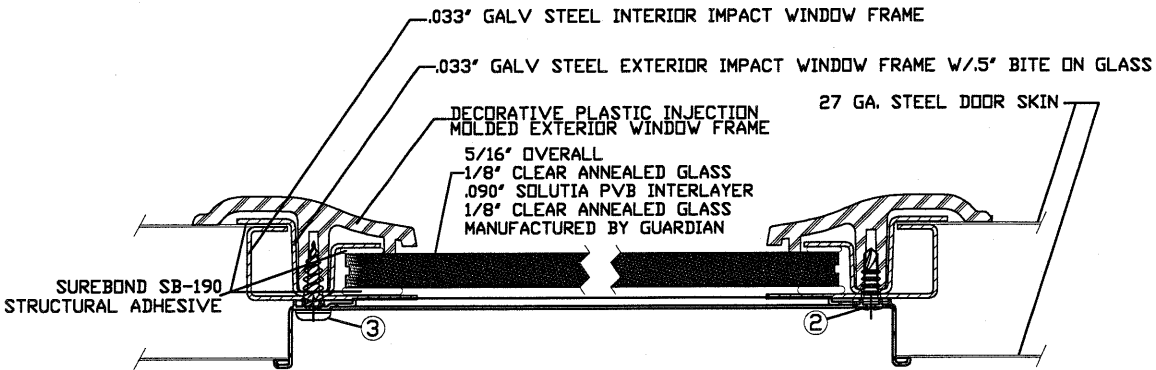
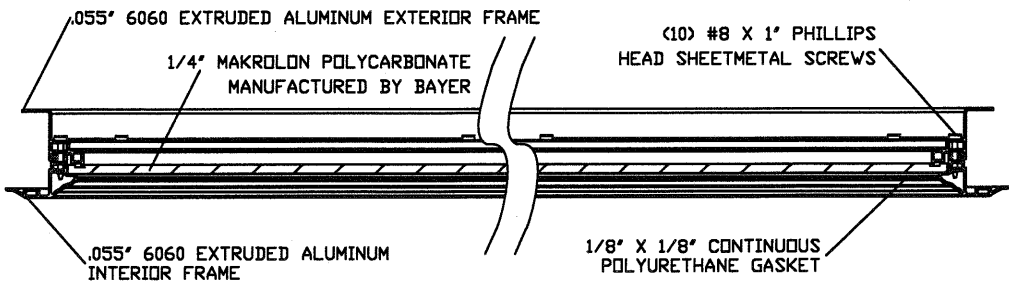
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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| REV                                                                                                                                                                       | DESCRIPTION OF REVISIONS | DATE                                                                                                                                                                                                                                                             | BY                                                                |
|                                                                                                                                                                           |                          |                                                                                                                                                                                                                                                                  |                                                                   |
| <p>MAX SIZE<br/>9' x 14'</p> <p>DESIGN LOADS<br/>+38.0 PSF<br/>-45.0 PSF</p> <p>TEST LOADS<br/>+57.0 PSF<br/>-67.5 PSF</p> <p>LARGE MISSILE<br/>IMPACT<br/>RESISTANCE</p> |                          | <p>Thomas L. Shelmerdine, PE (FL PE #0048579)<br/>Structural Solutions, PA (FL Firm #29412)</p>  <p>FL</p> <p>dba Structural Solutions of North Carolina, Inc.<br/>1700</p> |                                                                   |
|                                                                                      |                          |                                                                                                                                                                                                                                                                  |                                                                   |
| <p>MODEL #1600 AMARR LINCOLN 3000</p> <p>MODEL #1650 AMARR HILLCREST 3000</p>                                                                                             |                          |                                                                                                                                                                                                                                                                  |                                                                   |
| SIZE                                                                                                                                                                      | DRAWN BY                 | R/LR                                                                                                                                                                                                                                                             | DATE 02/6/14                                                      |
| B                                                                                                                                                                         | CHECKED BY               |                                                                                                                                                                                                                                                                  | DATE                                                              |
| ENTREMATIC<br>165 CARRIAGE COURT WINSTON-SALEM, N.C. 27105                                                                                                                |                          |                                                                                                                                                                                                                                                                  | <p>DRAWING NUMBER</p> <p>IRC-1609-155-15-</p> <p>SHEET 2 OF 3</p> |

TABLE 2

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

TABLE 3

| Section | Panel Type | Center Stile Location<br>(Measured from Left Edge) |          | Max Design Loads<br>Allowed |                   |
|---------|------------|----------------------------------------------------|----------|-----------------------------|-------------------|
|         |            | 1st (in)                                           | 2nd (in) | Positive<br>(PSF)           | Negative<br>(PSF) |
| 6' 0"   | Short      | 24.406                                             | 47.594   | 57.0                        | 67.5              |
| 7' 0"   | Short      | 29.200                                             | 54.800   | 48.8                        | 57.8              |
| 7' 2"   | Short      | 30.200                                             | 55.800   | 47.7                        | 56.5              |
| 7' 4"   | Short      | 31.200                                             | 56.800   | 46.6                        | 55.2              |
| 7' 6"   | Short      | 32.200                                             | 57.800   | 45.6                        | 54.0              |
| 7' 6"   | Long       | 45.000                                             |          | 45.6                        | 54.0              |
| 7' 8"   | Short      | 32.200                                             | 60.000   | 44.6                        | 52.8              |
| 7' 8"   | Long       | 46.000                                             |          | 44.6                        | 52.8              |
| 7' 10"  | Short      | 33.000                                             | 61.000   | 43.6                        | 51.7              |
| 7' 10"  | Long       | 47.000                                             |          | 43.6                        | 51.7              |
| 8' 0"   | Short      | 48.000                                             |          | 42.7                        | 50.6              |
| 8' 0"   | Long       | 48.000                                             |          | 42.7                        | 50.6              |
| 8' 2"   | Short      | 49.000                                             |          | 41.8                        | 49.5              |
| 8' 2"   | Long       | 49.000                                             |          | 41.8                        | 49.5              |
| 8' 4"   | Short      | 50.000                                             |          | 41.0                        | 48.6              |
| 8' 4"   | Long       | 50.000                                             |          | 41.0                        | 48.6              |
| 8' 6"   | Short      | 51.000                                             |          | 40.2                        | 47.6              |
| 8' 6"   | Long       | 51.000                                             |          | 40.2                        | 47.6              |
| 8' 8"   | Short      | 52.000                                             |          | 39.4                        | 46.7              |
| 8' 8"   | Long       | 52.000                                             |          | 39.4                        | 46.7              |
| 8' 10"  | Short      | 53.000                                             |          | 38.7                        | 45.8              |
| 8' 10"  | Long       | 53.000                                             |          | 38.7                        | 45.8              |
| 9' 0"   | Short      | 54.000                                             |          | 38.0                        | 45.0              |
| 9' 0"   | Long       | 54.000                                             |          | 38.0                        | 45.0              |



| REV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | DESCRIPTION OF REVISIONS | DATE | BY   |         |                   |     |      |         |                |   |            |  |      |  |                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------|------|---------|-------------------|-----|------|---------|----------------|---|------------|--|------|--|-------------------|
| <div><div>MAX SIZE<br/>9' x 14'</div><div>DESIGN LOADS<br/>+38.0 PSF<br/>-45.0 PSF</div><div>TEST LOADS<br/>+57.0 PSF<br/>-67.5 PSF</div><div>LARGE MISSILE<br/>IMPACT<br/>RESISTANCE</div></div> <div><div>Thomas L. Shelmerdine, PE (FL PE #0048579)<br/>Structural Solutions, PA (FL Firm #29412)</div><div><div>THOMAS L. SHELMERDINE<br/>LICENSE<br/>No. 48579<br/>STATE OF<br/>FLORIDA<br/>PROFESSIONAL ENGINEER<br/>FL</div><div>dba Structural Solutions of North Carolina, Inc.<br/>5921-G W. Friendly Ave., Greensboro, NC 27410</div></div></div> <div><div><b>Amarr</b></div><div>MODEL #1600 AMARR LINCOLN 3000<br/>MODEL #1650 AMARR HILLCREST 3000</div></div> <table border="1"><thead><tr><th>SIZE</th><th>DRAWN BY</th><th>RLR</th><th>DATE</th><th>02/6/14</th><th>DRAWING NUMBER</th></tr></thead><tbody><tr><td>B</td><td>CHECKED BY</td><td></td><td>DATE</td><td></td><td>IRC-1609-155-15-1</td></tr></tbody></table> <div>ENTREMATIC<br/>165 CARRIAGE COURT WINSTON-SALEM, N.C. 27105</div> <div>SHEET 3 OF 3</div> |                          |      |      | SIZE    | DRAWN BY          | RLR | DATE | 02/6/14 | DRAWING NUMBER | B | CHECKED BY |  | DATE |  | IRC-1609-155-15-1 |
| SIZE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | DRAWN BY                 | RLR  | DATE | 02/6/14 | DRAWING NUMBER    |     |      |         |                |   |            |  |      |  |                   |
| B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | CHECKED BY               |      | DATE |         | IRC-1609-155-15-1 |     |      |         |                |   |            |  |      |  |                   |