

HTL

Compliance Test Report



FLORIDA GEORGIA TEXAS
HTLTEST.COM

Acurlite Structural Skylights, Inc.

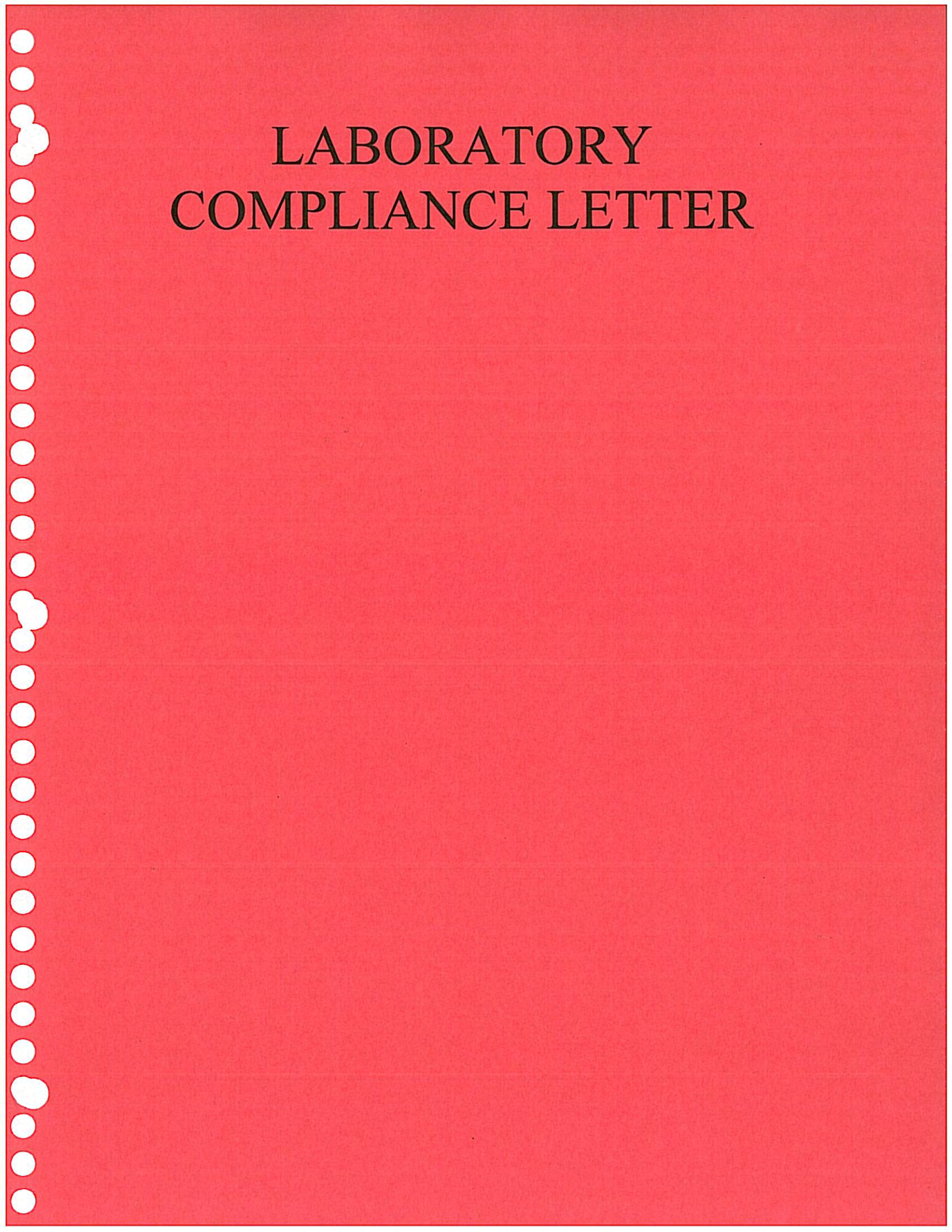
1017 North Vine, Street, P.O. Box 5

Berwick, PA 18603

"Secure Series", Small missile

Specimens 2, 3, & 4

HTL Report #: 0541-0418-09



LABORATORY COMPLIANCE LETTER



CORPORATE HEADQUARTERS

6655 Garden Road
Riviera Beach, Florida 33404
HTLTEST.COM
P: 888.477.2454
F: 561.881.0075

12/14/2009

Keith Mazzie
Acurlite Structural Skylights, Inc.
1017 North Vine Street, P.O. Box 5
Berwick, PA 18603

Re: Secure Series, Small Missile, Specimens 2, 3, & 4

Dear Mr. Mazzie:

Enclosed you will find the test report package for the Secure Series, Small Missile, Specimens 2, 3, & 4 tests that were performed at Hurricane Test Laboratory, LLC (HTL).

This test report package includes the following items:

- Laboratory compliance letter
- HTL test report # 0541-0418-09 (12 pages)
- Acurlite Structural Skylights, Inc. drawing labeled Small Missile Testing (14 sheets)

If you have any questions, please contact our office.

Sincerely,

HURRICANE TEST LABORATORY, LLC

Vinu J. Abraham, P.E.
FL Reg. # 53820



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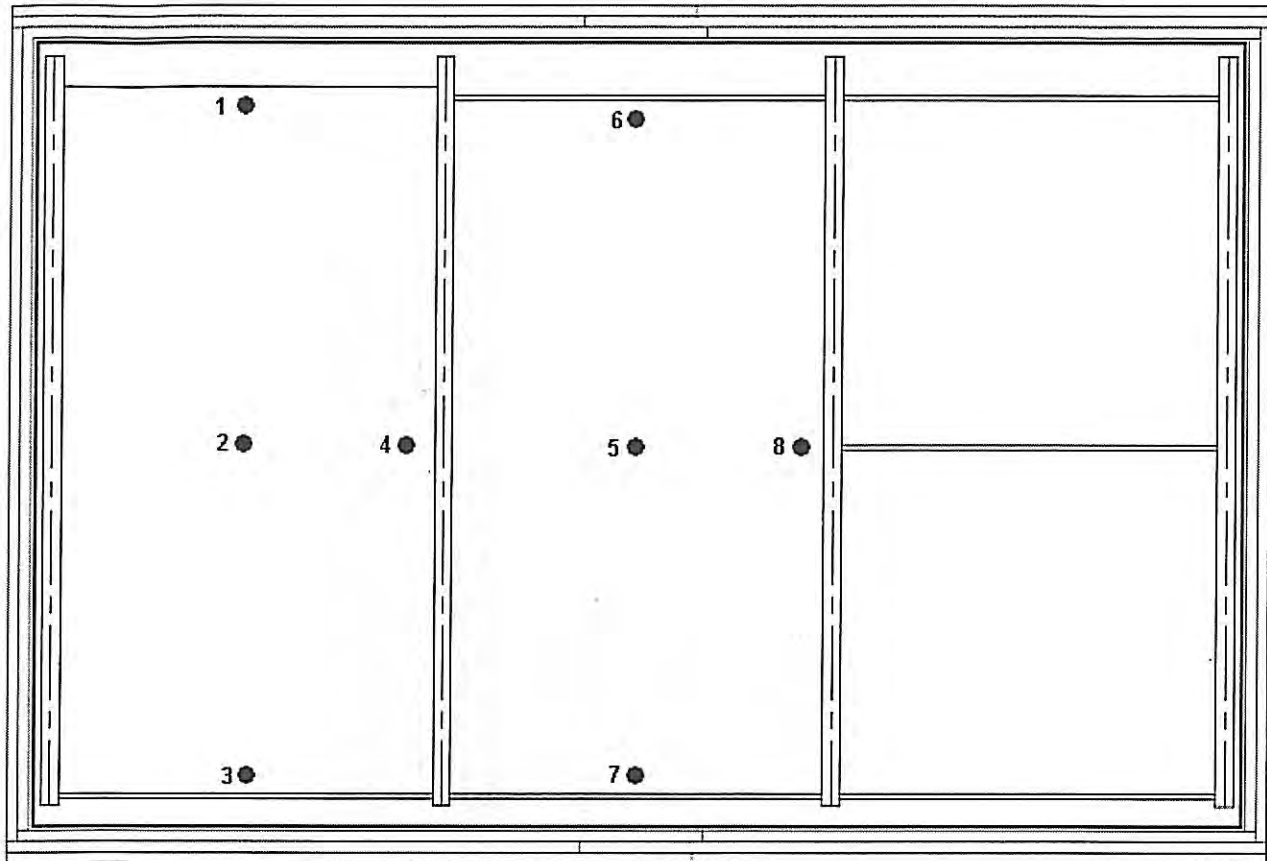
HURRICANE TEST LABORATORY, LLC

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Specimen 4
Figure 8.1: Small Missile Impact Locations

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12/14/2009

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12/14/2009



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8.1.2 Test Results - Small Missile Impact Test

HTL used ten (10) ball bearings with a 5/16" nominal diameter, each weighing between 1.90 and 2.10 grams. Table 8.1 provides the test results for the small missile impact test.

Table 8.1: Small Missile Impact Test Results

Specimen #	Impact #	Missile Velocity (ft/sec)	Glass Temp. (°F)	X Coord. ¹ (in.)	Y Coord. ² (in.)
2	1	130.01	75.7	10.00	54.00
	2	129.53	75.7	30.00	53.50
	3	130.73	75.7	47.75	95.00
	4	130.42	75.7	48.50	11.00
	5	130.74	75.7	65.23	92.00
	6	130.04	75.7	65.75	11.00
	7	129.75	75.7	84.75	53.00
	8	130.70	75.7	104.75	53.75
3	1	130.40	78.0	10.00	52.50
	2	129.27	78.0	31.00	52.50
	3	131.25	78.0	50.50	10.00
	4	129.15	78.0	51.00	95.50
	5	130.58	88.0	64.00	48.50
	6	131.31	88.0	72.00	48.50
	7	130.79	88.0	64.00	6.00
4	1	129.68	76.0	30.50	94.25
	2	130.28	76.0	30.50	53.00
	3	129.15	76.0	30.50	10.00
	4	131.49	76.0	50.50	53.00
	5	130.98	76.0	85.00	53.00
	6	129.93	76.0	85.00	94.25
	7	130.96	76.0	85.00	10.00
	8	130.17	76.0	104.50	53.00

8.1.3 Conclusion - Small Missile Impact Test

The small missiles impacted the intended targets and HTL carefully inspected each impact location. HTL observed no signs of penetration, rupture, or opening after the small missile impact test; as such, these test specimens satisfy the small missile requirements of TAS 201 and ASTM E1886/1996.

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Specimen #: 2, 3, & 4
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11.0 APPLICABLE CODES, STANDARDS, AND TEST METHODS

Florida Building Code TAS 201-94 - Impact Test Procedures
Florida Building Code TAS 202-94 - Criteria for Testing Impact & Nonimpact Resistant Building Envelope Components using Uniform Static Air Pressure
Florida Building Code TAS 203-94 - Criteria for Testing Products Subject to Cyclic Wind Pressure Loading
ASTM E283-04 - Standard Test Method for Determining Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
ASTM E330-02 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference
ASTM E331-00 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
ASTM E1886-05 - Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials
ASTM E1996-06 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes

12.0 WITNESSES (ALL OR PARTIAL)

Vinu J. Abraham, P.E.	CEO	HTL, LLC
Kristin Norville, E.I.	Assistant Operations Manager	HTL, LLC
Alan Rule	Technician	HTL, LLC
Veron Wickham	Technician	HTL, LLC
Ron Pretto	Technician	HTL, LLC
Freddie Henderson	Technician	HTL, LLC
Martin Gibbard	Technician	HTL, LLC
Howard Bennet	Technician	HTL, LLC
Kris Conte	Technician	HTL, LLC
John Spallina	Technician	HTL, LLC

ENGINEER OF RECORD

12/14/2009

REPORT WRITER

12/14/2009



8.2 Cyclic Load Test

8.2.1 Deflection Gage Locations - Cyclic Load Test

Figure 8.2 shows the deflection gage locations for the cyclic load test.

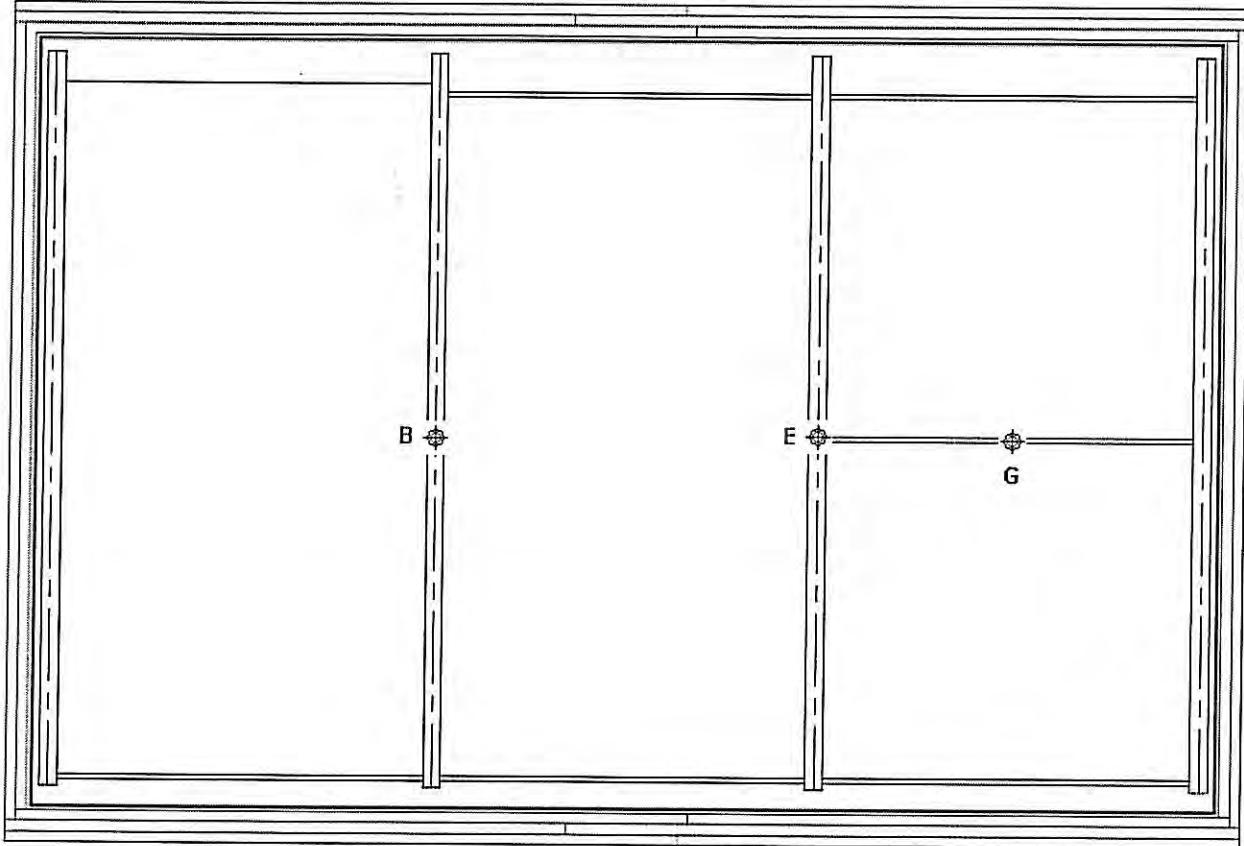


Figure 8.2: Deflection Gage Locations
Cyclic Load Test

8.2.2 Test Spectrum - Cyclic Load Test

Tables 8.2 and 8.3 provide the positive and negative cyclic load test spectrum respectively.

Table 8.2: Positive Load Test Spectrum

Stage	1	2	3	4
Pressure Range (psf)	24.0 – 60.0	0 – 72.0	60.0 – 96.0	36.0 – 120.0
Number of Cycles	3500	300	600	100

Table 8.3: Negative Load Test Spectrum

Stage	5	6	7	8
Pressure Range (psf)	36.0 – 120.0	60.0 – 96.0	0 – 72.0	24.0 – 60.0
Number of Cycles	50	1050	50	3350

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8.2.3 Deflection Results - Cyclic Load Test

Table 8.4 shows the cyclic test results for each test specimen.

Table 8.4: Cyclic Load Test Results

Spec. #	Gage Loc.	Inward (Positive Load)		Outward (Negative Load)	
		Permanent Set		Permanent Set	
		Measured (in.)	Allowed (in.)	Measured (in.)	Allowed (in.)
2	B	0.063	0.212	0.056	0.212
	E	0.200	0.212	0.063	0.212
	G	0.025	0.110	0.000	0.110
3	B	0.202	0.212	0.200	0.212
	E	0.205	0.212	0.100	0.212
	G	0.110	0.110	0.100	0.110
4	B	0.188	0.212	0.188	0.212
	E	0.125	0.212	0.200	0.212
	G	0.105	0.110	0.100	0.110

8.2.4 Conclusion - Cyclic Load Test

Upon completion of the cyclic load test, HTL carefully inspected the test specimens for failures. HTL observed no signs of failure; as such, these test specimens satisfy the cyclic load test requirements of TAS 203 and ASTM E1886/1996.

9.0 SUMMARY

Table 9.1 provides a summary of the test results for Acurlite Structural Skylight's Skylight Systems.

Table 9.1: Summary of Test Results

Specimen #	Test Method	Test Conditions	Test Conclusion
2, 3, & 4	Small Missile Impact Test (TAS 201 and ASTM E1886/E1996)	--	PASS
2, 3, & 4	Cyclic Load Test (TAS 203 and ASTM E1886/E1996)	+/-120 psf Design Pressure	PASS

10.0 CERTIFICATION AND DISCLAIMER STATEMENT

All tests performed on these test specimens were conducted in accordance with the specifications of the applicable codes, standards and test methods listed below by HTL, LLC. HTL, LLC does not have, nor does it intend to acquire or will it acquire, a financial interest in any company manufacturing or distributing products tested at HTL. HTL is not owned, operated or controlled by any company manufacturing or distributing products it tests. This report is only intended for the use of the entity named in Section 1.0 of this report. Detailed assembly drawings showing wall thickness of all members, corner construction and hardware applications are on file and have been compared to the test specimens submitted. A copy of this test report along with representative sections of the test specimen will be retained at HTL for a period of three (3) years. All results obtained apply only to the specimens tested and they do indicate compliance with the performance requirements of the test methods and specifications listed in the following section.

ENGINEER OF RECORD

12/14/2009

REPORT WRITER

12/14/2009

**CORPORATE HEADQUARTERS**

6655 Garden Road
Riviera Beach, Florida 33404
HTLTEST.COM
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F: 561.881.0075

12/14/2009

Jaime D. Gascon
Miami-Dade Building Code Compliance Office
Metro-Dade Flagler Building, Suite 1603
140 West Flagler Street
Miami, Florida 33130-1563

Re: Laboratory Compliance Letter (HTL09035)

Dear Mr. Gascon:

The tests described in the reports for the below jobs and specimen numbers have been performed in full accordance of the requirements of the Florida Building Code, with no deviations.

Job #	Specimen #'s	TAS 201	TAS 203	TAS 202		
				AIR	WATER	STATIC
0541-0418-09	2, 3, 4	X	X			

If you have any questions, please contact our office.

Sincerely,

HURRICANE TEST LABORATORY, LLC

Vinu J. Abraham, P.E.
FL Reg. # 53820

TEST REPORT



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6655 Garden Road
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(561)-881-0020
HTLTEST.COM

Test Report #: 0541-0418-09
Report Expiration: 12/14/2014
Specimen #: 2, 3, & 4
Page: 1 of 12

Acurlite Structural Skylights, Inc.

Secure Series, Small Missile

Test Report #: 0541-0418-09

1.0 MANUFACTURER'S IDENTIFICATION

- 1.1 Name of Applicant: Acurlite Structural Skylights, Inc.
1017 North Vine Street, P.O. Box 5
Berwick, PA 18603
Voice: 570.759.6882
Fax: 570.759.9552
- 1.2 Contact Person: Keith Mazzie

2.0 LABORATORY IDENTIFICATION

- 2.1 HTL Test Notification: HTL09035
- 2.2 HTL Lab Certifications: Miami-Dade County (05-1014.01); Florida Building Code (TST1527); IAS (TL-244); AAMA; WDMA; Keystone Certificate; Texas Department of Insurance

3.0 SCOPE OF WORK

- 3.1 Introduction
Acurlite Structural Skylights, Inc. retained HTL, LLC to conduct on their Secure Series Large Missile Structural Skylights to the requirements of the Florida building code (HVHZ) specifically test standards TAS 201, TAS 202, and TAS 203
- 3.2 Report Information
Table 3.1 provides the test dates for each mock-up and specimen number.

Table 3.1: Specimen Test Dates

Specimen #	Test Date
2	4/28/09 – 4/29/09
3	4/29/09 – 7/01/09
4	4/27/09 – 4/28/09

4.0 PRODUCT IDENTIFICATION

- 4.1 Product Type: Structural Skylight
- 4.2 Model Designation: Large Missile
- 4.3 Performance Class: +/- 120 psf
- 4.4 Overall Size:

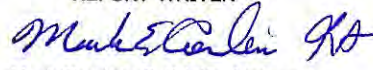
Specimen	Overall Size
2, 3, 4	169-1/4" (w) x 108-27/32" (h)

- 4.5 Configuration: Fixed

ENGINEER OF RECORD


Vinu J. Abraham, P.E.
FL Reg. #53820
12/14/2009

REPORT WRITER


Mark Creslein & Kristin Ahders

12/14/2009



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HTLTEST.COM

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Specimen #: 2, 3, & 4
Page: 2 of 12

4.6 Drawing:

This test report is incomplete if not accompanied by Acurlite Structural Skylights, Inc. drawing labeled "Plans and Elevations" (sheets 1 through 14) bearing the ink stamp of Hurricane Test Laboratory, LLC.

4.7 Sample Source:

Acurlite Structural Skylights, Inc.

5.0 PRODUCT DESCRIPTION

5.1 Frame Construction

The framing members were fabricated using the aluminum extrusions defined in Table 5.1.

Table 5.1: Aluminum Extrusion Details

Description	Part #	Overall Cross-Section	Alloy
Rafter	H08858	2.500" x 8.000" x 0.125"	6061-T6
Large Purlin	H08857	2.500" x 4.000" x 0.100"	6061-T6

Typical Frame Corner Construction: In this configuration the rafter member was notched and ran through while the purlin was also notched and received by the adjacent rafter. Once in place the purlin was fastened into place using two (2) #14 x 1-1/2" HWH Tek Screws per each end for a total of four (4) per purlin.

Angle Spacers and Flashings at Jamb locations: At jamb locations a 0.040" formed aluminum closure flashing was mechanically fastened to a 0.040" aluminum angle spacer using 1/8" x 1/4" aluminum pop rivets spaced 12" on center. The aluminum angle spacer was then mechanically fastened to the adjacent purlin using #12 x 1" HWH Tek Screws spaced at 12" on center.

NOTE: The flashings varied in shape and size depending on the condition to which they were installed. However, they all maintained the same thickness/alloy and installation method as described above.

5.2 Pressure Plate and Snap Cover Assembly

Table 5.2 provides the extrusions used in the pressure plate and snap cover assemblies.

Table 5.2: Pressure Plate and Snap Cover Details

Description	Part #	Overall Cross-Section	Alloy
Pressure Cap	S35591	2.321" 0.368" x 0.090"	6061-T6
Cover Cap	S08545	2.500" x 0.562" x 0.055"	6061-T6
Formed Cover Cap	FCC-1	3.937" x 0.593" x 0.040"	3003
Formed Pressure Cap	FPC-1	2.516" x 0.500" x 0.125"	3003

Pressure Cap Assembly: At all Rafters including Jamb, Gable Heads, Gable Posts, the respective pressure caps were attached to the rafters using 1/4-20 x 1-3/4" HWH Type F screws with a cap bead of sealant over the head of the screw. The cover cap was snap fit to the purlin pressure cap (Part #S35591).

5.3 Sill, Ridge, & Horizontal Assembly

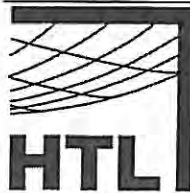
Please see drawing Acurlite Small Missile Testing page 10 of 14 for details.

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Specimen #: 2, 3, & 4
Page: 4 of 12

Table 5.3: Daylight Opening and Glass Bite Details con't.

Specimen #	Glazing Material Type	Location	Daylight Opening	Glass Bite
4	A	Left Lite	97-1/16" (w) x 52-1/4" (h)	
	B	Middle Lite	94-1/4" (w) x 52-1/4" (h)	
	A	Top Right Lite	45-7/8" (w) x 52-1/4" (h)	
	B	Bottom Right Lite	45-7/8" (w) x 52-1/4" (h)	

5.6 Weather Stripping
None Used.

5.7 Weep Holes, Water Diverters, and Covers
See Acurlite Structural Skylights, Inc. drawing labeled "Plans and Elevations" sheet 10 of 12 for weepage details.

5.8 Sealants Used
Table 5.4 provides a summary of the sealants used in each test specimen.

Table 5.4: Sealant Details

Location	Sealant Description
Perimeter Sealant	Dow Corning 795 Silicone Sealant
Glazing Sealant	Dow Corning 995 Silicone Sealant

6.0 PRODUCT INSTALLATION

Table 6.0 provides a detailed summary of the product installation.

Specimen #	Location	Fastening Components	Fastening Description
2, 3, 4	Intermediate Rafters at Head and Sill locations	Two (2) 3/8" x 3" x 3" x 8" long structural aluminum angles per intermediate rafter and the head and sill locations. Two (2) 1/2-13 x 4-1/2" HH cap screws with finish nut, lock washer and flat washer. Four (4) 1/2" x 4" HH Lag Screws w/ Flat Washer	Each side of the intermediate rafters had a 3/8" x 3" x 3" x 8" long structural aluminum angle. Two (2) 1/2-13 x 4-1/2" HH cap screws with lock and flat washers, were put through one side of the rafter through both angles, it was drilled into a finish nut on the other side. Four (4) 1/2" x 4" HH Lag Screws w/ Flat Washer were used on each side of the rafter to fasten the angles to the wood substrate.

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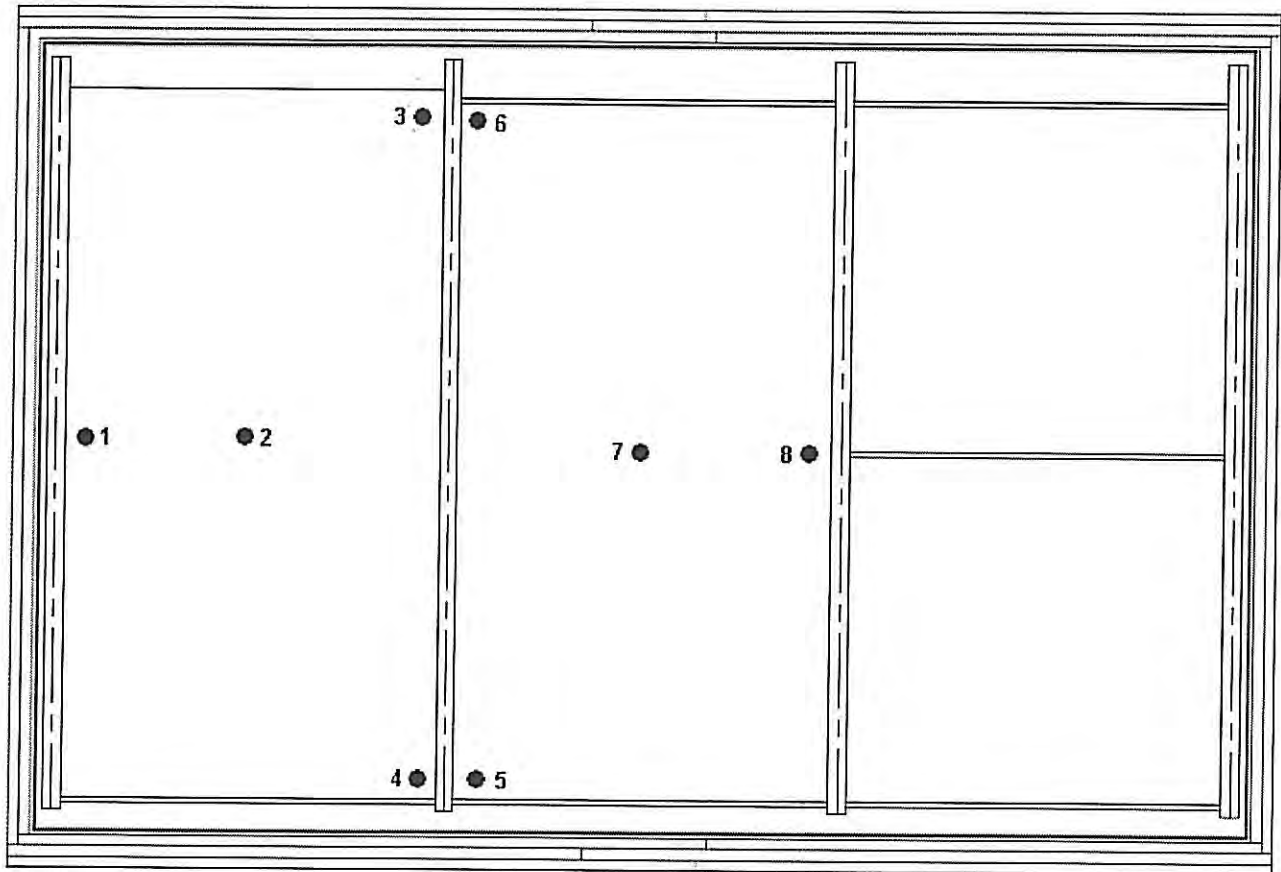
Test Report #: 0541-0418-09
Report Expiration: 12/14/2014
Specimen #: 2, 3, & 4
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8.0 TEST RESULTS

8.1 Small Missile Impact Test

8.1.1 Small Missile Impact Locations

Figure 8.1 shows the small missile impact location for the specimens tested.



Specimen 2

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12/14/2009

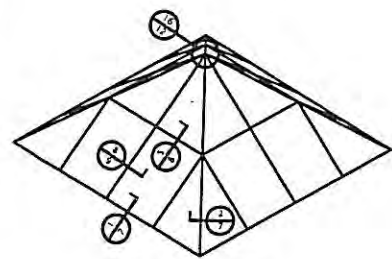


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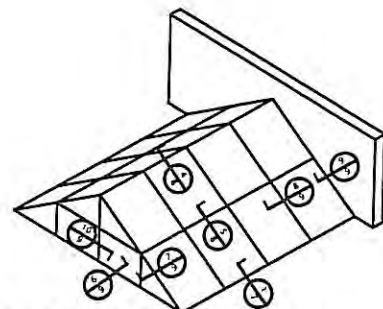
Test Report #: 0541-0418-09
Report Expiration: 12/14/2014
Specimen #: 2, 3, & 4

APPENDIX A:
Acurlite Structural Skylights, Inc.
Drawings labeled:
Small Missile Testing (sheets 1-14)

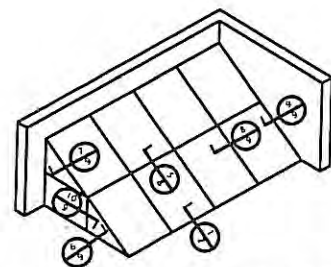
SMALL MISSILE TESTING ✓



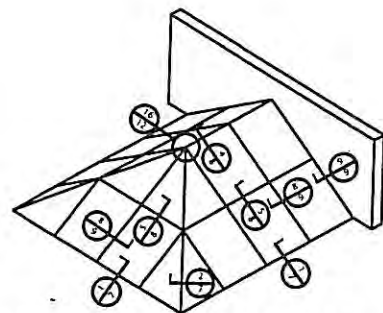
PYRAMID



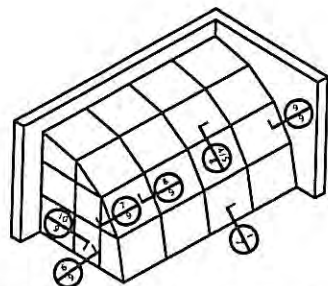
DOUBLE PITCH WITH GABLE



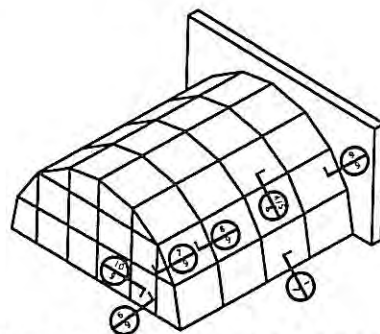
SINGLE PITCH WITH GABLE



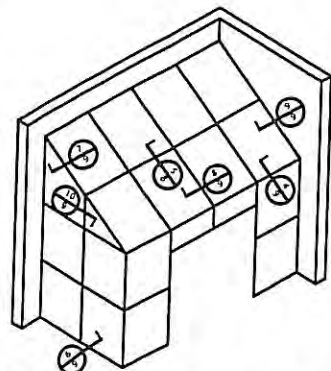
DOUBLE PITCH WITH HIP



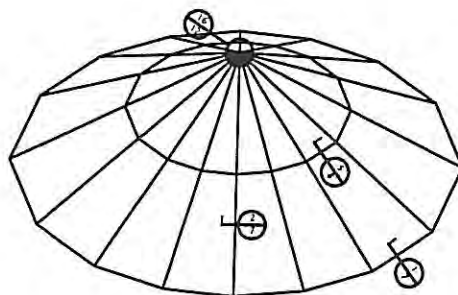
SEGMENTED BARRELL QUATER VAULT
WITH GABLE



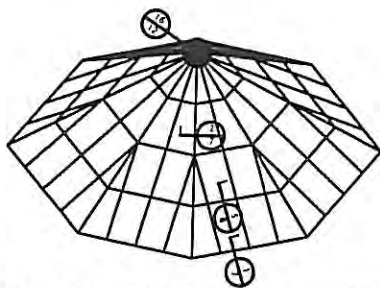
SEGMENTED BARRELL HALF VAULT
WITH GABLE



STRAIGHT EAVE LEAN-TO
WITH GABLE



POLYGON



POLYGON WITH JACK RAFTERS



Tested Under
Observed Notes

0541-0418-09
12-19-2009

DADE COUNTY USE		ENGINEER STAMP

acurlite
engineering light
Acurlite International Engineering Inc.
1807 North West Avenue, Suite 100
Tampa, FL 33609
© 1998-2009 acurlite sales@acurlite.com

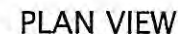
11/10/09

SMALL MISSILE TESTING ✓

COVERSHEET

DATE: 7/24/09
SCALE: NONE
DRAWN BY: K. MAZZIE
CHECKED BY: [blank]

(1) UNIT REQUIRED AS SHOWN
SPECIMEN # 1B



SCALE : $3/4" = 1'-0"$

SEAL INTERSECTION OF ALL PRESSURE CAPS
AND COVER CAPS. USE DOW CORNING 795



SCALE : $3/4" = 1'-0"$

3/8 X 3 X 3 X 4 LONG
INTERMEDIATE PURLIN SUPPORT ANGLE
ATTACH TO CURB USING 1/2-13 HEX HD TAP BOLT
DRILL AND TAP INTO STEEL
ATTACH TO PURLIN USING (4) #12 X 1 H.W.H. TEK SCREWS
QUANTITY, SIZE AND REQUIREMENT OF SUCH BASED ON
SIZE AND GEOMETRY OF SKYLIGHT
(NOT PART OF PRODUCT APPROVAL)



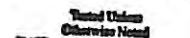
SCALE : 3/4" = 1'-0"



SCALE : 3/4" = 1'-0"



SCALE : $3/4" = 1'-0"$



DATE _____
JOB # _____

0341-0418-09
12-14-2009

NOTES:
1. SEE SHEET 6 OF 14 FOR GLASS SIZES AND TYPES.

DADE COUNTY USE

ENGINEER STAMP

SMALL MISSILE TESTING

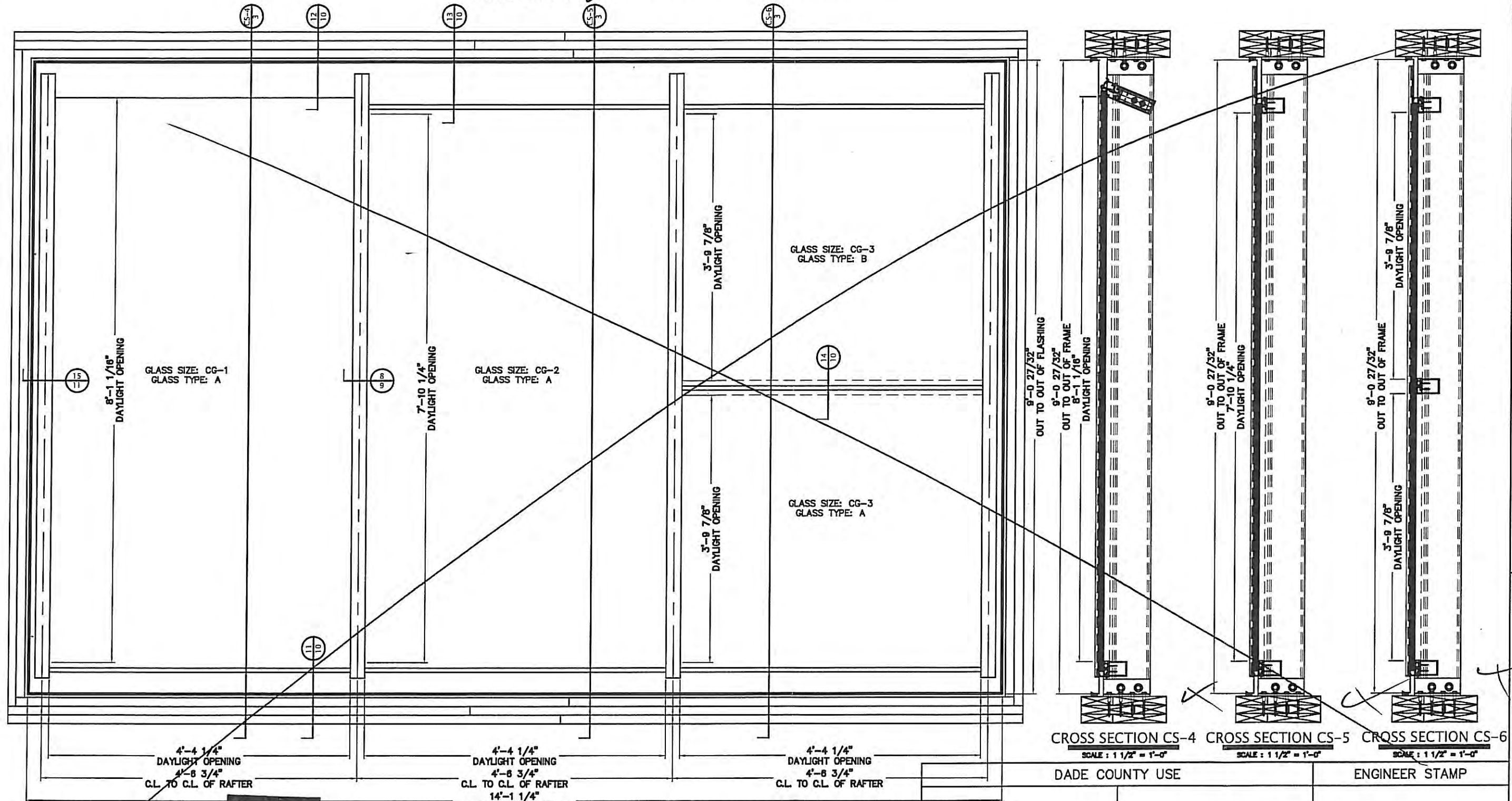
PLANS AND ELEVATIONS

MAZZIE
4/09
NOTED

2 of 14

TAS 201 AND 203-94 SMALL MISSILE IMPACT AND CYCLIC TEST SPECIMEN @ 120 PSF

SPECIMEN # 2 (1) UNIT REQUIRED AS SHOWN



TEST SPECIMEN ELEVATION
SCALE: 1 1/2" = 1'-0"

Not This
Report

NOTES:
1. SEE SHEET 8 OF 14 FOR GLASS SIZES AND TYPES.



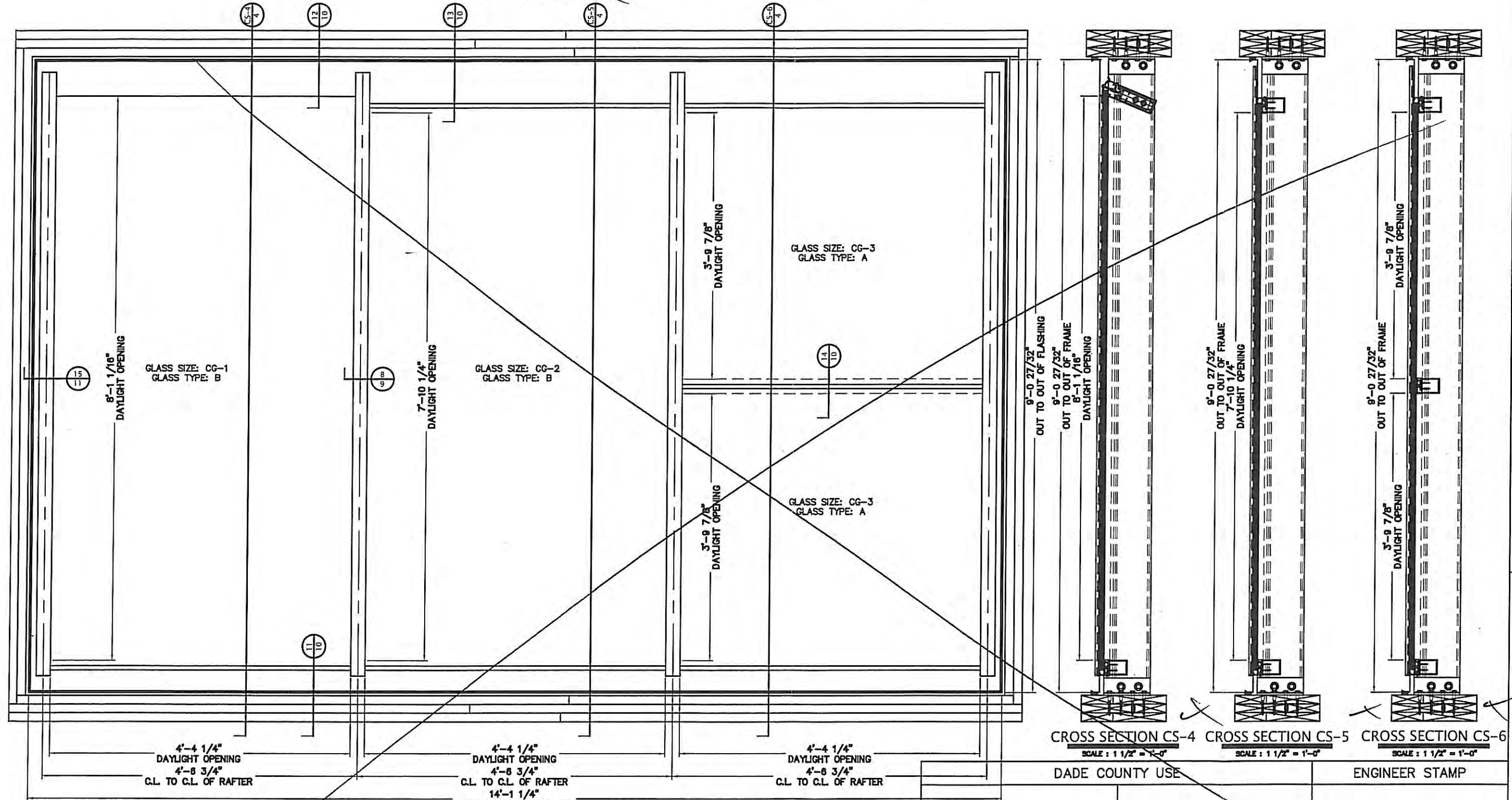
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SMALL MISSILE TESTING
PLANS AND ELEVATIONS

DATE: 7/24/09
SCALE: AS NOTED
SHEET: 3 of 14

TAS 201 AND 203-94 SMALL MISSILE IMPACT AND CYCLIC TEST SPECIMEN @ 120 PSF

SPECIMEN # 3 (1) UNIT REQUIRED AS SHOWN



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DATE
JOB #

0541-0418-09
12-14-2009

NOTES:
1. SEE SHEET 6 OF 14 FOR GLASS SIZES AND TYPES.

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engineering light
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Baltimore, MD 21208
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SMALL MISSILE TESTING

PLANS AND ELEVATIONS

DESIGNED BY
K. MAZZIE

CHECKED BY
7/24/09

AS NOTED
EXAMINE FILE

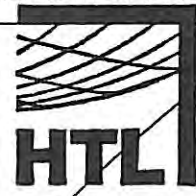
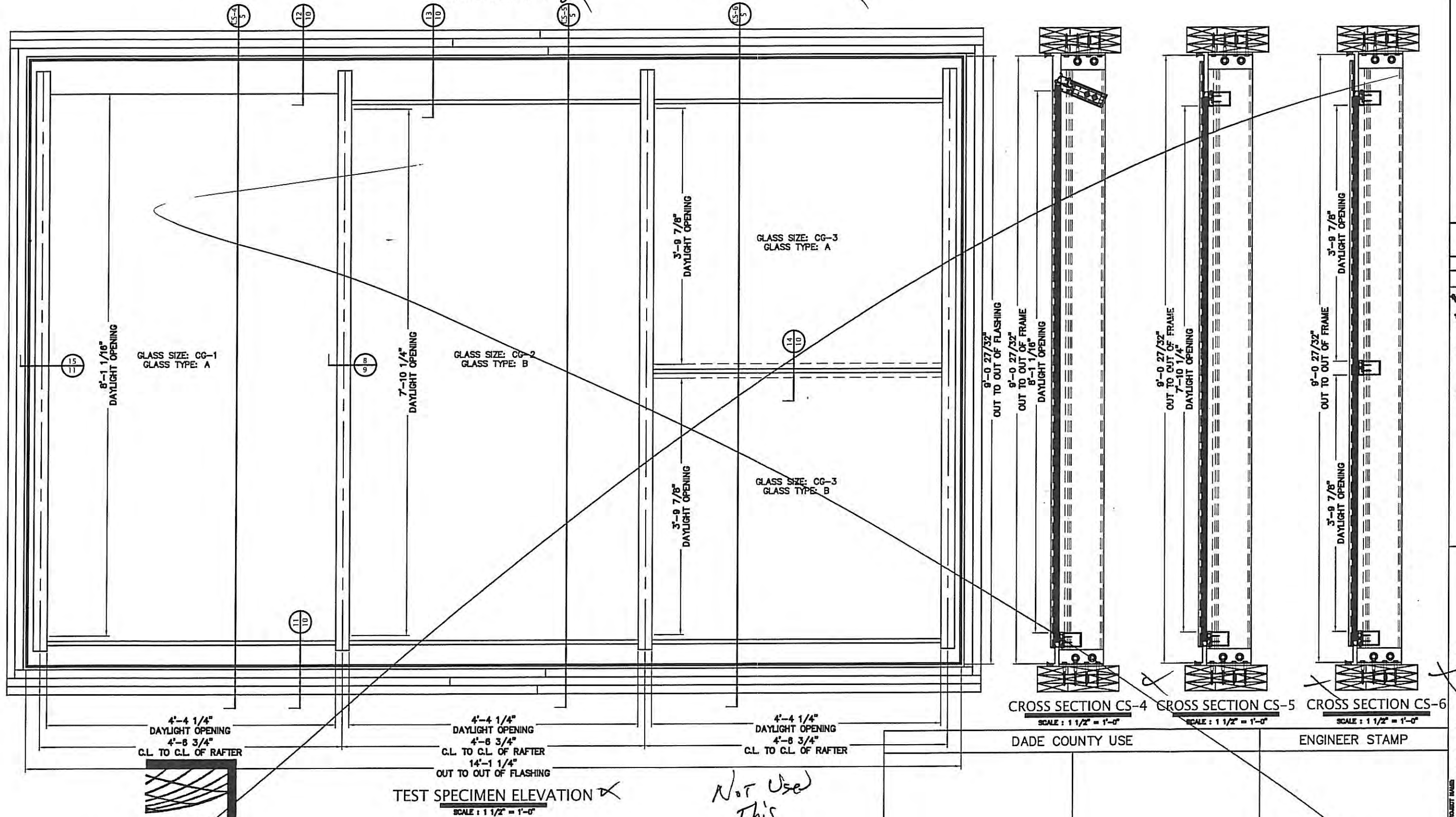
SHEET

4 of 14

TAS 201 AND 203-94 SMALL MISSILE IMPACT AND CYCLIC TEST SPECIMEN @ 120 PSF

(1) UNIT REQUIRED AS SHOWN

SPECIMEN # 4



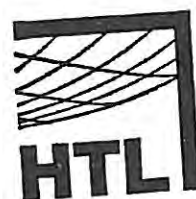
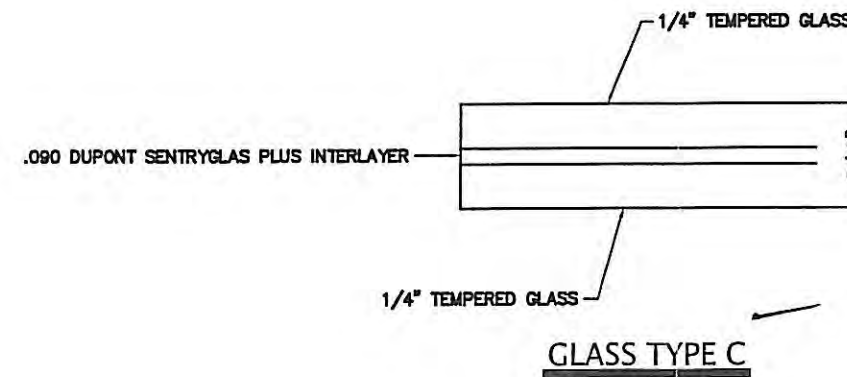
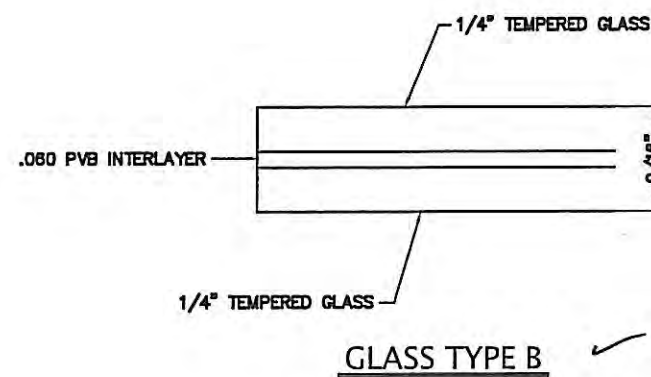
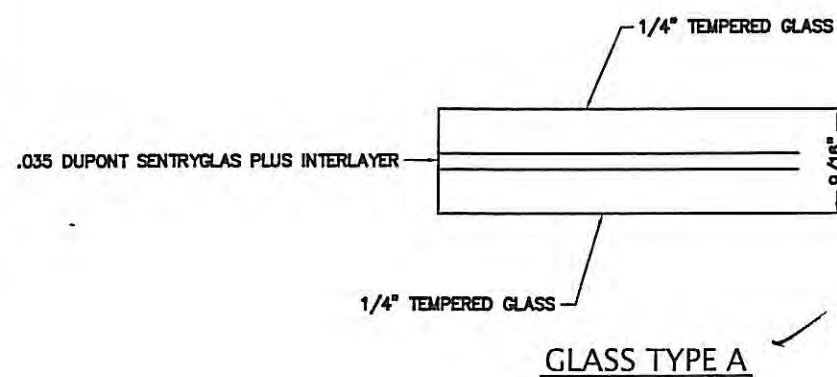
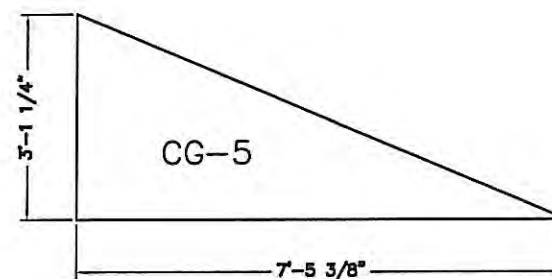
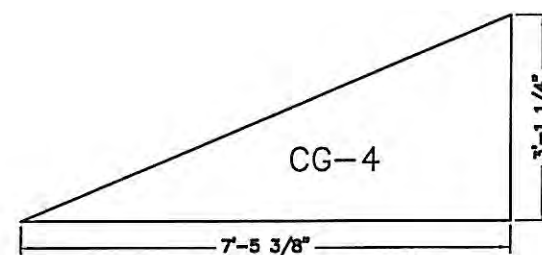
0541-0918-09
12-14-2009

NOTES:
1. SEE SHEET 6 OF 14 FOR GLASS SIZES AND TYPES.

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acurite engineering light Acurite Engineering Light Inc. 1007 West View Road, PO Box 8 Bensalem, PA 19006 © 11/10/09 sales@acurite.com		REVISION NO. DATE BY
SMALL MISSILE TESTING PLANS AND ELEVATIONS		DATE 7/24/09 SCALE AS NOTED DRAWING FILE
5 of 14		DEPARTMENT

	SIZE
CG-1	54 x 99
CG-2	54 x 96
CG-3	54 x 49 5/8
CG-4	SEE PATTERN
CG-5	SEE PATTERN

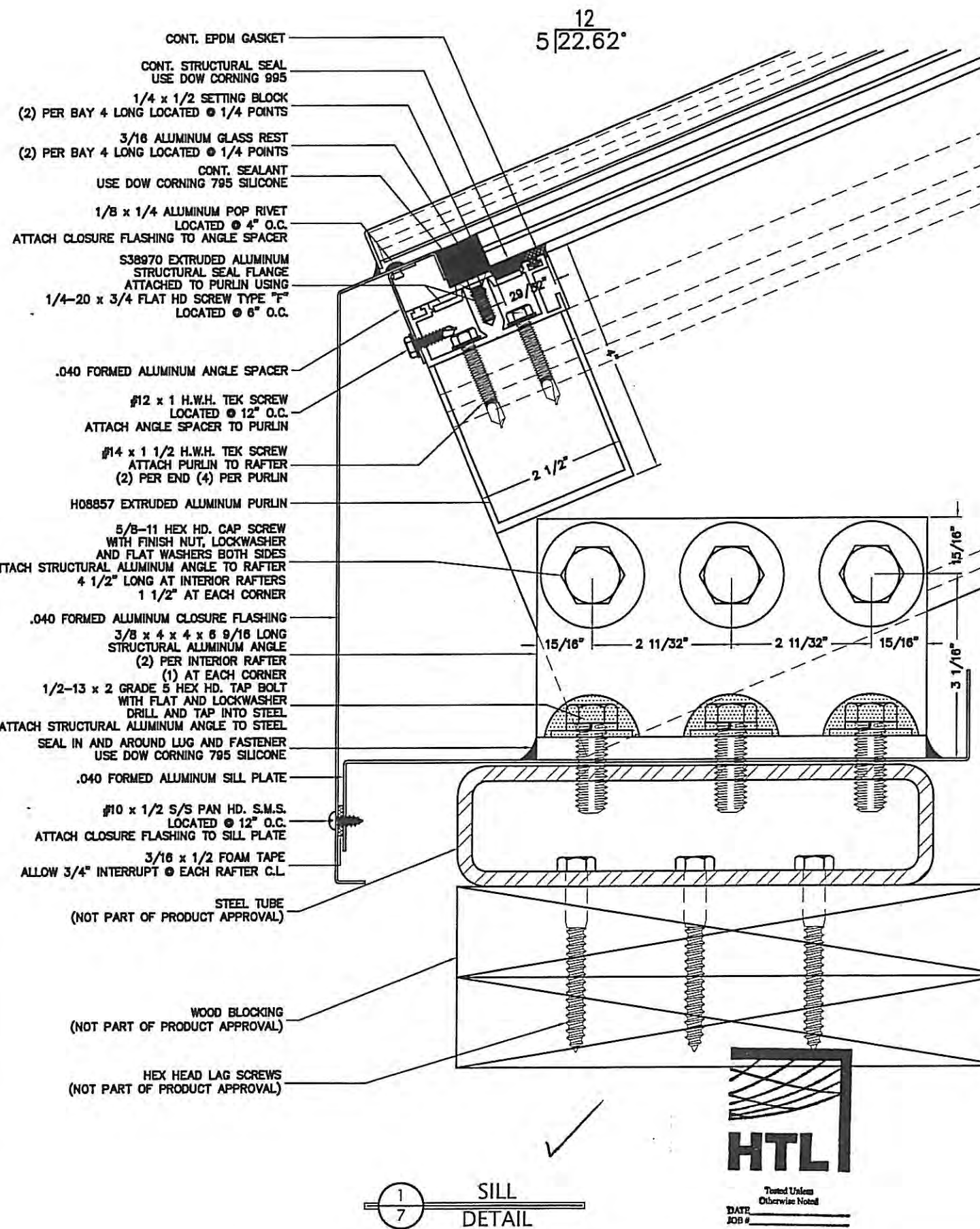


DATE _____
JOB # _____
6541-0418-09
12-14-2009

DADE COUNTY USE		ENGINEER STAMP
		PROJECT NAME SMALL MISSILE TESTING
		DESIGNED BY K. MAZZIE
		CHECKED BY 7/24/09
		DATE 12-14-2009
		GLAZING GLAZING
		6 of 14 6 of 14

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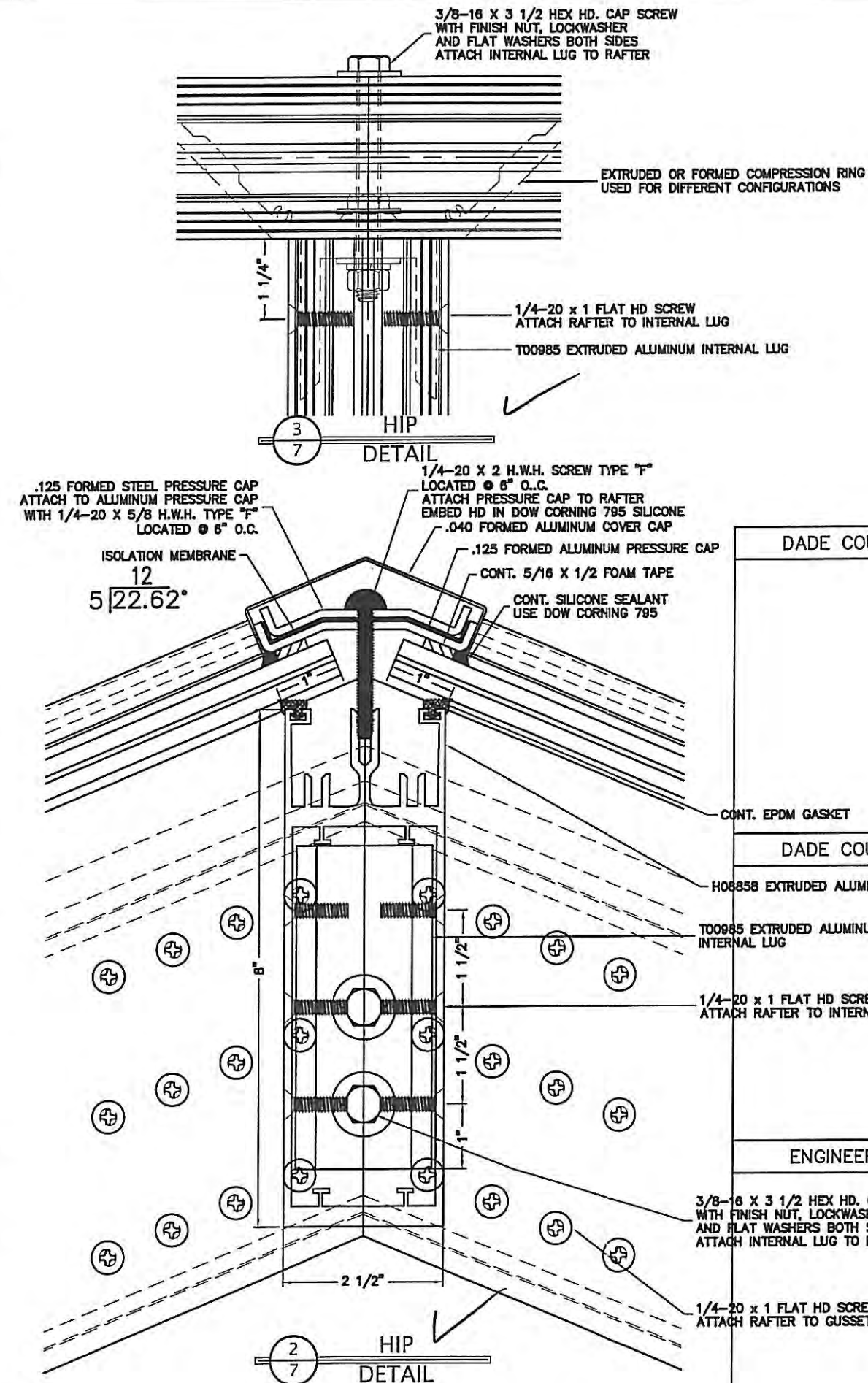


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DATE
JOB #

0541-0428-09
12-14-2009



NOTES:
1. SEE SHEET 6 OF 14 FOR GLASS SIZES AND TYPES.

DADE COUNTY USE

DADE COUNTY USE

ENGINEER STAMP

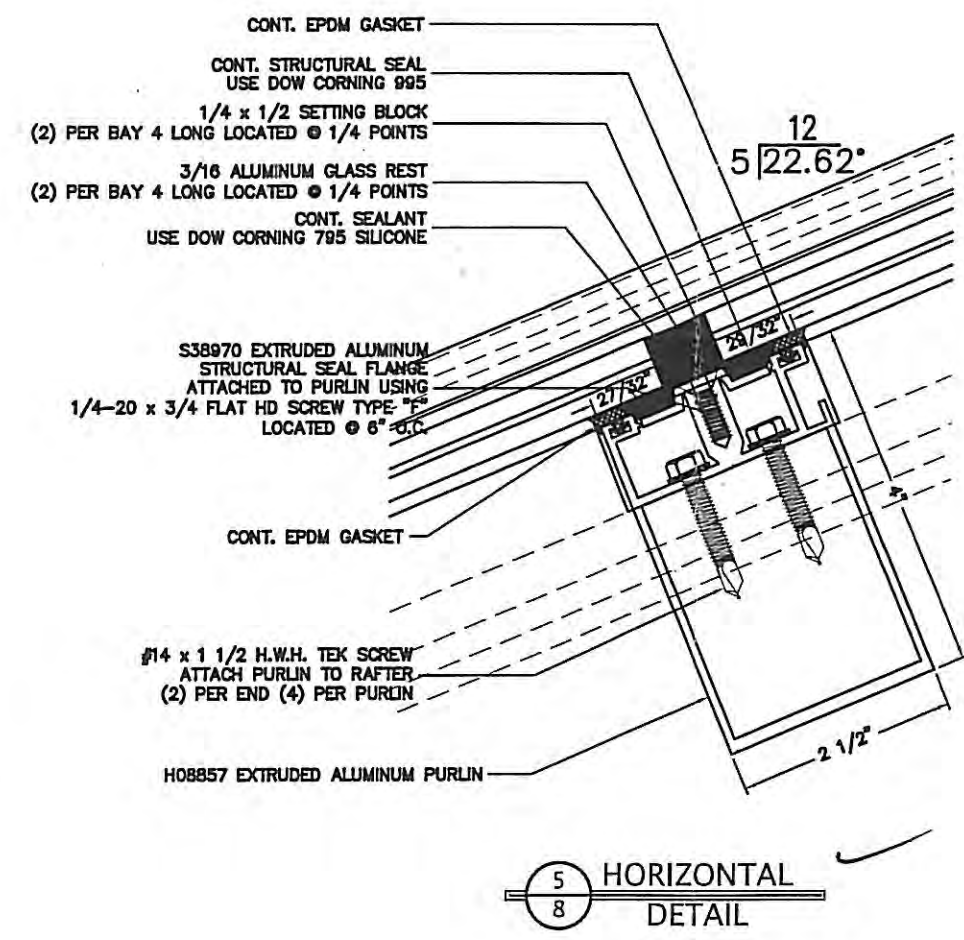
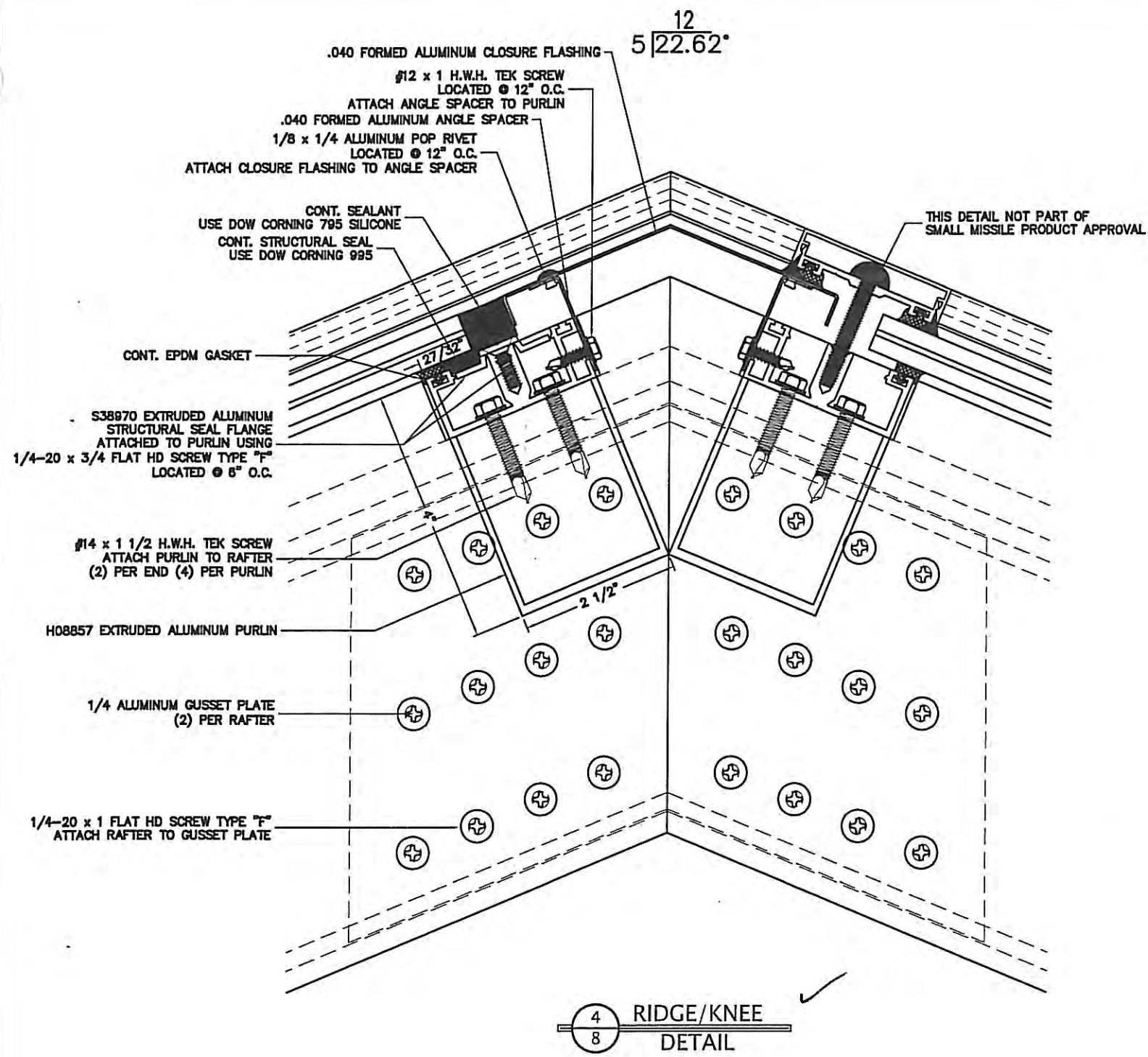
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11/10/08

SMALL MISSILE TESTING

PROJECT NO.
OWNER
DESIGNED BY
DATE
7/24/09
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DATE
7/24/09
APPROVED BY

7 of 14



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DATE
JOB #

0541-0418-09
12-14-2009

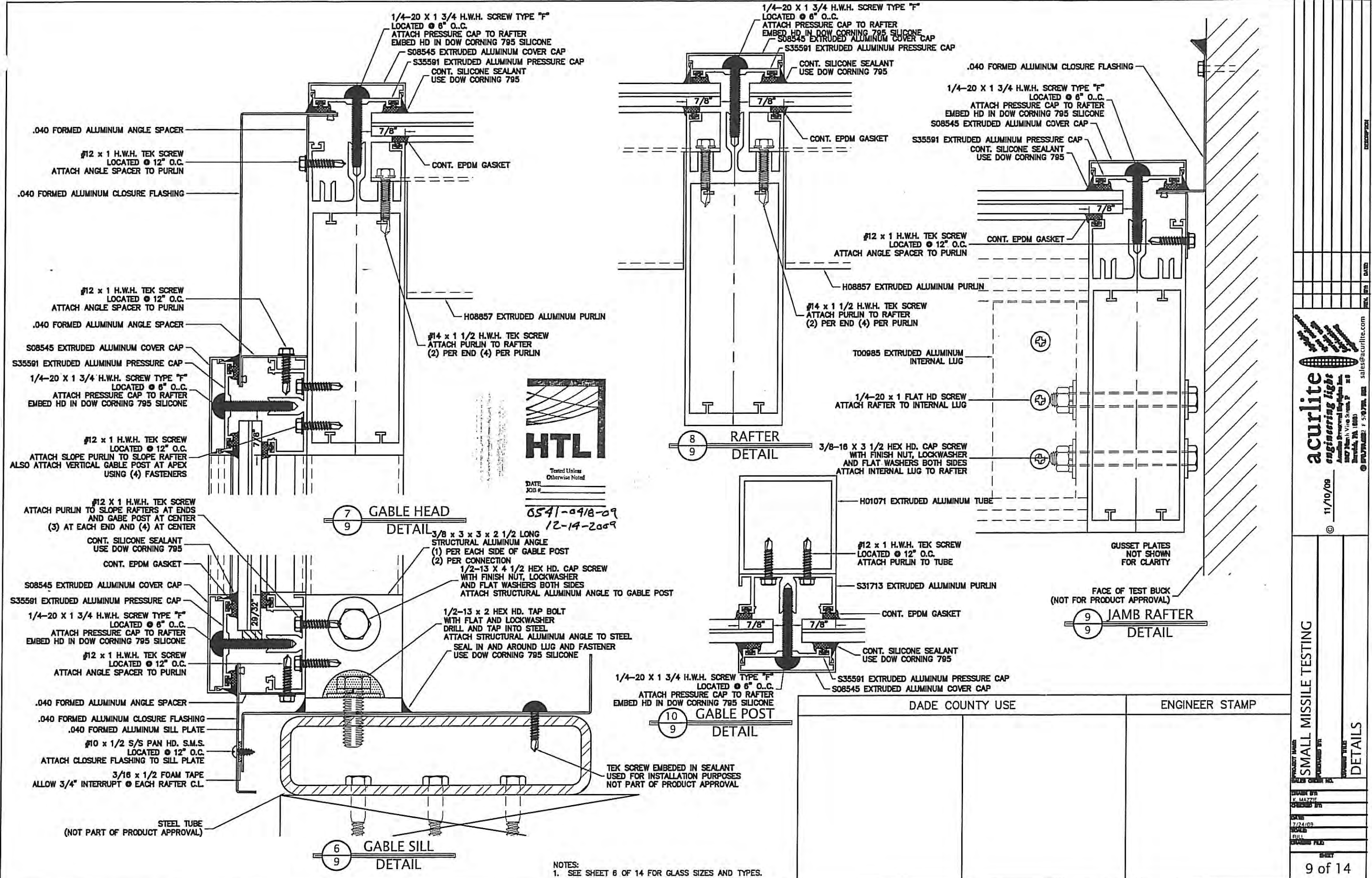
NOTES:
1. SEE SHEET 6 OF 14 FOR GLASS SIZES AND TYPES.

DADE COUNTY USE		ENGINEER STAMP

PROJECT NAME	SMALL MISSILE TESTING
DATE	11/10/09
DESIGNED BY	K. MAZZIE
CHECKED BY	
DATE	7/24/09
FILED	
PROJECT FILE	
SHEET	8 of 14

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engineering lights
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DETAILS



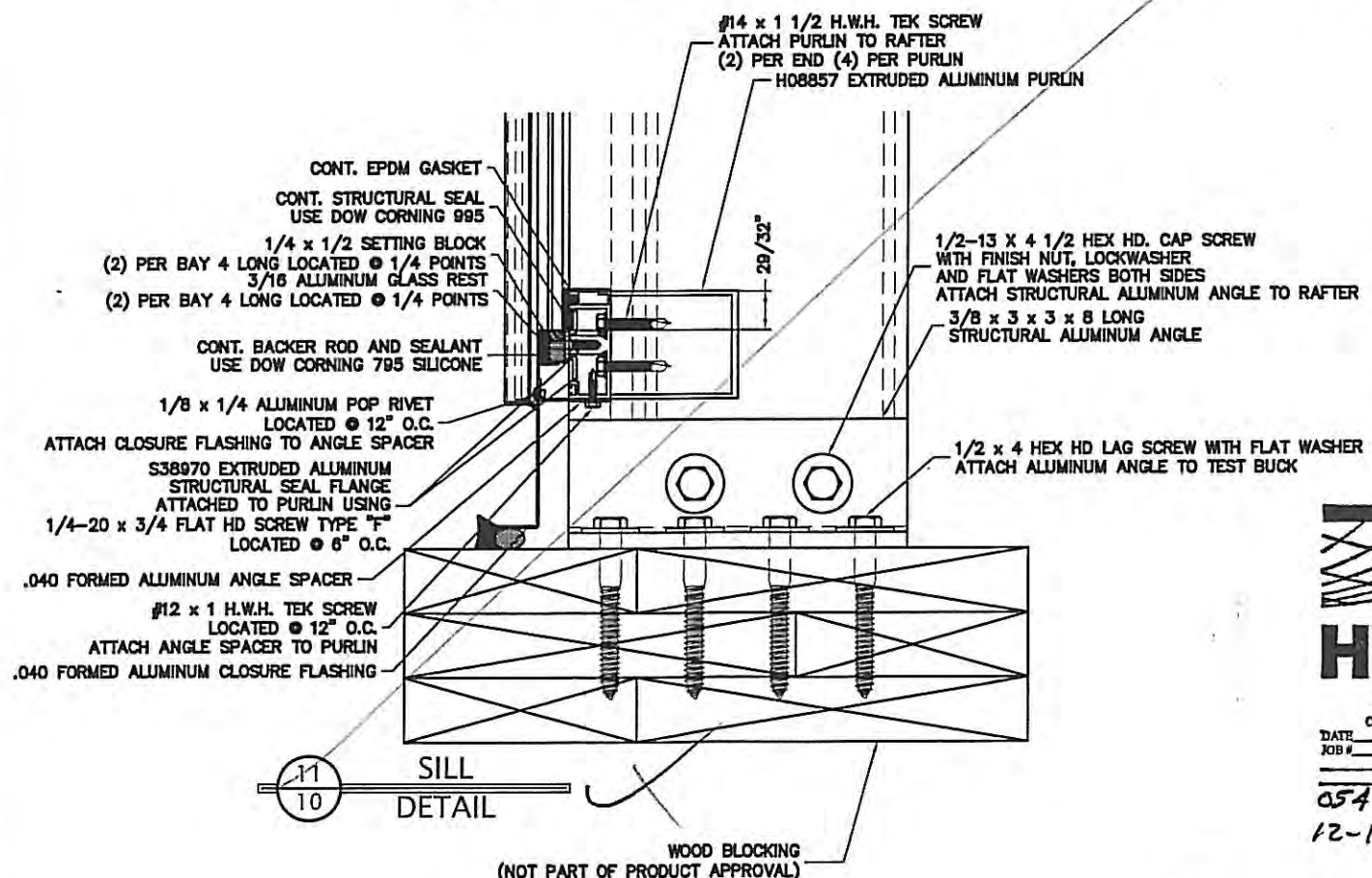
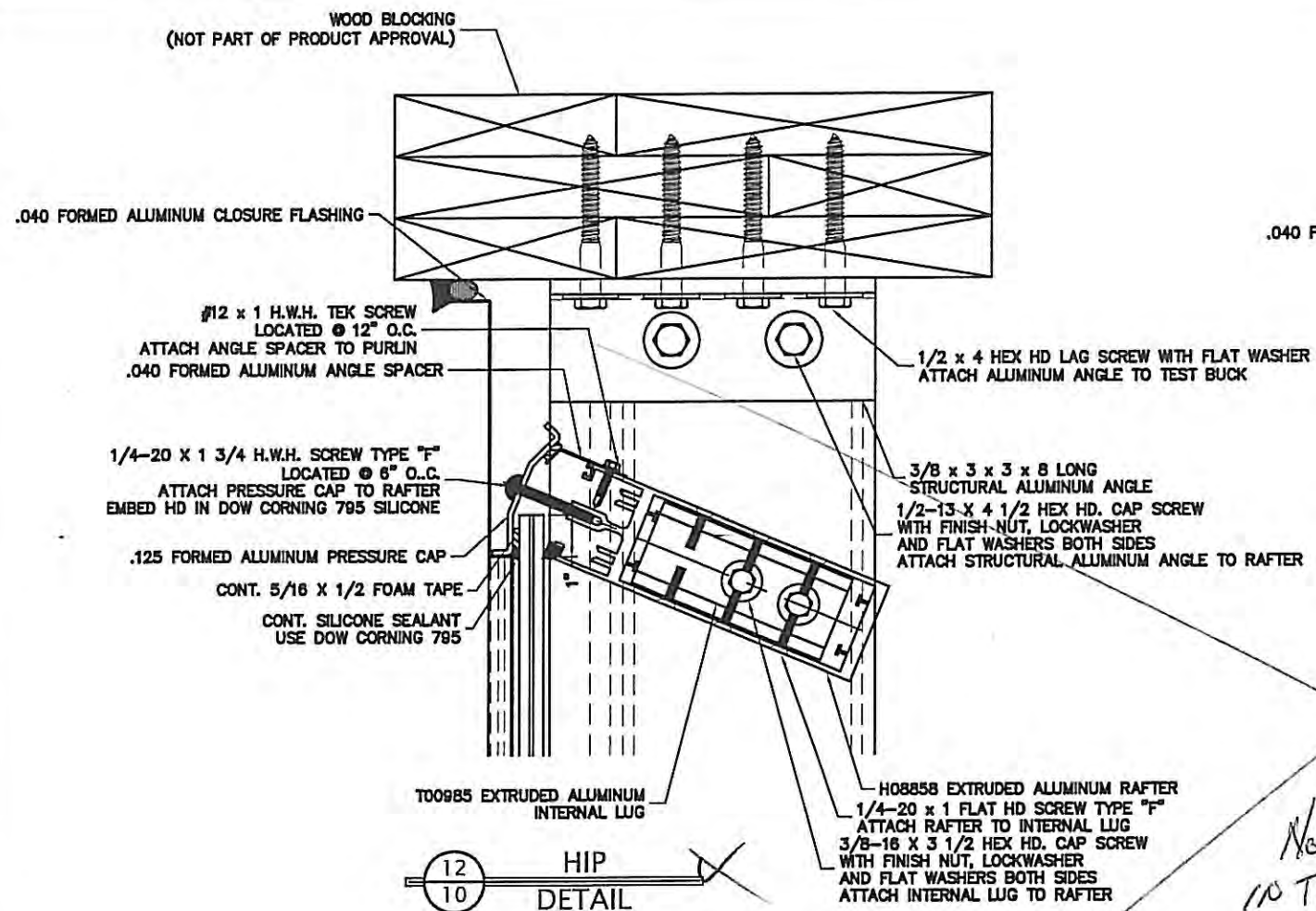
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SMALL MISSILE TESTING

DETAILS

9 of 14



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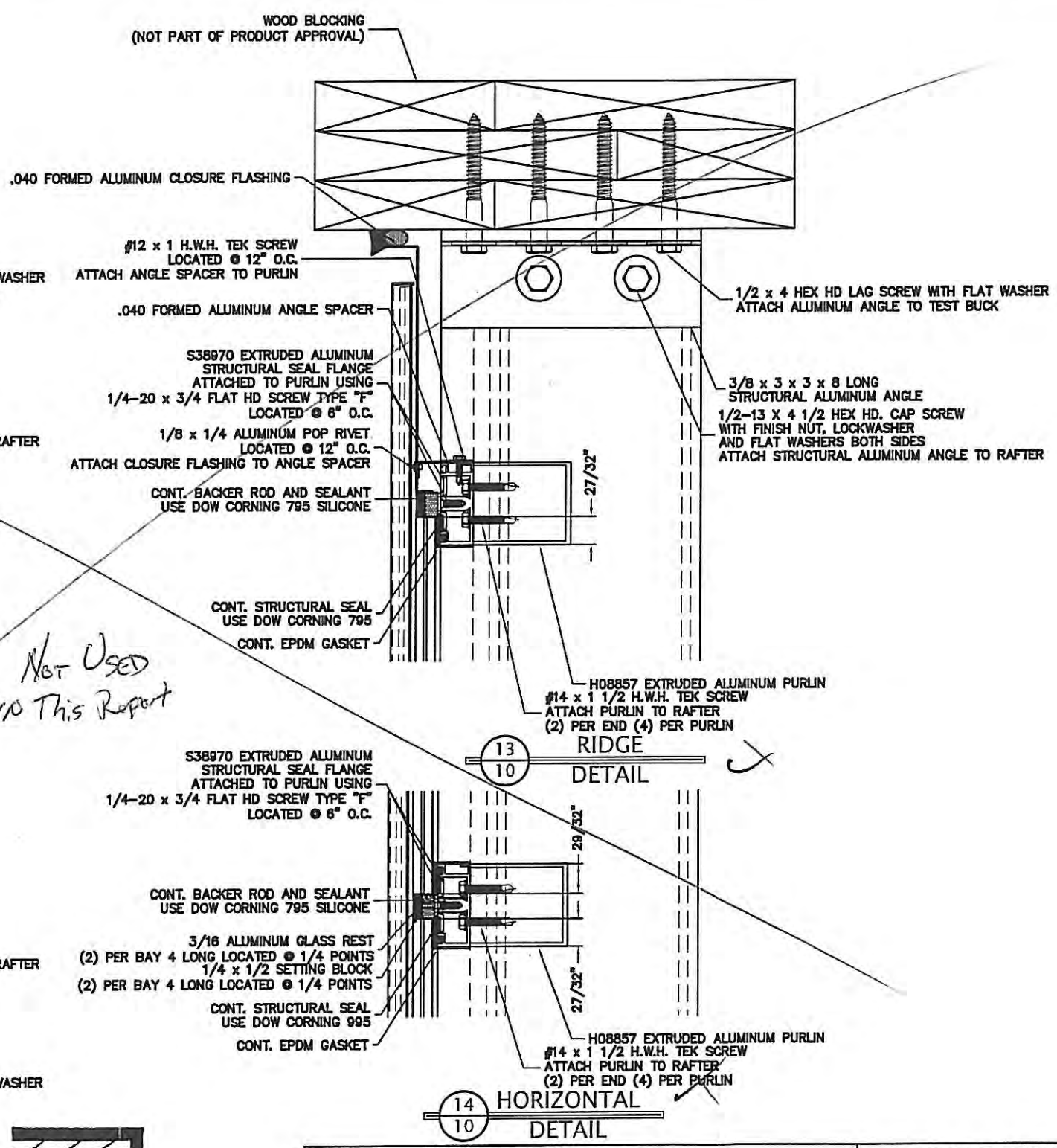
DATE _____

JOB # _____

0541-0418-09

12-14-2009

NOTES:
1. SEE SHEET 6 OF 14 FOR GLASS SIZES AND TYPES.



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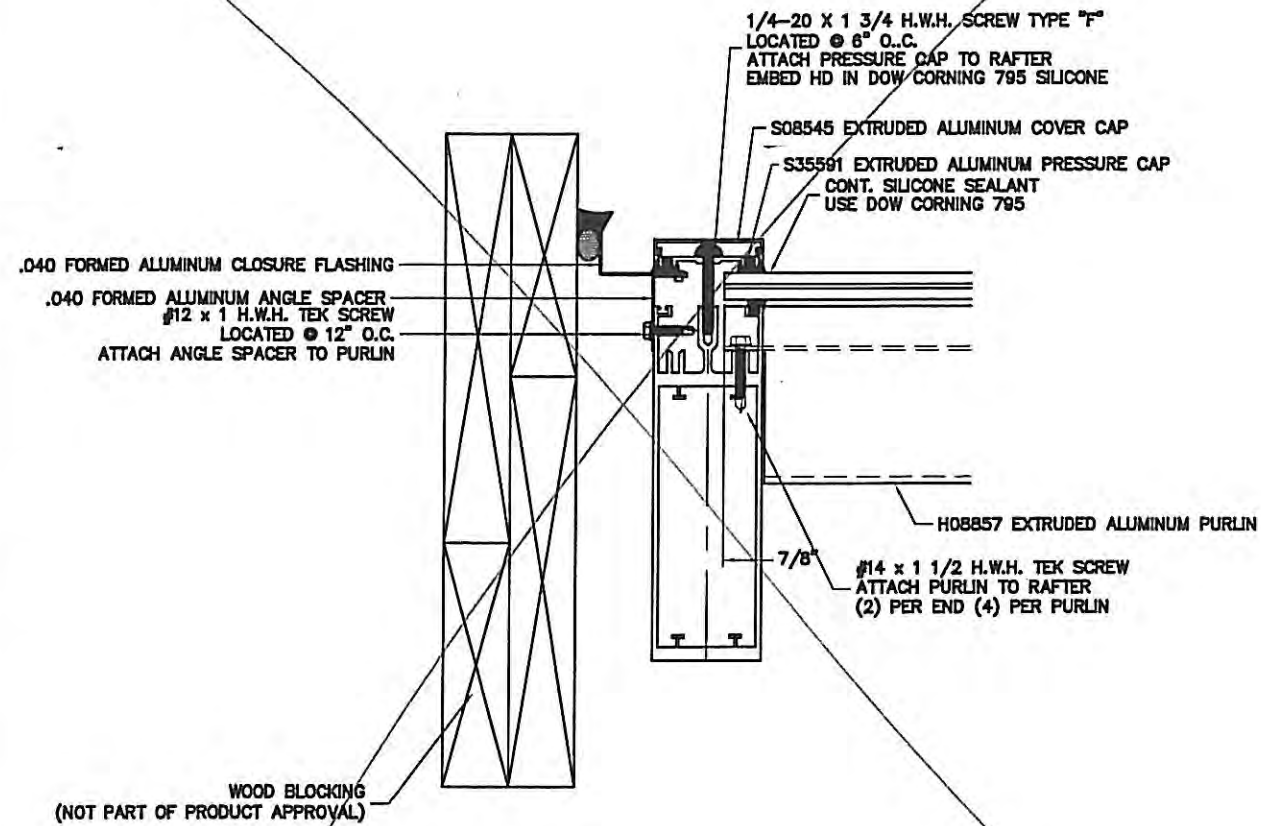
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SMALL MISSILE TESTING

DETAILS

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15
11 JAMB
DETAIL

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NOTES:
1. SEE SHEET 8 OF 14 FOR GLASS SIZES AND TYPES.

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Tested Unless
Otherwise Noted
DATE _____
JOB # _____
0541-0918-09
12-14-2009

DADE COUNTY USE		ENGINEER STAMP

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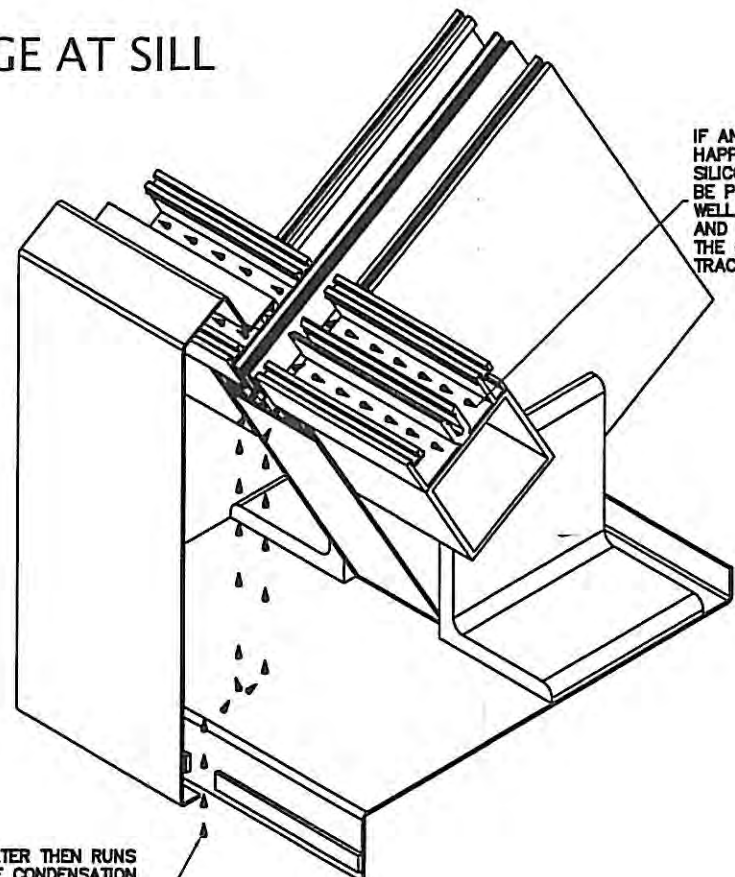
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SMALL MISSILE TESTING

DETAILS

11 of 14

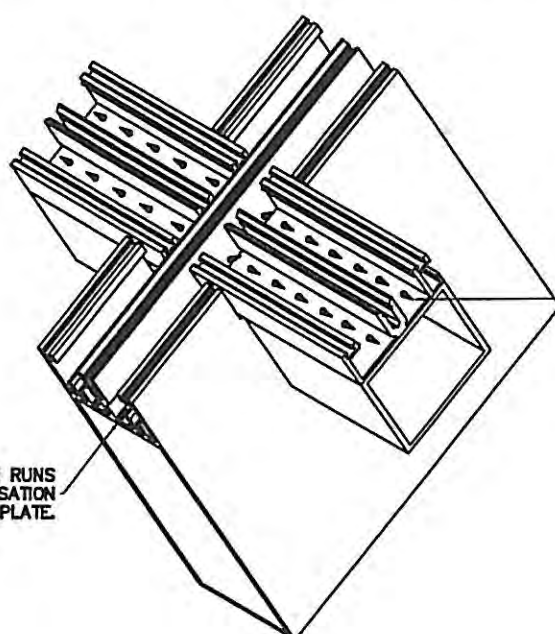
WEEPAGE AT SILL



IF ANY WATER WOULD HAPPEN TO PENETRATE THE SILICONE JOINT IT WOULD BE PICKED UP IN THE WELL OF THE PURLIN AND TRANSFERRED TO THE CONDENSATION TRACK OF THE RAFTER.

THE WATER THEN RUNS DOWN THE CONDENSATION TRACK ONTO THE SILL PLATE. FROM HERE IT WILL WORK ITS WAY FORWARD TO THE EDGE OF THE SILL PLATE AND DRAIN AT THE 3/4" VOID IN THE SPONGE GASKET. VOID FILLED WITH 30 PPI WEEP BAFFLE.

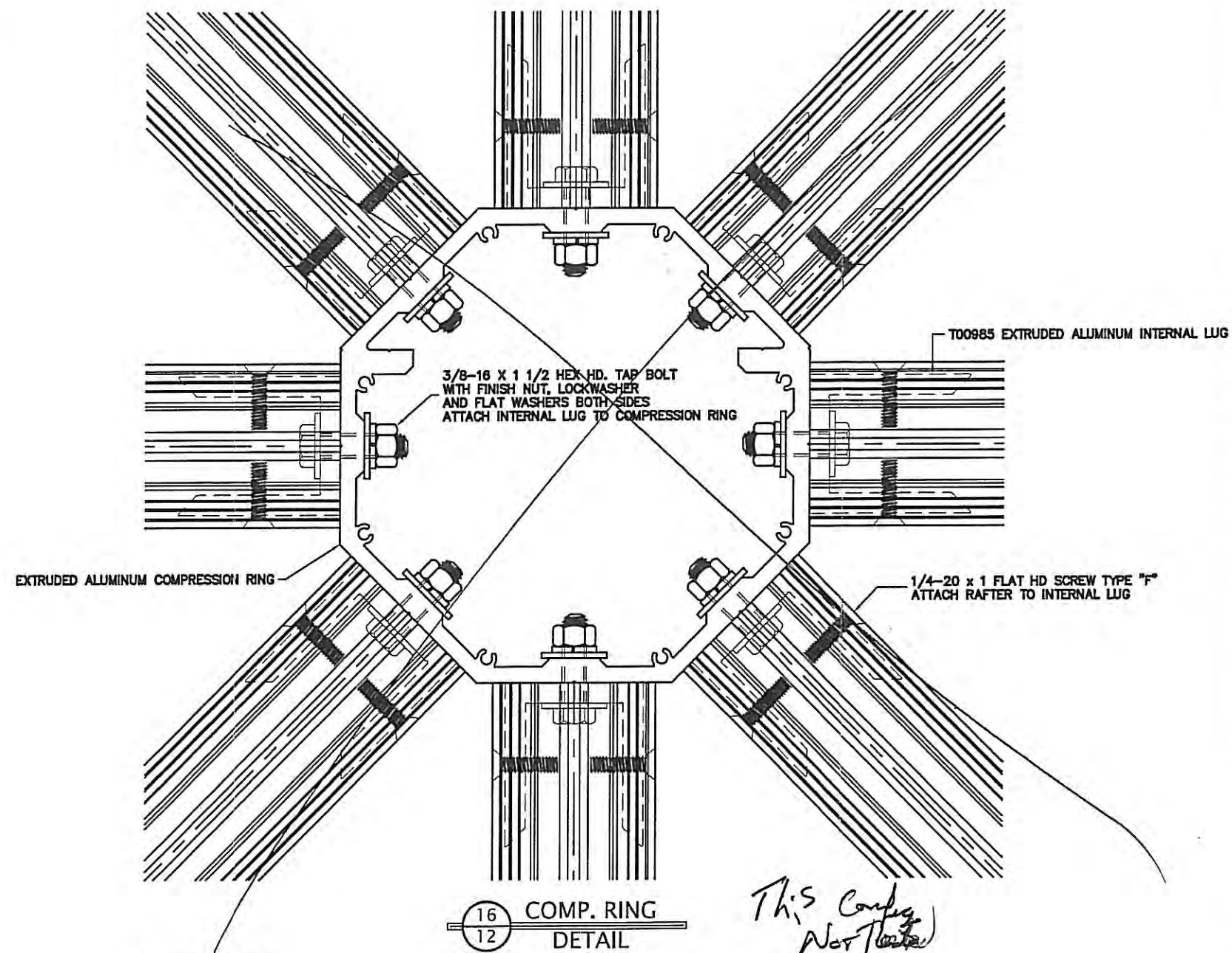
WEEPAGE AT INTERMEDIATE



IF ANY WATER WOULD HAPPEN TO PENETRATE THE SILICONE JOINT IT WOULD BE PICKED UP IN THE WELL OF THE PURLIN AND TRANSFERRED TO THE CONDENSATION TRACK OF THE RAFTER.

THE WATER THEN RUNS DOWN THE CONDENSATION TRACK TO THE SILL PLATE.

NOTES:
1. SEE SHEET 6 OF 14 FOR GLASS SIZES AND TYPES.



DATE
JOB #
0541-0418-09
12-14-2009

DADE COUNTY USE		ENGINEER STAMP

PROJECT NAME
SMALL MISSILE TESTING

DATE
7/24/09

SCALE
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SHEET
12 of 14

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DATE
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16

12

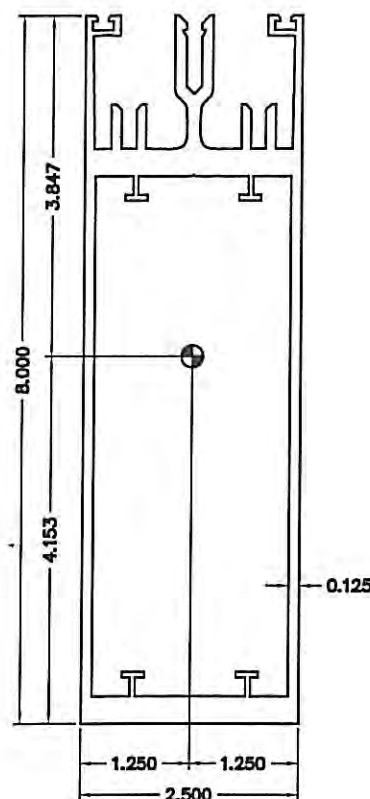
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DETAIL

DADE COUNTY USE

ENGINEER STAMP

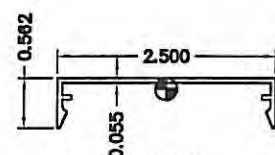
SMALL MISSILE TESTING

BILL OF MATERIALS



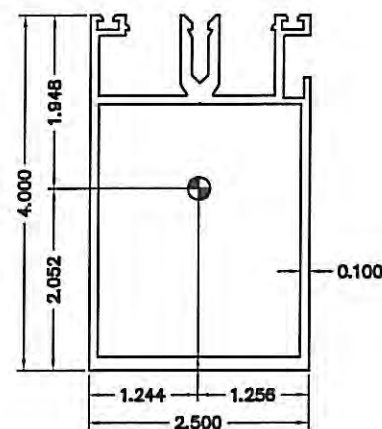
Area: 4.0777
 Perimeter: 54.9115
 Bounding box: X: -1.2500 -- 1.2500
 Y: -4.1528 -- 3.8472
 Moments of Inertia: X: 31.3863
 Y: 3.5664
 Product of Inertia: XY: 0.0000
 Radii of gyration: X: 2.7743
 Y: 0.9352
 Principal moments and X-Y directions about centroid:
 I: 3.5664 along [0.0000 1.0000]
 J: 31.3863 along [-1.0000 0.0000]
 Weight per lineal foot: 4.77 lbs.
 Aluminum Alloy: 6061-T6

H08858 RAFTER
 FULL SCALE



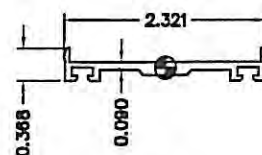
Area: 0.2110
 Perimeter: 7.5289
 Bounding box: X: -1.2500 -- 1.2500
 Y: -0.4392 -- 0.1228
 Moments of Inertia: X: 0.0049
 Y: 0.1783
 Product of Inertia: XY: 0.0000
 Radii of gyration: X: 0.1527
 Y: 0.9191
 Principal moments and X-Y directions about centroid:
 I: 0.0049 along [1.0000 0.0000]
 J: 0.1783 along [0.0000 1.0000]
 Weight per lineal foot: 0.25 lbs.
 Aluminum Alloy: 6061-T6

S08545 COVER CAP
 FULL SCALE



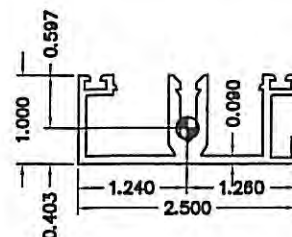
Area: 1.6983
 Perimeter: 31.2602
 Bounding box: X: -1.2438 -- 1.2562
 Y: -2.0520 -- 1.9480
 Moments of Inertia: X: 3.4288
 Y: 1.4491
 Product of Inertia: XY: -0.0182
 Radii of gyration: X: 1.4204
 Y: 0.9237
 Principal moments and X-Y directions about centroid:
 I: 1.4489 along [0.0082 -1.0000]
 J: 3.4267 along [1.0000 0.0082]
 Weight per lineal foot: 1.99 lbs.
 Aluminum Alloy: 6061-T6

H08857 PURLIN
 FULL SCALE



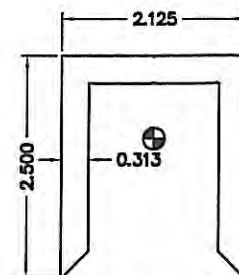
Area: 0.2955
 Perimeter: 6.9688
 Bounding box: X: -1.1634 -- 1.1626
 Y: -0.1489 -- 0.2190
 Moments of Inertia: X: 0.0012
 Y: 0.1486
 Product of Inertia: XY: 0.0000
 Radii of gyration: X: 0.0634
 Y: 0.7092
 Principal moments and X-Y directions about centroid:
 I: 0.0012 along [1.0000 0.0000]
 J: 0.1486 along [0.0000 1.0000]
 Weight per lineal foot: 0.354 lbs.
 Aluminum Alloy: 6061-T6

S35591 PRESSURE CAP
 FULL SCALE



Area: 0.7307
 Perimeter: 15.0209
 Bounding box: X: -1.2403 -- 1.2597
 Y: -0.4032 -- 0.5968
 Moments of Inertia: X: 0.0800
 Y: 0.4177
 Product of Inertia: XY: -0.0027
 Radii of gyration: X: 0.3309
 Y: 0.7561
 Principal moments and X-Y directions about centroid:
 I: 0.0800 along [1.0000 -0.0080]
 J: 0.4178 along [0.0080 1.0000]
 Weight per lineal foot: 0.86 lbs.
 Aluminum Alloy: 6061-T6

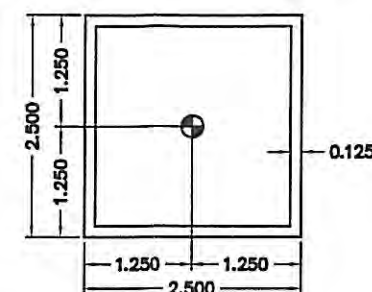
S31713 PURLIN
 FULL SCALE



Area: 1.9456
 Perimeter: 13.3088
 Bounding box: X: -1.0624 -- 1.0626
 Y: -1.5635 -- 0.9365
 Moments of Inertia: X: 1.0731
 Y: 1.3224
 Product of Inertia: XY: -0.0001
 Radii of gyration: X: 0.7427
 Y: 0.8244
 Principal moments and X-Y directions about centroid:
 I: 1.0731 along [1.0000 -0.0004]
 J: 1.3224 along [0.0004 1.0000]
 Weight per lineal foot: 2.335 lbs.
 Aluminum Alloy: 6061-T6

T00985 INTERNAL LUG
 FULL SCALE

NOTES:
 1. SEE SHEET 6 OF 14 FOR GLASS SIZES AND TYPES.



Area: 1.1875
 Perimeter: 19.0000
 Bounding box: X: -1.2500 -- 1.2500
 Y: -1.2500 -- 1.2500
 Moments of Inertia: X: 1.1195
 Y: 1.1195
 Product of Inertia: XY: 0.0000
 Radii of gyration: X: 0.9709
 Y: 0.9709
 Principal moments and X-Y directions about centroid:
 I: 1.1195 along [0.7071 -0.7071]
 J: 1.1195 along [0.7071 0.7071]
 Weight per lineal foot: 1.39 lbs.
 Aluminum Alloy: 6061-T6

H01071 TUBE
 FULL SCALE



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DATE
 JOB #

0591-0418-09
 12-14-2009

DADE COUNTY USE

ENGINEER STAMP

SMALL MISSILE TESTING

BILL OF MATERIALS

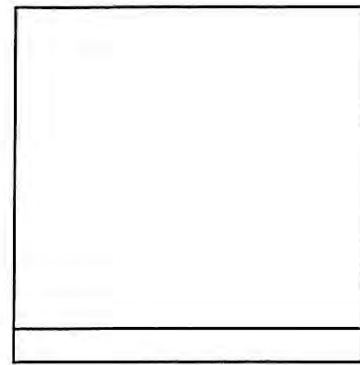
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 12/24/09

SCALE
 FULL

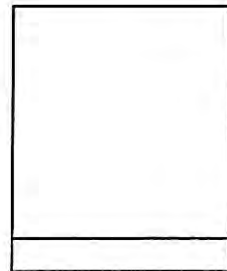
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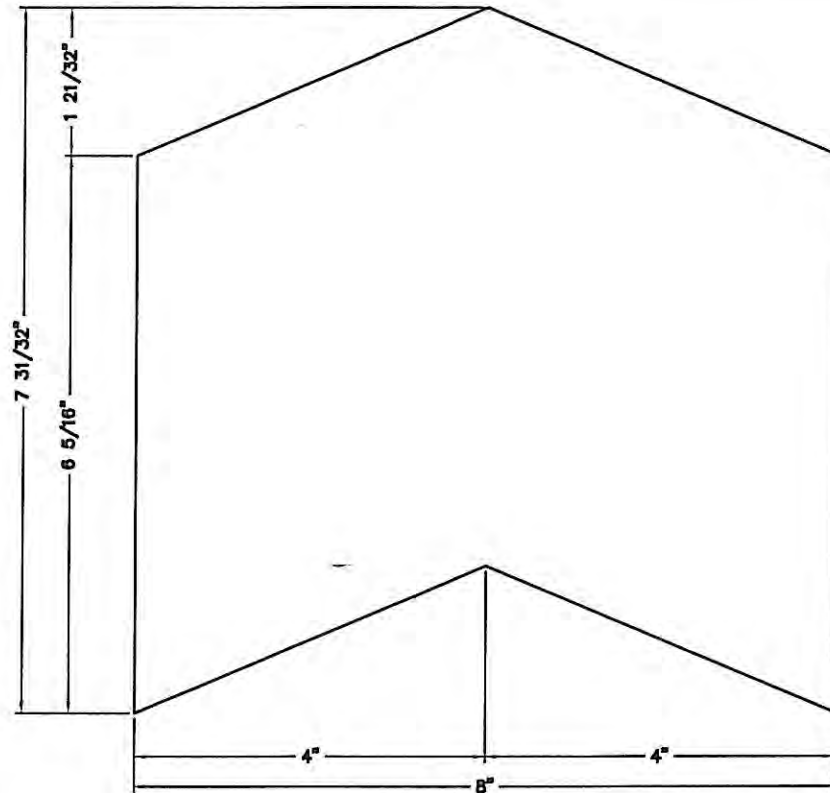
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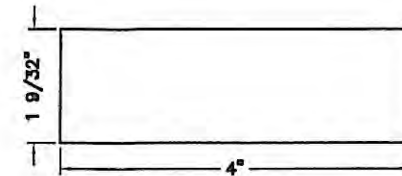
Description: Structural Aluminum Angle
Size: 3/8 x 4 x 4
Material: Aluminum (Alloy 6061-T6)



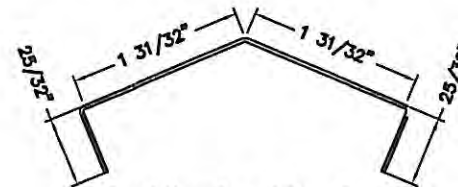
Description: Structural Aluminum Angle
Size: 3/8 x 3 x 3
Material: Aluminum (Alloy 6061-T6)



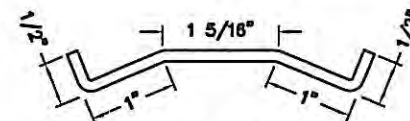
Description: Gusset Plate
Size: 1/4 Thick
Material: Aluminum (Alloy 6061-T6)



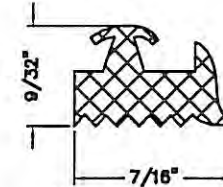
Description: Glass Rest
Size: 3/16 Thick
Material: Aluminum (Alloy 6061-T6)



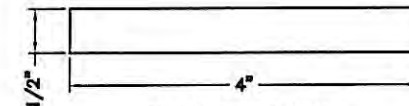
Description: Formed Cover Cap
Size: .040 Thick
Material: Aluminum (Alloy 3003)



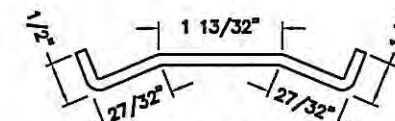
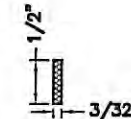
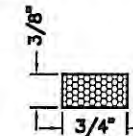
Description: Formed Pressure Cap
Size: .125 Thick
Material: Aluminum (Alloy 3003)



Manufacturer: Elbex
Description: Gasket
Material: EPDM Rubber



Manufacturer: Biltrite
Description: Setting Block
Material: Neoprene



Description: Formed Pressure Cap
Size: .125 Thick
Material: Steel ASTM A36



Description: Pop Rivet
Size: 1/8 x 1/4
Material: Aluminum



Description: Pan Head Sheet Metal Screw (Pan Hd. S.M.S.)
Size: #10 x 1/2
Material: Stainless Steel



Description: Hex Washer Head Tek Screw (H.W.H. Tek Screw)
Size: #12 x 1
Material: Case Hardened Carbon Steel Zinc Plated



Description: Flat Head Screw Type "F" (F.H.S. Type "F")
Size: 1/4-20 x Varies
Material: Case Hardened Carbon Steel Zinc Plated



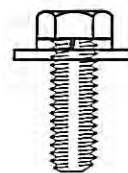
Description: Hex Washer Head Tek Screw (H.W.H. Tek Screw)
Size: #14 x 1 1/2
Material: Case Hardened Carbon Steel Zinc Plated



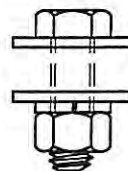
Description: Hex Washer Head Screw Type "F" (H.W.H. Screw Type "F")
Size: 1/4-20 x 1 3/4
Material: Case Hardened Carbon Steel Zinc Plated



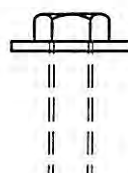
Description: Hex Head Cap Screw with Finish Nut, Flat Washers and Lockwasher
Size: 3/8-16 x 4 1/2
Material: Medium Carbon Steel Zinc Plated



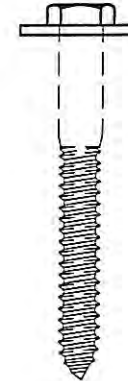
Description: Hex Head Tap Bolt with Flat Washer and Lockwasher
Size: 1/2-13 x 1 1/2
Material: Medium Carbon Steel Zinc Plated



Description: Hex Head Tap Bolt with Finish Nut, Flat Washers and Lockwasher
Size: 1/2-13 x 1 1/2
Material: Medium Carbon Steel Zinc Plated



Description: Hex Head Cap Screw with Finish Nut, Flat Washers and Lockwasher
Size: 1/2-13 x 4 1/2
Material: Medium Carbon Steel Zinc Plated



Description: Hex Head Lag Screw with Flat Washer
Size: 1/2 x 4
Material: Medium Carbon Steel Zinc Plated



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DATE
JOB #

0541-0918-09
12-14-2009

NOTES:
1. SEE SHEET 6 OF 14 FOR GLASS SIZES AND TYPES.

DADE COUNTY USE		ENGINEER STAMP

PROJECT NAME SMALL MISSILE TESTING		DATE 7/24/09	DESIGNED BY K. MAZZIE
BILL OF MATERIALS		CHECKED BY	
14 of 14			

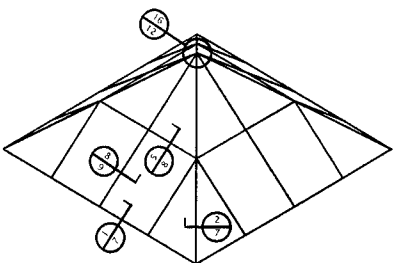
Revision Log

Rev. #	Date	Page(s)	Section #	Revision(s)
0	12/14/2009	N/A	N/A	Original report issued.

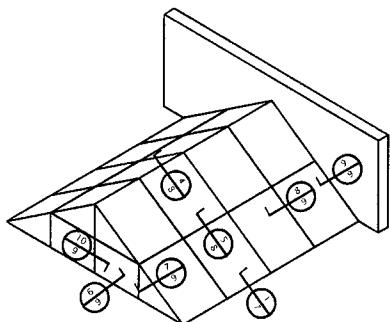
SMALL MISSILE

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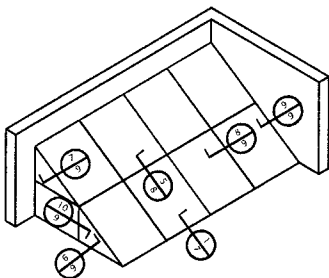
- 1. The skylight system indicated on these shop drawings has been verified for compliance in accordance with the 2007 Florida Building Code. Maximum design pressure +120psf and -100psf.
- 2. The skylight system may be installed in High Velocity Hurricane Zone.
- 3. These shop drawings are generic and do not provide information for site specific projects.
- 4. Structural adequacy of the supporting structure is not part of this product approval. Design of the supporting structure is the responsibility of the engineer of record for the project.
- 5. Design of the supporting structure shall take into account the loads being transferred from the skylight system (reactions) to the supporting structure.
- 6. The skylight system indicated on these shop drawings tested for small missile impact in accordance with TAS 201/202/203.
- 7. See sheet 6 of 14 of these shop drawings for glazing options
- 8. Aluminum in contact with dissimilar materials shall be protected in accordance with section 2003.8.4.2 of the Florida Building Code.



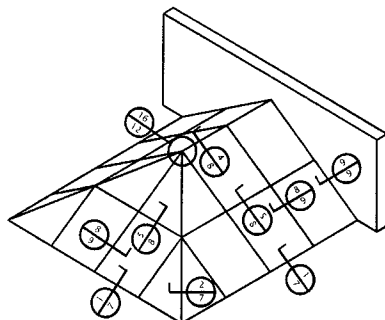
PYRAMID



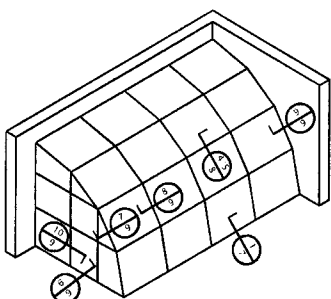
DOUBLE PITCH WITH GABLE



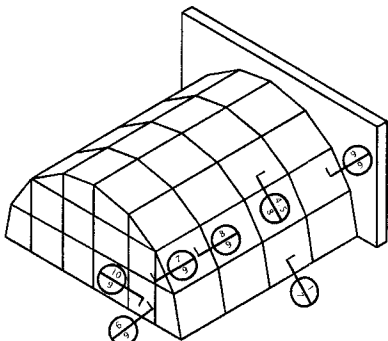
SINGLE PITCH WITH GABLE



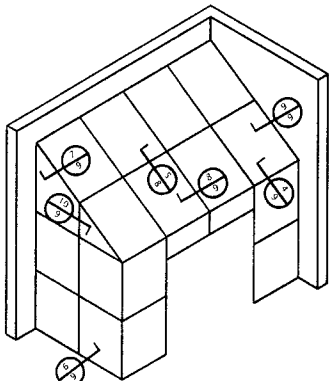
DOUBLE PITCH WITH HIP



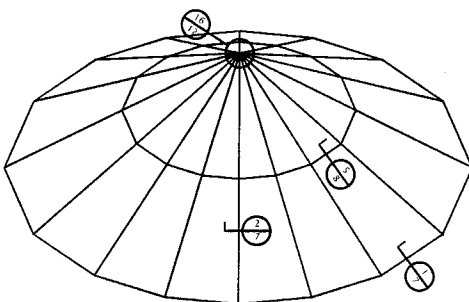
SEGMENTED BARRELL QUATER VAULT
WITH GABLE



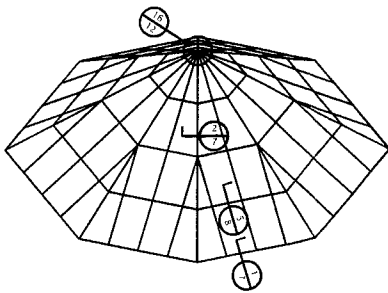
SEGMENTED BARRELL HALF VAULT
WITH GABLE



STRAIGHT EAVE LEAN-TO
WITH GABLE



POLYGON



POLYGON WITH JACK RAFTERS

DADE COUNTY USE

ENGINEER STAMP

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Florida Building Code
Date 08/11/2010
NOA# 10-060701
Miami Dade Product Control
Division
By Heather A. Weber

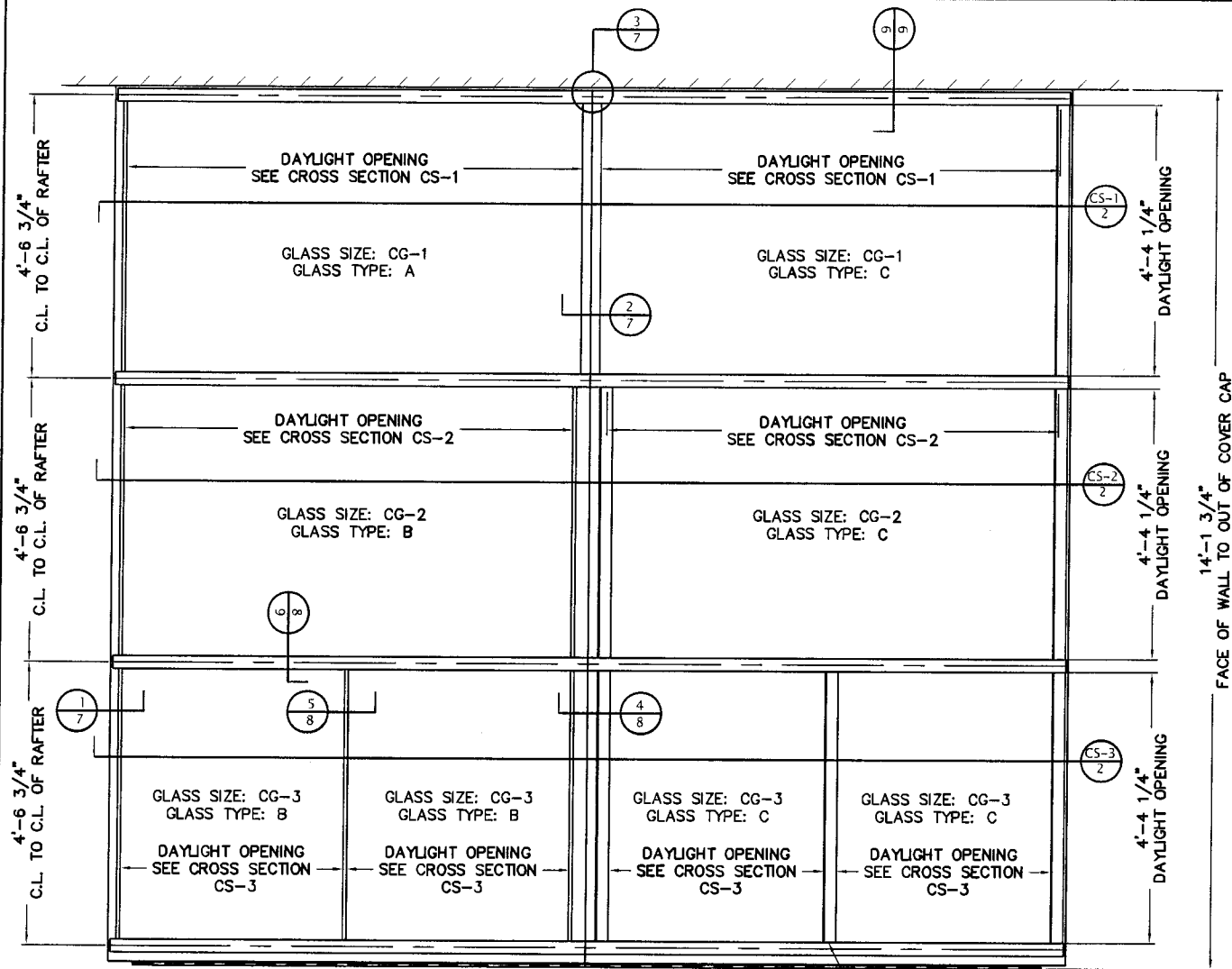
Robert McElroy
2/8/10

PRODUCT NAME
SECURE SERIES
PRODUCT TYPE
SMALL MISSILE
DRAWING TITLE
COVERSHEET

DOCUMENT NO.
SMNOA-001
DRAWN BY:
K. MAZZIE
CHECKED BY:
DATE:
2/4/10
SCALE:
NONE
DRAWING FILE:
SHEET
1 of 14

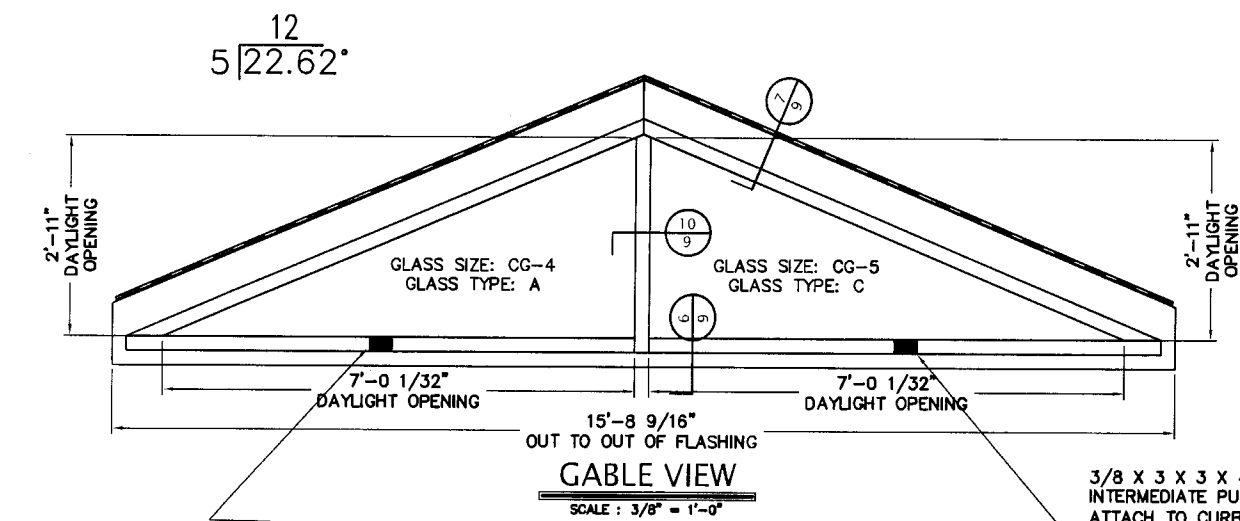
acur lite
engineering light
Acurlite Structural Skylights Inc.
1017 North Vero Beach, FL 32909
Beverly, FL 32909
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2/4/10
©



PLAN VIEW
SCALE: 3/8\" = 1'-0"

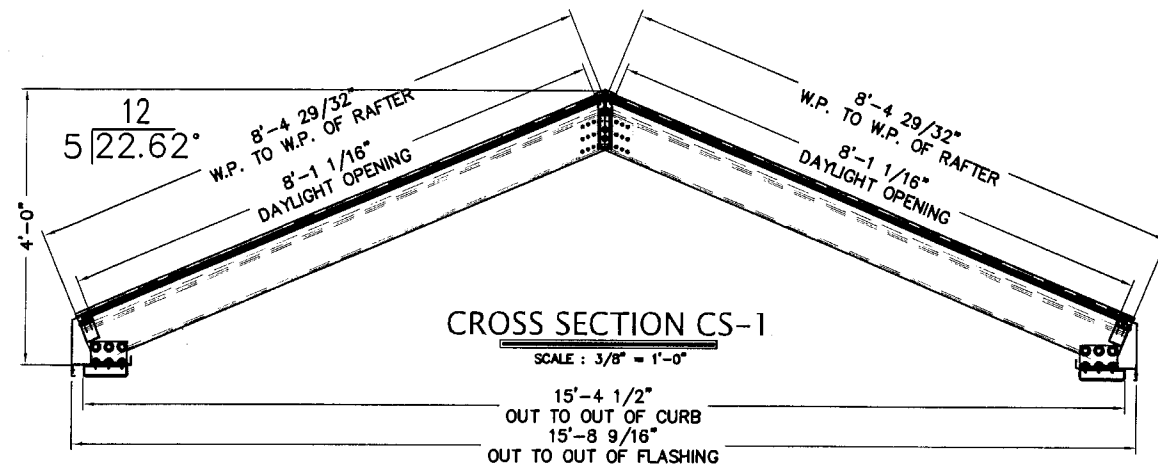
SEAL INTERSECTION OF ALL PRESSURE CAPS AND COVER CAPS. USE DOW CORNING 795



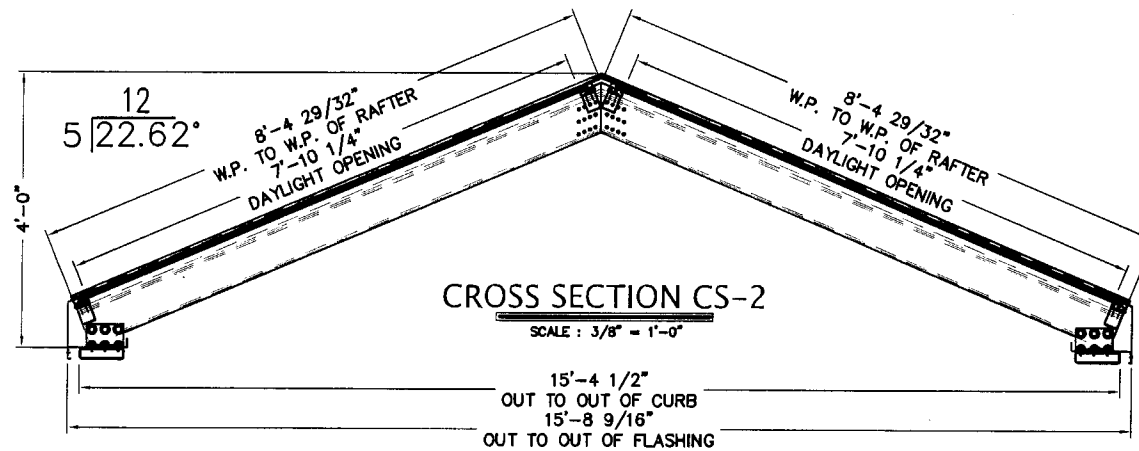
GABLE VIEW
SCALE: 3/8\" = 1'-0"

3/8 X 3 X 3 X 4 LONG
INTERMEDIATE PURLIN SUPPORT ANGLE
ATTACH TO CURB USING 1/2-13 HEX HD TAP BOLT
DRILL AND TAP INTO STEEL
ATTACH TO PURLIN USING (4) #12 X 1 H.W.H. TEK SCREWS
QUANTITY, SIZE AND REQUIREMENT OF SUCH BASED ON
SIZE AND GEOMETRY OF SKYLIGHT
(NOT PART OF PRODUCT APPROVAL)

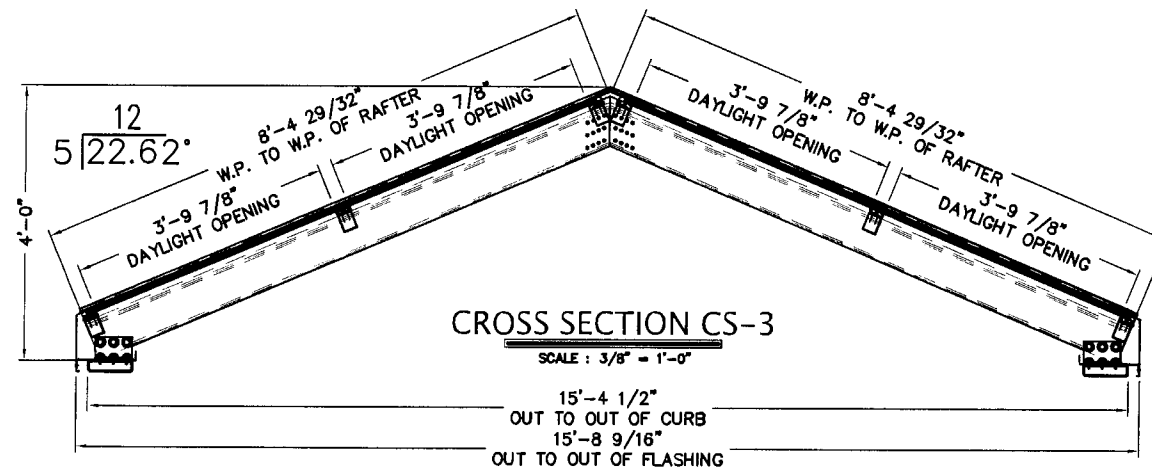
NOTES:
1. SEE SHEET 6 OF 14 FOR GLASS SIZES AND TYPES.



CROSS SECTION CS-1
SCALE: 3/8\" = 1'-0"



CROSS SECTION CS-2
SCALE: 3/8\" = 1'-0"



CROSS SECTION CS-3
SCALE: 3/8\" = 1'-0"

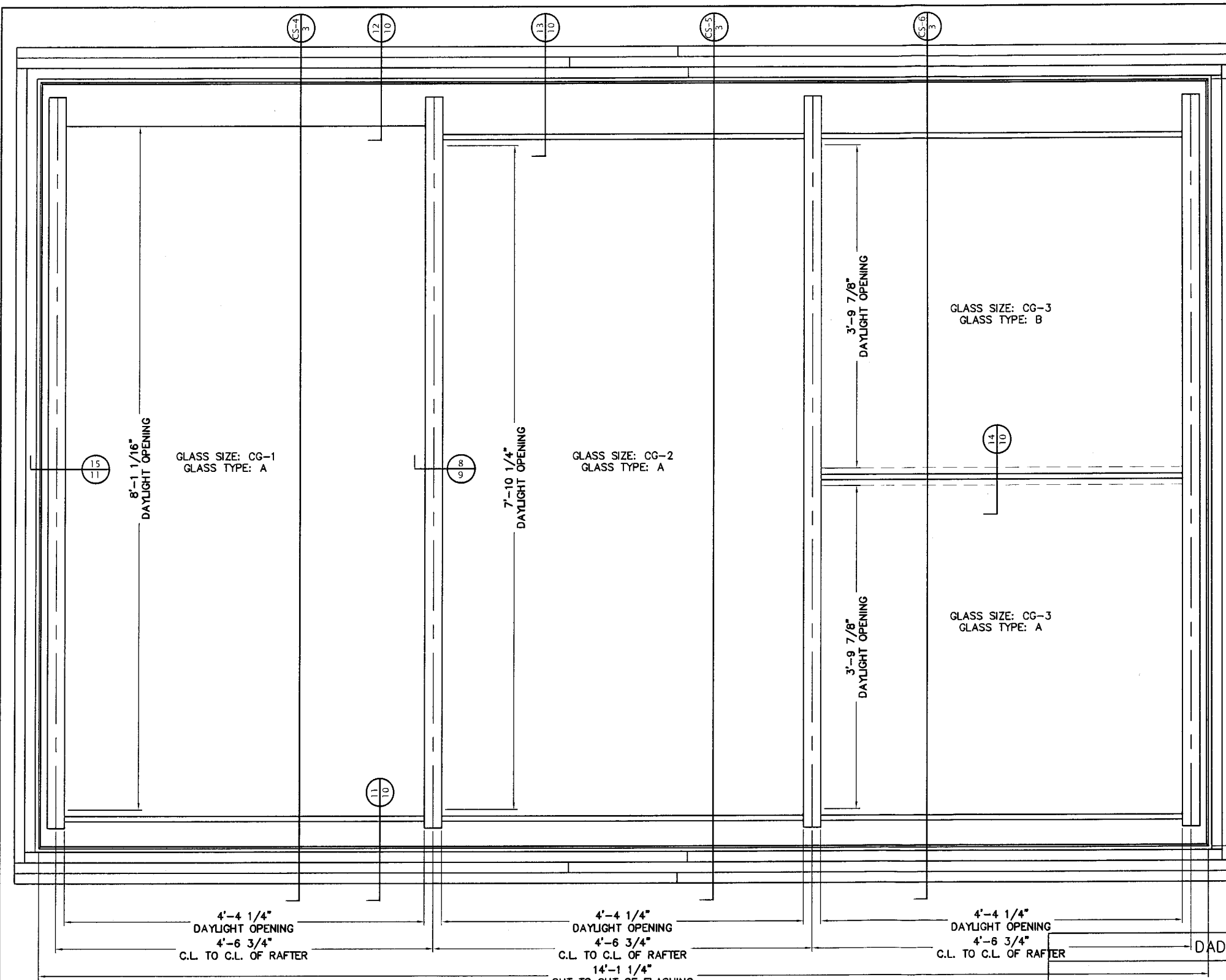
DADE COUNTY USE

ENGINEER STAMP

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Date 08/11/2010
NOA#10-0607-01
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Division
By *Heather A. Miller*

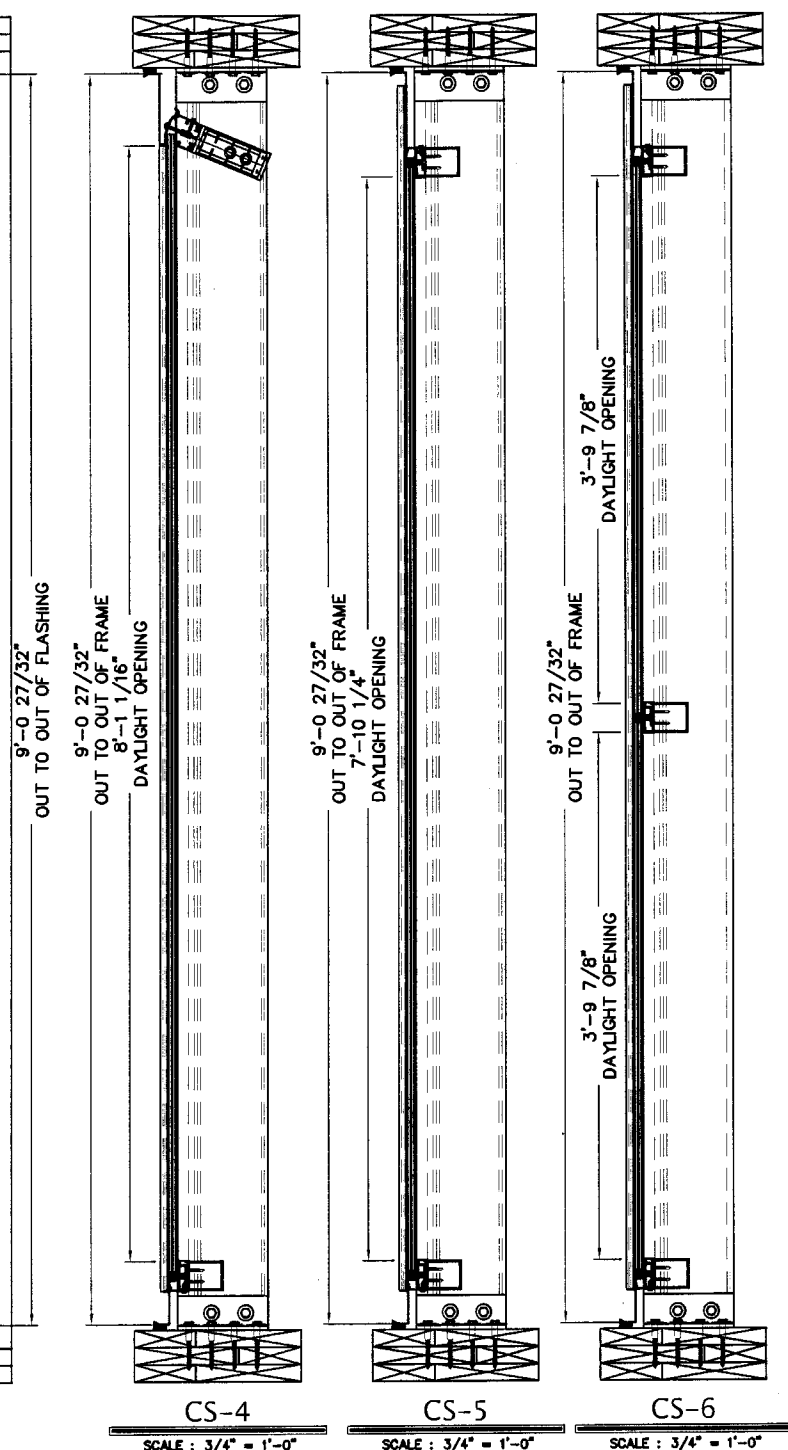
Robert M. Miller
2/8/10

acur lite engineering light Acurlite Structural Skylights Inc. 1017 North View Street, PO Box 5 Barwick, PA 18033 © 570.799.4882 © 570.799.9553 sales@acurlite.com		DATE: 2/4/10
SECURE SERIES		SMALL MISSILE
PLANS AND ELEVATIONS		2 of 14



TEST SPECIMEN ELEVATION
SCALE : 3/4" = 1'-0"

NOTES:
1. SEE SHEET 6 OF 14 FOR GLASS SIZES AND TYPES.



DADE COUNTY USE

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Miami Dade Product Control
Division
By *Heather A. Martin*

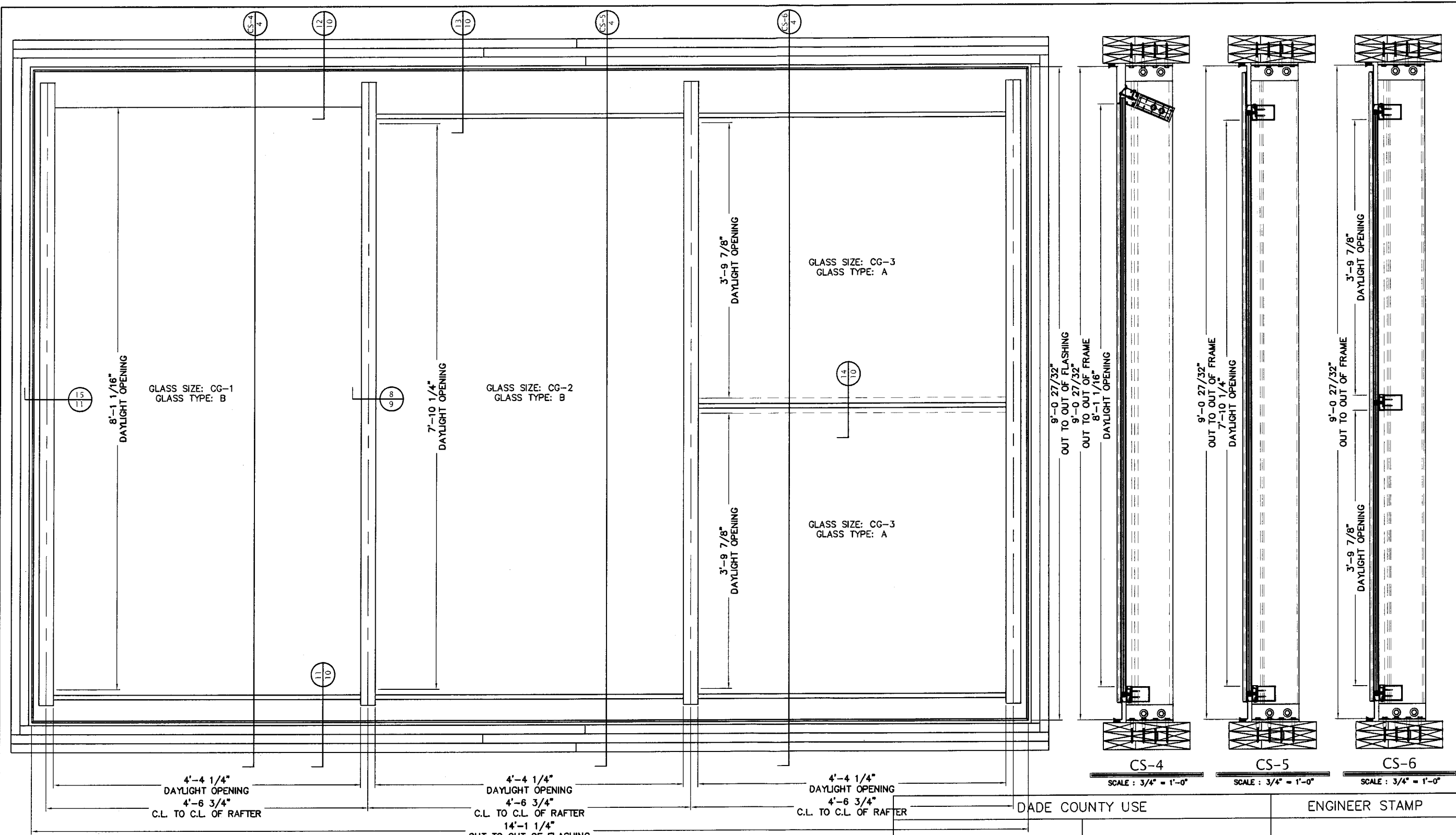
Robert M. Mayo
2/8/10

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SECURE SERIES
SMALL MISSILE
PLANS AND ELEVATIONS

PRODUCT NAME: SECURE SERIES
DOCUMENT NO: SMNOA-001
DRAWN BY: K. MAZZIE
CHECKED BY:
DATE: 2/4/10
SCALE: AS NOTED
DRAWING FILE:
SHEET
3 of 14



TEST SPECIMEN ELEVATION
SCALE : 3/4" = 1'-0"

NOTES:
1. SEE SHEET 6 OF 14 FOR GLASS SIZES AND TYPES.

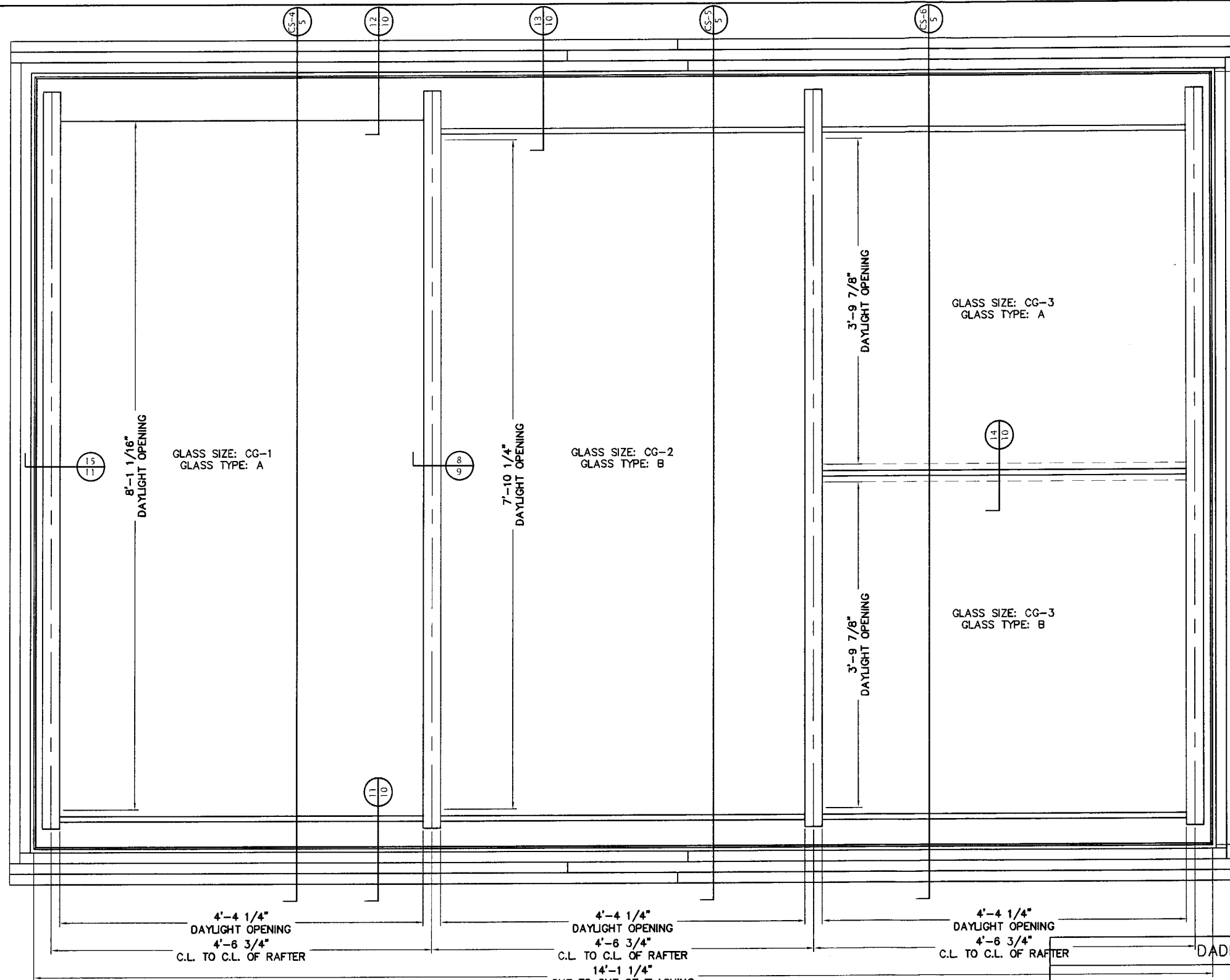
DADE COUNTY USE

ENGINEER STAMP

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Florida Building Code
Date 08/11/2010
NOA# 10-0607.01
Miami Dade Product Control
Division
By Heather A. Meltzer

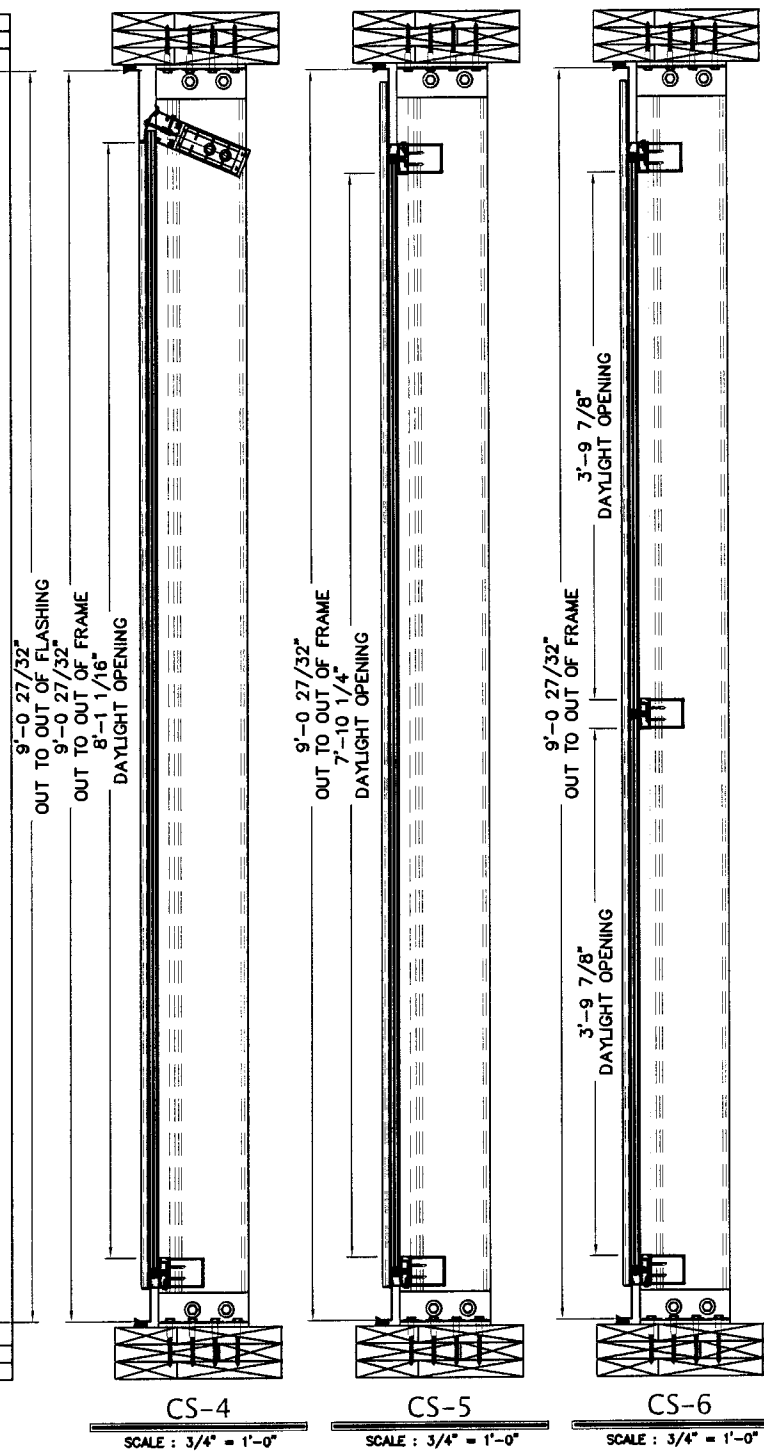
Robert Meltzer
2/8/10

 acur lite engineering light Acur lite Structural Skylights Inc. 1017 North Vine Street, PO Box 5 Bayville, PA 18608 © 570.799.6882 © 570.799.9553 sales@acur lite.com		REV. BY: _____ DATE: _____ DESCRIPTION: _____
© 2/4/10		SHEET 4 of 14



TEST SPECIMEN ELEVATION
SCALE : 3/4" = 1'-0"

NOTES:
1. SEE SHEET 6 OF 14 FOR GLASS SIZES AND TYPES.



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Florida Building Code
Date 08/11/2010
NOA# 10-0607.01
Miami Dade Product Control
Division
By *[Signature]*

[Signature]
2/8/10



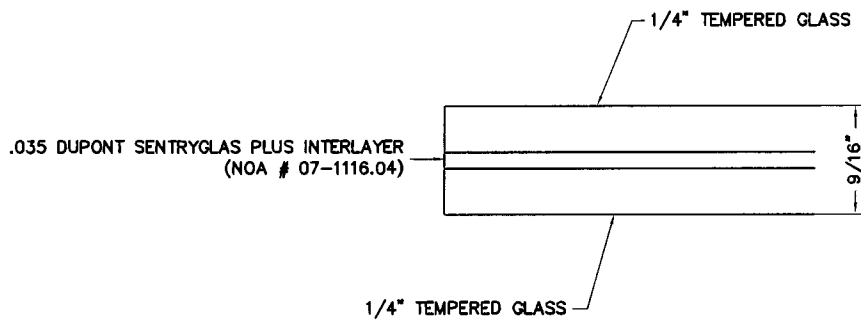
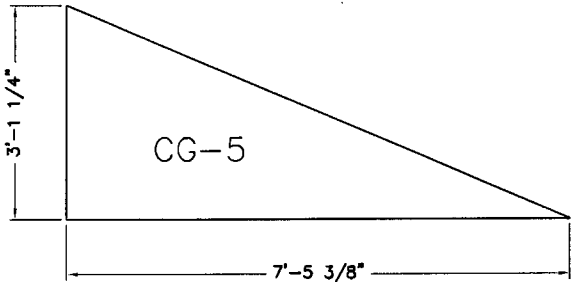
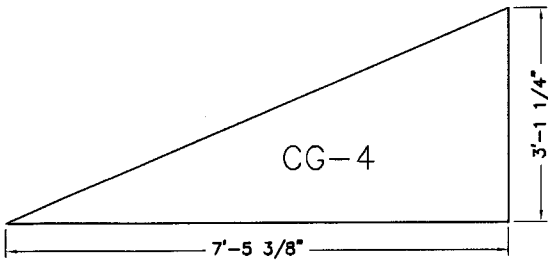
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PRODUCT NAME: SECURE SERIES
PRODUCT TYPE: SMALL MISSILE
DRAWING TITLE: PLANS AND ELEVATIONS

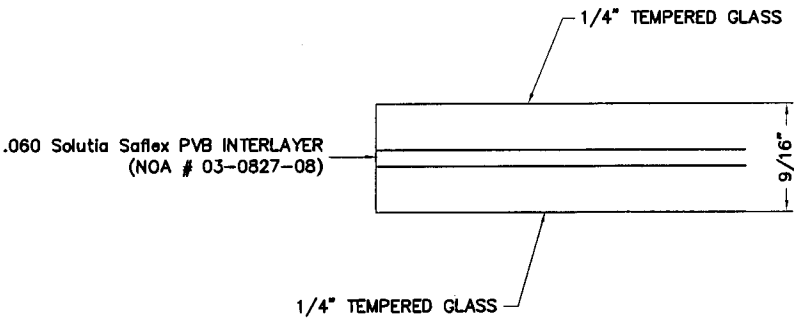
DOCUMENT NO: SMNOA-001
DRAWN BY: K. MAZZIE
CHECKED BY:
DATE: 2/4/10
SCALE: AS NOTED
DRAWING FILE:

SHEET
5 of 14

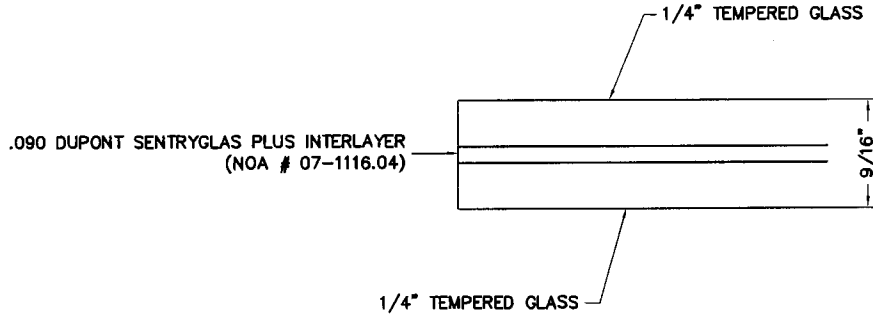
	SIZE
CG-1	54 x 99
CG-2	54 x 96
CG-3	54 x 49 5/8
CG-4	SEE PATTERN
CG-5	SEE PATTERN



GLASS TYPE A



GLASS TYPE B



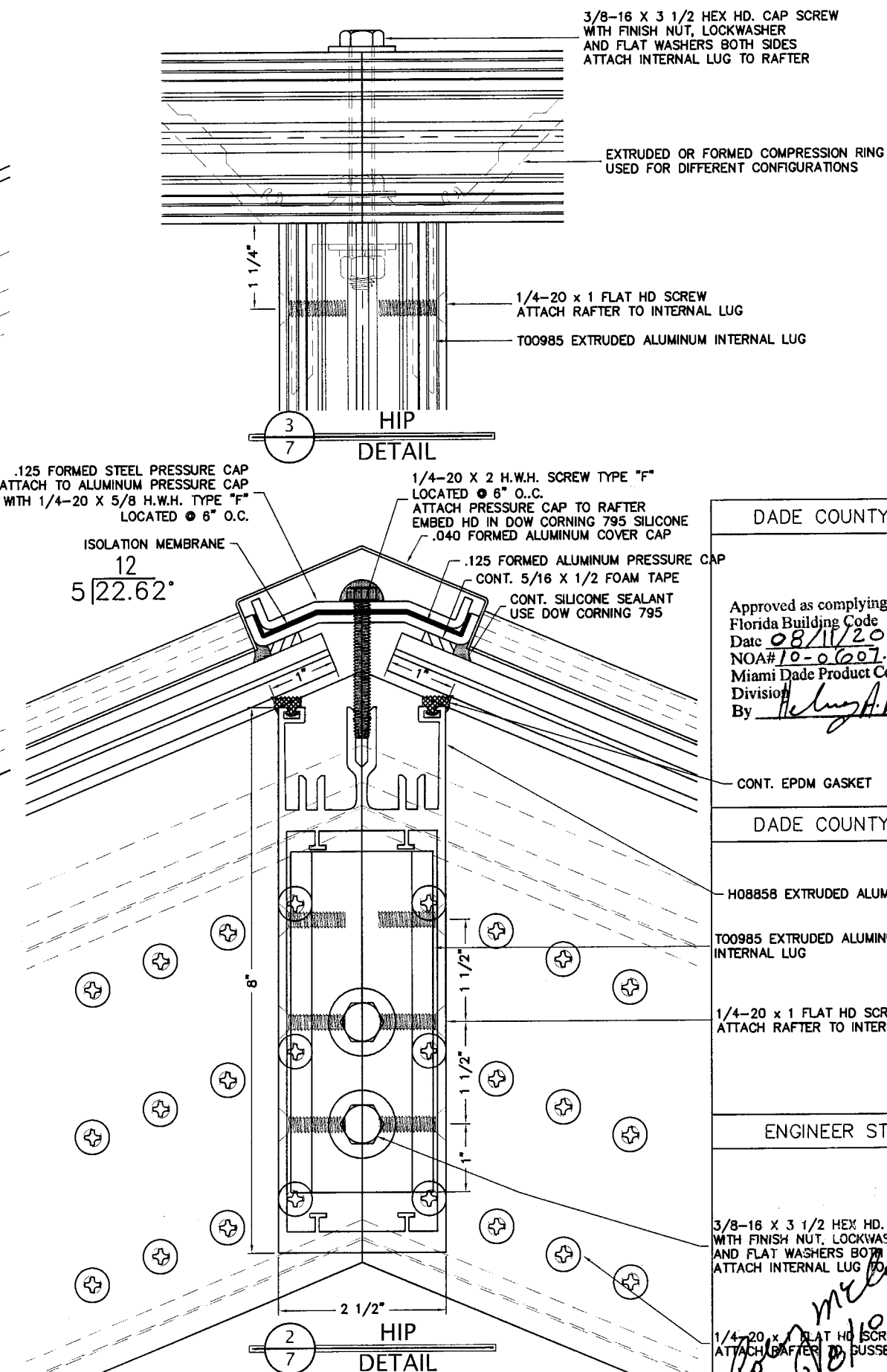
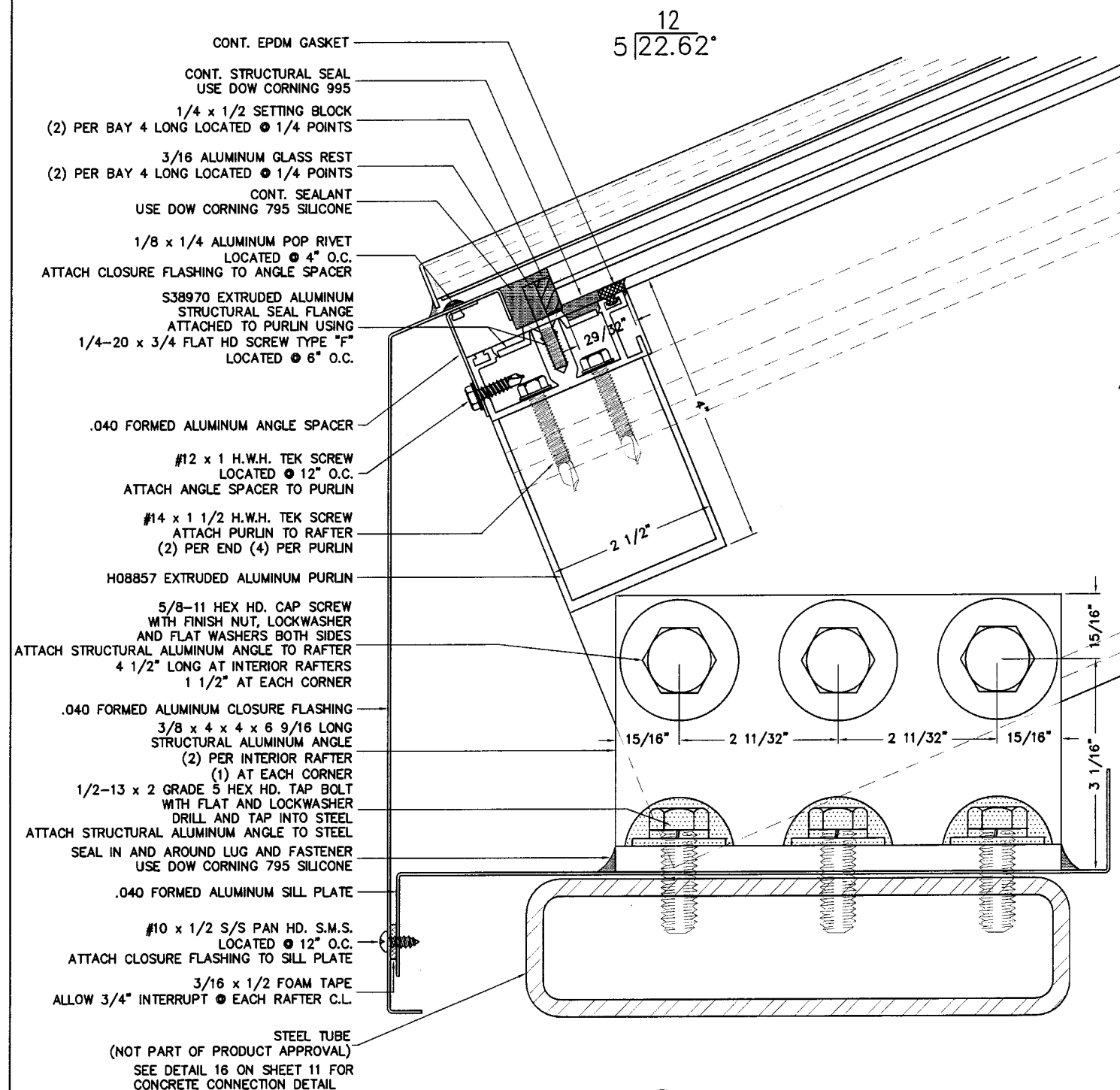
GLASS TYPE C

NOTES:
1. SEE SHEET 2,3,4 AND 5 OF 12 FOR LOCATIONS OF GLASS SIZES AND TYPES.

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PRODUCT NAME: SECURE SERIES PRODUCT TYPE: SMALL MISSILE DRAWING TITLE: GLAZING		DOCUMENT NO: SMNOA-001 DRAWN BY: K. MAZZIE CHECKED BY: DATE: 2/4/10 SCALE: NONE DRAWING FILE: SHEET: 6 of 14

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Date 08/11/2010
NOA# 10-0607.01
Miami Dade Product Control
Division
By *Helmut A. Mahr*

CONT. EPDM GASKET

DADE COUNTY USE

H08858 EXTRUDED ALUMINUM RAFTER

T00985 EXTRUDED ALUMINUM
INTERNAL LUG

1/4-20 x 1 FLAT HD SCREW
ATTACH RAFTER TO INTERNAL LUG

ENGINEER STAMP

3/8-16 x 3 1/2 HEX HD. CAP SCREW
WITH FINISH NUT, LOCKWASHER
AND FLAT WASHERS BOTH SIDES
ATTACH INTERNAL LUG TO RAFTER

1/4-20 x 1 FLAT HD SCREW TYPE "F"
ATTACH RAFTER TO BUSSET PLATE



acurite
engineering
Acacia Structural Systems Inc.
107 North Vine Street, PO Box 5
Barrick, PA 15003
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sales@acurite.com

2/4/10

PRODUCT NAME
SECURE SERIES
PRODUCT TYPE
SMALL MISSILE
DRAWING TITLE
DETAILS

DATE
2/4/10

SCALE
1/2"

DRAWING FILE

CHECKED BY

DRAWN BY

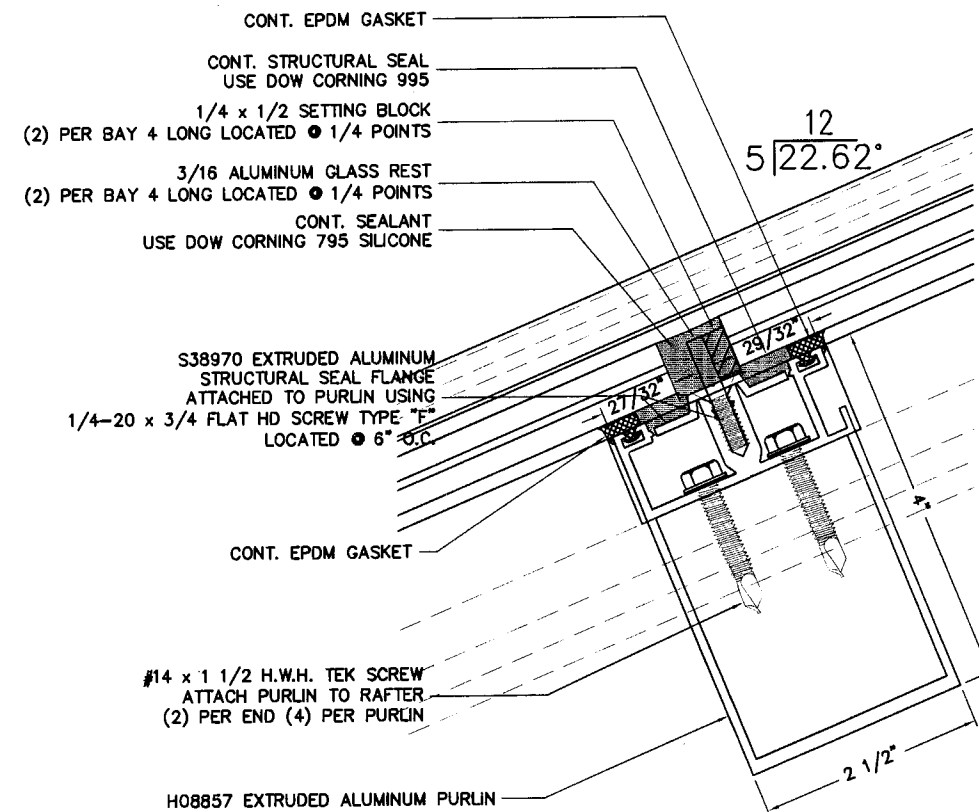
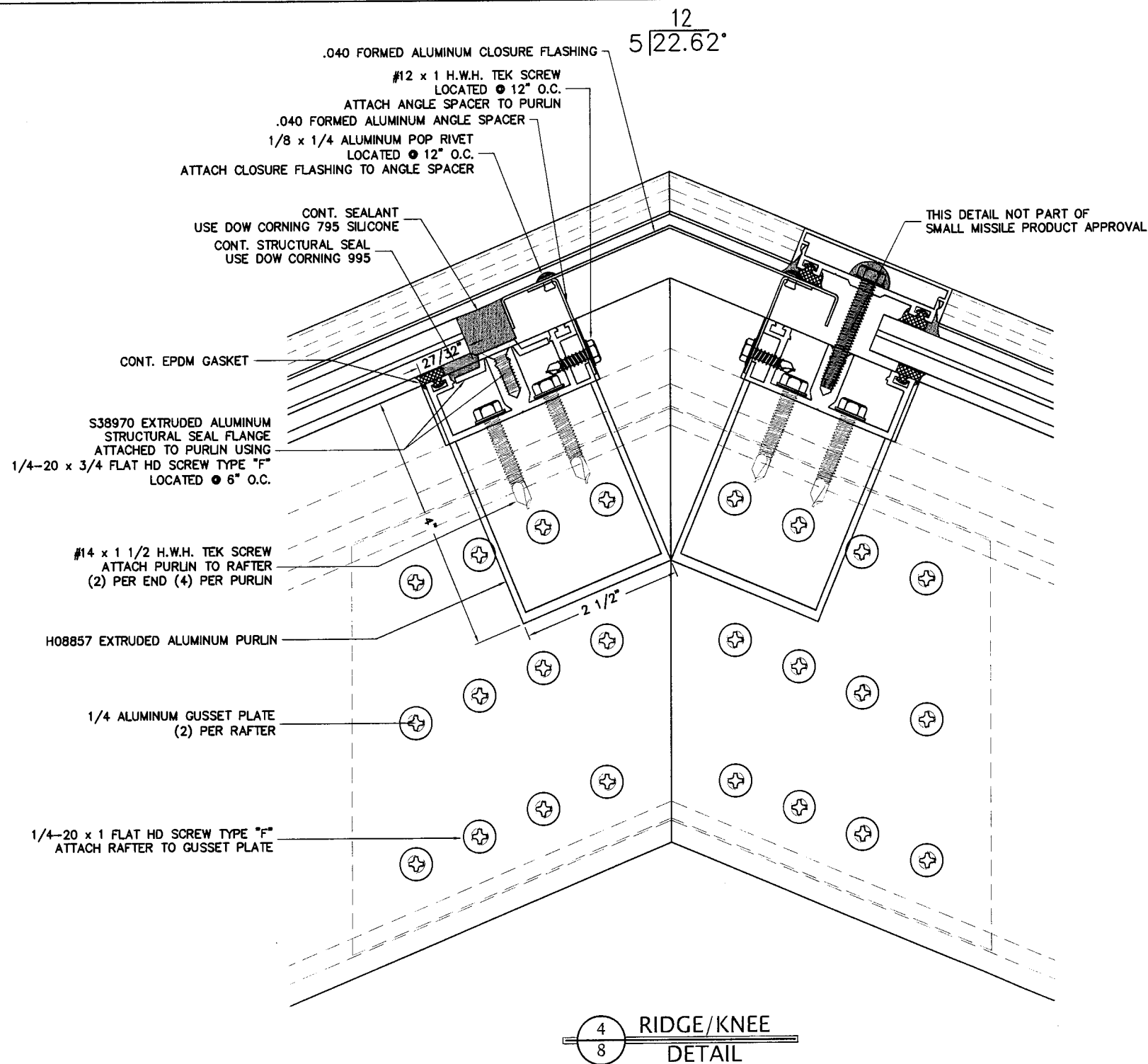
DATE

SCALE

DRAWING FILE

SHEET

7 of 14



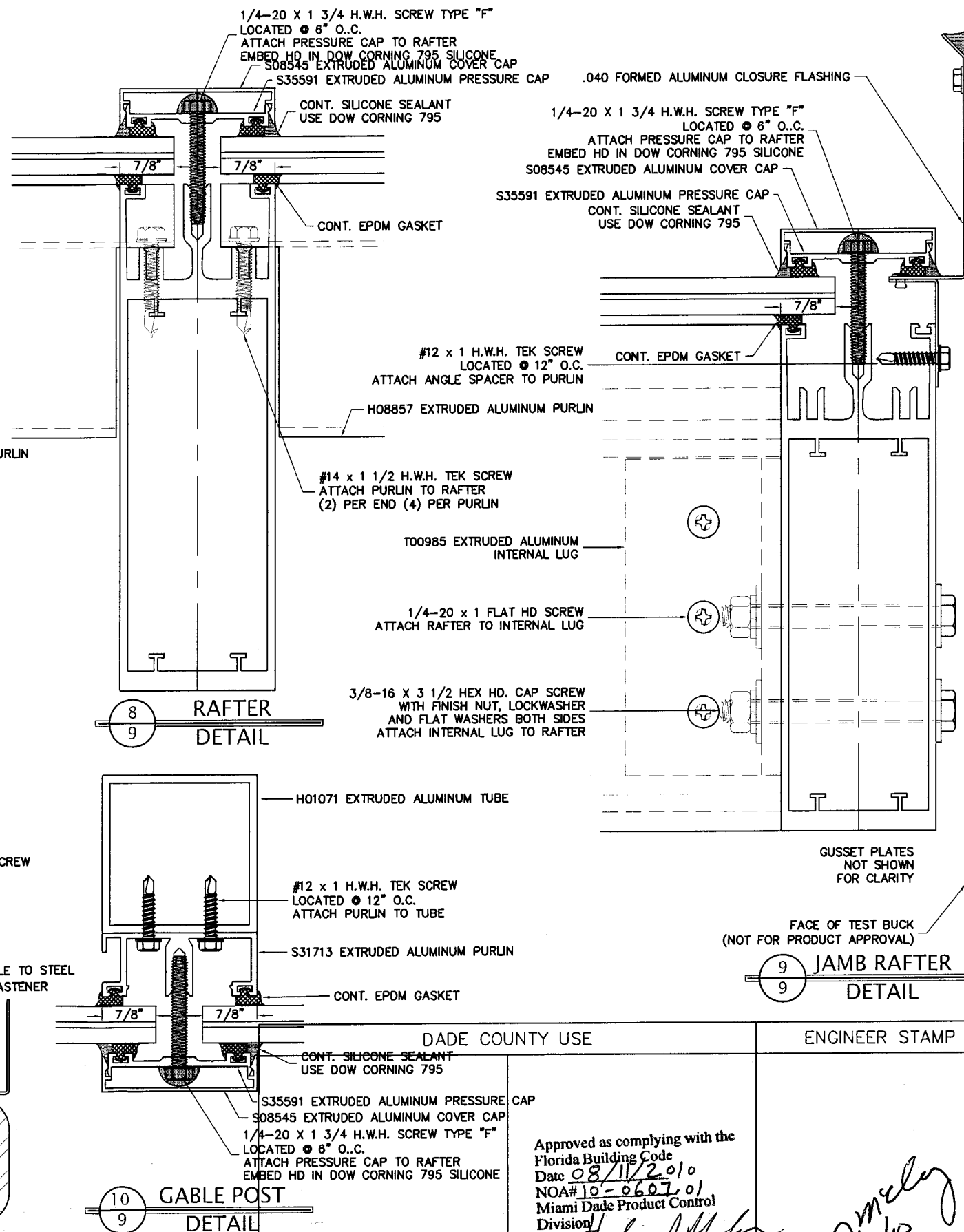
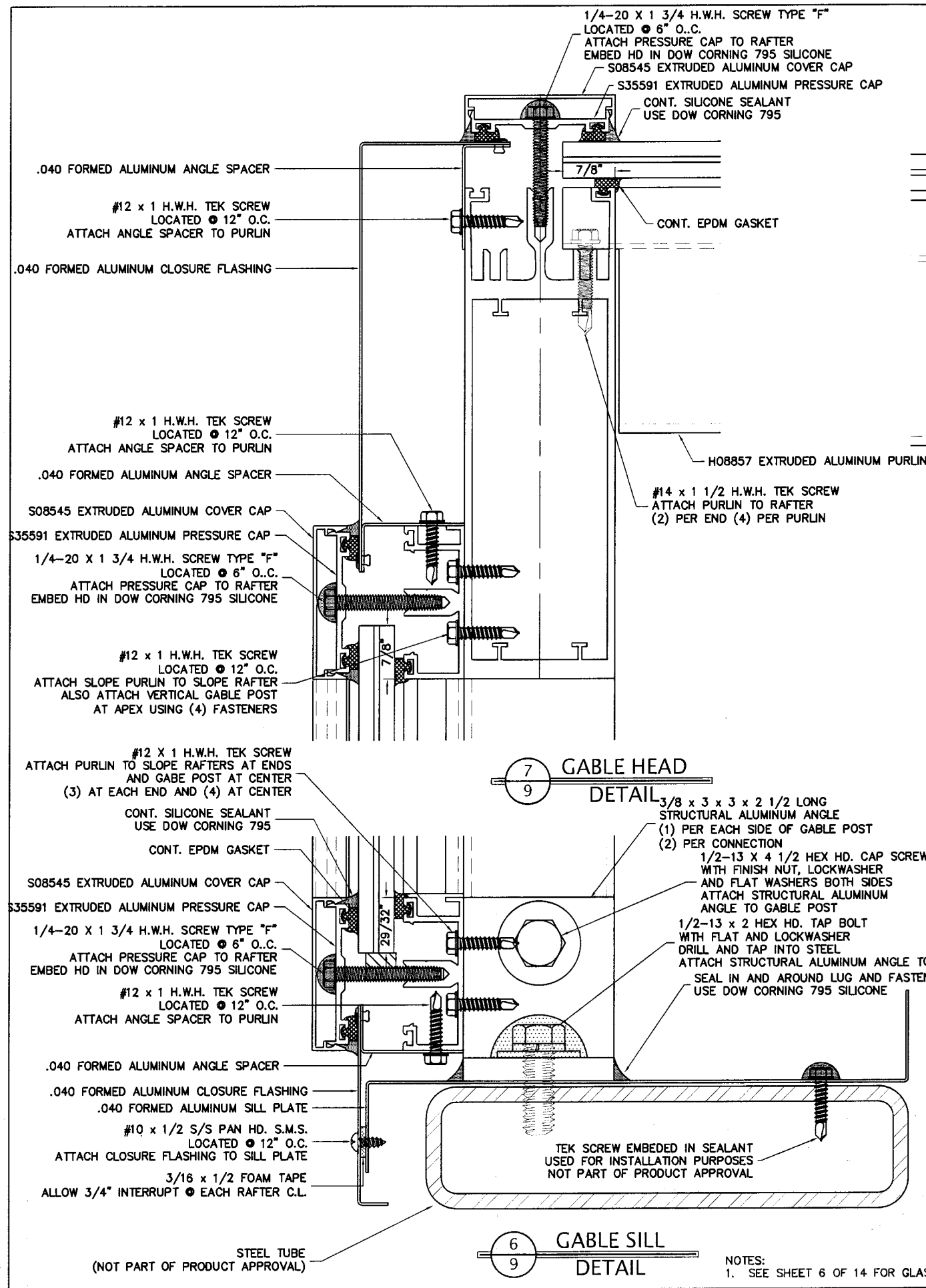
NOTES:
1. SEE SHEET 6 OF 14 FOR GLASS SIZES AND TYPES.

DADE COUNTY USE		ENGINEER STAMP
Approved as complying with the Florida Building Code Date <u>08/11/2010</u> NOA# <u>10-0607.01</u> Miami Dade Product Control Division By <u>Helmy A. Helmy</u>		<i>Robert Meloy</i> <u>2/8/10</u>

PRODUCT NAME SECURE SERIES	PRODUCT TYPE SMALL MISSILE	DRAWING TITLE DETAILS
DOCUMENT NO. SINOA-001	DRAWN BY K. MAZZIE	CHECKED BY
DATE 2-4-10	SCALE 1/4"	DRAWING FILE
SHEET 8 of 14		

acurite
 engineering light
 Acurite Structural Systems Inc.
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 Barwick, PA 18603
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DADE COUNTY USE

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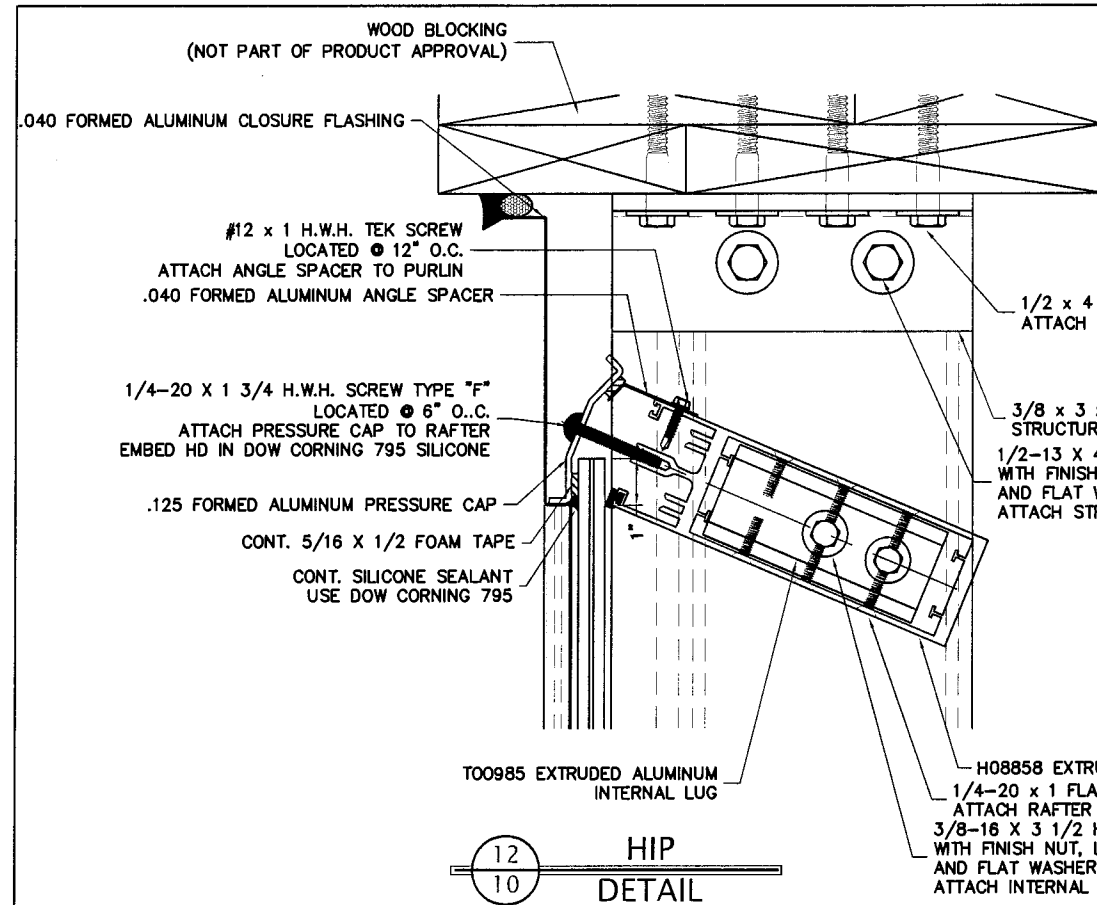
Approved as complying with the Florida Building Code
Date 08/11/2010
NOA# 10-0607.01
Miami Dade Product Control Division
By *Heidi A. M...*

Rob M...
2/20/10

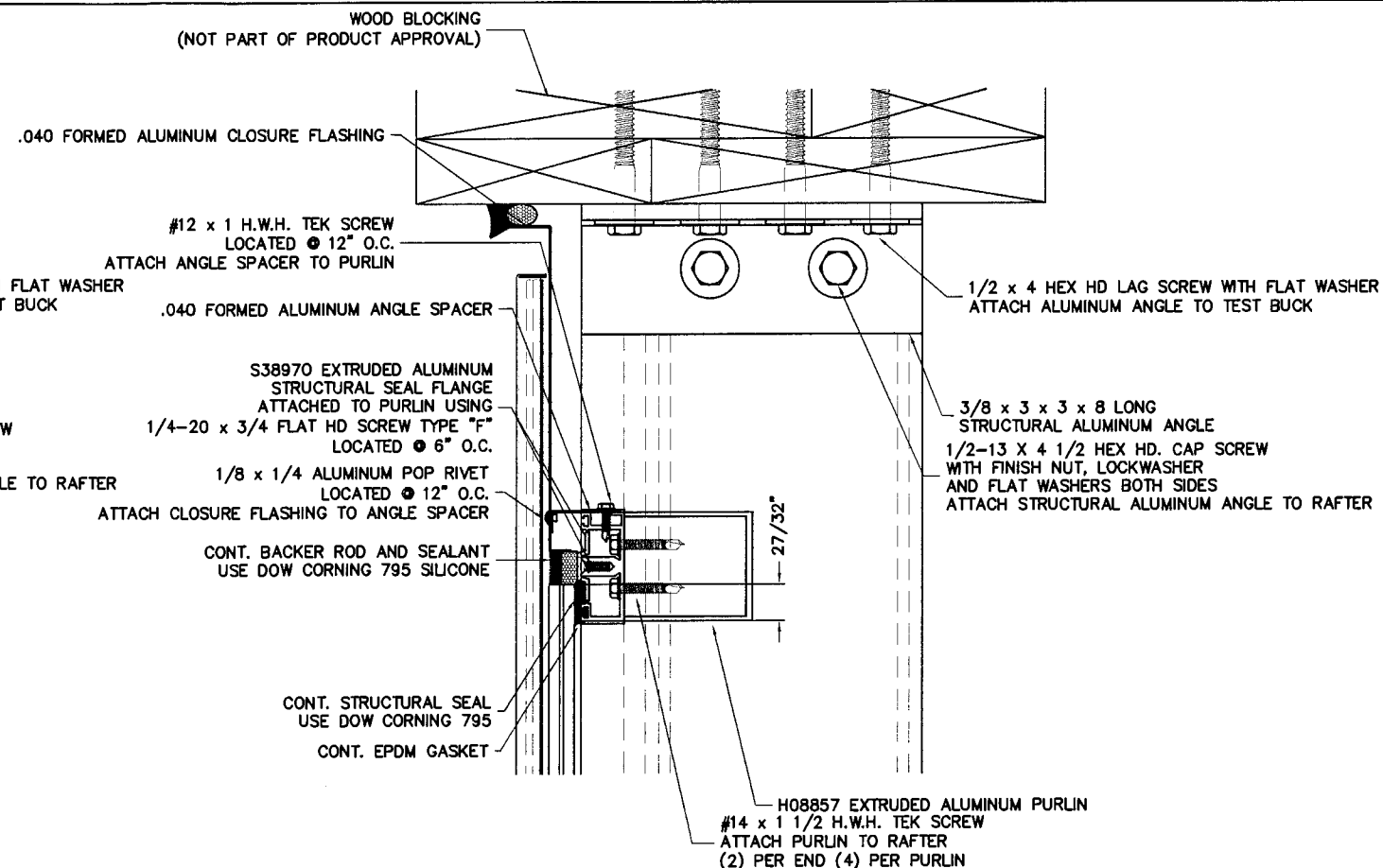
acur lite
engineering light
Acrylic Structural Skylights Inc.
1017 North Vero Street, PO Box 3
Beverly, FL 33403
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SECURE SERIES
SMALL MISSILE
DETAILS

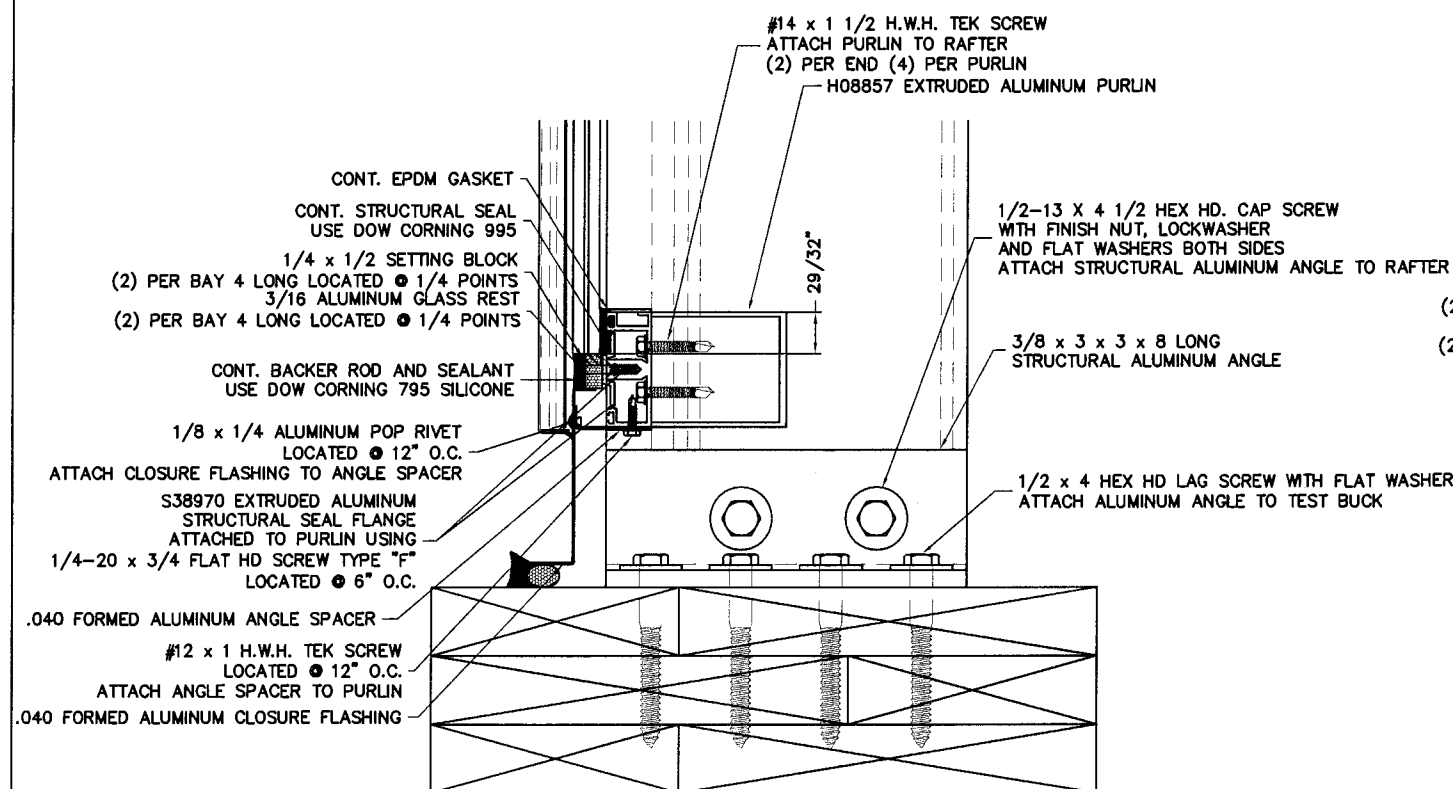
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SMNOA-001
DRAWN BY:
K. M. ZIE
CHECKED BY:
DATE:
2/4/10
SCALE:
HALF
DRAWING FILE:
SHEET



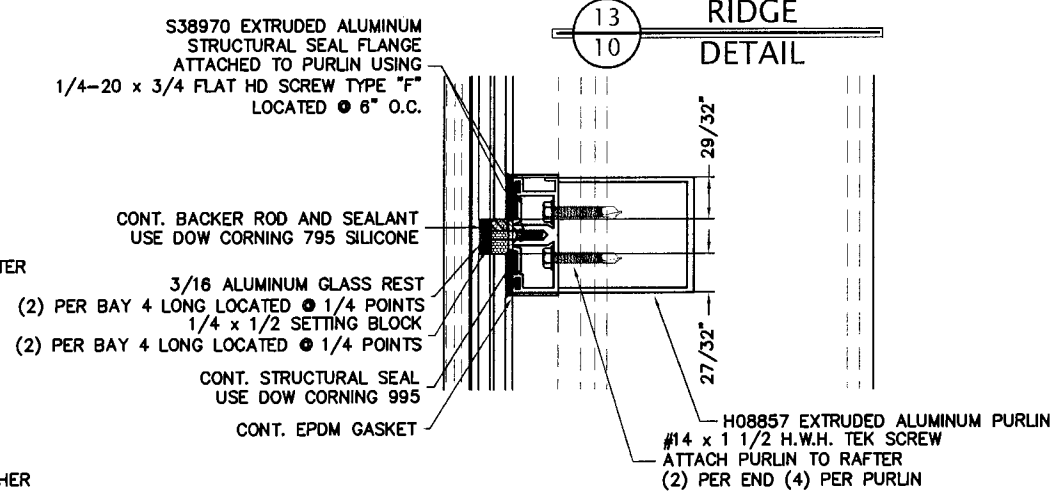
12
10
HIP
DETAIL



13
10
RIDGE
DETAIL



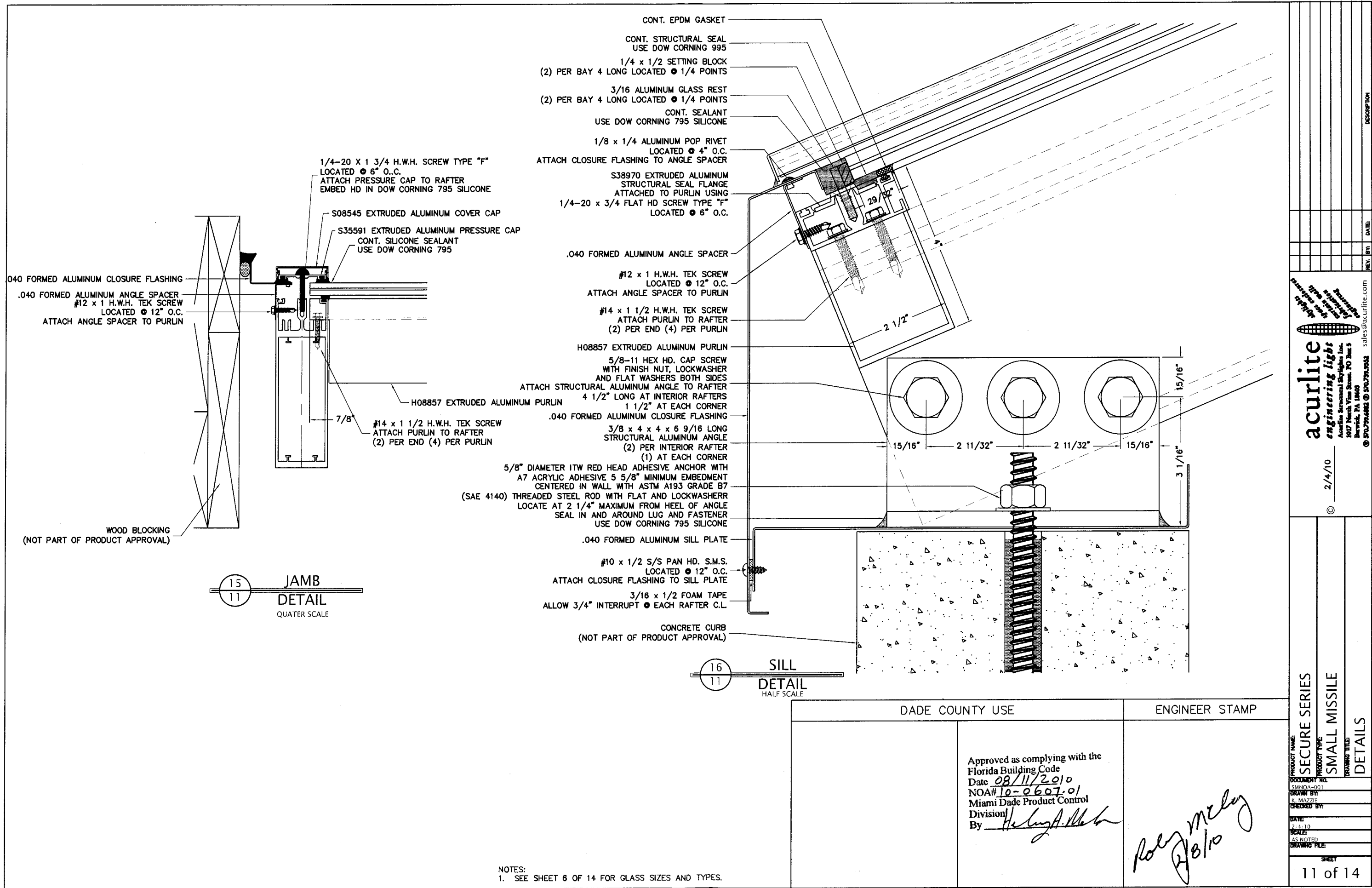
11
10
SILL
DETAIL



14
10
HORIZONTAL
DETAIL

NOTES:
1. SEE SHEET 6 OF 14 FOR GLASS SIZES AND TYPES.

DADE COUNTY USE		ENGINEER STAMP
Approved as complying with the Florida Building Code Date <u>08/11/2010</u> NOA# <u>10-0607.01</u> Miami Dade Product Control Division By <u>Heather A. M...</u>		<i>Robert M...</i> 2/8/10
PRODUCT NAME: SECURE SERIES DOCUMENT NO: SMNOA-001 DRAWN BY: K. MAZZIE CHECKED BY: DATE: 2/4/10 SCALE: QUATER DRAWING FILE: SHEET 10 of 14		2/4/10 © acur lite engineering light Acurlite Structural Skylights Inc. 1017 North Vero Street, PO Box 5 Barrick, PA 18603 © 2010 acur lite.com sales@acur lite.com



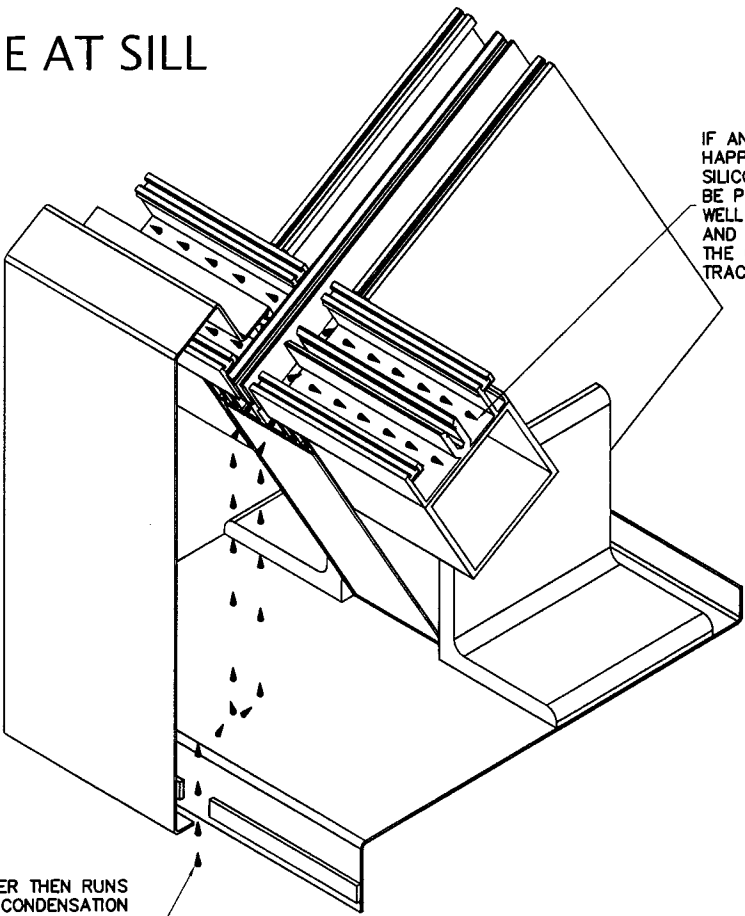
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Barrville, PA 16808
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sales@acurlite.com

2/4/10

SECURE SERIES
SMALL MISSILE
DETAILS

PRODUCT NAME: SECURE SERIES
DOCUMENT NO: SMNOA-001
DRAWN BY: K. MAZZIE
CHECKED BY:
DATE: 2/4/10
SCALE: AS NOTED
DRAWING FILE:
SHEET: 11 of 14

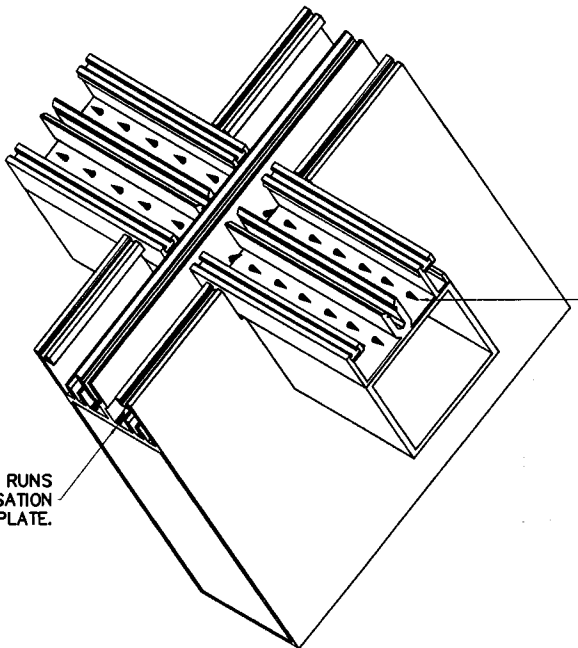
WEEPAGE AT SILL



IF ANY WATER WOULD HAPPEN TO PENETRATE THE SILICONE JOINT IT WOULD BE PICKED UP IN THE WELL OF THE PURLIN AND TRANSFERRED TO THE CONDENSATION TRACK OF THE RAFTER.

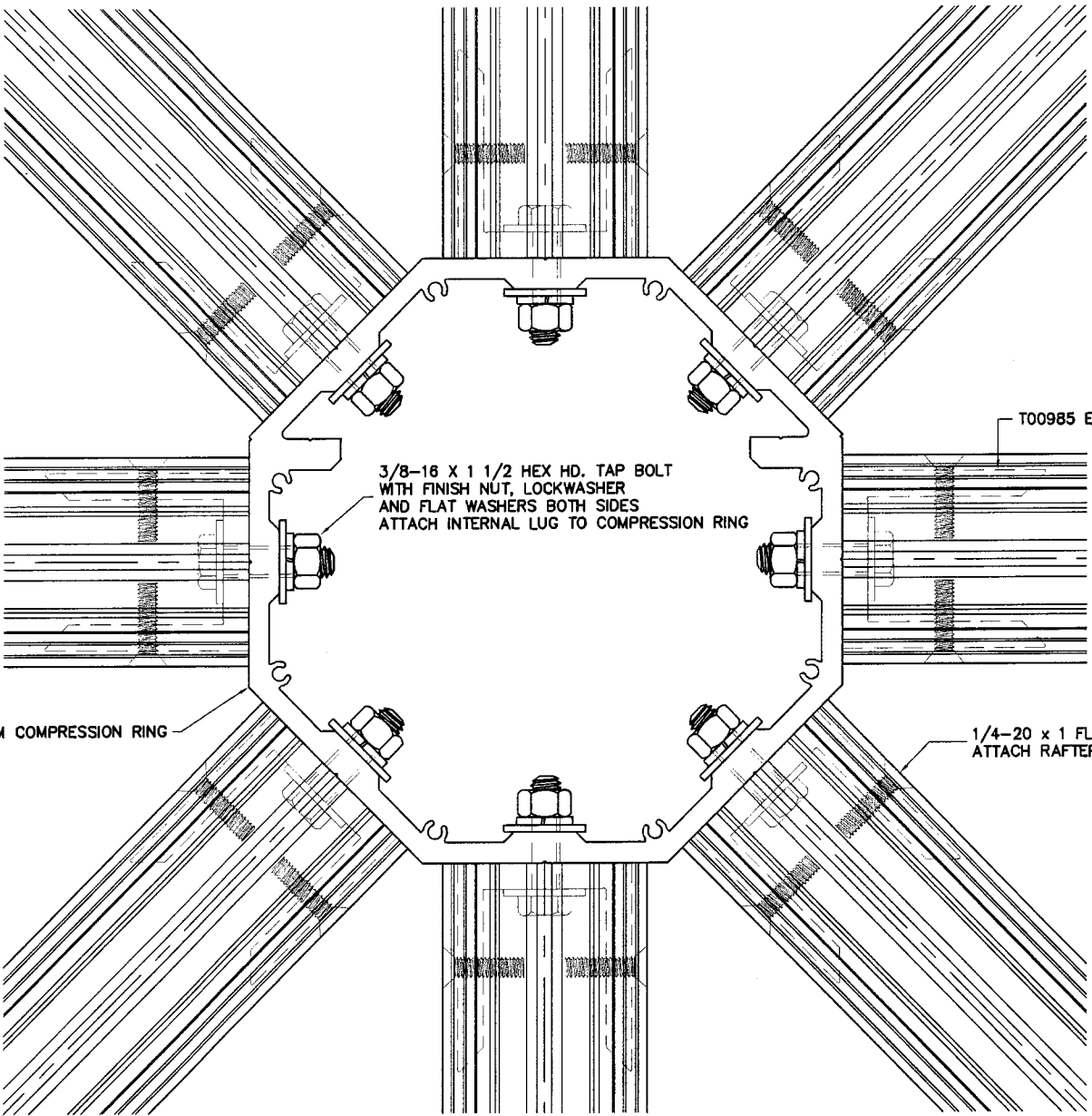
THE WATER THEN RUNS DOWN THE CONDENSATION TRACK ONTO THE SILL PLATE. FROM HERE IT WILL WORK ITS WAY FORWARD TO THE EDGE OF THE SILL PLATE AND DRAIN AT THE 3/4" VOID IN THE SPONGE GASKET. VOID FILLED WITH 30 PPI WEEP BAFFLE.

WEEPAGE AT INTERMEDIATE



IF ANY WATER WOULD HAPPEN TO PENETRATE THE SILICONE JOINT IT WOULD BE PICKED UP IN THE WELL OF THE PURLIN AND TRANSFERRED TO THE CONDENSATION TRACK OF THE RAFTER.

THE WATER THEN RUNS DOWN THE CONDENSATION TRACK TO THE SILL PLATE.



EXTRUDED ALUMINUM COMPRESSION RING

T00985 EXTRUDED ALUMINUM INTERNAL LUG

3/8-16 X 1 1/2 HEX HD. TAP BOLT WITH FINISH NUT, LOCKWASHER AND FLAT WASHERS BOTH SIDES ATTACH INTERNAL LUG TO COMPRESSION RING

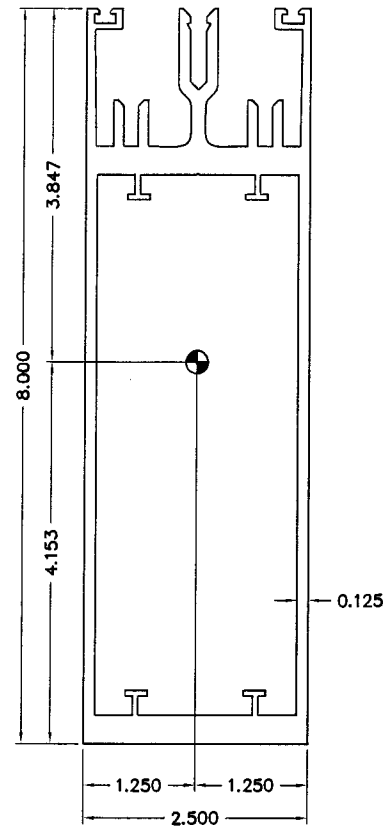
1/4-20 X 1 FLAT HD SCREW TYPE "F" ATTACH RAFTER TO INTERNAL LUG

16
12
COMP. RING
DETAIL

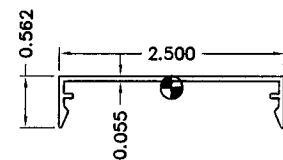
NOTES:
1. SEE SHEET 6 OF 14 FOR GLASS SIZES AND TYPES.

DADE COUNTY USE		ENGINEER STAMP
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PRODUCT NAME: SECURE SERIES		ENGINEER NAME: [Blank]
PRODUCT TYPE: SMALL MISSILE		ENGINEER TITLE: [Blank]
DOCUMENT NO. SMNOA-001		DATE: 2/4/10
DRAWN BY: N. MAZZIE		SCALE: HALF
CHECKED BY: [Blank]		DRAWING FILE: [Blank]
SHEET		12 of 14

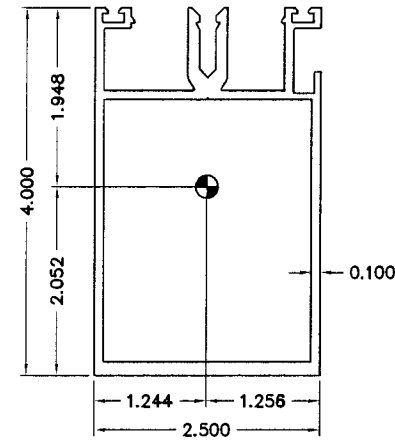
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engineering light
Acurlite Structural Skylights Inc.
1017 North Vasa Lane, PO Box 5
Burrhead, PA 15649
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sales@acurlite.com
570.794.6882



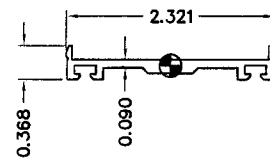
Area: 4.0777
 Perimeter: 54.9115
 Bounding box: X: -1.2500 -- 1.2500
 Y: -4.1528 -- 3.8472
 Moments of inertia: X: 31.3863
 Y: 3.5664
 Product of inertia: XY: 0.0000
 Radii of gyration: X: 2.7743
 Y: 0.9352
 Principal moments and X-Y directions about centroid:
 I: 3.5664 along [0.0000 1.0000]
 J: 31.3863 along [-1.0000 0.0000]
 Weight per lineal foot: 4.77 lbs.
 Aluminum Alloy: 6063-T6



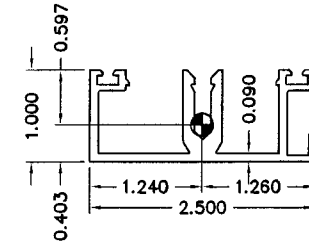
Area: 0.2110
 Perimeter: 7.5289
 Bounding box: X: -1.2500 -- 1.2500
 Y: -0.4392 -- 0.1228
 Moments of inertia: X: 0.0049
 Y: 0.1783
 Product of inertia: XY: 0.0000
 Radii of gyration: X: 0.1527
 Y: 0.9191
 Principal moments and X-Y directions about centroid:
 I: 0.0049 along [1.0000 0.0000]
 J: 0.1783 along [0.0000 1.0000]
 Weight per lineal foot: 0.25 lbs.
 Aluminum Alloy: 6063-T6



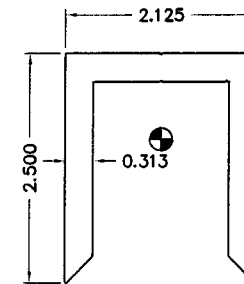
Area: 1.6983
 Perimeter: 31.2602
 Bounding box: X: -1.2438 -- 1.2562
 Y: -2.0520 -- 1.9480
 Moments of inertia: X: 3.4266
 Y: 1.4491
 Product of inertia: XY: -0.0162
 Radii of gyration: X: 1.4204
 Y: 0.9237
 Principal moments and X-Y directions about centroid:
 I: 1.4489 along [0.0082 -1.0000]
 J: 3.4267 along [1.0000 0.0082]
 Weight per lineal foot: 1.99 lbs.
 Aluminum Alloy: 6063-T6



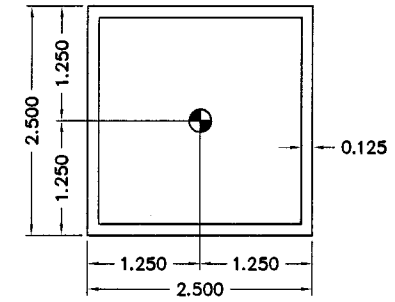
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 Perimeter: 6.9688
 Bounding box: X: -1.1634 -- 1.1626
 Y: -0.1489 -- 0.2190
 Moments of inertia: X: 0.0012
 Y: 0.1486
 Product of inertia: XY: 0.0000
 Radii of gyration: X: 0.0634
 Y: 0.7092
 Principal moments and X-Y directions about centroid:
 I: 0.0012 along [1.0000 0.0000]
 J: 0.1486 along [0.0000 1.0000]
 Weight per lineal foot: 0.354 lbs.
 Aluminum Alloy: 6063-T6



Area: 0.7307
 Perimeter: 15.0209
 Bounding box: X: -1.2403 -- 1.2597
 Y: -0.4032 -- 0.5968
 Moments of inertia: X: 0.0800
 Y: 0.4177
 Product of inertia: XY: -0.0027
 Radii of gyration: X: 0.3309
 Y: 0.7561
 Principal moments and X-Y directions about centroid:
 I: 0.0800 along [1.0000 -0.0080]
 J: 0.4178 along [0.0080 1.0000]
 Weight per lineal foot: 0.86 lbs.
 Aluminum Alloy: 6063-T6



Area: 1.9456
 Perimeter: 13.3068
 Bounding box: X: -1.0624 -- 1.0626
 Y: -1.5635 -- 0.9365
 Moments of inertia: X: 1.0731
 Y: 1.3224
 Product of inertia: XY: -0.0001
 Radii of gyration: X: 0.7427
 Y: 0.8244
 Principal moments and X-Y directions about centroid:
 I: 1.0731 along [1.0000 -0.0004]
 J: 1.3224 along [0.0004 1.0000]
 Weight per lineal foot: 2.335 lbs.
 Aluminum Alloy: 6063-T6



Area: 1.1875
 Perimeter: 19.0000
 Bounding box: X: -1.2500 -- 1.2500
 Y: -1.2500 -- 1.2500
 Moments of inertia: X: 1.1195
 Y: 1.1195
 Product of inertia: XY: 0.0000
 Radii of gyration: X: 0.9709
 Y: 0.9709
 Principal moments and X-Y directions about centroid:
 I: 1.1195 along [0.7071 -0.7071]
 J: 1.1195 along [0.7071 0.7071]
 Weight per lineal foot: 1.39 lbs.
 Aluminum Alloy: 6063-T6

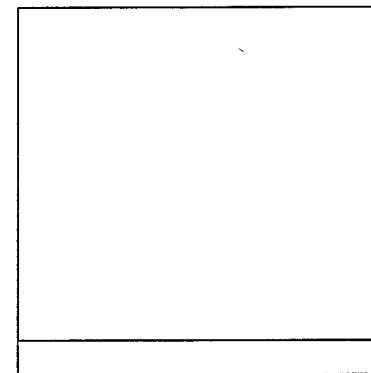


NOTES:
 1. SEE SHEET 6 OF 14 FOR GLASS SIZES AND TYPES.

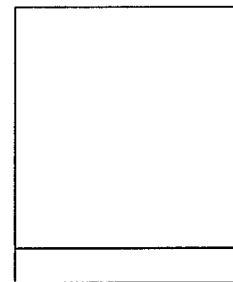
DADE COUNTY USE		ENGINEER STAMP
Approved as complying with the Florida Building Code Date <u>08/11/2010</u> NOA# <u>10-0607-01</u> Miami Dade Product Control Division <u>Building</u> By <u>[Signature]</u>		<u>[Signature]</u> <u>2/8/10</u>

PRODUCT NAME: SECURE SERIES PRODUCT TYPE: SMALL MISSILE DRAWING TITLE: BILL OF MATERIALS	DOCUMENT NO.: SMNOA-001 DRAWN BY: K. MAZZIE CHECKED BY: [Signature] DATE: 2/4/10 SCALE: 1/2" HALF: 1/2" DRAWING FILE: [Path] SHEET: 13 of 14
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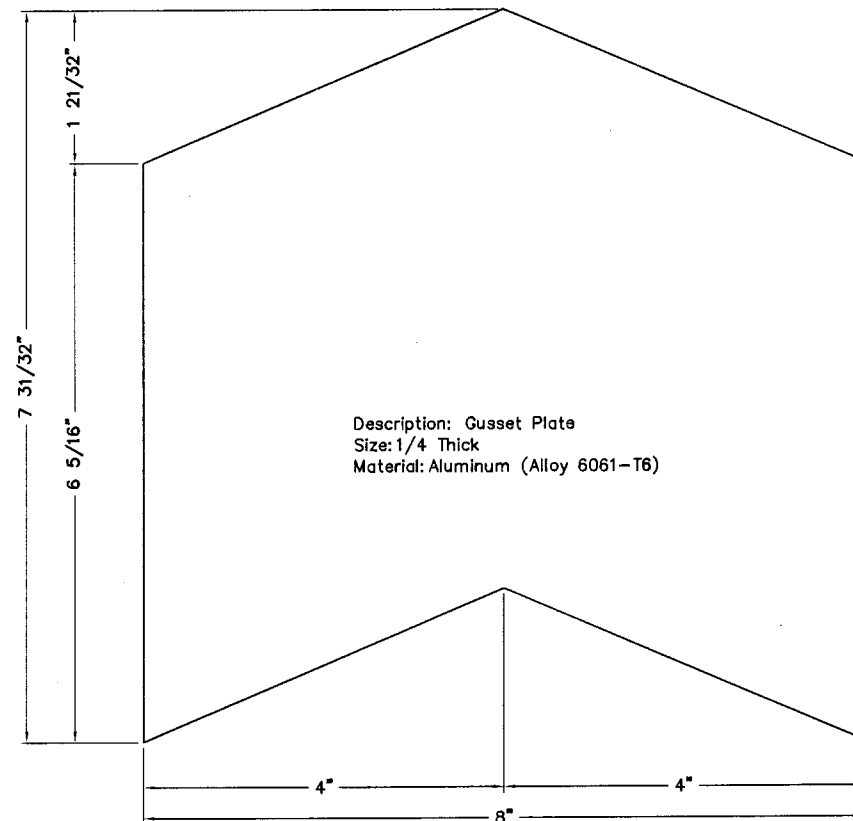
acur lite
 engineering light
 Acur lite Structural Systems Inc.
 1017 North Van Street, PO Box 5
 Berwick, PA 18603
 © 570.796.6882 © 570.796.9943 sales@acur lite.com



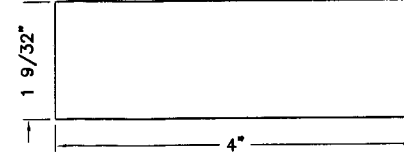
Description: Structural Aluminum Angle
Size: 3/8 x 4 x 4
Material: Aluminum (Alloy 6061-T6)



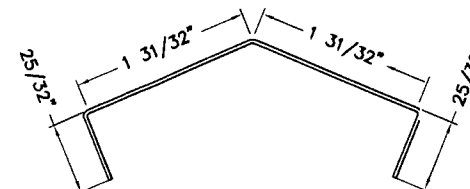
Description: Structural Aluminum Angle
Size: 3/8 x 3 x 3
Material: Aluminum (Alloy 6061-T6)



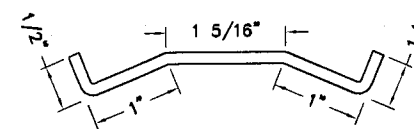
Description: Gusset Plate
Size: 1/4 Thick
Material: Aluminum (Alloy 6061-T6)



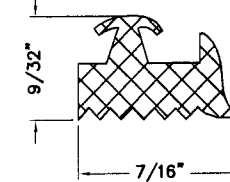
Description: Glass Rest
Size: 3/16 Thick
Material: Aluminum (Alloy 6061-T6)



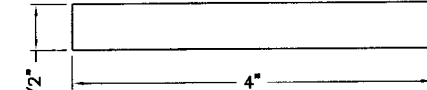
Description: Formed Cover Cap
Size: .040 Thick
Material: Aluminum (Alloy 3003)



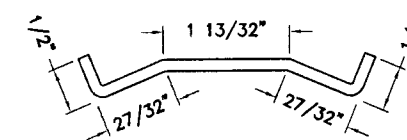
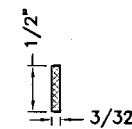
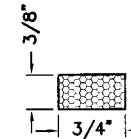
Description: Formed Pressure Cap
Size: .125 Thick
Material: Aluminum (Alloy 3003)



Manufacturer: Elbex
Description: Gasket
Material: EPDM Rubber



Manufacturer: Biltrite
Description: Setting Block
Material: Neoprene



Description: Formed Pressure Cap
Size: .125 Thick
Material: Steel ASTM A36



Description: Pop Rivet
Size: 1/8 x 1/4
Material: Aluminum



Description: Pan Head Sheet Metal Screw (Pan Hd. S.M.S.)
Size: #10 x 1/2
Material: Stainless Steel



Description: Hex Washer Head Tek Screw (H.W.H. Tek Screw)
Size: #12 x 1
Material: SAE Grade 2 Steel



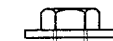
Description: Flat Head Screw Type "F" (F.H.S. Type "F")
Size: 1/4-20 x Varies
Material: SAE Grade 2 Steel



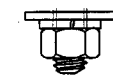
Description: Hex Washer Head Tek Screw (H.W.H. Tek Screw)
Size: #14 x 1 1/2
Material: SAE Grade 2 Steel



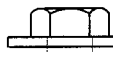
Description: Hex Washer Head Screw Type "F" (H.W.H. Screw Type "F")
Size: 1/4-20 x 3/4
Material: SAE Grade 2 Steel



Description: Hex Head Cap Screw with Finish Nut, Flat Washers and Lockwasher
Size: 3/8-16 x 4 1/2
Material: ASTM Grade 2 Steel



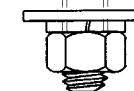
Description: Hex Head Tap Bolt with Flat Washer and Lockwasher
Size: 1/2-13 x 2
Material: ASTM A449 Grade 5



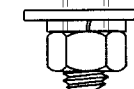
Description: Hex Head Tap Bolt with Finish Nut, Flat Washers and Lockwasher
Size: 1/2-13 x 1 1/2
Material: ASTM Grade 2 Steel



Description: Hex Head Cap Screw with Finish Nut, Flat Washers and Lockwasher
Size: 1/2-13 x 4 1/2
Material: SAE Grade 2 Steel



Description: Hex Head Cap Screw with Finish Nut, Flat Washers and Lockwasher
Size: 5/8-11 x 4 1/2
Material: ASTM A307 Steel



NOTES:
1. SEE SHEET 6 OF 14 FOR GLASS SIZES AND TYPES.

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Approved as complying with the Florida Building Code Date <u>08/11/2010</u> NOA# <u>10-0607.01</u> Miami Dade Product Control Division By <u>Helmy A. M...</u>		

acurllite engineering light	
Acurlite Structural Brighteners Inc. 1017 North Vero Street, PO Box 5 Beverly, FL 32609 © 2007 acurllite.com	
DATE: <u>2/4/10</u>	REV: <u>01</u>
SECURE SERIES	
SMALL MISSILE	
BILL OF MATERIALS	
SHEET 14 of 14	