



# ***NATIONAL CERTIFIED TESTING LABORATORIES***

FIVE LEIGH DRIVE • YORK, PENNSYLVANIA 17406 • TELEPHONE (717) 846-1200  
FAX (717) 767-4100  
[www.nctlinc.com](http://www.nctlinc.com)

## **MOCK-UP TEST REPORT**

**NCTL-110-19973-1**

### **ACURLITE STRUCTURAL SKYLIGHTS**

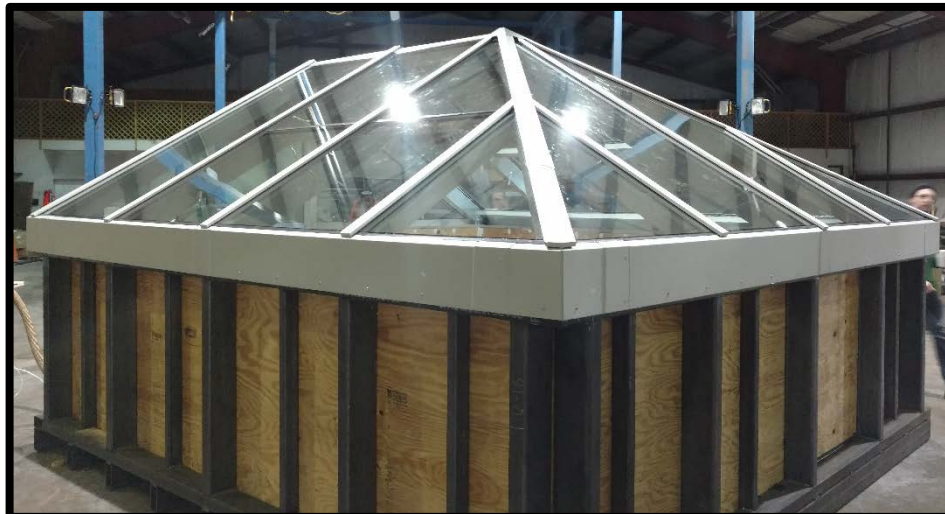
#### **MOCKUP TEST UNIT**

#### **TEST DATES**

**03/13/17, 03/21/17 – 03/23/17**

#### **REPORT DATE**

**04/03/17**





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**Report Number** NCTL-110-19973-1

**Report Date** 04/03/17

**Report To** Acurlite Structural Skylights  
1017 North Vine Street  
Berwick, PA 18603

**Project** Mockup Test Unit

**Test Date(s)** 03/13/17, 03/21/17 – 03/23/17

**Test Method(s)** ASTM E283-04(12)  
Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen

ASTM E331-00(09)  
Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference

ASTM E330-02(14)  
Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference

AAMA 501.1-05  
Standard Test Method For Water Penetration Of Windows, Curtain Walls And Doors Using Dynamic Pressure

## ***DRAWING REFERENCE***

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Acurlite Structural Skylights's Drawings Titled, "AWS Test Unit", Dated 06/15/16, Sheet Numbers 1.00, 2.00, 2.01, 2.02, 2.03, 2.04, 2.05, 3.00, 3.01, 3.02 and 3.03.

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## ***PROJECT SUMMARY***

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National Certified Testing Laboratories, Inc. was contracted by Acurlite Structural Skylights to conduct performance testing on a mock-up for the above-referenced project at their facility in Berwick, PA.

The test specimen successfully met all criteria outlined in the testing procedure.

## ***SPECIMEN DESCRIPTION***

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The test specimen was a double pitch skylight with (1) gable end and (1) hipped end. The double pitch side each employed (6) fixed lites, the hipped end employed (4) fixed lites and the gable end employed (4) fixed lites. The units were installed onto an aluminum sill receptor/flashing system. The mock-up was anchored to a simulated skylight "curb" condition. See attached drawings for a full description of the mock-up.

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**TEST RESULTS**

Note: Unless otherwise noted, all dimensions are in the order (Width x Height x Thickness) and all designations are from an interior view

03/22/17	<b>Test</b>		
	Preliminary Load Test		
	+22.5 psf - Pre-Load	=	Pass
	Allowed	=	Not Applicable
03/22/17	Air Infiltration 6.24 psf (49 mph)		
	Result	=	0.02 cfm/ft <sup>2</sup>
	Allowed	=	0.06 cfm/ft <sup>2</sup>
03/22/17	Water Penetration 12.0 psf (68.47 mph)		
	Result	=	Pass/ No Leakage
	Allowed	=	No Leakage
03/22/17	Dynamic Water Resistance 12.0 psf		
	Result	=	Pass/ No Leakage
	Allowed	=	No Leakage
	Note: Testing performed (2) times in order to facilitate testing on all elevations.		
03/22/17	Uniform Load Deflection DP45		
	+ 45.0 psf - Design	=	0.003"/ Pass
	Allowed	=	0.754"
	- 45.0 psf - Design	=	0.012"/ Pass
	Allowed	=	0.745"
03/22/17	Repeat Air Infiltration 6.24 psf (49 mph)		
	Measured	=	0.02 cfm/ft <sup>2</sup>
	Allowed	=	0.06 cfm/ft <sup>2</sup>
03/23/17	Water Penetration 12.0 psf (68.47 mph)		
	Result	=	Pass/ No Leakage
	Allowed	=	No Leakage
03/23/17	Dynamic Water Resistance 12.0 psf		
	Result	=	Pass/ No Leakage
	Allowed	=	No Leakage

03/23/17

## Uniform Load Structural DP45

+ 67.5 psf - Design	=	0.012"/ Pass
Allowed	=	0.264"
-67.5 psf - Design	=	0.033"/ Pass
Allowed	=	0.264"

Note: See Appendix B and C for full results of the Uniform Load tests

**OPTIONAL PERFORMANCE GRADE DP-75**

03/23/17

## Uniform Load Deflection DP75

+ 75.0 psf - Design	=	0.005"/ Pass
Allowed	=	0.754"
- 75.0 psf - Design	=	0.007"/ Pass
Allowed	=	0.745"

Note: See Appendix B and C for full results of the Uniform Load tests

03/23/17

## Uniform Load Structural DP75

+112.1 psf - Design	=	0.034"/ Pass
Allowed	=	0.264"
-112.1 psf - Design	=	0.115"/ Pass
Allowed	=	0.264"

Note: See Appendix B and C for full results of the Uniform Load tests

**Witness Log: (All or Partial)**

Keith Mazzie	Acurlite Structural Skylights
Matt Snyder	Acurlite Structural Skylights
Kyle Maylath	Acurlite Structural Skylights
Robert DeFayette	NCTL
George Edleblute	NCTL

This test report was prepared by National Certified Testing Laboratories (NCTL), for the exclusive use of the above named client and it does not constitute certification, or approval of this product or materials. The results are for the particular specimen tested and do not imply the quality of similar or identical products manufactured or installed from specifications identical to the tested product. The results in this report are actual tested values and are applicable to the specimen tested only. The test specimen was supplied to NCTL by the above named client. NCTL is a testing lab and assumes that all information provided by the client is accurate and does not guarantee or warranty any product tested or installed.

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**National Certified Testing Laboratories**



Robert Wm. DeFayette  
Field Testing Manager

RWD/ dro  
Encls:  
Appendix A - Photographs  
Appendix B - Drawings

**Revision Summary**

<u>Identification</u>	<u>Date</u>	<u>Page &amp; Revision</u>
Original Issue	04/03/17	Not Applicable

## APPENDIX A

### Photographs



Photo No. 1

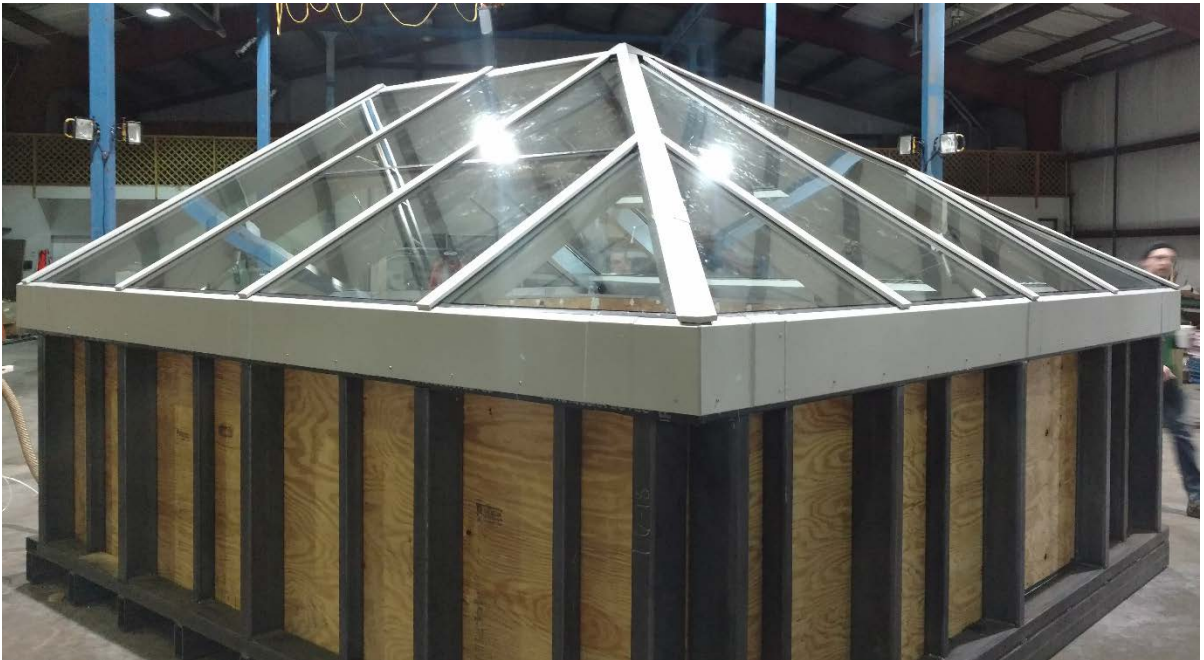


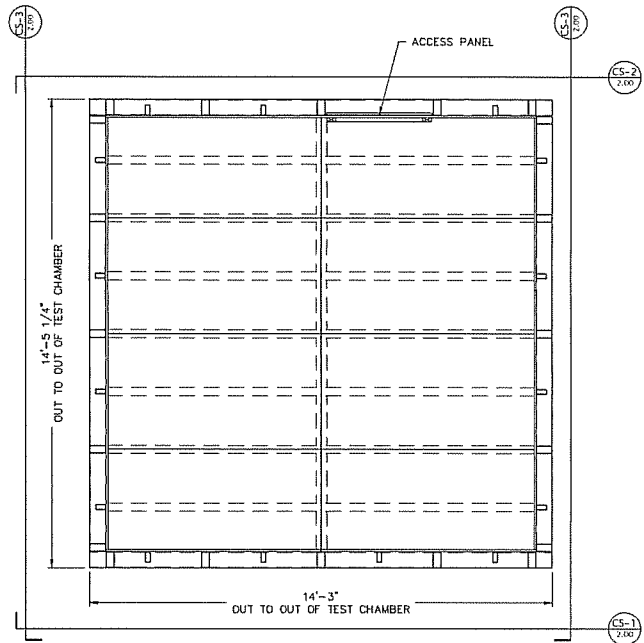
Photo No. 2

## **APPENDIX B**

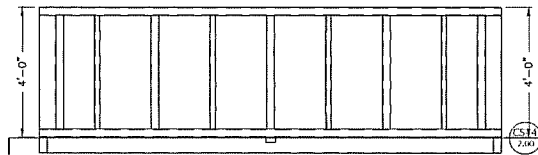
### Drawings

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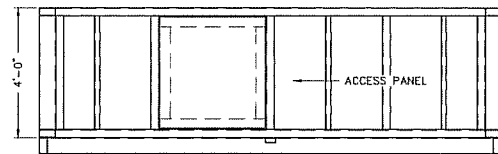




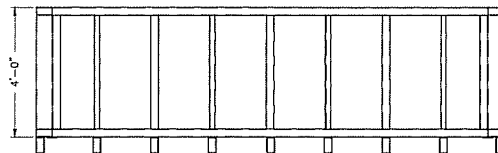
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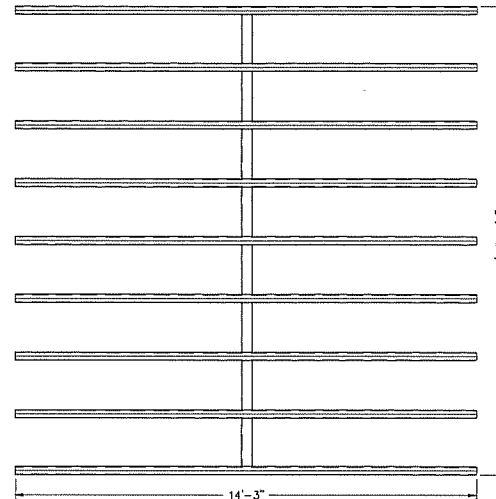
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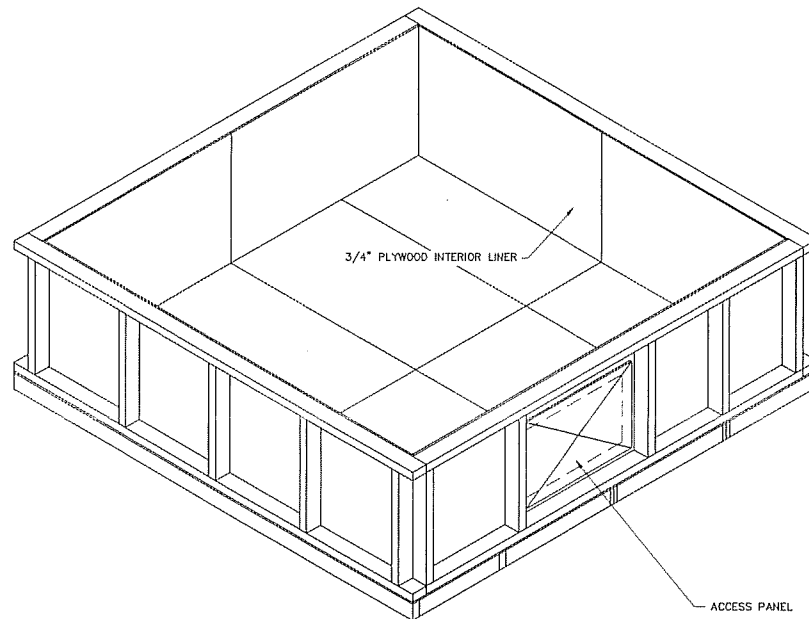
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SCALE : 1/2" = 1'-0"



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



CROSS SECTION CS-4  
SCALE : 1/2" = 1'-0"



BILL OF MATERIALS			
LOCATION	DESCRIPTION	QTY.	SIZE
CHAMBER BASE	6x3x1/4 STEEL TUBE	9	14'-3"
CHAMBER BASE	4x2x1/4 STEEL TUBE	6	1'-6 3/8"
CHAMBER BASE	4x2x1/4 STEEL TUBE	2	1'-6"
CHAMBER HORIZONTAL	6x3x1/4 STEEL TUBE	4	14'-3"
CHAMBER HORIZONTAL	6x3x1/4 STEEL TUBE	4	13'-5 1/4"
CHAMBER VERTICAL	6x3x1/4 STEEL TUBE	20	3'-6"
CHAMBER VERTICAL	4x2x1/4 STEEL TUBE	15	3'-6"
CHAMBER BASE	3/4" PLYWOOD	4	6'-6 3/4"x3'-1 1/8"
CHAMBER BASE	3/4" PLYWOOD	4	6'-6 3/4"x3'-6 3/4"
CHAMBER LINER	3/4" PLYWOOD	4	6'-7 1/2"x4'-0"
CHAMBER LINER	3/4" PLYWOOD	4	6'-7 7/8"x4'-0"
CHAMBER LINER	3/4" PLYWOOD	1	8'-0"x4'-0"
ACCESS PANEL	3/4" PLYWOOD	1	3'-2 3/4"x4'-0"
ACCESS PANEL	2X4	2	3'-5"
ACCESS PANEL	2X4	2	2'-7 3/4"

CONSTRUCTION BLOCK  
I HEREBY CERTIFY THAT ALL DIMENSIONS, PLANS, AND SPECIFICATIONS SHOWN ON THE ENCLOSED SHOP DRAWINGS, ELEVATIONS, AND SECTIONAL DRAWINGS, AS PER THESE DRAWINGS, HAVE BEEN PREPARED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF THEY COMPLY WITH ALL CITY, STATE, AND FEDERAL REQUIREMENTS AND I AM NOT PROVIDING ANY GUARANTEE OR WARRANTY FOR THE SAME.

DATE: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_

acurite  
engineering light  
Acurite Structural Skylights Inc.  
1011 S. 1st Ave. Street, PO Box 4  
Tulsa, OK 74101  
© 570.729.6842 © 570.729.6852 © sales@acurite.com

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PROJECT NAME: AWS TEST UNIT  
DESIGNED BY: E. MAZZI  
CHECKED BY: E. MAZZI  
DATE: 8/15/16  
SCALE: AS NOTED  
DRAWING TITLE: AWS MOCKUP  
PLANS AND ELEVATIONS

2.00



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DRAWING TITLE:	PLANS AND ELEVATIONS

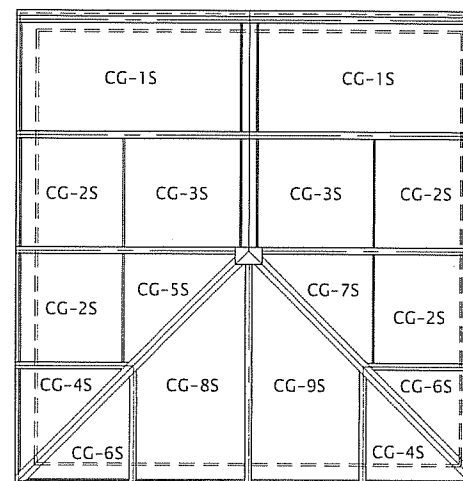
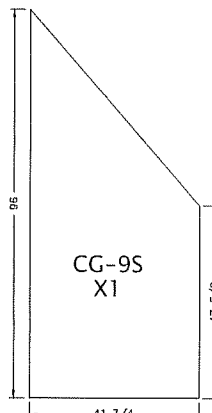
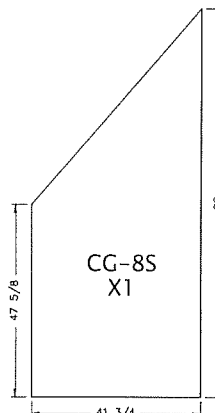
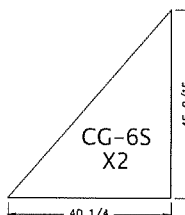
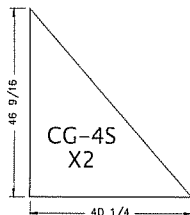
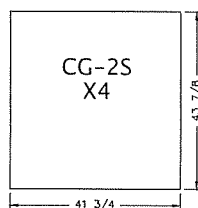
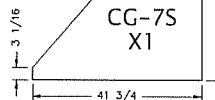
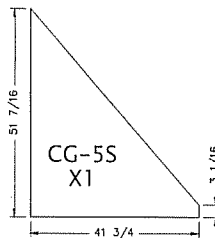
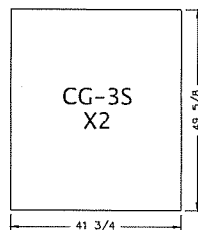
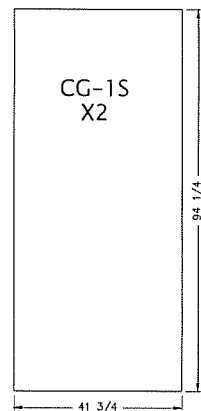
**CERTIFICATION BLOCK**

I HEREBY CERTIFY THAT ALL DIMENSIONS, PLANS, ELEVATIONS, AND FITCH ARE CORRECT, AS INDICATED ON THE ENCLOSED SHOP DRAWINGS. I HEREBY CERTIFY THAT THE SHOP DRAWINGS SHOW INDICATED STRUCTURE (S), AS PER THESE DRAWINGS.

PRINT NAME \_\_\_\_\_ DATE \_\_\_\_\_

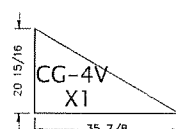
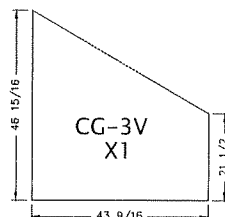
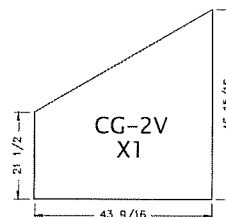
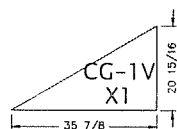
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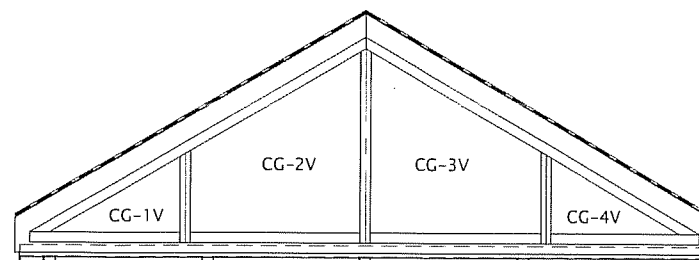
SLOPE GLAZING  
1 5/16" I.G.U.

1/4" CLEAR HEAT STRENGTHENED  
1/2" MILL AIRSPACE WITH BLACK SILICONE SECONDARY SEAL  
9/16" CLEAR HEAT STRENGTHENED LAMINATED  
1/4" CLEAR HEAT STRENGTHENED  
.060 PVB  
1/4" CLEAR HEAT STRENGTHENED



VERTICAL GLAZING  
1" I.G.U.

1/4" CLEAR TEMPERED  
1/2" MILL AIRSPACE WITH BLACK SILICONE SECONDARY SEAL  
1/4" CLEAR TEMPERED



PROJECT NAME: AWS TEST UNIT  
PROPOSED BY: ACURLITE STRUCTURAL SKYLIGHTS  
DRAWING TITLE: GLASS SIZES

© 6/15/16

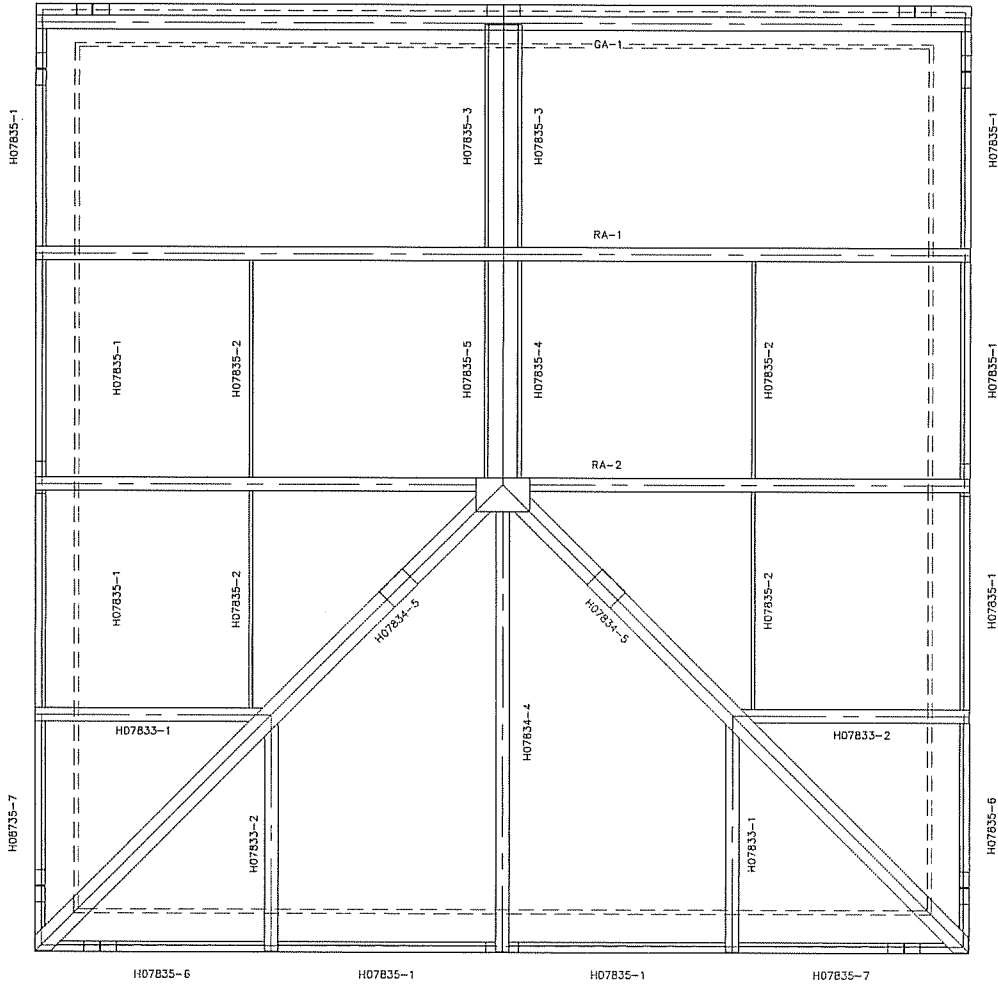
**acurlite**  
engineering light  
Acurlite Structural Skylights Inc.  
1012 South Vine Street, PO Box 8  
Berkley, PA 15010  
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CERTIFICATION BLOCK  
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ILLUSTRATIONS AND PFD ARE CORRECT AS INDICATED  
AND HAVE BEEN PREPARED BY THE ABOVE INDICATED  
PERSON OR PERSONS. I AM NOT PROVIDING ANY  
WARRANTY OR GUARANTEE OF THE ABOVE INFORMATION.  
NAME: DATE: SIGNATURE:

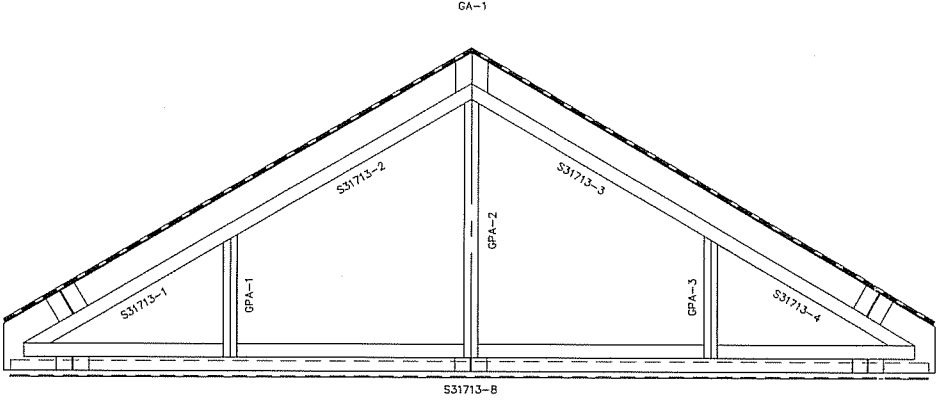
REV	DATE	DESCRIPTION

DATE: 6/15/16  
BY: AS NOTED  
CHECKED BY: AWS MOCKUP  
SCALE: 2.02





RAFTER & PURLIN LAYOUT  
 SCALE : 1" = 1'-0"



RAFTER & PURLIN LAYOUT  
 SCALE : 1" = 1'-0"

PROJECT NAME: AWS TEST UNIT  
 PREPARED BY: ACURLITE STRUCTURAL SKYLIGHTS  
 DRAWING TITLE: PLANS AND ELEVATIONS

DRAWN BY: K. MAZZINI  
 CHECKED BY: G. L. S. 116  
 DATE: 6/15/16  
 AS NOTED  
 DRAWING: AWS MOCKUP  
 SHEET: 2.04

acurlite  
 engineering light  
 1017 North Vine Street, PO Box 5  
 Berwick, PA 16003  
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 acurlite.com

CERTIFICATION BLOCK  
 I HEREBY CERTIFY THAT THE  
 ELEVATIONS AND PURLIN LAYOUTS  
 SHOWN ON THIS DRAWING ARE  
 ACCURATE REPRESENTATIONS OF THE ABOVE  
 PROJECT. I AM A REGISTERED PROFESSIONAL  
 ENGINEER IN THE STATE OF PENNSYLVANIA.  
 NAME: DATE: SIGNATURE:

REV	BY	DATE	DESCRIPTION



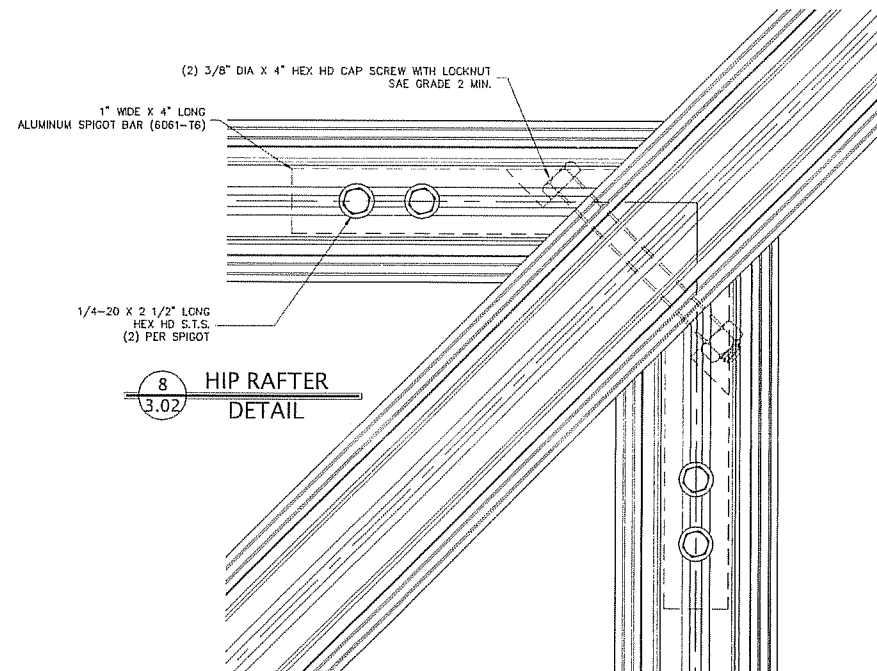
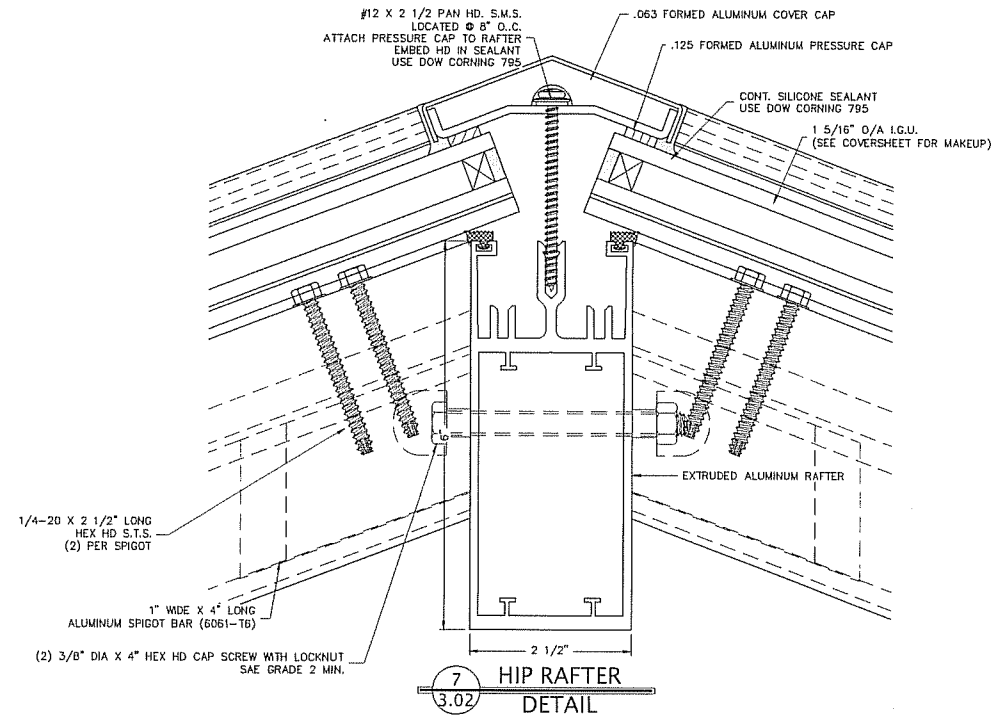
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<b>PREPARED BY:</b>		<b>DATE</b>
<b>ACURLITE STRUCTURAL SKYLIGHTS</b>		<b>6/15/16</b>
<b>DRAWING FILE:</b>		<b>DATE</b>
<b>PLANS AND ELEVATIONS</b>		<b>DATE</b>
<b>AS NOTED</b>		<b>DATE</b>
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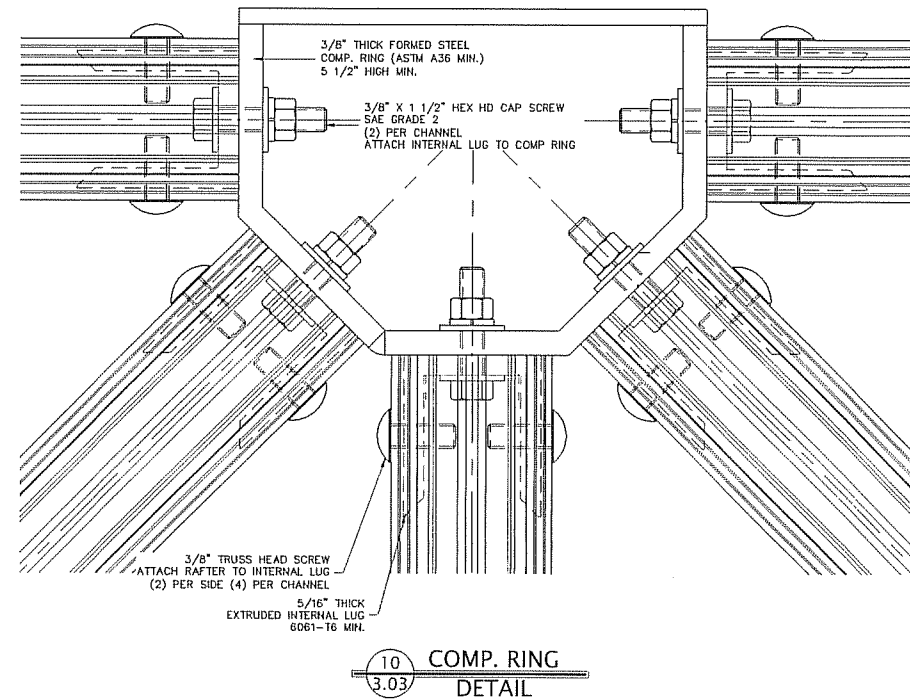
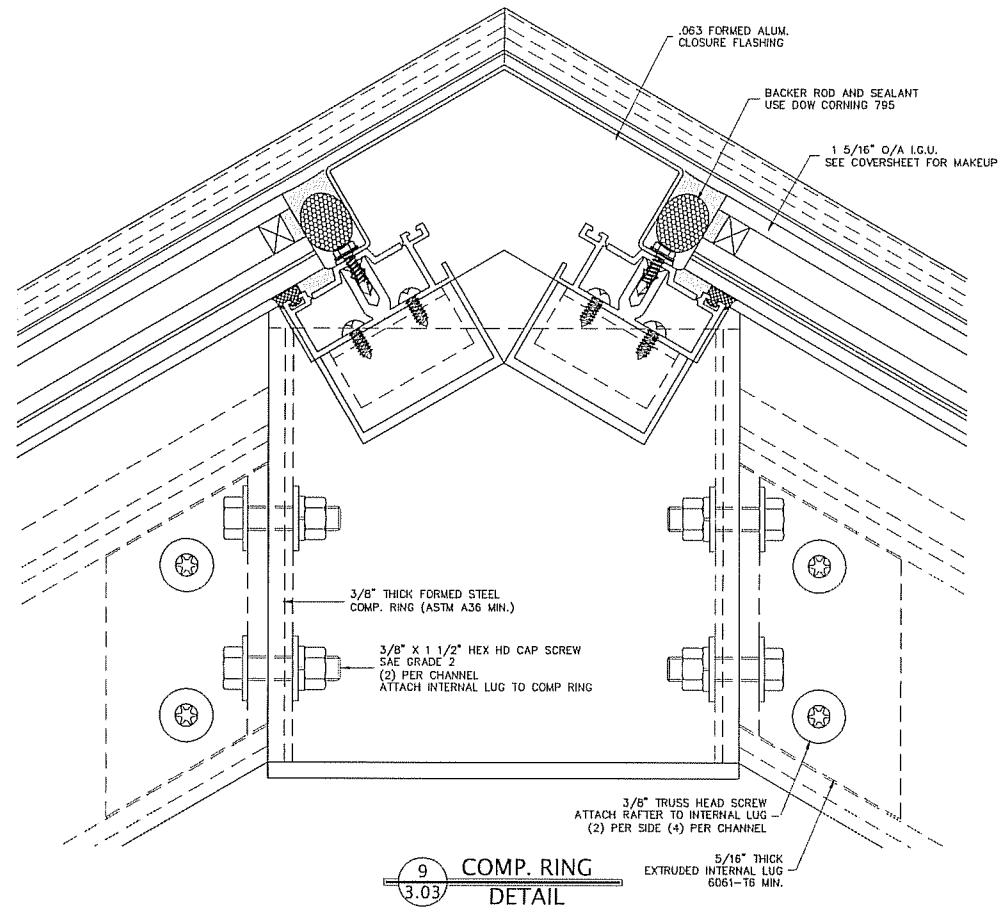
2.05




3.01







<b>PROJECT NAME:</b> AWS TEST UNIT						<b>PROJECT NO.:</b>					
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<b>DATE:</b> 6/15/16						<b>SCALE:</b>					
<b>AS NOTED</b>						<b>DETAILS</b>					
<b>AMS WORKUP</b>											
3.03											
 <b>acurlite</b> <i>engineering light</i> Acurlite Structural Systems, Inc. 1917 North Street, PO Box 8 Borewick, PA 15009 © 6/15/16 @ 570.29.6862   570.729.0552   info@acurlite.com											
<p><b>CERTIFICATION BLOCK</b></p> <p>I, <b>[NAME]</b>, CERTIFY THAT ALL DIMENSIONS, FINISHES, MATERIALS, AND METHODS OF CONSTRUCTION SHOWN ON THIS DRAWING WERE ACCURATELY FIELD CHECKED AND VERIFIED BY ME OR MY DESIGNATED REPRESENTATIVE, AS PER THESE INSTRUCTIONS.</p> <p>NAME: _____ DATE: _____</p> <p>SIGNATURE: _____</p>											
<div style="float: right;">             REV. BY: _____              DATE: _____              DESCRIPTION: _____           </div>											