

**AAMA/WDMA/CSA 101/LS.2/A440-05
TEST REPORT**

Rendered to:

WASHOE EQUIPMENT, INC. DBA SUNOPTICS PRISMATIC SKYLIGHTS

**SERIES/MODEL: 800MD Signature
PRODUCT TYPE: Fixed Plastic Glazed Skylight**

Title	Summary of Results
Primary Product Designator	SKP-C30 1618 x 2531 (64 x 100)
Design Pressure	1440 Pa (30.1 psf)
Negative Design Pressure	2400 Pa (50.1 psf)
Water Penetration Resistance Test Pressure	580 Pa (12.11 psf)
Air Infiltration	0.21 L/s/m ² (0.04 cfm/ft ²)
Uniform Load Structural Test Pressure	+2880 Pa (+60.15 psf) -4800 Pa (-100.3 psf)

Test Completion Date: 12/22/09

Reference must be made to Report No. 95748.01-301-44, dated 02/10/10 for complete test specimen description and data.

AAMA/WDMA/CSA 101/I.S.2/A440-05 TEST REPORT

Rendered to:

WASHOE EQUIPMENT, INC. DBA SUNOPTICS PRISMATIC SKYLIGHTS
6201 27th Street
Sacramento, California 95822

Report No.: 95748.01-301-44
Test Dates: 10/29/09
Through: 12/22/09
Report Date: 02/10/10
Expiration Date: 12/22/13

Project Summary: Architectural Testing, Inc. was contracted by Washoe Equipment, Inc. dba Sunoptics Prismatic Skylights to perform testing on a Series/Model 800MD Signature, Fixed Plastic Glazed Skylight. The sample tested successfully met the performance requirements for a product rating of SKP-C30 1618 x 2531 (64 x 100). Test specimen description and results are reported herein. The sample was provided by the client.

Test Specification: The test specimen was evaluated in accordance with:

AAMA/WDMA/CSA 101/I.S.2/A440-05, *Standard/Specification for Windows, Doors, and Unit Skylights.*

Test Specimen Description:

Series/Model: 800MD Signature

Product Type: Fixed Plastic Glazed Skylight

Dimensions:

Overall Frame OD: 1618 mm (63-11/16") wide by 2531 mm (99-5/8") long
Overall Height: 476 mm (18-3/4") high including frame
Curb OD: 1594 mm (62-3/4") wide by 2508 mm (98-3/4") long
Aluminum Glazing Retainer: 1554 mm (61-3/16") wide by 2467 mm (97-1/8") long

Overall Area: 4.10 m² (44.1 ft²)

Test Specimen Description: (Continued)

Frame Construction: The extruded aluminum frame corners were mitered and fully welded. An extruded vinyl thermal separator was snap-fitted to the frame. The hollow between the separator and frame was filled with an expanded polystyrene core. The thermal separator on the short side was butted and sealed with silicone to the long side.

Drainage:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
2" x 3/16" weep slot	2	Long frame side, 6" from opposite corners

Weatherstripping:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
1/2" vinyl weathersweep	1 Row	Inner side of frame perimeter facing curb, inserted into T-slot.

Dome: The dome was formed with a pattern of angular ridges and valleys in parallel arches across the shorter width of the skylight. A flat surface sloped up from each end of the dome.

Description:	Plastic single-glazed
Material:	white prismatic 100% impact acrylic
Thickness before forming:	4.19 mm (0.165")
Overall Dome Rise:	Approximately 15-1/2"
Ridge Spacing:	Approximately 7"
Ridge Height:	Approximately 1-1/4"

Glazing Details: The specimen was exterior glazed and secured with an aluminum retainer with serrations to engage the aluminum frame. The dome was fully embedded in sealant applied to the frame prior to setting the dome and to the dome prior to installing the retainer. Two different glazing compounds were utilized. Dow Corning 795 silicone sealant was applied to the center 24" of each short side and to the center 48" of each long side. GE SCS1000 silicone sealant was utilized in the remaining areas. The retainer corners were mitered. The retainer was secured to the aluminum frame using eight #6 x 1/2" hex washer head self-drilling steel screws, two screws per corner located 1-1/2" from each end.

Test Specimen Description: (Continued)

Finish: All aluminum was mill finish and all vinyl was white.

Installation: The skylight was mounted according to the manufacturer's instructions (Reference Appendix D) onto a test curb fabricated from nominal 2 x 8 Douglas Fir No. 2 lumber. The specimen was attached to the curb with #12 x 1-1/2" hex washer head self-tapping screws through pre-punched screw holes in the frame located approximately 8" from each corner and 12" on center. A 1-1/2" x 1/4" adhesive backed foam pad was attached to the skylight frame to provide a seal to the upper face of the curb.

Test Results: The temperature during testing was 20°C (68°F). The results are tabulated as follows:

<u>Paragraph</u>	<u>Title of Test - Test Method</u>	<u>Results</u>	<u>Allowed</u>
5.3.2.1	Air Leakage Resistance per ASTM E 283 75 Pa (1.57 psf)	0.21 L/s/m ² (0.04 cfm/ft ²)	1.5 L/s/m ² max. (0.3 cfm/ft ²)

Note #1: *The tested specimen exceeds the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440-05 for air leakage resistance.*

5.3.3.2	Water Penetration Resistance per ASTM E 331		See Note #2
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Note #2: *The client opted to start at a pressure higher than the minimum required. Those results are listed under "Optional Performance".*

5.3.4.2	Uniform Load Deflection per ASTM E 330 (Loads were held for 60 seconds) (Deflections were taken on the dome. See Sketch #1.)		
	1440 Pa (30.08 psf) (positive)	31.5 mm (1.24")	See Note #3
	1440 Pa (30.08 psf) (negative)	26.0 mm (1.03")	See Note #3
	(Deflections were taken on the frame between anchors. See Sketch #1.)		
	1440 Pa (30.08 psf) (positive)	0.5 mm (0.02")	See Note #3
	1440 Pa (30.08 psf) (negative)	0.5 mm (0.02")	See Note #3

Note #3: *The deflections reported are not limited by AAMA/WDMA/CSA 101/I.S.2/A440-05 for this product designation. The deflection data is recorded in this report for special code compliance and information only.*

Test Results: (Continued)

<u>Paragraph</u>	<u>Title of Test - Test Method</u>	<u>Results</u>	<u>Allowed</u>
5.3.4.3	Uniform Load Structural per ASTM E 330 (Loads were held for 60 seconds) (Permanent sets were taken on the dome. See Sketch #1.)		
	2880 Pa (60.15 psf) (positive)	2.8 mm (0.11")	See Note #4
	2880 Pa (60.15 psf) (negative)	2.5 mm (0.10")	See Note #4
	(Permanent sets were taken on the frame between anchors. See Sketch #1.)		
	2880 Pa (60.15 psf) (positive)	0.3 mm (0.01")	0.9 mm (0.04") max.
	2880 Pa (60.15 psf) (negative)	<0.3 mm (<0.01")	0.9 mm (0.04") max.

Note #4: *These measurements on the dome are not limited by AAMA/WDMA/CSA 101/I.S.2/A440-05 for this product designation. The dome did not exhibit any continued deformation without an increase in the load.*

Optional Performance

4.4.2.6	Water Penetration Resistance per ASTM E 331 580 Pa (12.11 psf)	No leakage	No leakage
4.4.2.6	Uniform Load Deflection per ASTM E 330 (Loads were held for 60 seconds) (Deflections were taken on the dome. See Sketch #1.)		
	2880 Pa (60.15 psf) (negative)	37.0 mm (1.47")	See Note #3
	(Deflections were taken on the frame between anchors. See Sketch #1.)		
	2880 Pa (60.15 psf) (negative)	0.8 mm (0.03")	See Note #3
4.4.2.6	Uniform Load Structural per ASTM E 330 (Loads were held for 60 seconds) (Permanent sets were taken on the dome)		
	4800 Pa (100.3 psf) (negative)	2.0 mm (0.08")	See Note #4
	(Permanent sets were taken on the frame between anchors. See Sketch #1.)		
	4800 Pa (100.3 psf) (negative)	0.3 mm (0.01")	0.9 mm (0.04") max.

Tape and film were used to seal against air leakage during structural testing. In our opinion, the tape and film did not influence the results of the test.

Drawing Reference: The test specimen drawings have been reviewed by Architectural Testing and are representative of the test specimen reported herein.

List of Official Observers:

<u>Name</u>	<u>Company</u>
Dennis Janzen	Architectural Testing, Inc.
Mason Kelly	Architectural Testing, Inc.
David Douglass	Architectural Testing, Inc.

Detailed drawings, data sheets, representative samples of test specimens, a copy of this report, or other pertinent project documentation will be retained by Architectural Testing, Inc. for a period of four years from the original test date. At the end of this retention period, such materials shall be discarded without notice and the service life of this report will expire.

Results obtained are tested values and were secured by using the designated test methods. If test specimen contains glazing, no conclusions of any kind regarding the adequacy or inadequacy of the glass in the test specimen can be made. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen(s) tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC.

David Douglass
Project Manager

Kenny C. White
Laboratory Manager

DD: ms

Attachments (pages): This report is complete only when all attachments listed are included.

- Appendix-A: Alteration Addendum (1)
- Appendix-B: Test Equipment (1)
- Appendix-C: Sketch (1)
- Appendix-D: Installation Instructions (1)
- Appendix-E: Drawings (4)

Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	02/10/10	N/A	Original report issue.

Appendix A

Alteration Addendum

Alteration #1: Date – 12/08/2009
Cause for alteration – Glazing breakage and deglazing during load testing.
Remedial action taken – Replaced 50% impact acrylic dome material with 100% impact acrylic, and changed glazing sealant to utilize a partial bead of Dow Corning® 795 Silicone Sealant.

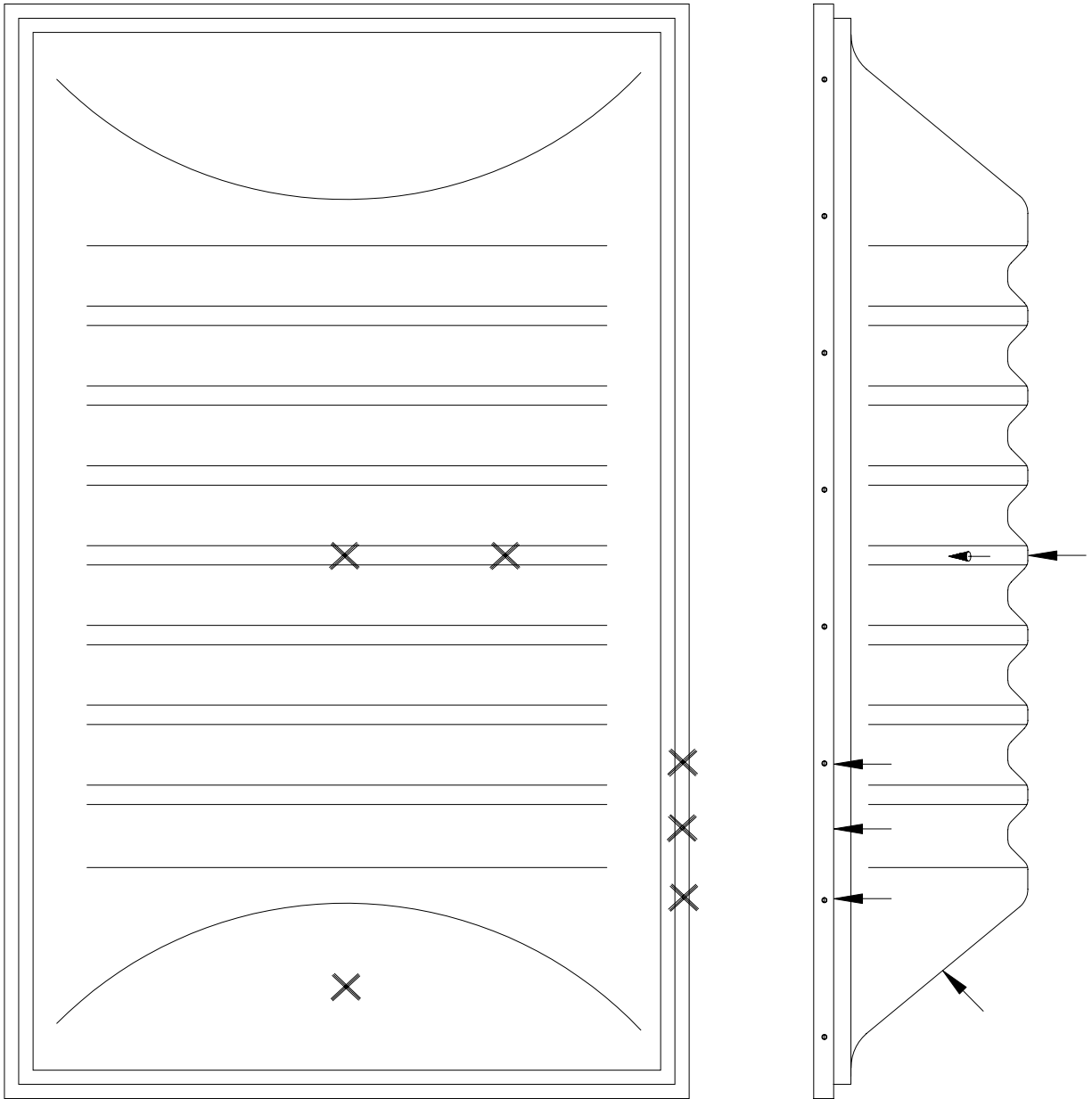
Appendix B
Test Equipment

Instrument	Manufacturer	Asset #
Control Panel	ATI	005724
Control Panel	ATI	Y003301
Water Spray Rack	ATI	4047
Linear Transducer	Celesco	4487
Linear Transducer	Celesco	3427
Linear Transducer	Celesco	3430
Linear Transducer	Celesco	5283
Linear Transducer	Celesco	4484
Linear Transducer	Celesco	4488

Appendix C

Sketch #1

× & ← linear transducer locations

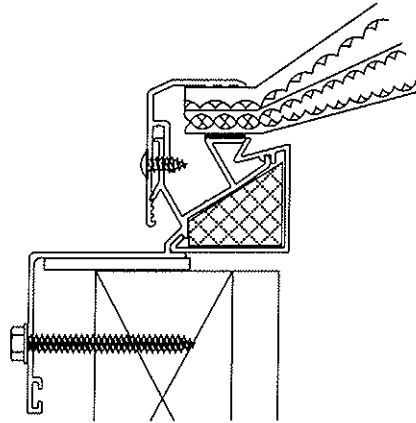


Appendix D
Installation Instructions

SKYLIGHT INSTALLATION INSTRUCTIONS

1. Set skylight over prepared, flashed curbs, making sure skylight is square and evenly spaced on all four sides.
2. Mount skylight to the curb with plated, galvanized or aluminum screws, Using 1 fastener for each hole provided. Drive screws just snug to the skylight flange. Check skylight for squareness and readjust screws as necessary.

NOTE: *Caulking the top of the curb for an air seal is not required with Sunoptics skylights. All double and triple glazed units are supplied with a 1 1/2 inch by 1/4 inch air seal tape premounted on the underside of the skylight.*

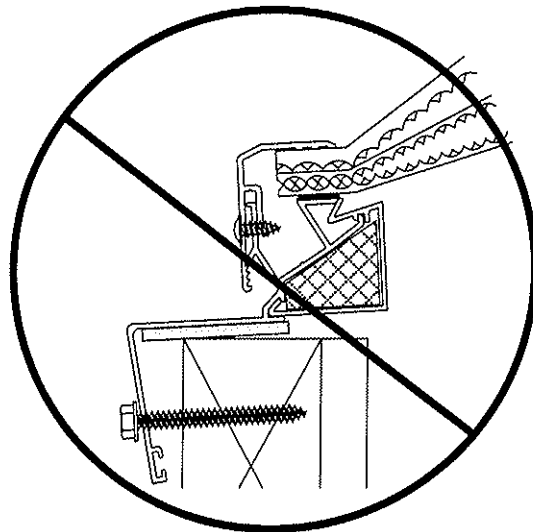


CORRECT MOUNTING

800MD frame shown. Installation instructions are similar for all Sunoptics curb mounted skylights.

NOTE:

When securing the skylight to the curb, run screws just snug to the skylight flange. Overtightening will distort the flange. This in turn may create forces which could crack the skylight lenses, or force it to pull out. This may void the warranty.



INCORRECT MOUNTING

Architectural Testing Inc.
Test samples made with their details
95746
Reps: Mr. [Signature]
Tech: [Signature]
Date: 12/21/2010

Received By _____ Date _____

Appendix E

Drawings



6201 27th STREET
SACRAMENTO, CA 95822
916 / 395-4700
FAX / 395-9204
800 / 289-4700

Contractor

Architect

Project

Spec. Section

Manufacturer

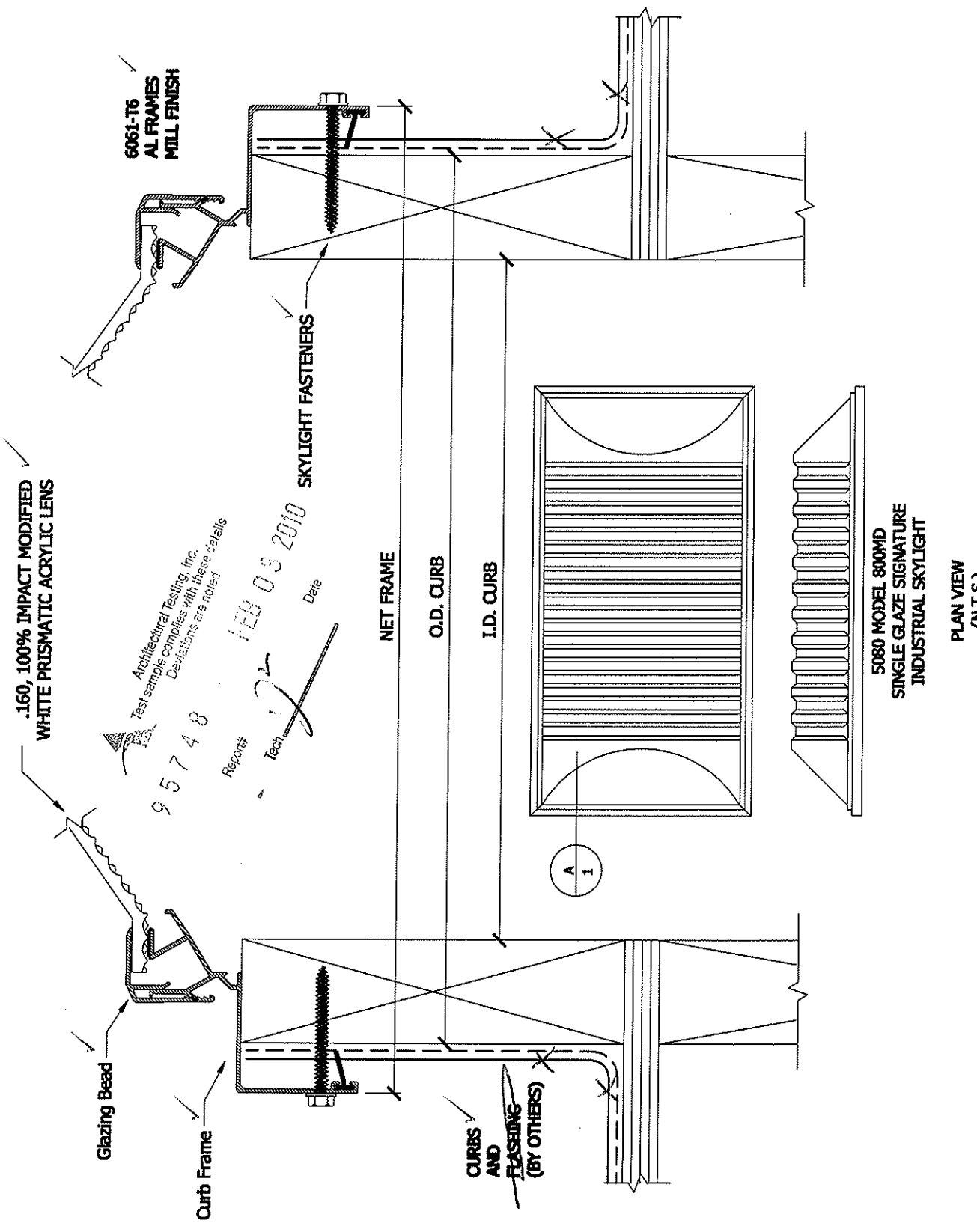
Customer Ref.

Date

Drawing Title

SIGNATURE
SKYLIGHT DETAIL

Drawing Number: **1**



6061-T6
AL FRAMES
MILL FINISH

SKYLIGHT FASTENERS

NET FRAME

O.D. CURB

I.D. CURB

5080 MODEL 800MID
SINGLE GLAZE SIGNATURE
INDUSTRIAL SKYLIGHT

PLAN VIEW
(N.T.S.)

.160, 100% IMPACT MODIFIED
WHITE PRISMATIC ACRYLIC LENS

Glazing Bead

Curb Frame

CURBS AND
FLASHING
(BY OTHERS)

Architectural Testing, Inc.
Test sample complies with these details.
Deviations are noted.

95748

Reports

Tech

FEB 03 2010
Date

A SECTION DETAIL
Scale: 6" = 1'-0"

APPROVED BY: _____

DATE: _____

sapa:
7933 NE 21st Ave
Portland, OR 97211-0263
(503) 547-0790

SUNOPTICS SKYLIGHTS
CUSTOMER NAME
PART NAME: FRAME
PART NO. DATE: 1-7-2005

ALUMINUM ANODIZED STANDARD TOLERANCES APPLY UNLESS OTHERWISE NOTED
TYP WALL UDS: .055 TYP RAD UDS: .010

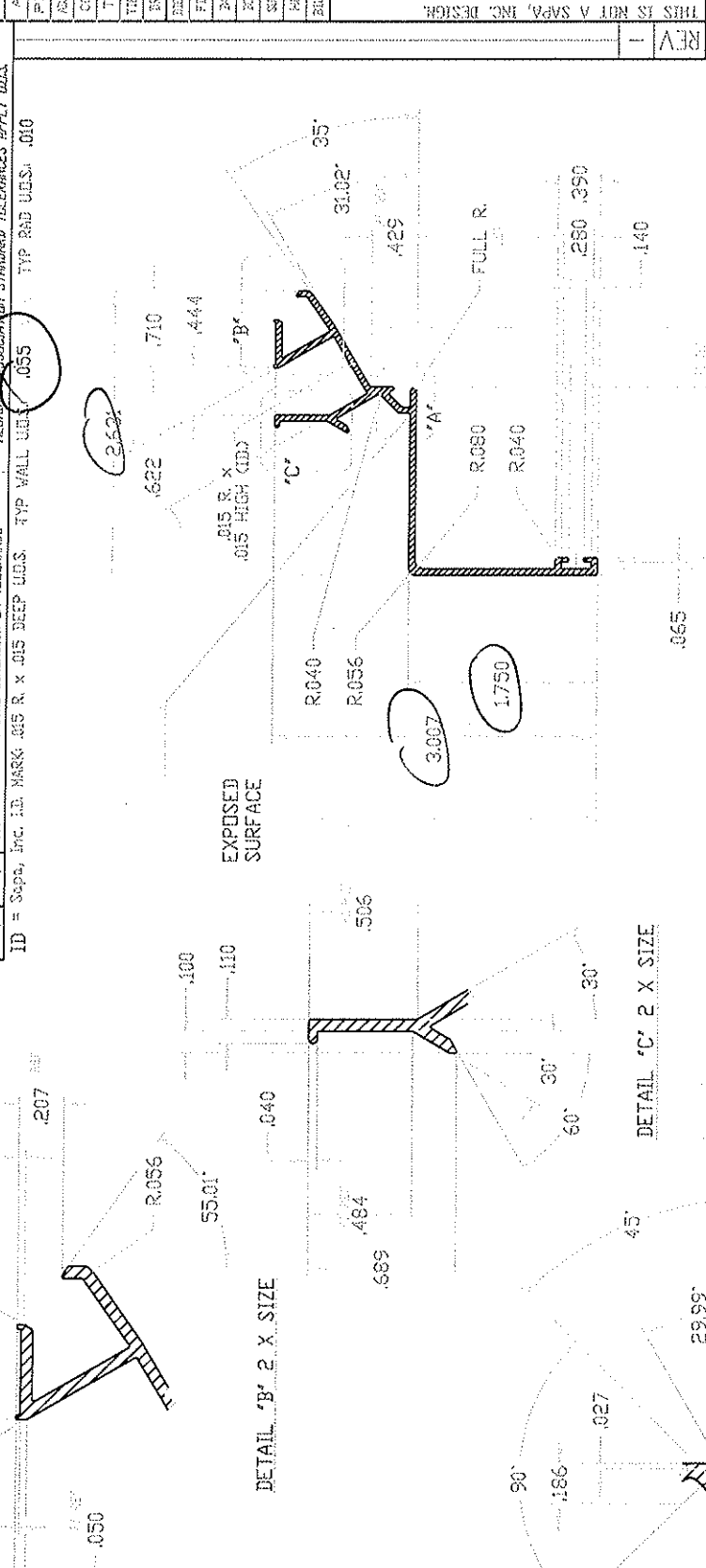
DATE: 1-7-2005
TYP WALL UDS: .055
TYP RAD UDS: .010

32048
DIN NUMBER

B-38807
DRAWING NUMBER

32048
DIN NUMBER

B-38807
DRAWING NUMBER



DETAIL 'A' 2 X SIZE
30°
.186
.027
29.99'
.156
.082
.179

DETAIL 'B' 2 X SIZE
30°
.020
.440
.033
.207
R.056
55.01'
.040
484
.689
.506

DETAIL 'C' 2 X SIZE
45°
60°
30°
30°
.065
105
1731

Architectural Testing, Inc.
Test sample complies with these details
Deviations are noted

9 5 7 4 8

Report#
Tech *[Signature]*
Date JAN 27 2010

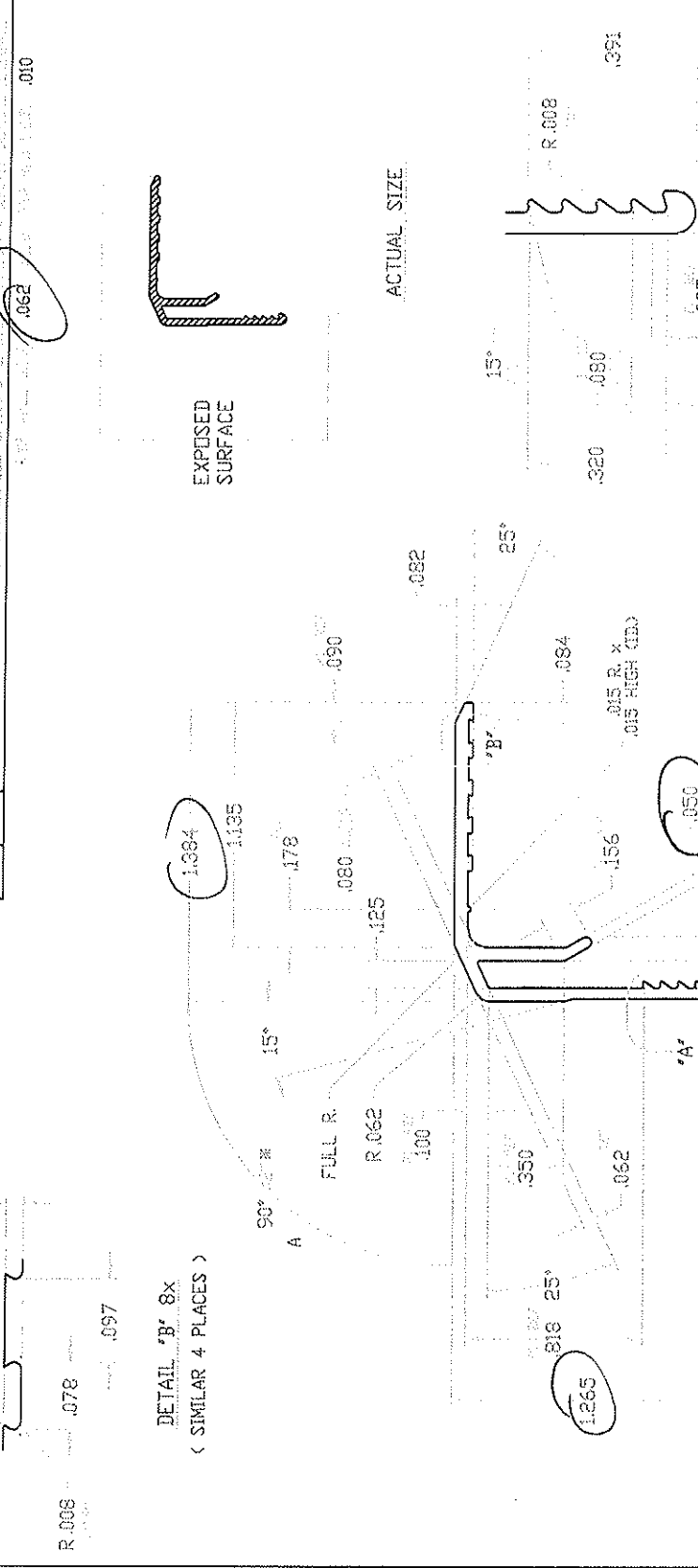
THIS IS NOT A SAPA, INC. DESIGN. SAPA, INC. ACCEPTS NO RESPONSIBILITY OR LIABILITY FOR THE PERFORMANCE OF PRODUCTS PRODUCED HEREFROM SAPA, INC. MAKES NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE WITH REGARD TO THIS DRAWING. PRODUCED PURSUANT TO THIS DRAWING.

REV 1

NOTES:
 1. ALUMINUM ASSOCIATION STANDARDS TOLERANCES
 APPLY UNLESS OTHERWISE SPECIFIED

18327	ANODIZING INC	SUNOPTICS SKYLIGHTS	18327
B-23757			
		CLIP	B
ID		3-12-97	

.232	
.199	
6.856	
19 28	S-HOLE II
JUG	
9 X 1-1/2	
5785	
310	
45	
7 54	



Architectural Testing, Inc.
 Test sample complies with these details
 Deviations are noted

95748

Report#

Tech

Date

JUN 21 2010

2 X SIZE

DETAIL 'A' 4X

Architectural Testing, Inc.
 Test samples comply with these details
 Exceptions are noted

9 5 7 4 8

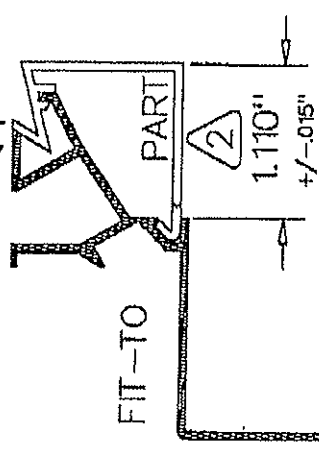
REV 21 2010
 Date

Report#

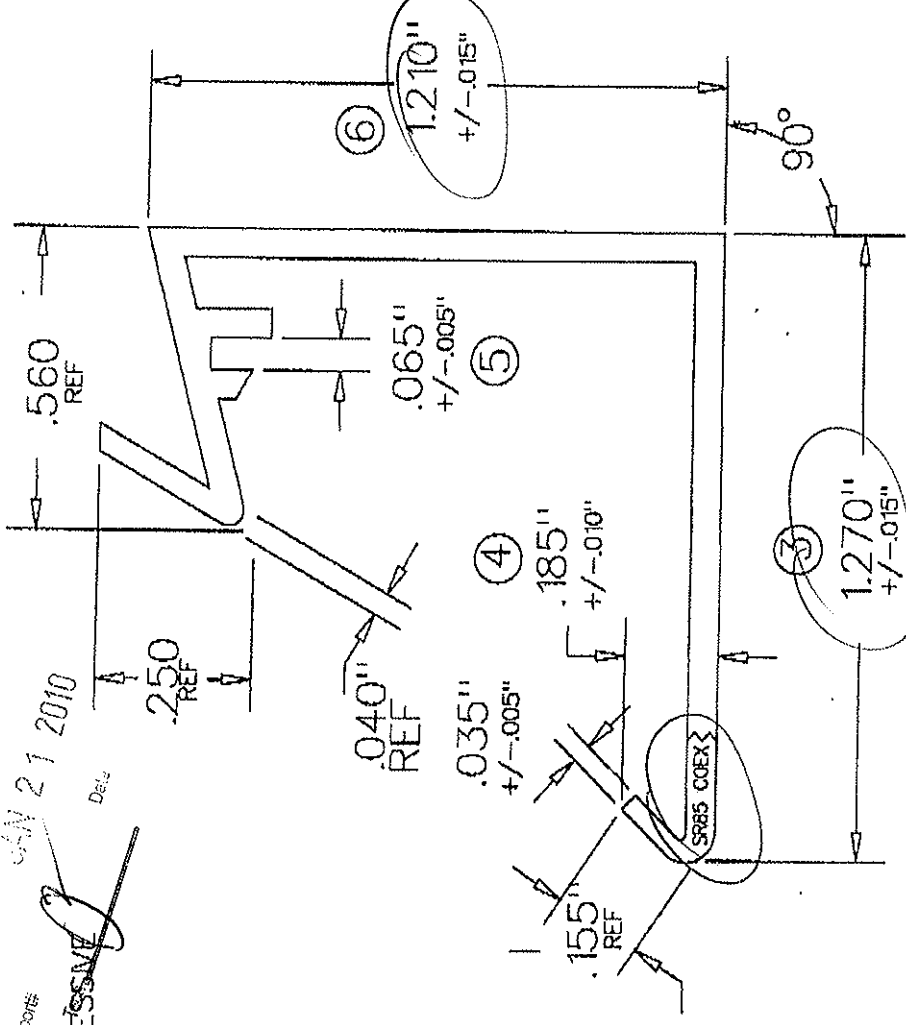
NOTES:

- ① 1) 55 GRAMS/FT +/-2.8 G
- 2) NO WAVY OR BUMPY EDGES
- 3) NO TWIST
- PART MUST SNAP IN FIT-TO WITHOUT EXCESSIVE PRESSURE AND CANNOT PULL OFF WITH THUMB PRESSURE FROM DIM ②
- PART MUST BE FLUSH OR MAY EXCEED FIT-TO BY .040 MAX.

PART MUST HAVE CONTACT W/ FIT-TO OR NO MORE THAN .020 GAP



check length as cooled
 end cuts must be square



SR85 COEX

FILTRONA EXTRUSION
 TACOMA PLANT
 3111 70th Ave. East
 Tacoma, Washington 98408
 Phone: (253) 841-4001
 Fax: (253) 841-4004

7215
 PART NAME
 THERMAL COVER

DATE	04/13/95
REV	DOUG
JUST NO.	8/26/02 AF

REV	DESCRIPTION	DATE
J	ADDED GRAM TOLERANCE	8/26/02 AF
I	CHANGED TO CUST. APPROVED SAMPLE	02/14/02 DF
H	PART REDESIGN	02/06/02 DB~
G	ADDED DART IMPACT TEST	12/06/01 DF
F	REVISED NOTES	11/20/01 DB~
E	REDESIGNED PER PRODUCTION MANAGER REQUEST	05/04/01 DB~
D	CHANGED DIM B FROM REFERENCE	03/16/01 DB~
C	REVISED NOTE	2-1-00 NP
B	CHANGED REF. DIMS	1-18-99 df
A	CHANGED PART TO MATCH NEW FIT-TO	3-14-97

CUT LENGTH	D.P. WALL
+/- .065"	.065" +/- .005
REEL LENGTH	BOW TOLERANCE
	1/32" PER FOOT
DEPT. HEAD	ENGINEERING MANAGER
	DATE

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