WDMA HALLMARK CERTIFICATION PROGRAM
REPORT SUBMISSION FORM

THIS FORM IS TO BE COMPLETED BY THE MANUFACTURER AND SUBMITTED TO AMS ALONG WITH SUBMISSION OF EACH NEW OR REVISED TEST REPORT FOR CERTIFICATION TO THE HALLMARK PROGRAM. ANY QUESTIONS PLEASE CONTACT AMS AT 315-646-2234 OR staff@amscert.com.

Manufacturer: KML Windows Inc.

Contact: Damian Dodd

Plant Location(s): 71 Second Street, Strathroy, Ontario

Phone: 519-245-2270

Test Report #: 91032.05-201-44

Email: ddodd@kmlwindows.com

Product Relationship:

Extension of currently certified product ? ☐ yes ☑ no If yes, what CCL # ?

Extension of currently pending product ? ☐ yes ☑ no If yes, what test report # ?

Difference from Certified Product:

Does this report require a Gateway Report # ? ☐ yes ☑ no Report #:

Impact Report:

If this is not an impact report check here: ☑

AWS Report #

Test Plan # ? ☐ yes ☐ no

Installation Instructions submitted ? ☐ yes ☐ no

Additional Information:

WDMA HALLMARK CERTIFICATION PROGRAM
REPORT SUBMISSION FORM

Product Name: Coastal Aluminum Clad Casement

(As to be listed on CCL – must match test report)

Product Type: Aluminum Clad Wood Casement with Impact Glazing

Additional Manufacturer ID #: 423 n/a ☐

Check here for **individual** CCL listing ☐

Check here for **full** CCL listing ☑

Hallmark CCL	Standard	Rating
☐	ANSI/AAMA/NWWDA 101/I.S. 2 97	
☐	101/I.S.2/NAFS-02	
☐	AAMA/WDMA/CSA/101/I.S.2/A440-05	
☐	AAMA/WDMA/CSA/101/I.S.2/A440-08	
☐	ASTM E 1996 99 / E1886-97	
☐	ASTM E 1996 01 / E1886-97	
☐	ASTM E 1996 02 / E1886-02	
☐	ASTM E 1996 03 / E1886-02	
☐	ASTM E 1996 04 / E1886-04	
☐	ASTM E 1996 05 / E1886-05	
☐	ASTM E330 02	
☑	TAS 201-94	+2400, -3120 Pa (+50.0, -65.0 psf)
☑	TAS 202-94	+2400, -3120 Pa (+50.0, -65.0 psf)
☑	TAS 203-94	+2400, -3120 Pa (+50.0, -65.0 psf)
☐	AAMA 450-06	
☐	Other:	

Architectural Testing

MIAMI-DADE COUNTY
PERFORMANCE TEST REPORT

Rendered to:

KML WINDOWS, INC.

SERIES/MODEL: Coastal Aluminum Clad Casement
PRODUCT TYPE: Aluminum Clad Wood Casement with Impact Glazing

This report contains in its entirety:

Cover Page:	**1 page**
Report Body:	**21 pages**
Sketches:	**2 pages**
Drawings:	**19 pages**

Secure Electronic Seal
for Electronic Submittal

JOSEPH A. REED
LICENSE
No. 58920
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Digitally Signed by: Joseph A. Reed

Date: 2010.07.07 11:52:08 -04'00'

Report No.:	**91032.05-201-44**
Test Dates:	**03/24/10**
And:	**03/25/10**
Report Date:	**07/06/10**
Test Record Retention Date:	**03/25/20**
Miami-Dade County Notification No.:	**ATIMN 09015**

849 Western Avenue North
St. Paul, MN 55117
phone: 651-636-3835
fax: 651-636-3843
www.archtest.com

Architectural Testing

MIAMI-DADE COUNTY PERFORMANCE TEST REPORT

Rendered to:

KML WINDOWS, INC.
71 Second Street
Strathroy, Ontario N7G 3H8
CANADA

Report No.:	91032.05-201-44
Test Dates:	03/24/10
And:	03/25/10
Report Date:	07/06/10
Test Record Retention Date:	03/25/20
Miami-Dade County Notification No.:	ATIMN 09015

Project Summary: Architectural Testing, Inc. was contracted by KML Windows, Inc. to perform testing per Florida Building Code, Test Protocols for High Velocity Hurricane Zone, Protocols TAS 201-94, TAS 202-94 and TAS 203-94 on four Series/Model Coastal Aluminum Clad Casement, aluminum clad wood casement with impact glazing windows. The samples tested met the performance requirements set forth in the protocols for a +50.0/-65.0 psf *Design Pressure* rating. Test specimen description and results are reported herein. The samples were provided by the client.

Test Procedures: The test specimens were evaluated in accordance with the following:

TAS 201-94, *Impact Test Procedures*.

TAS 202-94, *Criteria for Testing Impact and Non Impact Resistant Building Envelope Components Using Uniform Static Air Pressure Loading*.

TAS 203-94, *Criteria for Testing Products Subject to Cyclic Wind Pressure Loading*.

Drawing Reference: The test specimen drawings have been reviewed and verified by Architectural Testing and are representative of the samples tested.

Test Specimen Description:

Series/Model: Coastal Aluminum Clad Casement

Product Type: Aluminum Clad Wood Casement with Impact Glazing

849 Western Avenue North
St. Paul, MN 55117
phone: 651-636-3835
fax: 651-636-3843
www.archtest.com

Test Specimen Description: (Continued)

Overall Size: 913 mm (35-15/16") wide by 1829 mm (72") high

Sash Size: 864 mm (34") wide by 1778 mm (70") high

Overall Area: 1.7 m^2 (18.0 ft^2)

Finish: The exterior cladding was painted and interior wood was unfinished.

Frame Construction: The frame was comprised of pine members with the corners step/butted, sealed with silicone and secured with three #8 x 2" screws per corner. Aluminum cladding was miter-cut and snap-fit onto frame members and secured with 1/4" x 3/8" staples located 51 mm (2") from corners and 203 mm (8") on center. The corners of the cladding were secured with two #6 x 3/4" screws per corner.

Sash Construction: The interior consisted of pine members with mortise and tenon joinery secured with one 7/16" x 1-1/2" staple. The exterior was extruded aluminum cladding that was miter-cut and secured with one #6 x 3/4" screw through clad stiles into the clad rails. The cladding was secured to the wood sash with #6 x 3/4" screws in the glazing pocket 51 mm (2") from each corner and spaced 152 mm (6") on center.

Weatherstripping:

Description	Quantity	Location
Q-Lon	1 Row	Perimeter of frame
Vinyl leaf	1 Row	Perimeter of sash

Glazing Details:

Test Unit #1: The window was glazed with 16 mm (0.648") insulating glass comprised of a 3.0 mm annealed exterior sheet and a 10.1 mm laminated sheet on the interior separated by a silicone foam spacer system. The laminated sheet was comprised of two 3.9 mm annealed sheets separated by a 2.3 mm (0.090") Cardinal Sea-Storm® PVB interlayer. The glass was set from the interior into a bed of Dow Corning 995 structural sealant. Structural sealant was also used around the full perimeter in the glazing cavity. Wood glazing beads with 1.5 mm by 13 mm (1/16" by 1/2") acrylic double sided adhesive glazing tape were secured with 31 mm (1-1/4") brad nails 51 mm (2") from each corner and spaced 203 mm (8") on center. The glass bite was 1/2".

Test Specimen Description: (Continued)

Glazing Details: (Continued)

Test Unit #2: The window was glazed with 16 mm (0.648") insulating glass comprised of a 3.0 mm tempered exterior sheet and a 10.1 mm laminated sheet on the interior separated stainless steel spacer system. The laminated sheet was comprised of two 3.9 mm annealed sheets separated by a 2.3 mm (0.090") Cardinal Sea-Storm® PVB interlayer. The glass was set from the interior into a bed of Dow Corning 995 structural sealant. Structural sealant was also used around the full perimeter in the glazing cavity. Wood glazing beads with 1.5 mm by 13 mm (1/16" by 1/2") acrylic double-sided adhesive glazing tape were secured with 31 mm (1-1/4") brad nails 51 mm (2") from each corner and spaced 203 mm (8") on center. The glass bite was 1/2".

Test Unit #3 and Test Unit #4: The unit was glazed with 10.1 mm laminated monolithic glass comprised of two 3.9 mm annealed sheets with a 2.3 mm (0.090") Cardinal Sea-Storm® PVB interlayer. The glass was set from the interior into a bed of Dow Corning 995 structural sealant. Structural sealant was also used around the full perimeter in the glazing cavity. Wood glazing beads with 1.5 mm by 13 mm (1/16" by 1/2") acrylic double-sided adhesive glazing tape were secured with 31 mm (1-1/4") brad nails 51 mm (2") from each corner and spaced 203 mm (8") on center. The glass bite was 1/2".

Drainage: No drainage was utilized.

Hardware:

Description	Quantity	Location
4-point lock	1	Locking stile of frame and sash 254 mm (10") from top and bottom of sash and 762 mm (30") and 1295 mm (51") from bottom of sash
Butt hinges	3	Hinge stile of frame and sash 203 mm (8") from head and sill and midpoint
Roto hardware	1	Sill

Reinforcement: No reinforcement was utilized.

Test Specimen Description: (Continued)

Test Unit #4 Mullion Construction: The unit was mulled jamb to jamb. Two beads of Dow Corning 1199 were utilized; one between the cladding at the nail flange kerf and the other at the accessory kerf. The units were secured on the exterior with a U-shaped aluminum piece that was snap-fit to the accessory kerf. The interior was secured through each jamb with #6 x 1-3/4" screws staggered 4" on center from each end and spaced 12" on center. The interior was additionally secured with 1" x 1/2" corrugated staples 2" from each end and spaced 8" on center. The mullion ends were sealed with silicone.

Installation:

Test Unit #1 and Test Unit #3: The windows were installed within Spruce-Pine-Fir test bucks and secured with steel installation clips. The clips were secured to the window frame with three #8 x 3/4" screws. The clips were located 152 mm (6") from corners and midspan on jambs and 152 mm (6") from corners on the head and sill. The installation clips were secured to the buck on the interior with two #8 x 1-1/2" screws and on the exterior, through the nail flange and through the clip, with one #8 x 1-1/2" screw. Test unit was additionally secured through nail fin with 1-1/2" roofing nails 102 mm (4") from corners and spaced 305 mm (12") on center. The nail fin was sealed to the buck with silicone.

Test Unit #2 and Test Unit #4: The windows were installed within Spruce-Pine-Fir test bucks. The test unit was secured through the frame with #10 x 3" screws 152 mm (6") from each corner and spaced 305 mm (12") on center. Test unit was additionally secured through nail fin with 1-1/2" roofing nails 102 mm (4") from corners and spaced 305 mm (12") on center. The nail fin was sealed to the buck with silicone.

Test Results: The following results have been recorded:

Protocol TAS 202-94, *Static Air Pressure Tests*

Test Unit #1
Design Pressure: +50.0/-65.0 psf

Title of Test	Results					
	Indicator Readings (inch)					
Structural Loads	#1	#2	#3	#4	#5	#6
50% of Test Pressure (+37.5 psf)						
Maximum Deflection	0.04	0.04	0.01	0.01	0.01	0.05
Permanent Set	0.01	0.01	0.01	0.01	0.01	0.01
Design Pressure (+50.0 psf)						
Maximum Deflection	0.05	0.05	0.02	0.01	0.02	0.05
Permanent Set	0.02	0.01	0.02	0.01	0.01	0.01
50% of Test Pressure (-48.75 psf)						
Maximum Deflection	0.06	0.06	0.03	0.01	0.02	0.10
Permanent Set	0.01	0.01	0.01	0.01	0.01	0.02
Design Pressure (-65.0 psf)						
Maximum Deflection	0.08	0.07	0.03	0.02	0.03	0.11
Permanent Set	0.02	0.02	0.01	0.01	0.01	0.03
Test Pressure (+75.0 psf)						
Maximum Deflection	0.08	0.07	0.04	0.01	0.03	0.08
Permanent Set	0.02	0.02	0.02	0.01	0.01	0.08
Test Pressure (-97.5 psf)						
Maximum Deflection	0.17	0.16	0.09	0.05	0.07	0.24
Permanent Set	0.04	0.03	0.01	0.03	0.02	0.05

***Note**: See Architectural Testing Sketch #1 for indicator locations.*

Test Results: The following results have been recorded:

Protocol TAS 202-94, *Static Air Pressure Tests*

Test Unit #2
Design Pressure: +50.0/-65.0 psf

Title of Test	Results					
	Indicator Readings (inch)					
Structural Loads	#1	#2	#3	#4	#5	#6
50% of Test Pressure (+37.5 psf)						
Maximum Deflection	0.05	0.05	0.02	0.01	0.02	0.05
Permanent Set	0.01	0.01	0.01	<0.01	<0.01	0.01
Design Pressure (+50.0 psf)						
Maximum Deflection	0.07	0.07	0.03	0.01	0.03	0.07
Permanent Set	0.01	0.02	0.01	<0.01	<0.01	0.01
50% of Test Pressure (-48.75 psf)						
Maximum Deflection	0.06	0.08	0.03	0.01	0.03	0.08
Permanent Set	<0.01	0.01	<0.01	<0.01	<0.01	0.01
Design Pressure (-65.0 psf)						
Maximum Deflection	0.09	0.12	0.06	0.02	0.04	0.11
Permanent Set	0.01	0.02	0.01	0.01	0.01	0.02
Test Pressure (+75.0 psf)						
Maximum Deflection	0.10	0.13	0.06	0.02	0.04	0.11
Permanent Set	0.01	0.02	0.02	0.01	0.01	0.01
Test Pressure (-97.5 psf)						
Maximum Deflection	0.19	0.25	0.17	0.06	0.07	0.21
Permanent Set	0.01	0.03	0.02	0.05	0.02	0.03

***Note**: See Architectural Testing Sketch #1 for indicator locations.*

Test Results: The following results have been recorded:

Protocol TAS 202-94, *Static Air Pressure Tests*

Test Unit #3
Design Pressure: +50.0/-65.0 psf

Title of Test	Results					
Air Infiltration						
1.57 psf (25 mph)	<0.01 cfm/ft^2					
6.24 psf (50 mph)	<0.01 cfm/ft^2					
	Indicator Readings (inch)					
Structural Loads	#1	#2	#3	#4	#5	#6
50% of Test Pressure (+37.5 psf)						
Maximum Deflection	0.05	0.04	0.01	0.01	0.02	0.06
Permanent Set	0.01	0.01	<0.01	<0.01	<0.01	0.01
Design Pressure (+50.0 psf)						
Maximum Deflection	0.08	0.07	0.02	0.01	0.03	0.08
Permanent Set	0.01	0.01	<0.01	<0.01	<0.01	0.01
50% of Test Pressure (-48.75 psf)						
Maximum Deflection	0.09	0.10	0.05	0.02	0.03	0.13
Permanent Set	0.01	0.02	0.01	0.01	0.01	0.02
Design Pressure (-65.0 psf)						
Maximum Deflection	0.10	0.12	0.07	0.03	0.04	0.15
Permanent Set	0.01	0.01	0.01	0.01	0.01	0.02
Water Infiltration						
15% Positive Design Pressure (+7.50 psf)	No Penetration					
Test Pressure (+75.0 psf)						
Maximum Deflection	0.09	0.09	0.04	0.02	0.05	0.10
Permanent Set	0.02	0.01	0.01	0.01	0.01	0.02
Test Pressure (-97.5 psf)						
Maximum Deflection	0.20	0.20	0.08	0.06	0.07	0.24
Permanent Set	0.04	0.04	0.01	0.05	0.01	0.02
Forced Entry - ASTM F 588-97	Pass					

***Note**: See Architectural Testing Sketch #1 for indicator locations.*

Test Results: The following results have been recorded:

Protocol TAS 202-94, *Static Air Pressure Tests*

Test Unit #4
Design Pressure: +50.0/-65.0 psf

Title of Test	Results				
Air Infiltration					
1.57 psf (25 mph)	<0.01 cfm/ft^2				
6.24 psf (50 mph)	<0.01 cfm/ft^2				
	Indicator Readings (inch)				
Structural Loads	#1	#2	#3	#4	#5
50% of Test Pressure (+37.5 psf)					
Maximum Deflection	0.04	0.15	0.03	0.04	0.05
Permanent Set	0.01	0.01	0.01	0.01	0.01
	#6	#7	#8	#9	
Maximum Deflection	0.03	0.10	0.11	0.09	
Permanent Set	0.01	0.01	0.01	0.01	
	#1	#2	#3	#4	#5
Design Pressure (+50.0 psf)					
Maximum Deflection	0.06	0.21	0.04	0.06	0.06
Permanent Set	0.01	0.02	0.01	0.01	0.01
	#6	#7	#8	#9	
Maximum Deflection	0.04	0.12	0.15	0.10	
Permanent Set	0.01	0.01	0.01	0.01	
	#1	#2	#3	#4	#5
50% of Test Pressure (-48.75 psf)					
Maximum Deflection	0.07	0.22	0.03	0.08	0.08
Permanent Set	0.01	0.02	0.01	0.03	0.02
	#6	#7	#8	#9	
Maximum Deflection	0.08	0.11	0.14	0.19	
Permanent Set	0.03	0.01	0.02	0.02	

Test Results: (Continued)

Protocol TAS 202-94, *Static Air Pressure Tests*

Test Unit #4 (Continued)
Design Pressure: +50.0/-65.0 psf

Title of Test	Results				
	#1	#2	#3	#4	#5
Design Pressure (-65.0 psf)					
Maximum Deflection	0.10	0.32	0.04	0.10	0.10
Permanent Set	0.02	0.03	0.01	0.03	0.02
	#6	#7	#8	#9	
Maximum Deflection	0.10	0.16	0.20	0.27	
Permanent Set	0.04	0.02	0.03	0.03	
Water Infiltration 15% Positive Design Pressure (+7.50 psf)	No Penetration				
	#1	#2	#3	#4	#5
Test Pressure (+75.0 psf)					
Maximum Deflection	0.10	0.34	0.06	0.09	0.07
Permanent Set	0.02	0.03	0.02	0.02	0.03
	#6	#7	#8	#9	
Maximum Deflection	0.10	0.18	0.23	0.14	
Permanent Set	0.03	0.01	0.02	0.02	
	#1	#2	#3	#4	#5
Test Pressure (-97.5 psf)					
Maximum Deflection	0.18	0.56	0.08	0.13	0.14
Permanent Set	0.02	0.06	0.02	0.03	0.03
	#6	#7	#8	#9	
Maximum Deflection	0.10	0.30	0.33	0.38	
Permanent Set	0.03	0.05	0.04	0.05	
Forced Entry - ASTM F 588-97	Pass				

***Note**: See Architectural Testing Sketch #1 for indicator locations.*

Test Results: (Continued)

Protocol TAS 201-94*, Impact Test Procedures*

Conditioning Temperature: 68°F
Missile Weight: 9.2 lbs
Missile Length: 96-1/2"
Muzzle Distance from Test Specimen: 16' 0"

Test Unit #1

Impact #1: Missile Velocity: 49.3 fps

Impact Area: Center of glazing
Observations: No rips, tears or penetrations

Results: Pass

Impact #2: Missile Velocity: 49.6 fps

Impact Area: Lower right corner of glazing
Observations: No rips, tears or penetrations

Results: Pass

***Note**: Refer to Architectural Testing Sketch #2 for impact locations.*

Test Results: (Continued)

Protocol TAS 203-94, *Cyclic Wind Pressure Loading*

Test Unit #1

Design Pressure: +50.0/-65.0 psf

POSITIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (sec.)	Maximum Deflection at Indicator (inch)					
			#1	#2	#3	#4	#5	#6
10.0 to 25.0	3500	1.46	0.05	0.05	0.04	0.03	0.02	0.08
0 to 30.0	300	1.42	0.06	0.06	0.05	0.04	0.04	0.09
25.0 to 40.0	600	1.58	0.06	0.07	0.06	0.05	0.05	0.10
15.0 to 50.0	100	1.37	0.07	0.08	0.06	0.06	0.09	0.12
			Permanent Set (inch)					
			0.03	0.02	0.02	0.02	0.01	0.02

NEGATIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (sec.)	Maximum Deflection at Indicator (inch)					
			#1	#2	#3	#4	#5	#6
19.5 to 65.0	50	1.53	0.10	0.13	0.04	0.03	0.05	0.14
32.5 to 52.0	1050	1.13	0.07	0.11	0.03	0.02	0.04	0.11
0 to 39.0	50	1.41	0.06	0.09	0.03	0.02	0.04	0.09
13.0 to 32.5	3350	1.09	0.05	0.08	0.02	0.01	0.03	0.08
			Permanent Set (inch)					
			0.03	0.03	0.01	0.01	0.01	0.02

Result: Pass

***Note**: Refer to Architectural Testing Sketch #1 for indicator locations.*

Test Results: (Continued)

Protocol TAS 201-94, *Impact Test Procedures*

Conditioning Temperature: 68°F
Missile Weight: 9.2 lbs
Missile Length: 96-1/2"
Muzzle Distance from Test Specimen: 16' 0"

Test Unit #2

Impact #1: Missile Velocity: 49.2 fps

Impact Area: Center of glazing
Observations: No rips, tears or penetrations

Results: Pass

Impact #2: Missile Velocity: 49.8 fps

Impact Area: Upper left corner of glazing
Observations: No rips, tears or penetrations

Results: Pass

***Note**: Refer to Architectural Testing Sketch #2 for impact locations.*

Test Results: (Continued)

Protocol TAS 203-94, *Cyclic Wind Pressure Loading*

Test Unit #2

Design Pressure: +50.0/-65.0 psf

POSITIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (sec.)	Maximum Deflection at Indicator (inch)					
			#1	#2	#3	#4	#5	#6
10.0 to 25.0	3500	1.90	0.07	0.07	0.02	0.03	0.03	0.05
0 to 30.0	300	1.64	0.08	0.08	0.02	0.03	0.04	0.06
25.0 to 40.0	600	2.16	0.09	0.09	0.03	0.04	0.05	0.07
15.0 to 50.0	100	1.72	0.10	0.10	0.04	0.05	0.06	0.08
			Permanent Set (inch)					
			0.01	0.01	<0.01	0.01	0.01	0.01

NEGATIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (sec.)	Maximum Deflection at Indicator (inch)					
			#1	#2	#3	#4	#5	#6
19.5 to 65.0	50	2.18	0.18	0.23	0.13	0.04	0.05	0.16
32.5 to 52.0	1050	1.96	0.16	0.20	0.12	0.03	0.04	0.13
0 to 39.0	50	2.47	0.15	0.19	0.10	0.02	0.03	0.11
13.0 to 32.5	3350	1.94	0.14	0.18	0.09	0.02	0.02	0.10
			Permanent Set (inch)					
			0.07	0.08	0.07	0.02	0.02	0.04

Result: Pass

***Note**: Refer to Architectural Testing Sketch #1 for indicator locations.*

Test Results: (Continued)

Protocol TAS 201-94*, Impact Test Procedures*

Conditioning Temperature: 68°F
Missile Weight: 9.2 lbs
Missile Length: 96-1/2"
Muzzle Distance from Test Specimen: 16' 0"

Test Unit #3

Impact #1: Missile Velocity: 49.8 fps

Impact Area: Center of glazing
Observations: No rips, tears or penetrations

Results: Pass

Impact #2: Missile Velocity: 49.2 fps

Impact Area: Lower left corner of glazing
Observations: No rips, tears or penetrations

Results: Pass

***Note**: Refer to Architectural Testing Sketch #2 for impact locations.*

Test Results: (Continued)

Protocol TAS 203-94, *Cyclic Wind Pressure Loading*

Test Unit #3

Design Pressure: +50.0/-65.0 psf

POSITIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (sec.)	Maximum Deflection at Indicator (inch)					
			#1	#2	#3	#4	#5	#6
10.0 to 25.0	3500	1.90	0.07	0.07	0.02	0.02	0.03	0.07
0 to 30.0	300	1.64	0.08	0.08	0.03	0.02	0.04	0.07
25.0 to 40.0	600	2.16	0.09	0.09	0.04	0.02	0.04	0.08
15.0 to 50.0	100	1.72	0.10	0.10	0.05	0.03	0.05	0.08
			Permanent Set (inch)					
			0.01	0.01	0.01	0.01	0.01	0.01

NEGATIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (sec.)	Maximum Deflection at Indicator (inch)					
			#1	#2	#3	#4	#5	#6
19.5 to 65.0	50	2.18	0.14	0.14	0.05	0.03	0.05	0.17
32.5 to 52.0	1050	1.96	0.11	0.11	0.04	0.02	0.04	0.14
0 to 39.0	50	2.47	0.10	0.10	0.03	0.02	0.03	0.13
13.0 to 32.5	3350	1.94	0.09	0.09	0.03	0.02	0.02	0.11
			Permanent Set (inch)					
			0.03	0.02	0.02	0.01	0.01	0.04

Result: Pass

***Note**: Refer to Architectural Testing Sketch #1 for indicator locations.*

Test Results: (Continued)

Protocol TAS 201-94*, Impact Test Procedures*

Conditioning Temperature: 68°F
Missile Weight: 9.2 lbs
Missile Length: 96-1/2"
Muzzle Distance from Test Specimen: 16' 0"

Test Unit #4

Impact #1: Missile Velocity: 49.1 fps

Impact Area: Left sash, center of glazing.
Observations: No rips, tears or penetrations

Results: Pass

Impact #2: Missile Velocity: 49.6 fps

Impact Area: Left sash, lower right corner of glazing.
Observations: No rips, tears or penetrations

Results: Pass

Impact #3: Missile Velocity: 49.1 fps

Impact Area: Midspan of mullion
Observations: No structural damage

Results: Pass

***Note**: Refer to Architectural Testing Sketch #2 for impact locations.*

Test Results: (Continued)

Protocol TAS 203-94, *Cyclic Wind Pressure Loading*

Test Unit #4

Design Pressure: +50.0/-65.0 psf

POSITIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (sec.)	Maximum Deflection at Indicator (inch)				
			#1	#2	#3	#4	#5
10.0 to 25.0	3500	1.42	0.02	0.17	0.02	0.04	0.04
0 to 30.0	300	1.49	0.02	0.18	0.03	0.05	0.05
25.0 to 40.0	600	1.41	0.05	0.22	0.03	0.07	0.05
15.0 to 50.0	100	1.47	0.06	0.27	0.03	0.07	0.05
			Permanent Set (inch)				
			0.01	0.03	0.01	0.02	0.01

Pressure Range (psf)	Number of Cycles	Average Cycle Time (sec.)	Maximum Deflection at Indicator (inch)			
			#6	#7	#8	#9
10.0 to 25.0	3500	1.42	0.02	0.06	0.08	0.11
0 to 30.0	300	1.49	0.03	0.07	0.08	0.12
25.0 to 40.0	600	1.41	0.04	0.07	0.11	0.12
15.0 to 50.0	100	1.47	0.05	0.09	0.13	0.12
			Permanent Set (inch)			
			0.02	0.01	0.01	0.01

Test Results: (Continued)

Test Unit #4 (Continued)

Design Pressure: +50.0/-65.0 psf

NEGATIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (sec.)	Maximum Deflection at Indicator (inch)				
			#1	#2	#3	#4	#5
19.5 to 65.0	50	1.47	0.10	0.55	0.05	0.14	0.12
32.5 to 52.0	1050	1.16	0.08	0.47	0.04	0.13	0.09
0 to 39.0	50	1.60	0.06	0.38	0.04	0.10	0.07
13.0 to 32.5	3350	1.20	0.05	0.37	0.03	0.08	0.06
			Permanent Set (inch)				
			0.02	0.12	0.02	0.03	0.02

Pressure Range (psf)	Number of Cycles	Average Cycle Time (sec.)	Maximum Deflection at Indicator (inch)			
			#6	#7	#8	#9
19.5 to 65.0	50	1.47	0.05	0.18	0.30	0.31
32.5 to 52.0	1050	1.16	0.05	0.15	0.26	0.26
0 to 39.0	50	1.60	0.04	0.12	0.21	0.21
13.0 to 32.5	3350	1.20	0.03	0.11	0.19	0.18
			Permanent Set (inch)			
			0.02	0.03	0.08	0.08

Result: Pass

***Note**: Refer to Architectural Testing Sketch #1 for indicator locations.*

Test Equipment:

Cannon: Steel pipe barrel utilizing compressed air to propel the missile

Missile: 2x4 Southern Pine

Timing Device: Electronic Beam Type

Cycling Mechanism: Computer controlled centrifugal blower with electronic pressure measuring device

Deflection Measuring Device: Linear transducers

Laboratory Compliance Statements: The following are provided as required by the protocols for the testing reported herein.

Upon completion of testing, specimens tested for TAS 201-94 met the requirements of Section 1626 of the Florida Building Code.

Upon completion of testing, specimens tested for TAS 202-94 met the requirements of Section 1620 of the Florida Building Code.

Upon completion of testing, specimens tested for TAS 203-94 met the requirements of Section 1626 of the Florida Building Code.

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.

Testing was conducted at the Architectural Testing, Inc. laboratory located in St. Paul, Minnesota.

List of Official Observers:

Name	Company
Gene Loubert	KML Windows, Inc.
Jon P. Kasuboski	Architectural Testing, Inc.
Tony D. Gavin	Architectural Testing, Inc.
Karl A. Lips-Eakins	Architectural Testing, Inc.
Joseph A. Reed, P.E.	Architectural Testing, Inc.
Eric J. Schoenthaler	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 ten 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. 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.

Digitally Signed by: Eric Schoenthaler

Eric J. Schoenthaler
Project Manager

Digitally Signed by: Joseph A. Reed

Joseph A. Reed, P.E.
Director - Engineering and Product Testing

EJS:es/cmd

Attachments (pages): This report is complete only when all attachments listed are included.
Appendix-A: Sketches (2)
Appendix-B: Drawings (19)

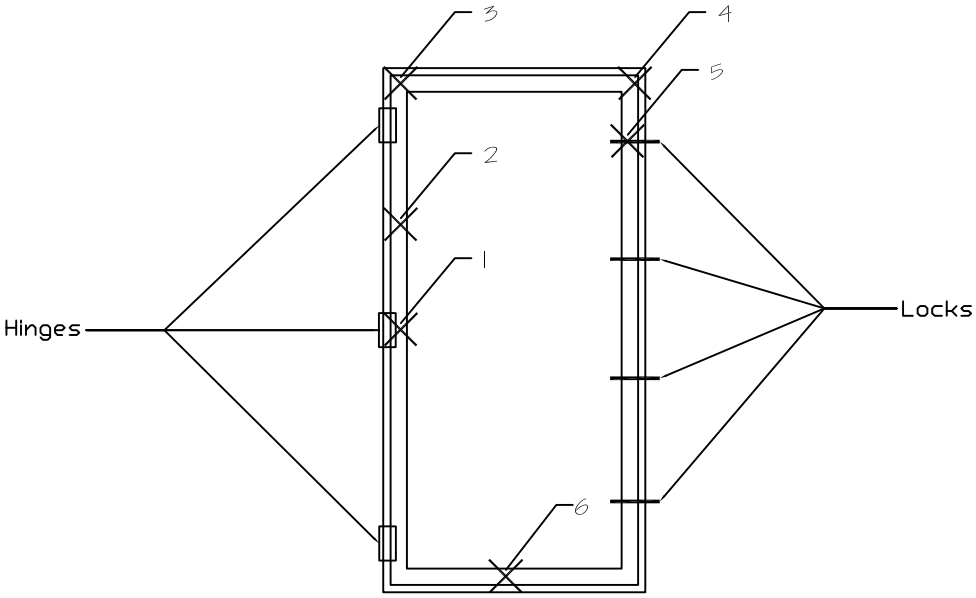
Revision Log

Rev. #	Date	Page(s)	Revision(s)
0	07/06/10	N/A	Original report issue. Report and drawings forwarded to AMS for Hallmark Certification.

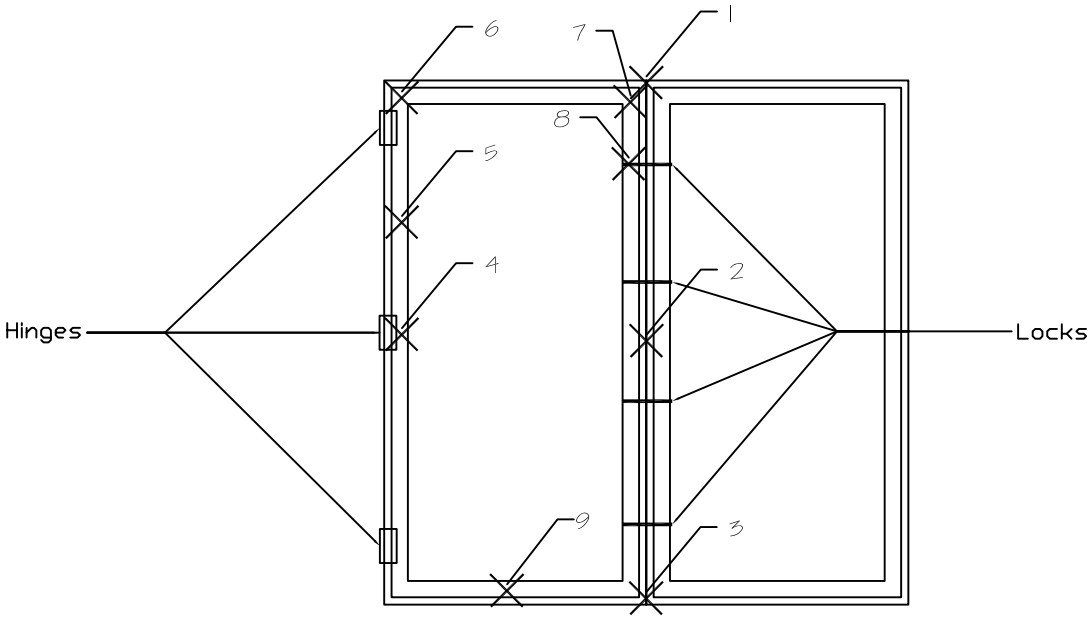
Appendix A

Sketches

SKETCH #1



ASSEMBLIES #1, #2, and #3

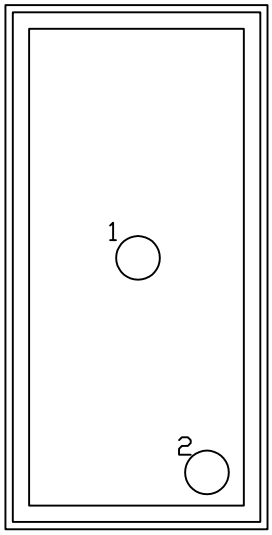


ASSEMBLY #4

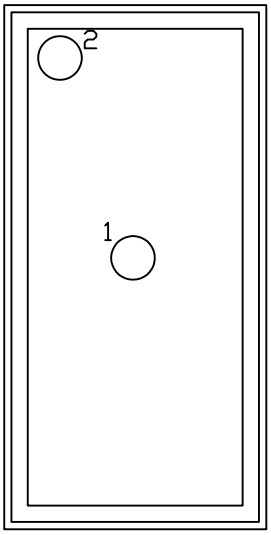
X= INDICATOR LOCATION

PROJECT NO.	CLIENT: KML WINDOWS, INC.		DRAWING	DWG. BY: HMD	PAGE 1 OF 2
91032.05-201-44	PROJECT NAME: Coastal Clad Casements	Architectural Testing	INDICATOR LOCATIONS	DATE: 06/29/10	

SKETCH #2



ASSEMBLY #1



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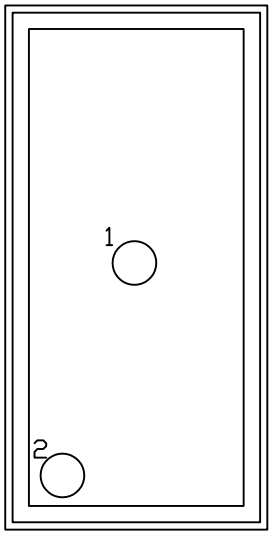

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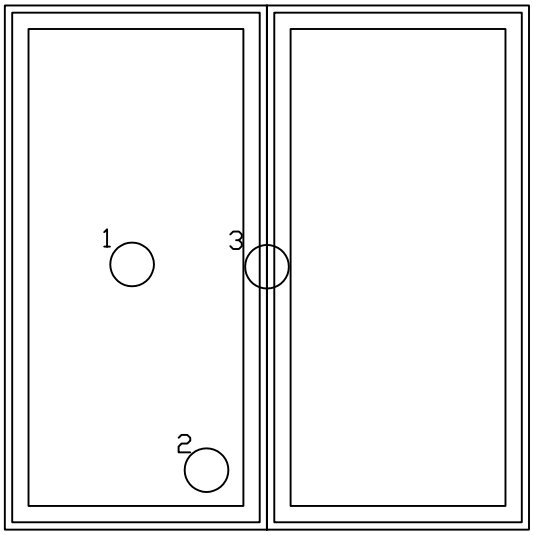


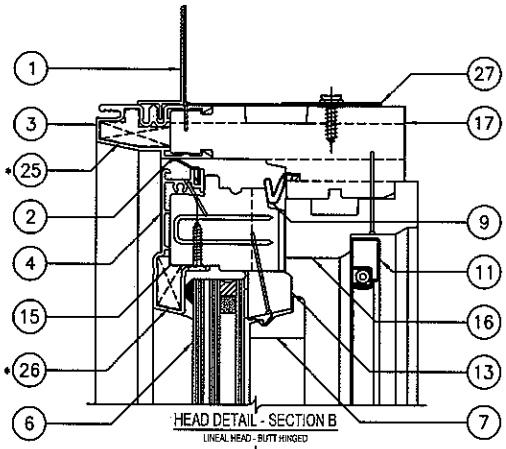
ASSEMBLY #4

X◯ = IMPACT LOCATION

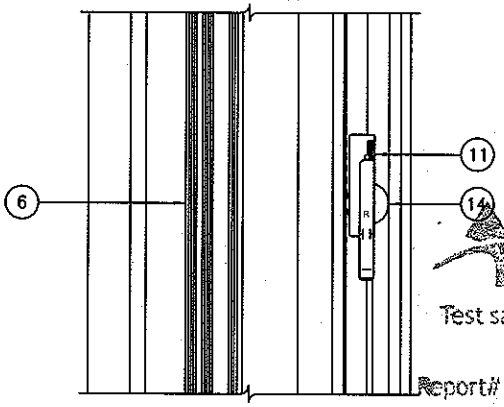
PROJECT NO.	CLIENT: KML WINDOWS, INC.		DRAWING	DWG. BY:	PAGE
91032.05-201-44	PROJECT NAME: Coastal Clad Casements	Architectural Testing	INDICATOR LOCATIONS	HMD	2 OF 2
				DATE: 06/29/10	

Appendix B

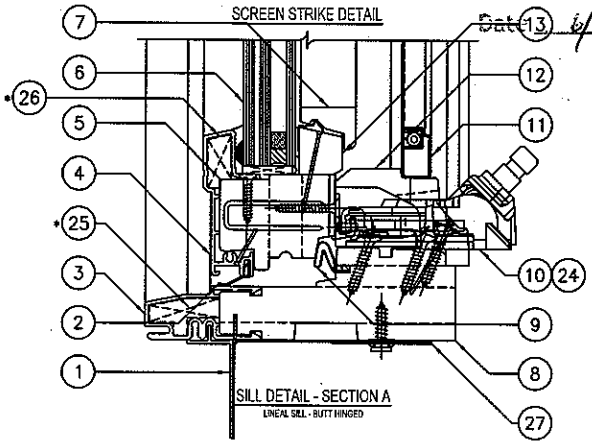
Drawings



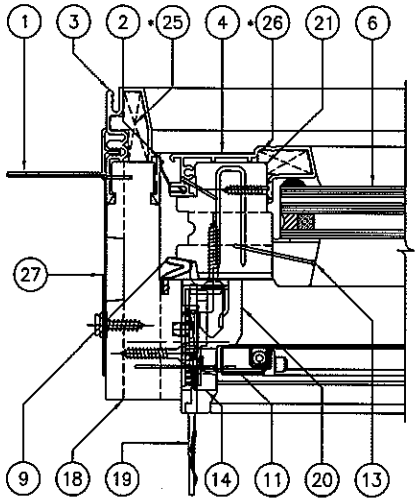
HEAD DETAIL - SECTION B
LINEAL HEAD - BUTT HINGED



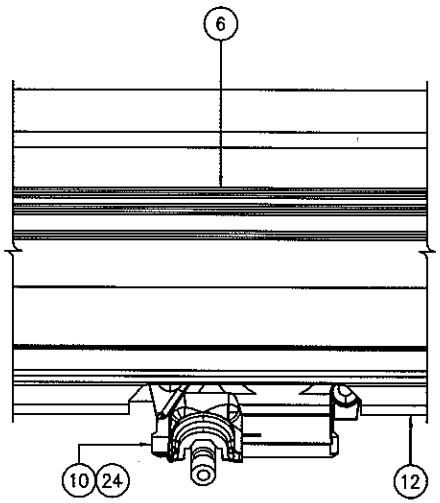
SCREEN STRIKE DETAIL



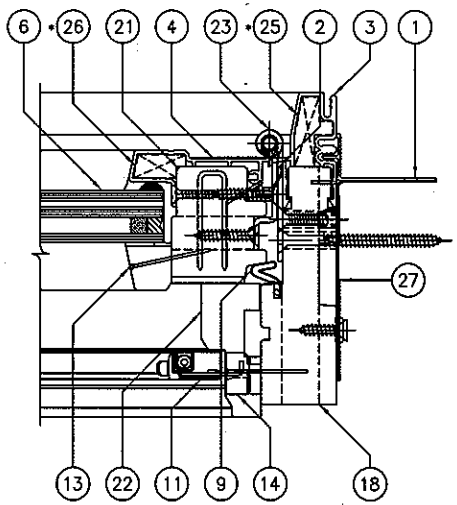
SILL DETAIL - SECTION A
LINEAL SILL - BUTT HINGED



LOCK JAMB DETAIL - SECTION C



OPERATOR DETAIL



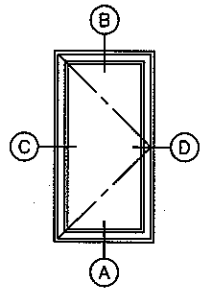
JAMB DETAIL - SECTION D

Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 91032

Date 6/23/10 Tech



RECTANGULAR

*	FRAME FASTENER KIT 'U'		
*	3-3/4" NOMINAL JAMB EXTENSION	PF1772	
*	3-1/4" NOMINAL JAMB EXTENSION	PF1771	
*	1-15/16" NOMINAL JAMB EXTENSION	PF1770	
*	1-1/4" NOMINAL JAMB EXTENSION	PF1769	
*	TEMPORARY CASEMENT HANDLE	P/N105166	
*	1-3/16" INTERIOR SURROUND	PF1230	SK2286
*	1-3/16" INTERIOR GLAZING STOP	PF1011	SK2286
*	15/16" INTERIOR SURROUND	PF1871	SK2286
*	15/16" INTERIOR GLAZING STOP	PF1483	SK2286
27	COASTAL INSTALLATION CLIP ASSEMBLY	PN-112788	
26	WOOD CORNER BLOCK	PF1365	
25	WOOD CORNER BLOCK	PF1586	
24	HARD. KIT 'D' STRAIGHT ARM OPER. (Ltd. opening)		SK2076
23	HARDWARE KIT 'F' - TOP BUTT HINGE	P/N106257	SK2022
22	HINGE SIDE JAMB SASH STOP - LINEAL	PF1765	SK2001
21	SASH STILE - LINEAL	PF1767	SK2005
20	LOCK SIDE JAMB SASH STOP - LINEAL	PF1765	SK2053
19	HARDWARE KIT 'X' SASH LOCK	varies by height	SK2054
18	JAMB FRAME MEMBER - LINEAL	PF1762	SK1997
17	HEAD FRAME MEMBER - LINEAL	PF1761	SK1996
16	HEAD SASH STOP - LINEAL	PF1773	SK1999
15	TOP SASH RAIL - LINEAL	PF1766	SK2004
14	SCREEN STRIKE	P/N105090	P/N105091
13	5/8" INTERIOR GLAZING STOP - LINEAL	PF1755	SK2286
12	STRAIGHT ARM WOOD OPERATOR COVER - LINEAL	PF1874	SK2037
11B	WOOD WRAPPED SCREEN B.O.M. (HOMESHIELD)		SK2295
11A	SCREEN ASSEMBLY B.O.M.		SK2023
10	HARDWARE KIT 'D' STRAIGHT ARM OPER. & TRACK	varies by width	SK2040
9	FRAME WEATHERSEAL - LINEAL	PF1013	SK2038
8	SILL FRAME MEMBER - LINEAL	PF1761	SK1996
7	INSUL GLAZED GRILLE SURROUND - (Optional)	PF1756	SK2286
6	GLAZING (as per order)		SK2286
5	BOTTOM SASH RAIL - LINEAL	PF1766	SK2004
4	ALUMINUM SASH CLADDING - LINEAL	PF1074	
3	ALUMINUM FRAME CLADDING - LINEAL	PF1002	
2	SASH RAINSKIRT - LINEAL	PF1026	
1	NAILING FIN (as per order)	PF1214	
ITEM	DESCRIPTION	PROFILE	REF. DWG.

*	LONG HINGE SCREWS		
*	HARDWARE KIT 'F' (bottom & mid. butt hinge)	P/N106257	SK2022
*	SASH GLAZING KIT 'V'		
*	VENT SASH FASTENER KIT 'W'		

NOTES:
* PROFILE OR PART DOES NOT APPEAR IN SECTIONS SHOWN.
REFER TO THE CASEMENT SEALANT AND FASTENER SPECIFICATIONS SHEET IN THE CASEMENT GENERAL SECTION.

NO.	DESCRIPTION	BY	DATE	ECN NO.
05	INSTALLATION CLIP CHANGED	SMD	12 NOV 07	200057

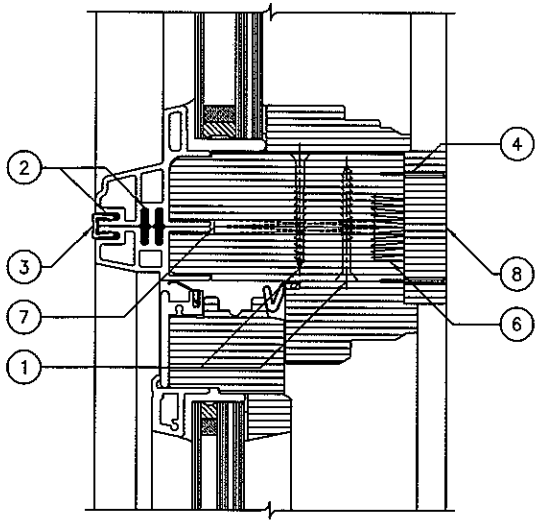
KML WINDOWS INC.
an Andersen® company

Title:
COASTAL CLAD VENTING CASEMENT
RECTANGULAR 'BOM'

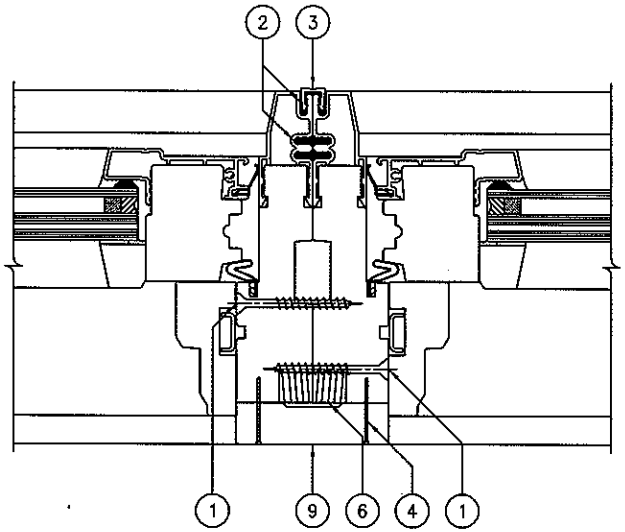
RELEASED

Drawn: GMM Chk'd:
Date: 30 JUNE 2005 Scale: HALF SIZE

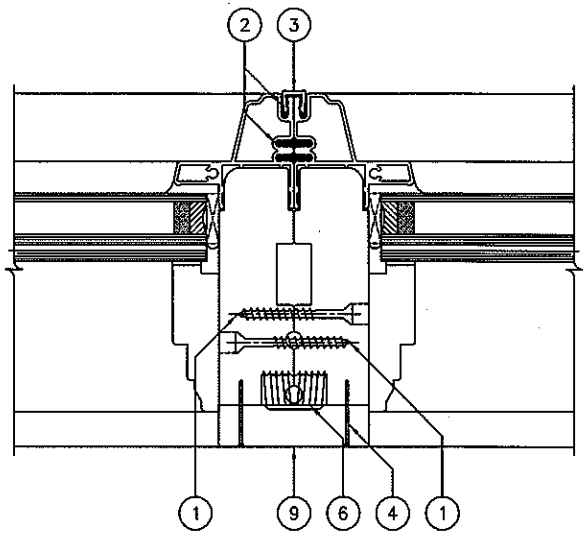
Drawing Number SK2281



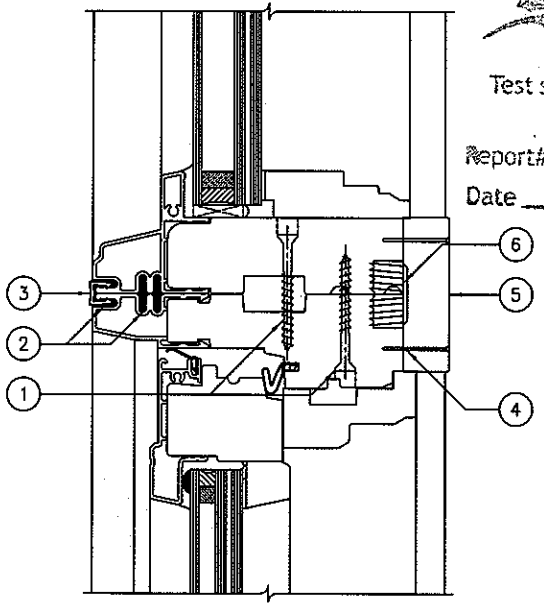
SECTION B
CURVED CASEMENT HEAD TO
CURVED TRANSOM SILL MULL DETAIL



SECTION C
VERTICAL CASEMENT TO CASEMENT
MULL DETAIL



SECTION D
VERTICAL TRANSOM TO TRANSOM
MULL DETAIL



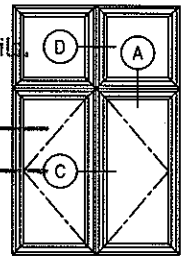
SECTION A
HORIZONTAL CASEMENT HEAD TO
TRANSOM SILL MULL DETAIL

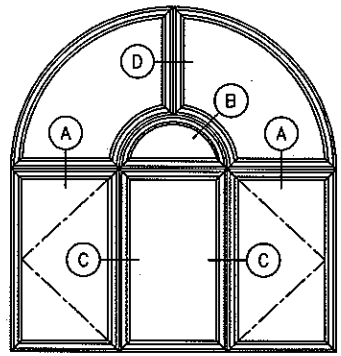
Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 9/032

Date 6/23/10 Tech





COMPOSITE ELEVATION N.T.S.
(AS VIEWED FROM EXTERIOR)

NOTE:
* PROFILE OR PART DOES NOT APPEAR IN SECTIONS SHOWN

ITEM		DESCRIPTION	PROFILE/PART NO.	FASTENER & SEALANT FREQUENCY
3	*	2" X 1/4" VERTICAL MULLION COVER – CURVED	PF2049	USE FOR BACK TO BACK MULLING WITH JAMB EXTENSIONS
3	*	2" X 1/4" VERTICAL MULLION COVER – LINEAL	PF2049	USE FOR BACK TO BACK MULLING WITH JAMB EXTENSIONS
3	*	2" X 3/8" HORIZONTAL MULLION COVER – LINEAL	PF2048	USE FOR BACK TO BACK MULLING WITH JAMB EXTENSIONS
3	*	2" X 3/8" HORIZONTAL MULLION COVER – LINEAL	PF2048	USE FOR BACK TO BACK MULLING WITH JAMB EXTENSIONS
	*	2-19/64" X 11/16" HORIZONTAL MULLION COVER – CURVED	PF1797	
	9	2-19/64" X 5/8" VERTICAL MULLION COVER – LINEAL	PF1796 ✓	
	8	2-19/64" X 5/8" VERTICAL MULLION COVER – CURVED	PF1796	
	7	USE GLAZING SHIM'S TO MAINTAIN JAMB SPACING		SPACED AT SAME INTERVALS AS JAMB FASTENERS
	6	CORRUGATED STAPLE	P/N-1744	USED TO TEMPORARILY HOLD UNIT TOGETHER FOR MULLING
	5	2-19/64" X 11/16" HORIZONTAL MULLION COVER – LINEAL	PF1797	
	4	1" GALVANIZED BRAD NAIL	P/N-1401	4" FROM CORNERS & MAX. 12" O.C.
	3	ALUMINUM DOUBLE MULLION CAP	PMC73 ✓	APPLY SILICONE BEFORE APPLYING MULL CAP
	2	DOW 1199 SILICONE – CLEAR (TYP. BOTH SIDES)	P/N-102598	CONTINUOUS APPLIED BETWEEN CLADDING AND MULL CAP
	1	#8 x 1-3/4" F.H., S.Q., S.M.S. SCREW	P/N-876	ALTERNATE 4" FROM CORNERS & MAX. 12" O.C.

NOTES:
JAMB FASTENERS ARE TO ALTERNATE ON BOTH SIDES OF JAMB AT 4" FROM CORNERS AND MAX. 12 O/C – STAGGERED BY 1/2" SO AS NOT TO INTERFERE WITH EACH OTHER.

MULLING DETAILS APPLY TO BOTH OPERATING AND FIXED – CASEMENT, TRANSOM & AWNING UNITS.

BACK TO BACK REINFORCED MULLIONS DO NOT REQUIRE TO BE MINIMUM JAMB EXTENDED TO 4-9/16".

REINFORCED MULLION DETAILS MAY BE USED IN CONJUNCTION WITH NON REINFORCED MULLION DETAILS. REF. SK2061 FOR NON-REINFORCED MULLION DETAILS.

NO.	DESCRIPTION	BY	DATE	ECN NO.
03	PF2048 & PF2049 Mull Covers Added	GMM	27 FEB 08	200072
02	Revised to Provide Additional Information	GMM	01 FEB 08	200030

KML WINDOWS INC.
an Andersen® company

Title:
CLAD COASTAL CASEMENT VERTICAL & HORIZ.
BACK TO BACK REINFORCED MULL B.O.M.

RELEASED

Drawn: GMM Chk'd:
Date: 02 SEPT 2005 Scale: HALF SIZE

Drawing Number SK2339 (1 of 3)

	Standard Hallmark Certified Products	Impact Certified Products (Coastal IR)
Specifications	ANSI/AAMA/NWWDA 101/I.S.2-NAFS-02, A440-05 & A440-08	ASTM E1886/E1996-02 Missile Level C & D Wind Zone 3 & 4
Rating	C-C60 (LC-PG60-C) 36" x 84"	DP +50-65
Frame Member Corner Assembly	✓ All shapes - (3) #8 x 2" P.H., S.Q., Screws per corner.	
Frame Member Corner Sealing	Tremco 830 caulking for wood to wood corner joint.	
Springline Unit Frame Member – Leg to Curved Head Assembly Butt Joint	Castel drill method – butt joint (3 or 4 as required) #8 x 2" PH, SQ, Screws.	
Springline Unit Frame Member – Leg to Curved Head Sealing Butt Joint	PVA wood glue for wood to wood butt joint	
Frame Cladding Assembly & Frame Cladding Corner Assembly	✓ ¼" x 3/8" staples @ 2" from corners & 8" O.C. maximum (2) #6 x 3/4" FH, SQ, screws per corner.	
Frame Cladding Sealing & Frame Cladding Corner Sealing	One continuous bead of Dow Corning 1199 silicone sealant in the rebate on the interior side of the wood jamb. Drill & pump Dow Corning 1199 silicone sealant into frame extrusion cavity at corner joints.	Two continuous beads of Dow Corning 1199 silicone sealant in the rebates on the interior & exterior sides of the wood jamb. Drill & pump Dow Corning 1199 silicone sealant into frame extrusion cavity at corner joints.
Sash Member Corner Assembly	✓ Mortis & Tenon joints with PVA wood glue. (1) – 7/16" x 1-1/2" x 16 GA. staples per M&T joint. (Ref. SK1919)	
Springline Unit Sash Member - Leg to Curved Head Assembly	Mortis & Tenon joints with PVA wood glue. (1) – 7/16" x 1-1/2" x 16 GA staple per M&T joint. (Ref. SK1919)	
Sash Cladding Assembly & Sash Cladding Corner Assembly	The interior glass lip 1/4" x 3/8" staples @ 2" from corners & 6" O.C. maximum. Curved portion on Springline have #6 x ¾" screws @ 2" from corners & 6" O.C. on both interior & exterior of sash. (1) - #6 x 3/4" screw per corner.	The interior glazing lip has #6 x 3/4" screws @ 2" from corners & 6" O.C. maximum. Curved portion on Springline have #6 x ¾" screws @ 2" from corners & 6" O.C. on both interior & exterior of sash. (1) - #6 x 3/4" screw per corner.
Sash Cladding Sealing & Sash Cladding Corner Sealing	One continuous bead of Dow Corning 1199 silicone sealant under glass lip. Drill & pump Dow Corning 1199 silicone sealant into sash glazing stop extrusion cavity at corner joints.	Two continuous beads of Dow Corning 1199 silicone sealant under glass lip and underside of sash cladding. Drill & pump Dow Corning 1199 silicone sealant into sash glazing stop extrusion cavity at corner joints.

Architectural Testing
Test sample complies with these details.
Deviations are noted.
Report# 91032
Date 6/23/10 Tech BPK

KML WINDOWS INC. an Andersen® company	**Process Specification**	**Title:** Specifications for Operating Clad Casement Windows	**Number:** PP09KM0006 **Page:** 3 of 3
Issued By: Graham Marks		**Approved By:** Sean Dixon	

	Standard Hallmark Certified Products	**Impact Certified Products (Coastal IR)**
Sash Stop Assembly	✓ 1-1/4" brad nails @ 2" from corners and 8" O.C. maximum	
Hinges	Rectangular units – concealed hinges Standard finish & corrosion resistant option ✓ Shaped units – stainless steel butt hinges	All shapes – stainless steel butt hinges
Operators	Corrosion resistant fastened to the sill with (5) #10 x 1 1/2" FH, PD, SS, SMS	Corrosion resistant fastened to the sill with (5) #10 x 1 1/2" FH, PD, SS, SMS
Locks & Keepers	✓ Multi-point lock & keeper system (2) #8 x 1" FH, PD, SS, SMS per lock point (1, 2 & 3 lock points) (2) #8 x 1" FH, PD, SS, SMS per keeper	
Glazing Method	Glass is set from interior against a bed of Dow Corning 1199 Gray silicone sealant. Wood glazing stops with double sided adhesive tape and fastened with 1-1/4" brad nails @ 2" from corners and 8" O.C. maximum.	Glass is set from the interior against a 1/8" thick bed of Dow Corning 995 structural silicone sealant using glazing bump-on spacers to obtain glazing bead thickness. Black 995 Silicone is used for all color options accept for White cladding color option uses White 995 Silicone. 995 Structural silicone is also used in the full perimeter in the glazing cavity. ✓ Wood glazing stops with double sided adhesive tape and fastened with 1-1/4" brad nails @ 2" from corners and 6" O.C. maximum.
Glass Options	Any monolithic or Insulated unit that meets the size and wind load requirements of ASTM E1300 that does not exceed the product DP rating.	Up to 35-15/16" x 84" frame size use 5/32" AN/0.090 PVB/ 5/32" AN laminated glass. Laminated glass can be used as monolithic or in an insulated unit with 1/8" anneal glass. ****Insul units can use Superspacer or Cardinal's metal spacer.****
Frame Size Restrictions	35-15/16" Wide 84" Tall ****<u>CAN NOT</u> exceed either dimension****	
Frame Installation Clip Options	Standard installation clip fastened to the frame with (2) #8 x ¾", FH, PD, SS, screws. Clip spacing: 4" to 6" from corners and O.C. spacing as noted on the production order paperwork. ✓ Sheer screw option through jamb #10 x 3" @ 4" to 6" from corners and per Engineered O.C. spacing.	Coastal installation clip fastened to the frame with (1) #8 x ¾", FH, PD, SS, SMS screw. Clip spacing: 4" to 6" from corners and O.C. spacing as noted on the production order paperwork. An additional (2) #8 x ¾", FH, PD, SS, SMS screws per clip shipped loose. Sheer screw option through jamb #10 x 3" @ 4" to 6" from corners and per Engineered O.C. spacing.

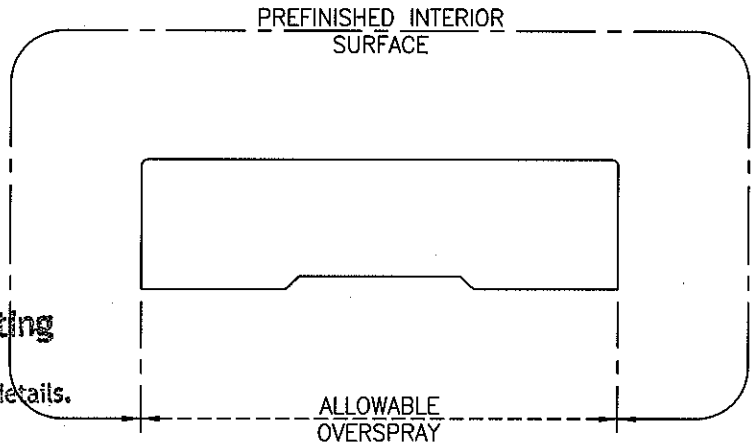
Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 91032

Tech

EXPOSED SURFACES (P) PRIMARY (S) SECONDARY (C) CONCEALED

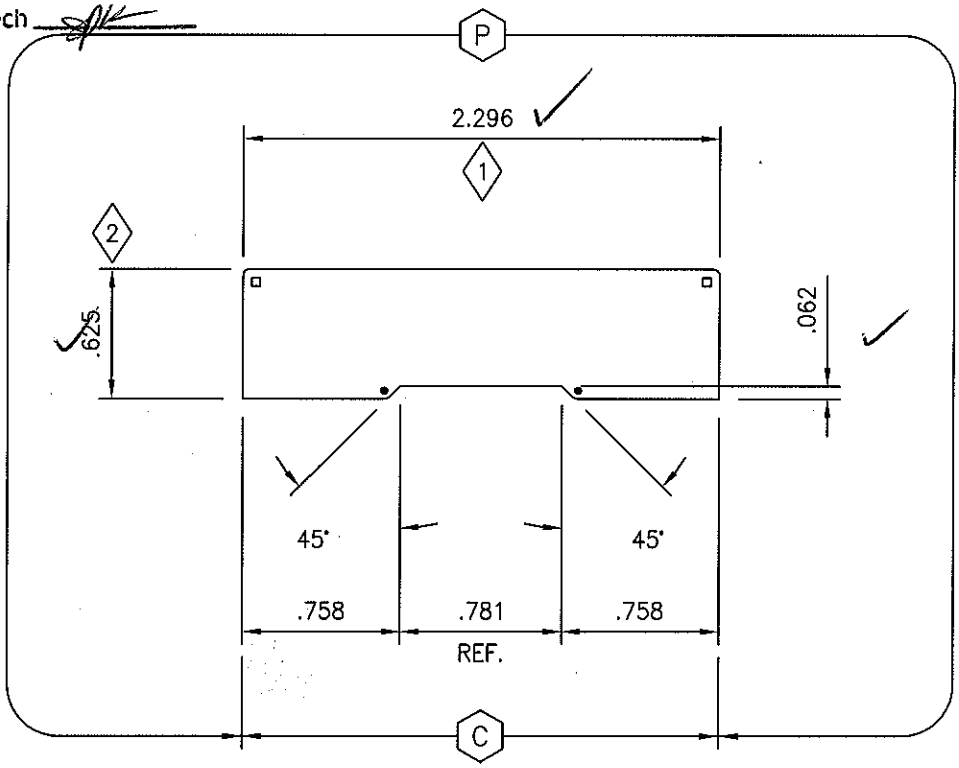


Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 91032

Date 6/23/10 Tech



NOTES:
1. PRESERVATIVE TREATMENT REQUIRED.
2. CRITICAL DIMENSIONS USED: 1 THRU 2.

TOLERANCE UNLESS OTHERWISE SPECIFIED:

DIMS < or = 1"	±.010
DIMS 1" to 3"	±.015
DIMS > 3"	±.031
ANGLES	±1°
RADII	±.015
LENGTH DIMS < or = 36"	±.015
LENGTH DIMS > 36"	±.031

STANDARD RADIUS MARKERS:

● RADII = 0.040 ■ RADII = ○ RADII = □ RADII = 0.031

PINE	Resawn 6/4 Clear Solid	P.I.	Resawn 6/4 Clear Solid – Pine
MAHOG	5/4 Clear Solid	VG FIR	5/4 Clear Solid
OAK	5/4 Clear Solid	ALDER	5/4 Clear Solid
CHERRY	5/4 Clear Solid	OTHER	
MAPLE	5/4 Clear Solid	OTHER	

NO.	DESCRIPTION	BY	DATE	ECN NO.
02	Sheet (2 of 2) Curved Version Added	GMM	18 DEC 07	200030

KML WINDOWS INC.
an Andersen® company

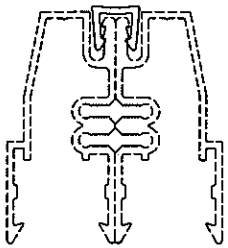
Title: INTERIOR VERTICAL MULLION COVER FOR CASEMENT WINDOWS (BACK TO BACK MULL)

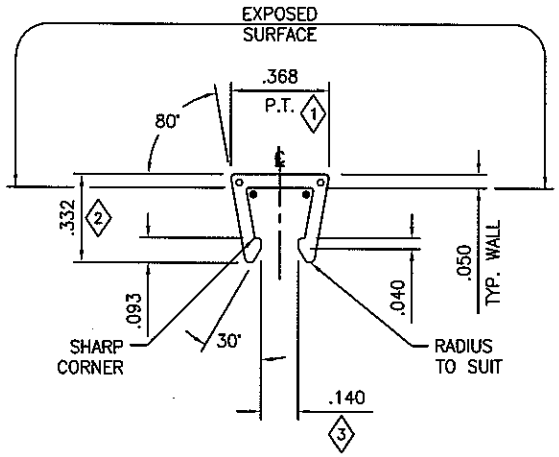
RELEASED

Drawn: SMD Chk'd:

Date: 09 AUG 2004 Scale: FULL SIZE

Drawing Number PF1796





THIS PROFILE IS SYMMETRICAL ABOUT THE ℄.

Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 91032

Date 6/23/10 Tech

NOTES:
1. CRITICAL DIMENSIONS USED: 1 THRU 3.
2. DIMENSIONS WITHOUT TOLERANCES USE ALUMINIUM INDUSTRY STANDARDS.
3. ALL DIMENSIONS APPLY TO POST PAINTING.
4. FINISH SPECIFICATION:
   PRIMED PAINTED – PP09KM0053

UNLESS OTHERWISE SPECIFIED:
□ WALLS = 0.050 ■ WALLS = ○ RADII = 0.015 ● RADII = 0.010
BREAK ALL CORNERS WITH: R 0.0055
P.I. = POINT OF INTERSECTION P.T. = POINT OF TANGENCY

ALLOY:	6063	TEMPER:	T5
HARDNESS:	WEBSTER 7 OR ABOVE AS EXTRUDED		
SHAPE:	SOLID	C.C.D. (in.):	0.45035
AREA (sq.in.):	0.04785	PERIMETER (in.):	1.93398
WT. (lbs\ft):	0.05570	WT. (kg\m):	0.08289
LENGTH:	216" (18'-0")		
MIN. BENDING RADIUS:	7.000 @ CENTER LINE		

NO.	DESCRIPTION	BY	DATE	ECN NO.
05	UPDATED TO CURRENT KML FORMAT	SMD	01 AUG 08	200102

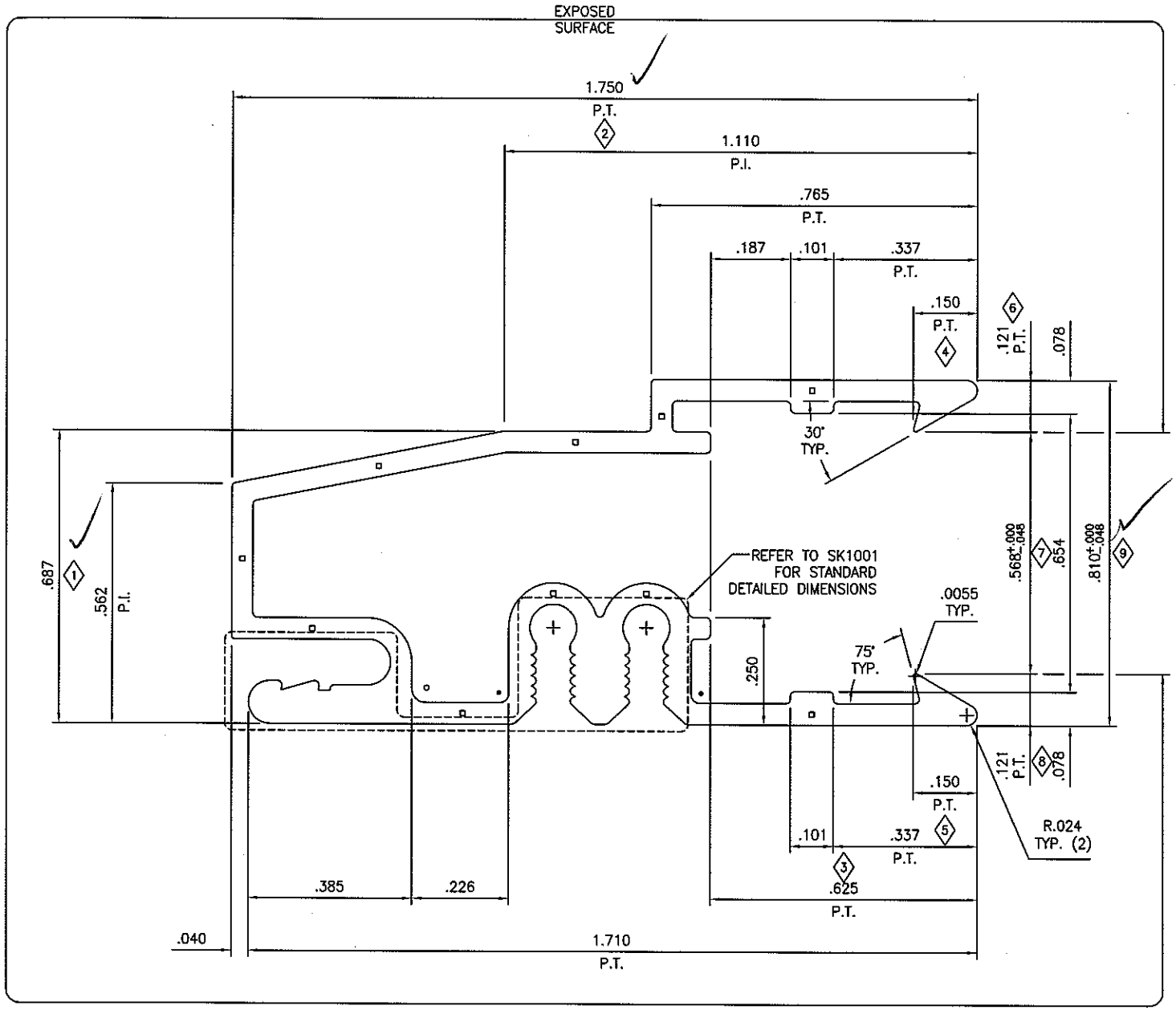
KML WINDOWS INC.
an Andersen® company

Title:
ALUMINUM MULLION COVER FOR A
BACK TO BACK MULLION

RELEASED

Drawn: GD Chk'd:
Date: 17 DEC 1990 Scale: 2x FULL SIZE

Drawing Number PMC73



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 91032

Date 6/23/10 Tech

NOTES:
1. CRITICAL DIMENSIONS USED: 1 THRU 9.
2. DIMENSIONS WITHOUT TOLERANCES USE ALUMINUM INDUSTRY STANDARDS.
3. ALL DIMENSIONS APPLY TO POST PAINTING.
4. FINISH SPECIFICATION:
   PRIME PAINTED – PP09KM0053
   PAINTED (2604) – PP09KM0047

UNLESS OTHERWISE SPECIFIED:
□ WALLS = 0.050 ■ WALLS = ○ RADII = 0.031 ● RADII = 0.020
BREAK ALL CORNERS WITH: R 0.010
P.I. = POINT OF INTERSECTION P.T. = POINT OF TANGENCY

ALLOY:	6063	TEMPER:	T5
HARDNESS:	WEBSTER 7 OR ABOVE AS EXTRUDED		
SHAPE:	SOLID	C.C.D. (in.):	1.86789
AREA (sq.in.):	0.30964	PERIMETER (in.):	11.11473
WT. (lbs\ft):	0.36042	WT. (kg\m):	0.53637
LENGTH:	168.000" & 192.000"		
MIN. BENDING RADIUS:	LINEAL ONLY		

NO.	DESCRIPTION	BY	DATE	ECN NO.
05	Critical Dims Added/Notes Revised	GMM	15 JAN 08	200067

KML WINDOWS INC. an Andersen® company

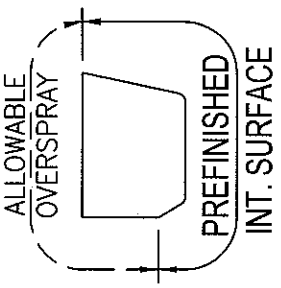
Title:
ALUMINUM FRAME CLADDING
- LINEAL -

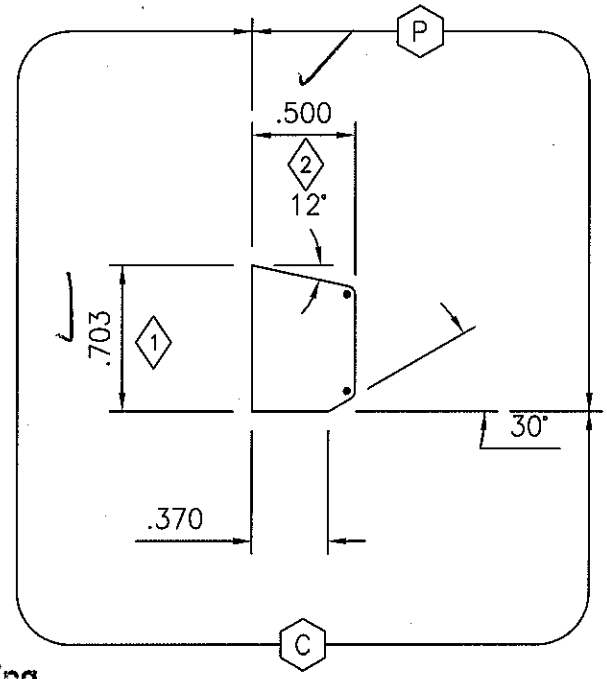
RELEASED

Drawn: DS Chk'd:
Date: 18 OCT 1995 Scale: 4x FULL SIZE

Drawing Number PF1002

EXPOSED SURFACES (P) PRIMARY (S) SECONDARY (C) CONCEALED





Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# ~~6/23/10~~ JF 91032

NOTES: 6/23/10 Tech

1. PRESERVATIVE TREATMENT REQUIRED.
2. CRITICAL DIMENSIONS USED: 1 THRU 2.
3. TOLERANCE UNLESS OTHERWISE SPECIFIED ±.020.

TOLERANCE UNLESS OTHERWISE SPECIFIED:

DIMS < or = 1" ±.010
DIMS 1" to 3" ±.015
DIMS > 3" ±.031
ANGLES ±1°

RADII ±.015
LENGTH DIMS < or = 36" ±.015
LENGTH DIMS > 36" ±.031

STANDARD RADIUS MARKERS:

● RADII = .040 ■ RADII = ○ RADII = □ RADII =

PINE	6/4" – RESAWN CLEAR SOLID	P.I.	USE PINE PROFILE
MAHOG	6/4" – RESAWN CLEAR SOLID	VG FIR	6/4" – RESAWN CLEAR SOLID
OAK	6/4" – RESAWN CLEAR SOLID	ALDER	6/4" – RESAWN CLEAR SOLID
CHERRY	6/4" – RESAWN CLEAR SOLID	OTHER	
MAPLE	6/4" – RESAWN CLEAR SOLID	OTHER	

NO.	DESCRIPTION	BY	DATE	ECN NO.
03	REVISED MATERIAL SPECIFICATIONS	RBB	26 MAR 07	100106

KML WINDOWS INC.
an Andersen® company

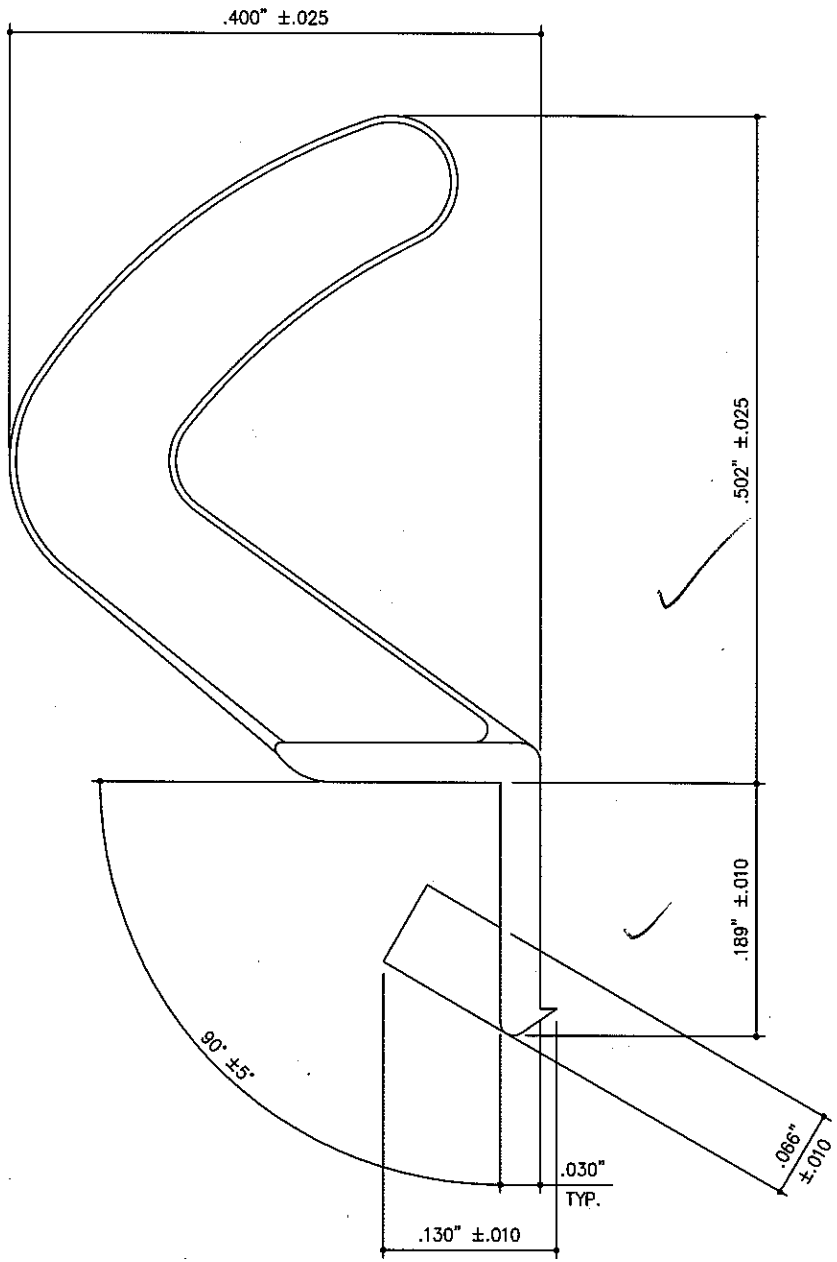
Title: 1/2" GLASS STOP -LINEAL-

RELEASED

Drawn: BTB Chk'd:

Date: 17 NOV 1994 Scale: FULL SIZE

Drawing Number PF1008



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 91032

Date 6/23/10 Tech

NOTES:
1. AMESBURY FOAM–TITE SEAL
2. EXTRUDED COMPOSITE OLEFIN/TPE
3. CLOSED CELL FOAMED ELASTOMERIC
4. MONSANTO "SANTOPRENE" TPE SKIN AROUND FOAM CORE
5. RIGID "L" SHAPED CARRIER
6. FLEXIBLE BARB FOR RETENTION IN A .125 KERF
7. SKIN COLOUR: GRAY
8. REFERENCE AMESBURY CAT. #12085 HOWEVER, DRAWING DETAIL TAKES PRECEDENT OVER CATALOGUE DETAIL OR SUBSEQUENT ALTERATIONS
9. ALL DIMENSIONS AND TOLERANCES SHOWN ARE FROM AMESBURY GROUP INC. (FOAM–TITE DIVISION) DRAWING #12085 DATED 2–10–93 REV. #1 DATED 7–29–94

NO.	DESCRIPTION	BY	DATE	ECN NO.
01	DRAWING UPDATED TO CURRENT FORMAT	SMD	22 AUG 07	200016

KML WINDOWS INC.
an Andersen® company

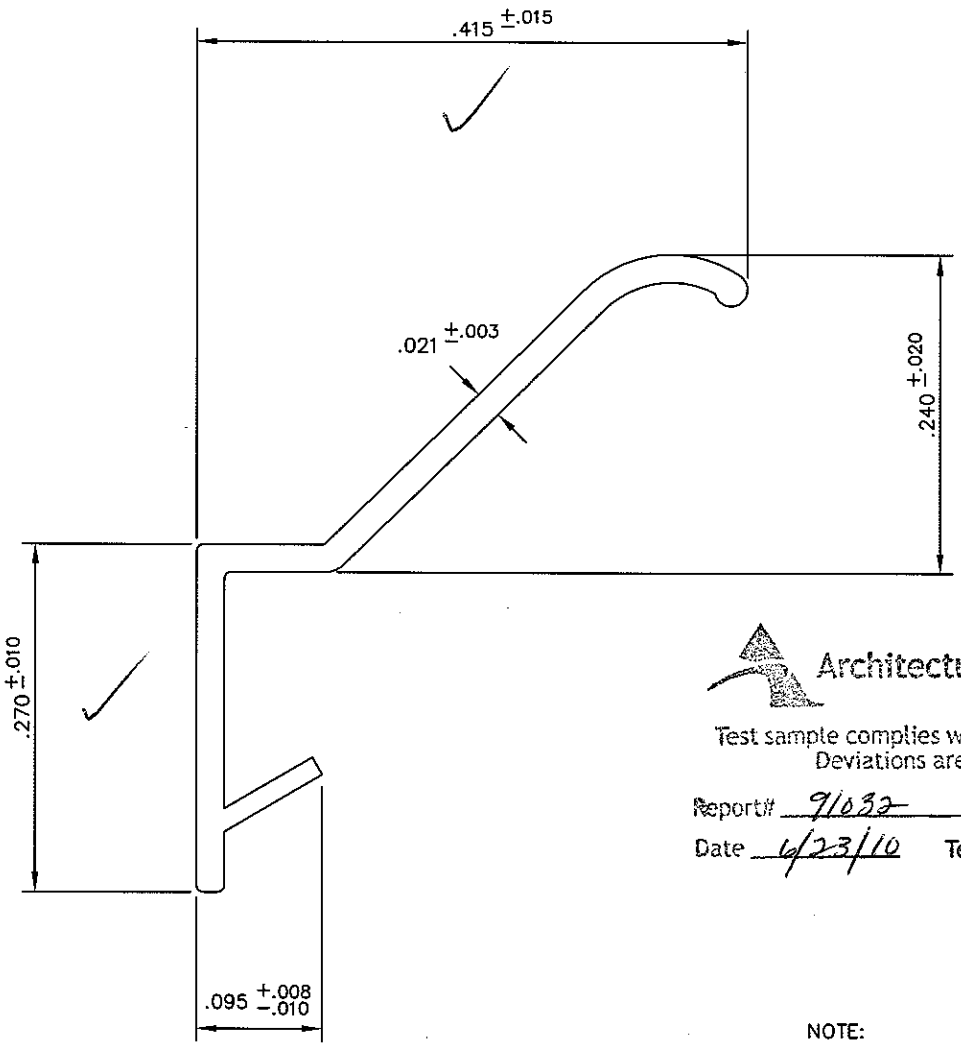
Title: FRAME WEATHERSEAL

RELEASED

Drawn: BTB Chk'd:

Date: 27 NOV 1994 Scale: 10x FULL SIZE

Drawing Number PF1013



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 9/032

Date 6/23/10 Tech

NOTE:

- ALL DIMENSIONS AND TOLERANCES SHOWN ARE FROM SCHLEGEL CANADA INC.(OAKVILLE DIVISION) DRAWING #PRO299 C DATED 22NO89 REV. #C2 DATED 02DE91

ACTUAL SIZE

MATERIAL:

- SCHLEGEL " SUPER POLYFLEX "
- EXTRUDED FLEXIBLE COPOLYMER
- FLEXIBLE BARB FOR RETENTION IN A .080 KERF
- COLOUR : BLACK
- REFERENCE SCHLEGEL CAT. # PFS 101 HOWEVER, DRAWING DETAIL TAKES PRECEDENT OVER CATALOGUE DETAIL OR SUBSEQUENT ALTERATIONS

NO.	DESCRIPTION	BY	DATE	ECN NO.

KML ARCHITECTURAL WINDOWS AND DOORS by Andersen™

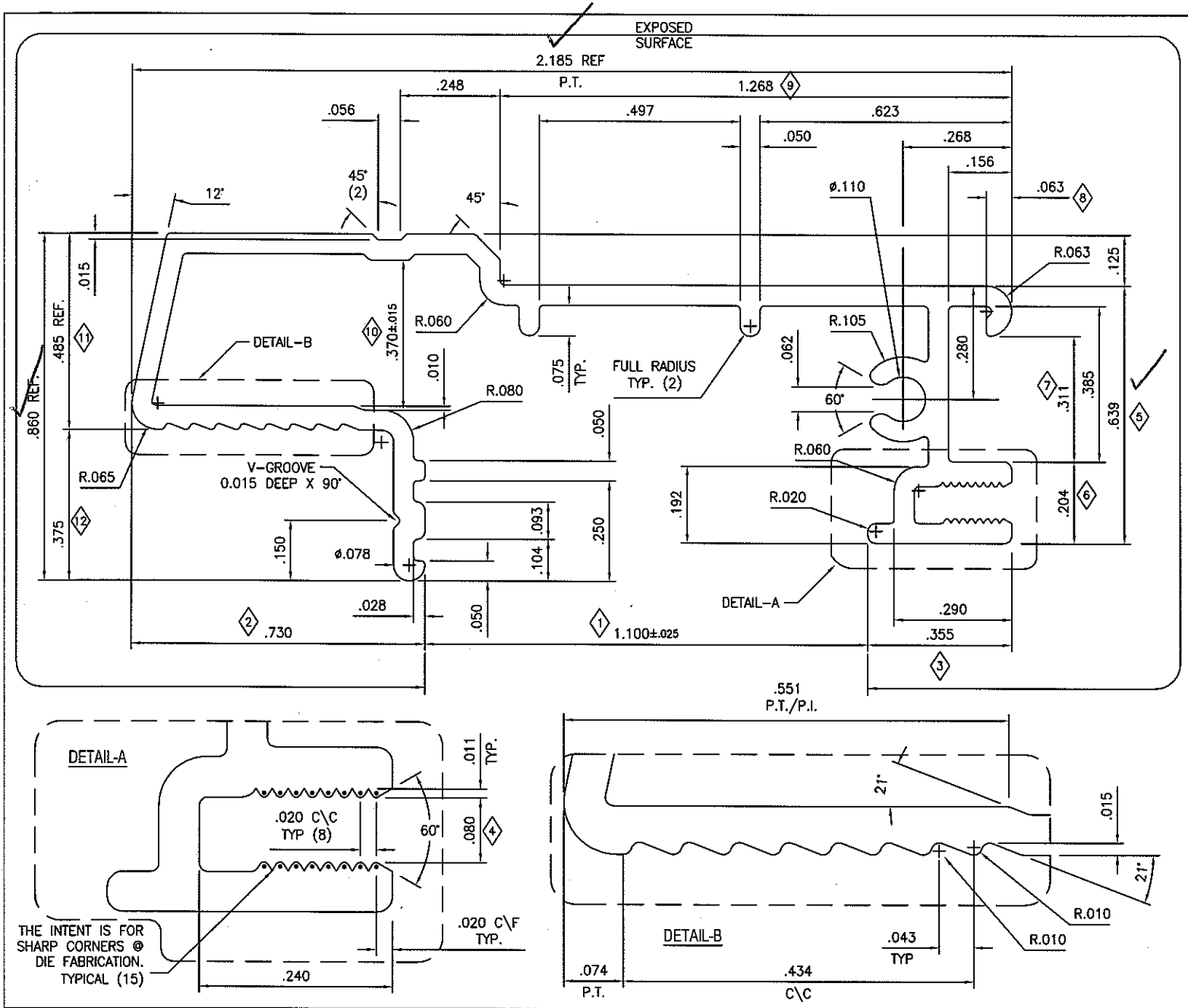
RELEASED

Title: VENTING CASEMENT WINDOW
SASH RAIN SKIRT

Drawn: BTB Chk'd:

Date: 14 FEB 1995 Scale: 10 x FULL SIZE

Drawing Number PF1026



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 91032

Date 6/23/10 Tech

NOTES:
1. CRITICAL DIMENSIONS USED: 1 THRU 12.
2. DIMENSIONS WITHOUT TOLERANCES USE ALUMINUM INDUSTRY STANDARDS.
3. ALL DIMENSIONS APPLY TO POST PAINTING.
4. FINISH SPECIFICATION:
   PRIMED PAINTED – PP09KM0053
   PAINTED (2605) – PP09KM0048

UNLESS OTHERWISE SPECIFIED:
□ WALLS = .050 ■ WALLS = ○ RADII = ● RADII = 0.0055
BREAK ALL CORNERS WITH: R 0.010
P.I. = POINT OF INTERSECTION P.T. = POINT OF TANGENCY

ALLOY:	6063	TEMPER:	T5
HARDNESS:	WEBSTER 7 OR ABOVE AS EXTRUDED		
SHAPE:	SOLID	C.C.D. (in.):	2.23136
AREA (sq.in.):	0.27047	PERIMETER (in.):	10.69887
WT. (lbs\ft):	0.31483	WT. (kg\m):	0.46852
LENGTH:	192.000"		
MIN. BENDING RADIUS:	LINEAL ONLY		

NO.	DESCRIPTION	BY	DATE	ECN NO.
03	RELEASED FROM REV 02-G TO REV 03	JCA	11 JAN 08	200044

KML WINDOWS INC.
an Andersen® company

Title: ALUMINUM SASH CLADDING
- LINEAL -

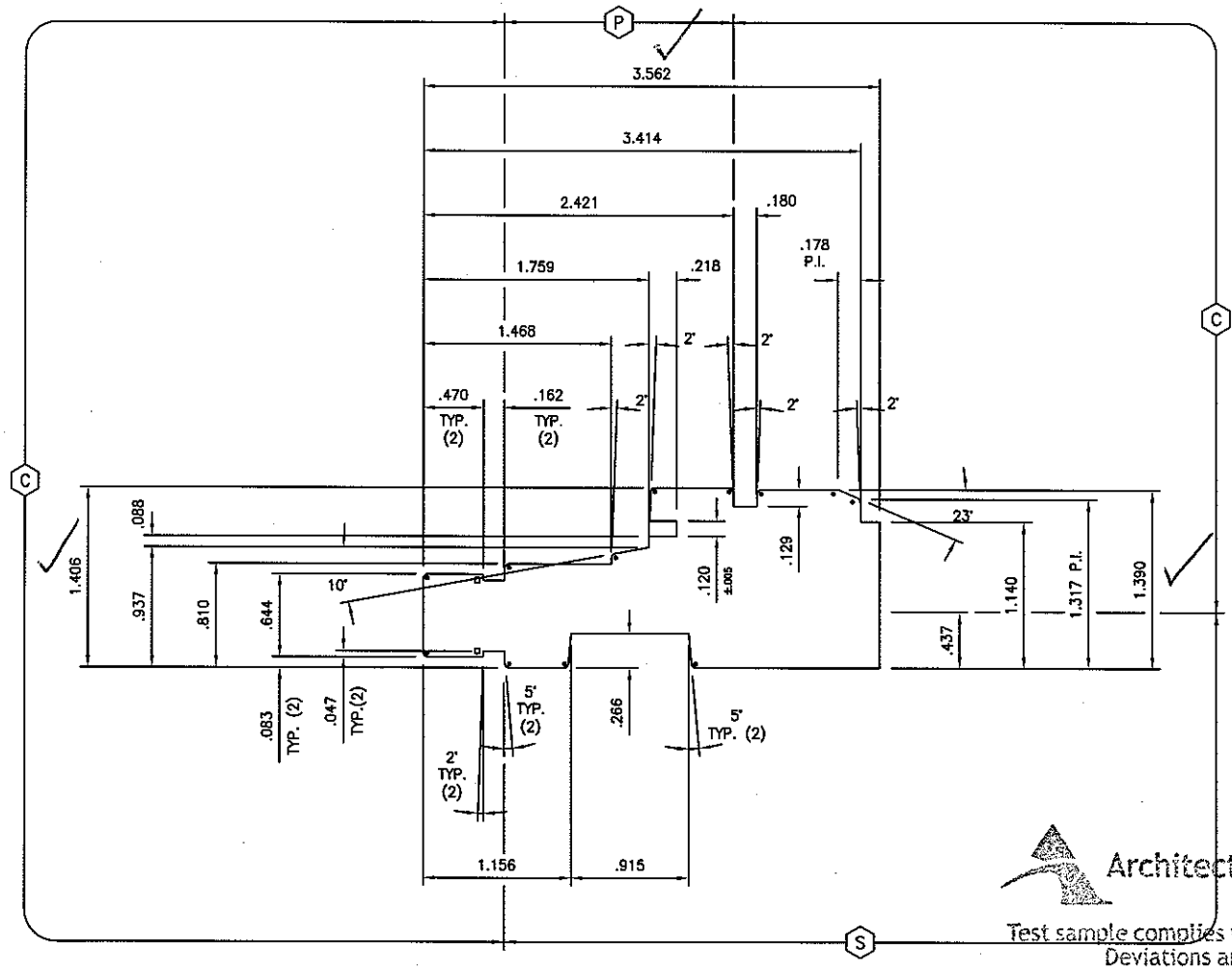
RELEASED

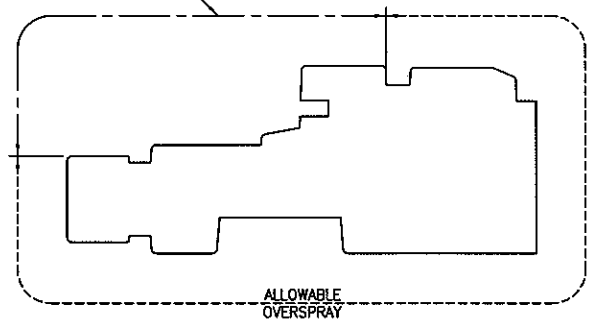
Drawn: DS Chk'd:
Date: 18 OCT 1995 Scale: 4x FULL SIZE

Drawing Number PF1074

EXPOSED SURFACES (P) PRIMARY (S) SECONDARY (C) CONCEALED

THIS SURFACE IS ALWAYS PAINTED AW GRAY 246, C0003. (2)





Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 91032

Date 6/23/10 Tech

TOLERANCE UNLESS OTHERWISE SPECIFIED:

DIMS < or = 1" ±.010	RADII ±.015
DIMS 1" to 3" ±.015	LENGTH DIMS < or = 36" ±.015
DIMS > 3" ±.031	LENGTH DIMS > 36" ±.031
ANGLES ±1°	

STANDARD RADIUS MARKERS:

● RADII = 0.031 ■ RADII = ○ RADII = □ RADII = 0.015

PINE	B214 + FACE VENEER	P.I.	
MAHOG		ALDER	
OAK		HICKORY	
CHERRY		WALNUT	
MAPLE		OTHER	
VG FIR		OTHER	

NO.	DESCRIPTION	BY	DATE	ECN NO.
03	B214 BLANK NOW USED	RBB	03 NOV 08	200116

KML WINDOWS INC. an Andersen® company

Title:
CLAD CASEMENT SILL & BEAD FRAME MEMBER
- LINEAL -

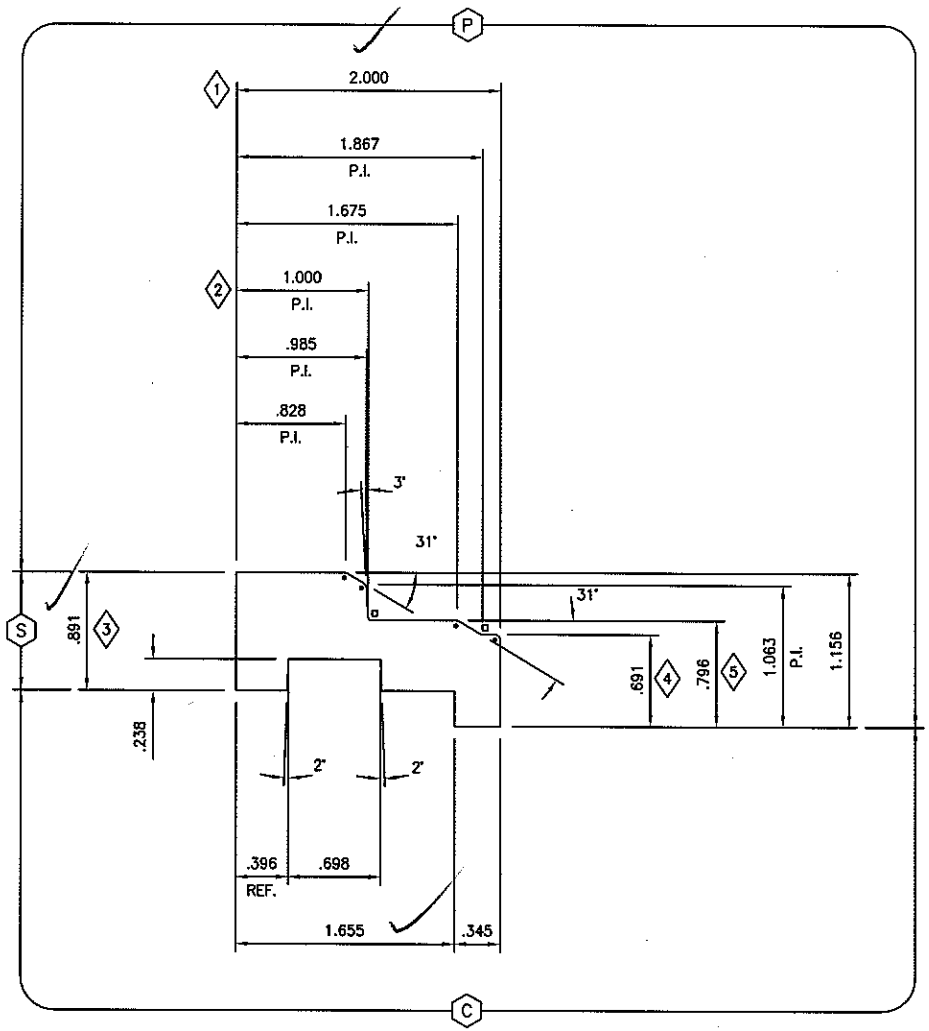
RELEASED

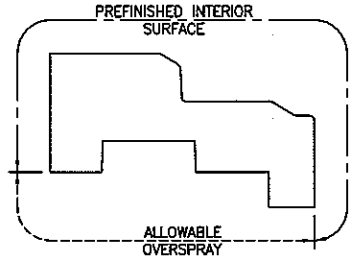
Drawn: GMM Chk'd:

Date: 21 JUNE 2004 Scale: FULL SIZE

Drawing Number PF1761

EXPOSED SURFACES (P) PRIMARY (S) SECONDARY (C) CONCEALED





Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 71032

Date 6/23/10 Tech

NOTES:
1. CRITICAL DIMENSIONS USED: 1 THRU 5.

TOLERANCE UNLESS OTHERWISE SPECIFIED:
DIMS < or = 1" ±.010
DIMS 1" to 3" ±.015
DIMS > 3" ±.031
ANGLES ±1°
RADII ±.015
LENGTH DIMS < or = 36" ±.015
LENGTH DIMS > 36" ±.031

STANDARD RADIUS MARKERS:
● RADII = .040 ■RADII = ○ RADII = □ RADII = .031

PINE	5/4" CLEAR SOLID	P.I.	USE PINE PROFILE
MAHOG	6/4" CLEAR SOLID	VG FIR	6/4" CLEAR SOLID
OAK	6/4" CLEAR SOLID	ALDER	6/4" CLEAR SOLID
CHERRY	6/4" CLEAR SOLID	OTHER	
MAPLE	6/4" CLEAR SOLID	OTHER	

NO.	DESCRIPTION	BY	DATE	ECN NO.
02	REVISED MATERIAL SPECIFICATIONS	RBB	28 MAR 07	100106

KML WINDOWS INC.
an Andersen® company

Title:
CASEMENT & AWNING INTERIOR
SASH STOP - LINEAL -

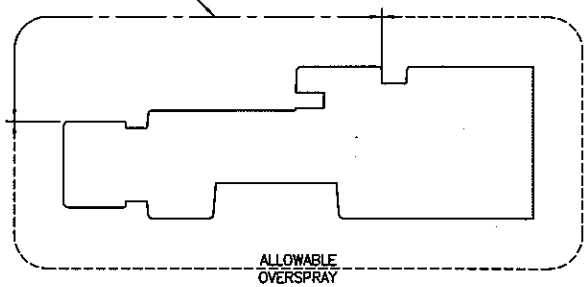
RELEASED

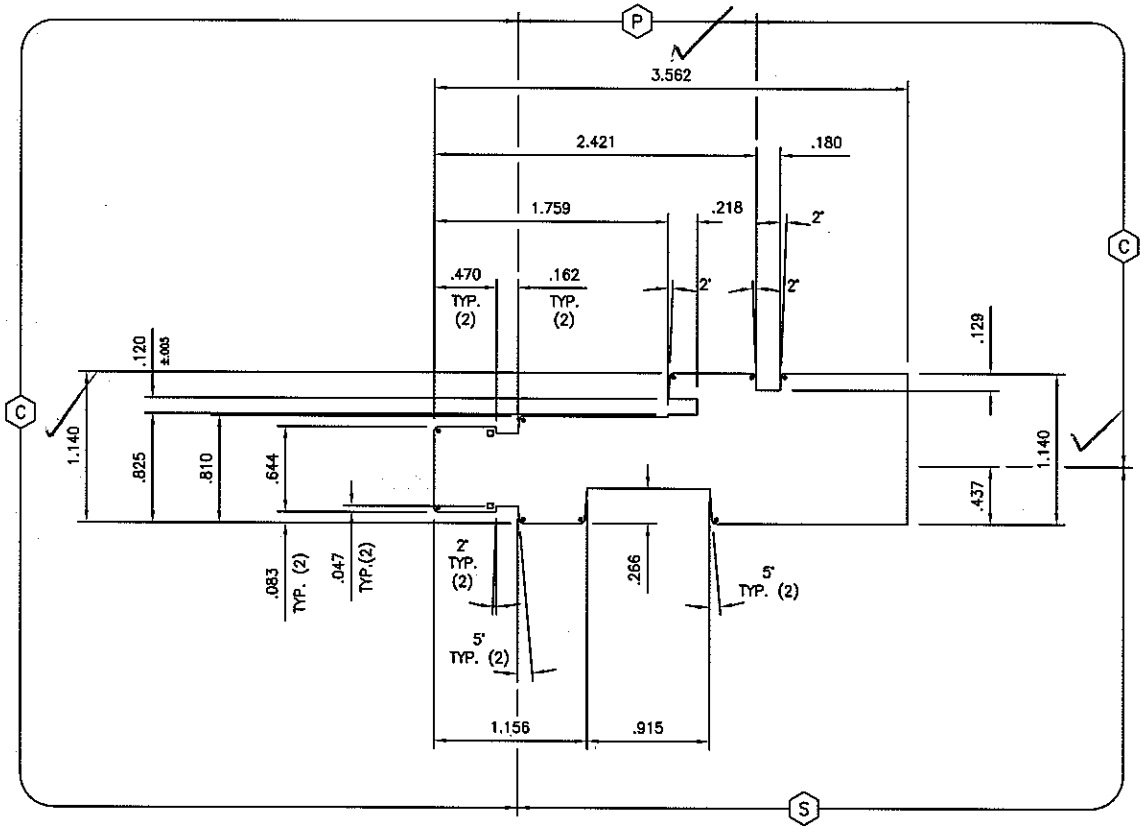
Drawn: GMM Chk'd:
Date: 21 JUNE 2004 Scale: NTS

Drawing Number PF1773

EXPOSED SURFACES (P) PRIMARY (S) SECONDARY (C) CONCEALED

THIS SURFACE IS ALWAYS PAINTED AW GRAY 246 C0003.





Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 71032

Date 4/23/10 Tech

TOLERANCE UNLESS OTHERWISE SPECIFIED:

DIMS < or = 1" ±.010	RADII ±.015
DIMS 1" to 3" ±.015	LENGTH DIMS < or = 36" ±.015
DIMS > 3" ±.031	LENGTH DIMS > 36" ±.031
ANGLES ±1°	

STANDARD RADIUS MARKERS:

● RADII = 0.031 ■ RADII = ○ RADII = □ RADII = 0.015

PINE	B214 + FACE VENEER	P.I.	
MAHOG		ALDER	
OAK		HICKORY	
CHERRY		WALNUT	
MAPLE		OTHER	
VG FIR		OTHER	

NO.	DESCRIPTION	BY	DATE	ECN NO.
03	B214 BLANK NOW USED	RBB	03 NOV 08	200116

KML WINDOWS INC. an Andersen® company

Title: CLAD CASEMENT JAMB MEMBER
- LINEAL -

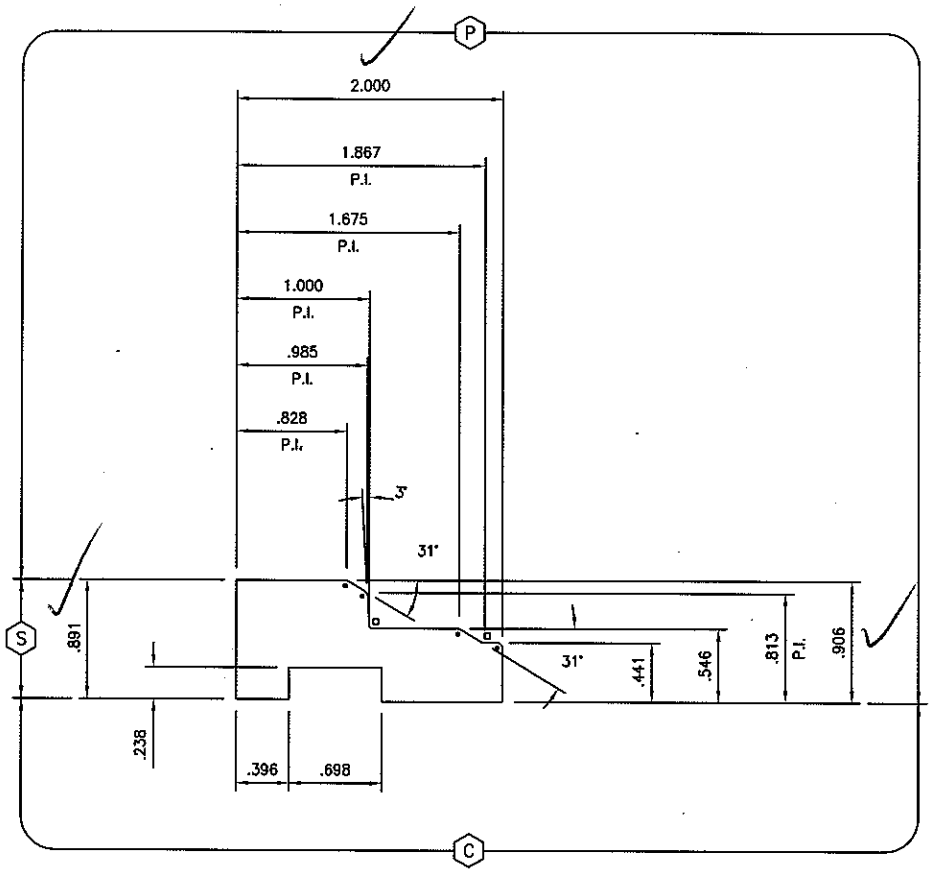
RELEASED

Drawn: GMM Chk'd:

Date: 21 JUNE 2004 Scale: FULL SIZE

Drawing Number PF1762

EXPOSED SURFACES (P) PRIMARY (S) SECONDARY (C) CONCEALED



HEAD POSITION	HEAD TYPE	KNIFE TYPE	WADKIN				
B1 – FIRST BOTTOM		STR.	*				
F1 – FIRST FENCE		STR.	*				
O1 – FIRST OUTSIDE		STR.	*				
F2 – SECOND FENCE							
O2 – SECOND OUTSIDE							
T1 – FIRST TOP		STR.	*				
T2 – SECOND TOP		PROFILE	T1091–A				
B2 – SECOND BOTTOM		PROFILE	T1075				
U1 – UNIVERSAL							

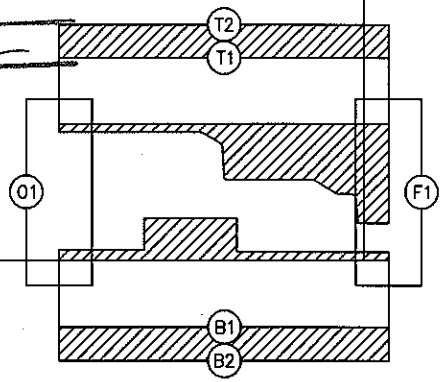
FENCE

Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 91032

Date 6/23/10 Tech



BED

HEAD CONFIGURATION – IN FEED POSITION
SCALE: HALF SIZE ☐ FULL SIZE ☒

DETAIL ANYWHERE RELIEF ANGLES ARE SHOWN, CONTROL DIMENSIONS APPLY TO THE BOTTOM OF THE ANGLE.

TOLERANCE AT MOULDER SETUP = ±.005

UNLESS OTHERWISE SPECIFIED:
• RADII = .040 ▫ RADII = .031

☒ PINE	5/4" – CLEAR SOLID
☒ MAHOGANY	5/4" – CLEAR SOLID
☒ OAK	5/4" – CLEAR SOLID
☒ CHERRY	5/4" – CLEAR SOLID
☒ OTHER	5/4" – CLEAR SOLID – MAPLE, ALDER & FIR

NO.	DESCRIPTION	BY	DATE	ECN NO.

KML ARCHITECTURAL WINDOWS AND DOORS by Andersen™

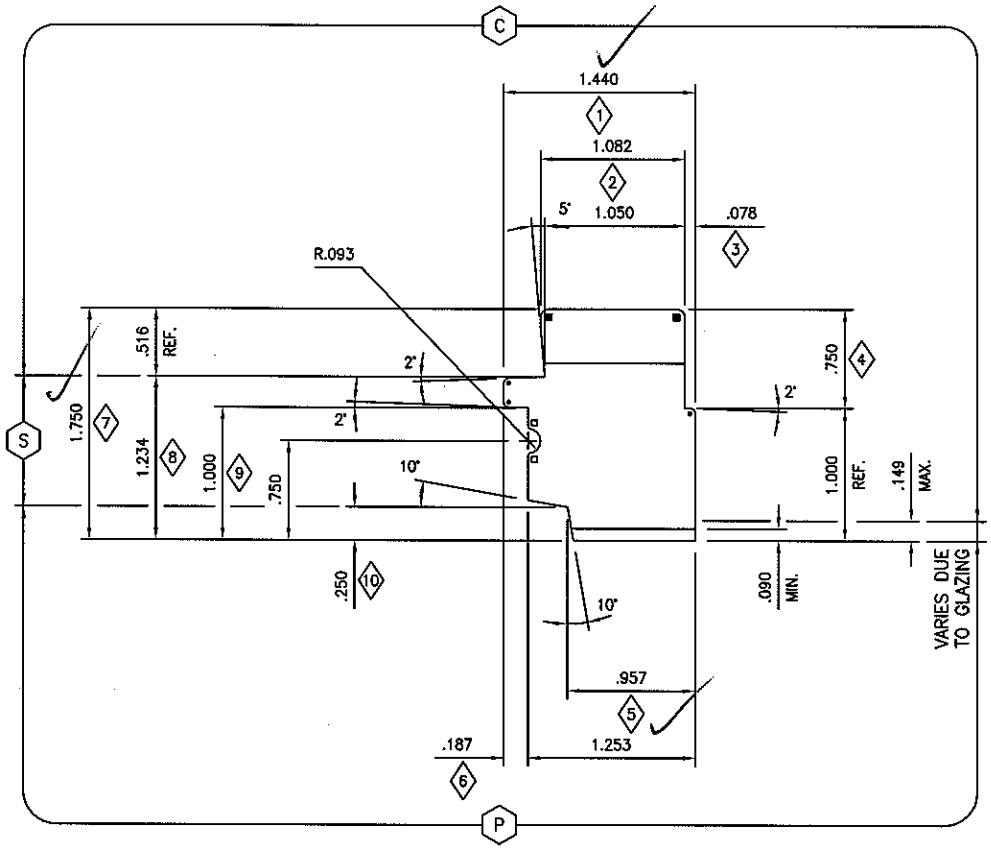
Title:
CASEMENT INTERIOR
SASH STOP - LINEAL -

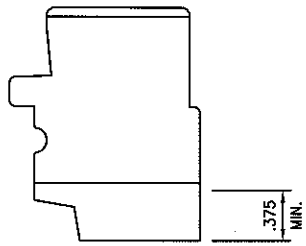
Drawn: GMM Chk'd:
Date: 21 JUNE 2004 Scale: FULL SIZE

RELEASED

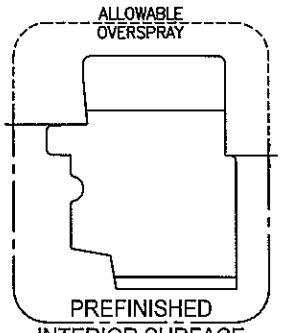
Drawing Number PF1765

EXPOSED SURFACES (P) PRIMARY (S) SECONDARY (C) CONCEALED





MINIMUM CLEAR MATERIAL THICKNESS FOR SPECIES



NOTES:
1. PRESERVATIVE TREATMENT REQUIRED.
2. CRITICAL DIMENSIONS USED: 1 THRU 10.

Architectural Testing

Test sample complies with these details. Deviations are noted.

Report# 9/032

Date 6/23/10 Tech

TOLERANCE UNLESS OTHERWISE SPECIFIED:

DIMS < or = 1" ±.010	RADII ±.015
DIMS 1" to 3" ±.015	LENGTH DIMS < or = 36" ±.015
DIMS > 3" ±.031	LENGTH DIMS > 36" ±.031
ANGLES ±1°	

STANDARD RADIUS MARKERS:
● RADII = 0.040 ■ RADII = 0.062 ○ RADII = □ RADII = 0.015

PINE	B214 + FACE VENEER	P.J.	B214 + FACE VENEER
MAHOG	S/4 – CLEAR SOLID	ALDER	B116
OAK	B116	HICKORY	B116
CHERRY	B116	WALNUT	B116
MAPLE	B116	OTHER	
VG FIR	B116	OTHER	

NO.	DESCRIPTION	BY	DATE	ECN NO.
06	B214 USED FOR PINE	RBB	11 NOV 08	200118

KML WINDOWS INC. an Andersen® company

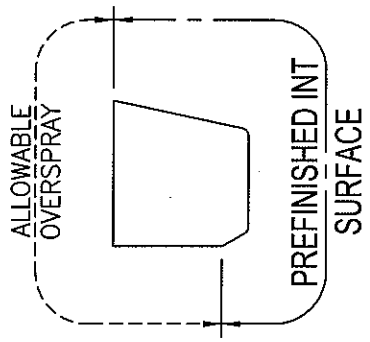
Title:
ALUM. CLAD CASEMENT & FRENCH CASEMENT
SASH RAIL - LINEAL -

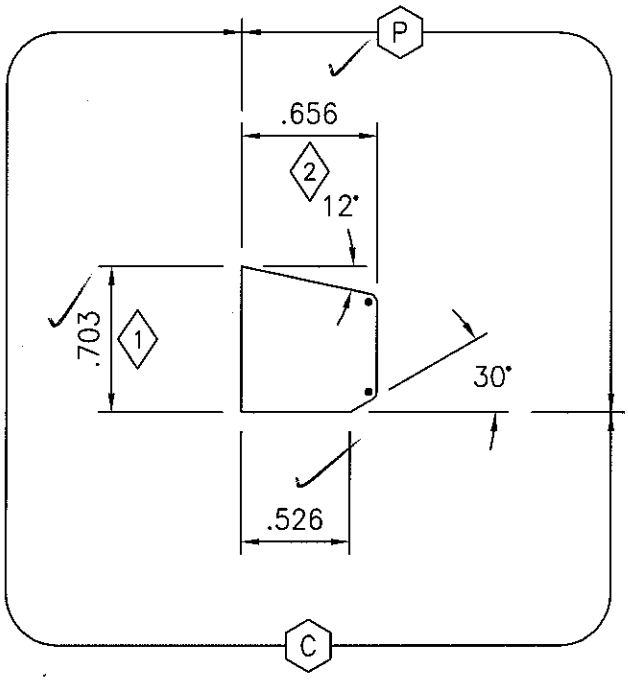
RELEASED

Drawn: GMM Chk'd:
Date: 21 JUNE 2004 Scale: FULL SIZE

Drawing Number PF1766 (1 of 3)

EXPOSED SURFACES (P) PRIMARY (S) SECONDARY (C) CONCEALED





Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 91032

Date 6/28/10 Tech SK

NOTES:
1. PRESERVATIVE TREATMENT REQUIRED.
2. CRITICAL DIMENSIONS USED: 1 THRU 2.

TOLERANCE UNLESS OTHERWISE SPECIFIED:

DIMS < or = 1"	±.010	RADII	±.015
DIMS 1" to 3"	±.015	LENGTH DIMS < or = 36"	±.015
DIMS > 3"	±.031	LENGTH DIMS > 36"	±.031
ANGLES	±1°		

STANDARD RADIUS MARKERS:
● RADII = .040 ■ RADII = ○ RADII = □ RADII = .031

PINE	RESAWN 6/4" CLEAR SOLID	P.I.	USE PINE PROFILE
MAHOG	RESAWN 6/4" CLEAR SOLID	VG FIR	RESAWN 6/4" CLEAR SOLID
OAK	RESAWN 6/4" CLEAR SOLID	ALDER	RESAWN 6/4" CLEAR SOLID
CHERRY	RESAWN 6/4" CLEAR SOLID	OTHER	
MAPLE	RESAWN 6/4" CLEAR SOLID	OTHER	

NO.	DESCRIPTION	BY	DATE	ECN NO.
02	REVISION TO MATERIAL SPECIFICATIONS	RBB	26 MAR 07	100106

KML WINDOWS INC.
an Andersen® company

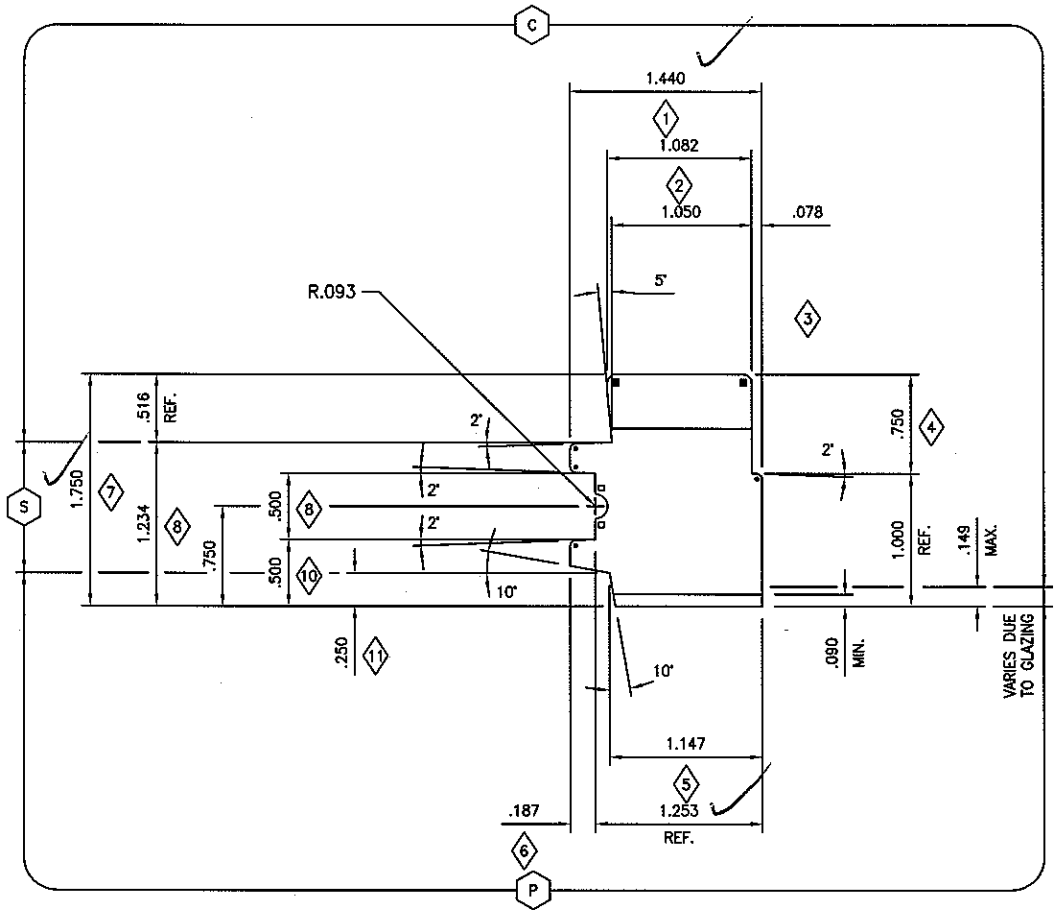
Title: NOMINAL 5/8" GLASS STOP
- LINEAL -

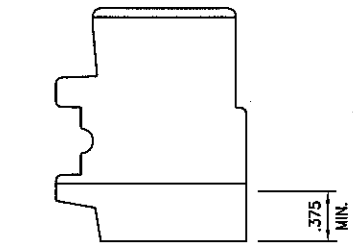
RELEASED

Drawn: GMM Chk'd:
Date: 12 APRIL 2004 Scale: FULL SIZE

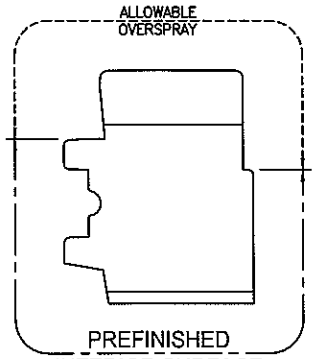
Drawing Number PF1755

EXPOSED SURFACES (P) PRIMARY (S) SECONDARY (C) CONCEALED





MINIMUM CLEAR MATERIAL THICKNESS FOR SPECIES



NOTES:
1. PRESERVATIVE TREATMENT REQUIRED.
3. CRITICAL DIMENSIONS USED: 1 THRU 11.

Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 9/032

Date 6/23/10 Tech

TOLERANCE UNLESS OTHERWISE SPECIFIED:

DIMS < or = 1"	±.010	RADII	±.015
DIMS 1" to 3"	±.015	LENGTH DIMS < or = 36"	±.015
DIMS > 3"	±.031	LENGTH DIMS > 36"	±.031
ANGLES	±1°		

STANDARD RADIUS MARKERS:
● RADII = 0.040 ■ RADII = 0.062 ○ RADII = □ RADII = 0.015

PINE	B214 + FACE VENEER	P.I.	B214 + FACE VENEER
MAHOG	8/4 - CLEAR SOLID	ALDER	B116
OAK	B116	HICKORY	B116
CHERRY	B116	WALNUT	B116
MAPLE	B116	OTHER	
VG FIR	B116	OTHER	

NO.	DESCRIPTION	BY	DATE	ECN NO.
04	B214 USED FOR PINE	RBB	11 NOV 08	200116

KML WINDOWS INC. an Andersen® company

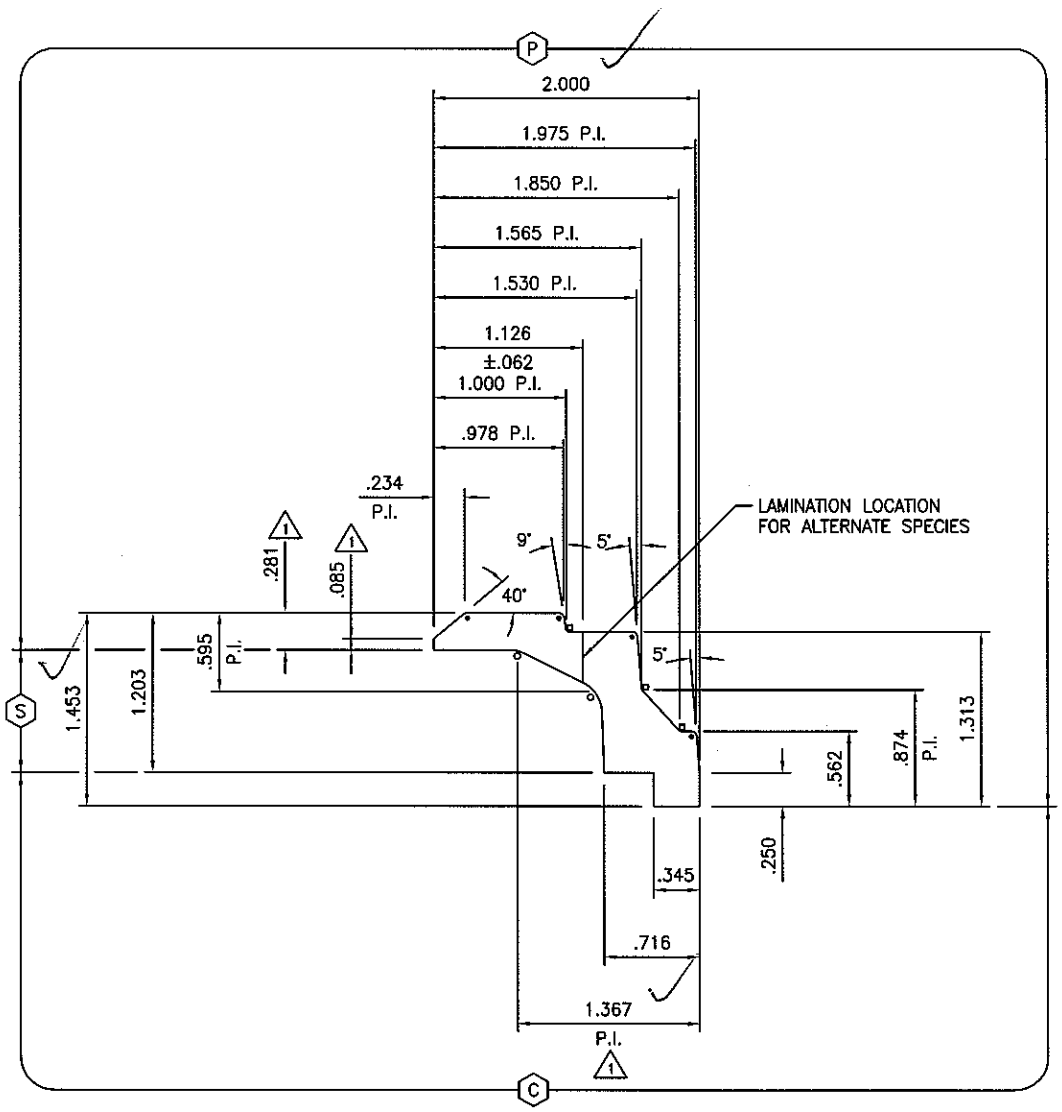
Title: ALUMINUM CLAD CASEMENT SASH STILE
- LINEAL -

RELEASED

Drawn: GMM Chk'd:
Date: 21 JUNE 2004 Scale: FULL SIZE

Drawing Number PF1767 (1 of 3)

EXPOSED SURFACES (P) PRIMARY (S) SECONDARY (C) CONCEALED



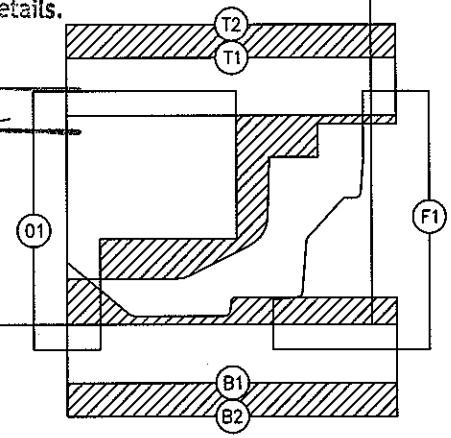
HEAD POSITION	HEAD TYPE	KNIFE TYPE	WADKIN				
B1 – FIRST BOTTOM		STR.	*				
F1 – FIRST FENCE		PROFILE	T1094–B				
O1 – FIRST OUTSIDE		PROFILE	T1097				
F2 – SECOND FENCE							
O2 – SECOND OUTSIDE							
T1 – FIRST TOP		STR.	*				
T2 – SECOND TOP		PROFILE	T1028–A	1			
B2 – SECOND BOTTOM		PROFILE	T1028–B	1			
U1 – UNIVERSAL							

Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 91032

Date 6/23/10 Tech SK



HEAD CONFIGURATION – IN FEED POSITION
SCALE: HALF SIZE ☐ FULL SIZE ☒

TOLERANCE UNLESS OTHERWISE SPECIFIED:
DIMS < or = 1" ±.010
DIMS 1" to 3" ±.015
DIMS > 3" ±.031
ANGLES ±1°
RADII ±.015
LENGTH DIMS < or = 36" ±.015
LENGTH DIMS > 36" ±.031

STANDARD RADIUS MARKERS:
● RADII = .040 ■ RADII = ○ RADII = .250 □ RADII = .020

PINE	6/4" – CLEAR SOLID	P.I.	2 pcs. 5/4" LAMINATED – CLEAR
MAHOG	2 pcs. 5/4" LAMINATED – CLEAR	VG FIR	2 pcs. 5/4" LAMINATED – CLEAR
OAK	2 pcs. 5/4" LAMINATED – CLEAR	ALDER	2 pcs. 5/4" LAMINATED – CLEAR
CHERRY	2 pcs. 5/4" LAMINATED – CLEAR	OTHER	
MAPLE	2 pcs. 5/4" LAMINATED – CLEAR	OTHER	

NO.	DESCRIPTION	BY	DATE	ECN NO.
01	Modify Underside for More Clearance	JCA	13 DEC 05	100012

KML WINDOWS INC.
an Andersen® company

Title: SILL OPERATOR COVER
- LINEAL -

RELEASED

Drawn: GMM Chk'd:
Date: 08 SEPT 2005 Scale: FULL SIZE

Drawing Number PF1874