

## TEST REPORT

AAMA/WDMA/CSA 101/I.S.2/A440-17

AAMA/WDMA/CSA 101/I.S.2/A440-11

REPORT NO.: 28001.06-109-11

RENDERED TO: MASTER WINDOW SYSTEMS, INC.  
 Atlanta, Georgia

PRODUCT TYPE: PVC Double Hung Window

SERIES / MODEL(S): 2800 Series Double Hung

Test	Specimen #1 DP30 New Construction Frame	Specimen #2 DP30 Replacement Frame
Primary Product Designator	Class LC– PG30 1118 x 1905 (44 x 75)-H	Class LC– PG30 1118 x 1905 (44 x 75)-H
Design Pressure	±1440 Pa (±30.08 psf)	±1440 Pa (±30.08 psf)
Air Infiltration @ 1.57 psf	0.8 L/s/m <sup>2</sup> (0.16 cfm/ft <sup>2</sup> )	See Specimen #1
Air Exfiltration @ 1.57 psf	0.4 L/s/m <sup>2</sup> (0.07 cfm/ft <sup>2</sup> )	See Specimen #1
Water Penetration Resistance Test Pressure	360 Pa (7.52 psf)	See Specimen #1

Test	Specimen #3 DP50 New Construction Frame	Specimen #4 DP50 Replacement Frame
Primary Product Designator	Class LC– PG50 1118 x 1905 (44 x 75)-H	Class LC– PG50 1118 x 1905 (44 x 75)-H
Design Pressure	±2400 Pa (±50.13 psf)	±2400 Pa (±50.13 psf)
Air Infiltration @ 1.57 psf	See Specimen #1	See Specimen #1
Air Exfiltration @ 1.57 psf	See Specimen #1	See Specimen #1
Water Penetration Resistance Test Pressure	See Specimen #1	See Specimen #1

Test Completion Date: 4/2/2024

Reference must be made to Report No. 28001.06-109-11, dated 3/19/2025 for complete test specimen description and detailed test results.



**CLIENT INFORMATION:** MASTER WINDOW SYSTEMS, INC.  
5070 Nifda Drive  
Atlanta, Georgia 30339

**TEST LABORATORY:** Molimo, LLC  
1140 Lincoln Ave  
Springdale, Pennsylvania 15144  
724-410-7324

**PROJECT SUMMARY:**

**PRODUCT TYPE:** PVC Double Hung Window

**SERIES/MODEL:** 2800 Series Double Hung

**PROJECT SUMMARY:**

Molimo, LLC was contracted to perform testing on the above-referenced products. The results are tested values and were secured by using the designated test methods.

*This product was originally tested by Chelsea Building Products as the Series/Model 9230-DH-T500, PVC Double Hung Window. This report is a reissue of Report No. 28001.01-109-11 in the name of Master Window Systems, Inc. through written authorization by Chelsea Building Products.*

A summary of the rating achieved for the specimens tested are shown in the table below.

SPECIMEN	SPECIFICATION	PRODUCT RATING
1	101/I.S.2/A440-11/-17	Class LC– PG30 1118 x 1905 (44 x 75)-H
2	101/I.S.2/A440-11/-17	Class LC– PG30 1118 x 1905 (44 x 75)-H
3	101/I.S.2/A440-11/-17	Class LC– PG50 1118 x 1905 (44 x 75)-H
4	101/I.S.2/A440-11/-17	Class LC– PG50 1118 x 1905 (44 x 75)-H

**PROJECT DETAILS:**

**Test Dates:** 2/15/2024 – 4/2/2024

**Test Record Retention End Date:** 4/2/2028

**Test Location:** Molimo, LLC test facility in Springdale, Pennsylvania.

**Test Specimen Source:** The test specimens were provided by the client. Representative samples of the test specimens will be retained by Molimo for a minimum of four years from the test completion date.

**Drawing Reference:** The test specimen drawings were supplied by the client. The test specimen construction was verified by Molimo and was found to be representative of the products tested. Test specimen drawings are located in Appendix C of this report.



**WITNESSES:**

The following representatives witnessed all or part of the testing.

Name	Company
James Grippo	Molimo, LLC
Michael Matovcik	Molimo, LLC

**TEST METHODS:**

AAMA/WDMA/CSA 101/I.S.2/A440-17, *NAFS 2017 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*

AAMA/WDMA/CSA 101/I.S.2/A440-11, *NAFS 2011 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*

**TEST SPECIMEN DESCRIPTION:**
**PRODUCT SIZES:**

All Test Specimens				
Overall Area: 2.1 m <sup>2</sup> (22.9 ft <sup>2</sup> )	Width		Height	
	Millimeters	Inches	Millimeters	Inches
<b>Overall Size:</b>	1118	44	1905	75
<b>Top Sash Size:</b>	1038	40-7/8	937	36-7/8
<b>Bottom Sash Size:</b>	1064	41-7/8	937	36-7/8
<b>Screen Size:</b>	1032	40-5/8	1843	72-9/16

**FRAME CONSTRUCTION:**

Frame Member	Material	Detail
Head, sill and jambs	PVC	Extruded
Corner construction	--	Miter-cut and thermally welded

**SASH CONSTRUCTION:**

Sash Member	Material	Detail
Rails and stiles	PVC	Extruded
Corner construction	--	Miter-cut and thermally welded



**TEST SPECIMEN DESCRIPTION:** (Continued)

**REINFORCEMENT:**

Drawing Number	Material	Location
9253	Aluminum	All specimens; lock rail (mechanically fastened in-place)
9254	Aluminum	All specimens; keeper rail (mechanically fastened in-place)
9254	Aluminum	Specimens #3 and #4; all stiles (mechanically fastened in-place)

**GLAZING DETAILS:** *No conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimens can be made.*

Description	Detail
Glass type	3/4" IG
Glazing construction (exterior to interior)	1/8" thick annealed glass 1/2" Plastic / butyl spacer 1/8" thick annealed glass
Glazing method	Set from the exterior against double-sided adhesive tape and secured with vinyl glazing beads
Glazing bite	1/2"
Daylight opening Top sash: Bottom sash:	967 mm x 865 mm (38-1/16" x 34-1/16") 992 mm x 865 mm (39-1/16" x 34-1/16")



**TEST SPECIMEN DESCRIPTION: (Continued)**
**WEATHERSTRIPPING:**

Description	Quantity	Location
0.187" backed with 0.220" high polypile with centerfin	1 Row	Head
0.187" backed with 0.270" high polypile with centerfin	1 Row	Sill
0.187" backed with 0.220" high polypile with centerfin	1 Row	Lock rail and top rail
0.187" backed with 0.270" high polypile with centerfin	2 Rows	All stiles
T-slot vinyl offset with 0.330" diameter hollow foam-filled vinyl bulb seal with fin	1 Row	Bottom rail
Dual fin insert with flexible 0.170" diameter hollow vinyl bulb	1 Row	Keeper rail
Plastic interlock weatherstrip extender with vertical carrier for insertion of 0.187" backed with 0.250" high polypile and 5/8" length	2 Each	Keeper rail, mechanically fastened in place, one at each end

**DRAINAGE:**

Description	Quantity	Location
Weepslot with flap (1" wide by 1/4" high)	2	Exterior sill face, one 3-1/2" in from each end
Weepslot (cavity) (1/2" wide by 1-1/4" deep)	2	Sill/jamb intersections, interior jamb track cavity, one at each end
Weepslot (1-3/8" wide by 1/4" high)	2	Sill, intermediate wall, one at each mitered end
Weep notch (1" wide by leg height)	2	Sill, screen track leg, one at each end
Weep notch (5" wide by leg height)	2	Sill, sash retention leg, one at each end
Weepslot (1/4" wide by 1/8" deep)	2	Bottom rail, glazing plane through bottom surface (two walls), one 2-1/2" in from each end
Weepslot (1/2" wide by 3/16" deep)	2	Keeper rail, glazing plane through glazing bead channel (two walls), one 2-1/2" in from each end



**TEST SPECIMEN DESCRIPTION: (Continued)**
**HARDWARE:**

Description	Quantity	Location
Composite cam lock and keeper	2	Lock rail with mating keeper at exterior meeting rail, one 7" in from each end
Constant force balance with tilt locking shoe	4	Two per jamb
Metal pivot bar	4	Bottom rail and keeper rail one at each end
Routed-in plastic tilt latch	4	Specimens #1 and #2, Top rail and lock rail one at each end
Routed-in plastic tilt latch	2	Specimens #3 and #4, Top rail one at each end
Routed-in plastic tilt latch (mechanically fastened)	2	Specimens #3 and #4, Bottom rail one at each end
Metal jamb clip	2	Specimens #3 and #4, One per jamb (interior track at tilt latch strike)

**SCREEN CONSTRUCTION:**

<b>Frame Material</b>	Extruded aluminum
<b>Corner Construction</b>	Miter-cut and keyed
<b>Mesh Type</b>	Fiberglass mesh
<b>Mesh Attachment Method</b>	Flexible vinyl spline



**INSTALLATION:**
**TEST SPECIMENS: #1 and #3**

The specimen was installed into a Spruce-Pine-Fir wood buck. The rough opening allowed for a 1/8" shim space. The exterior perimeter of the specimen was sealed with sealant.

Location	Anchor Description	Anchor Spacing
Head, sill and jambs (integral nail fin)	#8 x 1-1/4" long drywall screw	Nominally spaced at 7" on centers and starting 2" in from each end through nailing fin into wood buck
Jamb (interior track)	#8 x 1-1/2" long pan head screw	One per jamb through balance anchor of bottom sash into wood buck

**TEST SPECIMENS: #2 and #4**

The specimen was installed into a Spruce-Pine-Fir wood buck. The rough opening allowed for a 1/8" shim space. The exterior perimeter of the specimen was sealed with sealant. The sill was seated in two rows of silicone sealant.

Location	Anchor Description	Anchor Spacing
Jambs (through frame)	#8 x 1-1/2" long pan head screw	Two per jamb, one 3" in from each end (interior track) through frame and into wood buck
Jamb (interior track)	#8 x 1-1/2" long pan head screw	One per jamb through metal jamb clip into wood buck (bottom sash / tilt latch)



**TEST RESULTS:** The temperature during testing was 22.2° C (72° F).

**TEST SPECIMEN: #1**

**OPERATING FORCE:** (per ASTM E 2068)

Test	Results	Allowable	Note
Initiate Motion	80 N (18 lbf)	230 N (51.71 lbf)	1
Maintain Motion (Opening)	62 N (14 lbf)	180 N (40.47 lbf)	
Maintain Motion (Closing)	67 N (15 lbf)	180 N (40.47 lbf)	
Locks / Latches	9 N (2 lbf)	100 N (22.5 lbf)	

Measurement Uncertainty: ±4.5%

**AIR LEAKAGE TESTING:** (per ASTM E 283)

Test	Results	Allowable	Note
Infiltration @ 75 Pa (1.57 psf)	0.8 L/s/m <sup>2</sup> (0.16 cfm/ft <sup>2</sup> )	1.5 L/s/m <sup>2</sup> (0.30 cfm/ft <sup>2</sup> )	2
Exfiltration @ 75 Pa (1.57 psf)	0.4 L/s/m <sup>2</sup> (0.07 cfm/ft <sup>2</sup> )	1.5 L/s/m <sup>2</sup> (0.30 cfm/ft <sup>2</sup> )	2

Measurement Uncertainty: ±3.63%

Canadian Air Infiltration Rating: A2

**WATER PENETRATION TESTING:** (per ASTM E 547)

Test	Results	Allowable	Note
360 Pa (7.52 psf)	Pass	No Leakage	3



**TEST RESULTS: (Continued)**
**TEST SPECIMEN: #1** (Continued)

**UNIFORM LOAD TESTING: (per ASTM E 330)**

Design Pressure Test	Results	Allowable	Note
Deflection measured at the exterior meeting rail			
+1440 Pa (+30.08 psf)	12.5 mm (0.49")	Report Only	4,5,6
-1440 Pa (-30.08 psf)	12.5 mm (0.49")		

*Measurement Uncertainty: ±0.01"*

Structural Test	Results	Allowable	Note
Permanent Set measured at the exterior meeting rail			
+2160 Pa (+45.11 psf)	0.3 mm (0.01")	4.0 mm (0.16")	5,6
-2160 Pa (-45.11 psf)	0.5 mm (0.02")	4.0 mm (0.16")	

*Measurement Uncertainty: ±0.01"*
**SECONDARY TESTING:**

Test	Results	Allowable
FORCED ENTRY RESISTANCE per ASTM F 588 Type: A – Grade: 10	Pass	No Entry
THERMOPLASTIC CORNER WELD	Pass	Meets as stated
DEGLAZING per ASTM E 987 Operating Direction – 320 N (70 lbf) Remaining Direction – 230 N (50 lbf)	Pass Pass	Meets as stated Meets as stated

**TEST SPECIMEN: #2**
**UNIFORM LOAD TESTING: (per ASTM E 330)**

Design Pressure Test	Results	Allowable	Note
Deflection measured at the exterior meeting rail			
+1440 Pa (+30.08 psf)	11.4 mm (0.45")	Report Only	4,5,6
-1440 Pa (-30.08 psf)	12.2 mm (0.48")		

*Measurement Uncertainty: ±0.01"*



**TEST RESULTS: (Continued)**

Structural Test	Results	Allowable	Note
Permanent Set measured at the exterior meeting rail			5,6
+2160 Pa (+45.11 psf)	0.5 mm (0.02")	4.0 mm (0.16")	
-2160 Pa (-45.11 psf)	0.5 mm (0.02")	4.0 mm (0.16")	

*Measurement Uncertainty: ±0.01"*
**TEST SPECIMEN: #3**
**UNIFORM LOAD TESTING: (per ASTM E 330)**

Design Pressure Test	Results	Allowable	Note
Deflection measured at the exterior meeting rail			4,5,6
+2400 Pa (+50.13 psf)	22.3 mm (0.88")	Report Only	
-2400 Pa (-50.13 psf)	22.6 mm (0.89")		

*Measurement Uncertainty: ±0.01"*

Structural Test	Results	Allowable	Note
Permanent Set measured at the exterior meeting rail			5,6
+3600 Pa (+75.19 psf)	3.0 mm (0.12")	4.0 mm (0.16")	
-3600 Pa (-75.19 psf)	3.3 mm (0.13")	4.0 mm (0.16")	

**TEST SPECIMEN: #4**
**UNIFORM LOAD TESTING: (per ASTM E 330)**

Design Pressure Test	Results	Allowable	Note
Deflection measured at the exterior meeting rail			4,5,6
+2400 Pa (+50.13 psf)	22.1 mm (0.87")	Report Only	
-2400 Pa (-50.13 psf)	20.8 mm (0.82")		

*Measurement Uncertainty: ±0.01"*

Structural Test	Results	Allowable	Note
Permanent Set measured at the exterior meeting rail			5,6
+3600 Pa (+75.19 psf)	2.0 mm (0.08")	4.0 mm (0.16")	
-3600 Pa (-75.19 psf)	2.8 mm (0.11")	4.0 mm (0.16")	



**General Notes:** *All testing was performed in accordance with reference test methods.*

- #1: The operating force results listed above represent the maximum force measured among all sash tested.*
- #2: The specimen tested meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440 for air leakage resistance.*
- #3: Water Penetration testing was performed with and without an insect screen.*
- #4: The deflections reported are not limited by AAMA/WDMA/CSA 101/I.S.2/A440 for this product designation and is recorded for information purposes only.*
- #5: All loads were held for 10 seconds.*
- #6: Tape and film were used to seal against air leakage. In our opinion, the tape and film did not influence the results of the test.*



This report is reissued in the name of *Master Window Systems, Inc.* through written authorization from *Chelsea Building Products* to whom the original report was rendered. The original *Chelsea Building Products* Report Number is 28001.01-109-11.

A copy of this report, detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation will be retained by Molimo, LLC for the entire test record retention period. At the end of this retention period, the service life of this report will expire.

Results obtained are tested values and were secured by using the designated test methods. This test 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 permission of Molimo, LLC.

For MOLIMO, LLC:

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Michael Matovcik  
Technician

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Joseph E. Allison  
Regional Manager

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

Appendix-A: Alteration Addendum (1)

Appendix-B: Air Seal Location (1)

Appendix-C: Drawings (27)



## **Appendix A**

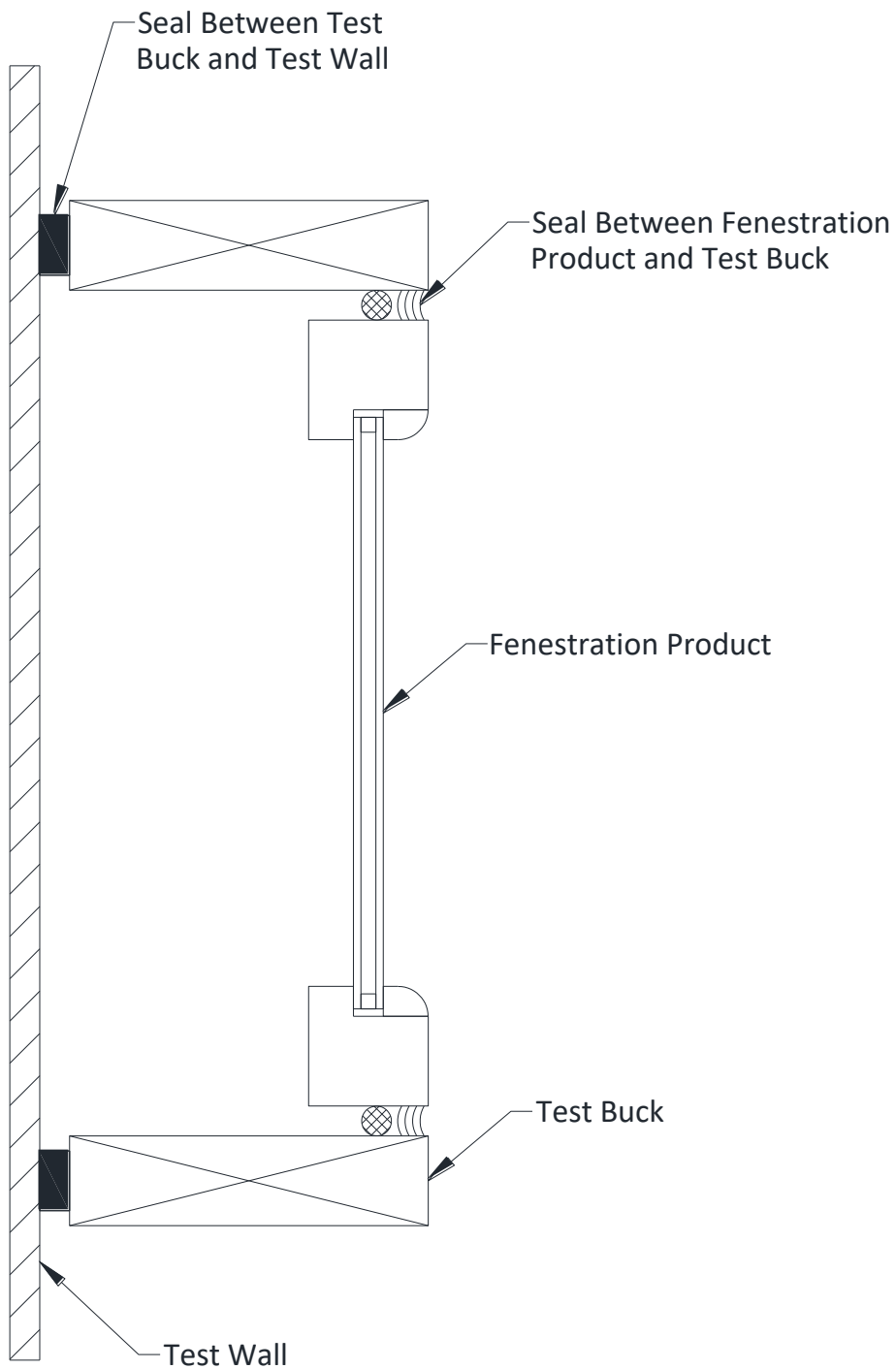
### **Alteration Addendum**

No alterations were performed.



## Appendix B

### Air Seal Location






## **Appendix C**

### **Drawings**



 <b>Molimo™</b> Architectural Product Testing	Report #:	28001.01-109-11
	Date:	4/3/2024
	By:	James Grippo

**BILL OF MATERIALS**  
**Model 9230-DH-T500 DP30**  
**New Construction Double Hung**  
**3/4" Glass (7/8" Glass Optional)**  
**Revised December 7, 2017**

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ITEM	DESCRIPTION	CBP PART#	QTY	MATERIAL/SOURCE	NOTES
1	Head	9231A	1	CBP	2
2	Sill	9232B	1	CBP	2
3	Jamb	9233A	2	CBP	2
4	Pull Rail	9215	1	CBP	2
5	Bottom Handle Rail	9205	1	CBP	2
6	Lock Rail	9206	1	CBP	2
7	Keeper Rail	9227	1	CBP	2
8	Stile	9208	4	CBP	2
9	Glazing Bead (3/4" Glass)	816	8	CBP	2
10	Sash Stop	9263B	4	CBP	2
11	Aluminum Rebar – Lock Rail	9253	1	BRT Extrusions #14605-A	1
12	Aluminum Rebar – Keeper Rail	9254	1	BRT Extrusions #14604	1
13	Weatherstrip/Interlock Extension		1 each	Vision #19556-L (19556-R)	2
14	Glazing Tape (1/16" x 3/8")		AR	Lamatek HGT	1
15	Glazing Block (3/4" x 3/4" x 1/8")		AR	Tremco	1
16	Tilt Latch L.H.		2	Ashland Sightline Classic .318 Nose - .075 Stile Snap	1,2
17	Tilt Latch R.H.		2	Ashland Sightline Classic .318 Nose - .075 Stile Snap	1,2
18	Balance – Coil		4	Caldwell Roller Tilt #562	1
19	Pivot Bar		4	Caldwell #15Y513	1
20	Weep Cover		2	Choose from optional section	1,2
21	Keeper		1	Vision #9316-00	2,3
22	Lock		1	Vision #671-00	2,3
<b>SCREWS (#410 Stainless Steel or Zinc Plated)</b>					
23	Balance		4	#6 x 7/8" PH Flat HD, Type AB, SMS	
24	Pivot Bar		8	#8 x 1/2" PH Truss HD Type AB, SMS	
25	Keeper Screw (Alum or Steel Rebar)		AR	#6 x 1/2" PH Flat HD TEK (Self-drilling)	2,3
26	Lock Screw (Alum or Steel Rebar)		AR	#6 x 3/4" PH Flat HD TEK (Self-drilling)	2,3
27	Stiffener Screw (Alum or Steel Rebar)		AR	#6 x 1/2" PH Flat HD TEK (Self-drilling)	
28	Weatherstrip/Interlock Extension		2	#4 x 1/2" PH Flat HD Type AB, SMS	2
<b>WEATHERSTRIPPING</b>					
29	Center Fin Pile (Top Rail, Head)		AR	.187 x .220	



**New Construction Double Hung  
3/4" Glass (7/8" Glass Optional)**

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WEATHERSTRIPPING (cont.)					
30	Center Fin Pile (Lock Rail)		AR	.187 x .220	
31	Center Fin Pile (Sill, Stile)		AR	.187 x .270	
32	Interlock Seal (Keeper Rail)		1	Ultrafab #E109	2
33	Bottom Seal (Bottom Rail)		1	Amesbury #32692	2
OPTIONAL					
34	Glazing Bead (7/8" Glass)	6266	8	CBP	2
35	Keeper Rail	9267	1	CBP	2
36	Drip Cap	9239/ 9239M	AR	CBP	2
37	Drip Cap	9236	AR	CBP	2
38	Transom Clip	727A	AR	CBP	2
39	1/2" Mullion Clip	749A	AR	CBP	2
40	Drywall Receptor	722	AR	CBP	2
41	Jamb Extension Clip	723	AR	CBP	2
42	3/4" Wood Return	738	AR	CBP	2
43	Balance Cover	712A	2	CBP	2
44	Block & Tackle Balance Cover	748A	2	CBP	2
45	Trim Kit	9269	AR	CBP	2
46	Composite Stiffener – Stile	9259	AR	CBP	1
47	Steel Stiffener – Lock Rail		1	Elliot Manufacturing	1
48	Steel Stiffener – Keeper Rail		1	Elliot Manufacturing	1
49	Steel Stiffener – Stile		AR	Elliot Manufacturing	1
50	Glazing Block (7/8" x 7/8" x 1/8")		AR	Tremco	1
51	Weep Cover		2	Gaer #98-03-00-00	1,2
52	Weep Cover		2	Vision #1230	
53	Vent Latch		2	Vision #1760	1,2
54	Window Operation Limiting Device		2	Vision #1761	1,2
55	Hole Plug		AR	Ashland #9946	1,2
56	Screen Frame		AR	3/8"	2

**NOTES:**

- 1 = Or Approved Equivalent  
2 = Specify color (White, Beige, Brown)  
3 = For windows over 32" double amount used

No.	Revision	By	Date	Checked By	Approved By
14	Added Vision lock & keeper as standard WO#17292	BLG	12/07/17		
13	Revised 9231M, 9232M, 9233M to 9231A, 9232B, 9233A; WO#16171, RBD#16281	JAF	12/14/16		
12	Revised 727 to 727A; WO#16181	JAF	12/14/16		
11	Added Lawrence lock & keeper as standard	BLG	09/23/16		
10	Added 9236 Drip Cap	BLG	07/31/13		
9	Revised Rebars	DRN	05-09-13		
8	Revised Truth lock part # from A09000425	DW	9-28-12		







 <b>Molimo™</b> Architectural Product Testing Report #: 28001.01-109-11 Date: 4/3/2024 By: James Grippo	

**BILL OF MATERIALS**  
**Model 9280-DH-T500 DP30**  
**Replacement Double Hung**  
**3/4" Glass (7/8" Glass Optional)**  
**Revised December 8, 2017**

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ITEM	DESCRIPTION	CBP PART#	QTY	MATERIAL/SOURCE	NOTES
1	Head	9281A	1	CBP	2
2	Sill	9282B	1	CBP	2
3	Jamb	9283A	2	CBP	2
4	Pull Rail	9215	1	CBP	2
5	Bottom Handle Rail	9205	1	CBP	2
6	Lock Rail	9206	1	CBP	2
7	Keeper Rail	9227	1	CBP	2
8	Stile	9208	4	CBP	2
9	Glazing Bead (3/4" Glass)	816	8	CBP	2
10	Sash Stop	9263B	4	CBP	2
11	Aluminum Rebar – Lock Rail	9253	1	BRT Extrusions #14605-A	1
12	Aluminum Rebar – Keeper Rail	9254	1	BRT Extrusions #14604	1
13	Weatherstrip/Interlock Extension		1 each	Vision #19556-L (19556-R)	2
14	Glazing Tape (1/16" x 3/8")		AR	Lamatek HGT	1
15	Glazing Block (3/4" x 3/4" x 1/8")		AR	Tremco	1
16	Tilt Latch L.H.		2	Ashland Sightline Classic .318 Nose - .075 Stile Snap	1,2
17	Tilt Latch R.H.		2	Ashland Sightline Classic .318 Nose - .075 Stile Snap	1,2
18	Balance – Coil		4	Caldwell Roller Tilt #562	1
19	Pivot Bar		4	Caldwell #15Y513	1
20	Weep Cover		2	Choose from optional section	1,2
21	Keeper		1	Vision #9316-00	2,3
22	Lock		1	Vision #671-00	2,3
<b>SCREWS (#410 Stainless Steel or Zinc Plated)</b>					
23	Installation		4	#8 x 2-1/2" PH Pan HD Type AB, SMS	
24	Balance		4	#6 x 7/8" PH Flat HD, Type AB, SMS	
25	Pivot Bar		8	#8 x 1/2" PH Truss HD Type AB, SMS	
26	Keeper Screw (Alum or Steel Rebar)		AR	#6 x 1/2" PH Flat HD TEK (Self-drilling)	2,3
27	Lock Screw (Alum or Steel Rebar)		AR	#6 x 3/4" PH Flat HD TEK (Self-drilling)	2,3
28	Stiffener Screw (Alum or Steel Rebar)		AR	#6 x 1/2" PH Flat HD TEK (Self-drilling)	
29	Weatherstrip/Interlock Extension		2	#4 x 1/2" PH Flat HD Type AB, SMS	2



**Replacement Double Hung  
3/4" Glass (7/8" Glass Optional)**

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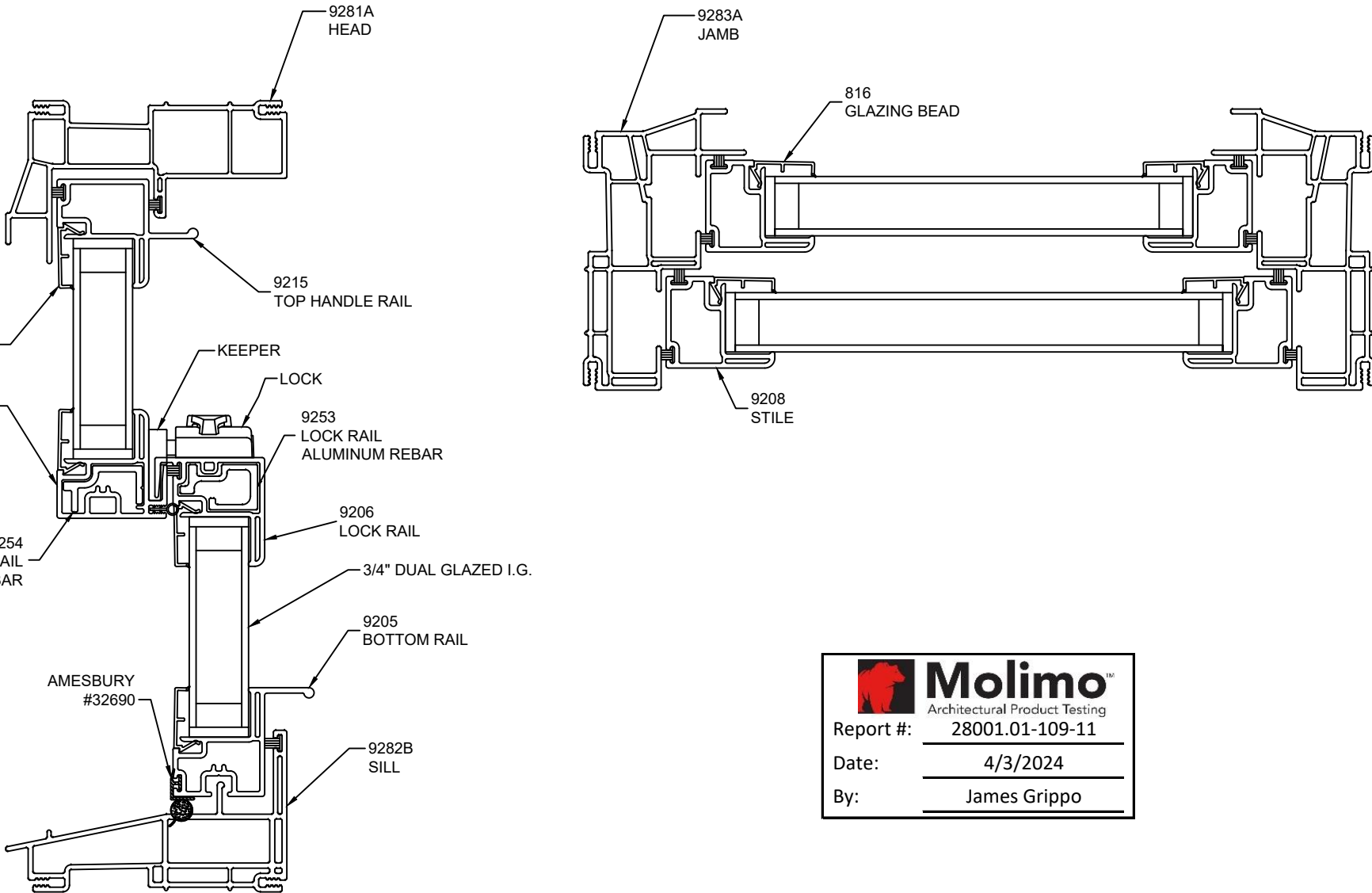
WEATHERSTRIPPING (cont.)					
30	Center Fin Pile (Top Rail, Head)		AR	.187 x .220	
31	Center Fin Pile (Lock Rail)		AR	.187 x .220	
32	Center Fin Pile (Stile, Sill)		AR	.187 x .270	
33	Interlock Seal (Keeper Rail)		1	Ultrafab #E109	2
34	Bottom Seal (Bottom Rail)		1	Amesbury #32692	2
OPTIONAL					
35	Glazing Bead (7/8" Glass)	6266	8	CBP	2
36	Keeper Rail	9267	1	CBP	2
37	Head Expander	750	1	CBP	2
38	Transom Clip	727A	AR	CBP	2
39	1/2" Mullion Clip	749A	AR	CBP	2
40	Sill Riser	765/765M	1	CBP	2
41	2-Piece Sill Riser Male	988	1	CBP	2
42	2-Piece Sill Riser Female	989	1	CBP	2
43	Balance Cover	712A	2	CBP	2
44	Block & Tackle Balance Cover	748A	2	CBP	2
45	Composite Stiffener – Stile	9259	AR	CBP	1
46	Aluminum Stiffener – Stile	9253	AR	BRT Extrusions #14605-A	1
47	Steel Stiffener – Lock Rail		1	Elliot Manufacturing	1
48	Steel Stiffener – Keeper Rail		1	Elliot Manufacturing	1
49	Steel Stiffener – Stile		AR	Elliot Manufacturing	1
50	Glazing Block (7/8" x 7/8" x 1/8")		AR	Tremco	1
51	Weep Cover		2	Gaer #98-03-00-00	1,2
52	Weep Cover		2	Vision #1230	1,2
53	Vent Latch		2	Vision #1760	1,2
54	Window Operation Limiting Device		2	Vision #1761	1,2
55	Screen Frame		AR	3/8"	2

**NOTES:**

- 1 = Or Approved Equivalent  
2 = Specify color (White, Beige, Brown)  
3 = For windows over 32" double amount used

No.	Revision	By	Date	Checked By	Approved By
11	Added Vision lock & keeper as standard	BLG	12/08/17		
10	Added Lawrence lock & keeper as standard	BLG	09/27/16		
9	Added Ashland Pivottrue Balance & 9264 Flush	BLG	01/13/14		
8	Revised Rebars	DRN	05-09-13		
7	Revised Truth lock part # from A09000425	DW	9-28-12		
6	Added Hill Design Tilt Latches to Optional	BLG	07/23/12		
5	Revised pivot bar screw	EAS	07-05-12		





**Molimo™**  
Architectural Product Testing

Report #: 28001.01-109-11

Date: 4/3/2024

By: James Grippo

[illegible]

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PRELIMINARY PART #

TITLE	9280-DH-T500 3/4" GLASS (7/8" GLASS OPTIONAL) REPLACEMENT DOUBLE HUNG
-------	--

DRAWN BY: EAS	DESIGNED BY:	DATE 10-03-11	SCALE NTS-1
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CHECKED BY:	APPROVED BY:	DRAWING No. 9280s511
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	<b>Molimo™</b> Architectural Product Testing
Report #:	28001.01-109-11
Date:	4/3/2024
By:	James Grippo

**BILL OF MATERIALS**  
**Model 9230-DH-T500 DP50**  
**New Construction Double Hung**  
**3/4" Glass (7/8" Glass Optional)**  
**Revised December 7, 2017**

9230dht500.doc page 1 of 3

ITEM	DESCRIPTION	CBP PART#	QTY	MATERIAL/SOURCE	NOTES
1	Head	9231A	1	CBP	2
2	Sill	9232B	1	CBP	2
3	Jamb	9233A	2	CBP	2
4	Pull Rail	9215	1	CBP	2
5	Bottom Handle Rail	9205	1	CBP	2
6	Lock Rail	9206	1	CBP	2
7	Keeper Rail	9227	1	CBP	2
8	Stile	9208	4	CBP	2
9	Glazing Bead (3/4" Glass)	816	8	CBP	2
10	Sash Stop	9263B	4	CBP	2
11	Aluminum Rebar – Lock Rail	9253	1	BRT Extrusions #14605-A	1
12	Aluminum Rebar – Keeper Rail	9254	1	BRT Extrusions #14604	1
13	Aluminum Rebar – Stiles	9254	4	BRT Extrusions #14604	1
14	Weatherstrip/Interlock Extension		1 each	Vision #19556-L (19556-R)	2
15	Glazing Tape (1/16" x 3/8")		AR	Lamatek HGT	1
16	Glazing Block (3/4" x 3/4" x 1/8")		AR	Tremco	1
17	Tilt Latch L.H. (Top Sash)		1	Ashland Sightline Classic .318 Nose - .075 Stile Snap	1,2
18	Tilt Latch R.H. (Top Sash)		1	Ashland Sightline Classic .318 Nose - .075 Stile Snap	1,2
19	Tilt Latch L.H. (Bottom Sash)		1	Hill Design #TLF863AA-10CL	1,2
20	Tilt Latch R.H. (Bottom Sash)		1	Hill Design #TLF863AA-10CR	1,2
21	Balance – Coil		4	Caldwell Roller Tilt #562	1
22	Pivot Bar		4	Caldwell #15Y513	1
23	Weep Cover		2	Choose from optional section	1,2
24	Jamb Reinforcement Clip	970	2	Four Jaks	1
25	Keeper		1	Vision #9316-00	2,3
26	Lock		1	Vision #671-00	2,3
<b>SCREWS (#410 Stainless Steel or Zinc Plated)</b>					
27	Balance		4	#6 x 7/8" PH Flat HD, Type AB, SMS	
28	Pivot Bar		8	#8 x 1/2" PH Truss HD Type AB, SMS	
29	Jamb Reinforcement Clip		2	#8 x 1-1/2" PH Pan HD, Type AB, SMS	
30	Keeper Screw (Alum or Steel Rebar)		AR	#6 x 1/2" PH Flat HD TEK (Self-drilling)	2,3
31	Lock Screw (Alum or Steel Rebar)		AR	#6 x 3/4" PH Flat HD TEK (Self-drilling)	2,3
32	Stiffener Screw (Alum or Steel Rebar)		AR	#6 x 1/2" PH Flat HD TEK (Self-drilling)	



33	Tilt Latch (Bottom Sash)		2 each	#6 x 1/2" PH Pan HD Type AB, SMS (Painted)	
34	Weatherstrip/Interlock Extension		2	#4 x 1/2" PH Flat HD Type AB, SMS	2


**New Construction Double Hung  
3/4" Glass (7/8" Glass Optional)**

**9230dht500.doc  
Page 2 of 3**

WEATHERSTRIPPING					
35	Center Fin Pile (Lock Rail)		AR	.187 x .220	
36	Center Fin Pile (Sill, Stile)		AR	.187 x .270	
37	Center Fin Pile (Top Rail, Head)		AR	.187 x .220	
38	Interlock Seal (Keeper Rail)		1	Ultrafab #E109	2
39	Bottom Seal (Bottom Rail)		1	Amesbury #32692	2
OPTIONAL					
40	Glazing Bead (7/8" Glass)	6266	8	CBP	2
41	Keeper Rail	9267	1	CBP	2
42	Drip Cap	9239/ 9239M	AR	CBP	2
43	Drip Cap	9236	AR	CBP	2
44	Transom Clip	727A	AR	CBP	2
45	1/2" Mullion Clip	749A	AR	CBP	2
46	Drywall Receptor	722	AR	CBP	2
47	Jamb Extension Clip	723	AR	CBP	2
48	3/4" Wood Return	738	AR	CBP	2
49	Balance Cover	712A	2	CBP	2
50	Block & Tackle Balance Cover	748A	2	CBP	2
51	Trim Kit	9269	AR	CBP	2
52	Composite Stiffener – Stile	9259	AR	CBP	1
53	Steel Stiffener – Lock Rail		1	Elliot Manufacturing	1
54	Steel Stiffener – Keeper Rail		1	Elliot Manufacturing	1
55	Steel Stiffener – Stile		AR	Elliot Manufacturing	1
56	Glazing Block (7/8" x 7/8" x 1/8")		AR	Tremco	1
57	Weep Cover		2	Gaer #98-03-00-00	1,2
58	Weep Cover		2	Vision #1230	
59	Vent Latch		2	Vision #1760	1,2
60	Window Operation Limiting Device		2	Vision #1761	1,2
61	Hole Plug		AR	Ashland #9946	1,2
62	Screen Frame		AR	3/8"	2

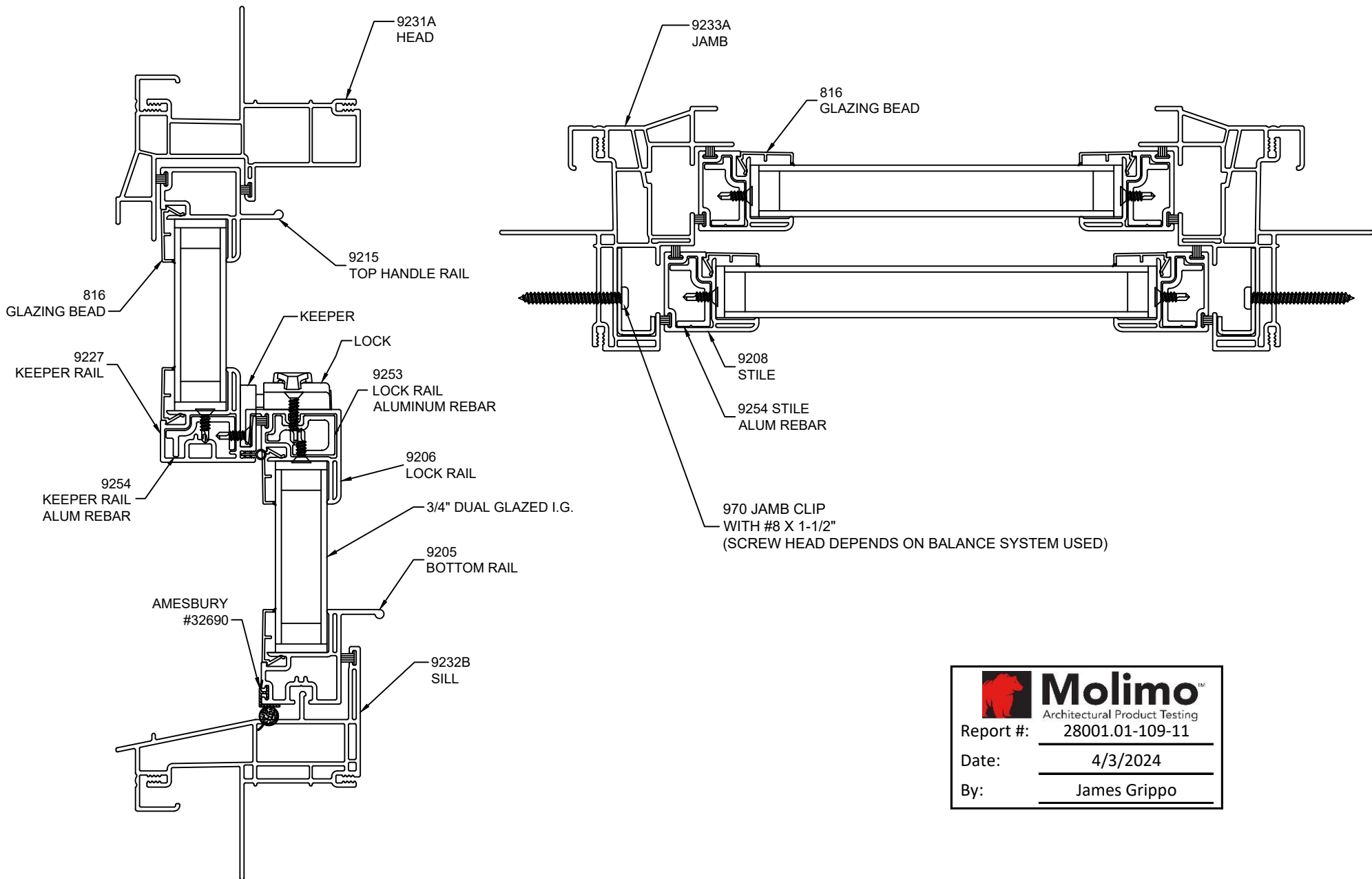
**NOTES:**


- 1 = Or Approved Equivalent  
2 = Specify color (White, Beige, Brown)  
3 = For windows over 32" double amount used

 <b>Molimo</b> Architectural Product Testing	
Report #:	28001.01-109-11
Date:	4/3/2024
By:	James Grippo

No.	Revision	By	Date	Checked By	Approved By
14	Added Vision lock & keeper as standard WO#17292	BLG	12/07/17		
13	Revised 9231M, 9232M, 9233M to 9231A, 9232B, 9233A; WO#16171, RBD#16281	JAF	12/14/16		
12	Revised 727 to 727A; WO#16181	JAF	12/14/16		
11	Added Lawrence lock & keeper as standard	BLG	09/23/16		






**Molimo**<sup>TM</sup>  
Architectural Product Testing

Report #: 28001.01-109-11

Date: 4/3/2024

By: James Grippo

No.	REVISION	BY	DATE
4	UPDATED 9253: WO#21089	JAF	03/03/21
3	REVISED 9231M, 9232M, 9233M TO 9231A, 9232B, 9233A: WO#16171, RBD#16281	JAF	12/01/16
2	ADDED DP50 COMPOSITE REBAR LAYER	BLG	07/23/12
1	UPDATED LOCK RAIL	EAS	10-27-11

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PRELIMINARY PART #			
9230-DH-T500 3/4" GLASS (7/8" GLASS OPTIONAL) NEW CONSTRUCTION DOUBLE HUNG			
DRAWN BY: EAS	DESIGNED BY:	DATE 10-03-11	SCALE NTS-1
CHECKED BY:	APPROVED BY:	DRAWING No. 9230s511	



	<b>Molimo™</b> Architectural Product Testing
Report #:	28001.01-109-11
Date:	4/3/2024
By:	James Grippio

**BILL OF MATERIALS**  
**Model 9280-DH-T500 DP50**  
**Replacement Double Hung**  
**3/4" Glass (7/8" Glass Optional)**  
**Revised December 8, 2017**

9280dht500.doc page 1 of 2

ITEM	DESCRIPTION	CBP PART#	QTY	MATERIAL/SOURCE	NOTES
1	Head	9281A	1	CBP	2
2	Sill	9282B	1	CBP	2
3	Jamb	9283A	2	CBP	2
4	Pull Rail	9215	1	CBP	2
5	Bottom Handle Rail	9205	1	CBP	2
6	Lock Rail	9206	1	CBP	2
7	Keeper Rail	9227	1	CBP	2
8	Stile	9208	4	CBP	2
9	Glazing Bead (3/4" Glass)	816	8	CBP	2
10	Sash Stop	9263B	4	CBP	2
11	Aluminum Rebar – Lock Rail	9253	1	BRT Extrusions #14605-A	1
12	Aluminum Rebar – Keeper Rail	9254	1	BRT Extrusions #14604	1
13	Aluminum Rebar – Stiles	9254	4	BRT Extrusions #14604	1
14	Weatherstrip/Interlock Extension		1 each	Vision #19556-L (19556-R)	2
15	Glazing Tape (1/16" x 3/8")		AR	Lamatek HGT	1
16	Glazing Block (3/4" x 3/4" x 1/8")		AR	Tremco	1
17	Tilt Latch L.H. (Top Sash)		1	Ashland Sightline Classic .318 Nose - .075 Stile Snap	1,2
18	Tilt Latch R.H. (Top Sash)		1	Ashland Sightline Classic .318 Nose - .075 Stile Snap	1,2
19	Tilt Latch L.H. (Bottom Sash)		1	Hill Design #TLF863AA-10CL	1,2
20	Tilt Latch R.H. (Bottom Sash)		1	Hill Design #TLF863AA-10CR	1,2
21	Balance – Coil		4	Caldwell Roller Tilt #562	1
22	Pivot Bar		4	Caldwell #15Y513	1
23	Weep Cover		2	Choose from optional section	1,2
24	Jamb Reinforcement Clip	970	2	Four Jaks	1
25	Keeper		1	Vision #9316-00	2,3
26	Lock		1	Vision #671-00	2,3
<b>SCREWS (#410 Stainless Steel or Zinc Plated)</b>					
27	Installation		4	#8 x 2-1/2" PH Pan HD Type AB, SMS	
28	Balance		4	#6 x 7/8" PH Flat HD, Type AB, SMS	
29	Pivot Bar		8	#8 x 1/2" PH Truss HD Type AB, SMS	
30	Jamb Reinforcement Clip		2	#8 x 1-1/2" PH Pan HD, Type AB, SMS	
31	Keeper Screw (Alum or Steel Rebar)		AR	#6 x 1/2" PH Flat HD TEK (Self-drilling)	2,3
32	Lock Screw (Alum or Steel Rebar)		AR	#6 x 3/4" PH Flat HD TEK (Self-drilling)	2,3



33	Stiffener Screw (Alum or Steel Rebar)		AR	#6 x 1/2" PH Flat HD TEK (Self-drilling)	
34	Tilt Latch (Bottom Sash)		2 each	#6 x 1/2" PH Pan HD Type AB, SMS (Painted)	
35	Weatherstrip/Interlock Extension		2	#4 x 1/2" PH Flat HD Type AB, SMS	2


**Replacement Double Hung  
3/4" Glass (7/8" Glass Optional)**

**9280dht500.doc  
Page 2 of 2**

WEATHERSTRIPPING					
36	Center Fin Pile (Top Rail, Head)		AR	.187 x .220	
37	Center Fin Pile (Lock Rail)		AR	.187 x .220	
38	Center Fin Pile (Stile, Sill)		AR	.187 x .270	
39	Interlock Seal (Keeper Rail)		1	Ultrafab #E109	2
40	Bottom Seal (Bottom Rail)		1	Amesbury #32692	2
OPTIONAL					
41	Glazing Bead (7/8" Glass)	6266	8	CBP	2
42	Keeper Rail	9267	1	CBP	2
43	Head Expander	750	1	CBP	2
44	Transom Clip	727A	AR	CBP	2
45	1/2" Mullion Clip	749A	AR	CBP	2
46	Sill Riser	765/765M	1	CBP	2
47	2-Piece Sill Riser Male	988	1	CBP	2
48	2-Piece Sill Riser Female	989	1	CBP	2
49	Balance Cover	712A	2	CBP	2
50	Block & Tackle Balance Cover	748A	2	CBP	2
51	Composite Stiffener – Stile	9259	AR	CBP	1
52	Aluminum Stiffener – Stile	9253	AR	BRT Extrusions #14605-A	1
53	Steel Stiffener – Lock Rail		1	Elliot Manufacturing	1
54	Steel Stiffener – Keeper Rail		1	Elliot Manufacturing	1
55	Steel Stiffener – Stile		AR	Elliot Manufacturing	1
56	Glazing Block (7/8" x 7/8" x 1/8")		AR	Tremco	1
57	Weep Cover		2	Gaer #98-03-00-00	1,2
58	Weep Cover		2	Vision #1230	1,2
59	Vent Latch		2	Vision #1760	1,2
60	Window Operation Limiting Device		2	Vision #1761	1,2
61	Screen Frame		AR	3/8"	2

**NOTES:**

- 1 = Or Approved Equivalent  
2 = Specify color (White, Beige, Brown)  
3 = For windows over 32" double amount used

	<b>Molimo</b> Architectural Product Testing
Report #:	28001.01-109-11
Date:	4/3/2024
By:	James Grippo

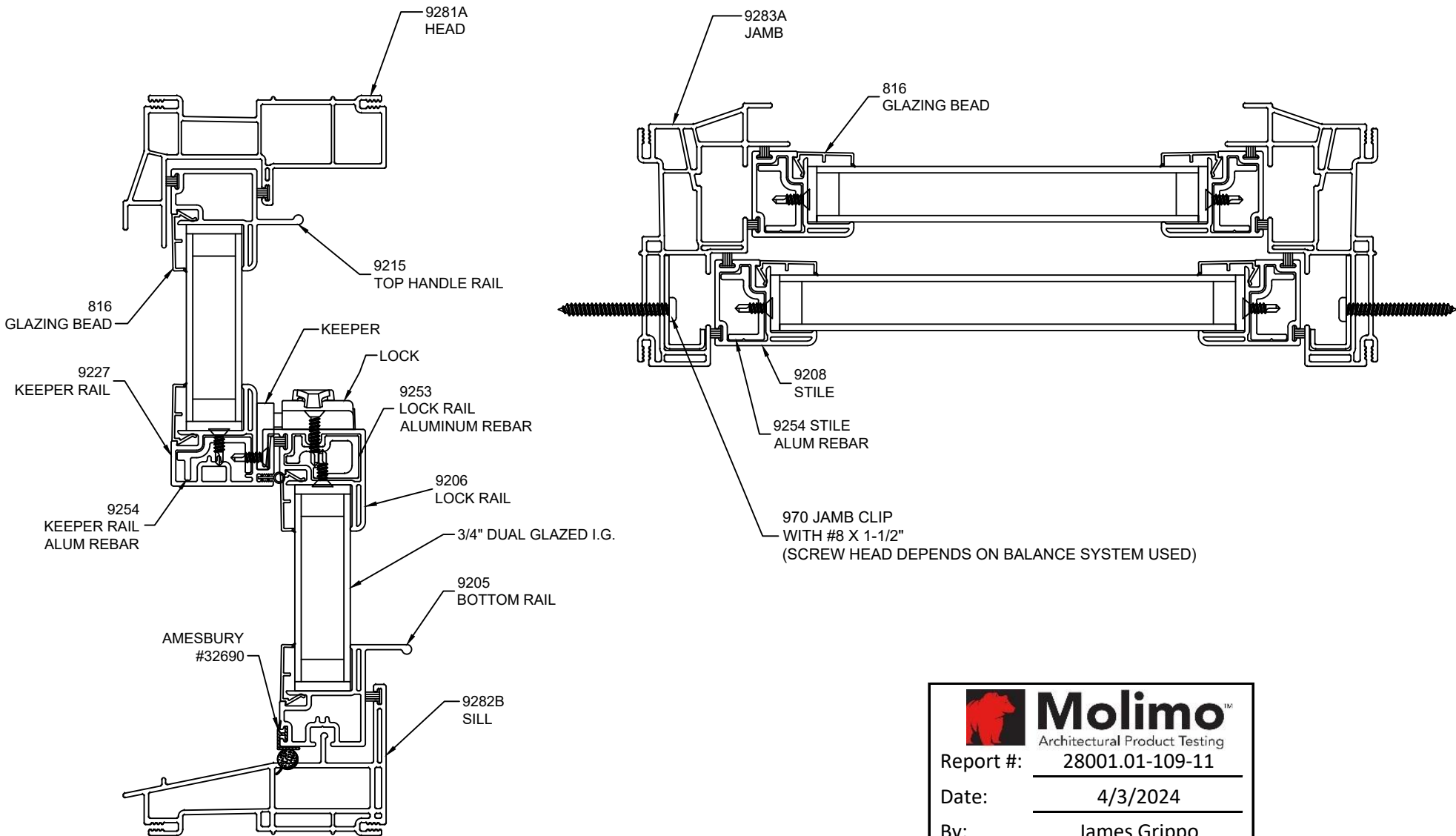
No.	Revision	By	Date	Checked By	Approved By
11	Added Vision lock & keeper as standard	BLG	12/08/17		
10	Added Lawrence lock & keeper as standard	BLG	09/27/16		
9	Added Ashland Pivottrue Balance & 9264 Flush	BLG	01/13/14		
8	Revised Rebars	DRN	05-09-13		



7	Revised Truth lock part # from A09000425	DW	9-28-12		
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	<b>Molimo</b> <sup>®</sup> Architectural Product Testing
Report #:	28001.01-109-11
Date:	4/3/2024
By:	James Grippo





**Molimo™**  
Architectural Product Testing

Report #: 28001.01-109-11

Date: 4/3/2024

By: James Grippo

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PRELIMINARY PART #





TITLE 9280-DH-T500 3/4" GLASS  
(7/8" GLASS OPTIONAL) REPLACEMENT DOUBLE HUNG

DRAWN BY: EAS	DESIGNED BY:	DATE 10-03-11	SCALE NTS-1
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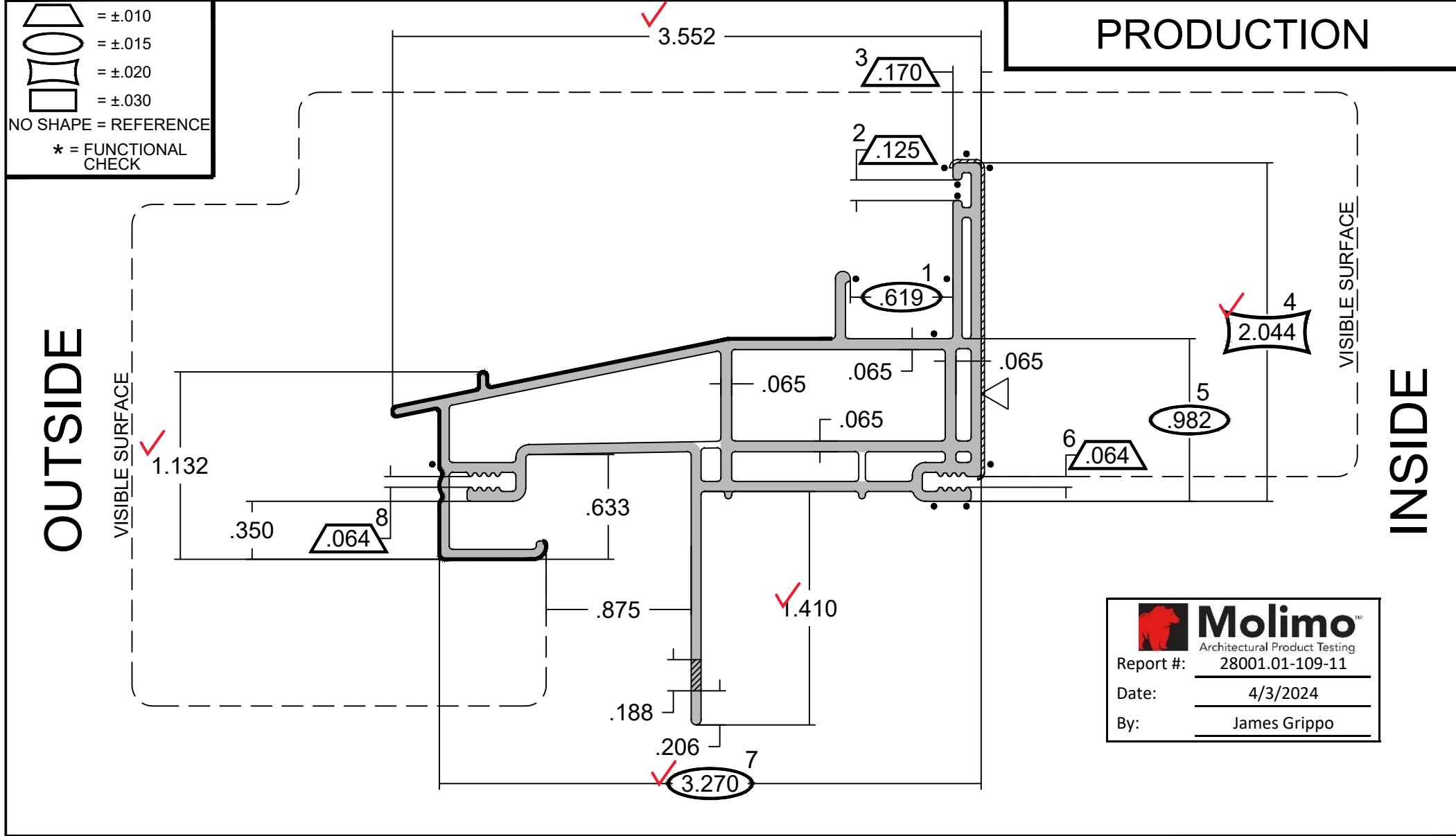
CHECKED BY:	APPROVED BY:	DRAWING No. 9280s511
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PART NAME: <b>9232B</b>	DESCRIPTION: <b>DOUBLE HUNG SILL</b>	DRAWN BY: <b>EAS</b>	DRAWN DATE: <b>04-05-16</b>	APPROVED BY:	<div>COPYRIGHT 2017 THIS DRAWING AND ITS CONTENTS ARE THE SOLE PROPERTY OF CHELSEA BUILDING PRODUCTS, INC. ANY UNAUTHORIZED USE OR REPRODUCTION IS STRICTLY PROHIBITED.</div> <div><b>CHelsea BUILDING PRODUCTS, INC.</b> <small>a member of aluplast group</small> 565 CEDAR WAY, OAKMONT PA 15139 Tel. 412-826-8077, Fax 412-826-0113 www.chelseabuildingproducts.com</div>
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 = ±.010  
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 = ±.030  
NO SHAPE = REFERENCE  
\* = FUNCTIONAL CHECK

**PRODUCTION**





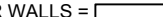



**Molimo™**  
Architectural Product Testing


Report #: **28001.01-109-11**





Date: **4/3/2024**

By: **James Grippo**

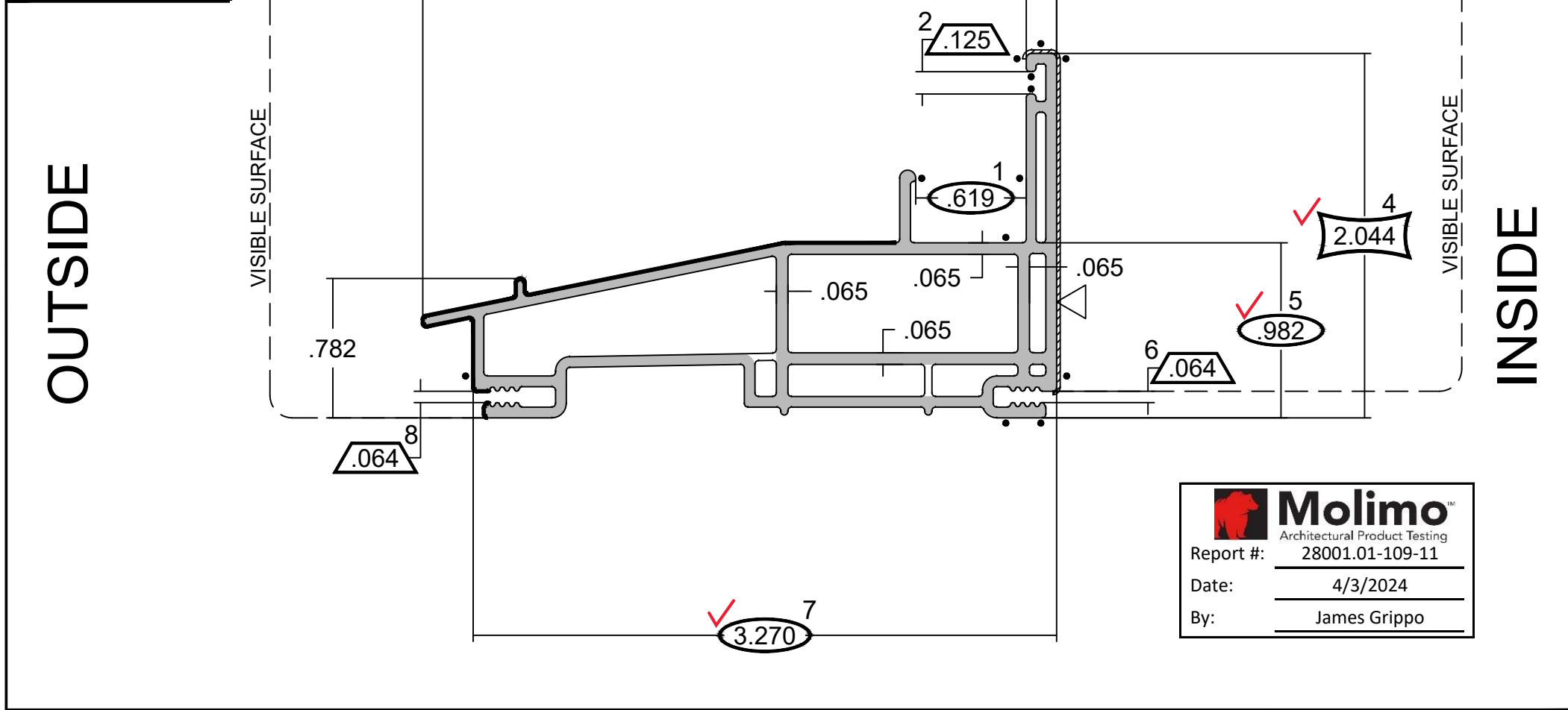
5	ADDED 9232B GAUGE TO GAUGE NUMBER BOX; WO#18186	BLG	09/14/18	1. MATERIAL = RIGID P.V.C.	6. WALL THICKNESS = ±10%
4	ADDED GAUGE CHECK TO AUDIT SHEET; WO#17226	EAS	09-28-17	2. FLEXIBLE P.V.C. = 	7. LOCATION FOR IMPACT TEST 
3	PART NUMBER WAS 9232MA; WO#16171, RBD#16281	JAF	11/10/16	3. EXTERIOR COVERAGE = 	8. SPECIFICATION LENGTH TO -0 +3/4"
2	MOVED INTERNAL WALLS PER CUSTOMER REQUEST	EAS	04-18-16	4. LAMINATE = 	9. MAX BOW .046in PER 3ft LENGTH
1	PART CREATED; WO#16069	EAS	04-05-16	5. THINNER INTERIOR WALLS = 	10. NOMINAL WALLS  .060
NO.	REVISION	BY	DATE		




PART NAME: <b>9282B</b>	DESCRIPTION: REPLACEMENT DOUBLE HUNG SILL	DRAWN BY: <b>EAS</b>	DRAWN DATE: 04-05-16	APPROVED BY:	<div>COPYRIGHT 2017 THIS DRAWING AND ITS CONTENTS ARE THE SOLE PROPERTY OF CHELSEA BUILDING PRODUCTS, INC. ANY UNAUTHORIZED USE OR REPRODUCTION IS STRICTLY PROHIBITED.</div> <div> <b>CHELSEA BUILDING PRODUCTS, INC.</b> <small>a member of aluplast group</small> 565 CEDAR WAY, OAKMONT PA 15139 Tel. 412-826-8077, Fax 412-826-0113 www.chelseabuildingproducts.com</div>
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NO SHAPE = REFERENCE  
\* = FUNCTIONAL CHECK

**PRODUCTION**





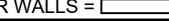



 **Molimo™**  
Architectural Product Testing

Report #: 28001.01-109-11

Date: 4/3/2024

By: James Grippo

5	ADDED 9282B GAUGE TO GAUGE NUMBER BOX; WO#18186	BLG	09/14/18	1. MATERIAL = RIGID P.V.C.	6. WALL THICKNESS = ±10%
4	ADDED GAUGE CHECK TO AUDIT SHEET; WO#17226	EAS	09-28-17	2. FLEXIBLE P.V.C. = 	7. LOCATION FOR IMPACT TEST 
3	PART NUMBER WAS 9282MA; WO#16171, RBD#16281	JAF	11/10/16	3. EXTERIOR COVERAGE = 	8. SPECIFICATION LENGTH TO -0 +3/4"
2	MOVED INTERNAL WALLS PER CUSTOMER REQUEST	EAS	04-28-16	4. LAMINATE = 	9. MAX BOW .046in PER 36" LENGTH
1	PART CREATED; WO#16069	EAS	04-05-16	5. THINNER INTERIOR WALLS = 	10. NOMINAL WALLS  .060
NO.	REVISION	BY	DATE		



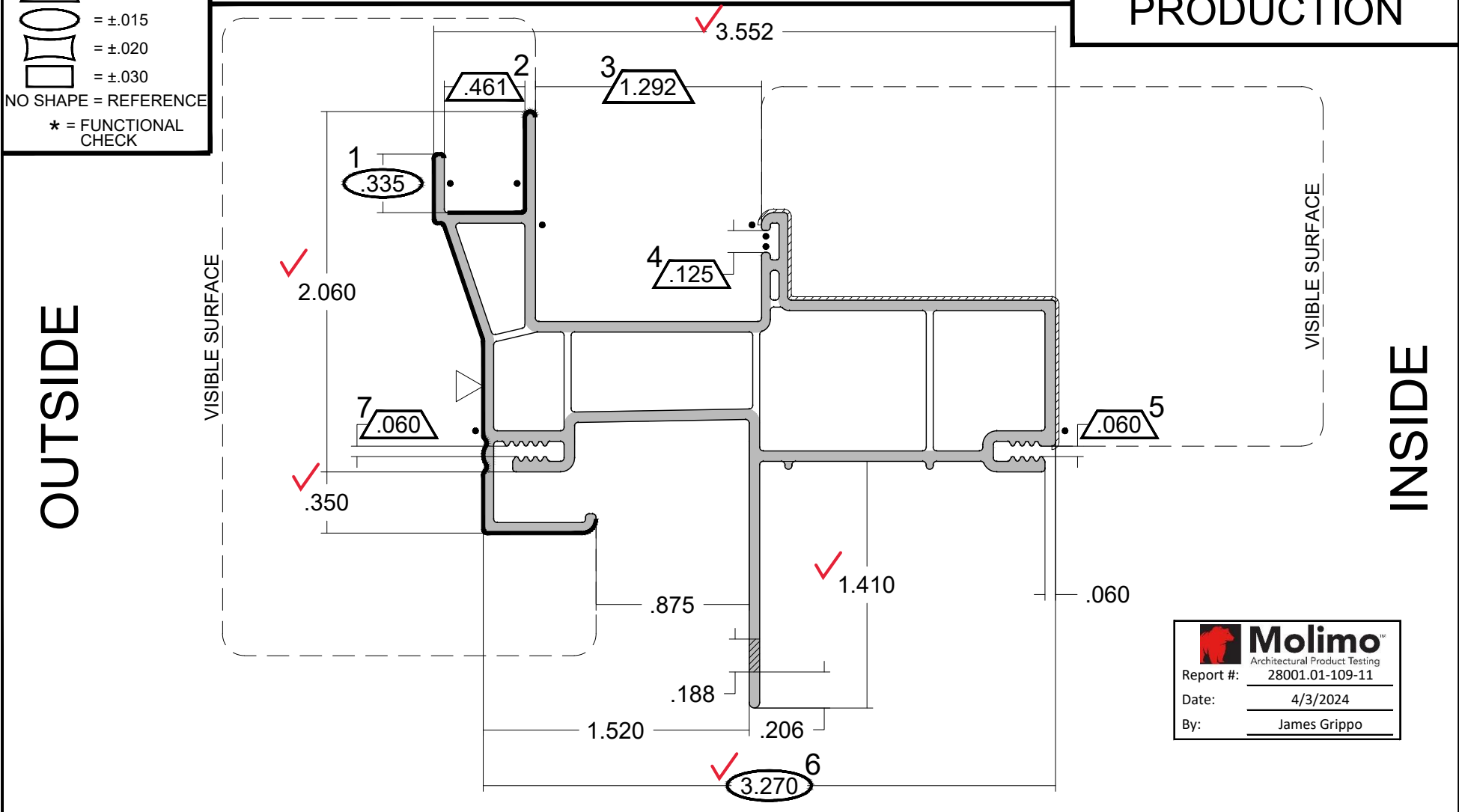
PART NAME: <b>9231A</b>	DESCRIPTION: <b>DOUBLE HUNG HEAD</b>	DRAWN BY: <b>JAF</b>	DRAWN DATE: <b>11/12/18</b>	APPROVED BY:	COPYRIGHT 2018 THIS DRAWING AND ITS CONTENTS ARE THE SOLE PROPERTY OF CHELSEA BUILDING PRODUCTS, INC. ANY UNAUTHORIZED USE OR REPRODUCTION IS STRICTLY PROHIBITED.
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 NO SHAPE = REFERENCE  
 \* = FUNCTIONAL CHECK

**NOTE FOR TOOL MAKERS: ALLOW AS MUCH AS .010" FOR EXTERIOR FILM**

**PRODUCTION**



**Molimo™**  
 Architectural Product Testing  
 Report #: 28001.01-109-11  
 Date: 4/3/2024  
 By: James Grippo

NO.	REVISION	BY	DATE	1. MATERIAL = RIGID P.V.C. 2. FLEXIBLE P.V.C. =	6. WALL THICKNESS = ± 10% 7. LOCATION FOR IMPACT TEST <input checked="" type="checkbox"/>
				3. EXTERIOR COVERAGE =	8. SPECIFICATION LENGTH TO -0 +3/4"
				4. LAMINATE =	9. MAX BOW .046in PER 3ft LENGTH
				5. THINNER INTERIOR WALLS =	10. NOMINAL WALLS .060 <input checked="" type="checkbox"/>

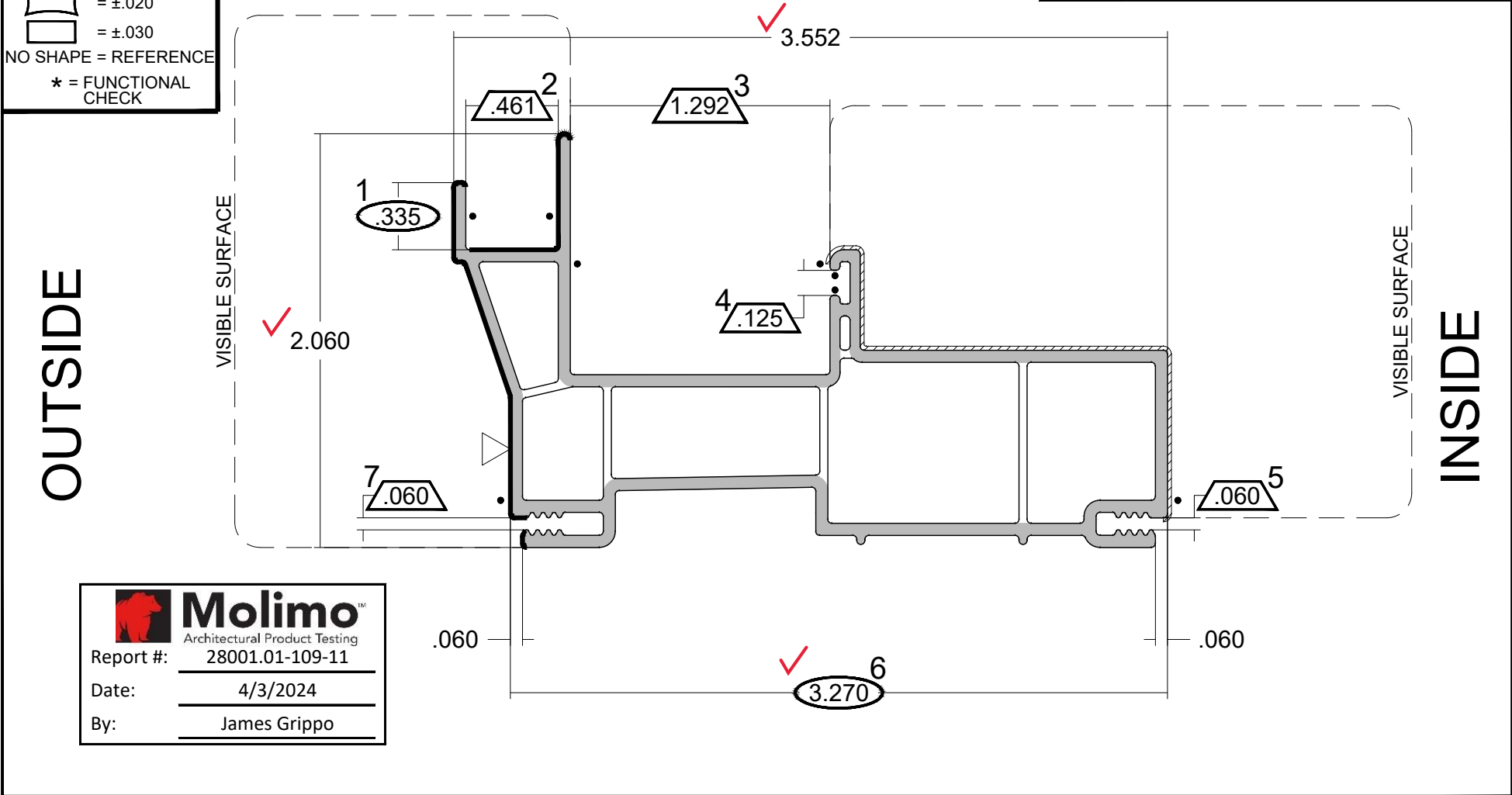


PART NAME: <b>9281A</b>	DESCRIPTION: <b>REPLACEMENT DOUBLE HUNG HEAD</b>	DRAWN BY: <b>JAF</b>	DRAWN DATE: <b>11/13/18</b>	APPROVED BY:	COPYRIGHT 2018 THIS DRAWING AND ITS CONTENTS ARE THE SOLE PROPERTY OF CHELSEA BUILDING PRODUCTS, INC. ANY UNAUTHORIZED USE OR REPRODUCTION IS STRICTLY PROHIBITED.
				CHELSEA BUILDING PRODUCTS, INC. <small>a member of aluplast group</small> 565 CEDAR WAY, OAKMONT PA 15139 Tel. 412-826-8077, Fax 412-826-0113 www.chelseabuildingproducts.com	

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 NO SHAPE = REFERENCE  
 \* = FUNCTIONAL CHECK

**NOTE FOR TOOL MAKERS: ALLOW AS MUCH AS .010" FOR EXTERIOR FILM**

**PRODUCTION**



**Molimo**  
 Architectural Product Testing  
 Report #: 28001.01-109-11  
 Date: 4/3/2024  
 By: James Grippo

				1. MATERIAL = RIGID P.V.C.	6. WALL THICKNESS = ± 10%
				2. FLEXIBLE P.V.C. =	7. LOCATION FOR IMPACT TEST <input checked="" type="checkbox"/>
				3. EXTERIOR COVERAGE =	8. SPECIFICATION LENGTH TO -0 +3/4"
				4. LAMINATE =	9. MAX BOW .046in PER 3ft LENGTH
				5. THINNER INTERIOR WALLS =	10. NOMINAL WALLS  .060
NO.	REVISION	BY	DATE		

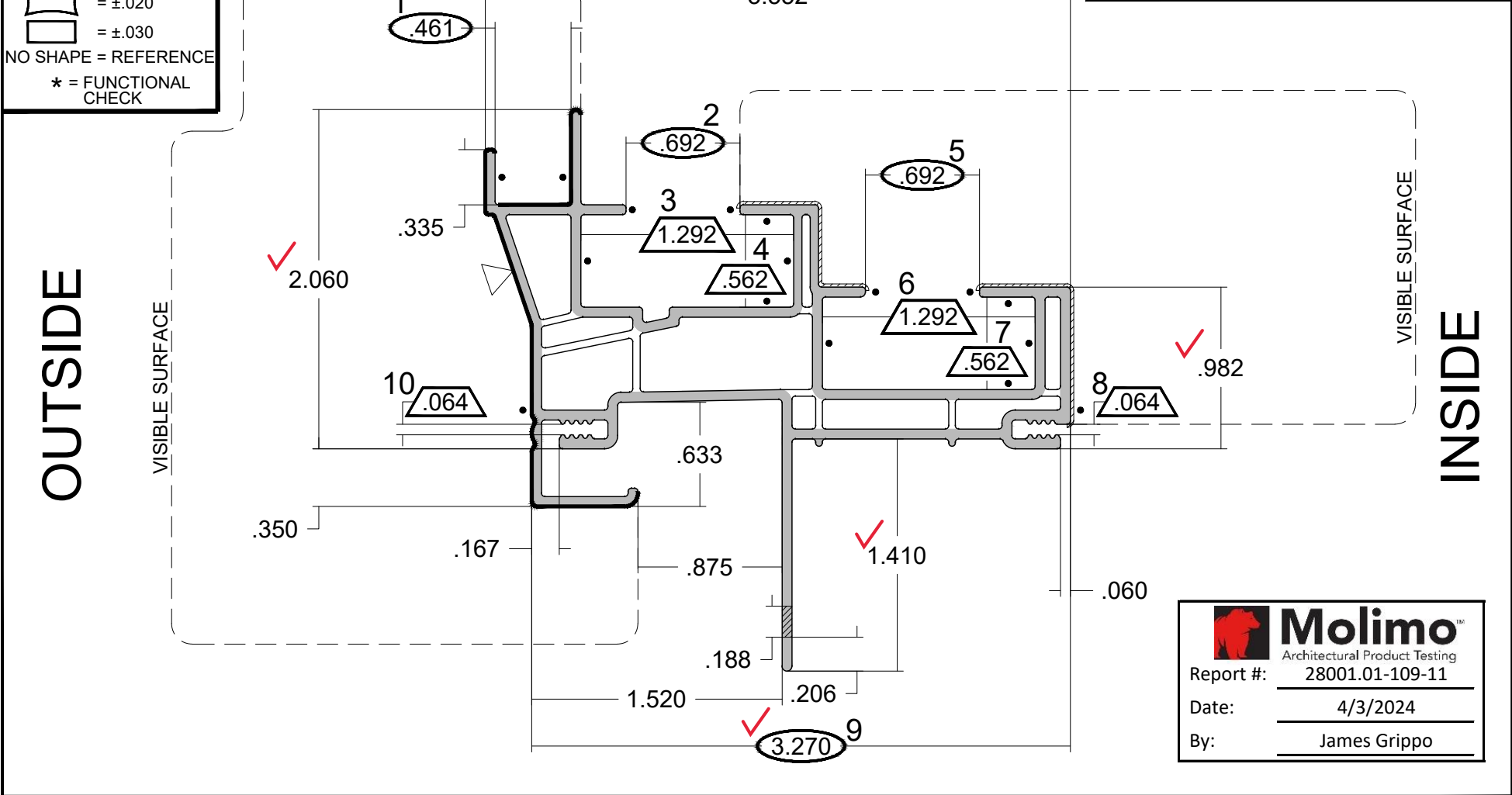


PART NAME: <b>9233A</b>	DESCRIPTION: <b>DOUBLE HUNG JAMB</b>	DRAWN BY: <b>JAF</b>	DRAWN DATE: <b>11/27/18</b>	APPROVED BY:	COPYRIGHT 2018 THIS DRAWING AND ITS CONTENTS ARE THE SOLE PROPERTY OF CHELSEA BUILDING PRODUCTS, INC. ANY UNAUTHORIZED USE OR REPRODUCTION IS STRICTLY PROHIBITED.
				CHELSEA BUILDING PRODUCTS, INC. <small>a member of aluplast group</small> 565 CEDAR WAY, OAKMONT PA 15139 Tel. 412-826-8077, Fax 412-826-0113 www.chelseabuildingproducts.com	

= ±.010  
 = ±.015  
 = ±.020  
 = ±.030  
 NO SHAPE = REFERENCE  
 \* = FUNCTIONAL CHECK

**NOTE FOR TOOL MAKERS: ALLOW AS MUCH AS .010" FOR EXTERIOR FILM**

**PRODUCTION**



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 Architectural Product Testing  
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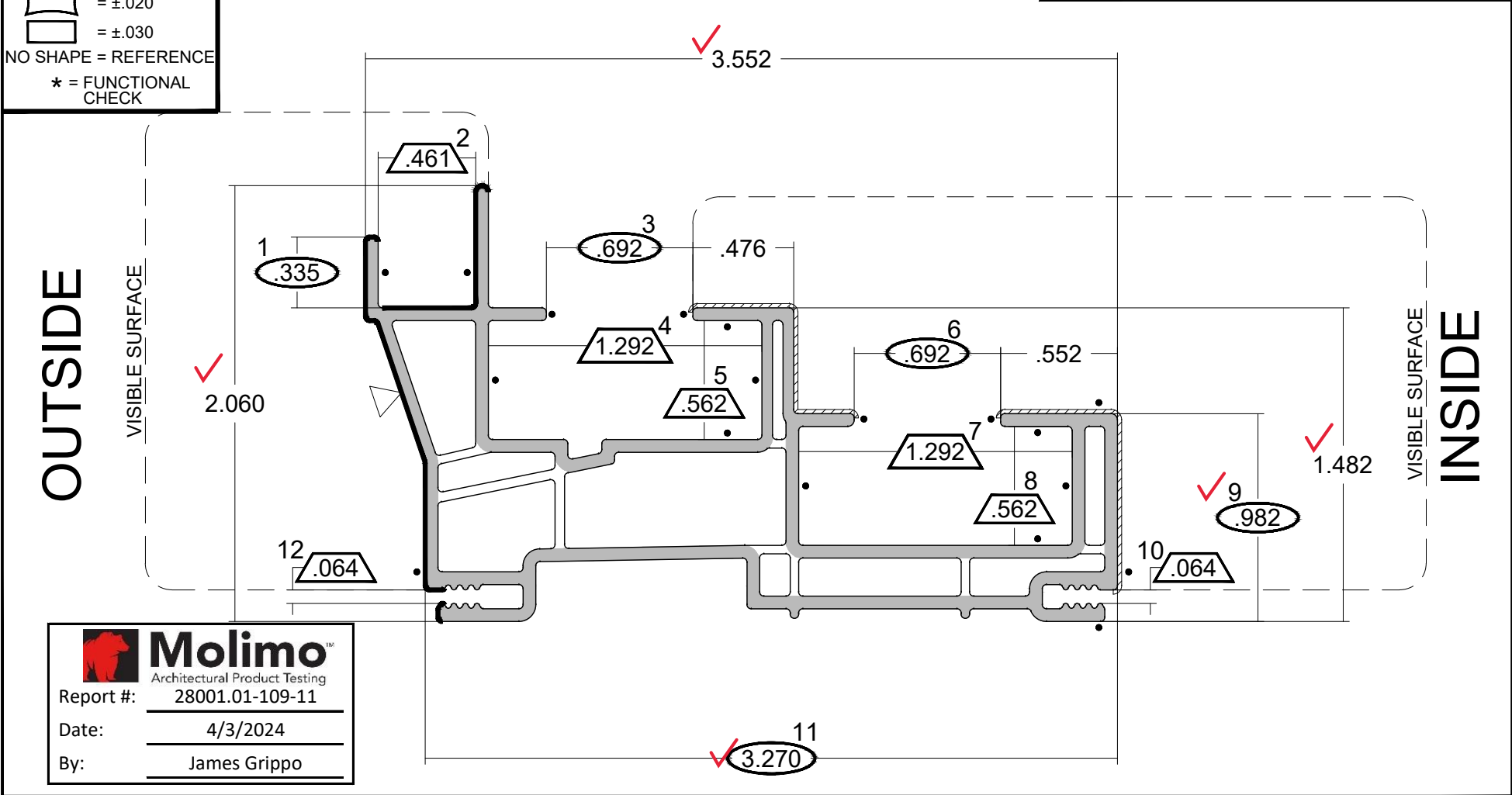
NO.	REVISION	BY	DATE	1. MATERIAL = RIGID P.V.C. 2. FLEXIBLE P.V.C. = 3. EXTERIOR COVERAGE = 4. LAMINATE = 5. THINNER INTERIOR WALLS =	6. WALL THICKNESS = ± 10% 7. LOCATION FOR IMPACT TEST <input checked="" type="checkbox"/> 8. SPECIFICATION LENGTH TO -0 +3/4" 9. MAX BOW .046in PER 3ft LENGTH 10. NOMINAL WALLS  .060
-----	----------	----	------	--	--



PART NAME: <b>9283A</b>	DESCRIPTION: <b>DOUBLE HUNG JAMB (MODIFIED)</b>	DRAWN BY: <b>JAF</b>	DRAWN DATE: <b>04/20/16</b>	APPROVED BY:	COPYRIGHT 2016 THIS DRAWING AND ITS CONTENTS ARE THE SOLE PROPERTY OF CHELSEA BUILDING PRODUCTS, INC. ANY UNAUTHORIZED USE OR REPRODUCTION IS STRICTLY PROHIBITED.
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= ±.010  
 = ±.015  
 = ±.020  
 = ±.030  
 NO SHAPE = REFERENCE  
 \* = FUNCTIONAL CHECK

**PRODUCTION**



**Molimo**  
 Architectural Product Testing  
 Report #: 28001.01-109-11  
 Date: 4/3/2024  
 By: James Grippo

1	PART NUMBER WAS 9283M; WO#16171, RBD#16281	JAF	11/08/16	1. MATERIAL = RIGID P.V.C.	6. WALL THICKNESS = ±10%
NO.	REVISION	BY	DATE	2. FLEXIBLE P.V.C. =	7. LOCATION FOR IMPACT TEST
				3. EXTERIOR COVERAGE =	8. SPECIFICATION LENGTH TO -0 +3/4"
				4. LAMINATE =	9. MAX BOW .046in PER 3ft LENGTH
				5. THINNER INTERIOR WALLS =	10. NOMINAL WALLS  .060












QC PRINT NUMBER: 9227qc		DRAWN BY: EAS		CHECKED BY:		APPROVED BY:		DEVELOP		INPROCESS		PRODUCTION	
PART NAME: 9227		DESCRIPTION: KEEPER RAIL/KEEPER STILE				SUPPLIER/PLANT: CHELSEA BUILDING PRODUCTS							
ILLUSTRATION OF PART AND CONTROL POINTS													




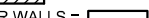







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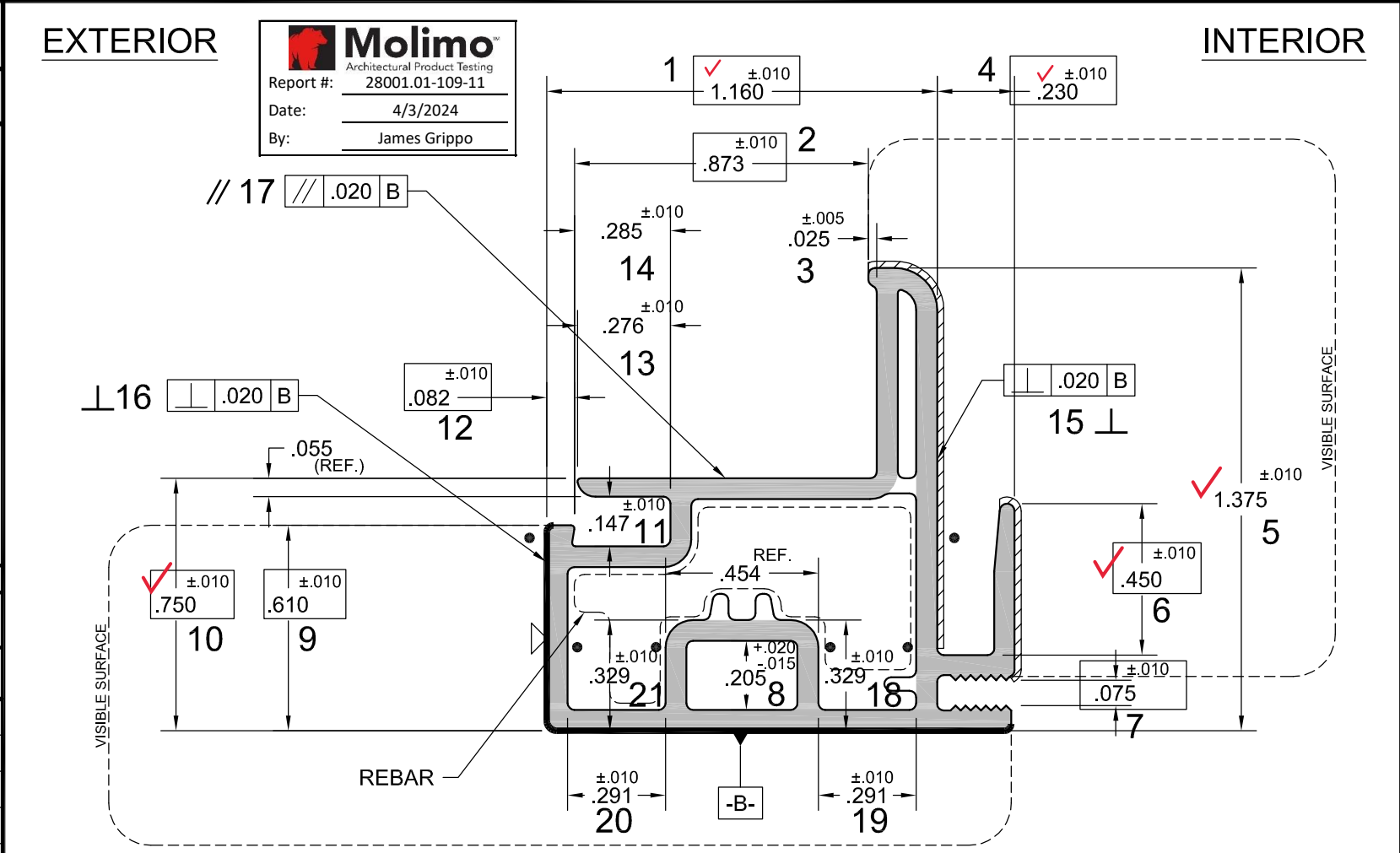
- NOTES:
- MATERIAL = RIGID P.V.C.
  - FLEXIBLE P.V.C. = 
  - EXTERIOR COATING = 
  - LAMINATE = 
  - THINNER INTERIOR WALLS = 
  - WALL THICKNESS = .062 ±.006 ✓
  - RADIUS = .020
  - LOCATION FOR IMPACT TEST 
  - ANGULARITY = 
  - PERPENDICULARITY = 
  - PARALLELISM = 
  - FLATNESS = 
  - SPECIFICATION LENGTH TO ±3/8"
  - ANGULARITY TO BE ±1°
  - PROFILE MUST MEET Q-303 PER AAMA SPECIFICATIONS
  - PROFILE MUST MEET Q-304 PER AAMA SPECIFICATIONS
  - PROFILE MUST MEET Q-901 PER AAMA SPECIFICATIONS
  - PROFILE MUST MEET Q-902 IMPACT RESISTANCE PER AAMA SPECIFICATIONS
  - MAX BOW .046in PER 3ft LENGTH
  - INTERNAL WALL THICKNESS ±.010 UNLESS OTHERWISE SPECIFIED

WEATHERSTRIP SPECIFICATION		
POSITION	SIZE	WEATHERSTRIP TYPE

FUNCTIONAL CHECK	
816 GLAZING BEAD (3/4" GLASS)	
6266 GLAZING BEAD (7/8" GLASS)	
ULTRAFAB #E109 SASH SEAL	

9259 COMPOSITE REBAR	
BSI PIVOT BAR (USE GAUGE #9205-GA-01)	

DRAWN DATE: 10-06-11

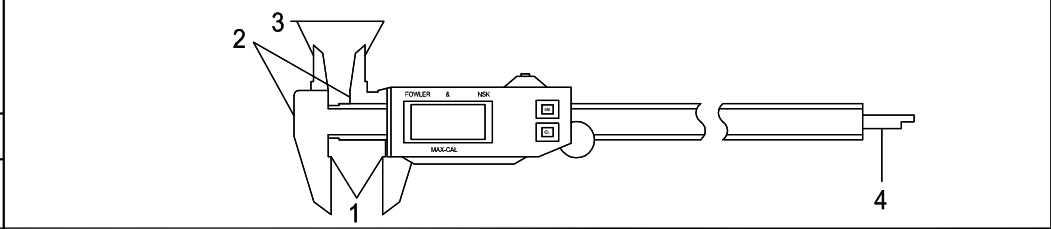


NO.		REVISION	CUSTOMER LENGTH		CHELSEA CUT LENGTH		TOLERANCE	
2	ADDED PIVOT BAR POCKET DIMS, WO#13130	EAS 07-10-13						
1	DIM .205 TOL WAS ±.010	EAS 11-21-11						
		BY DATE						

Use the caliper diagram as your guide to measure the following control points.  
Measure the following control points using #1 on the caliper diagram:  
Measure the following control points using #2 on the caliper diagram:  
Measure the following control points using #3 on the caliper diagram:  
Measure the following control points using #4 on the caliper diagram:


Frequency of sampling: Process Specialist- 3 samples per shift recorded every 4 hours.  
Auditor- 1 sample per shift recorded 1 hour after shift start.

IF ANY CONTROL POINTS ARE NOT IN SPEC.  
CORRECTIVE ACTION REQUIRED















QC PRINT NUMBER: 9206qc		DRAWN BY: EAS		CHECKED BY:		APPROVED BY:		DEVELOP <input type="checkbox"/> INPROCESS <input type="checkbox"/> PRODUCTION <input type="checkbox"/>	
PART NAME: 9206		DESCRIPTION: LOCK RAIL/LOCK STILE		SUPPLIER/PLANT: CHELSEA BUILDING PRODUCTS					
ILLUSTRATION OF PART AND CONTROL POINTS									



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**NOTES:**

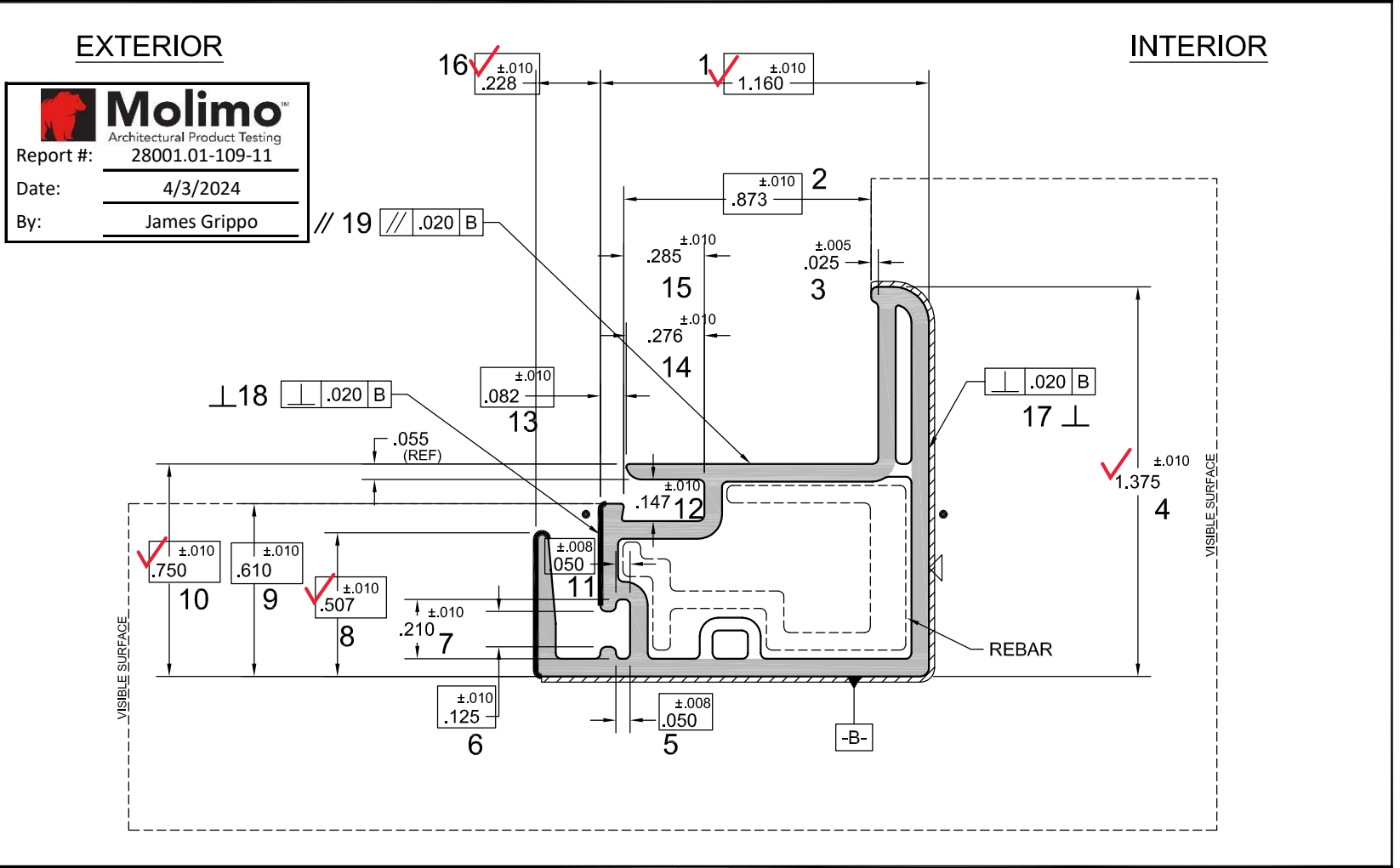
1. MATERIAL = RIGID P.V.C.
2. FLEXIBLE P.V.C. = 
3. EXTERIOR COATING = 
4. LAMINATE = 
5. THINNER INTERIOR WALLS = 
6. WALL THICKNESS = .062 ±.006 
7. RADIUS = .020
8. LOCATION FOR IMPACT TEST 
9. ANGULARITY = 
10. PERPENDICULARITY = 
11. PARALLELISM = 
12. FLATNESS = 
13. SPECIFICATION LENGTH TO ±3/8"
14. ANGULARITY TO BE ±1°
15. PROFILE MUST MEET Q-303 PER AAMA SPECIFICATIONS
16. PROFILE MUST MEET Q-304 PER AAMA SPECIFICATIONS
17. PROFILE MUST MEET Q-901 PER AAMA SPECIFICATIONS
18. PROFILE MUST MEET Q-902 IMPACT RESISTANCE PER AAMA SPECIFICATIONS
19. MAX BOW .046in PER 3ft LENGTH
20. INTERNAL WALL THICKNESS ±.010 UNLESS OTHERWISE SPECIFIED

WEATHERSTRIP SPECIFICATION

POSITION	SIZE	WEATHERSTRIP TYPE

FUNCTIONAL CHECK

816 GLAZING BEAD (3/4" GLASS)
6266 GLAZING BEAD (7/8" GLASS)
.187 BACK WOOLPILE
9253 ALUMINUM REBAR



DRAWN DATE: 10-06-11	1	ADDED SCREWBOS	EAS	10-24-11	CUSTOMER LENGTH	CHELSEA CUT LENGTH	TOLERANCE
	NO.	REVISION	BY	DATE			

Use the caliper diagram as your guide to measure the following control points.

Measure the following control points using #1 on the caliper diagram:

Measure the following control points using #2 on the caliper diagram:

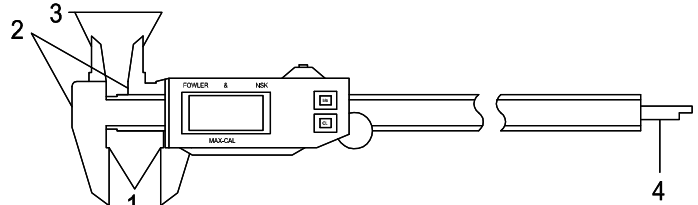
Measure the following control points using #3 on the caliper diagram:

Measure the following control points using #4 on the caliper diagram:

Frequency of sampling: Process Specialist- 3 samples per shift recorded every 4 hours.

Auditor- 1 sample per shift recorded 1 hour after shift start.

IF ANY CONTROL POINTS ARE NOT IN SPEC.  
CORRECTIVE ACTION REQUIRED














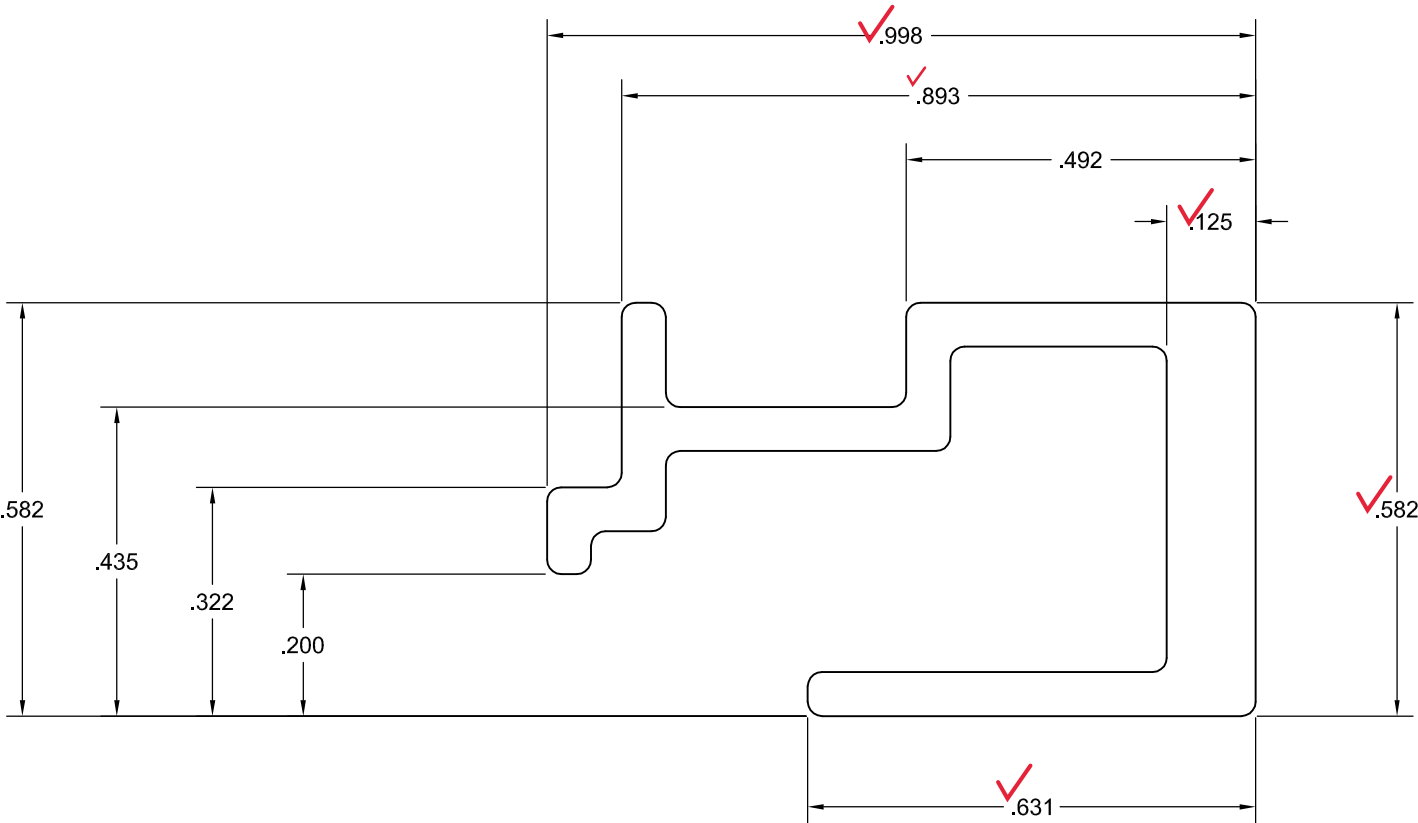


**Molimo**<sup>TM</sup>  
Architectural Product Testing



Report #: 28001.01-109-11

Date: 4/3/2024


By: James Grippo



MATERIAL - 6063 T5 ALUMINUM ALLOY FINISH - MILL

PRELIMINARY PART #			
UNLESS OTHERWISE SPECIFIED			
MATERIAL	ALUMINUM	WALLS	✓.062
EXTERIOR COATING		RADII	.020 R
FLEXIBLE P.V.C.		ANGULARITY	±1°
TOTAL AREA	.1868		
STANDARD WT/FT	.2197		

1	REDESIGNED	EAS	11-01-11
No.	REVISION	BY	DATE



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TITLE			
ALUMINUM REBAR FOR 9206 LOCK RAIL			
DRAWN BY:	DESIGNED BY:	DATE	SCALE
EAS	EAS	09-06-11	NTS-1
CHECKED BY:	APPROVED BY:	DRAWING No.	
		9253	

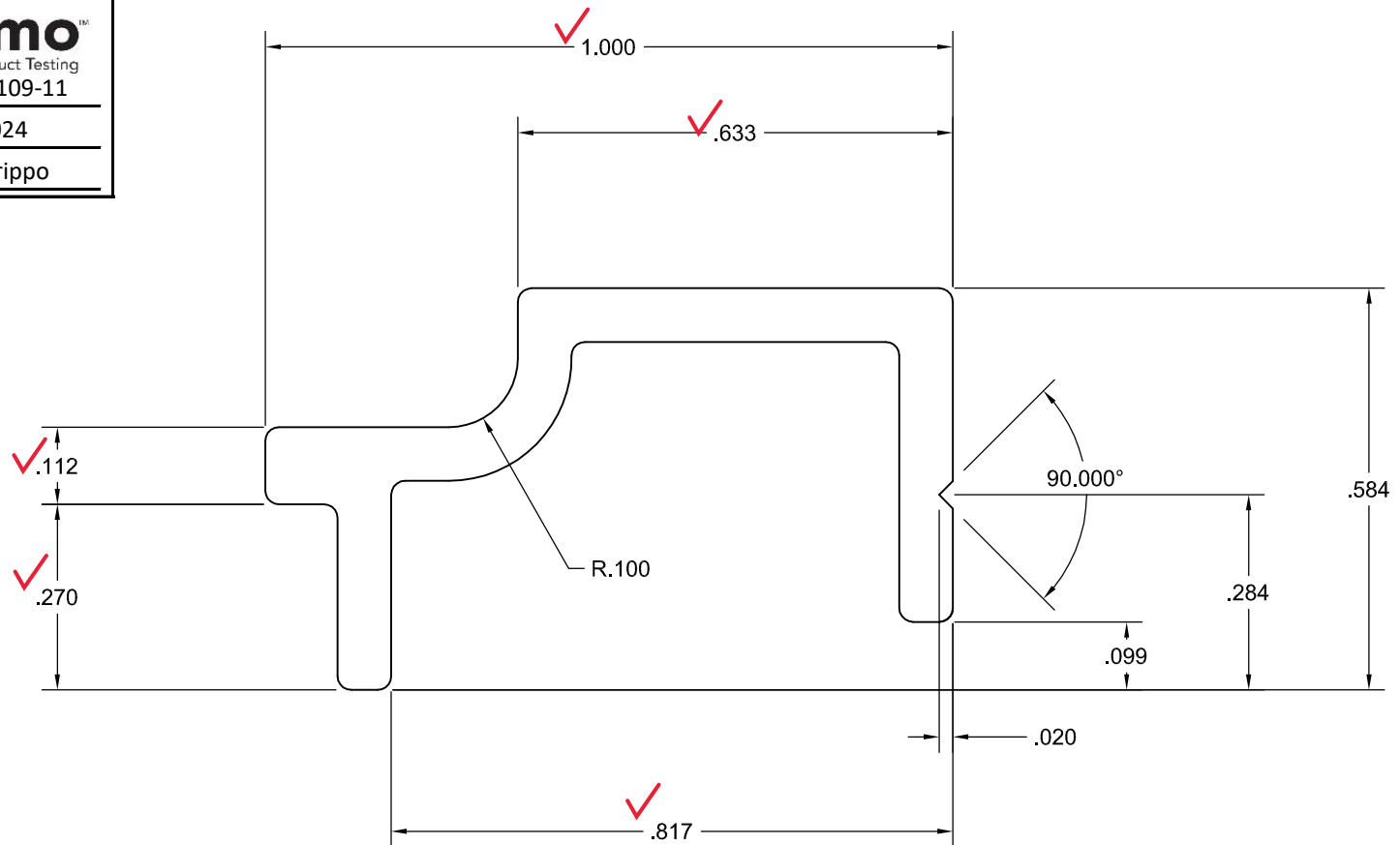


**Molimo**<sup>TM</sup>  
Architectural Product Testing

Report #: 28001.01-109-11

Date: 4/3/2024

By: James Grippo



MATERIAL - 6063 T5 ALUMINUM ALLOY FINISH - MILL

PRELIMINARY PART #

UNLESS OTHERWISE SPECIFIED

MATERIAL	ALUMINUM
EXTERIOR COATING	
FLEXIBLE P.V.C.	
TOTAL AREA	.1474
STANDARD WT/FT	.1733

WALLS	.078
RADII	.020 R
ANGULARITY	±1°

TITLE

ALUMINUM REBAR FOR 9227 &amp; 9267 KEEPER RAILS

DRAWN BY:

EAS

DESIGNED BY:

EAS

DATE

09-06-11

SCALE

NTS-1

CHECKED BY:

APPROVED BY:

DRAWING No.

9254

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1	WALL THICKNESS WAS NOTED AS .062, CHANGED TO .078	EAS	01-19-12
No.	REVISION	BY	DATE