

# STERGIS WINDOWS & DOORS, INC. TEST REPORT

#### **SCOPE OF WORK**

AAMA/WDMA/CSA 101/I.S.2/A440-11 TESTING ON 0706 BA 700, ALUMINUM DOUBLE HUNG WINDOW

#### **REPORT NUMBER**

G7634.01-250-44 R0

## TEST DATE(S)

02/02/17 - 06/20/17

#### **ISSUE DATE**

09/06/17

#### RECORD RETENTION END DATE

06/20/21

## **PAGES**

24

#### **DOCUMENT CONTROL NUMBER**

ATI 00438 (07/24/17) RT-R-AMER-Test-2804 © 2017 INTERTEK





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## TEST REPORT FOR STERGIS WINDOWS & DOORS, INC.

Report No.: G7634.01-250-44 R0

Date: 09/06/17

#### **REPORT ISSUED TO**

#### STERGIS WINDOWS & DOORS, INC.

79 Walton Street Attleboro, MA 02703

#### **SECTION 1**

#### **SCOPE**

Intertek Building & Construction (B&C) was contracted by Stergis Windows and Doors, Inc., Attleboro, Massachusetts to perform testing in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-11, NAFS 2011 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights, on their 0705 BA 700, Aluminum Double Hung Window. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at Intertek B&C test facility in Windham, New Hampshire. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

#### **SECTION 2**

#### **SUMMARY OF TEST RESULTS**

TITLE	RESULTS
AAMA/WDMA/CSA 101/I.S.2/A440-11	Class CW-PG50 55 x 91 (1400 x 2300)-H
Design Pressure	±2400 Pa (±50.13 psf)
Air Infiltration	0.4 L/s/m² (0.07 cfm/ft²)
Water Penetration Resistance Test Pressure	360 Pa (7.52 psf)

#### For INTERTEK B&C:

COMPLETED BY:	Brian Philcrantz	REVIEWED BY:	Dan Carroll
TITLE:	Project Lead – B&C	TITLE:	Regional Manager
SIGNATURE:		SIGNATURE:	
DATE:	09/06/17	DATE:	09/06/17
KM:ds			

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#### **SECTION 3**

## TEST METHOD(S)

The specimens were evaluated in accordance with the following:

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

#### **SECTION 4**

## MATERIAL SOURCE/INSTALLATION

Test specimen was provided by the client. Representative samples of the test specimen will be retained by Intertek B&C for a minimum of four years from the test completion date.

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 window was sealed with sealant.

LOCATION	ANCHOR DESCRIPTION	ANCHOR LOCATION
Interior Perimeter	#8 x 1-5/8" screws	1/4" blind stops, 8" on center
Exterior Perimeter	#8 x 1-5/8" screws	1" blind stops, 8" on center

#### **SECTION 5**

#### LIST OF OFFICIAL OBSERVERS

NAME	COMPANY	
Jordan Robelo	Stergis Windows & Doors	
Mike Rockwell	Intertek B&C	
Jon Murray	Intertek B&C	
Ryan Ignacio	Intertek B&C	
Kevin McNeil	Intertek B&C	

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#### **SECTION 6**

#### **TEST SPECIMEN DESCRIPTION**

Product Type: Aluminum Double Hung Window

Series/Model: 0706 BA 700

## **Product Size(s):**

## **Test Specimen**

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OVERALL AREA:	WIDTH		HEIGHT	
3.3 m <sup>2</sup> (35.0 ft <sup>2</sup> )	millimeters	inches	millimeters	inches
Overall Size	1403	55-1/4	2318	91-1/4
Exterior Sash	1337	52-5/8	1133	44-5/8
Interior Sash	1292	50-7/8	1133	44-5/8
Screen	1305	51-3/8	1141	44-15/16

## **Frame Construction:**

FRAME MEMBER	MATERIAL	DESCRIPTION
All members	Aluminum	Extruded aluminum with thermal break
	JOINERY TYPE	DETAIL
All Corners	Butted	Sealed

## **Sash Construction:**

SASH MEMBER	MATERIAL	DESCRIPTION
All members	Aluminum	Extruded aluminum with thermal break
	JOINERY TYPE	DETAIL
All Corners	Butted	Screwed and sealed

**Reinforcement:** No reinforcement was utilized.

# Weatherstripping:

weatherstripping.				
DESCRIPTION	QUANTITY	LOCATION		
Polypile with fin	1 Row	Sill riser, frame head, all stiles, meeting rail of upper sash		
Polypile with fin	2 Rows	Meeting rail of lower sash		

**Glazing:** No conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen(s) can be made.

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<b>GLASS TYPE</b>	SPACER TYPE	INTERIOR LITE	EXTERIOR LITE	GLAZING METHOD
15/16" IG	Aluminum	3/16" annealed	3/16" annealed	Glass was installed from the interior on 1/16" butyl tape, into a silicone bead, held in place with a rubber gasket

LOCATION	QUANTITY	DAYLIGHT OPENING		GLASS BITE
		millimeters	inches	
Interior sash	1	1254 x 1022	49-3/8 x 40-1/4	1/2"
Exterior sash	1	1210 x 1022	47-5/8 x 40-1/4	1/2"

## Drainage:

DRAINAGE METHOD	SIZE	QUANTITY	LOCATION
Weep slot with flap	1" by 1/4"	2	Sill 3" from corners

## Hardware:

DESCRIPTION	QUANTITY	LOCATION
4" long aluminum snap lock	2	Lower sash rail, 14" from ends
4" long aluminum snap lock	2	Upper sash top rail, 10" from ends
Tilt/Turn Mechanism	4	Two per sash, bottom corners
Tilt/Turn Lock	4	Two per sash, top rails
Spiral Balance mechanism	4	Two per sash, jambs

## **Screen Construction:**

FRAME MATERIAL	CORNER CONSTRUCTION	MESH TYPE	MESH ATTACHMENT METHOD
Aluminum	Keyed	Fiberglass	Rubber spline

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## **SECTION 7**

## **TEST RESULTS**

The temperature during testing was 16°C (61°F). The results are tabulated as follows:

## **Test Specimen:**

TITLE OF TEST	RESULTS	ALLOWED	NOTE
	Initiate Motion:		
	151 N (34 lbf)	Report only	
Operating Force,	Maintain Motion:		
per ASTM E2068	160 N (36 lbf)	200 N (44.96 lbf) max	
	Latches:		
	85 N (19 lbf)	100 N (22.48 lbf) max	
Air Leakage,			
Infiltration per ASTM E283	0.4 L/s/m <sup>2</sup>	1.5 L/s/m <sup>2</sup>	
at 75 Pa (1.57 psf)	(0.07 cfm/ft <sup>2</sup> )	(0.3 cfm/ft <sup>2</sup> ) max.	1
Water Penetration,			
per ASTM E331	N/A	N/A	3
Uniform Load Deflection,			
per ASTM E330	N/A	N/A	3
Uniform Load Structural,			
per ASTM E330	N/A	N/A	3
Forced Entry Resistance,			
per ASTM F588,			
Type: A - Grade: 10	Pass	No entry	
Deglazing,			
per ASTM E987			
Operating direction,			
320 N (70 lbf)	Pass	Meets as stated	
Remaining direction,			
230 N (50 lbf)	Pass	Meets as stated	

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#### **Test Specimen:**

TITLE OF TEST	RESULTS	ALLOWED	NOTE			
OPTIONAL PERFORMANCE						
Water Penetration,						
per ASTM E331						
at 360 Pa (7.52 psf)	Pass	No leakage	2			
Uniform Load Deflection,						
per ASTM E330						
Deflections taken at meeting rail						
+2400 Pa (+50.13 psf)	1.5 mm (0.06")	6.9 mm (.027") max.				
-2400 Pa (-50.13 psf)	6.9 mm (.027")	6.9 mm (0.27") max.	4, 5			
Uniform Load Structural,						
per ASTM E330						
Permanent set taken at meeting						
rail						
+3600 Pa (+75.19 psf)	<0.3 mm (<0.01")	3.6 mm (0.14") max.				
-3600 Pa (-75.19 psf)	0.5 mm (0.02")	3.6 mm (0.14") max.	4, 5			

- Note 1: The tested specimen meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440 for air leakage resistance.
- Note 2: With and without insect screen.
- Note 3: The client opted to start at a pressure higher than the minimum required. Test results are reported under Optional Performance.
- Note 4: Loads were held for 10 seconds.
- Note 5: The deflections reported are not limited by AAMA/WDMA/CSA 101/I.S.2/A440 for this product designation. The deflection data is recorded in this report for special code compliance and information only.
- Note 6: 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.
- Note 7: Reference Intertek-ATI Report No. G7634.01-250-44, dated 09/06/17 for complete test results.

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## **SECTION 8**

## **ALTERATIONS**

No alterations were required.

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## TEST REPORT FOR STERGIS WINDOWS & DOORS, INC.

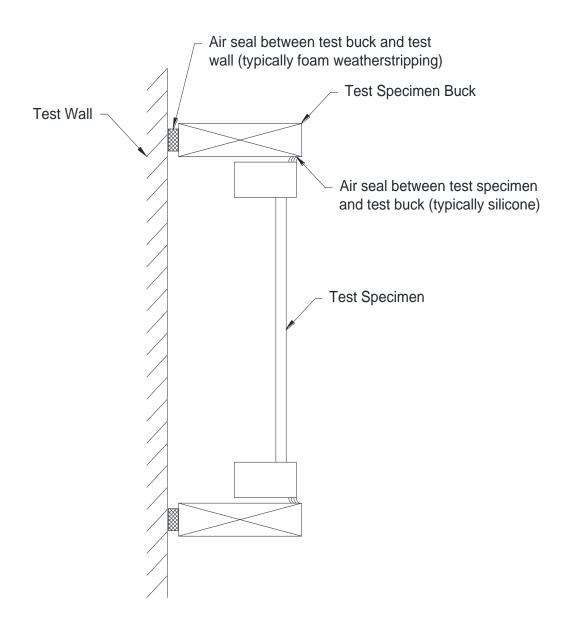
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#### **SECTION 9**

#### **LOCATION OF AIR SEAL**

The air seal between the test specimen and the test wall is detailed below. The seal is made of foam weatherstripping and is attached to the edge of the test specimen buck. The test specimen buck is placed against the test wall and clamped in place, compressing the weatherstripping and creating a seal.



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## **SECTION 10**

## **CONCLUSION**

The specimen tested successfully met the performance requirements for a Class CW-PG50 55 x 91 (1400 x 2300)-H rating.

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## **SECTION 11**

## **PHOTOGRAPHS**



Photo No. 1 Exterior View of Specimen

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## **TEST REPORT FOR STERGIS WINDOWS & DOORS, INC.**

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#### **SECTION 12**

#### **DRAWINGS**

The test specimen drawings have been reviewed by Intertek B&C and are representative of the test specimen reported herein. Test specimen construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.

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#### Frazer Construction MSPCA

#### Calculated by 04/20/16



REPLENISH

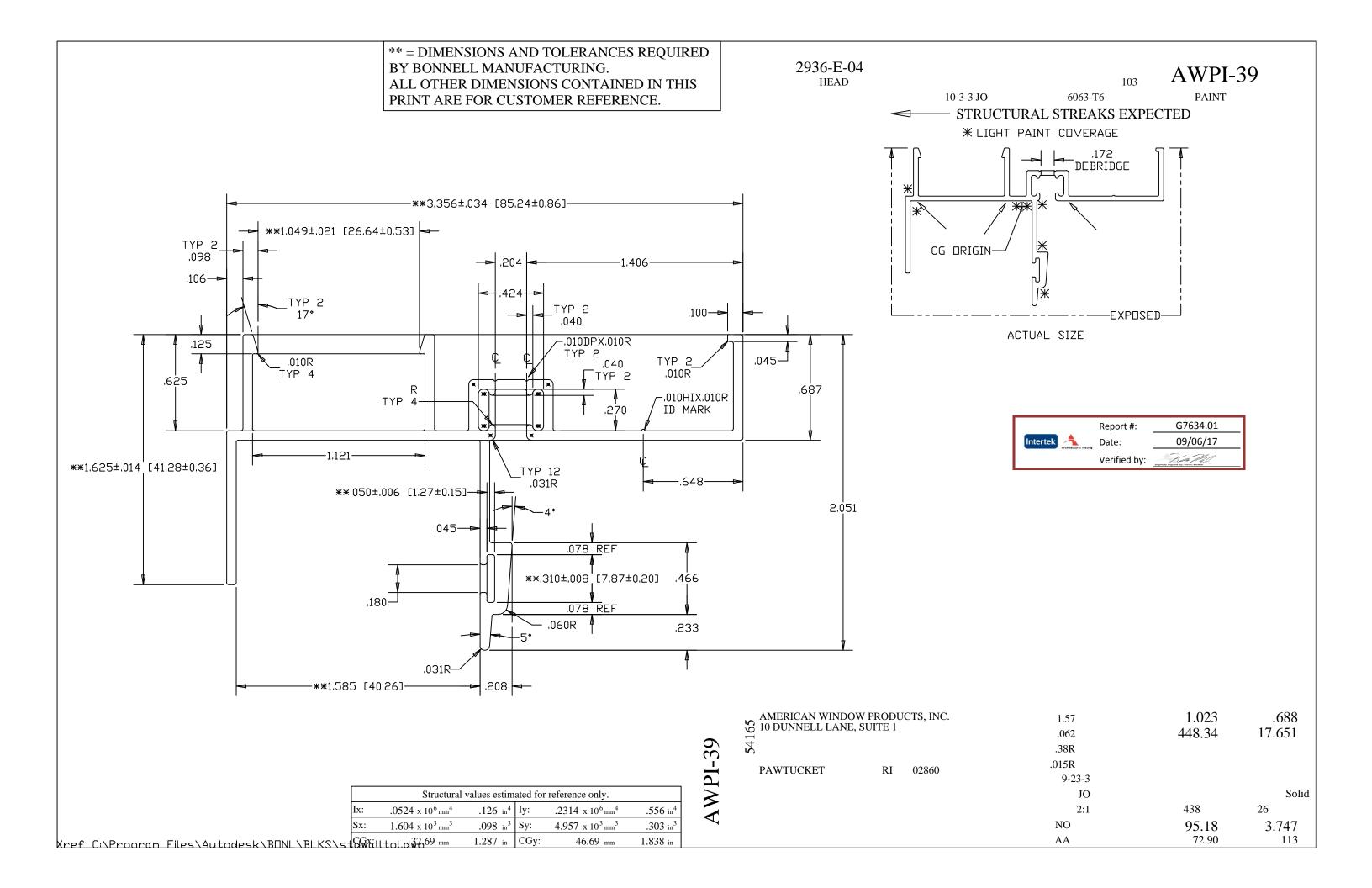
G7634.01 09/06/17

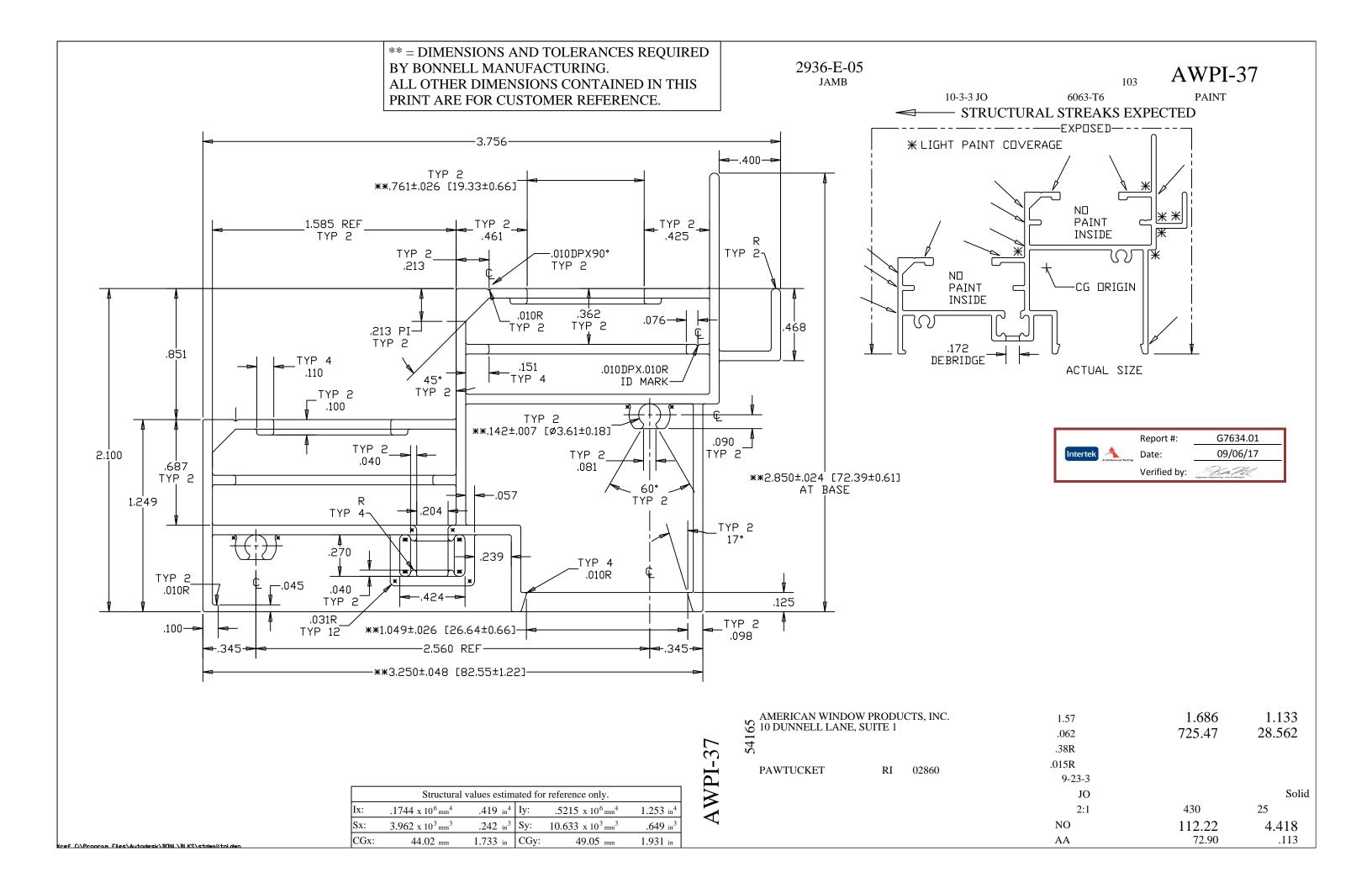
KAPEC

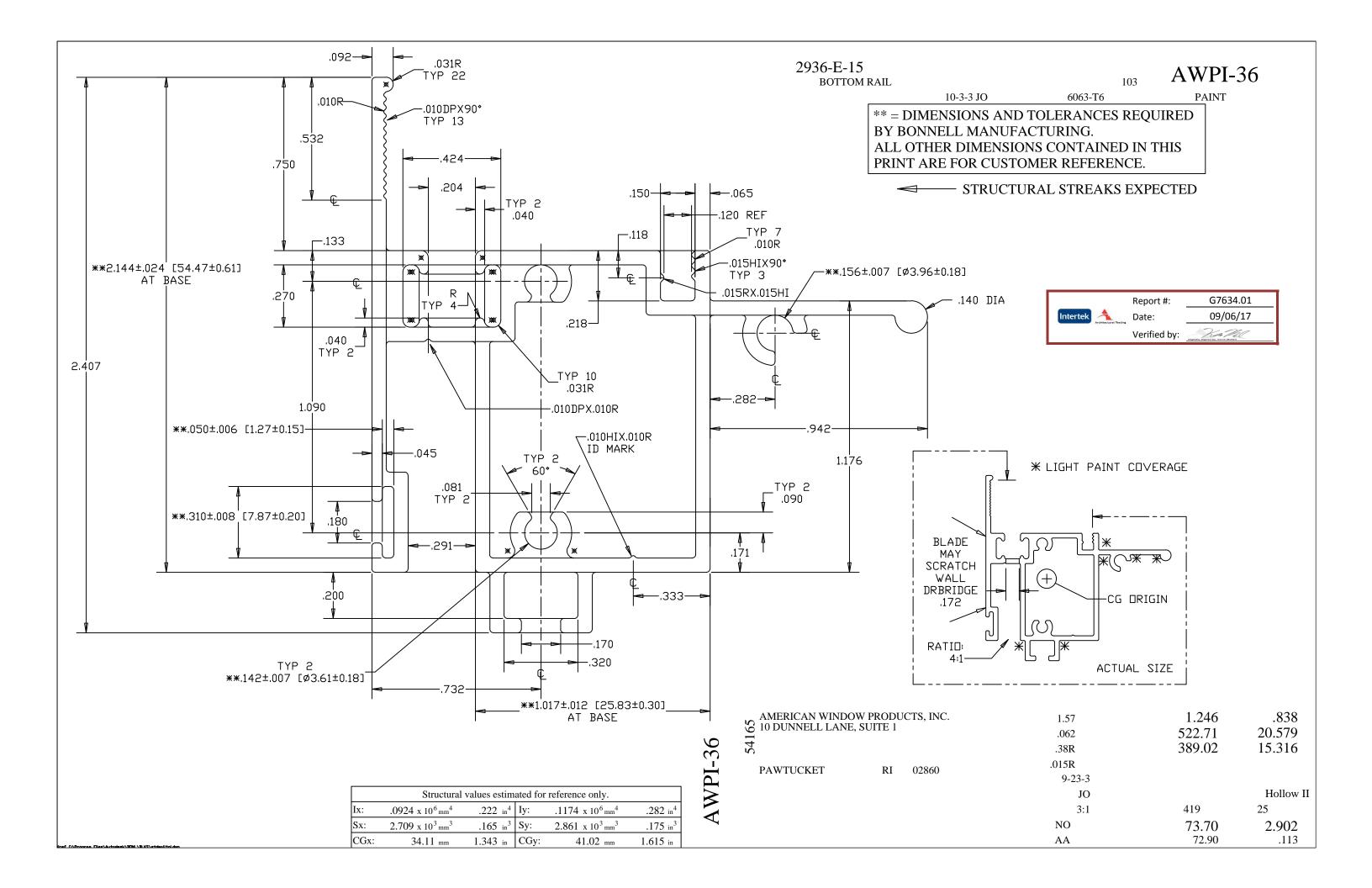
Part #	Describtion	Weight per ft	Optimal Length	Pcs needed	lbs Needed	Scrap	Order PC Count	PC Count Extra	Leftover lbs
			•			•			
GUSSW-39	700 Series DH Header		16"-0" = 192"	80					
GUSSW-17	700 Series Glazing Bead	0.1	16'-0" = 192"	549					
GUSSW-37	700 Series DH Jamb w/SB		17'-0" = 204"	211					
GUSSW-34	700 Series SH / DH Sill	1.061	16"-0" = 192"	80					
GUSSW-33	700 Series Top/Bot Sash Height	0.402	17'-0" = 204"	110					
GUSSW-36	700 Series Bottom Sash Handle	0.718	17'-0" = 204"	67					
GUSSW-6	700 Series Top Sash Handle		16'-0" = 192"	68					
GUSSW-13	700 Series Sash Lock Rail	0.838	17'-0" = 204"	67					
GUSSW-35	700 Series Top Sash Interlock		16'-0" = 192"	68					
GUSSW-18	700 Series PW/SH Header	0.574	16'-0" = 192"	81					
S-13430	5/16" Screen Frame Plain		17'-0" = 204"	120					
S-13431	5/16" Screen Frame Lip		17'-0" = 204"	57					
S-13432	5/16" Screen Frame Handle		17'-0" = 204"	67					
****NOTE- we will need approximately 32 lengths of snap mullion at 15'. We currently do not have that shape drawn up.****									
****NOTE - once the custom face fin is finalized, the quanties need to be calculated****									

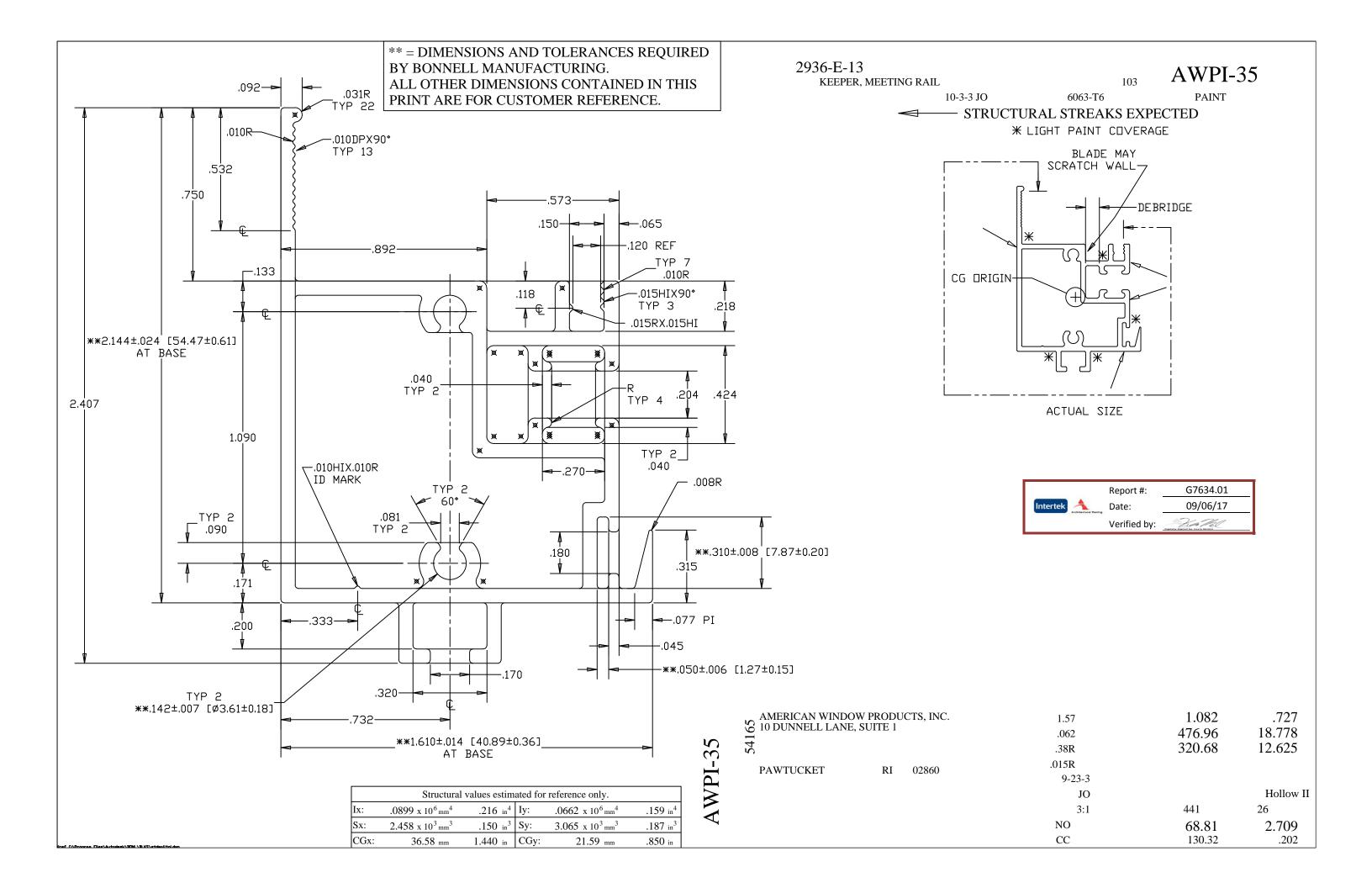
#### **BILL OF MATERIALS**

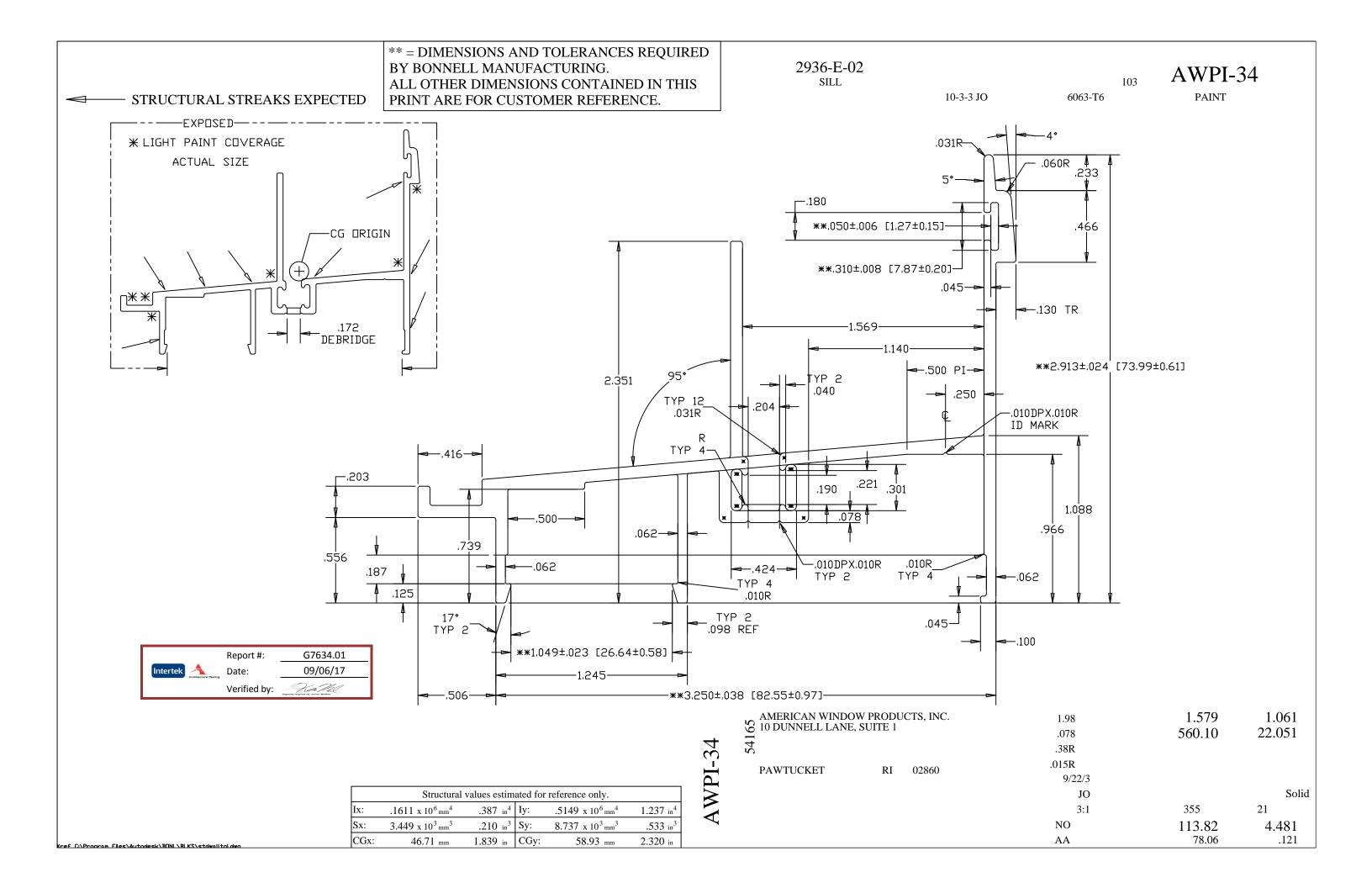
	BILL OF	IVIAIENIALS	
PART#	DESCRIPTION	REQUIRED	ON HAND
PN4462 - Wedge Splin	e-	38'	
GT0106 - 1/16" X 1/2" -	· Butyl glazing tape - 24' per window =	38'	
1127 H482 - Tilt Latch	-	4 pcs	
H235- tilt latch spring -		4 pcs	
800SCO15NON - 700/8	300 series tilt latch set screw -	4 pcs	
6918SS-1 (08-6918) - p	pivot bar with screw	4 pcs	
2988A - Balance Shoe	-	4 pcs	
110-9/127H780 LB - sa	sh cap left -	2 pcs	
110-9/127H780 RB - sa	ash cap right -	2 pcs	
LCS 068-2 - weep hole	cover black -	2 pcs	
RS5472 - woolpile retail	iner -	4'	
RS3245A - sash stop b		3'	
800HEX1NON - #8 X 1	.25 Hex self drilling 410SS MF/Sash assembly screw- 12 per window =	28 pcs	
PDSCO25NON - #8 X	1.250" Phil Pan Head Self Drill SS Balance installation screw -	4 pcs	
9183 X 187NC - slide ir	n spring for snap latch & half screens	8 pcs	
800SERWPBLK - DH/S	SH 270W X 300H Black Fab -	20'	
15027045GYWP - DH/	SH interlock woolpile 150W X 270H Grey -	5'	
	H sash height woolpile 290W X 187H Black -	30'	
KCUT1/16NON - Kiss (	Cut 1/16 X 2 1/2 X 3 1/2	4 pcs	
SETBL700NON - 1 3/1	6 X 1 X 2 X 1/8" setting block	20 pcs	
SETBLPD2NON - 1 1/8	3 X 1 X 2 X 1/8" setting block	10 pcs	
1299 DOW Corning sea	am sealer -	1 tube	
LITE.375NON - 11/16"		38'	
239201M6 Aluma Lock	Corner Key	4 pcs	
140HRSS NON .140 bl	•	19'	
SCNA32 NON 32" alum	n charcoal wire		

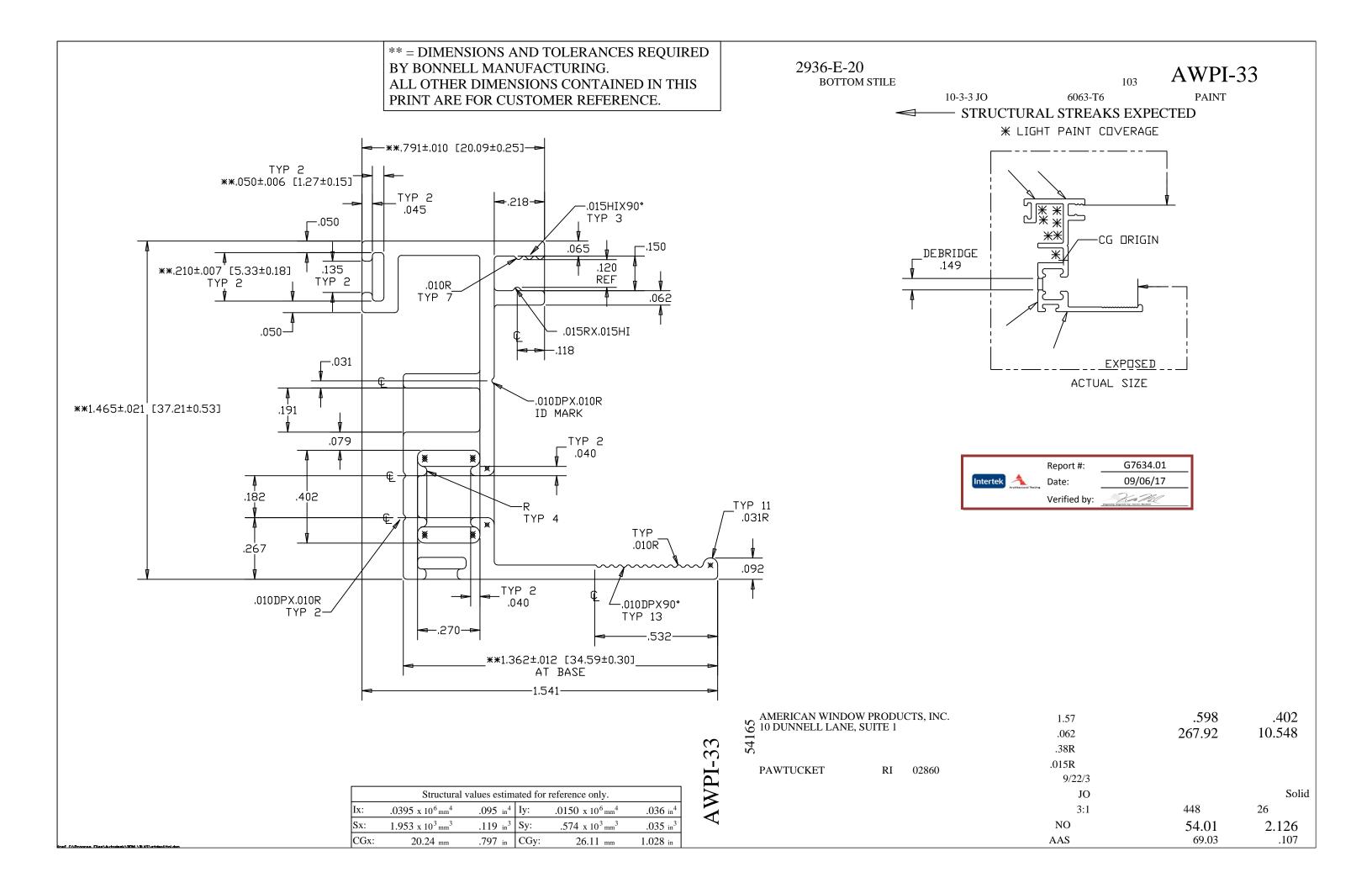


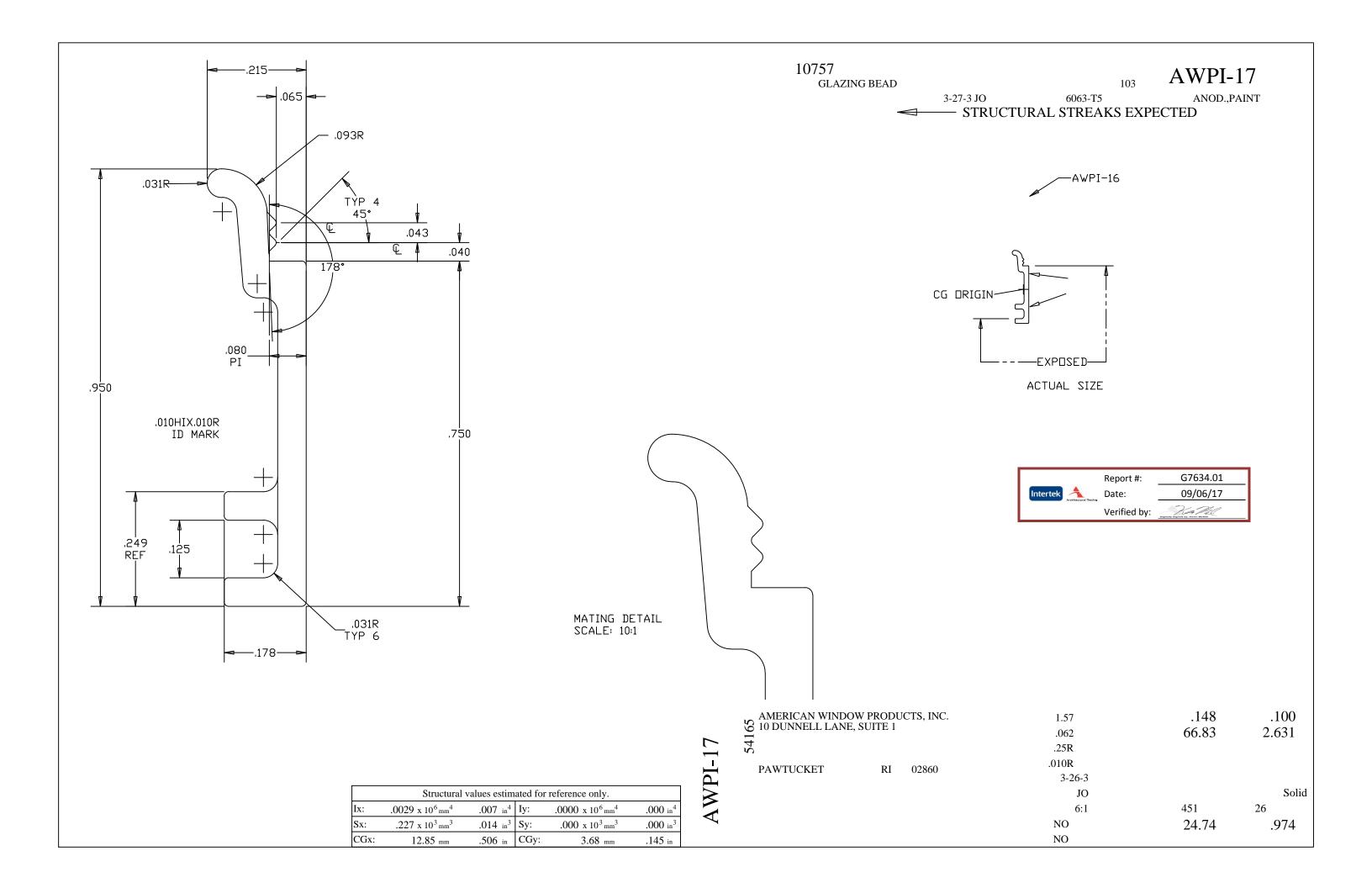


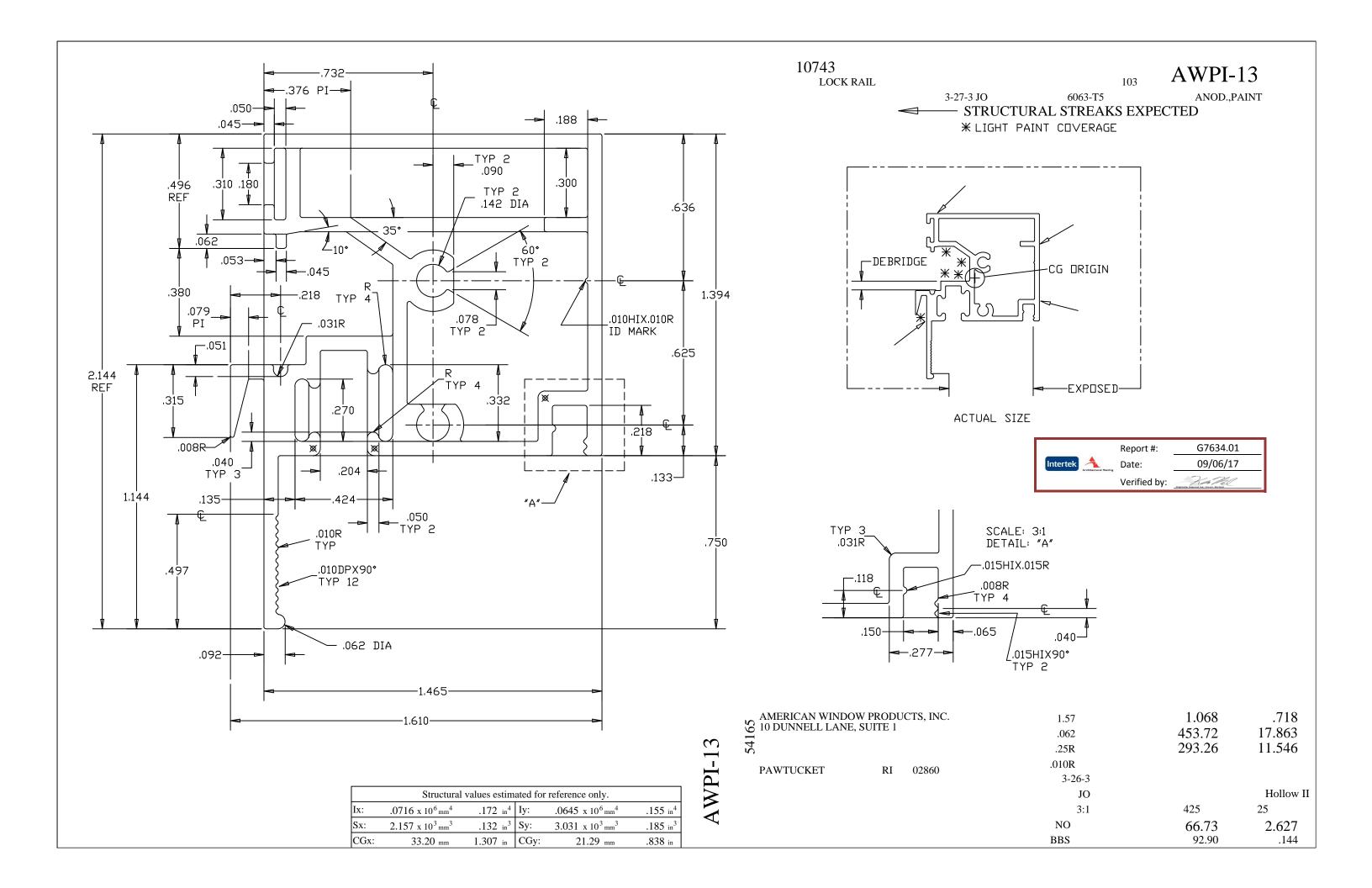


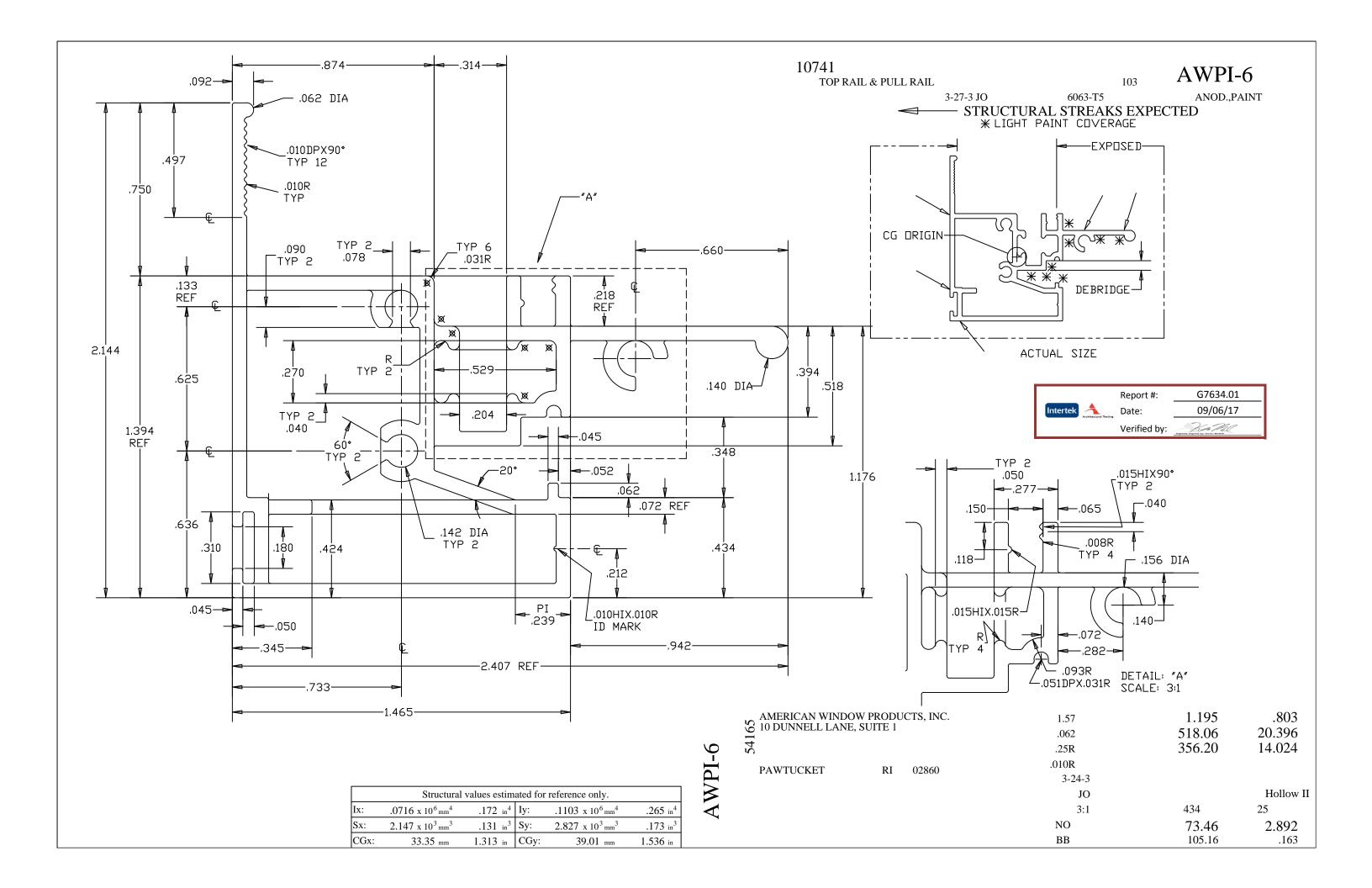


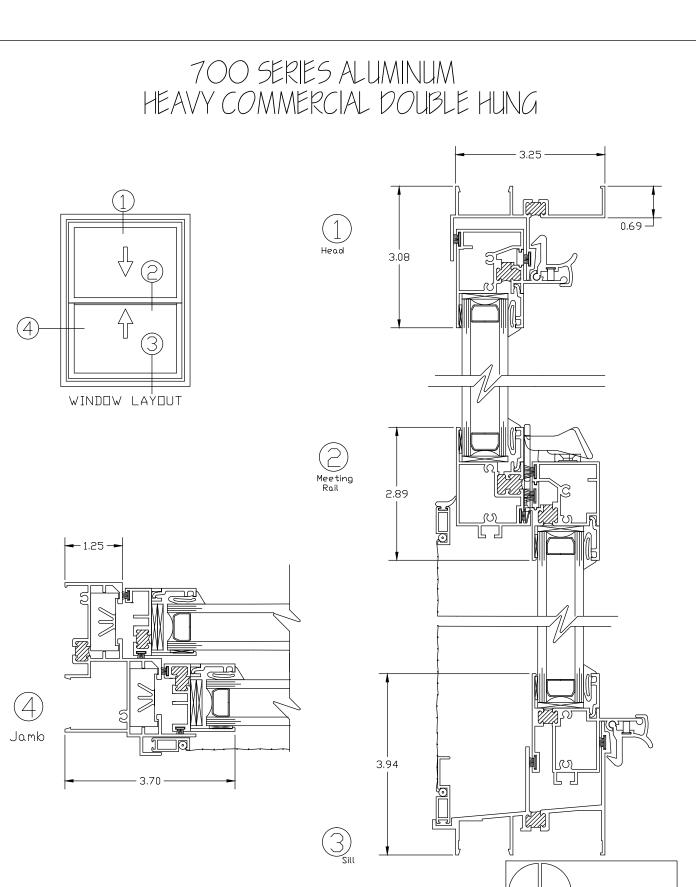














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#### **SECTION 13**

## **REVISION LOG**

REVISION #	DATE	PAGES	REVISION
0	09/06/17	N/A	Original Report Issue

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