

**NFRC U-FACTOR, SHGC / VT,
CONDENSATION RESISTANCE
COMPUTER SIMULATION REPORT**

Rendered to:

EARTHWISE GROUP, L.L.C.

**SERIES/MODEL: 143.095 DH
143.195 DH
145.095 DH
145.195 DH**

Baseline Product for Validation Testing

Series Model: **142.194 DH**

Unit Size: Width: 47.25" Height: 59"

Simulated U-Factor: 0.352

Glazing Information

<i>Layer 1:</i>	DS Guardian RLE 71/38 (e=0.027,#2)
<i>Gap 1:</i>	0.560" Duraseal Spacer (A8-D) - Air Fill
<i>Layer 2:</i>	SS Clear
<i>Gap 2:</i>	
<i>Layer 3:</i>	

Reinforcement Option Description

<i>Location</i>	<i>Material</i>
All Rails, All Stiles	Aluminum

Report No.: 54088.05-116-45

Report Date: 04/06/05

Expiration Date: 04/06/09

**NFRC U-FACTOR, SHGC / VT, CONDENSATION RESISTANCE
COMPUTER SIMULATION REPORT**

Rendered to:

EARTHWISE GROUP, L.L.C.
185 Union Avenue
Providence, Rhode Island 02909

Report No.: 54088.05-116-45
Simulation Date: 04/06/05
Report Date: 04/06/05
Expiration Date: 04/06/09

Project Summary: Architectural Testing, Inc. (ATI) was contracted to perform U-Factor, Solar Heat Gain Coefficient, Visible Transmittance, and Condensation Resistance* computer simulations in accordance with the National Fenestration Rating Council (NFRC). The products were evaluated in full compliance with NFRC requirements to the standards listed

**NFRC's Condensation Resistance rating is NOT equivalent to a Condensation Resistance Factor (CRF) determined in accordance with AAMA 1503.*

Standards:

NFRC 100-2001: Procedure for Determining Fenestration Product U-Factors
NFRC 200-2001: Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence
NFRC 500-2001: Procedure for Determining Fenestration Product Condensation Resistance Values

Software:

Frame and Edge Modeling: THERM 5.2.14
Center-of-Glass Modeling: WINDOW 5.2.17
Total Product Calculations: WINDOW 5.2.17
Spectral Data Library: 13.9

Simulation Specimen Description:

Series/Model:

143.095 DH	143.195 DH
145.095 DH	145.195 DH
Vertical Slider (Double Hung)	
Vinyl (VY)	
Vinyl w/reinforcing - horizontal members only (VH)	
1200 mm	
1500 mm	

Type:

Frame Material:

Sash Material:

Width:

Height:

Technical Interpretations:

U-factor: None
SHGC: None

Modeling Assumptions:

- U-factor:**
1. The 143.095 DH and the 143.195 DH are individual products within a product line and can be grouped according to NFRC 100-2001 Section 1.4.1 (2).
 2. The 145.095 DH and the 145.195 DH are individual products within a product line and can be grouped according to NFRC 100-2001 Section 1.4.1 (2).
 3. The 3/16" X 9/16", 3/16" X 5/8", 3/16" X 3/4", 1/4" X 5/8" Rectangular Muntins, 5.5mm X 18mm, 8mm X 18mm, 8mm X 25mm, 0.313" X 0.725" Contour Muntins, 7/16" X 3/8" Square Muntin, 5.9mm X 7.95mm Brass Caming Muntins were grouped for simulation purposes. The 7/16" X 3/8" Square Muntin was the group leader.
 4. Tempered glass is simulated as clear annealed per NFRC 100-2001.
- SHGC:**
1. Tempered glass is simulated as clear annealed per NFRC 200-2001.

Specialty Products Table: The specialty products method allow the manufacturer to determine the overall product SHGC and VT for any glazing option. The center of glass SHGC and/or VT must be determined using WINDOW 5.2. The method gives overall product SHGC and VT indexed on center of glass properties.

143.095 DH	No Dividers	Dividers < 1"	Dividers >= 1"
SHGC ₀	0.003	0.006	0.009
SHGC ₁	0.781	0.700	0.623
VT ₀	0.000	0.000	0.000
VT ₁	0.778	0.693	0.614

143.195 DH	No Dividers	Dividers < 1"	Dividers >= 1"
SHGC ₀	0.004	0.007	0.009
SHGC ₁	0.758	0.678	0.602
VT ₀	0.000	0.000	0.000
VT ₁	0.754	0.671	0.593

145.095 DH	No Dividers	Dividers < 1"	Dividers >= 1"
SHGC ₀	0.003	0.006	0.009
SHGC ₁	0.781	0.700	0.623
VT ₀	0.000	0.000	0.000
VT ₁	0.778	0.693	0.614

145.195 DH	No Dividers	Dividers < 1"	Dividers >= 1"
SHGC ₀	0.004	0.007	0.009
SHGC ₁	0.758	0.678	0.602
VT ₀	0.000	0.000	0.000
VT ₁	0.754	0.671	0.593

$$SHGC_c = SHGC_0 + SHGC_c (SHGC_1 - SHGC_0)$$

$$VT_c = VT_0 + VT_c (VT_1 - VT_0)$$

Appendices: The following appendices contain material required by NFRC 100-2001, NFRC 200-2001, and NFRC 500-2001.

A. Drawings and Bills of Material used in simulation

Spacer Option Description

<i>Spacer Type</i>	<i>Sealant</i>		<i>Dessicant</i>
	<i>Primary</i>	<i>Secondary</i>	
PPG Intercept Spacer	Butyl Rubber	Butyl Rubber	Yes
Edgetech Super Spacer	Butyl Rubber	None	No
TruSeal DuraSeal Spacer	Butyl Rubber	Butyl Rubber	No
Aluminum Swiggle Spacer	Butyl Rubber	Butyl Rubber	No
Cardinal XL Edge Spacer	Silicone	PIB	Yes

Grid Option Description

<i>Grid Size</i>	<i>Grid Type</i>	<i>Grid Pattern</i>
3/16" X 9/16"	Allmetal Rectangular Muntin	2H x 3V
3/16" X 5/8"	Allmetal Rectangular Muntin	2H x 3V
3/16" X 3/4"	Allmetal Rectangular Muntin	2H x 3V
1/4" X 5/8"	Allmetal Rectangular Muntin	2H x 3V
5.5mm X 18mm	Allmetal Contour Muntin	2H x 3V
8mm X 18mm	Allmetal Contour Muntin	2H x 3V
8mm X 25mm	Allmetal Contour Muntin	2H x 3V
0.313" X 0.725"	Allmetal Contour Muntin	2H x 3V
7/16" X 3/8"	Square Muntin	2H x 3V
5.9mm X 7.95mm	Brass Caming Muntin	2H x 3V

Reinforcement Option Description

<i>Location</i>	<i>Material</i>
Lock Rail, Keeper Rail, Top Rail, Bottom Rail	Aluminum

Gas Filling Technique Description

<i>Fill Type</i>	<i>Method</i>
90% Argon	Single Probe
95% Argon	Dual Probe
90% Krypton	Dual Probe

Edge-of-Glass Construction

<i>Interior Condition</i>	Foam tape between sash leg and glass
<i>Exterior Condition</i>	PVC glazing bead with flexible vinyl fin against glass

Weatherstripping

<i>Type</i>	<i>Qty.</i>	<i>Location</i>
Finpile	2 rows	Jamb Stiles, Lock Rail (Equal Lite only)
Finpile	1 row	Sill, Lock Rail, Keeper Rail, Top Rail
Foam Rubber Bulb Gasket	1 row	Bottom Rail
Foam Rubber Gasket	1 row	Head

Finish

<i>Interior Condition</i>	White PVC
<i>Exterior Condition</i>	White PVC

Hardware (*If modeling is required, continuous items are listed below*)

<i>Type</i>	<i>Qty.</i>	<i>Location</i>
None		

Sealing Rules (*To prevent air infiltration*)

Tape was applied to all interior sash crack locations.
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U-Factor / CR
143.095 DH

		PPG Intercept Spacer			
		No Grids		Grids	
Option Description		U-Factor	CR	U-Factor	CR
1	Clear / Clear - SS,DS - 3/4" IG	0.48	43	0.49	43
2	SS Clear / DS Clear - 3/4" IG	0.48	42	0.49	42
3	043 / Clear - SS,DS - 3/4" IG	0.34	53	0.36	53
4	043 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	56	0.33	56
5	041 / Clear w/ 90% Argon - DS - 3/4" IG	0.31	55	0.33	55
6	027 / Clear - SS,DS - 3/4" IG	0.34	53	0.36	53
7	027 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	56	0.32	56

		Super Spacer			
		No Grids		Grids	
Option Description		U-Factor	CR	U-Factor	CR
8	Clear / Clear - SS,DS - 3/4" IG	0.47	44	0.48	44
9	DS Clear / SS Clear - 3/4" IG	0.47	44	0.49	44
10	DS Clear / SS Clear w/ 90% Argon - 3/4" IG	0.45	45	0.47	45
11	154 / Clear - DS - 3/4" IG	0.36	52	0.39	52
12	154 / Clear w/ 95% Argon- DS - 3/4" IG	0.33	55	0.35	55
13	043 / Clear - SS,DS - 3/4" IG	0.34	55	0.35	54
14	043 / Clear w/ 90% Argon- SS,DS - 3/4" IG	0.30	58	0.32	58
15	041 / Clear - SS,DS - 3/4" IG	0.34	55	0.35	55
16	041 / Clear w/ 90% Argon- SS,DS - 3/4" IG	0.30	58	0.32	58
17	027 / Clear - SS,DS - 3/4" IG	0.33	58	0.35	55
18	027 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.30	58	0.31	58
19	027 / 027 w/ 90% Argon - SS,DS - 3/4" IG	0.29	59	0.31	59

U-Factor / CR
143.095 DH

		<i>Duraseal Spacer</i>			
		<i>No Grids</i>		<i>Grids</i>	
	Option Description	U-Factor	CR	U-Factor	CR
20	Clear / Clear - SS,DS - 3/4" IG	0.47	44	0.49	44
21	044 / Clear - SS,DS - 3/4" IG	0.34	54	0.36	54
22	044 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	57	0.32	57
23	041 / Clear - SS,DS - 3/4" IG	0.34	54	0.36	54
24	041 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.30	58	0.32	58
25	027 / Clear w/ 90% Argon - DS - 3/4" IG	0.30	57	0.32	57

		<i>Aluminum Swiggle Spacer</i>			
		<i>No Grids</i>		<i>Grids</i>	
	Option Description	U-Factor	CR	U-Factor	CR
26	Clear / Clear - SS,DS - 3/4" IG	0.48	43	0.49	43
27	041 / Clear - SS,DS - 3/4" IG	0.34	53	0.36	53
28	041 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	57	0.32	57
29	027 / Clear - SS,DS - 3/4" IG	0.34	54	0.34	54
30	027 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.30	57	0.32	57

		<i>Cardinal XL Edge Spacer</i>			
		<i>No Grids</i>		<i>Grids</i>	
	Option Description	U-Factor	CR	U-Factor	CR
31	Clear / Clear - DS - 3/4" IG	0.47	43	0.49	43
32	041 / Clear w/ 90% Argon - DS - 3/4" IG	0.30	56	0.33	56

U-Factor / CR
143.095 DH

		<i>Triple Glazed Super Spacer</i>			
		<i>No Grids</i>		<i>Grids</i>	
	Option Description	U-Factor	CR	U-Factor	CR
33	Clear / Clear / Clear - SS - 3/4" IG	0.40	51	-	-
34	027 / Clear / Clear - SS - 3/4" IG	0.35	56	-	-
35	027 / Clear / Clear w/ 90% Argon - SS - 3/4" IG	0.31	60	-	-
36	027 / 027 / Clear - SS - 3/4" IG	0.31	59	-	-
37	027 / 027 / Clear w/ 90% Argon - SS - 3/4" IG	0.27	63	-	-

Notes :

1. All options available with bronze and grey tints on exterior surface.
2. "5m" stands for 3/16" glass thickness
3. Low-E's used:
 - 0.043 = PPG Solarban 60
 - 0.041 = Cardinal E172
 - 0.027 = Guardian RLE 71/38
 - 0.154 = LOF Advantage
 - 0.044 = Guardian PPII

U-Factor / CR
143.195 DH

		PPG Intercept Spacer			
		No Grids		Grids	
Option Description		U-Factor	CR	U-Factor	CR
1	Clear / Clear - SS,DS - 3/4" IG	0.48	42	0.49	42
2	SS Clear / DS Clear - 3/4" IG	0.48	42	0.49	42
3	043 / Clear - SS,DS - 3/4" IG	0.35	52	0.37	52
4	043 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.32	55	0.33	55
5	041 / Clear w/ 90% Argon - DS - 3/4" IG	0.31	54	0.34	54
6	027 / Clear - SS,DS - 3/4" IG	0.35	52	0.36	52
7	027 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	55	0.33	55

		Super Spacer			
		No Grids		Grids	
Option Description		U-Factor	CR	U-Factor	CR
8	Clear / Clear - SS,DS - 3/4" IG	0.47	44	0.48	44
9	DS Clear / SS Clear - 3/4" IG	0.47	44	0.49	44
10	DS Clear / SS Clear w/ 90% Argon - 3/4" IG	0.45	45	0.47	45
11	154 / Clear - DS - 3/4" IG	0.37	51	0.39	51
12	154 / Clear w/ 95% Argon- DS - 3/4" IG	0.33	54	0.36	54
13	043 / Clear - SS,DS - 3/4" IG	0.34	54	0.36	54
14	043 / Clear w/ 90% Argon- SS,DS - 3/4" IG	0.31	57	0.32	57
15	041 / Clear - SS,DS - 3/4" IG	0.34	54	0.36	54
16	041 / Clear w/ 90% Argon- SS,DS - 3/4" IG	0.31	57	0.32	57
17	027 / Clear - SS,DS - 3/4" IG	0.34	55	0.36	54
18	027 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.30	58	0.32	58
19	027 / 027 w/ 90% Argon - SS,DS - 3/4" IG	0.30	59	0.31	59

U-Factor / CR
143.195 DH

		<i>Duraseal Spacer</i>			
		<i>No Grids</i>		<i>Grids</i>	
	Option Description	U-Factor	CR	U-Factor	CR
20	Clear / Clear - SS,DS - 3/4" IG	0.48	43	0.49	43
21	044 / Clear - SS,DS - 3/4" IG	0.35	54	0.36	55
22	044 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	57	0.33	57
23	041 / Clear - SS,DS - 3/4" IG	0.35	54	0.36	54
24	041 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	57	0.33	57
25	027 / Clear w/ 90% Argon - DS - 3/4" IG	0.30	57	0.33	56

		<i>Aluminum Swiggle Spacer</i>			
		<i>No Grids</i>		<i>Grids</i>	
	Option Description	U-Factor	CR	U-Factor	CR
26	Clear / Clear - SS,DS - 3/4" IG	0.48	43	0.49	43
27	041 / Clear - SS,DS - 3/4" IG	0.35	53	0.37	53
28	041 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.32	56	0.33	56
29	027 / Clear - SS,DS - 3/4" IG	0.34	53	0.34	53
30	027 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	56	0.32	56

		<i>Cardinal XL Edge Spacer</i>			
		<i>No Grids</i>		<i>Grids</i>	
	Option Description	U-Factor	CR	U-Factor	CR
31	Clear / Clear - DS - 3/4" IG	0.47	43	0.49	43
32	041 / Clear w/ 90% Argon - DS - 3/4" IG	0.31	55	0.33	55

U-Factor / CR
143.195 DH

		<i>Triple Glazed Super Spacer</i>			
		<i>No Grids</i>		<i>Grids</i>	
	Option Description	U-Factor	CR	U-Factor	CR
33	Clear / Clear / Clear - SS - 3/4" IG	0.40	51	-	-
34	027 / Clear / Clear - SS - 3/4" IG	0.35	56	-	-
35	027 / Clear / Clear w/ 90% Argon - SS - 3/4" IG	0.31	59	-	-
36	027 / 027 / Clear - SS - 3/4" IG	0.32	59	-	-
37	027 / 027 / Clear w/ 90% Argon - SS - 3/4" IG	0.27	62	-	-

Notes :

1. All options available with bronze and grey tints on exterior surface.
2. "5m" stands for 3/16" glass thickness
3. Low-E's used:
 - 0.043 = PPG Solarban 60
 - 0.041 = Cardinal E172
 - 0.027 = Guardian RLE 71/38
 - 0.154 = LOF Advantage
 - 0.044 = Guardian PPII

U-Factor / CR
145.095 DH

		PPG Intercept Spacer			
		No Grids		Grids	
Option Description		U-Factor	CR	U-Factor	CR
1	Clear / Clear - SS,DS - 3/4" IG	0.48	43	0.49	43
2	SS Clear / DS Clear - 3/4" IG	0.48	42	0.49	42
3	043 / Clear - SS,DS - 3/4" IG	0.35	53	0.36	53
4	043 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	56	0.33	56
5	041 / Clear w/ 90% Argon - DS - 3/4" IG	0.31	55	0.33	55
6	027 / Clear - SS,DS - 3/4" IG	0.34	53	0.36	53
7	027 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	56	0.32	56

		Super Spacer			
		No Grids		Grids	
Option Description		U-Factor	CR	U-Factor	CR
8	Clear / Clear - SS,DS - 3/4" IG	0.47	44	0.48	44
9	DS Clear / SS Clear - 3/4" IG	0.47	44	0.49	44
10	DS Clear / SS Clear w/ 90% Argon - 3/4" IG	0.45	45	0.47	45
11	154 / Clear - DS - 3/4" IG	0.36	52	0.39	52
12	154 / Clear w/ 95% Argon- DS - 3/4" IG	0.33	55	0.35	55
13	043 / Clear - SS,DS - 3/4" IG	0.34	54	0.35	54
14	043 / Clear w/ 90% Argon- SS,DS - 3/4" IG	0.30	58	0.32	58
15	041 / Clear - SS,DS - 3/4" IG	0.34	54	0.35	54
16	041 / Clear w/ 90% Argon- SS,DS - 3/4" IG	0.30	58	0.32	58
17	027 / Clear - SS,DS - 3/4" IG	0.33	55	0.35	55
18	027 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.30	58	0.31	58
19	027 / 027 w/ 90% Argon - SS,DS - 3/4" IG	0.29	59	0.31	59

U-Factor / CR
145.095 DH

		<i>Duraseal Spacer</i>			
		<i>No Grids</i>		<i>Grids</i>	
	Option Description	U-Factor	CR	U-Factor	CR
20	Clear / Clear - SS,DS - 3/4" IG	0.47	44	0.49	44
21	044 / Clear - SS,DS - 3/4" IG	0.34	54	0.36	54
22	044 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	57	0.32	57
23	041 / Clear - SS,DS - 3/4" IG	0.34	54	0.36	54
24	041 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	57	0.32	57
25	027 / Clear w/ 90% Argon - DS - 3/4" IG	0.30	57	0.32	57

		<i>Aluminum Swiggle Spacer</i>			
		<i>No Grids</i>		<i>Grids</i>	
	Option Description	U-Factor	CR	U-Factor	CR
26	Clear / Clear - SS,DS - 3/4" IG	0.48	43	0.49	43
27	041 / Clear - SS,DS - 3/4" IG	0.34	53	0.36	53
28	041 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	57	0.32	57
29	027 / Clear - SS,DS - 3/4" IG	0.34	54	0.34	54
30	027 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.30	57	0.32	57

		<i>Cardinal XL Edge Spacer</i>			
		<i>No Grids</i>		<i>Grids</i>	
	Option Description	U-Factor	CR	U-Factor	CR
31	Clear / Clear - DS - 3/4" IG	0.47	43	0.49	43
32	041 / Clear w/ 90% Argon - DS - 3/4" IG	0.30	56	0.33	56

U-Factor / CR
145.095 DH

		<i>Triple Glazed Super Spacer</i>			
		<i>No Grids</i>		<i>Grids</i>	
	Option Description	U-Factor	CR	U-Factor	CR
33	Clear / Clear / Clear - SS - 3/4" IG	0.40	51	-	-
34	027 / Clear / Clear - SS - 3/4" IG	0.35	56	-	-
35	027 / Clear / Clear w/ 90% Argon - SS - 3/4" IG	0.31	60	-	-
36	027 / 027 / Clear - SS - 3/4" IG	0.31	59	-	-
37	027 / 027 / Clear w/ 90% Argon - SS - 3/4" IG	0.27	63	-	-

Notes :

1. All options available with bronze and grey tints on exterior surface.
2. "5m" stands for 3/16" glass thickness
3. Low-E's used:
 - 0.043 = PPG Solarban 60
 - 0.041 = Cardinal E172
 - 0.027 = Guardian RLE 71/38
 - 0.154 = LOF Advantage
 - 0.044 = Guardian PPII

U-Factor / CR
145.195 DH

		PPG Intercept Spacer			
		No Grids		Grids	
Option Description		U-Factor	CR	U-Factor	CR
1	Clear / Clear - SS,DS - 3/4" IG	0.48	42	0.49	42
2	SS Clear / DS Clear - 3/4" IG	0.48	42	0.49	42
3	043 / Clear - SS,DS - 3/4" IG	0.35	52	0.37	52
4	043 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.32	55	0.33	55
5	041 / Clear w/ 90% Argon - DS - 3/4" IG	0.31	54	0.34	54
6	027 / Clear - SS,DS - 3/4" IG	0.35	52	0.36	52
7	027 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	55	0.33	55

		Super Spacer			
		No Grids		Grids	
Option Description		U-Factor	CR	U-Factor	CR
8	Clear / Clear - SS,DS - 3/4" IG	0.47	44	0.48	44
9	DS Clear / SS Clear - 3/4" IG	0.47	44	0.49	44
10	DS Clear / SS Clear w/ 90% Argon - 3/4" IG	0.45	45	0.47	45
11	154 / Clear - DS - 3/4" IG	0.37	51	0.39	51
12	154 / Clear w/ 95% Argon- DS - 3/4" IG	0.33	54	0.36	54
13	043 / Clear - SS,DS - 3/4" IG	0.34	54	0.36	54
14	043 / Clear w/ 90% Argon- SS,DS - 3/4" IG	0.31	57	0.32	57
15	041 / Clear - SS,DS - 3/4" IG	0.34	54	0.36	54
16	041 / Clear w/ 90% Argon- SS,DS - 3/4" IG	0.31	57	0.32	57
17	027 / Clear - SS,DS - 3/4" IG	0.34	54	0.36	54
18	027 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.30	58	0.32	58
19	027 / 027 w/ 90% Argon - SS,DS - 3/4" IG	0.30	59	0.31	58

U-Factor / CR
145.195 DH

		<i>Duraseal Spacer</i>			
		<i>No Grids</i>		<i>Grids</i>	
	Option Description	U-Factor	CR	U-Factor	CR
20	Clear / Clear - SS,DS - 3/4" IG	0.48	43	0.49	43
21	044 / Clear - SS,DS - 3/4" IG	0.35	54	0.36	54
22	044 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	57	0.33	57
23	041 / Clear - SS,DS - 3/4" IG	0.35	54	0.36	54
24	041 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	57	0.33	57
25	027 / Clear w/ 90% Argon - DS - 3/4" IG	0.30	56	0.33	56

		<i>Aluminum Swiggle Spacer</i>			
		<i>No Grids</i>		<i>Grids</i>	
	Option Description	U-Factor	CR	U-Factor	CR
26	Clear / Clear - SS,DS - 3/4" IG	0.48	43	0.49	43
27	041 / Clear - SS,DS - 3/4" IG	0.35	53	0.37	53
28	041 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.32	56	0.33	56
29	027 / Clear - SS,DS - 3/4" IG	0.34	53	0.34	53
30	027 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	56	0.32	56

		<i>Cardinal XL Edge Spacer</i>			
		<i>No Grids</i>		<i>Grids</i>	
	Option Description	U-Factor	CR	U-Factor	CR
31	Clear / Clear - DS - 3/4" IG	0.47	43	0.49	43
32	041 / Clear w/ 90% Argon - DS - 3/4" IG	0.31	55	0.33	55

U-Factor / CR
145.195 DH

		Triple Glazed Super Spacer			
		No Grids		Grids	
	Option Description	U-Factor	CR	U-Factor	CR
33	Clear / Clear / Clear - SS - 3/4" IG	0.40	51	-	-
34	027 / Clear / Clear - SS - 3/4" IG	0.35	56	-	-
35	027 / Clear / Clear w/ 90% Argon - SS - 3/4" IG	0.31	59	-	-
36	027 / 027 / Clear - SS - 3/4" IG	0.32	59	-	-
37	027 / 027 / Clear w/ 90% Argon - SS - 3/4" IG	0.27	62	-	-

		Super Spacer Foam Filled			
		No Grids		Grids	
	Option Description	U-Factor	CR	U-Factor	CR
38	043 / Clear w/ 90% Argon- SS,DS - 3/4" IG	0.28	59	0.29	59
39	027 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.27	59	0.29	59

Notes :

1. All options available with bronze and grey tints on exterior surface.
2. "5m" stands for 3/16" glass thickness
3. Low-E's used:
 - 0.043 = PPG Solarban 60
 - 0.041 = Cardinal E172
 - 0.027 = Guardian RLE 71/38
 - 0.154 = LOF Advantage
 - 0.044 = Guardian PPII

SHGC/VT
143.095 DH

		SHGC			VT		
Option Description		No Grids	√1	∧1	No Grids	√1	∧1
1	Clear / Clear - SS,DS	0.61	0.55	0.49	0.64	0.57	0.50
2	Solar Bronze / Clear - SS,DS	0.49	0.44	0.39	0.47	0.42	0.37
3	Solar Gray / Clear - SS,DS	0.46	0.41	0.37	0.43	0.38	0.34
4	043 / Clear - SS,DS	0.31	0.28	0.25	0.55	0.49	0.43
5	Clear / 043 - SS,DS	0.37	0.34	0.30	0.55	0.49	0.43
6	Solar Bronze / 043 - SS,DS	0.30	0.27	0.24	0.41	0.36	0.32
7	Solar Gray / 043 - SS,DS	0.28	0.26	0.23	0.37	0.33	0.29
8	041 / Clear - SS,DS	0.33	0.29	0.26	0.56	0.50	0.44
9	Clear / 041 - SS,DS	0.39	0.35	0.31	0.56	0.50	0.44
10	Solar Bronze / 041 - SS,DS	0.31	0.28	0.25	0.41	0.37	0.33
11	Solar Gray / 041 - SS,DS	0.29	0.26	0.23	0.37	0.33	0.29
12	027 / Clear - SS,DS	0.31	0.28	0.25	0.55	0.49	0.44
13	Clear / 027 - SS,DS	0.38	0.34	0.30	0.55	0.49	0.44
14	Solar Bronze - 027 - SS,DS	0.30	0.27	0.24	0.41	0.36	0.32
15	Solar Gray / 027 - SS,DS	0.28	0.25	0.23	0.37	0.33	0.29
16	154 / Clear - SS,DS	0.51	0.46	0.41	0.58	0.52	0.46
17	Clear / 154 - SS,DS	0.56	0.50	0.45	0.58	0.52	0.46
18	Solar Bronze / 154 - SS,DS	0.44	0.40	0.36	0.43	0.38	0.34
19	Solar Gray / 154 - SS,DS	0.41	0.37	0.33	0.39	0.35	0.31
20	044 / Clear - SS,DS	0.32	0.29	0.26	0.54	0.48	0.42
21	Clear / 044 - SS,DS	0.37	0.34	0.30	0.54	0.48	0.42
22	Solar Bronze - 044 - SS,DS	0.30	0.27	0.24	0.40	0.35	0.31
23	Solar Gray / 044 - SS,DS	0.28	0.25	0.23	0.36	0.32	0.28
24	Clear / Clear / Clear - SS	0.56	0.50	0.45	0.59	0.53	0.47
25	027 / Clear / Clear - SS	0.29	0.26	0.23	0.51	0.45	0.40
26	027 / 027 / Clear - SS	0.25	0.23	0.20	0.44	0.39	0.35

Notes :

1. "5m" stands for 3/16" glass thickness
3. Low-E's used:
 - 0.043 = PPG Solarban 60
 - 0.041 = Cardinal E172
 - 0.027 = Guardian RLE 71/38
 - 0.154 = LOF Advantage
 - 0.044 = Guardian PPII

SHGC/VT
143.195 DH

		SHGC			VT		
Option Description		No Grids	√1	∧1	No Grids	√1	∧1
1	Clear / Clear - SS,DS	0.60	0.53	0.48	0.62	0.55	0.49
2	Solar Bronze / Clear - SS,DS	0.48	0.43	0.38	0.46	0.41	0.36
3	Solar Gray / Clear - SS,DS	0.44	0.40	0.35	0.41	0.37	0.32
4	043 / Clear - SS,DS	0.30	0.27	0.24	0.53	0.48	0.42
5	Clear / 043 - SS,DS	0.36	0.33	0.29	0.53	0.48	0.42
6	Solar Bronze / 043 - SS,DS	0.29	0.26	0.24	0.40	0.35	0.31
7	Solar Gray / 043 - SS,DS	0.27	0.25	0.22	0.36	0.32	0.28
8	041 / Clear - SS,DS	0.32	0.29	0.26	0.54	0.48	0.43
9	Clear / 041 - SS,DS	0.38	0.34	0.30	0.54	0.48	0.43
10	Solar Bronze / 041 - SS,DS	0.30	0.27	0.24	0.40	0.36	0.32
11	Solar Gray / 041 - SS,DS	0.28	0.25	0.23	0.36	0.32	0.28
12	027 / Clear - SS,DS	0.30	0.27	0.24	0.54	0.48	0.42
13	Clear / 027 - SS,DS	0.36	0.33	0.29	0.54	0.48	0.42
14	Solar Bronze - 027 - SS,DS	0.29	0.26	0.23	0.40	0.35	0.31
15	Solar Gray / 027 - SS,DS	0.27	0.25	0.22	0.36	0.32	0.28
16	154 / Clear - SS,DS	0.49	0.44	0.39	0.56	0.50	0.44
17	Clear / 154 - SS,DS	0.54	0.48	0.43	0.56	0.50	0.44
18	Solar Bronze / 154 - SS,DS	0.43	0.39	0.34	0.42	0.37	0.33
19	Solar Gray / 154 - SS,DS	0.40	0.36	0.32	0.38	0.34	0.30
20	044 / Clear - SS,DS	0.31	0.28	0.25	0.52	0.46	0.41
21	Clear / 044 - SS,DS	0.36	0.33	0.29	0.52	0.46	0.41
22	Solar Bronze - 044 - SS,DS	0.29	0.26	0.23	0.38	0.34	0.30
23	Solar Gray / 044 - SS,DS	0.27	0.24	0.22	0.35	0.31	0.27
24	Clear / Clear / Clear - SS	0.54	0.49	0.43	0.57	0.51	0.45
25	027 / Clear / Clear - SS	0.28	0.25	0.23	0.49	0.44	0.39
26	027 / 027 / Clear - SS	0.24	0.22	0.20	0.43	0.38	0.33

Notes :

1. "5m" stands for 3/16" glass thickness
3. Low-E's used:
 - 0.043 = PPG Solarban 60
 - 0.041 = Cardinal E172
 - 0.027 = Guardian RLE 71/38
 - 0.154 = LOF Advantage
 - 0.044 = Guardian PPII

SHGC/VT
145.095 DH

		SHGC			VT		
Option Description		No Grids	√1	∧1	No Grids	√1	∧1
1	Clear / Clear - SS,DS	0.61	0.55	0.49	0.64	0.57	0.50
2	Solar Bronze / Clear - SS,DS	0.49	0.44	0.39	0.47	0.42	0.37
3	Solar Gray / Clear - SS,DS	0.46	0.41	0.37	0.43	0.38	0.34
4	043 / Clear - SS,DS	0.31	0.28	0.25	0.55	0.49	0.43
5	Clear / 043 - SS,DS	0.37	0.34	0.30	0.55	0.49	0.43
6	Solar Bronze / 043 - SS,DS	0.30	0.27	0.24	0.41	0.36	0.32
7	Solar Gray / 043 - SS,DS	0.28	0.26	0.23	0.37	0.33	0.29
8	041 / Clear - SS,DS	0.33	0.29	0.26	0.56	0.50	0.44
9	Clear / 041 - SS,DS	0.39	0.35	0.31	0.56	0.50	0.44
10	Solar Bronze / 041 - SS,DS	0.31	0.28	0.25	0.41	0.37	0.33
11	Solar Gray / 041 - SS,DS	0.29	0.26	0.23	0.37	0.33	0.29
12	027 / Clear - SS,DS	0.31	0.28	0.25	0.55	0.49	0.44
13	Clear / 027 - SS,DS	0.38	0.34	0.30	0.55	0.49	0.44
14	Solar Bronze - 027 - SS,DS	0.30	0.27	0.24	0.41	0.36	0.32
15	Solar Gray / 027 - SS,DS	0.28	0.25	0.23	0.37	0.33	0.29
16	154 / Clear - SS,DS	0.51	0.46	0.41	0.58	0.52	0.46
17	Clear / 154 - SS,DS	0.56	0.50	0.45	0.58	0.52	0.46
18	Solar Bronze / 154 - SS,DS	0.44	0.40	0.36	0.43	0.38	0.34
19	Solar Gray / 154 - SS,DS	0.41	0.37	0.33	0.39	0.35	0.31
20	044 / Clear - SS,DS	0.32	0.29	0.26	0.54	0.48	0.42
21	Clear / 044 - SS,DS	0.37	0.34	0.30	0.54	0.48	0.42
22	Solar Bronze - 044 - SS,DS	0.30	0.27	0.24	0.40	0.35	0.31
23	Solar Gray / 044 - SS,DS	0.28	0.25	0.23	0.36	0.32	0.28
24	Clear / Clear / Clear - SS	0.56	0.50	0.45	0.59	0.53	0.47
25	027 / Clear / Clear - SS	0.29	0.26	0.23	0.51	0.45	0.40
26	027 / 027 / Clear - SS	0.25	0.23	0.20	0.44	0.39	0.35

Notes :

1. "5m" stands for 3/16" glass thickness
3. Low-E's used:
 - 0.043 = PPG Solarban 60
 - 0.041 = Cardinal E172
 - 0.027 = Guardian RLE 71/38
 - 0.154 = LOF Advantage
 - 0.044 = Guardian PPII

SHGC/VT
145.195 DH

		SHGC			VT		
Option Description		No Grids	√1	∧1	No Grids	√1	∧1
1	Clear / Clear - SS,DS	0.60	0.53	0.48	0.62	0.55	0.49
2	Solar Bronze / Clear - SS,DS	0.48	0.43	0.38	0.46	0.41	0.36
3	Solar Gray / Clear - SS,DS	0.44	0.40	0.35	0.41	0.37	0.32
4	043 / Clear - SS,DS	0.30	0.27	0.24	0.53	0.47	0.42
5	Clear / 043 - SS,DS	0.36	0.33	0.29	0.53	0.47	0.42
6	Solar Bronze / 043 - SS,DS	0.29	0.26	0.24	0.40	0.35	0.31
7	Solar Gray / 043 - SS,DS	0.27	0.25	0.22	0.36	0.32	0.28
8	041 / Clear - SS,DS	0.32	0.29	0.26	0.54	0.48	0.43
9	Clear / 041 - SS,DS	0.38	0.34	0.30	0.54	0.48	0.43
10	Solar Bronze / 041 - SS,DS	0.30	0.27	0.24	0.40	0.36	0.32
11	Solar Gray / 041 - SS,DS	0.28	0.25	0.23	0.36	0.32	0.28
12	027 / Clear - SS,DS	0.30	0.27	0.24	0.54	0.48	0.42
13	Clear / 027 - SS,DS	0.36	0.33	0.29	0.54	0.48	0.42
14	Solar Bronze - 027 - SS,DS	0.29	0.26	0.23	0.40	0.35	0.31
15	Solar Gray / 027 - SS,DS	0.27	0.25	0.22	0.36	0.32	0.28
16	154 / Clear - SS,DS	0.49	0.44	0.39	0.56	0.50	0.44
17	Clear / 154 - SS,DS	0.54	0.48	0.43	0.56	0.50	0.44
18	Solar Bronze / 154 - SS,DS	0.43	0.39	0.34	0.42	0.37	0.33
19	Solar Gray / 154 - SS,DS	0.40	0.36	0.32	0.38	0.34	0.30
20	044 / Clear - SS,DS	0.31	0.28	0.25	0.52	0.46	0.41
21	Clear / 044 - SS,DS	0.36	0.33	0.29	0.52	0.46	0.41
22	Solar Bronze - 044 - SS,DS	0.29	0.26	0.23	0.38	0.34	0.30
23	Solar Gray / 044 - SS,DS	0.27	0.24	0.22	0.35	0.31	0.27
24	Clear / Clear / Clear - SS	0.54	0.49	0.43	0.57	0.51	0.45
25	027 / Clear / Clear - SS	0.28	0.25	0.23	0.49	0.44	0.39
26	027 / 027 / Clear - SS	0.24	0.22	0.20	0.43	0.38	0.33

Notes :

1. "5m" stands for 3/16" glass thickness
3. Low-E's used:
 - 0.043 = PPG Solarban 60
 - 0.041 = Cardinal E172
 - 0.027 = Guardian RLE 71/38
 - 0.154 = LOF Advantage
 - 0.044 = Guardian PPII

This report is reissued in the name of Earthwise Group, L.L.C. through written authorization of Dayton Technologies to whom the original report was rendered. The original Dayton Report No. is 54088.01-116-45.

due to either air movement through the specimen or solar radiation effects. As a consequence, the Condensation Resistance results obtained do not reflect performance which may be expected from field installations because they do not account for solar radiation, air leakage effects, and the thermal bridge effects that may occur due to the specific design and construction of the fenestration system opening. Therefore, it should be recognized that the Condensation Resistance results obtained from this simulation method are for controlled laboratory conditions and should only be used for fenestration product comparisons and as input to condensation resistance performance analyses, which also include solar, air leakage and thermal bridge effects.

Ratings included in this report are for submittal to an NFRC-licensed IA for certification purposes and are not meant to be used for labeling purposes. Only those values identified on a valid Certification Authorization Report (CAR) are to be used for labeling purposes.

Detailed drawings, simulation data disks, and a copy of this report will be retained by ATI for a period of four years. The above results are the exclusive property of the client so named herein and are applicable to the sample simulated. ATI is an NFRC accredited simulation laboratory and all simulations were conducted in full compliance with NFRC approved procedures and specifications. The NFRC procedure requires that the computational results be verified through actual test results. This report does not constitute an opinion or endorsement by this laboratory. This report may not be reproduced except in full without the approval of ATI.

For ARCHITECTURAL TESTING, INC.:

SIMULATED BY:

REVIEWED BY:

Eric Leitner
Simulation Technician

Michael J. Thoman
Director - Simulations & Thermal Testing
Simulator In Responsible Charge

EL:ssr
54088.05-116-45

Attachments (pages):
Appendix A: Drawings and Bills of Material (36)

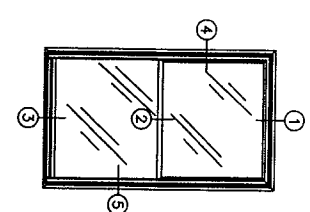
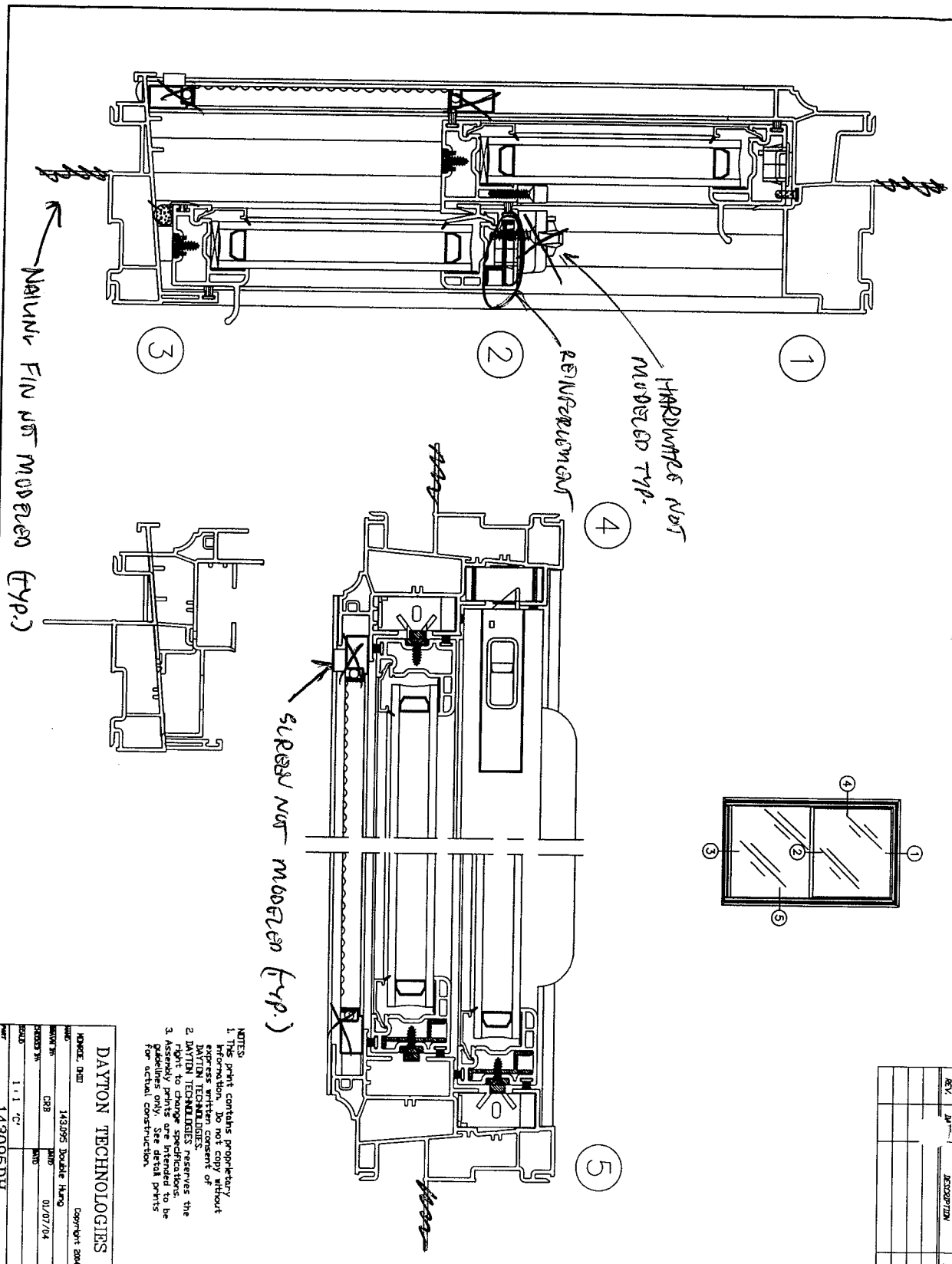
Revision Log

Rev. #	Date	Page(s)	Revision(s)
0	4/6/2005	All	Reiusse .01 report to Earthwise Group, L.L.C. with only their glazing options



All drawings and Bills of Material used in simulating this product are enclosed in this Appendix.

APPENDIX A



- NOTES:
1. This print contains proprietary information. Do not copy without express written consent of DAYTON TECHNOLOGIES.
 2. DAYTON TECHNOLOGIES reserves the right to change specifications.
 3. Assembly shown is intended to be guidelines only. See detail prints for actual construction.

DAYTON TECHNOLOGIES			
NAME: DHD	143095 Double Hang	Copyright 2004	
DATE: 01/07/04	CRB	01/07/04	
SCALE: 1/1" = 1'-0"			
PROJECT: 143095DHD			

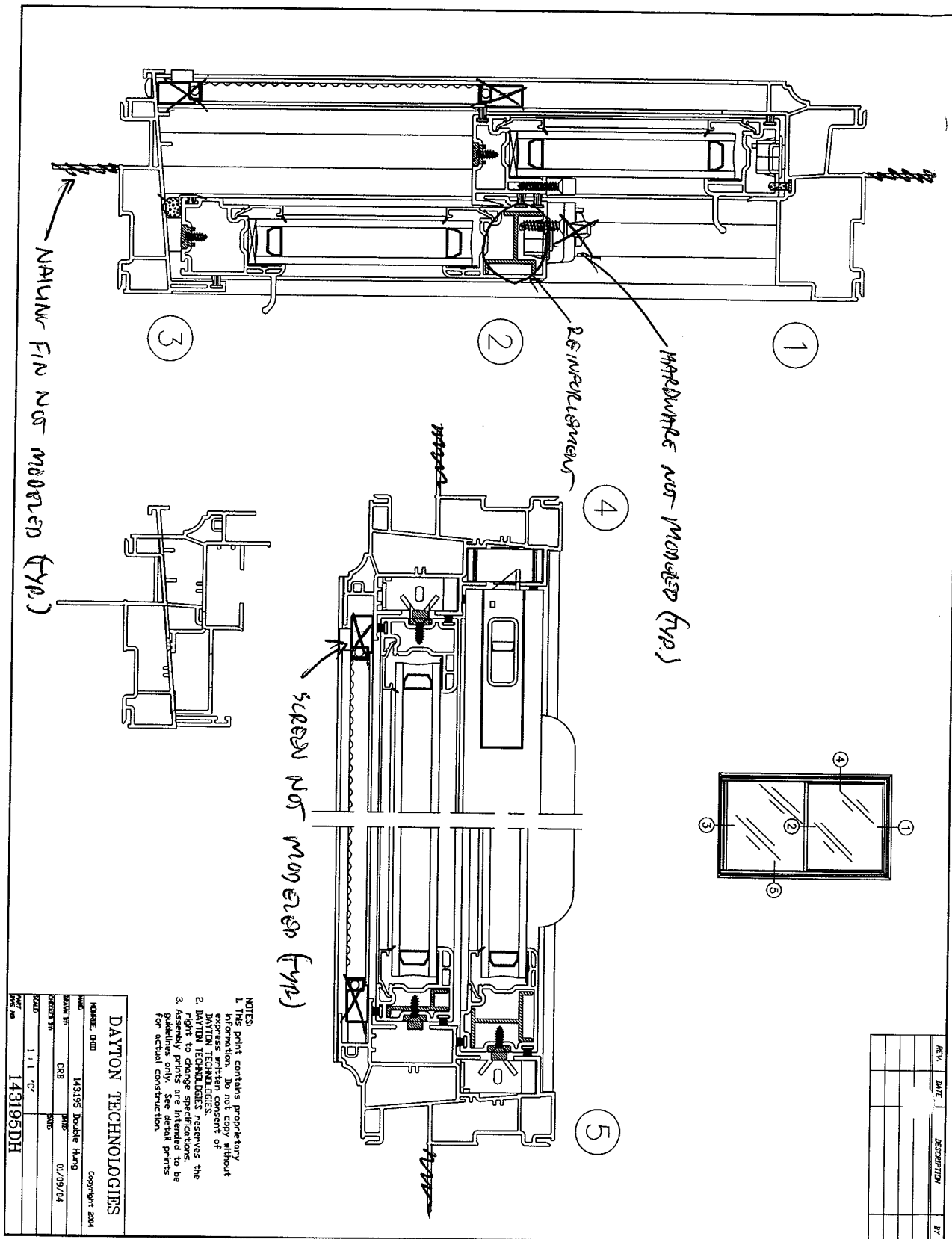


Architectural Testing

Test sample complies with these details.
 Deviations allowed.

Ref: 54088
 Date: 4/6/05 Tech: E3L

REV.	DATE	DESCRIPTION



- NOTES:
1. The print contains proprietary information. Do not copy without express written consent of DAYTON TECHNOLOGIES.
 2. DAYTON TECHNOLOGIES reserves the right to change specifications without notice.
 3. Assembly prints are intended to be guidelines only. See detail prints for actual construction.

DAYTON TECHNOLOGIES			
NAME, DHD	143195 Double Hung	Copyright 2004	
DATE	CRB	DATE	01/09/04
DESIGN BY		DATE	
SCALE	1:1	DATE	
REV. NO.	143195DH		



Architectural Testing

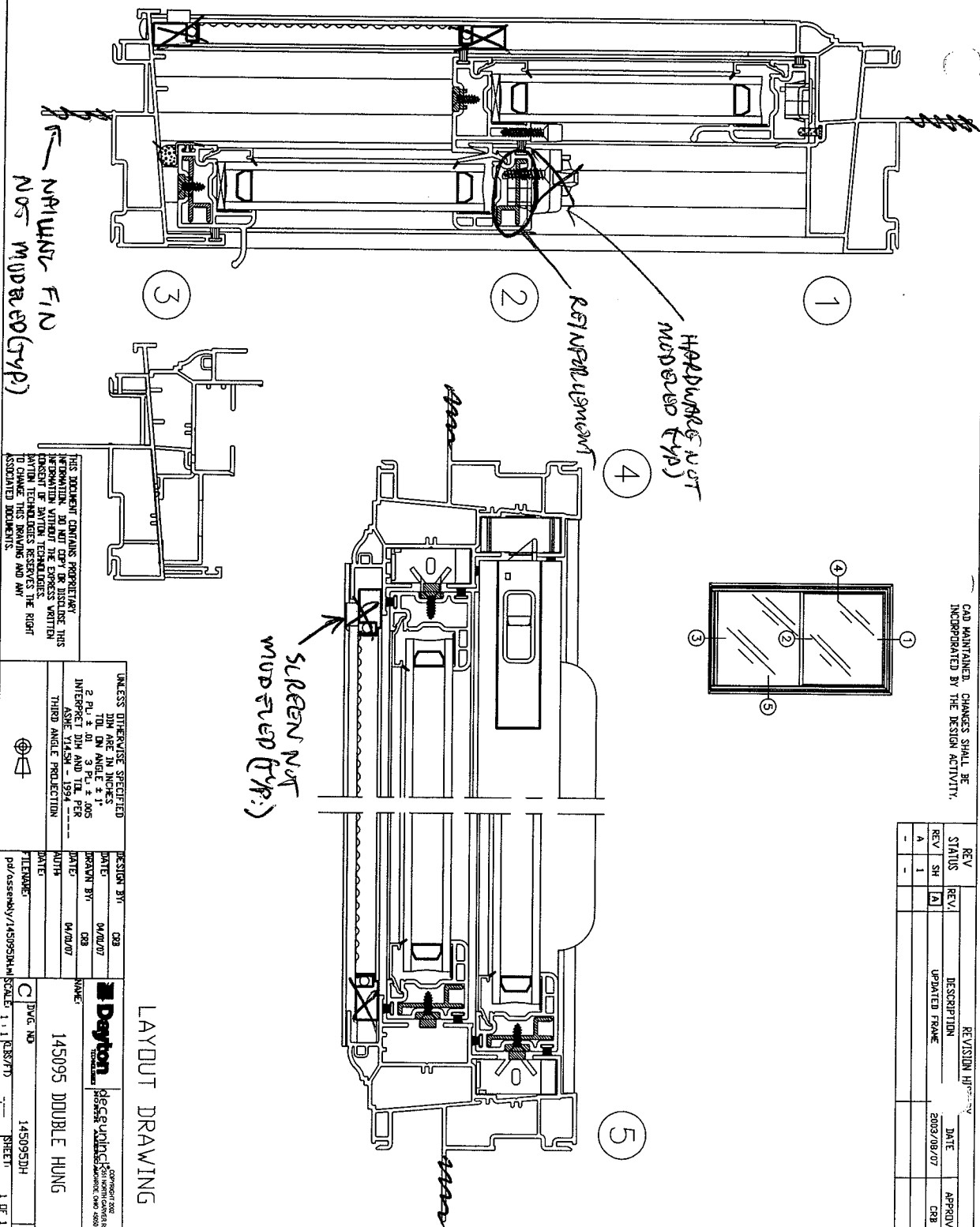
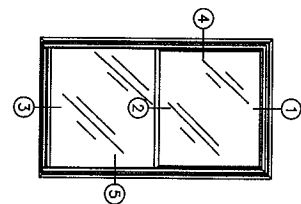
Test sample complies with these details.
Deviations are noted.

Report# 54088
Date 4/6/05 Tech ESL

REV.	DATE	DESCRIPTION	BY

CAD MAINTAINED. CHANGES SHALL BE INCORPORATED BY THE DESIGN ACTIVITY.

REV		REVISION HISTORY	
REV	STATUS	DESCRIPTION	DATE
1	A	UPDATED FRAME	2003/08/07
2			
3			
4			
5			



LAYOUT DRAWING

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UNLESS OTHERWISE SPECIFIED	
2 PL ± 0.1	DATE: 04/01/07
3 PL ± 0.05	DRAWN BY: CDB
INTERPRET DIM AND TOL PER	DATE: 04/01/07
ASME Y14.5M - 1994	AUTH: CDB
THIRD ANGLE PROJECTION	DATE:
⊕	FILE NAME: 145095.DWG
pdf/assembly/145095.DWG	SCALE: 1:1
	DATE: 04/01/07
	SHEET: 1 OF 1



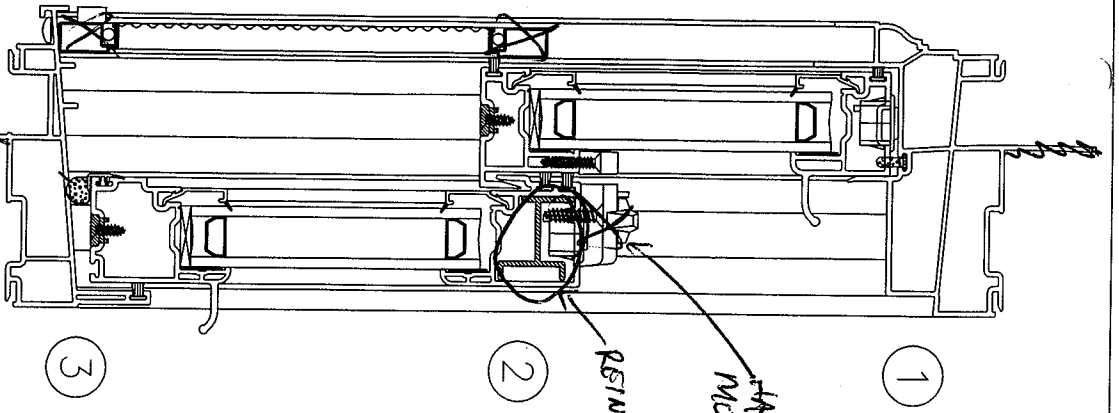
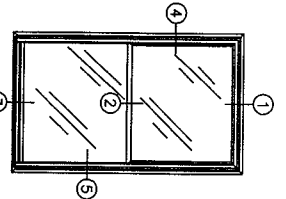
Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54088
Date 4/6/05 Tech CB

CAD MAINTAINED. CHANGES SHALL BE INCORPORATED BY THE DESIGN ACTIVITY.

REV		REVISION		DATE	APPROVED
STATUS	REV	DESCRIPTION	DATE	APPROVED	
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A	1				
-	-				

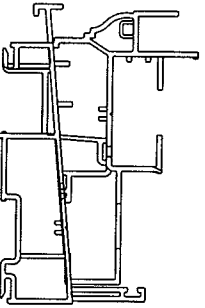
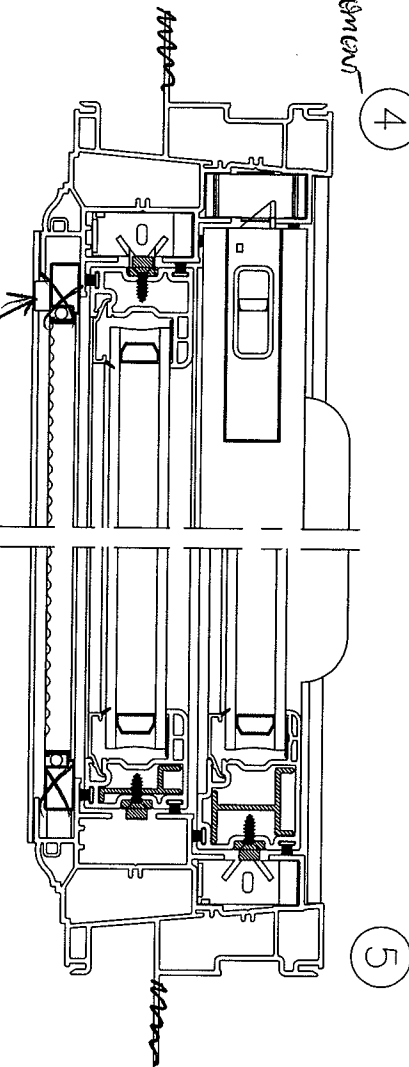


← BALUN FIN.
NOT MODIFIED (TYP)

← HARDWARE NOT
MODIFIED (TYP)

← REINFORCEMENT

← SCREEN NOT
MODIFIED (TYP)



LAYOUT DRAWING

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UNLESS OTHERWISE SPECIFIED		DESIGN BY:	CRB
DIM ARE IN INCHES		DATE:	04/01/07
TOL. ON ANGLE ± 1°		DRAWN BY:	CRB
INTERPRET DIM AND TOL PER		DATE:	04/01/07
ASME Y14.5M - 1994		DATE:	04/01/07
THIRD ANGLE PROJECTION		DATE:	04/01/07
		FILENAME:	145195 DOUBLE HUNG
		SCALE:	1:1 (AS SHOWN)
		REV:	1 OF 1



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54088
Date 4/6/05 Tech 31

143.000 DH FRAME - BILL OF MATERIALS - NC				
ITEM NO.	DESCRIPTION	QUANTITY	PART NO.	FAB DWG. NO.
1	HEAD	1	P8689	P8689F01
2	SILL	1	P8673 / P8674 Egress	P8673F03
3	JAMB	2	P8688	P8688F03
4				
5	CENTER FIN WEATHERSTRIPPING	AS REQ'D	.187 BK X 290 HT.	F
6	SCREEN ASSEMBLY	1	SCREEN - 13	GGG
7	WEATHER SEAL - AT HEAD (P8689)	AS REQ'D	Q-LON - #Q375T190	I
8				
9				
10	BALANCE SYSTEM - CROSSBOW		36" and Less / Over 36" Wide	
11	BALANCE	4	1000 / 10001	BBB
12		4	1200 / 1201	BBB
13		4	1400 / 1401	BBB
14		4	1600 / 1601	BBB
15		4	1800 / 1801	BBB
16		4	2000 / 2001	BBB
17		4	2200 / 2201	BBB
18		4	2400 / 2401	BBB
19		4	2600 / 2601	BBB
20		4	2800 / 2801	BBB
21		4	3000 / 3001	BBB
22		4	3200 / 3201	BBB
23		4	3400 / 3401	BBB
24		4	3600 / 3601	BBB
25		4	3800 / 3801	BBB
26		4	4000 / 4001	BBB
27		4	81020	D
28	1/2" REAR BRAKE SHOE			
29				
30				
31				
32				
33	BALANCE SCREW ANCHOR	2	9637	D
34	BALANCE SCREW	2	#8 x 1 1/4" PFH	B, Z
35				
36				
37				
38	FRAME SCREWS AT SCREEN TRACK	2	#8 x 3/4" PPH	B, Z
39				
40				
Rev	Date	Description	By	

DAYTON TECHNOLOGIES
 MONROE, OH COPYRIGHT 2000
 NAME: 143.000 DH
 DWN BY: CRB
 CHRD BY: 8/9/2000
 DWG NO: 143000DH-NC.XIS



Architectural Testing

Test sample complies with these details.
 Deviations are noted.

Report# 54088
 Date 4/6/05 Tech ESL

145.000 DH FRAME - BILL OF MATERIALS - NC

ITEM NO.	DESCRIPTION	QUANTITY	PART NO.	FAB DWG. NO.	
1	HEAD	1	10008651	10008651F01	A
2	SILL	1	10008673	10008673F04	A
3	JAMB	2	10008653	10008653F01	A
4					
5					
6	CENTER FIN WEATHERSTRIPPING	AS REQ'D	.187 BK. X .290 HT.		F
7	SCREEN ASSEMBLY	1	SCREEN - 13		GGG
8	WEATHER SEAL - AT HEAD (P8689)	AS REQ'D	Q-LON - #03751190		I
9					
10	BALANCE SYSTEM - CROSSBOW				
11	BALANCE	4	36" and Less / Over 36" Wide		
12		4	1000 / 10001		BBB
13		4	1200 / 1201		BBB
14		4	1400 / 1401		BBB
15		4	1600 / 1601		BBB
16		4	1800 / 1801		BBB
17		4	2000 / 2001		BBB
18		4	2200 / 2201		BBB
19		4	2400 / 2401		BBB
20		4	2600 / 2601		BBB
21		4	2800 / 2801		BBB
22		4	3000 / 3001		BBB
23		4	3200 / 3201		BBB
24		4	3400 / 3401		BBB
25		4	3600 / 3601		BBB
26		4	3800 / 3801		BBB
27		4	4000 / 4001		BBB
28	1/2" REAR BRAKE SHOE	4	81020		D
29					
30	OPTIONAL:				
31	EGRESS SILL	1	10008674	10008674F04	A
32	DP-50 SILL	1	10008672	10008672F04	A
33					
34	BALANCE SCREW ANCHOR	2	9637		D
35	BALANCE SCREW	2	#8 x 1 1/4" PPH		B, Z
36					
37	FRAME SCREWS AT SCREEN TRACK	2	#8 x 3/4" PPH		B, Z
38					
39					
40					

DAYTON TECHNOLOGIES

MONROE, OH COPYRIGHT 2003

NAME: 145.000 DH

DWN BY: CRB 10/1/2003

CHKD BY: 145000DH-NC.XLS



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54088
Date 4/6/05 Tech 652

000.095 DH SASH - BILL OF MATERIALS

ITEM NO.	DESCRIPTION	QUANTITY	PART NO.	FAB DWG. NO	SOURCE
26	TOP LIFT RAIL - EGRESS TOP LIFT RAIL	1	10008884 ✓	10008884F01	A
27	KEEPER RAIL	1	10008890 ✓	P8890-F-01	A
28	LOCK RAIL	1	10008844 ✓	P8854-F-01	A
29	BOTTOM LIFT RAIL	1	10008840 ✓	P8850-F-02	A
30	STILE	4	10008842 ✓	P8852-F-09	A
31	BULB SEAL	1	P8206, P8202	P8206-F-01 / P8202-F-01	A
32	INTERLOCK GLAZING BEAD	1	P5551	P5551-F-01	A
33	GLAZING BEAD	7	P8127 ✓	P8127-F-01	A
34	SASH REINFORCEMENT (ALUM.)	AS REQ'D	A6202 ✓	A6202-F-01	D
35	CENTER FIN WEATHERSTRIPPING	AS REQ'D	.187 BK. X .290 HT.	AT DT	D
36	LOCK/CAM - NO NIBS	1 OR 2	L20010001R01		D
37	LOCK/CAM - NESTING NIBS	1 OR 2	L20110001R01		D
38	KEEPER	4	12912		D
39	TILT LATCH ASSEMBLY	4	78045 / 78145		D
40	PIVOT BAR - "L" SHAPED LOCK IN	4	13036		D
41	OPTIONAL PIVOT BAR - STRAIGHT LOCK IN	2	1/8" x 3/4"		W
42	3/4" INSULATED GLASS	AS REQ'D			B, Z
43	SETTING BLOCKS (REFER TO IG SUPPLIER GUIDELINES)	2 OR 4	#8 x 3/4 PAINTED PFH		B
44	GLAZING COMPOUND	2 OR 4	#6 x 3/4 PAINTED PFH		B, Z
45	LOCK SCREW	8	#8 x 3/8 PPH		D
46	KEEPER SCREW	2	10008489		A
47	PIVOT BAR SCREW	4	P5109		A
48	NIGHT LATCH / VENT STOP - DELUXE	2			
49	OPTIONAL SASH STOP	2			
50	OPTIONAL BALANCE COVER	2			
51					
52					

DAYTON TECHNOLOGIES	
NAME: MONROE, OH	COPYRIGHT 2004
DWN BY: CRB	000.095 DH
CHKD BY:	5/2/2004
DWG NO:	000095DH.xls



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54088
Date 4/6/05 Tech 31

000.195 DH SASH - BILL OF MATERIALS

ITEM NO.	DESCRIPTION	QUANTITY	PART NO.	FAB DWG. NO	SOURCE
26	TOP LIFT RAIL	1	P8840 ✓	P8850-F-01	A
27	KEEPER RAIL	1	P8890 ✓	P8890-F-01	A
28	LOCK RAIL	1	P8846 ✓	P8856-F-01	A
29	BOTTOM LIFT RAIL	1	P8841 ✓	P8851-F-01	A
30	STILE (BOTTOM SASH)	2	P8843 ✓	P8853-F-01	A
31	STILE (TOP SASH)	2	P8842 ✓	P8852-F-09	A
32	BULB SEAL	1	P8206 / P8202	P8206F01 / P8202F01	A
33	OPTIONAL SASH STOP	4	P8487		A
34	OPTIONAL BALANCE COVER	2	P5109		A
35	3/4" INSULATED GLASS	2			A
36	GLAZING BEAD	7	P8127 ✓	P8127-F-01	A
37	OPTIONAL GLAZING BEAD	7	P5470	P5470-F-01	A
38	SASH REINFORCEMENT (ALUM.)	AS REQ'D	<u>P8202</u> / <u>P10300021</u>	STRAIGHT CUT	000
39	CENTER FIN WEATHERSTRIPPING	AS REQ'D	.187 BK. X .290 HT.	AT DT	
40	LOCK/CAM - NO NIBS	1 OR 2	L20010001R01		D
41	LOCK/CAM - NESTING NIBS	1 OR 2	L20110001R01		D
42	KEEPER	4	12912		D
43	TILT LATCH ASSEMBLY	4	78045 / 78145		D
44	PIVOT BAR - "L" SHAPED LOCK IN	4	13036		D
45	PIVOT BAR - STRAIGHT LOCK IN	4	12310 (WILL REQ. DIFFERENT FAB)		D
46	SETTING BLOCKS (REFER TO IG SUPPLIER GUIDELINES)	AS REQ'D	1/8" x 3/4"		W
47	GLAZING COMPOUND	2 OR 4	#8 x 3/4 PAINTED PFH		B, Z
48	LOCK SCREW	2 OR 4	#6 x 3/4 PAINTED PFH		B
49	KEEPER SCREW	2 OR 4	#8 x 3/8 PPH		B, Z
50	PIVOT BAR SCREW	8			D
51					
52	NIGHT LATCH / VENT STOP - DELUXE	2	86090		D

Rev	Date	Description	By

DAYTON TECHNOLOGIES	MONROE, OH	COPYRIGHT 2004
NAME:	000.195 DH Mastic	
DWN BY:	CRB	5/2/2004
CHKD BY:		
DWG NO:	000195DH.XLS	



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54088
Date 4/6/05 Tech ESL

UNLESS OTHERWISE SPECIFIED		SECTION BY: CHB		 STANDARD 2007 INTERNATIONAL 1221 AVENUE OF THE AMERICAS, NEW YORK, NY 10020		STANDARD 2007 INTERNATIONAL 1221 AVENUE OF THE AMERICAS, NEW YORK, NY 10020	
DIM ARE IN INCHES		DATE: 02/02/05		DRAWN BY: TJA			
2 PL. DR. ANGLE 45°		INTERPRET DIM AND TOL PER		DATE: 02/06/05			
ASME Y14.5M - 1994		THIRD ANGLE PROJECTION		AUTH:			
		TITLE:		DWG. NO. 10008651_SHS SCALE 1:1 CLASS/FY --- SHEET 3			
ELEVATION		HEAD FRAME-DH		REVISION 10008651_SHS-A-W SCALE 1:1 CLASS/FY --- SHEET 3			

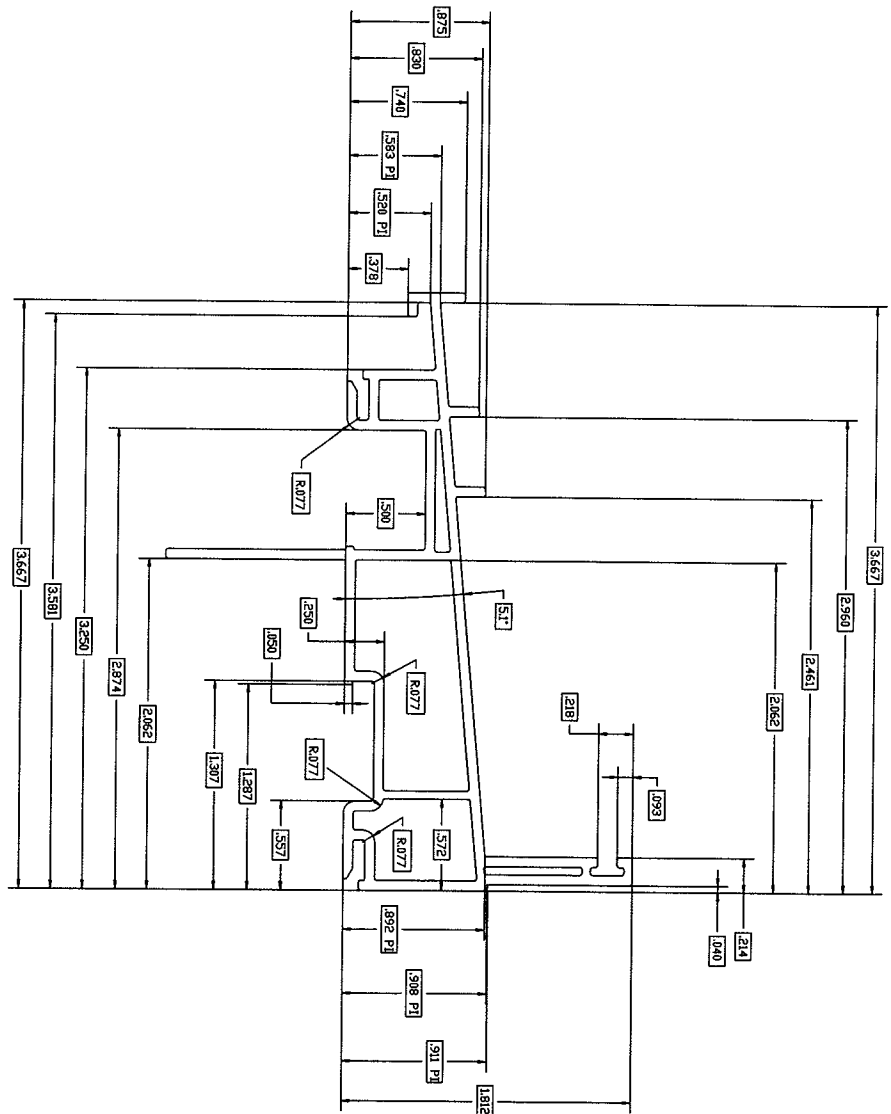


Report# 54088
Date 4/6/05 Tech EC



Test sample complies with these details.
Deviations are noted.

Report# 54088
Date 4/6/05 Tech 18C



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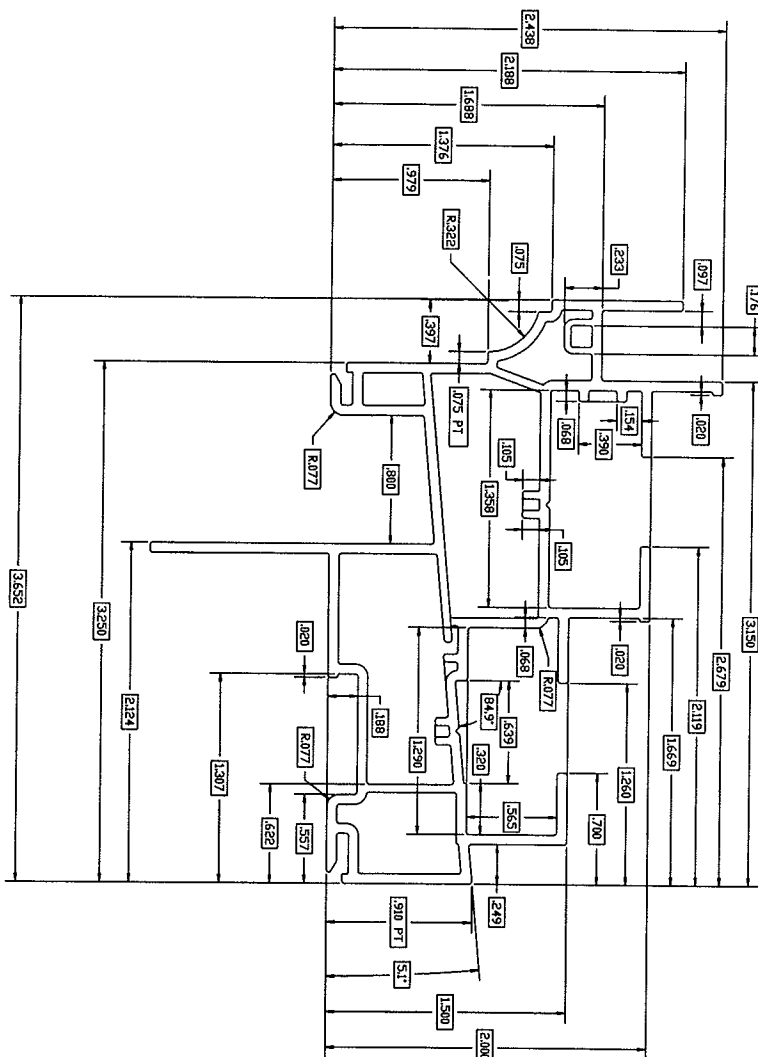
UNLESS OTHERWISE SPECIFIED		DESIGN BY: CRB	
DIM LINE IN INCHES		DATE: 02/06/08	
2 PL ± 0.1		DRAWN BY: DE L	
3 PL ± 0.05		DATE: 02/07/02	
INTERPRET DIM AND TOL PER ASME Y14.5M - 1994		DATE: 02/07/02	
THIRD ANGLE PROJECTION		DATE: 02/07/02	
TITLE: Hpd/Cad/ports/		NAME: SILL FRAME - SH/DH	
8673/1008673 SHCW		SCALE: 2.1	
C		DWG. NO. 1008673	
SHEET 3		REV. -	



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54088
Date 4/6/05 Tech ESL



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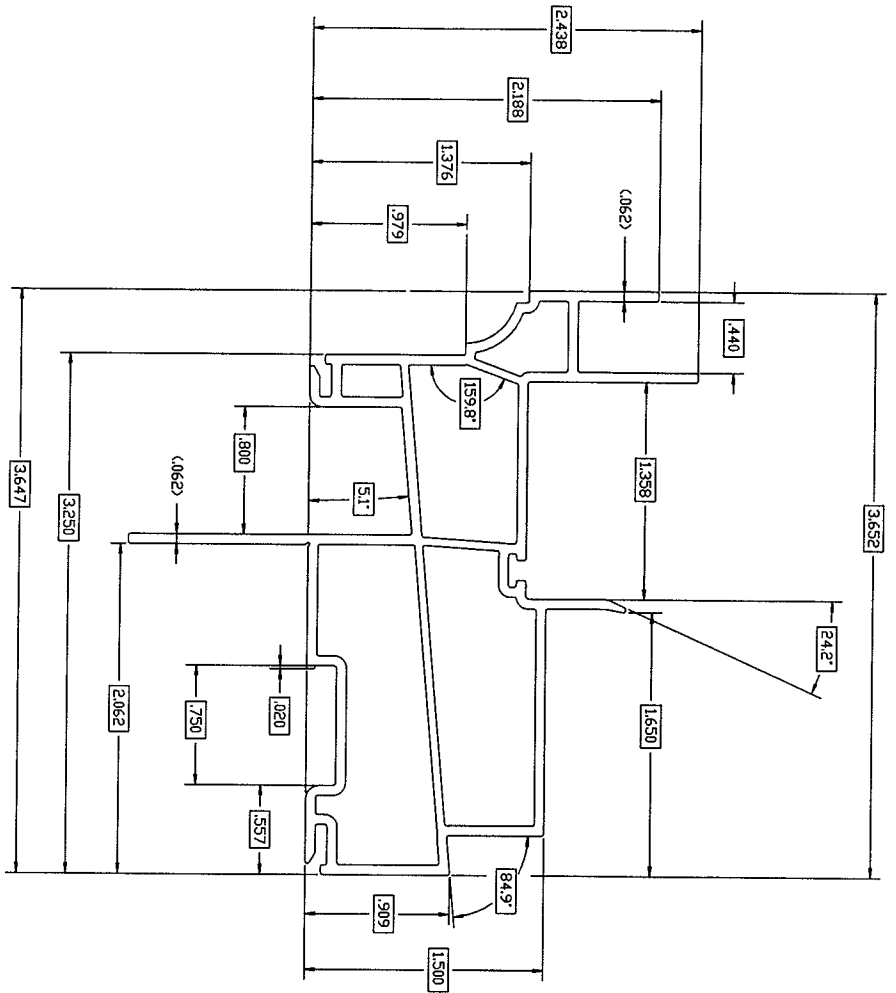
UNLESS OTHERWISE SPECIFIED		DESIGN BY: DB		DATE: 08/05/21	
DIM ARE IN INCHES		DRAWN BY: TJH		DATE: 03/07/28	
2 PL. 1/2" DIA. ANGLE x 1"		INTERPRET DIM AND TOL PER		ASME Y14.5M - 1994	
THIRD ANGLE PROJECTION		TITLE: MAIN FRAME - DH		SCALE: 1/16" = 1'-0"	
PROJECT: 10008688-SH3		SHEET: 3		REV: -	
Hood/Cool/Ports/...		8688/10008688-SH3.M			



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54088
Date 4/6/05 Tech EL



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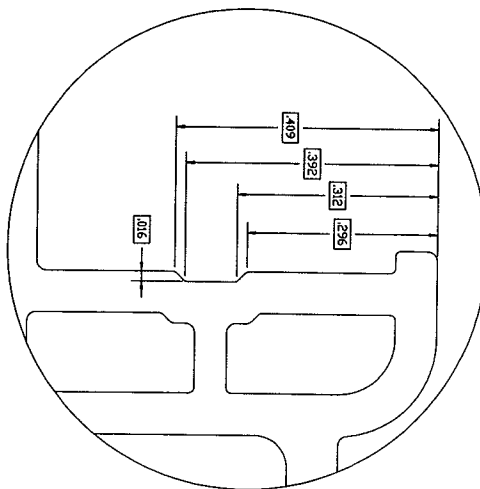
UNLESS OTHERWISE SPECIFIED		DESIGN BY: DB	
DIM ARE IN INCHES		DATE: 06/06/11	
TOL ON ANGLE ± 1°		DRAWN BY: J.E. L	
2 PL. 1/2" THICK		DATE: 04/09/05	
INTERPRET DIM AND TOL PER		NOTE: 10008689-SH3	
ASME Y14.5M - 1994		TITLE: DOUBLE HUNG HEAD FRAME	
THIRD ANGLE PROJECTION		SCALE: 2:1 (AS SHOWN)	
DATE: 10/03/11		SHEET: 3	
PROJECT: 10008689-SH3		REV: -	
FILE NAME: 10008689-SH3		SHEET: 3	
10008689-SH3		SHEET: 3	



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54088
Date 4/6/05 Tech ESL



DETAIL 'A'
SCALE 8" = 1'

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DESIGN BY	CRB	DATE	03/11/07	 DAYTON TECHNOLOGIES	
DRAWN BY	CRB	DATE	03/11/08	 DAYTON TECHNOLOGIES	
DATE		PULL/LIFT SASH		 DAYTON TECHNOLOGIES	
TITLE/REV	Hydro/ced/pwr/sf/	SCALE	4:1 (3/8"=1")	 DAYTON TECHNOLOGIES	
REV	10008840-SH3	SHEET	3	 DAYTON TECHNOLOGIES	



Test sample complies with these details.
Deviations are noted.

Report# 54088
Date 4/6/05 Tech E3L

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 Dayton INTERNATIONAL		CONVENTION 2002 100008941.SH3 100008941.SH3(4)	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES 2 PL. $\pm$.01 3 PL. $\pm$.005 INTERPRET DIM AND TOL PER ASME Y14.5M - 1994		DECISION BY: CRB DATE: 03/11/10 DRAWN BY: CRB DATE: 03/11/10 THIRD ANGLE PROJECTION DATE:	
		TITLE BLOCK: Hpd/cad/Papers/8841/ 100008941.SH3(4)	
Dwg. NO. 100008941.SH3		REC. A	
SCALE 4:1 (3/5"=1")		SHEET 3	



Test sample complies with these details.
Deviations are noted.

Report# 54088
Date 4/6/05 Tech BZ

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		DIM ARE IN INCHES	
		FRACTIONS ARE 16THS	
		2 PL. ± .01 3 PL. ± .005	
		INTERPRET DIM AND TOL. PER	
		ASME Y14.5 - 1994	
		THIRD ANGLE PROJECTION	
		DATE: 03/11/06	
		DESIGN BY: CRB	
		DATE: 03/11/06	
		DRAWN BY: CRB	
		DATE: 03/11/06	
		ROUTED	
		DATE:	
		FILED BY: HPO/csd/pars/SB4/c/	
		10008942.SHRW	
		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
		DESIGN BY: CRB	
		DATE: 03/11/06	
		DRAWN BY: CRB	
		DATE: 03/11/06	
		ROUTED	
		DATE:	
		FILED BY: HPO/csd/pars/SB4/c/	
		10008942.SHRW	
		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
		DESIGN BY: CRB	
		DATE: 03/11/06	
		DRAWN BY: CRB	
		DATE: 03/11/06	
		ROUTED	
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		FILED BY: HPO/csd/pars/SB4/c/	
		10008942.SHRW	
		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
		DESIGN BY: CRB	
		DATE: 03/11/06	
		DRAWN BY: CRB	
		DATE: 03/11/06	
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		DATE:	
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		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
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		DATE: 03/11/06	
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		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
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		DATE: 03/11/06	
		DESIGN BY: CRB	
		DATE: 03/11/06	
		DRAWN BY: CRB	
		DATE: 03/11/06	
		ROUTED	
		DATE:	
		FILED BY: HPO/csd/pars/SB4/c/	
		10008942.SHRW	
		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
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		TITLE: MAIN SASH	
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		SCALE: 4:1 (LBS/7.75)	
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		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
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		DATE: 03/11/06	
		DRAWN BY: CRB	
		DATE: 03/11/06	
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		DATE:	
		FILED BY: HPO/csd/pars/SB4/c/	
		10008942.SHRW	
		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
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		DATE: 03/11/06	
		ROUTED	
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		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
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		DRAWN BY: CRB	
		DATE: 03/11/06	
		ROUTED	
		DATE:	
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		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
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		DATE: 03/11/06	
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		DATE:	
		FILED BY: HPO/csd/pars/SB4/c/	
		10008942.SHRW	
		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
		DESIGN BY: CRB	
		DATE: 03/11/06	
		DRAWN BY: CRB	
		DATE: 03/11/06	
		ROUTED	
		DATE:	
		FILED BY: HPO/csd/pars/SB4/c/	
		10008942.SHRW	
		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
		DESIGN BY: CRB	
		DATE: 03/11/06	
		DRAWN BY: CRB	
		DATE: 03/11/06	
		ROUTED	
		DATE:	
		FILED BY: HPO/csd/pars/SB4/c/	
		10008942.SHRW	
		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
		DESIGN BY: CRB	
		DATE: 03/11/06	
		DRAWN BY: CRB	
		DATE: 03/11/06	
		ROUTED	
		DATE:	
		FILED BY: HPO/csd/pars/SB4/c/	
		10008942.SHRW	
		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
		DESIGN BY: CRB	
		DATE: 03/11/06	
		DRAWN BY: CRB	
		DATE: 03/11/06	
		ROUTED	
		DATE:	
		FILED BY: HPO/csd/pars/SB4/c/	
		10008942.SHRW	
		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
		DESIGN BY: CRB	
		DATE: 03/11/06	
		DRAWN BY: CRB	
		DATE: 03/11/06	
		ROUTED	
		DATE:	
		FILED BY: HPO/csd/pars/SB4/c/	
		10008942.SHRW	
		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
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		DATE: 03/11/06	
		ROUTED	
		DATE:	
		FILED BY: HPO/csd/pars/SB4/c/	
		10008942.SHRW	
		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
		DESIGN BY: CRB	
		DATE: 03/11/06	
		DRAWN BY: CRB	
		DATE: 03/11/06	
		ROUTED	
		DATE:	
		FILED BY: HPO/csd/pars/SB4/c/	
		10008942.SHRW	
		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
		DESIGN BY: CRB	
		DATE: 03/11/06	
		DRAWN BY: CRB	
		DATE: 03/11/06	
		ROUTED	
		DATE:	
		FILED BY: HPO/csd/pars/SB4/c/	
		10008942.SHRW	
		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
		DESIGN BY: CRB	
		DATE: 03/11/06	
		DRAWN BY: CRB	
		DATE: 03/11/06	
		ROUTED	
		DATE:	
		FILED BY: HPO/csd/pars/SB4/c/	
		10008942.SHRW	
		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
		DESIGN BY: CRB	
		DATE: 03/11/06	
		DRAWN BY: CRB	
		DATE: 03/11/06	
		ROUTED	
		DATE:	
		FILED BY: HPO/csd/pars/SB4/c/	
		10008942.SHRW	
		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
		DESIGN BY: CRB	
		DATE: 03/11/06	
		DRAWN BY: CRB	
		DATE: 03/11/06	
		ROUTED	
		DATE:	
		FILED BY: HPO/csd/pars/SB4/c/	
		10008942.SHRW	
		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
		DESIGN BY: CRB	
		DATE: 03/11/06	
		DRAWN BY: CRB	
		DATE: 03/11/06	
		ROUTED	
		DATE:	
		FILED BY: HPO/csd/pars/SB4/c/	
		10008942.SHRW	
		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
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		DATE: 03/11/06	
		DRAWN BY: CRB	
		DATE: 03/11/06	
		ROUTED	
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		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
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		DATE: 03/11/06	
		ROUTED	
		DATE:	
		FILED BY: HPO/csd/pars/SB4/c/	
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		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
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		DATE: 03/11/06	
		ROUTED	
		DATE:	
		FILED BY: HPO/csd/pars/SB4/c/	
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		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
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		DATE: 03/11/06	
		ROUTED	
		DATE:	
		FILED BY: HPO/csd/pars/SB4/c/	
		10008942.SHRW	
		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	
		TITLE: MAIN SASH	
		NAME:	
		DATE: 03/11/06	
		DESIGN BY: CRB	
		DATE: 03/11/06	
		DRAWN BY: CRB	
		DATE: 03/11/06	
		ROUTED	
		DATE:	
		FILED BY: HPO/csd/pars/SB4/c/	
		10008942.SHRW	
		10008942.SHRW	
		SCALE: 4:1 (LBS/7.75)	
		SHEET 3	
		REV: -	
		DWG. NO. 10008942-SH3	



Report# 54088
Date 4/6/05 Tech ESL

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION. DO NOT COPY OR DISCLOSE THIS INFORMATION WITHOUT THE EXPRESS WRITTEN CONSENT OF DAYTON TECHNOLOGIES. DAYTON TECHNOLOGIES RESERVES THE RIGHT TO CHANGE THIS DRAWING AND ANY ASSOCIATED DOCUMENTS.

UNLESS OTHERWISE SPECIFIED		DESIGN BY	CRB
DIM ARE IN INCHES		DATE	03/11/06
2 PL. 10 3 PL. 10 4 PL. 105		DESIGN BY	CRB
INTERPRET DIM AND TOL PER		DATE	03/11/06
ASME Y14.5M - 1994			
THIRD ANGLE PROJECTION			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			



Test sample complies with these details.
Deviations are noted.

Report# 54088
Date 4/6/05 Tech 32

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION AND IS NOT TO BE DISCLOSED WITHOUT THE EXPRESS WRITTEN CONSENT OF DAYTON TECHNOLOGIES. DAYTON TECHNOLOGIES RESERVES THE RIGHT TO CHANGE THIS DRAWING AND ANY ASSOCIATED DOCUMENTS.		UNLESS OTHERWISE SPECIFIED DIM ARE IN INCHES TOLERANCE 1. UNFRACTIONAL 2. PLU. 0.005 INTERPRET DIM AND TOL PER ASME Y14.5M - 1994	
THIRD ANGLE PROJECTION		DESIGN BY: CB8 DATE: 03/10/07 DRAWN BY: CB8 DATE: 03/10/07	
NAME: LDC SASH		DATE: 03/10/07	
FILE NAME: Hdd/cad/pw/15/98/44 1000894.SHG		DATE: 03/10/07	
SCALE: 1:1 (1/8"=1')		SHEET: 3	



Test sample complies with these details.
Deviations are noted.

Report# 54088
Date 4/6/03 Tech ESL

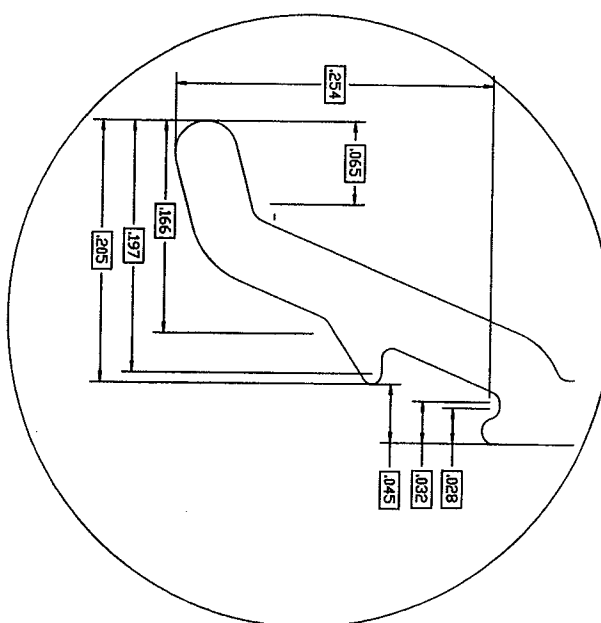
[illegible]

Report# 54088
Date 4/6/03 Tech CS2

UNLESS OTHERWISE SPECIFIED	DESIGN BY:	DATE:	BY:	DATE:	BY:
DO NOT SCALE	DATE:	BY:	DATE:	BY:	DATE:
2" P. T. IN ANGLE ± 1/8"	DATE:	BY:	DATE:	BY:	DATE:
INTERPRET DIM AND TOL PER	DATE:	BY:	DATE:	BY:	DATE:
ASME Y14.5M - 1994	DATE:	BY:	DATE:	BY:	DATE:
THIRD ANGLE PROJECTION	DATE:	BY:	DATE:	BY:	DATE:
⊕	DATE:	BY:	DATE:	BY:	DATE:
UNLESS OTHERWISE SPECIFIED	DESIGN BY:	DATE:	BY:	DATE:	BY:
DO NOT SCALE	DATE:	BY:	DATE:	BY:	DATE:
2" P. T. IN ANGLE ± 1/8"	DATE:	BY:	DATE:	BY:	DATE:
INTERPRET DIM AND TOL PER	DATE:	BY:	DATE:	BY:	DATE:
ASME Y14.5M - 1994	DATE:	BY:	DATE:	BY:	DATE:
THIRD ANGLE PROJECTION	DATE:	BY:	DATE:	BY:	DATE:
⊕	DATE:	BY:	DATE:	BY:	DATE:



Report# 54088
Date 4/6/08 Tech ER



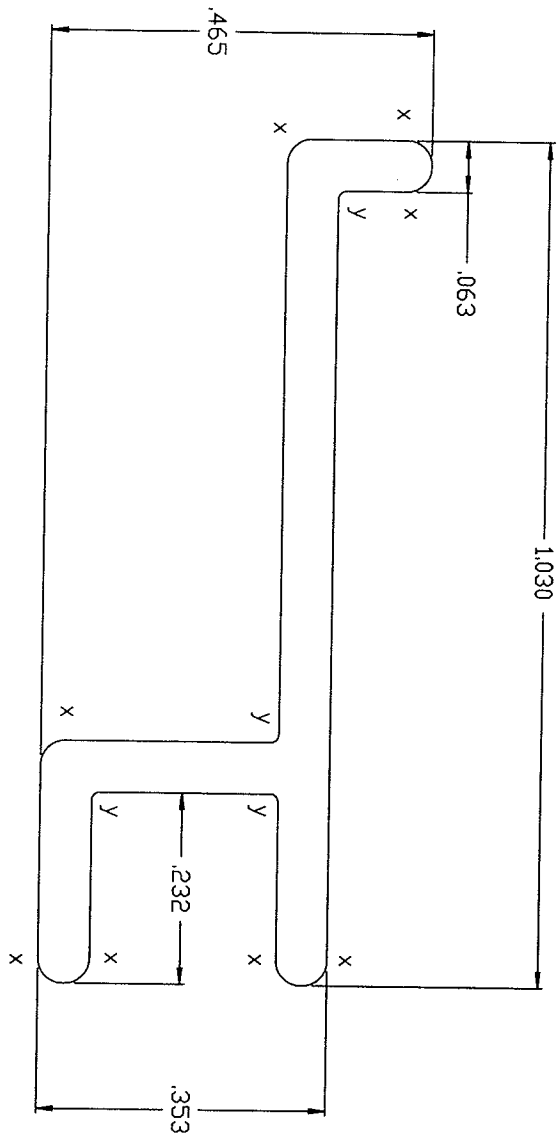
DETAIL 'A'
SCALE 16:1

THE SIGNIFICANT REMAINS PERMANENTLY IMPRINTED ON THE GLASS SURFACE THIS PERMANENTLY VITIATES THE OPTIC QUALITY OF THE GLASS. THEREFORE, THE RIGHT TO CHANGE THIS DRAWING AND ANY ASSOCIATED DOCUMENTS		UNLESS OTHERWISE SPECIFIED DIM ARE IN INCHES TOL ON ANGLE ± .1° 2 PL. DIM AND POS INTERPCT DIM AND POS ASME Y14.5M - 1974	
THIRD ANGLE PROJECTION		DESIGN BY: ASD, P&H DATE: 05/01/79 DRAWN BY: CDB DATE: 02/12/82	
DATE: 02/12/82		BY: Dayton	
GLAZING BEAD		CONTRACT NO. 10008127 SHEET 3	



Test sample complies with these details.
Deviations are noted.

Report# 54088
Date 4/6/05 Tech 831



- Notes:
- 1) "x" = .030" radius
 - 2) "y" = .010" radius

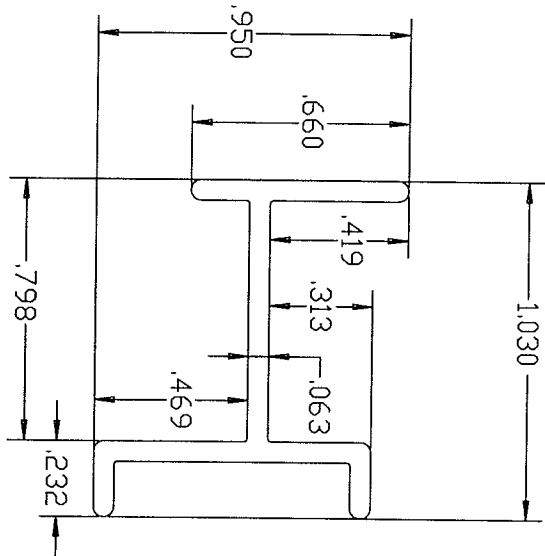
DAYTON EXTRUDED PLASTICS SPRINGBURD, OHIO Copyright 1994			
NAME:	0093 SASH REINFORCEMENT	MATERIAL(S):	ALUMINUM
DRAWN BY:	DAS	DATE:	3/22/94
CHECKED BY:		DATE:	
SCALE:	5 : 1 "A"	PART Dwg. NO:	A6202
CUST. PART NO:	6202	DIE NO:	6202
Area :	.103 Sq. In.	Weight :	.123 Lb./Ft.
Standard Commercial Tolerances Apply Unless Otherwise Noted			



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54088
Date 4/6/05 Tech ESL



Notes:
1) Part To Be Aluminum.

		DAYTON TECHNOLOGIES	
		MORRIS, OHIO	
		Copyright 2001	
NAME :		193 SASH REINFORCEMENT	
MATERIAL(S) :		ALUMINUM	
DRAWN BY :		CRB	DATE : 4/3/01
CHECKED BY :			DATE :
SCALE :		2 : 1	'A'
PART DWG. NO. :		A10300021	
Standard Commercial Tolerances			
Apply Unless Otherwise Noted			

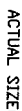


Architectural Testing

Test sample complies with these details.
Deviations are noted.

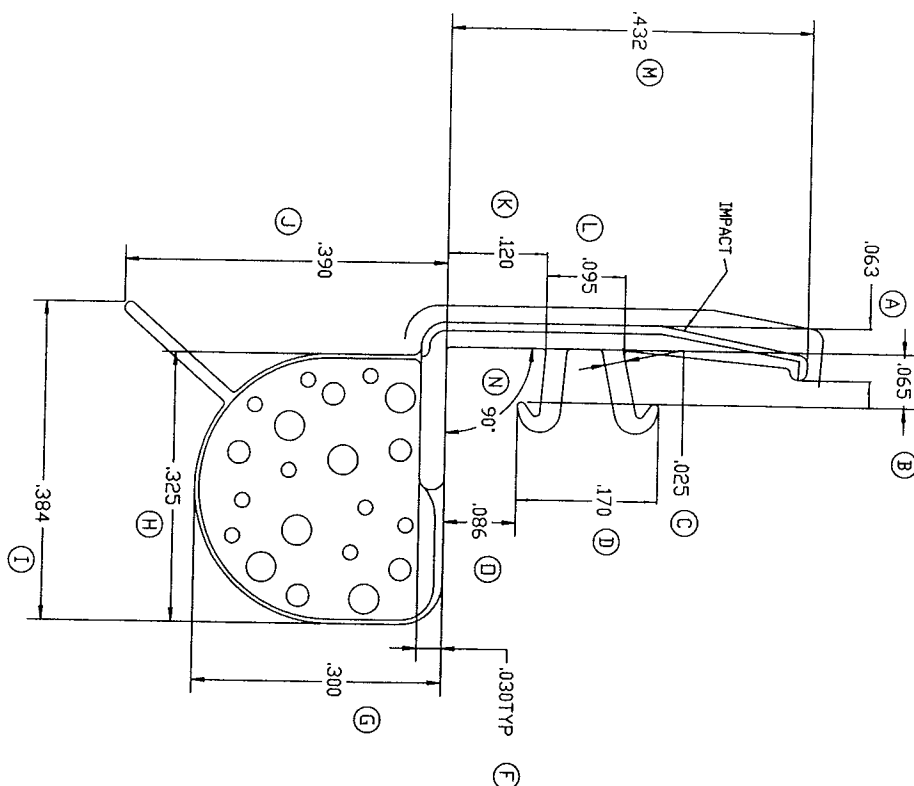
Report# 54088
Date 4/6/05 Tech CSL

1. FLEXIBLE TO BE 65 DUREMETER
2. CAPSTOCK TO BE .005 THICK



Report# 54088
Date 4/6/09 Tech ESL

== EXPOSED SURFACE ----- = WOODGRAIN SURFACE



ACTUAL SIZE



REV.	DATE	DESCRIPTION	BY
A	07-23-97	REVISED SHAP AREA & LEAF LENGTH	Joe L
B	08-25-97	REVISED SHAP DIM 'Y' & 'L'	Joe L
C	10-06-97	ADD TWO DIMENSIONS 'W' & 'Y'	Joe L
D	10/13/97	REMOVE 'E' & CHANGE 'Y'	Joe L

DAY CLASS		B		DIPNCT AREA		NOTED	
54804, 5481, 57004, 8160, 8880							

CONTROL DIMENSIONS									
DIM	METH	MIN	ENG	MAX	DIM	METH	MIN	ENG	MAX
A	V	.048	.063	.078	X				
B	V	.060	.065	.075	Y				
C	V	.020	.025	.030	Z				
D	V	.160	.170	.180	AA				
E					BB				
F	V	.025	.030	.035	CC				
G	V	.285	.300	.315	DD				
H	V	.305	.325	.345	EE				
I	V	.364	.384	.404	FF				
J	V	.365	.390	.415	GG				
K	V	.110	.120	.130	HH				
L	V	.080	.095	.110	II				
M	V	.407	.432	.457	JJ				
N	V	.90	.90	.95	KK				
O	V	.076	.085	.096	LL				
P					MM				
Q					NN				
R					OO				
S					PP				
T					QQ				
U					RR				
V					SS				
W					TT				

Part Vt (Class'Y)	Rigid	Cap	Flexi	Alum	Total
.014	.003	.039			.056

DAYTON TECHNOLOGIES	
MOONICE, OHIO	Copyright 1995

NAME	LEAF	BULL B SEAL
JOHN JIN	Joe L	DATE 12 June 1997

SCALE	8 : 1	"B"	DATE	DIM	DATE	DIM	DATE	DIM	DATE
CART NO.	8206								

P8206-D	
---------	--

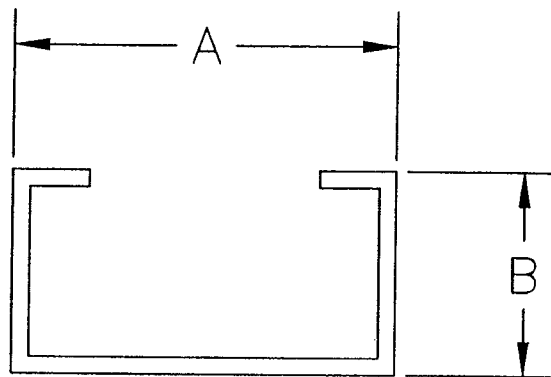


Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54088
Date 4/6/03 Tech ESL

SPACER



Material: STEEL

Width (A): 0.512, 0.45", 0.325"

Height (B): 0.300"

Wall Thickness: 0.010"



Architectural Testing

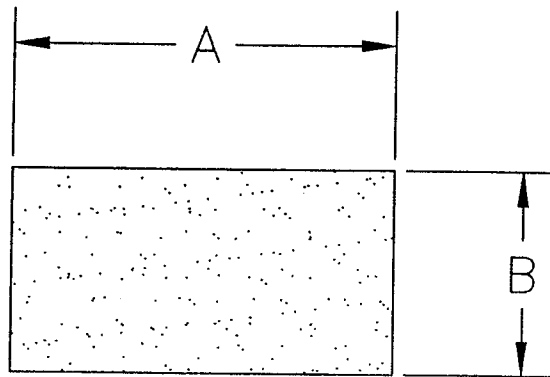
Test sample complies with these details.
Deviations are noted.

Report# 54088

Date 4/6/05

Tech B.L.

SPACER



Material: SILICONE FOAM
Width (A): 0.563, 0.500, 0.375
Height (B): 0.188
Wall Thickness: N/A

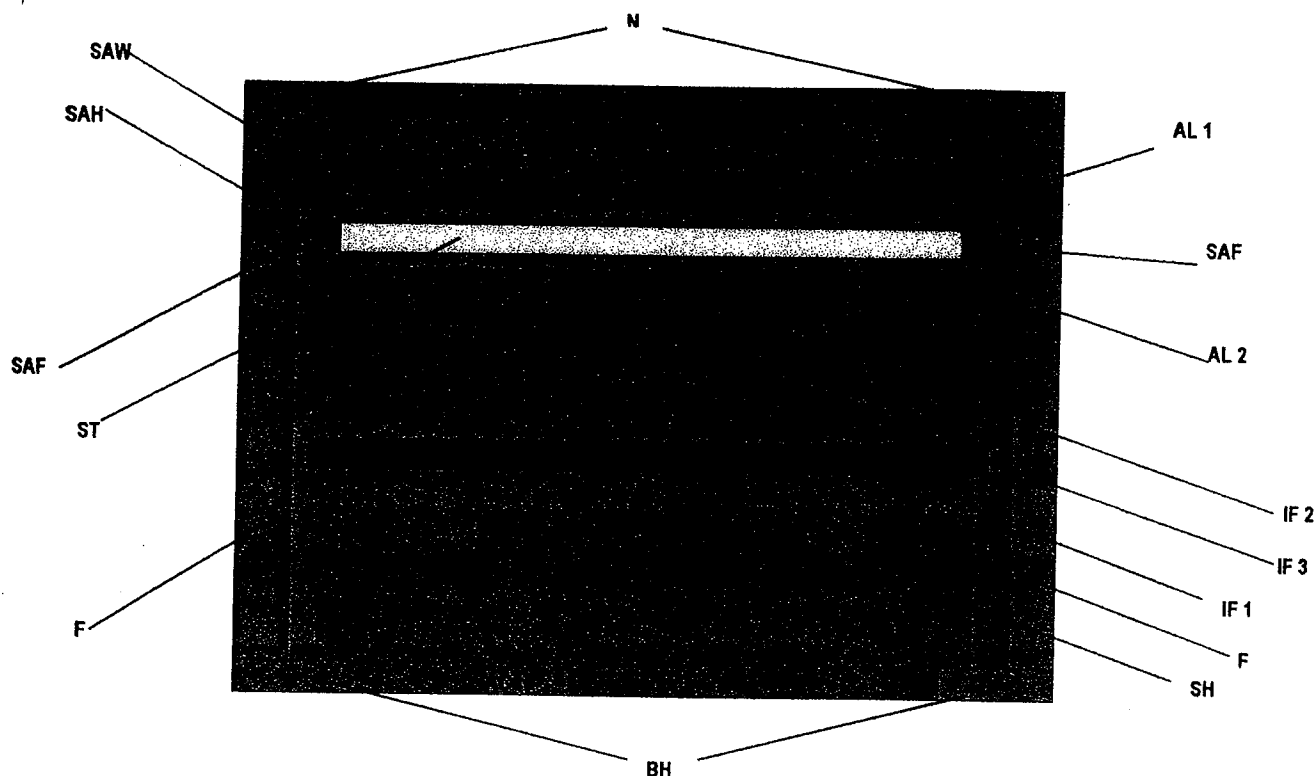


Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54088
Date 4/6/05 Tech BL

Legend



Description

Material and Conductivity Imp SI

N	71X	Butyl 1.603 Btu in/hr ft ² °F	0.231 W/m/°C
BH	71X	Butyl 1.603 Btu in/hr ft ² °F	0.231 W/m/°C
TL	71X	Butyl 1.603 Btu in/hr ft ² °F	0.231 W/m/°C
SAW	Moisture vapour barrier	Default polyethylene	Default polyethylene
SAH	Moisture vapour barrier	Default polyethylene	Default polyethylene
ST	Stiffener	Polypropylene 1.53 Btu in/hr ft ² °F	0.221 W/m/°C
SH	Shim	Default aluminum	Default aluminum
AL 1 2	Adhesive	Butyl 1.603 Btu in/hr ft ² °F	0.231 W/m/°C
AC 1 3 4	Default cavity	Default cavity	default still air*
AC 2	still air	still air – default conductivity	default still air*
SAF	Adhesive	Butyl 1.603 Btu in/hr ft ² °F	0.231 W/m/°C
IF 1 2 3	Adhesive	Butyl 1.603 Btu in/hr ft ² °F	0.231 W/m/°C
F	Adhesive	Butyl 1.603 Btu in/hr ft ² °F	0.231 W/m/°C

* Corrected from previous version

If there are questions regarding this document please call

Rich Warren
Technical Service
TruSeal Technologies
416 438 1858
888 257 7610



Architectural Testing

Test sample complies with these details.
Deviations noted.

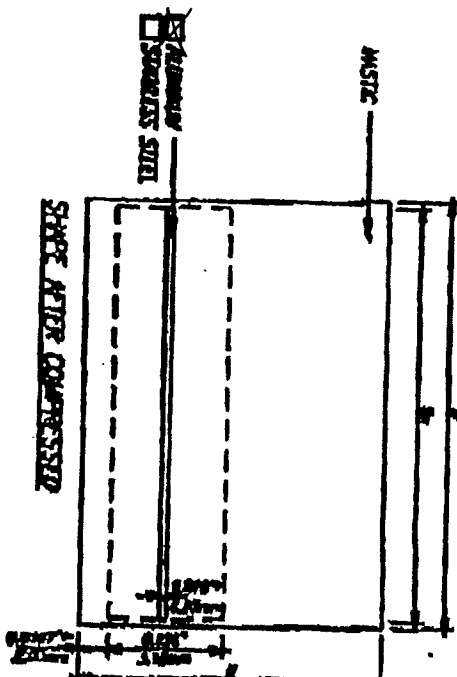
Report# 54088

Date 4/6/05

Rev. 82

Allegro CODE	Decoded	Internal			Metric		
		W	V	H	Decoded	W	H
3715	118	0.18	1.72	0.18	4.30	4.30	7.28
1584	208	0.20	0.20	0.20	8.00	8.00	7.28
14	298	0.20	0.20	0.20	8.00	8.00	7.28
5715	378	0.20	0.20	0.20	8.00	8.00	7.28
1102	248	0.20	0.20	0.20	8.00	8.00	7.28
38	378	0.20	0.20	0.20	8.00	8.00	7.28
1232	418	0.20	0.20	0.20	8.00	8.00	7.28
708	428	0.20	0.20	0.20	8.00	8.00	7.28
1832	478	0.20	0.20	0.20	8.00	8.00	7.28
3184	488	0.20	0.20	0.20	8.00	8.00	7.28
12	588	0.20	0.20	0.20	8.00	8.00	7.28
1732	638	0.20	0.20	0.20	8.00	8.00	7.28
5715	688	0.20	0.20	0.20	8.00	8.00	7.28
3884	818	0.20	0.20	0.20	8.00	8.00	7.28
58	878	0.20	0.20	0.20	8.00	8.00	7.28
1718	888	0.20	0.20	0.20	8.00	8.00	7.28
12715	818	0.20	0.20	0.20	8.00	8.00	7.28


Architectural Testing
 Test sample complies with these details.
 Deviations noted.
 Report# 54088
 Date 9/6/05 Tech BSL



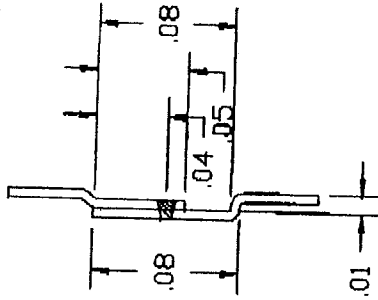
TRUSSEAL
 Technologies

SPACER LIBRARY
 FOR SIMULATORS

SINGLE SEAL

EAE
 29 SEPT 00
 M.H.
 M.T.S.

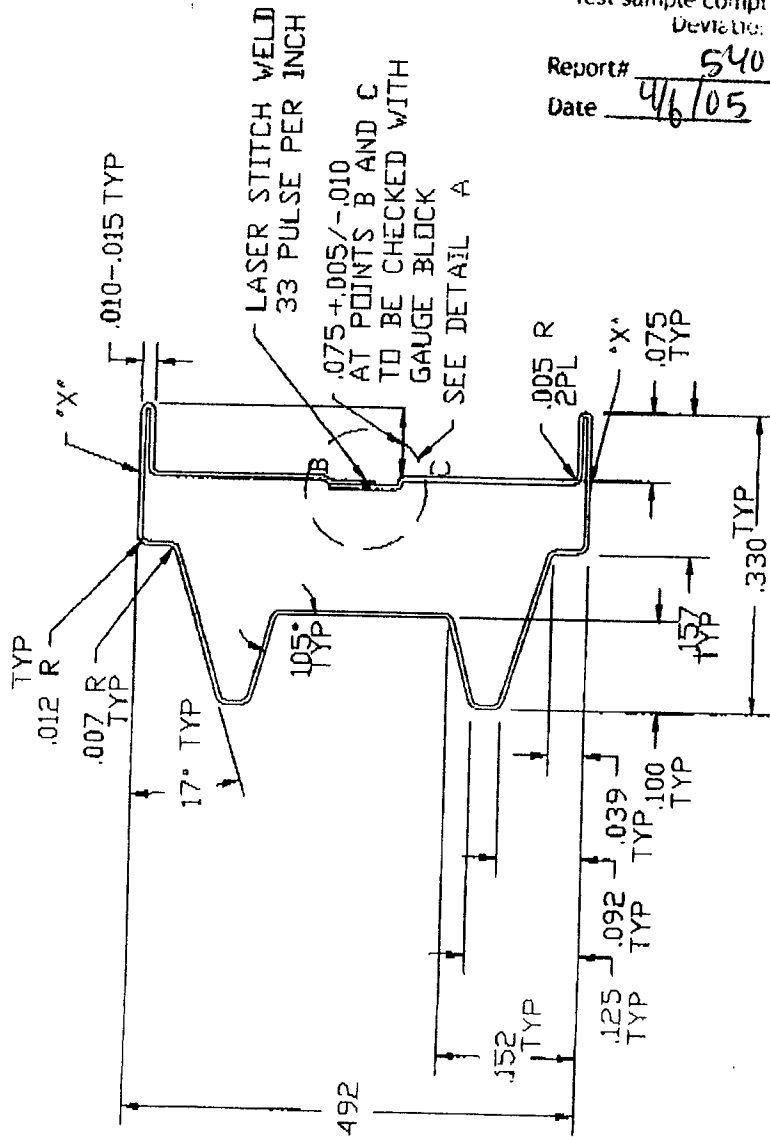
DETAIL A SCALE=10X



Architectural Testing

Test sample complies with these details.
Deviation: Not noted.

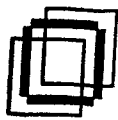
Report# 54088
Date 4/6/05 Tech ESL



NOTE:

1. MATERIAL: 201 STAINLESS STEEL, .0050 +/- .00025 WALL THICKNE ANNEALED TEMPER, 1 CBA FINISH.
2. LASER STITCH WELD 33 PULSE PER INCH, NO EXTERIOR FLASH, NO THROUGH BURNS.
3. SURFACES LABELED 'X' MUST BE PARALLEL TO EACH OTHER.
4. SPACER MUST BE CLEAN AND FREE OF DIRT AND OILS.

REVISION		DATE	BY	APPROVED
1	12/2/98	12/2/98	12/2/98	12/2/98
2	3/18/99	3/18/99	3/18/99	3/18/99
3	4/1/99	4/1/99	4/1/99	4/1/99
4	1/10/99	1/10/99	1/10/99	1/10/99
5	1/10/99	1/10/99	1/10/99	1/10/99
6	1/10/99	1/10/99	1/10/99	1/10/99
7	1/10/99	1/10/99	1/10/99	1/10/99
8	1/10/99	1/10/99	1/10/99	1/10/99
9	1/10/99	1/10/99	1/10/99	1/10/99
10	1/10/99	1/10/99	1/10/99	1/10/99
DESCRIPTION		TOLERANCES		
CARDINAL IG		XXX-XX-005		
TITLE		13.0mm SST U SPACER		
SCALE		5X		
DATE		1/10/99		
BY		SC		
APPROVED		SC		
PART		33-130		



ALLMETAL

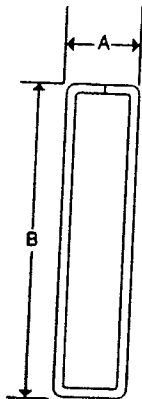
Muntin Bar

Painted, Mill Finish and Anodized Aluminum

TOLERANCE

A, $\pm .005$.127mm

B, $\pm .005$.127mm



The seller hereby expressly disclaims all warranties either expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose. Products are sold 'As Is' and on the condition that the purchasers shall make their own tests to determine the merchantability of such products and their fitness for any particular purpose. The liability of ALLMETAL, INC. for special, indirect or consequential damages for injury to a property for any reason or for any other loss resulting from a product defect or failure shall be limited to the purchase price of the product.

SPECIAL NOTICE

Cleaning and Handling of Muntin Bar

We recommend muntin bar to be wiped clean before installation into an insulating glass unit. A household grade liquid cleaner may be used for this purpose.

To avoid breakdown of painted surfaces, do not use M.E.K., Triethane, Alcohol or like substances for the cleaning of painted muntin bar.

When machining and processing muntin bar in your plant, keep saw tables and work areas free of saw cut filings to avoid scratching the painted surfaces.

FRACTIONAL DECIMAL IN INCHES

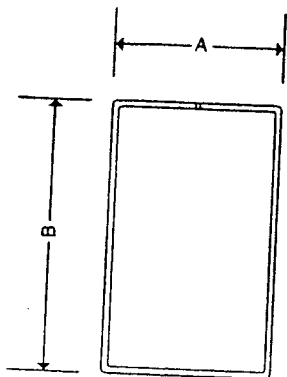
Size	A	B
3/16x1/2	.187	.500
3/16x9/16	.187	.551
3/16x5/8	.187	.630
* 3/16x.610	.187	.610
3/16x3/4	.187	.775
3/16x13/16	.187	.801
3/16x1	.187	1.000
1/4x5/16	.235	.313
1/4x9/16	.235	.562
1/4x5/8	.235	.625
1/4x3/4	.235	.765
1/4x1	.235	1.000
3/8x5/8	.325	.625
3/8x3/4	.325	.750
3/8x7/8	.325	.875
3/8x1	.325	1.000
1/2x3/4	.500	.750
1/2x1/2	.500	.500
1/2x1	.500	1.000
7/16x3/8	.425	.375
7/16x5/8	.438	.625
7/16x1	.438	1.000
5/8x5/8	.625	.625

* Available in Tutone

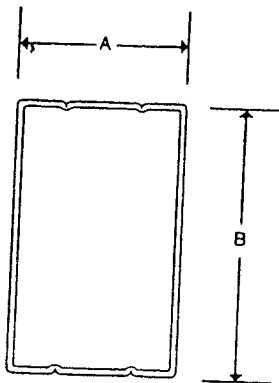
Muntin Bar-ZT & PT - Laser-Welded

Mill Finish and Anodized Aluminum

TOLERANCE



'Zippered' Top



Perforated Top

FRACTIONAL DECIMAL IN INCHES

Size	A	B
.187 x .500	.187	.500
.187 x .625	.187	.625
.187 x .750	.187	.750
.187 x 1.00	.187	1.00
.235 x .500	.235	.500
.235 x .625	.235	.625
.235 x 1.00	.235	1.00
.250 x .750	.250	.750
.312 x .500	.312	.500
.312 x .625	.312	.625
.325 x .500	.325	.500
.325 x .625	.325	.625
.325 x .750	.325	.750
.325 x .875	.325	.875
.325 x 1.00	.325	1.00
.375 x .500	.375	.500
.375 x .625	.375	.625
.437 x .500	.437	.500
.500 x .500	.500	.500
.437 x .625	.437	.625
.625 x .625	.625	.625



Architectural Testing

Muntin B

Test sample complies with these details.
Deviation noted.

Report#

54088

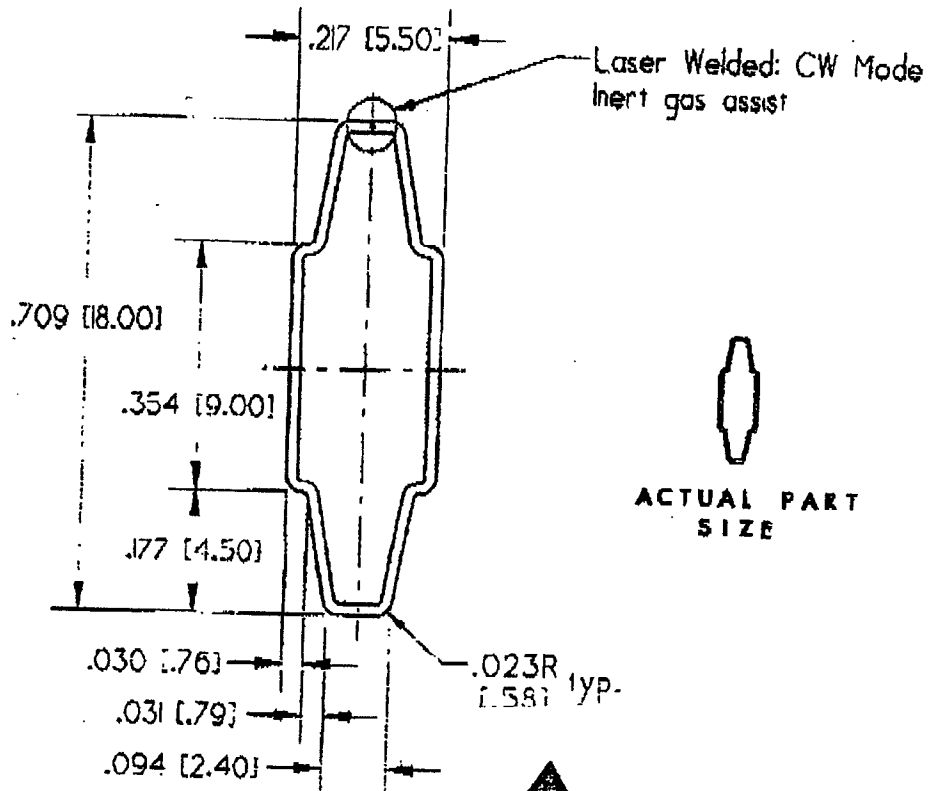
Date

4/6/05

tech

BL

NOTE: ALL DIMENSIONS IN [] BRACKETS ARE MM UNLESS NOTED



Architectural Testing

Test sample complies with these details.
Deviation noted.

Report# 54088

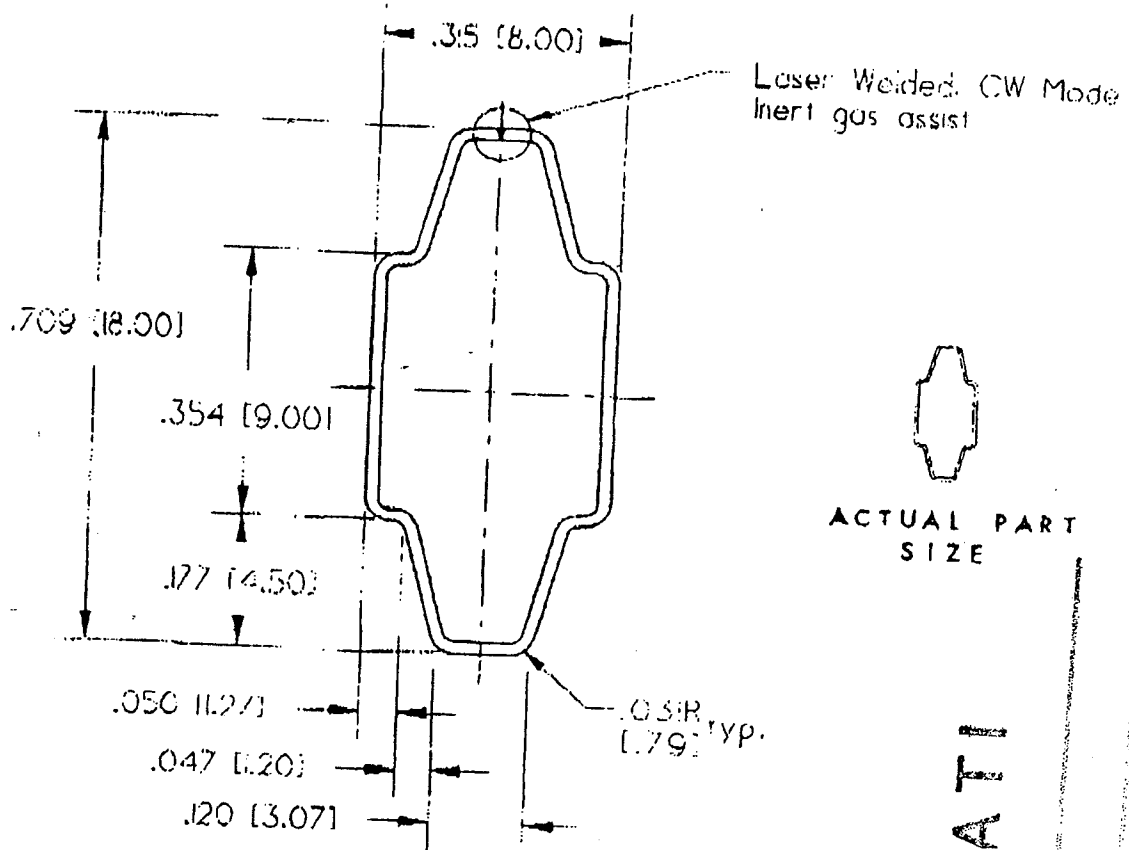
Date 4/6/05

Tech ESL

4/17/97		Weld note changed. Title block changed		GRM	
12/9/92		Initial Release		GRM	
DATE	SYN.	REVISION	AUTH.	DRN.	CK.
		INFORMATION SHOWN ON THIS PRINT IS PROPRIETARY. THIS DRAWING IS NOT TO BE REPRODUCED EITHER WHOLLY OR IN PART WITHOUT THE EXPRESS PERMISSION OF ALLMETAL INC.			
TOLERANCES EXCEPT AS NOTED		TITLE 5.5 x 18mm Contour Muntin Bar (CMB)		DRN. BY G. Matthews	
DECIMAL INCHES .XX .XXX .XXX ± .01 .005 .0002		MATL. .014" [.41mm] 3105 Aluminum		CK. BY	
DECIMAL MM .XX .XXX ± .13 .06		FINISH FULL RANGE (MILL. ANOD. PAINTED)		APPR. BY	
ANGULAR ± °		SCALE 4:1		S.O. NO.	
DATE 4/17/97		DWG. NO. 1020301010XX255			

FILENAME: CMB5318J

NOTE: ALL DIMENSIONS IN [] BRACKETS ARE MM UNLESS NOTED



Architectural Testing

Test sample complies with these details.
Deviations are noted.Report# 54088
Date 4/6/05 Tech ESL

4/17/97		Weld note changed, T
12/9/97		Initial Release
DATE	SYM.	



ALLMETAL

TOLERANCES
EXCEPT AS NOTED

DECIMAL INCHES

.XX .XXX .XXXX
± .01 .005 .0002

DECIMAL MM

.XX .XXX
± .13 .06

ANGULAR

± 1°

TITLE

8 x 18mm Contour Muntin Bar (CMB)

MATL.

.016" [.41mm]
3105 Aluminum

FINISH

FULL RANGE
(MILL, ANOD., PAINTED)

SCALE

4:1

DATE

4/17/97

DWG. NO.

1020301010XX280

DRN. BY G. MATTHEWS

CK. BY

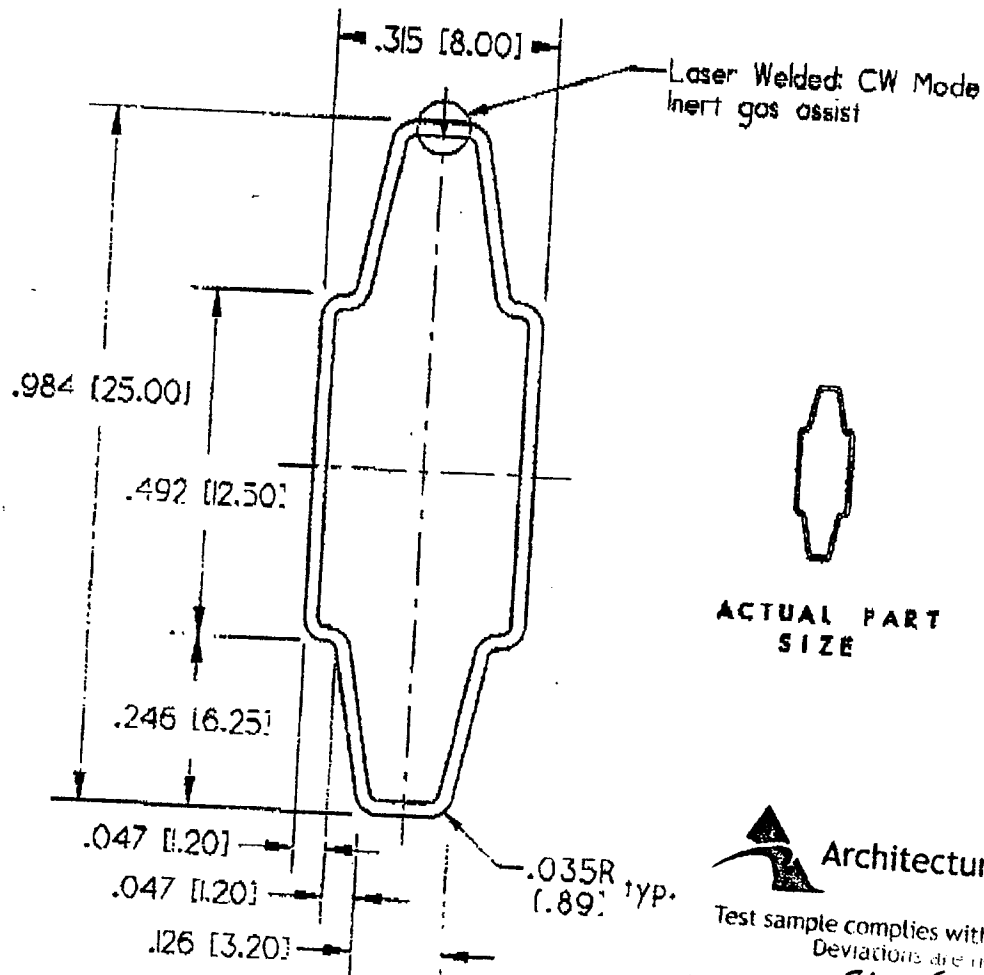
APPR. BY

S.O. NO.

HISTORY
R WHOLLY
ION OF

FILENAME: CM8818J

NOTE: ALL DIMENSIONS IN [] BRACKETS ARE MM UNLESS NOTED



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54088
Date 4/6/05 Tech ESL

4/17/97		Weld note changed. Title block changed			
4/1/95		Gauge changed from .016 to .020			GRM
12/9/92		Initial Release			GRM
DATE	SYN.				GRM
REVISION			AUTH.	DRN.	CK.



ALLMETAL

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THIS DRAWING IS NOT TO BE REPRODUCED EITHER WHOLLY
OR IN PART WITHOUT THE EXPRESS PERMISSION OF
ALLMETAL INC.

TOLERANCES
EXCEPT AS NOTED

DECIMAL INCHES
.XX .XXX .XXXX
± .01 .005 .0002

DECIMAL MM
.XX .XXX
± .13 .08

ANGULAR
± 1°

TITLE

8 x 25mm Contour Muntin Bar (CMB)

MATL.

.020" [.51mm]
3105 Aluminum

FINISH

FULL RANGE
(MILL, ANOD., PAINTED)

SCALE

4:1

DATE

4/7/97

DRG. NO.

1020301010XX380

DRN. BY G. Matthews

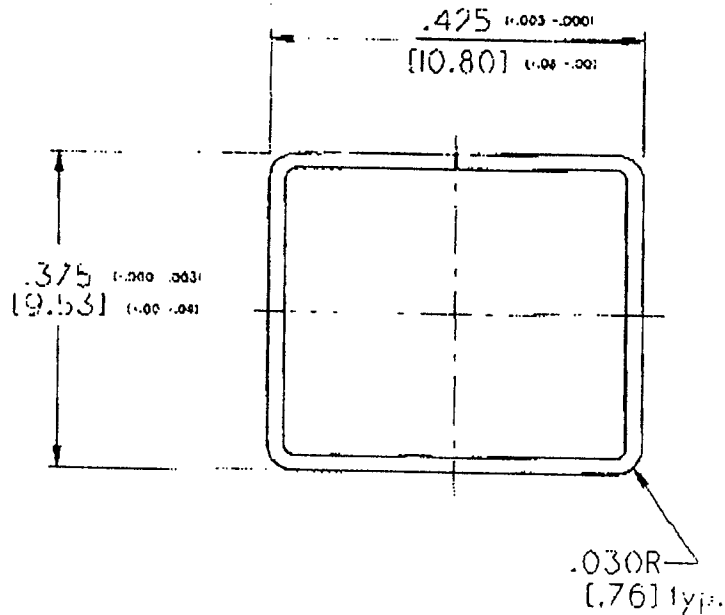
CK. BY

APPR. BY

S.O. NO.

FILENAME: CMB825J

NOTE: ALL DIMENSIONS IN [] BRACKETS ARE MM UNLESS NOTED



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54088

Date 4/6/05

Tech BR

ACTUAL PART
SIZE

FILE NAME: \MB\0185\716X38

DATE	SYM.	REVISION		AUTH.	DRN.	CK
 ALLMETAL		INFORMATION SHOWN ON THIS PRINT IS PROPRIETARY. THIS DRAWING IS NOT TO BE REPRODUCED EITHER WHOLLY OR IN PART WITHOUT THE EXPRESS PERMISSION OF ALLMETAL INC.				
TOLERANCES EXCEPT AS NOTED		TITLE 7/16 x 3/8 MB (Muntin Bar)			DRN BY G. Matthews	
DECIMAL INCHES .XX .XXX .XXXX ± .01 .005 .0002		MATL. .0185 [.47mm] 3105-H24 Aluminum			CK. BY	
DECIMAL MM .XX .XXX ± .13 .06		FINISH ALL BUT ANODIZED			APPL. BY	
ANGULAR ± 1°		SCALE 5:1	DATE 11/15/01	DWG. NO. 1020108018XX124		
					S.O. NO.	

11/14/2003 16:18 FAX 15135395407

11/13/2003 THU 17:36 FAX 8124643131 AMERICAN WINDOW & GLASS

11/06/2003 18:24 8544396055

HELIMA HELVETION

22/05/97

12:33

LINGEMANN GMBH + 8544330074

DAYTON TECH ENG.

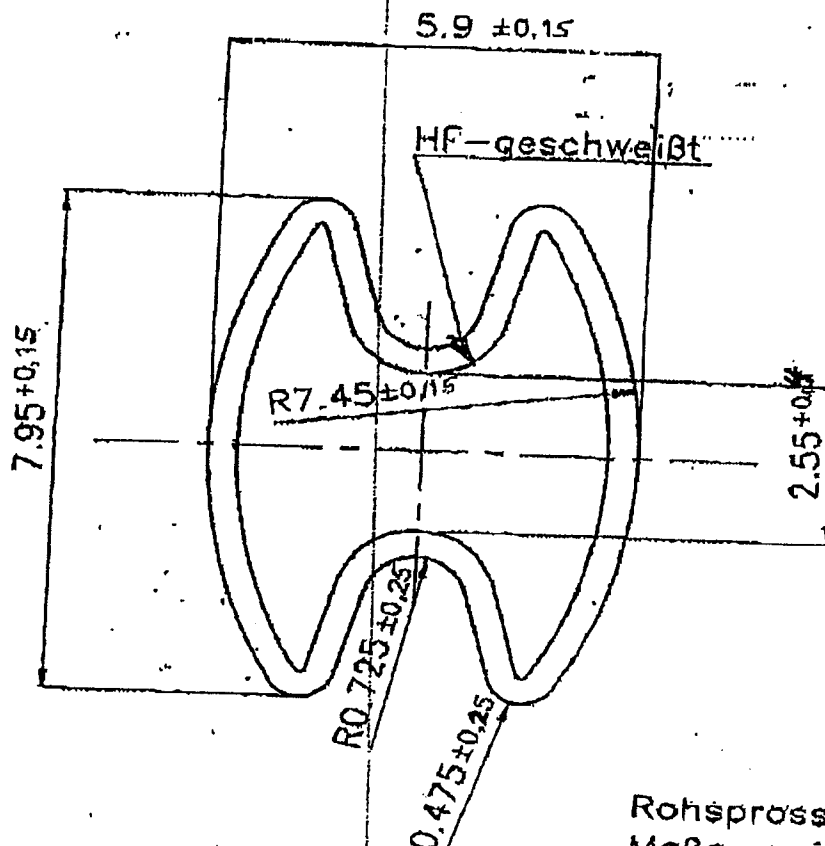
010

009/010

PAGE 02/02

NR. 328

Dr.



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Verteiler: BTL
OM3
Produkt
AV

Report# 54088

Date 4/6/05

Tech B/L

Rohsprösse!
Maße variieren je nach
Oberflächenbehandlung

M1

Werkstoff: Bd 0,4 +0,04
-0,03

AI 99,85-ähnlich EN 1085/WN
wahlweise EN AW-3003

1996	Tag	Name
Bearb.	24.07.	Höllinghoff
Gepr.		

Für diese Zeichnung bzw.
techn. Unterlage behalten
wir uns alle Rechte vor.

Helmut Lingemann
GmbH & Co.
Aluminium-Press- und
Werkzeug
Am Dockershäuschen 52
42114 Wuppertal

Maßstab:	Benennung:
10:1	

Einbausprosse, geschweißt

Maßstab:	Benennung:
10:1	

Zeichnungsnummern
KP 8x1,5G

7168-m

KP8 0x1,5G A1

Erstellt durch: