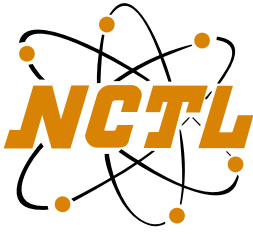


MGM Industries Inc.

*SIMULATION PERFORMANCE &
SOLAR HEAT GAIN REPORT*

*Series 5600
Single Hung*

NCTL-110-10717-01



NATIONAL CERTIFIED TESTING LABORATORIES

FIVE LEIGH DRIVE • YORK, PENNSYLVANIA 17406 • TELEPHONE (717) 846-1200
FAX (717) 767-4100
www.nctlinc.com

Simulation Performance, Solar Heat Gain Coefficient, Visible Transmittance and Condensation Resistance Calculation Report

REPORT NO: NCTL-110-10717-01
SIMULATION DATE: 06/11/07
REPORT DATE: 06/11/07

Client: MGM Industries Inc.
287 Freehill Road
Hendersonville, TN 37075

Product Line: MGM Industries Inc.'s Series 5600 Vinyl Single Hung window

Specification: NFRC 100-2004: "Procedure for Determining Fenestration Product U-Factors".
NFRC 200-2004: "Procedure for Determining Fenestration Product Solar Heat
Gain Coefficients and Visible Transmittance at Normal Incidence".
NFRC 500-2004: "Procedure for Determining Fenestration Product
Condensation Resistance Values".
Therm 5.x / Window 5.x NFRC Simulation Manual (Approved at test date)

Procedures and Compliance: All U-factor, Solar Heat Gain Coefficients, Visible Transmittance and
Condensation Resistance values were calculated using the following
characteristics: a default value of 0.30 solar absorptance for all products other
than window glazed wall and sloped glazing which have a solar absorptance of
0.50. The best glazing option was used as the configuration for SHGC and VT
specialty products table. NCTL is a NFRC accredited simulation laboratory and
this simulation was conducted in full compliance with NFRC requirements.
This report does not constitute an opinion or endorsement by the laboratory.
Ratings values included in this report are for submittal to an NFRC-licensed IA
and are not meant to be used directly for labeling purposes. Only those values
identified on a valid Certification Authorization Report (CAR) by an NFRC
accredited Inspection Agency (IA) are to be used for labeling purposes.
Rounding per IEEE/ASTM SI 10-1997 except section 5.4.1.3.

PRODUCT LINE DESCRIPTION

General: The product line modeled is MGM Industries Inc.'s Series 5600 Vinyl Single Hung
window.

Model Size Simulations: 1200mm x 1500mm {47.244" x 59.055"}

Note: All product drawings are included in Attachment A.

Weatherseals:

Location	Weather Seal Description
Head	None
Bottom Jamb	(3) single strips of weather-strip
Meeting Rail	(2) single strips of weather-strip
Sill	(1) single strips of weather-strip / (1) Bulb Seal
Top Jamb	None

Gas Fillings: Not applicable.

Reinforcement: Not applicable.

Finish: Vinyl

Dividers: Where applicable, dividers were not modeled because the gap between dividers and lites were greater than 3mm. For Solar Heat Gain and Visual Light Transmittance default dividers less than 1" and greater or equal to 1" and default patterns were used for simulations.

Group Leaders: The following group leaders are actual simulated individual products per NFRC 4.2.4 and the NFRC Technical Interpretations where applicable. All remaining individual products' U-factors in the corresponding groups are represented by the group leader's U-factor.

COG Group Leader: Individual products which differ from another (base) individual product in glazing tint and/or obscuration (including obscure glass, fritted glass, and wired glass) only may be assumed to have the same U-factor as the base product unless this change is associated with a change in coating properties.

COG Group Leader:

Glazing ID	Glazing Description	U _{COG}
001	2mm Clear / .553" Air / 2mm Clear	0.481*
005	2mm Clear / .553" Air / 2mm TiAC36 (e=.034 on 3)	0.298*
006	3mm Clear / .514" Air / 3mm TiAC36 (e=.034 on 3)	0.294*

* Group Leader

Modeling Assumptions and Comments Deemed Important:**Sealing Rules:**

All cavities that are opened to the exterior within a frame section shall be modeled according to ISO 15099, Section 6.7.1, which states that cavities greater than 2mm but equal to or less than 10 mm shall be modeled as "slightly ventilated air cavities". For physical testing purposes the product is sealed at the inside surface with tape or equivalent to prevent air infiltration. Air cavities created by this sealing technique must be simulated with the standard NFRC "Frame Cavity" material. If cavities on the frame are sealed (covered) to the surround panel with tape or equivalent, those cavities are also filled with NFRC "Frame Cavity" material within the simulation model. If the frame is not covered or sealed, those areas are left hollow or opened within the simulation model.

Continuous elements:

All elements continuous within the product line are identified from the Bill-of-Materials and detailed drawings via the referenced dimensions and cut lengths as compared to the overall size of the product.

Continuous hardware:

Not applicable.

General Notes:

The Condensation Resistance results obtained from this procedure are for controlled laboratory conditions and do not include the effects of air movement through the specimen, solar radiation, and the thermal bridging that may occur due to the specific design and construction of the fenestration system opening.

Modeling assumptions:

The product was modeled with a nominal 1" x 4" wood stud attached to the exterior flange.

Miscellaneous assumptions:

- 1. The screen extrusions were not modeled.*
- 2. All radii are simulated at angles.*
- 3. Any spacer simulated using a spacer system from the Frame Spacer Library match the required configurations for this manufacturer's spacer system.*
- 4. The modeling was performed in accordance with the manufacturer's assembly drawing from a DXF file.*

Component Area and Frame Heights:

Frame heights, calculated areas, area weighted values for U-factor, SHGC, and VT, and center-of-glazing are located in approved NFRC simulation programs for all individual products.

Specialty Products Table: The specialty products method allows 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.

SHGC	No Dividers	Dividers <1"	Dividers ≥1"
0.00	0.002	0.005	0.007
1.00	0.787	0.705	0.628

VT	No Dividers	Dividers <1"	Dividers ≥1"
0.00	0.000	0.000	0.000
1.00	0.785	0.700	0.620

$$SHGC = SHGC_0 + SHGC_{COG} (SHGC_1 - SHGC_0)$$

$$VT = VT_0 + VT_{COG} (VT_1 - VT_0)$$

NCTL Therm Section Filename Methodology

Filename Codes Example: CU_HD2_003.THM	
CU	Spacer (Intercept)
HD	Frame Section (Head)
2	Glass Size (2.5mm)
_003	Glazing ID #3

Individual Product Descriptions and Model Size Matrix of U-Factors, SHGC, VT & CR

All U-factors are given in BTU/HR/ft²/°F

Product Description	Product Number	Pane ID (Exterior)	Pane ID (Interior)	Pane Thickness (Exterior)	Pane Thickness (Interior)	Gap	Gap Fill	Emissivity Surface 2	Emissivity Surface 3	U-factor C-O-G	SHGC C-O-G	VT C-O-G	Spacer	Grid Type	Tint	U-factor	Condensation Resistance	Solar Heat Gain Coefficient (ND)	Visual Transmittance (ND)	Solar Heat Gain Coefficient (<1")	Visual Transmittance (<1")
2mm Clr	001	885	885	0.098	0.098	0.553	AIR			0.48	0.80	0.83	CU-D	N,G	.75	0.47	42.0	0.63	0.65	0.57	0.58
3mm Clr		887	887	0.118	0.118	0.514	AIR			0.48	0.79	0.82	CU-D	N,G	.75	0.47	42.0	0.62	0.64	0.56	0.58
2mm TiAC 36#3	002	885	964	0.098	0.098	0.553	AIR		0.034	0.30	0.47	0.69	CU-D	N,G	.75	0.33	52.0	0.37	0.54	0.33	0.48
2mm TiAC36#2		964	885	0.098	0.098	0.553	AIR	0.034		0.30	0.37	0.69	CU-D	N,G	.75	0.33	52.0	0.29	0.54	0.26	0.48
3mm TiAC 36#3	003	887	965	0.118	0.118	0.514	AIR		0.034	0.29	0.46	0.68	CU-D	N,G	.75	0.33	51.0	0.36	0.53	0.33	0.48
3mm TiAC 36#2		965	887	0.118	0.118	0.514	AIR	0.034		0.29	0.37	0.68	CU-D	N,G	.75	0.33	51.0	0.29	0.53	0.26	0.48

A baseline product test in accordance with the "NFRC 102: Test Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems" is required in order to validate the "Model Size Matrix of U-Values" as previously indicated. Per Section 1.4.3 of NFRC 100-2001, "the baseline product is the individual product selected for validation testing". **The individual product selected as the baseline product shall be the lowest simulated individual product or an individual product having a simulated U-factor within 0.60 W/ (m²*K) (0.10 BTU/HR/ft²/°F) or 20% of the listed lowest simulated U-factor.**

Note:

1. For lowest U-factor listings where multiple individual products are shown, validation testing can be conducted on any of the configurations listed.
2. Actual simulated individual products are required for product line validation testing.
3. All individual products in the product line were simulated using the approved NFRC THERM program.

For the purposes of validation testing, production line units and sizes shall be used to represent the baseline product. Per the client, the model size is manufactured as part of their product line; therefore the previously listed model size can be used for baseline product validation testing.

Copies of this report and the detailed product drawings will be retained by NCTL for a period of four (4) years. This report may not be reproduced, except in full, without the approval of NCTL. The results only to the fenestration product simulated. The attached diskette(s) contain(s) all required NFRC data and software files.

NATIONAL CERTIFIED TESTING LABORATORIES

A digital signature of Justin M. Robinson in cursive script. Below the signature is the NCTL logo, which consists of the letters 'NCTL' in a stylized font with a circular graphic element, and the words 'DIGITAL SIGNATURE' in a smaller, sans-serif font to the right.

JUSTIN M. ROBINSON

NFRC Accredited Simulator

Simulator-In-Responsible-Charge

Attachments

Report Log

Product Line: *MGM Industries Inc.'s 5600 Vinyl Single Hung window*

Date:
06/11/07 *- Original Report issued to MGM Industries Inc. and Inspection Agency*

NFRC CODES

Door	
Code	Description
EM	Embossed
FL	Flush
LF	Full Lite
LH	1/2 - Lite
LQ	1/4 - Lite
LT	3/4 - Lite
N	Not Applicable
RP	Raised Panel

Grid	
Code	Description
G	Grids between the glass
N	No Muntins
S	Simulated Divided Lites
T	True Muntins

Sealant	
Code	Description
D	Dual Seal Spacer System
N	Not Applicable
S	Single Seal Spacer System

Gap Fill	
Code	Description
AIR	Air
AR3	Argon/Krypton/Air Mixture
ARG	Argon
KRY	Krypton
N	Not Applicable

Glass Tint	
Code	Description
AZ	Azurlite
BG	Blinds between the Glazing
BL	Blue
BZ	Bronze
CL	Clear
DV	Dynamic Glazing (Variable)
DY	Dynamic Glazing (Non-Variable)
EV	Evergreen
GC	Gold (reflective coating)
GD	Gold
GR	Green
GY	Gray
LE	Low 'e' Coating
OT	Other (use comment field)
RC	Solar or Reflective Coating
RG	Roller shades between Glazing
RS	Silver (reflective coating)
SF	Suspended Polyester Film
SR	Silver

Spacer		
Code	Type	Definition
A1-D	Aluminum	Aluminum spacer system - dual sealed.
A1-S	Aluminum	Aluminum spacer system - single sealed.
A2-D	Aluminum (thermally-broken)	Thermally improved aluminum spacer system - dual sealed.
A2-S	Aluminum (thermally-broken)	Thermally improved aluminum spacer system - single sealed.
A3-D	Aluminum-reinforced polymer	Polymer spacer material with aluminum substance - dual sealed.
A3-S	Aluminum-reinforced polymer	Polymer spacer material with aluminum substance - single sealed.
A4-D	Aluminum/Wood	Composite spacer system of two materials - dual sealed.
A4-S	Aluminum/Wood	Composite spacer system of two materials - single sealed.
A5-D	Aluminum-reinforced butyl	Butyl spacer material with aluminum substrate - dual sealed.
A5-S	Aluminum-reinforced butyl	Butyl spacer material with aluminum substrate - single sealed.
A6-D	Aluminum/Foam/Aluminum	Two aluminum spacers separated by foam-type material - dual sealed
A6-S	Aluminum/Foam/Aluminum	Two aluminum spacers separated by foam-type material - single sealed
A7-D	Aluminum U-shaped	U-shaped spacer system embedded in sealant - dual sealed.
A7-S	Aluminum U-shaped	U-shaped spacer system embedded in sealant - single sealed.

Spacer		
Code	Type	Definition
A8-D	Aluminum-Butyl Composite	Exposed corrugated aluminum spacer with butyl - dual sealed.
A8-S	Aluminum-Butyl Composite	Exposed corrugated aluminum spacer with butyl - single sealed.
CS-D	Coated Steel	Coated Steel (galvanized or tinplated) - Dual seal
CS-S	Coated Steel	Coated Steel (galvanized or tinplated) - Single seal
CU-D	Coated Steel U-Shaped	Coated Steel (galvanized or tinplated) U-shaped spacer system embedded in sealant - Dual sealed
CU-S	Coated Steel U-Shaped	Coated Steel (galvanized or tinplated) U-shaped spacer system embedded in sealant - Single sealed
ER-D	EPDM Reinforced Butyl	EPDM reinforced butyl spacer system - dual sealed.
ER-S	EPDM Reinforced Butyl	EPDM reinforced butyl spacer system - single sealed.
FG-D	Fiberglass	Fiberglass - dual sealed.
FG-S	Fiberglass	Fiberglass - single sealed.
GL-S	Glass	Welded glass edge condition at glazing perimeter.
N	Not Applicable	
OF-D	Organic Foam	Organic-based foam spacer system - dual sealed.
OF-S	Organic Foam	Organic-based foam spacer system - single sealed.
P1-D	Polycarbonate- Butyl Composite	Exposed corrugated polycarbonate spacer with butyl - dual sealed.
P1-S	Polycarbonate- Butyl Composite	Exposed corrugated polycarbonate spacer with butyl - single sealed.
PU-D	Polyurethane foam	Polyurethane foam - dual sealed.
PU-S	Polyurethane foam	Polyurethane foam - single sealed.
S2-D	Steel (thermally-broken)	Stainless steel spacer with urethane thermal break - dual sealed.
S2-S	Steel (thermally-broken)	Stainless steel spacer with urethane thermal break - single sealed.
S3-D	Steel/Foam/Steel	Two steel spacers separated by foam-type material - dual sealed.
S3-S	Steel/Foam/Steel	Two steel spacers separated by foam-type material - single sealed.
S5-D	Steel reinforced butyl	Butyl spacer material with stainless steel substrate - dual sealed.
S5-S	Steel reinforced butyl	Butyl spacer material with stainless steel substrate - single sealed.
S6-D	Steel U-channel w/ thermal cap	U-shaped steel spacer system with a thermal cap - dual sealed.
S6-S	Steel U-channel w/ thermal cap	U-shaped steel spacer system with a thermal cap - single sealed.
SS-D	Stainless Steel	Stainless Steel - Dual Seal
SS-S	Stainless Steel	Stainless Steel - Single Sealed
SU-D	Stainless Steel U-Shaped	Stainless Steel U-shaped spacer system embedded in sealant - Dual sealed
SU-S	Stainless Steel U-Shaped	Stainless Steel U-shaped spacer system embedded in sealant - Single sealed
TP-D	Thermo-plastic	Thermo-plastic - dual sealed.
TP-S	Thermo-plastic	Thermo-plastic - single sealed.
TS-D	Thermo-plastic	Thermoplastic spacer with stainless steel substrate - dual-sealed
TS-S	Thermo-plastic	Thermoplastic spacer with stainless steel substrate - single-sealed
WD	Wood	Wood spacer system
ZF-D	Silicone Foam	Silicone foam spacer system - dual sealed.
ZF-S	Silicone Foam	Silicone foam spacer system - single sealed.
ZS-D	Silicone/Steel	Combination of two separate spacers: a steel spacer and silicone spacer - dual sealed.
ZS-S	Silicone/Steel	Combination of two separate spacers: a steel spacer and silicone spacer - single sealed.

ATTACHMENT A

Product Drawings

Bill of Materials Listing

Print Date: Feb 1, 2006

TEST SPECIMEN COMPLIES WITH THESE DETAILS.

ANY DEVIATION IS NOTED.

Products 5610

Type: SH

Assembly Code: **REPORT NO. NC 10-10717-04** <---Deducts---> Unit Code Vert Hpr Sub Assy Add Color Fixed Length W/Railing Fin

TEST DATE: 6/11/2007

Assembly Code	Description	Quantity	Height	Width	Unit Code	Vert Hpr	Sub Assy	Add Color	Fixed Length	W/Railing Fin
CR3	8X1PH Keeper Screw	4.00			EA		IA	Y		8X1PH
GLASS	ICL Default Glass Type	1.00	3.1250	3.0000	SF		IA	N		ICL
GLSSPC	5K66-9/16 Glass Spacer	2.00	3.1250		LI	H	IA	N		5K66-9/16
HEADER	V-185 Top/Bottom Extrusion	2.00		2.8125	LI	W	IA	Y		
KEEPER	3314 Keeper	2.00			EA		IA	N		3314
LJAMB	V-185 Side Extrusion	2.00	4.0000		LI	H	IA	Y		
MISC	1X3/4X1/16 Glass Setting Blocks	4.00			EA		IA	N		1X3/4X1/16
MTRAIL	M-399 Keeting Rail	1.00		2.8750	LI	W	IA	Y		
MULSEB	i Setting From Bottom	1.00	-.6875	.0000	LI	H	IA			
MUNCLP	10946-002 Muntin Clips	1.00			EA		IA	N		10946-002
MUNTNH	536006 Muntin Bar Horizontal	1.00		3.5625	LI	W	IA	Y		536006
MUNTRV	536006 Muntin Bar Vertical	1.00	4.0000		LI	H	IA	Y		536006

of Subassembly IA *****

CR2	6X1/2TRUSS #6 X 1/2" PPH Screw	2.00		.0000	EA		IB	N		
ASSCR3	8X1PH #8 X 1" PPH Screw	4.00			EA		IB	N		
GLASS	ICL Default Glass Type	1.00	3.1250	3.0000	SF		IB	N		ICL
GLSSPC	5K66-9/16 Glass Spacer	2.00	3.1250		LI	H	IB	N		5K66-9/16
HEADER	8004 Frame Top Extrusion	1.00		2.8750	LI	W	IB	Y		8004
LATCH	TWL-720 Latch	2.00			EA		IB	N		
LJAMB	8000 Left Side Extrusion	1.00	.2500		LI	H	IB	Y		8000
LOCK	V16-3288 Lock	2.00			EA		IB	N		V16-3288
MISC	1X3/4X1/16 Glass Setting Blocks	4.00			EA		IB	N		1X3/4X1/16
MUNCLP	10946-002 Muntin Clips	1.00			EA		IB	N		10946-002
MUNTNH	536006 Muntin Bar Horizontal	1.00		5.3750	LI	W	IB	Y		536006
MUNTRV	536006 Muntin Bar Vertical	1.00	4.0000		LI	H	IB	Y		536006
RJAMB	8000 Right Side Extrusion	1.00	.2500		LI	W	IB	Y		8000

Bill of Materials Listing

Print Date: Feb 11 2006

TEST SPECIMEN COMPLIES WITH THESE DETAILS.

Product: 5610

Type: SH

Assembly ANY DEVIATION IS NOTED.

<---Deducts--->

Code Part No. Description Height Width Unit Code Vert Hor Assy Add Color Fixed Length W/Nailing Fin

TEST DATE: 6/11/2007

8002	Bottom Extrusion	1.00	2.8750	LI	W		IB	Y		8002
TLTKEY	Tilt Key	2.00		EA			IB	N		23110
VSWEEP	Vinyl Sweep	1.00	2.8750	LI	W		IB	Y		V-391
WTSTPH	W432519W Weather Strip(H)	2.00	2.8750	LI	W		IB	N		
WTSTPV	W432519W Weather Strip(V)	6.00	.2500	LI	H		IB	N		

End of Subassembly 10

ALUMNF	42026 Aluminum Nailing Fin	1.00	1.7500	.0000	LI	W	NF	N		
ASSCR1	10X1TRUSS #10 X 1" PHPH	8.00			EA		NF	N		10X1TRUSS
ASSCR2	10X5/8TRUSS #10 X 5/8" PHPH	4.00			EA		NF	N		10X5/8TRUSS
BALSHO	7006T-LCK Balance Shoes	2.00			EA		NF			7006T-LCK
HEADAD	VR-2180 Head Adapter Insert	1.00	1.9375		LI	W	NF	Y		VR-2180
HEADER	M-398 Frame Top Extrusion	1.00	-.2500		LI	W	NF	Y		M-398
INSSTP	609 Insert Stop	1.00			EA		NF	Y	6.5000	609
JAMEXT	WOOD Jamb Extension	2.00	.0000		LI	H	NF			WOOD
JAMEXT	WOOD Jamb Extension	2.00	1.2500		LI	W	NF			WOOD
LJAMB	M-398 Left Side Extrusion	1.00			LI	H	NF	Y		M-398
MISC	716 BlockNTackle Balance	2.00	.0000		EA		NF	N		
MISCLI	WRAP Miscellaneous	20.00			LI	W	NF			WRAP
RJAMB	M-398 Right Side Extrusion	1.00			LI	H	NF	Y		M-398
SCAULK	896CT6789 Silicone Caulk	.20			EA		NF			896CT6789
SILL	M-402 Bottom Extrusion	1.00			LI	W	NF	Y		M-402
SILLTO	M-406 Sill Tower	1.00	1.8750		LI	W	NF	Y		M-406
WTSTPH	W432519W Weather Strip(H)	2.00	-.1250		LI	W	NF	N		

End of Subassembly NF

CKEYS	V6-211 Corner Keys	2.00			EA		SC	N		
HEADER	V11BLWT3B Frame Top Extrusion	1.00	3.1250		LI	W	SC	N		

Bill of Materials Listing

Print Date: Sep 11, 2006

TEST SPECIMEN COMPLIES WITH THESE DETAILS.

Product: 5610

Type: SH

Assembly

ANY DEVIATION IS NOTED.

<---Deducts--->

Code

REPORT NO: NOTL 10-10717-07

Height Width

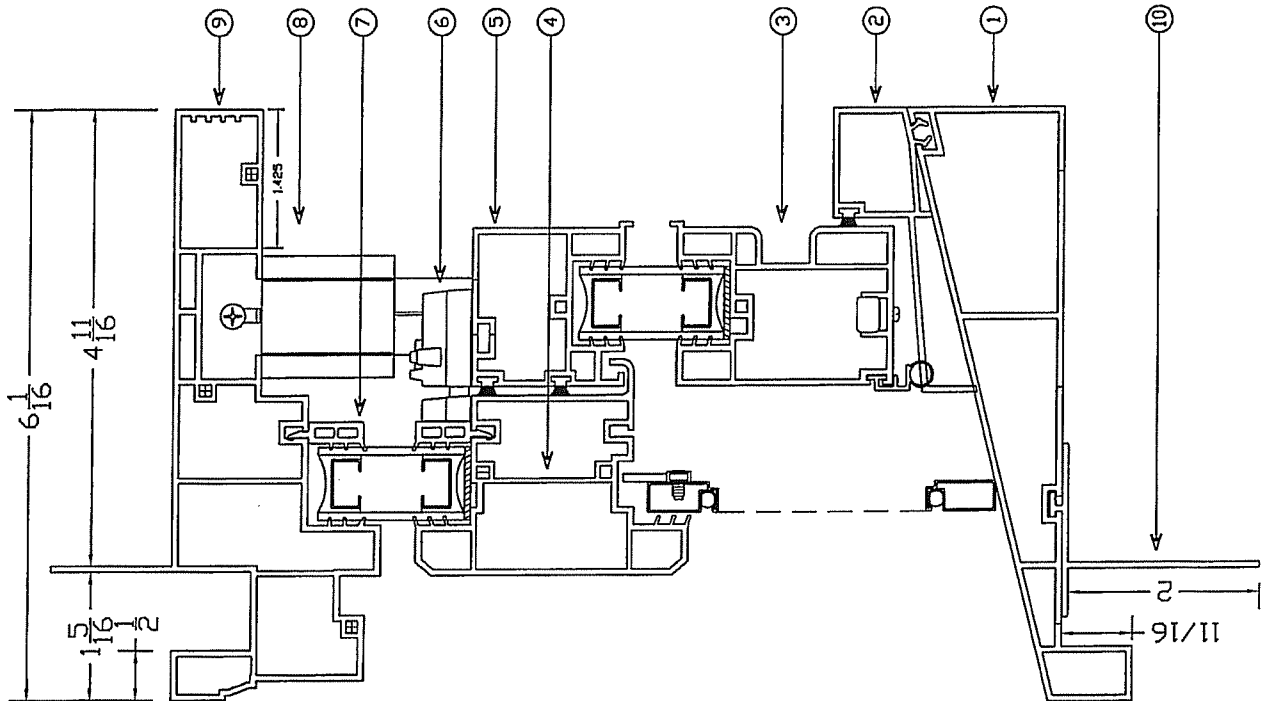
Unit Vert Sub Add Fixed W/Nailing
Code Hor Assy Color Length Fin

TEST DATE: 6/11/2007


Code	Part #	Description	Quantity	Height	Width	Unit Code	Vert Hor	Sub Assy	Add Color	Fixed Length	W/Nailing Fin
MS	V118LWT3B	Left Side Extrusion	1.00	1.0000		LI	H	SC	N		
LSPRNG	V8-3769	Leaf Spring	4.00			EA		SC	N		
WISC	8A-817	Crossbar Clips	2.00			EA		SC			
RJAMB	V118LWT3B	Right Side Extrusion	2.00	1.0000		LI	H	SC	N		
SCDEDF	1	Full Screen Deduct		4.0000	5.3750			SC			1
SCDEDH	1	Half Screen Deduct		2.4375	4.3750			SC			1
SCLOTH	1816	Screen Cloth(Std)	1.00	1.0000	2.3750	SF		SC	N		1816
SCLOTW	1816	Screen Cloth(Wire)	1.00	1.0000	2.3750	SF		SC	N		1816W
SILL	V118LWT3B	Bottom Extrusion	1.00		3.1250	LI	W	SC	N		
SSPLIN	.140	Screen Spline	2.00	.0000	4.2500	LI	W	SC	N		

End of Subassembly SC

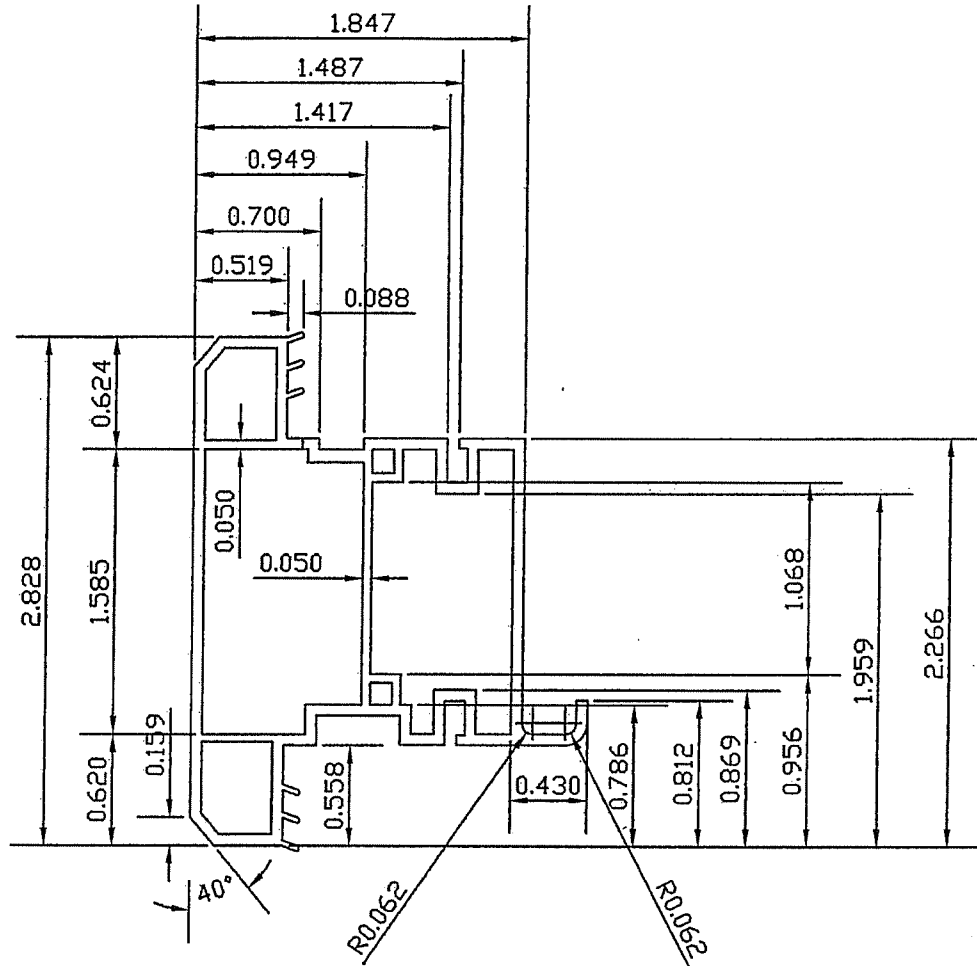
TEST SPECIMEN COMPLIES
 WITH THESE DETAILS.
 ANY DEVIATION IS NOTED.
 REPORT NO. NCTL-110-10717-01
 TEST DATE: 6/11/2007



- 1. SILL M-402
- 2. SILL TOWER M-406
- 3. LIFT RAIL M-8002
- 4. CENTER MEETING RAIL M-399
- 5. LOCK RAIL M-8004
- 6. SWEEP LOCK AND KEEPER
- 7. GLAZING BEAD M-185
- 8. SASH STOP M-609
- 9. HEAD AND JAMB M-398
- 10. ALUMINUM NAILING FIN A-127
- 11. BLOCK AND TACKLE BALANCE
- 12. SASH VERTICAL M-8000

 MGM INDUSTRIES 287 Freebill Road Hendersonville, TN 37075 1-800-476-5584		TITLE: Vertical and Horizontal Cross-Section	
		MATERIALS: Series #5600 Single Hung	
DATE: 02-03-05		SCALE: DO NOT SCALE	
DRAWN BY: RGraves		DWG NO: 1 Page	

APPLICATION TEST SPECIMEN COMPLIES NEW WITH THESE DETAILS USED ON ANY DEVIATION IS NOTED. REPORT NO. NCTL-110-10717-01 TEST DATE: 6/11/2007	REVISIONS			
	REV.	DESCRIPTION	DATE	APPROVED



MGM INDUSTRIES
287 FREEHILL ROAD
HENDERSONVILLE, TN
37075

DO NOT SCALE DRAWING

DESCRIPTION:
4 1/16 Jamb
Single Hung
Meeting Rail

DATE 07/07/03

ALL RADI TO BE 0.015
ALL WALL THK TO BE
0.062 UNLESS
OTHERWISE SPECIFIED
INTERNAL WALLS 0.050

WEIGHT
0.5337

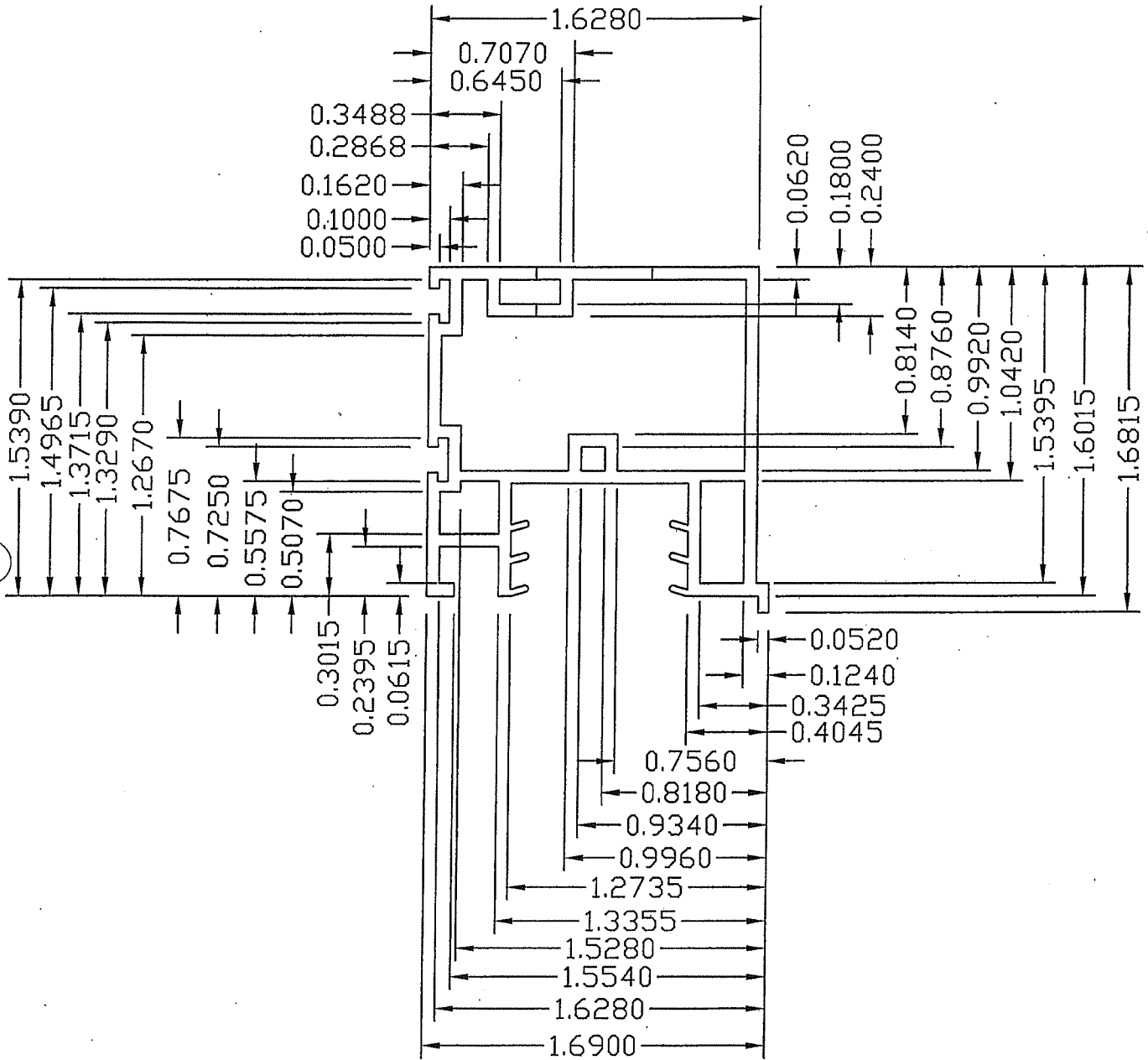
AREA
0.8553

DWG. NO.
M-399

BY: ABG

REV.

TEST SPECIMEN COMPLIES
 WITH THESE DETAILS.
 ANY DEVIATION IS NOTED.
 REPORT NO. NCTL-110-10717-01
 TEST DATE: 6/11/2007



MGM INDUSTRIES
 287 FREEHILL RD
 HENDERSONVILLE, TN
 37075

DESCRIPTION:

BOTTOM SASH
 TOP RAIL

ALL RADI TO BE 0.015.
 ALL WALL THK TO BE
 0.062 UNLESS
 OTHERWISE SPECIFIED.
 INTERNAL WALLS 0.052
 INTERNAL WALLS 0.052

DWG. NO.

M-8004

REV.

1

DATE 02/07/00

AREA

.5932

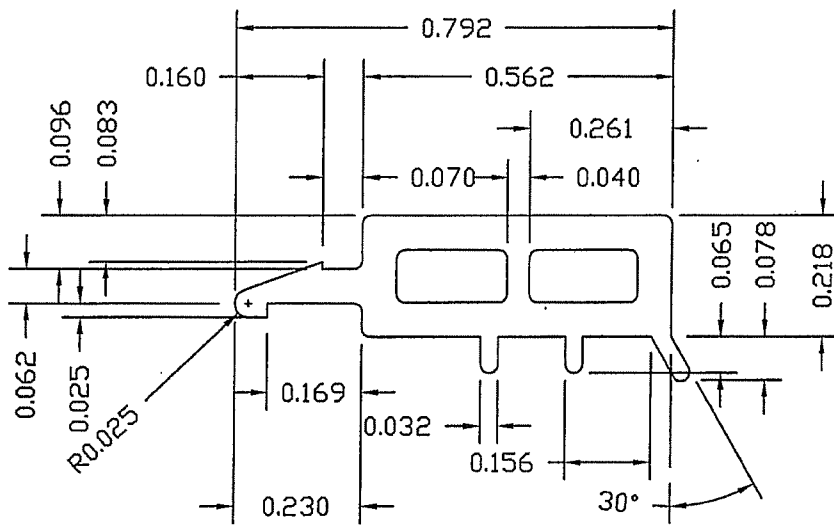
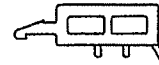
WT/FT

.3729

BY: ABG

TEST SPECIMEN COMPLIES
 WITH THESE DETAILS.
 ANY DEVIATION IS NOTED.
 REPORT NO. NCTL-110-10717-01
 TEST DATE: 6/11/2007

Full Size



NOTE:	WT/FT:	AREA:
RIGID	.061	.098
FLEX	.004	.007

ALL RADI TO BE 0.015. ALL WALL THKS TO BE 0.062 UNLESS OTHERWISE SPECIFIED.

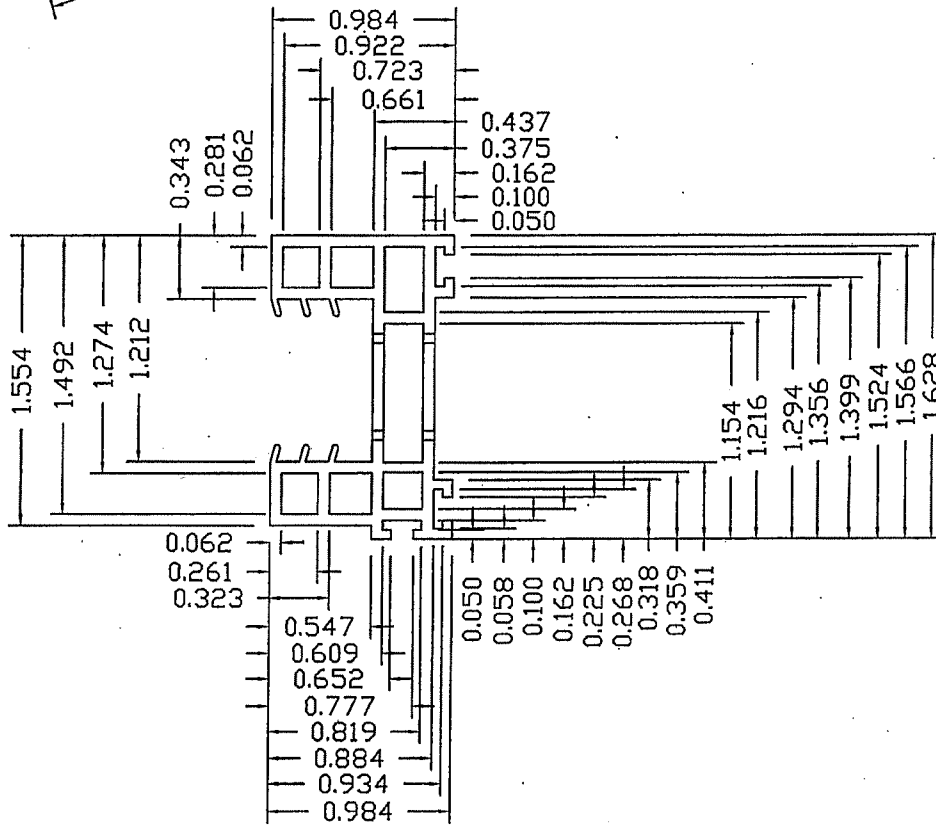
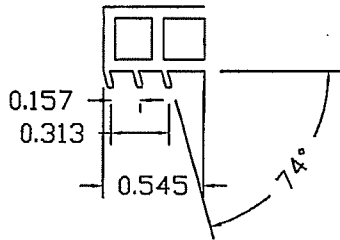
EM INDUSTRIES
 287 FREEHILL ROAD
 HENDERSONVILLE, TN
 37075

DESCRIPTION:
 Glazing Bead 5000
 5600-6000-7006
 7010-8006-8010
 DO NOT SCALE DRAWING

SERIES#:
 WT/FT: .066
 AREA: .106

DWG. NO.: V-185
 REV:
 BY: RGraves
 DATE: 10-06-01

TEST SPECIMEN COMPLIES
 WITH THESE DETAILS.
 ANY DEVIATION IS NOTED.
 REPORT NO. NCTL-110-10717-01
 TEST DATE: 6/11/2007



MGM INDUSTRIES
 287 FREEHILL RD
 HENDERSONVILLE, TN
 37075

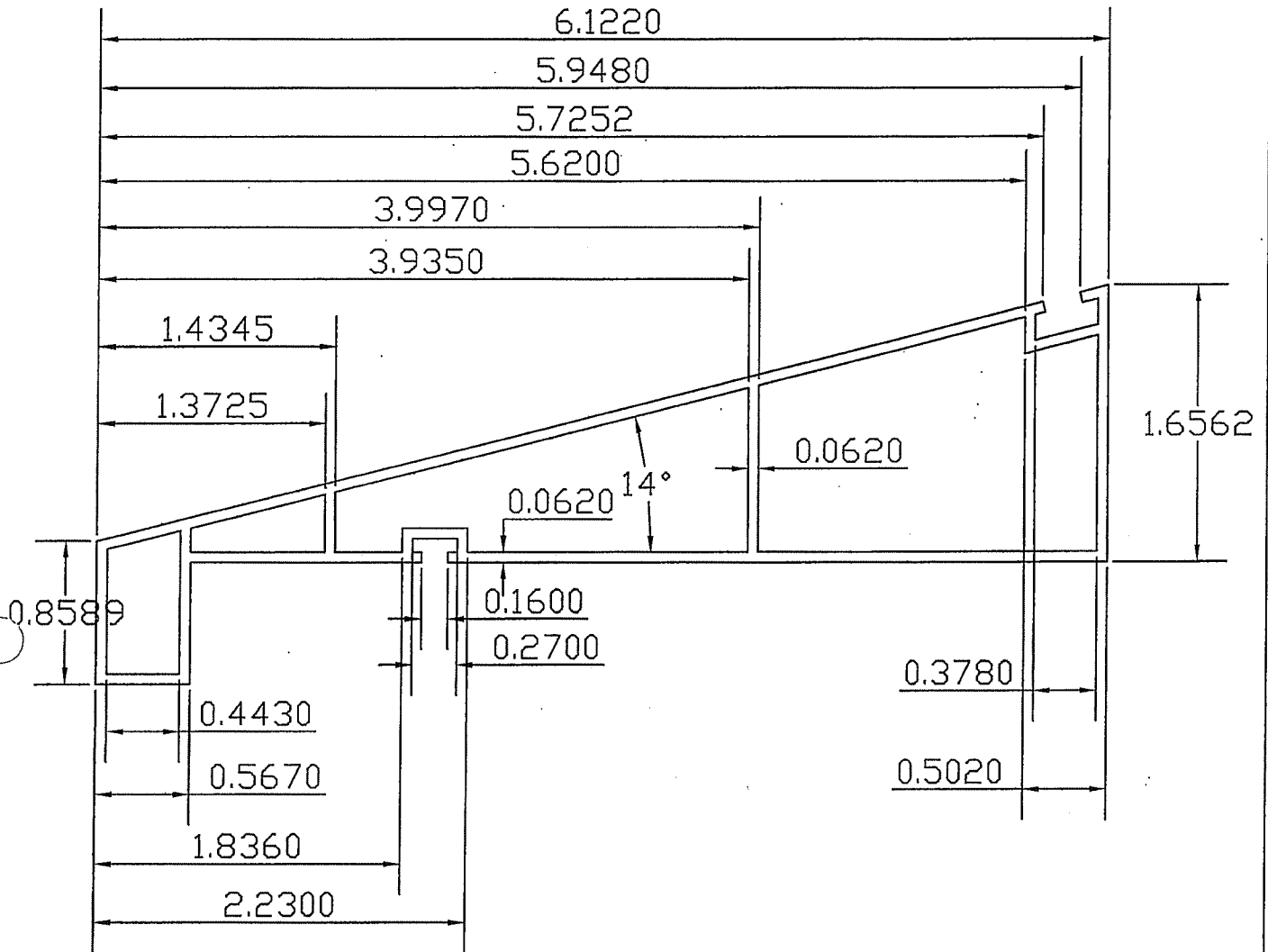
DESCRIPTION:
 8000 Series Sash
 DO NOT SCALE
 DATE: 02/07/00

ALL RADI TO BE 0.015.
 ALL WALL THK TO BE
 0.0625 UNLESS
 OTHERWISE SPECIFIED
 AREA .4959
 WT/FT .3094

DWG. NO.
 V-8000
 DRAWN BY:

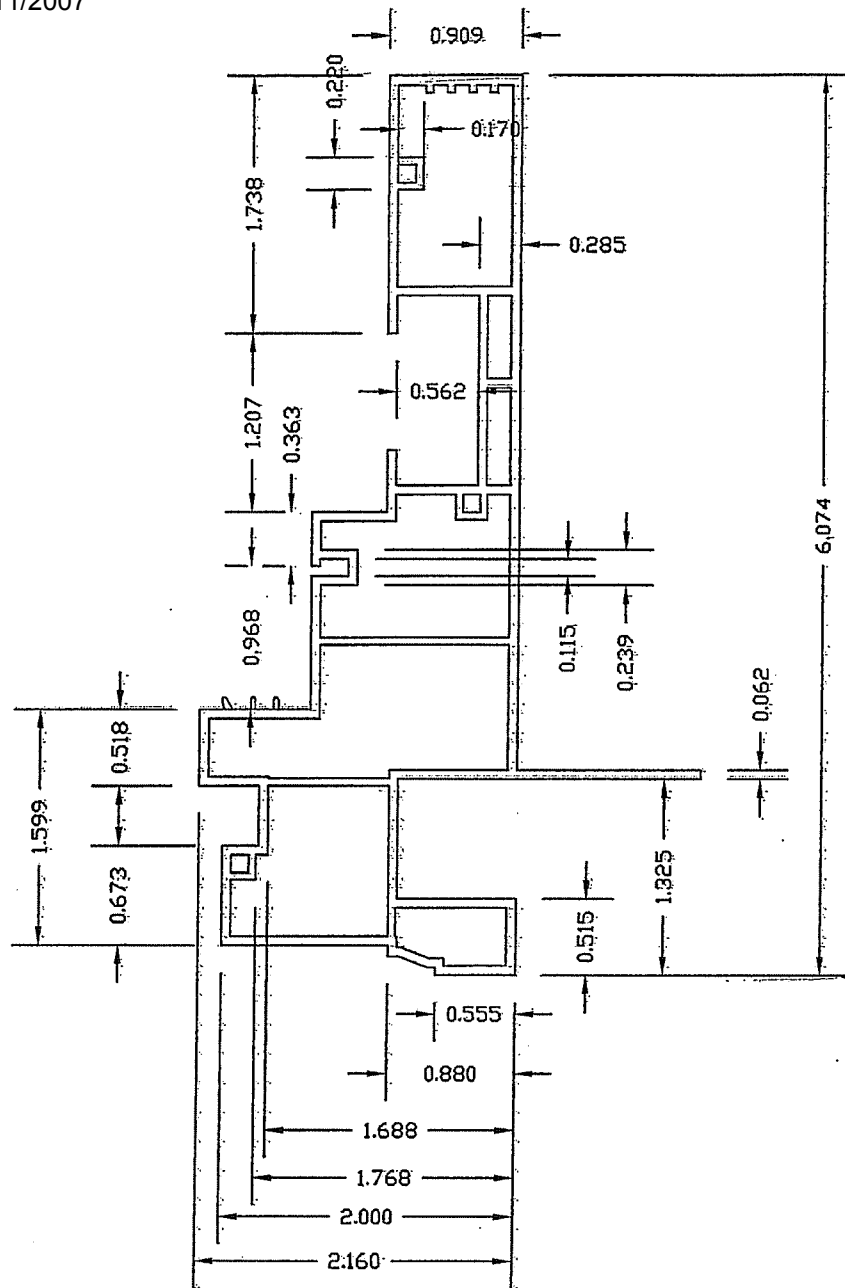
REV.
 1
 R.Graves

TEST SPECIMEN COMPLIES
 WITH THESE DETAILS.
 ANY DEVIATION IS NOTED.
 REPORT NO. NCTL-110-10717-01
 TEST DATE: 6/11/2007



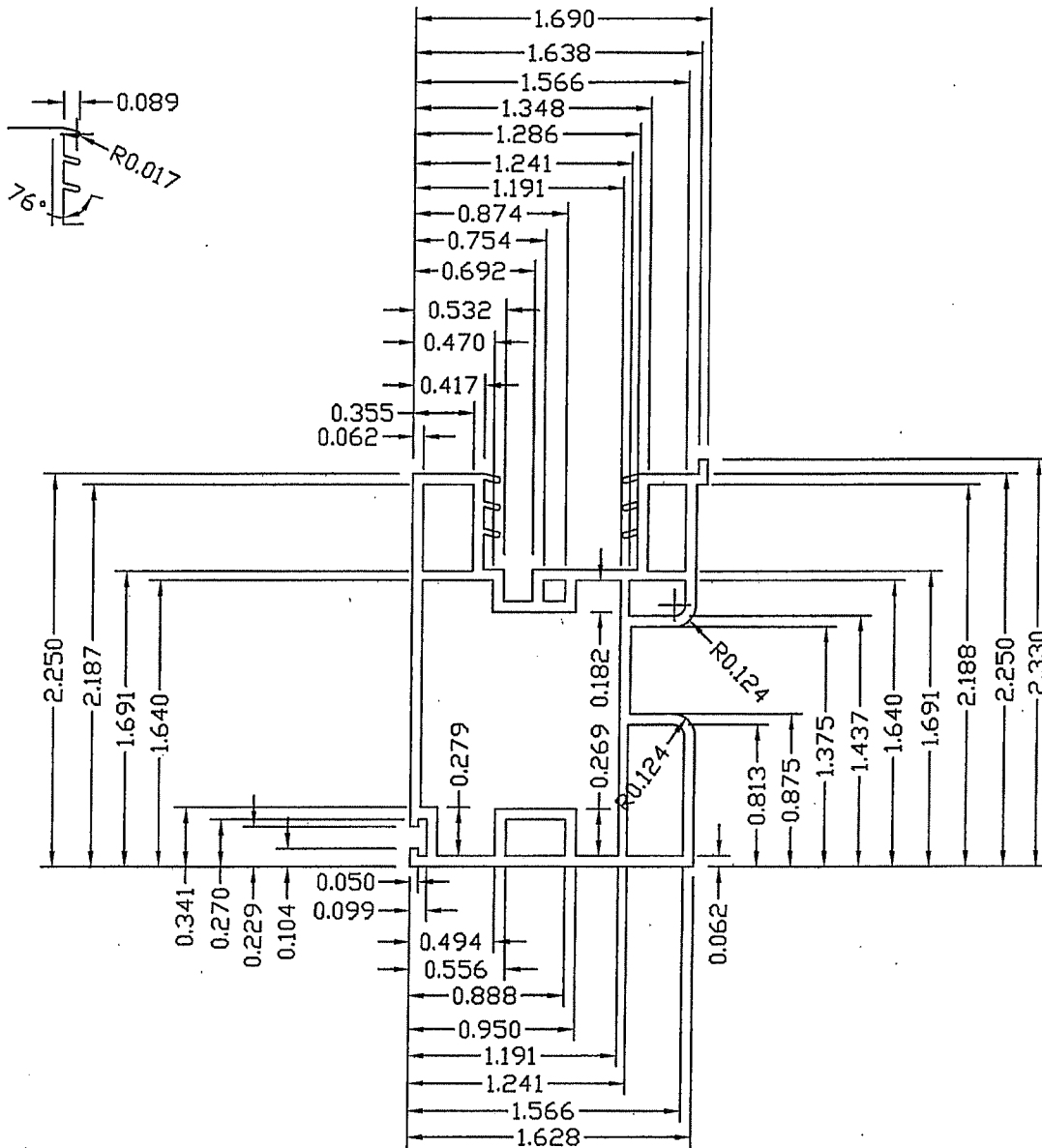
MGM INDUSTRIES 287 FREEHILL ROAD HENDERSONVILLE, TN 37075	DESCRIPTION: 4 9/16 single Hung Sill	ALL RADI TO BE 0.015 ALL WALL THK TO BE 0.062 UNLESS OTHERWISE SPECIFIED INTERNAL WALLS 0.050	DWG. NO. M-402	REV.
	DATE 07/07/03	WEIGHT 0.6840	AREA 1.0962	BY: ABG
DO NOT SCALE DRAWING				

TEST SPECIMEN COMPLIES
 WITH THESE DETAILS.
 ANY DEVIATION IS NOTED.
 REPORT NO. NCTL-110-10717-01
 TEST DATE: 6/11/2007



MGM INDUSTRIES 287 FREEHILL ROAD HENDERSONVILLE, TN 37075 ph 615-824-6572 fax 615-822-6581	DESCRIPTION:	SERIES:	DWG. NO.	REV.
	HEAD AND JAMB	5600	M-398	
DATE	WEIGHT:	AREA:	BY:	
07/07/03	1.0064	1.5810	ABG	
DO NOT SCALE DRAWING				

TEST SPECIMEN COMPLIES
 WITH THESE DETAILS.
 ANY DEVIATION IS NOTED.
 REPORT NO. NCTL-110-10717-01
 TEST DATE: 6/11/2007



MGM INDUSTRIES
 287 FREEHILL RD
 HENDERSONVILLE, TN
 37075

DESCRIPTION:
 Bottom sash.
 Bottom Rail

DATE
 08/11/00

ALL RADI TO BE 0.015.
 ALL WALL THK TO BE
 0.0625 UNLESS
 OTHERWISE SPECIFIED.
 ALL INTERNAL RADI .052

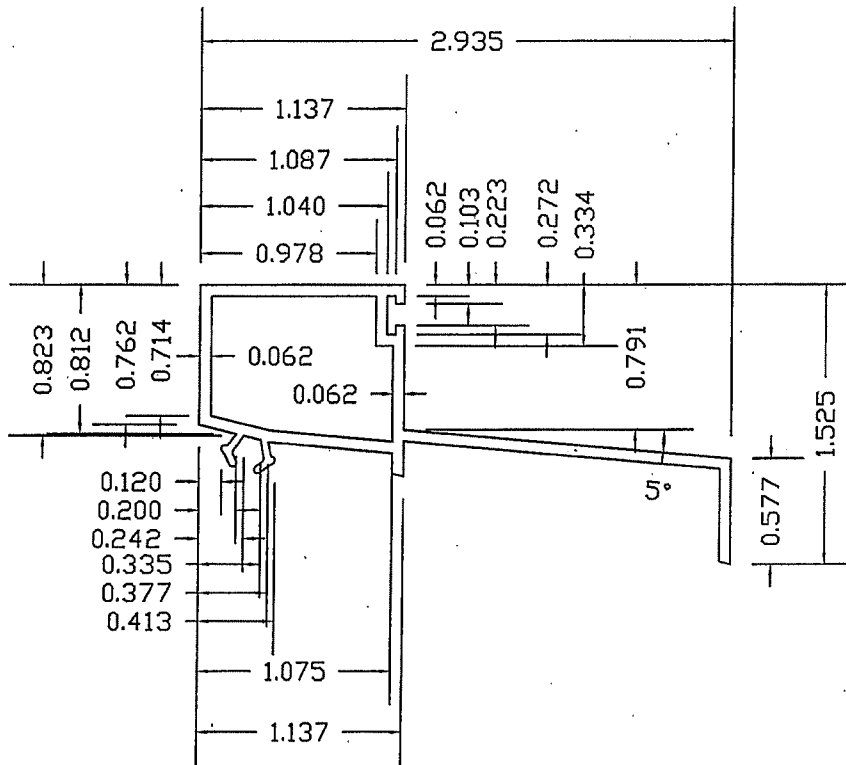
AREA .7808 WT/FT .4863

DWG. NO.
 V-8002

REV.
 4

BY: ABG

TEST SPECIMEN COMPLIES
 WITH THESE DETAILS.
 ANY DEVIATION IS NOTED.
 REPORT NO. NCTL-110-10717-01
 TEST DATE: 6/11/2007



MGM INDUSTRIES 287 FREEHILL ROAD HENDERSONVILLE, TN 37075	DESCRIPTION: 5600 Sill Tower	ALL RADI TO BE 0.015 ALL WALL THK TO BE 0.062 UNLESS OTHERWISE SPECIFIED INTERNAL WALLS 0.050	DWG. NO. M-406	REV.
	DATE 04/16/04	WEIGHT 0.2558	AREA 0.4099	BY: ABG
DO NOT SCALE DRAWING				

Revisions:

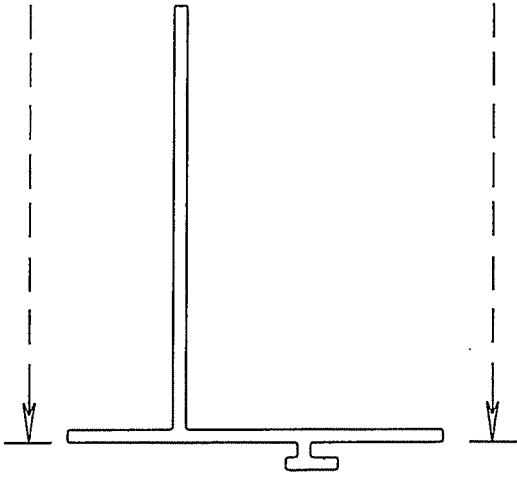
TEST SPECIMEN COMPLIES WITH THESE DETAILS

ANY DEVIATION IS NOTED.

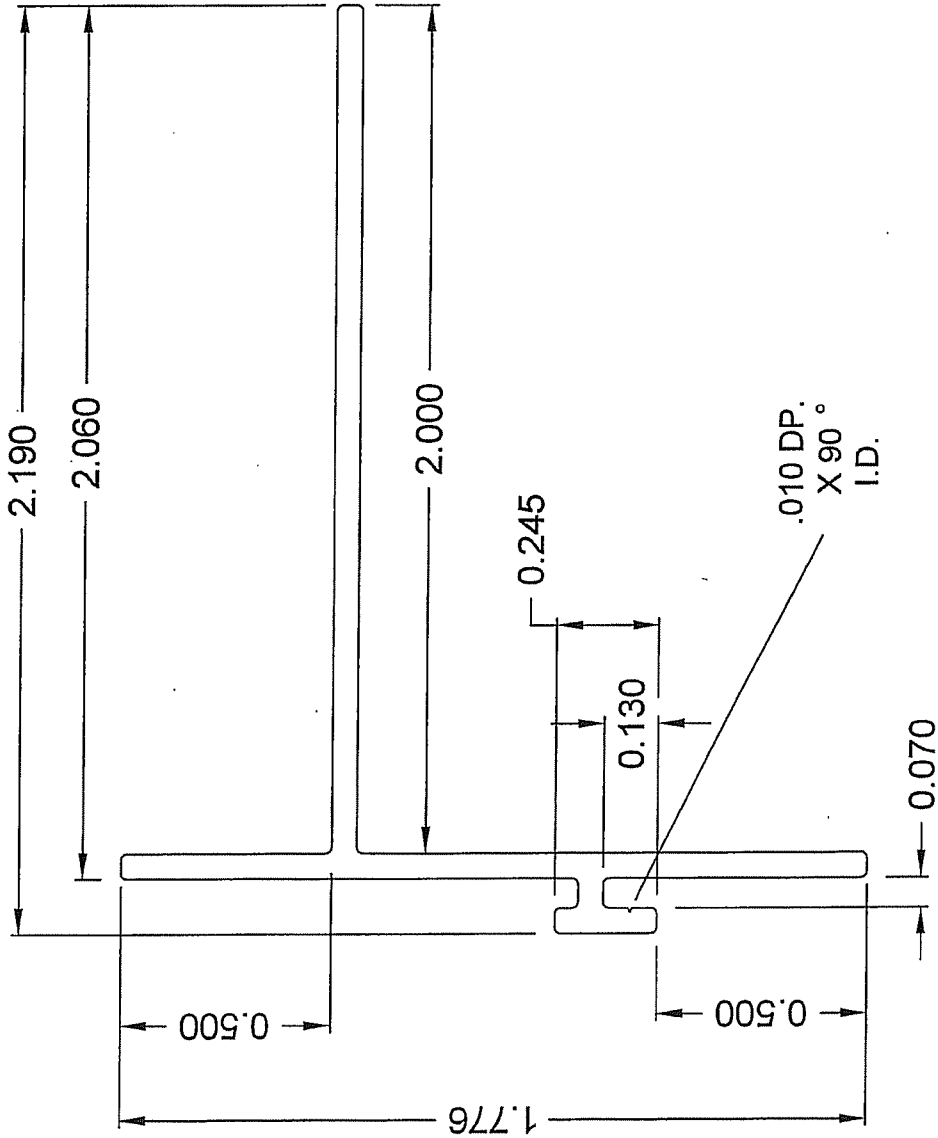
REPORT NO. NCTL 110-40747-04

TEST DATE: 6/11/2002

EXPOSED



ACTUAL SIZE

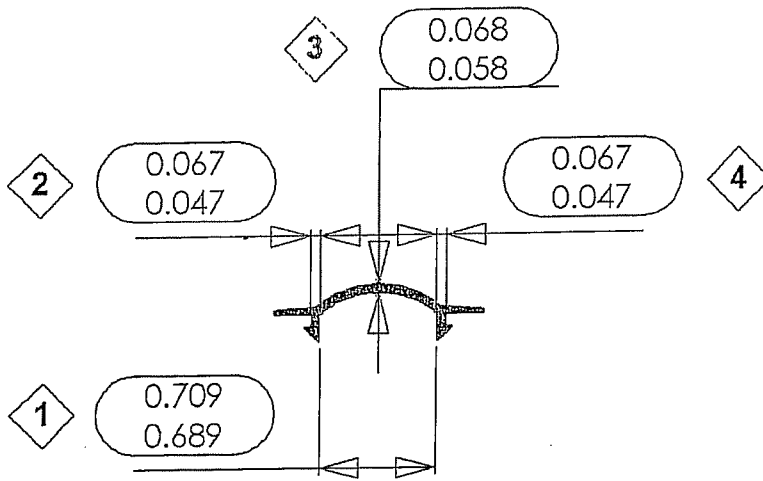


Unmarked Radii: .015	All Corners: .015	Radius Unless Specified:	Unspecified Wall Thickness: .060		Alloy/Temper: 6063-T6 Aluminum		Vendor/Die Number: 22095 A	
			Title: 8006 Nail Fin		Est. Area: .245	Scale: 2 X 1	Series#: 8000	BY: R. Graves
MGM INDUSTRIES, INC. 287 Freehill Road Hendersonville, Tennessee 37075 (615)-824-6572			Vendor: Alcoa Extruded Construction Products		Est. Perimeter: 8.219	Est. Wt. Per Ft.: .294	Date: 05/15/02	Customer #: A-127

TEST SPECIMEN COMPLIES
 WITH THESE DETAILS.
 ANY DEVIATION IS NOTED.
 REPORT NO. NCTL-110-10717-01
 TEST DATE 6/11/2007

EXTERIOR WALLS: N/A

INTERIOR WALLS: N/A



PROPRIETARY AND CONFIDENTIAL
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 WITHOUT THE WRITTEN PERMISSION OF
 MGM INDUSTRIES IS PROHIBITED.

NAME	DATE
DRAWN MCG	07/13/06
CHECKED	
ENG APPR. XXX	XX/XX/06
MFG APPR.	
Q.A.	

MGM INDUSTRIES
 287 FREEHILL RD.
 HENDERSONVILLE, TN 37075

4000/4006/7010/7006/8006/8007
 /8010/5600/5610 SERIES SASH STOP

WEIGHT: 0.056 lbs
 AREA: 0.089 in²

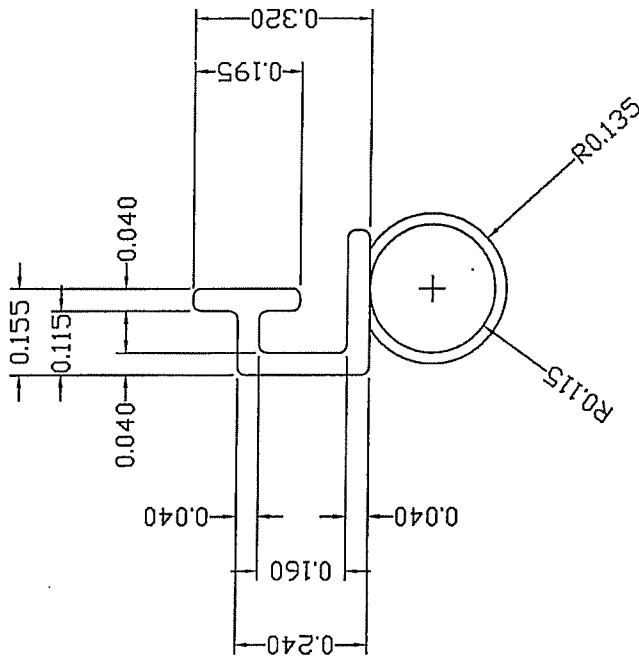
COMMENTS:
 UNLESS OTHERWISE SPECIFIED:
 EXTERNAL WALLS TO BE N/A
 INTERNAL WALLS TO BE N/A
 RADII TO BE 0.015

SHEET NO.	REV.
A	A
M-609-QUALITY	
SCALE: 1:1	DO NOT SCALE DRAWING SHEET: 4 OF 5

TEST SPECIMEN COMPLIES
 WITH THESE DETAILS.
 ANY DEVIATION IS NOTED.
 REPORT NO. NCTL-110-10717-01
 TEST DATE: 6/11/2007



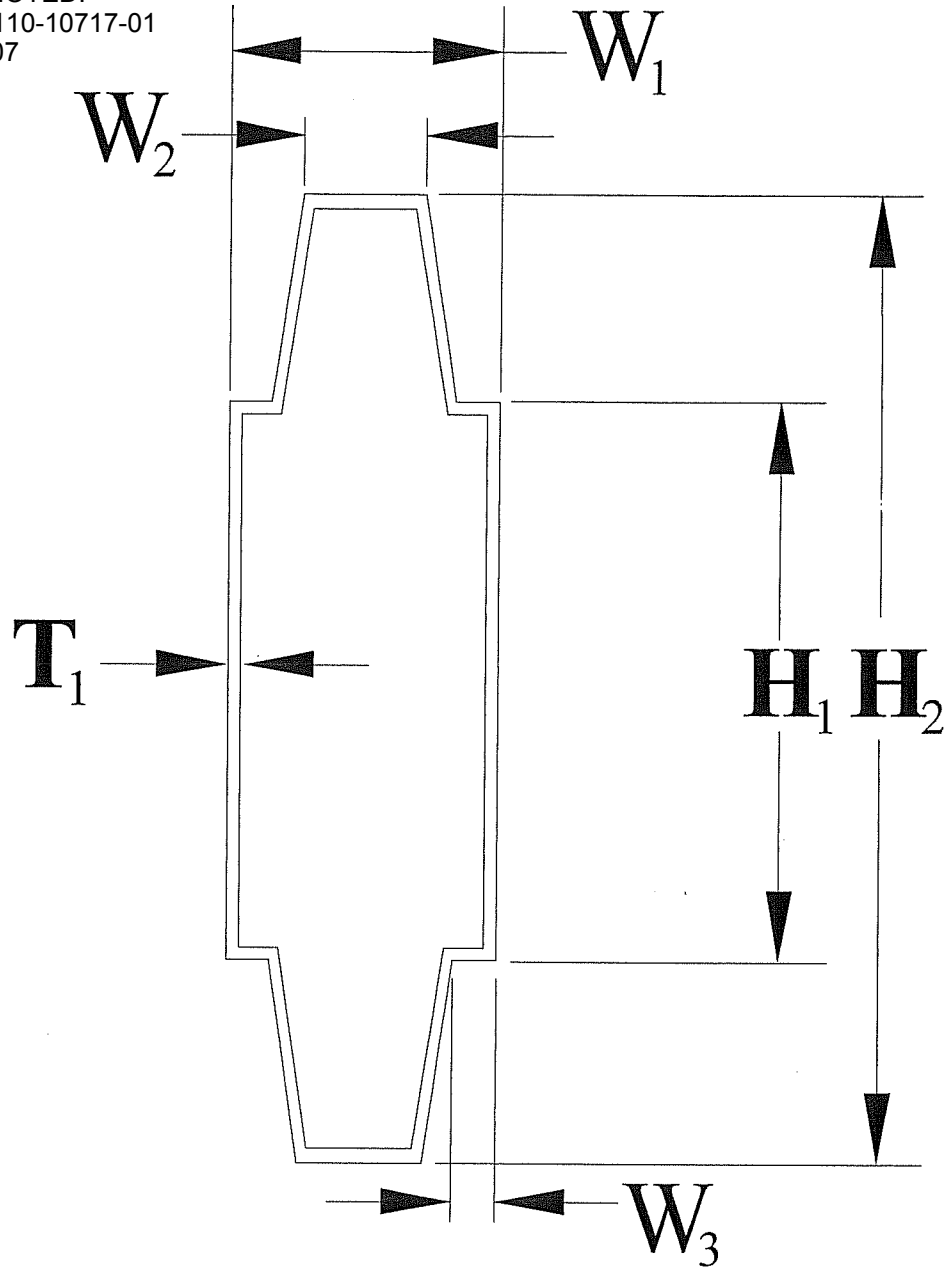
Full Size



ALL RADI TO BE 0.015. ALL WALL THKS TO BE 0.040 UNLESS OTHERWISE SPECIFIED.

MGM INDUSTRIES		SERIES# 6000		DWG. NO. V-388		REV:	
287 FREEHILL ROAD		WEIGHT:		AREA:		BY: RGraves	
HENDERSONVILLE, TN		DO NOT SCALE DRAWING		DATE: 10/06/03			
37075							

TEST SPECIMEN COMPLIES
 WITH THESE DETAILS.
 ANY DEVIATION IS NOTED.
 REPORT NO. NCTL-110-10717-01
 TEST DATE: 6/11/2007

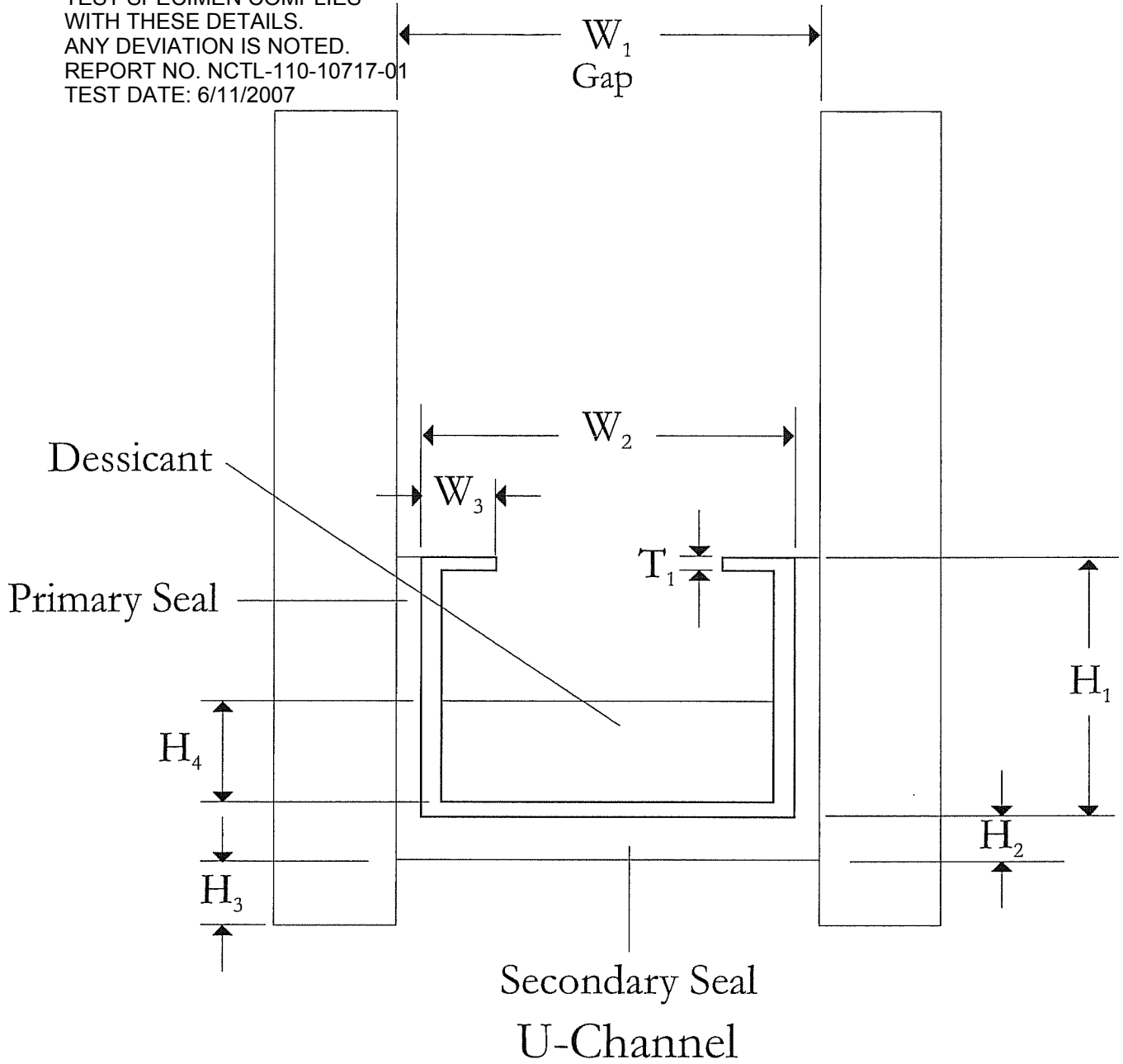


Decorative

Divider Dimensions - Fill dimensions where applicable - Please fill out a divider sheet for each divider size used.

Dimensions			Material		
<input checked="" type="checkbox"/> W_1 <u>.197</u> "	<input type="checkbox"/> W_2 _____ "	<input type="checkbox"/> W_3 _____ "	<input type="checkbox"/> Aluminum	<input type="checkbox"/> Steel - Galvanized	<input type="checkbox"/> Other _____
<input type="checkbox"/> H_1 _____ "	<input checked="" type="checkbox"/> H_2 <u>.512</u> "	<input type="checkbox"/> T_1 _____ "	<input type="checkbox"/> Steel - Mild	<input type="checkbox"/> Steel - Stainless	

TEST SPECIMEN COMPLIES
WITH THESE DETAILS.
ANY DEVIATION IS NOTED.
REPORT NO. NCTL-110-10717-01
TEST DATE: 6/11/2007



Spacer Dimensions -Fill dimensions where applicable - Please fill out a spacer sheet for each spacer used whether spacer type or size.

Gap	Primary Seal	Secondary Seal	Material	Fill
<input checked="" type="checkbox"/> W_1 <u>.75</u> "	<input checked="" type="checkbox"/> Butyl	<input checked="" type="checkbox"/> Butyl	<input type="checkbox"/> Aluminum	<input checked="" type="checkbox"/> Dessicant
<input checked="" type="checkbox"/> W_2 <u>.45</u> "	<input type="checkbox"/> PIB	<input type="checkbox"/> PIB	<input type="checkbox"/> Steel - Mild	<input type="checkbox"/> Air
<input checked="" type="checkbox"/> W_3 <u>.076</u> "	<input type="checkbox"/> Polysulphide	<input type="checkbox"/> Polysulphide	<input type="checkbox"/> Steel - Stainless	<input type="checkbox"/> Other _____
<input type="checkbox"/> W_4 _____ "	<input type="checkbox"/> Silicone	<input type="checkbox"/> Silicone	<input checked="" type="checkbox"/> Steel - Galvanized	
<input checked="" type="checkbox"/> H_1 <u>.300</u> "	<input type="checkbox"/> Urethane	<input type="checkbox"/> Urethane	<input type="checkbox"/> Vinyl	
<input checked="" type="checkbox"/> H_2 <u>.045</u> "	<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> Foam _____	
<input checked="" type="checkbox"/> H_3 <u>.08</u> "	<input type="checkbox"/> Other _____	<input type="checkbox"/> Other _____	<input type="checkbox"/> Other _____	
<input checked="" type="checkbox"/> H_4 <u>.084</u> "				
<input type="checkbox"/> H_5 _____ "				
<input checked="" type="checkbox"/> T_1 <u>.013</u> "				