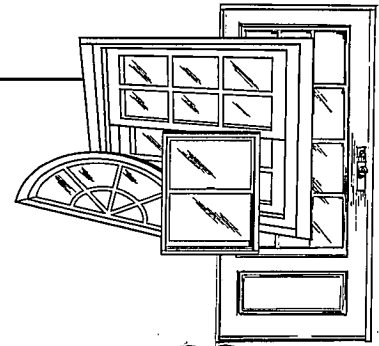


CERTIFIED TESTING LABORATORIES

Architectural Division • 7252 Narcoossee Rd. • Orlando, FL 32822
(407) 384-7744 • Fax (407) 384-7751
Web Site: www.ctlarch.com
E-mail: ctlarch.com



Report Number: CTLA 1753W-3
Report Date: October 25, 2007

STRUCTURAL PERFORMANCE TEST REPORT

Client: MGM Industries
287 Freehill Rd.
Hendersonville, TN 37075



Product Type and Series: Series 7010 Vinyl Fin Frame Fixed Transom Window F-R55*
1118mm x 1626mm (44.00" x 64.00")

Test Specification: ASTM E 283-99 "Standard Test Method for Determining Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors under Specified Pressure Differences across the Specimen."
ASTM E 547-00 "Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Cyclic Static Air Pressure Differential."
ASTM E 330-02 "Test Method for Structural Performance of Exterior Windows Curtain Walls, and Doors by Uniform Static Air Pressure Difference."
ASTM F 588-04 "Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact."
ASTM D 618-00 "Standard Practice for Conditioning Plastics for Testing."
*Note: Specimen tested to: AAMA/WDMA/CSA 101/LS.2/A440-05 "Standard/Specification for Windows, Doors and Unit Skylights" test methods but specimen does not qualify under minimum size requirements.

Frame: The extruded vinyl fin frame measured 1118mm (44.00") wide x 1626mm (64.00") high buck opening overall. Frame corners utilized miter cut and fusion welded construction. The vinyl frame head, jambs and sill measured 55mm (2.160") wide x 110mm (4.342") high. Ref. Dwg.# M-7002.

Configuration: One (1) fixed lite. **O**

Weather-stripping: N/A

Hardware & Location: N/A

Glazing: Insulated 19mm (.750") overall with 3mm (.125") Clear Annealed exterior lite, 13mm (.50") air space, 3mm (.125") Clear Annealed interior lite. Interior glazed with adhesive back bedding compound. Glazing bead is a vinyl extruded snap in type. Air space is comprised of galvanized steel "U" channel squiggle with Butyl seal. Glazing rested on rubber-setting blocks that measured 22mm (.850") wide x 22mm (.850") high x 17mm (.650") thick, with a 13mm (.50") glazing bite.

Handwritten signature and date:
10/26/07

○ Sealant: N/A

Weep System: N/A

Reinforcement: N/A

Additional Description: N/A

Screen: N/A

Installation: Thirty-Eight (38) #10 x 25mm (1.00") Phillips P.H. S.M.S. were used to secure the specimen to the wooden buck in the following manner: Eight (8) in the frame head and sill located at 22mm (.875"), 191mm (7.500"), 348mm (13.6875"), 518mm (20.375"), 678mm (26.6875"), 843mm (33.1875"), 1013mm (39.875"), and 1165mm (45.875") measuring from left frame jamb to right frame jamb. Eleven (11) in each frame jamb located at 25mm (1.000"), 191mm (7.500"), 356mm (14.000"), 521mm (20.500"), 686mm (27.000"), 851mm (33.500"), 1016mm (40.000"), 1181mm (46.500"), 1346mm (53.000"), 1511mm (59.500"), and 1640mm (64.5625") measuring from frame sill to frame head. Reference drawing- Installation Detail Screw Location.

Surface Finish: White/Vinyl

○ Comment: Nominal 2-mil polyethylene film was used to seal against air leakage during structural loads. The film was used in a manner that did not influence the test results.

Performance Test Results

<u>Paragraph</u>	<u>Title of Test</u>	<u>Method</u>	<u>Measured</u>	<u>Allowed</u>
5.3.2	Air Infiltration @ 1.57psf The tested specimen meets the performance levels specified in AAMA/WDMA 101.I.S.2/A440-05	ASTM E283-99	0.0041 cfm/ft ²	.30 cfm/ft ²
5.3.3.2	Water Resistance 5.0 gph/ft ² WTP=8.25 psf The specimen was tested without an insect screen installed.	ASTM E547-00 Four (4) 5 min. cycles	No Entry	No Entry
5.3.4.2	Uniform Load Structural Permanent Deformation @ 82.5 psf Positive (D/P +55) @ 82.5 psf Negative (D/P -55) Location (1)-Max. Allowable Perm. Set after test load at center mid-span of fixed panel (0.4% of 1575mm (62.000") span) = 6mm (0.248")	ASTM E330-02 Ten (10) second duration Loc.1 Loc.1	Passed 6mm (0.248") Passed 6mm (0.248")	

[Handwritten Signature]
 10/28/07

Performance Test Results: Continued

<u>Paragraph</u>	<u>Title of Test</u>	<u>Method</u>	<u>Measured</u>	<u>Allowed</u>
-------------------------	-----------------------------	----------------------	------------------------	-----------------------

5.3.5	Forced Entry Resistance Type "D" Window Assembly T ₁ = 10 minutes	ASTM F588-04	Passed	
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Tools used: a spatula (10.1.1.1) and a piece of stiff wire (10.1.1.2).
The test specimen meets the performance Grade 40.

5.3.6.2	Welded Corner Test Procedure "A"	ASTM D618-00	Passed	
---------	-------------------------------------	---------------------	--------	--

Note: When loaded to failure, the break did not extend along the entire weld line.

Test Date: October 2, 2007

Test Completion Date: October 5, 2007

Comments: Testing was witnessed at MGM Industries at the Hendersonville, TN location. All equipment was calibrated in accordance with AAMA 103. Nominal 2-mil polyethylene film was used to seal against air leakage during structural loads. The film was used in a manner that did not influence the test results.

Remarks: Detail drawings were available for laboratory records and comparison to the test specimen at the time of this report. A copy of this report along with representative sections of the test specimen will be retained by CTL for a period of four (4) years. The results obtained apply only to the specimen tested.

This test report does not constitute certification of this product, but only the above test results were obtained using the designated test methods and they indicate compliance with the performance requirements (paragraphs as listed) of the above referenced specifications.

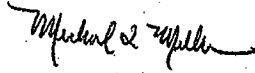
Certified Testing Laboratories assumed that all information provided by the client is accurate and that the physical and chemical properties of the components are as stated by the manufacturer.

Certified Testing Laboratories, Inc.

Handwritten signature
10/28/07

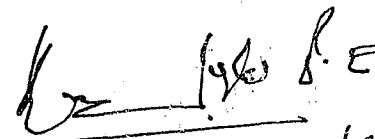
All Tests Witnessed by:

Gary Nations Certified Testing Laboratories
Ryan Blankenship- MGM Industries.



Michael Miller
Senior Lab Technician
Architectural Division
Certified Testing Laboratories, Inc.

cc: MGM Industries (2)
 A.L.I. (2)
 Ramesh Patel P.E. (1)
 File (1)



Ramesh Patel, P.E. 10/22/07
Florida Reg. #20224



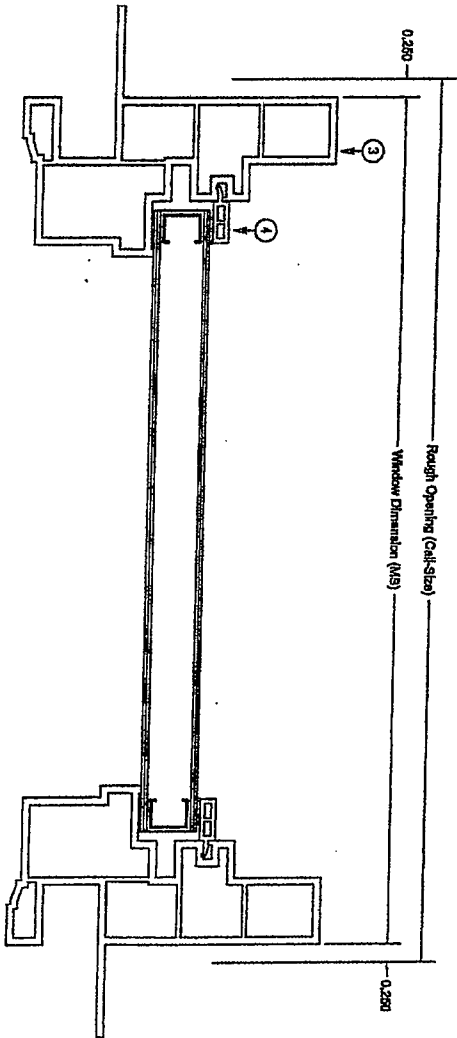
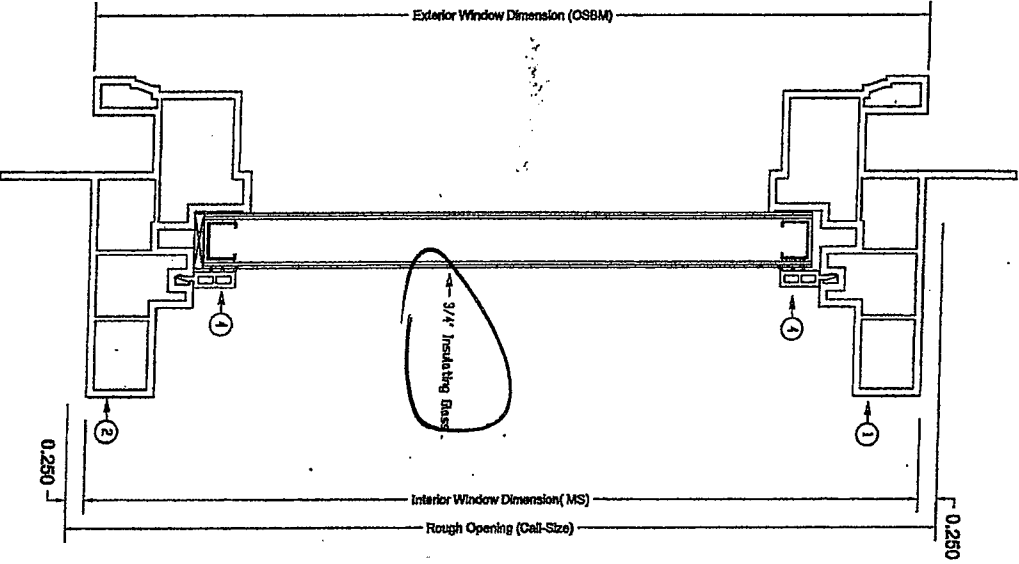
CTI
CERTIFIED TESTING LABORATORIES

ARCHITECTURAL DIVISION
7252 NARCOOSSEE ROAD
ORLANDO, FLORIDA 32822

CTIA No. 1753W-3

Date Verified: 10-18-07

Verified By: K.10



- ① H-7002 FRAME HEAD
- ② H-7002 FRAME SILL
- ③ H-7002 FRAME JAMB
- ④ H-185 GLAZING BEAD

MGM
INDUSTRIES

307 PRESIDENT ROAD
HENDERSONVILLE, TN 37075
1-404-478-4844
F4-415-824-8072
F4-615-822-8051

TITLE
Vertical and Horizontal Cut Logic

FOOT
WORK

REVISIONS
7010 Transom

SCALE

DATE
01-10-07

BY
R.GRAVES

Do Not Scale Drawing

DO NOT SCALE DRAWING

DATE 12/05/03

0.984

AREA 1.577

BY: ABG

37075

HENDERSONVILLE, IN
7 FREEHILL ROAD

Picture Window
7006 Bendable
7010

MGM INDUSTRIES

DESCRIPTION

ALL RADI TO BE 0.015

DWG. NO.

REV.

0.100 UNLESS

OTHERWISE SPECIFIED

INTERNAL WALLS 0.050

M-2002

Verified By: K. D.

Date Verified: 10-18-07

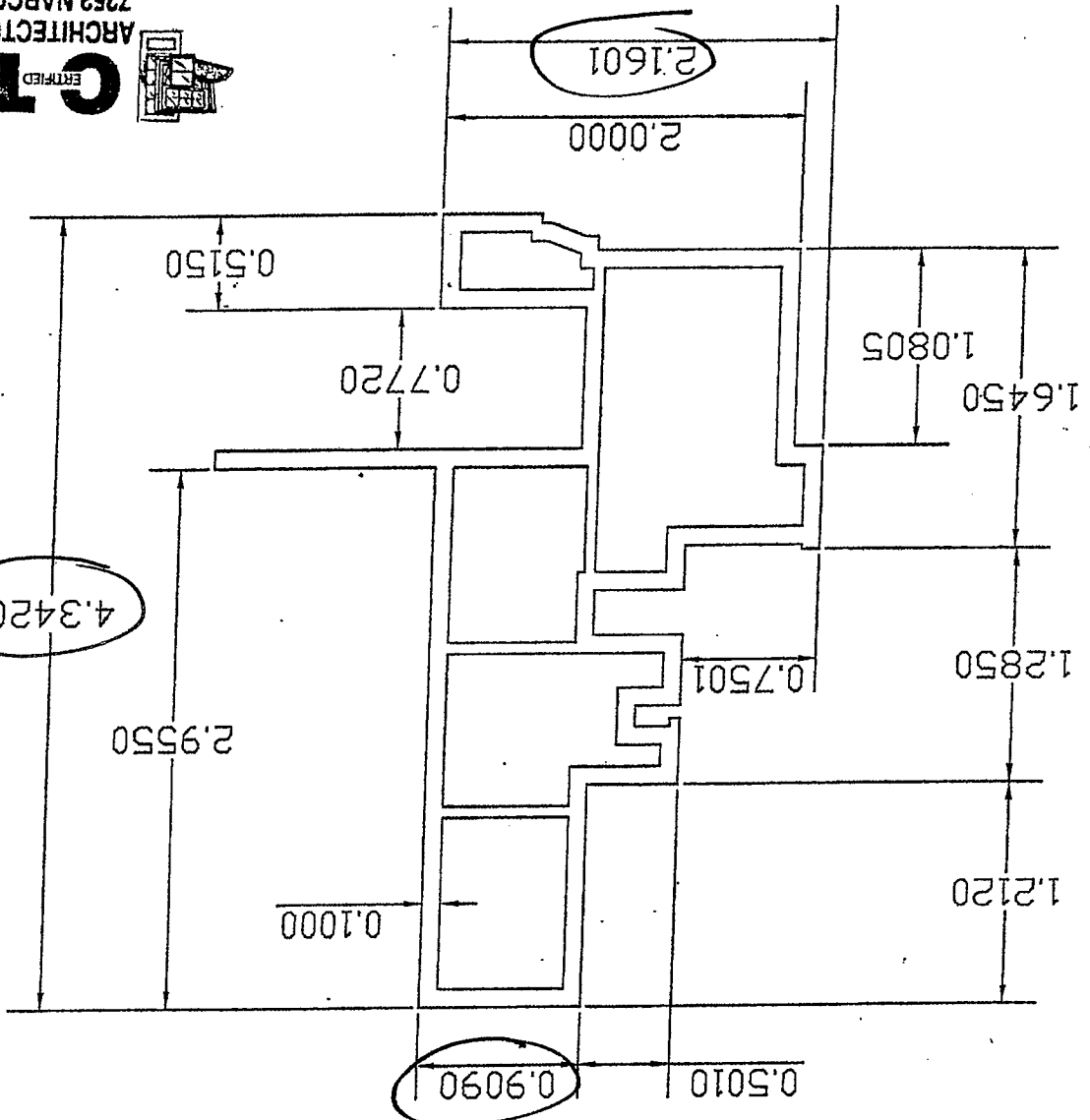
CTIA No. 1753W-3

ORLANDO, FLORIDA 32822

7252 NARCOOSSEE ROAD

ARCHITECTURAL DIVISION

CTL ESTING LABORATORIES



NEXT ASSY.

USED ON

REV.

DESCRIPTION

DATE APPROVED

APPROVED

APPLICATION

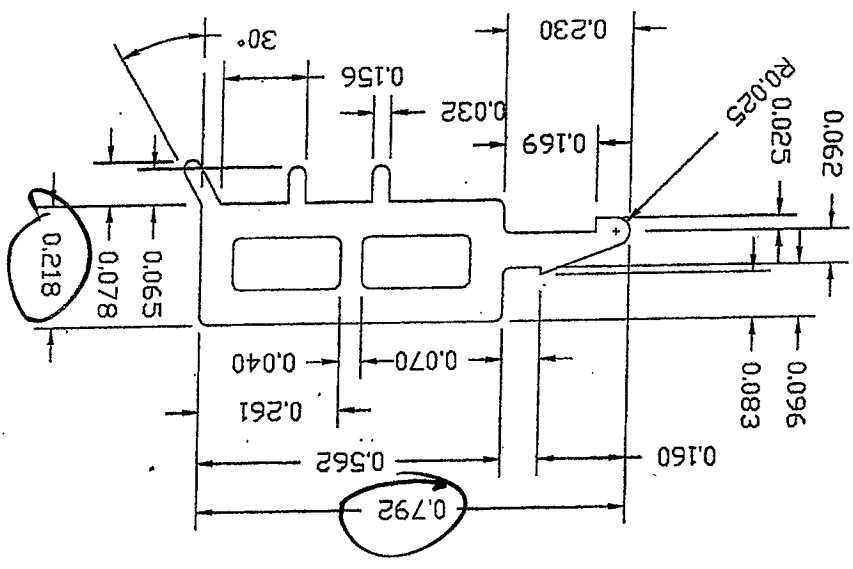
REVISIONS

DATE: 10-06-01		BY: R Groves		DESCRIPTION: Glazing Bead 5000		7010-8006-8010		5600-6000-7006		HENDERSOVILLE, TN		287 FREEHILL ROAD		MGM INDUSTRIES		37075	
DWG. NO.: V-185		REV.:		SERIES#:		WT/FT: .066		AREA: .106		DD NOT SCALE DRAWING							

ALL RADI TO BE .0015. ALL WALL THKS TO BE .0062 UNLESS OTHERWISE SPECIFIED.

CTL ESTIMATING LABORATORIES
 ARCHITECTURAL DIVISION
 7252 NARCOOSSEE ROAD
 ORLANDO, FLORIDA 32822
 CTLA No. 1753W-3
 Date Verified: 10.18.07
 Verified By: K-10

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



Full Size

Bill of Materials Listing

Print Date: Aug 17, 2007

Product: 7010

Type: TR


Assembly Code Part # Description Qty Height Width Code Hor Assy Unit Vert Sub Add Color Length Fixed W/Nailing

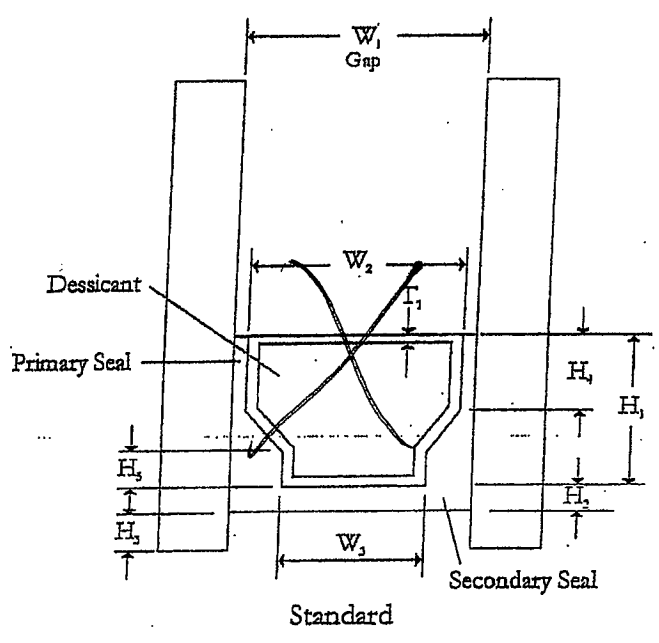
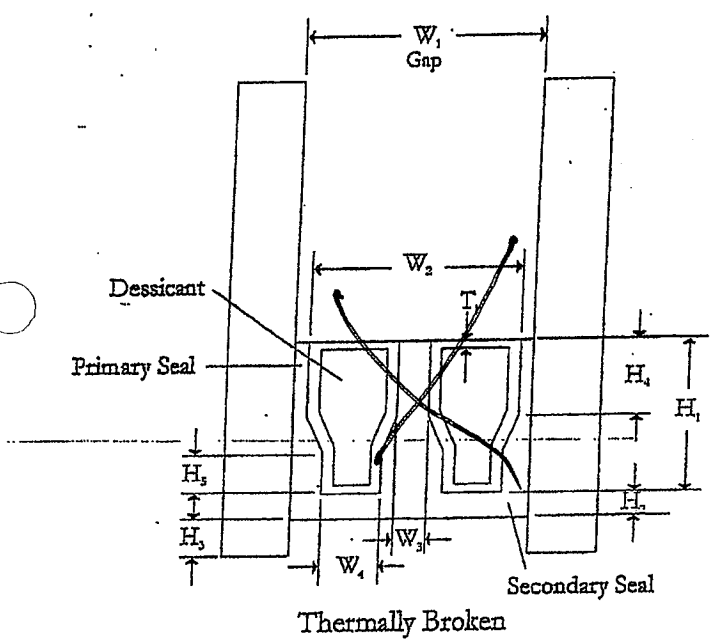
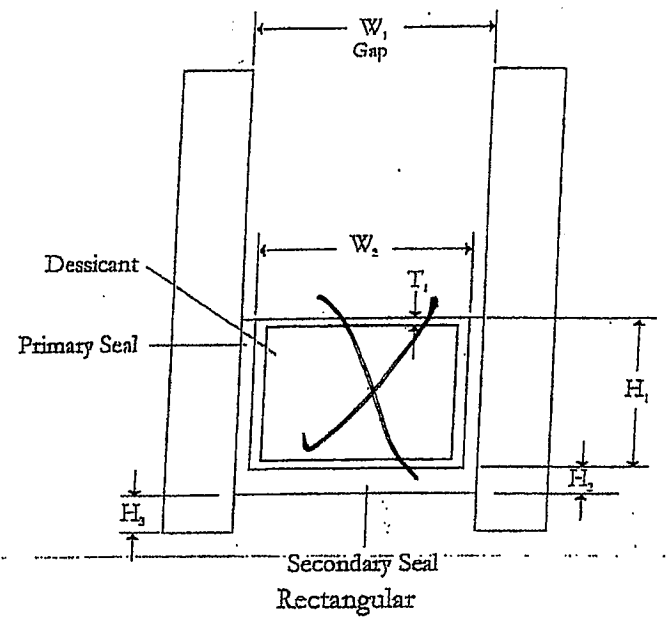
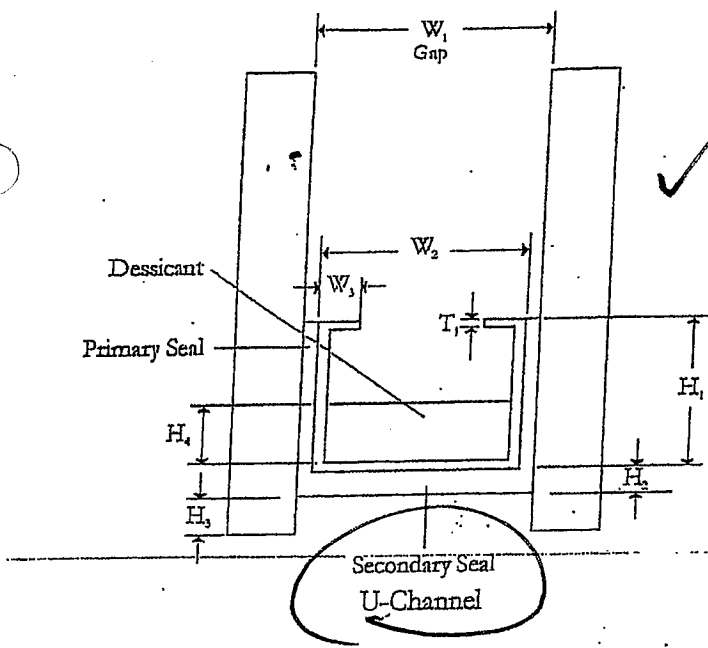
Code	Part #	Description	Qty	Height	Width	Code	Hor	Assy	Unit	Vert	Sub	Add	Color	Length	Fixed	W/Nailing
GLASS	1CT	Default Glass Type	1.00	3.1250	3.1250	SF					IA					
GLSSPC	SWG-11/16	Glass Spacer	2.00	3.9375		LI	W				IA					
GLSSPC	SWG-11/16	Glass Spacer	2.00	6.3750		LI	H				IA					
MUNCLP	10946-002	Muntin Clips	1.00			BA					IA					
MUNTNH	536006	Muntin Bar Horizontal	1.00	5.3125		LI	W				IA					
MUNTNV	536006	Muntin Bar Vertical	1.00	5.4375		LI	H				IA					

End of Subassembly IA

GLWNH	V-185	Glazing Vinyl(H)	2.00			LI	W				MF					
GLWLV	V-185	Glazing Vinyl(V)	2.00			LI	H				MF					
HEADER	7002	Frame Top Extrusion	1.00			LI	W				MF					
JAMBS	WOOD	Jamb Extension	2.00			LI	H				MF					
JAMBS	WOOD	Jamb Extension	2.00			LI	H				MF					
JAMEXT	WOOD	Jamb Extension	2.00			LI	W				MF					
LAMB	7002	Left Side Extrusion	1.00			LI	H				MF					
MULT	V-226	Mullion	1.00			LI	W				MF					
NLFTN	1023	Nailing Flt	2.00			LI	H				MF					
NLFTN	1023	Nailing Flt	2.00			LI	W				MF					
RAMB	7002	Right Side Extrusion	1.00			LI	H				MF					
SILT	7002	Bottom Extrusion	1.00			LI	W				MF					

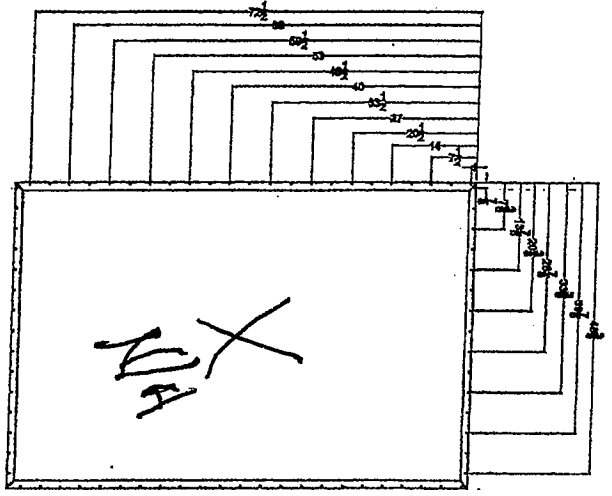
End of Subassembly MF


CTI ESTIMATING LABORATORIES
 ARCHITECTURAL DIVISION
 7252 NARCOOSSEE ROAD
 ORLANDO, FLORIDA 32822
 CTIA No. 1753W-3
 Date Verified: 10-18-07
 Verified By: K-ID

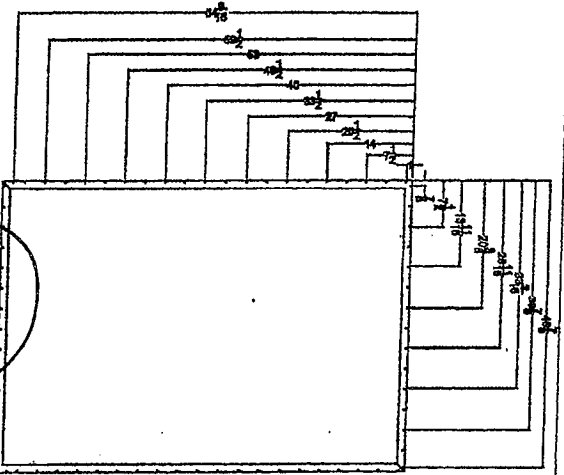


Spacer Dimensions - Fill dimensions where applicable - Please fill out a spacer sheet for each spacer used whether spacer type or size.

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<input type="checkbox"/> W ₂ <u>.526</u> "	<input type="checkbox"/> PIB	<input type="checkbox"/> PIB	<input type="checkbox"/> Steel - Mild	<input type="checkbox"/> Air
<input type="checkbox"/> W ₃ <u>.676</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 type="checkbox"/> H ₁ <u>.300</u> "	<input type="checkbox"/> Urethane	<input type="checkbox"/> Urethane	<input type="checkbox"/> Vinyl	
<input type="checkbox"/> H ₂ <u>.645</u> "	<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> Foam _____	
<input type="checkbox"/> H ₃ <u>.08</u> "	<input type="checkbox"/> Other _____	<input type="checkbox"/> Other _____	<input type="checkbox"/> Other _____	
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<input type="checkbox"/> H ₅ _____ "				
<input type="checkbox"/> T ₁ <u>.013</u> "				

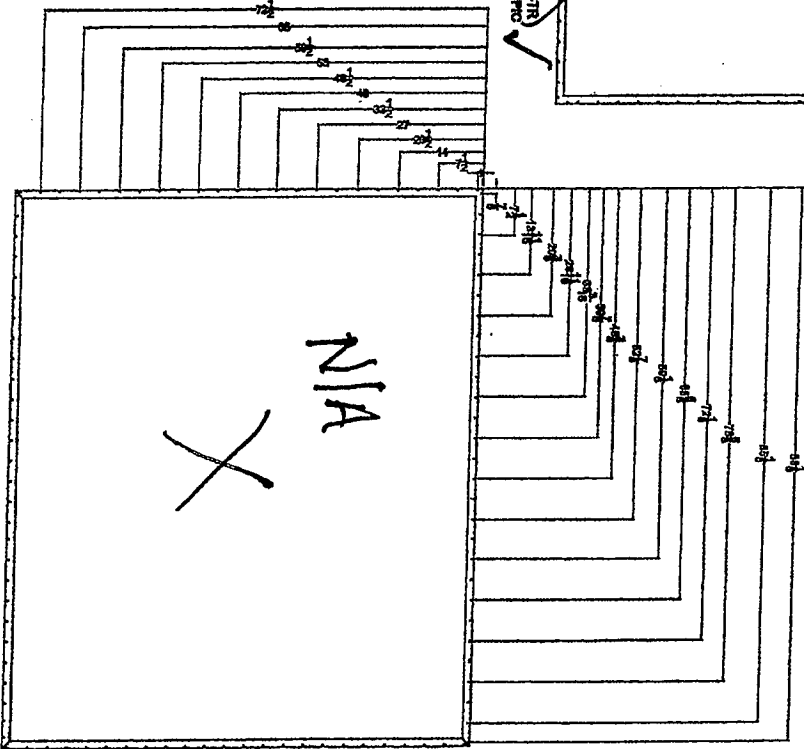


4000 Series 7010 DH



4000 Series 7010-TR
4000 Series 2016 PVC

Install Into Wood Buck
Back Bead Perimeter 3/8" - 1/2"
of Nail Fin. Level, Square and Plumb
prior to anchoring with #10x1" PPH screw.



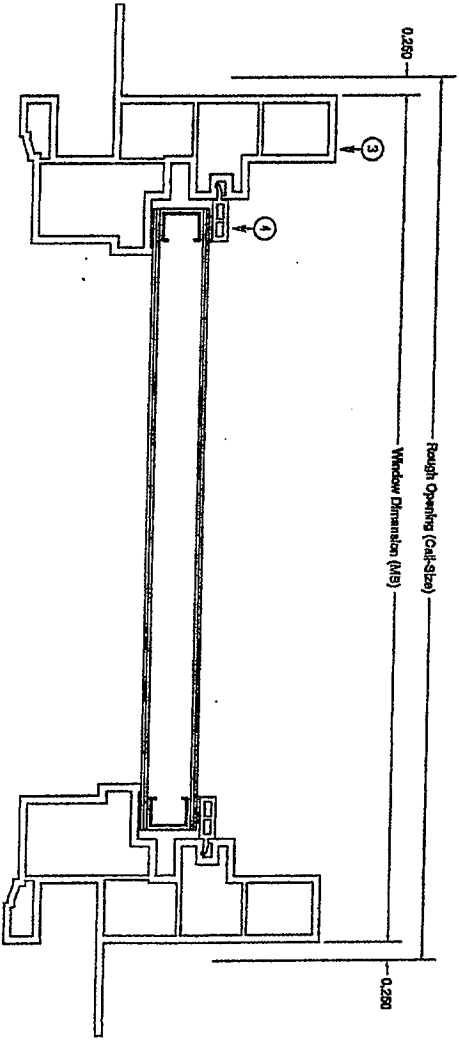
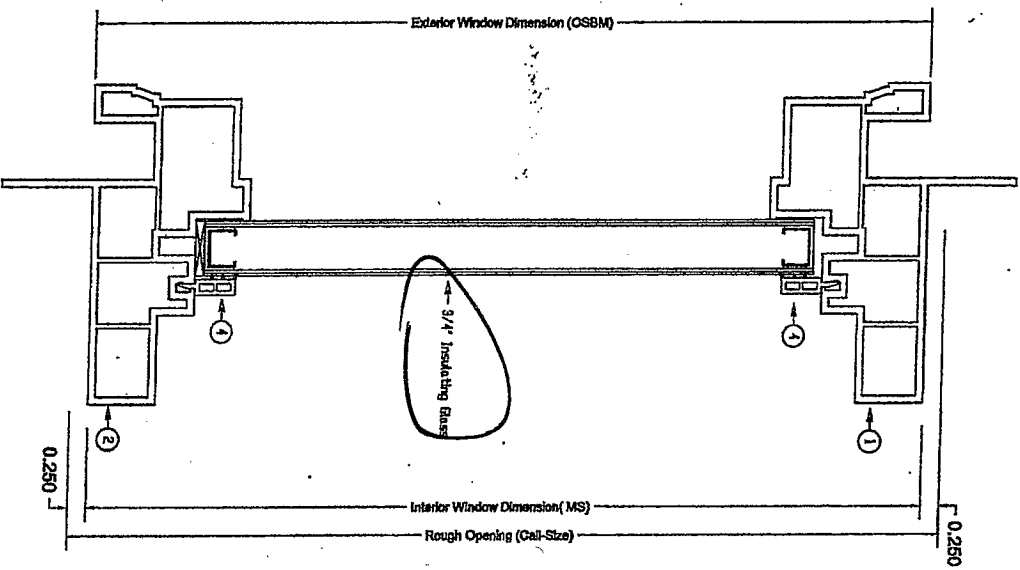
3802 Series 8066 DHTW

MGM
INDUSTRIES
287 FREEHILL ROAD
HENDERSONVILLE, TN 37075
1-800-476-6564
Ph-615-824-8872
Fk-615-822-8591

TITLE: Installation Detail Screw Location
MATERIALS:

PO#: SERIES #: 7010, 8065 DATE: 10-17-07 BY: RBLANK
WCH#: Do Not Scale Drawing DWG#:

CTLA No. **1753W-3**
 Date Verified: **10-18-07**
 Verified By: **K-10**



- ① H-7002 FRAME HEAD
- ② H-7002 FRAME SILL
- ③ H-7002 FRAME JAMB
- ④ H-185 GLAZING BEAD

MGM
 INDUSTRIES

287 FERRISL ROAD
 HENDERSONVILLE, TN 37056
 1-800-478-6884
 TN 615-884-8884
 TN 615-884-8881

TITLE: **Vertical and Horizontal Cut Logic**
 MATERIALS:

FOR: **WCM**

REVISION: **7010 Transom**

DATE:

01-10-07

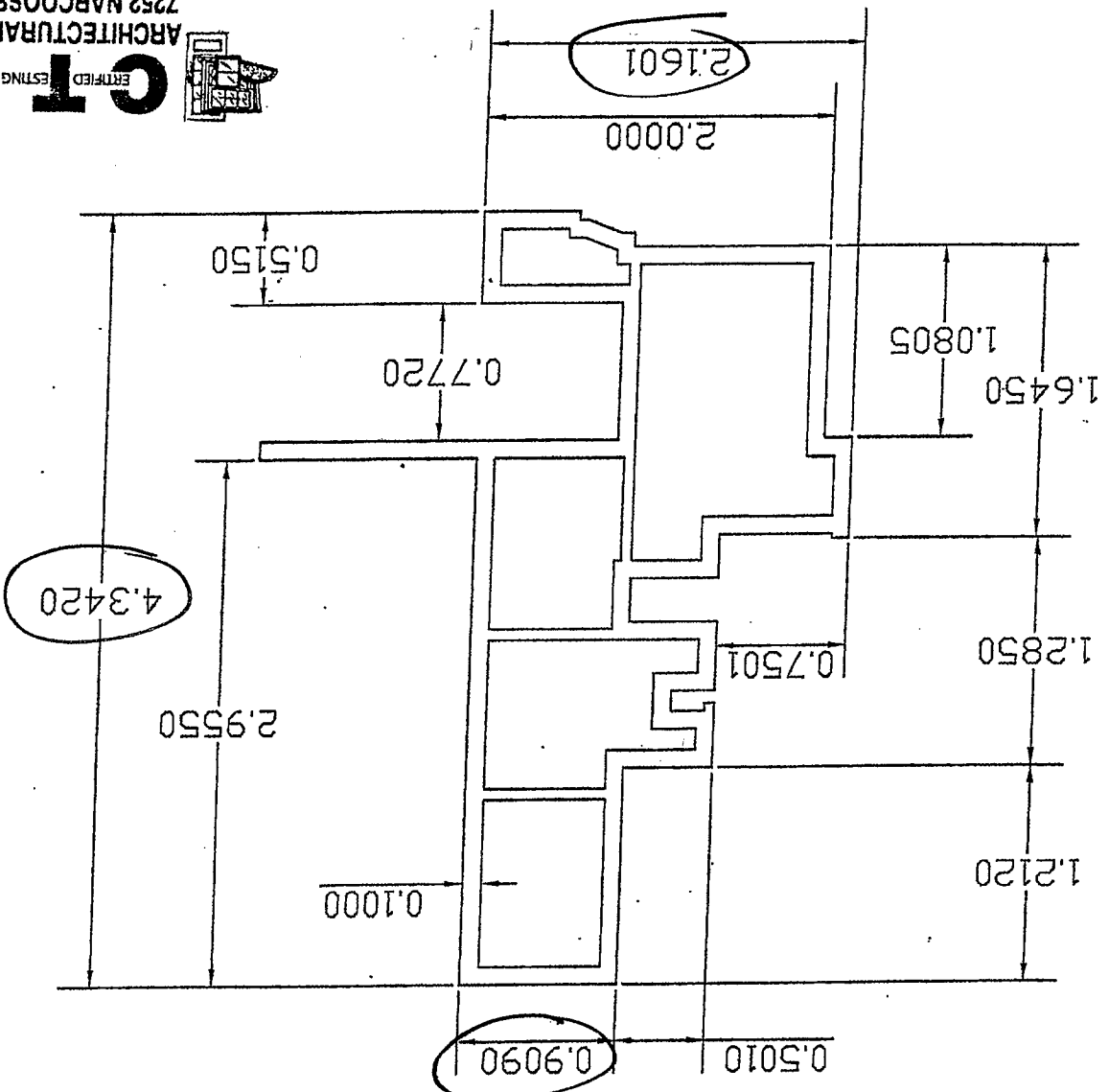
BY:

R.GRAVES

Do Not Scale Drawing

DD NOT SCALE DRAWING		DATE 12/05/03	WEIGHT 0.984	AREA 1.577	BY: ABG
37075		Picture Window	ALL RADI TO BE 0.015	INTERNAL WALLS 0.050	
HENDERSONVILLE, TN		706 Bendable	0.100 UNLESS OTHERWISE SPECIFIED	M-2002	
7 FREEHILL ROAD		1010	ALL WALL THK TO BE	DWG. NO.	REV.
MGM INDUSTRIES		DESCRIPTION:			

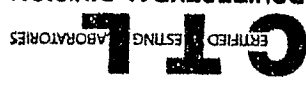
CTIA No. 1753W-3
 Date Verified: 10-18-07
 Verified By: K. Jo
 ARCHITECTURAL DIVISION
 7252 NARCOOSSEE ROAD
 ORLANDO, FLORIDA 32822
CTL ESTING LABORATORIES



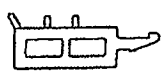
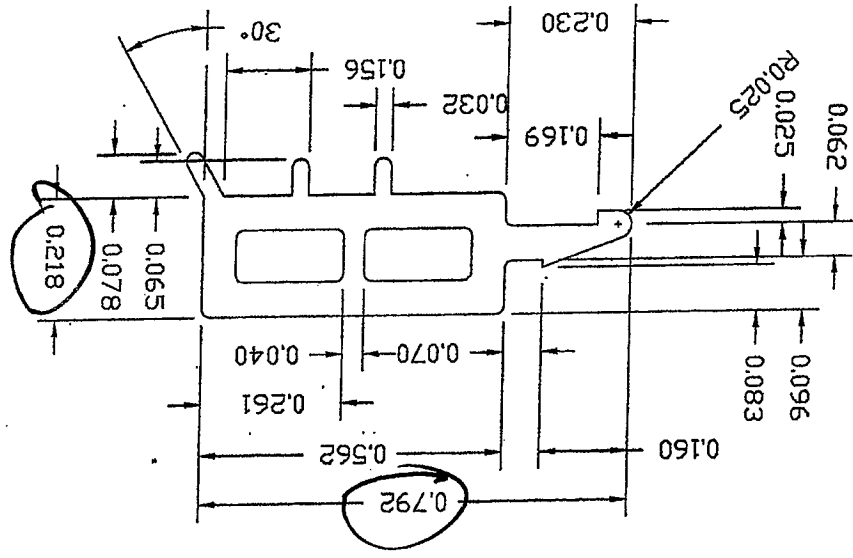
APPLICATION	USED ON	REV. DESCRIPTION	DATE APPROVED
NEXT ASSY.			
REVISIONS			

DATE: 10-06-01		AREA: .106		WT/FT: .066		DD NOT SCALE DRAWING		37075	
BY: R Graves		SERIES#: V-185		DVG. NO.:		DESCRIPTION: Glazing Bead 5000		HENDERSOVILLE, TN	
REV:		DVG. NO.:		SERIES#: V-185		DESCRIPTION: Glazing Bead 5000		287 FREEHILL ROAD	
REV:		DVG. NO.:		SERIES#: V-185		DESCRIPTION: Glazing Bead 5000		MGM INDUSTRIES	

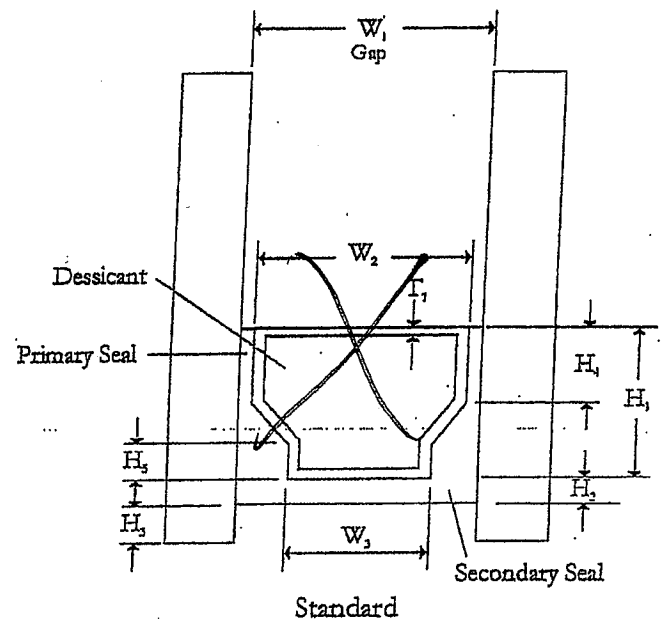
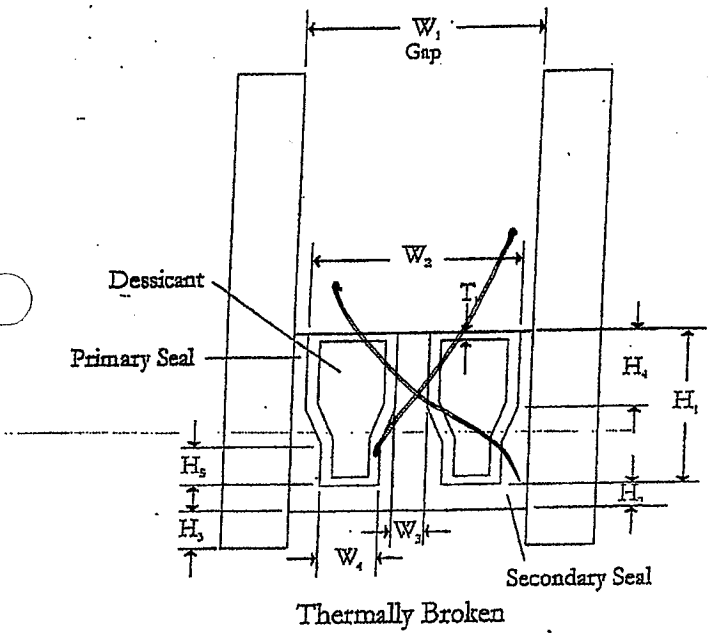
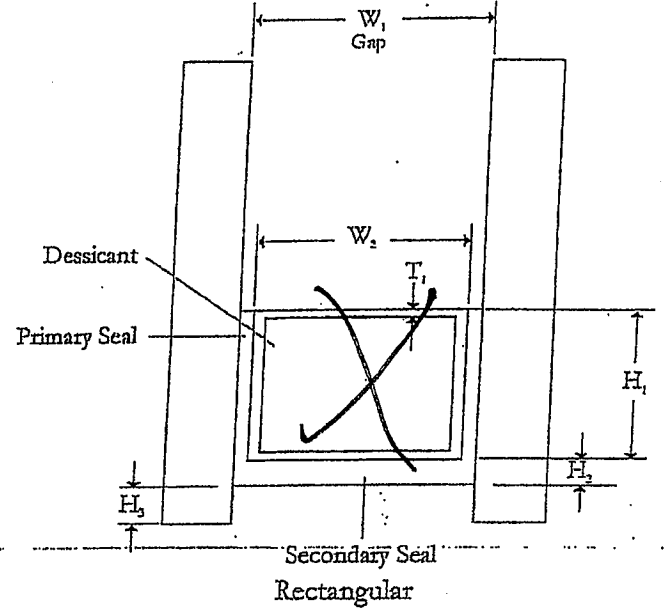
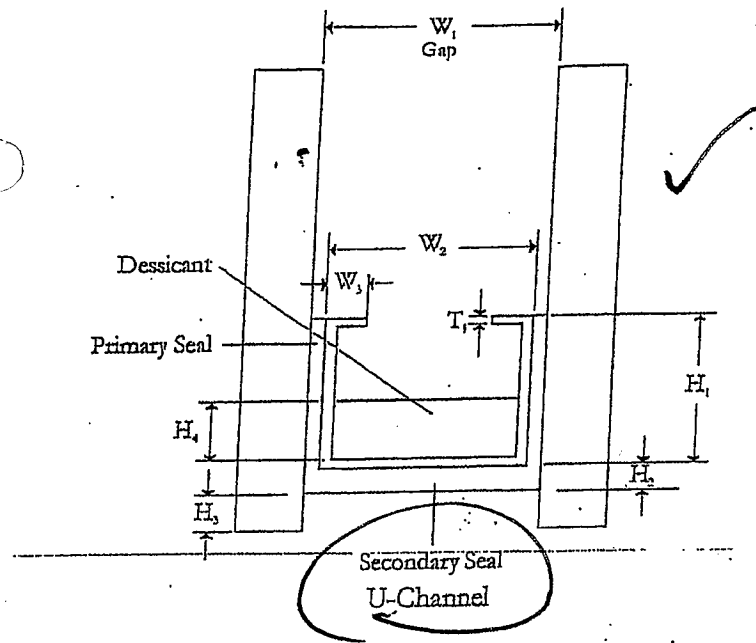
ALL RADI TO BE 0.015. ALL WALL THKS TO BE 0.062 UNLESS OTHERWISE SPECIFIED.


CTL
 CERTIFIED ESTING LABORATORIES
 ARCHITECTURAL DIVISION
 7252 NARCOOSSEE ROAD
 ORLANDO, FLORIDA 32822
 CTLA No. 1753 W-3
 Date Verified: 10.18.07
 Verified By: K-10

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



Full Size



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 type="checkbox"/> W ₁ .516 "	<input checked="" type="checkbox"/> Butyl	<input checked="" type="checkbox"/> Butyl	<input type="checkbox"/> Aluminum	<input checked="" type="checkbox"/> Dessicant
<input type="checkbox"/> W ₂ .526 "	<input type="checkbox"/> PIB	<input type="checkbox"/> PIB	<input type="checkbox"/> Steel - Mild	<input type="checkbox"/> Air
<input type="checkbox"/> W ₃ .676 "	<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 type="checkbox"/> H ₁ .300 "	<input type="checkbox"/> Urethane	<input type="checkbox"/> Urethane	<input type="checkbox"/> Vinyl	
<input type="checkbox"/> H ₂ .1645 "	<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> Foam _____	
<input type="checkbox"/> H ₃ .08 "	<input type="checkbox"/> Other _____	<input type="checkbox"/> Other _____	<input type="checkbox"/> Other _____	
<input type="checkbox"/> H ₄ .1084 "				
<input type="checkbox"/> H ₅ _____ "				
<input type="checkbox"/> T ₁ .013 "				

MGM
INDUSTRIES

287 FREEHILL ROAD
HENDERSONVILLE, TN 37076
1-800-475-5594
Ph-615-824-8872
Fx-615-822-5591

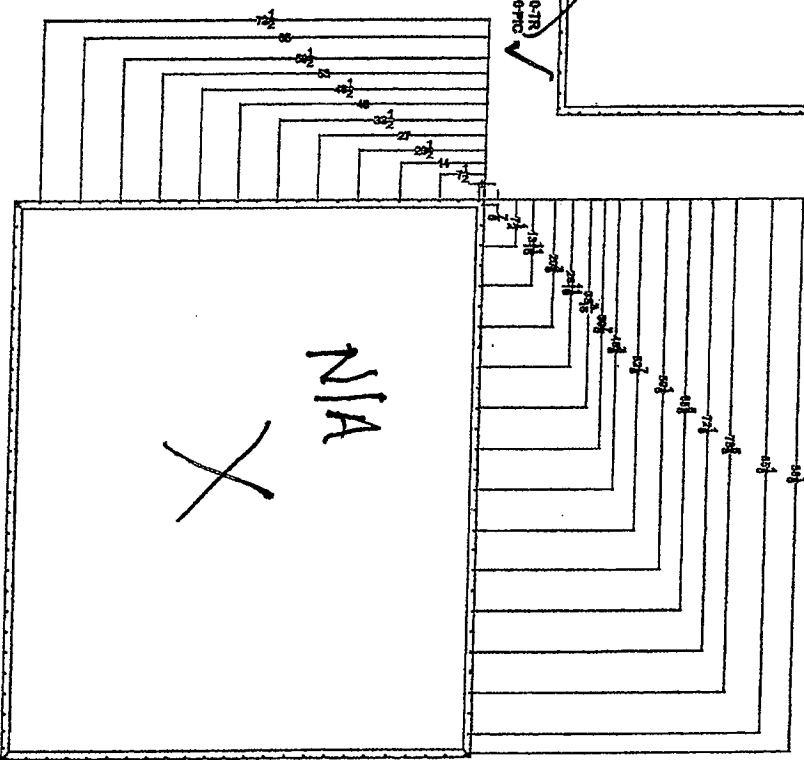
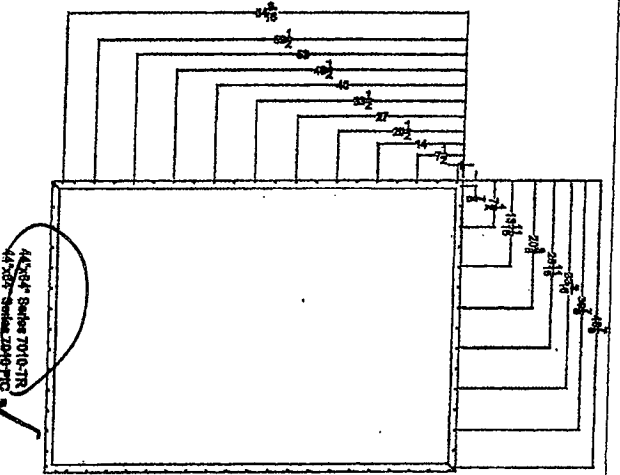
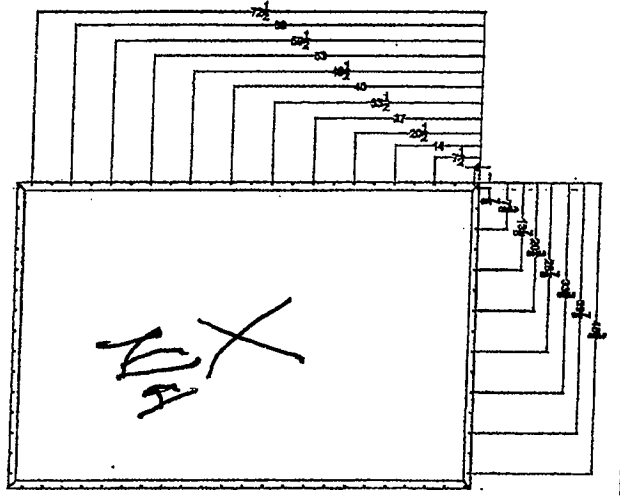
TITLE: Installation Detail Screw Location
MATERIALS:

PO#:
WCH#:

SERIES #: 7010, 8065 DATE: 10-17-07 BY: RBLANK
Do Not Scale Drawing DWG#:

Install Into Wood Buck
Back Bead Perimeter 3/8" - 1/2"
of Nail Fin. Level, Square and Plumb
prior to anchoring with #10x1" PPH screw.

4002 Series 7010 DH



3892 Series 8065 CHTW