



Architectural Testing

**ASTM E 1886 and ASTM E 1996
TEST REPORT**

Rendered to:

EFCO, A PELLA COMPANY

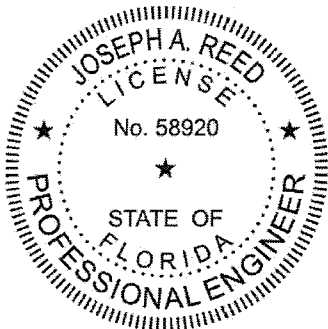
SERIES/MODEL: 5XPT

PRODUCT TYPE: Thermally Improved Aluminum Sliding Glass Door (OXXO)

This report contains in its entirety:

Cover Page: 1 page
Report Body: 15 pages
Test Equipment: 1 page
Sketch: 1 page
Drawings: 32 pages

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Joseph A. Reed
Digitally Signed by: Joseph A. Reed

Date: 2009.08.11 16:24:17 -04'00'

Report No.: 92110.02-801-18
Test Dates: 06/09/09
Through: 06/22/09
Report Date: 08/11/09
Expiration Date: 06/22/13

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ASTM E 1886 and ASTM E 1996 TEST REPORT

Rendered to:

EFCO, A PELLA COMPANY
1000 County Road
Monett, Missouri 65708

Report No.: 92110.02-801-18
Test Dates: 06/09/09
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Project Summary: Architectural Testing, Inc. was contracted by EFCO, a Pella Company to perform testing on four Series/Model 5XPT, thermally improved aluminum sliding glass doors (OXXO). Test Unit #1 through Test Unit #3 met the performance requirements set forth in the test methods for a ± 4309 Pa (± 90.0 psf) *Design Pressure* rating. Test Unit #4 included alternate glazing and was tested for informational purposes. All units had missile impacts corresponding to Missile Level D and Wind Zone 4. Test specimen description and results are reported herein. The samples were provided by the client.

Test Procedures: The test specimens were evaluated in accordance with the following:

ASTM E 1886-05, *Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors and Storm Shutters Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.*

ASTM E 1996-05, *Standard Specification for Performance of Exterior Windows, Glazed Curtain Walls, Doors and Storm Shutters Impacted by Wind Borne Debris in Hurricanes.*

Test Specimen Description:

Series/Model: 5XPT

Product Type: Thermally Improved Aluminum Sliding Glass Door (OXXO)

Overall Size: 4877 mm (192") wide by 2499 mm (98-3/8") high

Rough Opening Size: 4890 mm (192-1/2") wide by 2511 mm (98-7/8") high

Fixed Panel Size (2): 1292 mm (50-7/8") wide by 2356 mm (92-3/4") high

Operable Panel Size (2): 1251 mm (49-1/4") wide by 2356 mm (92-3/4") high

Test Specimen Description: (Continued)

Daylight Opening Size: 1054 mm (41-1/2") wide by 2184 mm (86") high

Overall Area: 12.2 m² (131.00 ft²)

Finish: White painted aluminum

Glazing Details: Units #1 through Test Unit #3 were glazed with insulating glass with 1-3/16" overall thickness and a steel reinforced spacer. There was 1/4" thick heat strengthened glass at the exterior, 3/8" air space, and at the interior was laminated glass with 0.075" thick Vanceva™ interlayer with one piece of 1/4" thick heat strengthened glass on each side. Test Unit #4 was glazed with insulating glass with 1-3/16" overall thickness and a steel reinforced spacer. There was 1/4" thick heat strengthened glass at the exterior, 3/8" airspace, and at the interior was laminated glass with 0.090" thick SentryGlas® Plus interlayer with one piece of 1/4" thick heat strengthened glass on each side. Each unit was interior glazed against a back bedding compound. A heel bead of sealant was applied full perimeter between the frame and glass at the interior. An aluminum snap-in glazing bead with glazing wedge was secured at the interior against the glass. All units were glazed with Bondaflex® SIL 295. Glazing bite on all units was 1".

Weatherstripping:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>	<u>Joinery</u>	<u>Method</u>
0.270" x 0.250" foam filled bulb	7 Rows	Exterior opening along fixed rails, exterior face of threshold, and exterior face of head filler. On each sash at interior face of meeting stile and at interior face of the keeper sash locking stile.	Kerf	Staked
0.270" x 0.220" pile	1 Row	Exterior face of keeper sash locking stile.	Kerf	Staked
0.187" x 0.250" vinyl bulb	1 Row	Interior face of the exterior leg at sub head.	Kerf	Staked
0.270" x 0.150" pile	1 Row	Interior face of the exterior leg at head.	Kerf	Staked

Test Specimen Description: (Continued)

Frame Construction: All frame and retaining members were formed from extruded aluminum members. The frame was thermally improved. Frame corners were square-cut, coped and mechanically assembled using #10 x 1-1/4" pan head Phillips screws at each corner. Two screws were used at each bottom corner and four at each top corner. Foam gasket was applied between corners before assembly. An aluminum 1-3/4" tall threshold was snapped into the sill. A sealant compound at the exterior face of the threshold was used to secure it to the sill. A 7/16" tall aluminum roller track was kerf mounted onto the sill. Between the threshold and the roller track were two 48" wide x 1" tall aluminum windload adaptors that were secured to the sill with #10 x 1/2" set screws (two per adaptor). Windload posts were positioned under operable panels. A sealant compound was applied over the sill thermal break and 7" up each jamb thermal break. An aluminum 1-3/4" tall head filler was snapped into the head of the frame. A sealant compound at the exterior face of the head filler was used to secure it to the frame head.

Fixed Panel Construction: All panel members were formed from thermally improved aluminum extrusions. Panel corners were square-cut, coped, and mechanically fastened. Two screws were used to fasten each fixed meeting rail corner: one #10 x 2" and one #10 x 1-1/4" pan head Phillips screw. Two #10 x 1-1/4" pan head Phillips screws were used to secure each fixed panel side rail. Foam gasket was applied between corners before assembly.

Operable Panel Construction: All sash members were formed from thermally improved aluminum extrusions. Sash corners were square-cut, coped and mechanically fastened. Each corner was secured using two #10 x 1-1/4" pan head Phillips screws. A foam gasket was applied between corners before assembly.

Hardware: The latch was fastened to the sash with two #10 x 1/2" flat head Phillips screws. Four #10 x 3/4" pan head Phillips screws were used to secure the keeper. Each flush pull was fastened with two #10 x 7/8" pan head Phillips screws. The flush rollers were secured using #10 x 3/8" flat head Phillips screws, two per roller.

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Two point latch	1	41" from bottom of interior left sash
Keeper	1	41" from bottom of interior right sash
Flush pull	2	39" from bottom of each sash, on exterior of locking stiles

Test Specimen Description: (Continued)

Hardware: (Continued)

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Sash rollers	4	3-1/2" from bottom inside sash corners, two each sash bottom rail

Drainage: No drainage was utilized.

Reinforcement: No reinforcement was utilized.

Installation: The unit was installed into a Hem-Fir test buck. A subsill was secured to the buck with a sealant compound and 5/16" x 2-1/4" hex head screws. Screws were located at 2-1/2" and 4" from outside edge of each corner and three at the bottom of each interlock with 1-1/2" on center spacing. The sealant compound was applied under the subsill and a heel bead at exterior of subsill. A sub-head was fastened to the buck with 5/16" x 3-3/4" hex head screws. The screws were positioned at 1-1/2", 3", and 4-1/2" from outer edge of each corner and five at the top of each interlock with 2" on center spacing. All screws at the head went through a sub-head stiffener before entering the sub-head. The stiffener was made out of aluminum and was 3/8" thick by 5" long at the corners and 10" long at top of the interlocks. Sealant was applied under sub-head and heel beaded at exterior. The sill snapped into the subsill, and there was sealant between the interior subsill leg and the interior side of the sill. The head snapped into the sub-head, and sealant was used to secure the two together at the interior and exterior. The jambs were attached to the buck using a heel beaded sealant compound at the exterior. The fixed panels were inserted and secured to the head, jamb and sill at the exterior with a heel bead of sealant. Between the head of the frame and the top rail of each fixed panel was an aluminum head spacer measuring 1-3/8" tall by 4" long. Each sash was installed with head in the frame first and then placing the bottom rail rollers on the roller track.

Test Results: The following results have been recorded:

ASTM E 1886, *Large Missile Impact*

Conditioning Temperature: 22°C (72°F)

Missile Weight: 4173 g (9.2 lbs)

Missile Length: 2.4 m (96")

Muzzle Distance from Test Specimen: 4.9 m (16' 0")

Test Unit #1

Impact #1: Missile Velocity: 15.3 m/s (50.2 fps)

Impact Area: Center of glass, right operable panel

Observations: No rupture, no penetration

Results: Pass

Impact #2: Missile Velocity: 15.5 m/s (50.9 fps)

Impact Area: Bottom right corner of glass, right operable panel

Observations: No rupture, no penetration

Results: Pass

Impact #3: Missile Velocity: 15.3 m/s (50.1 fps)

Impact Area: Meeting stile midpoint, right operable panel

Observations: No rupture, no penetration

Results: Pass

Note: Refer to Architectural Testing Sketch #1 for impact locations.

Test Results: (Continued)

ASTM E 1886, Air Pressure Cycling

Test Unit #1

Design Pressure: ± 4309 Pa (± 90.0 psf)

POSITIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inch)					
			#1	#2	#3	#4	#5	#6
862 to 2155 (18 to 45)	3500	2.40	31 (1.22)	24 (0.93)	7 (0.28)	36 (1.41)	26 (1.04)	6 (0.23)
0 to 2586 (0 to 54)	300	2.90	37 (1.45)	28 (1.09)	8 (0.32)	41 (1.63)	31 (1.21)	7 (0.26)
2155 to 3447 (45 to 72)	600	2.10	45 (1.79)	34 (1.34)	10 (0.39)	51 (2.00)	38 (1.48)	9 (0.34)
1293 to 4309 (27 to 90)	100	3.00	56 (2.22)	42 (1.65)	12 (0.48)	62 (2.44)	46 (1.80)	10 (0.41)
			Permanent Set					
			10 (0.40)	6 (0.25)	3 (0.13)	8 (0.31)	6 (0.22)	3 (0.11)

NEGATIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inch)					
			#1	#2	#3	#4	#5	#6
1293 to 4309 (27 to 90)	50	3.00	50 (1.98)	38 (1.48)	12 (0.47)	56 (2.22)	47 (1.85)	16 (0.64)
2155 to 3447 (45 to 72)	1050	2.10	41 (1.62)	31 (1.21)	11 (0.42)	46 (1.82)	39 (1.52)	15 (0.59)
0 to 2586 (0 to 54)	50	2.90	36 (1.43)	27 (1.06)	10 (0.38)	40 (1.58)	34 (1.32)	13 (0.53)
862 to 2155 (18 to 45)	3350	1.80	34 (1.32)	25 (0.99)	9 (0.36)	36 (1.42)	30 (1.18)	13 (0.52)
			Permanent Set					
			12 (0.47)	9 (0.34)	5 (0.18)	10 (0.39)	9 (0.36)	7 (0.27)

Observations: No rupture, no penetration

Result: Pass

Note: Refer to Architectural Testing Sketch #1 for indicator locations.

Test Results: (Continued)

ASTM E 1886, *Large Missile Impact*

Conditioning Temperature: 22°C (72°F)

Missile Weight: 4173 g (9.2 lbs)

Missile Length: 2.4 m (96")

Muzzle Distance from Test Specimen: 4.9 m (16' 0")

Test Unit #2

Impact #1: Missile Velocity: 15.5 m/s (50.9 fps)

Impact Area: Top right corner of glass, right operable panel

Observations: No rupture, no penetration

Results: Pass

Impact #2: Missile Velocity: 15.3 m/s (50.1 fps)

Impact Area: Lock stile midpoint, right operable panel

Observations: No rupture, no penetration

Results: Pass

Impact #3: Missile Velocity: 15.3 m/s (50.3 fps)

Impact Area: Center of glass, right operable panel

Observations: No rupture, no penetration

Results: Pass

Impact #4: Missile Velocity: 15.3 m/s (50.2 fps)

Impact Area: Meeting stile midpoint, right operable panel

Observations: No rupture, no penetration

Results: Pass

Impact #5: Missile Velocity: 15.3 m/s (50.2 fps)

Impact Area: Center of glass, right fixed panel

Observations: No rupture, no penetration

Results: Pass

Impact #6: Missile Velocity: 15.3 m/s (50.2 fps)

Impact Area: Bottom right corner of glass, right fixed panel

Observations: No rupture, no penetration

Results: Pass

Note: Refer to Architectural Testing Sketch #1 for impact locations.

Test Results: (Continued)

ASTM E 1886, Air Pressure Cycling

Test Unit #2

Design Pressure: ± 4309 Pa (± 90.0 psf)

POSITIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inch)					
			#1	#2	#3	#4	#5	#6
862 to 2155 (18 to 45)	3500	2.30	32 (1.27)	25 (0.98)	7 (0.29)	36 (1.42)	27 (1.07)	6 (0.25)
0 to 2586 (0 to 54)	300	2.90	39 (1.54)	30 (1.19)	9 (0.34)	44 (1.73)	33 (1.31)	7 (0.29)
2155 to 3447 (45 to 72)	600	2.20	43 (1.71)	34 (1.33)	10 (0.38)	49 (1.93)	37 (1.45)	8 (0.33)
1293 to 4309 (27 to 90)	100	3.00	52 (2.03)	40 (1.57)	11 (0.43)	59 (2.31)	44 (1.73)	10 (0.39)
			Permanent Set					
			9 (0.37)	6 (0.23)	3 (0.11)	10 (0.41)	7 (0.28)	3 (0.11)

NEGATIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inch)					
			#1	#2	#3	#4	#5	#6
1293 to 4309 (27 to 90)	50	3.00	38 (1.51)	32 (1.25)	12 (0.47)	43 (1.71)	36 (1.43)	9 (0.35)
2155 to 3447 (45 to 72)	1050	2.30	33 (1.29)	26 (1.01)	6 (0.24)	41 (1.61)	33 (1.30)	8 (0.33)
0 to 2586 (0 to 54)	50	2.70	26 (1.01)	20 (0.77)	5 (0.19)	33 (1.28)	26 (1.02)	6 (0.25)
862 to 2155 (18 to 45)	3350	2.00	26 (1.01)	18 (0.71)	5 (0.18)	30 (1.17)	24 (0.94)	6 (0.24)
			Permanent Set					
			4 (0.16)	3 (0.11)	2 (0.06)	5 (0.20)	5 (0.18)	2 (0.08)

Observations: No rupture, no penetration

Result: Pass

Note: Refer to Architectural Testing Sketch #1 for indicator locations.

Test Results: (Continued)

ASTM E 1886, *Large Missile Impact*

Conditioning Temperature: 22°C (72°F)

Missile Weight: 4173 g (9.2 lbs)

Missile Length: 2.4 m (96")

Muzzle Distance from Test Specimen: 4.9 m (16' 0")

Test Unit #3

Impact #1: Missile Velocity: 15.4 m/s (50.5 fps)

Impact Area: Bottom right corner of glass, right operable panel

Observations: No rupture, no penetration

Results: Pass

Impact #2: Missile Velocity: 15.4 m/s (50.5 fps)

Impact Area: Meeting stile midpoint, right operable panel

Observations: No rupture, no penetration

Results: Pass

Impact #3: Missile Velocity: 15.3 m/s (50.3 fps)

Impact Area: Lock stile midpoint, right operable panel

Observations: No rupture, no penetration

Results: Pass

Note: Refer to Architectural Testing Sketch #1 for impact locations.

Test Results: (Continued)

ASTM E 1886, Air Pressure Cycling

Test Unit #3

Design Pressure: ± 4309 Pa (± 90.0 psf)

POSITIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inch)					
			#1	#2	#3	#4	#5	#6
862 to 2155 (18 to 45)	3500	2.10	34 (1.33)	27 (1.08)	8 (0.30)	29 (1.13)	23 (0.91)	8 (0.31)
0 to 2586 (0 to 54)	300	2.50	45 (1.77)	37 (1.44)	10 (0.39)	37 (1.47)	30 (1.18)	10 (0.38)
2155 to 3447 (45 to 72)	600	2.30	48 (1.89)	39 (1.52)	11 (0.43)	40 (1.58)	32 (1.26)	10 (0.41)
1293 to 4309 (27 to 90)	100	3.00	58 (2.30)	46 (1.82)	12 (0.49)	49 (1.94)	39 (1.54)	12 (0.49)
			Permanent Set					
			10 (0.38)	7 (0.28)	4 (0.14)	7 (0.29)	5 (0.21)	3 (0.12)

NEGATIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inch)					
			#1	#2	#3	#4	#5	#6
1293 to 4309 (27 to 90)	50	2.90	48 (1.88)	40 (1.57)	14 (0.57)	41 (1.60)	30 (1.18)	10 (0.41)
2155 to 3447 (45 to 72)	1050	2.20	38 (1.51)	32 (1.26)	11 (0.45)	33 (1.28)	24 (0.94)	9 (0.36)
0 to 2586 (0 to 54)	50	3.00	37 (1.44)	30 (1.20)	11 (0.42)	31 (1.23)	23 (0.91)	9 (0.35)
862 to 2155 (18 to 45)	3350	1.80	28 (1.10)	23 (0.90)	9 (0.34)	25 (0.97)	17 (0.68)	8 (0.32)
			Permanent Set					
			4 (0.14)	3 (0.11)	3 (0.10)	4 (0.17)	2 (0.08)	3 (0.12)

Observations: No rupture, no penetration

Result: Pass

Note: Refer to Architectural Testing Sketch #1 for indicator locations.

Test Results: (Continued)

ASTM E 1886, *Large Missile Impact*

Conditioning Temperature: 22°C (72°F)

Missile Weight: 4173 g (9.2 lbs)

Missile Length: 2.4 m (96")

Muzzle Distance from Test Specimen: 4.9 m (16' 0")

Test Unit #4

Impact #1: Missile Velocity: 15.4 m/s (50.5 fps)

Impact Area: Center of glass, right operable panel

Observations: No rupture, no penetration

Results: Pass

Impact #2: Missile Velocity: 15.3 m/s (50.1 fps)

Impact Area: Bottom right corner of glass, right operable panel

Observations: No rupture, no penetration

Results: Pass

Impact #3: Missile Velocity: 15.4 m/s (50.4 fps)

Impact Area: Meeting stile midpoint, right operable panel

Observations: No rupture, no penetration

Results: Pass

Note: Refer to Architectural Testing Sketch #1 for impact locations.

Test Results: (Continued)

ASTM E 1886, Air Pressure Cycling

Test Unit #4

Design Pressure: ± 5267 Pa (± 110.0 psf)

POSITIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inch)					
			#1	#2	#3	#4	#5	#6
1053 to 2633 (22 to 55)	3500	2.30	33 (1.29)	25 (0.97)	6 (0.23)	39 (1.54)	27 (1.05)	4 (0.17)
0 to 3160 (0 to 66)	300	3.00	39 (1.55)	29 (1.16)	7 (0.28)	46 (1.83)	32 (1.25)	5 (0.20)
2633 to 4213 (55 to 88)	600	2.20	51 (2.02)	38 (1.49)	9 (0.36)	60 (2.38)	41 (1.60)	6 (0.25)
1580 to 5267 (33 to 110)	100	2.90	65 (2.57)	47 (1.87)	11 (0.43)	76 (2.99)	50 (1.98)	7 (0.29)
			Permanent Set					
			6 (0.23)	3 (0.13)	1 (0.04)	6 (0.24)	3 (0.12)	2 (0.06)

NEGATIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inch)					
			#1	#2	#3	#4	#5	#6
1580 to 5267 (33 to 110)	50	3.00	53 (2.07)	39 (1.55)	11 (0.44)	63 (2.48)	51 (2.01)	14 (0.54)
2633 to 4213 (55 to 88)	1050	2.00	48 (1.89)	37 (1.45)	12 (0.46)	56 (2.20)	48 (1.88)	11 (0.44)
0 to 3160 (0 to 66)	50	2.80	45 (1.76)	30 (1.18)	10 (0.40)	52 (2.04)	42 (1.67)	12 (0.49)
1053 to 2633 (22 to 55)	3350	2.10	40 (1.56)	26 (1.01)	9 (0.35)	41 (1.62)	34 (1.35)	12 (0.47)
			Permanent Set					
			8 (0.30)	7 (0.27)	4 (0.17)	11 (0.45)	9 (0.37)	5 (0.20)

Observations: No rupture, no penetration

Result: Pass

Note: Refer to Architectural Testing Sketch #1 for indicator locations.

General Note: Upon completion of testing, Test Unit #1 through Test Unit #3 met the requirements of Section 7 of ASTM E 1996. Test Unit #4 included alternate glazing and was tested for informational purposes.

Test Equipment: (See Appendix A)

Cannon: Constructed from steel piping utilizing compressed air to propel the missile

Missile: 2x4 Southern Pine

Timing Device: Electronic Beam Type

Cycling Mechanism: Computer controlled centrifugal blower with electronic pressure measuring device

Deflection Measuring Device: Linear transducers

Tape and film were used to seal against air leakage during structural testing. In our opinion, the tape and film did not influence the results of the test.

Drawing Reference: The test specimen drawings have been reviewed by Architectural Testing and are representative of the test specimen reported herein.

List of Official Observers:

<u>Name</u>	<u>Company</u>
Andy Cost	Architectural Testing, Inc.
Jesus Mata	Architectural Testing, Inc.
Daniel Reeves	Architectural Testing, Inc.
Jim Sturdevant	Architectural Testing, Inc.
Joseph A. Reed, P.E.	Architectural Testing, Inc.
Tom Klein	Architectural Testing, Inc.

Detailed drawings, data sheets, representative samples of test specimens, a copy of this report, or other pertinent project documentation will be retained by Architectural Testing, Inc. for a period of four years from the original test date. At the end of this retention period, such materials shall be discarded without notice and the service life of this report will expire.

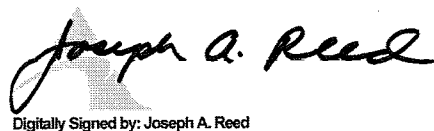
Results obtained are tested values and were secured by using the designated test methods. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimens tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC.



Digitally Signed by: Tom Klein

Tom Klein
Test Technician



Digitally Signed by: Joseph A. Reed

Joseph A. Reed, P.E.
Director - Engineering and Product Testing

TK:ac/cmd

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

- Appendix-A: Test Equipment (1)
- Appendix-B: Sketch (1)
- Appendix-C: Drawings (32)

Revision Log

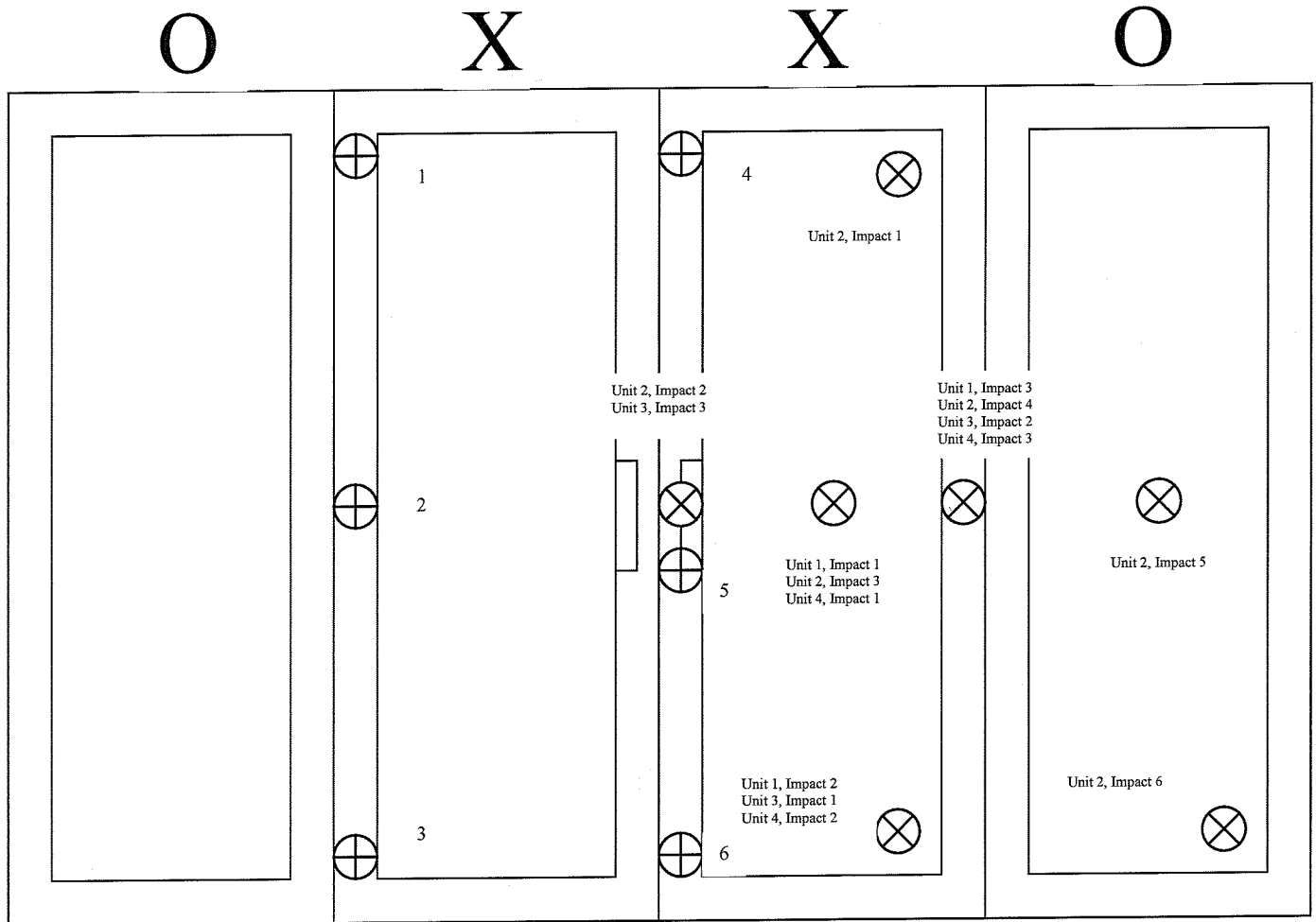
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Appendix A
Test Equipment

Instrument	Manufacturer	Asset #
Linear Transducer	Celesco	5202
Linear Transducer	Celesco	3546
Linear Transducer	Celesco	3755
Linear Transducer	Celesco	62196
Linear Transducer	Celesco	5204
Linear Transducer	Celesco	3273
Cannon	Architectural Testing, Inc.	5469
Spray Rack	Architectural Testing, Inc.	3233
Spring Scale 220#	Taylor	62104
Micro Mule	Architectural Testing, Inc	5302
BABS II	Architectural Testing, Inc.	5576
Control Panel	Architectural Testing, Inc.	4829

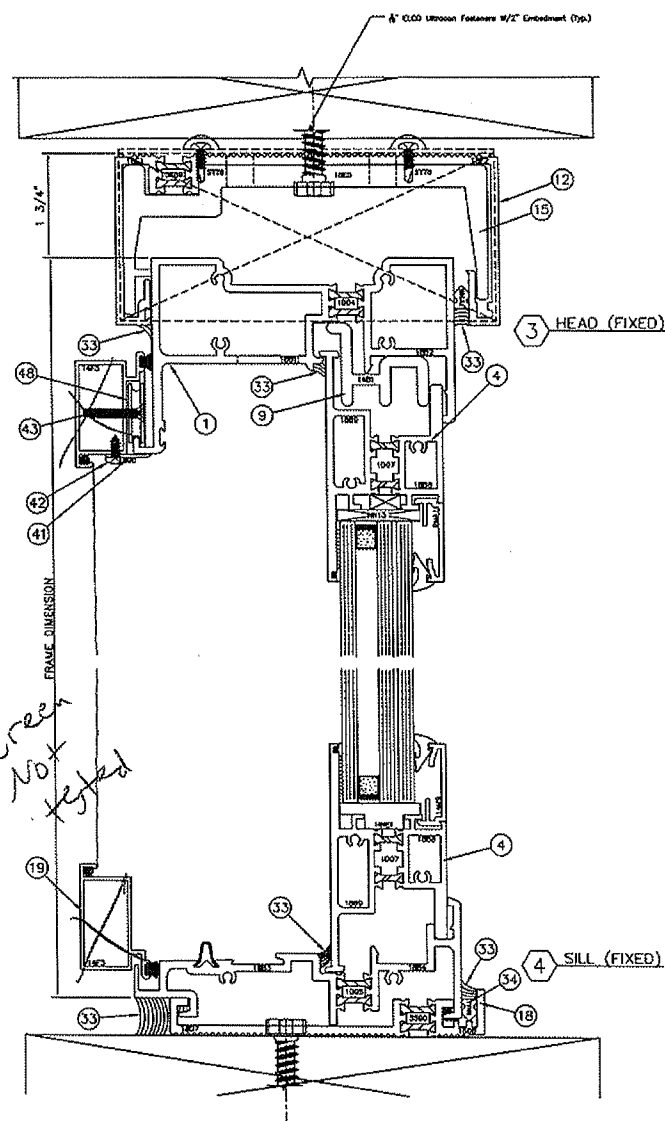
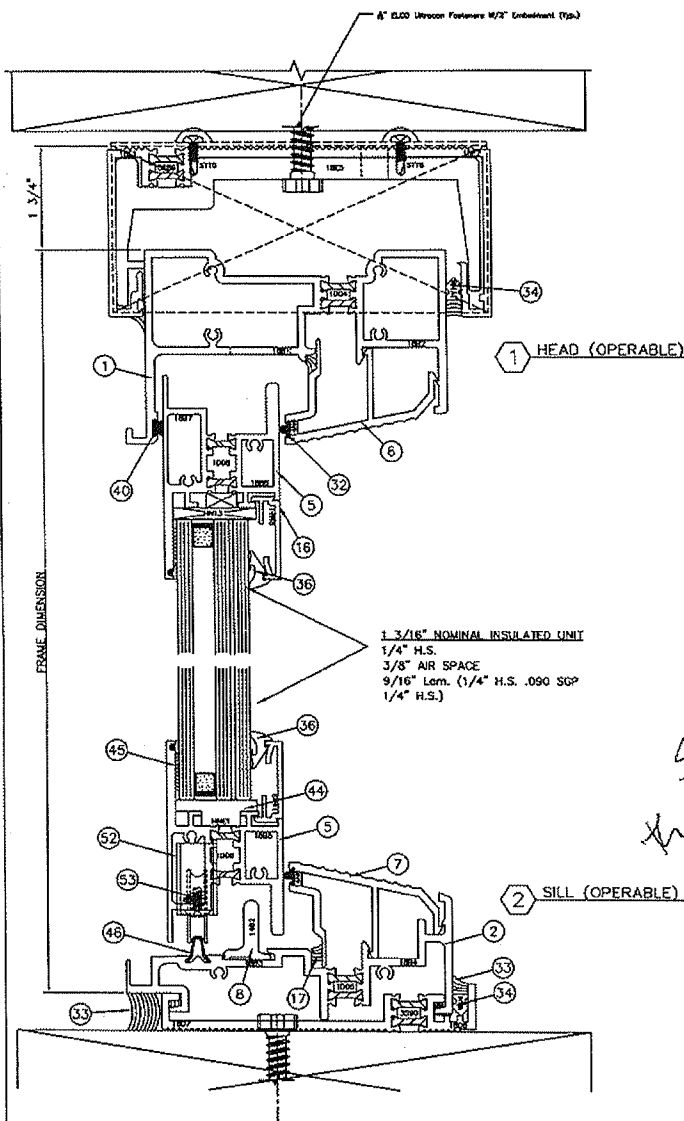
Appendix B

Sketch



⊗ = impact locations

⊕ = indicator locations



ITEM	#	RECD	PART #	DESCRIPTION	MFG.
1	1		1004	HEAD	EFCO
2	1		1005	SILL	EFCO
3	2		1006	JAMB	EFCO
4	2		1007	FIXED PANEL HORIZ	EFCO
5	2		1008	OPERABLE PANEL HORIZ	EFCO
6	1		14N6	HEAD FILLER	EFCO
7	2		14N6	THRESHOLD	EFCO
8	1		14B2	WINDLOAD ADAPTOR	EFCO
9	1		14B1	HEAD SPACER	EFCO
10	2		1010	FIXED PANEL SIDE RAIL	EFCO
11	1		1011	OPERABLE MEETING RAIL	EFCO
12	1		3S89	SUB HEAD	EFCO
13	1		1018	MEETING RAIL (MALE)	EFCO
14	1		1014	FIXED MEETING RAIL	EFCO
15	AS RECD		18E5	SUB HEAD STIFFENER	EFCO
16	8		14M9	GLAZING BEAD	EFCO
17	1		1017	MEETING RAIL (FEMALE)	EFCO
18	1		3S90	STARTER SILL	EFCO
19	1		14F3	SCREEN FRAME	EFCO
20	1		HS27	THUMBTURN	BRONZE DRAFT
21	1		HSA1	THUMBTURN SPINDLE	BRONZE DRAFT
22	1		HS26	FLUSH PULL	BRONZE DRAFT
23	1		HS55	DEAD LOCK	SASH CONTROL
24	1		IGK8	NYLON WASHER	GENERAL PLASTICS
25	1		WS07	BUG FLAP	GENERAL PLASTICS
26	2		HB60	SCREEN LATCH	ULTRAFAB
27	1		HB59	SCREEN KEEPER	ULTRAFAB
28	6		STU8	LATCH/KEEPER FASTENER	GENERAL PLASTICS
29	3		WS08	MEETING FLAP	GENERAL PLASTICS
30	2		WW98	WOOL PILE	ULTRAFAB
31	1		STD3	KEEPER FASTENER	GENERAL PLASTICS
32	AS RECD		WS05	SEALANT DAM	GENERAL PLASTICS
33	AS RECD			SILICONE SEALANT	
34	1		WNA1	ARROW SHIM	GENERAL PLASTICS
35	AS RECD		WS05	SEALANT DAM	GENERAL PLASTICS
36	AS RECD		WEB4	Glazing Wedge	ULTRAFAB
37	3		WF18	SCREEN WOOL PILE	ULTRAFAB
38	AS RECD		HNI13	SIDE BLOCKS (EDPM)	GENERAL PLASTICS
39	AS RECD		HEP8	SIDE BLOCKS (EDPM)	GENERAL PLASTICS
40	AS RECD		WW78	WOOL PILE	ULTRAFAB
41	2		1990	SCREEN ANTI-TAKE-OUT	EFCO
42	4		SPP7	ANTI-TAKE OUT FASTENER	
43	2		S111	SCREEN ROLLER FASTENER	
44	2		HNE1	SETTING BLOCKS	EPG
45	AS RECD			SILICONE BACKBED	
46	1		LATA	ROLLER TRACK	JOHNSON SEIS.
47	2		MT26	FLUSH PULL FASTENER	
48	2		HR38	SCREEN ROLLER	RE-DEMAR
49	1		HL95	RETAINER RING	
50	28		SL09	#10 ASSY SCREWS	
51	1		HST0	KEEPER	SASH CONTROL
52	2		HR41	TANDOM ROLLER	DEBWAY
53	4		STT5	ROLLER FASTENER	
54	2		SMO4	FLUSH PULL FASTENER	
55	1		HB61	SCREEN-KEEPER	ULTRAFAB

DRAWN BY T.H. CHECKED BY
DATE 5-1-09 DATE
SCALE FULL REV.



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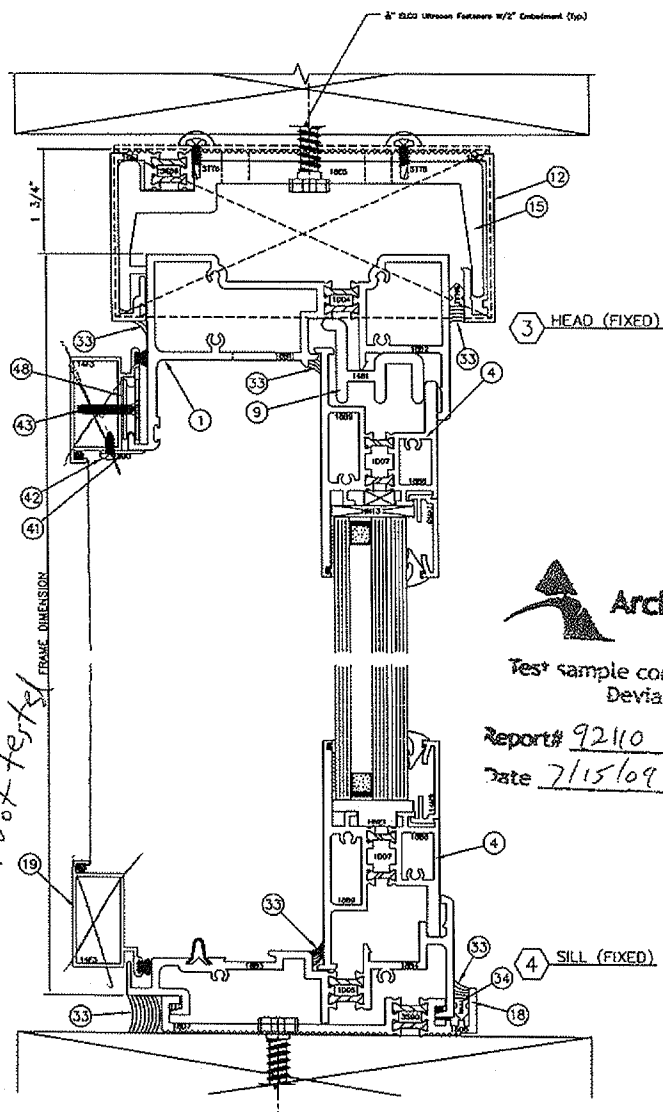
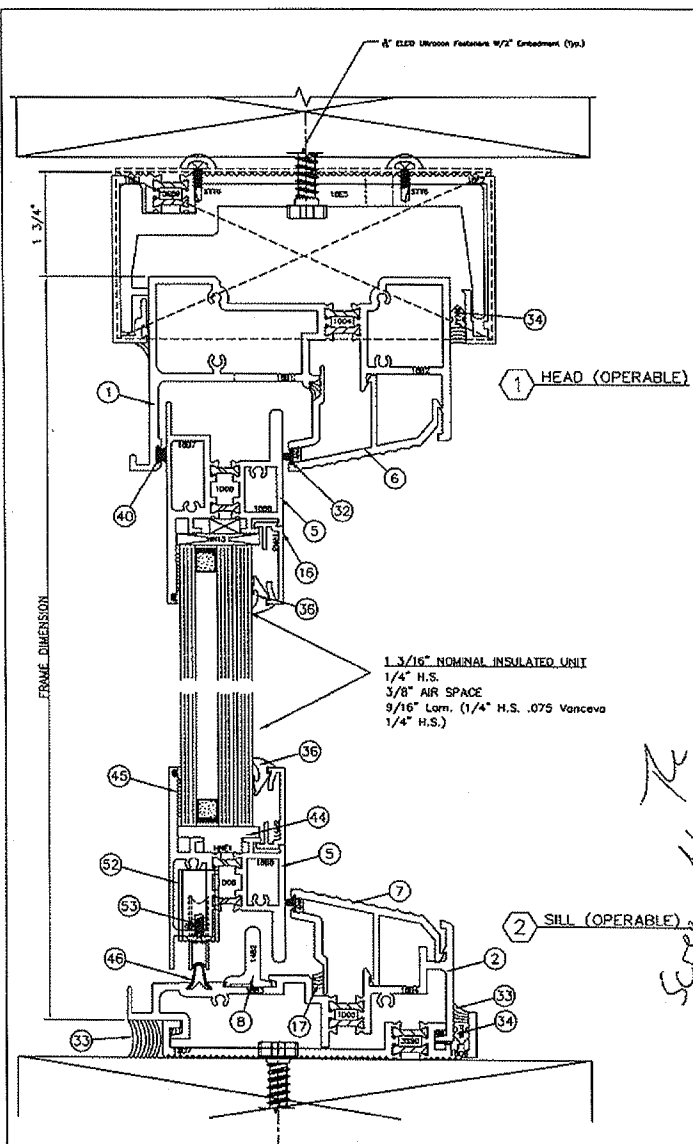
SERIES 5XPT SCD (OXXO)

Test sample complies with these details
Deviations are noted.

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REPORT#
SHEET
1 of 2

Report# 92110
Date 7/15/09 Tech TH



ITEM	#	RECD	PART #	DESCRIPTION	MFG.
1	1		1004	HEAD	EFCCO
2	1		1005	SILL	EFCCO
3	2		1006	JAMB	EFCCO
4	2		1007	FIXED PANEL HORIZ	EFCCO
5	2		1008	OPERABLE PANEL HORIZ	EFCCO
6	1		14N6	HEAD FILLER	EFCCO
7	2		14N6	THRESHOLD	EFCCO
8	1		14B2	WINDLOAD ADAPTOR	EFCCO
9	1		14B1	HEAD SPACER	EFCCO
10	2		1010	FIXED PANEL SIDE RAIL	EFCCO
11	1		1011	OPERABLE MEETING RAIL	EFCCO
12	1		3S88	SUB HEAD	EFCCO
13	1		1018	MEETING RAIL (MALE)	EFCCO
14	1		1014	FIXED MEETING RAIL	EFCCO
15	AS RECD		18E5	SUB HEAD STIFFNER	EFCCO
16	8		14M9	GLAZING BEAD	EFCCO
17	1		1017	MEETING RAIL (FEMALE)	EFCCO
18	1		3S90	STARTER SILL	EFCCO
19	4		T4F3	SCREEN FRAME	EFCCO
20	1		HS27	THUMBTURN	BROWNE
21	1		HSA1	THUMBTURN SPINDLE	BROWNE
22	1		HS26	FLUSH PULL	BROWNE
23	1		HSS5	DEAD LOCK	BROWNE
24	1		ICK8	NYLON WASHER	BROWNE
25	1		WS07	BUG FLAP	GENERAL
26	2		HB60	SCREEN LATCH	PLASTICS
27	1		HB59	SCREEN KEEPER	PLASTICS
28	6		STU8	LATCH/KEEPER FASTENER	GENERAL
29	3		WS0R	MEETING FLAP	PLASTICS
30	2		WW98	WOOL PILE	ULTRAFAB
31	1		STD3	KEEPER FASTENER	GENERAL
32	AS RECD		WS05	SEALANT DAM	PLASTICS
33	AS RECD		WNA1	SILICONE SEALANT	GENERAL
34	AS RECD		WS05	SEALANT DAM	PLASTICS
35	AS RECD		WE84	Glazing Wedge	GENERAL
36	2		WF18	SCREEN WOOL PILE	ULTRAFAB
37	AS RECD		HN13	SIDE BLOCKS (EDPM)	GENERAL
38	AS RECD		HEP8	SIDE BLOCKS (EDPM)	PLASTICS
39	AS RECD		WW78	WOOL PILE	ULTRAFAB
40	AS RECD		1990	SCREEN ANTI-TAKE-OUT	EFCCO
41	2		SPP7	ANTI-TAKE OUT FASTENER	GENERAL
42	2		S111	SCREEN ROLLER FASTENER	GENERAL
43	2		HNE1	SETTING BLOCKS	EPG
44	2			SILICONE BACKBED	GENERAL
45	AS RECD		LA1A	ROLLER TRACK	JOHNSON
46	1		MT26	FLUSH PULL FASTENER	EFCCO
47	2		HR38	SCREEN ROLLER	PE (OLYMP)
48	2		HL95	RETAINER RING	JOHNSON
49	1		SL09	#10 ASSY SCREWS	JOHNSON
50	28		HS70	KEEPER	JOHNSON
51	1		HR41	TANDOM ROLLER	DEBWAY
52	2		S1T5	ROLLER FASTENER	GENERAL
53	4		SM04	FLUSH PULL FASTENER	GENERAL
54	2		HB01	SCREEN KEEPER	PLASTICS
55	1				



Architectural Testing

Test sample complies with the
Deviations are noted

Report# 92110

Date 7/15/09

Tech JL

DRAWN BY T.H. CHECKED BY SCALE FULL REV.
DATE 5-1-09 DATE

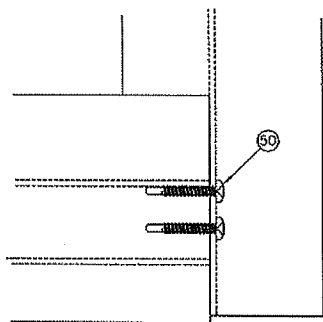


EFCCO CORPORATION
1000 County Road - Monett, Missouri 65708

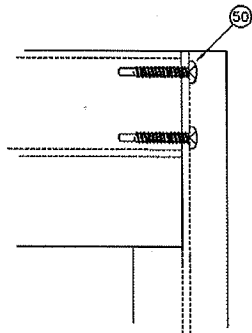
SERIES 5XPT SGD (OXXO)

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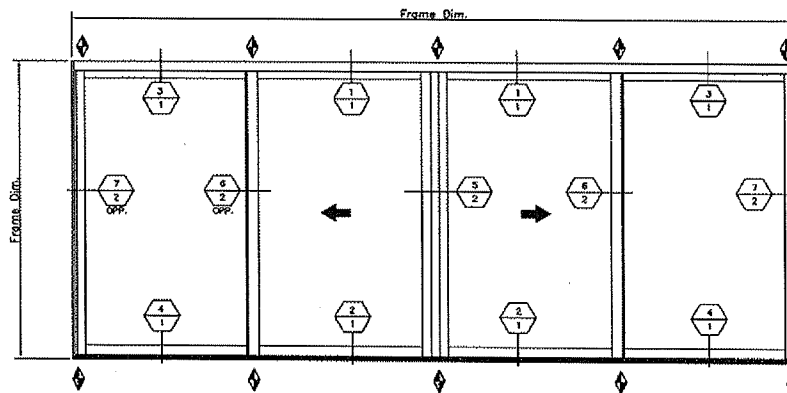
REPORT# SHEET
XXXXXX 1 of 2



SASH CORNER ASSEMBLY -
SQR. CUT, END COPED, AND MECH. FASTENED.

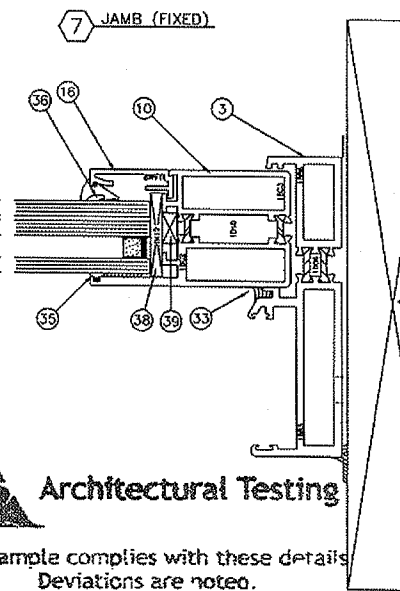
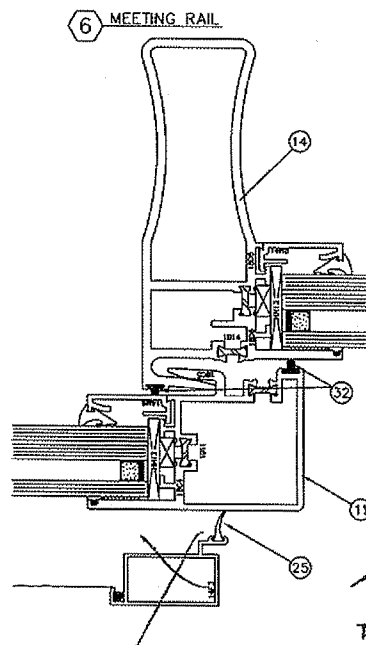
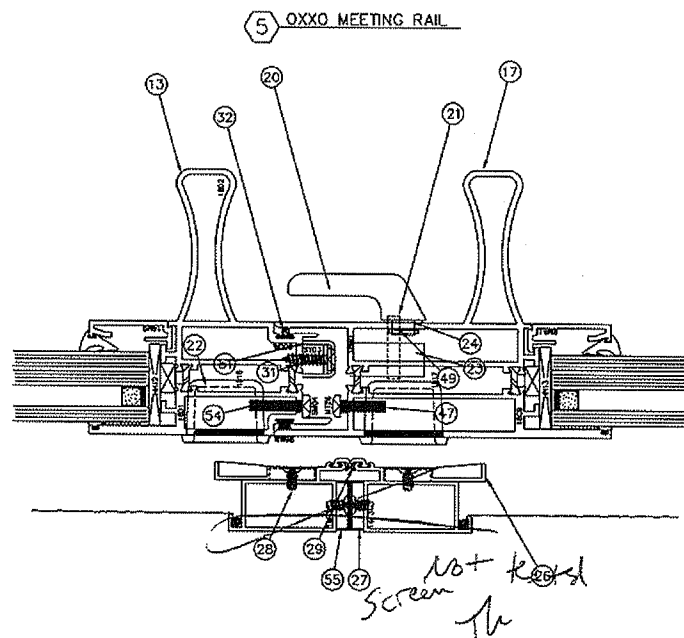


FRAME CORNER ASSEMBLY -
SQR. CUT, END COPED, AND MECH. FASTENED.



ELEVATION

* DENOTES LOCK LOCATION
♦ DENOTES ANCHOR LOCATIONS



Architectural Testing
Test sample complies with these details
Deviations are noted.

Report# 92110

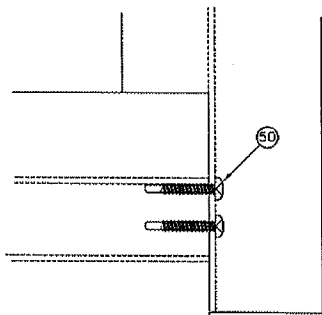
DRAWN BY	T.H.	CHECKED BY		SCALE	FULL	REV.	
DATE	5-1-09	DATE					



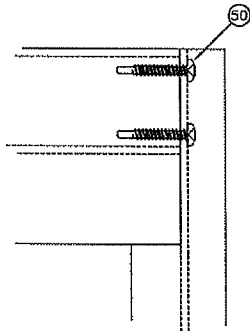
EFCO CORPORATION
1000 County Road - Monett, Missouri 65708

714569 SERIES 1500 TSD (OXXO)

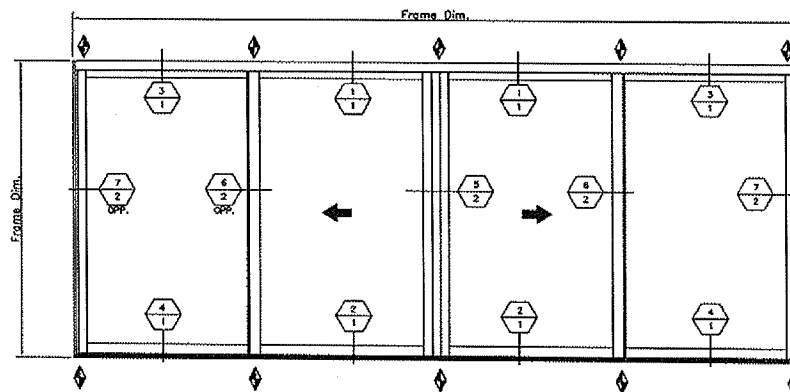
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xxxxxxx		2 OF 2



SASH CORNER ASSEMBLY -
SQR. CUT, END COPED, AND MECH. FASTENED.



FRAME CORNER ASSEMBLY -
SQR. CUT, END COPED, AND MECH. FASTENED.

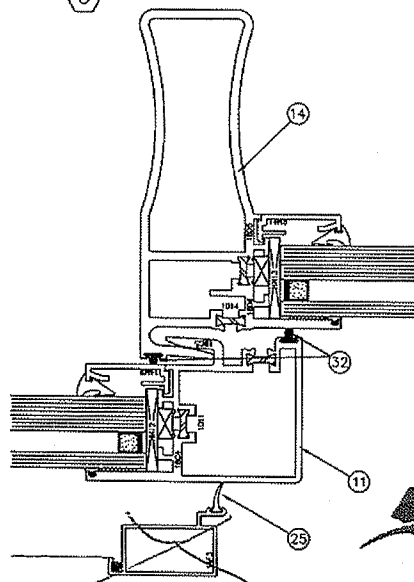


ELEVATION

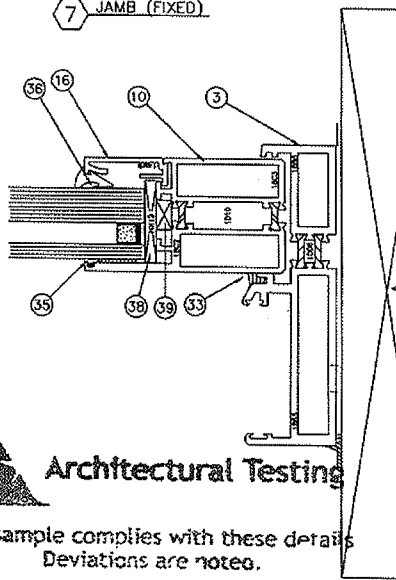
* DENOTES LOCK LOCATION

◇ DENOTES ANCHOR LOCATIONS

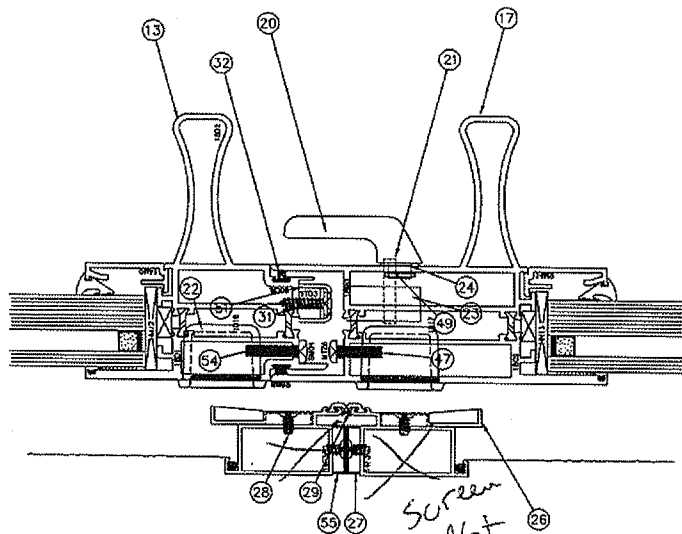
6 MEETING RAIL



7 JAMB (FIXED)



5 OXXO MEETING RAIL



Screen
Not
tested
th



Architectural Testing

Test sample complies with these details
Deviations are noted.

Report# 92110

DRAWN BY	T.H.	CHECKED BY	SCALE	REV.
DATE	5-1-09	DATE	FULL	



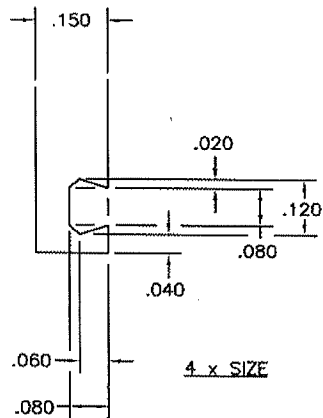
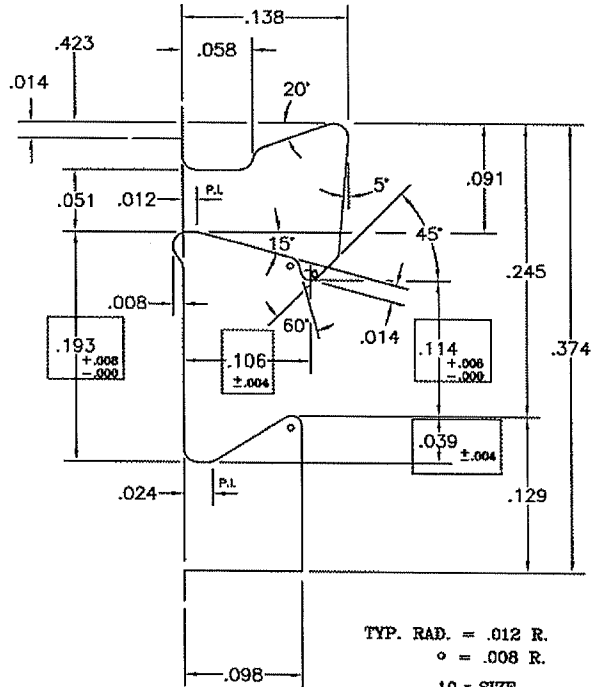
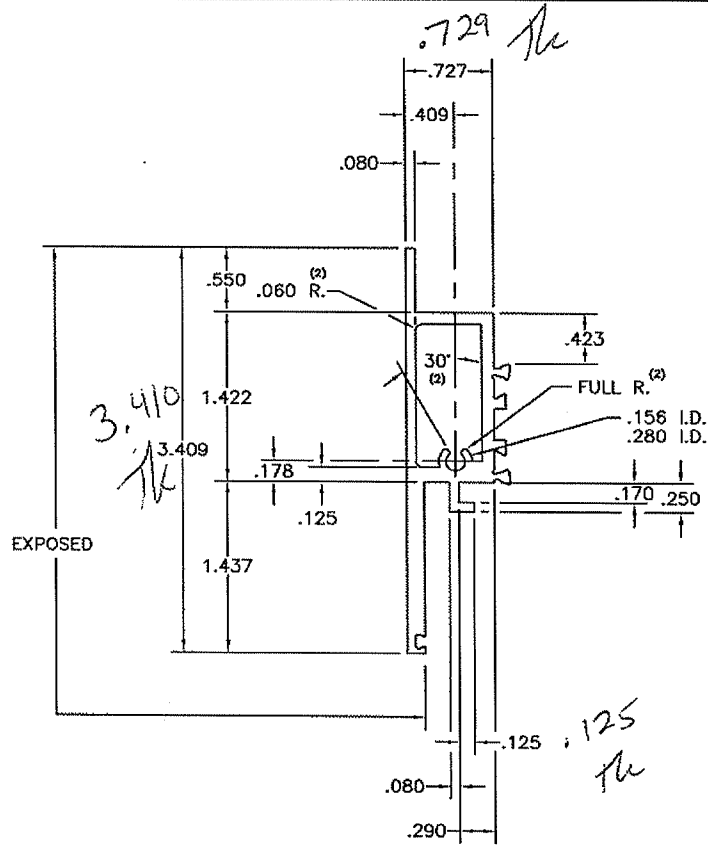
EFCO CORPORATION
1000 County Road - Marcell, Missouri 65708

Model 115-1000 SERIES 5XPT-1SGD-(OXXO)

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REPORT#	SHEET
XXXXXXX	2 of 2

STD. EXTRUSION TOLERANCES AS DEFINED BY THE ALUMINUM ASSOCIATION UNLESS OTHERWISE STATED. CORNER RADII .015 EXCEPT AS NOTED.



Test sample complies with these details
Deviations are noted.

Report# 92110
Date 7/15/09 Tech *th*

DO NOT SCALE PRINT

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MATERIAL: 6063-T6 ALUM.	
WALL THICKNESS: .100 & AS NOTED	
TOTAL PERIMETER: 14.337	OS = 10.306 IS = 3.941
PAINTED PERIMETER: 5.453	
AREA: .728	WT/FT: .874
FACTOR: 16	



EFCO CORPORATION
1000 County Road
Mooresville, Missouri 65706
1-800-221-4169
Fax: 417-235-7313

DRAWN BY: SCC		REVISIONS W/ DATES:	
DATE: 5/2/07			
APPROVED: SCC			
DATE: 5/2/07		JOB REF. NO.:	
SERIES: 5XPT	SCALE: AS NOTED	IDE CIRCLE: 4"	
TITLE: OPERABLE PANEL HORIZ.		(EXT.)	DWG NO. 18B7

[illegible]

Test sample complies with these details
Deviations are noted.

Technical drawing of a mechanical part showing dimensions and tolerances.

Dimensions:

- .014
- .058
- .138
- .091
- .051
- .012
- .008
- .193
- .106
- .114
- .039
- .024
- .098
- .245
- .374
- .129

Tolerances:

- $\pm .008$
- $\pm .004$
- $\pm .006$
- $\pm .004$

Angles:

- 20°
- 5°
- 15°
- 45°
- 60°

Notes:

- P.L.
- TYP. RAD. = .012 R.
- ° = .008 R.

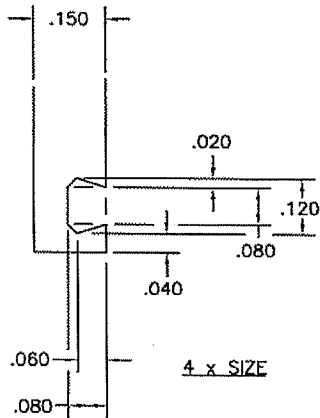
10 = SIZE



DRAWN BY: SCC		REVISIONS W/ DATES:	
DATE: 5/2/07			
APPROVED: SCC			
DATE: 5/2/07		JOB REF. NO.:	
SERIES: 5XPT	SCALE: AS NOTED	DI. CIRCLE:	3"
TITLE: (INT.) OPERABLE PANEL HORIZ.		DWG NO. 18B8	

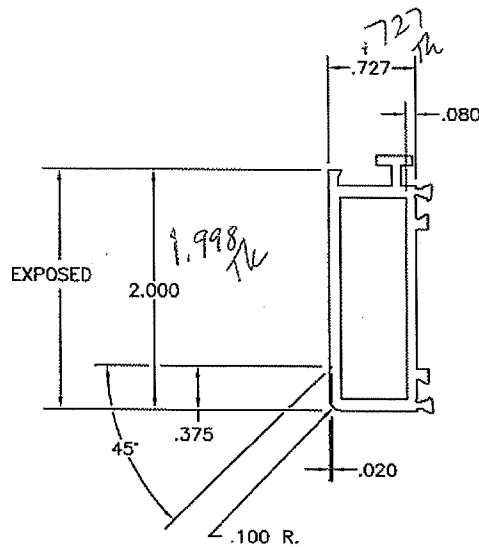
Technical drawing of a mechanical part, likely a bracket or support, showing dimensions and handwritten notes. The drawing includes the following dimensions and features:

- Overall Width:** 3.312 (Handwritten note: $3.312 \pm .015$)
- Overall Height:** 1.437
- Top Flange Width:** .727
- Top Flange Thickness:** .080
- Top Flange Radius:** .100 R.
- Top Flange Hole Diameter:** .150 (Handwritten note: $.150 \pm .005$)
- Bottom Flange Width:** .170
- Bottom Flange Thickness:** .125
- Bottom Flange Hole Diameter:** .290
- Bottom Flange Hole Position:** .080 from the right edge.
- Exposed Area:** A rectangular area on the left side is labeled "EXPOSED".

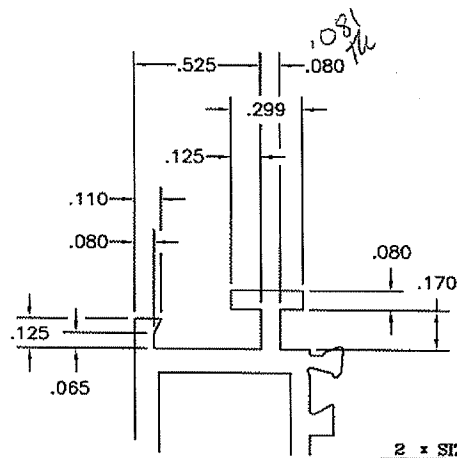


DRAWN BY: SCC		REVISIONS W/ DATES:	
DATE: 5/2/07			
APPROVED: SCC			
DATE: 5/2/07		JOB REF. NO.:	
SERIES: 5XPT	SCALE: AS NOTED	DIE CIRCLE: 4"	
TITLE: FIXED SIDE RAIL (EXT.)		DWG NO. 18C2	

STD. EXTRUSION TOLERANCES AS DEFINED BY THE ALUMINUM ASSOCIATION UNLESS OTHERWISE STATED. CORNER RADII .015 EXCEPT AS NOTED.



ACTUAL SIZE



2 x SIZE



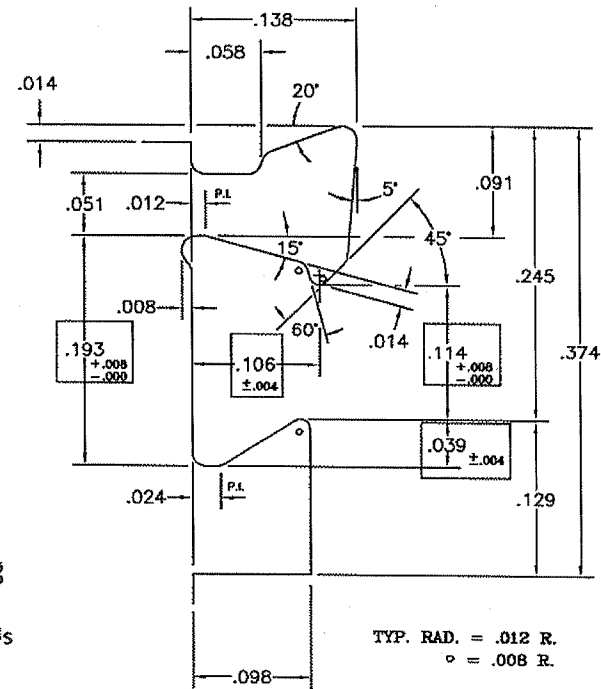
Architectural Testing

Test sample complies with these details
Deviations are noted.

Report# 92110

Date 7/15/09

Tech *th*



TYP. RAD. = .012 R.
= .008 R.

10 x SIZE

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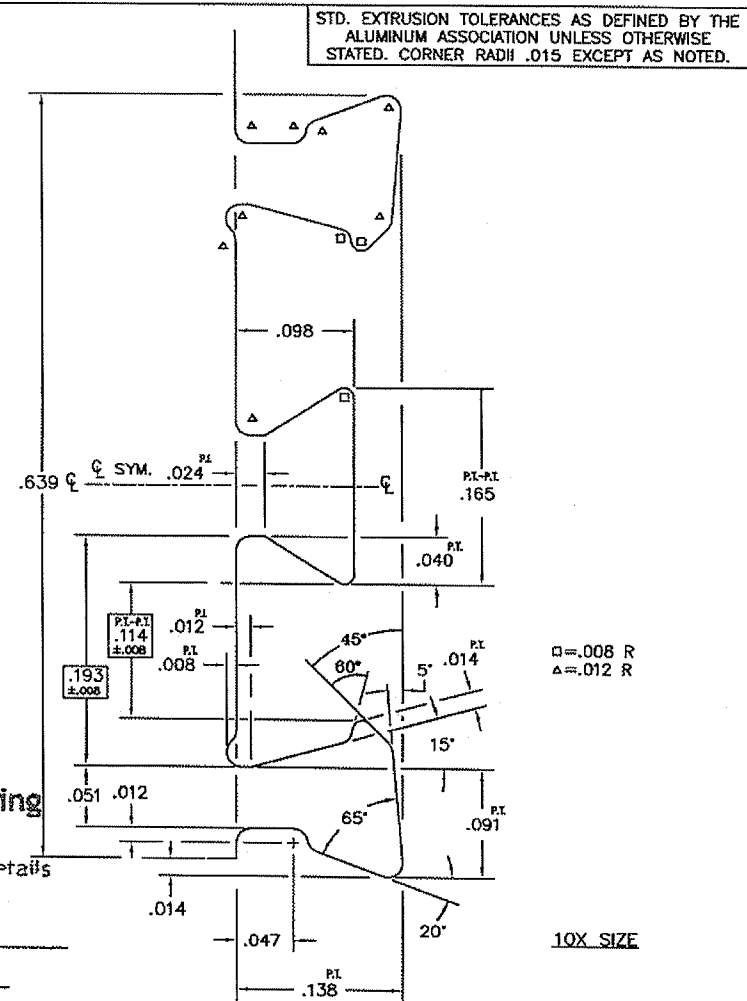
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MATERIAL: 6063-T6 ALUM.	
WALL THICKNESS: .100 & AS NOTED	
TOTAL PERIMETER: 12.049	OS = 7.605
PAINTED PERIMETER: 2.085	IS = 4.444
AREA: .537	WT./FT. .644
FACTOR: 19	



EFCO CORPORATION
1000 County Road
Monett, Missouri 65708
1-800-221-4169
Fax: 417-235-7213

DRAWN BY: SCC	REVISIONS W/ DATES:	
DATE: 5/2/07		
APPROVED: SCC		
DATE: 5/2/07	JOB REF. NO.:	
SERIES: 5XPT	SCALE: AS NOTED	DIE CIRCLE: 3"
TITLE: FIXED SIDE RAIL (INT.)	DWG NO. 18C3	



STD. EXTRUSION TOLERANCES AS DEFINED BY THE
ALUMINUM ASSOCIATION UNLESS OTHERWISE
STATED. CORNER RADII .015 EXCEPT AS NOTED.

$$\Delta = .012 \text{ R}$$

10X SIZE



Architectural Testing

Test sample complies with these details
Deviations are noted.

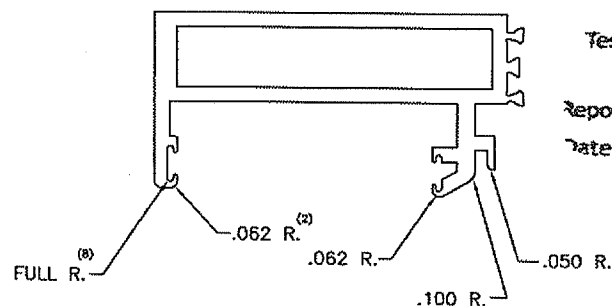
Report# 92410

Date 7/15/09

Tech *Tu*

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MATERIAL: 6063-T6 ALUM.	
WALL THICKNESS: .125 & AS NOTED	
TOTAL PERIMETER:	19.947 OS = 13.285 IS = 6.232
PAINTED PERIMETER: 8.594	
AREA:	1.199 WT/FT: 1.439
FACTOR:	14



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1000 County Road
Monett, Missouri 65708
1-800-221-4169
Fax: 417-235-7313

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DATE: 5/2/07			
APPROVED: SCC			
DATE: 5/2/07			
JOB REF. NO.:			
SERIES: 5XPT	SCALE: AS NOTED	DWG. NO. 4"	
TITLE: JAMB (EXT.)		DWG. NO. 18B5	

Technical drawing of a mechanical part, likely a bracket or support, showing dimensions and handwritten notes. The drawing includes the following dimensions and features:

- Overall Width:** 1.497
- Overall Height:** 1.250
- Top Section Width:** .750
- Top Section Height:** .100
- Bottom Section Width:** .203
- Bottom Section Height:** .026
- Right Section Width:** .280
- Right Section Height:** .090
- Handwritten Notes:**
 - 1.247 (with a checkmark)
 - .750 (with a checkmark)
 - 1.496 (with a checkmark)
 - EXPOSED (on the left side)

EXPOSED

ACTUAL SIZE



Test sample complies with these details
Deviations are noted.

Report# 92110

date 7/15/09

Tech Thu _____

DO NOT SCALE PRINT

Figure 1 is a technical drawing of a mechanical part, likely a bracket or support, showing various dimensions and tolerances. The drawing includes a central vertical section with a horizontal base and a top flange. Key dimensions include a total width of .639 ± .008, a central hole diameter of .024, and a base thickness of .051. The top flange has a thickness of .098 and a width of .165. A central vertical slot has a width of .012 and a depth of .008. The base has a width of .014 and a thickness of .047. The drawing also shows various angles (45°, 60°, 65°, 20°, 5°, 15°) and surface finish symbols (P.L., P.L.-P.L.). A note indicates a tolerance of .008 for the .193 dimension.

$$\square = .008 \text{ R}$$

10X SIZE

MATERIAL: 6063-T6 ALUM.	
WALL THICKNESS: .125 & AS NOTED	
TOTAL PERIMETER: 10.269	OS = 6.775 IS = 3.494
PAINTED PERIMETER: 1.429	
AREA: .607	WT/FT: .728
FACTOR: 14	



DRAWN BY: SCC		REVISIONS W/ DATES:	
DATE: 5/2/07			
APPROVED: SCC			
DATE: 5/2/07		JOB REF. NO.:	
SERIES: 6XPT	SCALE: AS NOTED	DIE CIRCLE:	2"
TITLE: JAMB (INT.)		DWG NO. 18B6	

EXPOSED

2.933 *hc*

2.928

2.660

2.056

1.931

.778

.73

.405

.125 R.

.125 R.

.073

.333

.149 .122

.060

.205

.559

.356

.311

.100 .060

1.075

.309

.496

1.125

30°

FULL R.

.156 I.D.

.280 O.D.

1.185

1.185 *hc*

ACTUAL SIZE

Test sample complies with these details
Deviations are noted.

date 7/15/09

Teach the

Technical drawing of a mechanical part, likely a bracket or support, showing dimensions in inches. The drawing includes a title block with the following information:

- Test sample com
- Deviant
- Report# 92110
- Date 7/15/09

Key dimensions and features include:

- Overall width: .416
- Top width: .208
- Top width: .292
- Top width: .146
- Top width: .034
- Top width: .041
- Top width: .117
- Top width: .068
- Top width: .188
- Top width: .105
- Bottom width: .118
- Bottom width: .025
- Bottom width: .100 R.
- Bottom width: .081 (2)
- Bottom width: 45°
- Bottom width: 15°
- Bottom width: 2x SIZE

STATED. CORNER RA

.014

.653

PL

PL-SYM. .024

PL-PT .165

PT .040

PL .012

PT .008

PT-PT .114 ±.008

.193 ±.008

45°

60°

5°

15°

65°

20°

.098

.099

.051

.012

.047

PL .138

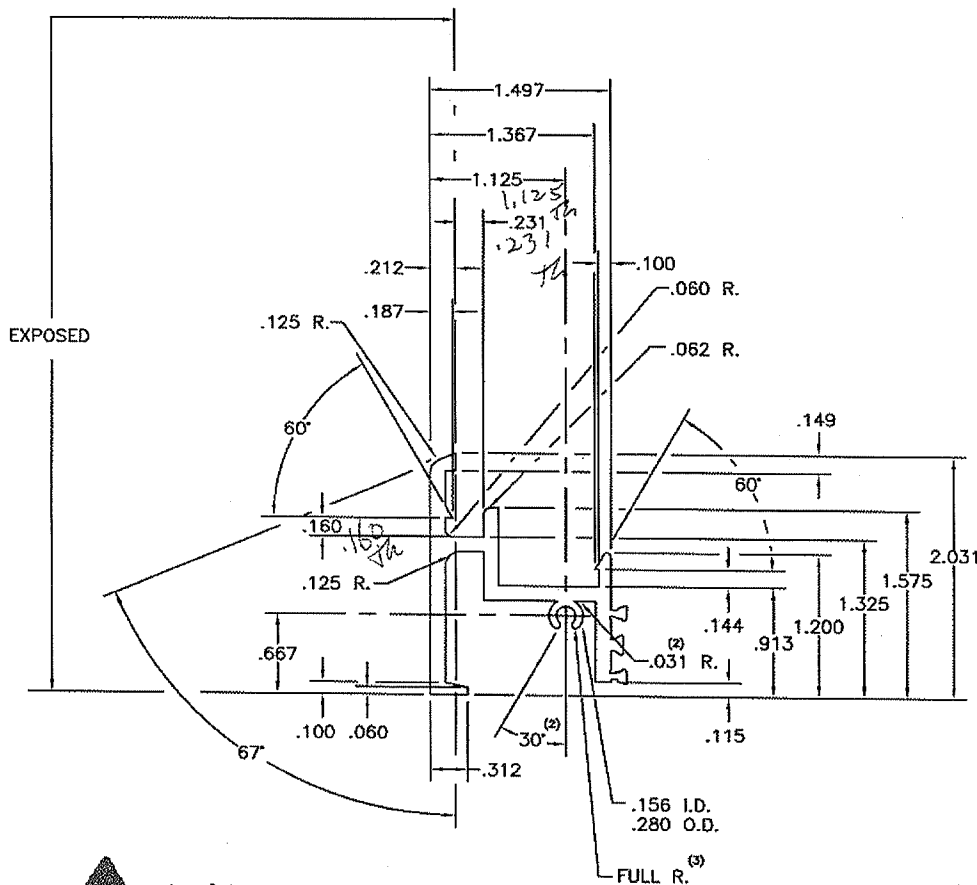
10X SIZE

MATERIAL: 6063--T6 ALUM.	
WALL THICKNESS: .125 & AS NOTED	
TOTAL PERIMETER: 15.613	
PAINTED PERIMETER: 5.472	
AREA: .894	WT/FT: 1.073
FACTOR: 15	

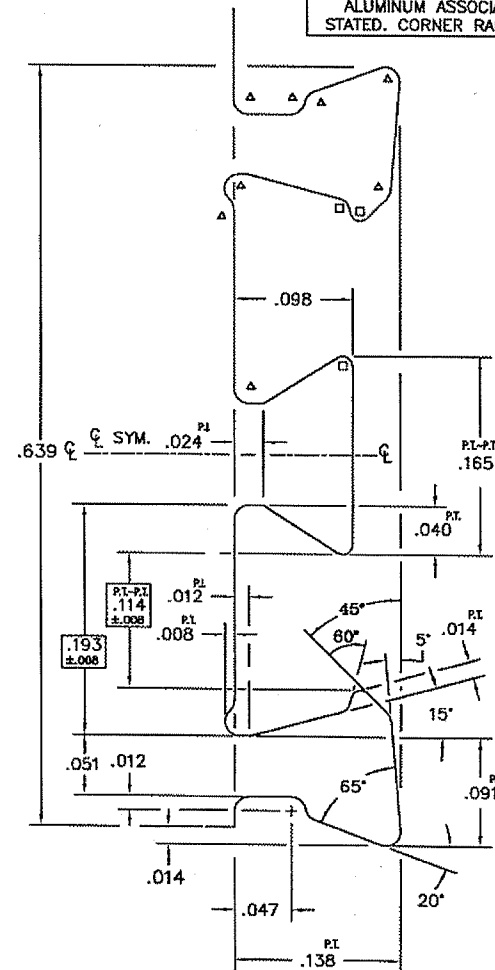


EFCO CORPORATION
1800 County Road
Monett, Missouri 65708
1-800-221-4169
Fax: 417-235-7313

DRAWN BY: SCC		REVISIONS W/ DATES:	
DATE: 5/1/07			
APPROVED: SCC			
DATE: 5/1/07		JOB REF. NO.:	
SERIES: 5XP ^T		SCALE: AS NOTED	DIE CIRCLE: 4"
TITLE: SILL (EXT.)		DWG NO. 18B3	



STD. EXTRUSION TOLERANCES AS DEFINED BY THE ALUMINUM ASSOCIATION UNLESS OTHERWISE STATED. CORNER RADII .015 EXCEPT AS NOTED.



□=.008 R
△=.012 R



Architectural Testing

Test sample complies with these details
Deviations are noted.

Report# 92110

Date 7/15/09

Tech *TL*
ACTUAL SIZE

DO NOT SCALE PRINT

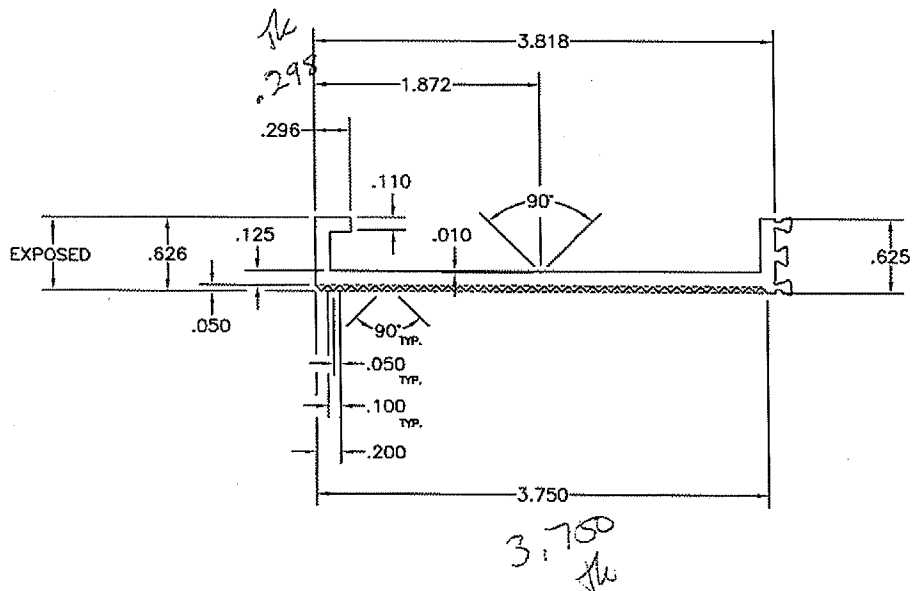
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MATERIAL: 6063-T6 ALUM.	
WALL THICKNESS: .125 & AS NOTED	
TOTAL PERIMETER: 12.593	
PAINTED PERIMETER: 2.178	
AREA: .710	WT/FT: .852
FACTOR: 15	



EFCO CORPORATION
1000 County Road
Monett, Missouri 65708
1-800-221-4169
Fax: 417-235-7313

DRAWN BY: SCC		REVISIONS W/ DATES:	
DATE: 5/1/07			
APPROVED: SCC			
DATE: 5/1/07		JOB REF. NO.:	
SERIES: 5XPT	SCALE: AS NOTED	DIE CIRCLE: 3"	
TITLE: SILL (INT.)		DWG NO. 18B4	



ACTUAL SIZE

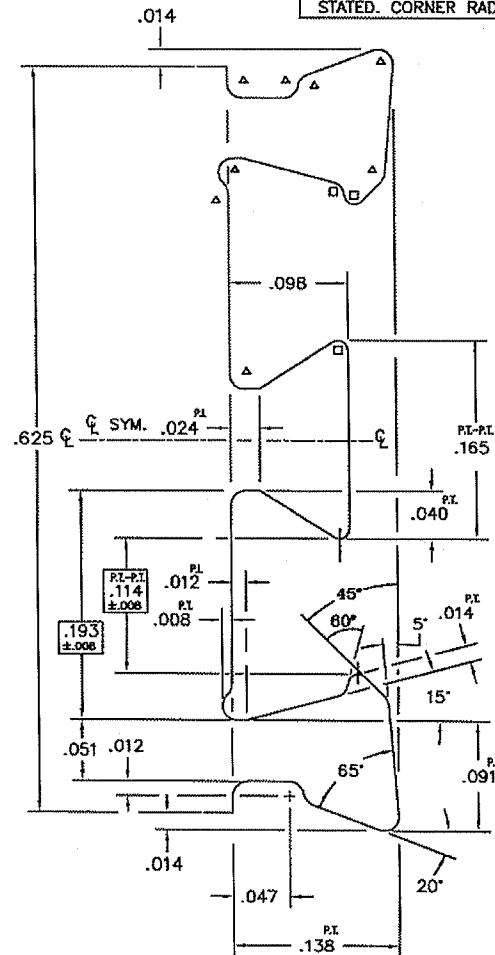


Architectural Testing

Test sample complies with these details
Deviations are noted.

Report# 92110
Date 7/15/09 Tech Ph

STD. EXTRUSION TOLERANCES AS DEFINED BY THE
ALUMINUM ASSOCIATION UNLESS OTHERWISE
STATED. CORNER RADII .015 EXCEPT AS NOTED.



□=.008 R
△=.012 R

10X SIZE

DO NOT SCALE PRINT

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MATERIAL: 6063-T6 ALUM.	
WALL THICKNESS: .125 & AS NOTED	
TOTAL PERIMETER: 12.634	
PAINTED PERIMETER: .647	
AREA: .742	WT/FT: .890
FACTOR: 14	



EFCO CORPORATION
1000 County Road
Monett, Missouri 65708
1-800-221-4169
Fax: 417-233-7313

DRAWN BY: SCC		REVISIONS W/ DATES:	
DATE: 4/30/07			
APPROVED: SCC			
DATE: 4/30/07		JOB REF. NO.:	
SERIES: 5XPT	SCALE: AS NOTED	DIE CIRCLE: 5"	
TITLE: SILL STARTER (EXT.)		DWG NO. 18D7	

Technical drawing of a mechanical part, likely a bracket or support, showing dimensions and handwritten notes. The drawing includes the following dimensions and features:

- Overall Dimensions:**
 - Top horizontal dimension: .392
 - Right vertical dimension: .296
 - Bottom horizontal dimension: .625
 - Bottom vertical dimension: .250
- Internal Features and Dimensions:**
 - Top horizontal dimension: .090
 - Vertical dimension: .125
 - Horizontal dimension: .090
 - Horizontal dimension: .219
 - Horizontal dimension: .531
 - Horizontal dimension: .15
 - Horizontal dimension: .050
 - Horizontal dimension: .050
 - Horizontal dimension: .100
 - Horizontal dimension: .200
- Handwritten Notes and Annotations:**
 - "EXPOSED" (top left)
 - "90°" (bottom right, indicating a corner or bend)
 - "625" (bottom right, likely a reference to the .625 dimension)
 - "Test" (bottom right, indicating a test point or feature)



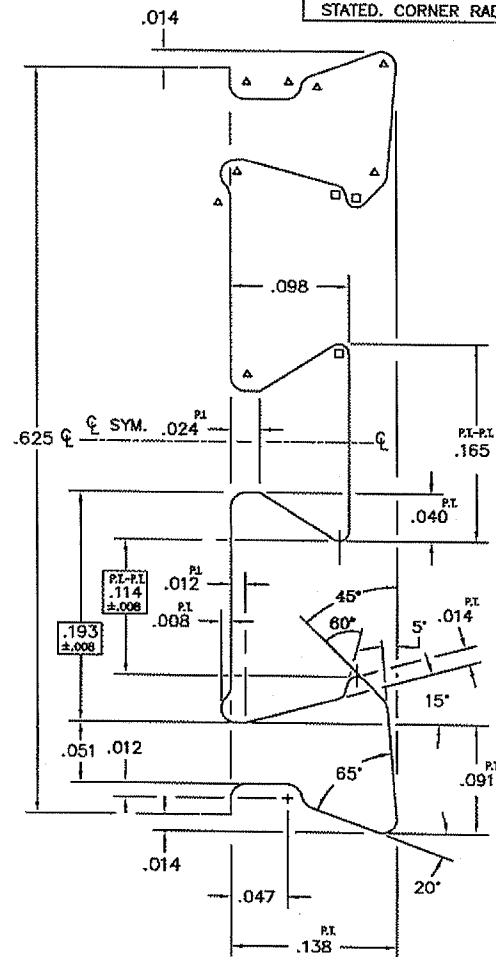
Architectural Testing

Test sample complies with these details
Deviations are noted.

Report# 92110

Date 7/15/09

Tech the


$$\square = .008 \text{ R}$$

10X SIZE

DO NOT SCALE PRINT

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MATERIAL: 6063-T6 ALUM.		 EFCO CORPORATION 1800 County Road Minnet, Missouri 65708 1-800-221-4169 Fax: 417-233-7313	DRAWN BY: SCC		REVISIONS W/ DATES:	
WALL THICKNESS: .125 & AS NOTED			DATE: 4/30/07			
TOTAL PERIMETER: 6.014			APPROVED: SCC			
PAINTED PERIMETER: .750			DATE: 4/30/07	JOB REF. NO.:		
AREA: .323	WT/FT: .388		SERIES: 5XPT	SCALE: AS NOTED	DIE CIRCLE: 2"	
FACTOR: 16		TITLE: SILL STARTER (INT.)			DWG NO. 18D8	



Architectural Testing

Test sample complies with these details
Deviations are noted.

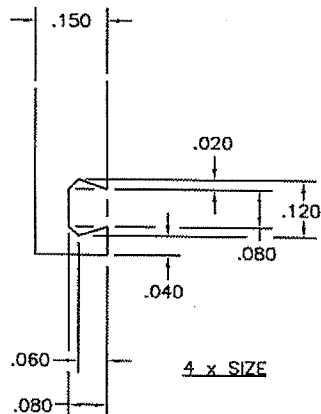
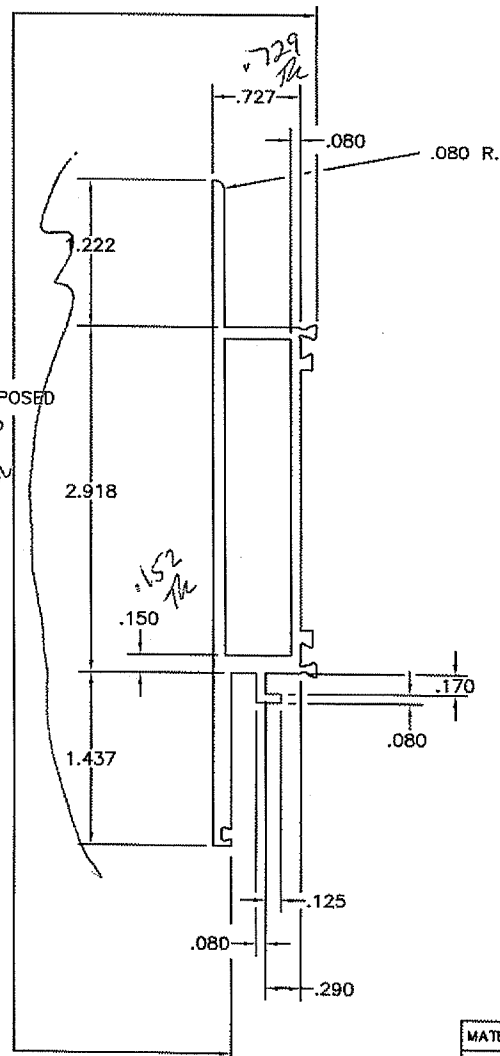
Report# 92110

Date 7/15/09

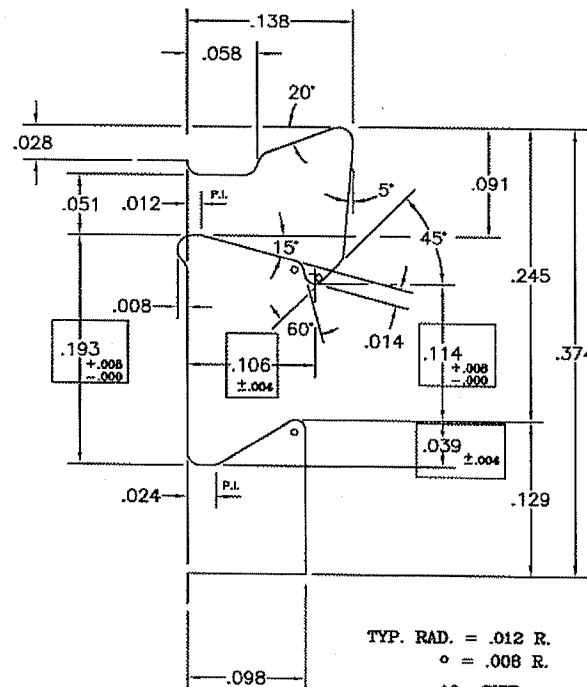
Tech *TH*

5.52
TH

EXPOSED



STD. EXTRUSION TOLERANCES AS DEFINED BY THE
ALUMINUM ASSOCIATION UNLESS OTHERWISE
STATED. CORNER RADII .015 EXCEPT AS NOTED.



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MATERIAL: 6063-T6 ALUM.	
WALL THICKNESS: .100 & AS NOTED	
TOTAL PERIMETER: 21.127	OS = 14.897
PAINTED PERIMETER: 7.821	IS = 6.430
AREA: 1.066	WT/FT: 1.279
FACTOR: 17	



EFCO CORPORATION
1000 County Road
Monett, Missouri 65708
1-800-221-4169
Fax: 417-235-7313

DRAWN BY: SCC	REVISIONS W/ DATES:	
DATE: 5/7/07		
APPROVED: SCC		
DATE: 5/2/07		
SERIES: 5XPT	SCALE: AS NOTED	ONE CIRCLE: 6"
TITLE: OXXO HARDWARE SIDE RAIL	(EXT.)	DWG NO. 18C9



STD. EXTRUSION TOLERANCES AS DEFINED BY THE ALUMINUM ASSOCIATION UNLESS OTHERWISE STATED, CORNER RADII .015 EXCEPT AS NOTED.

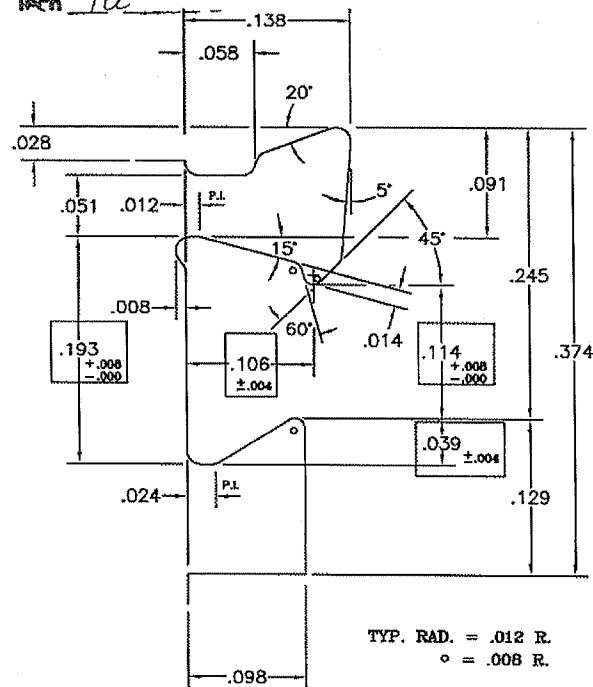
Date 7/15/09

Each the



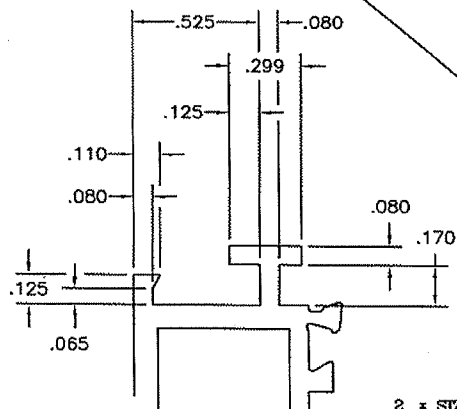
ACTUAL SIZE

DO NOT SCALE PRINT



TYP. RAD. = .012 R.
 ° = .008 R.

10 x SIZE



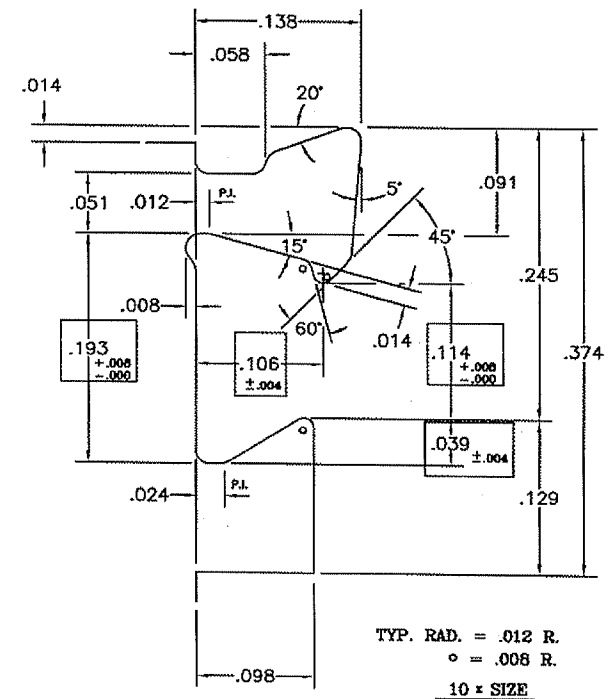
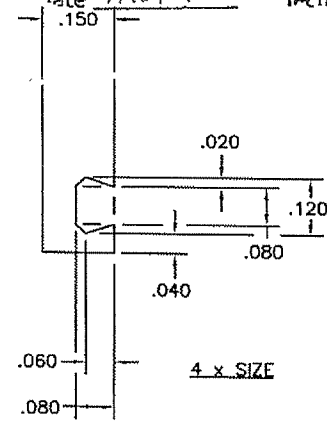
2 = SIZE

MATERIAL: 6063-T6 ALUM.	
WALL THICKNESS: .100 & AS NOTED	
TOTAL PERIMETER:	30.140 OS = 12.146 IS = 12.994
PAINTED PERIMETER: 11.390	
AREA:	1.432 WT/FT: 1.718
FACTOR:	18



EFCO CORPORATION
1000 County Road
Monett, Missouri 63708
1-800-221-4169
Fax: 417-235-7313

DRAWN BY: SCC		REVISIONS W/ DATES:	
DATE: 5/7/07			
APPROVED: SCC			
DATE: 5/7/07		JOB REF. NO.:	
SERIES: 5XPT	SCALE: AS NOTED	DWG. CIRCLE:	5"
TITLE: (INT.)		DWG NO.	
OXXO HARDWARE SIDE RAIL		18D0	



DRAWN BY: SCC		REVISIONS W/ DATES:	
DATE: 5/7/07			
APPROVED: SCC			
DATE: 5/2/07		JOB REF. NO.:	
SERIES: 5XPT	SCALE: AS NOTED	DIE CIRCLE:	5"
TITLE: OXXO MEETING RAIL (EXT.)		DWG NO. 18D1	

STD. EXTRUSION TOLERANCES AS DEFINED BY THE
ALUMINUM ASSOCIATION UNLESS OTHERWISE
STATED. CORNER RADII .015 EXCEPT AS NOTED.

Test sample complies with these details.
 Deviations are noted.

Report# 92110

Date 7/15/09

Tech 76

2 x SIZE

EXPOSED

ACTUAL SIZE

DO NOT SCALE PRINT

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MATERIAL: 6063-T6 ALUM.	
WALL THICKNESS: .100 & AS NOTED	
TOTAL PERIMETER:	25.217
PAINTED PERIMETER:	8.970
AREA:	1.182
WT/FT:	1.418
FACTOR:	18



EFCO CORPORATION
1000 County Road
Monett, Missouri 65708
1-800-221-4169
Fax: 417-233-7313

DRAWN BY: SCC		REVISIONS W/ DATES:	
DATE: 5/7/07			
APPROVED: SCC			
DATE: 5/7/07		JOB REF. NO.:	
SERIES: 5XPT	SCALE: AS NOTED	DWG. NO. 4"	
TITLE: OXOX MEETING RAIL (INT.)		18D2	

2 x SIZE

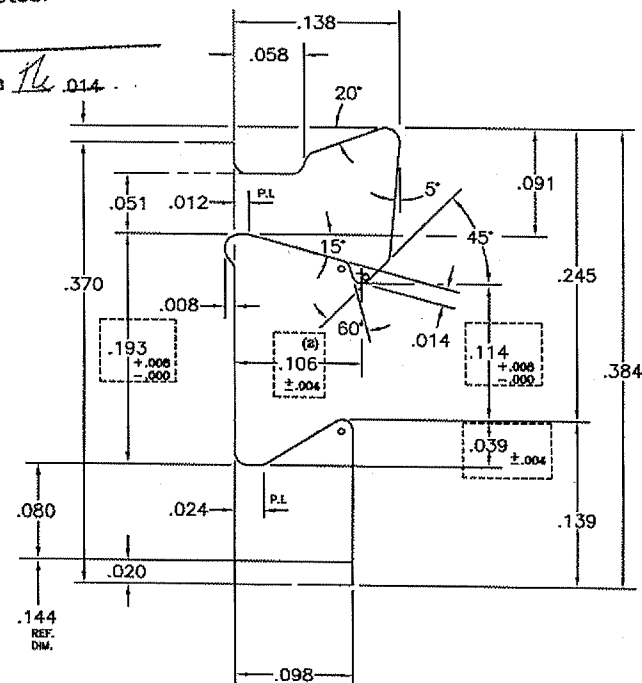


Test sample complies with these details
Deviations are noted.

Report# 92110

7/15/09

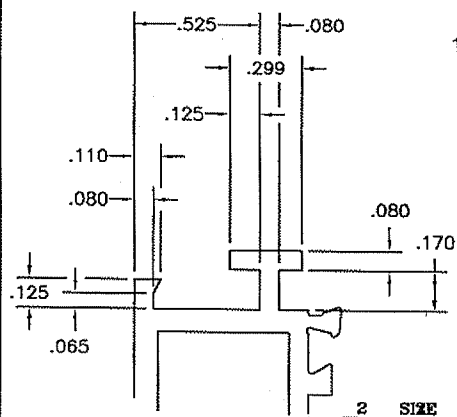
Tech 16 .014



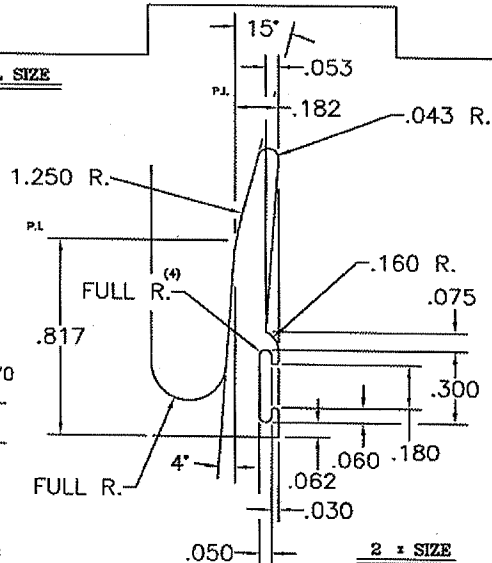
TYP. RAD. = .012 R.
 ° = .008 R.

10 x SIZE

ACTUAL SIZE



2 SIZE



2 x SIZE

DO NOT SCALE PRINT

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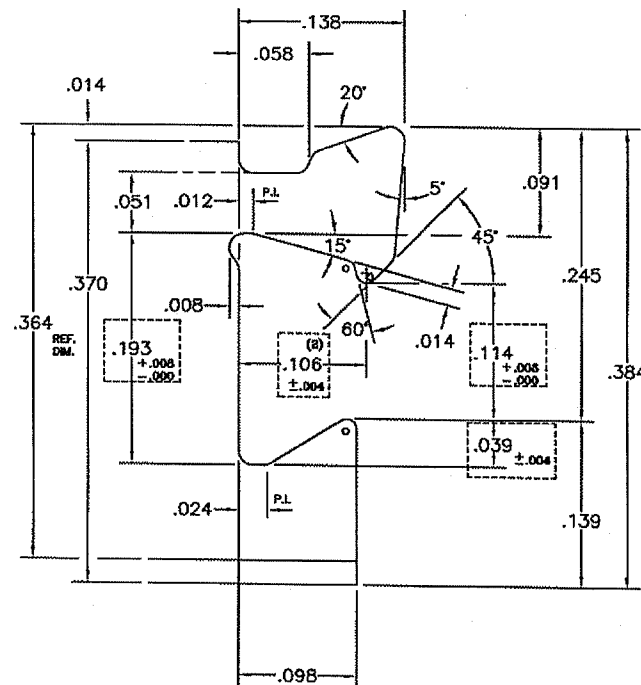
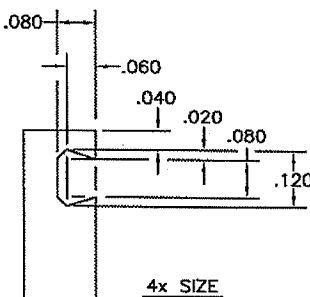
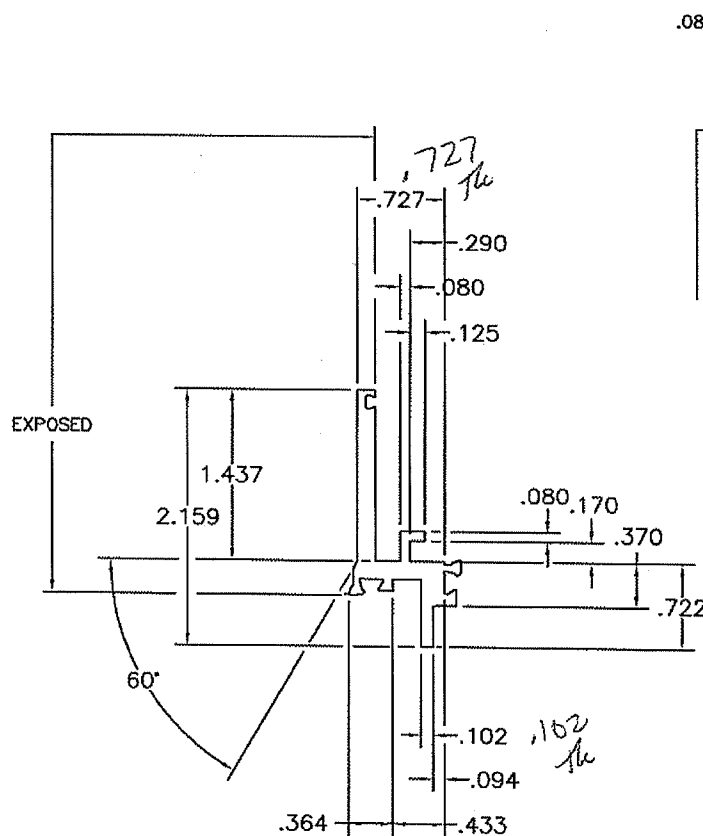
MATERIAL: 6063-T6 ALUM.	
WALL THICKNESS: .150 & AS NOTED	
TOTAL PERIMETER:	33.402
CS = 22.415	
IS = 10.987	
PAINTED PERIMETER:	15.347
AREA:	2.382
WT/FT:	2.858
FACTOR:	12



IFCO CORPORATION
1000 County Road
Monett, Missouri 65708
1-800-221-1169
Fax: 417-235-7313

DRAWN BY: SCC DATE: 5/7/07 APPROVED: SCC DATE: 5/7/07	REVISIONS W/ DATES:	
JOB REF. NO.:	SCALE: AS NOTED	DIE CIRCLE: 7"
TITLE: MEETING RAIL (INT.)		DWG. NO. 18D5

STD. EXTRUSION TOLERANCES AS DEFINED BY THE ALUMINUM ASSOCIATION UNLESS OTHERWISE STATED. CORNER RADII .015 EXCEPT AS NOTED.



TYP. RAD. = .012 R.
o = .008 R.

10x SIZE

ACTUAL SIZE

DO NOT SCALE PRINT

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Architectural Testing

Test sample complies with these details
Deviations are noted.

Report# 92110

Date 7/15/09

Tech JH

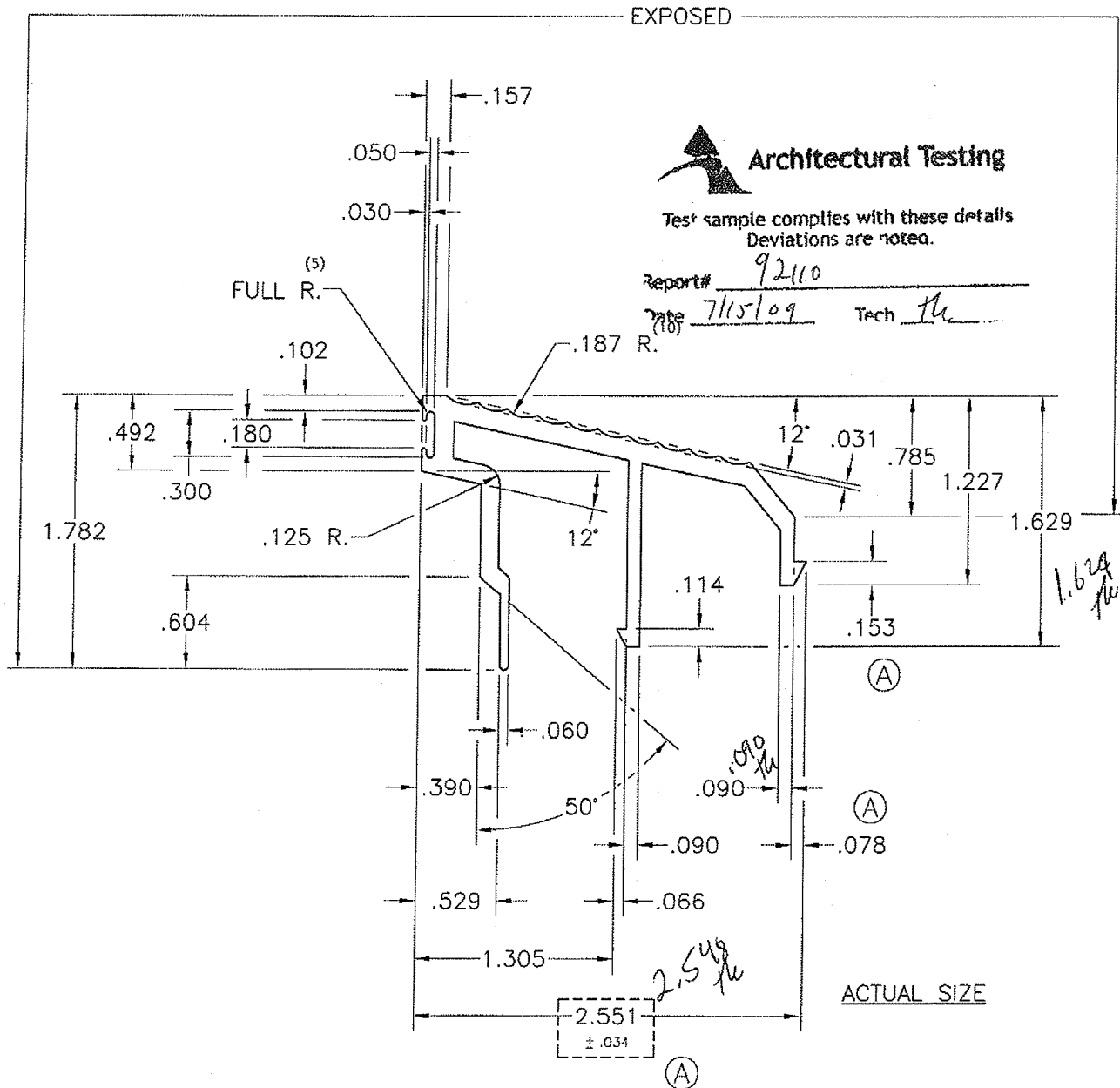
MATERIAL: 6063-T6 ALUM.	
WALL THICKNESS: .150 & AS NOTED	
TOTAL PERIMETER: 7.940	
PAINTED PERIMETER: 1.906	
AREA: .473	WT/FT: .568
FACTOR: 14	



EFCO CORPORATION
1000 County Road
Monett, Missouri 65708
1-800-221-4169
Fax: 417-235-7313

DRAWN BY: SCC		REVISIONS W/ DATES:	
DATE: 5/7/07			
APPROVED: SCC			
DATE: 5/7/07		JOB REF. NO.:	
SERIES: 5XPT	SCALE: AS NOTED	DWG. NO.:	3"
TITLE: MEETING RAIL (EXT.)		DWG. NO. 18D6	

STD. EXTRUSION TOLERANCES AS DEFINED BY THE
ALUMINUM ASSOCIATION UNLESS OTHERWISE
STATED. CORNER RADII .015 EXCEPT AS NOTED.



MATERIAL: 6063-T6 ALUM.	
WALL THICKNESS: .125 & AS NOTED	
TOTAL PERIMETER:	13.026 (A)
PAINTED PERIMETER:	5.317
AREA:	.717 (A)
WT/FT:	.860 (A)
FACTOR:	15



EFCO CORPORATION
1000 County Road
Monett, Missouri 65708
1-800-221-4169
Fax: 417-235-7313

DRAWN BY:	SCC	REVISIONS W/ DATES:	
DATE:	8/21/06	(A) .078 was .066, .153 was .145, 2.551 was 2.538	
APPROVED:	SCC	.717 was .715, .860 was .858,	
DATE:	9/29/06	13.026 was 13.003 9/29/06 SCC	
SERIES:	5XP	JOB REF. NO.:	
TITLE:	THRESHOLD	SCALE:	AS NOTED
		DWG NO.	14N6
		REV.	(A)

Diagram illustrating a vertical section of a wall. A horizontal line is drawn across the middle of the wall, labeled "EXPOSED".

[illegible]

Date 7/15/09 Tech TH

14M9

.010 x 90° I.D. MARK TO BE INCORPORATED INTO DIE @ EFCO BARNWELL ONLY. EFCO MONETT IS NOT TO HAVE I.D. MARK.

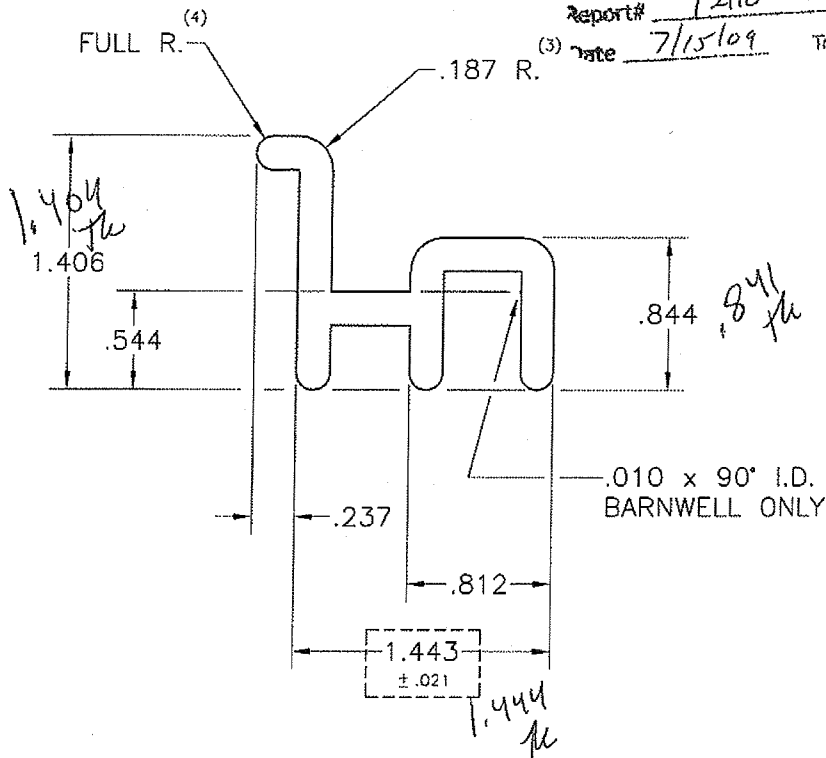
STD. EXTRUSION TOLERANCES AS DEFINED BY THE ALUMINUM ASSOCIATION UNLESS OTHERWISE STATED. CORNER RADII .015 EXCEPT AS NOTED.



Architectural Testing

Test sample complies with these details
Deviations are noted.

Report# 92110
(3) Date 7/15/09 Tech JH



ACTUAL SIZE

NO EXPOSED SURFACES

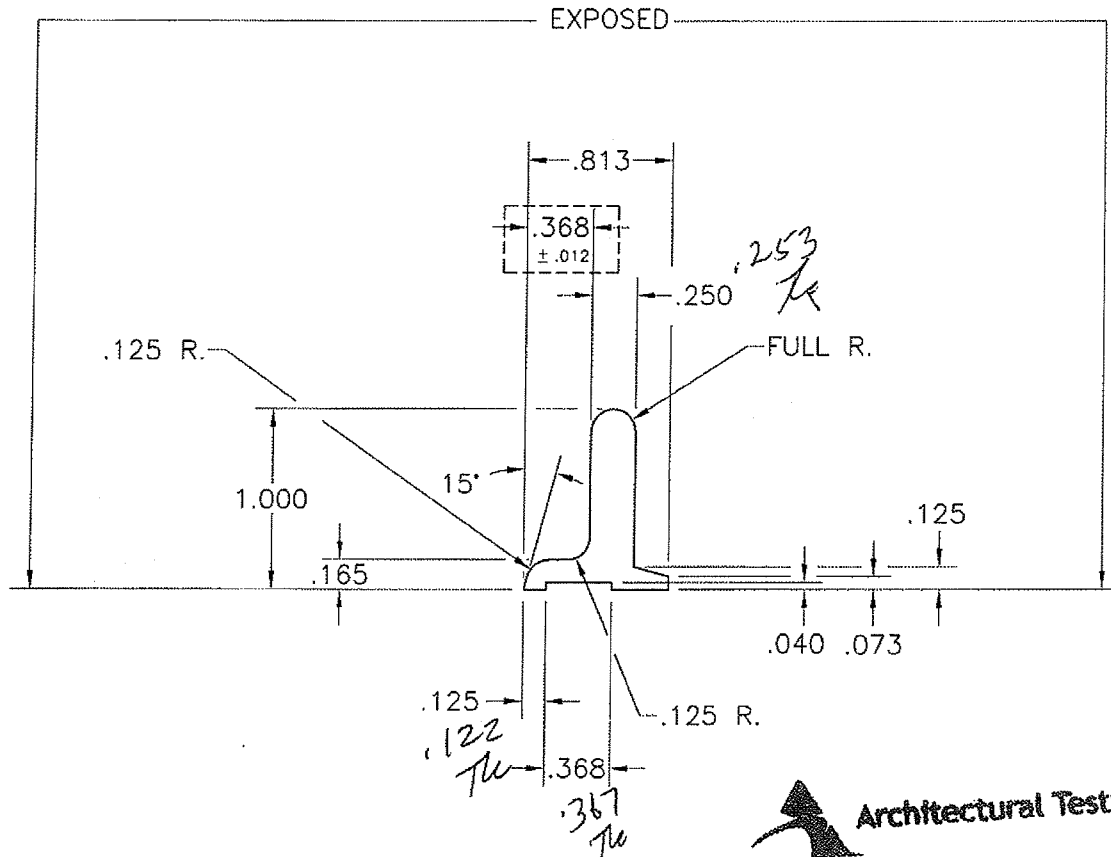
14B1

DO NOT SCALE PRINT

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MATERIAL: 6063-T6 ALUM.			DRAWN BY: SCC		REVISIONS W/ DATES:	
WALL THICKNESS: .187 & AS NOTED			DATE: 10/25/05			
TOTAL PERIMETER: 8.238			APPROVED: SCC			
			DATE: 10/25/05		JOB REF. NO.:	
AREA: .750	WT/FT: .900	EFCO CORPORATION 1000 County Road Monett, Missouri 65708 1-800-221-4169 Fax: 417 225 7313	SERIES: 5XP	SCALE: AS NOTED	DIE CIRCLE: 3"	
FACTOR: 9			TITLE: HEAD SPACER			DWG NO. 14B1

STD. EXTRUSION TOLERANCES AS DEFINED BY THE
ALUMINUM ASSOCIATION UNLESS OTHERWISE
STATED. CORNER RADII .015 EXCEPT AS NOTED.



Architectural Testing

Test sample complies with these details
Deviations are noted.

ACTUAL SIZE

Report# 92116
Date 7/15/09 Tech Th

14B2

DO NOT SCALE PRINT

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MATERIAL: 6063-T6 ALUM.			DRAWN BY: SCC	REVISIONS W/ DATES:	
WALL THICKNESS: .250 & AS NOTED			DATE: 10/25/05		
TOTAL PERIMETER: 3.433			APPROVED: SCC		
PAINTED PERIMETER: 2.540			DATE: 10/25/05	JOB REF. NO.:	
AREA: .307	WT/FT: .368	EFCO CORPORATION 1000 County Road Monett, Missouri 65708 1-800-221-4169 Fax: 417 225 7212	SERIES: 5XP	SCALE: AS NOTED	DIE CIRCLE: 2"
FACTOR: 9			TITLE: PERFORMANCE SILL ADAPTER		DWG NO. 14B2



Architectural Testing

STD. EXTRUSION TOLERANCES AS DEFINED BY THE ALUMINUM ASSOCIATION UNLESS OTHERWISE STATED. CORNER RADII .015 EXCEPT AS NOTED.

Test sample complies with these details
Deviations are noted.

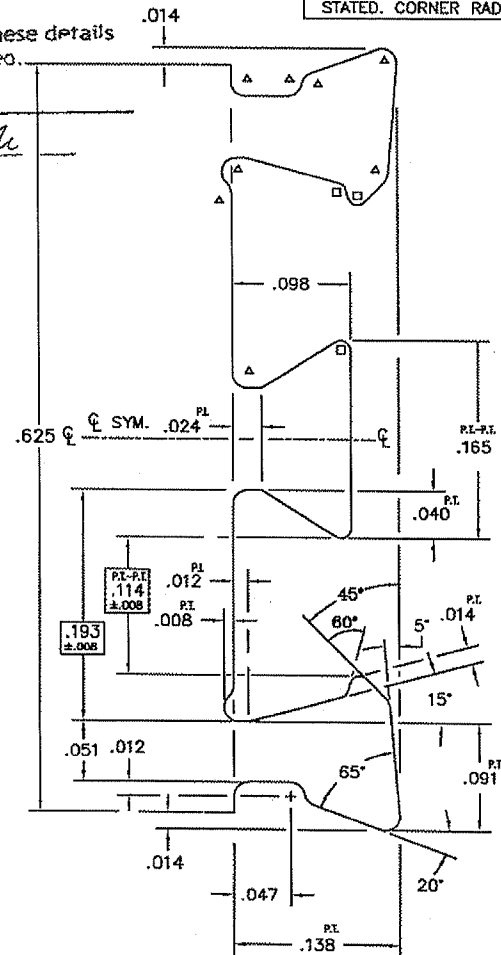
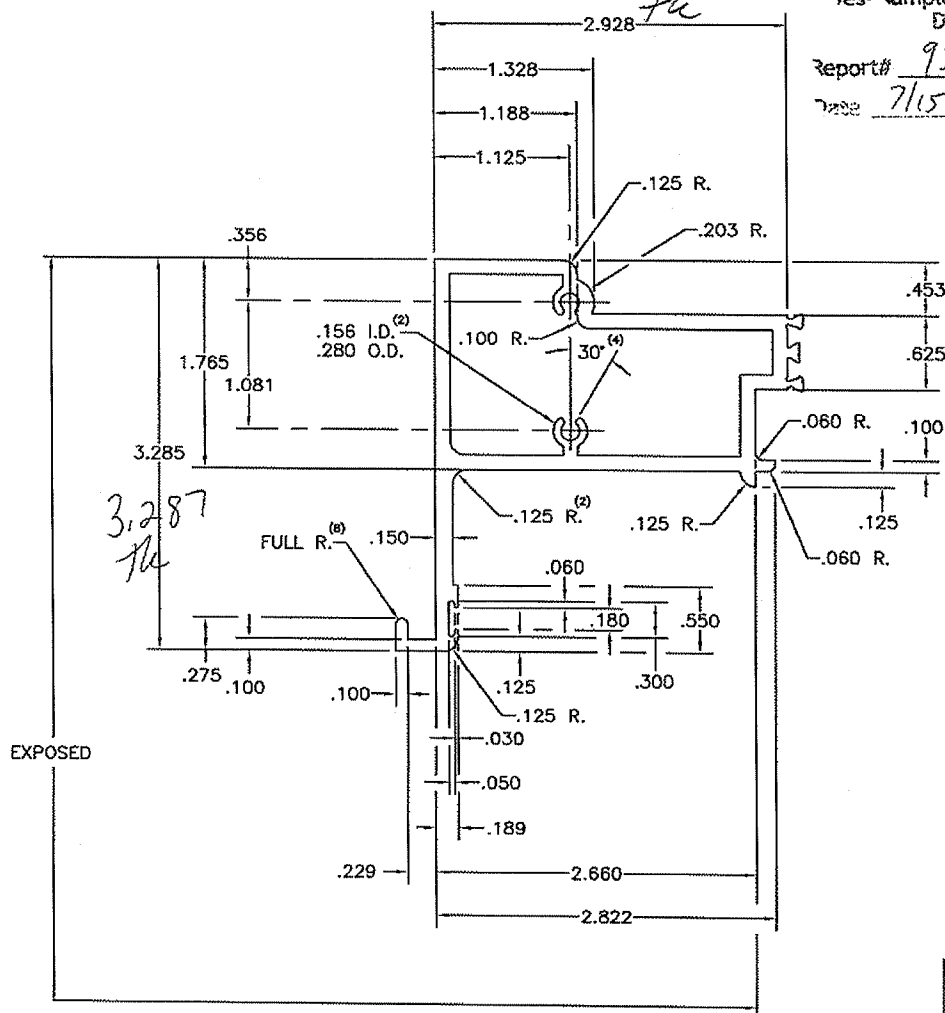
Report# 92110

Date 7/15/09 Tech TH

2.926 TH

.625 TH

3.287 TH



□=.008 R
△=.012 R

10X SIZE

DO NOT SCALE PRINT

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ACTUAL SIZE

MATERIAL: 6063-T6 ALUM.	
WALL THICKNESS: .125 & AS NOTED	
TOTAL PERIMETER: 24.865	OS = 15.040
PAINTED PERIMETER: 8.946	IS = 9.825
AREA: 1.502	WT/FT: 1.802
FACTOR: 14	



EFCO CORPORATION
1000 Century Road
Merate, Missouri 65708
1-800-221-4169
Fax: 417-235-7313

DRAWN BY: SCC	REVISIONS W/ DATES:	
DATE: 4/30/07		
APPROVED: SCC		
DATE: 4/30/07	JOB REF. NO.:	
SERIES: 5XPT	SCALE: AS NOTED	DIE CIRCLE: 5"
TITLE: HEAD (EXT.)	DWG NO. 18B1	

Technical drawing of a mechanical part, likely a valve or fitting, showing dimensions and handwritten notes.

Dimensions:

- Top arc: 90°
- Top horizontal dimension: .682
- Top left horizontal dimension: .269
- Top right horizontal dimension: .200
- Top center horizontal dimension: .100
- Top center horizontal dimension: .050
- Top left horizontal dimension: .050
- Top right horizontal dimension: .013
- Top right horizontal dimension: .625
- Top center horizontal dimension: .090
- Top center horizontal dimension: .090 R.
- Top center horizontal dimension: FULL R. (S)
- Top center horizontal dimension: .750
- Top center horizontal dimension: .211
- Top center horizontal dimension: .043
- Top center horizontal dimension: .080
- Top center horizontal dimension: .125
- Top center horizontal dimension: .117
- Top center horizontal dimension: .030
- Top center horizontal dimension: .050
- Top center horizontal dimension: .553
- Top center horizontal dimension: 1.553

Handwritten Notes:

- 2.526 in
- 2.825
- 7.50 in
- 1.553 in
- EXPOSED

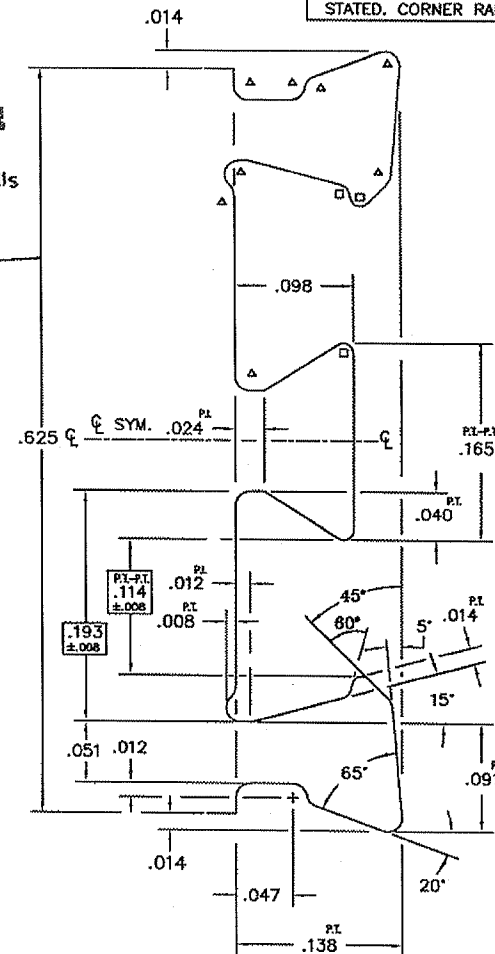
Other Text:

- ARC
- Test sample c
- Dev
- Report# 92
- Date 7/15/6

Architectural Testing

Test sample complies with these details
Deviations are noted.

Report# 92110
Date 7/15/09 Tech the



10X SIZE

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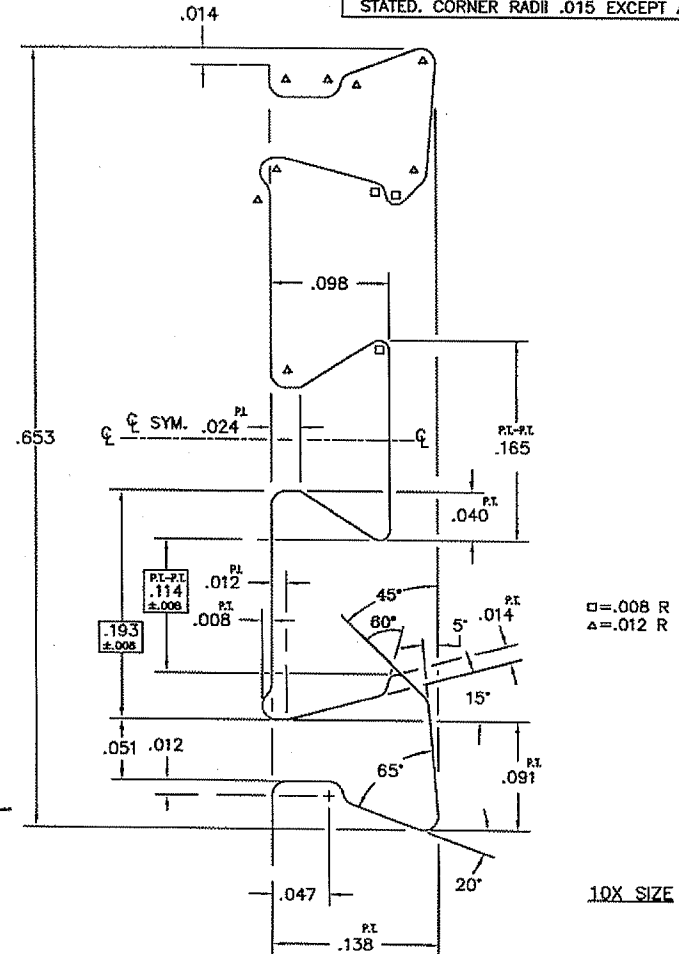
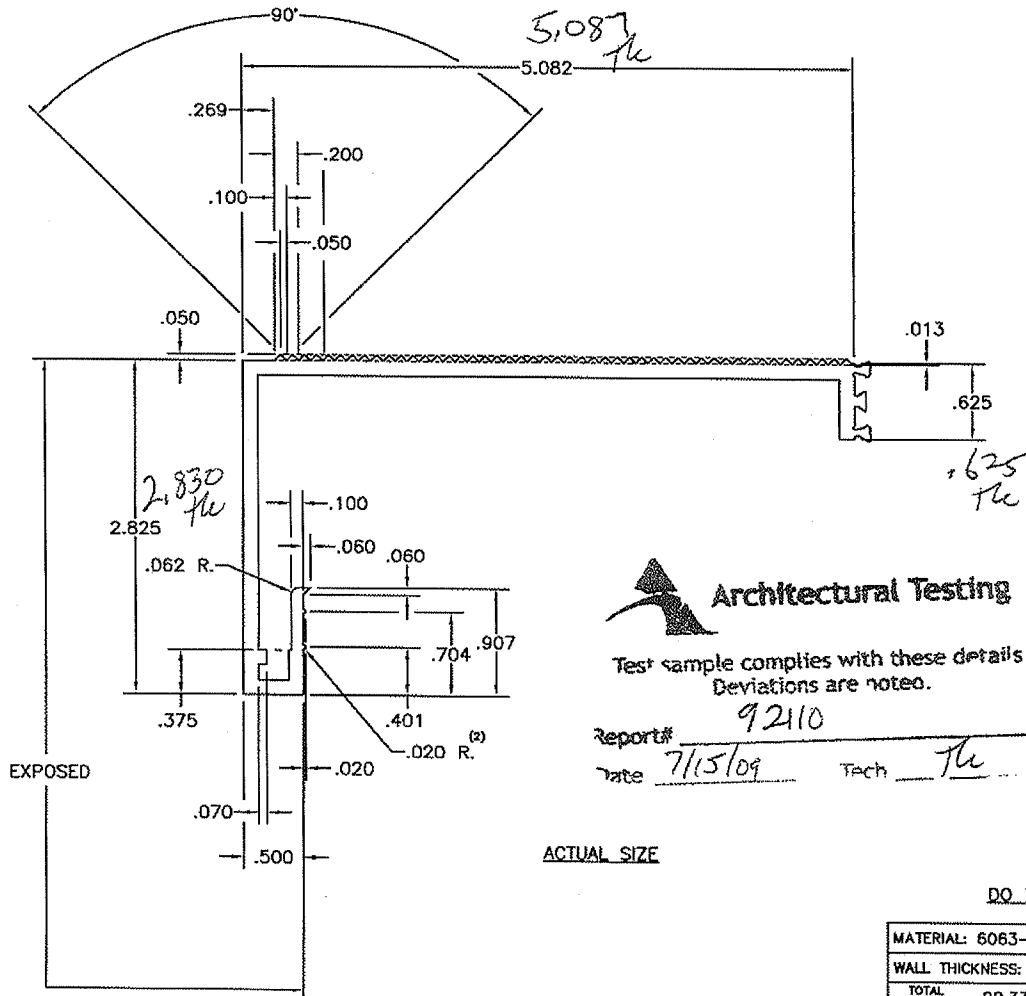
MATERIAL: 6063-T6 ALUM.	
WALL THICKNESS: .125 & AS NOTED	
TOTAL PERIMETER: 11.445	
PAINTED PERIMETER: 3.378	
AREA: .652	WT/FT: .782
FACTOR: 15	



EFCO CORPORATION
1090 County Road
Monett, Missouri 65708
1-800-221-4169
Fax: 417-235-7313

DRAWN BY: SCC		REVISIONS W/ DATES:	
DATE: 5/17/07			
APPROVED: SCC			
DATE: 5/17/07		JOB REF. NO.:	
SERIES: 5XPT		SCALE: AS NOTED	
TITLE: SUBHEAD (EXT.)		DIE CIRCLE: 3"	
		DWG NO. 18E1	

STD. EXTRUSION TOLERANCES AS DEFINED BY THE ALUMINUM ASSOCIATION UNLESS OTHERWISE STATED. CORNER RADII .015 EXCEPT AS NOTED.



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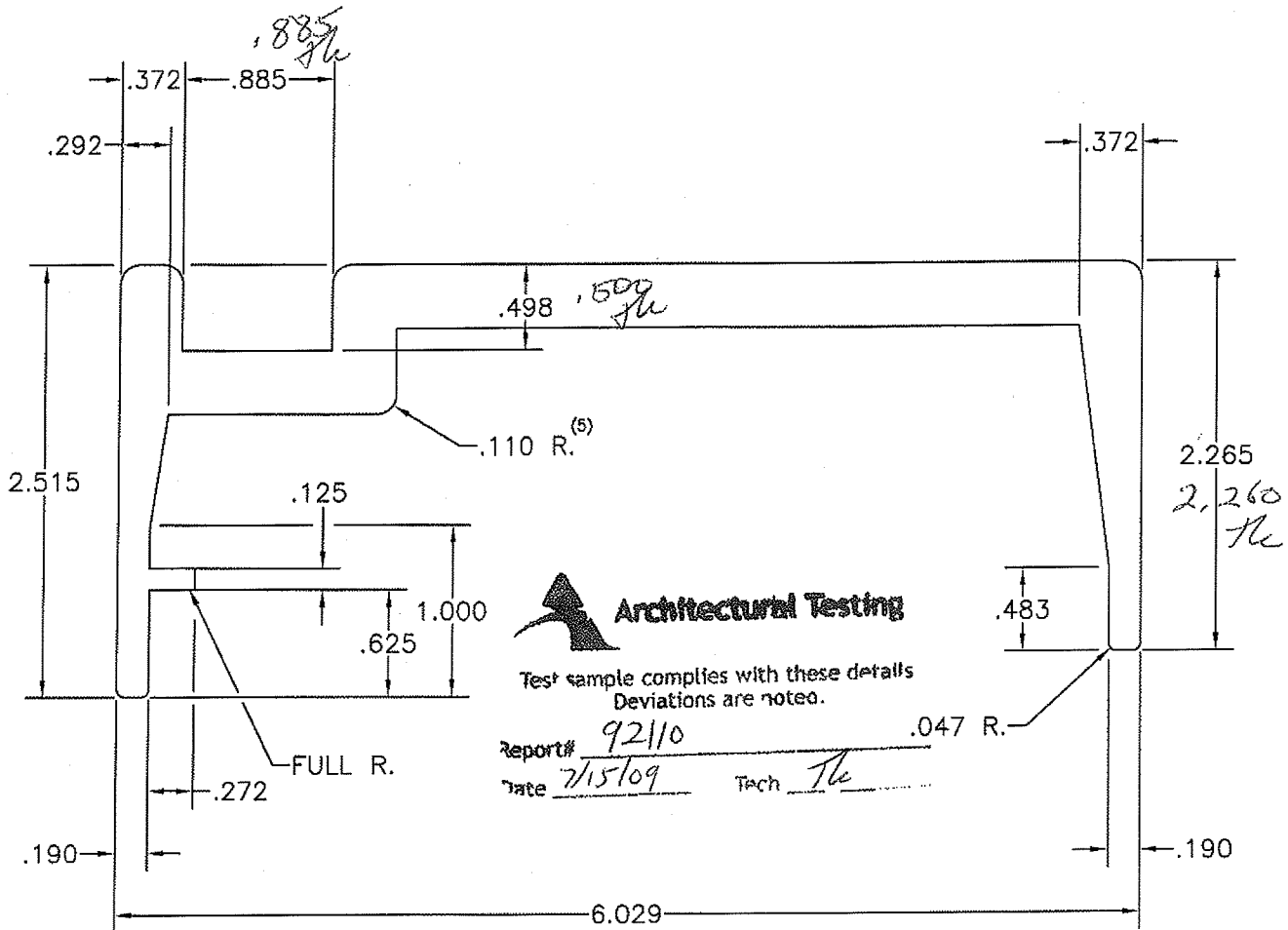
MATERIAL: 6063-T6 ALUM.	
WALL THICKNESS: .125 & AS NOTED	
TOTAL PERIMETER:	22.334
PAINTED PERIMETER:	3.325
AREA:	1.330
WT/FT:	1.596
FACTOR:	14



EFCO CORPORATION
1800 County Road
Monett, Missouri 65708
1-800-221-4169
Fax: 417-235-7313

DRAWN BY:	SCC	REVISIONS W/ DATES:	
DATE:	4/30/07		
APPROVED:	SCC		
DATE:	4/30/07	JOB REF. NO.:	
SERIES:	5XPT	SCALE:	AS NOTED
TITLE:	SUBHEAD (INT.)		DWG NO.
			18E2

STD. EXTRUSION TOLERANCES AS DEFINED BY THE
ALUMINUM ASSOCIATION UNLESS OTHERWISE
STATED. CORNER RADII .015 EXCEPT AS NOTED.



ACTUAL SIZE

NO EXPOSED SURFACES

DO NOT SCALE PRINT

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MATERIAL: 6063-T6 ALUM.			DRAWN BY: SCC		REVISIONS W/ DATES:	
WALL THICKNESS: .372 & AS NOTED			DATE: 5/8/07			
TOTAL PERIMETER: 21.833			APPROVED: SCC			
PAINTED PERIMETER: N/A			DATE: 5/8/07		JOB REF. NO.:	
AREA: 3.466	WT/FT: 4.159	EFCO CORPORATION 1000 County Road Monett, Missouri 65708 1-800-221-4169 Fax: 417-325-7717	SERIES: 5XPT	SCALE: AS NOTED	DIE CIRCLE: 4"	
FACTOR: 5			TITLE: SUBHEAD STIFFENER		DWG NO. 18E5	

EXPOSED

4x SIZE

DO NOT SCALE PRINT



Test sample complies with these details
Deviations are noted.

Report#

92110

date 7/15/09

Tech *Th*

MATERIAL: 6063-T6 ALUM.	
WALL THICKNESS: .100 & AS NOTED	
TOTAL PERIMETER: 17.428	
PAINTED PERIMETER: 7.175	
AREA: .904	WT/FT: 1.08
FACTOR: 16	



EFCO CORPORATION
1000 County Road
Monett, Missouri 65708
1-800-221-4169
Fax: 417-235-7313

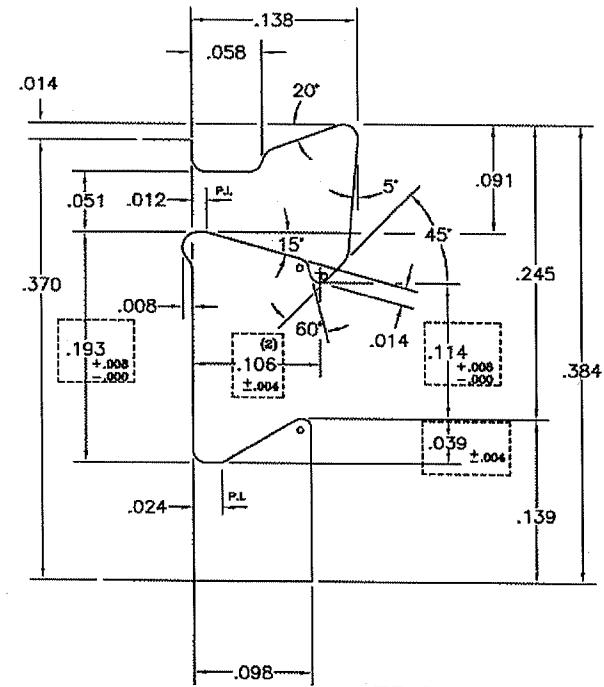
DRAWN BY: SCC		REVISIONS W/ DATES:	
DATE: 3/27/07			
APPROVED: SCC			
DATE: 3/27/07		JOB REF. NO.:	
SERIES: 5XPT		SCALE: AS NOTED	
		DIE CIRCLE: 5"	
TITLE: MEETING RAIL (EXT.)		DWG NO. 18C4	

EXPOSED

Technical drawing of a mechanical part, likely a valve or fitting, showing a cross-section with various dimensions and tolerances. The drawing includes a central vertical section and a horizontal section. Dimensions are given in inches, with some values in parentheses indicating tolerances. Handwritten notes include "80 Th" and "219 Th". The word "EXPOSED" is written in the top right corner.

Key dimensions and features:

- Overall height: 1.523
- Overall width: 1.319
- Top vertical dimensions: .541, .803, .798
- Horizontal dimensions (top): .156, .156, .080, .156 R.
- Horizontal dimensions (middle): .454, .110, .080, .050 R., .413, .156
- Horizontal dimensions (bottom): .727, .415, .299, .094, .028, .080, .065, .125, .170
- Vertical dimensions (bottom): .025 R., .060 R. (2)
- Handwritten notes: "80 Th", "219 Th"



10 x SIZE



Tech Th

MATERIAL: 6063-T6 ALUM.	
WALL THICKNESS: .100 & AS NOTED	
TOTAL PERIMETER:	9.604
PAINTED PERIMETER:	4.000
AREA: .492	WT/FT: .590
FACTOR: 16	



DRAWN BY: SCC		REVISIONS W/ DATES:	
DATE: 3/27/07			
APPROVED: SCC			
DATE: 3/27/07		JOB REF. NO.:	
SERIES: 5XPT		SCALE: AS NOTED	DIE CIRCLE: 2"
TITLE: MEETING RAIL (INT.)		DWG NO. 18C5	

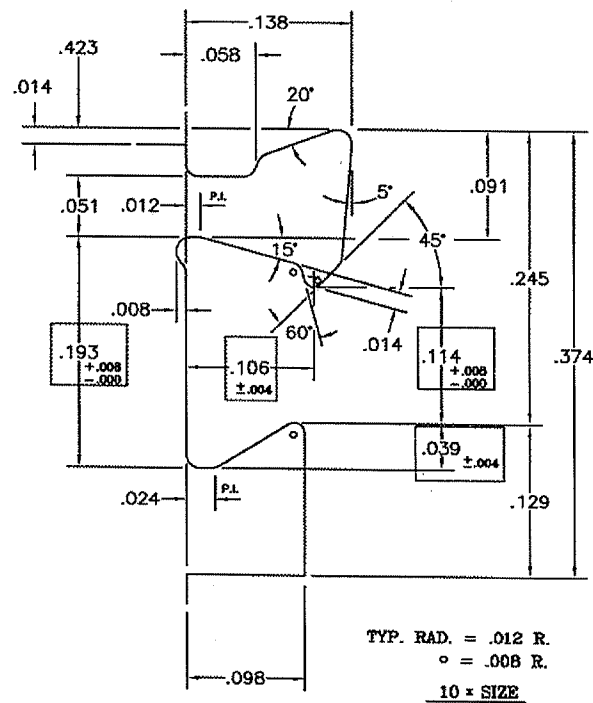
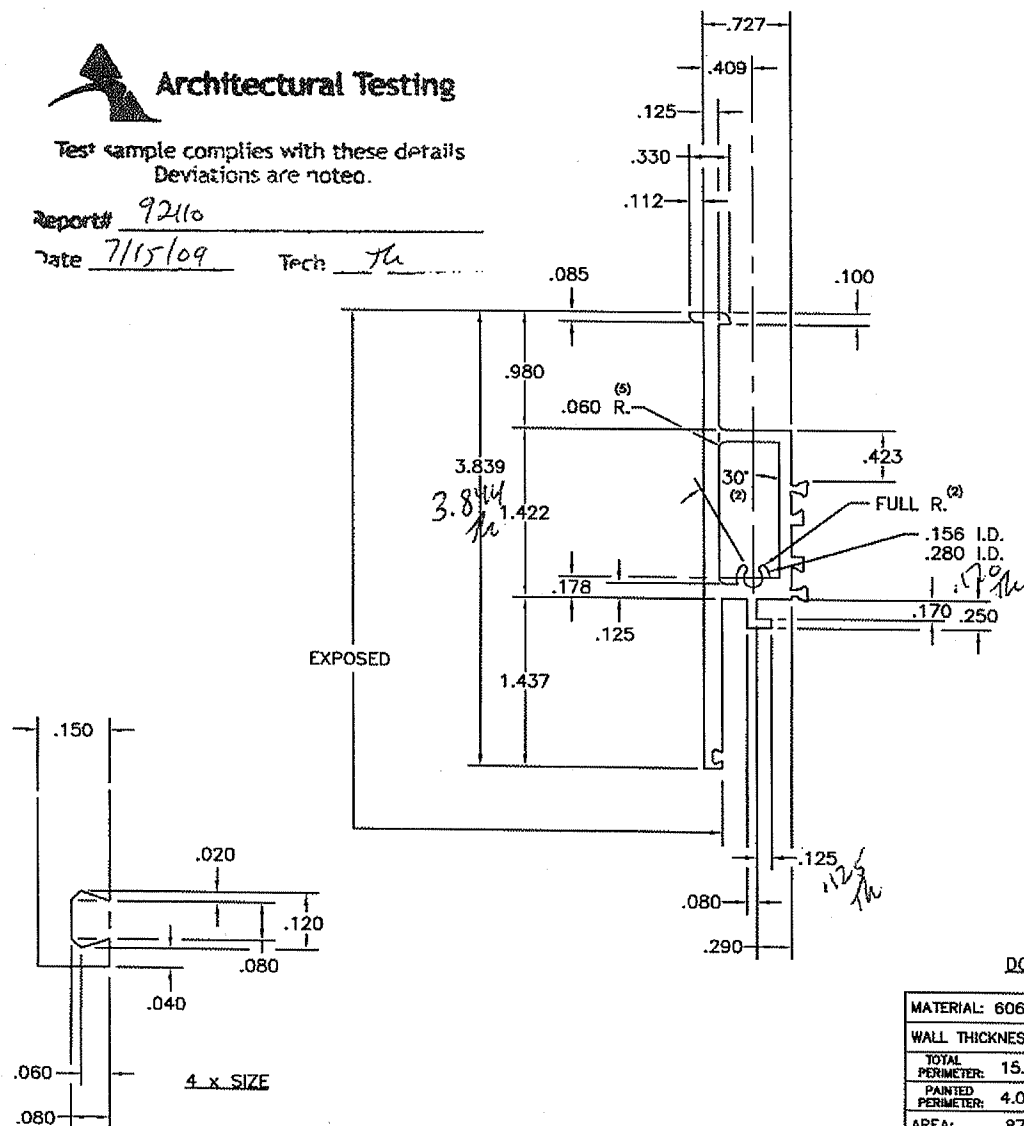


Test sample complies with these details
Deviations are noted.

Report# 92110

Date 7/15/09 Tech JH

STD. EXTRUSION TOLERANCES AS DEFINED BY THE
ALUMINUM ASSOCIATION UNLESS OTHERWISE
STATED. CORNER RADII .015 EXCEPT AS NOTED.



DO NOT SCALE PRINT

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MATERIAL: 6063--T6 ALUM.	
WALL THICKNESS: .100 & AS NOTED	
TOTAL PERIMETER:	15.435 OS = 11.586 IS = 3.849
PAINTED PERIMETER: 4.074	
AREA:	.878 WT/FT: 1.054
FACTOR:	15



EFCO CORPORATION
1000 County Road
Monett, Missouri 65706
1-800-221-4169
Fax: 417-235-7313

DRAWN BY: SCC		REVISIONS W/ DATES:	
DATE: 5/2/07			
APPROVED: SCC			
DATE: 5/2/07		JOB REF. NO.:	
SERIES: 5XPT	SCALE: AS NOTED	DIE CIRCLE: 4"	
TITLE: (EXT.) FIXED PANEL HORIZ.		DWG NO. 18B9	