

FILE COPY

REPORT OF

PRODUCT EVALUATION

CONDUCTED ON A

ECLIPSE E4™ 1L3R FOLDING DOOR SYSTEM WITH
DOOR PANELS BY B.C. DOOR CO. LTD.

FOR

REPORT PREPARED BY

INTERTEK TESTING SERVICES NA LTD.

1500 BRIGANTINE DRIVE
COQUITLAM, BC V3K 7C1
CANADA

REPORT NUMBER: 3057492-CAN

DATE: DECEMBER 5, 2005



Intertek Testing Services NA Ltd.

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PREFACE

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INTRODUCTION

As requested, Intertek Testing Services NA Ltd. (Intertek) has conducted a series of performance tests on an Eclipse E4™ "1L3R" Folding Wood Door System, assembled at our Intertek Coquitlam Laboratory. Testing was conducted between September 24, 2004 and September 30, 2005.

Testing was conducted in general accordance with CAN/CGSB 82.1-M89 "Sliding Doors."

Hurricane resistance testing was performed in accordance with TAS 201-95 "Impact Test Procedures, TAS 202-95 Criteria for Testing Impact and Non Impact Resistant Building Envelope Components Using Uniform Static Air Pressure" and TAS 203-95 "Criteria for Testing Products Subject to Cyclic Wind Pressure Loading."

PRODUCT DESCRIPTION

- | | |
|---------------------|---|
| Series | <ul style="list-style-type: none">• KT Eclipse e4™ "1L3R" |
| Designation | <ul style="list-style-type: none">• Double-glazed four panel folding door. |
| Frame | <ul style="list-style-type: none">• Head Frame: exterior Douglas Fir wood and interior extruded aluminium.• Sill Frame: interior Douglas Fir wood and exterior extruded aluminium.• Jambs: vertical grain clear Douglas Fir wood.• Corners: butt jointed and sealed using silicone.• Installation: the door system was secured to the test chamber through the jambs using two #12 x 76 mm (3") screws spaced at 406 mm (16") spacing. The head was secured to the test chamber using two #12 x 76 mm (3") through the aluminium exterior and using 6.35 mm x 152 mm (1/4" x 6") lag screws through the wood interior all spaced at 406 mm (16") apart. The sill was secured through the drainage channel using one #12 x 76 mm (3") screws and 6.35 mm x 152 mm (1/4" x 6") lag screws through the wood interior all spaced at 406 mm (16") apart. |
| Overall Size | <ul style="list-style-type: none">• Width: 4350 mm (171-1/4")• Height: 3219 mm (126-3/4") |
| Door Slabs | <ul style="list-style-type: none">• Sash stiles and rails: solid vertical grain clear Douglas Fir wood.• Corners: modified mortice and tennon joints with the bottom stile to rail reinforced with four 25 mm (1") diameter maple dowels and glued and the top stile to rail was reinforced with two dowels.• All wood components were treated with wood sealer after assembly. |
| Sash Size | <ul style="list-style-type: none">• Width: 1067 mm (42")• Height: 3048 mm (120") |

PRODUCT DESCRIPTION – continued

- | | | |
|---------------------------|-------------------------------------|--|
| Locks and Hardware | Active Door: | <ul style="list-style-type: none"> • Head and sill hinges located at the head and sill secured using four 5 mm diameter x 9 mm (0.19" x 0.35") machine screws. Mid span hinge was secured to the jamb using two #10 x 51 mm (2") wood screws. All hinges secured to the door slab using five #10 x 51 mm (2") wood screws. • Multi point locking system was secured to the astragal stile with the lock handle located at 787 mm (31") from the bottom rail. • Flush mount surface bolts were located at the top and bottom of the astragal stile and secured using five # 8 x 51 mm (2") wood screws at the bottom and seven at the top. |
| | 1st Folding Door: | <ul style="list-style-type: none"> • Four Folding Door Hinges were located at the 2nd door stile located at the top and bottom and 984 mm (38-3/4") from the top and bottom. Each hinge was secured to each door slab using five #10 x 51 mm (2") wood screws. • Top and bottom hinges were incorporated with roller assemblies. • Flush mount surface bolts were located at the top and bottom of the astragal stile and secured using five # 8 x 51 mm (2") wood screws at the bottom and seven at the top. |
| | 2nd Folding Door: | <ul style="list-style-type: none"> • Four Folding Door Hinges were located at the 3rd door stile located at the top and bottom and 984 mm (38-3/4") from the top and bottom. Each hinge was secured to each door slab using five #10 x 51 mm (2") wood screws. • Flush mount surface bolts were located at the top and bottom of the astragal stile and secured using five # 8 x 51 mm (2") wood screws at the bottom and seven at the top. |
| | 3rd Folding Door: | <ul style="list-style-type: none"> • Four Folding Door Hinges were located at the 3rd door stile located at the top and bottom and 984 mm (38-3/4") from the top and bottom. Each hinge was secured to each door slab using five #10 x 51 mm (2") wood screws. • Flush mount surface bolts were located at the top and bottom of the astragal stile and secured using five # 8 x 51 mm (2") wood screws at the bottom and seven at the top. • Head and sill hinges located at the head and sill secured using four 5 mm diameter x 9 mm (0.19" x 0.35") machine screws. Mid span hinge was secured to the jamb using two #10 x 51 mm (2") wood screws. All hinges secured to the door slab using five #10 x 51 mm (2") wood screws. |
| Weatherstrip | | <ul style="list-style-type: none"> • The meeting perimeter of the mainframe was weather-stripped with a jacketed foam filled V type weather-stripping. Corners were butt jointed and sealed using silicone. • The exterior edge of the head was weather-stripped with a pile and fin type weather-strip. • Active Door: both stiles were weather-stripped with a jacketed foam filled V type weather-stripping. 1st Folding Door: exterior face of astragal was weather stripped with a jacketed foam filled V type weather-stripping and a pile and fin type weather-strip. • 2nd Folding Door: interior and exterior edge of the 1st door meeting stile was weather-stripped with a jacketed foam filled V type weather-stripping. • 3rd Folding Door: interior and exterior edge of the 2nd door meeting stile and the exterior edge of the jamb stile were weather-stripped with a jacketed foam filled V type weather-stripping. • At all hinge locations profile cut neoprene caskets were adhered to the hinge plates and the joint between the gasket and stile weather-stripping was sealed with silicone. |

PRODUCT DESCRIPTION – continued

- Drainage**
- 7.12 mm (0.24") diameter weeps were punched into the front face of the aluminium sill and through to the intermediate trough at a 305 mm (12") spacing.
- Glazing Thickness**
- Glazing Units: 5 mm clear annealed glass with 2.29 mm Safety Plus ® II with 5 mm clear annealed laminated glass separated by a 12.9 mm (1/2") aluminium spacer bar and a 5 mm tempered glass panel backed with polyisobutylene and silicone
 - Overall Thickness: 30.16 mm (1-3/16").
- Glazing Method**
- Laid-in exterior glazing: glazing panels were laid into a back bed of silicone into the T Stop with a (1/16") spaced between the door frame and the glass. The laminant flap was held out and more silicone was gunned into the glazing cavity. Wood stops were then installed on the exterior side onto the silicone bed.
 - T-Stop was secured to the door slab in the glazing cavity using 64 mm (2-1/2") brads and glued.
 - Exterior Glazing Stop was secured to exterior face of the door slab using 44.5 mm (1-3/4") brads.
 - Glazing units support: two setting blocks were located at 51 mm (2") from the corners.
- Drawings**
- Set of drawings stamped "Intertek Testing Services" included in Appendix B of this report.

TEST PROGRAM**1. Air Tightness Test**

Air Tightness Testing was performed in accordance with ASTM E283-04, "*Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.*" The test was performed using the specified pressure differentials.

2. Preload Test

A Uniform Load Structural Test was conducted in general accordance with ASTM E330-02 "*Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference,*" Procedure A and section 5.2.3 Uniform Static Air of TAS 202-95.1 "*Criteria for Testing Impact and Non Impact Resistant Building Envelope Components Using Uniform Static Air Pressure.*" The load durations were 30 seconds.

1/2 Test Load and Design Pressure loads were applied and deflections were recorded.

3. Water Tightness Test

A water penetration resistance test was performed in accordance with ASTM E331-00 "*Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.*"

A calibrated water spray assembly was used to deliver the water on the test sample. The test was performed using the specified pressure differential and a water spray rate of at least 204 L/m² per hour (5.0 U.S. gal/ft² per hour). The test period was 15 minutes during which the water spray and test pressure were continuously applied.

An additional water test was performed in accordance with ASTM E547-00 "*Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference*". The Water Tightness test was performed using the specified pressure differential and a water spray rate of at least 204 L/m² per hour (5.0 U.S. gal/ft² per hour). Each cycle consisted of five minutes with the pressure applied and one minute with the pressure released, during which the water spray was continuously applied.

4. Uniform Load Structural Test

A Uniform Load Structural was conducted in general accordance with ASTM E330-02 "*Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference,*" Procedure A and section 5.2.3 Uniform Static Air of TAS 202-95.1 "*Criteria for Testing Impact and Non Impact Resistant Building Envelope Components Using Uniform Static Air Pressure.*" Test load (1.5 x Design Pressure) duration was 30 seconds. After a 30 second preload (50% of test load), followed by a recovery period of not less than 1 minute and not more than 5 minutes. The pressure was reversed and loaded for 30 seconds. This was then repeated in the other direction.

5. Security/Forced Entry Test

Static load tests were performed in accordance South Florida Building Code section 3603.2 (b)(5). Single 1.33 KN (300 lbf) loads were placed at the lower corner, at the lock and at the top corner of the active door in an opening direction. Hydraulic rams were used to induce the loads.

TEST PROGRAM – IMPACT /CYCLING TESTS (THREE SAMPLES)**1. Impact Tests**

Each specimen was impacted three times with a Large Missile in accordance with TAS 201-95.1 “*Impact Test Procedures.*”

The missile speed was calibrated using stop motion videography.

The missile level used was a 4100 g +/- 100 g (9.0 lb +/- 0.25 lb) 2x4 No. 1 Douglas Fir 2.4 m +/- 100 mm (8ft +/- 4 in) lumber at an impact speed of 15.25 m/s (50 ft/s).

2. Cycling Tests

Each specimen was subjected to wind load cycling in accordance with TAS 203-95.1 “*Criteria for Testing Products Subject to Cyclic Wind Pressure Loading.*”

The samples were cycled as shown in the following table:

Loading Sequence	Loading Direction	Air Pressure Cycles	Number of Air Pressure Cycles
1	Positive	0.2P-0.5P	3500
2	Positive	0.0P-0.6P	300
3	Positive	0.5P-0.8P	600
4	Positive	0.3P-1.0P	100
5	Negative	0.3P-1.0P	50
6	Negative	0.5P-0.8P	1050
7	Negative	0.0P-0.6P	50
8	Negative	0.2P-0.5P	3350

Polyethylene film was used to seal against air leakage, during the negative pressure cycles.

The Design Pressure, P:

Positive: 2644 Pa (55 psf)

Negative: 2644 Pa (55 psf)

TEST RESULTS

1. Air Leakage Resistance Test

Air Infiltration

An air infiltration test was performed using a test pressure of 75 Pa (1.57 psf). Based on a corrected infiltration rate of 2.61 m³/hr (1.54 cfm) and an overall crack length of 23.85 m (78.25 ft), the air infiltration rate was calculated to be 0.11 L/s/m² (0.02 cfm/ft²).

The system met the **A3** requirement for Air Leakage of CAN/CGSB 82.1-M89.

2. Preload Test

At a uniform load of ± 1.98 kPa (± 41.25 psf) there was no damage or visible deformation that would impair the operation of the system.

3. Water Penetration Resistance Test

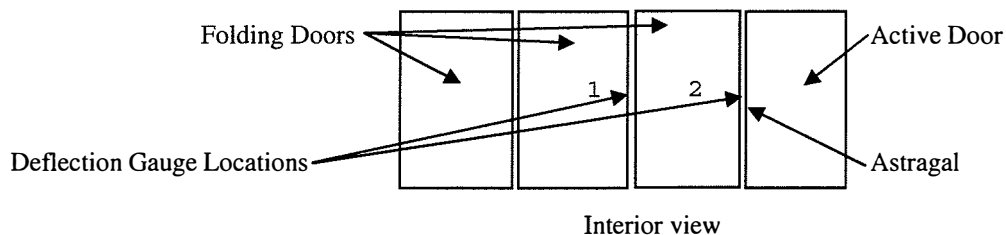
During the 15 minute test period at a pressure difference of 425 Pa (8.84 psf), there was no water leakage observed.

A subsequent test was performed in accordance with ASTM E 547-00. During the 24 minute test period at a pressure difference of 500 Pa (10.4 psf), there was no water leakage observed.

The system met the performance requirements of CAN/CGSB 82.1-M89 for a **B4** Water Leakage rating.

4. Uniform Load Structural Test

The test was performed using a Design Pressure of ± 2.644 kPa (55 psf). The system was tested with preloads at $\frac{1}{2}$ Test Load of ± 2.34 kPa (49 psf) and Test Loads of ± 4.69 kPa (97.5 psf) in both directions. Deflection measurements were taken at the center of the astragal and mid span using a deflection yoke:



Pressure Differential kPa / psf		Gauge #1		Gauge #2	
		Deflection mm / inches	Residual Deflection mm / inches	Deflection mm / inches	Residual Deflection mm / inches
Design Pressure	- 2.65 / 55	43.53 / 1.714	0.96 / 0.037	36.76 / 1.447	0.13 / 0.005
Design Pressure	+ 2.65 / 55	36.77 / 1.448	0.29 / 0.011	34.56 / 1.361	0.42 / 0.017
½ Test Load	+1.98 / 41.1	n/a	n/a	n/a	n/a
Test Load	+3.98 / 82.7	52.25 / 2.057	0.37 / 0.015	48.25 / 1.900	0.56 / 0.022
½ Test Load	- 1.98 / 41.1	n/a	n/a	n/a	n/a
Test Load	- 3.98 / 82.7	61.99 / 2.441	n/a	59.01 / 2.323	n/a

Yoke span = 2940 mm (115.75")

n/a - denotes not available

System can not be rated for structural as there is no criteria for swing or folding doors for deflection. However, the system passed a C3 Blow Out Test only.

5. Security/ Forced Entry Test

Location	Load	Pass / Fail
Lower lock side of active door	1.33 KN (300 lbf)	Pass
At lock location	1.33 KN (300 lbf)	Pass
Upper lock side of active door	1.33 KN (300 lbf)	Pass

IMPACT /CYCLING TESTS

Three separate samples were installed and tested for the Impact Test and Cyclic Wind Pressure Loading. Impact samples were impacted a minimum of six times each. All samples **MET** the test requirements of ordinance 93-141 that there shall be no "rupture in the specimen with dimensions greater than 1/16" by 5".

TEST HISTORY

See Appendix A for test history and modifications.

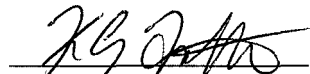
CONCLUSION

The Eclipse E4™ 1L3R Folding Door system described herein met the performance criteria as per CAN/CG SB 82.1-M89 "Sliding Doors" for Air Tightness A3, Water Tightness by Static Pressure B4, and Structural C3 (Blow Out) only.

The Eclipse E4™ 1L3R Folding Door system, described within this report met the requirements for Air Tightness, Water Resistance, Structural Loading, Impact Testing, and Cyclic Wind Pressure Loading as per with TAS 201-95.1 "Impact Test Procedures," TAS 202-95.1 *Criteria for Testing Impact and Non Impact Resistant Building Envelope Components Using Uniform Static Air Pressure,* and TAS 203-95.1 "Criteria for Testing Products Subject to Cyclic Wind Pressure Loading."

INTERTEK TESTING SERVICES NA LTD.

Tested by:



Kazamia L. Falconbridge
Technologist
Fenestration Products Testing

Reviewed by:



Heiko Neugebauer, ASCT
Team Leader
Fenestration Products Testing

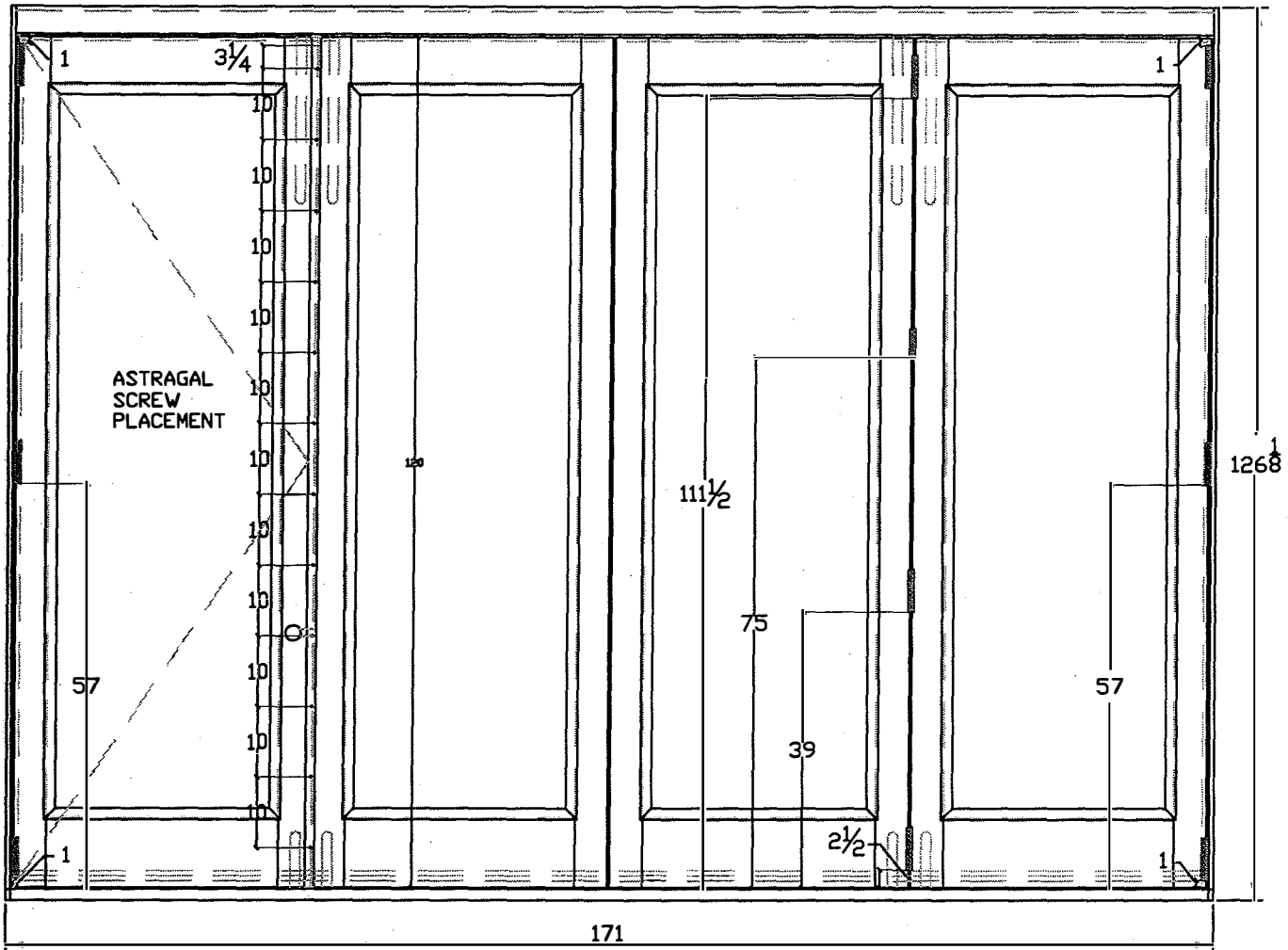
HN/jm

APPENDIX A
(Testing History – 1 page)

TESTING HISTORY

Date	Test	Event	Modification
04/09/24	Water Tightness @ 400 Pa (8.25 psf)	Water leakage was observed at: Through top flush bolts	Flush bolts were modified by installing an O ring at the top of the plunger. System was retested and passed two consecutive Water Tests 425 Pa (8.84 psf) and 500 Pa (10.4 psf).
04/10/01	Structural Test @ 3.25 kPa (67.6 psf)	Head split	Head of system was rebuilt and modified using marine grade Fir 19 mm(3/4") plywood instead of clear vertical grain Douglas Fir Lumber. See Drawings for detail. System was retested and passed at a Design Pressure of 2.64 kPa (55 psf).

A P P E N D I X B
(Drawings – 36 pages)



OUTSIDE

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DWG:..... *1* of *36*

NOV 29 2005

3057492

PROJECT #:.....

REVIEWED BY:..... *Jm*

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V6P 3G3

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FOR:

E-4 ECLIPSE FOLDING DOOR SYSTEM

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DESCRIPTION:

EXTERIOR VIEW

SCALE:
NTS

PREPARED BY:

John Plaisier

CUSTOMER

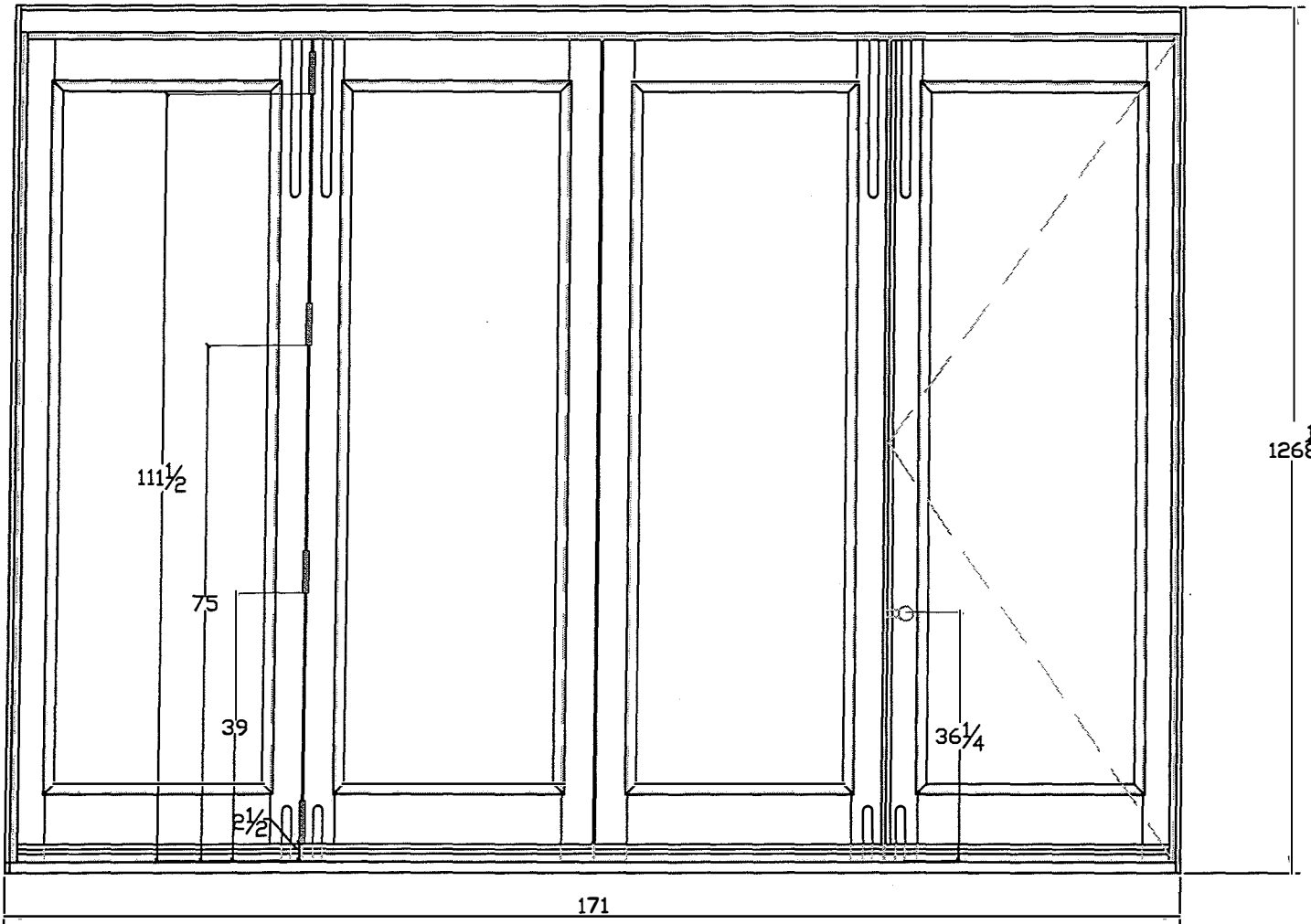
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DATE:

October 24/05

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INTERIOR

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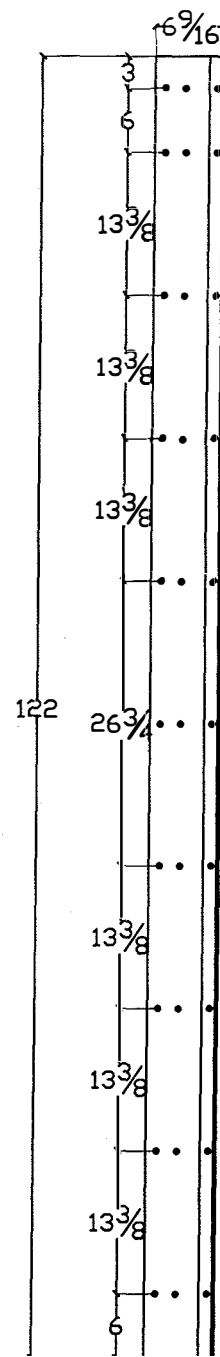
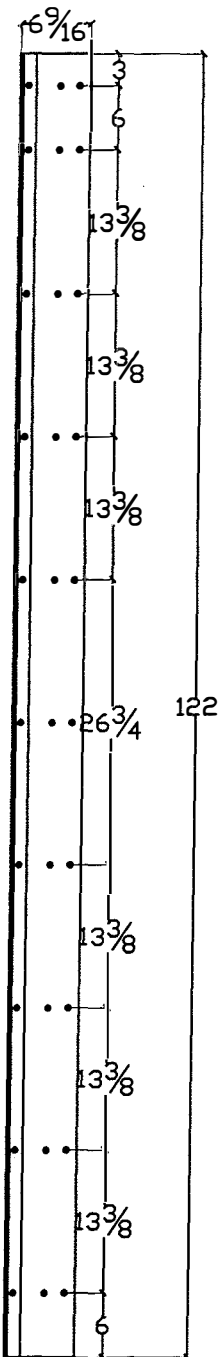
DESCRIPTION:
INTERIOR VIEW

DATE:
October 24/05

SCALE:
NTS

PREPARED BY:
John Plaisier

APPROVED BY:



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DWG: 3 of 36

NOV 23 2005

PROJECT #: 3057492

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OUTSIDE

L

R

JAMB

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DESCRIPTION: SCREW PLACEMENT

DATE: October 24/05

SCALE: NTS

PREPARED BY: John Plaisier

APPROVED BY:

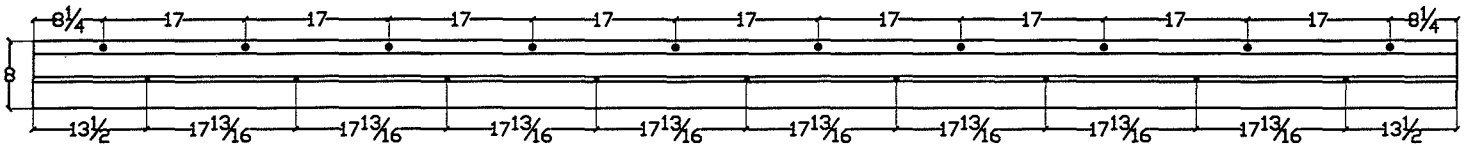
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DWG:.....4..... of36.....

NOV 23 2005

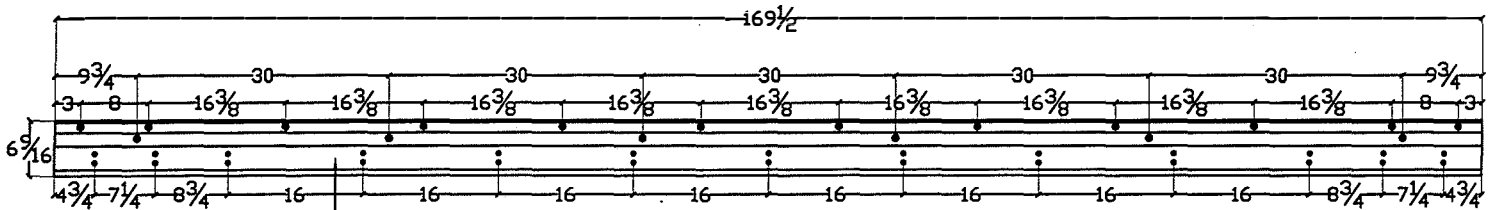
PROJECT #:.....3057492.....

REVIEWED BY:.....*Jm*.....



OUTSIDE

SILL



KT80 TOP TRACK

OUTSIDE

HEADER

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FOR:

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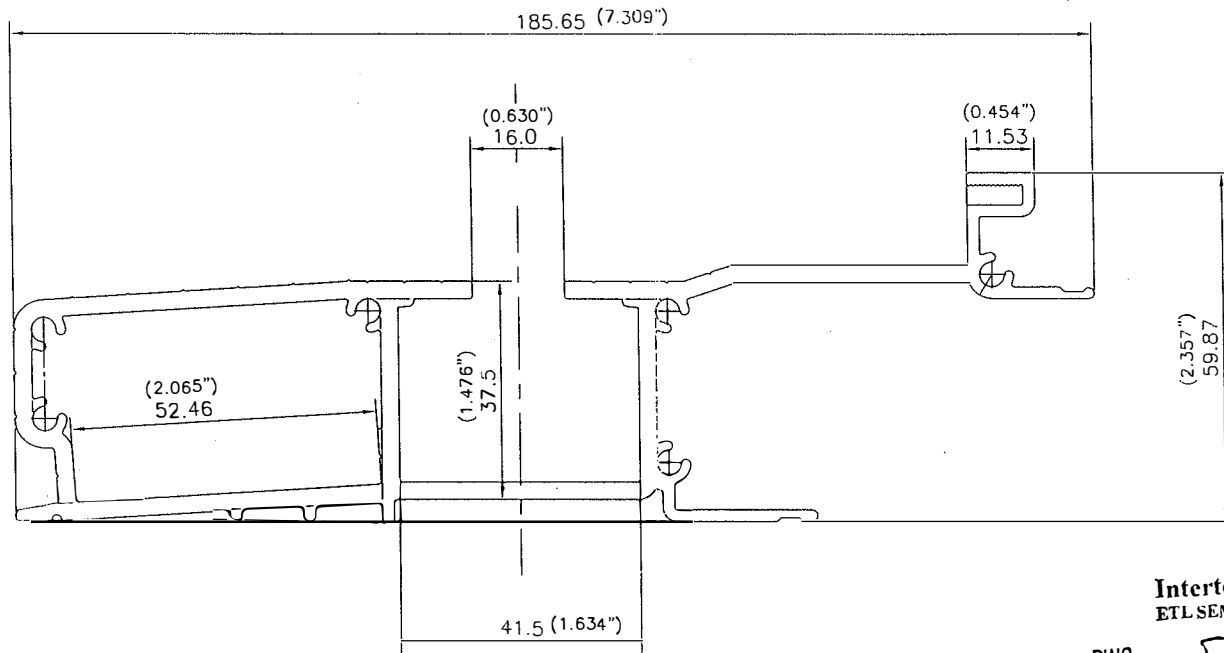
DATE: October 24/05

SCALE:
NTS

PREPARED BY:
John Plaisier

APPROVED BY:

WEIGHT 3.599 Kg/m 2.418 LB/FT	AREA 1327.98 mm ² 2.058 inch ²	OUT PERIM. 757.90 mm 29.839 inch	TOTAL PERIM. 962.79 mm 37.905 inch	SCALE 1 : 1	REV. 2	SECTION NO. IAS1815
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Intertek Testing Services
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DWG: 5 of 36
NOV 23 2005
3057492
PROJECT #:
REVIEWED BY: Zh

Die to be run in clear anodize class II, medium bronze class II and mill finish.

CUSTOMERS APPROVAL DRAWING

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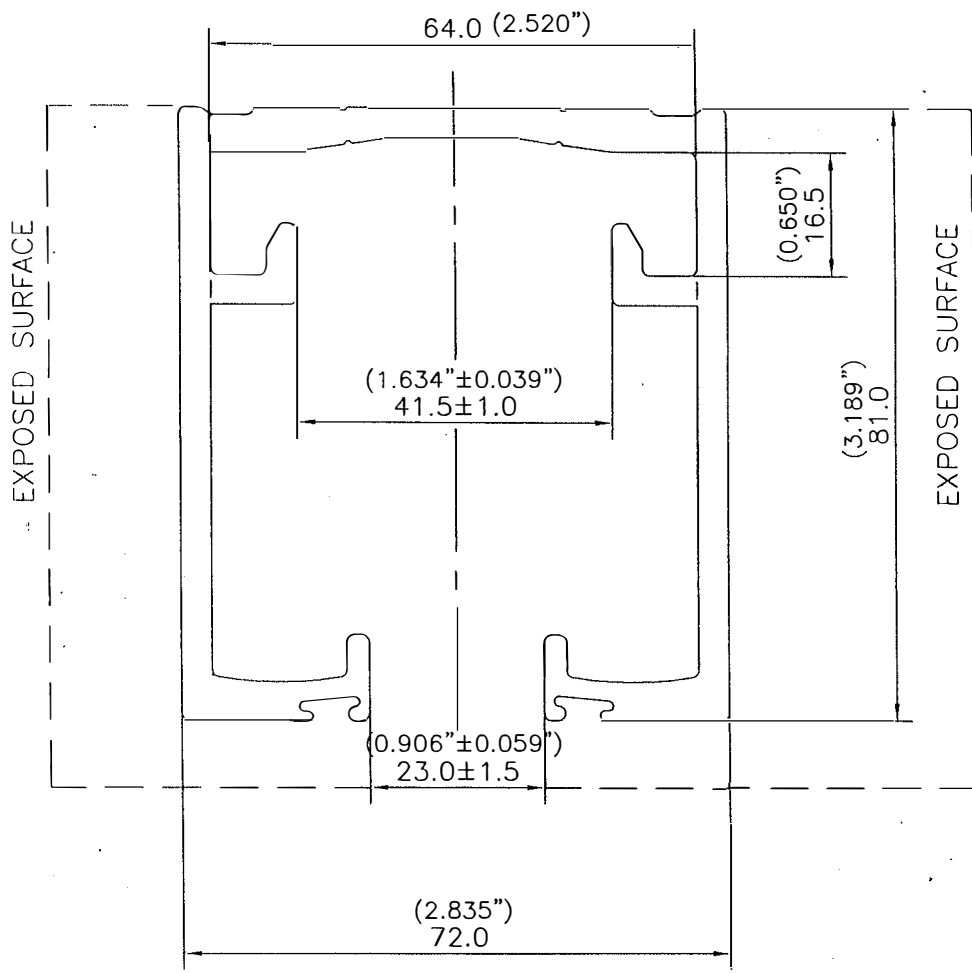
CUSTOMER: DATE:

SIZE TOLERANCE		THICKNESS TOLERANCE	
RANGE	TOLERANCE	RANGE	TOLERANCE
0-<10	±0.18	0-<3	±0.15
10-<25	±0.25	3-<6	±0.20
25-<38	±0.30	6-<10	±0.30
38-<50	±0.36	10-<15	±0.35
50-<100	±0.60	15-<20	±0.40
100-<150	±0.85	20-<25	±0.50
150-<200	±1.12	25-<30	±0.55
200-<250	±1.37	30-<60	±0.60
ABOVE 250	±1.5	60-<100	±0.70
ANGLE	±1'	ABOVE 100	±1.0

(0.118"±0.0.008") (0.016")
UNSPECIFIED THICKNESS 3.0±0.2 mm UNSPECIFIED CORNERS 0.4 mm RAD.

SECTION NO. IAS1815	DRAWN LI-LIYING	DESCRIPTION E4 SILL	CUSTOMER PART NO.
CUSTOMER INTEGRIS	DATE 22/05/2003	MIN. CIRCUMCIRCLE DIA. ø190 mm ø7.480 inch	
ALLOY & TEMPER 6063-T5	APPROVED	AP TAISHAN CITY KAM KIU ALUMINIUM EXTRUSION CO. LTD	
	CHECKED		

W.011	AREA	OUT PERIM.	TOTAL PERIM.	SCALE	REV.	SECTION NO.
3.555 Kg/m 2.389 LB/FT	1311.73 mm ² 2.033 inch ²	643.14 mm 25.320 inch	mm inch	1 : 1	2	IAS158



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 DWG:.....6..... of36.....
 NOV 23 2005
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Die to be run in clear anodize class I,
 medium bronze class II and mill finish.

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EXCLUSIVE SHAPES: IN THOSE INSTANCES WHERE THE SHAPE IS DEVELOPED AS AN "EXCLUSIVE", THE CUSTOMER WHOSE NAME APPEARS ON THIS DRAWING SHALL ACCEPT FULL RESPONSIBILITY FOR ALL CLAIMS MADE AGAINST THE CUSTOMER OR PERSONS CLAIMING UNDER THE CUSTOMER, OR KAM KIU. THAT THE EXTRUDED SHAPES SHOWN AND PRODUCTS MADE FROM IT, INFRINGES ANY PATENT, REGISTERED DESIGN OR COPYRIGHT IS THE SUBJECT OF CONFIDENTIAL INFORMATION, THE CUSTOMER SHALL INDEMNIFY KAM KIU AGAINST ALL DAMAGES, LOSSES AND EXPENSES ARISING OUT OF ANY CLAIM.

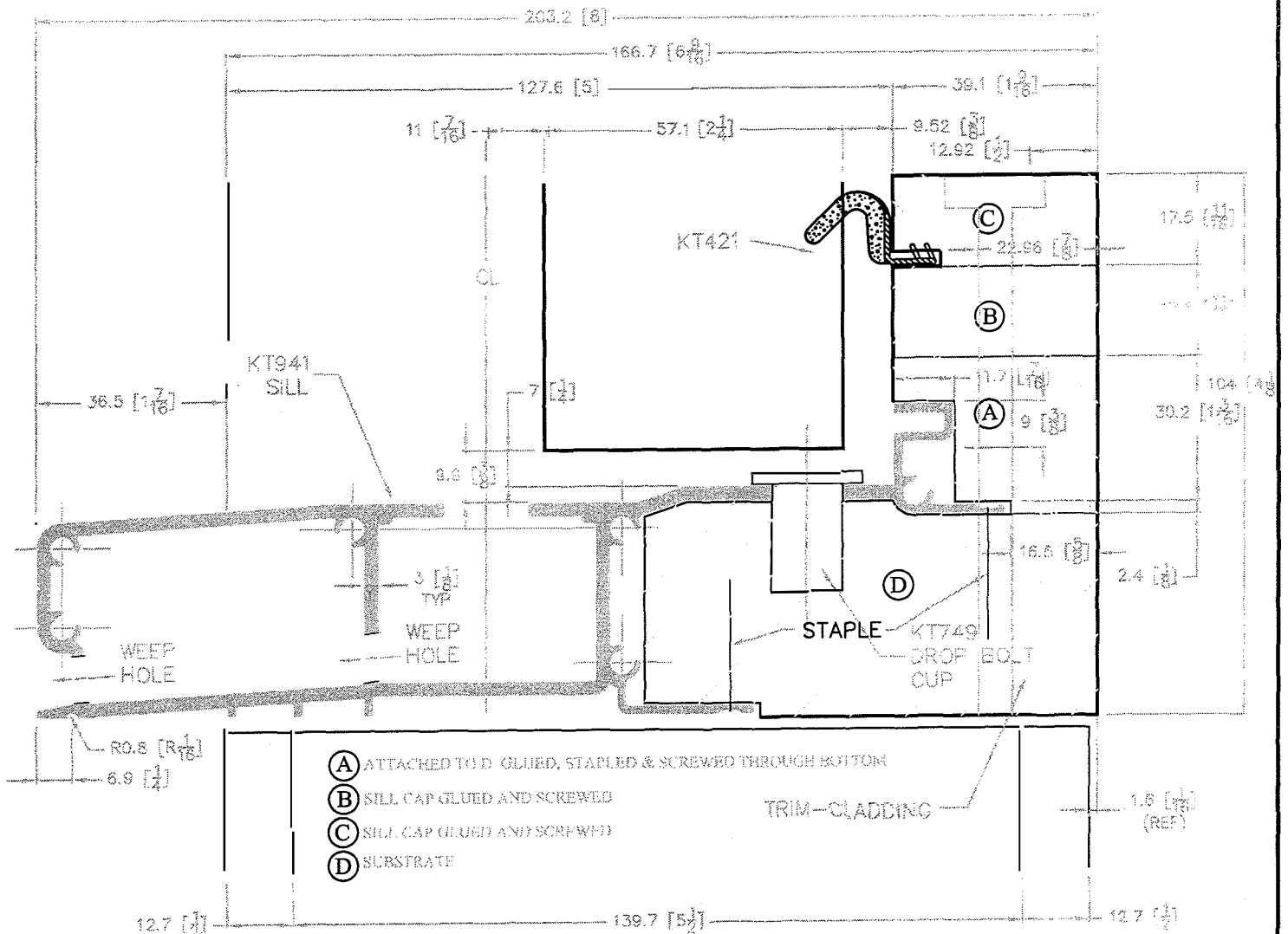
SHAPE DIMENSIONS: THIS DRAWING HAS BEEN CHECKED FOR CORRECT DIMENSIONS, TOLERANCES AND ANY OTHER SPECIAL REQUIREMENTS BY THE CUSTOMER. ALTERATIONS MADE AFTER PORTAGE MANUFACTURE IS COMMENCED WILL BE AT OUR ACCOUNT.

CUSTOMER: _____ DATE: _____
 SIGNATURE: _____

SIZE TOLERANCE		THICKNESS TOLERANCE	
RANGE	TOLERANCE	RANGE	TOLERANCE
0-<10	±0.18	0-<3	±0.15
10-<25	±0.25	3-<6	±0.20
25-<38	±0.30	6-<10	±0.30
38-<50	±0.36	10-<15	±0.35
50-<100	±0.60	15-<20	±0.40
100-<150	±0.85	20-<25	±0.50
150-<200	±1.12	25-<30	±0.55
200-<250	±1.37	30-<60	±0.60
ABOVE 250	±1.50	60-<100	±0.70
ANGLE	±1'	ABOVE 100	±1.0

(0.157"±0.008") (0.016")
 UNSPECIFIED THICKNESS 4.0±0.2 mm UNSPECIFIED CORNERS 0.4 mm

SECTION NO. IAS1581	DRAWN LI-WANAI	DESCRIPTION TOP TRACK	CUSTOMER PART
CUSTOMER INTEGRIS	DATE 26/06/2003	MIN. CIRCUMCIRCLE DIA. ø108 mm ø4.252	
ALLOY & TEMPER 6005-T5	APPROVED	KAP TAISHAN CITY KAM KIL ALUMINIUM EXTRUSION CO.	
	CHECKED		



- (A) ATTACHED TO D GLUED, STAPLED & SCREWED THROUGH BOTTOM
- (B) SILL CAP GLUED AND SCREWED
- (C) SILL CAP GLUED AND SCREWED
- (D) SUBSTRATE

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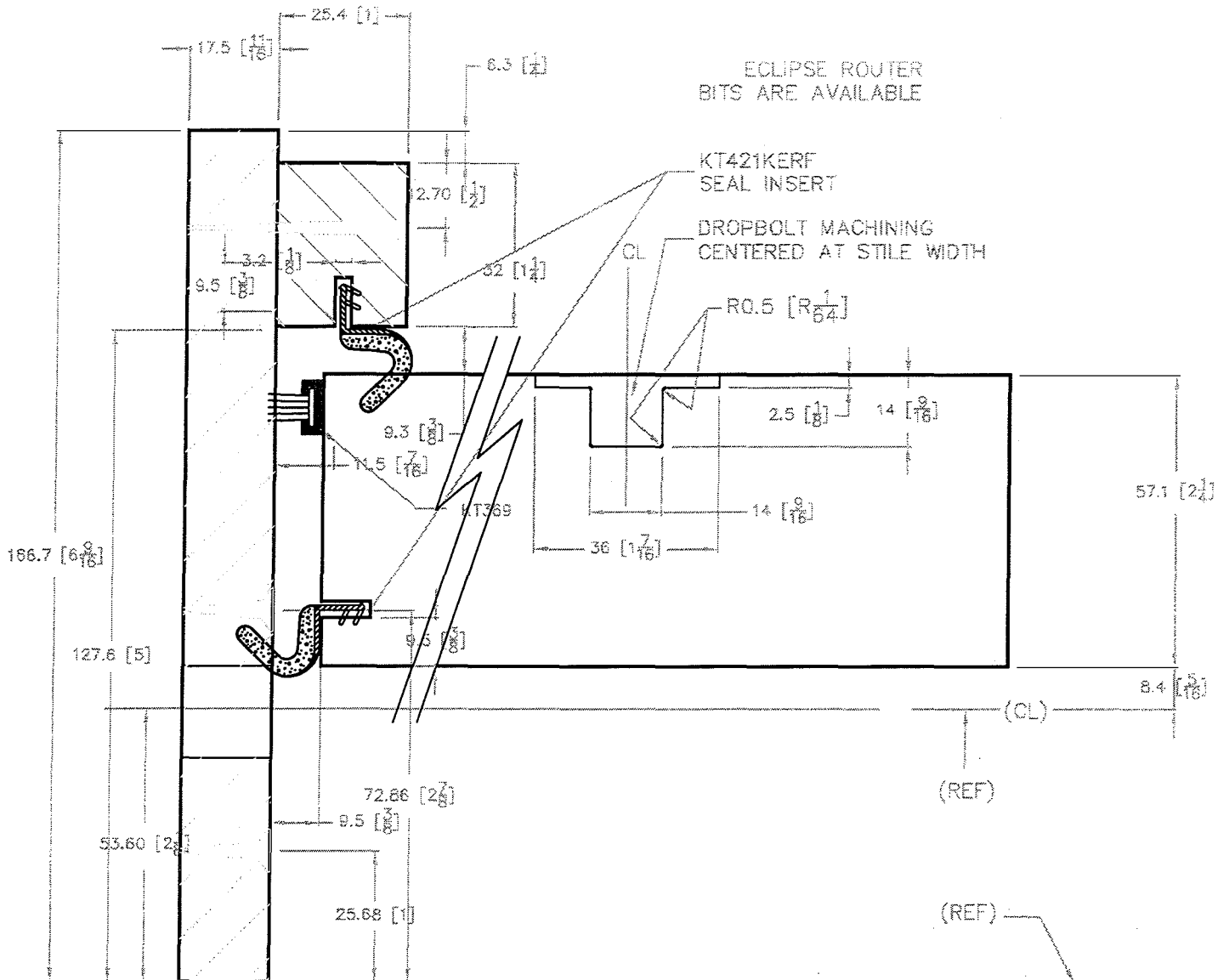
DWG:..... 7 of 36

NOV 23 2005

PROJECT #:..... 3057492

REVIEWED BY:..... *Jm*

ECLIPSE ARCHITECTURAL 47 LEEDER STREET Coquitlam B.C. V3K 3V5	FOR:	
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Ph: 604-520-1080	DESCRIPTION:	DATE:
Fax: 604-520-3594	SCALE: NTS	PREPARED BY:
		APPROVED BY:



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ETL SEMKO

DWG:..... 8 of 36

NOV 29 2005

PROJECT #:..... 3057492

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PAGE 2 of 5

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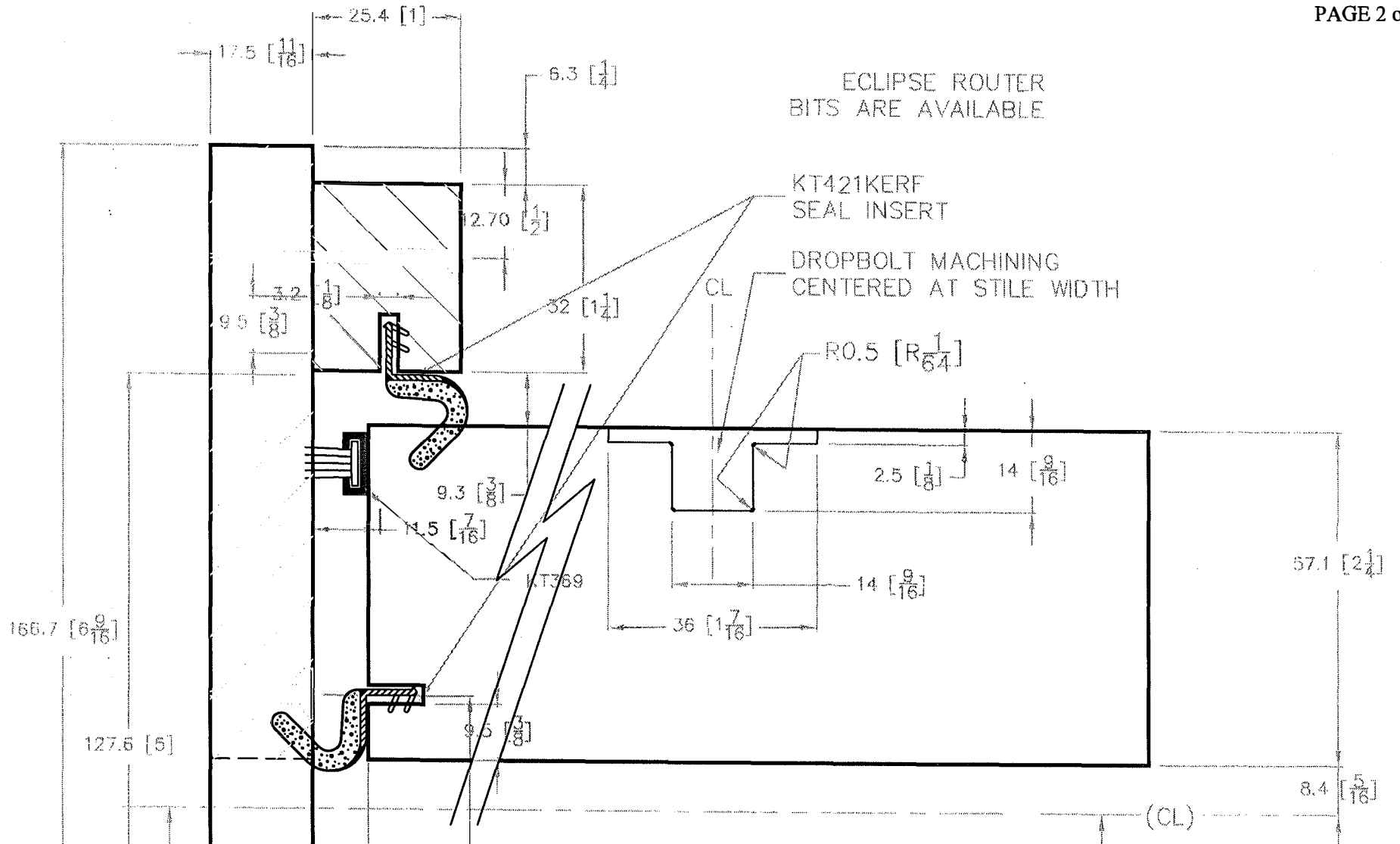
DATE:

Fax: 604-520-3594

SCALE:
NTS

PREPARED BY:

APPROVED BY:



Intertek Testing Services
EIL SEMK●

DWG:..... 9 of 36

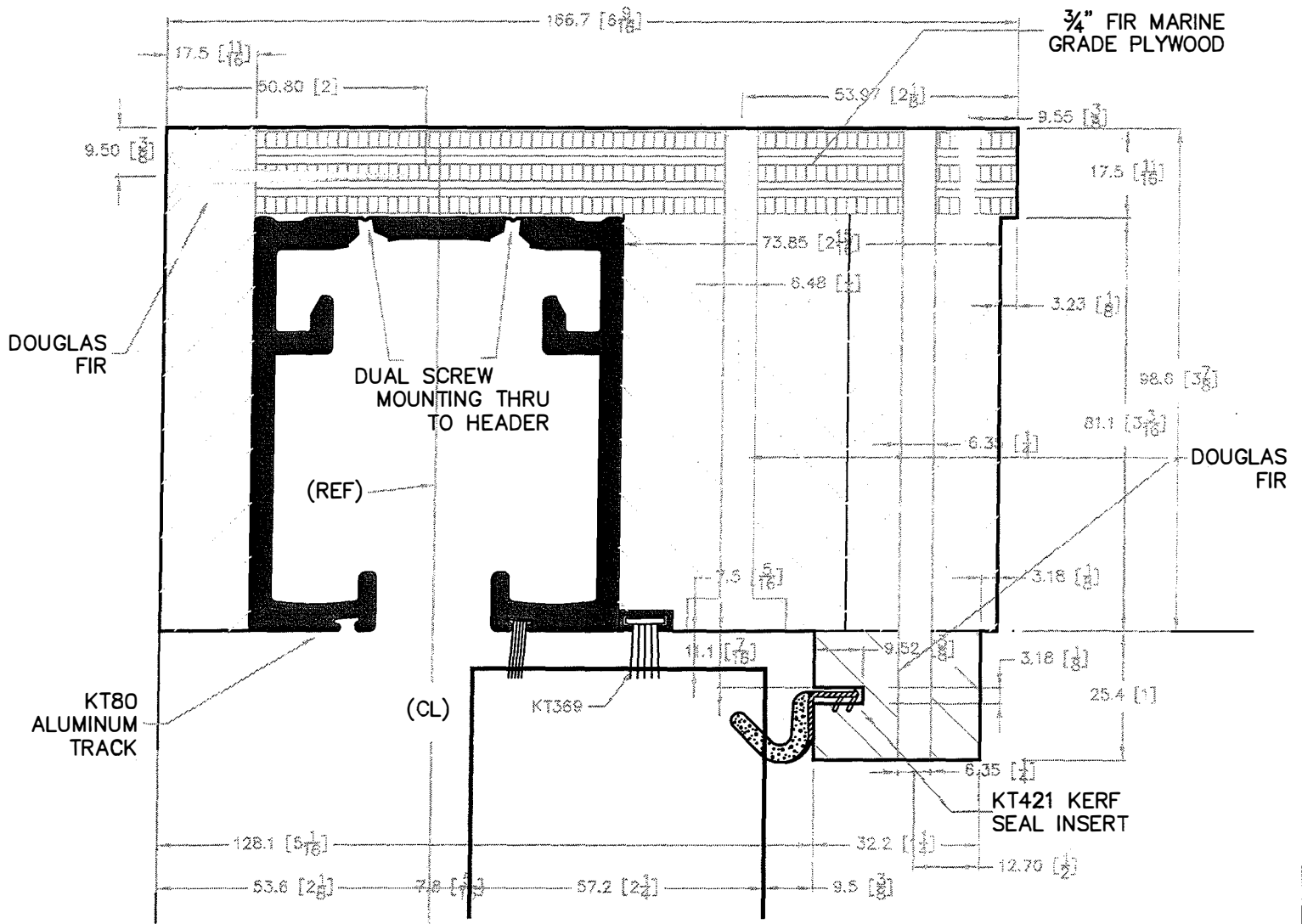
NOV 29 2005

3057492

PROJECT #:.....

REVIEWED BY:..... *M*

FULL SCALE 03



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DWG:..... 10 of 36

NOV 29 2005

3057492

PROJECT #:.....

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PAGE 3 of 5

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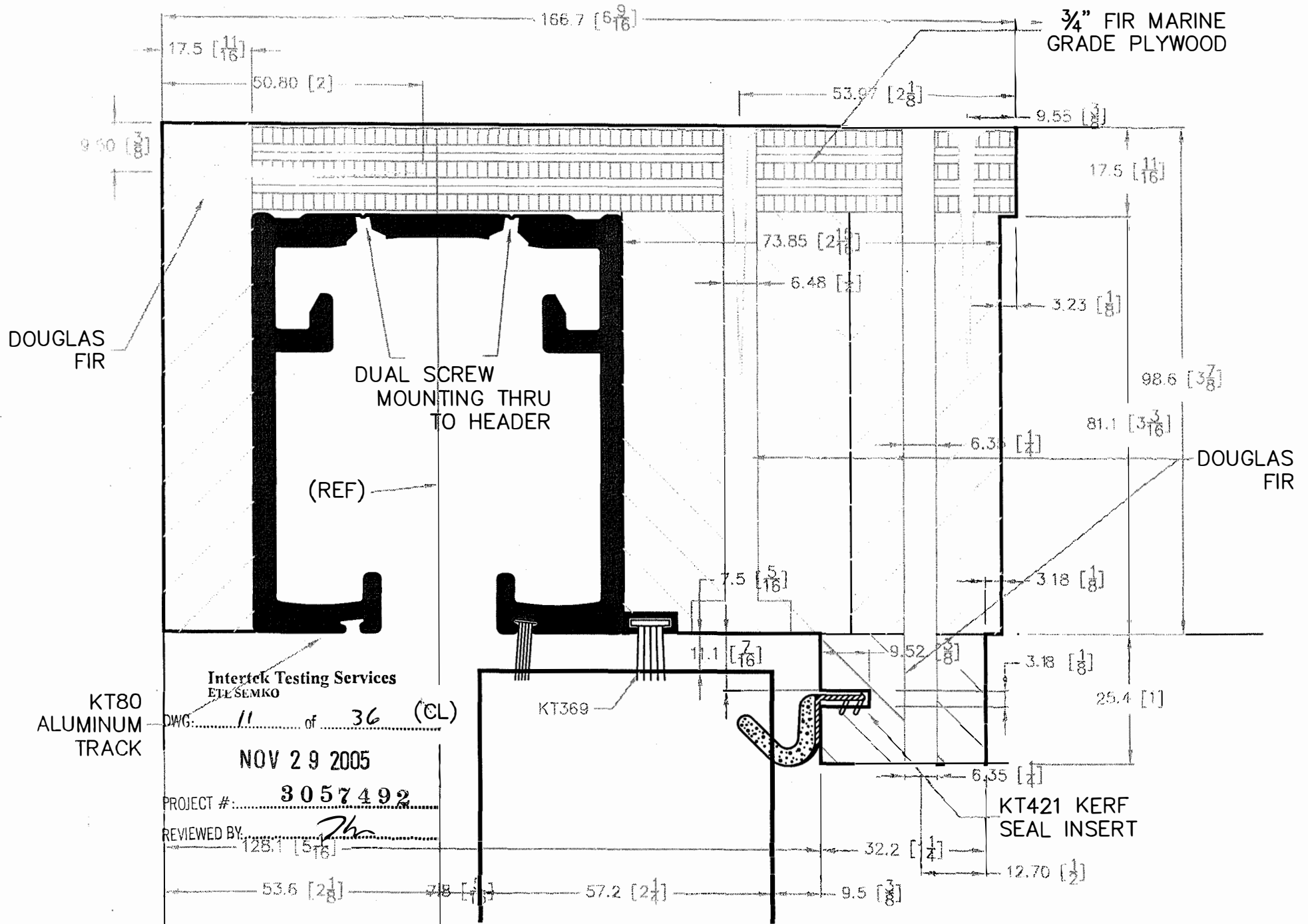
DATE:

Fax: 604-520-3594

SCALE:
NTS

PREPARED BY:

APPROVED BY:



DOUGLAS FIR

3/4" FIR MARINE GRADE PLYWOOD

DUAL SCREW MOUNTING THRU TO HEADER

(REF)

DOUGLAS FIR

KT80 ALUMINUM TRACK

Intertek Testing Services ELE SEMKO

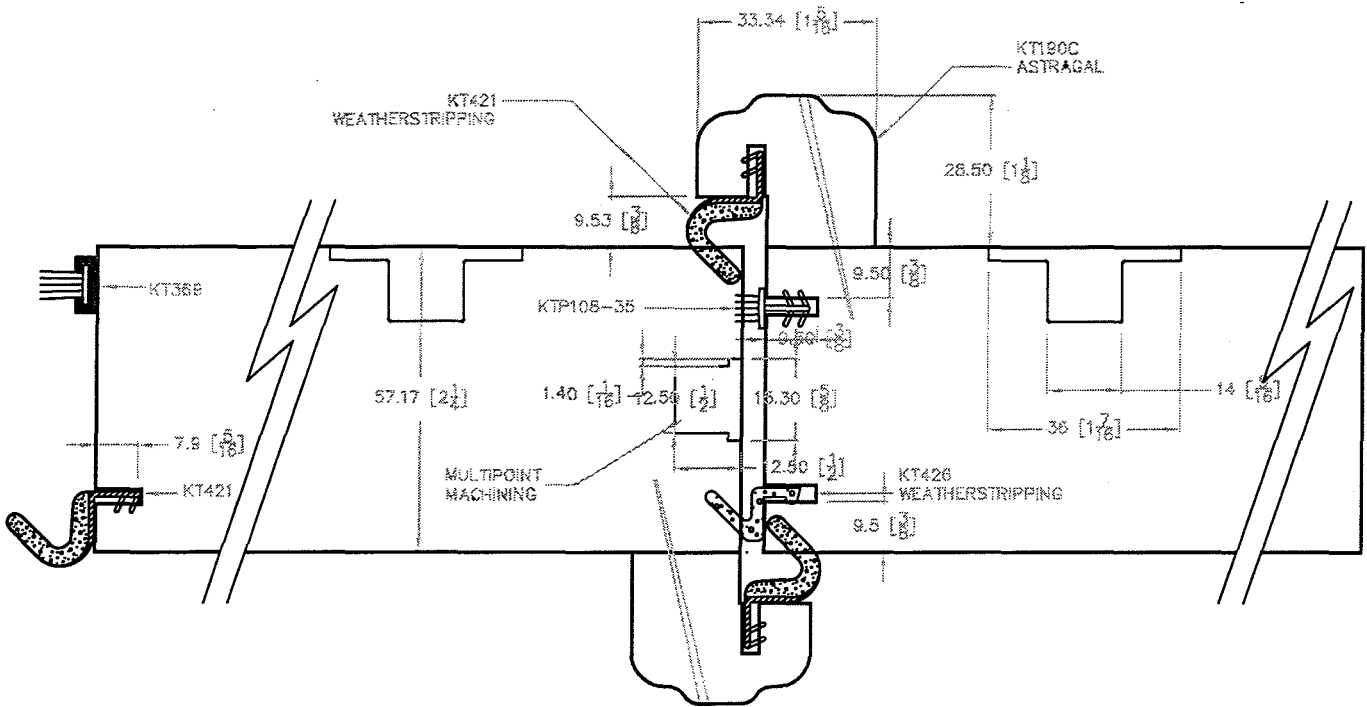
DWG: 11 of 36 (CL)

NOV 29 2005

PROJECT #: 3057492

REVIEWED BY: *Jha*

KT421 KERF SEAL INSERT



OUTSIDE

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ETL SEMKO

DWG:..... 12 of 36

NOV 29 2005

PROJECT #:..... 3057492**

REVIEWED BY:..... *Jm*

PAGE 4 of 5

ECLIPSE ARCHITECTURAL

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Ph: 604-520-1080

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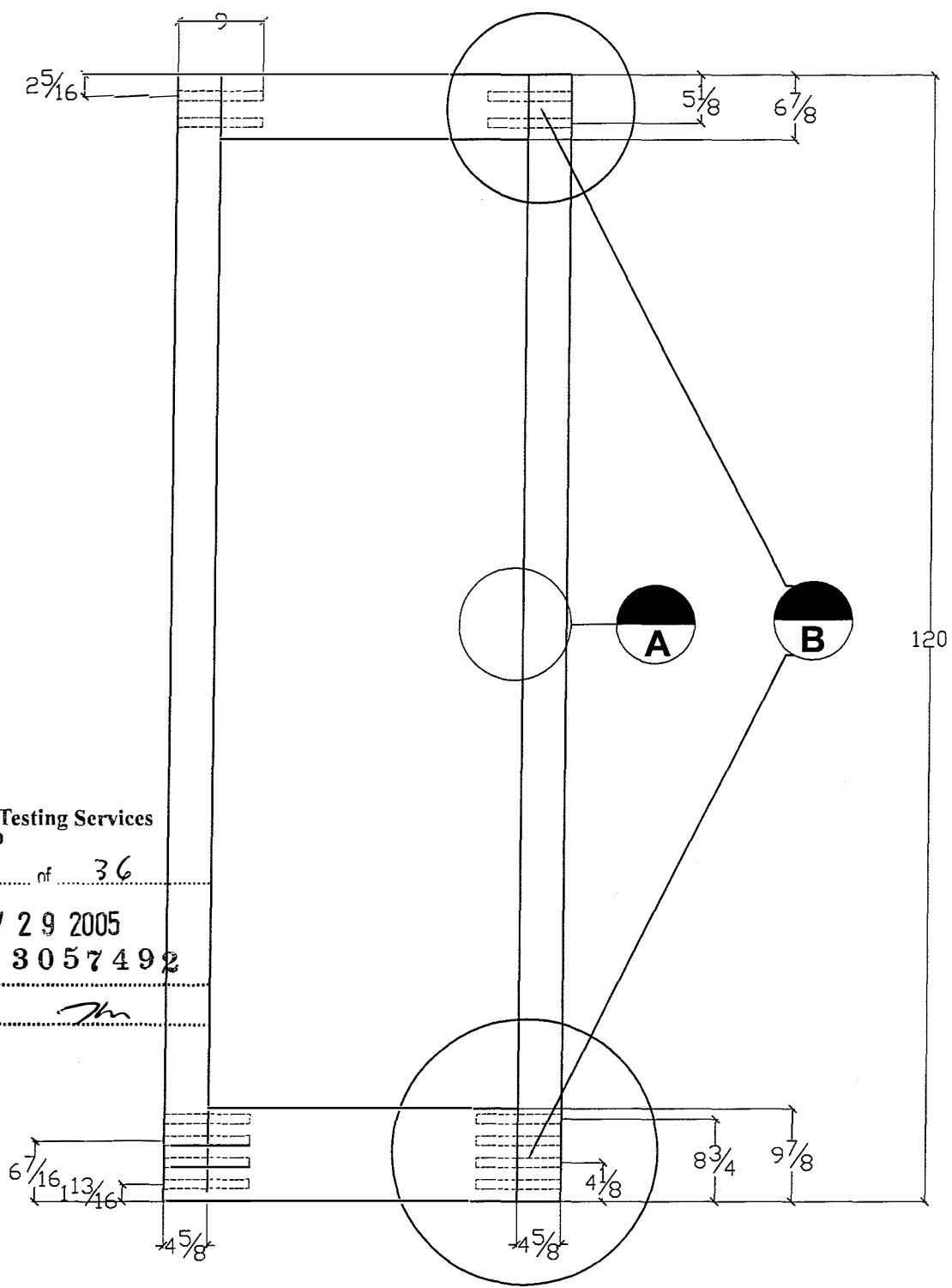
DATE:

Fax: 604-520-3594

SCALE:
NTS

PREPARED BY:

APPROVED BY:



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DWG:.....13..... of36.....

NOV 29 2005

PROJECT #:.....3057492.....

REVIEWED BY:.....*Jm*.....

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Vancouver B.C.
V6P 3G3

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DESCRIPTION:
STILE & RAIL DETAIL

SCALE:
NTS

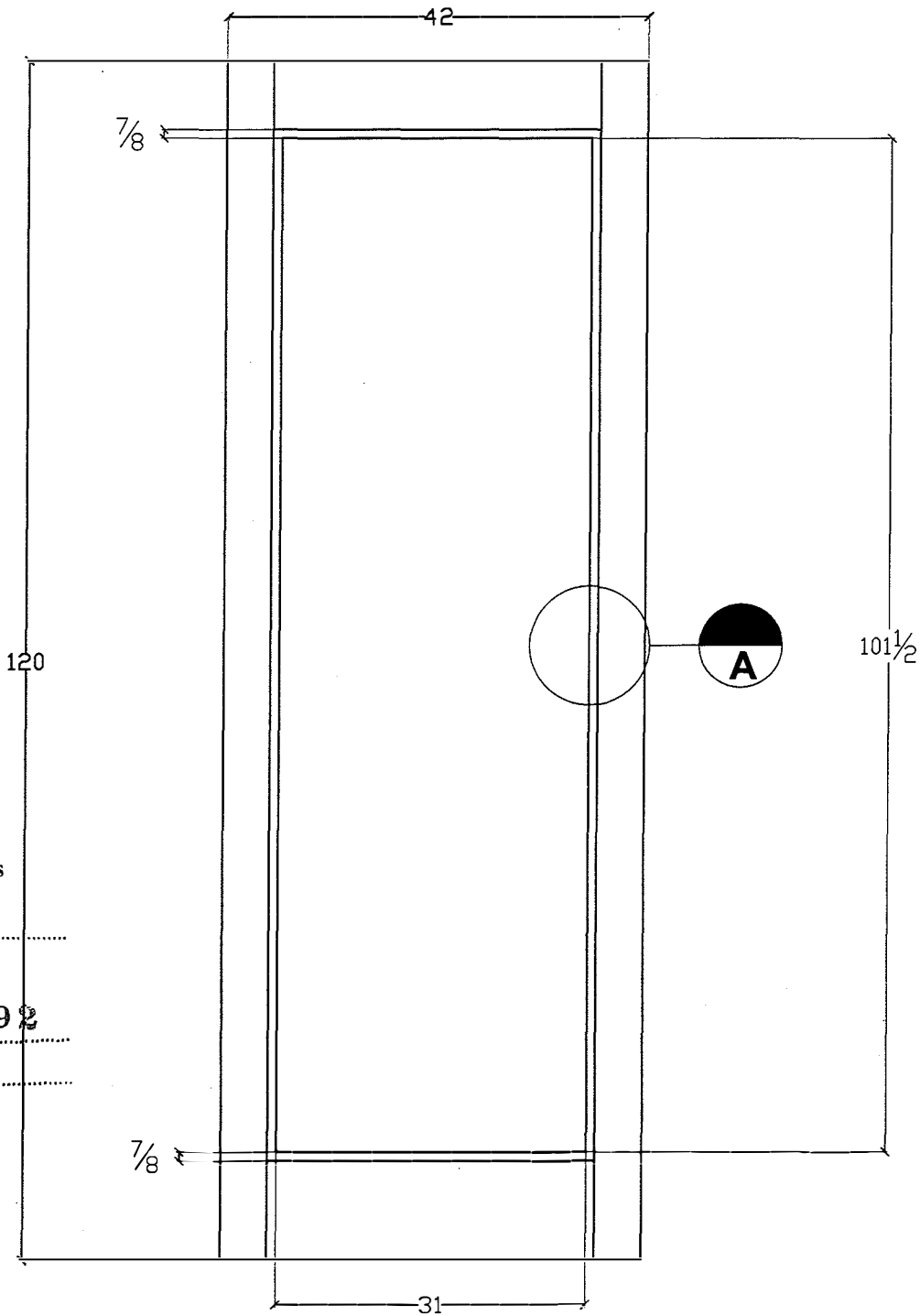
PREPARED BY:

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DWG: 14 of 36

NOV 29 2005

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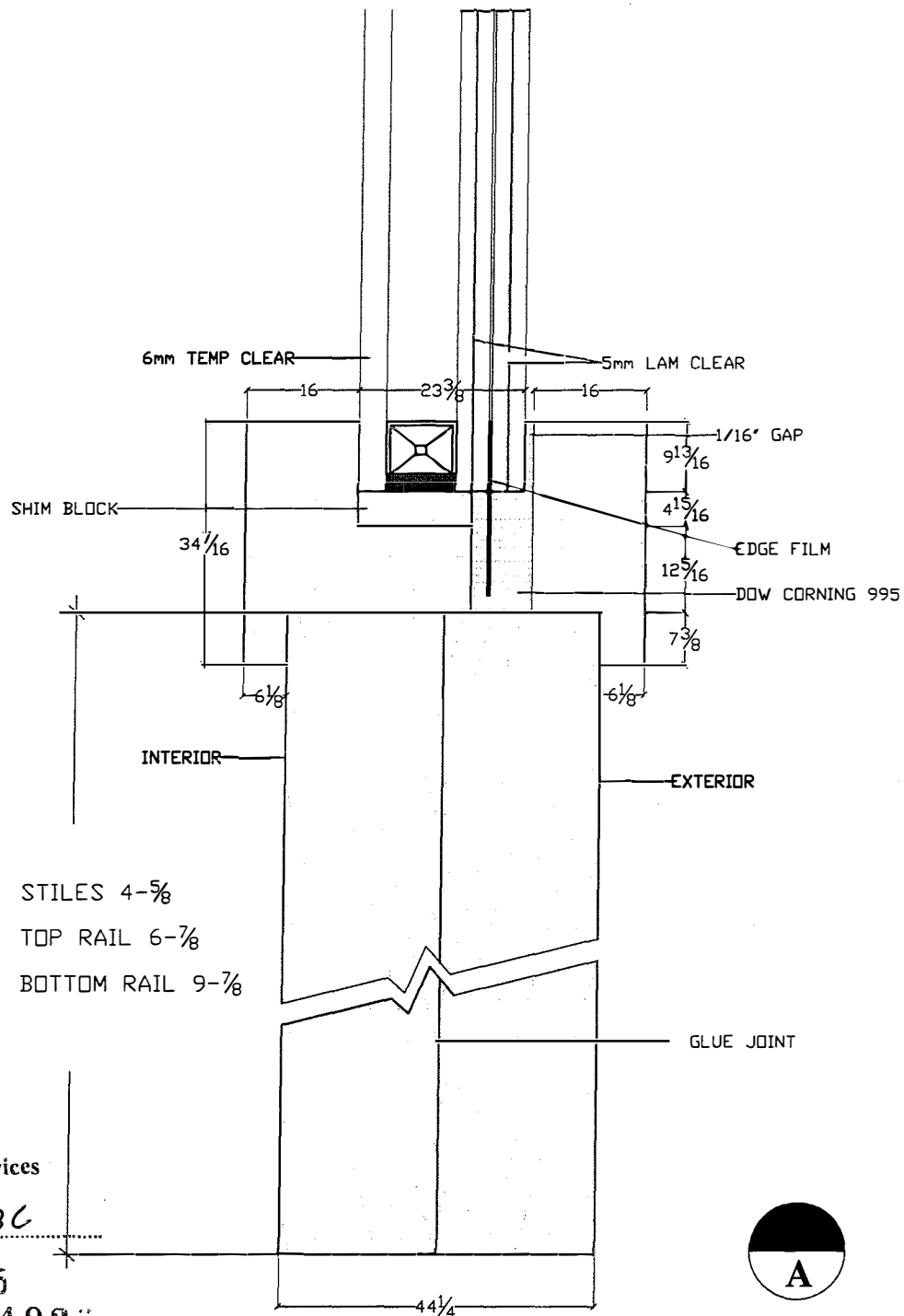
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GLASS ELEVATION

DATE:

SCALE:

PREPARED BY:

APPROVED BY:



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DWG:.....15..... of36.....

NOV 29 2005

3057492

PROJECT #:.....

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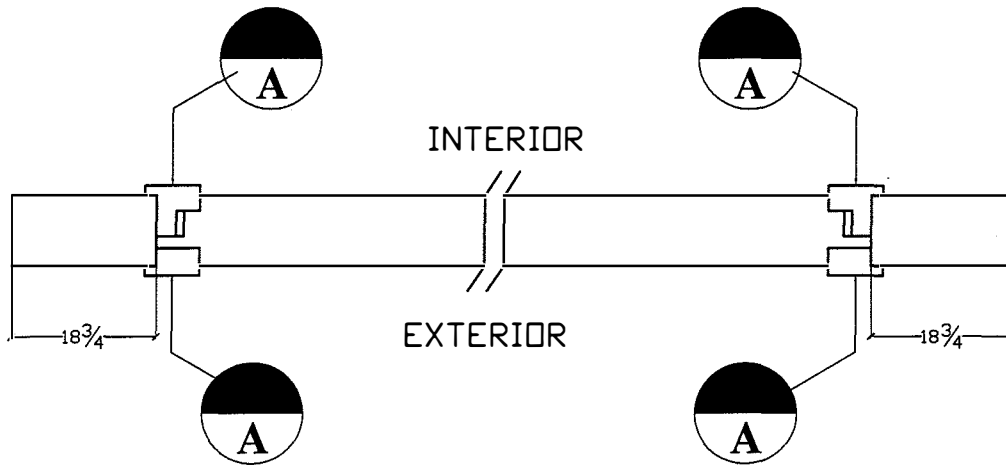
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DATE:

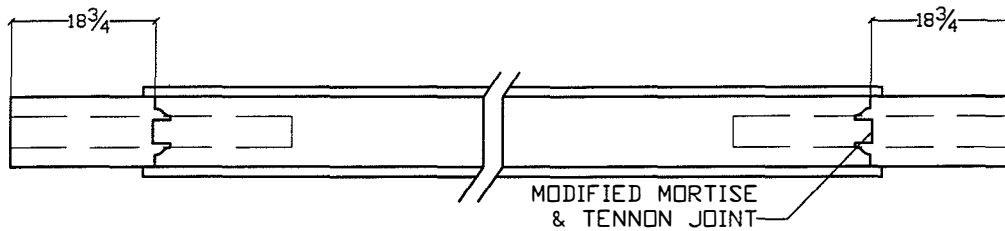
SCALE:
NTS

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GLASS STOP SECTION



JOINT SECTION

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DWG:.....16..... of36.....

NOV 29 2005

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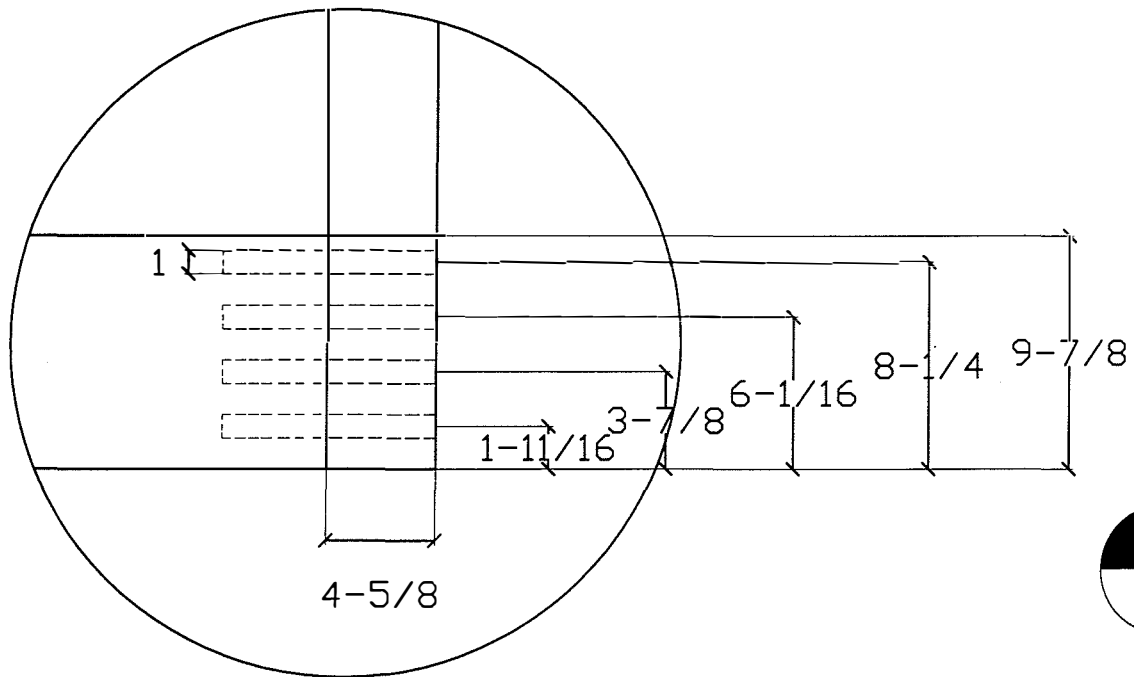
DESCRIPTION: SECTION

DATE:

SCALE:
NTS

PREPARED BY:

APPROVED BY:



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DWG:.....17..... of36.....

NOV 29 2005

PROJECT #:.....3057492*.....

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PAGE5 of 5

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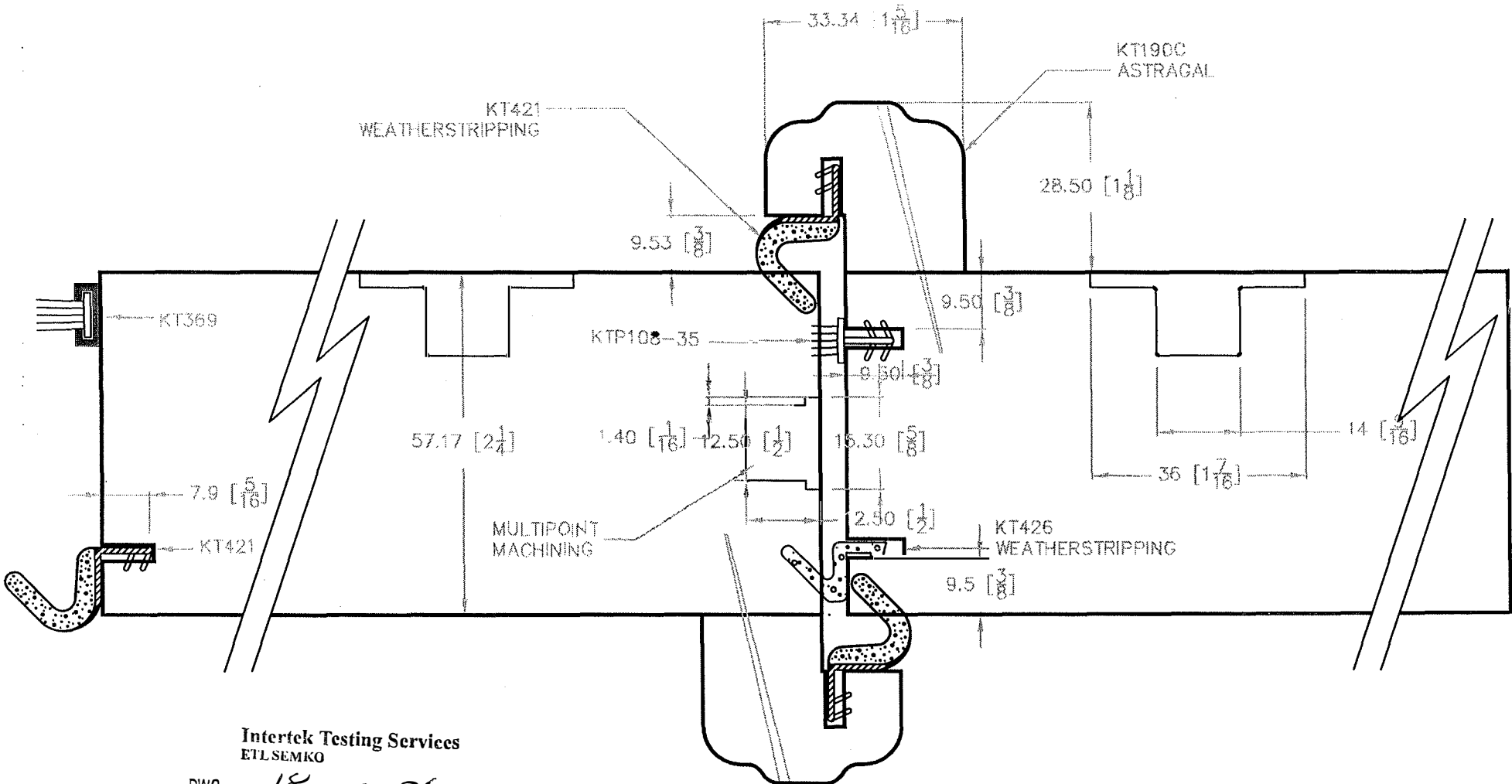
DESCRIPTION:
JOINT DETAIL

SCALE:
NTS

PREPARED BY:

DATE:

APPROVED BY:



OUTSIDE

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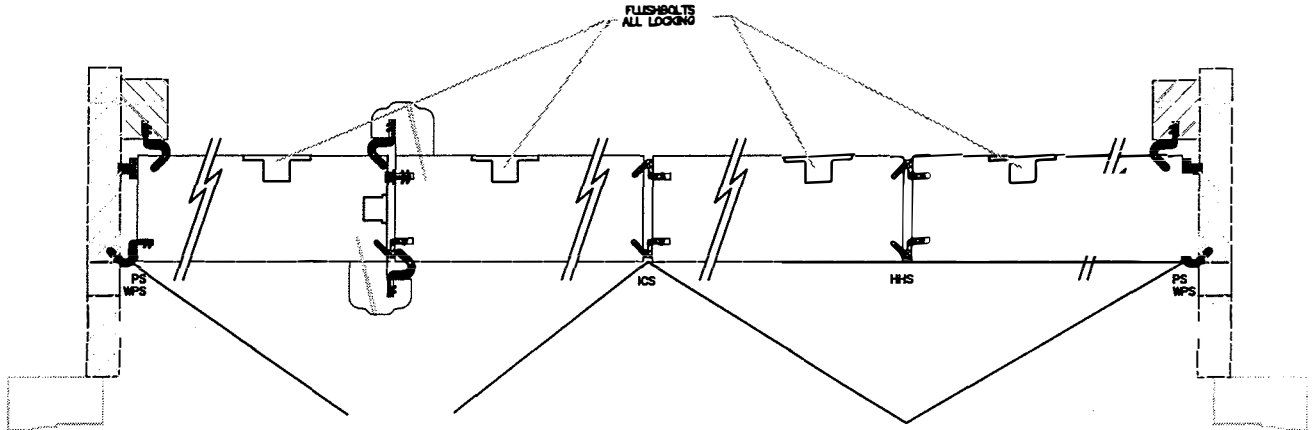
DWG: 18 of 36

NOV 29 2005

PROJECT #: 3057492

REVIEWED BY: [Signature]

FULL SCALE 04



1L 3R

OUTSIDE

PS = PIVOT SET
 WPS = WALL PIVOT SET
 ICS = INTERMEDIATE CARRIER
 HHS = HINGE SET

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 ETL SEMKO

DWG:..... 19 of 36

NOV 29 2005

3057492

PROJECT #:.....

REVIEWED BY:..... *Jm*

PAGE 5 of 5

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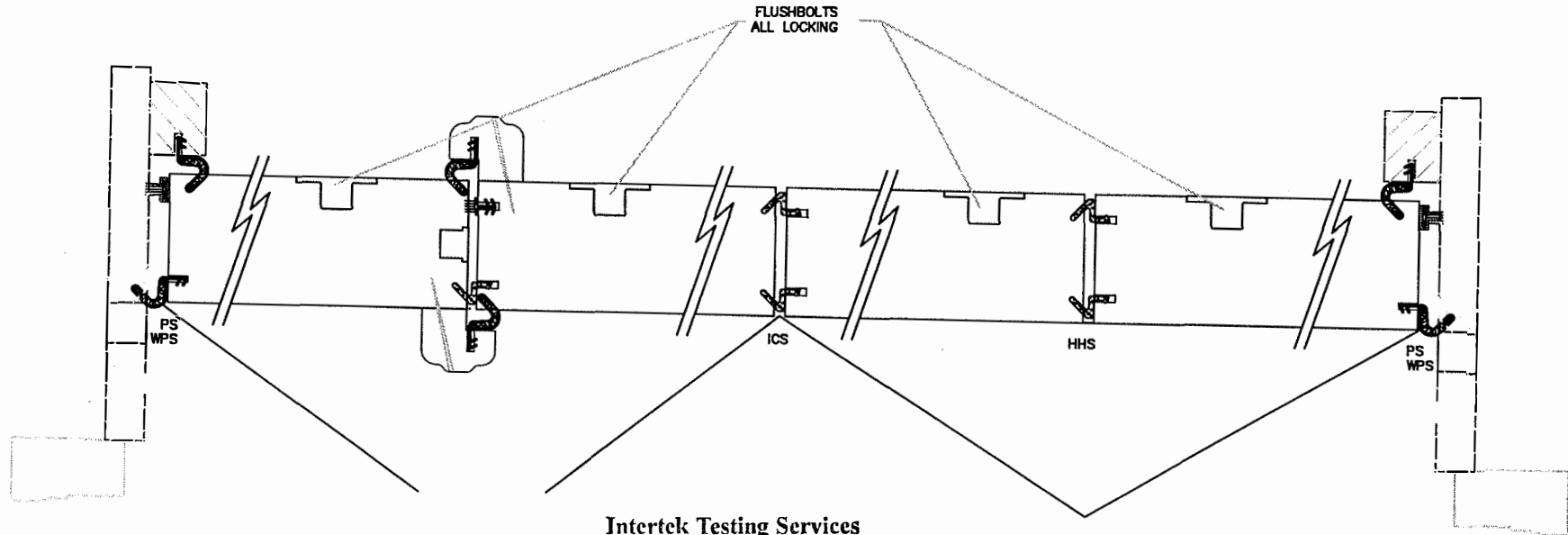
DATE:

Fax: 604-520-3594

SCALE:
 NTS

PREPARED BY:

APPROVED BY:



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DWG:.....20..... of36.....

NOV 29 2005

PROJECT #:.....3057492.....

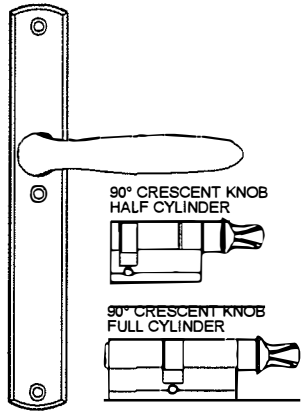
REVIEWED BY:.....*Jm*.....

1L 3R

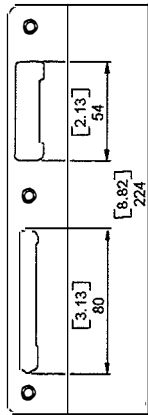
OUTSIDE

PS = PIVOT SET
WPS = WALL PIVOT SET
ICS = INTERMEDIATE CARRIER
HHS = HINGE SET

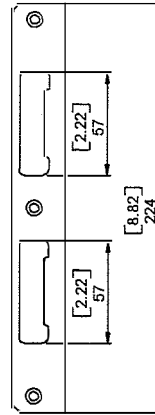
HANDLE SET
M151/216N



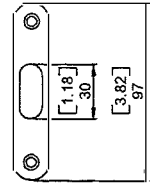
LATCH AND DEADBOLT STRIKE PLATE
8784127 - BRASS
8784139 - STAINLESS STEEL
8784135 - OIL RUBBED
2218185 - ANTIQUE NICKEL



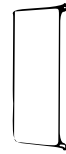
LATCH AND DEADBOLT STRIKE PLATE
2332261 - BRASS
2332287 - STAINLESS STEEL



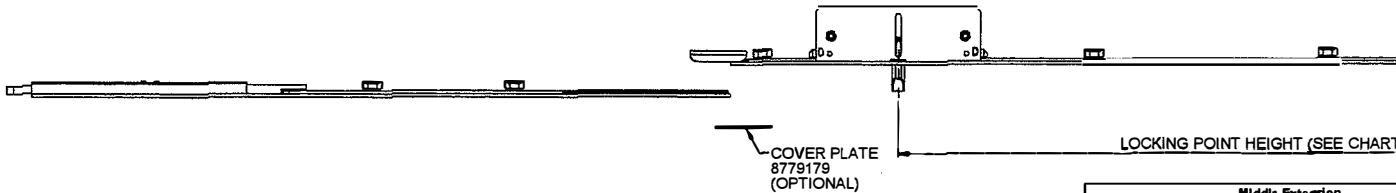
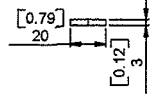
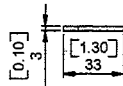
STANDARD - ROUND BOLT STRIKE PLATE
8784615 - BRASS
1956739 - STAINLESS STEEL



DUST CAP
8784535

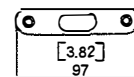


DUST CAP
8786547



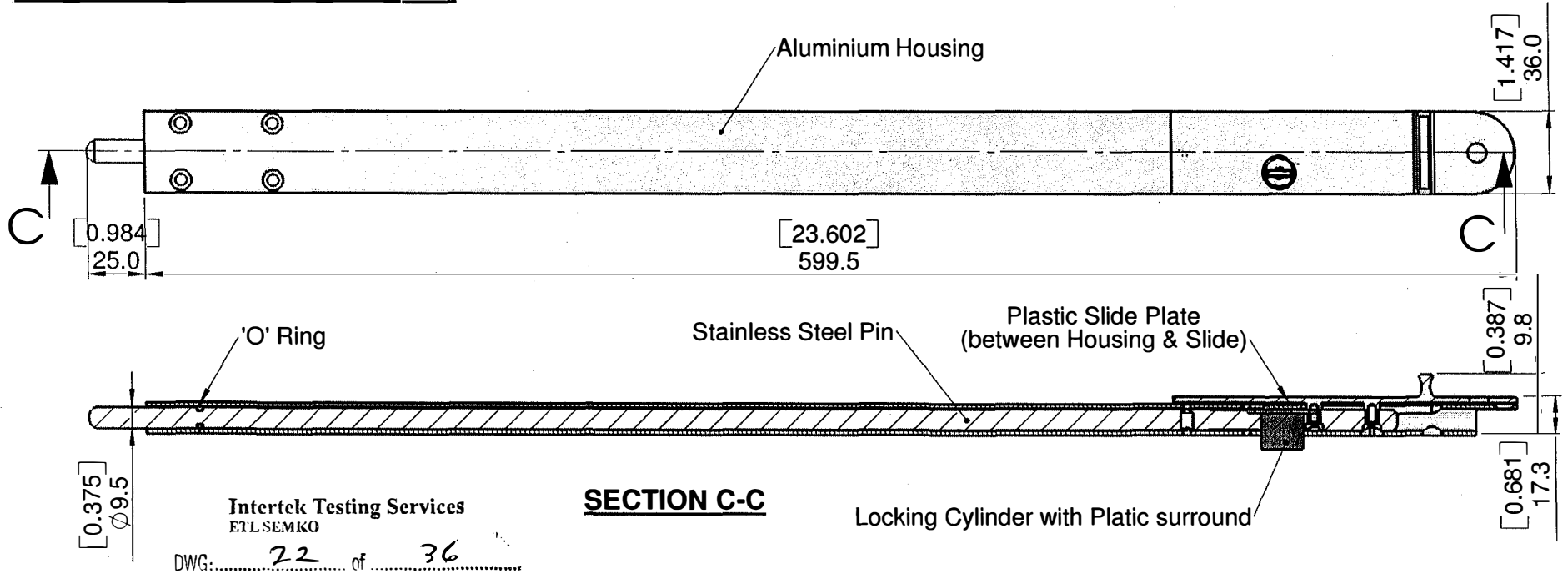
Part Number	Description	Top Extension		Number of Screws	Reference Lengths When Combined with Middle Extensions		
		Top Extension Length	Max. Cutoff		Overall Length		
					Combined with M0691/RB0600 (with 914mm/36" Handle Height)	Combined with M0691/RB0600 (with 914mm/36" Handle Height)	Combined with M0691/RB0600 (with 914mm/36" Handle Height)
8778611	M/0400/SB (20mm)	400mm 15.75"	100mm 3.94"	3	1946mm - 2046mm 76.61" - 80.55"	2396mm - 2496mm 94.33" - 98.27"	2846mm - 2946mm 112.05" - 115.98"
8778615	M/0475/SB (20mm)	475mm 18.70"	100mm 3.94"	3	2021mm - 2121mm 73.57" - 83.50"	2471mm - 2571mm 97.28" - 101.22"	2921mm - 3021mm 115.00" - 118.94"
8778619	M/0550/SB (20mm)	550mm 21.65"	100mm 3.94"	4	2096mm - 2196mm 82.52" - 86.46"	2546mm - 2646mm 100.24" - 104.17"	2996mm - 3048mm 117.95" - 120.00"

Part Number	Description	Middle Extension	
		Middle Extension Length	Top Roundbolt Position
8778739	M/0691/RB0600	691mm 27.20"	600mm 23.62"
8778743	M/1141/RB1050	1141mm 44.92"	1050mm 41.34"
8778747	M/1591/RB1500	1591mm 62.64"	1500mm 59.06"



467.5 [18.41] FOR ROUND BOLT POSITION
917.5 [36.12] FOR ROUND BOLT POSITION
1367.5 [53.84] FOR ROUND BOLT POSITION

Eclipse Drop Bolt Symphony 600



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SECTION C-C

Locking Cylinder with Plastic surround

DWG: 22 of 36

NOV 29 2005

PROJECT #: 3057492

REVIEWED BY: Jha

Rev	Revision Note	Date	By
A	ORIGINAL ISSUE	18/8/05	SS



O' Ring

- Material: NBR / Buna-N
- Size: 6.02mm O.D / 2.62mm I.D
- Scale 1:1

ALL DIMENSIONS MILLIMETRES

GENERAL TOLERANCES

LINEAR	X.XX	± 0.02
LINEAR	X.X	± 0.1
LINEAR ≤ 200	X	± 0.25
LINEAR > 200	X	± 1
ANGULAR	X.X	± 0°30'
ANGULAR	X	± 1°
GENERAL SURFACE FINISH Ra = 3.2 µm		

Directory \ Part File Name
G:\Products\Dropbolt Symphony\
DBSY600NB.SLDPRT



997 Kingsford Smith Drive
PO Box 1550
Eagle Farm, Queensland 4009, Australia

ABN 96 009 716 189
Phone (07) 3868 5777
Fax (07) 3868 1201

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Drawn by S.Smith	Scale 1:2.5	Material As Specified	A4
Checked by #	Print Date 23/11/2005	Weight g	Sheet No. 1 of 1
Drawing File Name Symphony DB600.SLDDRW			Part No. DBSY600KRS
Description Drop Bolt Symphony 600mm Keyed			Revision A

Eclipse Drop Bolt Symphony 200

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DWG: 23 of 36

NOV 29 2005

PROJECT #: 3.057.192

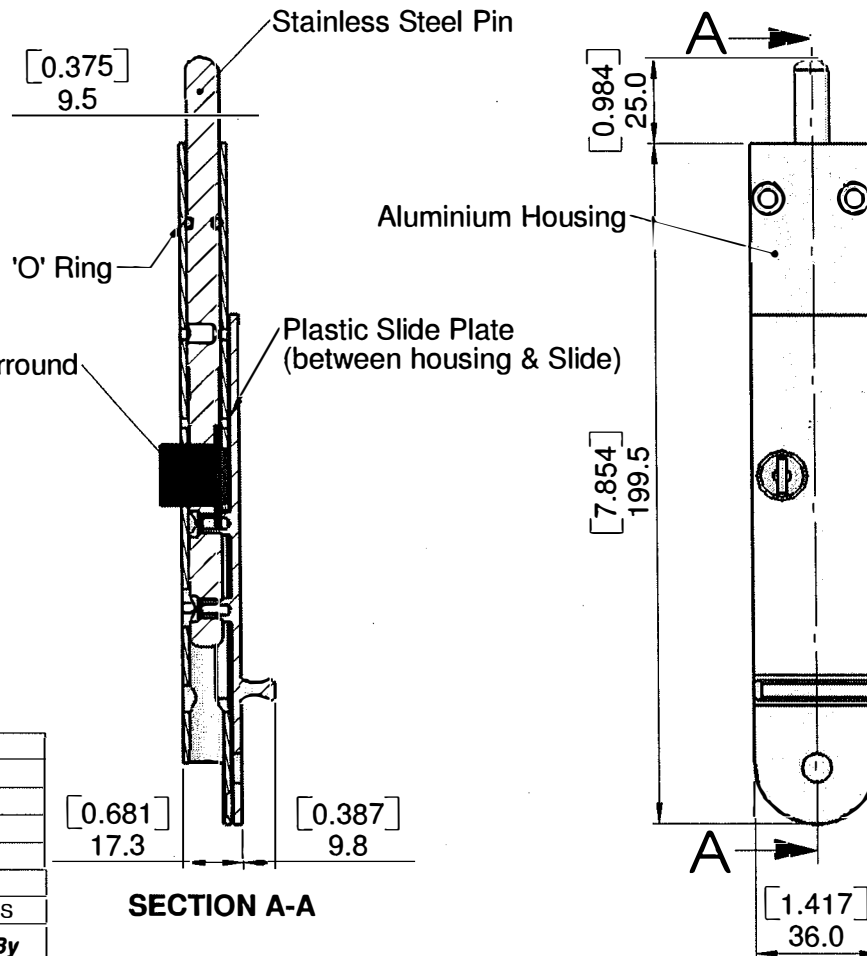
REVIEWED BY: *Jm*

Locking Cylinder with Plastic surround



'O' Ring

- Material: NBR / Buna-N
- Size: 6.02mm O.D / 2.62mm I.D
- Scale 1:1



A	ORIGINAL ISSUE	18/8/05	SS
Rev	Revision Note	Date	By

ALL DIMENSIONS MILLIMETRES

GENERAL TOLERANCES

LINEAR	X.XX	± 0.02
LINEAR	X.X	± 0.1
LINEAR ≤ 200	X	± 0.25
LINEAR > 200	X	± 1
ANGULAR	X.X	± 0°30'
ANGULAR	X	± 1°

GENERAL SURFACE FINISH Ra = 3.2 µm

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FIRST FOR FUNCTION

997 Kingsford Smith Drive
PO Box 1550
Eagle Farm, Queensland 4009, Australia

ABN 96 009 716 189
Phone (07) 3868 5777
Fax (07) 3868 1201

Drawn by S.Smith	Scale 1:2	Material As Specified	A4
Checked by #	Print Date 23/11/2005	Weight g	
Drawing File Name Symphony DB200.SLDDRW			Part No. DBSY200KRS
Description Drop Bolt Symphony 200mm Keyed			Revision A

Directory \ Part File Name
G:\Products\Dropbolt Symphony\
DBSY200NR.SLDPRT

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Eclipse E4 Bottom Pivot

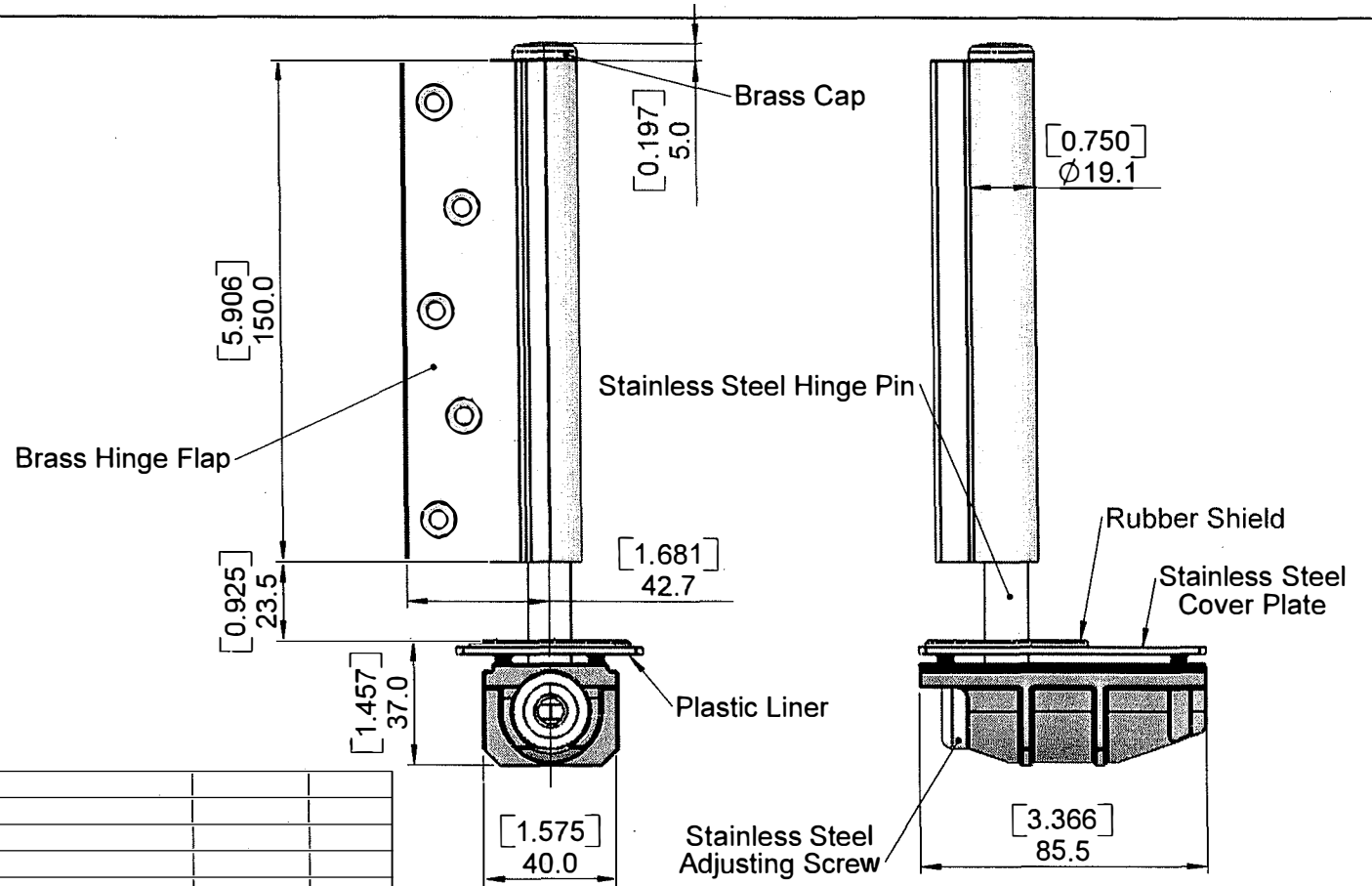
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DWG: 24 of 36

NOV 29 2005

PROJECT #: 3057492

REVIEWED BY: [Signature]



Rev	Revision Note	Date	By
A	ORIGINAL ISSUE	18/8/05	SS

ALL DIMENSIONS MILLIMETRES	
GENERAL TOLERANCES	
LINEAR	X.XX ± 0.02
LINEAR	X.X ± 0.1
LINEAR ≤ 200	X ± 0.25
LINEAR > 200	X ± 1
ANGULAR	X.X ± 0°30'
ANGULAR	X ± 1°
GENERAL SURFACE FINISH Ra = 3.2 µm	

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997 Kingsford Smith Drive
PO Box 1550
Eagle Farm, Queensland 4009, Australia

ABN 96 009 716 189
Phone (07) 3868 5777
Fax (07) 3868 1201

Drawn by S.Smith	Scale 1:2	Material As Specified	A4
Checked by #	Print Date 19/08/2005	Weight g	
Drawing File Name E4 Bottom Pivot Brass.SLDDRW			Part No. E4PSB
Description E4 Bottom Pivot - Brass			Revision A

Directory \ Part File Name
G:\Products\Eclipse E4\E4 Bottom Pivot\
E4 Bottom Pivot Assembly New 250203.SLDPRT

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Eclipse E4 Wall Pivot

This product is used the Top Pivot and Bottom Pivots at the end of a door panel.

Brass Cap

Brass Hinge Flap

Stainless Steel Hinge Pin

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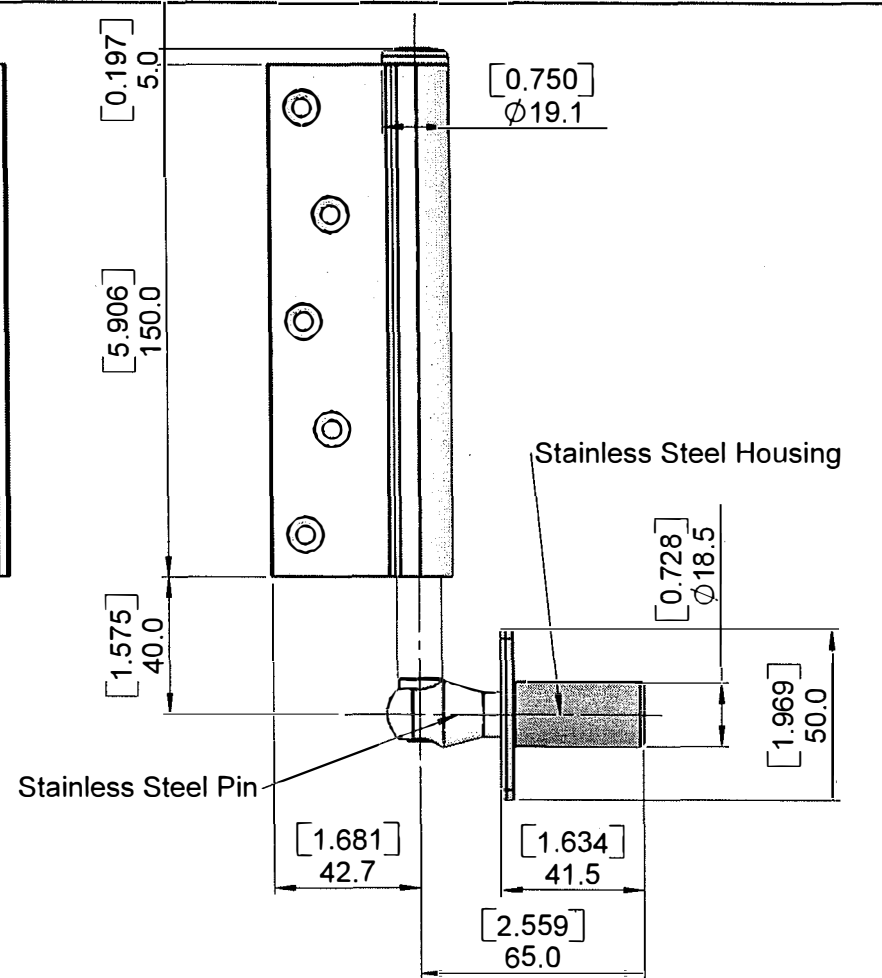
DWG: 25 of 36

NOV 29 2005

PROJECT #: 3057492

REVIEWED BY: Jm

Rev	Revision Note	Date	By
A	ORIGINAL ISSUE	18/8/05	SS



ALL DIMENSIONS MILLIMETRES

GENERAL TOLERANCES

LINEAR	X.XX	± 0.02
LINEAR	X.X	± 0.1
LINEAR ≤ 200	X	± 0.25
LINEAR > 200	X	± 1
ANGULAR	X.X	± 0°30'
ANGULAR	X	± 1°
GENERAL SURFACE FINISH Ra = 3.2 µm		

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997 Kingsford Smith Drive
PO Box 1550
Eagle Farm, Queensland 4009, Australia

ABN 96 009 716 189
Phone (07) 3868 5777
Fax (07) 3868 1201

Drawn by S. Smith	Scale 1:2	Material As Specified	A4
Checked by #	Print Date 19/08/2005	Weight g	Sheet No. 1 of 1
Drawing File Name E4 Wall Pivot Brass.SLDDRW			Part No. E4WPB
Description E4 Wall Pivot - Brass			Revision A

Directory \ Part File Name
G:\Products\Eclipse E4\E4 Wall Pivot\
E4 Wall Pivot Assembly.SLDPRT

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Eclipse E4 Top Pivot

Stainless Steel Housing

[3.346]
85.0

Stainless Steel Cover Plate

Stainless Steel Hinge Pin

[11.274]
286.4

Stainless Steel Adjustment Parts

[0.780]
Ø19.8

Stainless Steel Thrust Bearing

[2.756]
70.0

[5.906]
150.0

Brass Hinge Flap

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DWG: 26 of 36
NOV 29 2005
PROJECT #: 3057492
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Rev	Revision Note	Date	By
A	ORIGINAL ISSUE	18/8/05	SS

ALL DIMENSIONS MILLIMETRES

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LINEAR > 200	X	± 1
ANGULAR	X.X	± 0°30'
ANGULAR	X	± 1°
GENERAL SURFACE FINISH Ra = 3.2 µm		

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Drawn by S.Smith	Scale 1:2	Material As Specified	A4
Checked by #	Print Date 19/08/2005	Weight g	
Drawing File Name E4 Top Pivot Brass.SLDDRW			Part No. E4TPB
Description E4 Top Pivot - Brass			Revision A

Directory \ Part File Name
G:\Products\Eclipse E4\E4 Top Pivot\
E4 Top Pivot Assembly in track.SLDPRT

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Eclipse E4 Intermediate Carrier

Nylon/Stainless Steel Bearing Roller

Stainless Steel Circlip

Nylon/Stainless Steel Bearing Roller x4

Stainless Steel Axle

Stainless Steel Hinge Pin

Stainless Steel Thrust Bearing

Brass Hinge Flaps

Stainless Steel Adjustment Parts

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NOV 29 2005
PROJECT #: 3057492
REVIEWED BY: *Jm*

[11.248]
285.7

[1.862]
47.3

[0.780]
Ø19.8

[3.362]
85.4

[5.906]
150.0

Rev	Revision Note	Date	By
A	ORIGINAL ISSUE	18/8/05	SS

ALL DIMENSIONS MILLIMETRES

GENERAL TOLERANCES

LINEAR	X.XX	± 0.02
LINEAR	X.X	± 0.1
LINEAR ≤ 200	X	± 0.25
LINEAR > 200	X	± 1
ANGULAR	X.X	± 0°30'
ANGULAR	X	± 1°

GENERAL SURFACE FINISH Ra = 3.2 µm

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Drawn by S.Smith	Scale 1:2	Material As Specified	A4
Checked by #	Print Date 19/08/2005	Weight g	Sheet No. 1 of 1
Drawing File Name E4 Intermediate Carrier Brass.SLDDRW			Part No. E4ICB
Description E4 Intermediate Carrier - Brass			Revision A

Directory \ Part File Name
G:\Products\Eclipse E4\E4 Carriers and Guides\
E4 Intermediate Carrier and Track.SLDPRT

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Eclipse E4 Intermediate Guide

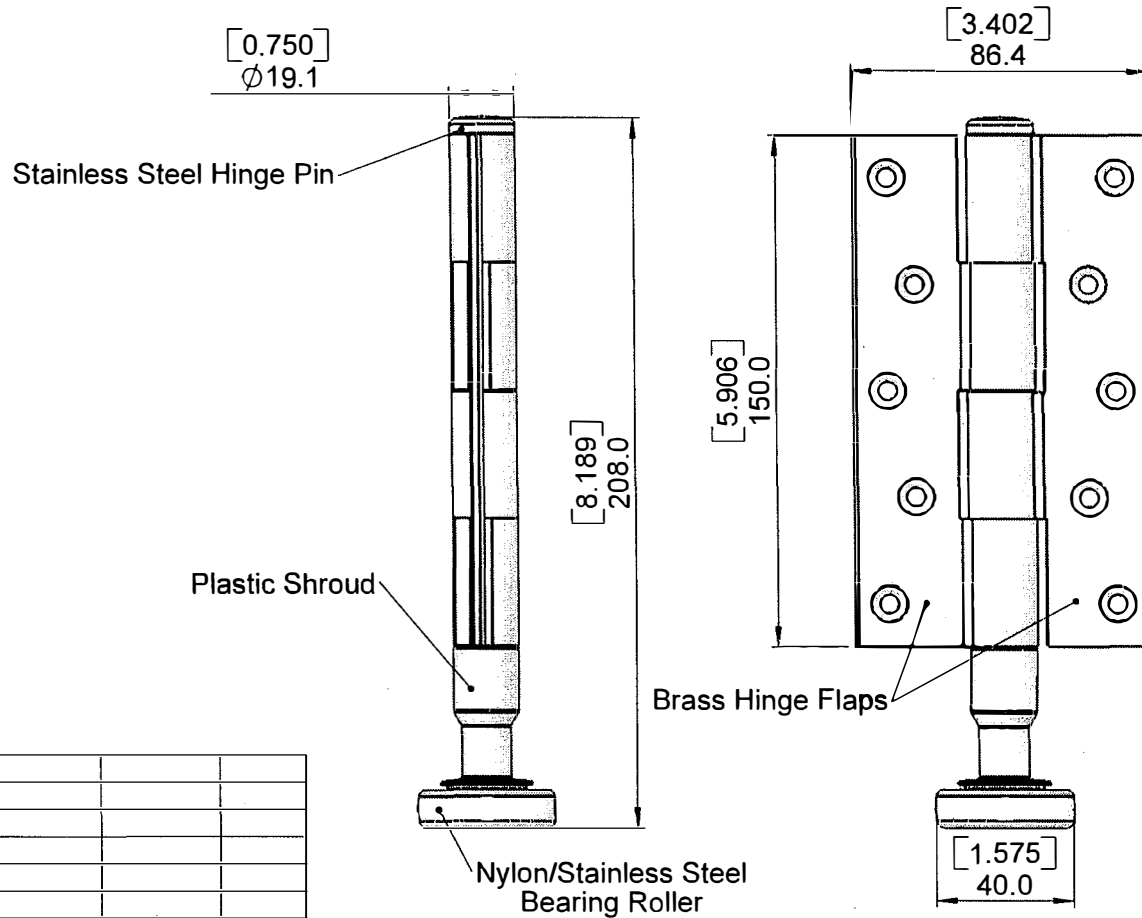
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DWG: 28 of 36

NOV 29 2005

PROJECT #: 3057492

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Rev	Revision Note	Date	By
A	ORIGINAL ISSUE	18/8/05	SS

ALL DIMENSIONS MILLIMETRES

GENERAL TOLERANCES

LINEAR	X.XX	± 0.02
LINEAR	X.X	± 0.1
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LINEAR > 200	X	± 1
ANGULAR	X.X	± 0°30'
ANGULAR	X	± 1°
GENERAL SURFACE FINISH Ra = 3.2 µm		

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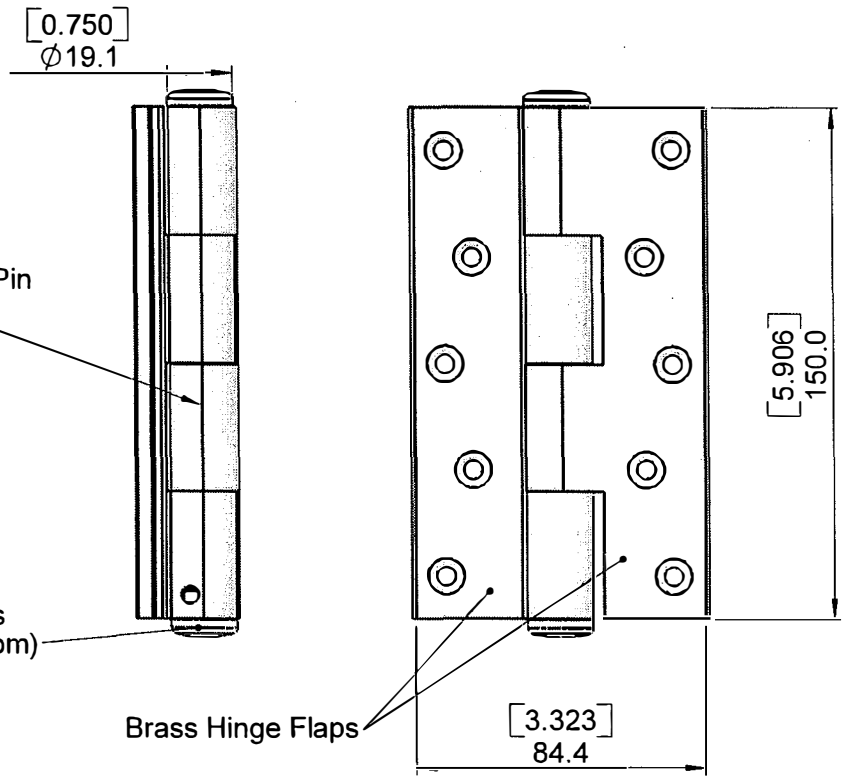
ABN 96 009 716 189
Phone (07) 3868 5777
Fax (07) 3868 1201

Drawn by S.Smith	Scale 1:2	Material As Specified	A4
Checked by #	Print Date 19/08/2005	Weight g	Sheet No. 1 of 1
Drawing File Name E4 Intermediate Guide Brass.SLDDRW			Part No. E4IFGB
Description E4 Intermediate Guide - Brass			Revision A

Directory \ Part File Name
G:\Products\Eclipse E4\E4 Carriers and Guides\
E4 Intermediate Guide and Channel.SLDPRT

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Eclipse E4 Half Offset Hinge



Stainless Steel Hinge Pin
(Internal)

Brass Caps
(top and bottom)

Brass Hinge Flaps

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NOV 29 2005
PROJECT #: 3057492*
REVIEWED BY: Jh

Rev	Revision Note	Date	By
A	ORIGINAL ISSUE	18/8/05	SS

ALL DIMENSIONS MILLIMETRES	
GENERAL TOLERANCES	
LINEAR	X.XX ± 0.02
LINEAR	X.X ± 0.1
LINEAR ≤ 200	X ± 0.25
LINEAR > 200	X ± 1
ANGULAR	X.X ± 0°30'
ANGULAR	X ± 1°
GENERAL SURFACE FINISH Ra = 3.2 µm	

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Fax (07) 3868 1201

Drawn by S.Smith	Scale 1:2	Material As Specified	A4
Checked by #	Print Date 19/08/2005	Weight g	Sheet No. 1 of 1
Drawing File Name E4 Half Offset Hinge Brass.SLDDRW			Part No. E4HOHB
Description E4 Half Offset Hinge - Brass			Revision A

Directory \ Part File Name
G:\Products\Eclipse E4\E4 Hinges\Offset\
Offset.SLDPRT

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Eclipse E4 Half Offset Hinge with Handle

Stainless Steel Cap
(Top & Bottom)

[0.748]
19.0

[0.236]
6.0

Brass Handle

[6.457]
164.0

Stainless Steel Hinge Pin
(Internal)

[5.906]
150.0

[2.173]
55.2

[3.323]
84.4

Brass Hinge Flaps

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DWG: 30 of 36

NOV 29 2005

PROJECT #: 3057492

REVIEWED BY: Jh

Rev	Revision Note	Date	By
A	ORIGINAL ISSUE	18/8/05	SS

ALL DIMENSIONS MILLIMETRES

GENERAL TOLERANCES

LINEAR	X.XX	± 0.02
LINEAR	X.X	± 0.1
LINEAR ≤ 200	X	± 0.25
LINEAR > 200	X	± 1
ANGULAR	X.X	± 0°30'
ANGULAR	X	± 1°
GENERAL SURFACE FINISH Ra = 3.2 µm		

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Drawn by S.Smith	Scale 1:2	Material As Specified	A4
Checked by #	Print Date 19/08/2005	Weight g	
Drawing File Name E4 Half Offset Hinge with Handle Brass.SLDDRW			Part No. E4HOHHB
Description E4 Half Offset Hinge with Handle - Brass			Revision A

Directory \ Part File Name
G:\Products\Eclipse E4\E4 Hinges\Offset\
E4OHHS Offset Hinge with Handle.SLDPRT

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Eclipse E4 Straight Hinge

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DWG: 31 of 36

NOV 29 2005

3057492*

PROJECT #:

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Brass Hinge Cap
(top & bottom)

[0.138]
3.5

Brass Hinge Flaps

[3.402]
86.4

[0.750]
Ø19.1

[5.906]
150.0

Stainless Steel Hinge Pin
(internal)

[0.197]
5.0

Rev	Revision Note	Date	By
A	ORIGINAL ISSUE	18/8/05	SS

ALL DIMENSIONS MILLIMETRES

GENERAL TOLERANCES

LINEAR X.XX ± 0.02
 LINEAR X.X ± 0.1
 LINEAR ≤ 200 X ± 0.25
 LINEAR > 200 X ± 1
 ANGULAR X.X ± 0°30'
 ANGULAR X ± 1°
 GENERAL SURFACE FINISH Ra = 3.2 µm



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 Eagle Farm, Queensland 4009, Australia
 ABN 96 009 716 189
 Phone (07) 3868 5777
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Drawn by S. Smith	Scale 1:2	Material As Specified	A4
Checked by #	Print Date 19/08/2005	Weight g	Sheet No. 1 of 1
Drawing File Name E4 Straight Hinge.SLDDRW			Part No. E4HB
Description E4 Straight Hinge			Revision A

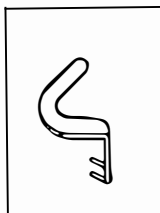
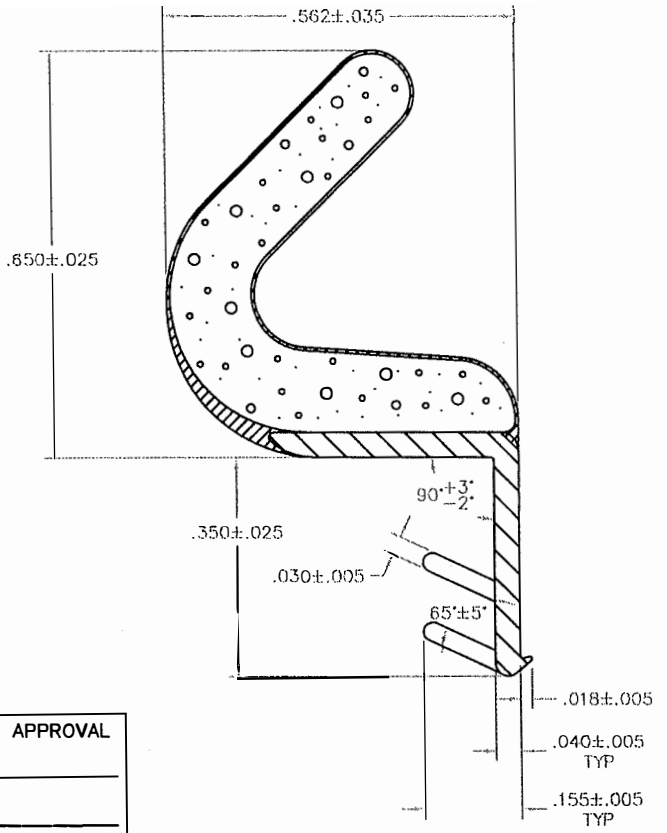
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 E4H HINGE.SLDPRT

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DWG NO. 12001

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DWG: 32 of 36
NOV 29 2005
PROJECT #: 3057492
REVIEWED BY: *DM*

CUSTOMER APPROVAL _____
DATE _____

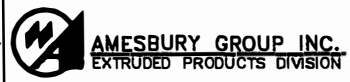
FD003 | SD014 | CD007

REVISIONS	
1.	
2.	
3.	
4.	
5.	
6.	

DRAWN	DATE	CHK'D	SCALE:
RCH	2/18/93		5/1

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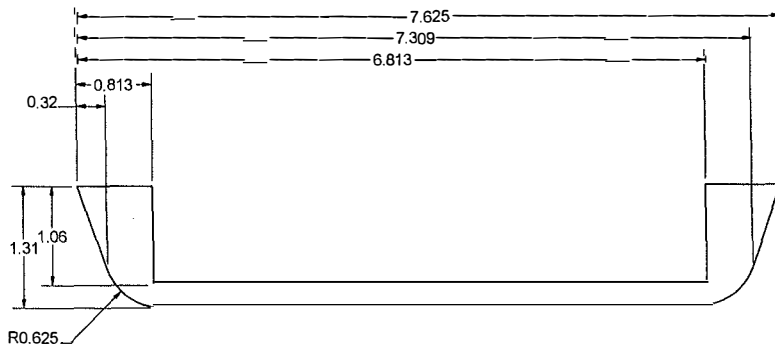
TITLE:
.650 HINGED DOOR SEAL



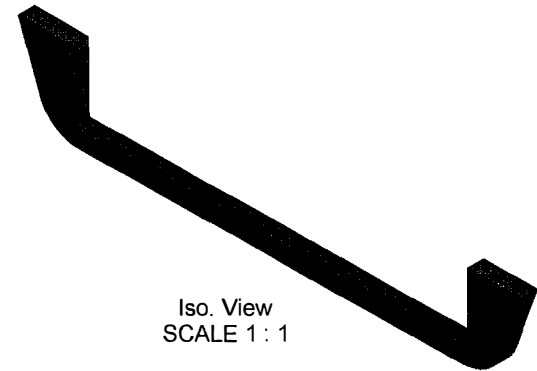
57 Hunt Rd.
Amesbury, MA 01913

Dwg. or Part No.	REV.
12001	3

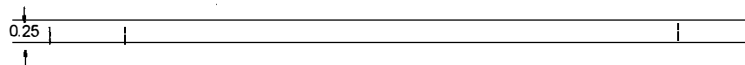
Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	Eclipse Gasket Seal	1/4" closed cell neoprene c/w PSA backing (DK4111)



Face View
SCALE 1 : 1



Iso. View
SCALE 1 : 1



Bottom View

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DWG:.....33..... of36.....

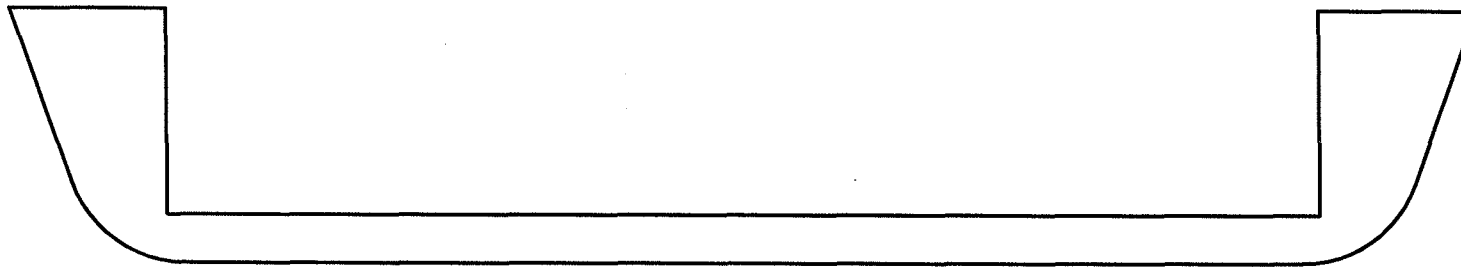
NOV 29 2005

PROJECT #:.....3057492.....

REVIEWED BY:.....*Th*.....

Gasketech Ltd.
105 - 190 Mills Road,
Kelowna, B.C., Canada,
V1X - 4G7

DRAWN Joerg	11/08/2005	TITLE Eclipse Gasket Seal	
CHECKED		SIZE C	DWG NO
QA		SCALE	REV
MFG		SHEET 1 OF 1	
APPROVED			



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DWG: 34 of 36

NOV 29 2005

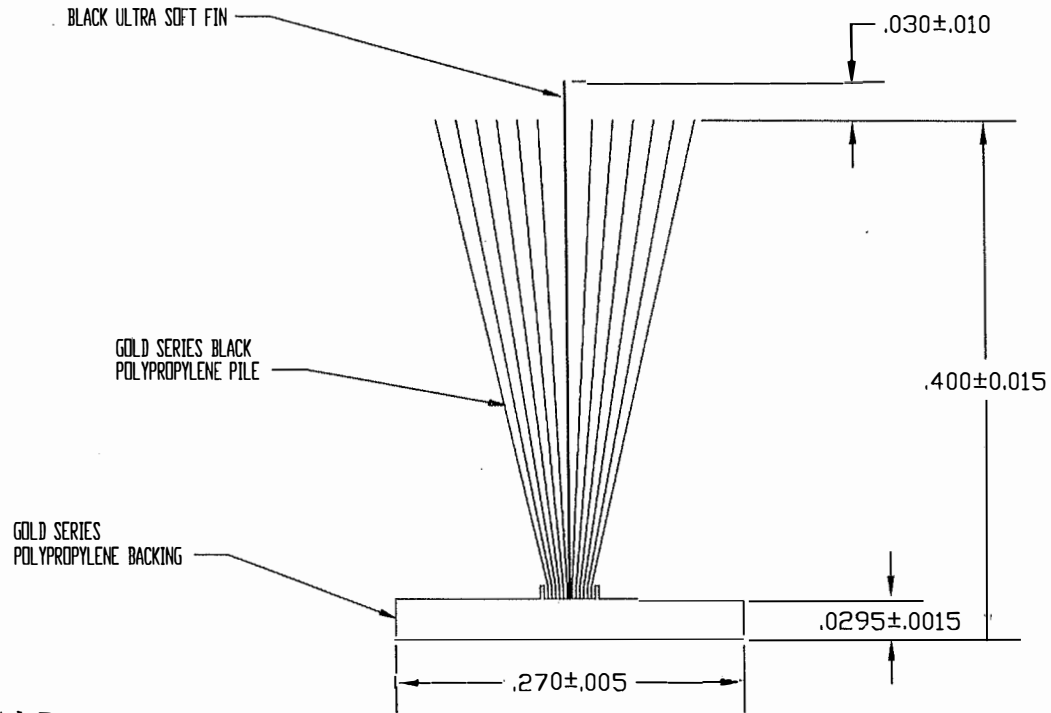
PROJECT #: 3057492

REVIEWED BY: Jh

Face View
SCALE 1 : 1

DRAWN Joerg	11/08/2005	TITLE <h1>Eclipse Hinge Gasket Seal</h1>		
CHECKED	C.K.			
QA				
MFG	Gasketech			
APPROVED				
		SIZE A	DWG NO	REV
		SCALE	SHEET 2	OF 2

G31405NK



1-1 Scale

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DWG: 35 of 36

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PROJECT #: 3057492

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	APPROVALS	DATE		
MATERIAL	DRAWN	JMB	10/18/05	SIZE
POLYPROPYLENE	CHECKED			B
FINISH	PROJECT LEADER			FILE NAME
	ENGINEER			G31405NK
				DO NOT SCALE DRAWING
				REVISIONS
				SCALE NTS
				SHEET

- ① DIMENSIONS: 787 mm X 2578 mm (31" x 101.1/2")
- ② OUTBOARD: 5mm CLEAR ANNEALED / 2.286mm SAFETY PLUS ® II / 5mm CLEAR ANNEALED
(3/16" CLEAR ANNEALED / 0.090" SAFETY PLUS ® II / 3/16" CLEAR ANNEALED)
- ③ AIRSPACE: 1/2" SPACER WITH STANDARD CLEAR ANODIZED SPACER BAR; DUAL SEAL SILICONE
- ④ INBOARD: 5mm CLEAR TEMPERED GLASS (3/16")
- ⑤ INTERLAYER FOR OUTBOARD HAS A 1.1/2" WIDE PIECE OF POLYETHYLENE TEREPHTHALATE.
(P.E.T. AROUND PERIMETER OF OUTBOARD GLASS SANDWICHED BETWEEN LAMINATE)

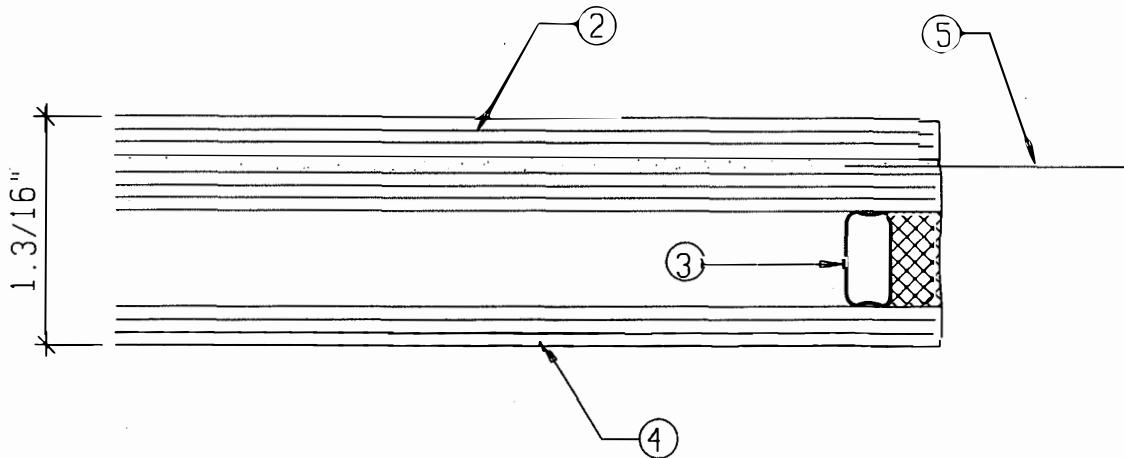
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DWG:.....36..... of36.....

NOV 29 2005

PROJECT #:.....3057492.....

REVIEWED BY:.....*Jm*.....



 ADVANCED GLAZING SYSTEMS LTD. 8315 RIVERBEND COURT BURNABY B.C. V3N 5E7 TEL: 604 521-4449 FAX: 604 521-4433	
PROJECT:	JOB #
E4 SERIES BI-FOLD DOORS	05:077
EXTRUSION #	
FINISH: CLEAR GLAZING	
DESCRIPTION: INSULATED GLASS UNIT	
OWN BY: NC	CHK BY:
DATE ISSUED TO SHOP:	
RELEASE #	
SHEET #	GU-1.0
PAGE #	1 OF 1

APPENDIX C
(Photograph – 1 page)