

NATIONAL CERTIFIED TESTING LABORATORIES

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STRUCTURAL PERFORMANCE TEST REPORT

Report No.: NCTL-210-3000-1A
Test Date: 10/15/04
Report Date: 10/05/07

Client: *Bevel King Door and Glass Company*
8145 Troon Circle, Suite D
Austell, GA 30168

Test Specimen: *Bevel King Door and Glass Company's Wood Double Entry Door*
74" x 97" DP +50/-50 (+50 Positive, -50 negative)

Test Method: *ASTM E283-91, "Test Method for Determining the Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors under Specified Pressure Differences across the Specimen." ASTM E330-02, "Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference." ASTM E331-00, "Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference."*

TEST SPECIMEN DESCRIPTION

Model Designation: *Bevel King Door and Glass Company's Wood Double Entry Door*

Overall Size:

Main Frame 74" x 97" overall

Configuration:

All Specimens: XX

Frame Construction: *The test specimen was a one (1) lite, one (1) panel embossed in-swing wood double door/frame assembly measuring 74" wide by 97" high overall. The door leaf measured 36" wide by 96" high. The panel stiles and rails were constructed of wood measuring 7.5" wide for the panel stiles, 8.5" wide for the bottom rails, 6.75" for the active top rail and 6.25" for the astragal panel top rail and 7" for the mid rail. The mainframe was of coped /butted construction employing an aluminum adjustable sill with a wood insert underneath that was secured with three (3) 0.375" x 1.5" staples and one (1) #8 x 2" Phillips flat head counter sunk wood screw on the sill corners and four (4) 0.375" x 1.5" staples and one (1) #8 x 2" Phillips flat head counter sunk wood screw at each top corner. The door panel stiles and rails were of butted construction held together with PI-120 (D4/B4-2 Component Polymer Isocyanate) water resistant glue and 0.625" diameter x 4.75" long wood dowels: three (3) from the astragal door panel stiles to the top and mid rails 1.5" from the top of the top rail then 1.5" on center thereafter, 2" on center from the bottom of the mid rail and 1.5" on center thereafter; four (4) from the door panel stiles to the bottom rail bottom 2" from the bottom then 1.5" on center thereafter. The active door panel had three (3) each at the top and mid rails, 2.25" on center*

Frame Construction (Cont'd):

from the end then 1.25" on center thereafter; five (5) from the bottom rail 1.5625" on center from the end then 1.25" on center thereafter.

Glazing: The overall insulated glass thickness was 0.625" consisting of 0.125" outer layer tempered glass / 0.375" air space created by a Swiggle spacer system / 0.1875" thick beveled annealed glass in the center of the air space separated by an aluminum true muntin frame held together at each joint with tack welds / 0.125" outer layer tempered glass.

Glazing Material: Sika Flex 552 Sealant

Glazing Method: The inserts were interior glazed using structural silicone with a wood glazing bead.

Daylight Opening: Each panel contained one (1) lite measuring 21" wide by 66" high.

Weatherseals: Wood stops employing a vinyl wrapped foam weatherseal were mounted at the head and each doorjamb. The door leaf of the astragal panel employed a rigid vinyl sweep containing four (4) flexible vinyl leaves that were attached with thirteen (13) #8 x 1.25" Phillips flat head drywall screws. The door leaf of the active panel employed a rigid vinyl sweep containing five (5) flexible vinyl leaves that were attached with nine (9) 0.1875" staples. One (1) 1.625" x 1.625" dust pad was located at the top and bottom of the astragal.

Hardware: Both door panels contained four (4) steel hinges measuring 4" long. The passage/deadbolt was manufactured by Kwikset and located 50.25" from the top of the door leaf. Both panels contained 8" surface bolts at the bottom and 6" surface bolts at the top located 2.75" on center from each end. Each surface bolt was secured with four (4) 0.25" x 3" Phillips slotted pan head machine bolts with washer and nut. The astragal door panel contained a wood astragal secured with ten (10) 1" finish nails around both astragal dead bolt locks and three (3) 2.5" finish nails; one (1) located 7.25" from each end and one (1) located 55.25" from the top. Both astragal bolt locks were located 3" on center from both ends.

Weeps: None.

Reinforcement: None.

Sealant: Sealant was used to seal the main frame to the test buck on both sides.

Insect Screen: None.

Installation: The mainframe was installed to the wood test buck using eighteen (18) #10 x 2.5" Phillips flat head wood screws; six (6) on the left jamb, four (4) on the right jamb, five (5) on the head and two (2) on the sill.

Interior & Exterior Surface Finish: Natural Mahogany Wood Finish.


10/25/07

TEST RESULTS
Air Infiltration Tests

Air Infiltration Tests were conducted in accordance with ASTM E283-91.

Specimen # 1

Air at 1.57psf

Out-swing

| | |
|---------------------------|--------------------------|
| <u>Actual</u> | <u>Allowable</u> |
| 0.001 cfm/ft ² | 0.30 cfm/ft ² |

Water Infiltration Tests

Water Infiltration Tests was conducted in accordance with ASTM E331 -00.

Specimen#1 Out-swing WTP = 7.5psf (15) minute duration passed No Entry

Static Air Pressure Tests ASTM E 330-02

| <u>Design Load</u> | <u>+ 50.0 psf, - 50.0 psf</u> | | <u>Measured</u> | <u>Allowed</u> |
|-----------------------|-------------------------------|-----------------|-----------------|------------------|
| <u>Positive Loads</u> | <u>Time (Sec.)</u> | <u>psf Load</u> | <u>Def.</u> | <u>Perm. Set</u> |
| 1/2 Test | 30 | 37.5 | | |
| Design | 30 | 50.0 | | |
| Test | 30 | 75.0 | Loc#1 0.017" | 0.384" |
| | | | Loc#2 0.013" | 0.144" |
| | | | | |
| <u>Negative Loads</u> | <u>Time (Sec.)</u> | <u>psf Load</u> | <u>Def.</u> | <u>Perm. Set</u> |
| 1/2 Test | 30 | 37.5 | | |
| Design | 30 | 50.0 | | |
| Test | 30 | 75.0 | Loc#1 0.021" | 0.384" |
| | | | Loc#2 0.021" | 0.144" |

Loc #1 Maximum Allowable Permanent Set (0.4% of 96" span) =0.384"

Loc #2 Maximum Allowable Permanent Set (0.4% of 36" span) =0.144"

Loc #1 Astragal

Loc #2 Top Rail of Active Door

FORCED ENTRY RESISTANCE TEST

| <u>Par. No.</u> | <u>Title of Test</u> | <u>Measured</u> | <u>Allowed</u> |
|-----------------|------------------------------|-----------------|----------------|
| 3603.2 | Tool Manipulation 300 lbs | Meets as Stated | |

The specimen tested meets the criteria of Chapter 36 of the Florida Building Code for Forced Entry Resistance.

Note: All forces were attached to the active door panel within 3" of the locking devices in the direction that it would tend to be opened and simultaneously and perpendicular.

At the conclusion of testing, no damage to the specimen or hardware was observed.


Pull test forces of 300 lbs were achieved by use of geared pull along devices and measured with Dillon Force Gauges.

TEST COMPLETED 110/01/04

Note: A 2 mil. Polyethylene film was used on the cycle tests and it is the opinion of the undersigned that they had no influence on the results of these tests.

Disclaimer: This test report was prepared by National Certified Testing Laboratory (NCTL), for the exclusive use of the above named client; it does not constitute certification of this product. The results are for that particular specimen tested and does not imply the quality of similar or identical products manufactured or installed from specifications identical to the tested product. NCTL is a testing lab and assumes that all information provided by the client is accurate and does not guarantee or warranty any product tested or installed.

Detailed drawings were available for laboratory records and compared to the test specimens at the time of this report. A copy of this report along with representative sections of the test specimens will be retained by NCTL for a period of four (4) years. The results obtained apply only to the specimens tested. No conclusions of any kind regarding the adequacy or inadequacy of the glass in the test specimens may be drawn from this test. This report does not constitute certification of the product, which may only be granted by a certification program validator.


10/25/07

Observers: Mr. Brian Guertin (NCTL)
Mr. Daniel Ocasio (NCTL)
Mr. Gerry Ferrara (P.E.)

NATIONAL CERTIFIED TESTING LABORATORIES

DANIEL OCASIO
Laboratory Technician

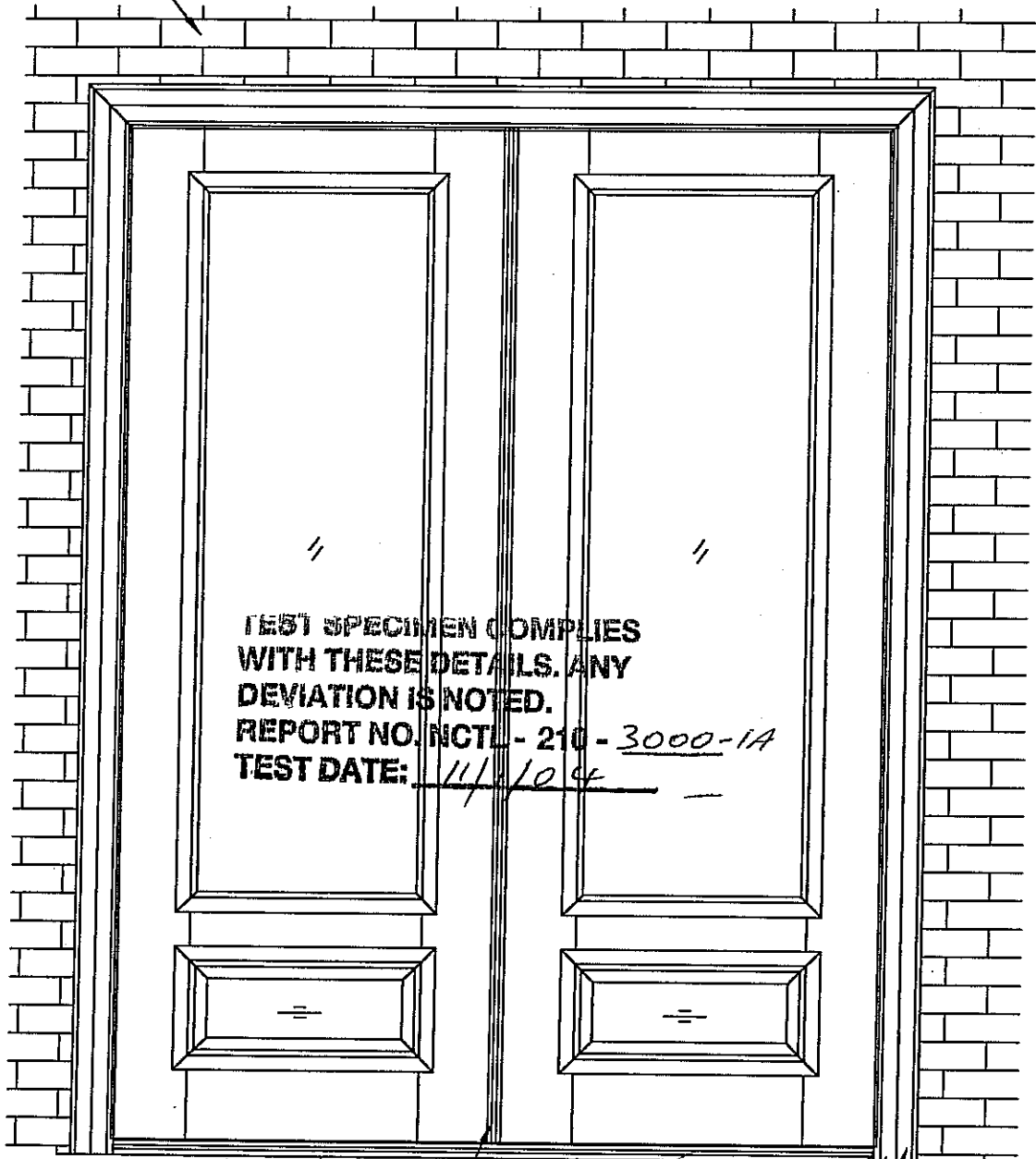
BRIAN GUERTIN
Manager of Testing Services

Gerald J. Ferrara, P.E.
Florida Registration No. 11985
Certificate of Authorization No. 2529
2865 Whitehurst Road
Deland, Florida 32720
(386) 734-8792 - PHONE
(386) 734-8692 - FAX
DO/mjt



10/25/07

Brick Veneer



TEST SPECIMEN COMPLIES
 WITH THESE DETAILS. ANY
 DEVIATION IS NOTED.
 REPORT NO. NCTL - 210 - 3000-1A
 TEST DATE: 11/10/04

Threshold

T-Astragal

4 9/16" Jamb

1" x 4" Casing

Brickmould

BEVEL KING



BEVEL KING®

PREMIUM HARDWOOD DOORS

Door Size: 36"x96"x1 3/4" #802167 3/4 Lite Door

Material: Meranti

Double-Door Front Elevation

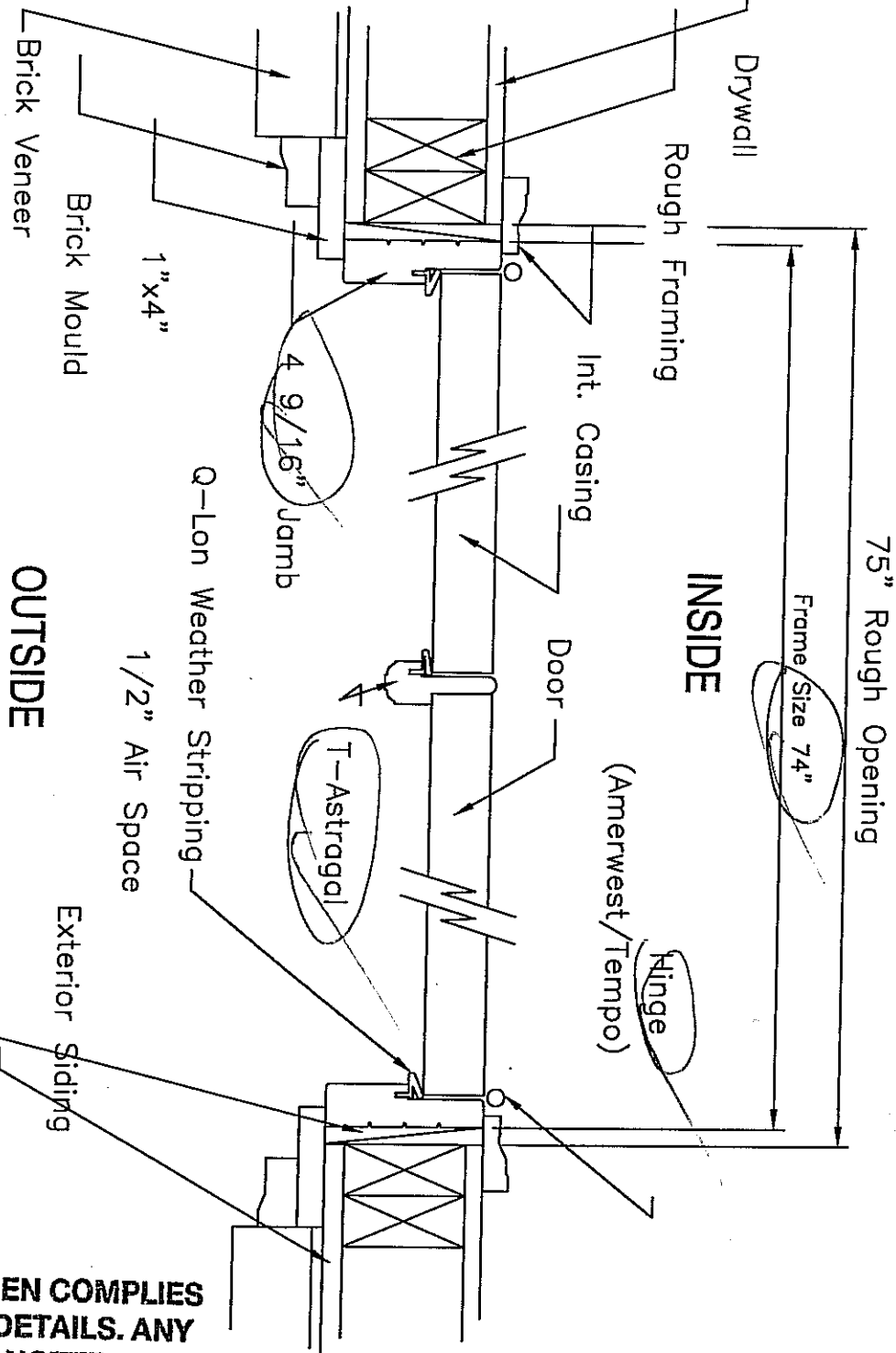
5455 Guhn Road
Houston, TX 77040

713-460-0045 (voice)
713-460-2646 (fax)

Dwg. No.

Front Elevation

Rev:



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TEST DATE: 11/1/04



BEVEL KING®

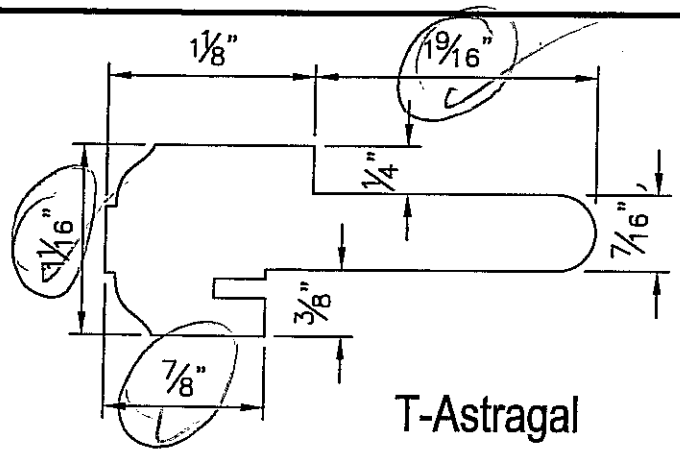
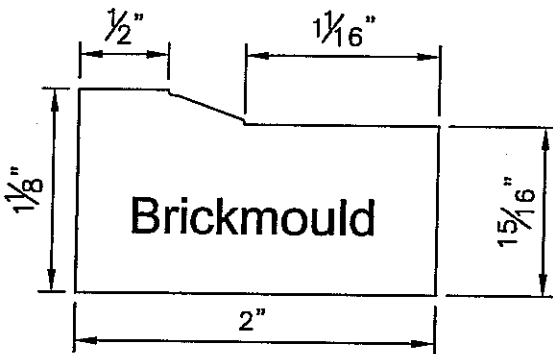
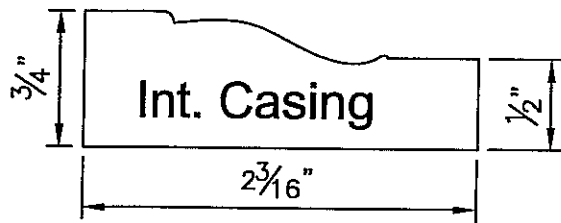
PREMIUM HARDWOOD DOORS

Unit Size: 74" x 98 1/2" x 4 9/16"

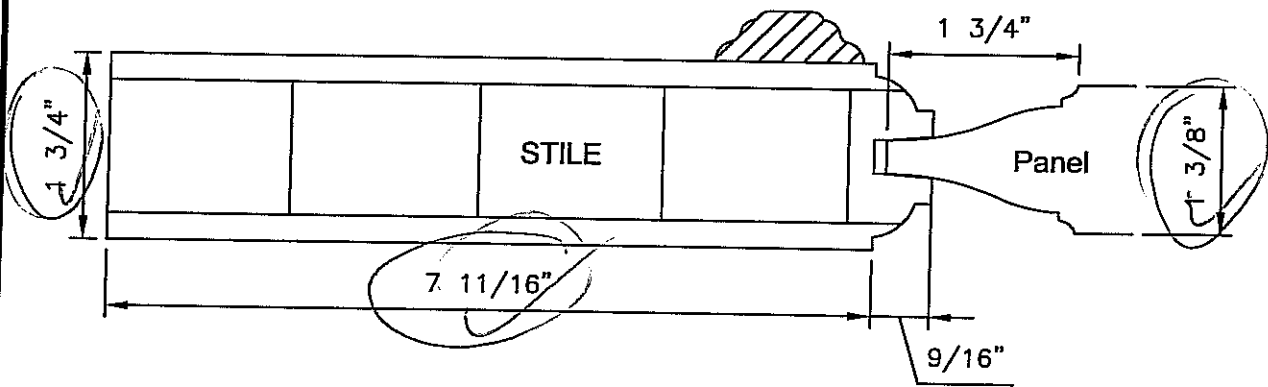
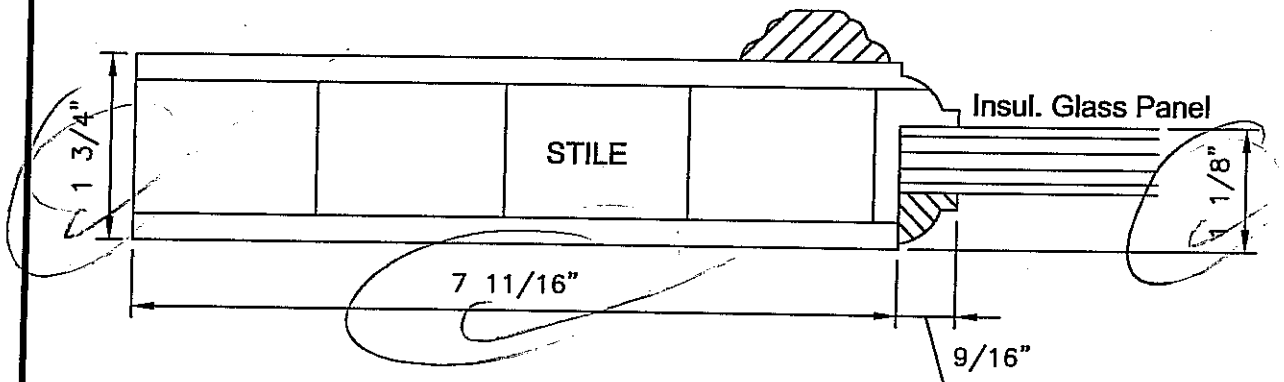
Door Size:

Material: Meranti

Double Door Assembly Plan



TEST SPECIMEN COMPLIES WITH THESE DETAILS. ANY DEVIATION IS NOTED.
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 TEST DATE: 11/1/04



BEVEL KING®

PREMIUM HARDWOOD DOORS

Door Size:

Material: Meranti

Double-Door Component Details

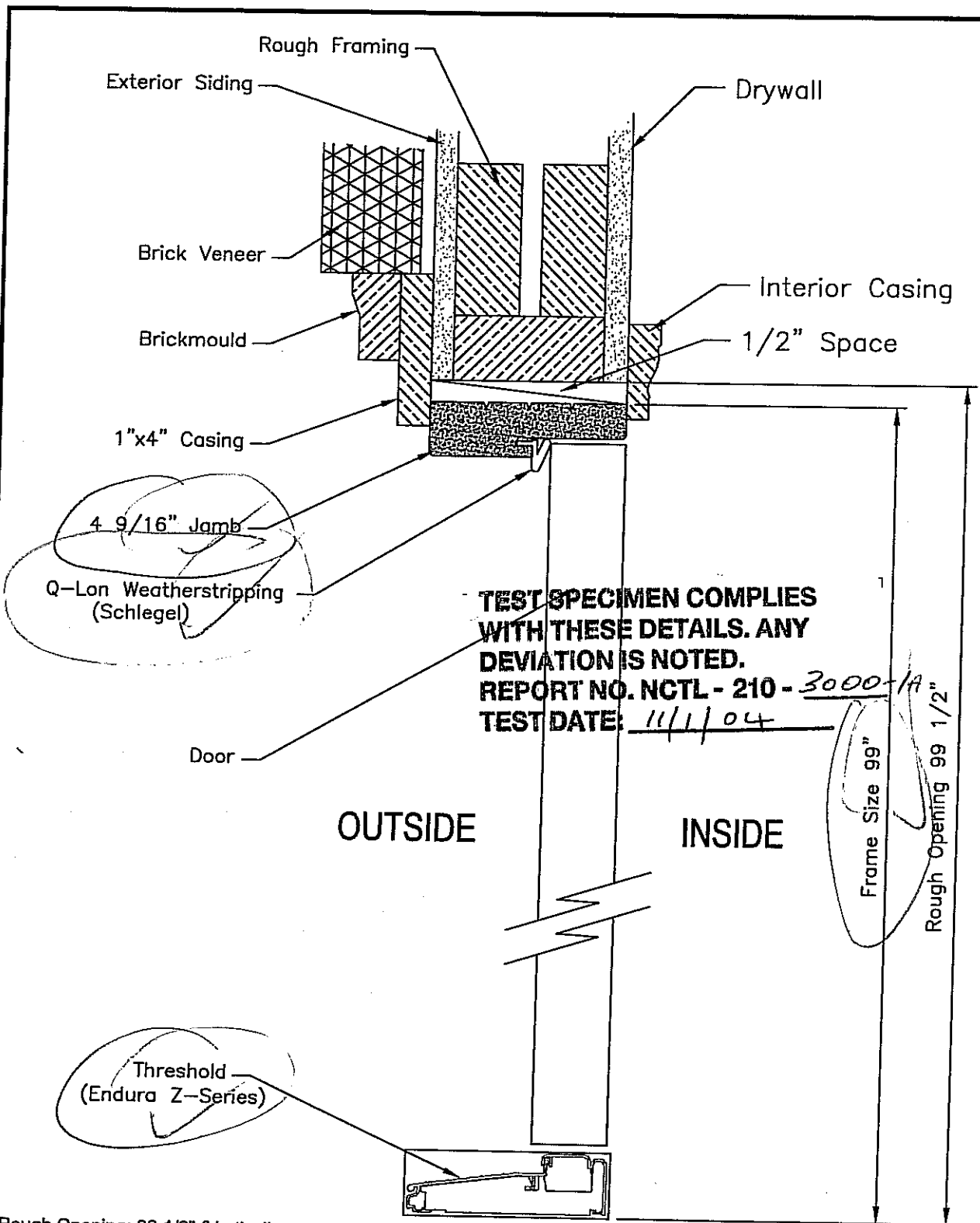
5455 Guhn Road

713-460-0045 (voice)

Dwg. No.

Component Details

Rev:



Rough Opening: 99 1/2" (Vertical)
 Frame Size: 99"

Unit Size: 74" x 98 1/2" x 4 9/16"

Door Size:

Material: Meranti

5455 Guhn Road

713-460-0045 (voice)



BEVEL KING®

PREMIUM HARDWOOD DOORS

Double-Door Section Elevation

Dwg. No.

Section Elevation

Rev:

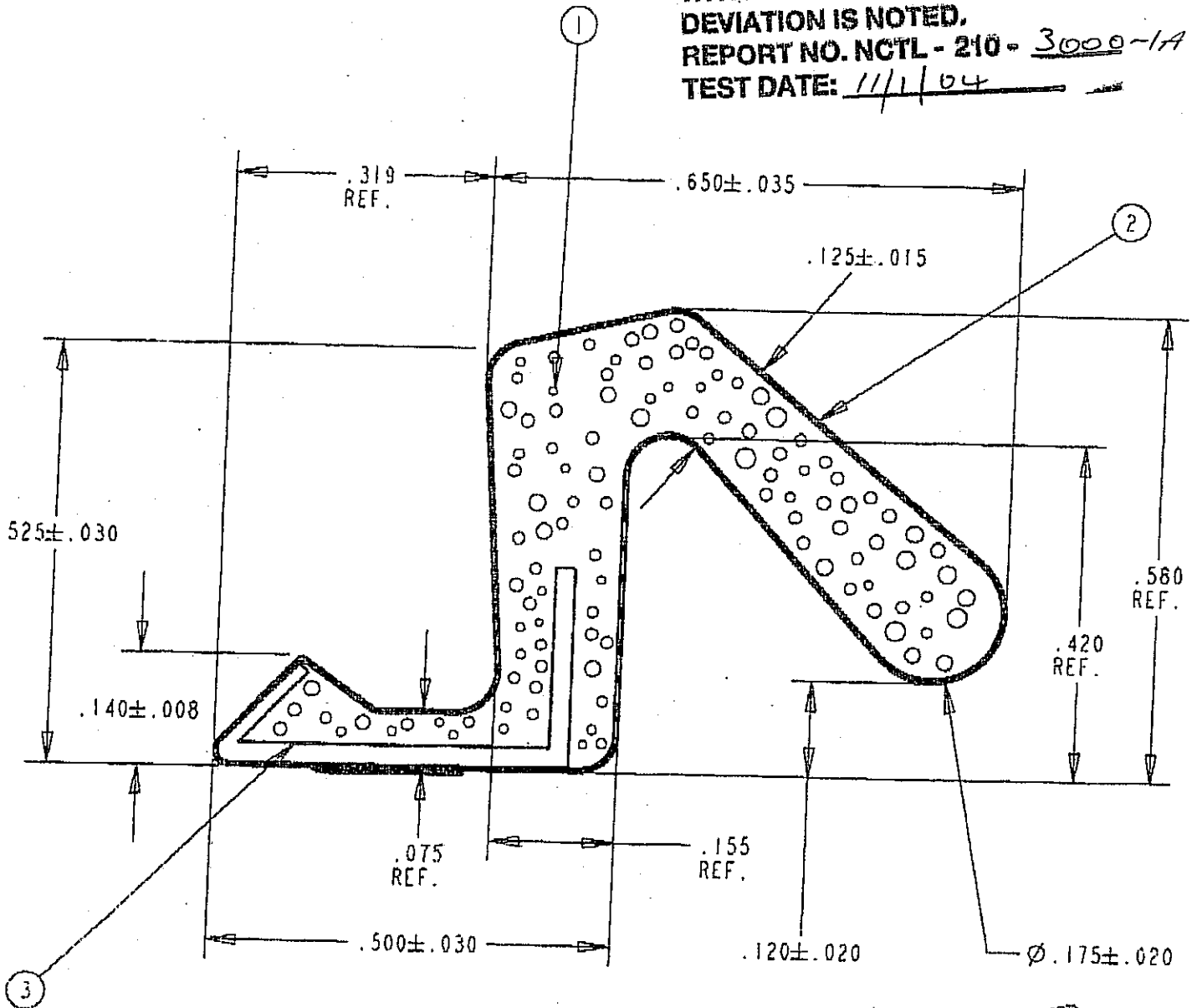


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| REVISIONS | | |
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| J | REV TO PRO-E | 11/20/98 |
| K | REV PER ECO 2149 | 4/4/00 |

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SCALE 1.000

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DECIMAL DIMENSIONS ± UNLESS OTHERWISE SPECIFIED
 mm. □ In. ☒

| | | | |
|-----------|---|------------|-----------------|
| 13-Nov-98 | 3 | SEE B.O.M. | INSERT PP200523 |
| | 2 | SEE B.O.M. | LINER |
| | 1 | SEE B.O.M. | URETHANE FOAM |

| | | | |
|-------------------------|-----------|---------------|----------------------------------|
| SHEET 1 OF 1 | ITEM | R. M. NUMBER | MATERIAL DESCRIPTION |
| DRAWING SCALE: 5.00 : 1 | APPROVED: | CHECKED: | DRAWN: E.J.L. TITLE: QDS/CDS-650 |
| AD FILE | PART 1103 | DRW 110300105 | |



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PRODUCT PRINT

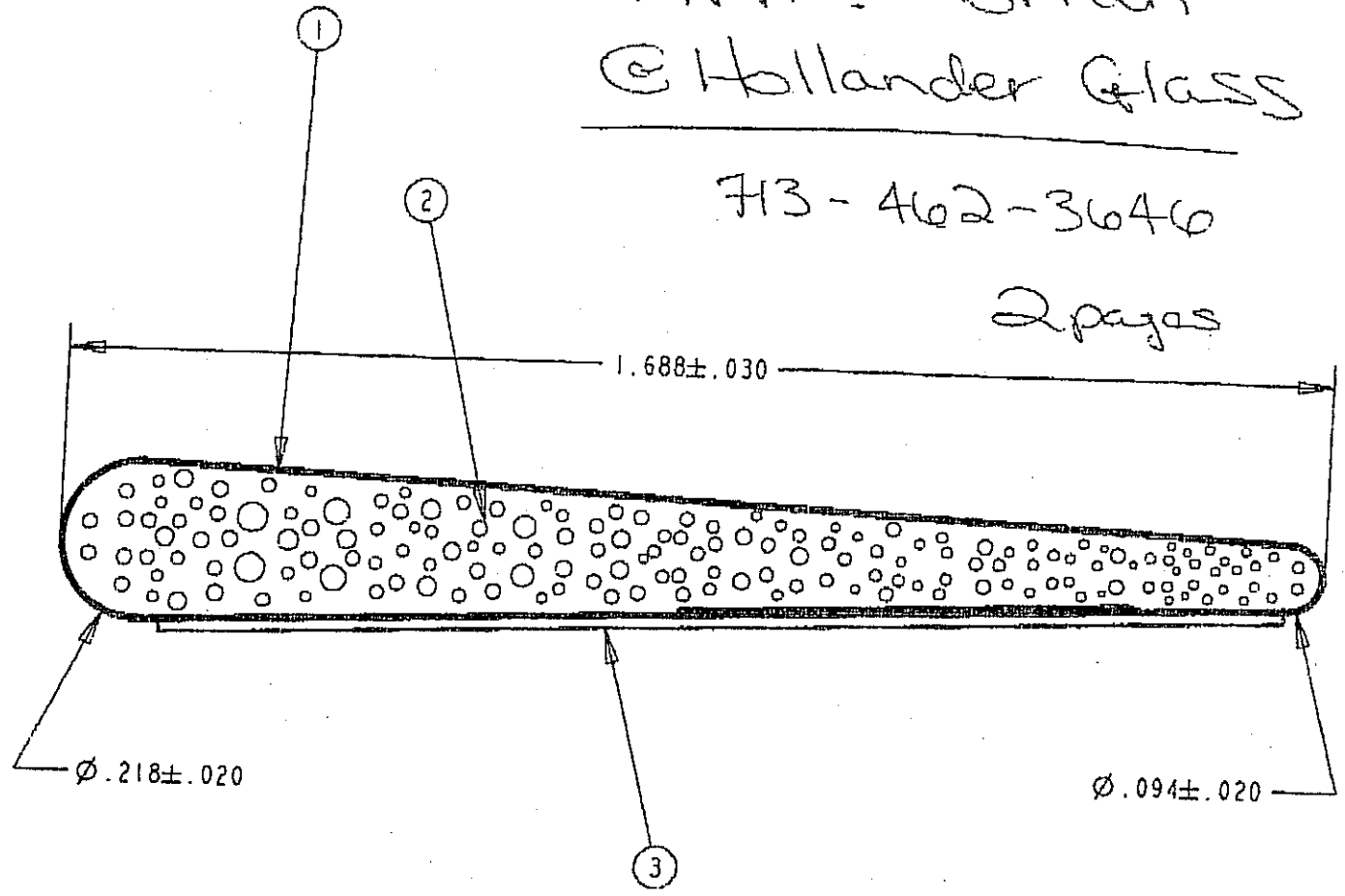
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| LEV | DESCRIPTION | DATE |
| D | REV TO PRO E | 10/18/99 |

Attn: Brian
@ Hollander Glass

713-462-3646

2 pages



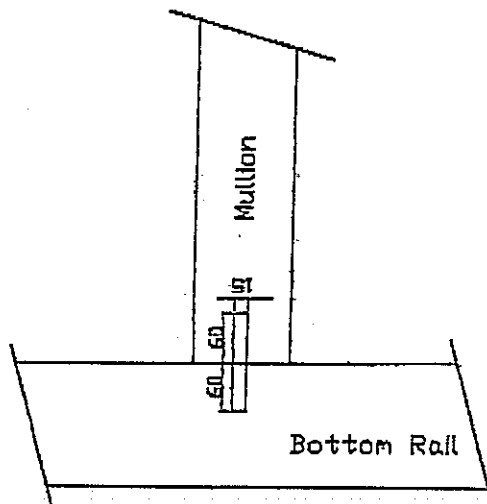
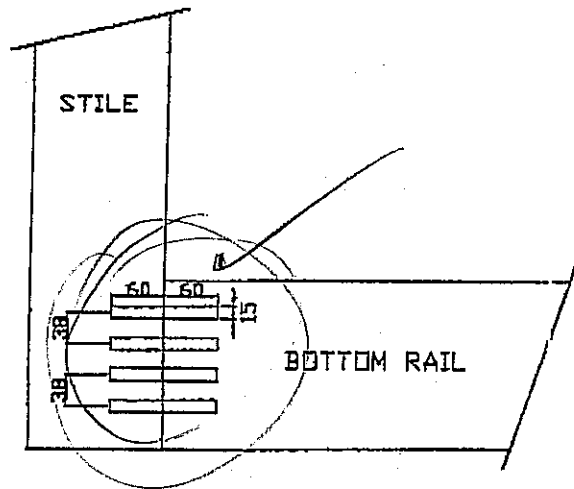
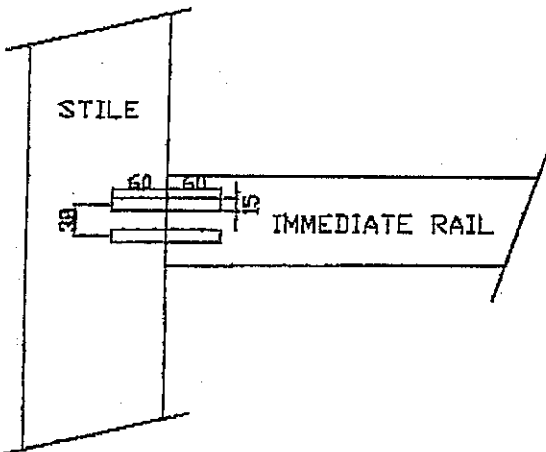
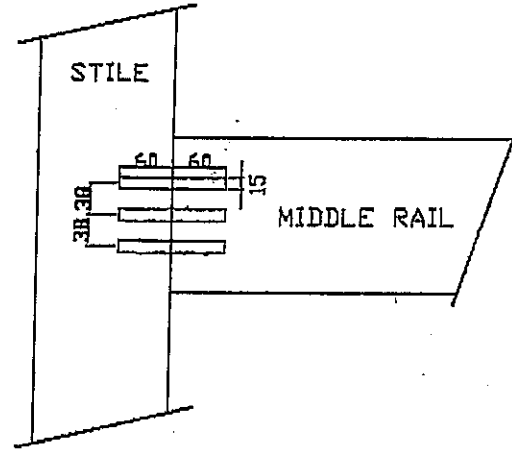
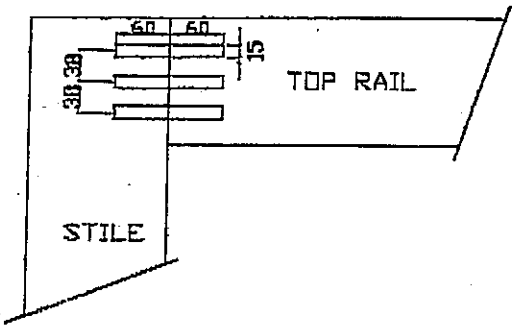
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TEST DATE: 11/1/04

DO NOT SCALE DRAWING

| DECIMAL DIMENSIONS ± UNLESS OTHERWISE SPECIFIED | ITEM | R. M. NUMBER | MATERIAL DESCRIPTION |
|---|---------------|--------------------|---|
| mm. <input type="checkbox"/> 1 in. <input type="checkbox"/> | 3 | R2855-150-4 | 3M 950 ADHESIVE 1.50" WIDE |
| 18-0c1-99 | 2 | SEE B.O.M. | LINER |
| SHEET 2 OF 2 | 1 | SEE B.O.M. | URETHANE FOAM |
| DRAWING SCALE: 4.00 : 1 | CHECKED: | DRAWN: E.J.L. | TITLE: Q-LON CORNER SEAL/Q-FOAM CORNER SEAL |
| APPROVED: | PART NO.: U61 | DRW. NO.: UP300331 | |

FX04-03-9187
Pg 2/7

DOWEL POSITION.



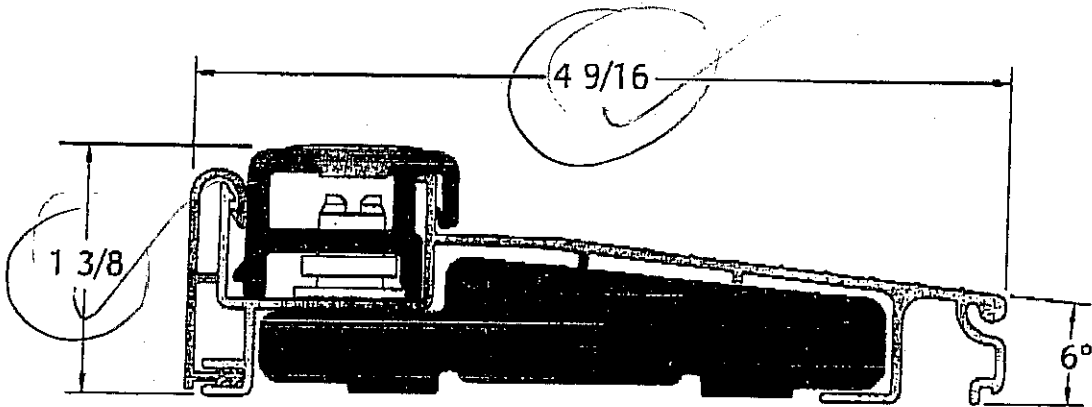
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59055

Z Series Adjustable Inswing Sill



ZAI4566

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TEST DATE: 11/1/04

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