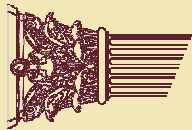
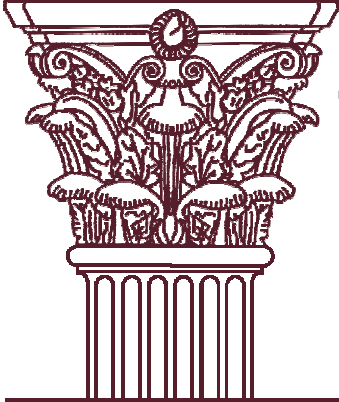


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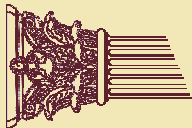
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August 27, 2001

Engineering Report 21166-1

Structural Performance Tests
Timeless Architectural Reproductions, Inc.
Cambridge Rail and Balustrade System

SUMMARY

Structural performance testing was carried out on an assembly of Timeless Architectural Reproductions, Inc. composite railings. Concentrated or distributed loads were applied to the top rail and balusters. The railing was attached to cement flooring using furnished standard connectors and fasteners, which were installed in accordance with the manufacturer's instructions. The rail assembly was then loaded in each specified manner of the test procedure. Component deflections under load were monitored and documented. The testing was based on the "American Society of Civil Engineers" (ASCE) *Minimum Design Loads for Buildings and Other Structures* Section 4.4.2 (a) (ASCE 7-98) (referenced by Building Officials & Code Administrators International, Inc. - BOCA).

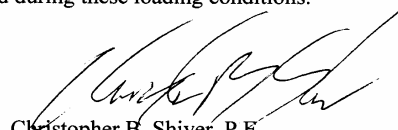
The test used one nominal 108-inch wide by 40-inch high railing. The balustrade assembly included 25-3/4-inch long balusters attached to a standard style top rail and bottom rail. The synthetic turned balusters were spaced on approximately 7-inch centers.

The one furnished Timeless Architectural Reproductions, Inc. rail assembly that was tested withstood loads that exceeded the design requirements for each of the specified loading conditions based on the above referenced Section 4.4.2 (a) ASCE 7-98. Minimal deflections were observed during these loading conditions.

Respectfully submitted,



Phillip B. Plyler
Staff Engineer



Christopher B. Shiver, P.E.
Vice President – Principal Engineer



TECHNICAL SOCIETIES

American Concrete Institute
American Society for Testing & Materials
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