

## **H. GILROY DAMON ASSOCIATES, INC.**

CONSULTING CIVIL ENGINEERS AND LAND SURVEYORS

David P. Damon, P.E.

H. Gilroy Damon, Jr., P.E., P.L.S.

A.F. Damon, Jr., P.E.  
(1894-1954)

H. Gilroy Damon, P.E.  
(1924-1981)

October 21, 2005

Darby Historical Commission  
c/o John W. Haigis  
1006 Main Street  
Darby, PA 19023

RE: SEPTA Trolley Bridge  
Darby Borough, Delaware County, PA

Dear Mr. Haigis:

At your request, H. Gilroy Damon Associates, Inc. has performed an evaluation of the former Trolley Bridge over Darby Creek at the Darby Transportation Center on Main Street in Darby Borough. The purpose of the evaluation was to determine if it is feasible for the bridge to stay in service as a pedestrian bridge.

The Trolley Bridge consists of a single span Warren type truss structure with an elevated deck through the trusses. The structure is of riveted steel construction and reportedly dates back to 1904. At some time the deck was converted for vehicle use.

The structure shows some signs of aging but is in overall sound condition. The abutments appear to be in good condition despite being subjected to floodwaters of Darby Creek on an ongoing basis.

The bottom of the trusses is inundated by the 10-year frequency flood. The 50-year and above flood completely submerges the elevated deck. Although the structure obstructs the floodplain, its effect on the flood elevations upstream is minimal. The downstream bridge carrying Chester Pike over Darby Creek is a much more significant obstruction. The backwater formed from the Chester Pike obstruction influences the elevation upstream of the Trolley Bridge. The published Flood Profiles from the Flood Insurance Study indicate that the effect of the Trolley Bridge is negligible for the 10-year flood. For the 50 and 100-year flood the trolley bridge obstruction causes an increase in flood elevation of about 4-inches.

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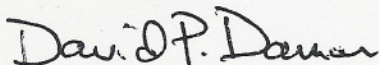
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Darby Borough, Delaware County, PA

Based on the above, it is our professional opinion that converting the trolley bridge to pedestrian and bike only use is a feasible option. Structurally the bridge is more than adequate to provide a serviceable life for this type of loading. The bridge's influence on the flooding is very minimal and should not rationally factor into the decision making process.

Please contact me if you have any questions concerning the above.

Very truly yours,

H. GILROY DAMON ASSOCIATES, INC.

A handwritten signature in cursive script that reads "David P. Damon".

David P. Damon, P.E.

DPD/kec