

September 24, 2009

Gregory Sandusky, P.E., P.L.S., County Engineer
Office of the Mercer County Engineer
Department of Transportation & Infrastructure
Engineering Division
McDade Administration Building
640 South Broad Street, Room 301
P.O. Box 8068
Trenton, NJ 08650-0068

Attn: Mr. Basit Muzaffar, P.E.
Principal Engineer

**Re: Inspection of 59 On and 1 Off-System Mercer County Bridges
BR-NBIS(751) and BR-Z-NBIS(752) Group 11A7
Agreement No. 2007BI634E, 2nd Cycle, Addendum No. 1
Structure No. 1100-060; County Structure No. 214.2
Bear Tavern Road (CR 579) over Jacobs Creek; Mile Post 4.47
Hopewell Township, Mercer County
Recommendation for closing of bridge**

Dear Mr. Sandusky:

This letter is a follow up to the phone conversations we have had within the last couple of days in reference to the above bridge. Bear Tavern Road Bridge over Jacobs Creek was inspected as part of a routine inspection on July 15, 2009. The condition assessed in the previous cycle as well as current inspection is serious due to heavy section loss of the superstructure elements and critical due to very low load ratings of the bridge (the bridge is posted for 3 tons load limit). At the request of Mr. Basit Muzaffar who observed excessive deflection when heavier truck crossed the bridge, we revisited the bridge on September 15, 2009. Engineers from IH team and Mr. Muzaffar of Mercer County noted that heavier truck (>3 tons) were going over the bridge. This is considered a serious violation and cannot be ignored, since repetitive heavy loading will cause fatigue and eventually bridge failure. While at the bridge, we took sufficient measurement of section losses in the controlling member and recomputed the load capacity based on the previous load computations provided by Mercer County. We assumed all the other data of the previous calculation is valid except section losses. The inventory ratings for H15 (1 ton), HS20 (2 ton) and Type 3 (2 ton) trucks fall below the load posting. The operating rating for H15 truck (2 tons) falls below the load posting also. For legal truck type 3, the operating rating equals the load posting. For other trucks the operating rating varies from 4 tons to 6 tons. The load rating indicates that there is no additional capacity available between the calculated rating for legal load (Type 3) and the load posting.

It is our opinion that due to the frequent use of the bridge by vehicles heavier than posted load (failure of the load limit enforcement), serious condition of the structure, low ratings (H15 operating rating below load posting) the bridge will not be able to sustain the forces from repetitive overload (causing fatigue in steel) for much longer period. The bridge should be **closed immediately** until a major rehabilitation to improve the load carrying capacity of the bridge or a complete replacement of the bridge is accomplished. We also like to add that this is a fracture critical bridge. The spacing of the floorbeam (controlling member) is about 12 ft. Failure of any floorbeam will cause catastrophic failure and may result in loss of life.

Mr. Gregory Sandusky, P.E.
Page – 2

If you have any questions or require additional information please call me.

Very truly yours,
IH ENGINEERS, P.C.



Iftekhar Hossain, P.E.
Project Manager

c: Gregory Renman/ Robert Flannegan, NJDOT Structure Evaluation

Approved as to Form and Legality

Date


 County Counsel

September 10, 2009

MERCER COUNTY BOARD OF CHOSEN FREEHOLDERS CONCURS WITH HOPEWELL TOWNSHIP ORDINANCE NO. 09-259, ADOPTED AUGUST 10, 2009, BY THE HOPEWELL TOWNSHIP COMMITTEE ACCEPTING A PORTION OF COUNTY ROUTE 579 (BEAR TAVERN ROAD) WITHIN THE HARBOURTON HISTORIC DISTRICT, HOPEWELL TOWNSHIP, MERCER COUNTY

WHEREAS, the Township of Hopewell Committee has requested to take over a portion of County Route 579 (Bear Tavern Road) from Harbourton Woodsville Road north to its present terminus, one thousand (1,000) feet north of Harbourton Mount Airy Road, Hopewell Township, County of Mercer; and,

WHEREAS, Hopewell Township has created the Harbourton Historic District and would like the flexibility to create/restore the original uniqueness of this historic district; and,

WHEREAS, the County of Mercer has agreed to give the Township of Hopewell jurisdiction of this portion of the roadway; now, therefore,

.....
 Clerk to the Board

RECORD OF VOTE													
FREEHOLDER	Aye	Nay	N.V.	Abs	Res	Sec	FREEHOLDER	Aye	Nay	N.V.	Abs	Res	Sec
Benson	X						Hamilton	X					
Cannon	X				✓		Walter	X					
Cimino	X					✓	Carabelli	X					
Colavita	X												

X—Indicates Vote Abs.—Absent N.V.—Not Voting
 Res.—Resolution Moved Sec.—Resolution Seconded

BE IT RESOLVED, that the Mercer County Board of Chosen Freeholders concurs with Township of Hopewell Resolution No. 09-258, adopted on August 10, 2009, for the purpose aforesaid; and,

BE IT FURTHER RESOLVED, that the Clerk to the Board shall forward two (2) certified copies of this Resolution to the Office of the County Engineer for distribution and a copy of this Resolution to the Director of the Mercer County Department of Transportation and Infrastructure.

I hereby certify this to be a true
copy of the original.

[Signature]
Mercer County Board of Freeholders

[Signature] Deputy Clerk to the Board