

The Corporation of the County of Peterborough
Load Limits on Bridges By-law
By-law No. 2017 – 03

Schedule “B”

December 8, 2015

The County of Peterborough
310 Armour Road
Peterborough, ON
K9H 1Y6

Attn.: Kendra Reid, C.E.T.
Senior Engineering Technician

RE: Quotation No. Q-07-201
Westwood Bridge
Structure #099021 – Centerline Road
Our File No. 130-3900

Dear Madam:

G.D. Jewell Engineering Inc. (GDJE) is pleased to present the evaluation result of Westwood Bridge located on Centerline Road, approximately 0.7km East of County Road 38 crossing West Branch of Ouse River, in the Village of Westwood, Township of Asphodel-Norwood, and County of Peterborough.

The Westwood Bridge, built in 1937, is a two span cast-in-place concrete T-beam structure with clear span of 7.31m each. The wearing surface is 50mm asphalt placed on top of 210mm thick concrete deck. The deck width is approximately 6100mm from curb to curb with an overhang sidewalk slab 1300mm wide each side. The sidewalk is protected with concrete post and beam gulderail.

The girder system consists of three concrete beams spaced 3125mm center to center and are simply supported on concrete abutments at East and West ends of the bridge and on a concrete pier at the center of the bridge. The size of the exterior two beams is 305mm in width and 852 in height. The central beam is 305mm wide by 648mm high.

The bridge has a two lane roadway. The legal speed limit is 50km/hour. The structure currently is not posted with a weight restriction.

Reference Information Used for the Evaluation

The following information was made available for the evaluation:

- Municipal Bridge Appraisal report for Westwood Bridge inspected on August 2, 2015.
- Deck Condition Survey report for Westwood Bridge conducted on September 14, 2015.
- Original construction drawing of the bridge dated June 15, 1937.

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- Condition information of the bridge based on a site visit by the evaluator on October 26, 2016.

Evaluation Standards

Section 14 of Canadian Highway Bridge Design Code (CHBDC) CAN-USA S6-14, was followed for the process of evaluation.

Section 3, 5 and 8 were followed to calculate the load effects and resistance capacity of the bridge.

The bridge was categorized as Highway Class C according to its traffic load as stated in the appraisal report.

Findings and Recommendations

The result of the calculations according to Clause 14.17.2(d), indicates that consideration shall be given to closing the bridge. To satisfy this requirement, the bridge should be scheduled for replacement within the next five years.

Although consideration could be given to the salvaging of the substructure as noted in the recent detailed deck condition survey report, due to the age of the structure, we are of the opinion that a complete bridge replacement would be more feasible.

Until the replacement is undertaken, GDJE recommends a load limit for gross vehicle weight of 5 metric tonnes to be posted for the structure.

We trust that this report meets the needs of the County and the requirements of the above-noted quotation. Please contact the undersigned if you have any questions or comments.

Sincerely,

Evaluated By:
Danny Wang, P. Eng
G. D. Jewell Engineering Inc.
Mississauga Office

Reviewed By:
Kasey Bartusevicius, P. Eng
G. D. Jewell Engineering Inc.
Mississauga Office



Attachment: Load Posting Calculations