



MEMORANDUM

Date: April 14, 2016

To: Matthew Leavitt, P.Eng.
Project Soils Engineer
Northwestern Region

Cc: A. DeSira, M.Eng., P.Eng.
Foundation Engineer
and
Ken Ahmed, P.Eng.
Senior Foundation Engineer
MERO-Pavement and Foundations Section

From: Stan E. Gonsalves, P.Eng.
Principal Engineer
Designated MTO Foundation Contact
exp Services Inc.

Re: Addresses on Comments on the Draft Foundation Investigation and Design Report
Cedar Creek Culvert No. 3 Replacement, Highway 590, Site No. 48W-154/C,
Township of O'Connor, District of Thunder Bay

Agreement No. 6014-E-0017, Assignment # 2
GWP 6348-14-00
MTO Geocres No. 52A-215

We are pleased to submit the Final Foundation Investigation and Design Report of the above noted project. The final report addresses all comments on the Draft Foundation Investigation and Design Report noted in the MTO letter of March 21, 2016. In particular, **exp's** responses to these comments are:

1. Exp's response to MTO Comment No. 1: *MTO GEOCRES No. 52A-215 is assigned to the Final Report and Foundation Drawings.*

FOUNDATION INVESTIGATION REPORT

2. Exp's response to MTO Comment No. 2: *Culvert construction year (1899) referenced on page 1 of FIR is replaced with unknown.*
3. Exp's response to MTO Comment No. 3: *The following sentence is added in Section 1.4.7, pg. 7 of the final report: Cobbles and boulders were noted to be contained within*



the till deposit; therefore their presence should be anticipated despite not encountering any within the layer in the boreholes.

FOUNDATION DESIGN REPORT

4. Exp's response to MTO Comment No. 4: *Culvert construction year (1899) referenced on Page 10 of the FIDR is replaced with unknown.*
5. Exp's response to MTO Comment No. 5: *The 10 m embedment is referring to 10 m below the creek bed level. The proposed tip elevation and minimum length have been added in Section 2.3.3.1, p.g. 15 of the final report.*
6. Exp's response to MTO Comment No. 6: *A paragraph is added in Section 2.3.3.1, pg.15 of the final report providing reference to the potential for encountering cobbles or boulders within the Till material and challenges associated with driving sheet piles through rockfill identified in Borehole 201.*
7. Exp's response to MTO Comment No. 7: *A paragraph is added in Section 2.3.3.1, pg.15 of the final report to clarify the inspection and testing requirements for installation of the sheet piles for the sheet pile culvert option.*
8. Exp's response to MTO Comment No. 8: *Agreed, the cofferdams, is to envelop temporarily a construction site. Therefore, the height requirement of the cofferdam has been updated in the final report to extend 1 m above the water level in creek at the time of construction (see Section 2.7, p.g. 28).*
9. Exp's response to MTO Comment No. 9: *Two Professional Engineers, Silvana Micic and Stan Gonsalves, who is exp's Designated Principal Contact identified for MTO Foundation Engineering Projects, signed and stamped the Final Foundation Investigation Report and the Final Foundation Investigation and Design Report.*

RECORD OF BOREHOLE LOGS

10. Exp's response to MTO Comment No. 10: *The note 2 has been removed from the borehole logs.*

We trust these responses satisfactory address the items raised after the MTO review. Should you have any questions, please do not hesitate to contact this office.

Yours truly,

A handwritten signature in cursive script, appearing to read 'Silvana Micic'.

Silvana Micic, Ph.D., P.Eng.
Senior Geotechnical Engineer
Project Manager

A large, stylized handwritten signature in cursive script, appearing to read 'Stan Gonsalves'.

Stan Gonsalves, M.Eng.,P.Eng
Principal Engineer
MTO Designated Contact