



## MEMORANDUM

**Date:** December 10, 2015

**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  
Kawawia Creek Culvert Replacement, Highway 502, Site No. 41S-244/C, District of  
Kenora  
Agreement No. 6014-E-0017, Assignment # 6  
GWP 6323-14-00  
MTO Geocres No. 52F-043

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 November 30, 2015. In particular, **exp's** responses to these comments are:

1. Exp's response to MTO Comment No. 1: *MTO GEOCRES No. 52F-043 is assigned to the Final Report and Foundation Drawings.*

### FUNDATION INVESTIGATION REPORT

2. Exp's response to MTO Comment No. 2: *The paragraphs 2 and 3 of Section 1.6 are moved to Section 2.11, pg. 25 and 26 of Foundation Investigation and Design Report.*

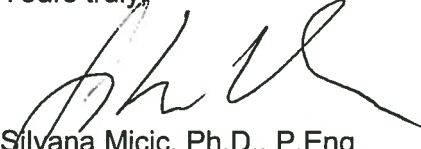


## FUNDATION DESIGN REPORT

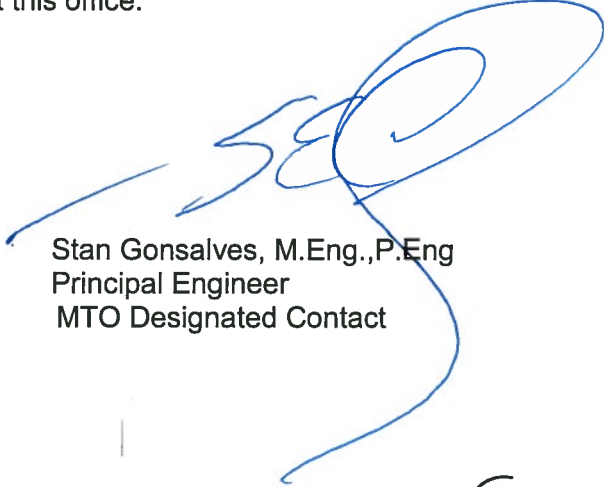
3. Exp's response to MTO Comment No. 3: *The advantages, disadvantages and risk associated with the founding option available for the proposed culvert tabulated in Table 2.1 (see pg.10) and the preferred option is recommended from a foundation perspective.*
4. Exp's response to MTO Comment No. 4: *The paragraph is added in Section 2.3.1, pg.11 of final report to clarify how construction of footings could be carried out on bedrock if the exposed surface was uneven. In addition, the paragraph added in Section 2.3.1.2, pg. 12 to clarify that dowels could be used for additional lateral support for a footing founded on bedrock. Appendix I with NSSPs addressing these issues is added to the final report*
5. Exp's response to MTO Comment No. 5: *The paragraphs addressing the difficulties associated with installing roadway protection given the shallow refusal of bedrock have been added in Section 2.5, pg. 18 and 19 of the final report.*
6. Exp's response to MTO Comment No. 6: *The paragraphs added in Section 2.8, pg. 21 and 22 of the final report to address the requirement of cofferdam to control the creek water flow during culvert replacement. However it is contractor's responsibility to design the suitable dewatering system based on the time of construction, water levels and river flow conditions for prior approval of the MTO.*
7. Exp's response to MTO Comment No. 7: *The word Appendix F replaced with Appendix G in paragraph 1 of Section 2.10.1, pg. 24 of the final report.*
8. Exp's response to MTO Comment No. 8: *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.*

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,



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



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