THURBER ENGINEERING LTD.
GEOTECHNICAL ▪ ENVIRONMENTAL ▪ MATERIALS

December 4, 2006 File: 15-85-32

Alberta Infrastructure and Transportation
Unit 2, Jewell Building
3603 – 53 Street
Athabasca, Alberta
T9S 1A9

Attention: Mr. Arthur Kavulok

NORTH CENTRAL REGION GEOHAZARD ASSESSMENT
HWY 2:48 (NC 43), WEST OF WIDEWATER
2006 ANNUAL INSPECTION REPORT

Dear Sir:

This letter documents the 2006 annual site inspection of an area of slope instability located along Hwy 2:48 at km 21 about 500 m west of Widewater, Alberta (refer to Figure NC43-1, Section F). Thurber Engineering Ltd. (Thurber) undertook this inspection in partial fulfillment of our Geotechnical Services for Geohazard Assessment, Instrumentation Monitoring and Related Work contract (CE143/2006) with Alberta Infrastructure and Transportation (AIT).

Mr. Don Proudfoot, P.Eng. and Mr. Masud Karim, M.Sc. of Thurber undertook the inspection on May 2, 2006 in the presence of Mr. Roger Skirrow, P. Eng., Mr. Arthur Kavulok and Mr. Fred Bickell of AIT.

1. BACKGROUND

Thurber last visited the site in June 2005 and the site condition at that time is described in our Part B assessment letter in the site binder.

2. SITE OBSERVATIONS

The changes in condition since last year are shown on the attached site sketch plan, Figure NC43-1, attached for inclusion in Appendix F of the binder. A cross-section is also attached for inclusion in Section F (Figure NC43-2). Selected photographs taken during the visit are also attached.

No significant changes were observed since the last visit in 2005 except some minor surficial slump development down slope of the bench, and minor erosion of the scarp face. The drop off from the top of the scarp to the bench area is approximately 0.6 to 1.0 m high. The scarp, bench and side slope areas were dry at the time of the visit and no evidence of seepage was noted.

Similar to the previous observation in 2005 the highway surface did not show any slide related cracks. The CSP culvert near the west end of the bench area was visually approximated at 600 to 700 mm in diameter.

3. ASSESSMENT

As mentioned previously there is no visible slide related movement at the site. The current lack of movement indicates that the slide poses no immediate threat to the highway, as the scarp is well away from the roadway surface. However, a quad trail exists between the highway guard rail and the slide scarp, which poses some danger to quad users.

The cause of the slide has not been confirmed, as there is no geotechnical information available for the site. It is presently assumed that this shallow slump is a result of weathering and loss of cohesion in the embankment fill leading to progressive failure.

Two slope inclinometers (SI1 and SI2) have been installed in 2006 by Jacques Whitford at the locations shown in Figure NC43-1.

4. RISK LEVEL

The risk level for this site has been assessed as follows:

PF (7) * CF (2) = 14

A Probability Factor of 7 is considered appropriate since this is likely an active slide with a perceptible movement rate and defined zone of movement, with a high level of uncertainty. A Consequence Factor of 2 is considered appropriate since the slide is located in the side slope of the highway embankment and would have to retrogress further to the south before it would affect the use of the highway.

5. RECOMMENDATIONS

5.1 Short Term

In the short term the site should be regularly inspected by the MCI to assess whether further movement is occurring.

Also the safety concern for quad users should be addressed. It is recommended that material from the side slope be pushed up against the scarp as shown on the cross-section.

5.2 Long Term

The site should be included again in the annual geohazards assessments for 2007. The newly installed SI's should be read twice a year during the annual geohazard instrumentation program. If the slide progress further, a detailed design should be undertaken using the geotechnical information gathered.

5.3 Maintenance

There are currently no maintenance measures required for this site.

6. CLOSURE

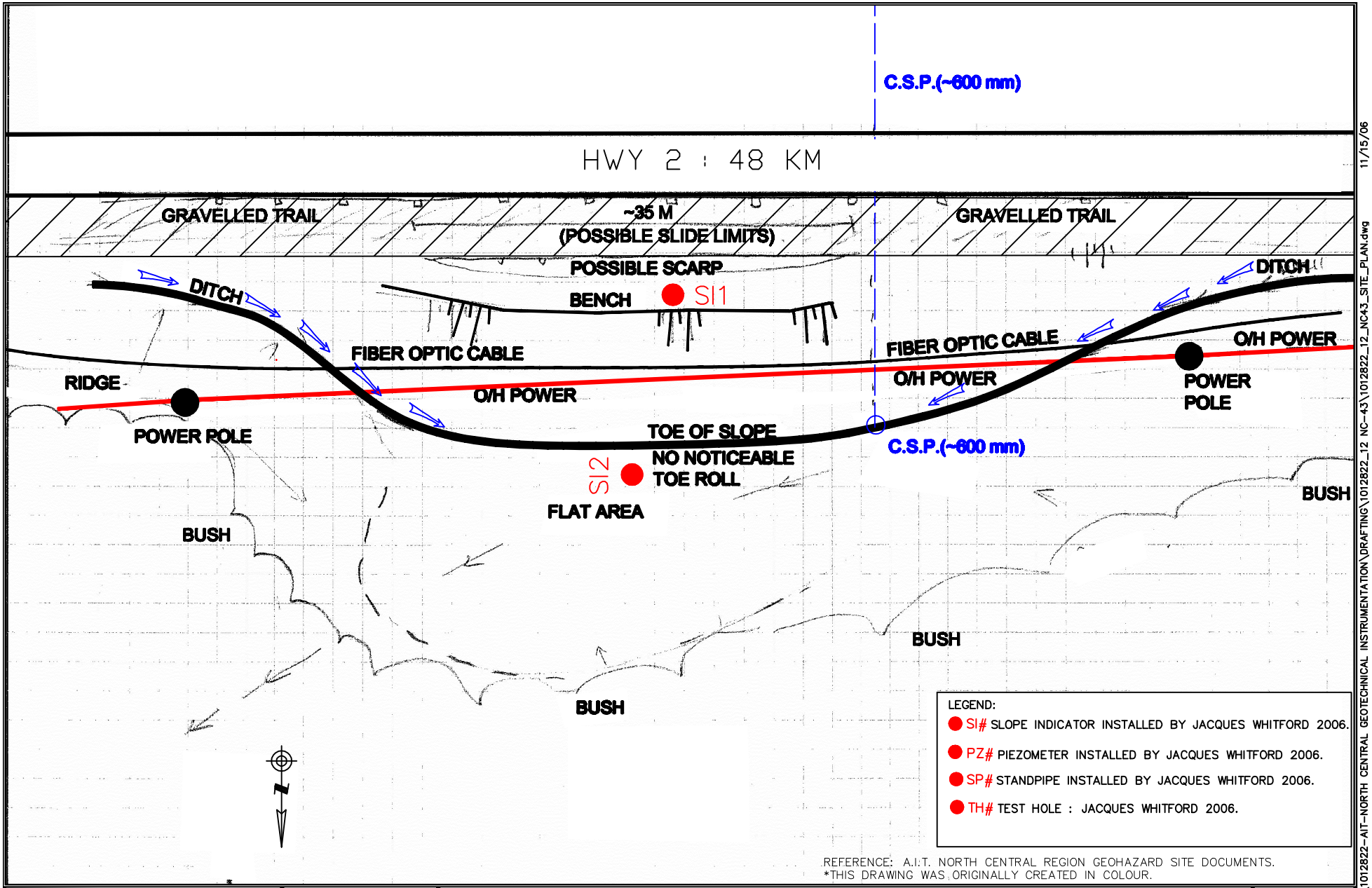
We trust this assessment and recommendations meet with your needs at this time. Please contact the undersigned should questions arise or if the slide condition worsens.

Yours very truly,
Thurber Engineering Ltd.
Don Law, P.Eng.
Review Principal

Masud Karim, M.Sc.
Project Coordinator
/dw

Attachments

cc Mr. Roger Skirrow, P.Eng.
Director, Geotechnical Services (AIT)



Jacques Whitford AXYS

SCALE:	AS SHOWN (APPROX.)
DATE:	15/11/2006
DRAWN BY:	NJA
APPROVED BY:	

CLIENT : ALBERTA INFRASTRUCTURE AND TRANSPORTATION

TITLE : NORTH CENTRAL REGION GEOHAZARD

SITE PLAN AND BOREHOLE LOCATIONS (NC-43)

HWY 2:48

PROJECT 1012822.12

DRAWING: 1

11/15/06

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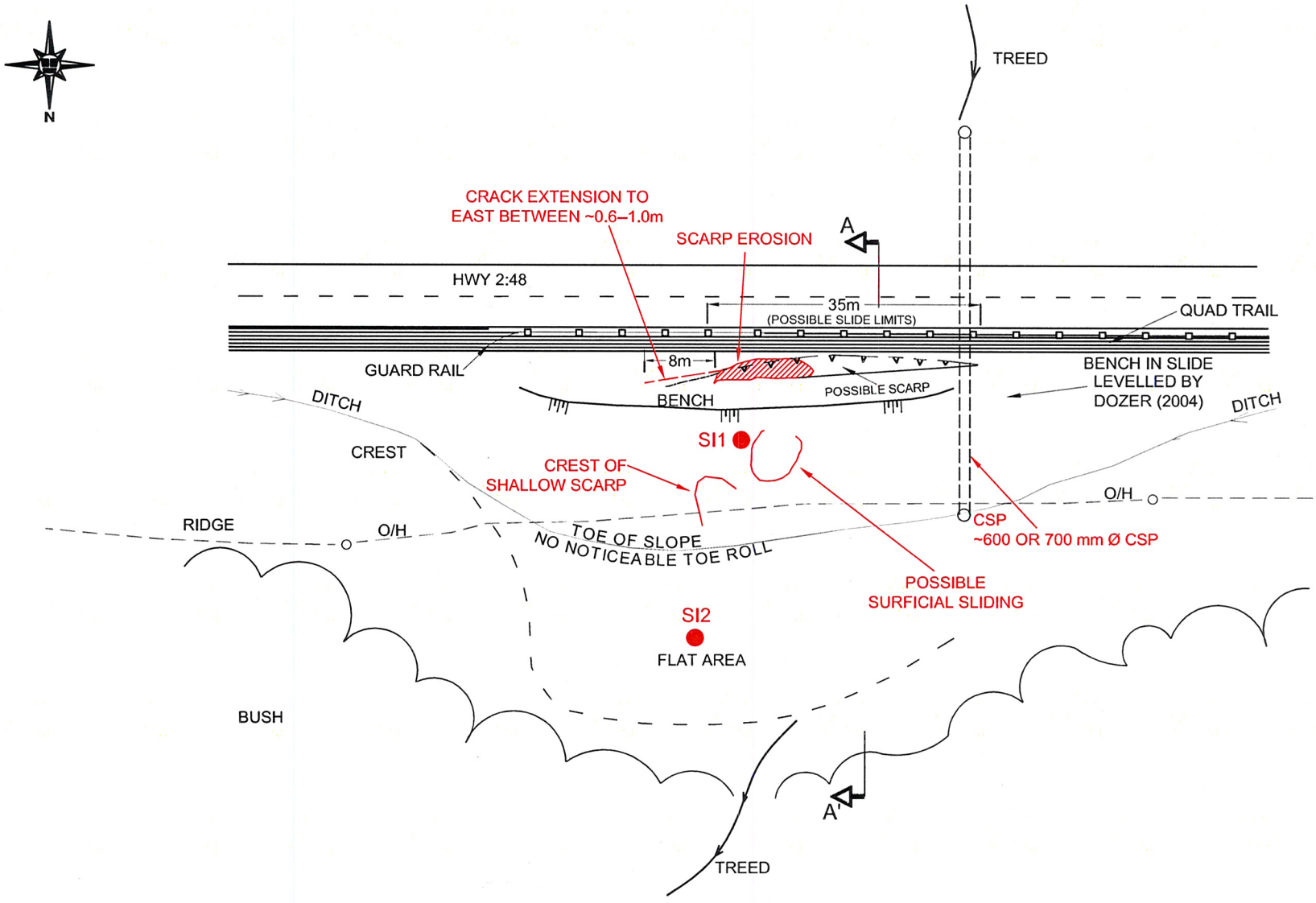

LEGEND

SI# SLOPE INDICATOR INSTALLED BY JACQUES WHITFORD 2006.

2006 OBSERVATIONS IN RED

FIGURE NC43-1 SKETCH SITE PLAN
NC43- HWY 2:48 Km 21

N.T.S.

MAY 02, 2006

THURBER PROJECT #15-85-32

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Photo 1 Looking northwest at the distress area, May 2, 2006.

Photo 2 Looking from top at the distress area, May 2, 2006.

Photo 3 Looking northwest at the downslope toe area, May 2, 2006.

Photo 4 Looking southeast at the side slope area, May 2, 2006.