



December 14, 2005

File: 15-85-11

Alberta Infrastructure and Transportation
Room 223, Provincial Building
4709-44 Avenue
Stony Plain, Alberta
T7Z 1N4

Attention: Mr. Mike Baik

**NORTH CENTRAL REGION GEOHAZARD ASSESSMENT
HWY 759:02 SOUTH OF BERRYMOOR BRIDGE (NC7)
2005 ANNUAL INSPECTION REPORT**

Dear Sir;

This letter documents the 2005 annual site inspection of an area of slope instability located along Hwy 759:02 approximately 1 km south of the Berrymoor Bridge over the North Saskatchewan River (11.5 km north of Jcn. Hwy 759 and Hwy 39).

Thurber Engineering Ltd. (Thurber) undertook this inspection in partial fulfillment of our Geotechnical Services for Geohazard Assessment, Instrumentation Monitoring and Related Work contract (CE046/2004) with Alberta Infrastructure and Transportation (AIT).

Dr. Renato Clementino, P.Eng of Thurber undertook the inspection on May 19, 2005 in the presence of Mr. Roger Skirrow, P. Eng. of AIT.

1. BACKGROUND

Thurber last visited the site in May 31, 2004 and the site condition at that time is described in our Part B assessment letter in the site binder. Additional information of the site is provided in the Geotechnical File Review in Section A of the binder and in the report prepared by Thurber (2004) to AIT entitled "Concrete Pile Wall and Other Work – Contract 6673/04 – Project Summary Report" dated July 12, 2004.

2. SITE OBSERVATIONS

The changes in condition since last year are shown on the site sketch plan in Figure NC7-1 in Section F of the binder. Selected photographs taken during the visit are also included in Section F.

No significant changes on site condition were observed during the site inspection. No slide feature or distress were noted on the side slope.

The old main pavement crack has reappeared on the new overlaid (2004) pavement surface as showed in the drawing on Section F. The new crack is approximately 5mm open and there is no noticeable differential drop across the crack.

The two existing drains outlets installed during the construction of the pile wall in 2004 were working properly with water flowing.

The side slope vegetation has grown reasonable well since the end of the pile wall construction and is fully established.

3. ASSESSMENT

Since last year pile wall construction, there has been little or no slope activity at this site. Even the side slope east of the wall, which is not being supported by the pile wall, appears to have stabilized or moving at a very small rate. This is confirmed by the spring 2005 slope inclinometer (SI) readings that show negligible slope movement. In addition the readings of the two SIs (SI04-1 and SI04-2) installed inside the pile wall do not show structure movement as well.

Based on the above, the reappearing of the main crack on the new overlay is likely related to reflective crack from the original crack, rather than related to slope movement.

4. RISK LEVEL

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

$$PF(3) * CF(3) = 9$$

A Probability Factor of 3 is considered appropriate since the highway embankment is being supported by the newly constructed pile wall which reduces the likelihood of sliding. A Consequence Factor of 3 is considered appropriate since if a slide occurs it may affect the use of roadway and safety of motorist, but not requiring closure of the roadway.

5. RECOMMENDATIONS

5.1 Maintenance

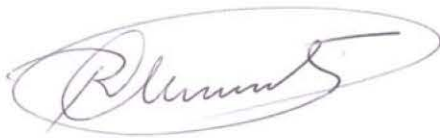
Based on the above observations this site appears to be performing well, with the exception of the reappearance of the main crack through the new patch (2004). However, this crack is likely a reflective crack and should be repaired as per AIT Asphalt Pavement Transverse Crack Repair – Mill and Fill Specification 53.8. A crack repair drawing is attached at the end of this report. The estimated cost for the repair is approximately \$ 6,000.

After the reflective crack has been repaired it is recommended to keep this site in the program for another year. If no further development occurs after a year of the crack repair, consideration should be given to withdraw this site from the Geohazard program.

6. CLOSURE

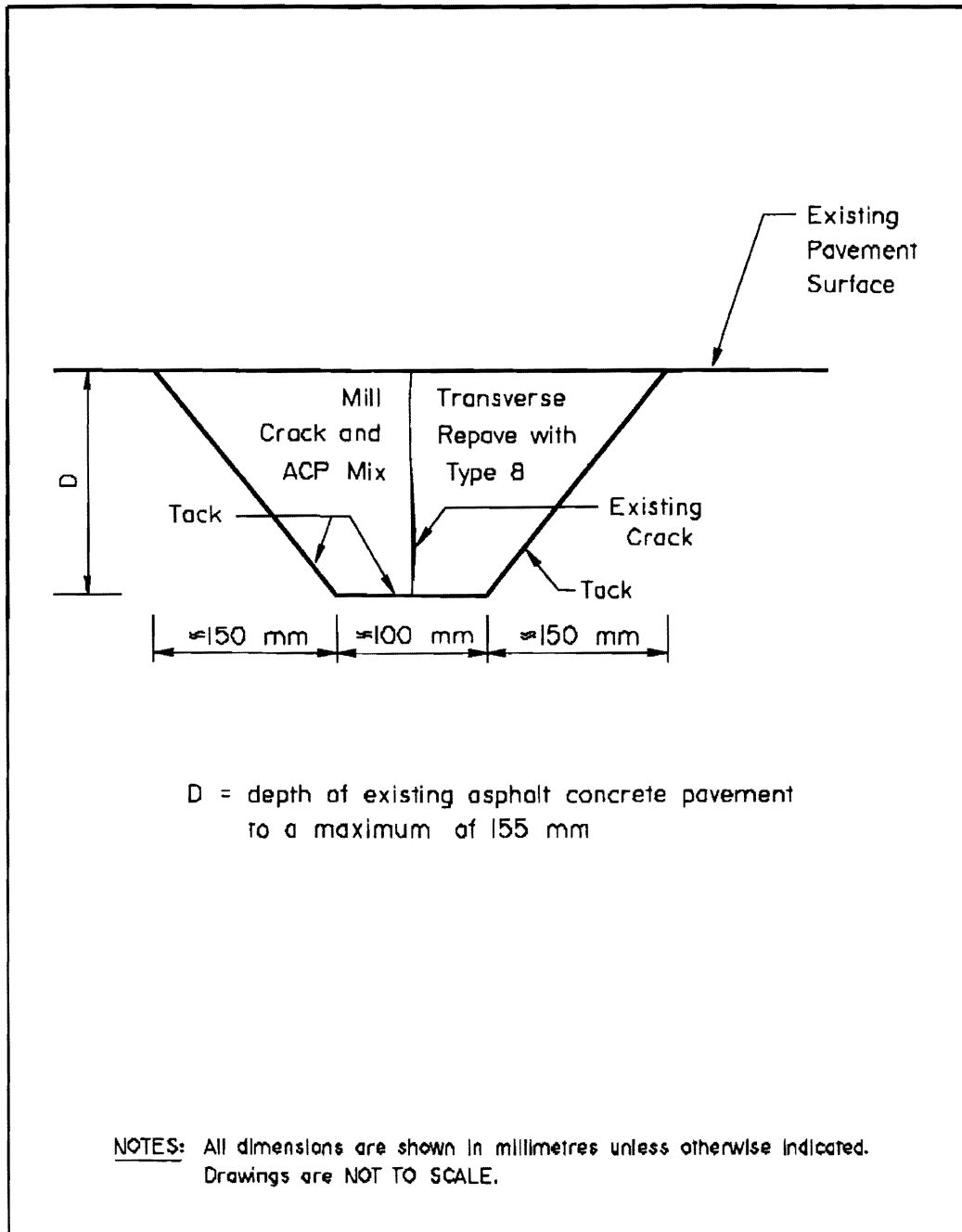
We trust this assessment and recommendations meet with your needs at this time. Please contact the undersigned should questions arise or if the slide condition worsens.


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



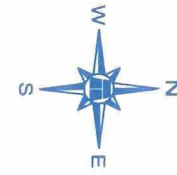
Renato V. Clementino, P.Eng.
Project Engineer

Attachments

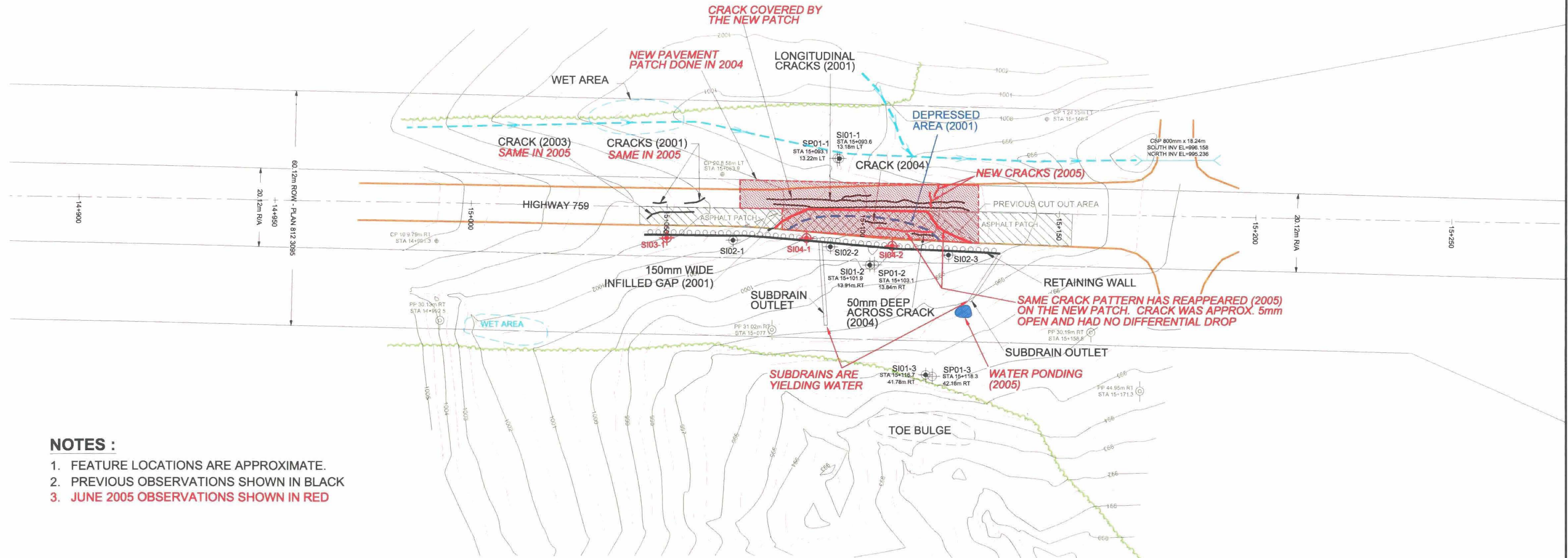


	DETAIL OF MILLING AND REPAVING AT TRANSVERSE CRACKS	
	August 1995	Drawing No. MS-002

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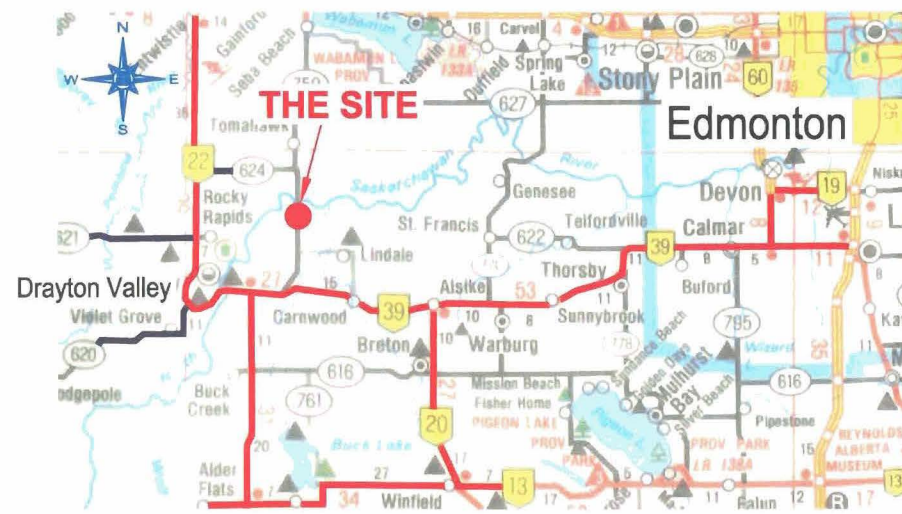


N.E. Sec.11-50-06 W.5M.



NOTES :

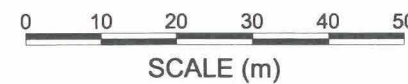
1. FEATURE LOCATIONS ARE APPROXIMATE.
2. PREVIOUS OBSERVATIONS SHOWN IN BLACK
3. JUNE 2005 OBSERVATIONS SHOWN IN RED



KEY PLAN
N.T.S

LEGEND

- STANDPIPE PIEZOMETER
- SLOPE INCLINOMETER
- REPAIR CUT-OUT(1999)
- ASPHALT PATCH
- CRACKS
- NEW ASPHALT PATCH**



ALBERTA INFRASTRUCTURE & TRANSPORTATION

SITE PLAN

NORTH CENTRAL 2005
GEOHAZARDS ASSESSMENT

NW-12-50-06 W.5M
HWY 759:02 - km 15+100 SLIDE REPAIR
BERRYMOOR, AB

THURBER PROJECT #15-85-11

THURBER ENGINEERING LTD.
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS

ENGINEER:	RVC	DRAWN:	ZD	APPROVED:	
DATE:	JULY	SCALE:	1:1000 APPROX.	DRAWING No.:	FIGURE NC7-1



Photo 1 – New overlaid area, looking south (2005).



Photo 2. Main crack reappears through the new overlaid asphalt patch (2005).



Photo 3. Side slope fully re-vegetated (2005).



Photo 4 – North end drain outlet (2005).



Photo 5 – South end drain outlet (2005).