STONY PLAIN REGION
GEOHAZARD RISK ASSESSMENT
SITE INSPECTION FORM

SITE NUMBER AND NAME:	HIGHWAY AND KM:	PREVIOUS INSPECTION DATE:	INSPECTION DATE:
NC 22 - Pavement Dip	Hwy 759:02, km 1.42	May 20, 2010	June 14, 2011
LEGAL DESCRIPTION:	**NAD 83 COORDINATES:**	**RISK ASSESSMENT:**	
NW 11-49-6-W5M	-51362 E, 5898567 N	PF: 9 CF: 2 **TOTAL: 18**	

SUMMARY OF SITE INSTRUMENTATION:	INSPECTED BY:
Survey pins	Adam Gmeinweser, P. Eng. (EBA) Chris Gräpel, P. Eng. (EBA) Sabhago Oad, P. Eng. (TRANS) Fred Cheng, P. Eng. (TRANS)

LAST READING DATE:

PRIMARY SITE ISSUE: Section of asphalt with as much as 0.6 m settlement

APPROXIMATE DIMENSIONS: 30 m in length

DATE OF REMEDIAL ACTION:

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress	X		30 m long strip of asphalt; 0.6 m maximum settlement		X
Slope Movement		X			
Erosion		X			
Seepage		X			
Culvert Distress	X		Culvert south of pavement dip; blocked with static water		X

COMMENTS:
Location and site plan shown on Figure NC-22.
Site conditions shown in Photos 1 and 2.
Risk level unchanged from 2010.
Foam columns installed in Spring 2010 – performing well so far.
Asphalt pavement placed after foam injection in Spring 2010.
Survey pins installed in new asphalt to monitor settlement.

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SITE OBSERVATIONS:

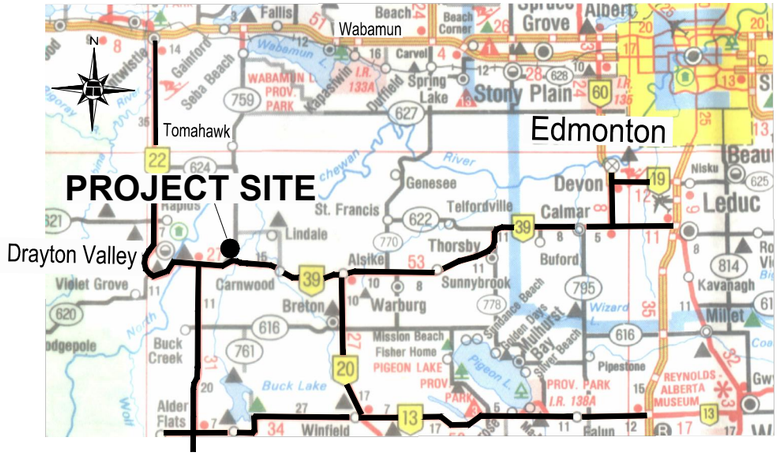
- Length of pavement dip area is approximately 30 m long and appears to be relatively uniform across the width of the pavement;
- Pavement dip appeared to be about 0.6 m before foam injection implemented;
- Embankment is about 3 m high with approximately 3H:1V sideslopes outside of the dip;
- Sideslopes within dip area are concave and steep (about 1H:1V);
- New asphalt pavement placed in summer 2010. Cracks beginning to reflect through new pavement;
- 800 mm diameter culvert located south of the pavement dip. Culvert appears to be blocked and standing water is located within the ditch on both sides of the highway;
- Small sinkhole observed about 3 m east of the west outlet of the culvert. Relatively unchanged from 2008 inspection;
- Deflection of barbed wire fence observed at toe of east embankment (i.e. northbound lane); and
- Lateral spreading of embankment suspected due to concave shape of sideslopes in dip area and deflection of the barbed wire fence.

RECOMMENDATIONS:

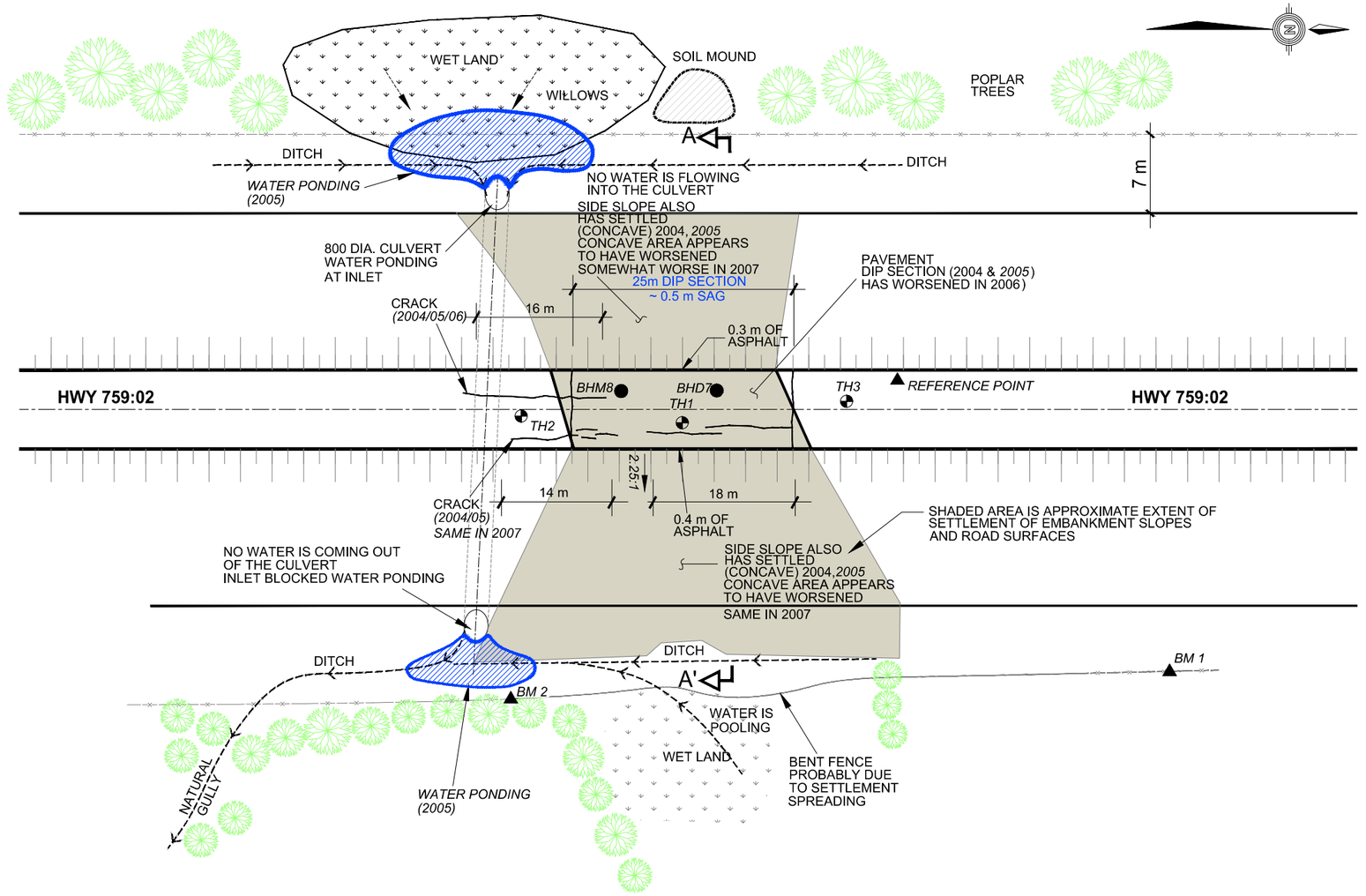
- Continue to monitor survey pins installed as part of the foam injection study.
- MCI should replace the existing culvert and develop a construction plan for improvement of both ditches.
- TRANS operations staff and EBA to discuss milling pavement versus levelling asphalt with pavement options.

Photo 1: Asphalt overlay placed after foam injection

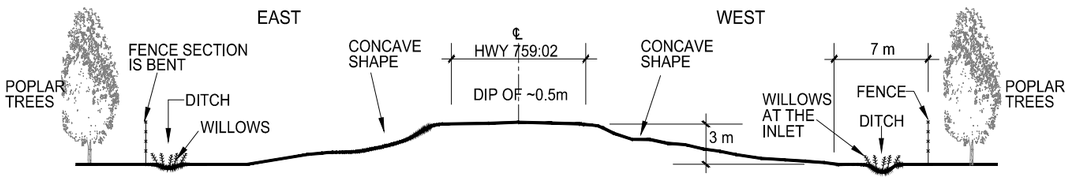
Photo 2: Repaired pavement dip facing northeast



KEY PLAN
N.T.S



SITE PLAN
NOT TO SCALE



SECTION A-A'
(NOT TO SCALE)

BASE DRAWING PROVIDED BY THURBER ENGINEERING LTD.

LEGEND :

- BOREHOLE DRILLED BY JACQUES WHITFORD (2006)
- BOREHOLE DRILLED BY EBA (2010)
- BENCH MARK
- CONCAVE SIDE SLOPES

NOTES :

1. FEATURE LOCATIONS ARE APPROXIMATE.
2. SITE INSPECTION CARRIED OUT IN MAY, 2004
3. *MAY 2007 OBSERVATIONS SHOWN IN RED*
4. *BM1 - RELATIVE ELEVATION 99.42 m*
5. *BM2 - RELATIVE ELEVATION 96.282 m*
4. *REFERENCE POINT - RELATIVE ELEVATION 100.0 m*

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NC 22 PAVEMENT DIP - FOAM TREATMENT PLAN
HWY 759:02, KM 1.5

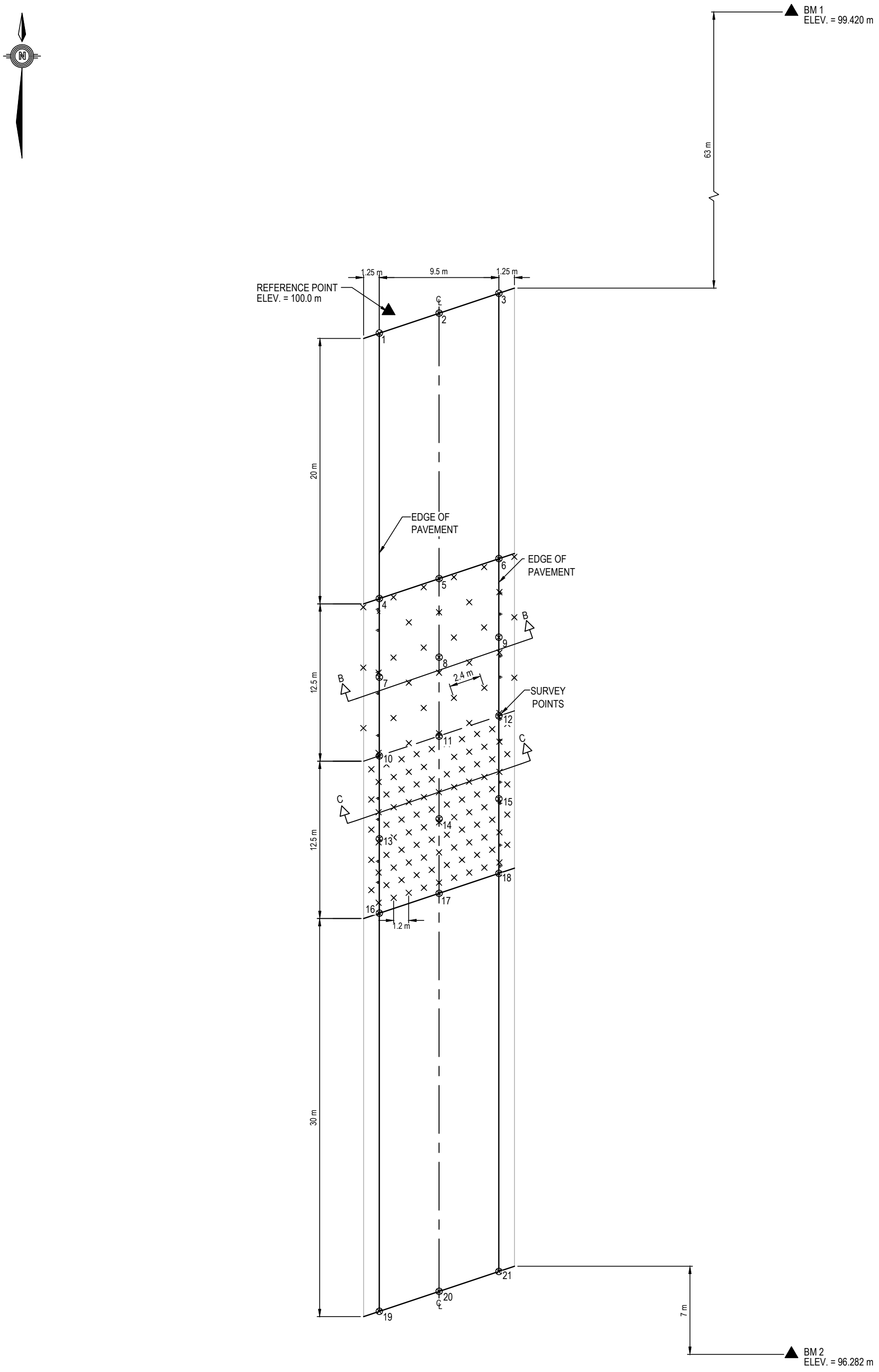
NC 22 PAVEMENT DIP SITE PLAN

eba A TETRA TECH COMPANY

PROJECT NO.	DWN	CKD	REV
E12101085.003	TK	RJM	0
OFFICE: EDM	DATE: November 18, 2011		

Figure 1

Q:\Edmonton\Drafting\DIVISIONS2007\E12\E12101085\003\Acad\E12101085.003_FIG 1.dwg [FIGURE 1] November 18, 2011 - 2:30:23 pm (BY: KIROS, TIGIST)



LEGEND:

⊗ - SURVEY POINTS
× - INJECTION POINTS

0 10
Scale: 1: 300 (metres)

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NC 22 PAVEMENT DIP - FOAM TREATMENT PLAN
HWY 759:02, KM 1.5

E12101085 NORTH CENTRAL (STONY PLAIN)
GEOHAZARD RISK MANAGEMENT PROGRAM
NC 22 FOAM INJECTION TREATMENT PLAN

PROJECT NO.	DWN	CKD	REV
E12101085.003	TK	RJM	0

OFFICE	DATE
EDM	November 18, 2011

Figure 2

Photo 1: Asphalt overlay placed after foam injection

Photo 2: Repaired pavement dip facing northeast