



**ALBERTA TRANSPORTATION
PEACE REGION (GRANDE PRAIRIE)
INSTRUMENTATION MONITORING RESULTS**

SPRING 2020

SECTION C

SITE GP044-1: HWY 40:40, km 1.0 BACKSLOPE LANDSLIDE

1. OBSERVATIONS

1.1 Field Program and Instrumentation Status

One standpipe piezometer (SP17-2) was read at the Hwy 40:40 km 1.0 backslope landslide site on June 24, 2020 by Mr. Niraj Regmi, G.I.T. and Mr. Mark Gallego, P.Eng., both of Thurber Engineering Ltd.

The standpipe piezometer was read using a Heron dipmeter.

2. INTERPRETATION

2.1 Zones of Movement

SI17-3 was installed at the site as part of the geotechnical investigation at the site in 2017. SI17-3 was found to be sheared at 7.3 m depth during the spring of 2018 readings. No zones of movement had been observed in SI17-3 before it sheared off.

2.2 Interpretation of Monitoring Results

Standpipe piezometer SP17-2 showed a decrease in groundwater level of 0.01 m since the fall of 2019 readings. The standpipe piezometer readings are summarized in Table GP044-1-2 below and are plotted on Figures GP044-1-1 (by elevation) and GP044-1-2 (by depth) in Section D.



3. RECOMMENDATIONS

3.1 Future Work

SP17-2 should be read again in the fall of 2020.

3.2 Instrumentation Repairs

No instrument repairs are required at this time.

**TABLE GP044-1-1
 SPRING 2020 – HWY 40:40, km 1.0 BACKSLOPE LANDSLIDE
 SLOPE INCLINOMETER INSTRUMENTATION READING SUMMARY**

Date Monitored: June 24, 2020

INSTRUMENT #	DATE INITIALIZED	TOTAL CUMULATIVE RESULTANT MOVEMENT AT NOTED DEPTH SINCE INITIAL READING (mm)	MAXIMUM RATE OF MOVEMENT (mm/yr)	CURRENT STATUS	DATE OF PREVIOUS READING	INCREMENTAL MOVEMENT SINCE PREVIOUS READING (mm)	RATE OF MOVEMENT (mm/yr)	CHANGE IN RATE OF MOVEMENT SINCE PREVIOUS READING (mm/yr)
<i>SI17-3</i>	<i>December 18, 2017</i>	<i>No discernible movement</i>	<i>N/A</i>	<i>Sheared at 7.3 m depth</i>	<i>March 21, 2018</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>

Drawing 13353-GP044-1-1 in Section D provides a sketch of the approximate location of the monitoring instrumentation for this site.

**TABLE GP044-1-2
 SPRING 2020 – HWY 40:40, km 1.0 BACKSLOPE LANDSLIDE
 STANDPIPE PIEZOMETER INSTRUMENTATION READING SUMMARY**

Date Monitored: June 24, 2020

INSTRUMENT #	DATE INITIALIZED	TIP ELEV. (m)	GROUND ELEV. (m)	CURRENT STATUS	MAXIMUM WATER ELEVATION (m)	CURRENT WATER ELEVATION (m)	PREVIOUS WATER ELEVATION (m)	CHANGE IN WATER LEVEL SINCE PREVIOUS READING (m)
SP17-2	November 15, 2017	715.14	729.72	Operational	717.57 in December 2017	717.49	717.50	-0.01
SP17-4	November 15, 2017	736.14	755.25	<i>Blocked at 7.63 m depth</i>	738.74 in November 2017	N/A	737.09*	N/A

Drawing 13353-GP044-1-1 in section D provides a sketch of the approximate location of the monitoring instrumentation for this site.

* Previous groundwater elevation on October 7, 2018

**TABLE GP044-1-3
 SPRING 2020 – HWY 40:40, km 1.0 BACKSLOPE LANDSLIDE
 VIBRATING WIRE PIEZOMETER INSTRUMENTATION READING SUMMARY**

Date Monitored: June 24, 2020

INSTRUMENT #	DATE INITIALIZED	TIP ELEV. (m)	GROUND ELEV. (m)	CURRENT STATUS	MAXIMUM GROUNDWATER ELEVATION (m)	CURRENT GROUNDWATER ELEVATION (m)	PREVIOUS GROUNDWATER ELEVATION* (m)	CHANGE IN WATER LEVEL SINCE PREVIOUS READING (m)
VW17-3	November 15, 2017	730.83	755.83	Inoperative	735.68 in December 2017	N/A	735.05	N/A

Drawing 13353-GP044-1-1 in section D provides a sketch of the approximate location of the monitoring instrumentation for this site.

* Previous groundwater elevation reading on March 21, 2018



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**SECTION D
DATA PRESENTATION**

SITE GP044-1: HWY 40:40, km 1.0 BACKSLOPE LANDSLIDE

**ALBERTA TRANSPORTATION
PEACE REGION (GRANDE PRAIRIE)
INSTRUMENTATION MONITORING FIELD SUMMARY (GP044-1)
SPRING 2020**

Location: North of Cutbank River (HWY 44:40, km 1.0)
File Number: 13353

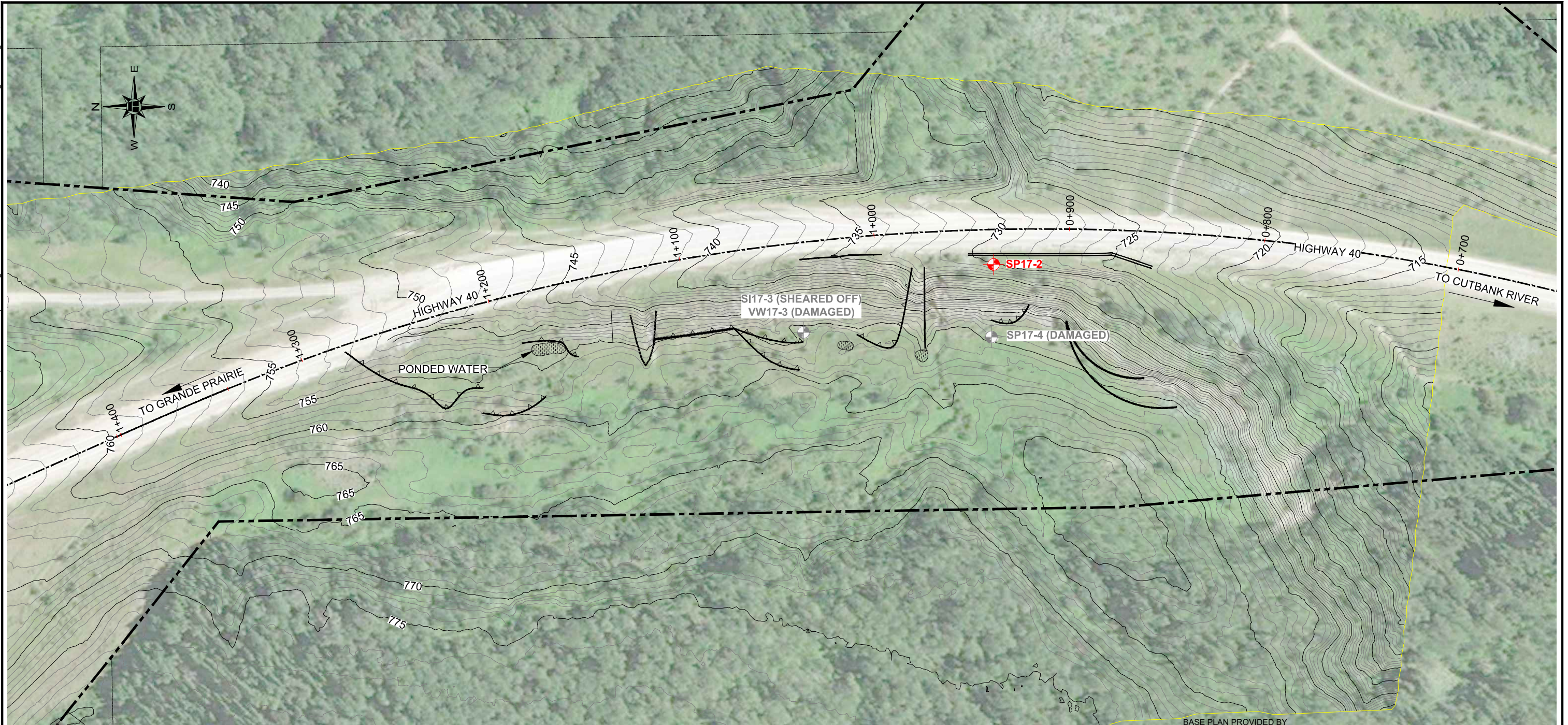
Readout: Heron Instrument Dipper T
Temp: 23
Read by: NKR/MG

STANDPIPE PIEZOMETER READINGS

SP#	GPS Location (UTM 11)		Date	Stick-up (m)	Reading below top of pipe (m)	Bottom Pipe Depth (below ground (m))
	Easting (m)	Northing (m)				
SP17-2	391461.00	6056359.00	24-Jun-20	0.95	13.18	14.58








INSPECTOR REPORT

H:\13000\13353 Geohazard Assessment - Grand Prairie (CON0017603)\Drafting\2020\INSTRUMENT\13353-GP044-1-1.dwg - 1 - Aug. 31, 2020

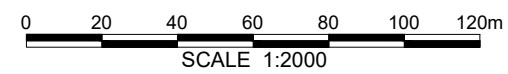


BASE PLAN PROVIDED BY

LEGEND

-  GROUND SURFACE CONTOUR (CONTOUR INTERVAL = 1m)
-  APPROXIMATE CORE HOLE LOCATION
-  (15m) DEPTH OF CORE HOLE IN METRES
-  SP STANDPIPE PIEZOMETER
-  SI SLOPE INCLINOMETER
-  VW VIBRATING WIRE PIEZOMETER
-  HIGHWAY RIGHT-OF-WAY

NOTE:
 LANDSLIDE FEATURES TAKEN FROM MAY 30, 2017 GP44
 CALL-OUT INSPECTION REPORT (THURBER FILE NO. 13353)



PEACE REGION (GRANDE PRAIRIE)

GP044-1: HWY 40:40 km 1.0 BACKSLOPE LANDSLIDE

DWG NO. 13353-GP044-1-1

DRAWN BY	ML
DESIGNED BY	BWN
APPROVED BY	RVC
SCALE	1:2000
DATE	AUGUST 2020
FILE No.	13353

