



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

**FALL 2020**

**SECTION C**

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

**1. OBSERVATIONS**

**1.1 Field Program and Instrumentation Status**

The Hwy 40:40 km 1.0 backslope landslide site was visited on October 08, 2020 by Mr. Niraj Regmi, G.I.T. and Mr. Long Le, both of Thurber Engineering Ltd. SP17-2, the only instrument that was functional at the site, was found to have been destroyed by construction since the spring of 2020 readings. This report contains historical instrumentation information related to this site.

**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**

The historical 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**

As there are no more active instruments at the site, GP044-1 will be removed from the bi-annual instrumentation monitoring program.

#### **3.2 Instrumentation Repairs**

No instrument repairs are required at this time.

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

Date Monitored: October 8, 2020

<b>INSTRUMENT #</b>	<b>DATE INITIALIZED</b>	<b>TOTAL CUMULATIVE RESULTANT MOVEMENT AT NOTED DEPTH SINCE INITIAL READING (mm)</b>	<b>MAXIMUM RATE OF MOVEMENT (mm/yr)</b>	<b>CURRENT STATUS</b>	<b>DATE OF PREVIOUS READING</b>	<b>INCREMENTAL MOVEMENT SINCE PREVIOUS READING (mm)</b>	<b>RATE OF MOVEMENT (mm/yr)</b>	<b>CHANGE IN RATE OF MOVEMENT SINCE PREVIOUS READING (mm/yr)</b>
<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  
FALL 2020 – HWY 40:40, km 1.0 BACKSLOPE LANDSLIDE  
STANDPIPE PIEZOMETER INSTRUMENTATION READING SUMMARY**

Date Monitored: October 8, 2020

<b>INSTRUMENT #</b>	<b>DATE INITIALIZED</b>	<b>TIP ELEV. (m)</b>	<b>GROUND ELEV. (m)</b>	<b>CURRENT STATUS</b>	<b>MAXIMUM WATER ELEVATION (m)</b>	<b>CURRENT WATER ELEVATION (m)</b>	<b>PREVIOUS WATER ELEVATION (m)</b>	<b>CHANGE IN WATER LEVEL SINCE PREVIOUS READING (m)</b>
SP17-2	November 15, 2017	715.14	729.72	Destroyed	717.57 in December 2017	N/A	717.49*	N/A
SP17-4	November 15, 2017	736.14	755.25	Blocked at 7.63 m depth	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 June 24, 2020

\*\* Previous groundwater elevation on October 7, 2018

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

Date Monitored: October 8, 2020

<b>INSTRUMENT #</b>	<b>DATE INITIALIZED</b>	<b>TIP ELEV. (m)</b>	<b>GROUND ELEV. (m)</b>	<b>CURRENT STATUS</b>	<b>MAXIMUM GROUNDWATER ELEVATION (m)</b>	<b>CURRENT GROUNDWATER ELEVATION (m)</b>	<b>PREVIOUS GROUNDWATER ELEVATION (m)</b>	<b>CHANGE IN WATER LEVEL SINCE PREVIOUS READING (m)</b>
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



**ALBERTA TRANSPORTATION  
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INSTRUMENTATION MONITORING RESULTS**

**FALL 2020**

**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)  
FALL 2020**

<b>Location:</b> North of Cutbank River (HWY 44:40, km 1.0) <b>File Number:</b> 13353	<b>Readout:</b> Heron Dipper T <b>Temp:</b> 4 <b>Read by:</b> NKR/LL
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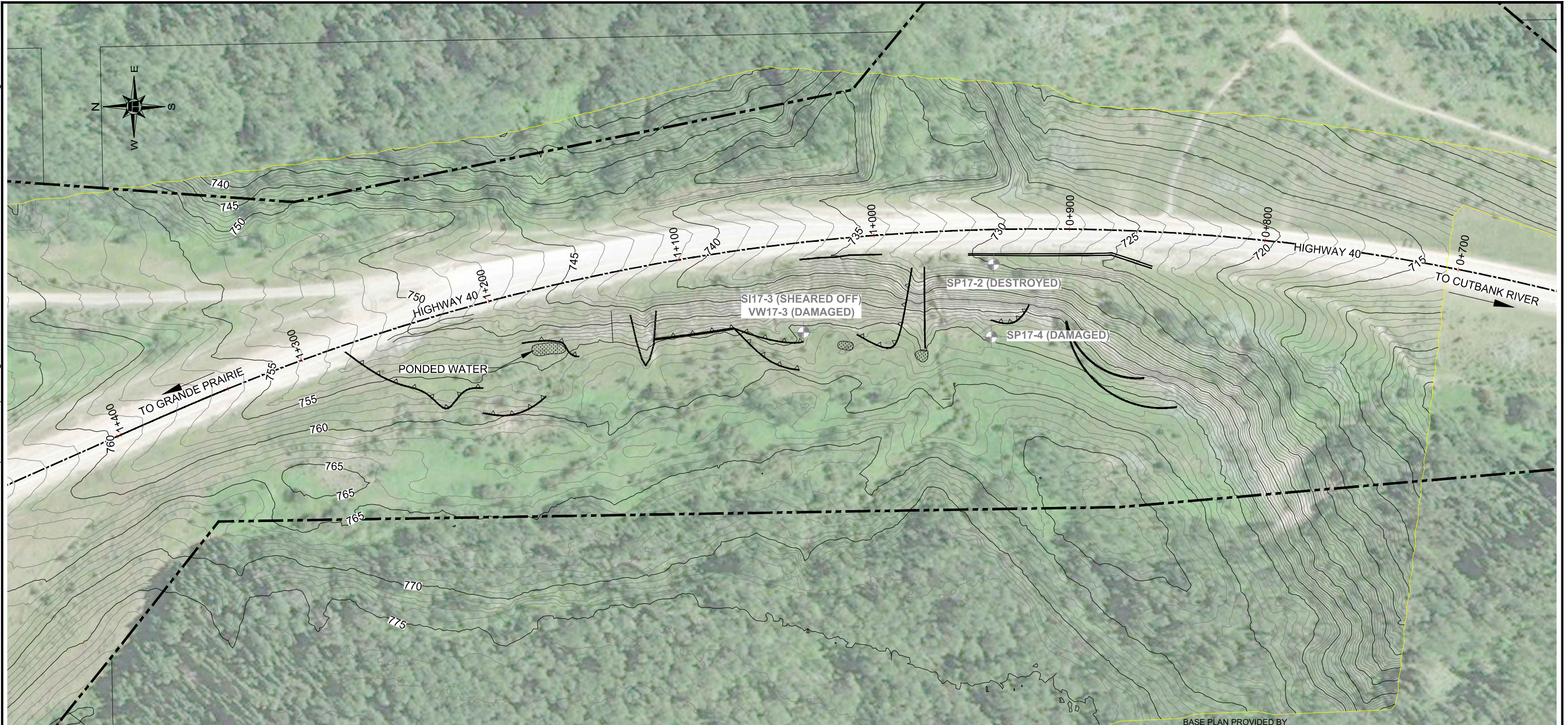
**STANDPIPE PIEZOMETER READINGS**

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	8-Oct-20	0.95	13.18*	14.58

**INSPECTOR REPORT**








*Destroyed by construction

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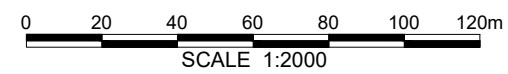


BASE PLAN PROVIDED BY

**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	NOVEMBER 2020
FILE No.	13353

