THURBER ENGINEERING LTD.

ALBERTA TRANSPORTATION
NORTH CENTRAL REGION – ATHABASCA AREA
INSTRUMENTATION MONITORING RESULTS

FALL 2015

SECTION C

SITE NC42: HWY 754:04, NORTH OF SLAVE LAKE

1. OBSERVATIONS

1.1 Field Program and Instrumentation Status

One slope inclinometer (SI1) was read at the Hwy 754:04 site on September 14, 2015 by Mr. Chad Gray, C.E.T., of Thurber Engineering Ltd. (Thurber).

The SI was read using a RST Digital Inclinometer probe with 2 ft. wheelbase and a RST Pocket PC readout. Inclinometer reading depths were defined as per cable markings with respect to the top of the inclinometer casing.

2. INTERPRETATION

2.1 General

SI plots A and B directions are presented in Section D and are summarized below. Where movement has been recorded the resultant plot (X direction) and rate of movement have also been provided.

2.2 Zones of Movement

Zones of new movement were not observed since the last set of readings in the spring of 2015.

The zone of movement is summarized on Table NC42-1 at the end of this report.

2.3 Interpretation of Monitoring Results

Slope inclinometer SI-1 showed a creep rate of movement of 5.3 mm/yr over 7.0 m to 8.8 m depth. The rate of movement has increased by 4.6 mm/yr since the last monitoring event in the spring of 2015.

3. RECOMMENDATIONS

3.1 Future Work

The instrument should be read again in spring 2016.

3.2 Instrumentation Repairs

No repairs are required at this time.

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TABLE NC42-1
FALL 2015 – HWY 754:04, NORTH OF SLAVE LAKE
INSTRUMENTATION SUMMARY

Date Monitored: September 14, 2015

INSTRUMENT #	DATE INITIALIZED	TOTAL CUMULATIVE RESULTANT MOVEMENT AND DEPTH OF MOVEMENT TO DATE (mm)	MAXIMUM RATE OF MOVEMENT (mm/yr)	CURRENT STATUS OF SI	DATE OF PREVIOUS READING	INCREMENTAL MOVEMENT SINCE PREVIOUS READING (mm)	CURRENT RATE OF MOVEMENT (mm/yr)	CHANGE IN RATE OF MOVEMENT SINCE PREVIOUS READING (mm/yr)
SI1	Sept. 6, 2006	23.7 over 7 m to 8.8m depth in 180º direction	5.6 between May 2008 and May, 2009	Operational	May 20, 2015	1.7	5.3	4.6

Drawing 15-16-358-NC42 in section D provides a sketch of the approximate location of the monitoring instrumentation for this site.
Note: SI – Slope Inclinometer.

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SECTION D
DATA PRESENTATION

SITE NC42: HWY 754:04, NORTH OF SLAVE LAKE

ALBERTA TRANSPORTATION
NORTH CENTRAL REGION - ATHABASCA AREA
INSTRUMENTATION MONITORING FIELD SUMMARY (NC42)
FALL 2015

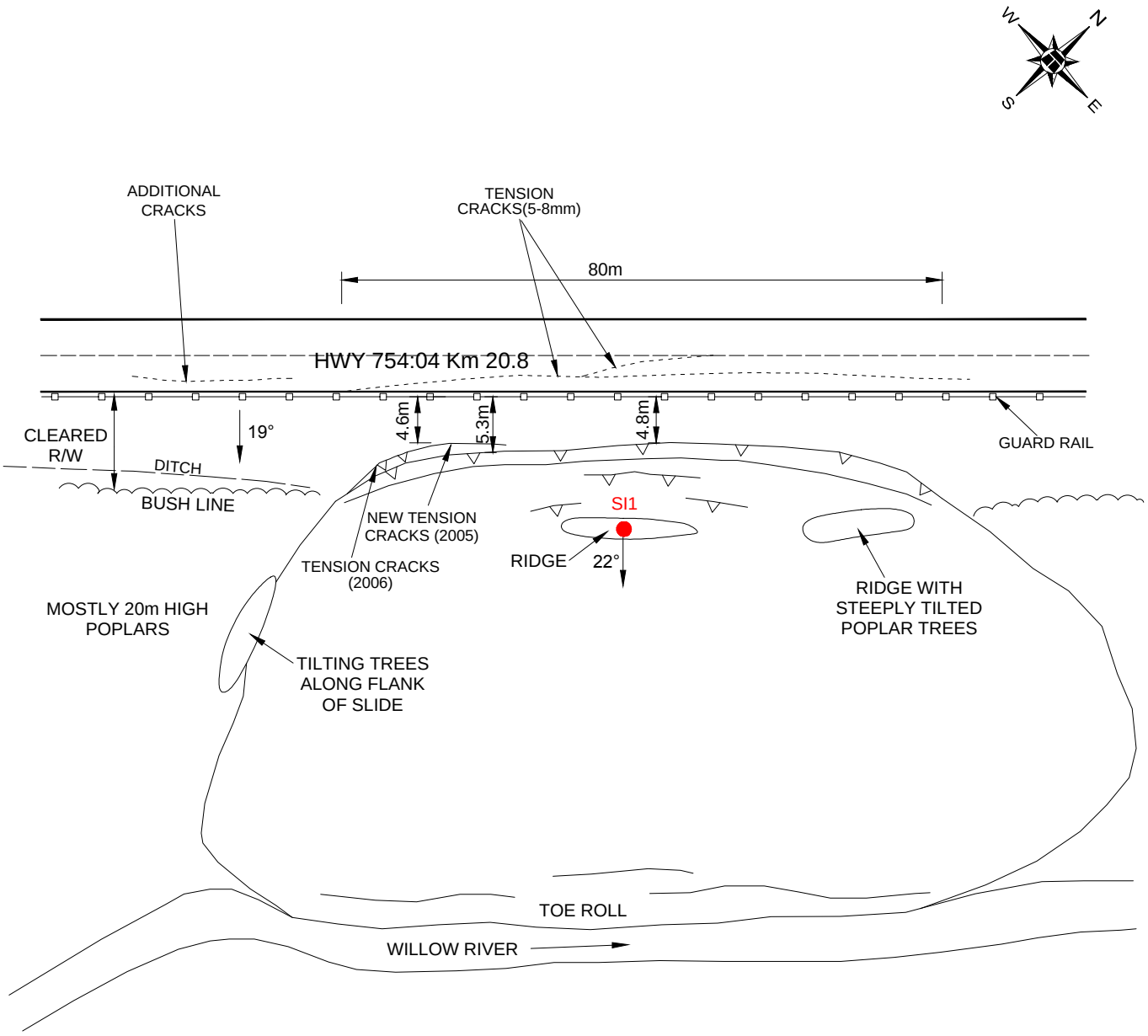
Location: HWY 754:04, North of Slave Lake (Km 20.8 from the control section)	**Readout:** RST #8
File Number: 15-16-358	**Extension:** 3.34"
Probe: RST #8	**Temp:** 15
Cable: RST #8	**Read by:** CMG

SLOPE INCLINOMETER (SI) READINGS

SI#	GPS Location (NAD 83)		Date	Stickup (m)	Depth from top of Casing (ft)	Magn. North A+ Groove	Current Bottom Depth Readings				Remarks
	Latitude (N)	Longitude (W)					A+	A-	B+	B-	
1	55° 43' 05"	114° 23' 18"	14-Sep-15	0.52	48 to 2	180°	531	-533	556	-559	

INSPECTOR REPORT

H:\15\16-358 North Central (Athabasca) 2015 2016 - Instr. Monitoring\Drafting\2015 FALL\15-16-358 NC42.dwg - JUN05 - Oct. 13, 2015



LEGEND:

● SI# SLOPE INDICATOR INSTALLED BY JACQUES WHITFORD 2006.

NORTH CENTRAL REGION - ATHABASCA AREA

NC42 - HWY 754:02 km 20.8
SITE PLAN

DWG No. 15-16-358-NC42

Alberta Transportation

DRAWN BY	ML
DESIGNED BY	NFR
APPROVED BY	DWP
SCALE	N.T.S.
DATE	SEPTEMBER 2015
FILE No.	15-16-358

THURBER ENGINEERING LTD.