

## Tutela Heights Road Slope Stability Monitoring Program

The below program has been developed to monitor the slope along Tutela Heights Road, from the east end of the Bell Homestead property to approximately one kilometre east, as noted as the “Slope Area” below.



Item/Action	Frequency
Observations of the surface movements by survey of Monitoring Points - Standard Iron Bars (SIB). Monitoring point locations shown on attached Plan	Semi Annually
Observations of the subsurface movements by monitoring the 3 installed inclinometers located on Tutela Heights Road including geotechnical conditions evaluation. Inclinometer locations shown on attached Plan	Quarterly – 4 time per year
Geotechnical review of Monitoring Data	Subject to the observation results of the current monitoring of the survey points and the inclinometers subsurface movements if unstable slope condition noted
Updates on slope monitoring	Annually on the County and City Website
In River Groynes condition	Once and as required thereafter



MONITORING POINT - MOVEMENT SUMMARY (PLANTED BARS)																																																									
	MP-01-14			MP-02-14			MP-03-14			MP-04-14			MP-05-14			MP-06-14			MP-07-14			MP-08-14			MP-09-14			MP-10-14			MP-11-14			MP-12-14			MP-13-14			MP-14-14			MP-15-14			MP-16-14			MP-17-14			MP-18-14			MP-19-14		
	ELEV.	HORZ. CHANGE	N.S.E.W. CHANGE	ELEV.	HORZ. CHANGE	N.S.E.W. CHANGE	ELEV.	HORZ. CHANGE	N.S.E.W. CHANGE	ELEV.	HORZ. CHANGE	N.S.E.W. CHANGE	ELEV.	HORZ. CHANGE	N.S.E.W. CHANGE	ELEV.	HORZ. CHANGE	N.S.E.W. CHANGE	ELEV.	HORZ. CHANGE	N.S.E.W. CHANGE	ELEV.	HORZ. CHANGE	N.S.E.W. CHANGE	ELEV.	HORZ. CHANGE	N.S.E.W. CHANGE	ELEV.	HORZ. CHANGE	N.S.E.W. CHANGE	ELEV.	HORZ. CHANGE	N.S.E.W. CHANGE	ELEV.	HORZ. CHANGE	N.S.E.W. CHANGE	ELEV.	HORZ. CHANGE	N.S.E.W. CHANGE	ELEV.	HORZ. CHANGE	N.S.E.W. CHANGE	ELEV.	HORZ. CHANGE	N.S.E.W. CHANGE												
JAN. 13/2015	225.99	---	---	224.16	---	---	216.41	---	---	205.93	---	---	199.24	---	---	203.01	---	---	198.54	---	---	202.13	---	---	198.52	---	---	200.05	---	---	207.59	---	---	204.28	---	---	202.96	---	---	212.07	---	---	223.24	---	---	204.28	---	---	210.25	---	---	218.75	---	---	221.72	---	---
APR. 24/2015	225.99	0.02m		224.17	0.02m		216.39	0.02m		205.95	0.02m		199.16	0.01m		203.00	0.05m		198.54	0.04m		202.11	0.04m		198.52	0.03m		200.08	0.02m		207.60	0.01m		204.22	0.04m		202.98	0.01m		212.07	0.05m		223.24	0.04m		204.27	0.02m		210.25	0.01m		218.73	0.03m		221.71	0.04m	
NOV. 5/2015	225.99	0.02m		224.15	0.02m		216.43	0.03m		205.91	0.05m		199.23	0.02m		203.00	0.02m		198.55	0.02m		202.10	0.02m		198.50	0.00m		200.01	0.04m		207.60	0.04m		204.27	0.02m		202.96	0.01m		212.04	0.05m		223.21	0.01m		204.28	0.01m		210.26	0.01m		218.74	0.02m		221.71	0.01m	
MAY 8/2018 (DISTURBED)	225.95	0.16m		224.13	0.04m		216.37	0.03m		205.88	0.05m		199.16	0.05m		202.94	0.02m		198.52	0.07m		202.06	0.31m		198.48	0.05m		200.00	0.04m		207.57	0.21m		204.27	0.02m		202.95	0.06m		212.03	0.27m		223.16	0.04m		204.21	0.05m		210.24	0.03m		218.73	0.03m		221.69	0.03m	
DEC. 11/2018	225.94	0.14m	S 0.12m W 0.07m	224.12	0.03m	N 0.03m E 0.02m	216.87	0.04m	N 0.04m E 0.01m	205.85	0.04m	N 0.04m E 0.02m	199.15	0.07m	N 0.07m E 0.02m	202.96	0.05m	N 0.05m E 0.02m	198.50	0.07m	N 0.07m W 0.01m	202.09	0.37m	N 0.35m E 0.11m	198.46	0.04m	N 0.04m E 0.02m	200.03	0.03m	N 0.03m W 0.01m	207.53	0.23m	N 0.15m W 0.18m	204.21	0.04m	N 0.04m W 0.01m	202.99	0.05m	N 0.05m E 0.00m	212.02	0.27m	N 0.27m E 0.01m	223.22	0.01m	S 0.01m E 0.01m	204.21	0.04m	N 0.03m E 0.02m	210.24	0.03m	S 0.01m E 0.03m	218.72	0.02m	N 0.02m E 0.01m	221.70	0.02m	N 0.01m E 0.02m

1. MONITORING POINTS IN THIS CHART PLANTED ON JAN. 13/2015.  
2. DISTANCE CHANGE IS FROM THE JAN. 13/2015 LOCATIONS.  
3. NORTH/SOUTH/EAST/WEST (N.S.E.W.) CHANGE IS FROM THE JAN. 13/2015 LOCATIONS.



**LEGEND:**

- EXISTING ELEVATIONS
- GENERAL DIRECTION OF MOVEMENT
- EXISTING TOP OF SLOPE (JAN. 15, 2015)
- EXISTING TOP OF SLOPE (APR. 24, 2015)

**NOTES:**

- ALL ELEVATIONS & DISTANCES SHOWN ARE METRIC.
- MONITORING POINTS PLANTED ON JAN. 13/2015.
- HORIZONTAL MEASUREMENTS ACCURATE TO ±0.02m

NO.	REVISION	DATE (MM/DD/YY)	BY
4	ADDED DEC. 11/2018 SURVEY	12/11/18	K.P.B.
3	ADDED MAY 8/2018 SURVEY	08/10/18	K.P.B.
2	ADDED NOV. 5/2015 SURVEY	11/05/15	K.P.B.
1	ADDED APR. 24/2015 SURVEY	04/24/15	K.P.B.

**J.H. COHOON ENGINEERING LIMITED**  
CONSULTING ENGINEERS  
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PROJECT:  
**TUTELA HEIGHTS ROAD SLOPE STABILITY**  
COUNTY OF BRANT

CLIENT:  
**ENGLOBE CORP**

**SITE PLAN**

DESIGN:	SCALE: 1:1000
DRAWN: K.P.B.	JOB No: <b>11051</b>
CHECKED: J.H.C.	
SHEET: 1 of 1	DWG. No: <b>11051-M1</b>
DATE: FEB. 19/15	



# Tutela Heights Road - Inclinometer Locations

