

Site Number	Location	Name	Hwy	km
PH080	Hwy 688:02 C1 15.4	McKinney Creek Slide	688:02	Km 15.4
Legal Description: 16-16-84-20 W5		UTM Co-ordinates		
		11U E 494733	N	6238402

Current Monitoring:	19-Sep-2024	Previous Monitoring	19-May-2024
Instruments Read By:	Mr. Niraj Regmi, G.I.T and Mr. Nixon Mationg, of Thurber		

Instruments Read During This Site Visit			
Slope Inclinometers (SIs):	Pneumatic Piezometers (PN):	Vibrating Wire Piezometers (VW): VW18-1, VW18-2, and VW18-3	Standpipe Piezometers (SP):
Load Cell (LC):	Strain Gauges:	SAAs:	Others:

Readout Equipment Used			
Slope Inclinometers:	Pneumatic Piezometers:	Vibrating Wire Piezometers: Geokon GK404 vibrating wire readout	Standpipe Piezometers:
Load Cell:	Strain Gauges:	SAAs:	Others:

Discussion	
Zones of New Movement:	None
Interpretation of Monitoring Results:	<p>Vibrating wire piezometers VW18-1 showed a decrease in groundwater level of 0.04 m, respectively, since the spring of 2024 readings. VW18-2 and VW18-3 showed an increase in groundwater level of 0.60 m and 0.15 m, respectively, since the spring of 2024 readings. VW18-1 and VW18-3 showed a prior trend of diminishing groundwater levels since the completion of construction and the groundwater levels at these instrument locations appear to have levelled out. The piezometers had all previously shown their highest groundwater levels during construction as fill was placed at their respective locations.</p> <p>Figures PH080-1, PH080-2 and PH080-3 show the response of each of the piezometers relative to fill height during construction, as well as the subsequent decrease in pore water pressure. Figure PH080-4 shows a combined plot of the groundwater elevations of all three vibrating wire piezometers.</p>
Future Work:	These piezometers were installed to monitor conditions during fill placement during the culvert replacement project in 2019. The piezometers all show stable water level well below peaks reached during construction. As such it is suggested that these instruments have served their purpose and can now be removed from the monitoring program.
Instrumentation Repairs:	No instrument repairs are required at this time.

Additional Comments:	
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Attachments:	<ul style="list-style-type: none"> • Table PH080-1: Fall 2024 – HWY 688:02 McKinney Creek Culvert (Km 15.4) - Bf72477 Vibrating Wire Piezometer Instrumentation Reading Summary • Statement of Limitations and Conditions • APPENDIX A - PH080-1 FALL 2024 <ul style="list-style-type: none"> ○ Field Inspector's report ○ Site Plan Showing Approximate Instrument Locations (Drawing No. 32121 PH080) ○ Figure PH080-1 (VW18-1 Readings) ○ Figure PH080-2 (VW18-2 Readings) ○ Figure PH080-3 (VW18-3 Readings) ○ Figure PH080-4 (Combined VW Piezometer Readings)
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We trust this report meets your requirements at present. If you have any questions, please contact the undersigned at your convenience.

Yours very truly,
Thurber Engineering Ltd.
Roger Skirrow, M.Sc., P. Eng.
Senior Geotechnical Engineer

Lucas Green, P.Eng.
Geotechnical Engineer

Table PH080-1: Fall 2024 – HWY 688:02 McKinney Creek Culvert (Km 15.4) - BF72477 Vibrating Wire Piezometer Instrumentation Reading Summary

Date Monitored: September 19, 2024

INSTRUMENT	DATE INITIALIZED	TIP Elevation (m)	CURRENT STATUS	MAXIMUM GROUNDWATER ELEVATION (M)	CURRENT GROUNDWATER ELEVATION (m)	PREVIOUS GROUNDWATER ELEVATION (m)	CHANGE IN WATER LEVEL SINCE PREVIOUS READING (m)
VW18-1 (VW47342)	July 26, 2018	545.59	Operational	551.90 on October 30, 2018	547.80	547.84	-0.04
VW18-2 (VW47343)	July 26, 2018	545.82	Operational	560.50 on August 16, 2019	549.60	549.00	0.60
VW18-3 (VW45176)	August 8, 2018	559.84	Operational	554.93 on July 24, 2019	549.41	549.26	0.15

Drawing 32121-PH080 in Appendix A provides a sketch of the approximate location of the monitoring instrumentation for this site.



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THURBER ENGINEERING LTD.

**ALBERTA TRANSPORTATION AND ECONOMIC CORRIDORS GRMP (CON0022164)
PEACE REGION (PEACE RIVER DISTRICT)
INSTRUMENTATION MONITORING RESULTS**

FALL 2024

**APPENDIX A
DATA PRESENTATION**

SITE PH080: HWY 688:02 MCKINNEY CREEK SLIDE (KM 15.4) - BF72477

**ALBERTA TRANSPORTATION AND ECONOMIC CORRIDORS
PEACE REGION (PEACE RIVER DISTRICT)
INSTRUMENTATION MONITORING FIELD SUMMARY (PH080)
FALL 2024**

Location: McKinney Creek Slide (Hwy 688:02 C1 15.422) - BF72477	Readout: GK 404, SN 364
File Number: 32121	Temp: 10
	Read by: NKR/NRM

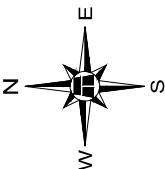
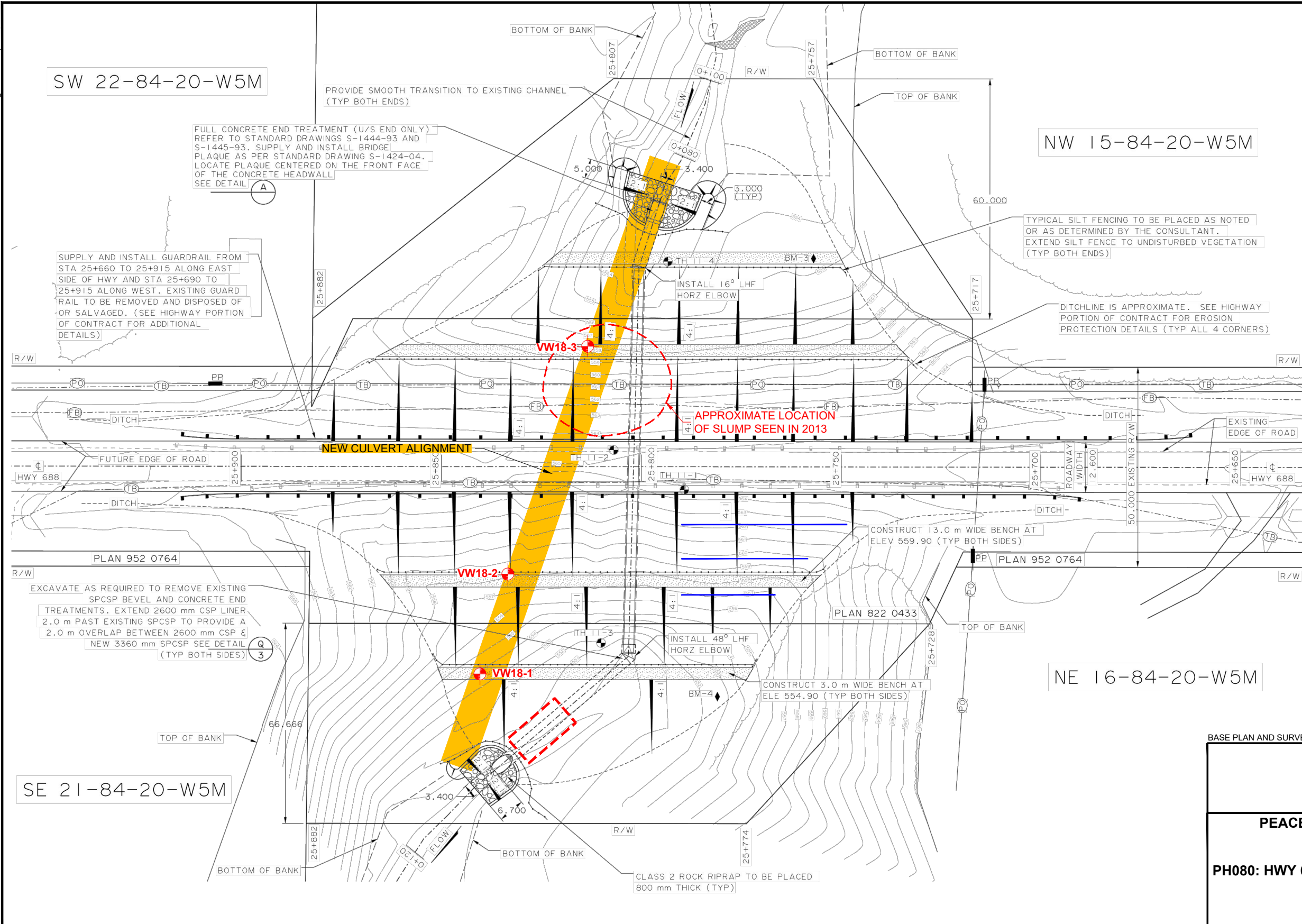
VIBRATING WIRE PIEZOMETER (VW) READINGS

VW #	Serial Number	GPS Location (UTM 11)		Date	Reading Dg	Temperature (deg C)
		Easting (m)	Northing (m)			
VW18-1	VW47342	494733	6238402	19-Sep-24	8664	6.9
VW18-2	VW47343	494733	6238402	19-Sep-24	8585.6	6.6
VW18-3	VW45176	494859	6238380	19-Sep-24	8505.1	5.9

INSPECTOR REPORT

VW18-1 and VW18-2 cables are west of the highway, north of the culvert outlet near the bush line. VW18-3 cable is east of the highway, north of the creek near the crest of the hill
VW 18-1,18-2 and 18-3 needs stickup protector or enclosure box. Currently the wires are lying on ground. See photographs

H:\32000\32121 AT GRMP Peace River District 2021-2025\CAD\2021 INSTRUMENT\32121-PH080.dwg - 1N - Sep. 21, 2021



SW 22-84-20-W5M

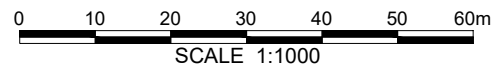
NW 15-84-20-W5M

SE 21-84-20-W5M

NE 16-84-20-W5M

- LEGEND**
- APPROXIMATE INSTRUMENT LOCATION
 - VW** VIBRATING WIRE PIEZOMETER

NOTE:
1. BASE PLAN FROM DRAWING 36131-P, DATED OCTOBER 13, 2015



BASE PLAN AND SURVEY PROVIDED BY WSP



PEACE REGION (PEACE RIVER DISTRICT)

PH080: HWY 688:02 MCKINNEY CREEK CULVERT SLIDE INSTRUMENT LOCATIONS

DWG No. 32121-PH080

DRAWN BY	ML
DESIGNED BY	BWN
APPROVED BY	DWP
SCALE	1:1000
DATE	SEPTEMBER 2021
FILE No.	32121



FIGURE PH080-1
HWY 688:02 MCKINNEY CREEK CULVERT SLIDE - VW18-1
(WEST SIDE OF CULVERT)

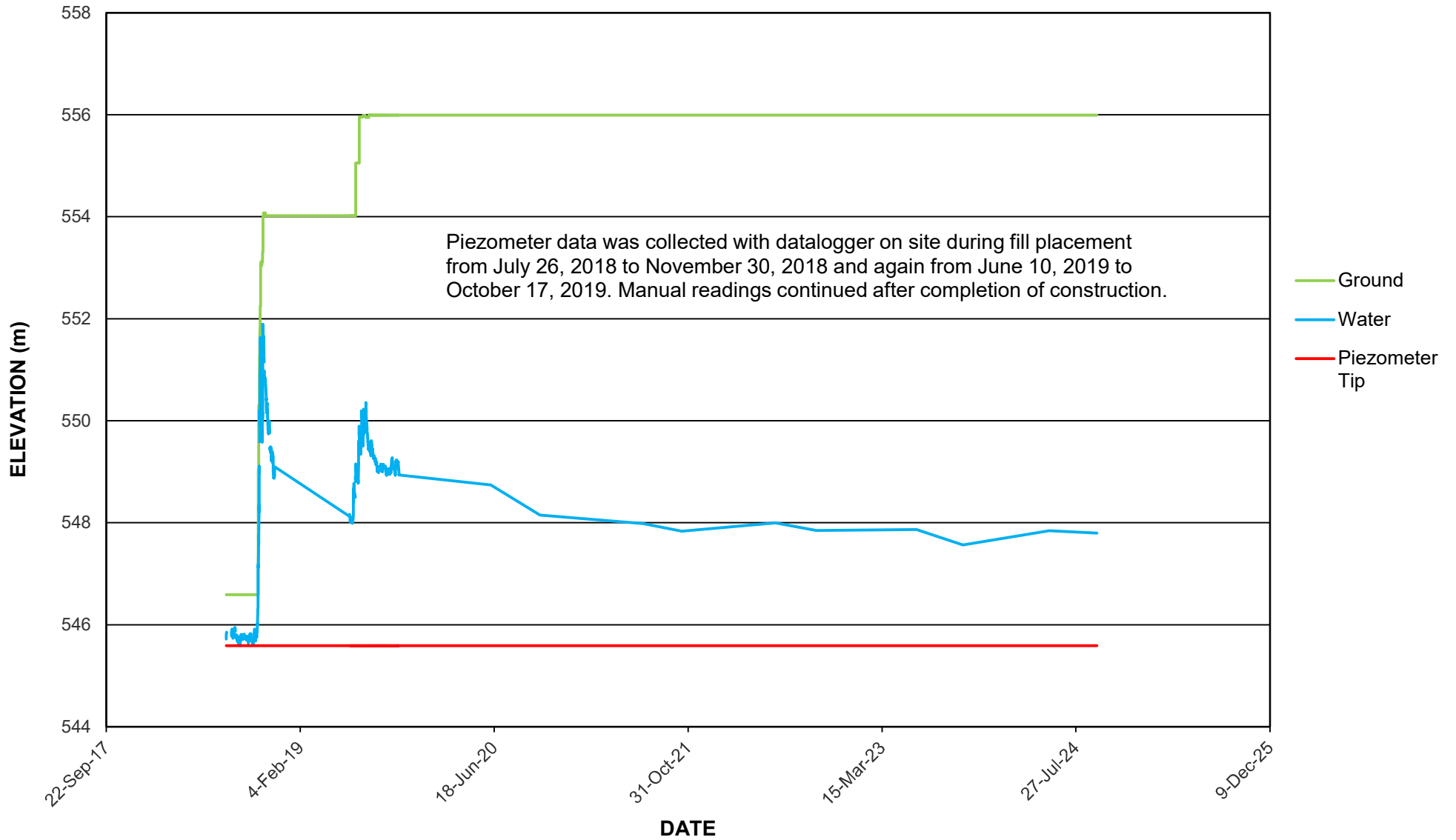


FIGURE PH080-2
HWY 688:02 MCKINNEY CREEK CULVERT SLIDE - VW18-2
(CENTER OF CULVERT)

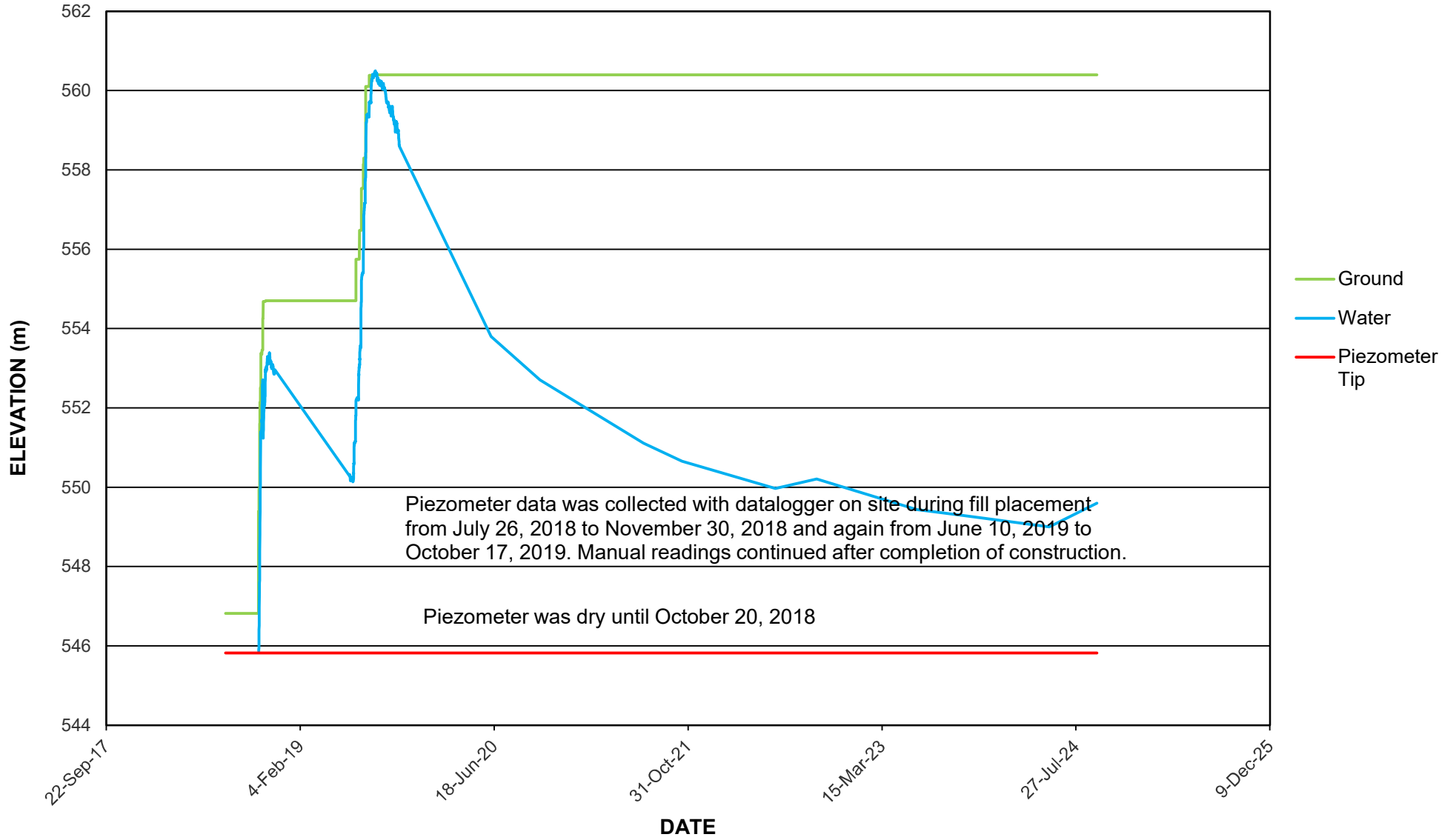


FIGURE PH080-3
HWY 688:02 MCKINNEY CREEK CULVERT SLIDE - VW18-3
(EAST SIDE OF CULVERT)

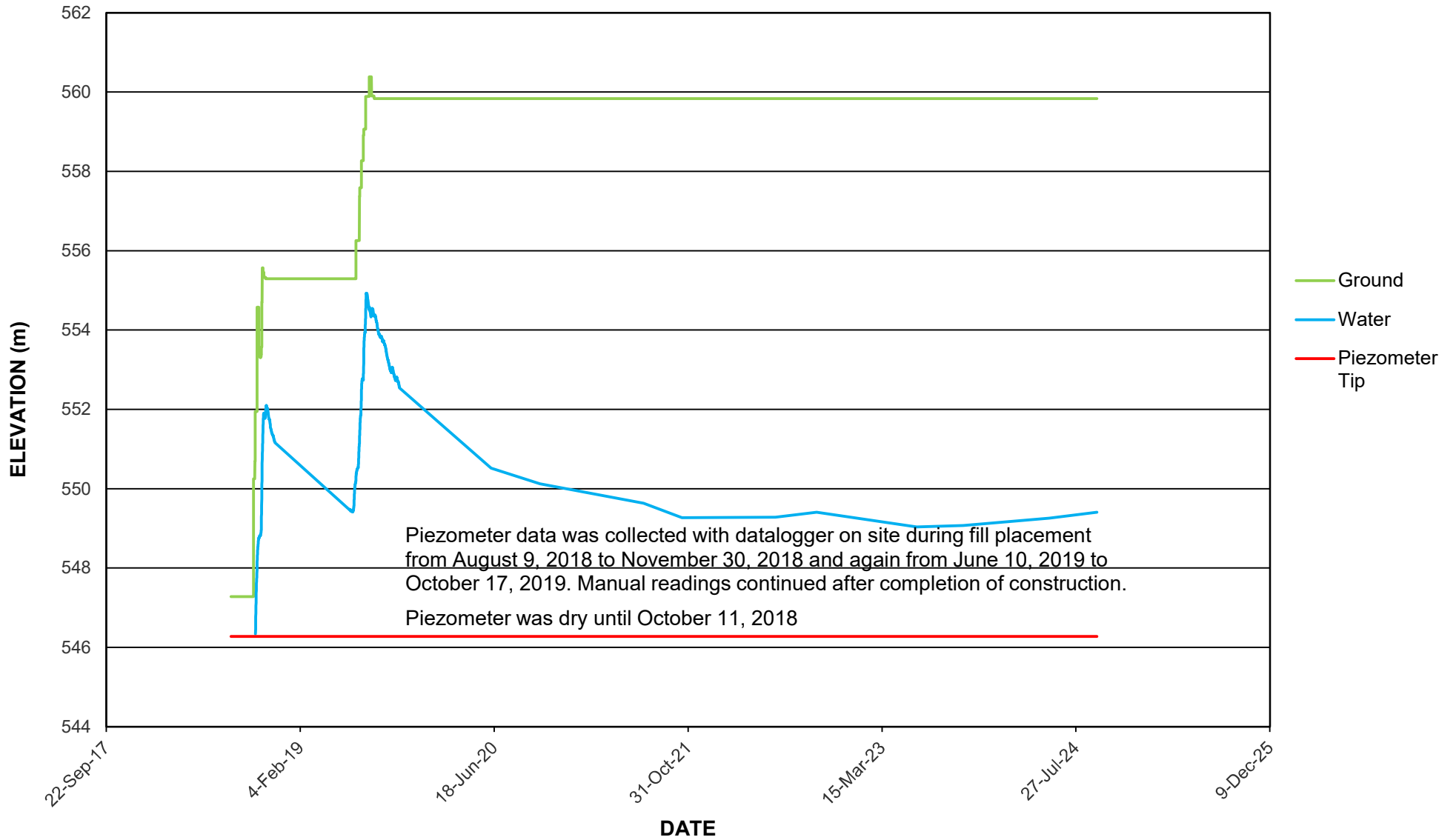


FIGURE PH080-4
HWY 688:02 MCKINNEY CREEK CULVERT SLIDE
(COMBINED PIEZOMETER READINGS)

