

Site Number	Location	Name	Hwy	km
PH054	HWY 684:02 29+200 to 29+800	Shaftesbury Trail	684:02	28.35 to 30.30
Legal Description: 9-30-83-21 W5		UTM Co-ordinates		
		11U E 481485	N	6230854

Current Monitoring:	7-Jun-2025	Previous Monitoring	18-May-2024
Instruments Read By:	Mr. Niraj Regmi, G.I.T and Mr. Godfred Etiendem, of Thurber		

Instruments Read During This Site Visit			
Slope Inclinometers (SIs): SI20-4	Pneumatic Piezometers (PN): N/A	Vibrating Wire Piezometers (VW): VW20-4	Standpipe Piezometers (SP): N/A
Load Cell (LC): N/A	Strain Gauges: N/A	SAA's: N/A	Others:

Readout Equipment Used			
Slope Inclinometers: RST Digital Inclinator probe with 2 ft. wheelbase and RST Pocket PC readout	Pneumatic Piezometers:	Vibrating Wire Piezometers: Downloaded from Datalogger	Standpipe Piezometers:
Load Cell:	Strain Gauges:	SAA's:	Others:
Notes:			

Discussion	
Zones of New Movement:	None
Interpretation of Monitoring Results:	<p>SI20-4 showed no discernible movement over 1.9 m to 4.3 m depth since the previous readings on May 18, 2024, and a cumulative movement of 0.9 mm over this depth. The zone of movement, extending from 1.9 m to 4.3 m depth, has exhibited alternating up and downslope movement over the last two reading cycles, and further readings are required to confirm whether it constitutes an actual zone of movement.</p> <p>SI20-4 showed a rate of movement of less than 0.1 mm/yr over 12.8 m to 15.3 m depth, and a cumulative movement of 2.5 mm/yr.</p> <p>Vibrating wire piezometer VW20-4 showed an increase in groundwater level of 0.06 m compared to the May 18, 2024, readings. Vibrating wire piezometer VW20-4 has generally shown a cyclical water level, with the highest water levels in the early spring months, about 1.2 m higher than the lowest levels during the winter.</p>
Future Work:	The instruments should be read again in the spring of 2026. The zone of movement over 1.9 m to 4.3 m depth should be confirmed over the next few reading cycles.
Instrumentation Repairs:	No instrument repairs are required at this time.

Additional Comments:	
Attachments:	<ul style="list-style-type: none"> • Table PH054-1 Spring 2025 – HWY 684:02 Shaftesbury Trail, Slope Inclinator Reading Instrumentation Summary • Table PH054-2 Spring 2025 – HWY 684:02 Shaftesbury Trail Piezometer Instrumentation Reading Summary • Statement for Use and Interpretation of Report • APPENDIX A – PH054 SPRING 2025 <ul style="list-style-type: none"> ○ Field Inspector's report ○ Site Plans Showing Approximate Instrument Locations (Drawing No.23838-4) ○ SI Reading Plots ○ Figure PH054-1 (VW20-04 Piezometric Elevations)

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.
Don Proudfoot, M.Eng., P. Eng.
Partner | Senior Geotechnical Engineer

Lucas Green, P.Eng.
Geotechnical Engineer

Table PH054-1: Spring 2025 – Hwy 684:02 Shaftesbury Trail Inclinator Instrumentation Reading Summary

Date Monitored: June 7, 2024

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)
SI20-4	August 14, 2020	0.9 mm over 1.9 m to 4.3 m depth in 205° direction	3.2 mm/yr in May 2024	Operational	May 18, 2024	No Discernible Movement	N/A	1.1
		2.5 mm over 12.8 m to 15.3 m depth in 205° direction	4.7 mm/yr in October 2020			<0.1	<0.1	-1.0

Drawings 23838-4 in Appendix A provides a sketch of the approximate locations of the monitoring instrumentation for this site.

Table PH054-2: Spring 2025 – Hwy 684:02 Shaftesbury Trail Vibrating Wire Piezometer Instrumentation Reading Summary

Date Monitored: June 7, 2024

INSTRUMENT #	DATE INITIALIZED	TIP ELEV. (m)	GROUND ELEV. (m)	CURRENT STATUS	HIGHEST MEASURED WATER ELEVATION (m)	CURRENT WATER ELEVATION (m)	PREVIOUS WATER ELEVATION (June 14, 2023) (m)	CHANGE IN WATER LEVEL SINCE PREVIOUS READING (m)
VW20-4 (67878)	August 12, 2020	314.20	329.40	Operational	316.66 on August 15, 2020	315.48	315.42	0.06

Drawings 23838-4 in Appendix A provides a sketch of the approximate locations of the monitoring instrumentation for this site.

Notes:

VW – vibrating wire piezometer.

BGS - below ground surface.



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

SPRING 2025

**APPENDIX A
DATA PRESENTATION**

SITE PH054: HWY 684:02, SHAFTESBURY TRAIL

**ALBERTA TRANSPORTATION AND ECONOMIC CORRIDORS
PEACE REGION (PEACE RIVER DISTRICT)
INSTRUMENTATION MONITORING FIELD SUMMARY (PH054)
SPRING 2025**

Location: Hwy 684:02 Shaftesbury Trail Km 28.35 to Km 30.30	Readout:
File Number: 32121	Casing size: 2.75
Probe: RST SET 8R	Temp: 22
Cable: RST SET 8R	Read by: NKR/GE

SLOPE INCLINOMETER (SI) READINGS

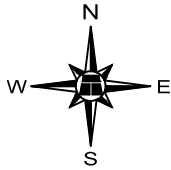
SI#	GPS Location (UTM 11V)		Date	Stickup (m)	Depth from top of casing (ft)	Azimuth of A+ Groove	Current Bottom Depth Readings				Probe/ Reel #	Remarks
	Easting (m)	Northing (m)					A+	A-	B+	B-		
SI20-4	481485	6230854	07-Jun-25	0.89	52 to 2	59	-1066	1076	309	-304	8R/8R	

VIBRATING WIRE READINGS

VW	GPS Location (UTM 11)		VW Serial #	Datalogger Serial #	Date	Comment
	Easting (m)	Northing (m)				
VW20-4(Attached to SI20-4)	481485	6230854	67878	DT20211	07-Jun-25	Downloaded

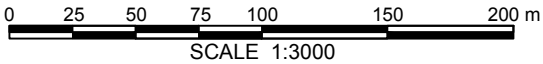
INSPECTOR REPORT

G:\23000\23838 PH53 Hwy 684\02 km 28.4 to 30.3 Embankment Stability Assessment\Drafting\2025\23838-1 2025.dwg - 4N - Jul. 03. 2025



LEGEND

- APPROXIMATE TEST HOLE LOCATION
- APPROXIMATE INSTRUMENT LOCATION
- VIBRATING WIRE PIEZOMETER
- SLOPE INCLINOMETER
- GEOHAZARD SITE NUMBER



AIR PHOTO FROM ESRI WORLD IMAGERY EXPORTED ON APRIL 18, 2022



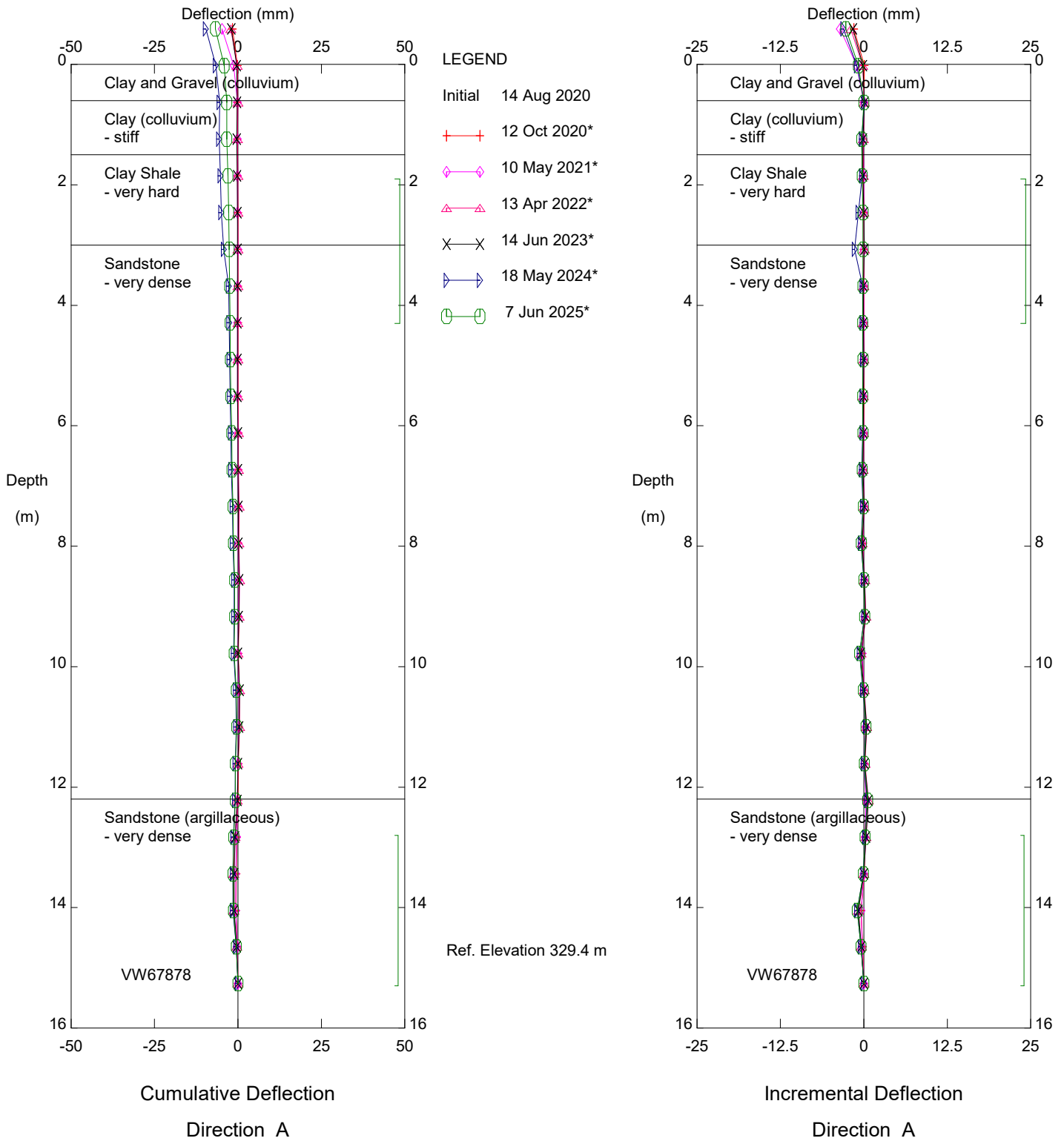
**SHAFTESBURY TRAIL - HWY 684, km 28.3 TO 30.3
GEOTECHNICAL INVESTIGATION AND PRELIMINARY
ENGINEERING ASSESSMENT
DETAIL PLAN**

DWG No. 23838-4

DRAWN BY	ML
DESIGNED BY	LGM
APPROVED BY	DWP
SCALE	1:3000
DATE	JULY 2025
FILE No.	23838



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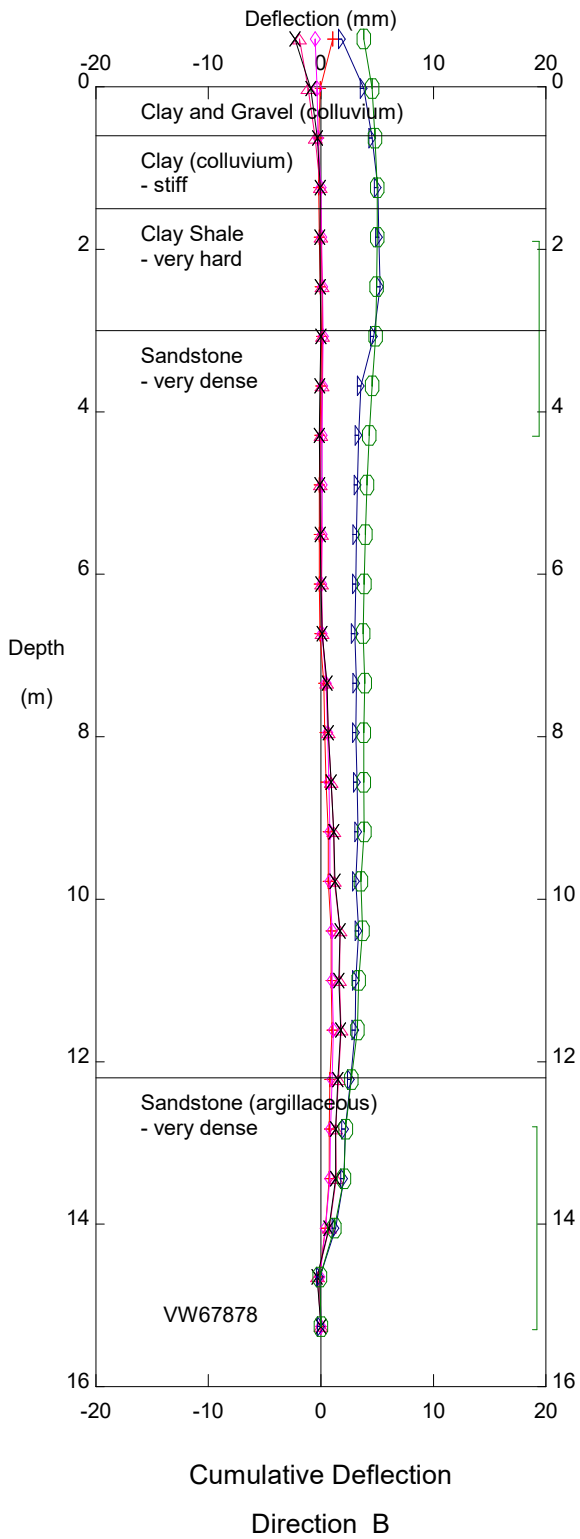


HWY 684 Shaftesbury trail, Inclinometer SI20-4

Alberta Transportation

Sets marked * include zero shift and/or rotation corrections.

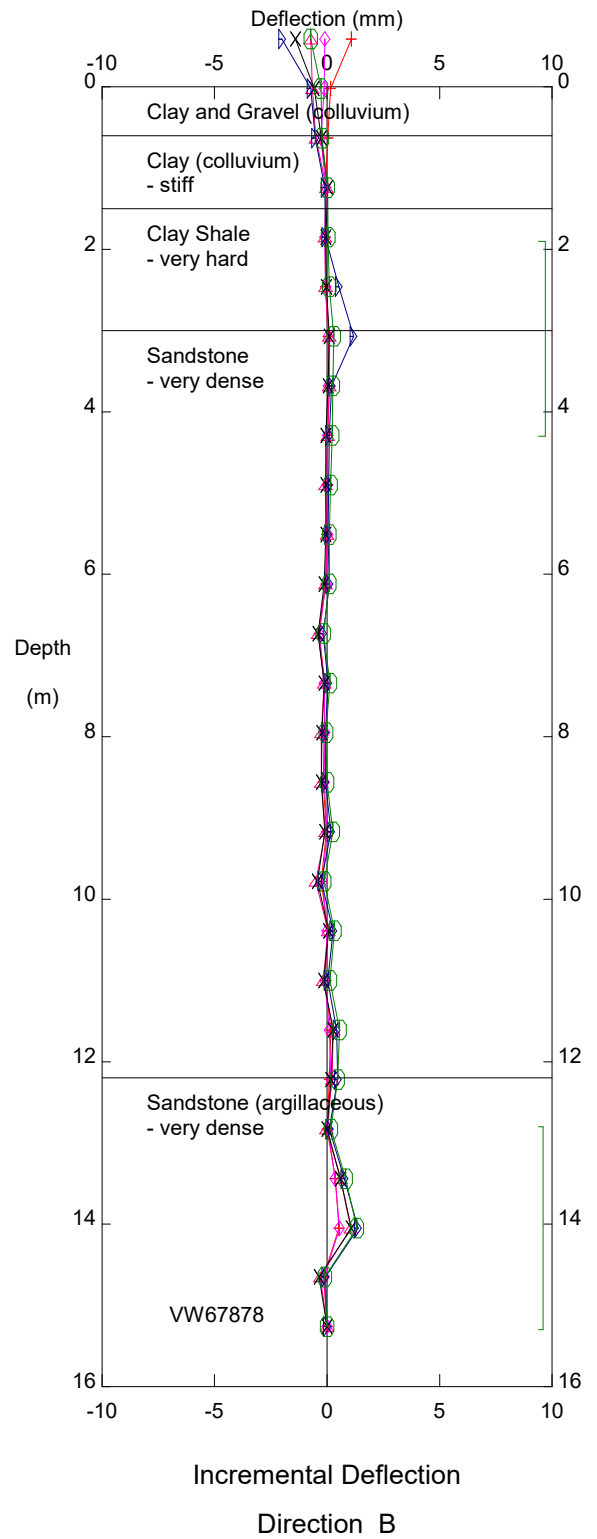
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LEGEND

- Initial 14 Aug 2020
- 12 Oct 2020*
- 10 May 2021*
- 13 Apr 2022*
- 14 Jun 2023*
- 18 May 2024*
- 7 Jun 2025*

Ref. Elevation 329.4 m

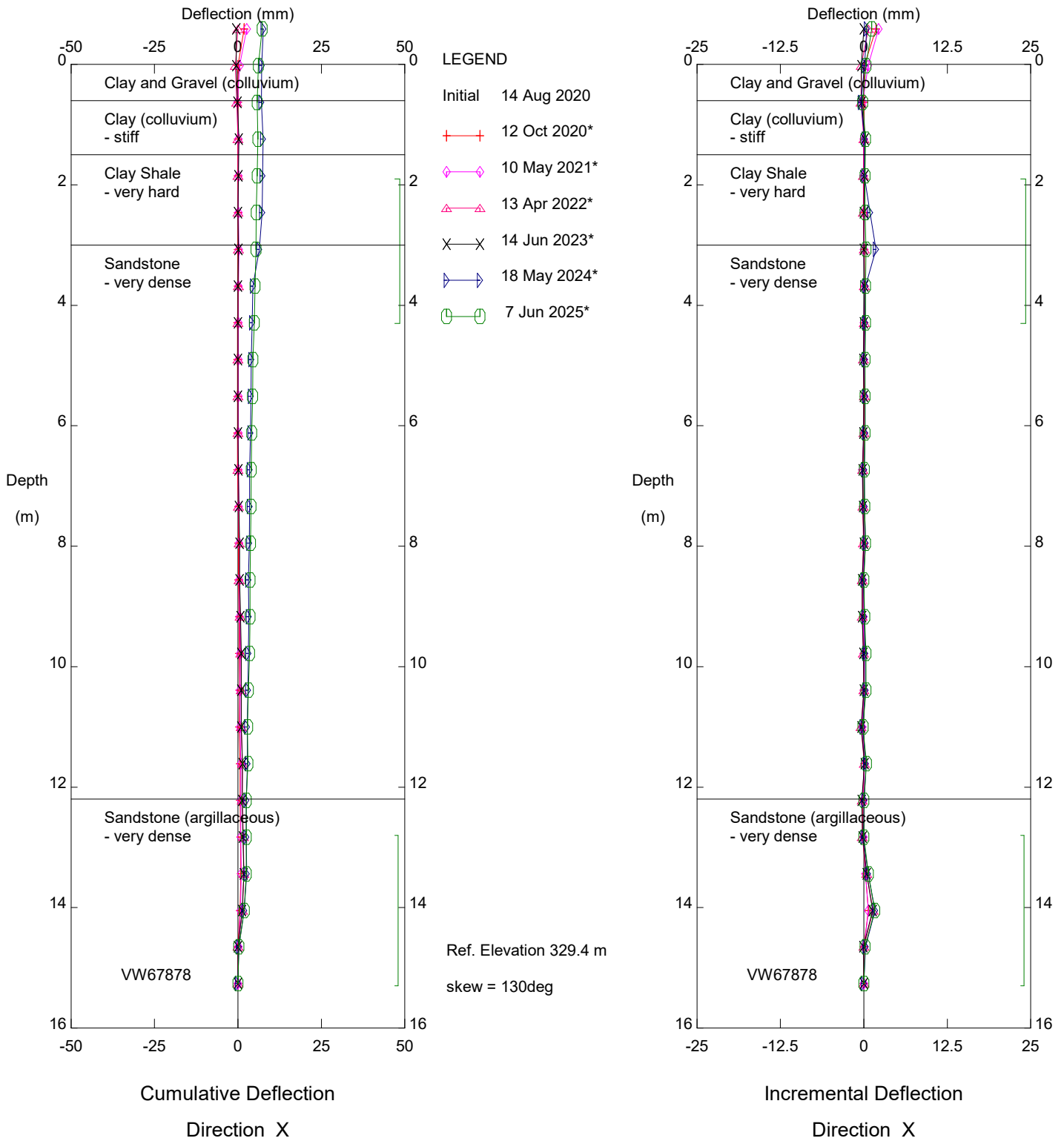


HWY 684 Shaftesbury trail, Inclinator SI20-4

Alberta Transportation

Sets marked * include zero shift and/or rotation corrections.

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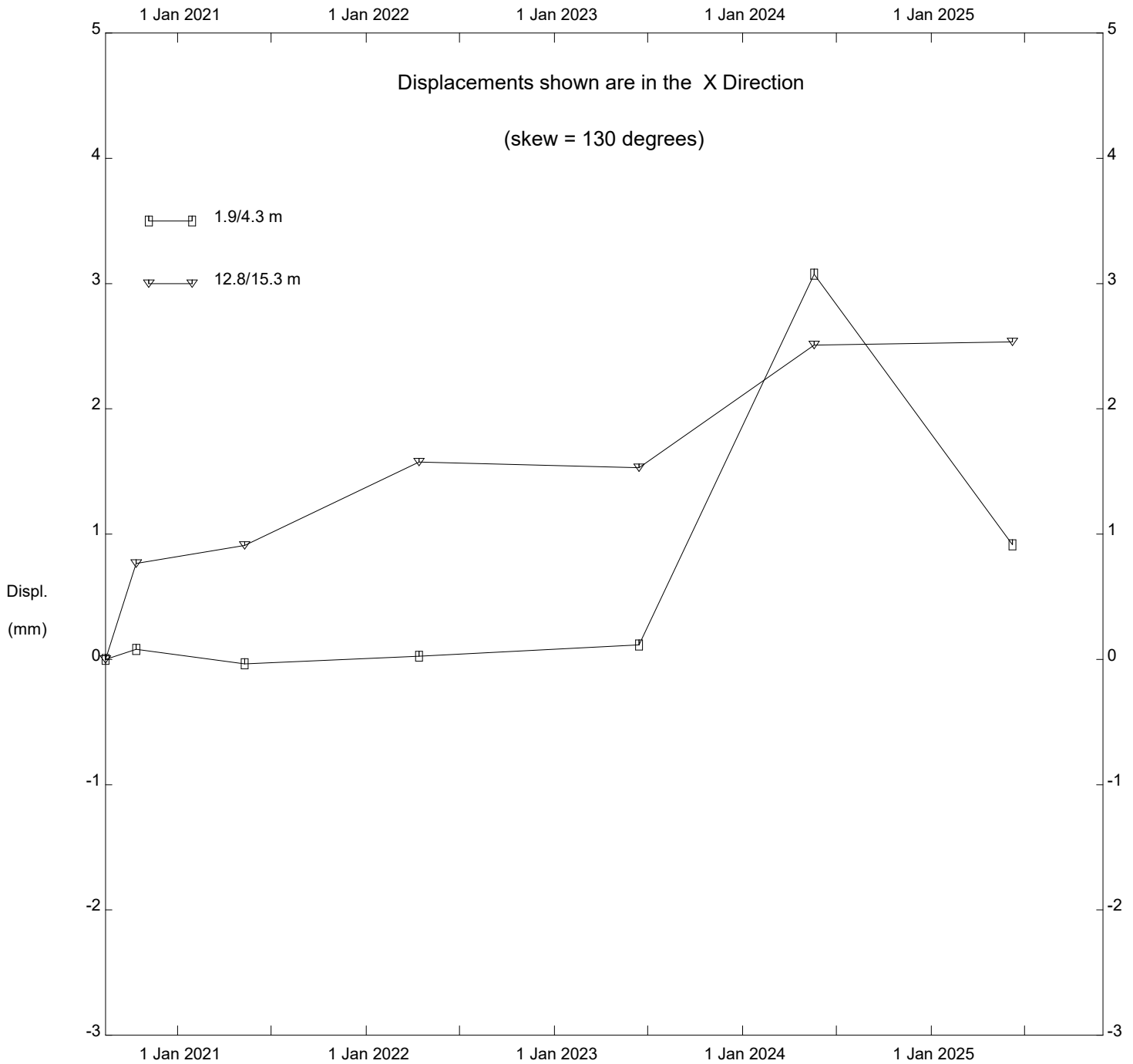


HWY 684 Shaftesbury trail, Inclinometer SI20-4

Alberta Transportation

Sets marked * include zero shift and/or rotation corrections.

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HWY 684 Shaftesbury trail, Inclinator SI20-4

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PH054 - 1- VW20-4

