THURBER ENGINEERING LTD.

November 22, 2022 File No.: 32123

Alberta Transportation
Provincial Building
9621-96 Avenue
Peace River, Alberta
T8S 1T4

Attention: Mr. Ed Szmata

ALBERTA TRANSPORTATION GRMP (CON0022165)
PEACE REGION (GRANDE PRAIRIE DISTRICT – NORTH)
INSTRUMENTATION MONITORING RESULTS – FALL 2022

SECTION C

SITE GP029: HWY 2:70, CHURCH CAMP SLIDE

Dear Mr. Szmata:

This report provides the results of the bi-annual geotechnical instrumentation monitoring for the above-mentioned site as part of Alberta Transportation's Geohazard Risk Management Program for Peace Region Grande Prairie District – North (CON0022165).

It is a condition of this letter report that Thurber's performance of its professional services will be subject to the attached Statement of Limitations and Conditions.

1. FIELD PROGRAM AND INSTRUMENTATION STATUS

Three slope inclinometers (SI-2, SI-3, and SI17-5), eleven pneumatic piezometers (PN-02, PN17-2A, PN17-2B, PN17-2C, PN17-3B, PN17-3C, PN17-4A, PN17-4B, PN17-4C, PN17-5A and PN17-5B) and one standpipe piezometer (SP17-6) were read at the Hwy 2:70 Church Camp site on October 3, 2022 by Mr. Niraj Regmi, G.I.T. and Mr. Kyle Crooymans, both of Thurber Engineering Ltd.

The SIs were read using an RST Digital Inclinometer probe with a 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. The pneumatic piezometers were read using an RST C108 pneumatic piezometer readout. The standpipe piezometer was read using a DGSI dipmeter.

2. DATA PRESENTATION

2.1 General

SI plots for A and B directions are presented in Appendix A and are summarized below. Where movement has been recorded, the resultant plot (X direction, if applicable) and rate of movement have also been provided. Piezometer readings are also summarized below and are plotted in Appendix A. The SI and piezometer summary tables also contain instruments deleted from the GRMP program, for future reference.

2.2 Zones of Movement

Zones of new movement were not observed in the SIs since the previous readings in the spring of 2022.

Zones of movement are summarized in Table GP029-1 below. This table also provides a historical account of the total movement, the depth of movement and the maximum rate of movement that has occurred at this site since the initialization of the slope inclinometers.

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TABLE GP029-1
FALL 2022 – HWY 2:70 CHURCH CAMP SLIDE
SLOPE INCLINOMETER INSTRUMENTATION READING SUMMARY

Date Monitored: October 3, 2022

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)
SI-2	October 18, 2007	30.0 over 7.0 m to 8.8 m depth in 112° direction	8.1 in October 2016	Operational	June 23, 2022	0.9	3.1	1.4
		20.0 over 33.8 m to 35.1 m depth in 79° direction	6.9 in October 2020			1.3	4.8	3.3
SI-3	October 18, 2007	35.9 over 5.2 m to 7.0 m depth in 113° direction	7.6 in July 2021	Operational	June 23, 2022	0.3	1.2	-4.4
		12.9 over 9.4 m to 10.6 m depth in 81° direction	5.4 in October 2016			1.1	3.8	3.3
		3.1 over 13.1 m to 14.3 m depth in 81° direction	2.0 in October 2021			<0.1	0.2	<0.1
		4.6 over 18.0 m to 19.2 m depth in 91° direction	2.3 in October 2018			0.1	0.3	0.2
SI17-1	*September 15, 2017*	*7.0 over 24.4 m to 26.3 m depth in 85° direction*	*8.1 in October 2018*	*Sheared at 33.2 m*	*October 7, 2019*	*N/A*	*N/A*	*N/A*
		22.4 over 31.8 m to 33.0 m depth in 120° direction	*22.6 in October 2018*			*N/A*	*N/A*	*N/A*

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TABLE GP029-1 – CONTINUED…
FALL 2022 – HWY 2:70 CHURCH CAMP SLIDE
SLOPE INCLINOMETER INSTRUMENTATION READING SUMMARY

Date Monitored: October 3, 2022

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)
SI17-2	*September 15, 2017*	*25.7 m over 17.2 m to 19.7 m depth in 110° direction*	*42.7 in October 2017*	*Sheared at 50.6 m*	*October 7, 2019*	*N/A*	*N/A*	*N/A*
		6.9 m over 21.5 m to 23.3 m depth in 110° direction	*10.4 in October 2018*			*N/A*	*N/A*	*N/A*
		38.0 over 47.1 m to 50.8 m depth in 110° direction	*31.9 in October 2018*			*N/A*	*N/A*	*N/A*
SI17-3	*September 15, 2017*	*No discernible movement*	*N/A*	*Sheared at 43.6 m*	*October 5, 2018*	*N/A*	*N/A*	*N/A*
SI17-4	*September 15, 2017*	*11.8 over 37.4 m to 39.2 m depth in 118° direction*	*17.5 in July 2018*	*Sheared at 45.1 m*	*October 5, 2018*	*N/A*	*N/A*	*N/A*
SI17-5	September 16, 2017	No discernible movement	N/A	Operational	June 23, 2022	N/A	N/A	N/A

Drawing 32123-GP029 in Appendix A provides a sketch of the approximate location of the monitoring instrumentation for this site.

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TABLE GP029-2
FALL 2022 – HWY 2:70 CHURCH CAMP SLIDE
PNEUMATIC PIEZOMETER INSTRUMENTATION READING SUMMARY

Date Monitored: October 3, 2022

INSTRUMENT #	DATE INITIALIZED	TIP ELEV. (m)	GROUND ELEV. (m)	CURRENT STATUS	HIGHEST MEASURED WATER ELEVATION (m)	MEASURED PORE PRESSURE (kPa)	CURRENT WATER ELEVATION (m)	PREVIOUS WATER ELEVATION (m)	CHANGE IN WATER LEVEL SINCE PREVIOUS READING (m)
PN-02	May 9, 2008	629.66	635.76	Operational	635.82 in October 2016	48.3	634.58	635.78	-1.20
PN-03	*May 9, 2008*	*614.57*	*631.33*	*Damaged*	*628.23 in May 2014*	*N/A*	*N/A*	*628.13 (June 15, 2017)*	*N/A*
PN17-1A	*September 15, 2017*	*633.85*	*645.58*	*Malfunctioning*	*645.45 in July 2018*	*N/A*	*N/A*	*636.87 (July 5, 2019)*	*N/A*
PN17-1B	*September 15, 2017*	*610.53*	*645.58*	*Malfunctioning*	*645.75 in June 2020*	*N/A*	*N/A*	*645.75* (June 22, 2020)*	*N/A*
PN17-2A	September 15, 2017	628.41	638.65	Operational	638.46 in June 2020	91.0	637.69	638.32	-0.63
PN17-2B	September 15, 2017	598.54	638.65	Operational	637.77 in July 2018	380.6	637.35	637.77	-0.42
PN17-2C	September 15, 2017	587.88	638.65	Operational	637.79 in October 2018	486.1	637.44	637.65	-0.21
PN17-3A	*September 15, 2017*	*603.80*	*629.50*	*Malfunctioning*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*

Drawing 32123-GP029 in Appendix A provides a sketch of the approximate location of the monitoring instrumentation for this site.
* Indicates artesian groundwater level

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TABLE GP029-2 – CONTINUED…
FALL 2022 – HWY 2:70 CHURCH CAMP SLIDE
PNEUMATIC PIEZOMETER INSTRUMENTATION READING SUMMARY

Date Monitored: October 3, 2022

INSTRUMENT #	DATE INITIALIZED	TIP ELEV. (m)	GROUND ELEV. (m)	CURRENT STATUS	HIGHEST MEASURED WATER ELEVATION (m)	MEASURED PORE PRESSURE (kPa)	CURRENT WATER ELEVATION (m)	PREVIOUS WATER ELEVATION (m)	CHANGE IN WATER LEVEL SINCE PREVIOUS READING (m)
PN17-3B	September 15, 2017	591.30	629.50	Operational	635.66 in January 2018	359.2	627.92	628.35	-0.43
PN17-3C	September 15, 2017	581.45	629.50	Operational	638.81* in June 2022	562.6	638.81*	638.81*	0.00
PN17-4A	September 15, 2017	606.31	631.19	Operational	630.15 in June 2020	223.4	629.09	629.44	-0.35
PN17-4B	September 15, 2017	590.92	631.19	Operational	634.44 in October 2017	388.9	630.57	630.50	0.07
PN17-4C	September 15, 2017	582.69	631.19	Operational	641.12* in June 2020	545.4	638.30*	638.72*	-0.42
PN17-5A	September 15, 2017	633.17	647.40	Operational	645.68 in July 2018	121.3	645.54	645.75	-0.21
PN17-5B	September 15, 2018	611.99	647.40	Operational	641.38 in October 2022	288.2	641.38	641.02	0.36

Drawing 32123-GP029 in Appendix A provides a sketch of the approximate location of the monitoring instrumentation for this site.
* Indicates artesian groundwater level

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TABLE GP029-3
FALL 2022 – HWY 2:70 CHURCH CAMP SLIDE
STANDPIPE PIEZOMETER INSTRUMENTATION READING SUMMARY

Date Monitored: October 3, 2022

INSTRUMENT #	DATE INITIALIZED	TIP ELEV. (m)	GROUND ELEV. (m)	CURRENT STATUS	MAXIMUM MEASURED WATER ELEVATION (m)	MEASURED WATER ELEVATION (m)	PREVIOUS WATER ELEVATION (m)	CHANGE IN WATER LEVEL SINCE PREVIOUS READING (m)
SP17-6	September 15, 2017	640.26	647.81	Operational	645.57 in October 2020	645.01	644.80	0.21
SP17-7	September 15, 2017	*635.44*	*646.54*	*Destroyed*	*645.36 in January 2018*	*N/A*	*N/A*	*N/A*
SP17-8	September 15, 2017	*639.46*	*646.06*	*Destroyed*	*642.54 in January 2018*	*N/A*	*N/A*	*N/A*
SP17-9	September 15, 2017	*637.84*	*644.44*	*Destroyed*	*639.69 in January 2018*	*N/A*	*N/A*	*N/A*

Drawing 32123-GP029 in Appendix A provides a sketch of the approximate location of the monitoring instrumentation for this site.

3. INTERPRETATION OF MONITORING RESULTS

Slope inclinometer SI-2 showed a rate of movement of 3.1 mm/yr over 7.0 m to 8.8 m depth and a rate of movement of 4.8 mm/yr over 33.8 m to 35.1 m depth since the spring of 2022 readings. Both zones of movement in SI-2 show a slight acceleration of movement compared to the past several readings cycles. SI-3 showed a rate of movement of 1.2 mm/yr over 5.2 m to 7.0 m depth, a rate of movement of 3.8 mm/yr over 9.4 m to 10.6 m depth, a rate of movement of 0.2 mm/yr over 13.1 m to 14.3 m depth and a rate of movement of 0.3 mm/yr over 18.0 m to 19.2 m depth since the spring of 2022 readings. The zone of movement over 5.2 m to 7.0 m depth in SI-3 showed a noticeable deceleration in movement compared to the average rate of movement over the past several years, while the zone over 9.4 m to 10.6 m depth showed an acceleration in movement. The lower two movement zones in SI-3 show rates of movement similar to the historic average rates for these instruments. SI17-5 has shown no discernible movement since initialization as it is likely located just outside of the landslide.

Pneumatic piezometers PN-02, PN17-2A, PN17-2B, PN17-2C, PN17-3B, PN17-4A, PN17-4C and PN17-5A showed decreases in groundwater levels of 1.20 m, 0.63 m, 0.42 m, 0.21 m, 0.43 m, 0.35 m, 0.42 m, and 0.21 m, respectively, since the spring of 2022 readings. PN17-4B and PN17-5B showed increases in groundwater levels of 0.07 m, and 0.36 m, respectively, since the spring of 2022 readings. PN17-5B is currently showing the highest groundwater level measured in the instrument since it was initialized. PN17-3C showed no change in groundwater level since the spring of 2022 readings. PN17-3C and PN17-4C are currently showing above-ground (artesian) groundwater levels of 9.31 m and 7.11 m, respectively.

Standpipe piezometer SP17-6 showed an increase in groundwater level of 0.21 m since the spring of 2022 readings.

Overall, the pneumatic and standpipe piezometers are showing groundwater levels in line with historic groundwater level readings at the site. The piezometer readings are summarized in Tables GP029-2 and GP029-3 above and are plotted in Figures PH029-1 (by elevation) and PH029-2 (by depth) in Appendix A.

4. RECOMMENDATIONS

4.1 Future Work

The instruments should be read again in the spring of 2023.

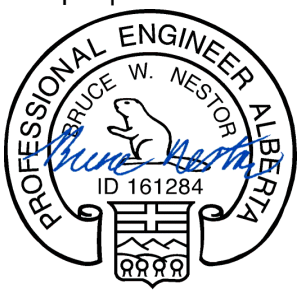
4.2 Instrumentation Repairs

No instrument repairs are required at this time.

5. CLOSURE

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.
Principal | Senior Geotechnical Engineer



November 22, 2022

PERMIT TO PRACTICE
THURBER ENGINEERING LTD.
RM SIGNATURE:
RM APEGA ID #: 51674
DATE: November 23, 2022
PERMIT NUMBER: P005186
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

Bruce Nestor, P.Eng.
Geotechnical Engineer
/jf

Attachments:

- Statement of Limitations and Conditions
- Appendix A
  - Field Inspector's report
  - Site Plan Showing Approximate Instrument Locations (Drawing No. 32123-GP029)
  - SI Reading Plots
  - Figure GP029-1 (Piezometric Elevations)
  - Figure GP029-2 (Piezometric Depths)

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STATEMENT OF LIMITATIONS AND CONDITIONS

1. STANDARD OF CARE

This Report has been prepared in accordance with generally accepted engineering or environmental consulting practices in the applicable jurisdiction. No other warranty, expressed or implied, is intended or made.

2. COMPLETE REPORT

All documents, records, data and files, whether electronic or otherwise, generated as part of this assignment are a part of the Report, which is of a summary nature and is not intended to stand alone without reference to the instructions given to Thurber by the Client, communications between Thurber and the Client, and any other reports, proposals or documents prepared by Thurber for the Client relative to the specific site described herein, all of which together constitute the Report.

IN ORDER TO PROPERLY UNDERSTAND THE SUGGESTIONS, RECOMMENDATIONS AND OPINIONS EXPRESSED HEREIN, REFERENCE MUST BE MADE TO THE WHOLE OF THE REPORT. THURBER IS NOT RESPONSIBLE FOR USE BY ANY PARTY OF PORTIONS OF THE REPORT WITHOUT REFERENCE TO THE WHOLE REPORT.

3. BASIS OF REPORT

The Report has been prepared for the specific site, development, design objectives and purposes that were described to Thurber by the Client. The applicability and reliability of any of the findings, recommendations, suggestions, or opinions expressed in the Report, subject to the limitations provided herein, are only valid to the extent that the Report expressly addresses proposed development, design objectives and purposes, and then only to the extent that there has been no material alteration to or variation from any of the said descriptions provided to Thurber, unless Thurber is specifically requested by the Client to review and revise the Report in light of such alteration or variation.

4. USE OF THE REPORT

The information and opinions expressed in the Report, or any document forming part of the Report, are for the sole benefit of the Client. NO OTHER PARTY MAY USE OR RELY UPON THE REPORT OR ANY PORTION THEREOF WITHOUT THURBER'S WRITTEN CONSENT AND SUCH USE SHALL BE ON SUCH TERMS AND CONDITIONS AS THURBER MAY EXPRESSLY APPROVE. Ownership in and copyright for the contents of the Report belong to Thurber. Any use which a third party makes of the Report, is the sole responsibility of such third party. Thurber accepts no responsibility whatsoever for damages suffered by any third party resulting from use of the Report without Thurber's express written permission.

5. INTERPRETATION OF THE REPORT

a) Nature and Exactness of Soil and Contaminant Description: Classification and identification of soils, rocks, geological units, contaminant materials and quantities have been based on investigations performed in accordance with the standards set out in Paragraph 1. Classification and identification of these factors are judgmental in nature. Comprehensive sampling and testing programs implemented with the appropriate equipment by experienced personnel may fail to locate some conditions. All investigations utilizing the standards of Paragraph 1 will involve an inherent risk that some conditions will not be detected and all documents or records summarizing such investigations will be based on assumptions of what exists between the actual points sampled. Actual conditions may vary significantly between the points investigated and the Client and all other persons making use of such documents or records with our express written consent should be aware of this risk and the Report is delivered subject to the express condition that such risk is accepted by the Client and such other persons. Some conditions are subject to change over time and those making use of the Report should be aware of this possibility and understand that the Report only presents the conditions at the sampled points at the time of sampling. If special concerns exist, or the Client has special considerations or requirements, the Client should disclose them so that additional or special investigations may be undertaken which would not otherwise be within the scope of investigations made for the purposes of the Report.

b) Reliance on Provided Information: The evaluation and conclusions contained in the Report have been prepared on the basis of conditions in evidence at the time of site inspections and on the basis of information provided to Thurber. Thurber has relied in good faith upon representations, information and instructions provided by the Client and others concerning the site. Accordingly, Thurber does not accept responsibility for any deficiency, misstatement or inaccuracy contained in the Report as a result of misstatements, omissions, misrepresentations, or fraudulent acts of the Client or other persons providing information relied on by Thurber. Thurber is entitled to rely on such representations, information and instructions and is not required to carry out investigations to determine the truth or accuracy of such representations, information and instructions.

c) Design Services: The Report may form part of design and construction documents for information purposes even though it may have been issued prior to final design being completed. Thurber should be retained to review final design, project plans and related documents prior to construction to confirm that they are consistent with the intent of the Report. Any differences that may exist between the Report's recommendations and the final design detailed in the contract documents should be reported to Thurber immediately so that Thurber can address potential conflicts.

d) Construction Services: During construction Thurber should be retained to provide field reviews. Field reviews consist of performing sufficient and timely observations of encountered conditions in order to confirm and document that the site conditions do not materially differ from those interpreted conditions considered in the preparation of the report. Adequate field reviews are necessary for Thurber to provide letters of assurance, in accordance with the requirements of many regulatory authorities.

6. RELEASE OF POLLUTANTS OR HAZARDOUS SUBSTANCES

Geotechnical engineering and environmental consulting projects often have the potential to encounter pollutants or hazardous substances and the potential to cause the escape, release or dispersal of those substances. Thurber shall have no liability to the Client under any circumstances, for the escape, release or dispersal of pollutants or hazardous substances, unless such pollutants or hazardous substances have been specifically and accurately identified to Thurber by the Client prior to the commencement of Thurber's professional services.

7. INDEPENDENT JUDGEMENTS OF CLIENT

The information, interpretations and conclusions in the Report are based on Thurber's interpretation of conditions revealed through limited investigation conducted within a defined scope of services. Thurber does not accept responsibility for independent conclusions, interpretations, interpolations and/or decisions of the Client, or others who may come into possession of the Report, or any part thereof, which may be based on information contained in the Report. This restriction of liability includes but is not limited to decisions made to develop, purchase or sell land.

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ALBERTA TRANSPORTATION GRMP (CON0022165)
PEACE REGION (GRANDE PRAIRIE DISTRICT – NORTH)
INSTRUMENTATION MONITORING RESULTS

FALL 2022

APPENDIX A
DATA PRESENTATION

SITE GP029: HWY 2:70, CHURCH CAMP SLIDE

ALBERTA TRANSPORTATION
PEACE REGION (GRANDE PRAIRIE - NORTH DISTRICT)
INSTRUMENTATION MONITORING FIELD SUMMARY (GP029)
FALL 2022

Location:	Church Camp Slide (HWY 2:70 C1 11.881)	**Readout:**	RST PN C108 Unit 1/DGSI Dipmeter
File Number:	32123	**Extension:**	2.75/3.34"
Probe:		**Temp:**	18
Cable:		**Read by:**	KTC/NKR

SLOPE INCLINOMETER (SI) READINGS

SI#	GPS Location (UTM 11)		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-		
SI-2	393096	6168377	03-Oct-22	0.6	118 to 4	60	178	-158	22	-20	8R/8R	Casing size 3.34
SI-3	393155	6168341	03-Oct-22	0.64	108 to 4	120	-79	99	-63	70	8R/8R	Casing size 3.34
SI17-5	393014	6168383	03-Oct-22	0.72	128 to 2	70 °	19	-14	-4377	4380	8R/8R	

PNEUMATIC PIEZOMETER (PN) READINGS

PN#	GPS Location (UTM 11)		Date	Reading (Psi)	Identification Number
	Easting (m)	Northing (m)			
PN-02	393096	6168377	03-Oct-22	7	60675
PN17-2A	393112	6168505	03-Oct-22	13.2	37657
PN17-2B	393112	6168505	03-Oct-22	55.2	37651
PN17-2C	393112	6168505	03-Oct-22	70.5	37650
PN17-3B	393192	6168472	03-Oct-22	52.1	37652
PN17-3C	393192	6168472	03-Oct-22	81.6	37649
PN17-4A	393157	6168374	03-Oct-22	32.4	37655
PN17-4B	393157	6168374	03-Oct-22	56.4	37679
PN17-4C	393157	6168374	03-Oct-22	79.1	37678
PN17-5A	393014	6168383	03-Oct-22	17.6	37656
PN17-5B	393014	6168383	03-Oct-22	41.8	37654

STANDPIPE PIEZOMETER (SP) READINGS

SP	GPS Location (NAD83 UTM)		Date	Stick-up (m)	Water level below top of pipe (m)	Total length of pipe (m)
	Easting	Northing				
SP17-6	392931	6168288	03-Oct-22	0.86	3.66	7.55

INSPECTOR REPORT

- Call private landowner before reading SP17-6

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LEGEND

- APPROXIMATE INSTRUMENT LOCATION
- CRACK
- ACP PATCH
- SI SLOPE INCLINOMETER
- PN PNEUMATIC PIEZOMETER
- SP STANDPIPE PIEZOMETER

0 25 50 75 100 125 150m

SCALE 1:2500

Alberta

PEACE REGION
(GRANDE PRAIRIE DISTRICT - NORTH)

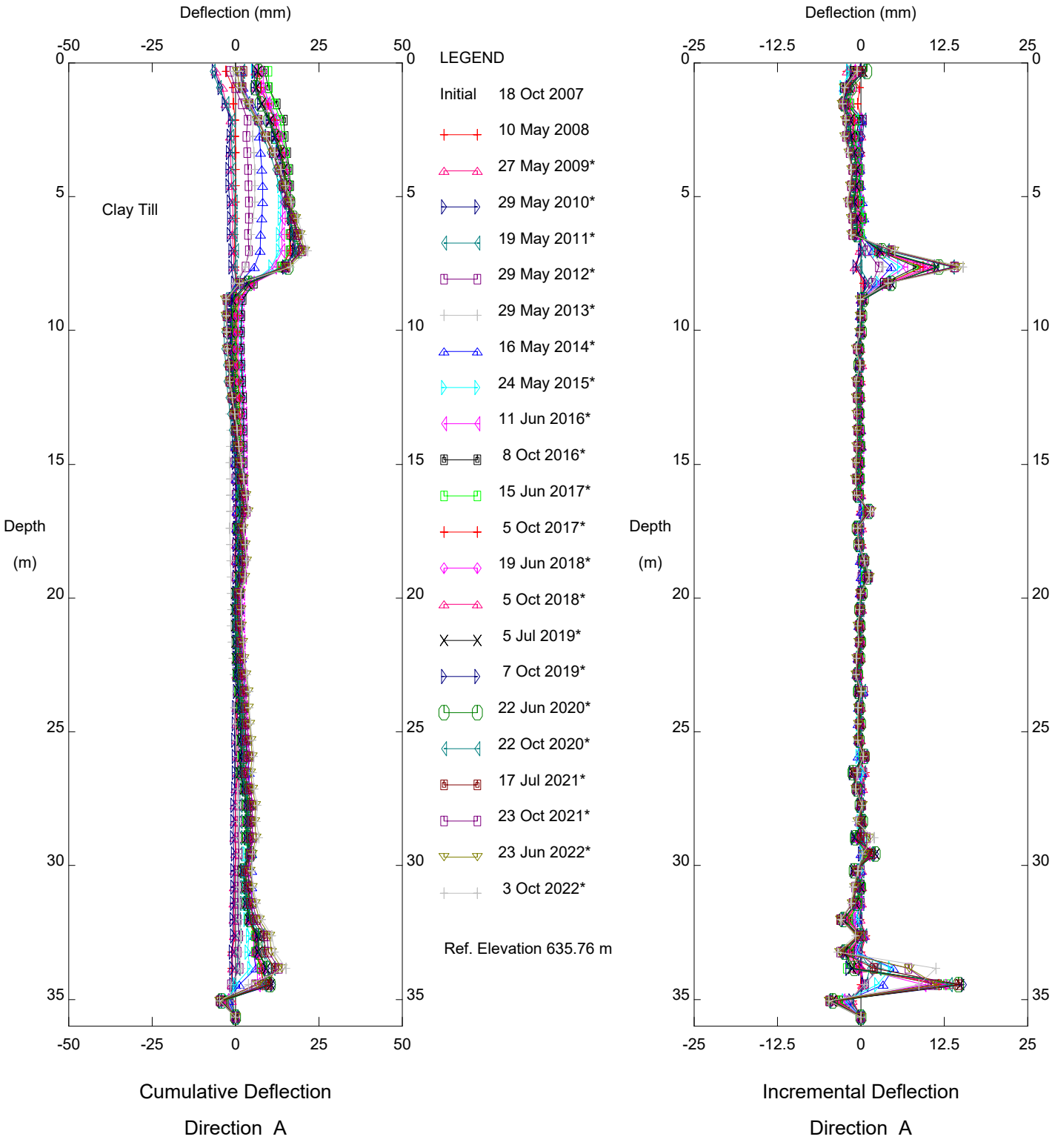
GP029: HWY 2:70 CHURCH CAMP SLIDE
INSTRUMENT LOCATIONS

DWG No. 32123-GP029

DRAWN BY	ML
DESIGNED BY	BWN
APPROVED BY	RVC
SCALE	1:2500
DATE	AUGUST 2021
FILE No.	32123

THURBER ENGINEERING LTD.

Thurber Engineering Ltd



Cumulative Deflection

Direction A

Incremental Deflection

Direction A

GP029 HWY 2:70 (Church Camp), Inclinometer SI-2

Alberta Transportation

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

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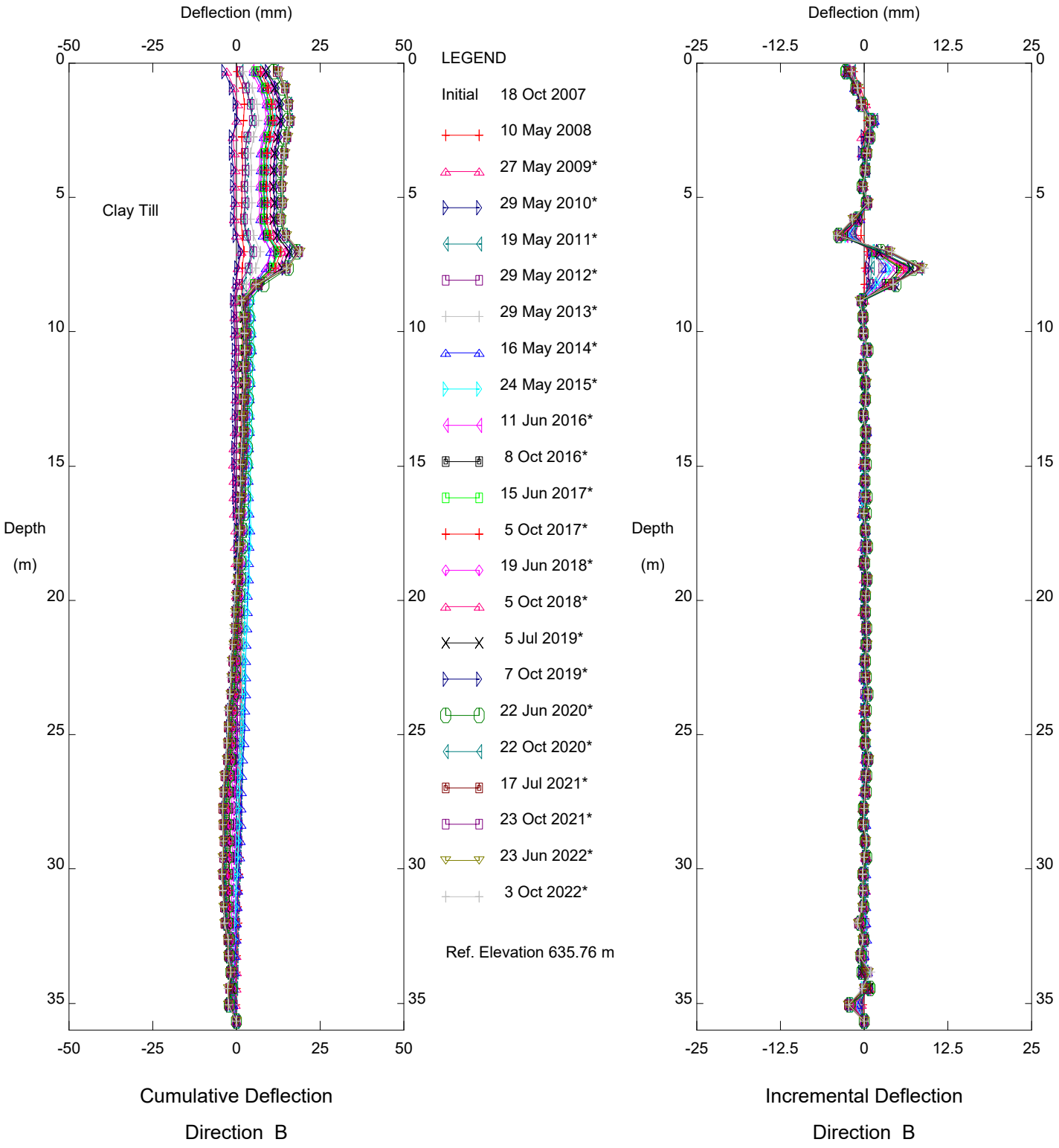

Cumulative Deflection

Direction B

Incremental Deflection

Direction B

GP029 HWY 2:70 (Church Camp), Inclinometer SI-2

Alberta Transportation

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

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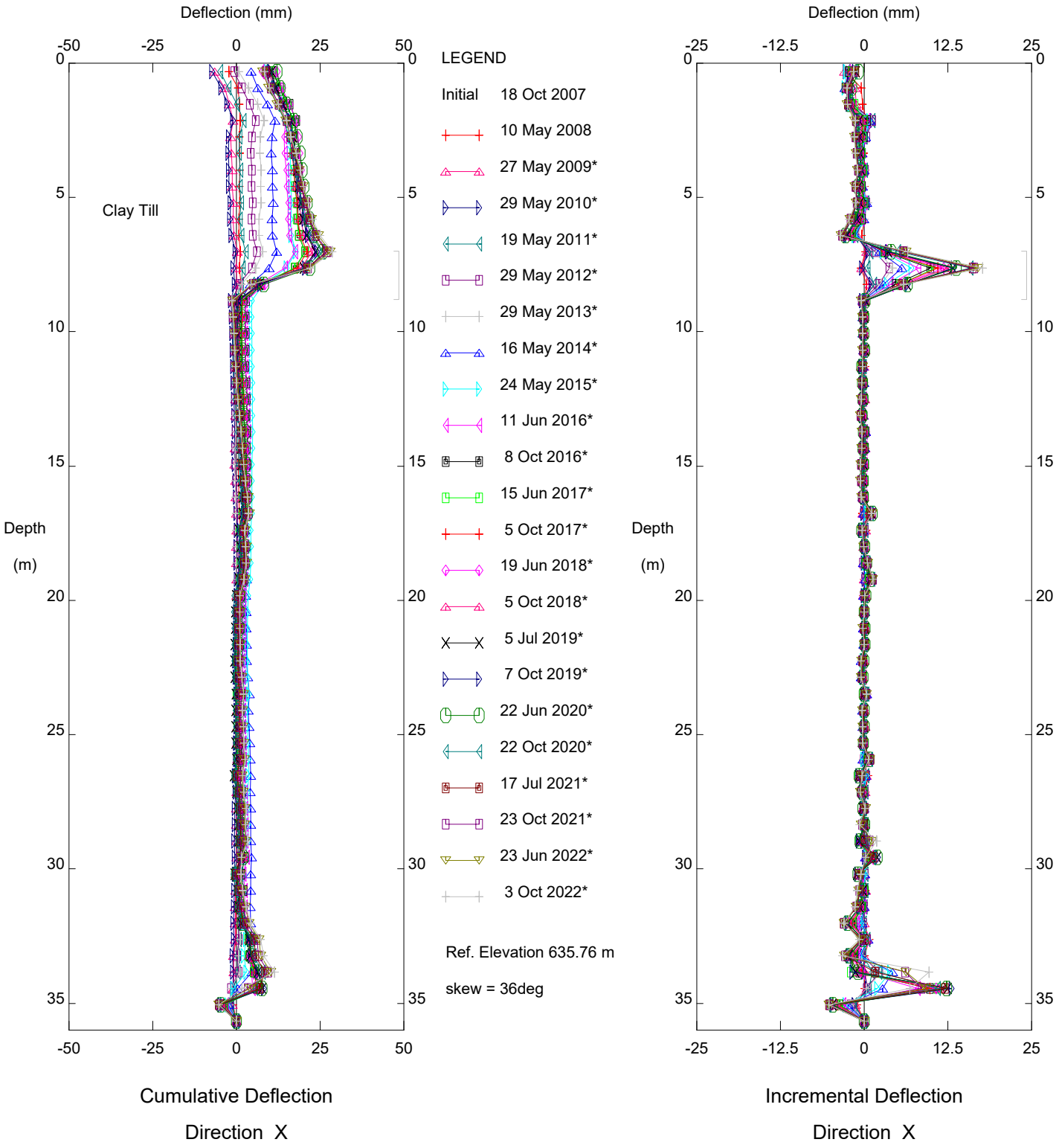

Cumulative Deflection

Direction X

Incremental Deflection

Direction X

GP029 HWY 2:70 (Church Camp), Inclinometer SI-2

Alberta Transportation

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

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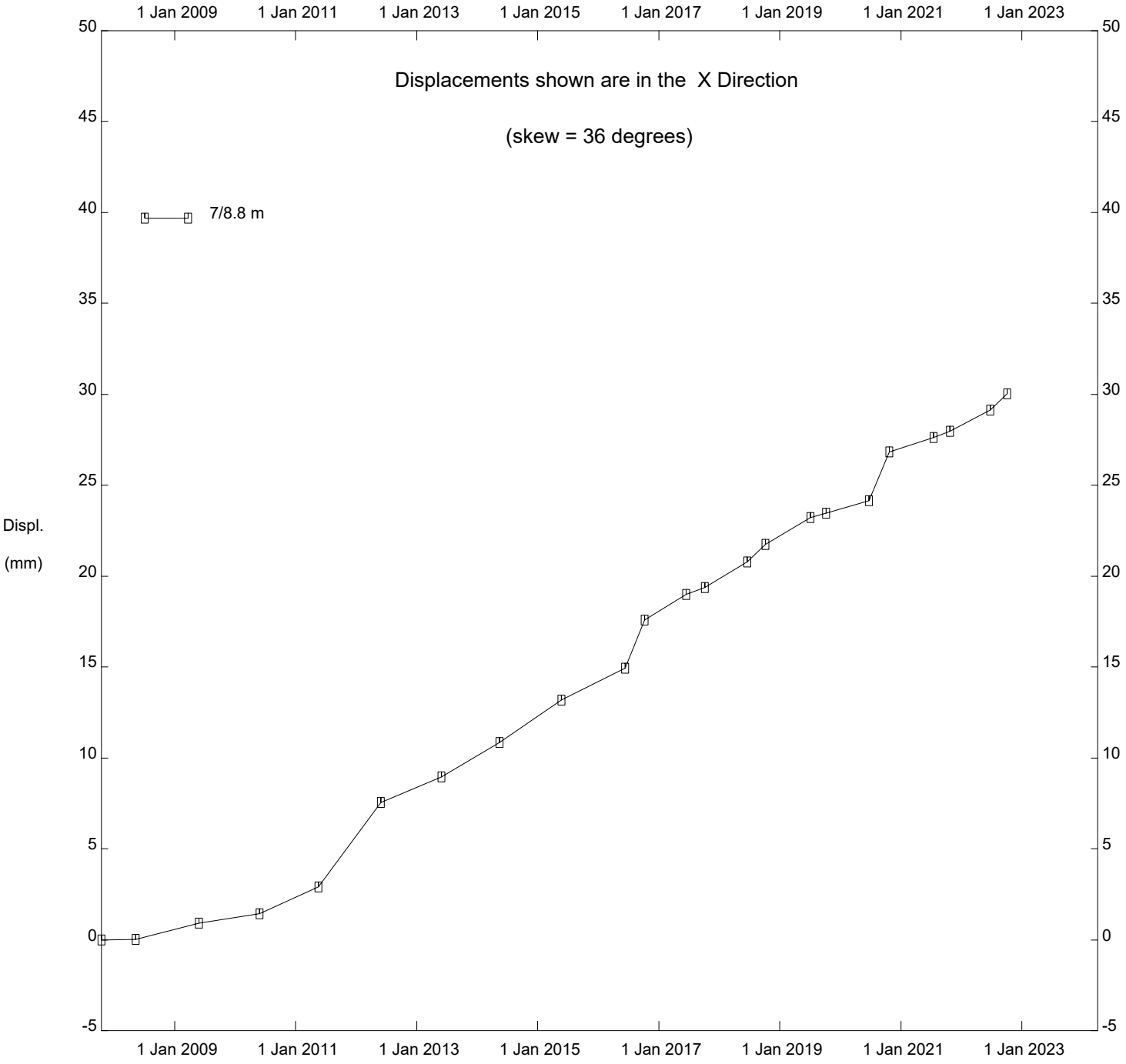
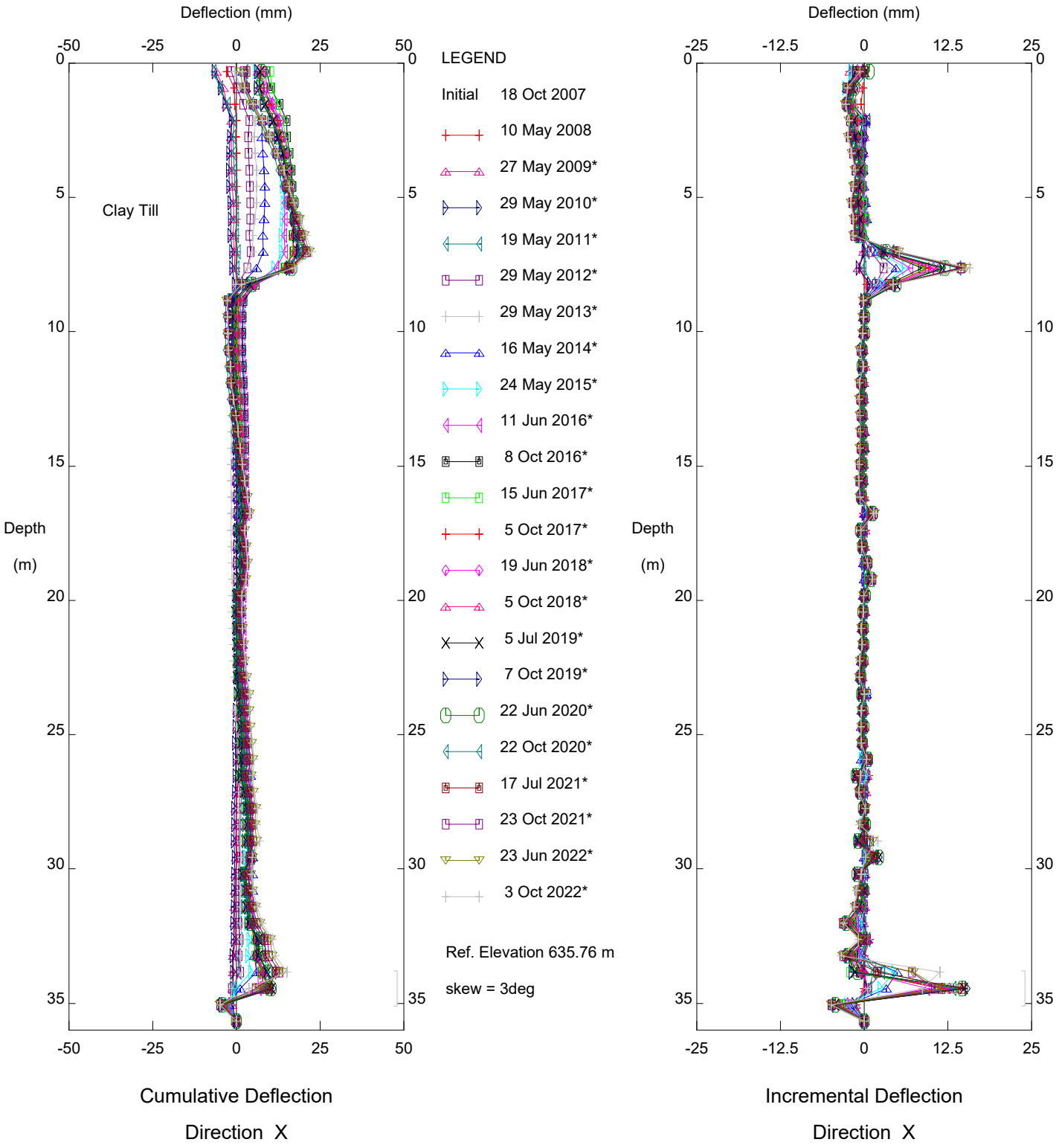


GP029 HWY 2:70 (Church Camp), Inclinometer SI-2

Alberta Transportation

Thurber Engineering Ltd



Cumulative Deflection

Direction X

Incremental Deflection

Direction X

GP029 HWY 2:70 (Church Camp), Inclinometer SI-2

Alberta Transportation

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

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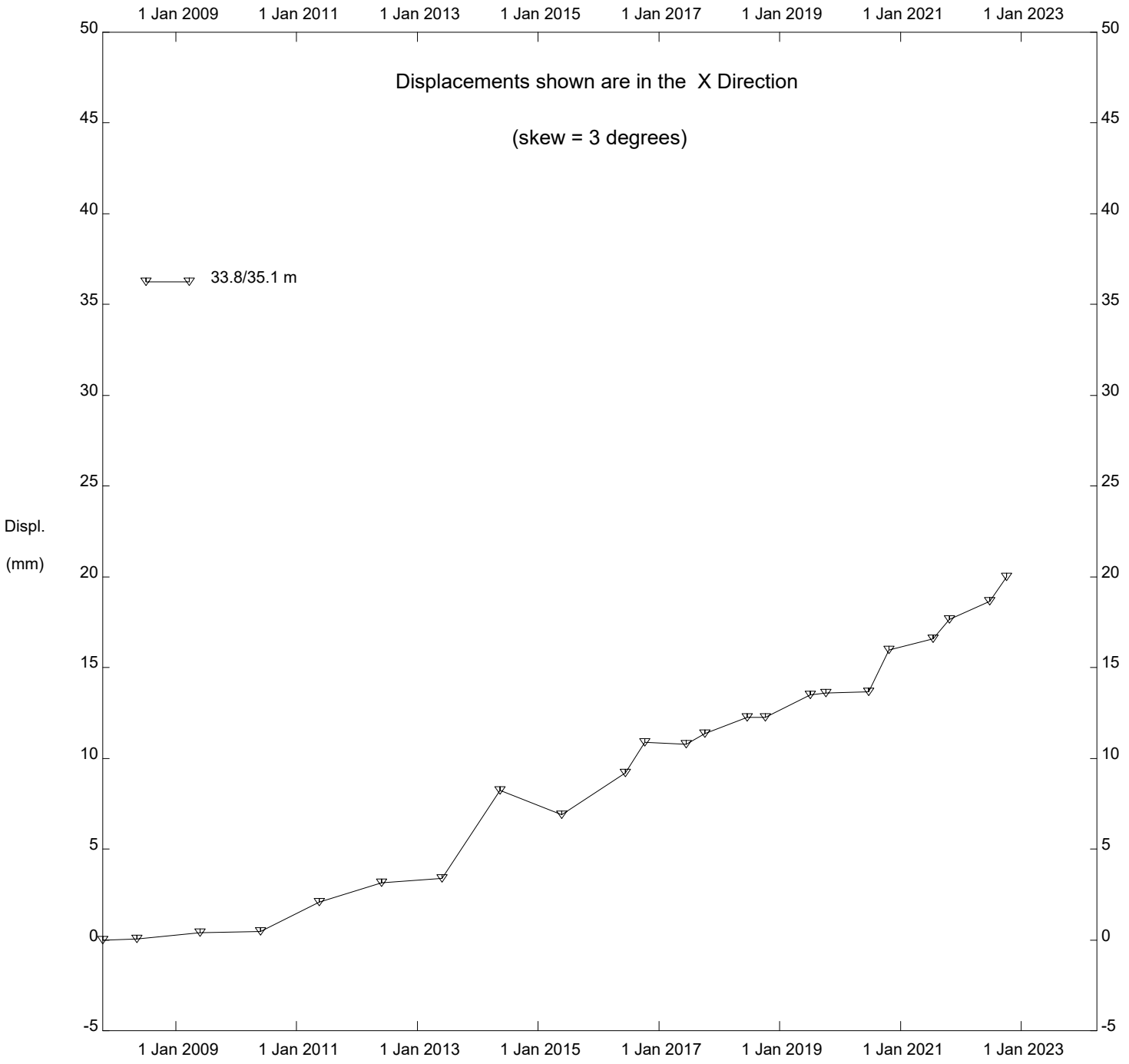
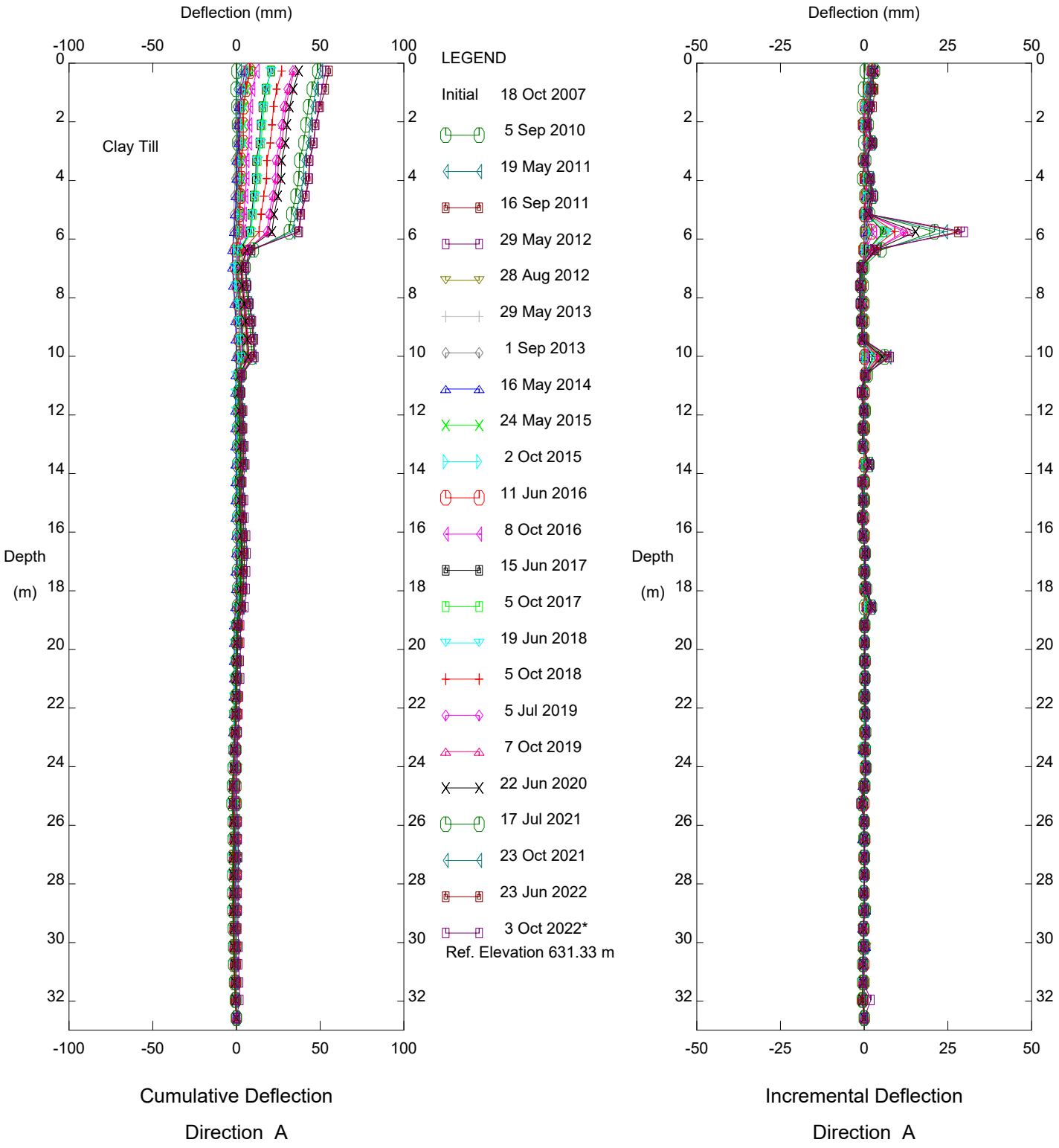
Thurber Engineering Ltd



GP029 HWY 2:70 (Church Camp), Inclinometer SI-2

Alberta Transportation

Thurber Engineering Ltd



Cumulative Deflection

Direction A

Incremental Deflection

Direction A

GP029 HWY 2:70 (Church Camp), Inclinometer SI-3

Alberta Transportation

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

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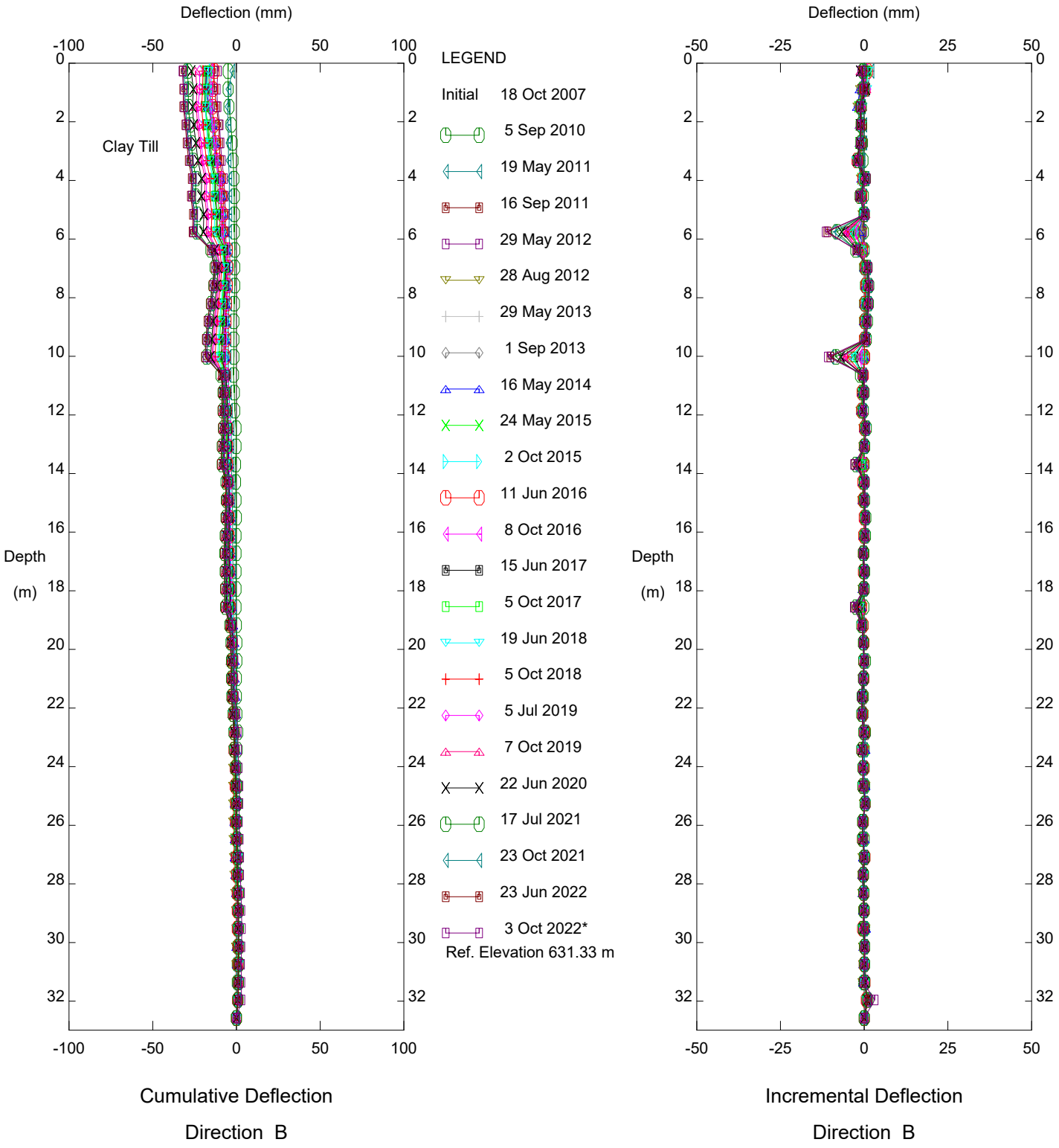

Cumulative Deflection

Direction B

Incremental Deflection

Direction B

GP029 HWY 2:70 (Church Camp), Inclinometer SI-3

Alberta Transportation

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

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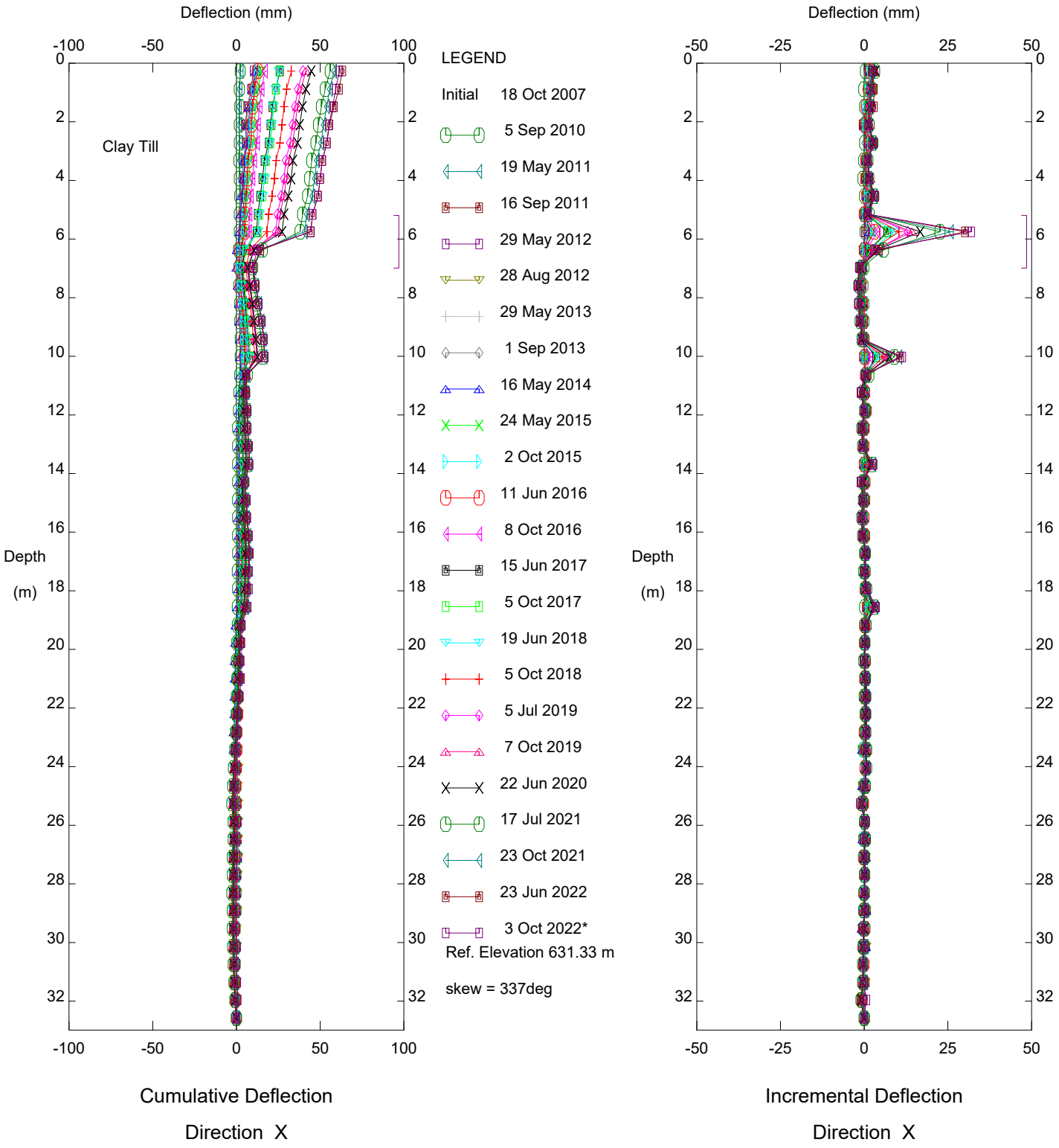

Cumulative Deflection

Direction X

Incremental Deflection

Direction X

GP029 HWY 2:70 (Church Camp), Inclinometer SI-3

Alberta Transportation

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

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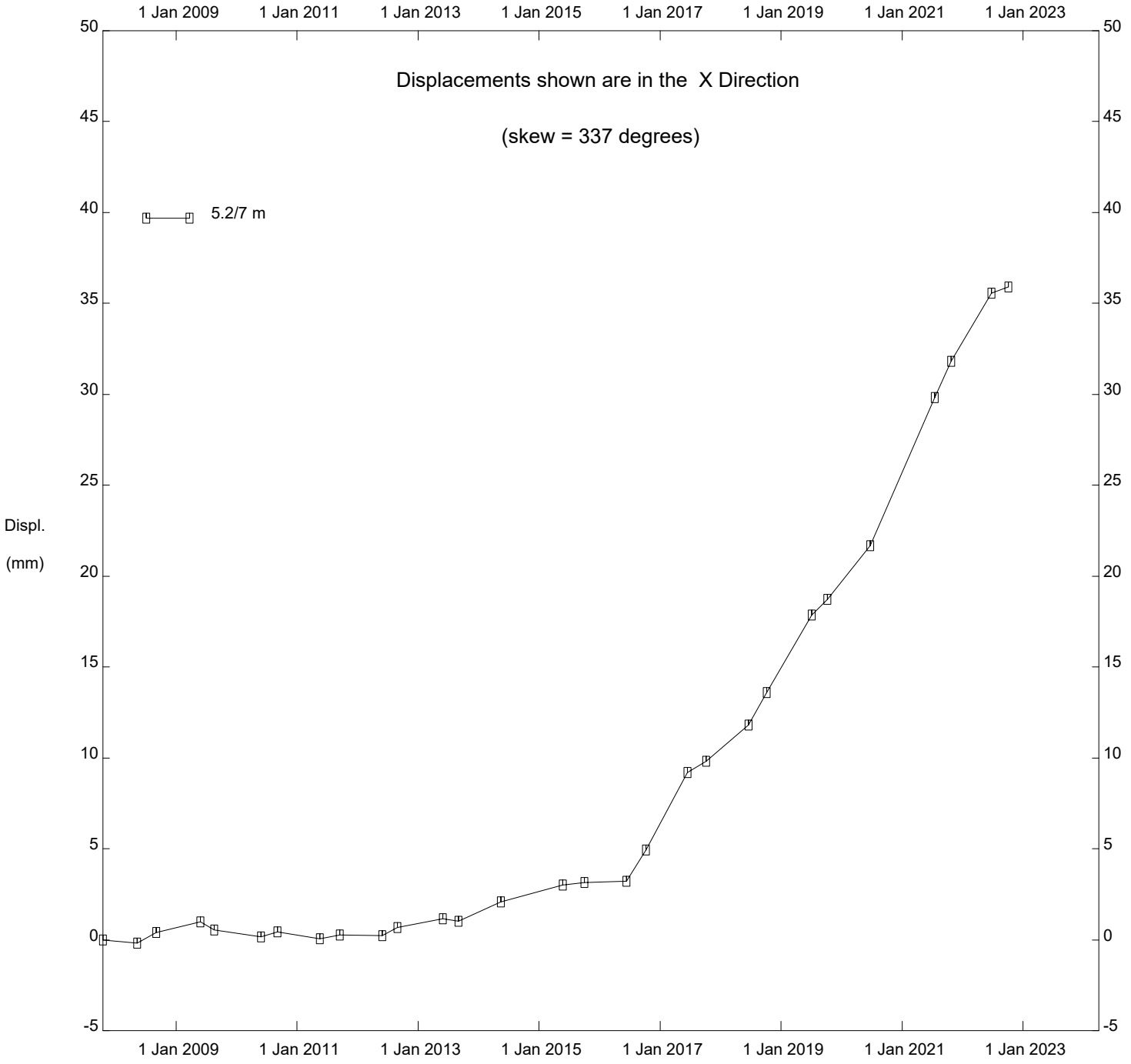
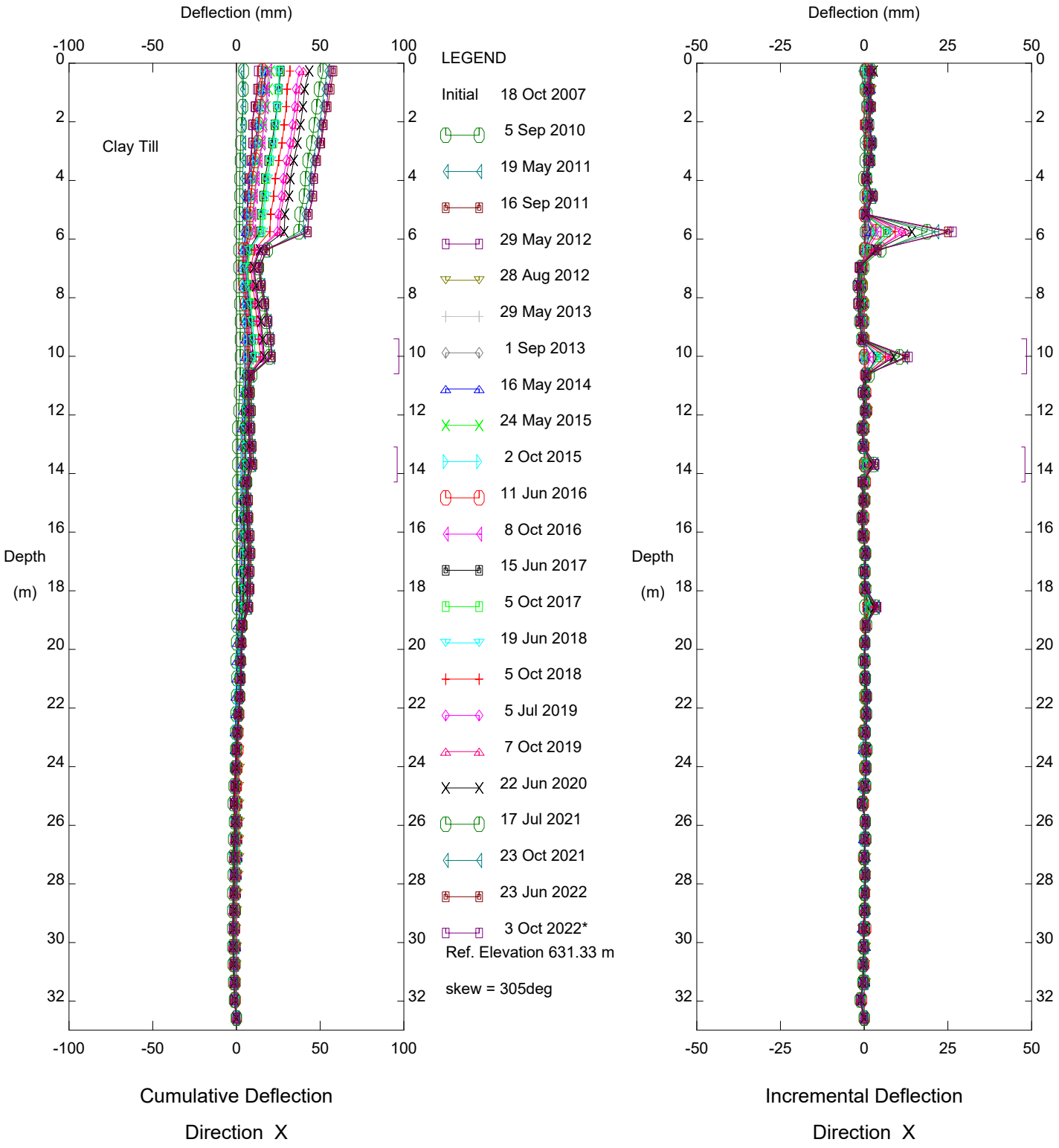


GP029 HWY 2:70 (Church Camp), Inclinometer SI-3

Alberta Transportation

Thurber Engineering Ltd



Cumulative Deflection

Direction X

Incremental Deflection

Direction X

GP029 HWY 2:70 (Church Camp), Inclinometer SI-3

Alberta Transportation

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

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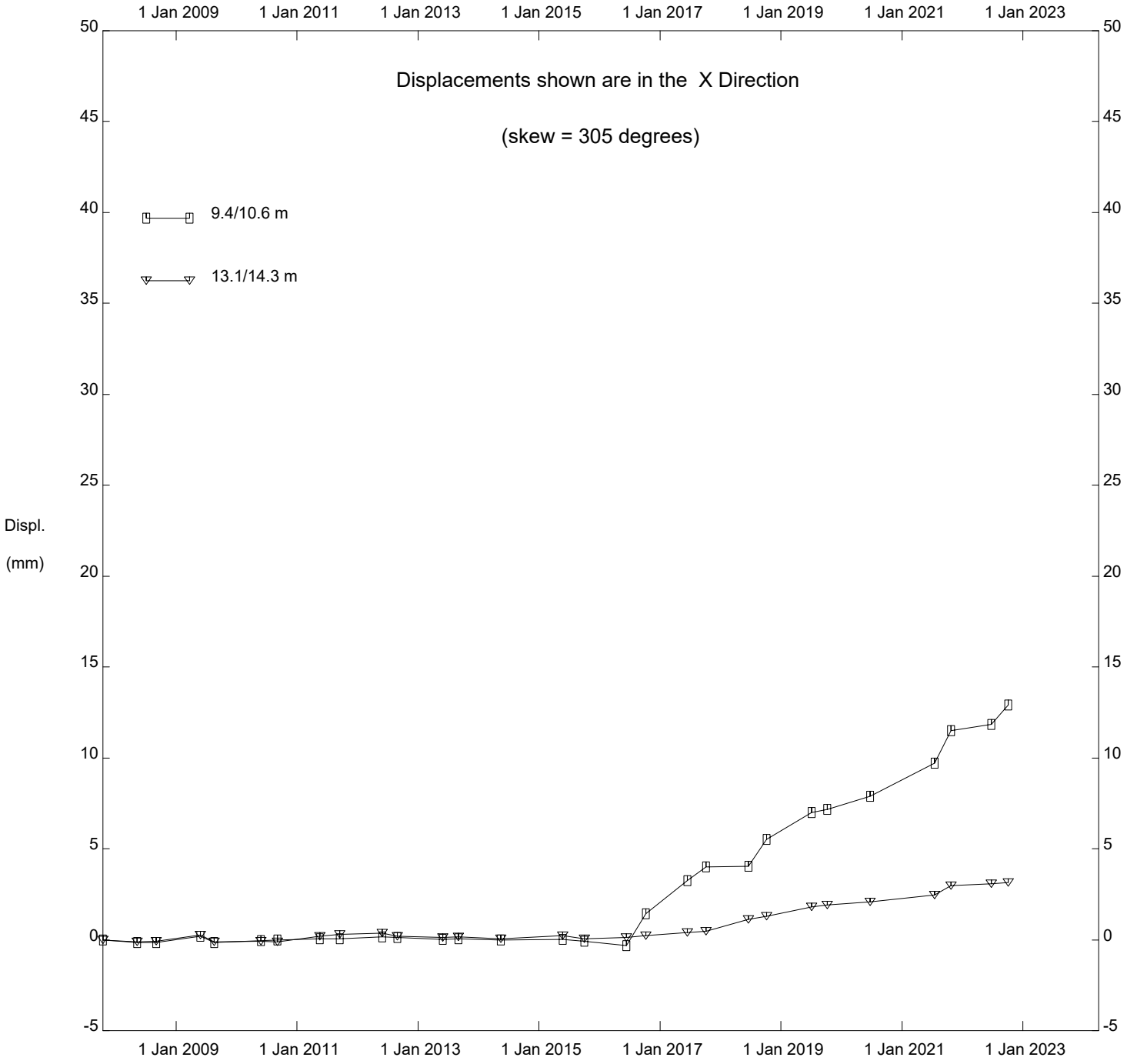

GP029 HWY 2:70 (Church Camp), Inclinometer SI-3

Alberta Transportation

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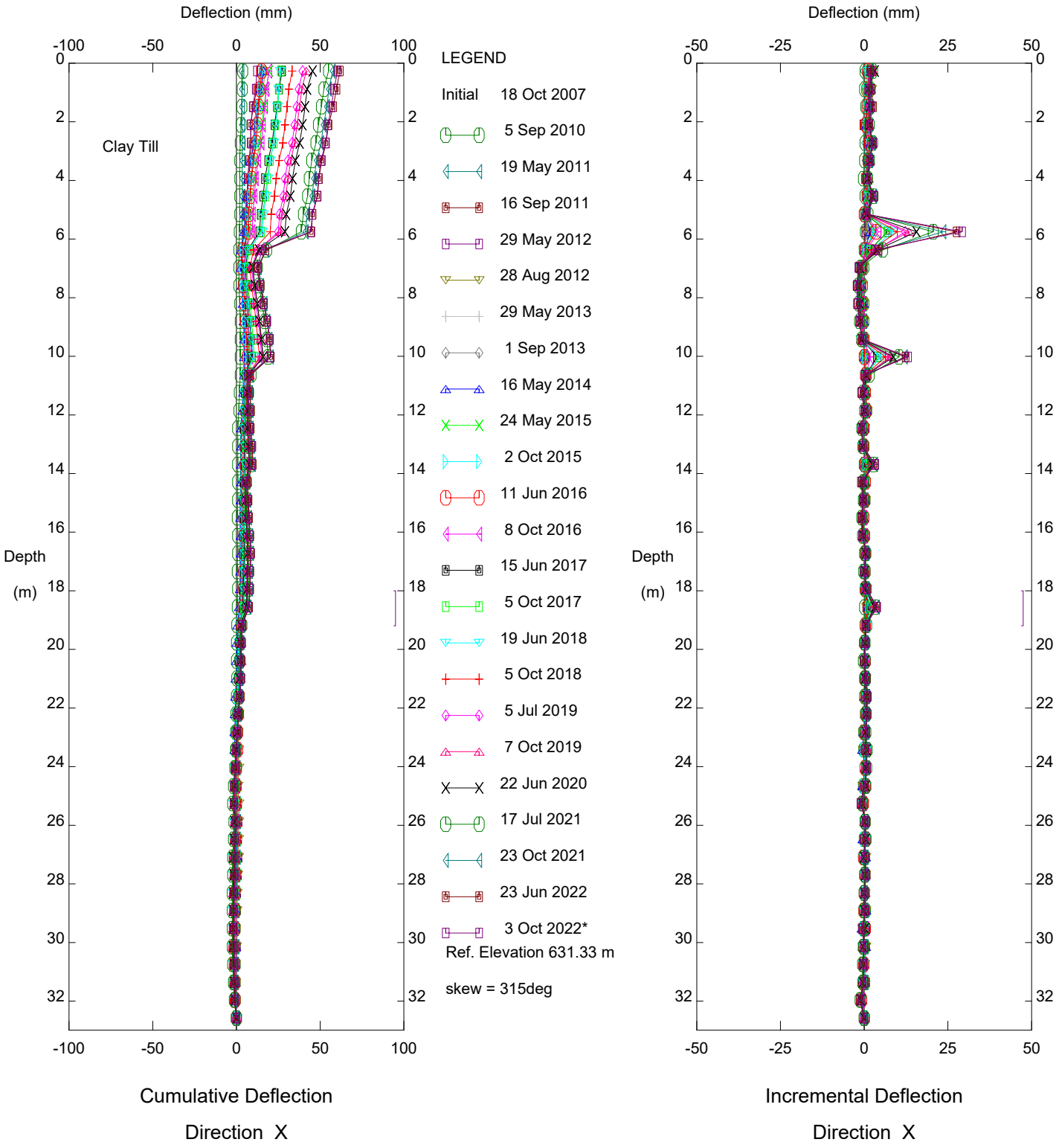

Cumulative Deflection

Direction X

Incremental Deflection

Direction X

GP029 HWY 2:70 (Church Camp), Inclinometer SI-3

Alberta Transportation

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

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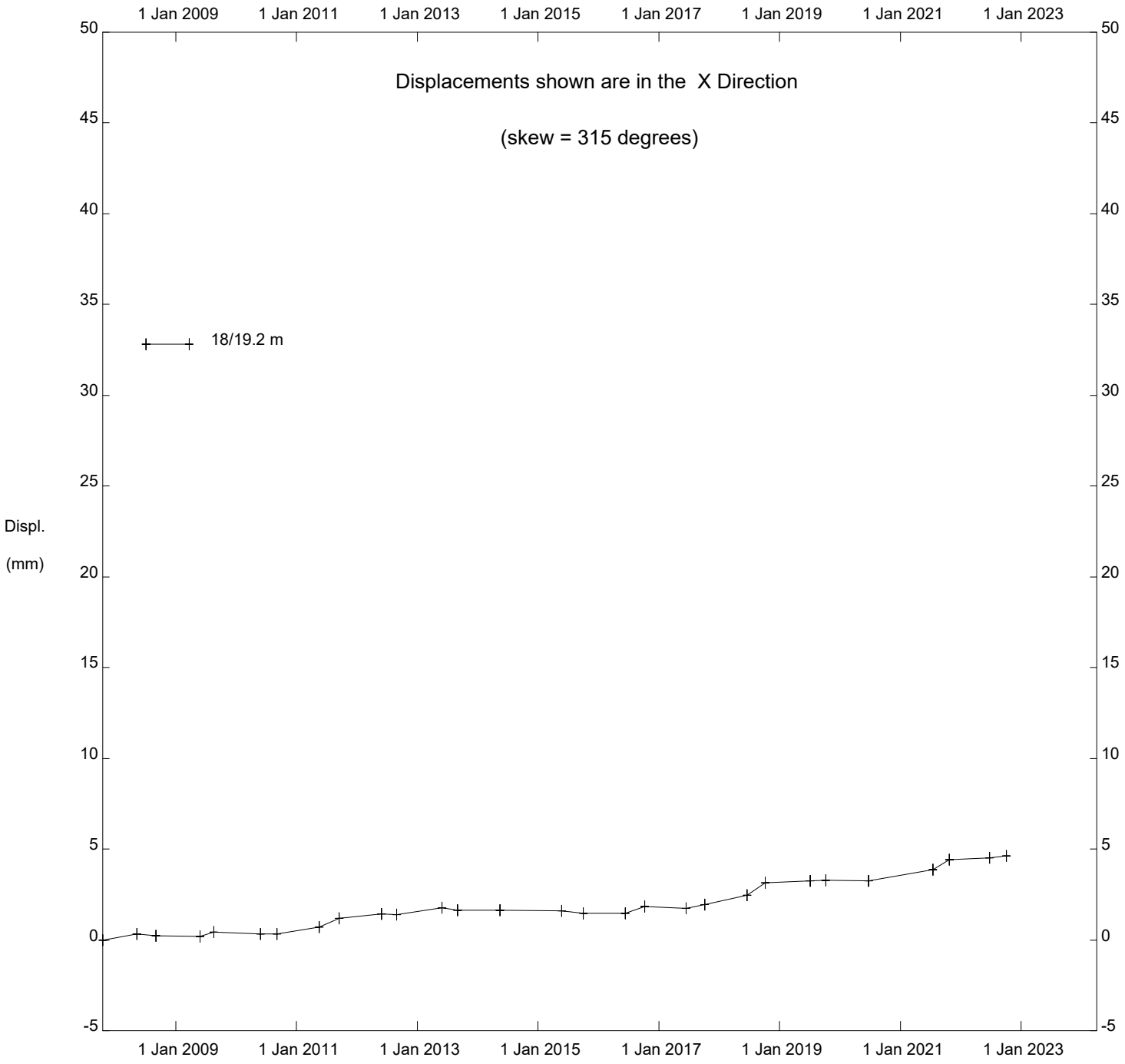
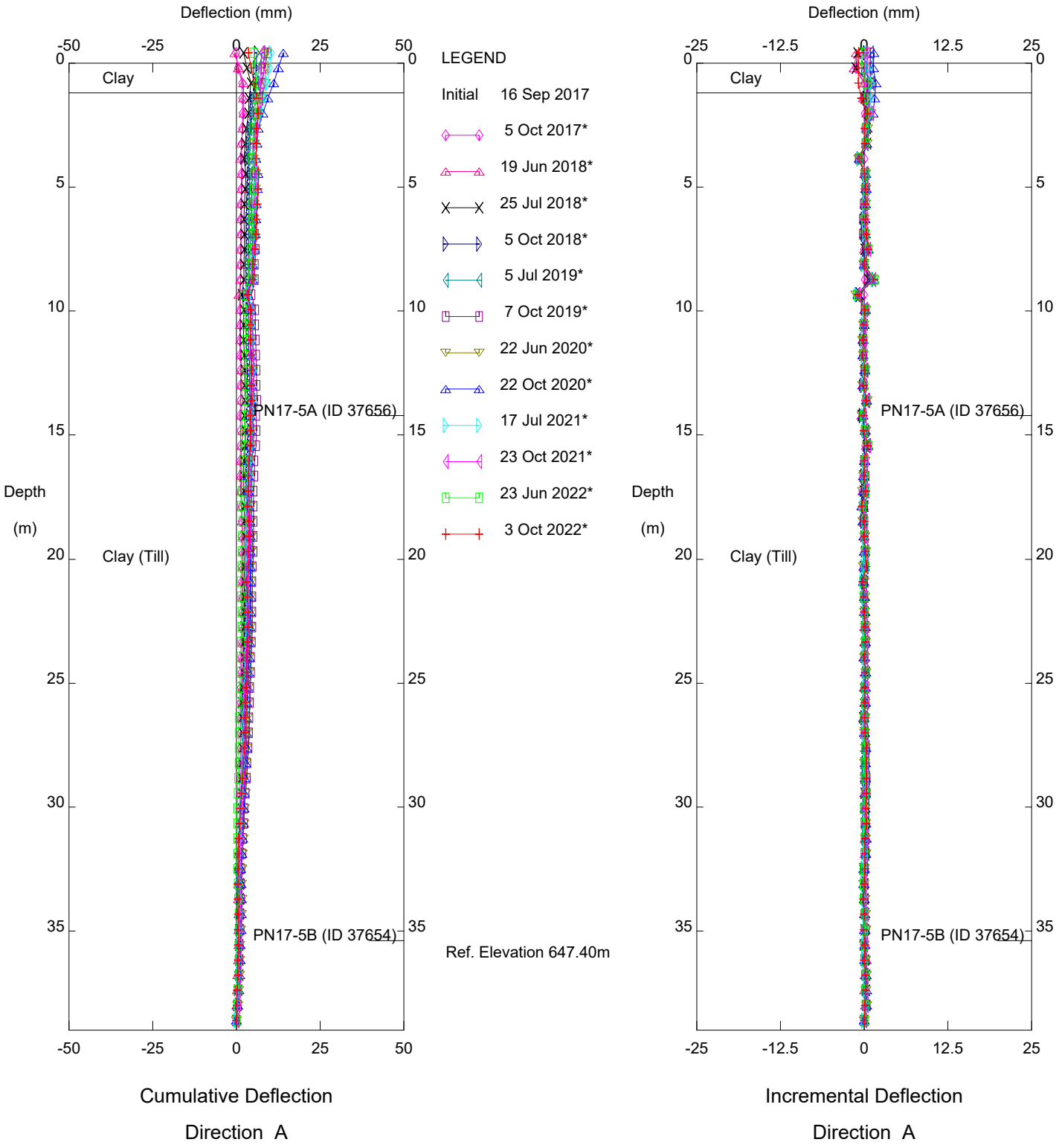


GP029 HWY 2:70 (Church Camp), Inclinometer SI-3

Alberta Transportation

Thurber Engineering Ltd



Cumulative Deflection

Direction A

Incremental Deflection

Direction A

GP029 - Church Camp Slide, Inclinometer SI17-5

Alberta Transportation

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

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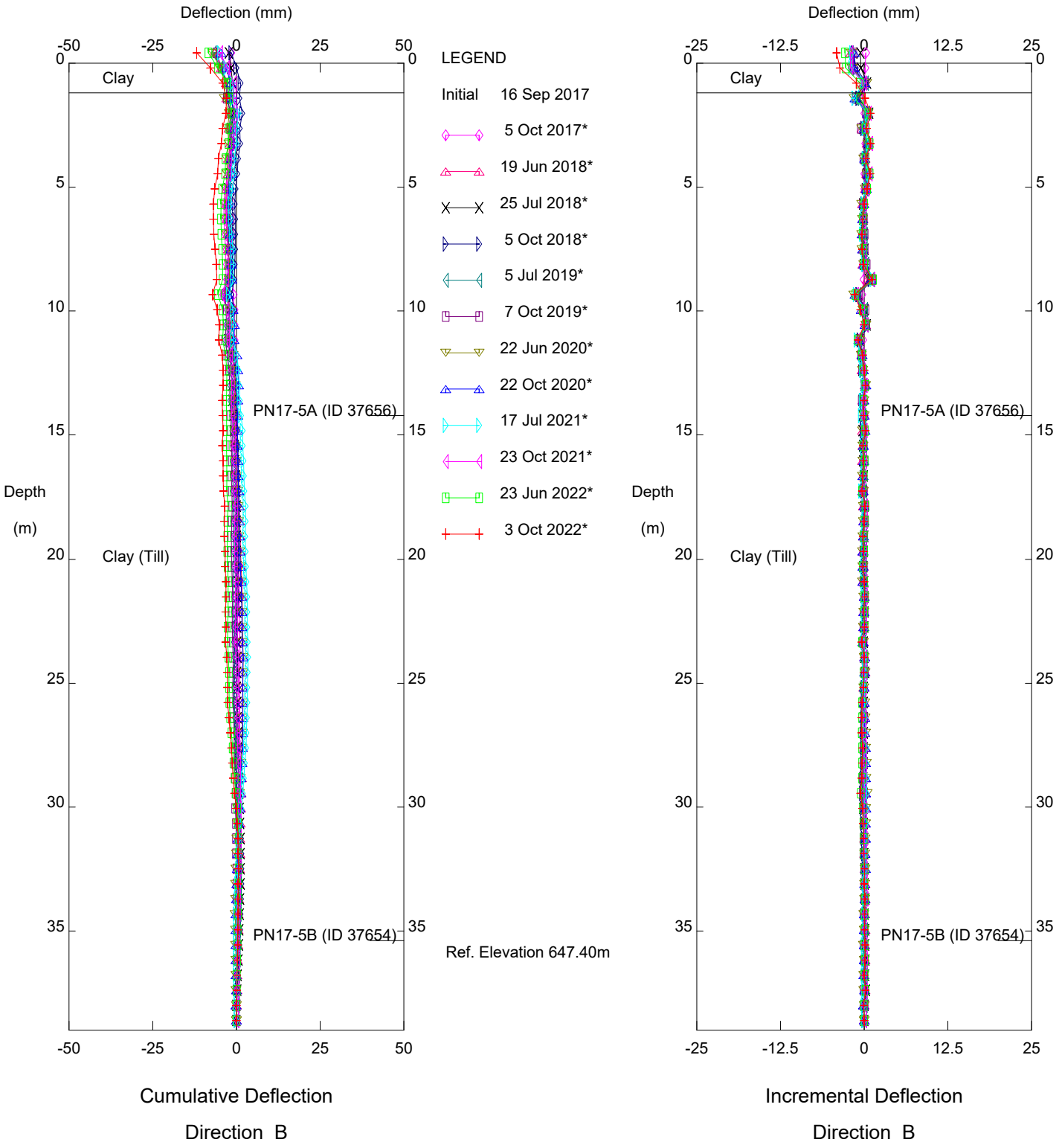

Cumulative Deflection

Direction B

Incremental Deflection

Direction B

GP029 - Church Camp Slide, Inclinometer SI17-5

Alberta Transportation

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

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FIGURE GP029-1
PIEZOMETRIC ELEVATIONS FOR HWY 2:70 CHURCH CAMP SLIDE

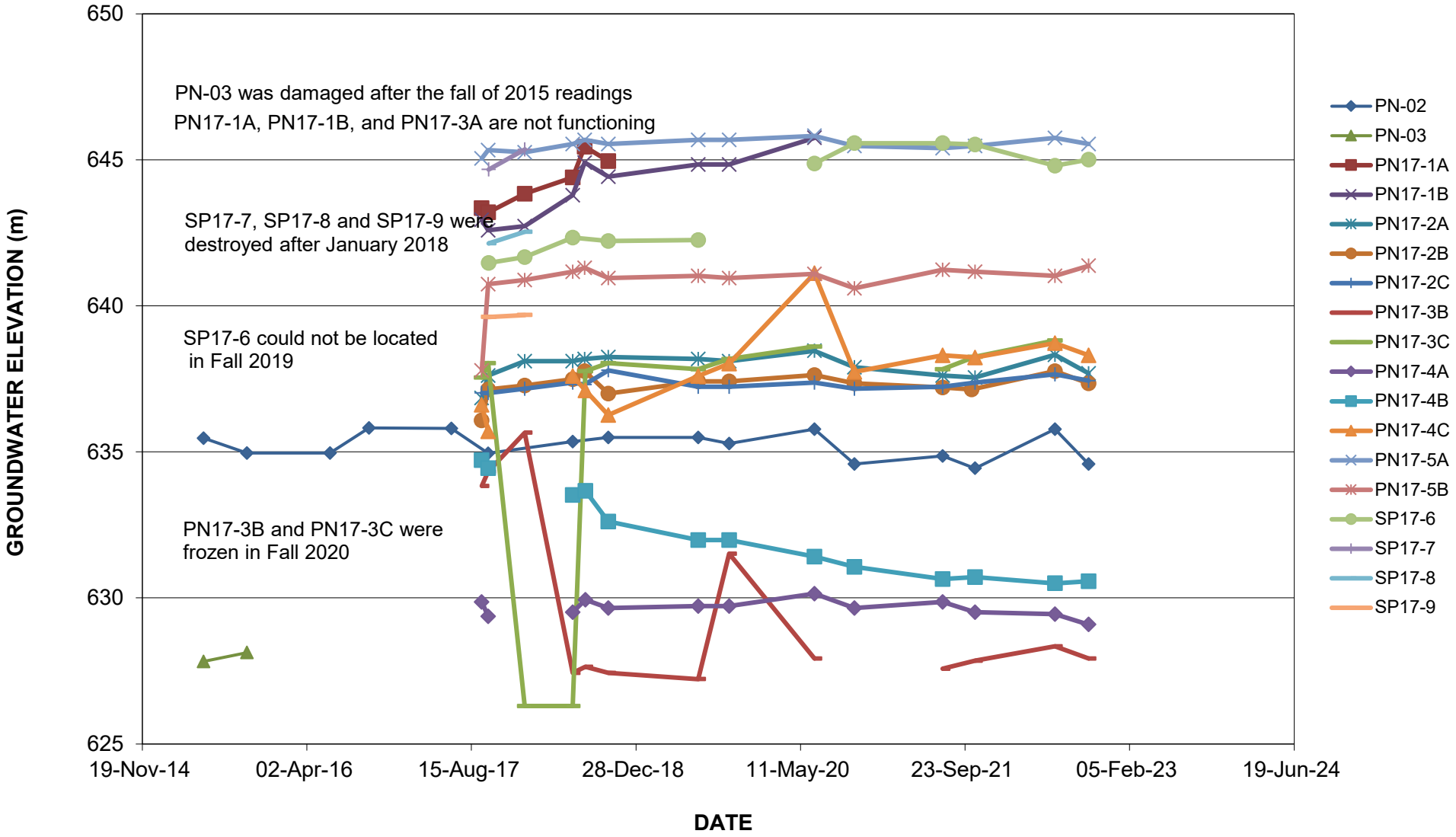

FIGURE GP029-2
PIEZOMETRIC DEPTHS FOR HWY 2:70 CHURCH CAMP SLIDE