

**ALBERTA TRANSPORTATION AND  
ECONOMIC CORRIDORS GRMP  
PEACE REGION – (PEACE RIVER DISTRICT)  
INSTRUMENTATION MONITORING - FALL 2024**



Site Number	Location	Name	Hwy	km
PH002	Station 2+350 to 4+500	Peace River East Hill	2:60	km 34.5
<b>Legal Description:</b> 1-28-83-21 W5		<b>UTM Co-ordinates</b>		
		11U E 484847	N	6230679

<b>Current Monitoring:</b>	21-Sep-2024	<b>Previous Monitoring</b>	19-May-2024
<b>Instruments Read By:</b>	Mr. Niraj Regmi, G.I.T and Mr. Nixon Mationg, of Thurber		

Instruments Read During This Site Visit			
<b>Slope Inclonometers (SIs):</b> SI63, SI64, and SI10-3	<b>Pneumatic Piezometers (PN):</b> PN10-3	<b>Vibration Wire Piezometers (VW):</b> N/A	<b>Standpipe Piezometers (SP):</b> N/A
<b>Load Cell (LC):</b> N/A	<b>Strain Gauges:</b> N/A	<b>SAA:</b> N/A	<b>Others:</b>

Readout Equipment Used			
<b>Slope Inclonometers:</b> RST Digital Inclonometer probe with 2 ft wheelbases and RST pocket readout.	<b>Pneumatic Piezometers:</b> RST C108 pneumatic piezometer reader	<b>Vibration Wire Piezometers:</b>	<b>Standpipe Piezometers:</b>
<b>Load Cell:</b>	<b>Strain Gauges:</b>	<b>SAA:</b>	<b>Others:</b>
<b>Note</b>			

Discussion	
<b>Zones of New Movement:</b>	None
<b>Interpretation of Monitoring Results:</b>	Slope inclinometers SI63 and SI10-3 continued to show no discernible movement. SI64 showed a rate of movement of 8.1 mm/yr over 0.5 m to 4.1 m depth since the spring of 2024 readings.  Pneumatic piezometer PN10-3 showed a decrease in groundwater level of 0.13 m since the spring of 2024 readings. The pneumatic piezometer readings are summarized in Table PH002-2 below, and are plotted on Figure PH002-1 in Appendix A.
<b>Future Work:</b>	The instruments should be read again during the spring of 2025 program.
<b>Instrumentation Repairs:</b>	No instrument repairs are required.
<b>Additional Comments:</b>	

**Attachments:**

- Table PH002-1 Fall 2024 – Peace River East Hill (Station 2+350 to 4+500) Slope Inclinator Instrumentation Reading Summary
- Table PH002-1 Fall 2024 – Peace River East Hill (Station 2+350 to 4+500) Pneumatic Piezometer Instrumentation Reading Summary
- APPENDIX A - PH002-1 FALL 2024
  - Field Inspector's Report
  - Site Plan Showing Approximate Instrument Locations (Drawing No. 32121-PH002-1 and 32121-PH002-2)
  - SI Reading Plots
  - Figure PH002-1 (Piezometric Depths)

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 PH002-1: FALL 2024 – Peace River East Hill (Station 2+350 To 4+500) Slope Inclinometer Instrumentation Reading Summary**

Date Monitored: September 21, 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)	CURRENT RATE OF MOVEMENT (mm/yr.)	CHANGE IN RATE OF MOVEMENT SINCE PREVIOUS READING (mm/yr.)
SI63	Oct. 22, 1996	No discernible movement	N/A	Operational	May 19, 2024	N/A	N/A	N/A
SI64	Sept. 4, 1996	25.4 mm over 0.5 m to 4.1 m depth in 206° direction	12.1 mm/yr. September 2017	Operational	May 19, 2024	2.8	8.1	7.4
SI10-3	March 4, 2010	No discernible movement	N/A	Operational	May 19, 2024	N/A	N/A	N/A
SI10-4	March 4, 2010	56.3 mm over 4.2 m to 7.2 m depth in 0° direction	49.9 mm/yr. in September 2011	Sheared at ~ 6.7 m depth	June 10, 2012	N/A	N/A	N/A
SI10-5	March 5, 2010	34.7 mm over 7.9 m to 15.2 m in 20° direction	53.9 mm/yr. in September 2011	Sheared at ~ 12.2 m depth	September 21, 2011	N/A	N/A	N/A

Drawings 32121-PH002-1 and 32121-PH002-2 in Appendix A provide a sketch of the approximate locations of the monitoring instrumentation for this site.

**Table PH002-2: FALL 2024 – Peace River East Hill (Station 2+350 To 4+500) Pneumatic Piezometer Instrumentation Reading Summary**

Date Monitored: September 21, 2024

INSTRUMENT #	DATE INITIALIZED	TIP DEPTH (m)	GROUND ELEV. (m)	CURRENT STATUS	HIGHEST MEASURED WATER LEVEL BGS (m)	MEASURED PORE PRESSURE (kPa)	CURRENT WATER LEVEL BGS (m)	PREVIOUS WATER LEVEL BGS (m)	CHANGE IN WATER LEVEL SINCE PREVIOUS READING (m)
PN10-3 (33090)	Feb. 21, 2010	17.7	-	Operational	14.39 on May 20, 2015	24.3	15.20	15.07	-0.13
PN10-4 (33098)	Feb. 21, 2010	10.7	-	Damaged	5.05 on May 20, 2015	N/A	N/A	2.58 (Sep 27, 2017)	N/A
PN10-5 (33097)	Feb. 21, 2010	11.7	-	Damaged	3.62 on September 17, 2014	N/A	N/A	7.40 (June 7, 2017)	N/A

Drawings 32121-PH002-1 and 32121-PH002-2 in Appendix A provide a sketch of the approximate locations of the monitoring instrumentation for this site.

Note: BGS – Below Ground Surface



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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 PH002: HWY 2:60, PEACE RIVER EAST HILL**

**ALBERTA TRANSPORTATION AND ECONOMIC CORRIDORS  
PEACE REGION (PEACE RIVER DISTRICT)  
INSTRUMENTATION MONITORING FIELD SUMMARY (PH002)  
FALL 2024**

<b>Location:</b> Peace River East Hill (HWY 2:60 C1 34.464) <b>File Number:</b> 32121 <b>Probe:</b> RST SI SET 5R and 8R <b>Cable:</b> RST SI SET 5R and 8R	<b>Readout:</b> RST PN C108 Unit4 <b>Casing</b> 3.34, SI 10-3 -2.75 <b>Temp:</b> 4 <b>Read by:</b> NKR/NRM
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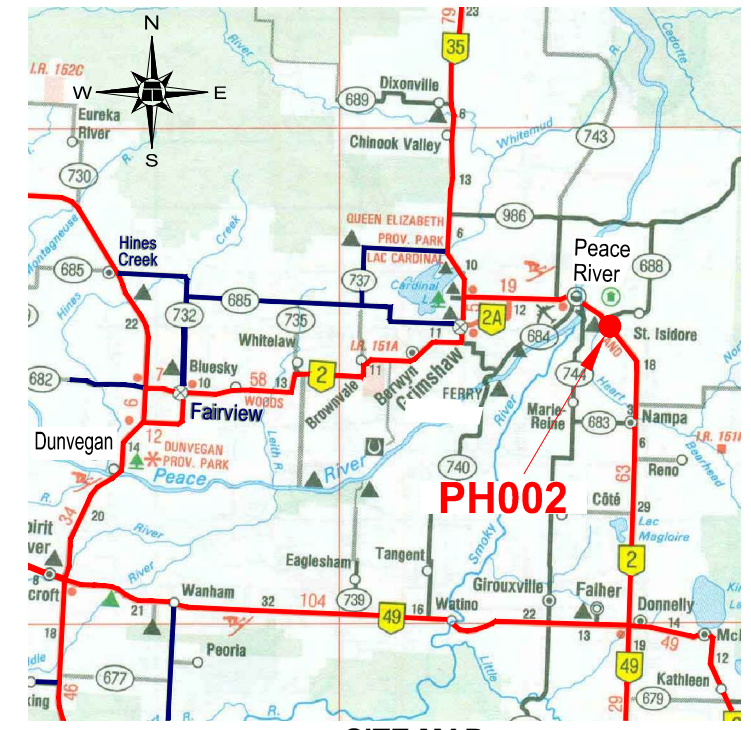
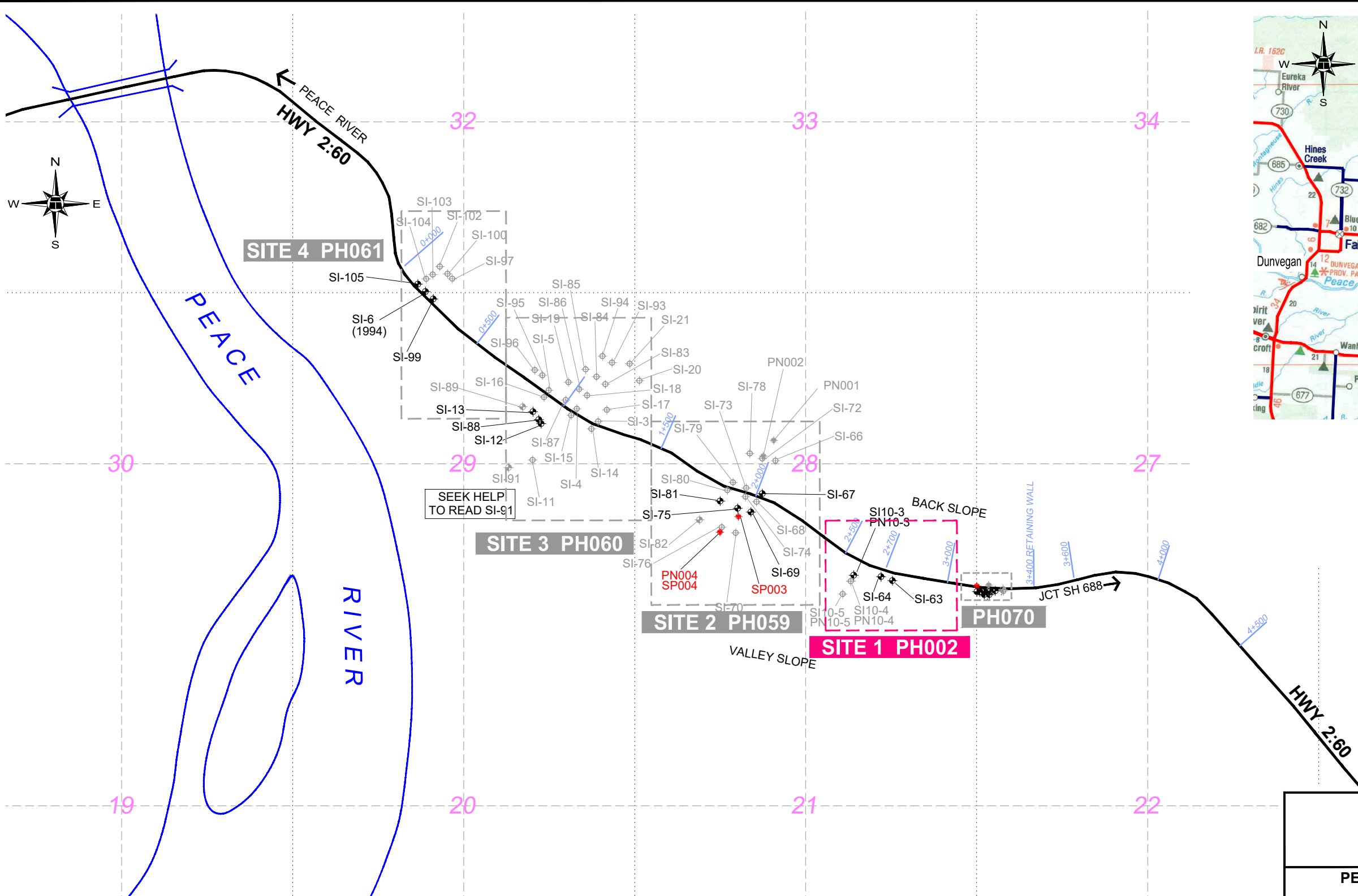
**SLOPE INCLINOMETER (SI) READINGS**

Site#	SI#	GPS Location (UTM 11)		Date	Stickup (m)	Depth from top of Casing (ft)	Magn. North A+ Groove	Current Bottom Depth Readings				Probe/ Reel #	Size (")	Remarks
		Easting (m)	Northing (m)					A+	A-	B+	B-			
1	SI-63	484847.44	6230679.44	21-Sep-24	0.94	148 to 2	170°	-158	163	-98	86	5R/5R	3.34	
	SI-64	484797.84	6230683.40	21-Sep-24	0.76	148 to 2	155	-82	92	-23	25	8R/8R	3.34	
	SI10-3	484642.01	6230685.96	21-Sep-24	0.61	106 to 4	170	1619	-1604	-1112	1092	5R/5R	2.75	

**PNEUMATIC PIEZOMETER (PN) READINGS**

PN#	GPS Location (UTM 11)		Date	Reading kPa	Identification Number
	Easting (m)	Northing (m)			
10-3	484642.01	6230685.96	21-Sep-24	24.3	33090

**DAILY INSPECTOR REPORT**

**SITE MAP**  
NOT TO SCALE

**LEGEND :**

- SLOPE INCLINOMETER  
(currently using)
- SP STANDPIPE PIEZOMETER
- PN PNEUMATIC PIEZOMETER
- SLOPE INCLINOMETER  
(not in use)
- PNEUMATIC PIEZOMETER  
(not in use)

**SITE PLAN**  
1:20,000 (APPROX.)

**PEACE REGION (PEACE RIVER DISTRICT)**

**PH002: PEACE RIVER EAST HILL SITE #1  
INSTRUMENTATION READINGS  
KEY PLAN**

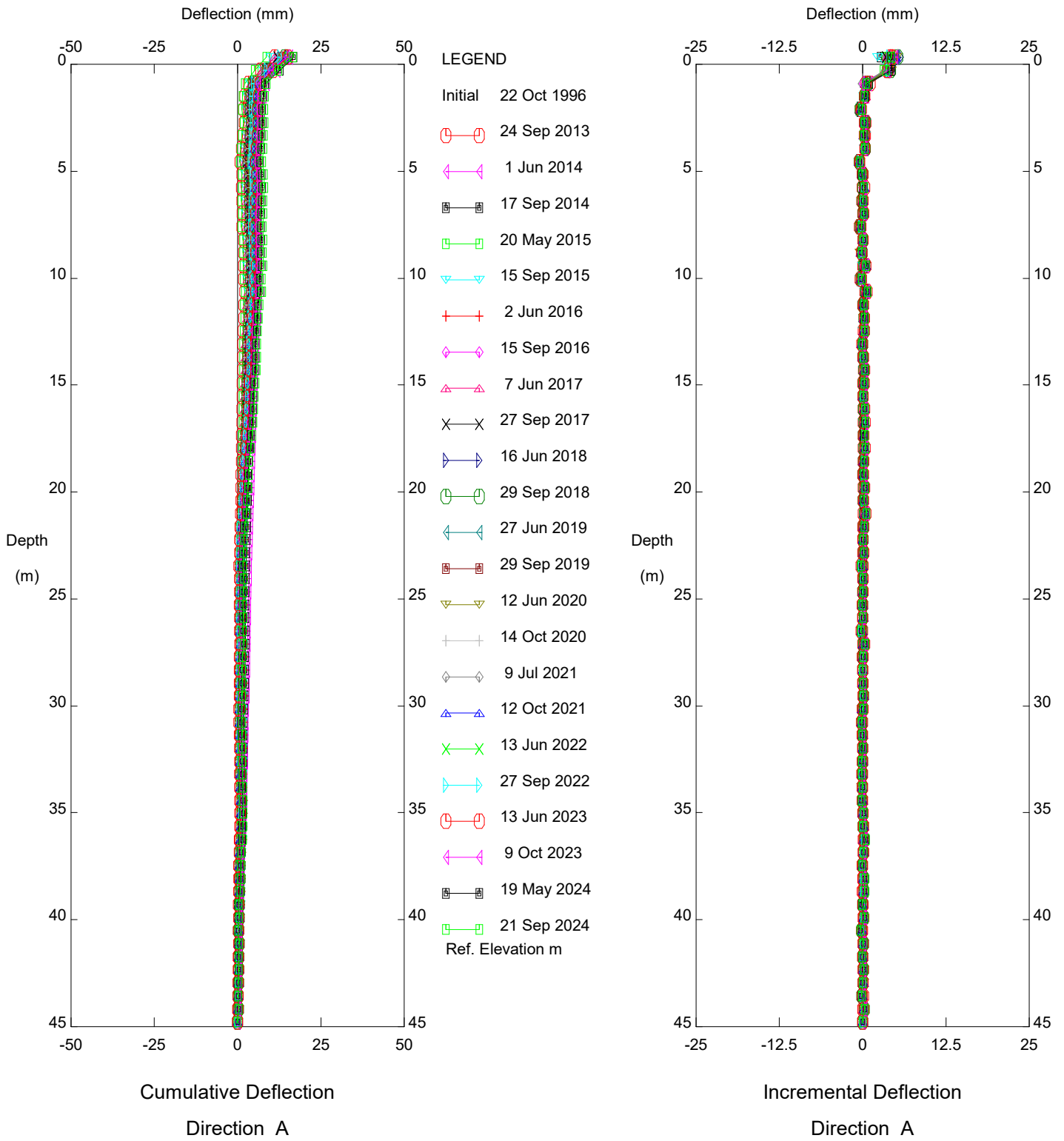
DWG No. 32121-PH002-1

DRAWN BY	ML
DESIGNED BY	NFR
APPROVED BY	DWP
SCALE	AS SHOWN
DATE	SEPTEMBER 2021
FILE No.	32121

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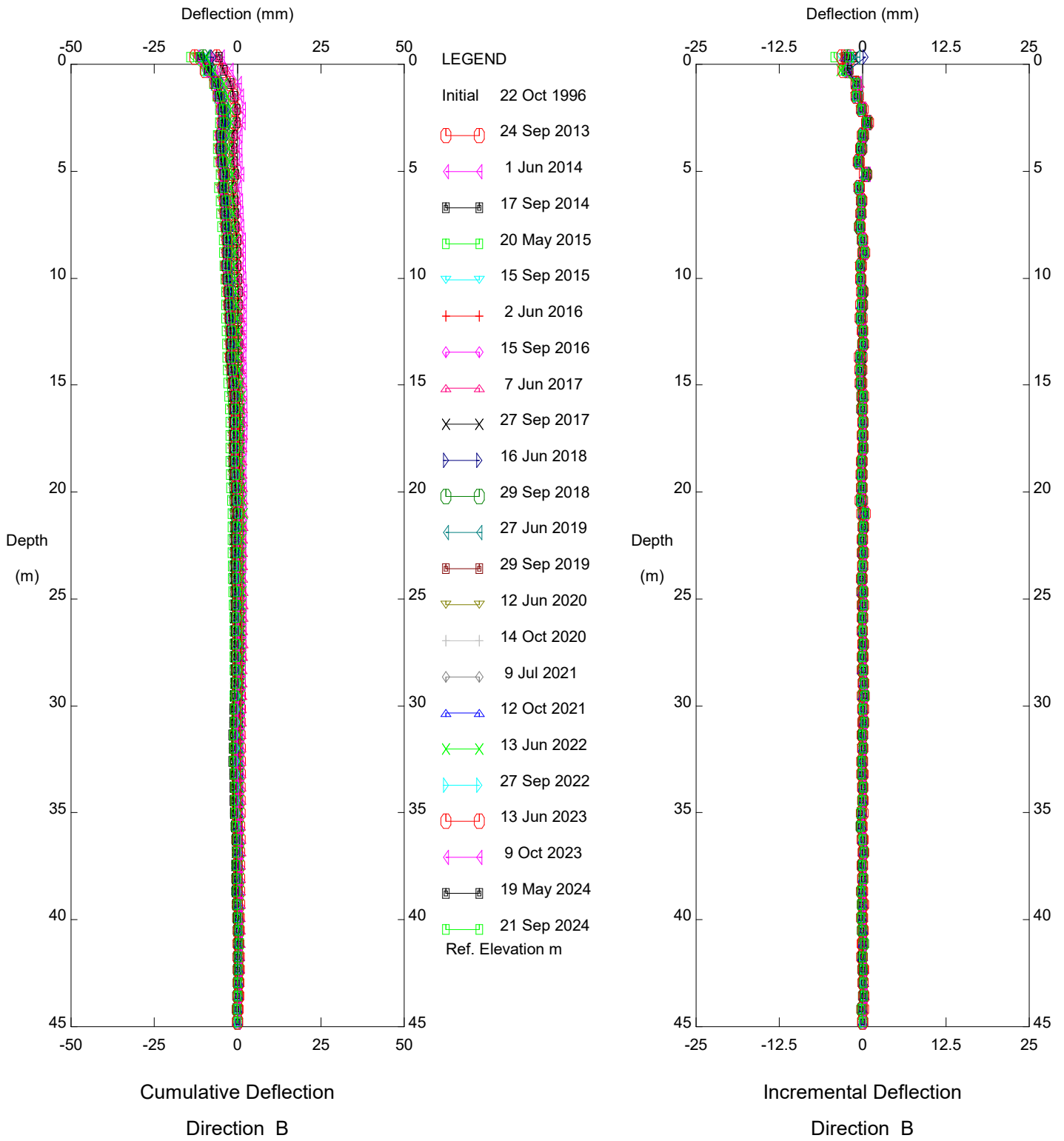
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HWY. 2:60 - STA. 2+600, Inclinometer SI-63

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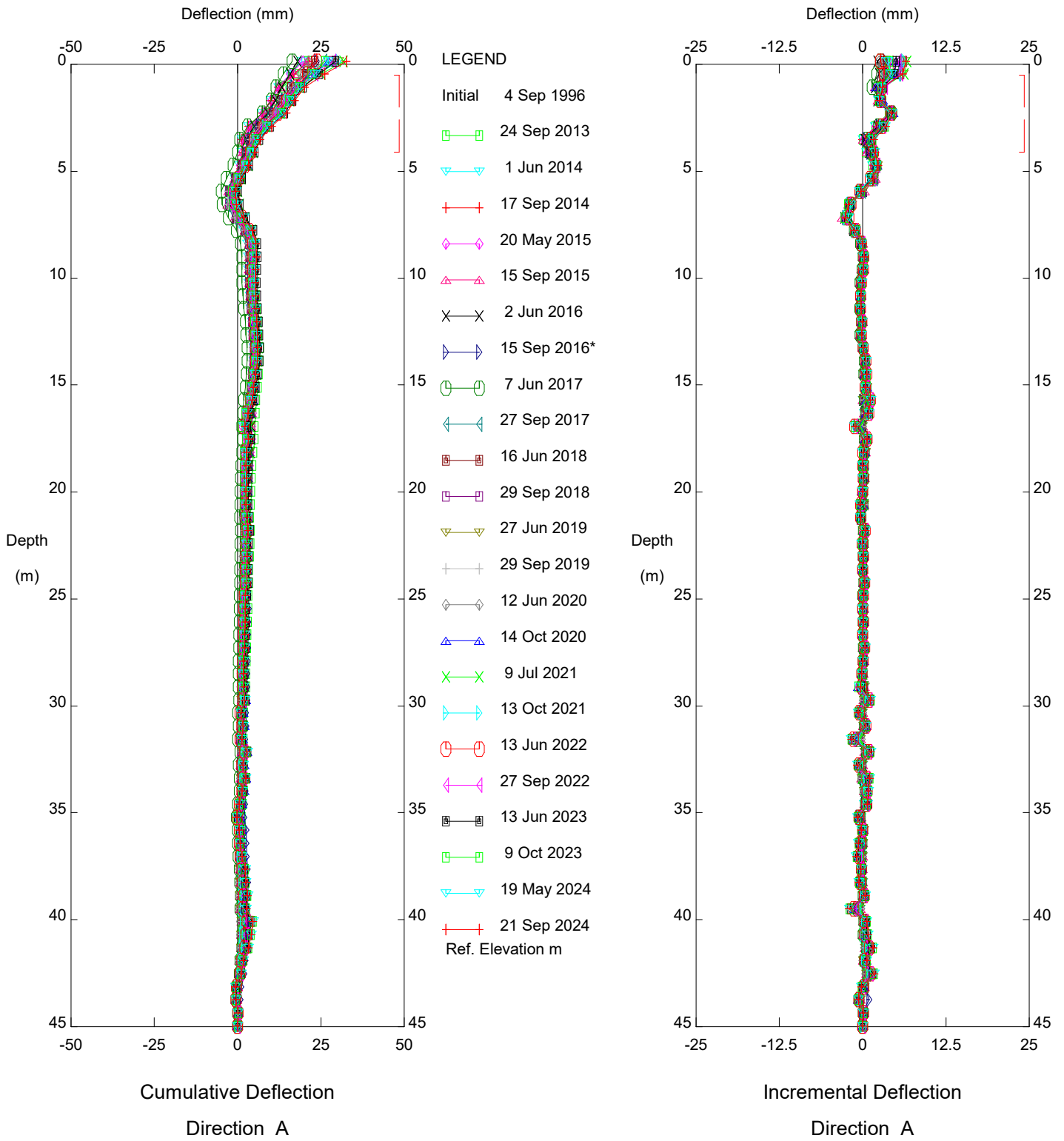
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HWY. 2:60 - STA. 2+600, Inclinometer SI-63

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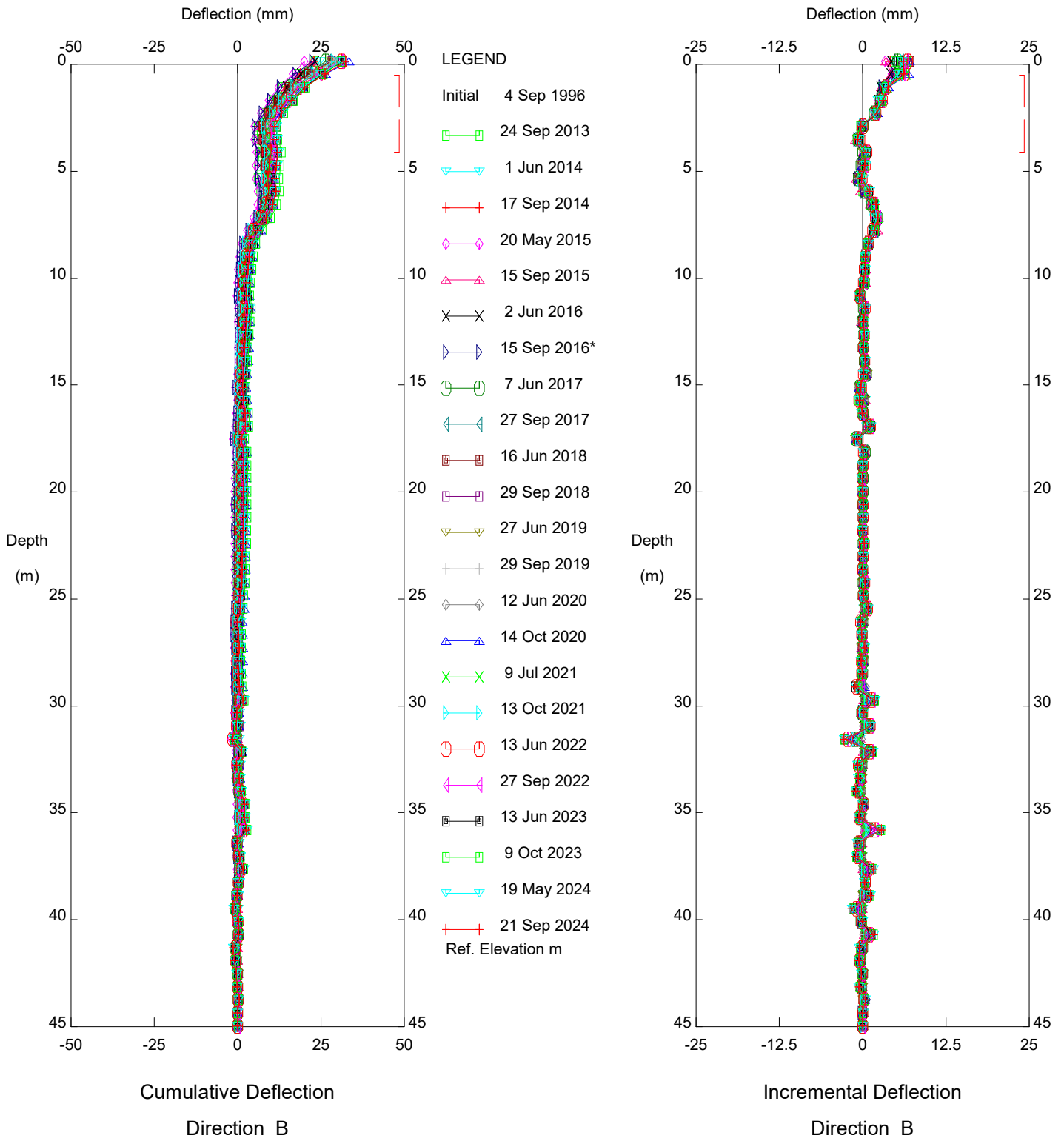


HWY. 2:60 - STA. 2+600, Inclinometer SI-64

Alberta Transportation

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

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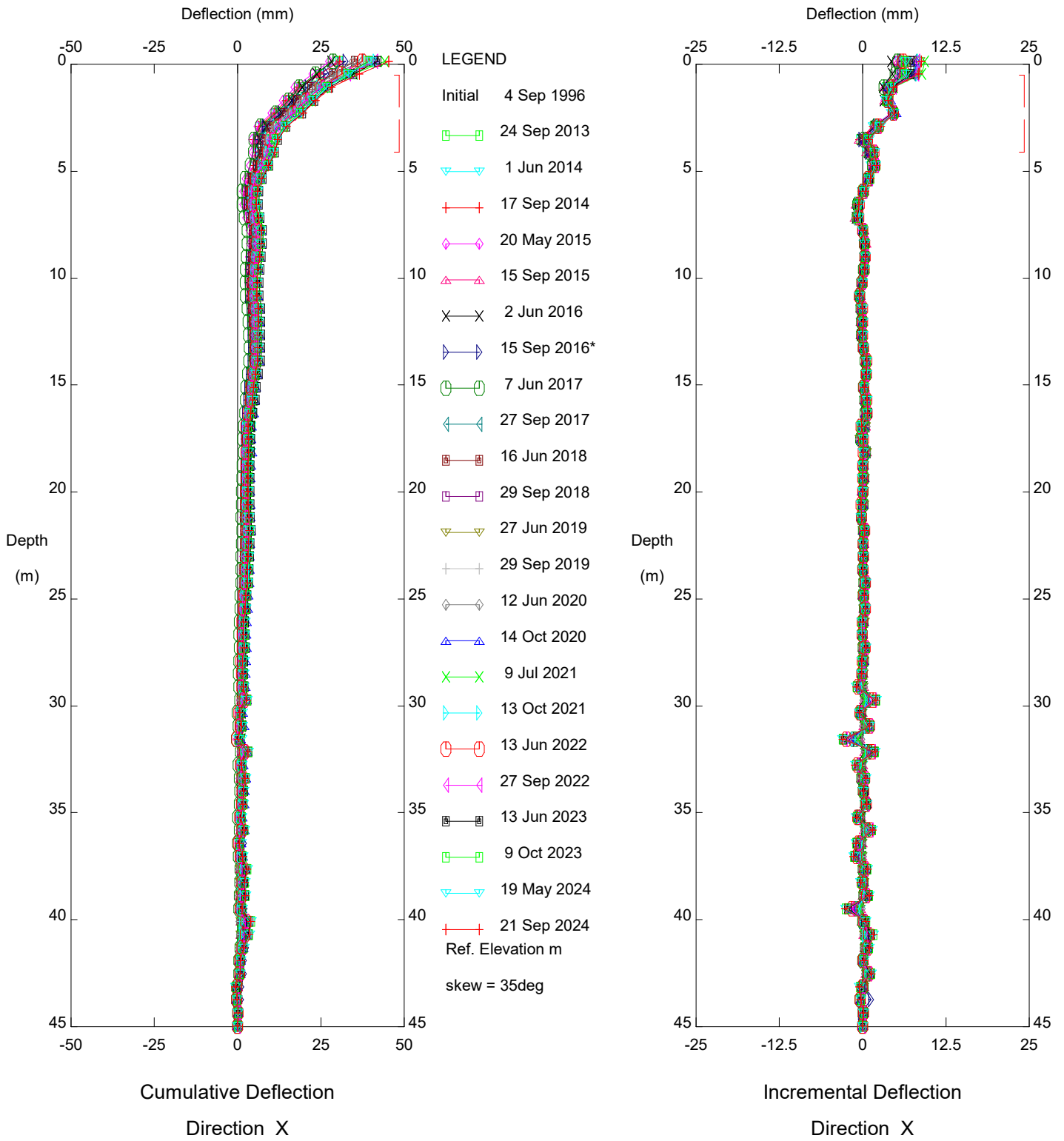


HWY. 2:60 - STA. 2+600, Inclinometer SI-64

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

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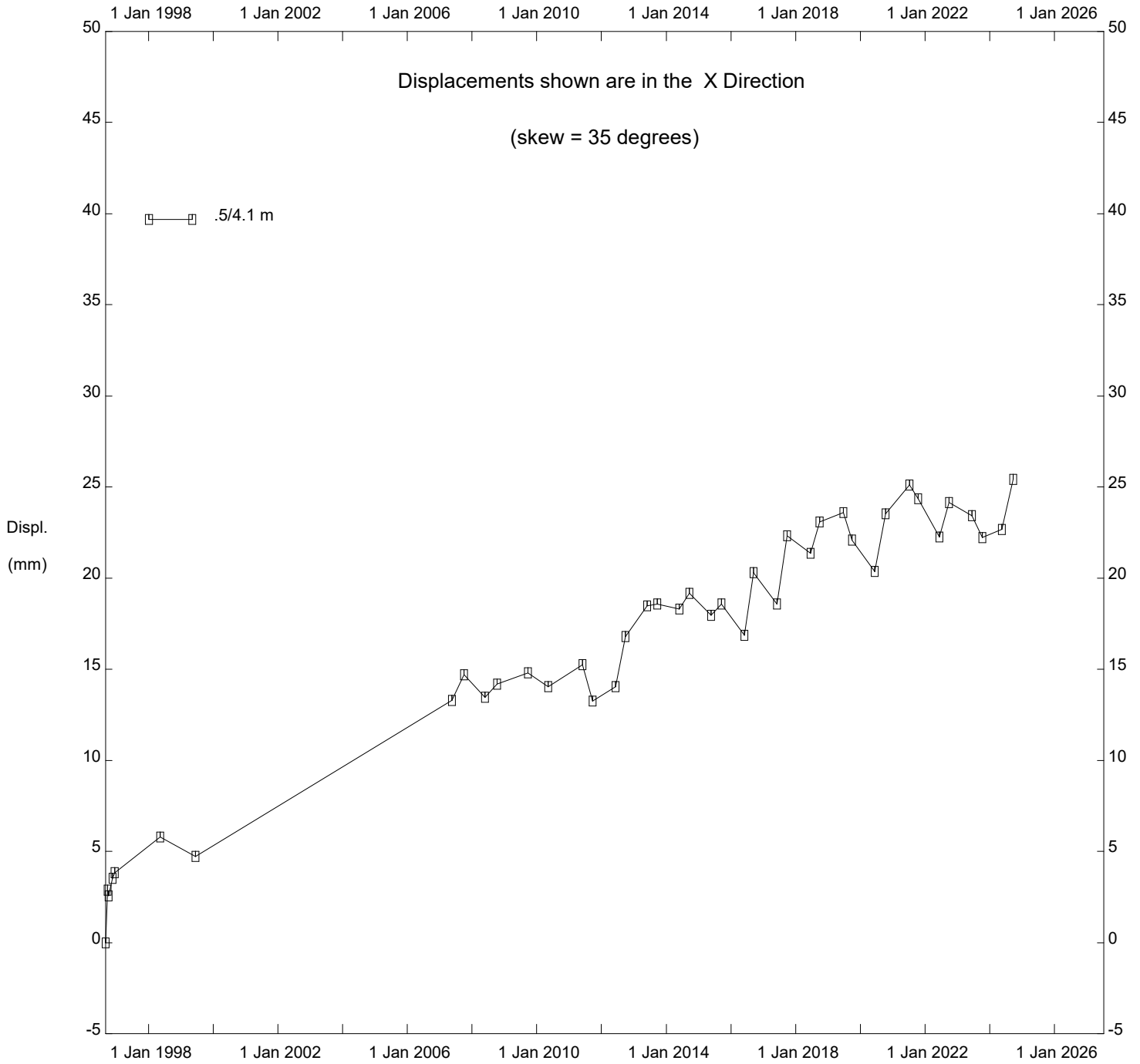


HWY. 2:60 - STA. 2+600, Inclinometer SI-64

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

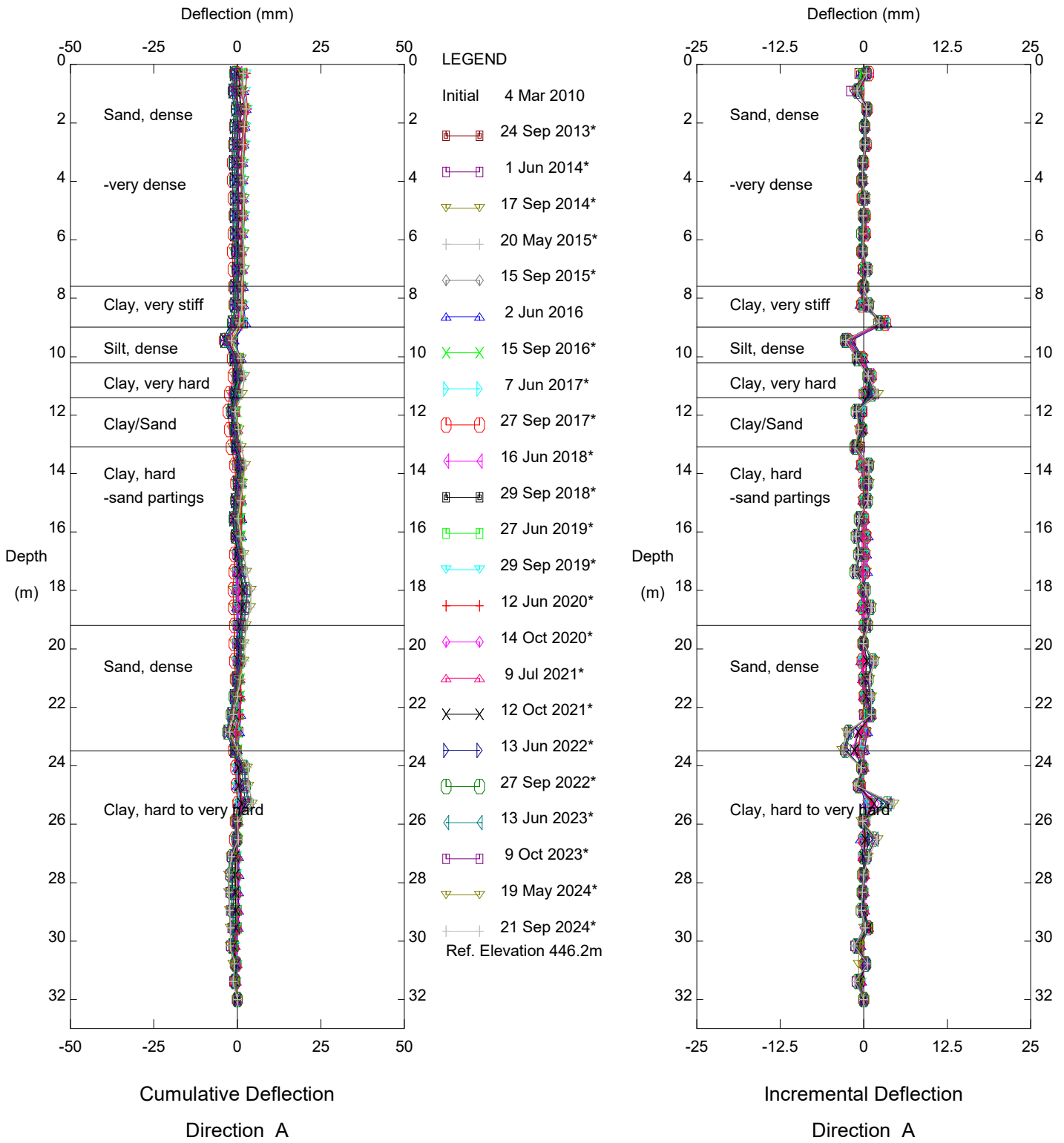
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HWY. 2:60 - STA. 2+600, Inclinator SI-64

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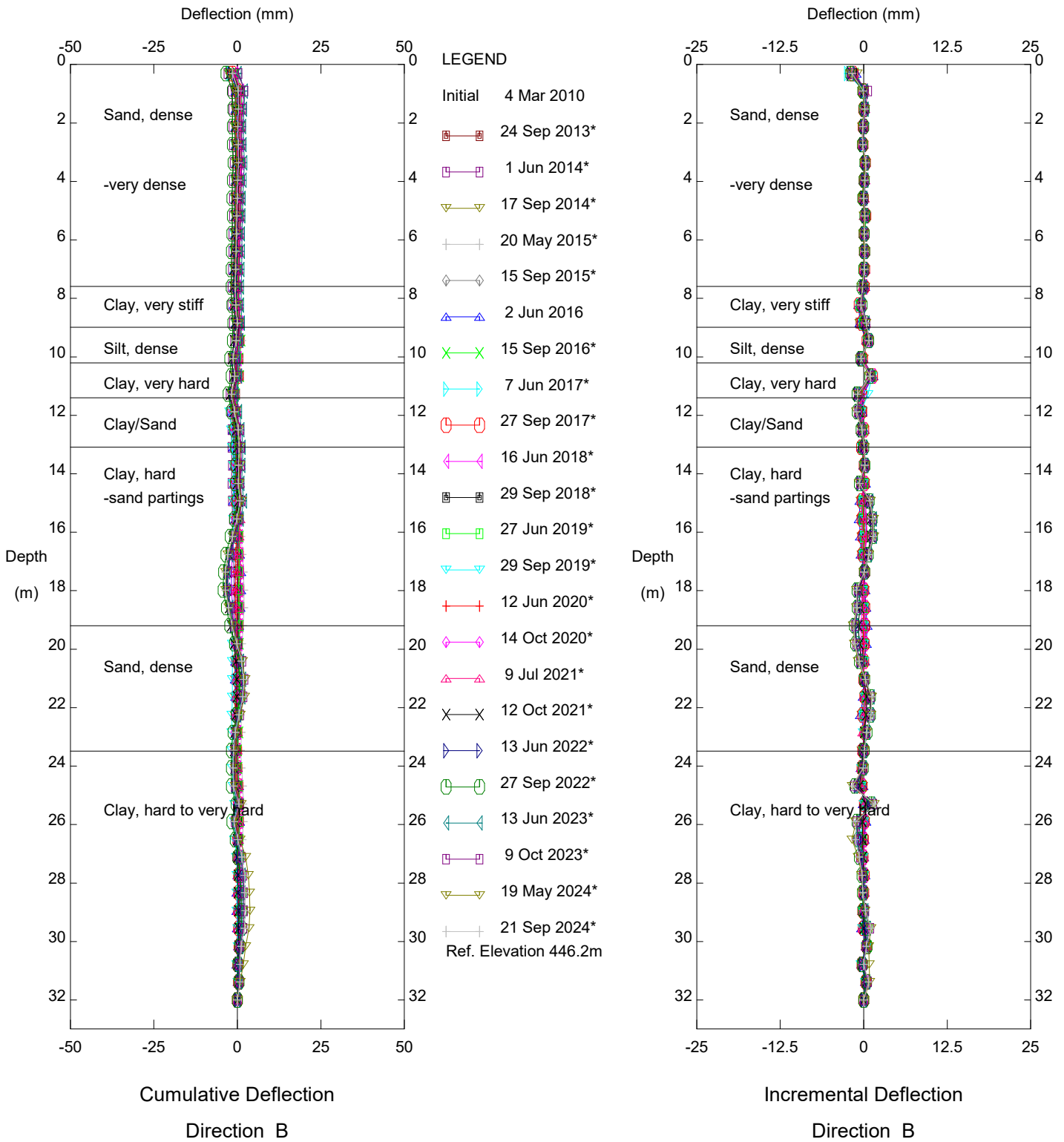


Peace River East Hill PH2, Inclinometer SI10-3

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

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Peace River East Hill PH2, Inclinometer SI10-3

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



**FIGURE PH002-1  
PIEZOMETRIC DEPTHS FOR HWY 2:60 PEACE RIVER EAST HILL**

