

SITE NUMBER AND NAME: NC086 – Poplar Creek Slide	HIGHWAY AND KM: 39:06, km 4.915	PREVIOUS INSPECTION: June 14, 2024	CURRENT INSPECTION: May 20, 2025
LEGAL DESCRIPTION: SW 11-49-06-W5	NAD83 COORDINATES: UTM11U 5897673N, 648158E		RISK ASSESSMENT: PF: 9 CF: 3 Total: 27
AVERAGE ANNUAL DAILY TRAFFIC (AADT): 3,660 (2024)		CONTRACTOR MAINTENANCE AREA (CMA): 509	

SUMMARY OF INSTRUMENTATION: One slope inclinometer functional.	INSPECTED BY: Stantec: Leslie Cho, Sonja Pharand TEC: Kristen Tappenden, Jennifer Mazurek
LAST READING DATE: May 9, 2025	
PRIMARY SITE ISSUE: Slope failure southeast of the intersection of Highway 39 and Township Road (TWP RD) 491A.	
APPROXIMATE DIMENSIONS: 35 m wide by 60 m long	
DATE OF ANY REMEDIAL ACTION: 2018 – Pile wall installed. Culvert under TWP RD 491A realigned. Centerline culvert at Highway 39 grouted and abandoned. Rock check dams installed in north ditch of Highway 39.	

ITEM	CONDITIONS EXIST		DESCRIPTION AND LOCATION	NOTICEABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress	X		Separation along joint of new and old pavement west of pile wall. Visible cracking, rutting and occasional potholes on south side of eastbound lane.	X	
Slope Movement	X		Slope movement downslope of pile wall. Slide scarp retrogressing north towards highway. Leaning light post on south side of highway east of intersection.	X	
Erosion	X		Erosion within northern ditch and erosion off eastbound lane into southern ditch.	X	
Seepage	X		Landslide mass is wet.		X
Bridge/Culvert Distress		X			X

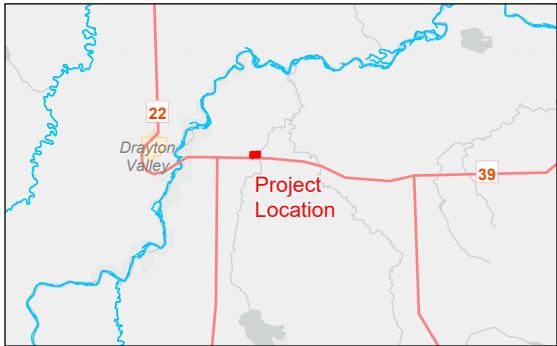
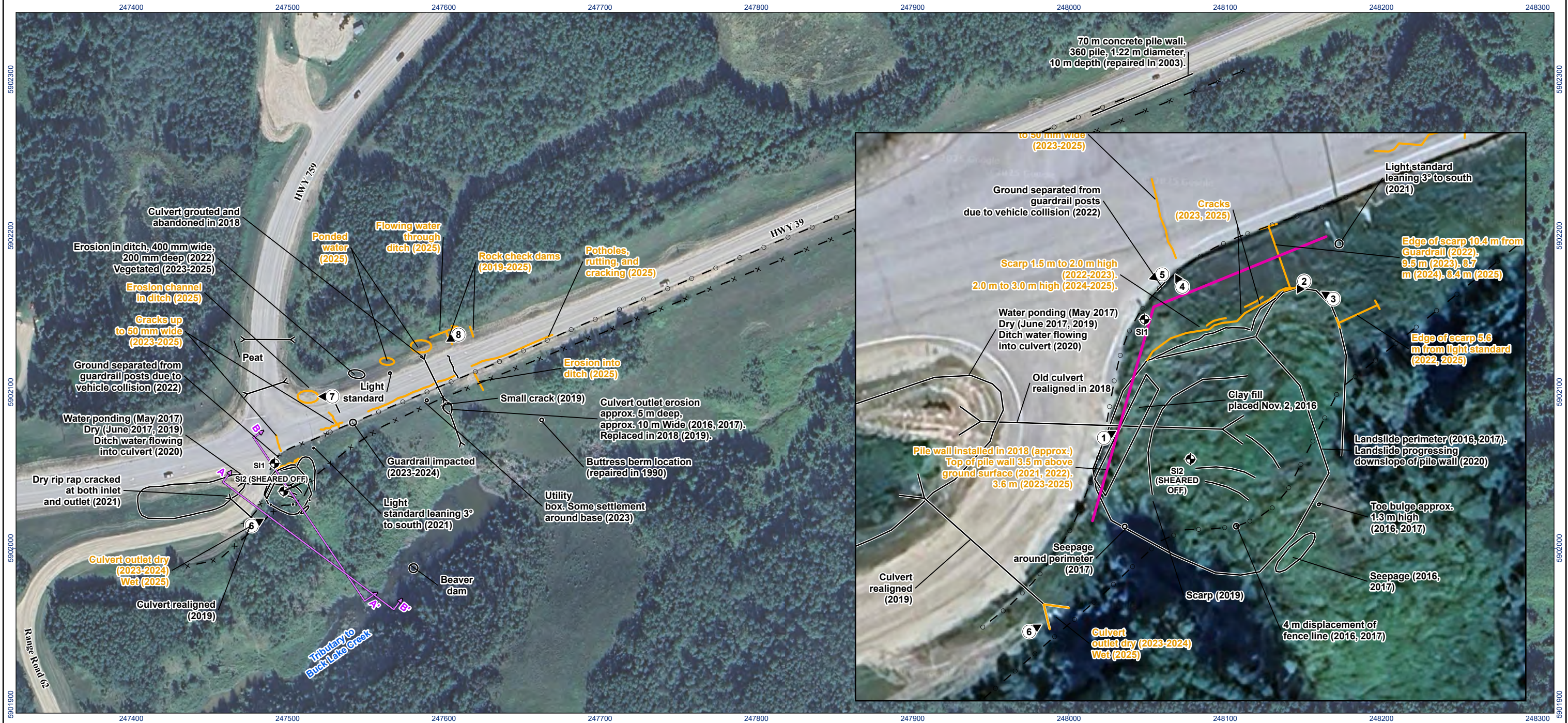
COMMENTS
<ul style="list-style-type: none"> The landslide downslope of the wall continues to progress slowly (Photos 1 to 3, 9 and 10). A measurement from the top of pile wall to the top of ground was taken between the 9th and 10th guardrail post south of the stop sign. The height was measured to be 3.6 m, same as the past two inspections. The landslide mass appears to have extended east beyond the limits of the pile wall. The current east limit is approximately 5.6 m east from the light standard. This is approximately in line with the east limit of the pile wall. The scarp is approximately 8.4 m south of the guardrail, meaning that the slide has retrogressed 0.3 m since the 2024 inspection. The height of the scarp remains similar to 2024, varying between about 2 and 3 m high. The southeast extent of the scarp extends into the tree line as noted in 2024. The scarp is less vegetated than observed during the previous inspection. The tension cracks above the current landslide scarp appeared similar to 2023 observations.

- SI1 showed a negligible cumulative movement of 1 mm at a depth of about 14 m in the clay shale since initialization in 2018.
- The light standard south of Highway 39 and about 20 m from the intersection had a 3° lean towards the slide mass. The MCI previously informed Stantec that many light standards in this area have a similar lean. The metal at the base of the light standard appears to be peeling and corroding, similar to 2024 observations.
- Settlement of the ground was noted around the base of the utility box to the east of the light standard on the south side of the highway, similar to 2024.
- The culvert and ditch across TWP RD 491A were wet (raining during site inspection). The riprap at both ends of the culvert was cracked (Photo 6).
- The separation between the new and old pavement could not be observed as the area was covered in dirt and gravel, similar to 2024.
- Transverse pavement cracks up to 50 mm wide were observed east of the intersection (Photo 4). A pothole around 0.1 m diameter and 50 mm deep was observed within one of the cracks. The cracking and rutting appeared to be extending further east.
- Longitudinal cracking of Highway 39 was observed and appeared similar to 2024, with cracks up to 10 mm wide (Photo 5). The observed cracking does not appear to be related to landslide activity (Photo 11).
- The north ditch of Highway 39 was wet, with some erosion and ponded water (Photo 7). One larger area of ponded water exists near the north end of the culvert that was grouted and abandoned in 2018 (Photos 8 and 11). Water was observed to be flowing east towards the check dams.
- Both check dams were observed to the east of the light standard, with the check dam furthest west partially obscured by vegetation (Photo 11).

RECOMMENDATIONS

- The site should be regularly monitored by the MCI. In particular, the landslide should be monitored for additional progression towards the light standard which would indicate the slide is beyond the extent of the pile wall. In addition, the depth of the landslide from the top of the pile wall should be checked to ensure that it does not exceed the design cantilever height of 6 m.
- To facilitate monitoring of the slide, lathe may be installed within the slide zone, and to the northeast of the slide zone, to provide repeatable reference points. Measurements between lathe and from features outside of the slide zone could be taken during the annual instrument readings in the spring.
- Should the landslide progress beyond the east extent of the pile wall, the pile wall can be extended to protect the highway. The high-level cost of extending the pile wall by 20 m is \$315,000, excluding engineering. Conflicts with streetlight power and communications cable are expected if the pile wall is extended east.
- Pavement cracks should be sealed to reduce surface water infiltration into the slope.
- The ditch on the north side of Highway 39 should be regraded for water flow. Additional check dams or other structures should be installed to reduce surface water flow velocity.
- Site inspections should continue annually.
- Instrumentation readings should continue to be read annually in the spring. Consideration may be given to installing an additional SI to the northeast of the slide area.

PREPARED BY: Sonja Pharand, P.Eng.	REVIEWED BY: Leslie Cho, M.Eng., P.Eng.	PERMIT TO PRACTICE:



- Instrument Location
- Photo and Direction
- Pile Wall
- 2025 Observation
- Previous Observation
- Fence
- Guardrail
- Cross-Section
- Culvert
- Quarter Section

Notes
1. Coordinate System: NAD83(CSRS)v7 UTM Zone 12N
2. Data Sources: Geogatis, ©Department of Natural Resources Canada, All rights reserved.
3. Background: Light Gray Base: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community
Google Satellite: © OpenStreetMap (and) contributors, CC-BY-SA

0 40 80 metres
(At original document size of 11x17)
1:2,500



Project Location
HWY 39:06,
Alberta

Prepared by MK on 2025-07-02
QR by SP on 2025-07-03
IR by LC on 2025-07-03

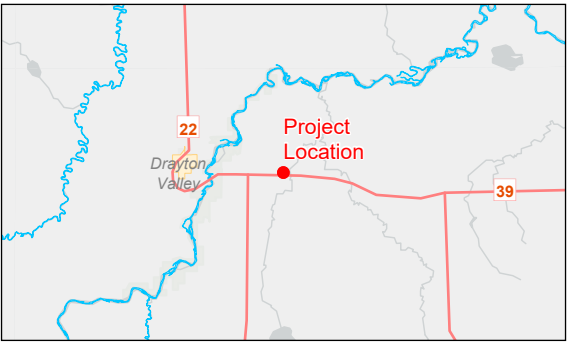
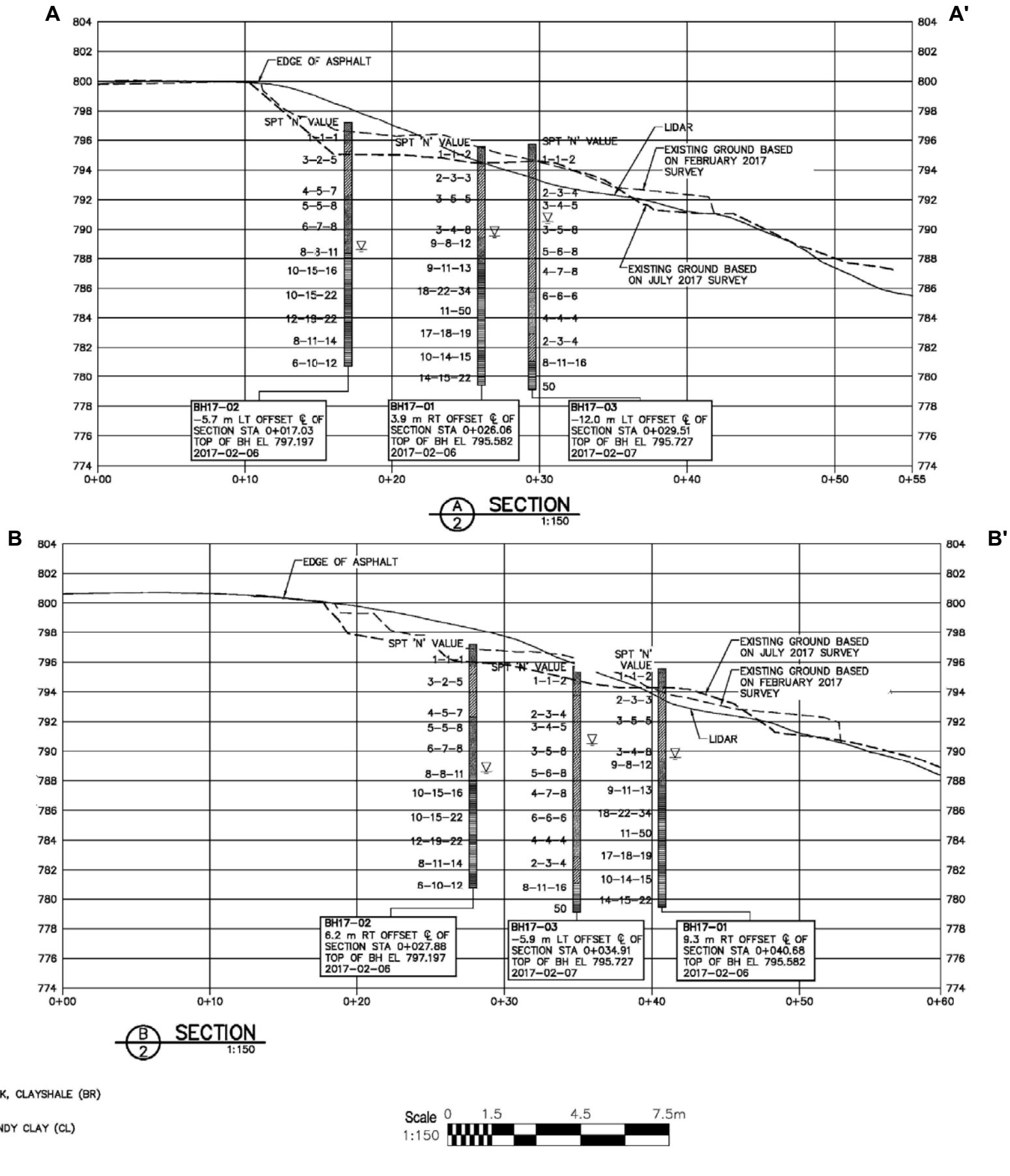
Client/Project
Transportation and Economic Corridors
Geohazard Monitoring Program
NC86 HWY 39:06 Poplar Creek Slide

123315222

Figure No.
1

Site Plan

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Project Location
HWY 39:06,
Alberta

Prepared by MK on 2025-07-02
QR by SP on 2025-07-07
IR by LC on 2025-07-08

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Figure No.
2

Title
Cross-Sections A and B

2025 Site Inspection Photos at NC086



Photo 1: Slope movement downslope of pile wall. Looking northeast.



Photo 2: Slope movement downslope of pile wall. Looking southwest.

2025 Site Inspection Photos at NC086



Photo 3: Scarp less vegetated than previous inspection. Looking northwest.



Photo 4: Crack on east side of intersection. Looking north.

2025 Site Inspection Photos at NC086



Photo 5: Pavement condition at intersection. Looking west.



Photo 6: Culvert outlet south of the pile wall. Looking northeast.

2025 Site Inspection Photos at NC086



Photo 7: Erosion occurring off the east corner of Hwy 759 and Hwy 39, into the north ditch. Looking west.



Photo 8: Ponded water located in the north ditch, water flowing towards east. Facing southwest.

2025 Site Inspection Photos at NC086



Photo 9: Aerial view of the slide and surrounding pavement. Taken by drone, facing northeast.



Photo 10: Aerial view of the slide, from the south end. Taken by drone, facing northwest.

2025 Site Inspection Photos at NC086



Photo 11: Aerial view of Highway 39, east from the intersection with Range Road 759. Facing east.