NORTH CENTRAL REGION GRMP
EDSON / STONY PLAIN
SITE INSPECTION FORM

SITE NUMBER AND NAME:	HIGHWAY AND KM:	PREVIOUS INSPECTION:	CURRENT INSPECTION:
NC083 – West of Wildhay River	40:30, km 37.368	June 11, 2024	May 23, 2025
LEGAL DESCRIPTION:	**NAD83 COORDINATES:**		**RISK ASSESSMENT:**
SE-08-53-27-W5	UTM11U 5935069N, 437757E		PF: 11 CF: 5 Total: 55
AVERAGE ANNUAL DAILY TRAFFIC (AADT):		**CONTRACTOR MAINTENANCE AREA (CMA):**	
1,250 (2024)		508	

SUMMARY OF INSTRUMENTATION:	INSPECTED BY:
Three slope inclinometers and three vibrating wire piezometers functional **LAST READING DATE:** May 6, 2025	Stantec: Leslie Cho, Sonja Pharand and Carrie Murray TEC: Kristin Tappenden
PRIMARY SITE ISSUE:	
Embankment failure due to shallow groundwater levels and weak foundation soils.	
APPROXIMATE DIMENSIONS:	
150 m wide. Unclear where the toe is.	
DATE OF ANY REMEDIAL ACTION:	
Southbound lane (SBL) patched in 2016. SBL patched with 25 tonnes of asphalt in summer 2017. SBL milled and filled in summer 2023.	

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICEABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress	X		Cracking over both lanes within 75 m both directions from intersection with gravel pit access road. Pavement breaks with rutting. Cracks reflecting through pavement patch.	X	
Slope Movement	X		Semi-circular cracking along SBL, extending north past BH17-02 and south past the culvert and timber pile. New curved cracks visible, dipping in pavement.	X	
Erosion	X		Erosion at Hwy 40 centerline (C/L) culvert outlet. Severe erosion near timber stockpile. Erosion at the east corner of the entrance to the gravel access road. New erosion channel southeast of BH17-01 draining to tree line.	X	
Seepage	X		Seepage on south slope near culvert and at vehicle tracks. Seepage at Hwy 40 C/L culvert inlet. Seepage downslope from BH17-01.	X	
Bridge/Culvert Distress		X			

COMMENTS

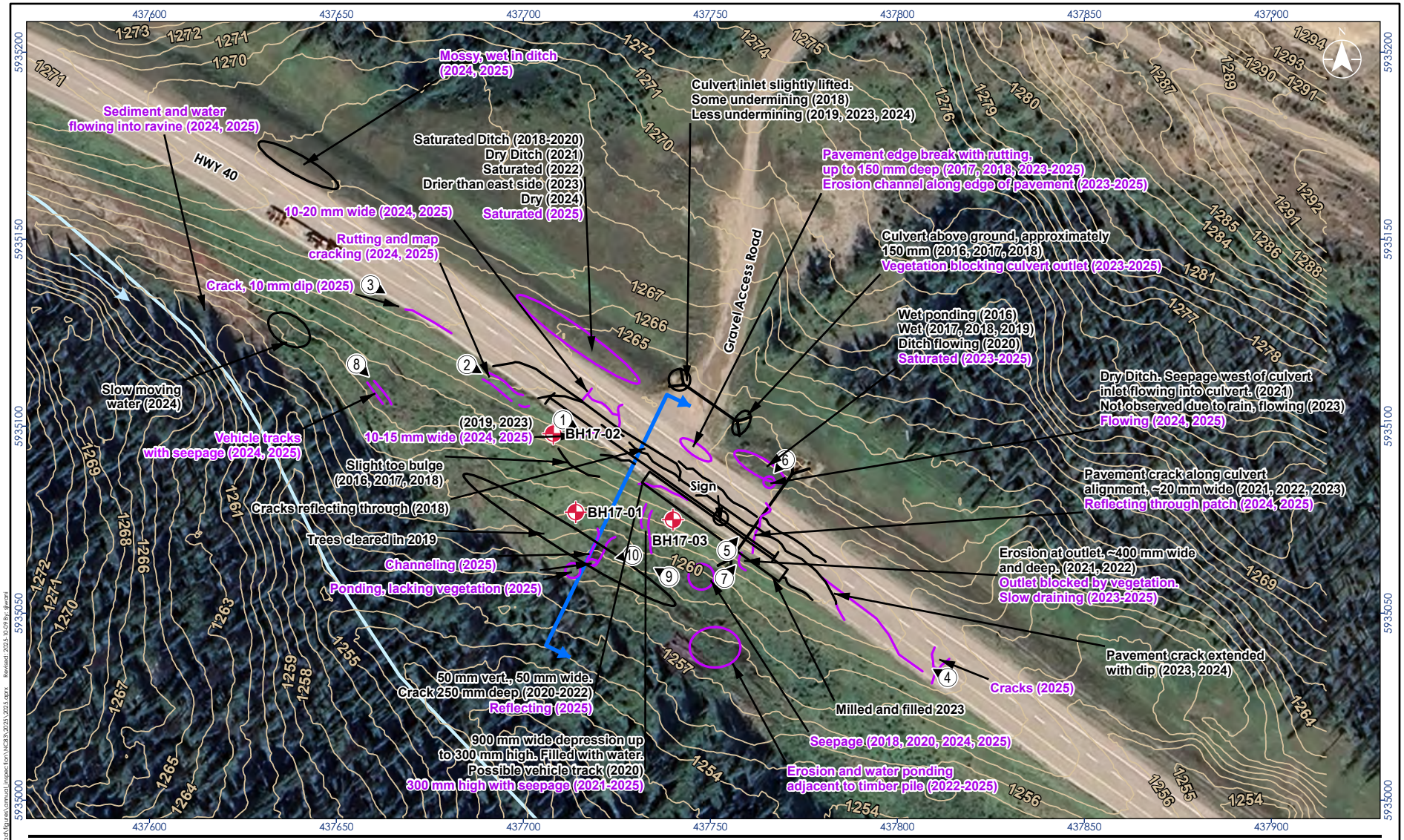
- Pavement cracks not covered by the 2023 milling and filling in the south bound lane (SBL) appeared to have worsened in comparison to the 2024 inspection and consisted of:
  - Semi-circular crack across all 3 lanes at the entrance to the gravel pit access road shows additional, small cracks forming nearby (Photos 1 and 11).
  - Semi-circular crack along SBL between BH17-02 and BH17-03 appears similar to 2024 with some additional smaller cracks nearby.
  - 50 mm high crack along SBL shoulder northwest of BH17-03, extending past the C/L culvert crossing.
  - 20 mm wide pavement crack along the alignment of the C/L culvert, reflecting through pavement patch, appears similar to 2024 (Photo 5).

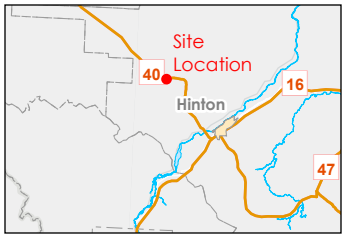
  - New curved crack observed on south side of SBL, north from BH17-02. Small dip (approx. 10 mm) apparent in the pavement surface (Photo 3).
  - Additional pavement cracks originating near the highway centerline and curving towards the south were observed further south from the C/L culvert (Photo 4).
- The angled pavement crack within the northern end of the milled and filled section of the SBL has begun to reflect.
- Both culverts at the site appear to be in good condition. The ditch near the inlet of the C/L culvert is saturated and soft (Photo 6).The erosion channel at the C/L culvert outlet was about 400 mm wide and deep, similar to 2024. The C/L culvert outlet continues to be blocked by vegetation resulting in slow drainage out of the culvert (Photo 7).
- An erosion channel was observed at the entrance to the gravel access road where it followed the highway and entered the east ditch where it had eroded the edge of pavement. The edge of pavement at this location was also broken over several meters, similar to 2024.
- The south slope has a “hummocky” appearance and was soft and spongy to traverse (Photos 8 to 12).
- Erosion features with ponded water were observed near the timber stockpile, in a similar condition to the previous site inspection.
- Seepage was observed in the previously observed vehicle tracks at the south slope and northwest of BH17-02 (Photo 8).
- Seepage has formed a new erosion channel southeast of BH17-01 (Photos 10 and 11). Two areas were found to have ponded water and saturated, soft ground, lacking vegetation.
- Water was observed to be flowing into the creek / drainage from the western ditch into the channel that runs south from the site. Iron staining was observed within the western ditch (Photo 12).
- All three SIs at the site continue to show movement with movement rates ranging from 2 mm/year to 11 mm/year. Piezometric levels remain high ranging from 0.4 m to 0.8 m below ground surface, similar to measurements since 2018.

RECOMMENDATIONS

- All pavement cracks should be sealed to reduce surface water infiltration into the landslide.
- Riprap or gravel should be placed at the C/L culvert outlet. If the erosion is left unchecked, it could lead to further channeling and embankment movement.
- A French drain along the north ditch from west of the gravel access road extending for about 250 m with a depth of 3 m could be considered for stabilizing this section of the highway. The high-level cost of construction is $300,000 to $400,000 excluding engineering.
- It is understood that this section of the highway is planned to be widened, and that slope stabilization will be included with the highway widening works. Remediation options could include installing a pile wall along the south edge of pavement or constructing a gravel toe berm south of the highway and/or considering light weight fill for the highway widening work. Any remediation measures undertaken should include drainage measures such as trench drains, finger drains, or drainage blanket (wicking geotextile) underneath the embankment to reduce pore pressure build-up.
- The site should continue to be inspected annually.
- Instrumentation monitoring should continue semi-annually.

PREPARED BY: Sonja Pharand, P.Eng.	**REVIEWED BY:** Leslie Cho, M.Eng., P.Eng.	**PERMIT TO PRACTICE:**
PROFESSIONAL ENGINEER ALBERTA SONJA A. PHARAND ID 286545 2025-10-11		PERMIT TO PRACTICE STANTEC CONSULTING LTD. Signature ID# 74389 Date 15 - Oct - 2025 PERMIT NUMBER: P 0258 The Association of Professional Engineers and Geoscientists of Alberta





- Photos and Direction
- Borehole Location
- Culvert
- Cross-Section Location
- 2025 Observation
- Previous Observation
- Drainage/ Creek
- Ground Elevation Contours (m AMSL, LiDAR 2006)

0 25 50 metres

1:1,500 (At original document size of 8.5x11)

Notes

1. Coordinate System: NAD 1983 UTM Zone 11N
2. Base features: Geogratis, ©Department of Natural Resources Canada, All rights reserved.
3. Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

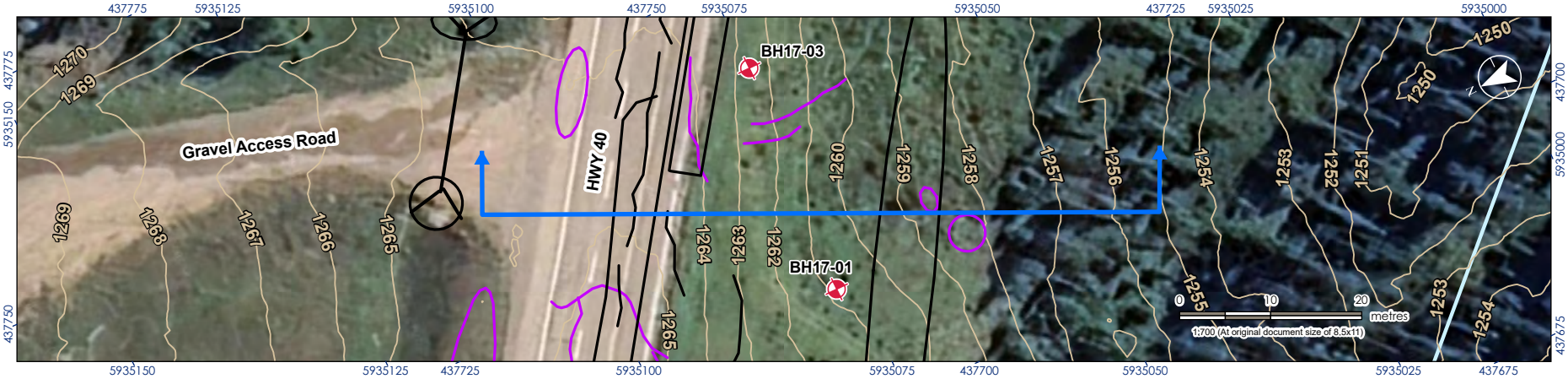
Project Location
SE 8-53-27 W5M
Yellowhead County, Alberta

123315222
Prepared by MK on 2025-09-02
TR by SP on 2025-09-03
IR by LC on 2025-09-04

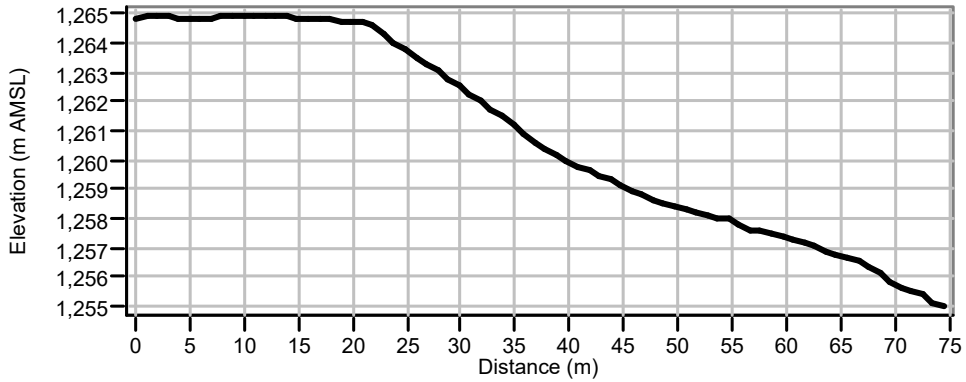
Client/Project
Transportation and Economic Corridors
Geohazard Monitoring Program
NC83 – West of Wildhay River

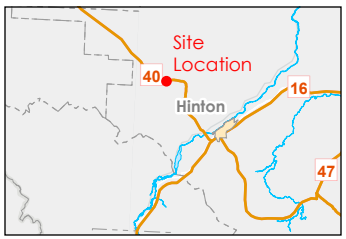
Figure No.
1

Title
Site Plan



Cross Section A-A'





- Borehole Location
- Culvert
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Stantec

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Figure No.
2

Title
Ground Profile of Section A-A'

2025 Site Inspection Photos at NC083

Photo 1: Pavement cracking in SBL near BH17-02. Looking southeast.

Photo 2: Pavement cracking on highway near BH17-02. Looking southeast.

2025 Site Inspection Photos at NC083

Photo 3: New cracking and ~10 mm dip in SBL northwest from BH17-02 and north from vehicle tracks with seepage. Looking southwest.

Photo 4: Curved cracks extending further south. Looking northwest.

2025 Site Inspection Photos at NC083

Photo 5: Pavement crack along C/L culvert alignment. Looking northeast.

Photo 6: North ditch at C/L culvert inlet. Looking southwest.

2025 Site Inspection Photos at NC083

Photo 7: Vegetation blocking C/L culvert outlet. Looking northeast.

Photo 8: Seepage in vehicle track northwest from BH17-02. Looking southeast.

2025 Site Inspection Photos at NC083

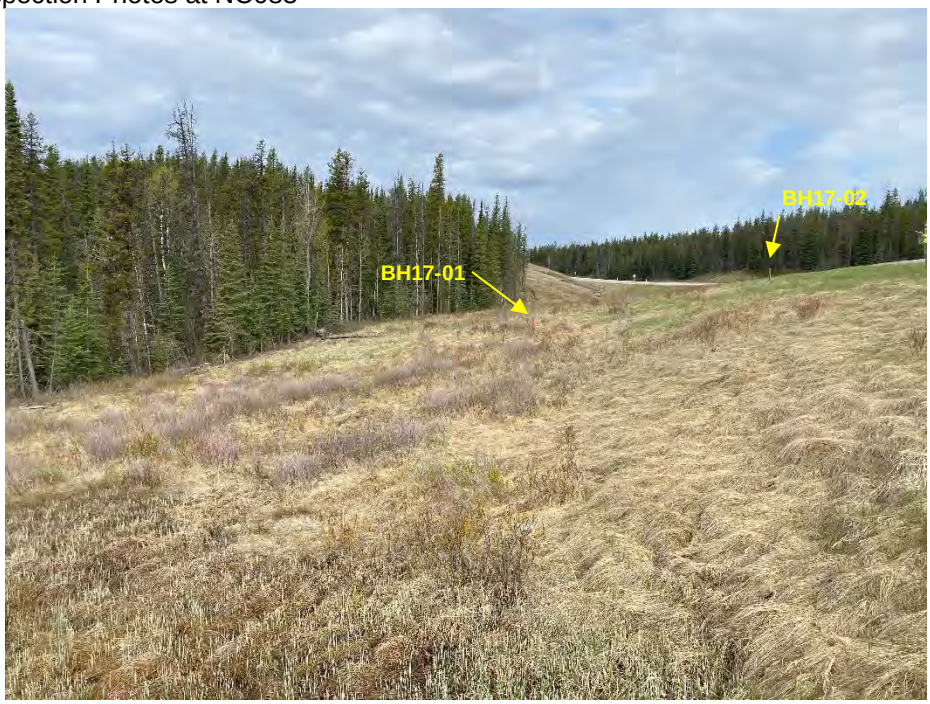

Photo 9: Overall view of south slope. Looking northwest.

Photo 10: Saturated ground with ponded water and erosion channeling near BH17-01 on south slope. Looking southwest.

2025 Site Inspection Photos at NC083

Photo 11: Site overview photo, taken by drone. Looking south.

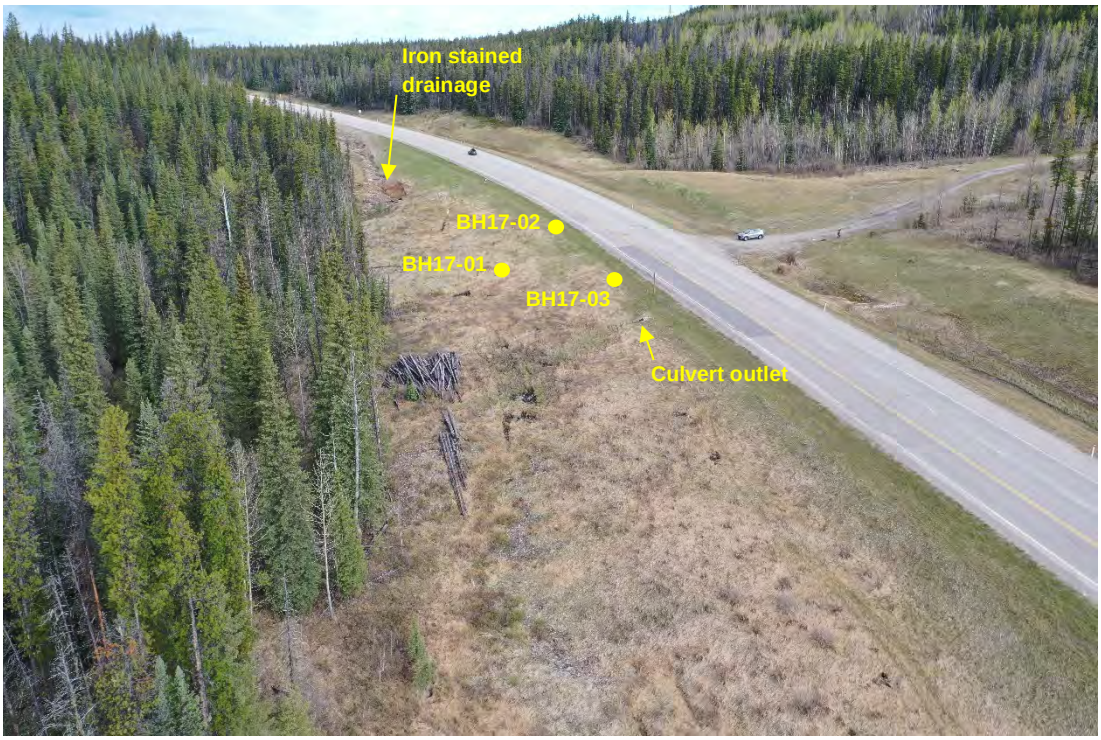

Photo 12: Site overview photo, taken by drone. Looking north.