NORTH CENTRAL REGION GRMP
EDSON / STONY PLAIN
SITE INSPECTION FORM

SITE NUMBER AND NAME:	HIGHWAY AND KM:	PREVIOUS INSPECTION:	CURRENT INSPECTION:
NC057 – Highway 624 Embankment Failure	624:02, km 2.571	June 14, 2023	May 20, 2025
LEGAL DESCRIPTION:	**NAD83 COORDINATES:**		**RISK ASSESSMENT:**
NE & NW 34-50-07-W5	UTM11U 5915066N, 637131E		PF: 10 CF: 6 Total: 60
AVERAGE ANNUAL DAILY TRAFFIC (AADT):		**CONTRACTOR MAINTENANCE AREA (CMA):**	
1,540 (2024)		509	

SUMMARY OF INSTRUMENTATION:	INSPECTED BY:
Two vibrating wire piezometers and one standpipe piezometer functional. **LAST READING DATE:** May 16, 2024	Stantec: Leslie Cho, Sonja Pharand TEC: Kristen Tappenden, Jennifer Mazurek
PRIMARY SITE ISSUE:	
Highway embankment failure due to high groundwater level and weak foundation soils.	
APPROXIMATE DIMENSIONS:	
140 m long by 15 m wide	
DATE OF ANY REMEDIAL ACTION:	
Pavement dip repaired in 2006. Granular drains installed in 2007. Milled and paved in 2014 and 2017. Milled in 2022.	

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICEABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress	X		Pavement cracking reflecting through milled asphalt.	X	
Slope Movement	X		Eastbound lane (EBL) slumping near BH17-06. Bulge feature south of BH17-06 approximately at mid-embankment height. Vertical differential developing southwest of BH17-01 on westbound lane (WBL). Two depressions and possible toe bulge observed in the north ditch near BH17-01.	X	
Erosion		X			X
Seepage	X		A spring was observed at BH17-03 in 2018, 2019, 2023 and 2025. Artesian conditions were also observed in BH17-02 in prior years. Anecdotal evidence from the nearby residents suggests springs exist in this area.	X	
Bridge/Culvert Distress		X			X

COMMENTS

In general, little change was observed since the 2024 inspection. The following summarizes Stantec's observations:

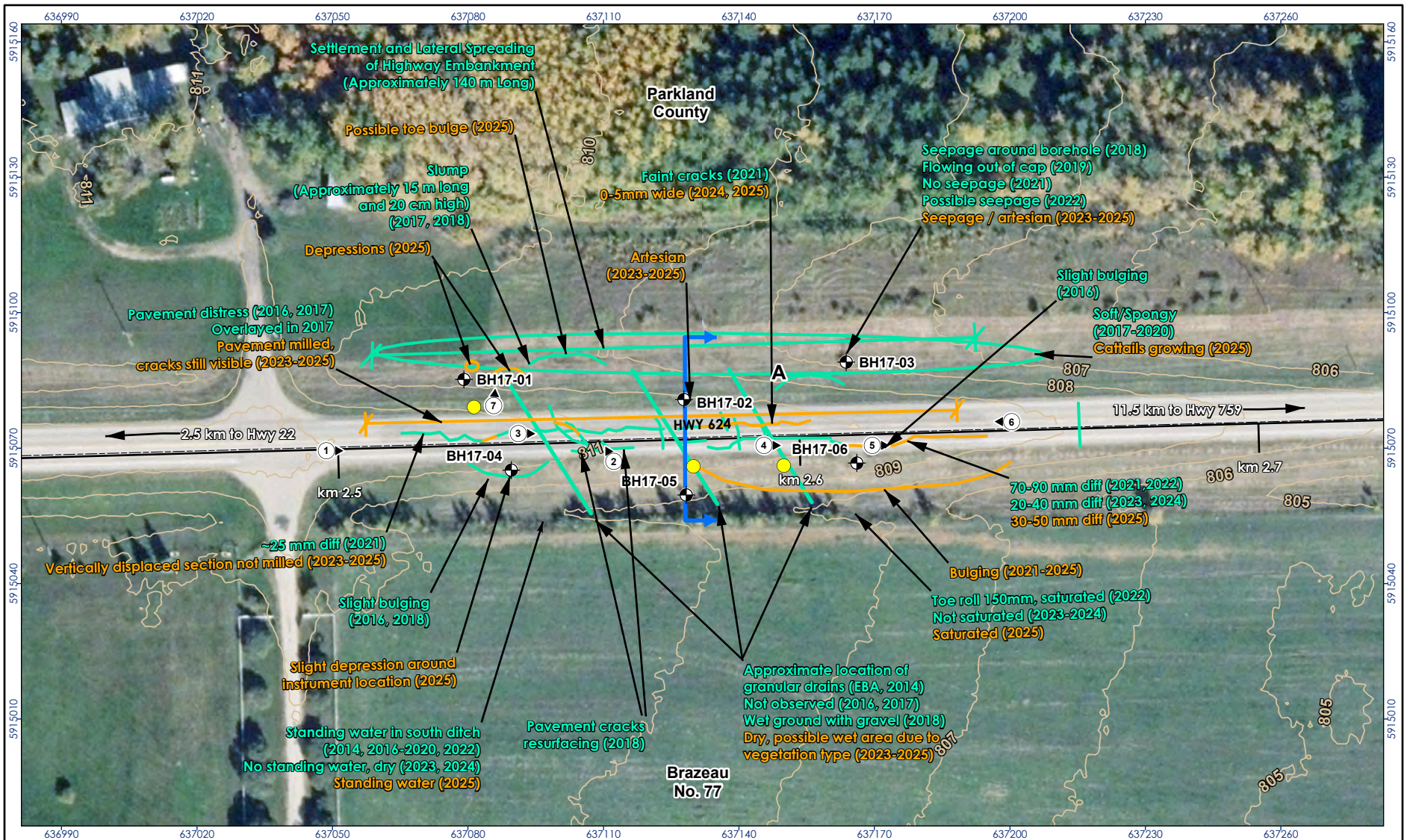
- Pavement cracks are visible within the milled asphalt surface (Photos 1 to 6). The cracks were observed to be up to 5 mm wide and extend past the milled portion of the highway. Additional diagonal cracking was observed during this inspection.
- On the WBL, cracking has progressed to about 25 m east of BH17-02, similar to the observation in 2024.
- Vertical displacement was observed at the west extents of the pavement cracks on the WBL due to transition from milled to non-milled pavement (Photo 1).

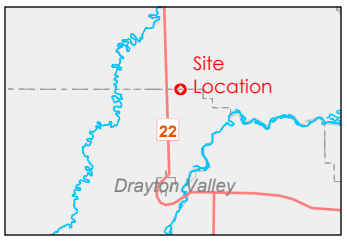
- The EBL pavement cracks near BH17-06 show about 30 to 50 mm vertical displacement, approximately 10 mm more than observed in 2024. A portion of pavement near BH17-06, at the location of the greatest vertical displacement south of the crack, was not milled (Photos 4 and 5).
- The potential bulge south of BH17-06 approximately halfway down the embankment slope appeared similar to 2024.
- Two depressions in the north ditch near BH17-01 were observed, one approximately 1.5 m long and 0.3 m wide and the other approximately 0.4 m in diameter (Photo 7). A potential toe bulge was observed in this same area.
- The piezometer levels remain high at this site with the piezometers showing artesian conditions as high as 0.4 m above ground surface. High piezometric levels are likely contributing to embankment instability. Little to no change was observed between Spring 2025 and Fall 2024 readings.
- Range Roads 71 and 72 could be used for detours and would require less than 20 minutes of additional travel time. However, travel over gravel roads would be required and may not be suitable for transport trucks. Transport trucks may see additional travel times in the order of 30 minutes on paved roadways.

RECOMMENDATIONS

- Pavement cracks should be sealed to reduce surface water infiltration into the embankment. Additional pavement patches are not recommended since it is considered an additional driving force on the embankment. Mill and fill could be completed to address the vertical displacement until remediation is completed.
- Detailed design of this site is complete. The remediation option will include removal of the existing embankment and reconstructing it using tire derived aggregate to improve embankment drainage. The draft tender package is currently with TEC for review.
- Site inspections should continue annually.
- Instrumentation should continue to be read semi-annually.
- If remediation is delayed by more than two years, slope inclinometers should be considered to monitor the depth and rate of slope movement. This information will be useful for characterizing the failure and optimizing the design.

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





- Borehole Location
- Gravel Drain
- Previous Observation
- 2025 Observation
- Cross-Section Location
- Municipality Boundary

N

0 10 20 30 metres

1:1,250 (At original document size of 8.5x11)

Notes

1. Coordinate System: NAD 1983 UTM Zone 11N
2. Data Sources: Geogratis, ©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
   World Imagery: Brazeau County, Parkland County.

Stantec

Project Location	123315222
NE & NW-34-50-07-W5 Hwy 624:02, km 2.57 Alberta	Prepared by MK on 2025-07-11 QR by SP on 2025-07-14 IR by LC on 2025-06-14

Client/Project

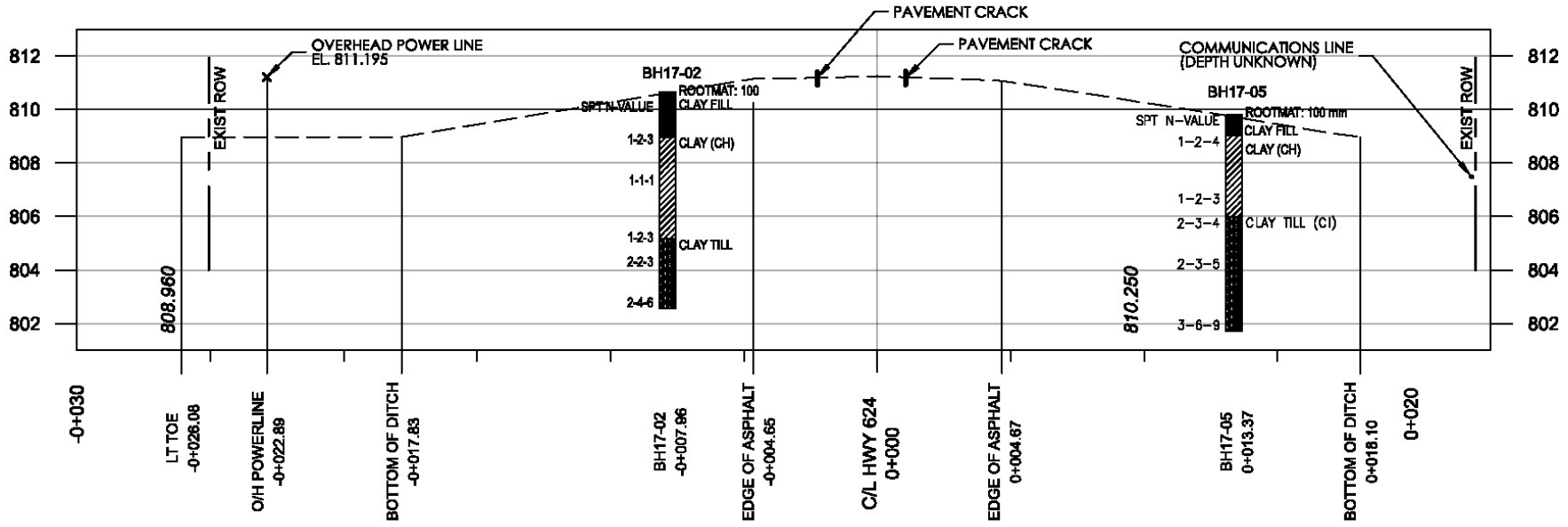
Transportation and Economic Corridors
Geohazard Monitoring Program
NC57 Hwy 624 Embankment Failure

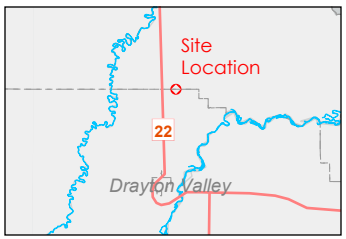
Figure No.

1

Title

Site Plan





Stantec

Project Location NE & NW-34-50-07-W5 Hwy 624:02, km 2.57 Alberta	123315222 Prepared by MK on 2025-07-11 QR by SP on 2025-07-14 IR by LC on 2025-07-14
Client/Project Transportation and Economic Corridors Geohazard Monitoring Program NC57 Hwy 624 Embankment Failure	
Figure No. 2	
Title **Cross-Section A**	

2025 Site Inspection Photos at NC057

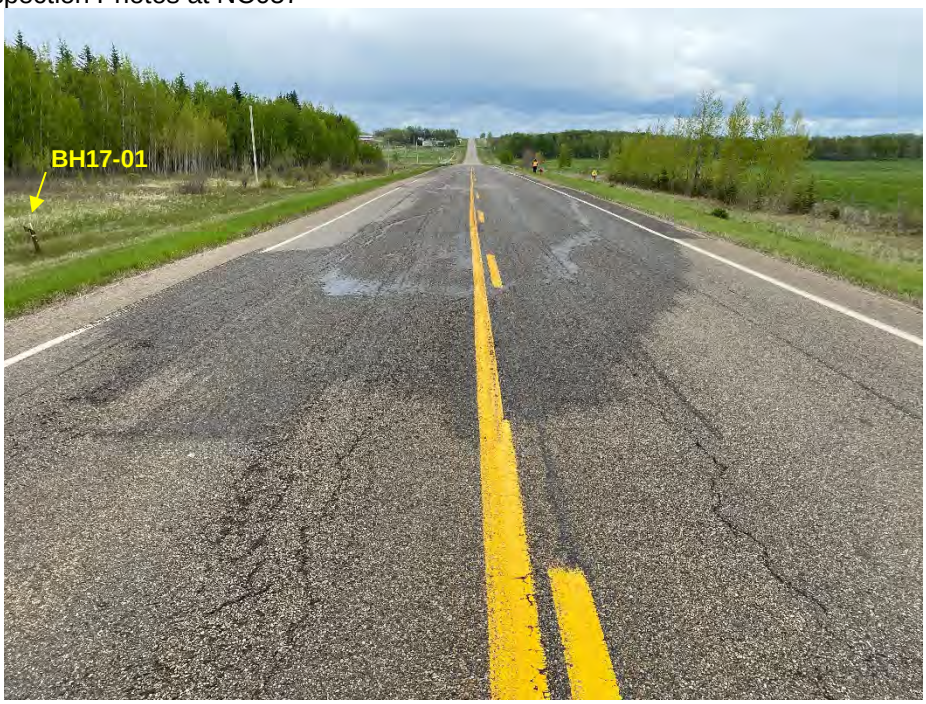


Photo 1: West extent of milled pavement. Looking east.

Photo 2: Diagonal cracking across milled pavement, looking northwest.

2025 Site Inspection Photos at NC057

Photo 3: Middle section of milled pavement, looking east.

Photo 4: Pavement cracking on EBL. Looking east.

2025 Site Inspection Photos at NC057

Photo 5: Pavement cracking on EBL. Looking east.

Photo 6: East extent of milled pavement. Looking west.

2025 Site Inspection Photos at NC057

Photo 7: Depression in the north ditch near BH17-01. Looking north.

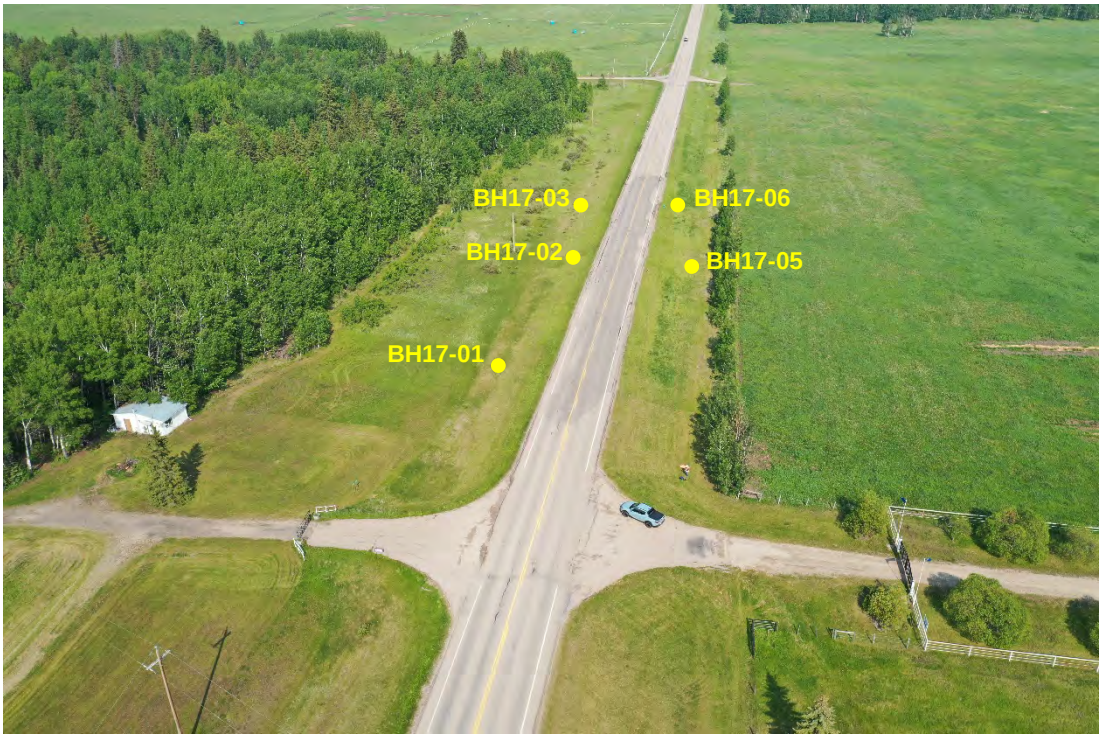


Photo 8: Site overview, photo taken by drone. Looking east.

2025 Site Inspection Photos at NC057

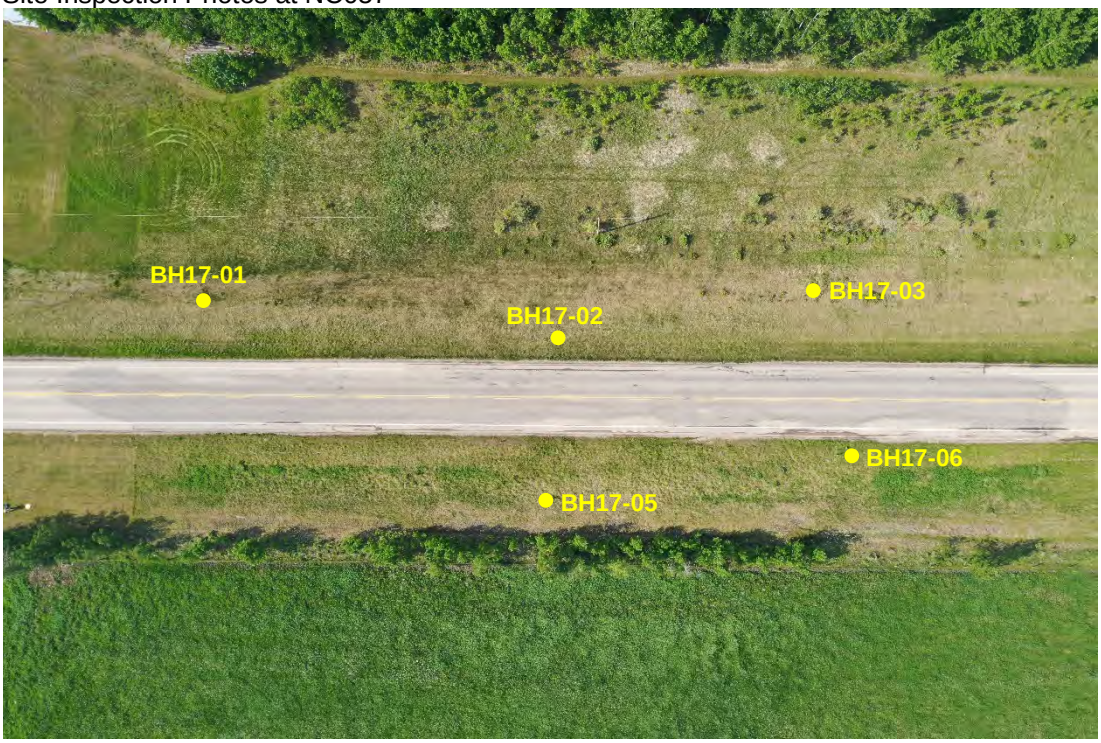


Photo 9: Site overview, taken by drone. Looking northeast.