

SITE NUMBER AND NAME: S049 Hoot and Howl Slide		HIGHWAY & KM: 504:02, 5.090	PREVIOUS INSPECTION DATE: June 9, 2020	INSPECTION DATE: May 19, 2022
LEGAL DESCRIPTION: 03-17-04-16 W4M	NAD 83 COORDINATES: UTM Northing Easting 12 5460493 417931		RISK ASSESMENT: PF: 8 CF: 3 TOTAL: 24	
AVERAGE ANNUAL DAILY TRAFFIC (AADT): 250 (east) (Reference No. 7000054)			CONTRACTOR MAINTENANCE AREA (CMA): 24	

SUMMARY OF SITE INSTRUMENTATION: There is no instrumentation at the S049 site. LAST READING DATE: N/A	INSPECTED BY: Chris Morgan (KCB) Laura Assaad (KCB) Alex Frotten (AT) Roger Skirrow (AT)
PRIMARY SITE ISSUE: Large translational earth slide on the south embankment of the highway. Approximately 18 m of guard rail on the south side of the highway is being undermined by the retrogressing head scarp.	
APPROXIMATE DIMENSIONS: Approximately 20 m of highway is being impacted by the head scarp. The landslide is approximately 50 to 70 m wide in the middle of the embankment.	
DATE OF ANY REMEDIAL ACTION: Unknown – guardrail was repaired	

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress		X	Undermining of the south shoulder at the guardrail and the pavement edge is spalling.		X
Slope Movement	X		Translational slide with open back scarp approximately 1/3 the way down the slope and a tension crack approximately 2 m below pavement elevation		X
Erosion	X		Some minor erosion below fence line and near the CSP culvert outlet		X
Seepage		X	N/A – none observed		X
Culvert Distress		X	N/A – culvert appears to be in good condition		X

COMMENTS
No significant changes were observed between the 2021 and 2022 inspection. No significant changes have been observed at the site since 2018 (overall site shown in Photos 1 and 2)
The site is well vegetated (Photos 1 through 7).
The creek at the toe of the slope was dry during the 2022 inspection.
Approximately 50 mm of settlement has been observed in the guardrail, where it is being undermined (Photo 7).
The pavement edge is cracking due to slope movement and asphalt pieces are rolling down the slope.
The CSP culvert (oriented approximately northwest-southeast) located west of the slide zone is in good condition without any signs of distress from the slide movement (Photo 6). The culvert inlet is slightly rusted and may have some debris inside. Minor erosion was noted at the outlet and standing water was observed during previous inspections.

During the 2022 inspection, a tension crack approximately 23 m long and 2 m below the pavement elevation (WP 106) appears to drop by approximately 100 mm to 150 m (i.e., sloping towards the east) (Photo 5).

The right (west) flank of the scarp shows visible movement toward the creek and the slide appears to be extending further upslope (Photos 3 and 4). An erosion gully from the highway ditch is feeding into the right flank. There is no visible feature of a left flank.

There is a well-developed toe roll at the toe of the slope. There is no evidence of upward movement at the toe, which indicates translational slide movement.

A berm appears to be present at the toe of the slope adjacent to the slide area and culvert. However, the berm is also located the opposite side of the embankment and appears to be an old roadway.

Two owls (appeared to be burrowing owls) were previously noted during the previous inspection, flying out of the bank face opposite the slide.

Maintenance/Repair/Monitoring Recommendations:

- The site should be regularly inspected by AT's MCI and inspected every two-years as part of the Southern Region Section B inspections.
- Drainage improvements should be complete to divert survey water runoff away from the head scarp.
- Deeper-than-typical guardrail posts should be installed in this area to allow the guardrail to be at the typical/design guardrail height.

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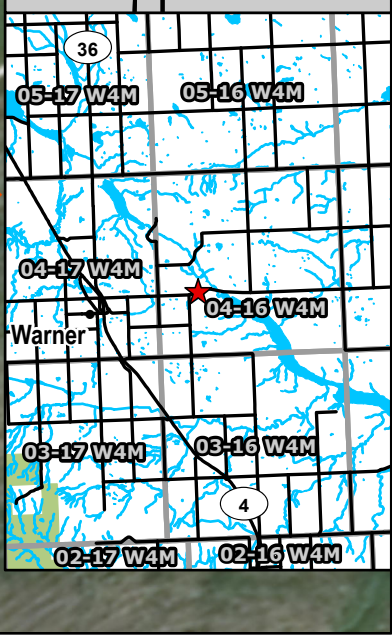
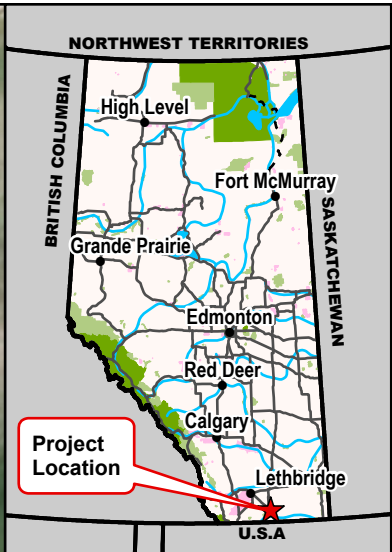
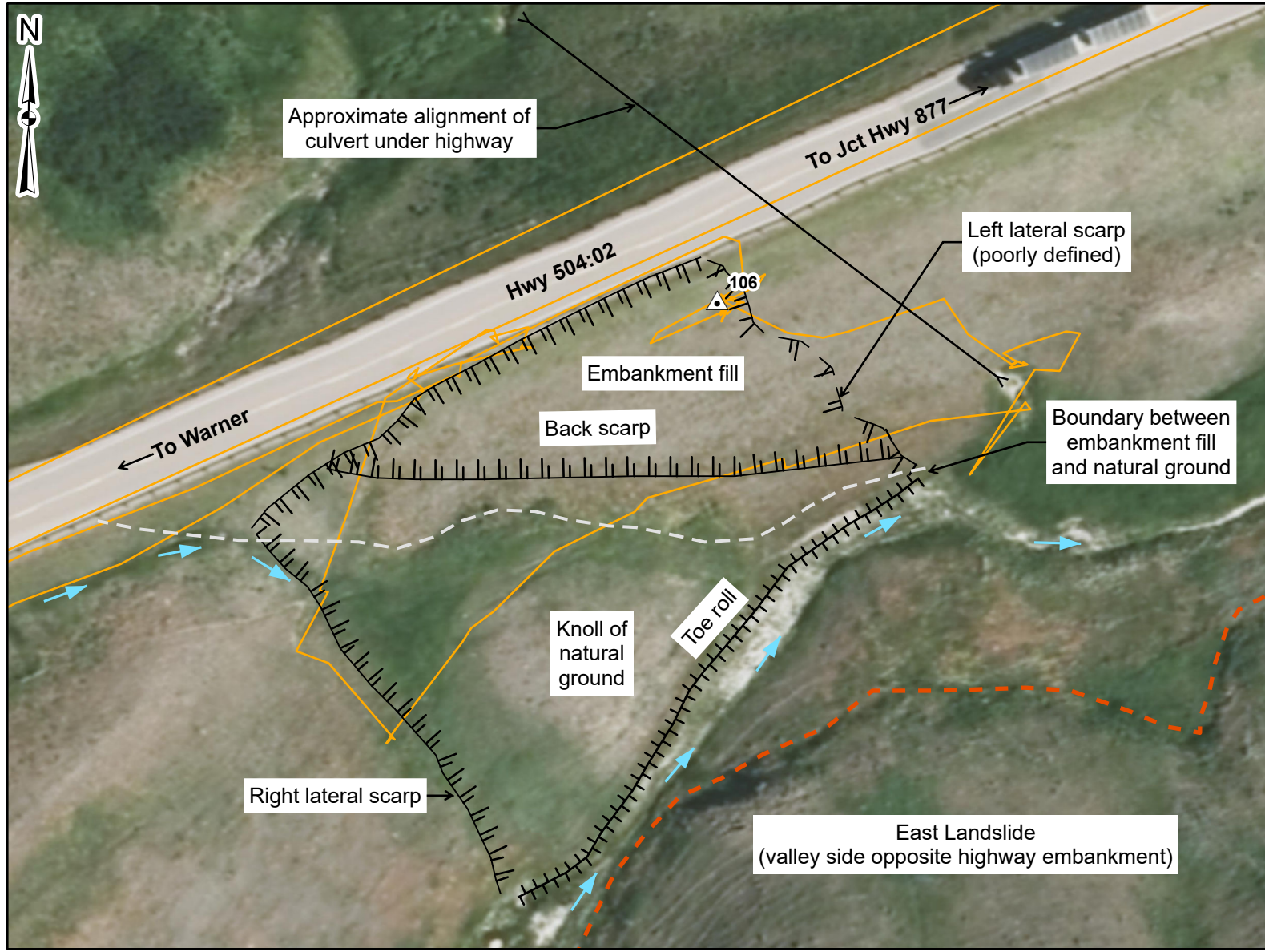
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<p>Chris Gräpel, M.Eng., P.Eng. Senior Civil Engineer, Associate</p>	
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- Legend**
- GPS Waypoint (May 19, 2022)
 - GPS Track (May 19, 2022)
 - Flow Direction
 - Boundary
 - Scarp
 - Culvert
 - Toe Roll
 - Slide Extent

NOTES:
 1. HORIZONTAL DATUM: NAD83
 2. GRID ZONE: UTM ZONE 12N
 3. IMAGE SOURCE: ESRI, MAXAR, EARTHSTAR GEOGRAPHICS AND THE GIS USER COMMUNITY.

CLIENT

PROJECT SOUTHERN REGION GEOHAZARD RISK MANAGEMENT PROGRAM		
TITLE Site Plan S049 - Hoot and Howl Slide Hwy 504:02, km 5.090		
SCALE 1:800	PROJECT No. A05116A03	FIG No. 1



Inspection Photographs

Photo 1 High embankment slope instability, translational slide. Presence of back scarp infers a reverse graben has formed which is evidence of translational slide movement usually along a horizontal weak layer at depth. Higher head scarp at west end indicates slide is exhibiting hinged movement, dropping more at the west end where more of the slide mass involves natural ground and a pre-existing basal rupture surface exists and is controlling movement. Photos taken June 16, 2016, facing northward.

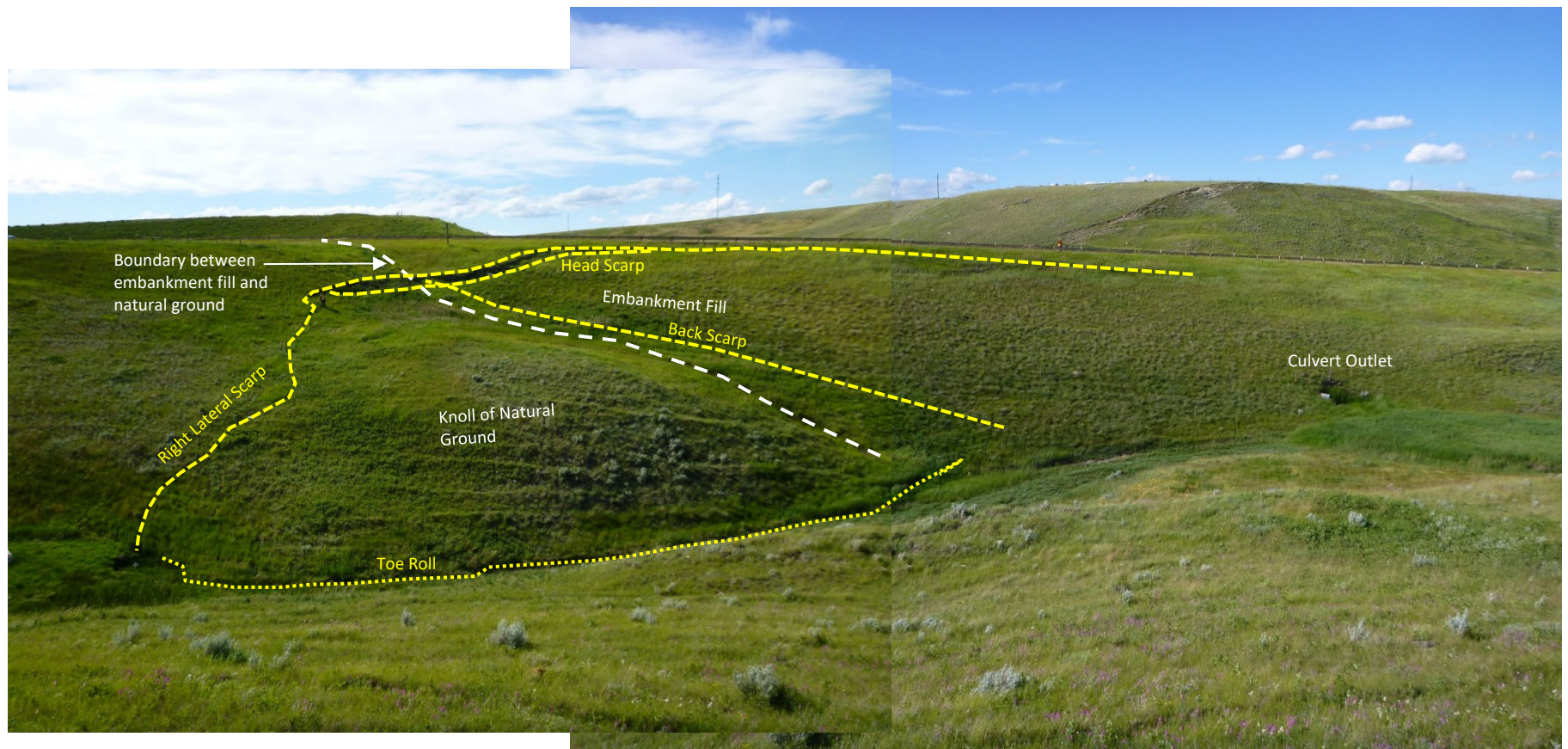


Photo 2 View east across the slide zone. Tall grass is obscuring the visible slide features.
Photo taken May 19, 2022, facing east.



Photo 3 Head scarp on right flank. Photo taken on May 19, 2022, facing northwest.



Photo 4 Head scarp near the right flank of the slide zone. Photo taken May 19, 2022, facing northeast.



Photo 5 Tension crack on embankment fill (indicated by red dashed line) (WP 106) approximately 2 m below pavement elevation. Photo taken May 19, 2022, facing southwest.



Photo 6 CSP culvert outlet near the left flank of the slide zone. The CSP culvert appears to be in good condition. Photo taken May 19, 2022, facing southeast.



Photo 7 The head scarp at the edge of the pavement and is reducing the pavement support over approximately 18 m. Photo taken May 19, 2022, facing west.

