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| SITE NUMBER AND NAME: C071 Black Snake Slide | | HIGHWAY & KM: 836:04, 15.016 | PREVIOUS INSPECTION DATE: June 13, 2018 | INSPECTION DATE: June 19, 2024 |
| LEGAL DESCRIPTION: 04-09-31-22 W4M | NAD 83 COORDINATES: UTM Northing Easting 12 5722921 356357 | | RISK ASSESSMENT: PF: 3 CF: 2 TOTAL: 6 | |
| AVERAGE ANNUAL DAILY TRAFFIC (AADT): 170 (north) & 180 (south) (Ref No. 105240 & 105250) | | | CONTRACT MAINTENANCE AREA (CMA): 517 | |

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| SUMMARY OF SITE INSTRUMENTATION: There are no instruments at the C071 site. LAST READING DATE: N/A | | INSPECTED BY: Chris Gräpel (KCB) James Lyons (KCB) Tony Penney (TEC) Rocky Wang (TEC) |
| PRIMARY SITE ISSUE: Slope instability in the east (northbound) highway embankment slope resulting in ground cracks and a toe roll which impacted an existing fence. | | |
| APPROXIMATE DIMENSIONS: The slide is impacting an approximately length of 115 m of the highway embankment (3H:1V side slopes and 3 m to 4 m in height). The height of the head scarp was approximately 1 m to 2 m in height. | | |
| DATE OF ANY REMEDIAL ACTION: 2019 – the slide was repaired which included removing the existing slide material and rebuilding the highway embankment with geogrid reinforced granular fill, including a shear key. | | |

| ITEM | CONDITION EXISTS | | DESCRIPTION AND LOCATION | NOTICABLE CHANGE FROM LAST INSPECTION | |
|-------------------|------------------|----|---|---------------------------------------|----|
| | YES | NO | | YES | NO |
| Pavement Distress | X | | Longitudinal cracking near highway centerline in response to highway loading, not in response to embankment slope failure | | X |
| Slope Movement | X | | 2017 slope failure resulting in ground cracking on east (northbound) highway embankment slope and a toe roll which impacted the existing fence. | | X |
| Erosion | | X | N/A – none observed during the 2024 inspection. | | X |
| Seepage | | X | N/A – none observed during the 2024 inspection. | | X |
| Culvert Distress | | X | 2000 mm diameter CSP culvert (BF73719) appears to be in good condition. | | X |

COMMENTS

The site was repaired in May 2019 by Whissell Enterprises Ltd. (out of Edmonton, Alberta) under TEC Contract No. CON0019153) and monitored by KCB. The repair consisted of removing the failed material within the slide area (i.e., east embankment fill) and replacing it with geogrid reinforced granular fill (including a shear key). The site was seeded after construction completion. The geogrid reinforcement was only included along an approximately 25 m long section upslope of the 2000 mm diameter culvert. KCB's final details report was issued to TEC on November 22, 2019.

Pavement distress (longitudinal cracking near the highway centerline and minor settlement beneath the wheel path in the west (southbound) lane) was observed during the 2024 inspection (Photo 1 and 2). However, the cracking and settlement does not appear new and is similar to what was observed during 2019 construction.

A new electric fence was installed upslope of the existing fence between construction and the 2024 inspection (Photo 3). The new electric fence is much closer to the highway than the existing fence, approximately 4 m from the edge of pavement (i.e. east of the highway), and is within TEC's right-of-way.

The repaired slope is well vegetated, and no ground cracks were observed during the 2024 inspection (Photo 3 and 4).

Maintenance/Repair/Monitoring Recommendations

- The site should be removed from the active list of GRMP sites and no longer inspection as part of the GRMP Section B Inspection.
- The site should still be inspected regularly by TEC's MCI.

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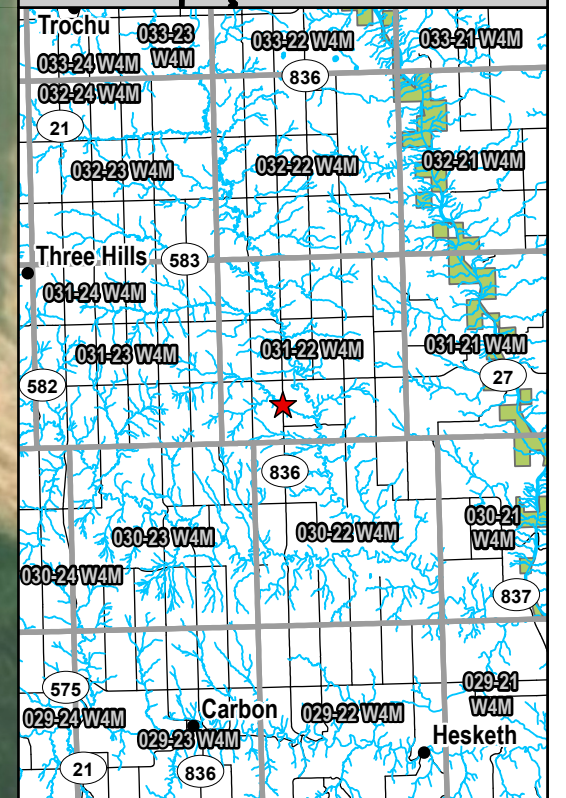
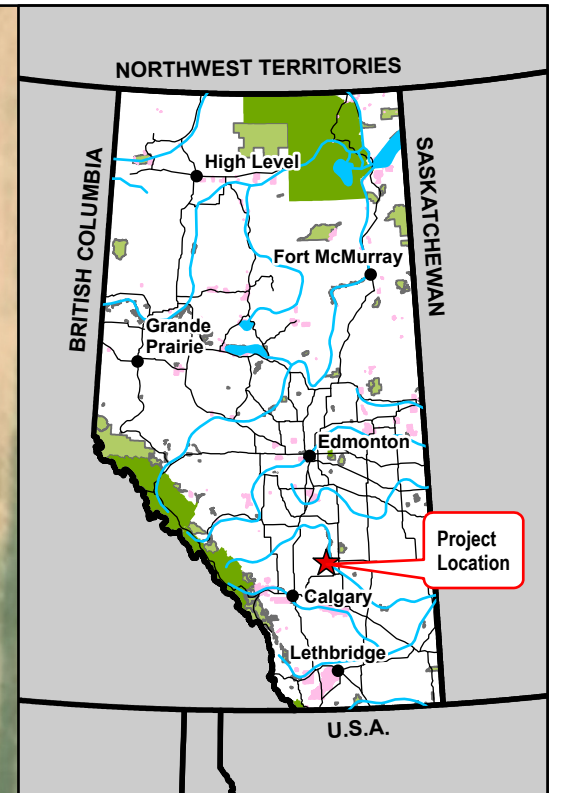
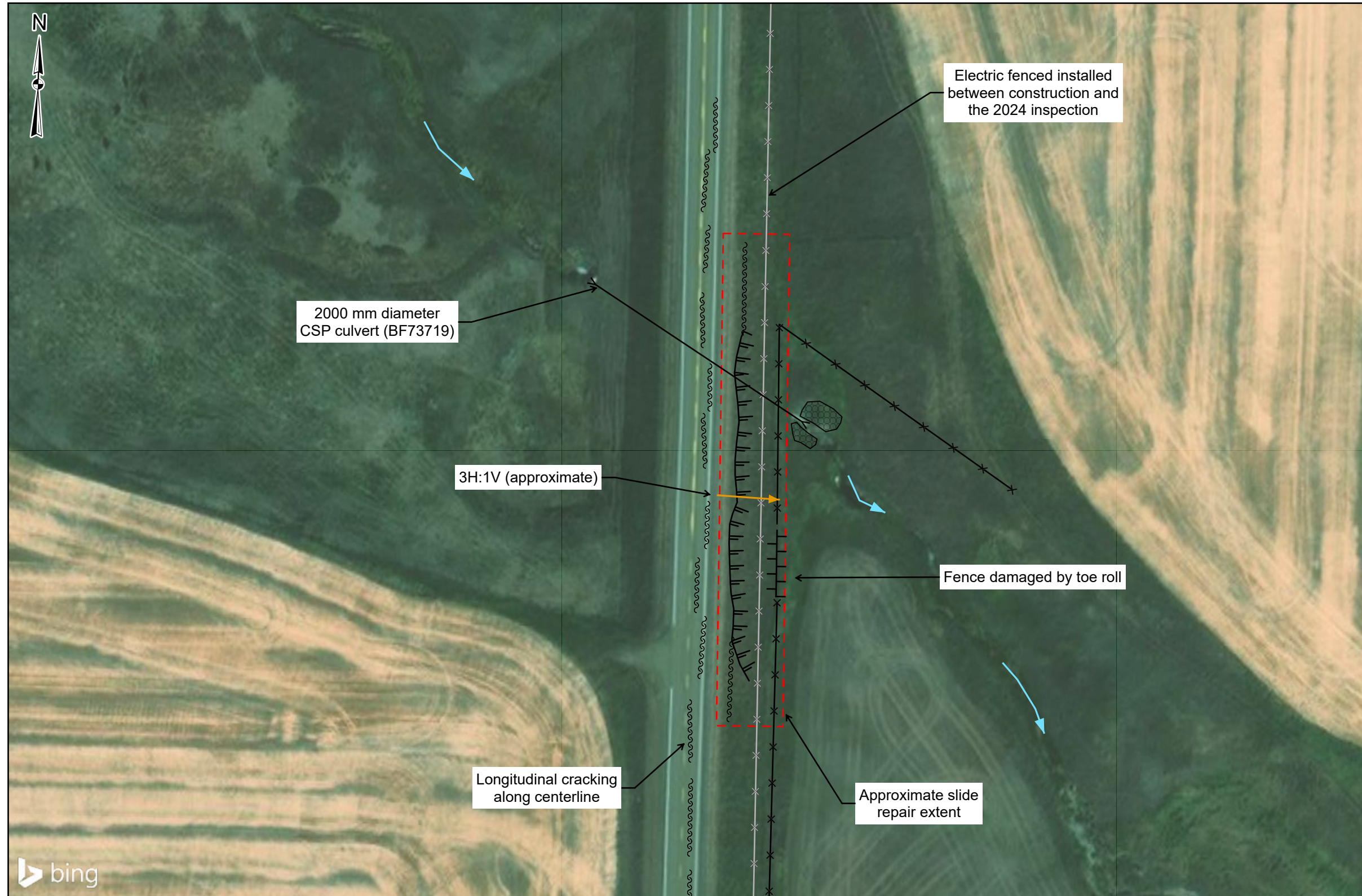
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James Lyons, P.Eng.
Civil Engineer

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Legend

| | | | |
|--|----------------|--|-----------------|
| | Culvert | | Scarp |
| | Toe Roll | | Flow Direction |
| | Fence | | Slope Direction |
| | Electric Fence | | Riprap |
| | Crack | | Repair Extent |

NOTES:
 1. HORIZONTAL DATUM: NAD83
 2. GRID ZONE: UTM ZONE 12N
 3. IMAGE SOURCE: 2024 MICROSOFT CORPORATION, MAXAR, CNES DISTRIBUTION AIRBUS DS.

CLIENT

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|---------|--|-----------------------|
| PROJECT | CENTRAL REGION GEOHAZARD RISK MANAGEMENT PROGRAM | |
| TITLE | Site Plan C071 - Black Snake Slide Hwy 836:04, km 15.016 | |
| SCALE | 1:1,000 | PROJECT No. A05116A02 |
| | | FIG No. 1 |

Photo 1 Highway surface upslope of repair is in fair condition. Photo take June 19, 2024, facing south.



Photo 2 Pavement distress (longitudinal cracking and minor settlement in wheel path) was observed in the west (southbound) lane. Photo take June 19, 2024, facing north.



Photo 3 New electric fence installed between construction and the 2024 inspection is much closer to the highway than the old fence (indicated by red arrow) and is inside TEC's right-of-way. Photo taken June 19, 2024, facing south.



Photo 4 The repaired embankment slope is well vegetated and appears to be in good condition. Photo taken June 19, 2024, facing south.

