SOUTHERN REGION GRMP
SITE INSPECTION FORM

SITE NUMBER AND NAME: **S059 Siddons Slide**	HIGHWAY & KM: 22:10, 27.530	PREVIOUS INSPECTION DATE: June 8, 2020	INSPECTION DATE: **July 5, 2021**
LEGAL DESCRIPTION: 01-20-017-02 W5M	NAD 83 COORDINATES: UTM 11 Northing 5591352 Easting 696456	RISK ASSESMENT: PF: 9 CF: 3 TOTAL: 27	
AVERAGE ANNUAL DAILY TRAFFIC: 1470 (north), 1850 (south), (Ref. No. 71130)		CONTRACTOR MAINTENANCE AREA (CMA): 27	

SUMMARY OF SITE INSTRUMENTATION: None LAST READING DATE: N/A	INSPECTED BY: Chris Morgan (KCB) Chris Grapel (KCB) Roger Skirrow (AT) Alex Frotten (AT)

PRIMARY SITE ISSUE: Back slope failure of earth slope, with toe zone blocking the highway drainage ditch. Pavement cracking was noted on the east side of the highway. The failure has undermined a length of fence line approximately 36 m long (along the highway) and is retrogressing onto adjacent private property.

APPROXIMATE DIMENSIONS: Slope failure zone approximately 170 m long. Embankment slope approximately 12 to 14 m high.

DATE OF ANY REMEDIAL ACTION: Highway was repaved in June 2021 and the work included installation of a CSP culvert in the east ditch at the south end of the slide area where the toe roll had previously blocked ditch flow.

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress		X	None visible. Highway was repaved in June 2021.		X
Slope Movement	X		There is an active slope failure east of the highway. The failure has retrogressed to undermine the fence line and is impacting adjacent land.		X
Erosion		X	None observed.		X
Seepage		X	Not visible at the time of inspection.		X
Culvert Distress		X			X

COMMENTS

No obvious or significant changes to the back slope failure when compared to 2020 observations. The ditch topography and lower slope geometry has changed when compared to 2020 observations due to culvert installation and localized backslope regrading to approximately 3H:1V.

The failure has undermined the fence near the back scarp over a length of approximately 36 m. Back scarp is up to 1.3 m high. The failure extends approximately 7.5 m onto private land and the landowner has installed new fence around the failure zone since 2019.

Ponded water was observed near the inlet of the new CSP culvert during the 2021 inspection.

The toe rolls observed in the ditch in 2020 were removed during culvert installation in June 2021. Prior to culvert installation, two areas of toe roll were noted, one 21 m long and one 19 m long (two adjacent toe rolls had

coalesced together) with a gap of 19 m measured between them.

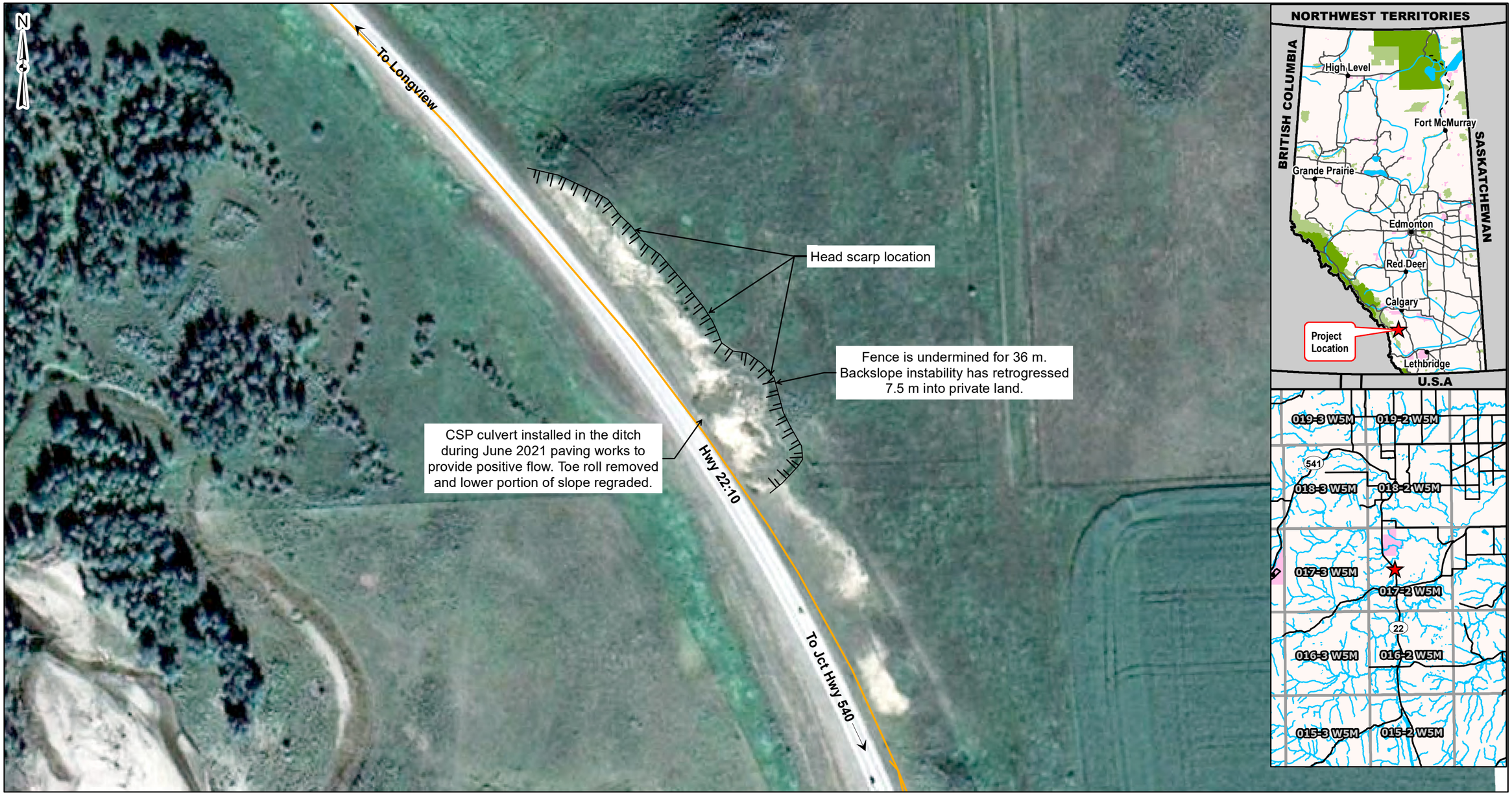
Candidate repair options include:

- Backslope reprofiling to flatten the overall slope to approximately 10H:1V or a composite slope of 5H:1V at the base and 10H:1V for the upper portion of the slope (land purchase would be required); or
- Slope reconstruction in panels, replacing failed material with geogrid reinforced free draining gravel and with perforated pipe drains.

2021-11-24

Chris Morgan, M.Sc., P.Eng.
Senior Geotechnical Engineer

PERMIT TO PRACTICE
KLOHN CRIPPEN BERGER LTD.
RM SIGNATURE: Pamela Jones
RM APEGA ID #: 187607
DATE: 25 Nov. 2021
PERMIT NUMBER: P009196
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)



Legend

GPS Track (2021)

Scarp

Metres
0 100

NOTES:
1. HORIZONTAL DATUM: NAD83
2. GRID ZONE: UTM Zone 11N
3. IMAGE SOURCE: 2020 Google Earth. 2020 CNES/Airbus. Source date September 6, 2019.

CLIENT
Alberta Government
Klohn Crippen Berger

PROJECT
SOUTHERN REGION GEOHAZARD RISK MANAGEMENT PROGRAM

TITLE
Site Plan
S059 Siddons Slide
Hwy 22:10, km 27.5

SCALE	PROJECT No.	FIG No.
1:2,000	A05116A03	1

Time: 15:29:37 PM
Date: October 07, 2021
File: Z:\ACGY\Alberta\A05116A03 ABT Southern Region GRMP\400 Drawings\2021\Section B figures\MXD\S059_211007.mxd

Photo 1 **Slide zone and back scarp looking towards left flank. Photo taken facing south on July 5, 2021.**

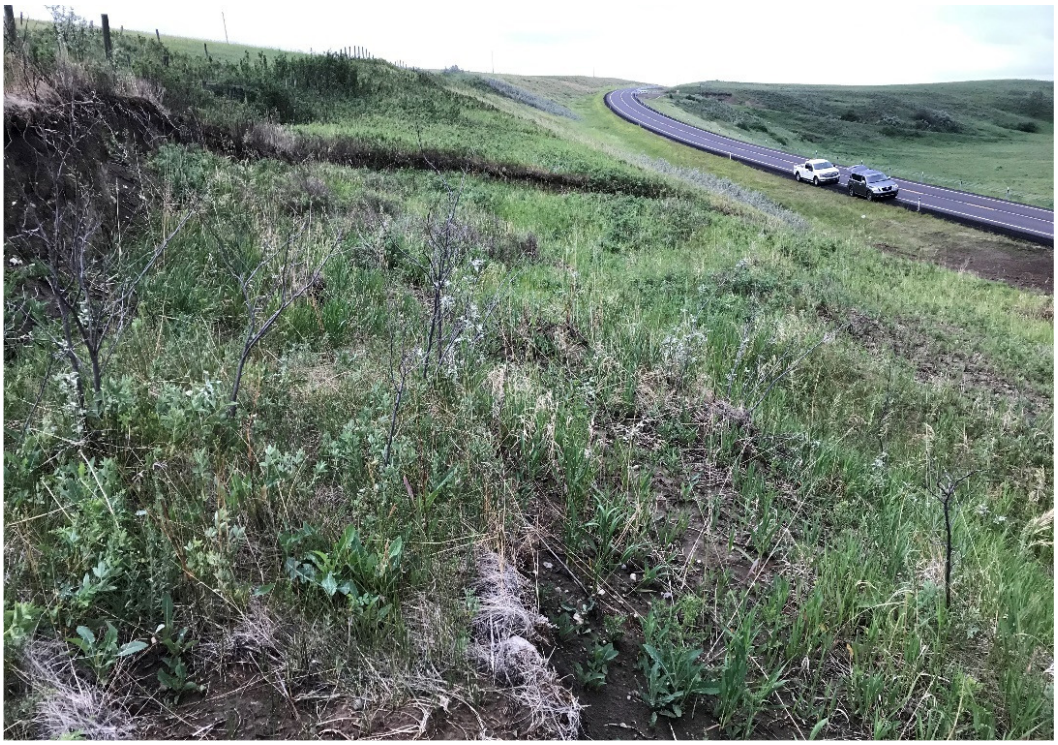


Photo 2 **Approximately 36 m length of undermined fence line at crest of slope. Photo taken facing northeast on July 5, 2021.**

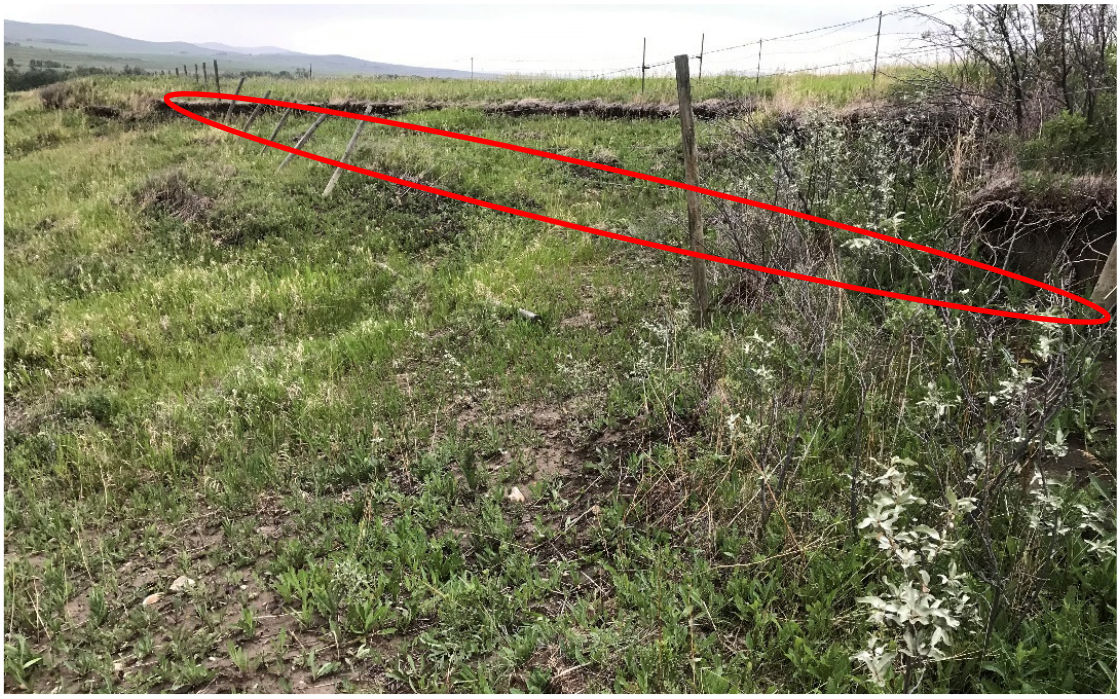


Photo 3 **Ditch regrading and culvert installation carried out in June 2021 to remove the toe roll blocking the ditch. Culvert installation included localized regrading at the toe of the slide zone. Photo taken facing west on July 5, 2021.**

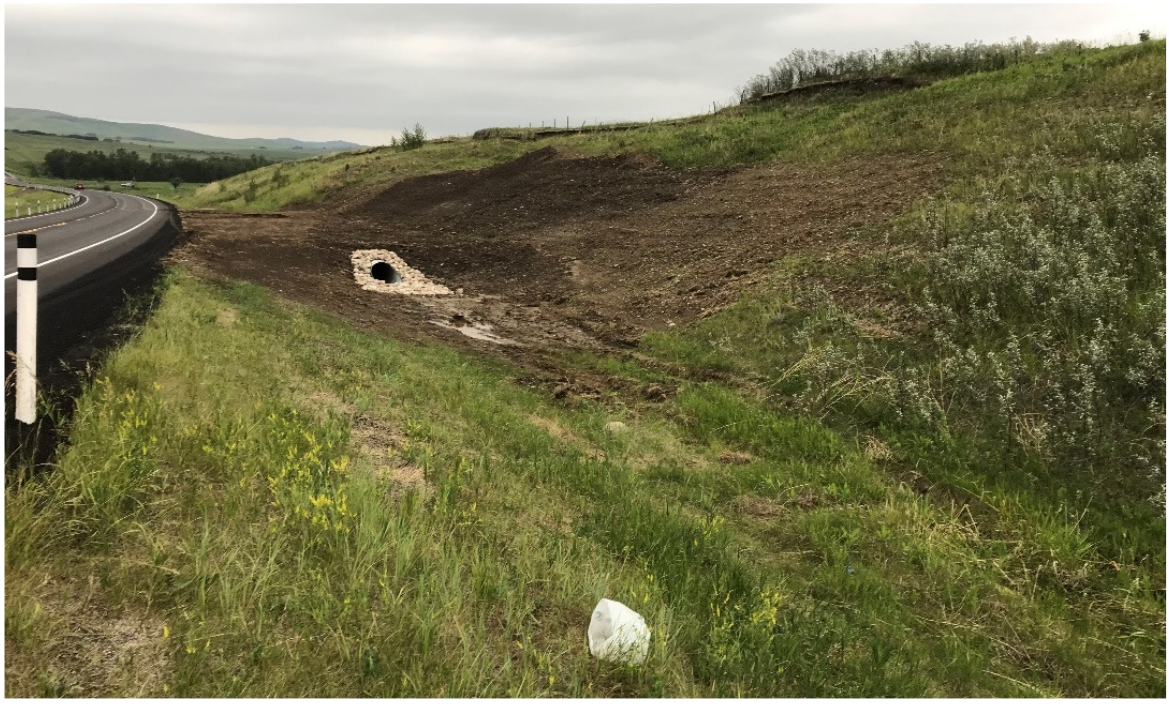


Photo 4 **Culvert installation and ditch regrading on east side of the highway completed during 2021 paving activities. Photo taken facing south on July 5, 2021.**