

SITE INSPECTION FORM

SITE NUMBER AND NAME: GP048 Kleskun Creek Erosion		HIGHWAY & KM: 733:02, 14.506	PREVIOUS INSPECTION DATE: May 28, 2020	INSPECTION DATE: June 16, 2022
LEGAL DESCRIPTION: SE 33-73-03-W6M	NAD 83 COORDINATES: UTM Northing Easting 11 6135882 412217		RISK ASSESSMENT: PF: 8 CF: 6 TOTAL: 48	
AVERAGE ANNUAL DAILY TRAFFIC (AADT): 890 (north) & 880 (south) (Reference No. 30730, 2021)			CONTRACT MAINTENANCE AREA (CMA): 504	

SUMMARY OF SITE INSTRUMENTATION: There is no instrumentation at the GP048 site. LAST READING DATE: N/A	INSPECTED BY: Chris Gräpel (KCB) Courtney Mulhall (KCB) Ed Szmata (AT) Kristen Tappenden (AT) Max Shannon (AT)
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PRIMARY SITE ISSUE: Two erosion features on either side of Hwy 733:02 that were repaired in 2018. During a 1:100-year flood event in 2018, the repair (riprap-lined channel) on the west side of the highway failed resulting in an erosion gully/feature that extends along the west ditch of Hwy 733:02 and down the northwest abutment of the highway embankment. The highway embankment crosses Kleskun Creek just south of the site.

APPROXIMATE DIMENSIONS: Erosion feature is approximately 160-m long.

DATE OF ANY REMEDIAL ACTION: 2018 – beaver dam on west side of highway removed, culvert inlet on west side of highway plugged, both gullies on either side of highway filled, west highway ditch lined with rolled erosion control product, channel along north abutment/west slope of highway embankment down to creek-bottom area armored with subrounded to rounded riprap, and natural slope above channel flattened. No remedial action since riprap-lined channel was damaged by storm runoff flow.

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress	X		Several cracks present in pavement surface, which appear unrelated to the erosion feature.		X
Slope Movement		X	None observed at time of 2022 inspection.		X
Erosion	X		Deep channel (approximately 0.3 m to 0.5 m deep, 1.0 m wide) eroded into west highway ditch undermining rolled erosion control product. Depth of erosion is greater than last year. Gully on east side of highway appears unchanged with no signs of retrogression towards highway.	X	
Seepage		X	None observed at time of 2022 inspection.		X
Culvert Distress		X	Culvert decommissioned.		X

COMMENTS
Kleskun Creek is a tributary of the Smoky River, and a mapped D watercourse with no restricted activity period (RAP). There is no fish occurrence information for the creek.
The high-tension-cable barrier is located too far downslope from the highway and may not redirect motorist back onto highway.

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The gullying in the west highway ditch upstream/above the formerly riprap-lined channel appears to have failed because the flow rates were too high for the rolled erosion control product placed in the ditch. The flow rate in the west highway ditch was increased because the centreline culvert was blocked and decommissioned, diverting all flow down the west highway ditch. Also, removal of the beaver dam eliminated any flood attenuation offered by the beaver pond.

Almost all riprap from the previously riprap-lined portion of the ditch channel has been displaced and deposited in a pile near the bottom of the ditch channel exposing the underlying geotextile, which is damaged. The riprap appears to have failed because of the riprap being undersized. The non-woven geotextile also appears to have been undermined, which could have been initiated by lower flows passing below the non-woven geotextile causing erosion of the subgrade.

Maintenance/Repair/Monitoring Recommendations:

- Repair the ditch and reconstruct the riprap-lined channel. Assess peak flow rates for design flood event (return period to be selected in discussion with AT). New channel should be designed with check trenches installed below the non-woven geotextile to reduce the potential for erosion happening underneath the non-woven geotextile, which will not be uniformly pressed into the subgrade by the weight of the riprap. Estimated cost: between \$150,000 to \$250,000 depending on design.

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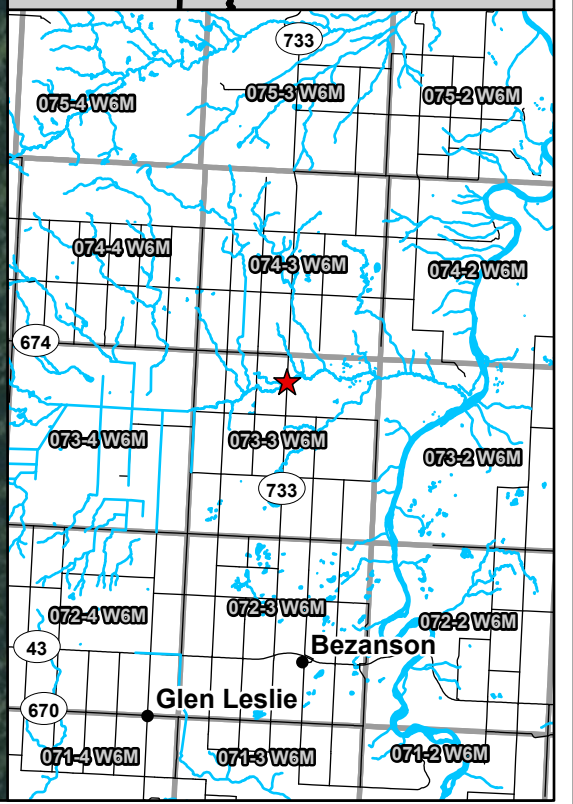
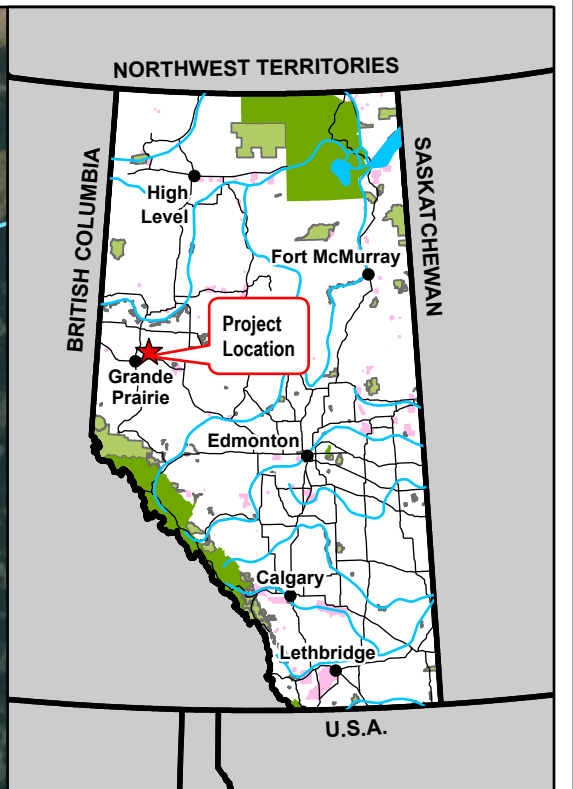
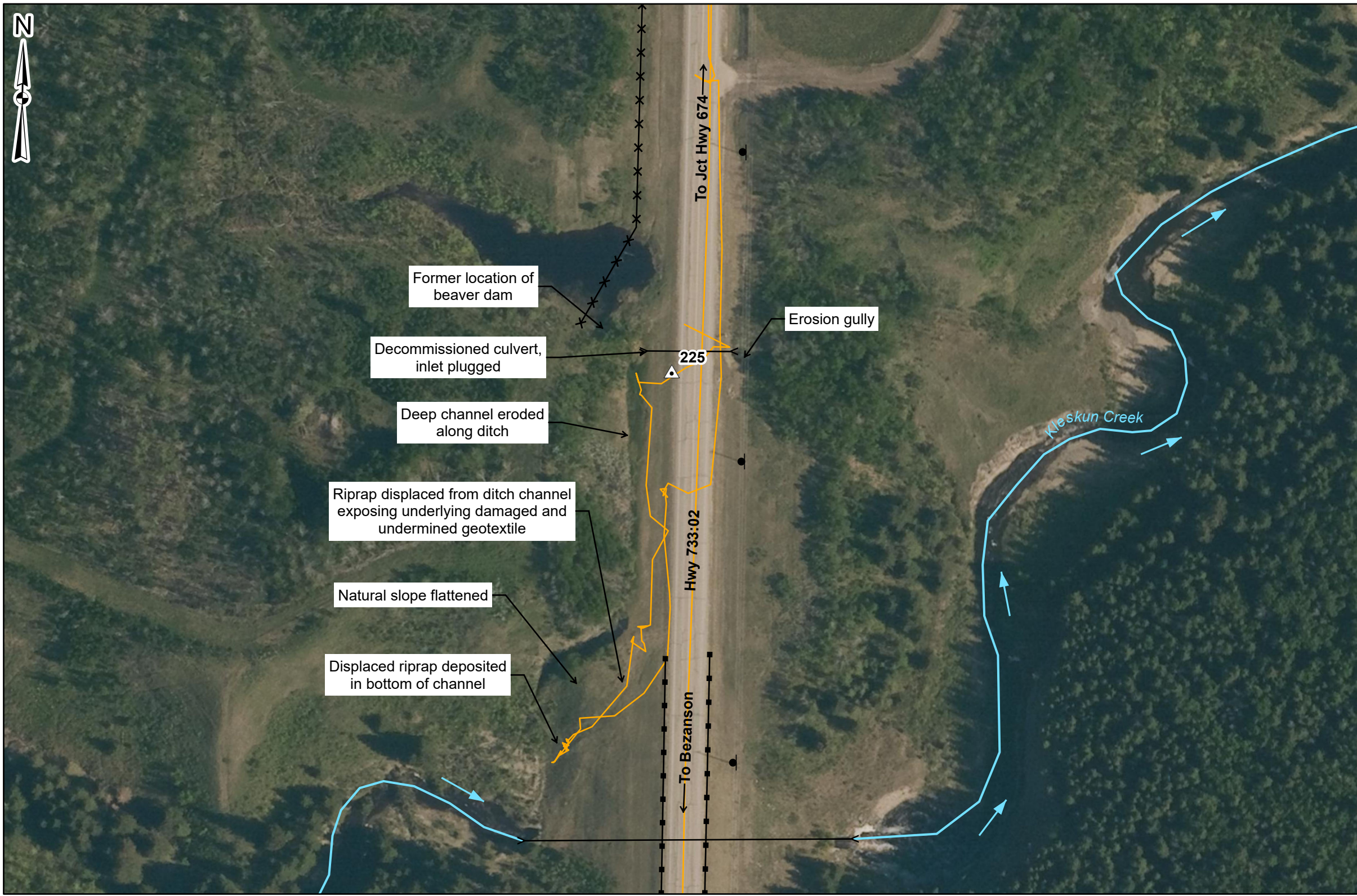
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PEACE REGION
(GRANDE PRAIRIE DISTRICT – SOUTH) GRMP
SITE INSPECTION FORM



<p>Chris Gräpel, M.Eng., P.Eng. Senior Civil Engineer, Associate</p>	
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Legend

-  Powerpole
-  Watercourse
-  GPS Waypoint (June 16, 2022)
-  Fence
-  GPS Track (June 16, 2022)
-  Culvert
-  Flow Direction
-  Guardrail



NOTES:
 1. HORIZONTAL DATUM: NAD83
 2. GRID ZONE: UTM ZONE 11N
 3. IMAGE SOURCE: ESRI, MAXAR, EARTHSTAR GEOGRAPHICS, AND THE GIS USER COMMUNITY
 4. IMAGERY DOES NOT SHOW REPAIR COMPLETED IN 2018.

CLIENT




PROJECT	PEACE REGION (GRANDE PRAIRIE DISTRICT-SOUTH) GEOHAZARD RISK MANAGEMENT PROGRAM	
TITLE	Site Plan GP048 - Kleskun Creek Erosion Hwy 733:02, km 14.506	
SCALE	1:1,250	PROJECT No. A05116A01
		FIG No. 1

Inspection Photographs

Photo 1 Former beaver dam location on west side of Hwy 733:02 (circled in white). Photo taken June 16, 2022, facing west.



Photo 2 Channel approximately 0.3 m to 0.5 m deep, 1.0 m wide eroded into west ditch of Hwy 733:02. Photo taken June 16, 2022, facing northwest.



Photo 3 Channel approximately 0.3 to 0.5 m deep, 1.0 m wide eroded into west ditch of Hwy 733:02. Photo taken June 16, 2022, facing south.



Photo 4 Almost all riprap from previously riprap-lined portion of ditch channel displaced. Note underlying geotechnical is damaged and undermined. Photo taken June 16, 2022, facing northeast looking up northwest embankment abutment.



Photo 5 Displaced riprap deposited in pile near bottom of ditch channel. Note underlying geotechnical is damaged and undermined. Photo taken June 16, 2022, facing southwest.

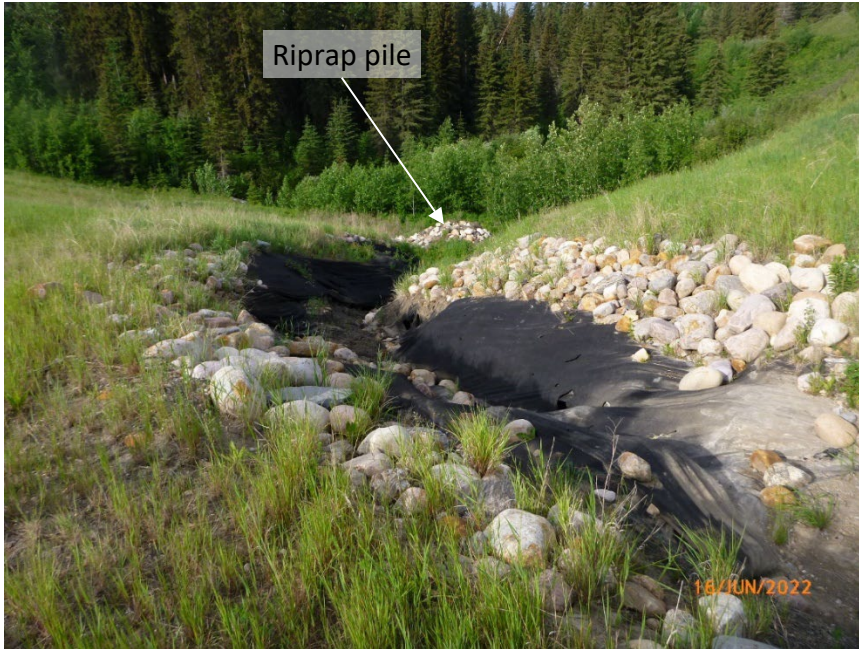


Photo 6 Displaced riprap deposited in pile near bottom of ditch channel. Photo taken June 16, 2022, facing northwest.



Photo 7 **Pavement surface of Hwy 733:02. Note guardrail located downslope from pavement edge. Photo taken June 16, 2022, facing southeast.**

