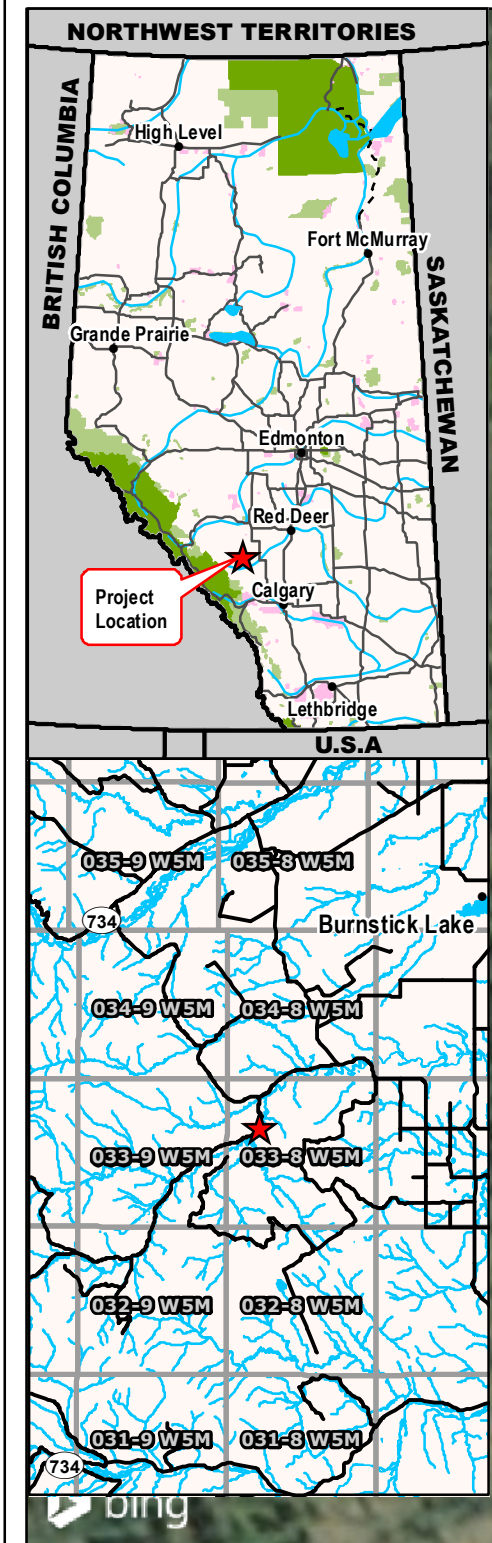


SITE NUMBER AND NAME: <b>C037 – I &amp; II Culverts</b>		HIGHWAY & KM: 734:12, 41.8 & 42.9	PREVIOUS INSPECTION DATE: June 23, 2016	INSPECTION DATE: <b>June 12, 2017</b>
LEGAL DESCRIPTION: 03-29-033-08 W5M	NAD 83 COORDINATES: UTM Northing Easting 11 5746497 630511		RISK ASSESSMENT: PF: 1 CF: 1 TOTAL: 1 PF: 1 CF: 1 TOTAL: 1	
AVERAGE ANNUAL DAILY TRAFFIC (AADT): 160 south (Reference No. 51280)			CONTRACT MAINTENANCE AREA (CMA): 18	

SUMMARY OF SITE INSTRUMENTATION:  None  LAST READING DATE: n/a	INSPECTED BY: Chris Gräpel (KCB) Courtney Mulhall (KCB) Roger Skirrow (AT) Tony Penney (AT)
PRIMARY SITE ISSUE: In 2005, erosion damage occurred at the two sites because the culverts had insufficient capacity to handle flood flow volumes. Minimal damage was observed at these two sites after the 2013 flood event. The site was repaired in June 2016.	
APPROXIMATE DIMENSIONS: The two sites are located approximately 1 km apart on Hwy 734. Each site is approximately 20 m long, and the highway embankment at each site (C037-I and C037-II) is approximately 3 m and 5 m high, respectively, sloped at approximately 2H:1V.	
DATE OF ANY REMEDIAL ACTION: June 2016 – culverts with higher flow capacities were installed at each site (three 600 mm diameter CSP culverts at C037 – I, and three 1000 mm diameter CSP culvert at C037 – II).	

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress		X	None observed, gravel surfaced road		X
Slope Movement		X	None observed		X
Erosion		X	None observed		X
Seepage		X	None observed		X
Culvert Distress		X	Culverts open		X

<b>COMMENTS</b>
At the C037 – I site, some undersized Class 2 riprap was placed at the culvert outlets. The MCI should monitor the culvert outlets for erosion after future flood events. Large riprap that was placed during a previous repair and removed during the 2016 repair and placed along the flanks of the riprap ramp, can be placed around the culvert outlets to repair erosion, as needed.
An old timber crib culvert was discovered at the C037-I site during construction in 2016. The timber culvert was excavated and replaced with coarse rockfill (gabion basket backfill) and covered with woven geotextile before the culverts were placed.
Prior to repair work being completed in 2016, the original highway geometry at the C037-II site had a steep super elevation. To eliminate some of the super elevation, additional gravel was added to the repair work contract, after the site was inspected during the 2016 GRMP tour, and subsequently placed during construction in 2016. Grading since 2016 appears to have re-established the super elevation that existed before construction.
The quantity and diameter of culverts installed at the C037 – II site resulted in the site becoming a bridge file (BF83184).
The C037 sites are recommended for removal from the GRMP.



**Legend**

- GPS Track (June 12, 2017)
- Creek
- Culvert
- Riprap
- Surface Flow Direction



NOTES: 1. HORIZONTAL DATUM: NAD83 2. GRID ZONE: UTM Zone 11N 3. IMAGE SOURCE: Bing Maps 2016, Microsoft Corporation. Image dated May 2013	CLIENT 	PROJECT CENTRAL REGION GEOHAZARD RISK MANAGEMENT PROGRAM
		TITLE Site Plan C037-I Culverts Hwy 734:12, km 41.8
SCALE 1:800	PROJECT No. A05115A02	FIG No. 1

Time: 13:07:10 PM  
 Date: August 23, 2017  
 File: Z:\AEDM\A05115A02\Drawings\2017\2. Section B\2017 Site Inspections\MXD\C037\_170719.mxd

**Photo 1** The inlet of the 600-mm culverts that were installed at the C037 – I site in June 2016. Vegetation is growing through the erosion control cloth that was placed around the culverts in June 2016. Photo taken June 12, 2017 looking southwest.



**Photo 2** The inlet of the 1000-mm culverts (BF83184) that were installed at the C037 – II site in June 2016. Vegetation is growing through erosion control cloth that was placed around the culverts in June 2016. Photo taken June 12, 2017 looking northeast.

