

**ALBERTA TRANSPORTATION  
GEOHAZARD ASSESSMENT PROGRAM  
PEACE REGION – SWAN HILLS  
2018 INSPECTION**



Site Number	Location	Name	Hwy	km
SH026	West of High Prairie	Gunns Creek North Embankment	2A:54	18.2 – 18.3
Legal Description		UTM Co-ordinates		
SW2-75-20-W5M		11U E 500,382	N	6,146,164

	Date	PF	CF	Total
<b>Previous Inspection:</b>	24-Jun-2015	12	4	48
<b>Current Inspection:</b>	18-Jun-2018	4	4	16
<b>Road AADT:</b>	770		<b>Year:</b>	2017
<b>Inspected By:</b>	Roger Skirrow, TRANS Ed Szmata, TRANS		Barry Meays, Thurber Ken Froese, Thurber	
<b>Report Attachments:</b>	<input checked="" type="checkbox"/> Photographs <input checked="" type="checkbox"/> Plans <input type="checkbox"/> Maintenance Items			

<b>Primary Site Issue:</b>	Retrogressive slides (A, B, and C) in the north side of the highway embankment. Slumping of riprap downstream of the culvert out on the south side of the highway.		
<b>Dimensions:</b>	18 m high embankment affected by Slide A which is 50 m wide and Slide B which is 20 m wide. Slide C is 10 m wide and at the toe of the embankment.		
<b>Date of Remediation:</b>	<u>1980's:</u> South slope slump repaired with finger drains and reconstructed at 4H:1V with common clay fill.  <u>2000's:</u> South slump repaired again with granular fill and subdrainage system. A toe berm was also constructed (culvert was extended) and riprap placed around the culvert outlet.  <u>2017:</u> North slumps excavated and backfilled with granular fill.		
<b>Maintenance:</b>	None		
<b>Observations:</b>	<b>Description</b>	<b>Worsened?</b>	
<input checked="" type="checkbox"/> Pavement Distress	Asphalt was patched in WB lane. Some longitudinal and transverse cracks and a pothole exist in the EB lane which don't appear to be slide-related.	<input type="checkbox"/>	
<input checked="" type="checkbox"/> Slope Movement	There is minor cracking at the top of the repair for Slide B.	<input type="checkbox"/>	
<input checked="" type="checkbox"/> Erosion	There is minor erosion on south bank beyond the outlet.	<input type="checkbox"/>	
<input type="checkbox"/> Seepage		<input type="checkbox"/>	
<input type="checkbox"/> Bridge/Culvert Distress		<input type="checkbox"/>	
<input checked="" type="checkbox"/> Other	A dozer left ruts along the top of the north sideslope parallel to the pavement.	<input checked="" type="checkbox"/>	
<b>Instrumentation:</b>	None		

**Assessment:**

The 2017 repairs excavated the three slides in the north embankment and backfilled with compacted granular material capped with clay. Subdrains were installed in all slides and daylight in the riprap protection placed around the culvert inlet. Riprap and TRM linings were placed on both ditches. A recently overlay included the east portion of the site.

At the time of the 2018 inspection, the repairs appeared to be performing well. There was some minor items noted: a gully forming below a silt fence, minor cracking above Slide B (which could be settlement-related), and equipment ruts adjacent to the guardrail. It was noted that the asphalt pavement in the vicinity of the site is fairly worn with a few popouts/shallow potholes. A slump was observed south of the embankment where the culvert outlet flow may be impacting on the bank of Gunns Creek.

**Recommendations:**

## Short-Term:

- Consideration should be given to completing the pavement overlay through the remainder of the site.

## Long-Term:

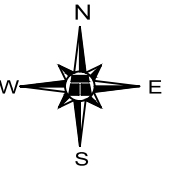
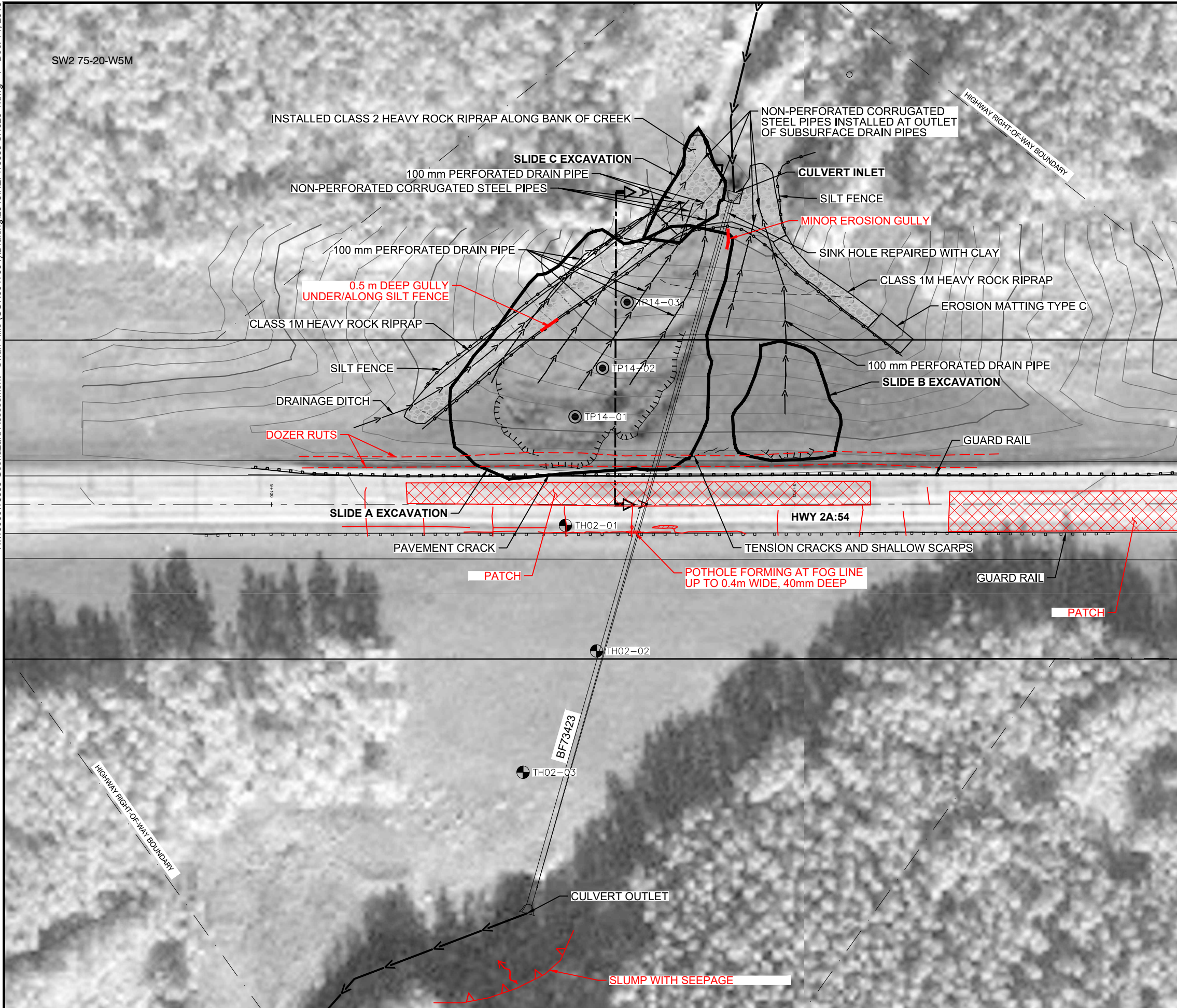
- If future work is being undertaken in this area, consideration should be given to bank protection beyond the culvert outlet to minimize erosion and sedimentation downstream.
- If it is understood that this site is currently programmed for a culvert replacement. Given the recent investment in stabilization of the embankment, it is recommended that in-place repair methods be considered for the culvert such as a liner.

## Ongoing Investigation:

- It is recommended that the annual GeoHazard inspection should continue as scheduled for one more year after which time the site can be removed from the program if no issues are identified.

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SW2 75-20-W5M

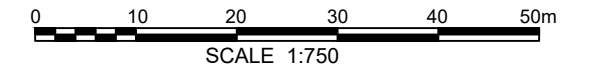


**LEGEND**

- 2002 THURBER BOREHOLE
- 2014 AMEC TEST PIT

**NOTES**

- 1. JUNE 2018 OBSERVATIONS SHOWN IN RED.



BASE PLAN PROVIDED BY AMEC FOSTER WHEELER



**PEACE REGION (SWAN HILLS)**

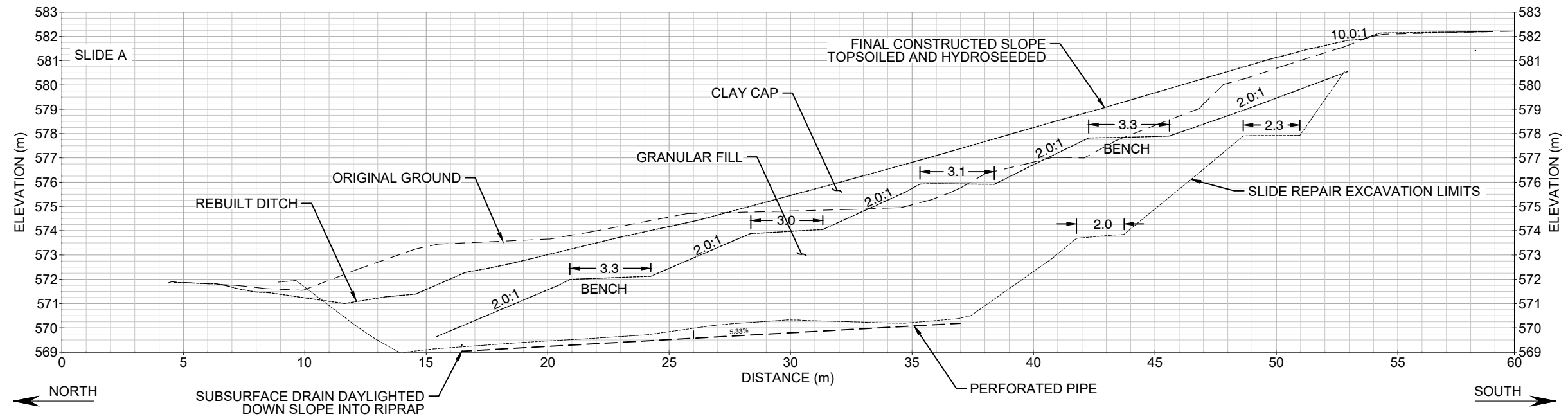
**SH026: HWY 2A:54 GUNN'S CREEK  
2018 SITE INSPECTION PLAN**

**DWG No. 13355-SH026-1-1**

DRAWN BY	KLW
DESIGNED BY	KEF
APPROVED BY	DWP
SCALE	1:750
DATE	DECEMBER 2018
FILE No.	13355







BASE PLAN PROVIDED BY AMEC FOSTER WHEELER



PEACE REGION (SWAN HILLS)

SH026: HWY 2A:54 GUNN'S CREEK  
DESIGN CROSS-SECTION A-A'

DWG No. 13355-SH026-1-2

DRAWN BY	KLW
DESIGNED BY	KEF
APPROVED BY	DWP
SCALE	1:200
LAST UPDATED	DECEMBER 2018
FILE No.	13355







Photo 1 – Looking west at crest of repaired north embankment.



Photo 2 – Looking northeast at riprap-lined ditch channel.





Photo 3 – Looking southeast at riprap-lined ditch channel with two subdrains visible at the toe.



Photo 4 – Looking east at un-overlaid portion of the pavement at this site.





Photo 5 – Looking southeast at eroding bank immediately south of the culvert outlet.





UAV Composite Image of the site.