

**PEACE REGION – GRANDE PRAIRIE
GEOHAZARD RISK ASSESSMENT
SITE INSPECTION FORM**

SITE NUMBER GP-New-II	SITE NAME Bear River Bridge-Slide (at a bridge headslope at ditch end)	HIGHWAY & KM Hwy 724:04 (4 km south of LaPlaze)	PREVIOUS INSPECTION DATE <i>New Site</i> <i>no inspection previous</i>	INSPECTION DATE May 28, 2014
LEGAL DESCRIPTION -W6M	NAD 83 COORDINATES N 5,536,028 E 119,154	RISK ASSESSMENT PF: n/a CF: n/a TOTAL: n/a		
		CURRENT 2012 RISK ASSESSMENT PF: 14 CF: 7 TOTAL: 98		

SUMMARY OF SITE INSTRUMENTATION: No Instrumentation	INSPECTED BY: Ed Szmata, Ted Prue, Rocky Wang of AT & Karl Li, Justin Kei of KarlEng
PRIMARY SITE ISSUE: Sliding movement of creek bank slope (adjacent to bridge headslope) originated from erosion incision at ditch terminus down river (Bear River) bank slope	
APPROXIMATE DIMENSIONS: About 30m length and 15m width(w a 5m depth vertical headscarp along a narrowed shoulder edge strip) - a stretch of slide encroachment adjacent to bridge headslope and bridge approach	
DATE OF ANY REMEDIAL ACTION: n/a	

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
PAVEMENT DISTRESS	x		i) Pavement map start to be affected w encroachment of headscarp along narrowed (scarped) shoulder edge ii) Bridge approach area may be affected soon	x	
SLOPE MOVEMENT	x		- Sliding movement of creek bank next to headslope - Erosion induced sliding at terminus outfall of ditch down river bank slope	x	
EROSION	x		Erosion of creek bank ongoing w substrate likely of overburden weak silty clay soil type	x	

SEEPAGE			n/a		
CULVERT DISTRESS			n/a		
COMMENTS 1) This site was a new site inspected in recent years 2012-13 callout inspection. 2) Current 2014 observe some deterioration of site and Risk of Site Failure is HIGH. 3) Need to design remediation repairs to slide and ditch as site may deteriorate SOON. 4) Continue road patching maintenance. 5) Advise to inspect site again next year to monitor conditions. END					

Fig. 1- Site Location Plan

GP-New-II.PNG

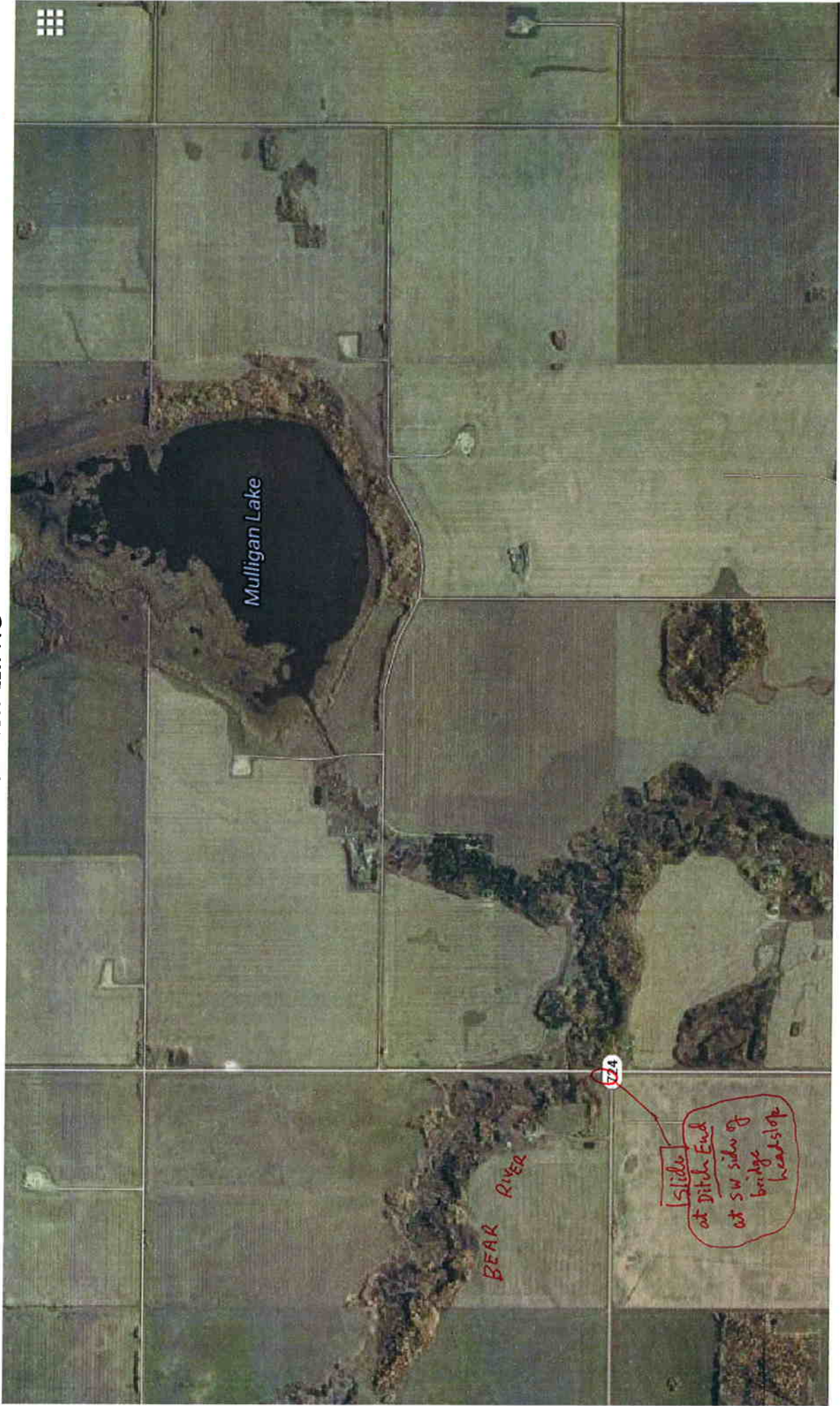




Photo 1

- Slide encroached to roadway with only 0.3 m limited setback space at (A) at bridge approach
- A +5 m scarp steepening at bottom of (A)



Photo 1a
Another view of head of slide



Photo 1b
Close up of limited setback space (A) to roadway

*Note: Photos taken on May, 2014
(Slide Deterioration Since June, 2013)*

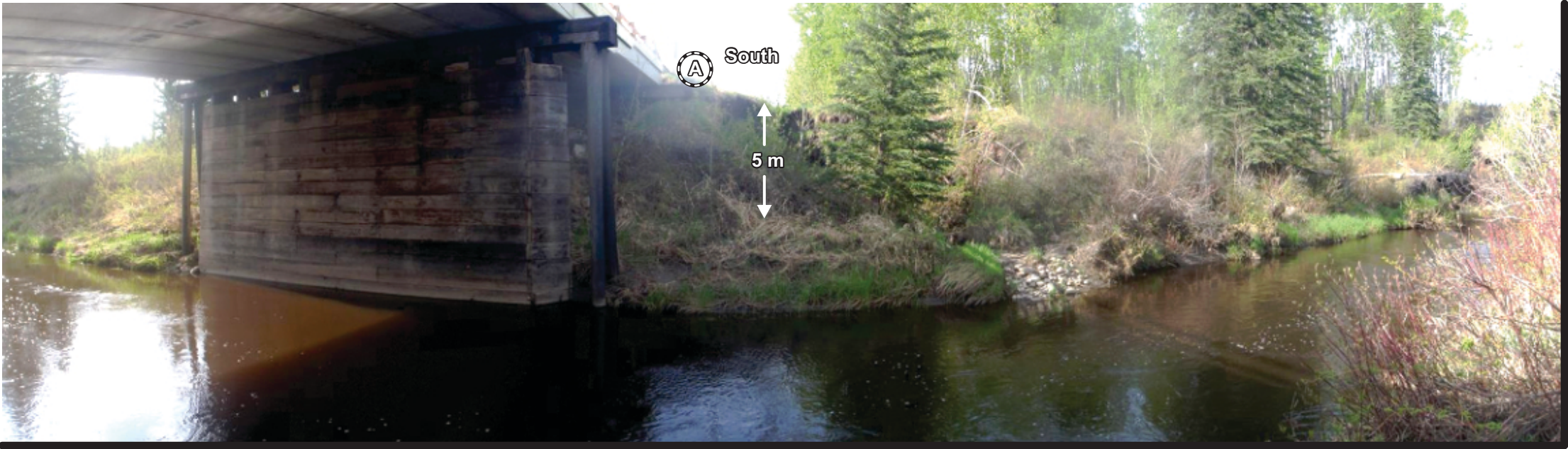


Photo 2

- Slide at SW corner of crossing
- Slide may affect the headslope

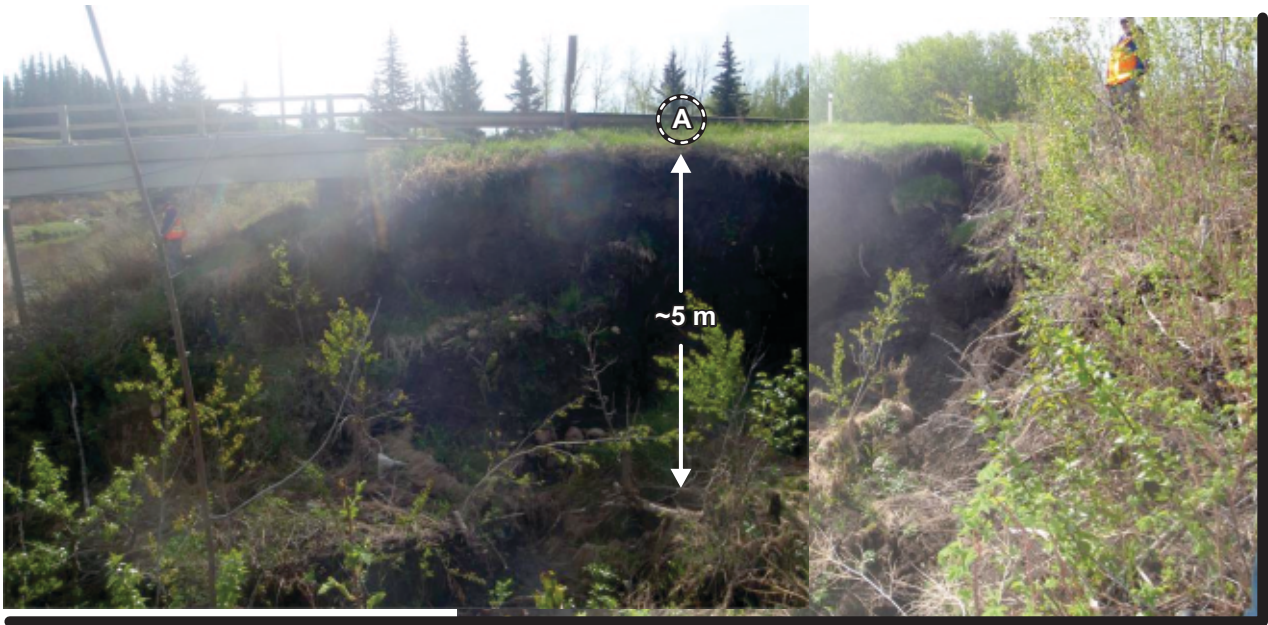


Photo 2a

- A scarp steepening along side slope at bridge approach
- Limited (0.3 m to 0.5 m) setback space at top (A)

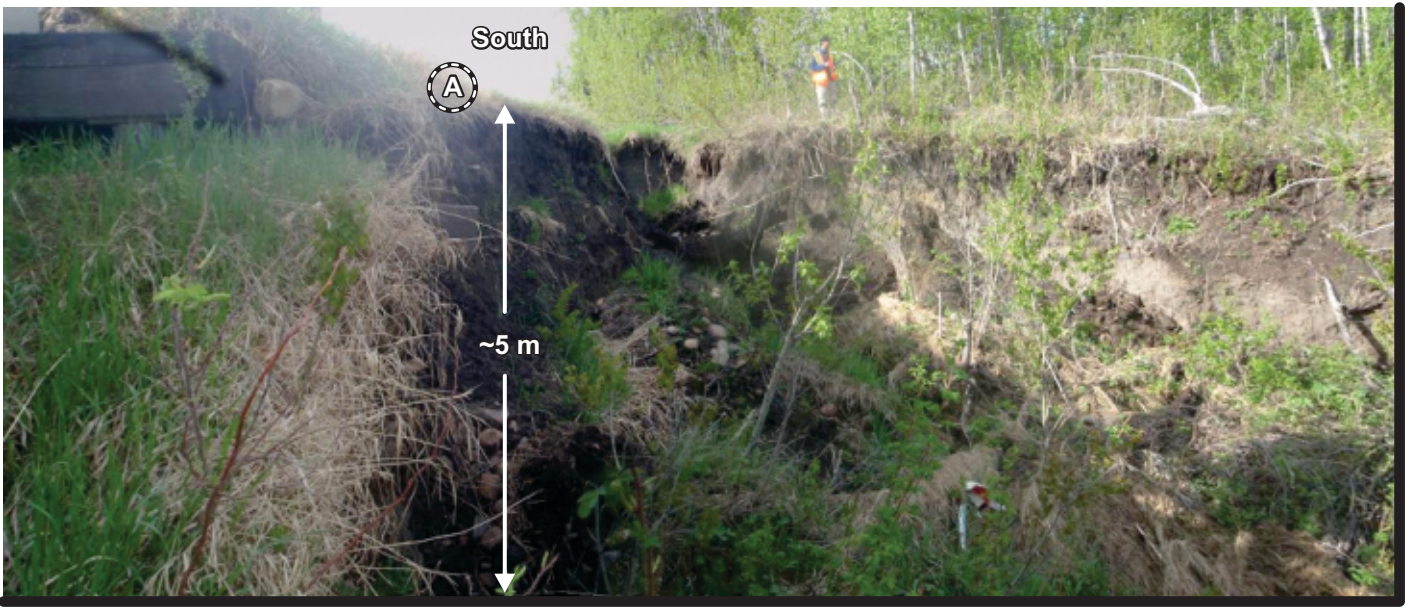


Photo 2b

A scarp steepening along side slope at bridge approach

*Note: Photos taken on May, 2014
(Slide Deterioration Since June, 2013)*

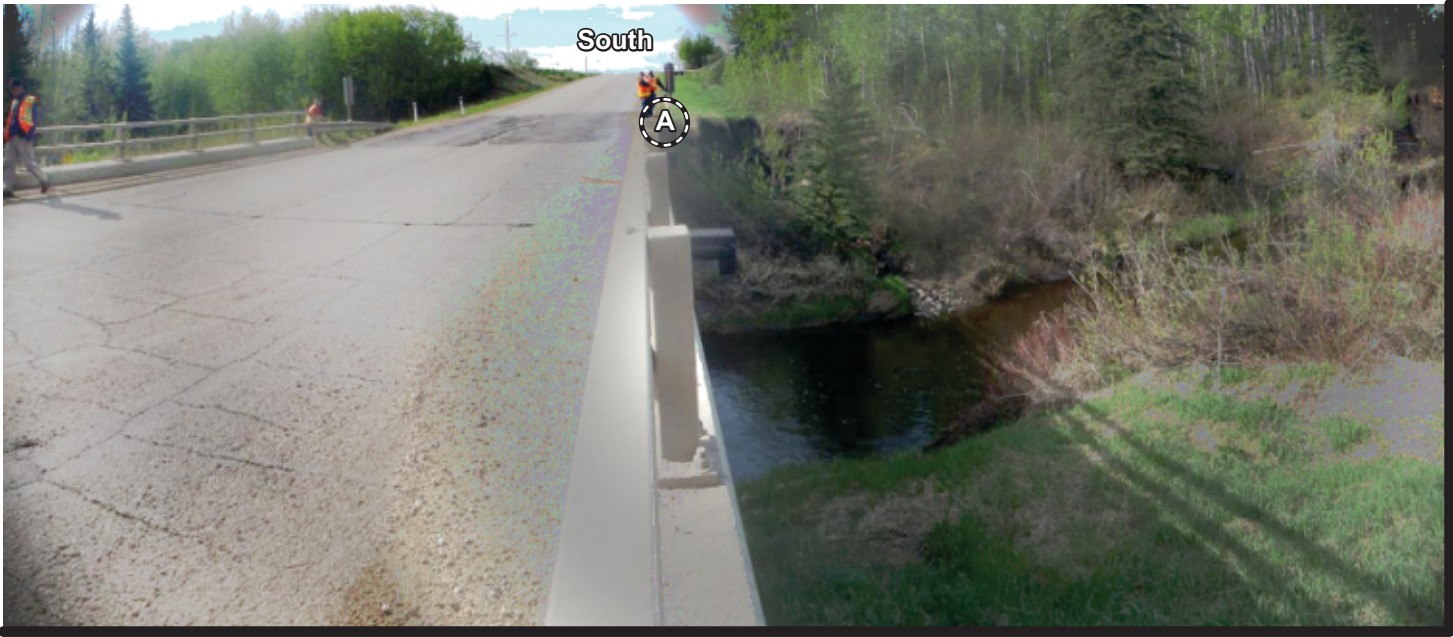


Photo 3
Slide at elbow of bridge SW headslope and biting into south approach at location (A)

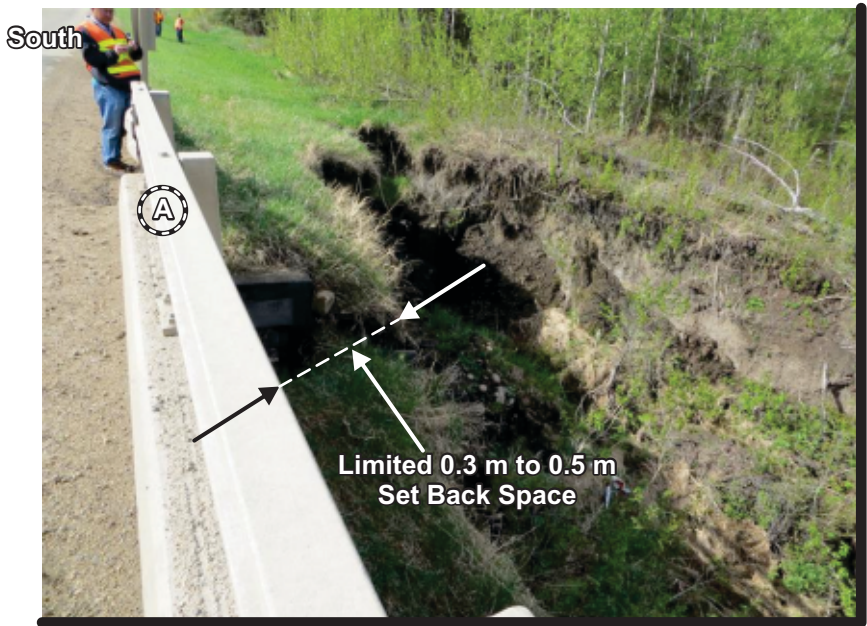


Photo 3a

- Close up of limited setback space at SW Slide
- A +5 m vertical scarp just below the limited setback



Photo 3b
Another view of bridge SW headslope



Photo 3c
Opposite headslope (NW) in good condition

Note: Photos taken on May, 2014
(Slide Deterioration Since June, 2013)

**Photo I**

Looking south at valley slope at top portion of slide failure at outfall of west ditch
Upper part of slide failure (looking from west side of bridge deck)

- Hwy 724:04 runs north - south with a west side ditch carrying runoff south to north to outfall down the river bank slope to cause slope failure (just beside the bridge south headslope)
- Increase in amount of runoff in west ditch (to outfall down the river bank slope) (south to north) was caused by
 - (i) Additional Hwy ditch flow (catchment area to south of Twp Road 753) was invoked from installation (recent 2012) of a twin culvert connecting west ditch at south upgrade end (at junction with Twp Road 753 as its new approach culverts) to flow to river slopes
 - (ii) Additional ditch flow from Twp Road 753 invoked from a recent (2012) opening up of a centreline culvert to channel the (east-west) flows into the Hwy to flow towards the river bank slope (bridge) via the west ditch (south to north)

**Photo Ia**

Looking north at slide failure at outfall of west ditch - another view

- Lower part of slide failure and river bank

**Photo Ib**

Looking west - river channel at toe of slide

- Bank slope well vegetated and looked stable

Note: Photos taken on June, 2013
(Historic - 1 Year Ago)

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Photo II

Looking south at failure area

- Ditch waters (south to north) runoff to outfall down the valley slope to cause sliding
- Ditch waters sources from catchment areas from Twp Road 753(east-west) and Hwy 724:04 lands south of Twp 753 junction
- Twin culvert(s) at Twp 753 approach was recently (2012) installed for 1 year

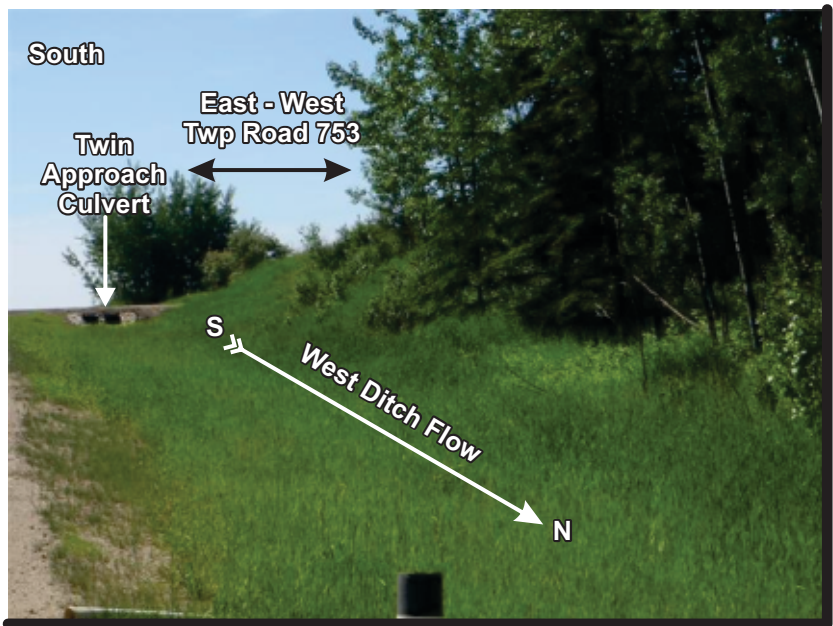


Photo IIb

Looking south at failure area

- Ditch waters (south to north) runoff to outfall down the valley slope to cause sliding
- Ditch waters sources from catchment areas from Twp Road 753(east-west) and Hwy 724:04 lands south of Twp 753 junction
- Twin culvert(s) at Twp 753 approach was recently (2012) installed for 1 year

**Note: Photos taken on June, 2013
(Historic - 1 Year Ago)**

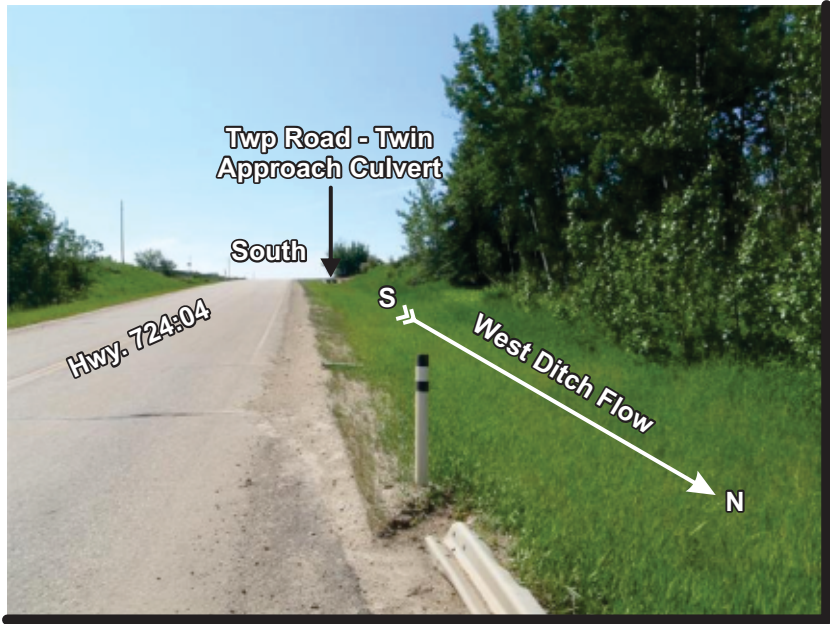


Photo IIa

Looking south at failure area

- Ditch waters (south to north) draining down the valley slope to cause sliding
- Ditch waters sources from catchment areas from Twp Road 753(east-west) and Hwy 724:04 lands south of Twp 753 junction
- Twin culvert(s) at Twp 753 approach was recently (2012) installed



Photo IIc

Twin Culvert located at approach to Twp Road 753

- Two 600 mm CSP (twin culverts)

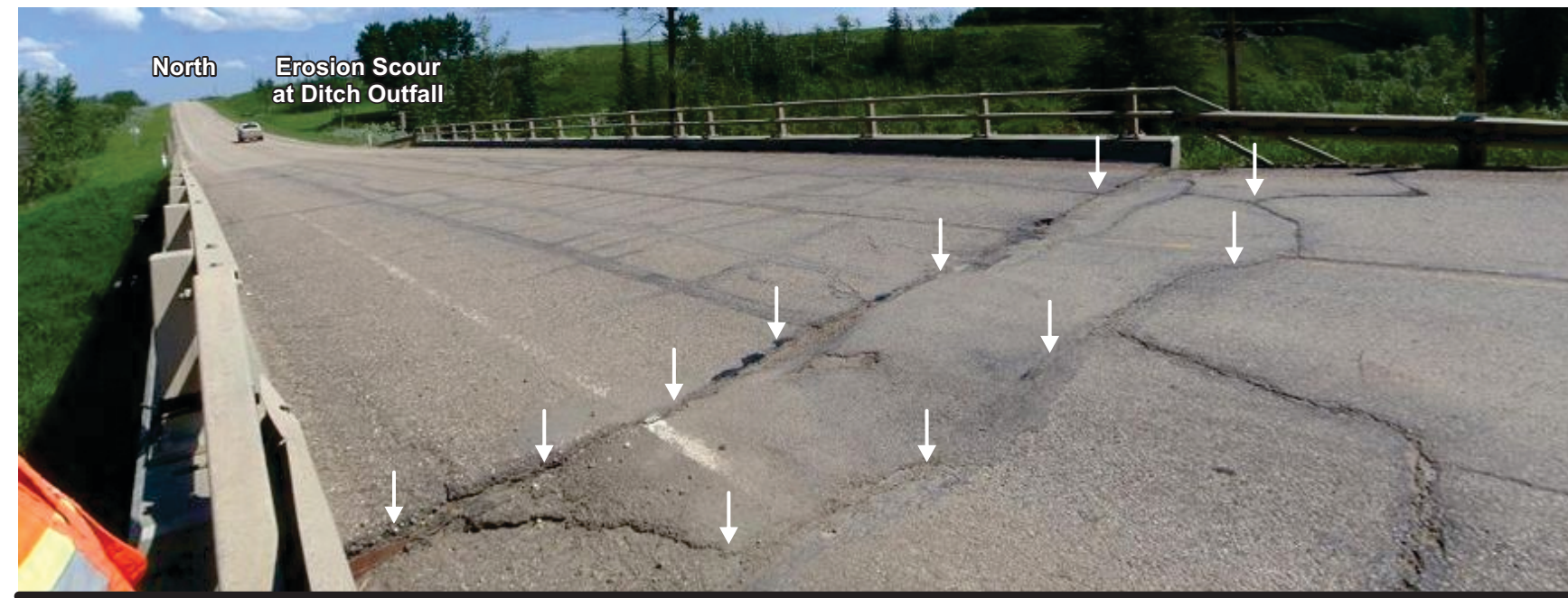


Photo III

Looking north at south approach slab area at south headslope abutment
 • Cracking and minor sag at south approach to bridge deck



Photo IIIa

Looking north at south approach slab area at south headslope abutment
 • Cracking and minor sag at south approach to bridge deck



Photo IIIb

Looking north at opposite valley bank slope
 • Opposite slope well vegetated and in good condition

*Note: Photos taken on June, 2013
(Historic - 1 Year Ago)*

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Photo IV
Looking east - another view of slide

- Width of slide at about 30-35m
- Height of slide (valley slope) at about 7-10m



Photo IVa
Looking north - down the head of slide

- Powdery soil of weak strength and easily erodible

*Note: Photos taken on June, 2013
(Historic - 1 Year Ago)*

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