

Photo 1
Looking south upgrade (towards Grande Cache) from about 150m south from Cutbank River bridge
 - Subsurface drains along backslope ditch (right side of photo)
 - Rosebud Creek (tributary to Cutbank River) at toe of sideslope (left side of photo) flowing north to join Cutbank River



Photo 2
Looking south upgrade (towards Grande Cache) along mid-height of Cutbank River valley slope
 - About 400m of sidehill alignment (approach to Cutbank River) runs parallel to Rosebud Creek (tributary to Cutbank River)
 - Rosebud Creek is a straight channel and downcutting along a steep (7%) gradeline
 - Slumping of creek banks along Rosebud Creek at toe of highway sideslope (see photo #13 to 14 for bank slumping movements) deteriorating and starting to destabilize effect on this sidehill highway alignment. (See photos# 8, 11 to 13 for development of tension cracks)

Note: Photos taken on June 2007



Photo 3

Looking south upgrade (towards Grande Cache) along backslope ditch
- Well grassed ditch as surface erosion protection
- A subsurface drain installed at 4m below ditch surface



Photo 4

Looking north downgrade (towards Grande Grande) along backslope ditch
- A subsurface drain installed at 4m below ditch surface
- Outlet of subsurface at downgrade (foreground)



Photo 5

Outlet of subsurface drain was buried and blocked and it was opened up to flow (at this June 07 inspection)
- This outlet section of subdrain was damaged and needs repair.
Sub-excavation and replacement of damaged outlet section is advised.



Photo 6

Outlet of subsurface drain was buried and needs to be repaired. Thereafter, yearly cleanout of outlet blockage siltation is advised.



Photo 7

Another view of the buried outlet of subdrain.

Note: Photos taken on June 2007



Photo 8

Looking south upgrade (from about 300m distance south of bridge abutment) along mid-height of River valley.

- Tension cracks of about 100m length along southbound lanes of pavement. It is apparent that these are not wheel track rutting cracks. Tension cracks just recently developed or reactivated in year 2006/2007.
- Apparently, there is an impending instability under-development along this sidehill roadway mostly probably due to vertical degradation of creek along the toes (left of photo) of this sidehill alignment.



Photo 9

Looking south along the creek bank (highway to right of photo)

- Slumping of creep bank slopes at toe of sidehill highway alignment
- This slumping of creek bank slope extends about 100-150m



Photo 11

Looking north downgrade towards bridge

- Another views of tension crack propagation and reflecting along the roadway pavement
- Roseham Creek and toe of sideslope to right of photo



Photo 12

Looking north downgrade towards bridge

- Another views of tension crack propagation and reflecting along the roadway pavement
- Roseham Creek and toe of sideslope to right of photo

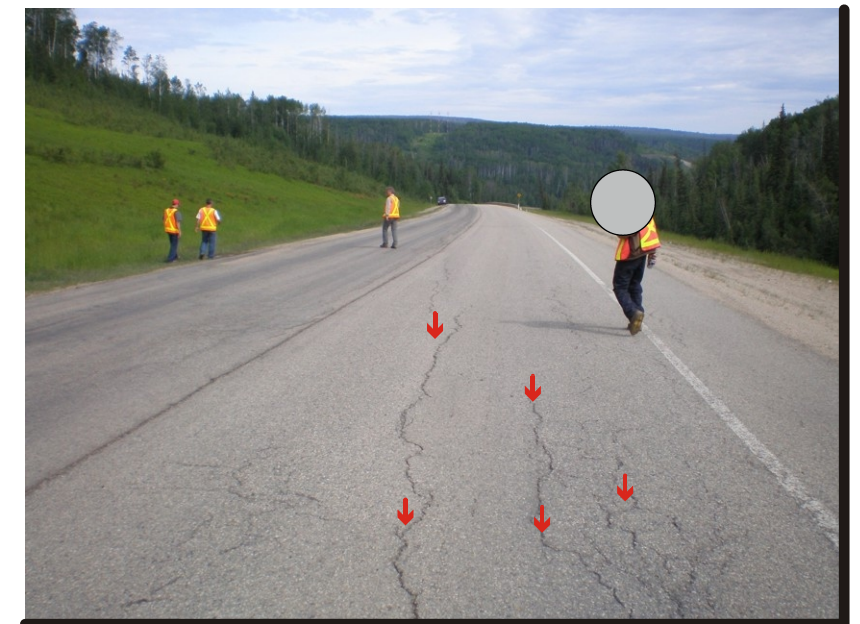


Photo 13

Looking north downgrade towards bridge

- Another views of tension crack propagation and reflecting along the roadway pavement
- Roseham Creek and toe of sideslope to right of photo

Note: Photos taken on June 2007



Photo 14

Slumping of creek banks on both sides of the creek

- the natural valley slope (left of photo) also exhibits instability (tilting trees) and slumping movement in same manner as highway sideslope (right of photo)



Photo 15

Slumping of creek banks on both sides of the creek

- the natural valley slope (left of photo) also exhibits instability (tilting trees) and slump movement in same manner as highway sideslope (right of photo)

Note: Photos taken on June 2007



Photo 16

Looking north (towards bridge) downstream along creek bank
- Slumping of creek banks
- Gradual loss of toe support for sidehill fill alignment



Photo 17

Looking north (towards bridge) downstream along creek bank
- Slumping of creek banks
- Gradual loss of toe support for sidehill fill alignment



Photo 18

Looking north (towards bridge) downstream along creek bank
- Slumping of creek banks
- Gradual loss of toe support for sidehill fill alignment



Photo 19

Previous rock checks eroded by high creek flow along this creek of about 7% grade.



Photo 20

Previous rock checks eroded by high creek flow along this creek of about 7% grade.

Note: Photos taken on June 2007