

Verishine, Leah TRAN:EX

From: Coulter, Colin TRAN:EX
Sent: Thursday, February 21, 2013 2:04 PM
To: Gaib, Sarah E TRAN:EX
Subject: RE: Walkers Hook Report

Thanks as always for your work on this. My preference would be to fully excavate, so let me know if you come across an extra \$250K ☺

Just to give you a quick update...

We'll likely be taking down the large douglas fir on Isabella Point Rd fairly soon. I am awaiting a letter from an Ecosystems Biologist confirming that the tree is not an eagle nesting habitat. The tree service has indicated that they will likely have to fall the tree down towards the ocean. The shoulder is continuing to slump, although at a much slower rate and further from the pavement edge.

Mainroad has leveled out the failure on Walker's Hook with gravel rather than another asphalt overlay. The failure does not appear to have worsened since your site visit.

The site on Fulford-Ganges has not changed noticeably. The slumping appears to have increased only slightly, but the tension cracks do not appear to be any worse. The shoulder has yet to be filled, however I will instruct Mainroad to do so as soon as possible.

Based on my observations, there have been no significant changes at any of the other sites we visited.

Colin

-----Original Message-----

From: Gaib, Sarah E TRAN:EX
Sent: Tuesday, February 19, 2013 10:01 AM
To: Coulter, Colin TRAN:EX
Subject: Walkers Hook Report

Hi Colin,

Please find attached the final report for Walkers Hook Road.

I will write something up for the rock fall issue on Long Harbour Road.

Best,

Sarah Gaib, M.Eng., P.Eng.
Senior Geotechnical Engineer
Geotechnical, Materials & Pavement Engineering Section B.C. Ministry of Transportation & Infrastructure
Office: 250-356-0390 Cell: 250-213-2044
sarah.gaib@gov.bc.ca

Verishine, Leah TRAN:EX

From: Coulter, Colin TRAN:EX
Sent: Tuesday, January 29, 2013 2:12 PM
To: Gaib, Sarah E TRAN:EX
Subject: RE: walkers hook road

Hi Sarah,

Still no luck getting in touch with Bob, but I hear that you were able to speak to Dale. Are you still looking for more background on Walker's Hook? Andy thought there might be a map showing the location of the pipes and CBs installed in the late 1980s, but it seems it was recently shipped off site to an archive facility. I don't have any sort of reference number to try and retrieve the map at this time, but if you think it is essential to have I can see what else could be done to find it.

On a separate note, I remember you mentioning on Salt Spring that you were aware of similar situations to that of Ganges Hill (groundwater permeating up through the pavement surface). I am keen to start planning for a fix, so when you return from the Loops if you wouldn't mind pointing me in the direction of reports/repairs that have taken place elsewhere but are similar in nature it would be most appreciated!

Thanks,
Colin

From: Gaib, Sarah E TRAN:EX
Sent: Friday, January 25, 2013 3:39 PM
To: Coulter, Colin TRAN:EX
Subject: RE: walkers hook road

Sure thing. Let me know what Bob has to say. I have to go to Kamloops early next week but will be working on this when I have the time.

Wayne's file was confusing to me as it contained additional information from another Salt Spring Island failure on the Fulford-Ganges Road. I think I've separated the two sets of documents.

Have a good weekend,
Sarah

From: Coulter, Colin TRAN:EX
Sent: Friday, January 25, 2013 3:30 PM
To: Gaib, Sarah E TRAN:EX
Subject: RE: walkers hook road

Hi Sarah,

Sorry I wasn't able to touch base with Dale, I think he was off today. If you want to try him directly on Monday, his cell is 250-537-7255.

I'd also like to speak to Bob Webb about Walker's Hook but he is only working as a s.22
take a couple days before I can track him down.

p/t consultant, so it may

Colin

From: Gaib, Sarah E TRAN:EX
Sent: Friday, January 25, 2013 3:06 PM
To: Coulter, Colin TRAN:EX
Subject: walkers hook road

Hi Colin,

I'm still working on this site. Do you recall what Dale mentioned about the catch basin at the site? I seem to remember him saying they clean it out a couple times a year. But not sure if he meant pump out water or mud or ??? it seems that a series of horizontal drains outlet into this catch basin. Don Gillespie is going to go by the site this weekend and check into it.

Sarah Gaib, M.Eng., P.Eng.
Senior Geotechnical Engineer
Geotechnical, Materials & Pavement Engineering Section
B.C. Ministry of Transportation & Infrastructure
Office: 250-356-0390 Cell: 250-213-2044
sarah.gaib@gov.bc.ca

February 19, 2013

Colin Coulter
Operations Technician/Area Manager Salt Spring Island
Vancouver Island District
Ministry of Transportation & Infrastructure

Re: Walkers Hook Road Instability (#770)

An ongoing, existing slide failure on Walkers Hook Road, across from the property at 770, showed significant movement as a response to heavy rain on Tuesday January 8th, 2013. This letter summarizes site conditions and includes recommendations.

Location:

Walkers Hook Road runs generally north-south on the east side of Salt Spring Island north of Ganges. The road is just above the ocean.

Site Observations:

A site visit was completed on January 14th, 2013 and included Sarah Gaib P. Eng. (MoTI Senior Geotechnical Engineer), Colin Coulter (MoTI Area Manager), Tim Carr (Mainroad Contracting) and Dale Johnson (Mainroad Contracting).

The crack in the asphalt extended approximately 0.5m over centreline and was 36m long (photo 1). Where movement was the greatest, the asphalt was offset by about 60mm vertically (photo 2). According to the maintenance contractor this site has been repaved 20 times in the past 15 years. The asphalt thickness seemed to be about 1.5m on the down slope shoulder edge.



Photo 1: Initial Crack



Photo 2: Vertical offset of crack

The paved road surface is 5m wide. There was no water in the upslope road ditch but the slope up to the residence appeared to be generally wet as it was heavily vegetated and a bench on the slope was covered in cat tails. The bench may be a previous slide feature. The width of the down slope soil shoulder varies from <0.5m to 2m. The slope down to the beach is covered heavily with blackberry vines. A 1987 field survey shows the slope to be 25°. The bottom 2m of the slope is over steepened (55°) due to wave erosion. The elevation change from the beach to the road is 8m. The entire area appears to be wet. No slide toe was identified but would not be expected to survive winter storm waves.

A manhole was located just down slope of the road on the bank. The maintenance contractor checks the manhole every spring and fall and cleans out any accumulated mud.

A subsequent site visit was conducted on January 27th, 2013 by Don Gillespie, P.Eng. (MoTI Geotechnical Engineering Manager) to confirm the site location and manhole operation. A series of 50mm diameter drain pipes flow into the buried manhole structure (photo 3). One 100mm big O pipe carries the water out of the buried structure (photo 4) and down the slope to the beach. This pipe is initially buried and then lies on the ground surface until it ends.

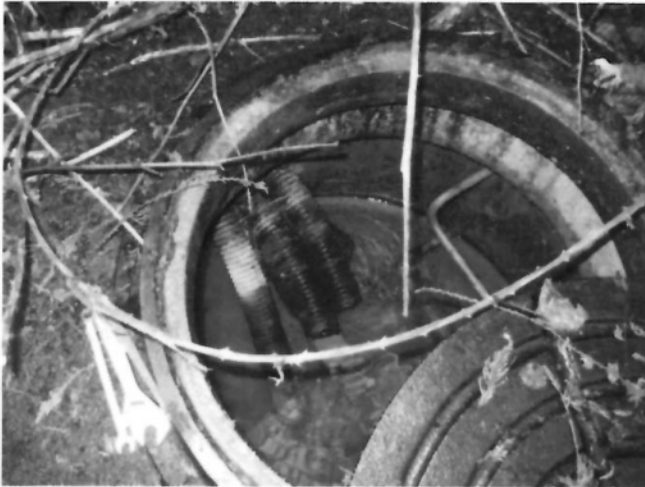


Photo 3: Drain pipes flowing into manhole structure



Photo 4: Outlet connected to buried Big O pipe

Site History:

In 1987 Ministry geotechnical personnel completed a drilling investigation in response to the outside lane collapsing in a number of locations along Walkers Hook Road. Five drill holes, with lab testing, were completed. A plan with drill hole survey locations does not have any reference points for locating the sites in the field. Presumably one drill hole at each slide location. A letter from 1988 in the file recommends a cut-off drain, horizontal drains or continued maintenance with patching. It is not clear what recommendations were implemented but it is possible that upslope ditch improvements were made.

The drill hole TH87-01 appears to have been completed for the slide at 770 Walkers Hook Road. The soil profile consisted of 75mm of asphalt, underlain by loose embankment fill (to 0.9m), underlain by soft silt with some organics (to 2.1m), underlain by a stiff to hard layer of clay (to 4.3m), underlain by very dense gravel (to 5.6m), underlain by solid bedrock. The water table was encountered at 1.83m depth in September 1987. The 1987 soil investigation drawing is attached.

After 1988, continued ongoing annual patching by the maintenance contractor appears to have occurred.

In 1999, further significant movement instigated the installation of horizontal drains at 4 sites along Walkers Hook Road. Presumably the 4 locations correspond with 4 of the 5 1987 drill hole locations. Drain installation records reference the properties along Walkers Hook Road adjacent to the installations. A fan of 5 drains (50mm diameter) was installed in front of 770 Walkers Hook Road in early 2000. The drains vary between 39.5m and 33.4m in length according to installation records. Individual flow rates varied between dripping and 13 litres/minute at the time of installation. The horizontal drains outlet into the manhole structure buried on the slope. The collected water is then carried in another pipe (100mm diameter) to the beach where it outlets.

Since 2000, continued ongoing annual patching by the maintenance contractor appears to have occurred.

Findings

The intent of the horizontal drain pipes was to collect the water from the area upslope of the failure and dispose of it at the beach keeping it out of the active slide area. This approach appears to have been quite effective at other slide sites along Walkers Hook Road but movement in front of 770 continues. Based on the geometry of the site, the soil profile and the continued movement the drains haven't been as effective as hoped. Ground water appears to be a major factor in destabilizing the site. The added weight of ongoing asphalt patching works to destabilize the slope to a smaller degree.

The horizontal drains installed in 2000 are likely sheared due to the movement that has occurred over time. If sheared, the drains are more likely adding water to the slide than keeping the water out. They may have become a destabilizing influence.

Summary and Recommendations:

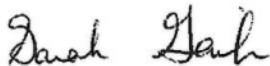
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Closure:

We trust this letter provides the information you require at this time. If you have any questions or comments, please do not hesitate to contact the undersigned.

Regards,

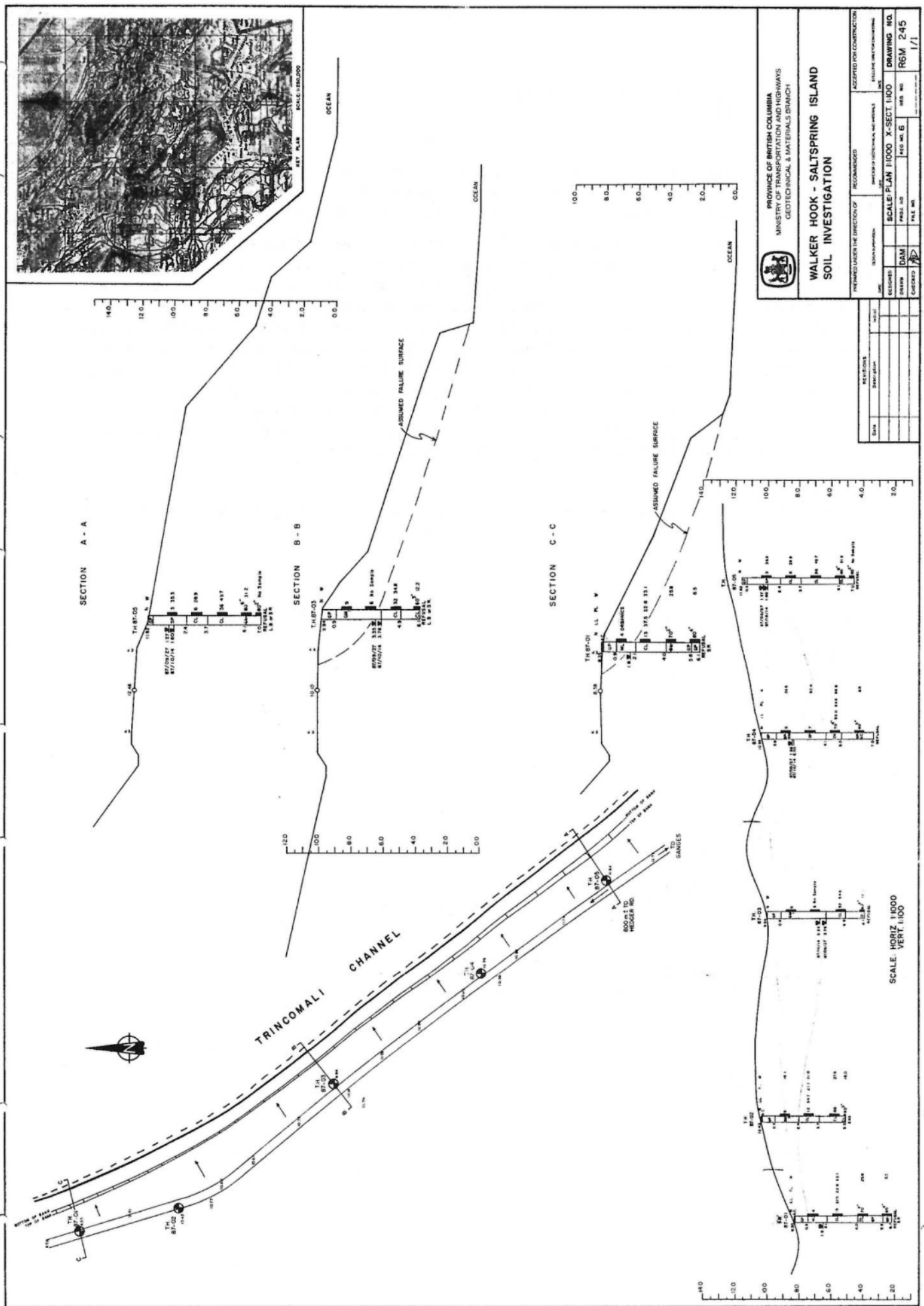


Written by:
Sarah Gaib, P.Eng., M.Eng.
Sr. Geotechnical Engineer
MoTI



Reviewed by:
Don Gillespie, P.Eng., PhD.
Manager Geotechnical, Materials & Pavement Engineering
MoTI

Cc: Wayne Janusson, P.Eng.
Geotechnical Operations Manager, Nanaimo
MoTI



Thomas, Daveena L TRAN:EX

From: Coulter, Colin TRAN:EX
Sent: Tuesday, January 15, 2013 11:45 AM
To: Mounteney, Renee EDUC:EX
Cc: Spillett, Ryan TRAN:EX
Subject: RE: Media call - Salt Spring issue - Walker's Hook Road
Attachments: Capital F-20120813-00066.jpg

This is another issue that has been ongoing for many years. There are several segments on both Walker's Hook Road and North Beach Road that are in need of base repair. The location in question is on Walker's Hook Road about 270m south of Hedger Road. I've attached a photo of the site which I took back in August for an audit. In recent weeks the displacement of the northbound lane has increased by about another inch, and the cracks in the pavement surface have become more pronounced. To ensure safety, Mainroad has coned off the section where the road is slumping so that there is currently single lane traffic only.

Peter Bullock assessed the site a few years ago and I am told that he gave a rough estimate of about \$100,000 for repairs. Over the years Mainroad has continued to maintain the road surface as best they can by patching distortions in the road with hot mix. Sarah Gaib, Geotech Engineer from HQ had a look yesterday, and I am awaiting a formalized assessment and/or recommendation on how best to proceed. It appears that simply patching the road surface is no longer the best option as the sheer weight of the asphalt may be contributing to the slumping.

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To answer the media questions, yes we are in the early stages of planning a permanent solution. The improvements will almost definitely be incremental, rather than one large project. The drainage systems are inspected regularly and do appear to be functioning correctly. We are awaiting the results of yesterday's geotechnical assessment, however further assessment may be required to get to the root cause of the problem. In the short term, we are continuing to monitor the site closely to ensure safety.

I don't think it's a good idea to get into too much detail at this point, but I am hoping that we can complete a permanent fix for this specific site during Summer 2013.



From: Mounteney, Renee A TRAN:EX
Sent: Tuesday, January 15, 2013 9:50 AM
To: Coulter, Colin TRAN:EX
Cc: Spillett, Ryan TRAN:EX
Subject: FW: Media call - Salt Spring issue - Walker's Hook Road

Colin,

Can you give me some details on the following please? The Ryan and I can discuss what the media response should be. Thanks.

Renée Mounteney, MBA
District Manager, Transportation
Vancouver Island District
Ministry of Transportation & Infrastructure
(250) 751-3282 - work
(250) 208-8876 - cell

From: O'Hare, Kim GCPE:EX
Sent: Tuesday, January 15, 2013 9:48 AM
To: TRAN SCR CORR TRAN:EX; Drummond, Derek M TRAN:EX; Mounteney, Renee A TRAN:EX
Subject: Media call - Salt Spring issue - Walker's Hook Road

Please note this is a different media request from the Driftwood (a week or two ago) – the last drainage issue was Ganges Hill (the part of Fulford-Ganges Road coming into Ganges village from the south)

Minister Response: Not requested

Topic: Walker's Hook Road, Salt Spring Island, where a giant crack appears every year or two due to drainage problems.

Details:

Reporter heard from Mainroad that there was a meeting yesterday with the ministry and geo-tech people about the problem.

Is a long term solution is being sought? It is likely to be a big project with a lot of the road or will one or two problem areas be concentrated on?

Outlet: Gulf Islands Driftwood

Reporter/Contact Number: Elizabeth Nolan - enolan@gulfislands.net

Deadline: early afternoon today



Thomas, Daveena L TRAN:EX

From: Leon Bohmer <lbohmer@mainroad.ca>
Sent: Friday, May 20, 2016 9:38 AM
To: Tormala, Travis TRAN:EX
Subject: FOI REQUEST
Attachments: Walkers Hook Rd FOI.PNG

Hi Travis.

Please find attached two entries of work reported. These are the only entries for work reported during the time period of 01/01/2013 to 05/31/2013 as requested in FOI.

Cost as follows:

s.17

Total cost for time period \$174.69

Mainroad South Island Contracting LP

Leon Bohmer
Operations Manager
Mainroad South Island Contracting LP



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250.391.7310 ext.2100
Fax: 250.391.7312
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Start Work Reported x C397 x Preview x Preview x Preview x

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Select filters then click Refresh

Work #: 0 Task #: 0 Task status: End from: 01/01/2013 Posted:

Job/Ph: 0401bs / 0 Activity: Loc: h 0152 End to: 05/31/2013 Sent:

Act Type: All

Work#	Task#	Job#	Phase	End Date	Activity	Acmp	Loc Type	Loc Code	Send Date	Post Date	Ministry Approved	Notes	Lmark	Start Offset
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