

NORTHERN PACIFIC RAILWAY
STATE OF WASHINGTON -- VALUATION SECTION 26

BELLINGHAM TO WICKERSHAM
PRE-INVENTORY INFORMATION

GENERAL OUTLINE AND HISTORY OF THE WORK

This is a single track branch line extending from Wickersham to Bellingham, a seaport on the shores of Puget Sound.

The line runs through a rough, heavily timbered country; encountering many rock cuts, touching Minor Lake in Mile 2, and running along the shore of Lake Whatcom in Miles 5 to 16, inclusive.

The original construction of this line was done by the Bellingham Bay & Eastern Ry. Co., from whom the Northern Pacific purchased the road on July 1st, 1903.

The line from Lake Whatcom to the old town of Whatcom, on Bellingham Bay, a distance of four miles, was built in 1899. Cuts at sub-grade were 18 feet with 1:1 slopes where earth was encountered, and in classified material were made 16 feet with 1 1/2:1 slopes. Embankments were 14 feet wide at sub-grade. The next mile along the water front in Whatcom was built in 1891. These lines were constructed by Company Forces. The balance of the line was built in 1901 and 1902, and operation was commenced by the Northern Pacific October 11, 1902.

After this railroad was acquired by the Northern Pacific a great deal of reconstruction work was done both by Company Forces and by Contract. Considerable trouble was experienced with sliding cuts, sliding embankments along shores of the different lakes, and with sink holes, and it was necessary to make line changes, fill bridges, widen both cuts and fills and to place additional ballast. The sliding cuts and fills between Stations 260 and 390 were especially active. At Mirror Lake the sink hole developed into a serious menace, at Construction Station 103 spliced test piles were driven 96 feet and at Station 100+75 were driven 66 feet without bringing upward in each instance the driving of the piles was stopped because the work of driving caused dangerous settlement of track (Chief Engineer's File 806, letter from G. A. Kyle of February 12th, 1903). A large amount of material was dumped into this hole but the settlement could not be stopped, and it was decided to make a line change; a ditch to lower the water in the lake was also dug. Trouble was experienced for a while with the new line. Blue-print showing location and profile of this line change and sink hole is attached to the inventory.

Other line changes and bridge-filling was done by the following contractors, copies of contracts and list of extra work bills incurred under same are attached to the inventory, viz.:

Rich & Harris, of Prosser, contract dated June 28, 1904.

White & Goerig, of Tacoma, contract of May 20th, 1904.

In addition to these contracts other work was done by Company Forces.

Following extracts from reports of Engineers indicate the nature and extent of slides and sink holes, Chief Engineer's Correspondence File 806:

*Referring to your letter of the 23d ult., asking for more details concerning the changes on the Whatcom Branch. Below please find the information desired:

*Change No. 1, from Stations 271+96 to 299+15. This change is made necessary in order to be able to get the roadbed on solid ground that will not slide into the lake, especially at bridges 23, 22, and 21. As mentioned in my letter of previous date, this change might be deferred this year as the bridge mentioned above are not in a serious condition at present, but the change should probably be made next year. The alignment and grade remain practically the same as at present excepting that the line has been thrown into the hill from 0 to 5 feet.

*Change No. 2, from Stations 329+00 to 335+29.4, is necessary on account of bridge No. 20-1 being on a very steep slope and is not absolutely safe to operate. The slope is so steep that filling of the bridge is not practicable, the lake being at least 200 ft. deep and with a rock slope of 1 to 1 1/2 to 1. The change will save 60⁰ 3/4' in curvature and the distance will remain practically the same.

*Change No. 3, from Stations 355+03.9 to 369+03. This change is necessary to eliminate bridges 19 and 20, a total of 287 feet of pile bridging, which is on a very dangerous blind cliff, especially bridge No. 19 which is anchored by a cable to keep it in place. These bridges cannot be filled on account of steep slopes and are actually dangerous to operate. This will require a tunnel 145 feet long, will save 21⁰ 3/8' curvature and 10 feet of distance and reduce the maximum curvature from 16⁰ to 12⁰. Unless this change is made there will have to be put into a 120 foot Howe truss at Bridge No. 19 to make the road safe to operate, and maintain the temporary structures at both bridges mentioned.

*Change No. 4, from Stations 374+73 to 379+10.7, is made necessary on account of bridge No. 15 being on a steep cliff and liable to slide into the lake. The curvature and distance remain practically the same. It is proposed to put a 50 foot girder at bridge No. 17 on the water side instead of changing the line as the bluff is very steep. I think it preferable to do this than to throw the line into the hill as there is a solid rock foundation for girder and the rock drops off vertically for a distance of 10 to 15 feet.

*Change No. 5, at Mirror Lake. The detail maps of this change of line shows the soundings made with rods to be from 15 to 55 feet deep, and since that time three piles have been driven by the

Operating Department to test the bottom of Station 103+00, being driven 96 feet by splicing and did not get hard bottom. Driving was stopped on account of the track settling out of shape with the driver. A second pile was driven at Station 100+75, but was only driven 66 feet for the same reason as above. It is very evident to my mind that this is a very dangerous hole and that drainage will not make it safe as the crust is broken and timbers floating to a depth of at least 5 feet, as mentioned in a previous letter, and I would recommend changing the line as shown on blue-print of same, which would add 65⁰ of curvature and 5 feet of distance." (From letter of G. A. Kyle to W. L. Darling of February 12th, 1903).

"At Mirror Lake, Change #5, the work on the ditch had progressed as far as clearing, and a very small hole excavated on the lower end. I judge from appearances that this ditch only extends into the sink hole, and it looks to me as if it will have very little effect on the stage of water. I think in order to lower the water it will have to extend to the lake proper, but I doubt whether in that case it would help the roadbed."

"There is another sink hole at Mile 20 $\frac{1}{2}$, which has not yet broken through, but I anticipate that there will be the same trouble there as at the one at Mirror Lake though on a smaller scale. So far as I know there have been no soundings at this point." (From letter of H. T. Crosswell to W. L. Darling of March 13th, 1903).

The ballast on this line is gravel and cinders; the gravel coming from pits, the location of which is shown on blue-print attached to the inventory; the cinders coming from Seattle, Snohomish, Sedro Woolley and Bellingham.

A list of items in abandoned roadbed is included in the inventory and itemized separately.