

NORTHERN PACIFIC RAILWAY
STATE OF MONTANA - VALUATION SECTION 4.

HELENA TO MISSOULA.

PRE-INVENTORY INFORMATION.

GENERAL OUTLINE AND HISTORY OF THE WORK.

This is part of the original main line of the Northern Pacific Railway Company; is single track from Helena to Garrison and is double tracked from Garrison to Missoula.

Was originally constructed by the Northern Pacific Railroad Company in the years, 1881, 1882 and 1883. Was built as part of the two following construction divisions; of the Rocky Mountain Division, which extended from Livingston to Elliston and of the Missoula Division which extended "From Station 8200 (Elliston) about two miles west of Frenchwoman's Ranch, on the Little Blackfoot, to the "Third Crossing", a crossing of the Clark's Fork or Pend d' Oreille River near Knowles (Old Olive), taken from report of I.S.P. Weeks, C.E. Old Vault File 47 - 13.

From Helena to the east approach of the Mullan Tunnel, the general work of grading and building bridges and culverts was done by Herman Clark under his contract of July 31st, 1882.

The Mullan Tunnel and approaches were constructed by Jas. Muir under his contract of Nov. 8th, 1881. The machinery for the construction of this tunnel was furnished by the Railroad Company, part of which at least was hauled to the site by one James O'Neill, under his contract of February 3rd, 1882.

The tunnel known as the Iron Ridge Tunnel just east of the MULLAN Tunnel was built by H.G. Clark, under his contract of Sept. 4th, 1882.

From the west approach of the Mullan Tunnel to Frenchwoman's Ranch, the general work of grading and building culverts was done by Washington Dunn, as per letter of Chief Engineer, General Anderson of July 24th, 1882.

From Frenchwoman's Ranch to the mouth of the Little Blackfoot (near Garrison) the general work of grading and building culverts was done by Washington Dunn under his contract of May 1st, 1882.

From the mouth of the Little Blackfoot to a point 25 miles west, the general work of grading and building culverts was done by Washington Dunn, under terms of his accepted proposal of April 15th, 1881.

From point 25 miles west of the mouth of the Little Blackfoot to point 50 miles west graded by Washington Dunn, under his contract of August 1st, 1881.

From point 50 miles westerly from the mouth of the Little Blackfoot "to the western terminus of the Missoula Division or to such point south (east) of said terminus as may be reached by the working forces of the Railroad Company coming from the west" the general work of grading was done by Washington Dunn under the terms of his contract of May 1st, 1882.

The tracklaying and surfacing on the Rocky Mountain Division was done by Winston Bros., under terms of their accepted proposal of Dec. 30th, 1882, the work being done from the east to the west.

The tracklaying and surfacing and bridging on the Missoula Division was done by Winston Bros. & Clark under the terms of their accepted proposal of March 3rd, 1883, the work being done from the west towards the east. On 62½ miles of this tracklaying there was a bonus of \$100.00 per mile paid because of completing that work within a specified time.

Copies of all the above mentioned contracts are submitted with the inventory although all of the final estimate vouchers incurred under same have not yet been found.

The two ends of the main track met near Gold Creek, August 22nd, 1883. (See Annual Report year ending June 30th, 1884).

Because of the treacherous and unstable ground encountered in the Mullan Tunnel the work of driving proved more troublesome and slower than was anticipated, and in order to avoid serious delay in the tracklaying and the ultimate connecting up with the track coming from the west it was found necessary to build a temporary line over the pass. The grading was done by Winston Bros. & Clark, on a cost plus percentage basis. As this overhead line is regarded as an essential step in the construction of the railroad the quantities handled in its construction are not regarded as abandoned and are included in the regular inventories.

From Beaver Tail Hill (Bonita Tunnel) to Missoula, the clearing was done by E. L. Bonner & Co., under the terms of their accepted proposal of October 10th, 1881.

From Helena the line of the road ascends the east slope of the main range of the Rocky Mountains, crossing the divide through the Mullan Tunnel and descends the west slope following the Little Blackfoot and Hellgate rivers, both of which are very tortuous and required a large number of truss bridges; as the materials for these bridges had to be brought up by track, most of the crossings were made on temporary pile bridges and the permanent bridges built afterwards. (Chief Engineer Annual Report for the year ending June 30th, 1884 - C.E. Old Vault File 45 - 5.)

The Railway Company has done an unusually large amount of work on this section since the completion of the original construction period, improving the roadbed alignment and gradient, the work having been done by both Company forces and by contract. The Hellgate River which is followed between Garrison and Missoula is a rapid tortuous stream lying in a very narrow valley with bordering steep mountain slopes, and many channel changes have been necessary. Temporary bridges and culverts have

been replaced in permanent material, over 11000 lineal feet of temporary bridges have been filled, and all the work necessary to make up a first class main line track. The Little Blackfoot or Avon Tunnel was connected ^{into} with an open cut in the year 1889, apparently by Company Forces.

The largest of the many improvements made on this section was the double tracking of the line between Garrison and Missoula in the years 1906 - 1907 - 1908 and 1909; this work involved many heavy line changes, was done almost entirely by contract although some was done by the Company with its own forces. The general work of grading, driving, ^{troughs} and laying of culvert pipe was done by Winston Bros. Co. under their contract of October 16th, 1906; some of the tracklaying and surfacing and ballasting was done by the Company with its own forces but most of that work was done by Roberts Bros. under their contract of February 28th, 1908. During the progress of this double track work, in May and June 1908, occurred an unprecedented rise of the Hellgate River, the river rising some four feet higher than had ever been known before; this flood wrought enormous damage to the uncompleted double track work. Embankments were washed away, channel changes were obliterated and in some instances the track itself was washed into the river and destroyed or lost. A statement of the quantities thus lost is submitted with the regular inventory with claim that same should be allowed as one of the requisite steps in the reproduction of the road.

After the flood of 1908, it was found that a very large amount of work was necessary to prevent a recurrence of the catastrophe; the grade was raised, channel changes widened, and great deal of rip-rap work done, part of this work was done under the existing contracts with Winston Bros. Co. and Roberts Bros. and also a new contract for rip-rap work was entered into with Winston Bros. Co. under date of November 7th, 1908 and some by Company Forces.

The track between Elliston and Garrison also suffered very severely during the 1908 flood and the extensive repairs and rectification work on the Little Blackfoot River channel was done almost entirely by the Railway Company with its own forces.

At the time of the double track work between Garrison and Missoula the C.M. & St. P. Ry. Co. were also building a line between those points. The valley of the Hellgate River is so narrow that in order to effect economy of construction, the two railways often built their tracks on common embankments or occupied the same cuts; in general the Northern Pacific Railway Company with two tracks and the C.M. & St. P. Ry. Co. with one track. The quantities in these joint embankments during construction were divided vertically on the right of way line, and in the joint cutswere divided on a percentage basis, the Northern Pacific in general paying for 59% of the entire excavation and the C.M. & St. P. paying for 41%. Many channel changes were also jointly excavated, the cost of these was in general divided equally between the two companies

A large amount of rip-rap was also placed jointly and the expense of same borne equally. See copy of agreement between the two companies on Page 69 of Red Book 8967. The inventory as compiled divides this yardage between the two companies in the same manner as was paid for during construction.

In 1913 and 1914 a ventilating plant was installed at the Mullan Tunnel, part of the work being done by the Railway Company with its own forces and part by the B.E. Sturtevant Company under their contract of August 29th, 1913.

Copies of all the final estimate vouchers which have been found covering roadway work are submitted with the inventory together with lists of extra work bills incurred under same on account of grading and tunnels, (except Mullan Tunnel). These lists do not pretend to be a complete statement of all the extra cost or in any sense a partial statement of original cost, but merely enumerate some of the items of extra work found readily available.

The ballast is composed gravel, decomposed rock and cinders, coming from pits and terminals whose location is shown on print attached to the inventory.

The subsidence of the roadbed will be developed at time of Government Inventory.

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