

NORTHERN PACIFIC RAILWAY COMPANY

STATE OF MINNESOTA
VALUATION SECTION NO. 13
STAPLES TO MINNESOTA-NORTH DAKOTA STATE LINE
PRE-INVENTORY INFORMATION
GENERAL OUTLINE AND HISTORY OF THE WORK

This is a double track main line extending from Staples to Minnesota North Dakota State Line. The original single track was constructed by the Northern Pacific Railway Company in the year 1870-1871 to the end of track of Moorhead, January 1st, 1872.

The general work of clearing and grubbing, grading, including bridges and culverts, and tracklaying was done by the Northwestern Construction Company under their contract of June 11th, 1870, copy of which is submitted with the inventory, as is also a copy of the monthly estimate dated July 1st, 1871; the final estimate has not yet been found.

This line extends through a heavy rolling and timbered country, interspersed with lakes and open parks except at the west end, where it crosses the Red River Valley.

Much of the line was in a swampy and muskeg country, rendering the bringing in of material and construction difficult and making use of corduroy necessary.

Railway Company did a large amount of work on this single track section since its original construction, widening cuts and fills, filling sags caused by the gradual settlement of the roadbed into swamps, adding ballast, replacing temporary bridges and culverts with permanent structures, also grade revisions at several points. Quite extensive grade revision was made in 1896 at Oak Lake.

The double track on this single track line began in the year 1903 and was completed in the year 1908. The principal work being done under contracts listed as follows:

GRADING

Double track	Dower Lake to Staples,	L. J. Hill & Son.....	1903
"	"	Wadena to Dower Lake, A. Guthrie & Co.....	1906
"	"	Wadena to Lake Park, A. Guthrie & Co....	1906-1908
"	"	Lake Park to Glyndon, A. Guthrie & Co....	1906-1908
"	"	Lake Park to Glyndon, Company Forces....	1906-1908

TRACKLAYING AND SURFACING

Dower Lake to Staples	Company Forces
Wadena to Dower Lake	A. Guthrie & Co.
Wadena to Lake Park	A. Guthrie & Co.....1908
Lake Park to Glyndon.....	A. Guthrie & Co.....1908
Glyndon to Moorhead	Company Forces

In addition to the grading done by contract, as stated above between the year 1903 and June 30th, 1917 there was a great amount of work done by Company Forces between Staples and Moorhead, the most important of which was, Oak Lake Grade Revision, widening of Lake Park Station Grounds and cuts and fills between Lake Park and Hawley, and a new double track between Hawley and Glyndon, which was done entirely by Company Forces, excepting a small amount of light work between Big Cut and Stockwood Fill, and a small amount of side borrow in the Stockwood Fill.

This double track involved a great deal of extraneous work, such as temporary connecting track between Muskoda and the Big Cut in order to reach material for making Stockwood Fill and a new temporary main line from a point near Muskoda to Glyndon. Also more than five miles of temporary trestle constructed at grade for a standard gauge equipment over the Stockwood Fill.

The tracks were constructed in the months of March and April during severe cold weather, requiring frozen material to be moved at great expense, more than twelve miles of temporary track were constructed, requiring removal of approximately 75000 cubic yards of material, besides handling enormous quantities of bridge track and other material.

It was necessary to do this work during the early spring in order to take advantage of the short season during which work of this kind can be carried on in Minnesota. Many changes of channel in the Buffalo River were necessary before work on the roadbed could proceed, also drainage of lakes at Lake Park and other places. Ditching was found necessary between Lake Park and Glyndon, and change of channel near Witherow. Company was required to construct a roadway from depot at Lake Park to City Streets which was very expensive on account of the wet material handled. A double tracking and change of line made it necessary to construct new terminals at Dilworth.

In order to get the necessary water supply of good quality, a reservoir was constructed at Gantz, by excavation in the flat Red River bottom, which was wet and underlaid with quicksand, causing much trouble in keeping up shovels and loading tracks. Numerous other items are listed and included in inventory with copy of contracts and final estimates covering same.

In the construction of the line across the Stockwood Fill a big sink hole was developed, best described by Mr. McCoy, Engineer in charge, in a letter to W. L. Darling, Chief Engineer:

"Stockwood Sink Hole, first made itself visible along about the time of your trip on August the 1st, 1907, at which time the trestle had settled about two feet and the ground had risen about the same amount. Within four days after that date, or on August the 4th, the settlement of the bank was about seven feet and surrounding ground had risen about seven feet. These conditions gradually became worse until the latter part of August, when I was forced to drive a new trestle in order to be able to unload any dirt at all in

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locality. In the meantime I had been able to unload and spread material east of the sink hole and haul the surplus output to Glyndon. Shortly after the new trestle was erected we experienced the same trouble as we did with the original one, and it was only a matter of a weeks time until the new trestle entirely disappeared, having settled to the original elevation of the bank at time it was driven, and since this occurred I have endeavored to unload, spread and raise track and not depend at all upon a temporary trestle scheme, except for run-off purposes. It is interesting to note that from the time the sink hole first developed, up to November the 1st, 1907, we had unloaded at that place a total of 401,108 cubic yards more than necessary to form the original prism of embankment, and this does not include the other yardage lost which should be charged to that place for the reason that its action so congested and interfered with our unloading that the output of the shovels were diminished, and consequently they could not load as much as they could have otherwise. I estimate the approximate loss on this latter account at 500,000 cubic yards, besides the construction of a new trestle and the constant work of bridgemen to keep the old one in proper repair, also an enormous number of track forces necessary to raise track while unloading, in order to enable work to proceed. For your information, the ground is settling gradually every day, and has been since we stopped unloading dirt thereon, and I mention this fact as it may have some important bearing upon the course that you will wish to pursue towards completion of the Big Fill".

On account of this settling of the embankment it made it necessary to rearrange all forces and the output of the shovel for the year 1907 was materially reduced. During the winter reorganization of forces was made and the grade was lowered over the highest point of the fill across sink hole near Stockwood, about 20 feet, and in the spring this work was resumed to the revised grade line. Work proceeded during the year 1908 and 1909, until embankment was completed to the revised grade line, but instead of getting material from the large cut as it had been planned on the opening of the work and during its progress during the years 1906 and 1907, new borrow pits were opened near Muskoda where a better class of material could be secured, and shortening the haul about two miles, the material in the big cut being used in widening embankment between the Stockwood Fill and the Big Cut. In order to counteract the weight of the embankment a great deal of work was done by Force Account constructing a berm along embankment from material from sides and hauled in material. This acted as a counter weight and gives stability to the embankment, and is an essential and absolutely necessary part of the embankment, and as such is included in our inventory quantities.

Since completion of the main part of the work in the year 1909, Company Forces have been working continuously to date on this fill, a great amount of material has been hauled in in order to keep up embank-

ment up to revised grade line, and track forces are continually raising track on ballast, and it appears that embankment has not reached a point of stability to date.

During the construction of the new double track line from Lake Park to Glyndon, much trouble was encountered in digging out and widening cut to the town of Lake Park. This work was let by contract to A. Guthrie and Company, and their forces worked during the year 1906 excavating cut from the west end, but they encountered so much trouble in keeping up their loading tracks which required piling to be driven for same and floor made for shovel out of old stringers that after they shut down their work in the early winter of 1906 the Company relieved them of this contract and completed this excavation by Company Forces, starting the shovels at the east end and hauling materials to the new yard east of the town.

This material was wet and sticky, causing much trouble with loading tracks and keeping up of shovel and contractors had to shovel material from dump cars after same was loaded, but when it was placed in the embankment it slid very badly and it required material to be hauled in from other points in order to crown same out. A great deal of preliminary work was done on this cut draining two large lakes which lay across same, and draining one large lake covering many acres lying in close on the north side.

At Stockwood just east of our present station the Company constructed a 16 ft. roadway concrete arch placed on a pile foundation, but when the settlement of embankment began, this arch began to settle and was entirely destroyed by the end of the year 1907 and the Company was compelled by the County Commissioners to excavate a roadway through this embankment and same has been spanned by temporary pile trestle.

The ballast on this Valuation Section is composed of gravel and some cinders, all coming from points, the location of which are shown on blue print map attached to inventory.

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

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

A list of extra bills were also included. These are not intended as a complete list of all extra bills, or in any sense a partial statement of original cost, but merely enumerate some of the items of extra cost found readily available.