VALUATION SECTION MONTANA 2.

GENERAL LOCATION:

Valuation Section Montana 2 covers about 91 miles of the Chicago Milwaukee and St. Paul Railway Company's Puget Sound Extension in Montana, lying between a point about 3-3/10 miles west of Harlowton, Montana and Lombard. The line follows the Musselshell River to its headwaters, crosses the Little Belt Mountain Divide and descends to the Missouri River at Lombard, passing through Meagher, Gallatin and Broadwater Counties.

The original line was constructed by the Montana Railroad Company in two sections; that from the point near Harlowton to Summit being built in 1900 and the part between Summit and Lombard in the years 1894-95-96-97. The Montana Railroad Company entered into an agreement and lease with the Chicago Milwaukee and Puget Sound Railway Company on December 11th, 1907, in which the former Company agreed to improve the line between Harlowton and Lombard and granted trackage rights to the latter Company for a period of 99 years. On January 15th, 1910 the Montana Railroad Company deeded its entire road and property lying between Lewistown and Lombard, Montana to the Chicago Milwaukee and Puget Sound Railway Company.

SURVEYS:

The reconnoissance in September 1904 beginning at Miles City and extending west along Yellowstone and Musselshell Rivers to Harlowton, as described under Valuation Section Montana No. 1, was continued on west to Lombard along the Montana Railroad and from this report it was decided to use the Montana Railroad for train operation on this Section.

There were a number of surveys made for the revision and betterment of the Montana Railroad previous to the adoption of the line as reconstructed. The topography of the country is such that it was necessary to contour practically the whole valley from Summit west to Lombard to obtain a satisfactory location.

CHARACTER OF COUNTRY:

The Valley of the Musselshell River was fairly well developed at the time of reconstruction, and is now well settled by ranchers, and numerous irrigation ditches exist. Some grazing is done on the higher lands. After crossing the Divide near Summit

the line passes through the open country at the head of the Smith River Valley and enters the Valley of Sixteen Mile Creek near Ringling. This Valley soon narrows into a deep winding box canyon known as Sixteen Mile Canyon. The topography here presents an exceedingly rough and mountainous appearance.

CONSTRUCTED LINE:

The line as revised ascends from Harlowton with a maximum gradient of one percent to Groveland station. Here the gradient increases to two percent to attain the Divide at Summit. From the Divide the line ascends across drainage with a maximum gradient of one percent to Ringling. From Ringling the line lies in the Sixteen Mile Canyon until the Missouri River crossing is reached at Lombard. For this portion the maximum gradient is one percent and a large amount of sharp curvature is used.

CONSTRUCTION ORGANIZATION:

The revision and betterment work of the Montana Railroad was carried on under the supervision of the Chief Engineer of that line with the necessary Assistants and under the general direction of the Chicago, Milwaukee and Puget Sound Railway Company. McIntosh Bros. did the work under a general contract which covered clearing, grubbing, grading, oulvert, bridge and tunnel construction, track laying and the handling of supplies and stores. The work was sublet to the Firm of Dittmar, Breadbury & Weitbrec, who in turn relet part of the work to other contractors.

CONSTRUCTION:

During the period between 1906 and 1910 practically the entire road belonging to the Montana Railroad Company between Harlowton and Lombard was rebuilt to conform to the Chicago, Milwaukee and St. Paul standard of construction. This work was done in two sections, that between Harlowton and Moyne in 1909-10 and between Moyne and Lombard in 1906-07-08.

The grading on the revised line between Harlowton and Martinsdale was light but some heavy work occurred between Martinsdale and Lennep. From Summit to Ringling heavy work was encountered and from Ringling to Lombard the construction work was very heavy and often difficult to execute. Numerous crossings with Sixteen Mile Creek occur and several channel changes were made to avoid others. Fight tunnels varying in length from 160 to 380 feet occur between Fanalulu and Lombard, a distance of 30 miles. During this construction trains were operated on the old line of the Montana Railroad and where the old line and revised line had the same alignment or interfered, a temporary track was constructed for the operation of trains. In many cases this required the construction of temporary bridges. The canyon is very narrow and the material encountered was largely solid rock, which necessitated extra forces to protect and maintain the line under operation.

BRIDGES, TRESTLES AND CULVERTS:

The original bridges and culverts on the Montana Railroad were of light construction and these structures were all rebuilt to conform to the Chicago Milwaukee and St. Paul Railway Company's design. The culverts are principally of cast iron pipe. A number of steel bridges with masonry structures and a few concrete arch culverts were built, work being done by the Railway Company forces.

TRACK LAYING AND BALLASTING:

In connection with the reconstruction of the line, new 85 pound rail was laid in the main track and lighter material in the sidings. This work was done in 1907-08-09. 90 pound rail has since been laid in the mountainous district on the sharp curves. Fir ties from the West were used. Ballast was obtained from pits located at Two Dot, Groveland, Minden and in Mile 164. About 70,000 cubic yards of material was moved in stripping the pit near Two Dot in addition to a large amount of force account which was done in connection with this work. Ballast has been placed at various times between 1908 and 1914.

FENCES AND SNOW PROTECTION:

Right of way fences with the necessary crossing facilities have been built except at inaccessible and isolated places. All cuts into which the snow drifts badly are protected with either portable or permanent snow fences.

WATER SUPPLY:

The Montana Railroad maintained water supply stations at Two Dot, Groveland, Freeman, Summit, Spur 47, New Dorsey, Deer Park and Lombard, which have since been removed or replaced with standard structures. Permanent water stations are now maintained at Two Dot, Groveland, Bruno, Sixteen, Nathan, Cardinal, and a temporary station at Two Dot Pit.

BUILDINGS:

In connection with the revision of the Montana Railroad old depots were removed or torn down at Martinsdale, Lennep and Dorsey. Section dwellings were removed at Dorsey and old Fanalulu. At Summit and Lombard engine houses, coal derricks, etc. have been torn down. Combination freight and passenger depots are now maintained at Two Dot, Martinsdale, Lennep, Bruno, Ringling, Maudlow and Lombard. Smaller depots for train operators are maintained at the less important places, and buildings for section crews at places convenient to the work.

TELEPHONE AND TELEGRAPH:

Material for the telephone and telegraph line was distributed by work train. The line averages 35 poles per mile and carries an average of eight wires. Telephones are used for train dispatching, being installed in booths at "blind sidings" and in the depots.

ELECTRIFICATION:

This entire Section has been equipped for operation by electricity. Substations were built at Two Dot, Summit and Josephine. Power is obtained from the Montana Power Company's Plant at Great Falls, being transmitted to the substations at 100,000 volts alternating current. It is transformed and re-generated to 3,000 volts direct current for train operation.

OPERATION AND MANAGEMENT:

This Section is operated as a part of the Rocky Mountain Division, the local offices being in Three Forks, Montana. Automatic block signals are in use over the entire section.