

Great Northern Railroad Bed
(From Big Sandy to Verona)
Fort Benton Vicinity
Chouteau County
Montana

HAER No. MT-53

HAER
MONT,
8-FOBE.V,
1-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
Rocky Mountain Regional Office
National Park Service
U. S. Department of the Interior
P. O. Box 25287
Denver, Colorado 80225

HISTORIC AMERICAN ENGINEERING RECORD

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Great Northern Railroad Bed

HAER No. MT-53

Location: From Big Sandy, Montana, to Verona, Montana, in Chouteau County, Montana

UTM: A: Zone 12 558725E 5328300N
B: Zone 12 563900E 5334090N
Quad: Ihmsen Well, Montana 7.5' (1969)

Date of Construction: 1887

Builder/Designer: James J. Hill

Present Owner: Montana Department of Highways

Present Use: Abandoned. Ties and track have been removed. Ballast will be used as fill for highway reconstruction and realignment.

Significance: The St. Paul, Minneapolis and Manitoba Railway, a predecessor of the Great Northern Railway, was the third railroad to enter Montana and, in conjunction with its subsidiary, the Montana Central, affected rate competition in the transportation market from 1889 to 1896. After 1893, the Great Northern itself (not particularly this segment) provided transcontinental rail service to the northern tier, facilitating the growth and development of high plains dry-land agriculture.

Historian: Edrie Vinson
Montana Department of Highways
December 1987

I. HISTORY

This portion of the Great Northern Railway (from Big Sandy to Verona) was constructed in 1887 under the name of the St. Paul, Minneapolis and Manitoba. Built by James J. Hill, it was the third railroad to enter the Territory of Montana.

Montana became a territory in 1864, a few years after placer gold was discovered here. The major transportation route to the gold fields was by steamboat up the Missouri River from the east, and along the Mullan Military Road from Walla Walla, Washington, from the west. These routes sufficed to move people and goods into and out of the region, and facilitated the settlement of the frontier. When placer gold was exhausted, however, a major transportation source, one capable of moving heavy machinery and tons of ore, was needed to develop the quartz or hard-rock mines. The closest railhead was the Union Pacific, completed in 1869, and a wagon road from Corinne, Utah, that connected the Butte, Montana, mines to this transportation source. The first ore from Butte travelled over this road, on its way to Wales for evaluation. While the value of the ore was verified, development of the mines lagged, as Butte awaited rail transportation. It was not until late December 1881 that the Utah and Northern, a narrow gauge line, connected Montana territory to the major transcontinental road. Less than two years later, the Northern Pacific crossed Montana east-west along the Yellowstone River to Helena, over the Continental Divide and down the Clark Fork through the Bitterroot Mountains.

The Union Pacific and the Northern Pacific entered into non-competitive agreements and jointly financed a connecting spur from Butte to Garrison to exchange passengers and freight. Without competition, their rates were set high, and mining interests, in particular, believed development of mineral resources was critically hampered by the expense of transportation.

James J. Hill, president of the St. Paul, Minneapolis, and Manitoba Railway, stepped into the situation and promised Marcus Daly of the Butte Anaconda Mine fast and competitively-priced service, that would afford him the opportunity to expand his copper mining enterprise. He delivered the service, as promised.

Hill had purchased the financially-troubled St. Paul and Pacific Railroad in 1878 and incorporated it as the St. Paul, Minneapolis and Manitoba, the following year. It expanded its lines into the Red River County and into Canada, where Hill had developed a freighting clientele. He continued to build westward through Dakota territory, where, by 1886, he had reached Minot. There, he announced that he would build into Montana. Beginning in April 1887, Hill's contractor, D. C. Shepherd, built a record-breaking 550 miles of track by mid-October.

The steel stretched across the plains along the Milk River to Havre, then southwest to Great Falls. The route covered largely unsettled territory, including this Big Sandy-Verona segment. Given the fact that Hill had no land grants, government subsidy, or ready market, it could not be expected to be profitable. Through secret agreement with Colonel C. A. Broadwater, however, the revenue would be sufficient to finance the construction of this line all the way to Seattle by 1893.

The Union Pacific connection to Butte had cut into the lucrative business of the Diamond R freighting business. Colonel Broadwater, one of the Diamond R's owners and an old-time friend of Hill, agreed to incorporate and build the Montana Central from Butte to Great Falls. Hill, who financed the venture, would lease the road, access the Butte mine, and offer reduced rates to cut into the business of the Union Pacific and Northern Pacific. Broadwater's rail ran from Helena to Great Falls and linked with the Manitoba in November 1887, but the Butte connection was not complete until 1889. When that line was finally finished, it had an immediate effect on the rail rate structure. In response, the Northern Pacific dropped its fee by one-third, but psychological advantage belonged to Hill and his St Paul, Minneapolis and Manitoba Railroad.

Hill's route was an easy one, building across high plains with few drainages that could be bridged quickly. He had a large work force of 6,600 men and 300 teams that worked with relatively unsophisticated equipment. The portion just south of the Big Sandy [Teton drainage and some of that route] was out and had to be realigned in 1900 (Verona was more difficult, crossing the Marias). Broadwater's relatively short construction south of Great Falls, and along the Continental Divide, however, were most difficult. He had to blast his way inch by inch, and take constant readings to maintain grade. He had to bore tunnels in the Prickly Pear and Missouri canyons, north of Helena, as well as along Bison Creek north of Butte. The materials and heavy equipment, the expertise of the construction crew, the time required, and the cost, all mounted, making this short distance a hefty accomplishment.

The immediate impact of the new line was reduced freight rates, which stimulated Montana's fledgling industrial economy. The long-term advantage, however, was Hill's, not the rate-payers. Greatly-reduced revenue seriously taxed the Northern Pacific and, in 1895-1896, Hill and his banker friend, J. P. Morgan, purchased controlling interests and reorganized it under their own management.

Hill's acquisition of the Northern Pacific was a major coup for him, and it established a pattern of how he would deal with competitors. He had to dominate even the small, relatively insignificant lines. One such rival, the Great Falls and Canada, was in direct competition of the

Great Falls-Havre segment. Built in 1890 from Great Falls to Sweetgrass, it continued as the Alberta Railroad and Coal Company to Lethbridge on narrow gauge rails. The Montana portion continually fell into difficulty with laws and regulations, perhaps enforced, with a vengeance inspired by Hill. Urgency to deal with the situation occurred in 1901, when it appeared that the Canadian Pacific would lease the Lethbridge-Great Falls line, and become a major transcontinental competition from the city Hill helped create. Just as with the Northern Pacific, a buy-out in a period of financial weakness was his answer. The Montana and Great Northern, a subsidiary of Hill's Great Northern, bought the Montana portion for only \$750,000.

In 1894, the Chicago, Burlington and Quincy built its tracks into Billings, then later southward to connect to Denver. Hill and Morgan wanted this road's connection to Chicago and, in 1901, they purchased controlling interest literally out from under E. H. Harriman and his Pacific trust. So it was, with the Burlington, the Northern Pacific, and the Manitoba (renamed the Great Northern in 1890), Hill and Morgan formally merged the three into the Northern Securities Company, capitalized at \$400,000,000, and gained a firm control of all northwest rail transportation. Although the Supreme Court determined that the Northern Securities Company violated the Sherman Anti-Trust Act, and disbanded it in 1904, the breakup had little effect, as Hill and Morgan continued to control each of the three railroads separately.

Hill continued to control rails and rates in Montana until 1909, when the Chicago, Milwaukee, St. Paul and Pacific completed its line between the Great Northern and the Northern Pacific, accessing the agricultural heartland that was experiencing rapid homestead development. But the road staggered under massive construction debts and fierce competition from Hill-controlled lines and finally, in 1923, it fell into receivership. It never seriously interfered with Hill's railroad empire. In 1970, four railways--the Great Northern, the Northern Pacific, the Chicago, Burlington and Quincy, and the Spokane, Portland and Seattle--merged to form the Burlington Northern, officially creating the rail monopoly Hill set out to hold.

The Havre-Great Falls line and the Montana Central's Great Falls-Butte line played a short but important role in Montana's rail history, as it gave Hill the advantage that enabled him to build on to Seattle, linking the northern sections of the tier states to world markets. However, other than serving local traffic, after 1896 when Hill controlled the Northern Pacific, traffic was no longer diverted north over it, and the east-west lines have since been the most important carrier routes. The Butte-Basin segment became redundant after the Burlington Northern merger in 1970. The Butte-Basin line was abandoned in 1972, and the Montana City-Basin line was never repaired after flood waters destroyed

sections of the track in 1981. The Big Sandy-Verona stretch is part of a segment abandoned and the tracks removed in 1983, due to gumbo soil slippage failure north of Fort Benton.

One of the most significant effects of the Great Northern (not just this segment) is that it opened the high plains for agricultural development and promoted settlement to establish customers for its services. Along the rails, new communities developed (including Big Sandy) and, in particular, Great Falls. This city, platted in 1884 by Hill and his long-time friend, Paris Gibson, was created to serve the railroad and its natural water power was harnessed to provide the energy for an industrial city. As Great Falls developed, Fort Benton declined. Fort Benton's significance as the terminus of steamboat navigation and hub of a freighting network began to elip as early as 1869, when the Corinne Road linked the territory to the Union Pacific, and it diminished greatly when the Canadian Pacific Railroad cut out all of its northwest trade. Still further reduced by the Northern Pacific in 1883, this community was bypassed to the west by the St. Paul, Minneapolis and Manitoba in 1887, removing any competitive edge it could have retained of its former transportation empire.

Fort Benton found its lasting place as an agricultural community, a position it shares with other little towns that developed along the Great Falls-Havre, the Great Falls-Sweetgrase, and the Great Northern linee, locally known as the "Golden Triangle." The name derives not from the gold that made Fort Benton famous, but from the golden fields of grain opened up for settlement by rails.

Big Sandy also remains as an agricultural-commercial community. While Verona, which was a platted townsite, lost its last structure, a grain elevator, in 1968. The spur was removed by Burlington Northern in 1972.

II. CONSTRUCTION TECHNIQUES

Conetruction of the St. Paul, Minneapolis and Manitoba Railway was a masterpiece of efficiency and speed. The conetruction work itself was observed by a River Press reporter, who described it thie way (September 28, 1887):

"We met teams loaded with round pile timbers of different lengthe as would be required at the front. Next came wagon of stringers and other bridge timbers. Those teams are always kept traveling from the construction trains, and usually deliver their loade from five to twelve miles in advance of the iron.

All along the grade at different points we saw pile drivers at on different small bridges and culverte. Within a couple miles from the end of the track, we came upon teams delivering ties on

the road bed. This business is so managed that the exact number of ties required are dropped just where they are needed, within easy reach of the men who are required to put them in the proper position. These teams seldom get more than one to three miles ahead of the iron, but they are always able to keep their work up.

The first gang of laborers we encountered consisted of twelve men laying ties in position and two men whose sole duty it was to stretch a small rope by which the ties were placed in a straight line.

The next gang was the advance track layers with "trollies," small cars hauled by two horses each. The trollies hold 40 rails of thirty feet each, capable of laying 600 feet of track--nine loads being sufficient to lay over a mile of track. The horses that haul the trollies generally come to the front at a fast walk, trot or gallop, as occasion required. They travel each side of the road bed between the ties and the edge of the road grade. They pull the trollies by a single rope with a hook in the end, which is attached or detached in a second by two iron handlers belonging to the iron gang who sit on the front of the car for that purpose.

The iron handlers gang consists of 24 men who load and unload the trollies, of which there are seven in all. The iron is brought as near to the front of the regular train as the iron can come, where it is tumbled off right at the edge of the track in piles of convenient size. The train then backs out and the trollies are brought into position. The rails weigh 600 pounds each. Eighteen men stand in line, pick up a rail and toss it on the trolley: in a few moments the required forty rails are loaded. The horses, each ridden by a boy, are hooked on and away it goes to the very end of the last laid rail. Here ten men, five on each side, push the rail forward over iron rollers set in the side of the trollies for that purpose, and the rail on each side drops into its proper position. Gaugers standing at each end place their gauges on the rails. They are adjusted to the exact proper position and the trolley moves forward, two more rails are dropped and adjusted, again it moves forward until it is empty. When it is raised up off the track and left resting on its side to make room for the next trolley.

In the meantime, twelve strappers have been placing angle bars and bolting the ends of the rails together, leaving just enough space between the ends of the rails to provide for expansion, which may be caused by summer heat.

Thirty-two "spike drivers" follow the strappers, accompanied by 16 nippers and 4 spike peddlers. The peddlers drop the spike at the end of the ties. The nippers are provided with steel crow bars, to which is attached a wooden fulcrum, and with this tool raise the top of the tie snug up against the bottom of the rail, while the spikes are being driven. This force of peddlers, strappers and spike drivers can keep right up with the forward trolley. Where the ends of the rails join is called a joint and here an extra tie is provided so that the end of each rail rest snugly together at the joint. The ends of the rails have been securely bolted together with angle bars, which fit the angle at the bottom of the rails, are with the rails spiked securely to the two ties. This makes a strong secure joint.

This completes the work of the advance track layers, except probably to straighten up the track a little should it be out of true line. This very seldom happens and it is easily done by means of crow bars. To do the work of placing ties, hauling iron and laying rails requires 96 men exclusive of the foreman of each gang. All of this force is under the charge of one foreman, J. H. Hansen, who had charge of the same work on the Canadian Pacific and who has had more experience in this line than any other man in the work, having been with D. Grant & Co., in executing all of their great contracts.

The bridge builders are always in the advance of the track layers and of course follow the pile drivers. The gang numbers from 70 to 90 men. Some idea of the rapidity of their work may be seen from what they did on the Marias Bridge. The bridge with its approaches was 720 feet long. After the tops of the piles were sawed off, which required but a short time, they completed the bridge ready for the rails in one hour and forty five minutes.

The trains at the extreme front:

The head train consists of sixteen cars, four of these are dining and lodging cars, which may be called three stories high, in the middle is the cook house car, with two of the lodging and dining cars on each side of it. The upper stories of the dining and cook cars contain double racks of berths, upper and lower, where the men sleep. At the extreme front, ahead of the dining cars, is Donald Grant's own car, which is used for office and other purposes for himself and his clerks and other officials, as well as the physicians who look after the health of the men and attend them in case of accidents. It contains also the post office, drug store and a small supply store. Back of the rear dining car is a car devoted to the uses of a blacksmith and carpenter shop. Behind this car is the supply car which contains the provisions, followed by the flat cars for hauling

the steel rails, spikes and angle bars. Behind the flat cars is the locomotive, which propels the train, it being entirely in the rear. As fast as the flat cars of rails and other supplies are unloaded, they are backed out and sent to a siding in the rear. Here loaded cars are substituted so that the train is always kept about the same size. The total length of the train was about 1/6 of a mile.

The second train is the timber and steel train. It moves twice a day, noon and night, back to what is termed the "front yard," leaves its empty cars, picks up loaded ones and brings them to the front. The number cars handled each half day averages from 25 to 40 or from 50 to 80 cars a day, according to the character of the work. A full day's work at the front consumes 24 cars of steel rails, 52 cars of ties and four cars of timbers, poles and other telegraph supplies. The "front yard" is a series of side tracks and the place where the trains for the extreme front are made up. Through trains from Minot keep the front yard always supplied with train loads of materials of all kinds. The trains are loaded at Minot in such a manner that they do not have to be unloaded at the front yard, but are simply held there loaded until needed at the front. The front yard is advanced from time to time, as the track advances. It is seldom closer than 10 miles from the front and may be at times 35 miles in the rear. The first siding back from the end of the track is also used to hold loaded cars of material for the front.

In order to regulate the movements of all trains, the Western Union Telegraph Lines has strung two wires. One wire being used for commercial business and the other exclusively for railroad work. The wires move forward with the end of track and the operator improvises an office, using a large box for a table for his telegraph key. At night the telegraph office is always at the end of track.

The Surfacers

From twenty to fifty miles back from the end of tracks there is gang of five hundred surfacers under charge of Samuel Grant, Mr. Donald Grant's son. This gang is engaged in thoroughly leveling up and straightening the track. Earth is taken from the side of the grade and thrown between the ties to hold them firmly in place, after they have been adjusted and tamped. This gang makes about the same number of miles per day as the tracklayers, averaging about five miles in good weather. After its work is done, the completed road is ready to receive ballast and is turned over to the care of the company section men."

TEXT FOR A HIGHWAY MARKER NEAR LOMA

The railroad grade you see before you was the St. Paul, Minneapolis and Manitoba Railway, a precursor of the Great Northern Railway. James J. Hill, owner and builder, constructed this line in record time in 1887 to serve wealthy mining communities. There he offered more competitive freight rates to take business away from the Northern Pacific and Union Pacific transcontinental railroads.

As railroads competed for ascendancy, Montana's cities vied for transportation facilities. Fort Benton, had prospered as the head of the steamboat navigation and the hub of freight and stage lines to settlements in Montana, Idaho and Canada. As railroads replaced steamboats as carriers, this line by-passed Fort Benton, ending its economic importance in transportation. This line went directly to Great Falls, enabling that city to grow as an industrial and rail center.

III. SOURCES OF INFORMATION

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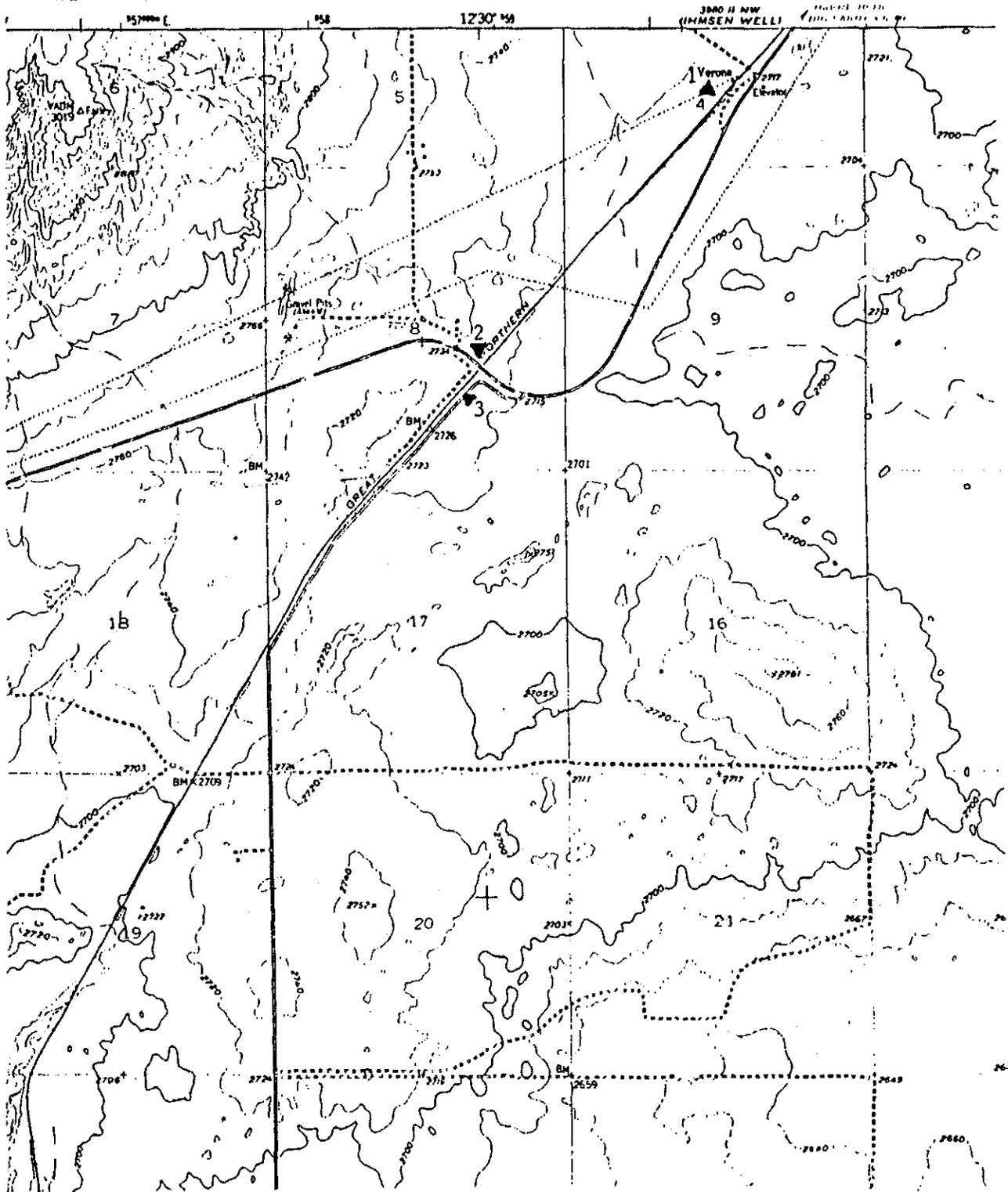
D. Interviews:

Joel Overholser, Fort Benton, November 25, 1987.

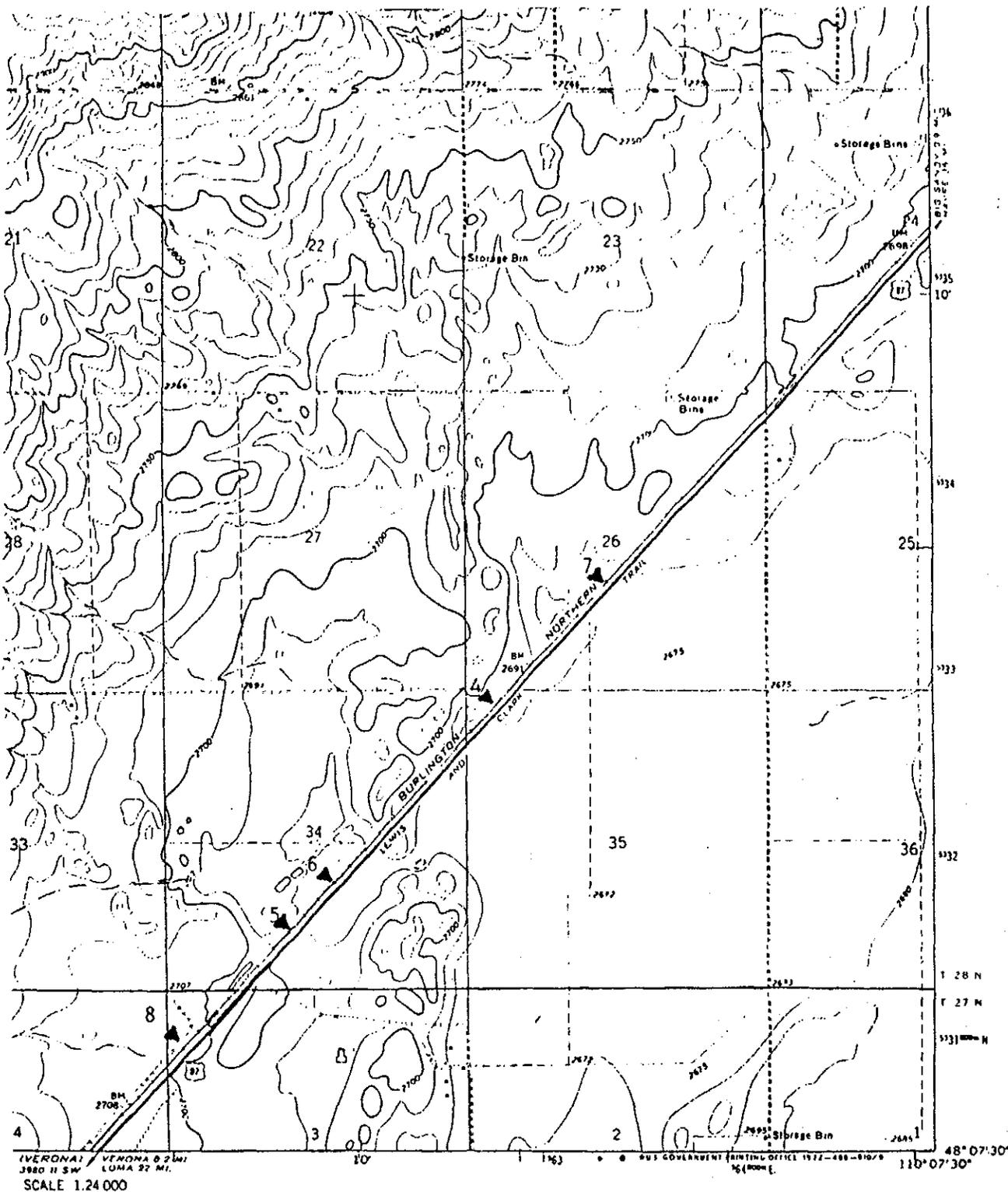
Jack Lepley, Fort Benton, November 24, 1987.

Henry Pope, Loma, November 27, 1987.

Art Jacobsen, Helena, December 4, 1987.



Verona, Mont.
7.5' (1953)



Ihmsen Well, Mont.
7.5' (1969)

