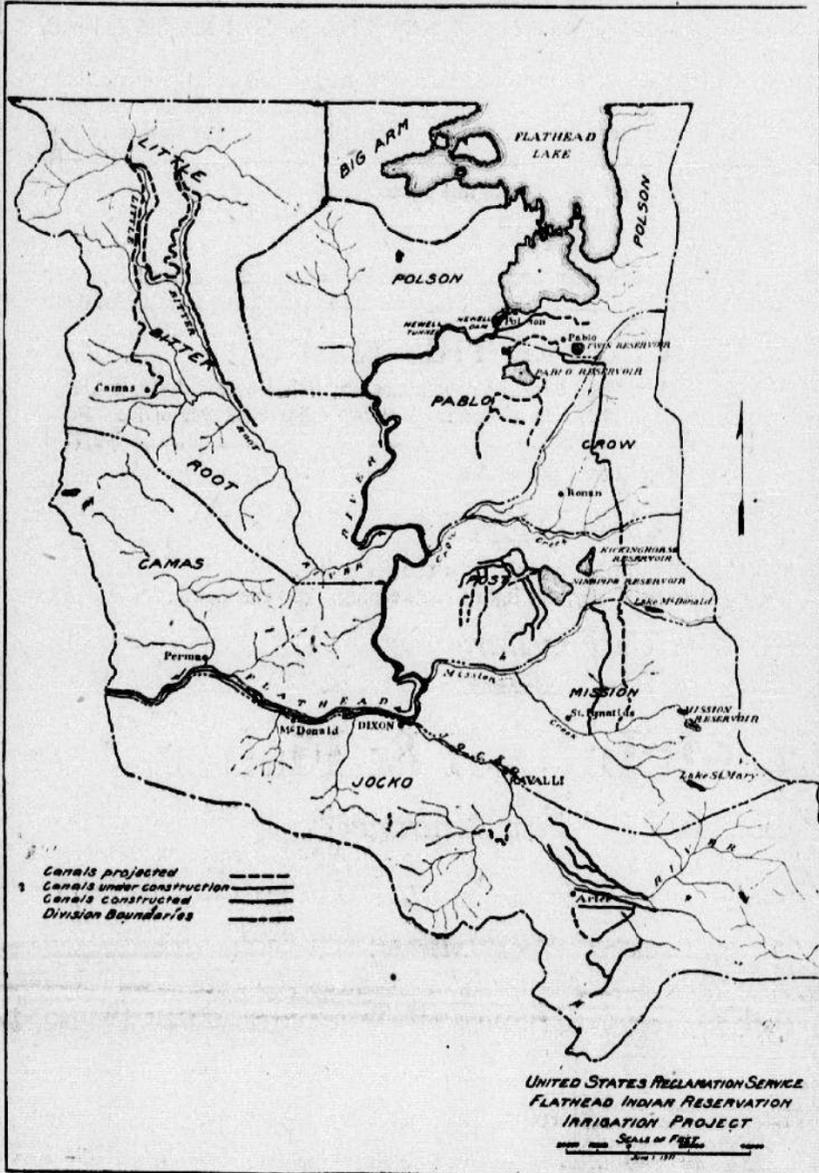
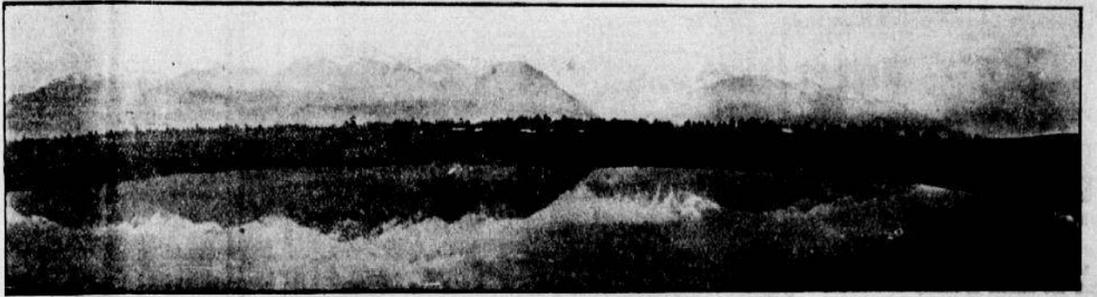


MISSOULA, MONTANA, SUNDAY MORNING, JUNE 11, 1911.

EXTENT OF GREAT FLATHEAD IRRIGATION PROJECT NOT THOROUGHLY UNDERSTOOD OR APPRECIATED



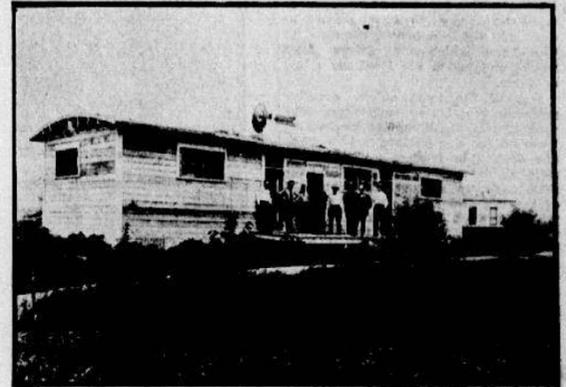
Map of former Flathead reservation showing boundaries of the several units of the irrigation project, canals completed, canals under construction, canals projected and the principal storage reservoirs. The canals shown are only the main gathering, feeder and distributing ditches, it being impossible to show the network of laterals on a map of this scale.



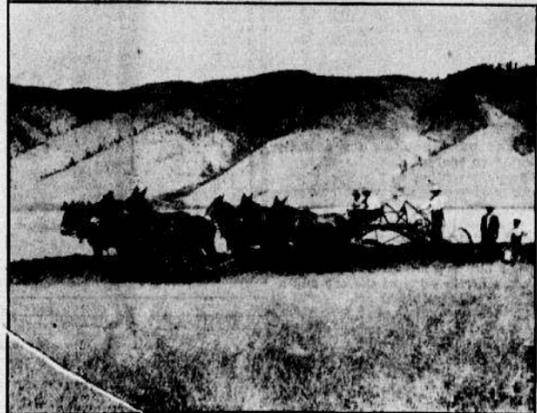
THE MISSION RANGE AND A NATURAL RESERVOIR SITE



CONSTRUCTING HEADQUARTERS AT FLATHEAD



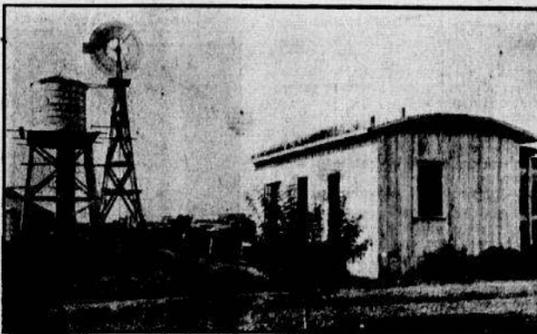
PROJECT ENGINEER'S HEADQUARTERS AT ST. IGNATIUS



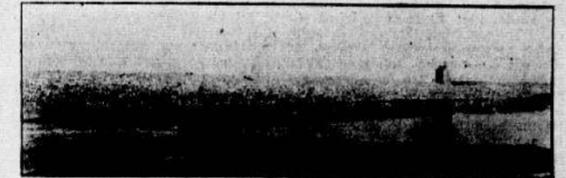
MAKING CANALS THROUGH THE GRAIN FIELDS



MISSION STORAGE RESERVOIR SITE



EVERY PERMANENT CAMP HAS WATERWORKS



NINE PIPE STORAGE RESERVOIR DAM AND GATES

Chapter I. "Stranger, I'm tellin' you that this is the limit. We're gettin' some rain now, but if she turns hot we can't save these crops in no fashion. We're sure gettin' the worst of it on this irrigation business. Them engineers have been foolin' 'round out here for two or three years, drawin' maps an' all such rot, when they ought to be diggin' ditches. This land could all be under water this minute, but there ain't nothin' doin' yet. Then when they do get you some water they want to hold you up for it. A poor man has no show at all any more. I'm clean disgusted with the whole layout."

Chapter II. "How do you do, young man? That gate opens on the other side—there. Pretty warm isn't it. Have a drink of this well water; it's nice and cool. Yes, things are looking pretty good and this rainy weather has given our grain such a start that there is not much chance of a failure now, even if it does get dry and hot later in the season. No, we won't get any water from the irrigation system this year. We didn't expect it and had no right to, for Judge Witten, who had charge of the opening of the reservation, made it very plain to prospective homesteaders that there was no date set when these claims could be supplied. We've got to adopt dry land methods just as though there was no water in prospect and if we do that we can get along for a year or two more all right. But say, when that irrigation system is completed we will be O. K. I took a ride up over the line of the big canal at the foot of the mountains yonder last Sunday and I saw things that opened my eyes. Those engineers have laid out a great scheme. I never knew just what it was before, but I asked a few questions and had a good look at what's goin' on, and take it from me, when the whole thing is done this country is assured of water for irrigation forever, season after season, without fail. I've been here six months and never got out to look over the work before, so I had no idea of just what those engineers were doing. I bet there is nine out of ten settlers who don't know any more than I did. They have all been pretty busy, I know, but it will pay any of them to take a Sunday off and see the same as I have done. My trip was worth a lot, and I am more than satisfied with this beautiful country, and know that its future is assured."

variance with the other, although concerning the same question, is significant when considering the conditions at work in the making of a great agricultural country from the former barren Flathead Indian reservation. The statements and the type of men who made them must be analyzed carefully before the deduction can be applied to the opening of the reservation and the development of its arable and irrigable land. It is the statement of those familiar with the history of the opening of Indian lands in the United States that there are always two distinct types represented by the early settlers. The first is the bona fide homesteader, the man who files on the land, pays his fees, builds him a house and settles down on his place to live up to the requirements of the law and to establish a permanent home for himself and his family. The first few years in any new country are usually ones of hard work and little pay. But the settler of this type expects this, is not discouraged, does not kick, keeps working and adding to his improvements and developments, becoming a factor for wealth and good in the community. The second type of settler is the renter who comes into the place with ideas and plans altogether different. His aims are speculative rather than industrial. He rents all the land he can handle as cheaply as possible, builds only such improvements as are absolutely imperative for his convenience during his short sojourn; works the land to its fullest capacity during his term of temporary proprietorship and then "hikes" to some other field of activity. He is usually a kicker against the conditions that existed before he invited himself to come into the community and of which he should have been fully advised, stirs up a spirit of dissatisfaction among his neighbors and rarely stands for anything good or offers assistance to any community movement for advancement. He goes, leaving the land he worked robbed of much of its richness, run down at the corners, and an unsightly tumble-down shack and a dirty, hay-roofed barn as a monument.

"cousin" their luck and the country in which they can see no opportunity or nothing good.

Problem for Government. But the government has found the two types mentioned so distinct in handling Indian lands that it has been a problem much considered. When the regulations governing the Flathead opening were worked out much careful attention was given the problem of the renter. As a safeguard, both for the Indians and the community, renters on the Flathead are required to enter into a contract, which becomes a part of their leases, to construct certain substantial improvements, a part of the value of which is allowed to apply on the rental of the land. In this way a better class of early settlers has been secured and the results are already manifest to those who have been watching the development of the rented farms, of which there are a great number, on the recently-opened reserve.

However, some of general type have slipped in and it was such a one who is quoted in "chapter" one, above. Comparatively, this man had a much better piece of ground and better crop prospects than the homesteader quoted in "chapter" two, but his was a different spirit. The men quoted were only two of several interviewed by the writer who recently made a trip across the lower section of the Flathead country, but the sentiment expressed was typical. First, it shows that there are some kickers among the new settlers who are, in a sense, malicious. Second, it lays bare the fact that a great many are not fully advised as to the plans and even the work already accomplished in the way of irrigation upon which the whole territory will eventually depend. This last seems more important. If more would, like the optimistic homesteader, take a day off, swing into the saddle and get over the ground, talk with the engineers and learn just what is being planned and how far the work is progressing, still better satisfied would they become. It is to assist in a better understanding of the big Flathead irrigation project that this article is undertaken.

First Plan. When Senator Dixon first took up the matter of opening the Flathead reservation to settlement he was confronted with the problem of caring for the Indian wards of the government. Arrangements were made to give each member of the tribe an allotment of land, but to make those lands capable of supporting the red

men necessitated some scheme of irrigation. To water the Indian lands along the water thought and intention. It was then that Mr. Dixon called upon the reclamation service to make an investigation and a preliminary survey to see just what could be done and what would be the approximate cost. Engineer H. N. Savage, in charge of the division of the northwest, was asked to make this examination and he sent engineers into the territory to make a preliminary survey after himself having made a personal inspection of the territory.

Greater Possibilities. With the results of this survey before him, Engineer Savage saw unfolded the possibilities of a great irrigation scheme that, when completed, would not only be capable of watering the Indian's land, but which could be made to cover the greater portion of that to be settled upon by the white man in the lower half of the reserve. It was evident that the flowing streams could be directly diverted in the ordinary manner to the most of the Indian lands by the construction of head gates and canals leading therefrom, but it was also discovered that, could a plan be devised for storing the whole drainage of the Mission range, enough water could be saved from these same streams to regularly water at least 150,000 acres each season. The cost of the larger plan was considerable, but the difference between it and the cost of the work necessary to irrigate the Indian lands alone was comparatively very small and the benefits correspondingly large.

Savage Reports. Engineer Savage reported his findings with the recommendation that steps be taken to enlarge the project first proposed. His judgment was, as usual, considered good and he was in-

structed to proceed with more preliminary work to see just what could be done. This called to the Flathead a small organization of engineers who went to work in earnest. The first feature that was worked out was that at the Newell power tunnel and power site on the Flathead river about six miles from the outlet of the Flathead lake. Here it was found that power for a great pumping station could be harnessed with comparative ease that could be used in lifting water from the stream into a natural storage reservoir up on the high lands from where 40,000 acres or more could be irrigated. It was also learned that a high-line canal traversing the base of the Mission mountains for a distance of nearly 30 miles could be directed into this same reservoir, feeding it with the waste from all along the line and filling it during the seasons when the water was not being used by the farmers. From this big gathering canal it was also possible to feed other reservoirs, the natural sites for which were found scattered along at frequent intervals on the plains miles from the mountains where the building of simple earth dams and headgates was capable of storing and distributing large quantities of water. Several other natural reservoir sites were found back in the mountains.

The main gathering canal for these reservoirs terminates at Post creek, the outlet of Lake McDonald, but it will be joined here by another which hugs the mountains close and gets its principal supply from a reservoir to be constructed at the mouth of Mission creek. This canal will in turn be connected with one taken out at the head of the Jocko river, where later another reservoir will be constructed, and the Jocko canal will be joined by still another which gathers the water of each little stream as far south as Elvaco, situated at the southern boundary of the reservation. Thus it can

be seen that for a distance of nearly 60 miles this thread of high-line canals extends along the base of the mountains, high enough to cover every quarter section of arable land and so arranged that every drop of water from the numerous streams fed by the eternal snows of the Mission range can be captured and then diverted at will wherever it is most needed. Such an arrangement makes the Flathead project one of the most complete in the world and will allow a supply of water to be conserved that will never fail, no matter how dry the season. Its apparent complexity is only exceeded by its simplicity when the plan is once understood.

Artificial Reservoirs. The extensive system of artificial reservoirs embraced in the project can best be understood when considered from the standpoint of numbers in a stated area. Within a strip of 30 miles long by 15 wide there are to be in all 10 storage basins connected with the canal system. Two of these, little Lake McDonald and Lake St. Mary, will require but a slight amount of work, comparatively speaking, before they can be gotten under control. Besides these, however, there are eight that will demand more attention. In the northern, or Polson, division the reservoir sites have been selected and named and are Polson, Pablo, and Twin, all in the vicinity of Polson. About through the center of the area to be watered will be the Lower Crow Creek, Nine Pipe and Kicking Horse reservoirs, these being situated around Ronan. Then come Mission and McDonald sites, near St. Ignatius.

The largest and what will be the most important storage is the Pablo site, which occupies 3,000 acres and will retain enough water to irrigate 40,000 acres. This will perhaps be the last completed reservoir in the whole project, for with all of its immense size it will be the least needed for a time and will always serve more as a thing of emergency than regular necessity. It has been learned through careful measurements which have been taken by government men during the past few years that the water supply from the Mission range will, in normal years, be sufficient to irrigate the whole 150,000 acres of irrigable land to

be directly applied with but the aid of the smaller storage ponds. However, a couple of dry years in succession will cause the supply to run short and it will be then that the Pablo reservoir, with its gathering and feeder canals running in from both Post creek and the north fork of Crow creek, and further augmented by the supply from the Polson pumping station, will be needed and can be put to its best use. The Pablo reservoir will absolutely make a constant supply of water certain for the whole of the irrigable portion of the Flathead reservation. The Nine Pipe and Kicking Horse reservoirs will be filled by gathering and feeder canals which will take their supply from Post creek, near the base of the Mission mountains.

Work Begins. This was the general scheme of the project, together with a separate, but no less important plan for a secondary system on the west side of the reservation where the water supply will come from the Little Bitter Root river, that was finally submitted by engineers, accepted by the Indian service and finally ordered to be commenced. That was only about three years ago. There were no funds available to start work on a big scale and only small appropriations of a few thousand dollars at a time were advanced. Work could only be started on the small canals taken direct from the streams by which some of the lower valleys could be reached, the small laterals to later become a part of the big system. In this manner more than 12,000 acres of Indian land was under water last season. This work was gradually extended, the effort of the engineers always being to cover the most land with the least initial expense and to do no work that would not finally fit into the final completed system. It was not until February, this year, that the first appropriation of any proportion was made by the government for the Flathead project. After the board of army engineers had been dispatched to make an investigation and had made a glowing report of the scheme and the work already accomplished, congress gave \$400,000 to the work, a portion becoming imme-