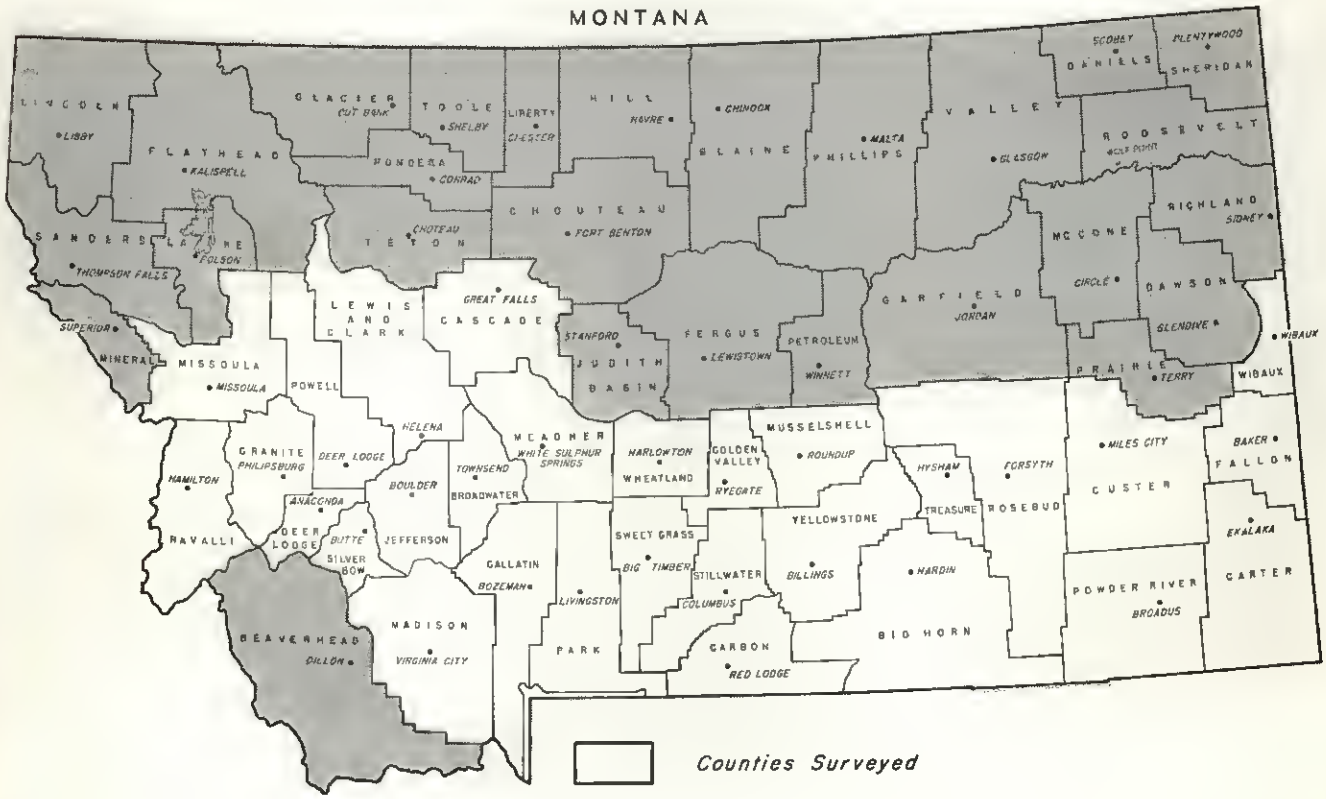
WATER RESOURCES SURVEY

POWDER RIVER COUNTY MONTANA

Part I

History of Land and Water Use on Irrigated Areas



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MONTANA STATE AGRICULTURAL EXPERIMENT STATION

O. W. Monson, Irrigation Engineer and Consultant, Bozeman

June, 1961

Honorable Donald G. Nutter
Governor of Montana
Capitol Building
Helena, Montana

Dear Governor Nutter:

Submitted herewith is a consolidated report on the Water Resources Survey of Powder River County, Montana.

This work was accomplished with funds made available to the State Engineer by the 36th Legislative Session, 1959, and in co-operation with the State Water Conservation Board and the Montana State Agricultural Experiment Station.

The report is divided into two parts. Part I consists of history of land and water use, irrigated lands, water rights, etc., and Part II contains the township maps in the County showing in colors the lands irrigated from each source or canal system.

Work has been completed and reports are now available for the following counties: Big Horn, Broadwater, Carbon, Carter, Cascade, Custer, Deer Lodge, Fallon, Gallatin, Golden Valley, Granite, Jefferson, Lewis and Clark, Madison, Meagher, Missoula, Musselshell, Park, **Powder River,** Powell, Ravalli, Rosebud, Silver Bow, Stillwater, Sweet Grass, Treasure, Wibaux, Wheatland and Yellowstone.

The office files contain minute descriptions and details of each individual water right and land use, which are too voluminous to be included herein. These office files are available for inspection to those who are interested.

The historical data on water rights contained in this report can never become obsolete. If new information is added from time to time as new developments occur, the records can always be kept current and up-to-date.

Respectfully submitted,

FRED E. BUCK, State Engineer

ACKNOWLEDGMENTS

A survey and study of water resources involves many phases of both field and office work in order to gather the necessary data to make the information complete and comprehensive. Appreciation of the splendid co-operation of various agencies and individuals who gave their time and assistance in aiding us in gathering the data for the preparation of this report is hereby acknowledged.

County Officials

William Eaton, Commissioner — Delbert Hanson, Commissioner

F. F. Huckins, Commissioner

Mrs. E. B. McLain, Clerk of the District Court

Mrs. Charlotte Edwards, Clerk and Recorder

Lawrence Thompson, Assessor

Robert G. Dunbar — Professor of History, Montana State College

M. G. Burlingame — Department Head of History, Montana State College

John W. Jeakins — County Extension Agent

R. A. Dightman — State Climatologist, U. S. Dept. of Commerce, Weather Bureau

David R. Cawlfield — State Soil Scientist, U. S. Dept. of Agriculture, S.C.S.

Frank Stermitz — District Engineer, U. S. Geological Survey

S. L. Groff — Head, Ground-Water and Fuels Branches, Bureau of Mines and Geology, Montana School of Mines

Raymond M. Jensen — Work Unit Conservationist, U. S. Dept. of Agriculture, S.C.S.

Walter J. Everin — Director, State Fish and Game Department

Charles L. Tebbe — Regional Forester, U. S. Dept. of Agriculture, Forest Service

The State Engineer's Office, Water Resources Survey, hereby expresses sincere appreciation to the many ranchers, farmers and stockmen who have given their helpful co-operation in this survey.

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FOREWORD

MONTANA'S WATER RIGHT PROBLEMS

Our concern over surface water rights in Montana is nearly a century old. When the first Territorial Legislature, meeting in Bannack, adopted the common law of England on January 11, 1865, the Territory's legal profession assumed that it had adopted the Doctrine of Riparian Rights. This doctrine had evolved in England and in eastern United States where the annual rainfall is generally more than twenty inches. It gave the owners of land bordering a stream the right to have that stream flow past their land undiminished in quantity and unaltered in quality and to use it for household and livestock purposes. Since the law restricted the use of the water to riparian owners and forbade them to reduce appreciably the stream flow, the early miners and ranchers in Montana favored the Doctrine of Prior Appropriation which permitted diversion and diminution of the streams. Consequently, the next day the legislature enacted a law which permitted diversion by both riparian and non-riparian owners. Whether or not this action provided Montana with one or two definitions of water rights was not settled until 1921 when the Montana Supreme Court in the Mettler vs. Ames Realty Co. case declared the Doctrine of Prior Appropriation to be the valid Montana water right law. "Our conclusion," it said, "is that the common law doctrine of riparian rights has never prevailed in Montana since the enactment of the Bannack Statutes in 1865 and that it is unsuited to the conditions here . . . "

The appropriation right which originated in California was used by the forty-niners to divert water from the streams to placer mine gold. They applied to the water the same rules that they applied to their mining claims—first in time, first in right and limitaton of the right by heneficial use. Those who came to the Montana gulches brought with them these rules, applying them to agriculture as well as to mining.

The main points of consideration under the Doctrine of Prior Appropriations are:

1. The use of water may be acquired by both riparian and non-riparian landowners.

2. It allows diversion of water regardless of the reduction of the water supply in the stream.

3. The value of the right is determined by the priority of the appropriation; i. e., first in time is first in right.

4. The right is limited to the use of the water. Stream waters in Montana are the property of the State and the appropriator acquires only a right to their use. Moreover, this use must be beneficial.

5. A right to the use of water is considered property only in the sense that it can be bought or sold; its owner may not be deprived of it except by due process of law.

The State Legislature has provided methods for the acquisition, determination of priority and administration of the right. No right may be acquired on a stream without diversion of water and its application to a beneficial use. On unadjudicated streams, the Statutes stipulate that the diversion must be preceded by posting a notice at a point of intended diversion and by filing a copy of it within 20 days in the County Clerk's office of the county in which the appropriation is being made. Construction of the means of diversion must begin within 40 days of the posting and continue with reasonable diligence to completion. However, the Montana Supreme Court has ruled that an appropriator who fails to comply

with the Statutes may still acquire a right merely by digging a ditch and putting the water to beneficial use.

To obtain a water right on an adjudicated stream, one must petition the District Court having jurisdiction over that stream for permission to make an appropriation. If the other appropriators do not object, the court gives its consent and issues a supplementary decree granting the right subject to the rights of the prior appropriators.

Inasmuch as the Montana laws do not require water users to file official records of the completion of their appropriations, it becomes advisable as soon as the demand for the waters of a stream becomes greater than its supply, to determine the rights and priorities of each user by means of an adjudication or water right suit. This action may be initiated by one or more of the appropriators who may make all the other claimants parties to the suit. Thereupon the Judge of the District Court examines the claims of all the claimants and issues a decree establishing priority of the right of each water user and the amount of water he is entitled to use. The court decree becomes in effect the deed of the appropriator to his water right.

Whenever scarcity of water in an adjudicated stream requires an allocation of the supply according to the priority of rights, the Judge, upon petition of the owners of at least 15 per cent of the water rights affected, must appoint a water commissioner to distribute the water. After the Commissioner has been appointed the Judge gives him full instructions on how the water is to be apportioned and distributed in accordance with the terms of the decree.

The recordings of appropriations in local courthouses provides an incomplete record of the water rights on unadjudicated streams. In fact, the county records often bear little relation to the existing situation. Since the law places no restriction on the number or extent of the filings which may be made on an unadjudicated stream, the total amount of water claimed is frequently many times the available flow. There are numerous examples of streams becoming over appropriated. Once, six appropriators each claimed all of the water in Lyman Creek near Bozeman. Before the adjudication of claims to the waters of Prickly Pear Creek, 68 parties claimed thirty times its average flow of about 50 cfs. Today, the Big Hole River with an average flow of about 1,100 cfs has filings totaling 173,912 cfs. A person is unable to distinguish in the county courthouses the perfected rights from the unperfected ones since the law requires no official recordation of the completion of an appropriation. Recognition by the courts of unrecorded appropriations adds to the incompleteness of these records. To further complicate the situation, appropriators have used different names for the same stream in their filings. In Montana many of the streams flow through several counties; consequently, water right filings on these inter-county streams are found distributed in two or more county courthouses. Anyone desirous of determining appropriations on a certain river or creek finds it difficult and expensive to examine records in several places. In addition, the records are sometimes scattered because the original nine counties of 1865 have now increased to 56. As the original counties have been divided and sub-divided, the water right filings have frequently not been transcribed from the records of one county to the other. Thus, a record of an early appropriation in what is at present Powell County may be found in the courthouse of the original Deer Lodge County.

It can be readily seen that this system of recording offers little protection to rights in the use of water until they are determined by an adjudication. In other words, an appro-

priator does not gain a clear title to his water right until after adjudication and then the title may not be clear because the Montana system of determining rights is also faulty. In the first place, adjudications are costly, sometimes very costly when they are prolonged for years. It is estimated that litigation over the Beaverhead River, which has lasted more than twenty years, has cost the residents of the valley nearly one-half million dollars. In the second place, unless the court seeks the advice of a competent irrigation engineer, the adjudication may be based upon inaccurate evidence. In the third place, if some claimant has been inadvertently left out of the action, the decree is not final and may be reopened for consideration by the aggrieved party. Another difficulty arises in determining the ownership of a water right when land under an adjudicated stream becomes sub-divided in later years and the water not apportioned to the land by deed or otherwise. There is no provision made by law requiring the recording of specific water right ownership on deeds and abstracts.

The Legislative Session of 1957 passed Chapter 114 providing for the policing of water released from storage to he transmitted through a natural stream bed to the place of use. The owner of the storage must petition the court for the right to have the water policed from the storage reservoir to his place of use. If there are no objections, the court may issue this right and appoint a water commission to distribute the water in accordance therewith. This law applies only to unadjudicated streams.

Administration of water on an adjudicated stream is done by the District Court, but it has its drawbacks. The appointment of a water commissioner is often delayed until the shortage of water is acute and the court frequently finds it difficult to obtain a competent man for a position so temporary. The present administration of adjudicated streams which cross the county boundaries of judicial districts creates problems. Many of the water decrees stipulate head gates and measuring devices for proper water distribution, but in many instances the stipulation is not enforced, causing disagreement among the water users.

Since a water right is considered property and may he bought and sold, the nature of water requires certain limitations in its use. One of the major faults affecting a stream after an adjudication is the failure of the District Court to have some definite control over the transfer of water rights from their designated places of use. The sale and leasing of water is becoming a common practice on many adjudicated streams and has created serious complications. By changing the water use to a different location, many of the remaining rights along the stream are disrupted, resulting in a complete breakdown of the purpose intended by the adjudication. To correct this situation, legal action must be initiated by the injured parties as it is their responsibility and not the Court's.

At one time or another all of the other Western Reclamation States have used similar methods of local regulation of water rights. Now all of them except Montana have more or less abandoned these practices and replaced them by a system of centralized state control such as the one adopted by the State of Wyoming. The key characteristics of the Wyoming system are the registration of both the initiation and completion of an appropriation in the State Engineer's Office, the determination of rights and administration by a State Board of Control headed by the State Engineer. These methods give the Wyoming water users titles to the use of water as definite and defensible as those which they have to their land.

When Montana began to negotiate the Yellowstone River Compact with Wyoming and North Dakota in 1939, the need for some definite information concerning our water and its

use became apparent. The Legislature in 1939 passed a bill (Ch. 185) authorizing the collection of data pertaining to our uses of water and it is under this authority that the Water Resources Survey is being carried on. The purpose of this survey is six fold: (1) to catalogue by counties, in the office of the State Engineer, all recorded, appropriated and decreed water rights including use rights as they are found; (2) to map the lands upon which the water is being used; (3) to provide the public with pertinent water right information on any stream, thereby assisting in any transaction where water is involved; (4) to help State and Federal agencies in pertinent matters: (5) to eliminate unnecessary court action in water right disputes; (6) and to have a complete inventory of our perfected water rights in case we need to defend these rights against the encroachments of lower states, or Wyoming or Canada.

Ground water and surface water are often intimately related. In fact, it is difficult in some cases to consider one without the other. In times of heavy precipitation and surface runoff, water seeps below the land surface to recharge underground reservoirs which, in turn, discharge ground water to streams and maintain their flow during dry seasons. The amount of water stored underground is believed to be greater at any given instant than the amount of surface water in Montana, and, without seepage from underground sources, it is probable that nearly all the streams in the State would cease to flow during the dry seasons.

It is believed that Montana's ground water resource is vast and only partly developed. Yet this resource is now undergoing a rapidly accelerating development as the need for its use increases and economical energy for pumping becomes available. Continued rapid development will undoubtedly cause waste and depletion of ground water in areas where it is not plentiful. Experience in other states has shown that once overuse of ground water in a specific area has started, it is nearly impossible to stop it, and may result in painful economic readjustments for the inhabitants of the area concerned.

To remedy this situation, the 37th Legislative Session, 1961, passed Chapter No. 237, which provides for a modern underground water code to be administered by the State Engineer's Office. This act does not become effective until January 1, 1962, but the Legislature failed to appropriate funds to carry out the provisions of the act between then and June 30, 1963. This act provides for a central State office where all filings, well logs, and other pertinent information pertaining to underground water rights will be available. It is hoped that some time in the future a similar code can be passed providing for a central State filing agency for surface water rights. This will eliminate the difficulties now encountered with surface water rights which are enumerated above. Accurate records concerning water rights and amount of water available are essential in the administration and investigation of water resources. The availability of these records in a central office under the control of a responsible State agency will provide a stronger and more accurate basis for the negotiation of inter-state water compacts, as well as set up means for the evaluation of data for in-State litigation. It will also protect all of Montana's use—both underground and surface water—from encroachments by lower states, or Wyoming, an upper state, or Canada.

METHOD OF SURVEY

Water Resources data contained in Part I and Part II of this report are obtained from courthouse records in conjunction with individual contacts with landowners. A survey of this type involves extensive detailed work in both the office and field to compile a comprehensive inventory of water rights as they apply to land and other uses.

The material of foremost importance used in conducting the survey is taken from the files of the county courthouse and the data required includes: Landownership, water right records (decrees and appropriations), articles of incorporation of ditch companies and any other legal papers in regard to the distribution and use of water. Deed records of landownership are reviewed and abstracts are checked for water right information when available.

Aerial photography is used by the survey to assure accuracy in mapping the land areas of water use and all the other detailed information which appears on the final colored township maps in Part II of the report. Section and township locations are determined by the photogrammetric system, based on government land office survey plats, plane-table surveys, county maps and by "on the spot" location during the field survey. Noted on the photographs are the locations of each irrigation system, with the irrigated and irrigable land areas defined. All the information compiled on the aerial photo is transferred and drawn onto a final base map by means of aerial projection. From the base map color separation maps are made and may include three to ten over-lay separation plates, depending on the number of irrigation systems within the township.

Field forms are prepared for each landowner, showing the name of the owner and operator, photo index number, a plat defining the ownership boundary, type of irrigation system, source of water supply and the total acreage irrigated and irrigable under each. All of the appropriated and decreed water rights that apply to each ownership are listed on the field forms with the description of intended place of use. During the field survey, all water rights listed on the field form are verified with the landowner. Whenever any doubt or complication exists in the use of a water right, deed records of the land are checked to determine the absolute right of use.

So far as known, this is the first survey of its kind ever attempted in the United States. The value of the work has become well substantiated in the counties completed to date by giving Montana its first accurate and verified information concerning its water rights and their use. New development of land for irrigation purposes by State and Federal agencies is not within the scope of this report. The facts presented are as found at the time of completion of each survey and provide the items and figures from which a detailed analysis of water and land use can be made.

The historical data contained in these reports can never become obsolete. If new information is added from time to time as new developments occur, the records can always be kept current and up-to-date.

Complete data obtained from this survey cannot be included in this report as it would make the text too voluminous. However, if one should desire detailed information about any particular water right, lands irrigated, or the number and amount of water rights diverting from any particular stream, such information may be obtained by writing the State Engineer's Office in Helena.

HISTORY AND ORGANIZATION

The Powder River has been famous ever since the first Texan lost a trail-driven longhorn steer in its treacherous quicksands. "A mile wide and an inch deep," was the saying used by cowboys in describing the stream, when actually it is not wide at all, being little more than a creek, except for a few periods when extreme flood conditions arise. Also, as to its turbidity, the same epitaph applies to the Powder River as has been applied to the Missouri River, that it's water is "too thick to drink and too thin to plow."

Events of great significance in western history have occurred in the Powder River country and even in our time the river's name has come to be a slogan recognizable almost anywhere in the World. "Powder River; let-er buck!" was the battle cry of Montana and Wyoming troops in World War I and has long been the shout which greets the bronc rider as he comes out of the rodeo chute on a bucking outlaw horse.

Powder River County, created April 1, 1919 and so-called from the stream of that name, lies in southeastern Montana. It is bordered on the east by Carter County, on the north by Custer County, on the west by Rosebud and Big Horn Counties and on the south by the state of Wyoming. It has a land area of about 3,337 square miles, with the northern and eastern portions consisting of rolling prairies interspersed with pine and cedar brakes. The western and southern parts are rough and broken in places, containing some hills of considerable size, which in all probability will always be used for grazing purposes.

One of the earliest missions into the Powder River country was headed by Francois Antoine Larocque, who, with two other men, undertook a journey to discover the Rocky Mountains in the year 1805. The party entered southeastern Montana about July 15, 1805, following the course of the Little Missouri River for a few days and then crossing to Boxelder Creek on July 21. On the 27th they were on the Powder River. Here they found that: "The current of the river is very strong and the water so muddy that it is scarcely drinkable. The savages say that it is always thus and that it is for this reason that they call the river Powder; for the wind rises and carries from the slope a fine sand which obscures and dirties the water." On August 4, while continuing up the Powder River, the men were able, from the adjacent hills, to see through a small telescope the outline of the Big Horn Range which they felt was their goal, the Rocky Mountains.

The early history of the Powder River country actually began in 1864, when the Sioux Indians were defeated in a battle with General Sully's army and scattered over eastern Montana. Large numbers of buffalo had retreated to this part of Montana and Indian hunting parties came in from all quarters. The natural route of travel, up the Little Powder River and into Wyoming, was teeming with Indians. All of southeastern Montana contained Indian villages and camps because of the numerous buffalo in the locality. Any movement of white men across their hunting grounds was reason for attack, making travel and settlement in the eastern territory of Montana almost impossible. The Sully victories and exploits of 1864 and 1865 did not produce any results in the form of treaties between the white man and the Indians.

In the spring of 1865, pressure was brought to bear on Congress for settlement of the Indian menace, which was holding up progress and development and was taking a large toll of life and property. The Powder River Expedition of 1865 was made to clear the Indians from that valley. This ill-fated Expedition, having never made contact with a division of rein-

forcements, returned to Fort Laramie after subsisting 82 days on 60 days rations, and suffered heavy losses in men and horses. On their return trip to Fort Laramie, tools and equipment that could not be burned were buried at the mouth of Pilgrim Creek on the Powder River.

When Fort Keogh (near the present site of Miles City) was established, a vigorous campaign was kept up against the hostile Indians during the winter of 1876-1877 and did much to clear them from the valley of the Powder. By the fall of 1877 the valley began to absorb white settlers. Buffalo hunters and trappers moved up and down the river, and settlers explored the tributaries of the Powder River seeking choice locations for settlement.

Among the first cattlemen to settle in the Powder River country were Biddle and Ferdon, Captain Calvin C. Howes, Justice Lincoln Wilson, Oscar Broaddus, and Frank T. Kelsey. Two of the early sheep ranchers were John Lloyd Selway and John Edwards.

Biddle and Ferdon went into the cattle business in 1881 at Powderville. Biddle was noted for his activities with the organization of the Montana Stockgrowers Association in 1885. The partnership of Biddle and Ferdon was dissolved in 1893 and Biddle relocated on the Little Powder. Ferdon remained on the Powderville Ranch until 1898 when he moved to Nebraska.

Captain Calvin C. Howes was among the earliest of those cattlemen who located on Otter Creek in the Powder River area in 1881. Some of the original buildings are still used on this ranch and a stone fort which was built in 1887 during the last Indian scare in that locality still stands as a landmark.

Justice Lincoln Wilson, who came to the Powder River in 1882, was probably the largest of the small operators in cattle, owning around 1,900 head. Wilson also ran sheep and was in business with R. R. Selway for a number of years. His son, E. Lee Wilson was the first white boy born in Powder River County.

Oscar Broaddus came to the Powder River country in 1885 from Missouri. He obtained a squatters' right at the mouth of Baking Powder Creek, but later sold these rights to his sister and her husband. While living on Baking Powder Creek, Oscar Broaddus started the first Broadus post office. After several moves, Broaddus settled on a ranch where the town of Broadus is now located. Here he built a two room log house where he stayed until 1905, when he again moved to Baking Powder Creek and lived there until his death in 1934.

One of the well known men of southeastern Montana was Frank T. Kelsey; a pioneer of 1888; a livestock rancher on the Powder River at Moorhead; and a former United States Commissioner and Surveyor. Kelsey served two consecutive terms in the Montana Legislature as a representative from old Custer County before its division placed his holdings in the new County of Powder River. He has been referred to as the "Father of Powder River County," because of his successful achievement in the creation of the said County in 1919. He also served as state senator from Powder River County from 1932 until 1936.

One of the oldest of the old ranches in Powder River County is the Selway sheep ranch, established in 1881 by John Lloyd Selway and later operated by a brother, R. R. "Bob" Selway, who made a reputation for himself as a "sheep king." Another noted sheepman was John Edwards who settled near Powderville in 1881 with 4,500 head of sheep. The severe winter of 1886-1887 left Edwards with heavy losses of his sheep interests so he sold out and

went to Nebraska. The Edwards family returned to Powder River County in the early 1900's, re-entering the sheep business and has remained there.

Homesteading reached its peak in 1909-1910. This was due to the building of the Chicago, Milwaukee, and St. Paul and Pacific transcontinental railway which opened up new lands for settlement. Homesteading kept steadily expanding over the range country, especially after 1916 when the enlarged 640 acre Homestead Law became effective. The homesteaders took practically all the remaining good Government lands as well as a great deal of the poorer lands. Many of the later settlers did not stay long enough to "prove up" on their homesteads, but a large number did, and many of those that made final proof and obtained a patent, sold out to adjoining ranchers and moved on to a better prospect for a farm home. There is little record of unlawful activities in the area of what is now Powder River County, which was probably due to the late settling of the country in comparison to other parts of Montana.

Probably, the most historic town in Powder River County was Powderville, located in the northeast corner of the County, where the old stage road between Deadwood, South Dakota and Miles City crossed the Powder River. Powderville had a post office, saloon and a place for travelers, called a "Road Ranch." Today it is more or less of a ghost town, but a few of the older residents can still relate stories of its stirring past and can point out "Boot Hill" cemetery to verify tales of the past.

Broadus, the largest town, is the County seat of Powder River County. It was named after the Broaddus family, early settlers on the Powder River. In the year 1923 there was a flood in Broadus which surrounded the town buildings and made the use of boats necessary in order to navigate through the streets. An old Crow Indian Chief once declared, "he had seen the Powder River running water from bluff to bluff where the town of Broadus is now situated."

Biddle, another small community in the County, started with just a post office. It was named after Spencer F. B. Biddle, a pioneer cattleman of the Powder River region. The present post office and store is located about eight miles from the old Biddle ranch house. Its location was on the famous Texas Trail which followed the Little Powder River to its mouth, three miles below the present town of Broadus and there crossed the big Powder River and continued northward. Other smaller communities in the County are: Coalwood, Epsie, Moorhead, Olive, Otter, and Sonnette.

Powder River County today (1961), with a population of 2,485 people, is still a new frontier for many activities, and, with the great need for agricultural products throughout the world, a trend toward farming in this area has been increased. The oil exploration now active, may open up another industry in this area to take its place along side farming and livestock. The livestock industry, however, will probably remain indefinitely the major source of income of the County.

CLIMATE

The general comment that Eastern Montana is "plains" country does not hold true for much of Powder River County. While there are many fairly level or rolling hill sections along the principal river valleys, much of the County is quite hilly or mountainous, particularly the western half. As in all of Montana, topography plays an important part in the County's

climate, with significant variations between valleys and higher country—although the differences may not be as large or dramatic as in many of the state's more mountainous western counties. Elevations range from about 2,800 ft. above sea-level where the Powder River leaves the County north of Powderville to almost 5,000 ft. on some of the higher mountains; but most of the County lies between 3,000 and 4,000 ft. above sea-level.

Much of the western mountain area is well forested, and is drained by numerous small creeks flowing westward into the Tongue River, and eastward into Pumpkin and Mizpah Creeks and into the Powder River itself. These are the County's main streams, with the addition of the Little Powder, which joins the Powder near Broadus. The principal drainage direction is about north-northeast, although smaller streams in the mountains can be found flowing in almost any direction. Even though the elevation range (2,800-5,000 ft.) is quite limited for the rugged character of the County, this rugged topography must be emphasized by noting that valley-ridge contours are chaotic, and in general are sharp and frequent. These features all play a part in the area's climate.

The area's climate is Continental, with cold winters, warm summers, and pronounced variations in seasonal precipitation. About three fourths of a normal year's precipitation falls during the April-September growing season, and May and June are usually the wettest months of the year. By areas the lower elevations are generally the driest, receiving usually around 12 inches of moisture a year; but some of the sections on leeward slopes of mountains are a little drier—receiving an average of only about 10 inches. And, as usual in most mountain areas, the higher portions of the County are the wettest, with annual averages probably as much as 20 inches or a little more. At the former Fletcher Ranch 17 miles south of Ashland (almost on the Rosebud County line, elevations 3,900 ft.), precipitation for a 22-year period averaged almost 17 inches a year. While valley snowfall averages close to 30 inches a year, mountain snowfall is quite variable, but probably is as much as 100 inches a year in some sections—perhaps more.

Temperatures average generally around the 43°-46° range for the year, the warmer averages occurring in the lower elevations of the northeast corner. At Broadus, where the longest temperature record in the County has been kept, monthly averages range from 18° in January to 71° in July. Also at Broadus, July maximums average between 86° and 87°—about 3° cooler than along the Yellowstone River in the Miles City area. On the other hand, January minimums average a little colder at Miles City than at Broadus. The fact that Powder River County maximum temperatures in summer average about 3° cooler than along the Yellowstone River to the north, in spite of its more southern latitude, arises from the general elevation of the County being mostly more than 1,000 ft. higher than along the river. Conversely, winter minimums are warmer for two reasons; one because of the more southerly latitude of Powder River County, the other due to cold air drainage northward toward the Yellowstone Valley. Contrary to what might be expected because of the County's hilly character and higher elevations, extremes of temperature (both high and low) do not have as wide a range as in many of Montana's lower elevation counties. For example, extremes at Broadus are 108° and —42°, while at Miles City, 700 ft. lower and about 74 miles north, these figures for a comparable period are 110° and —45°.

Actual records of sunshine and cloudiness have not been made anywhere very near to the County, but from other data it can be estimated that these features are not greatly different than in neighboring areas. There is considerable sunny weather all year, but midsummer is sunniest, and most cloudy weather is usually in November and Decemher—al-

though the rainy months of May and June have several cloudy days in an average year. Midsummer mornings are mostly clear, but the days often develop thunderhead cloud types during the afternoon. Hot days (highs 90° or more) probably don't occur more than 20 or 30 times a year, and cold ones (minimums 0° or colder) at about the same rate. Growing seasons vary considerably with topographic features, and probably don't anywhere exceed by very much the 128-day average freeze-free season observed at Broadus. This season length, incidentally, should be fairly representative over the length of the Powder River Valley itself; but perhaps a few days shorter upstream towards the Wyoming line near Moorhead and along the Carter County line in the Boyes area. In the mountainous western half freeze-free periods will vary considerably within short distances.

Severe storms of several types visit the area occasionally, but the area is not one of the state's stormiest. High winds are observed a few times every year, but speeds greater than 50-60 m.p.h. are uncommon. The fastest mile of record in the general area was 84 m.p.h. at Sheridan, Wyoming in 1949, but this should be considered a rarity in Powder River County. Heavy snowstorms occur with a frequency of less than once a year, and when they do occur, are most likely in late fall or early spring when temperatures are not severly cold. Tornadoes are rare—only one occurrence has been reported in the county in a 35-year period. Thunderstorms, sometimes accompanied by hail or gusty winds, are the most common storm type that can be considered to be severe, and these are limited almost entirely to July and early August. Hail causes limited amounts of local crop damage in most years, and a really bad hail year is rare. However, heavy rains acompanying occasional severe thunderstorms have been known to produce flash flooding on some of the smaller streams. Large-scale flooding of the principal streams is rare; more common is the ice-jam flooding in late winter or early spring that occurs only locally and is caused by thawing progressing more rapidly upstream than in downstream areas. Severe blizzards have been known in the area, but are rare. Listed below is a selected tabulation of Powder River County weather data:

POWDER RIVER COUNTY WEATHER DATA

	TEMPERATURE				PRECIPITATION					
Station	Years of Record	Average Annual	Highest	Lowest	Years of Record	Average Annual	Wettest	Year	Driest	Year
Broadus	23	45.1[1]	108	—42	23	14.01[1]	21.91	1944	7.87	1952
Boyes	9	43.8[2]	105	—40	9	13.87[2]	19.62	1957	9.38	1952
Moorhead	9[3]	[3]	109	—42	9	11.68[4]	15.44	1957	8.16	1954
Powderville					10	12.09[5]	15.51	1957	7.60	1952
Sonnette	8[3]	[3]	105	—38	9	11.94[6]	16.11	1958	8.43	1952
Biddle					8	10.70[7]	15.82	1957	6.87	1954

(1) 1937-1955, (2) 1951-1959, (3) Incomplete Record, (4) 1949-1957, (5) 1950-1959, (6) 1951-1959, (7) 1952-1959.

SOILS

The character of soils is determined by parent material, relief, vegetation, climate, and time. Since there is a limited variety of parent material and a small range in climatic conditions in Powder River County, there is not a large variety of soils. The principal parent materials are sandstones and shales (chiefly of Cretaceous Age) and alluvium which occupies stream valleys, upland slopes, and swales.

The principal great soil groups are Brown, Chestnut, Alluvial, Solonetz, Regosols, and Lithosols. Agricultural soils are largely limited to Brown, Chestnut and Alluvial great soils groups, but some solonetzic (claypan) soils are dryland farmed. A large part of the soils are used for grazing. Only 6.3 percent of the soils of Powder River County were used for dry farming and irrigated cropland in 1958. There is a significant acreage of woodland, most of which is in Custer National Forest.

The chief problem associated with irrigated soils is removal of excess salts, and soils having this problem are not extensive. Because of the need to economize in use of irrigation water, extensive drainage problems are not likely to develop.

CROPS AND LIVESTOCK

Powder River County encompasses 2,102,400 dry land acres and is divided into 398 ranch units. Approximately 1,760,000 of these acres are classified as range land and 340,000 acres as forest. The remainder is used for the production of wheat, oats, barley, alfalfa seed and hay. The dry land range is quite fertile and produces quality grass for 68,200 head of cattle, 72,600 head of sheep and 1,900 head of horses.

Cattle and sheep ranging on native grasses, consisting primarily of Western Wheat Grass, Blue Grama and Green Needle, do very well on the range and the County is noted for its quality feeder calves and lambs which demand and receive premium prices in the livestock markets of Montana, South Dakota and Wyoming. The total assessed value of the livestock in Powder River County is $3,700,438 which accounts for the major part of the ranchers' income.

The ranchers in the County are continually improving their stock through sound management and improved breeding practices. A number of the ranchers belong to the Montana Performance Registry Association, carrying on test weighing and controlled selection of the breeding stock in their herds. Quality cattle are in evidence throughout the area.

Sheep are mainly of the wool breeds, carrying Rambouillet, Targhee or Columbia breeding, and, as with the cattle, quality is good. Top registered rams are used for service.

Calves and lambs are seldom fed to slaughter weights in the County but are delivered to the markets as feeders. Perhaps as barley acreages increase, more feeding will he done.

The horse is still an important factor in every ranch operation. Horse production is not just a memory, but is quite a thriving business on the rolling hills and bluffs of Powder River County.

Hogs and dairy cattle are conspicuous by their absence. As a general practice the farmers depend upon the local retail stores for ham, bacon, lard, milk and other pork and dairy products.

Altbough livestock accounts for the major share of the ranchers' income, crops are of extreme importance in the County's economy. Powder River ranked second among Montana counties in 1959 in the production of alfalfa seed, which resulted in a gross production of $145,400. Wheat, barley, oats and hay are produced under sound management practices and annual yields rank with the average for the State. A number of ranchers carry on grain

and small seed certification programs which have improved the quantity and the quality of the grain and small seeds produced.

Early spring run-off during flood periods has left many deeply eroded gullies. Today, however, through careful planning and competent engineering, diversion dams and spreader dikes control erosion and provide additional moisture for the meadows. Hay yields have increased from one half ton to as much as a ton and one half per acre on these fields because of this practice, and thus hay is produced in sufficient quantities to supply the livestock feeding needs of the County.

The people of Powder River County are proud of their ranch and farm operations, and justly so, because they have planned and worked hard and have developed some of the finest ranches found in any county in Montana.

SOURCES OF WATER SUPPLY

Powder River County, situated in the semiarid region of southeastern Montana, is more or less dependent on early spring runoff and summer thunder storms for its irrigation water supply. The available water in this area is being more and more utilized for irrigation with the construction of spreader dike systems and water storage reservoirs for livestock purposes.

The spreader dike systems are known as conservation measures to prevent soil erosion, and so constructed as to provide for the retention and distribution of water on many acres of grazing land. This type of irrigation is becoming more prominent in many parts of southeastern Montana.

There are only two major drainage areas in Powder River County, the Tongue and Powder rivers. The Powder River is the larger of the two and, including its tributaries, furnishes water for the irrigation of 27,153 acres in the County. The most common type of irrigation practiced along the main stem of the Powder River is by the use of pumps, which lifts the water from the river for sprinkler irrigation or spills it into dike systems.

Little Powder River and Mizpah Creek are two of the major streams that are tributaries to the Powder River. The Little Powder River supplies water for the irrigation of 1,124 acres, and its tributaries contribute a supply for 5,670 acres. Mizpah Creek and its tributaries furnish water for a total of 5,412 irrigated acres.

The Tongue River is located outside the boundaries of Powder River County, but two of its tributaries—Otter and Pumpkin creeks—form the major drainages in the western part of the County. Otter Creek and its tributaries have a combined total of 4,073 acres irrigated with most of the irrigated acreages small and widely scattered throughout the drainage area. Pumpkin Creek has 971 acres irrigated with an additional 888 scattered along its tributary streams.

STREAM GAGING STATIONS

The U. S. Geological Survey measures the flow of streams, co-operating with funds supplied by several State and Federal agencies. The results have been published yearly in book

form as Water-Supply Papers, the latest being for the year 1959. The later records may be obtained prior to publication from the U. S. Geological Survey. That agency's records and reports have been used in the preparation of this resume'.

Data given below cover the stream gaging records which are available for Powder River County from the beginning of measurements through the water year 1959. The water year begins October 1 and ends September 30 of the following year. The discharge quantities shown at the gaging stations are actual measured flows and have not been corrected for upstream storage or diversions for irrigation above the gage.

Following are equivalents useful in converting from one unit of measurement to another:

(a) In Montana, one cubic foot per second equals 40 miner's inches.

(b) One acre-foot is the amount of water required to cover an acre one foot deep.

(c) One cubic foot per second will nearly equal two acre-feet (1.983) in 24 hours.

(d) A flow of 100 miner's inches will equal five acre-feet in 24 hours.

(e) One miner's inch flowing continuously for 30 days will cover one acre 1½ feet deep.

For reference purposes, the stream gaging stations are listed in downstream order.

Powder River at Moorhead*

The water-stage recorder is 500 feet downstream from post office at Moorhead and 6¼ miles upstream from Buffalo Creek. The drainage area is approximately 8,030 square miles. Records are available from May 1929 to date (1961). Prior to Aug. 28, 1931, a staff gage one quarter of a mile upstream was used at a different datum; from Aug. 28, 1931, to Mar. 21, 1956, a water-stage recorder was used three-quarters of a mile upstream at a different datum; from Mar. 22, to July 24, 1956, a staff gage at site one quarter of a mile downstream was used at different datum; from July 25, to Sept. 12, 1956, a staff gage was used at the present site and datum. The maximum discharge computed was 15,300 cfs (May 25, 1952 at gage height of 10.67 ft.). A flood of Sept. 30, 1923 reached a stage of 19 feet at the site from information supplied by local residents. The minimum was no flow at times in 1931-34 and part of July 14, 1954. The average discharge for 30 years was 442 cfs or 320,000 acre-feet per year. The highest annual runoff was 629,800 acre-feet (1944) and the lowest 137,600 acre-feet (1954). There are diversions for irrigation of about 50,000 acres above the station. There are three reservoirs in Wyoming with combined usuable capacity of 36,800 acre-feet.

Little Powder River at Biddle (Discontinued)

The wire-weight gage was at highway bridge half a mile downstream from Ranch Creek and three quarters of a mile northeast of Biddle. The drainage area is approximately 1,540 square miles. Records are available from Apr. 1938 to June, 1943. The maximum discharge was 5,700 cfs (Aug. 17, 1940) and the minimum, no flow at times. The highest annual runoff during the four complete years of record was 21,890 acre-feet (1939) and the lowest 14,810 acre-feet (1942). The mean discharge for 1939 was 30.2 cfs and for 1942 was 20.5 cfs. There are small diversions for irrigation above the station.

Little Powder River near Broadus*

The water-stage recorder is a quarter of a mile downstream from mouth of East Fork of Little Powder River, 1 mile downstream from highway bridge, 5½ miles upstream from mouth, and 5½ miles southeast of Broadus. The drainage area is about 1,990 square miles. Records are available from May 1947 to Sept. 1953 and March 1957 to date. The maximum discharge was 2,340 cfs (June 15, 1953) and the minimum, no flow at times. The average discharge for 8 years 1948-53, 1958-59 was 33.3 cfs or 24,110 acre-feet per year. The highest annual runoff was 46,880 acre-feet (1949) and the lowest 10,140 acre-feet (1958). There are small diversions for irrigation of hay meadows above the station.

Partial Record Stations and Miscellaneous Discharge Measurements

In order to provide information on more streams than are covered by stream gaging stations the Geological Survey has for several years been collecting some partial records. These are in addition to the miscellaneous discharge measurements which have always been reported. These partial records when correlated with simultaneous discharges of nearby continuous-record stations give fair indications of available flow.

There are about a dozen low-flow and about fifty crest-stage partial-record stations in the Missouri Basin in Montana. A number of them have been in operation since 1955 or 1956, but more of them were started in 1958 or 1959. There is one crest-stage partial-record station in Powder River County.

These partial-record stations as well as the miscellaneous discharge measurements are reported in lists at the end of each U. S. Geological Survey Water Supply Paper.

* These gaging stations are now in operation (1961).

ECONOMIC MINERAL DEPOSITS

Powder River County is geologically situated on the west flank of the Black Hills uplift and the northeast flank of the Powder River Basin. Exposures of bedrock formations range from the sandstones and shales of the Eocene Wasatch formation in the southwest to the Cretaceous Pierre shale in the northwest part of T. 4 S., R. 55 E. All bedrock is sedimentary in origin, and there are no lode (hard rock) metallic mineral deposits. Oil and gas are not presently (1961) in production, though there is a production potential for gas.

OIL and GAS

Numerous oil and gas wildcat wells have been drilled in Powder River County, but significant discoveries have been reported only in the Pumpkin Creek area. The Pumpkin Creek Gas Field was discovered in November, 1945. The discovery well (G. J. Greer—Allen No. 1; sec. 24, T. 1 S., R. 49 E.) was reported to have had an initial flow of 15.5 million cubic feet per day with a pressure of 779 pounds per square inch. The gas occurred in the Shannon (upper Eagle) sandstone. Seven more wells were drilled in an area about 6 miles long, and initially yielded 1 to 8 million cubic feet per day. No pipeline serves the field, and all wells were shut in during 1958.

COAL

Powder River County ranks second in Montana with respect to coal reserves, having 19.5% of the State's total as compared to 19.6% for Big Horn County. The coal is of sub-bituminous and lignite rank, and occurs as layers in the thick (2,000 feet) Fort Union Formation. None of the coal is high-grade, and none is satisfactory for making coke with the present (1961) technology. Shipping time and outdoor storage of Fort Union coal is limited because of its slacking characteristic (breaking down to small fragments or dust when exposed to atmospheric conditions).

The total measured and estimated amount of sub-bituminous coal in beds 2½ feet to more than 10 feet thick is nearly 41 billion tons, and, in addition, there are almost 2½ billion tons of lignite in similar beds.

The Ashland Coal Field of Custer and Rosebud counties extends into Powder River County, and, in this field, some 5 to 8 coal beds average 6 feet in thickness and some may be as much as 25 feet thick in places. The Birney-Broadus and Moorhead Fields are predominantly in Powder River County, and the amount of coal in these fields is the greatest in the State.

Coal mines with some production in 1960 are listed below:

Company	Address
Hanson Mine	Perry Hanson—Box 104, Ashland
Sterling Coal Mine	U. B. Sterling—Sonnette
Shoenbach Mine	F. L. Schoenbach—Ashland
Two Tree Mine	Epsie, Montana

Coal production for industrial use in recent years has been curtailed due to the use of more concentrated energy sources. Thus, the County's vast coal resources must be considered as sub-economic when related to industrial use in the present (1961) state of technology and need. Future utilization of the vast energy locked in this resource depends on technical advances in methods of extracting energy and chemical by-products.

GROUND WATER

Water wells in the Fort Union and Hell Creek formations supply much of the necessary domestic and rangeland stock water. The Fort Union formation contains many water-bearing sandstone and fractured coal bed horizons on which the stockgrowers depend. The alluvium of the Powder River Valley supplies relatively large amounts of ground water to wells in the vicinity of Broadus. Artesian wells occur along the Powder River Valley, and such wells are drilled relatively deep to premeable sandstones in the Tullock member of the Fort Union formation, or the Hell Creek formation. An even better source of artesian water would be the Fox Hills sandstone, below the Hell Creek.

Artesian aquifers (water yielding formations) at a depth of several thousand feet are also present in the Powder River structural basin. Some of these aquifers, i.e., the Dakota sandstone, are capable of yielding strong artesian flows at the surface. However, most of the deep-seated ground water is brackish. "Recent developments in the Powder River Valley in-

dicate that with proper well construction, large quantities of water may be developed from the valley alluvium in some localities."

SAND, GRAVEL AGGREGATE, and ROAD MATERIAL

Large deposits of sand and gravel are apparently not present in Powder River County, according to the 1938 edition of the U. S. Geological Survey, Sand and Gravel Map of Montana. However, scattered deposits are shown to be present along the branches of Pumpkin Creek. The alluvium of most of the stream valleys, including that of the Powder River, consists largely of fine sand, silt, and mud. However, it is likely that small deposits of suitable sand and gravel may be found for local uses.

Almost unlimited supplies of road-metal, railroad ballast, and concrete aggregate are available from the thick layers of scoria or clinker formed by the burning of coal beds.

SOIL CONSERVATION DISTRICT

In the times of our fathers there was grass in abundance. All the main drainages had live water, and the cattle grazed on the grass the year-round. Then came the plow, the fences and the increased production. The balance of nature was broken, and the original picture began to change. The grass which had always grown plentifully gave way to weeds and droughty crops. Many creeks became muddy and soon quit running altogether. The cattle grazed in the summer but grew thin and died in the winter. It was a time of too much water but not enough; too much winter and not enough summer.

In the fall of 1953 the ranchers in the Biddle Community of Powder River County met to discuss these growing problems and on December 17, 1953, voted to form the Powder River Soil Conservation District.

Three years later, when two additional areas had been added, all of Powder River County except the Otter Creek drainage, which was in the Cartersville-Thurlow SCD, then joined forces to meet these problems. In July 1958, the Otter Creek area was transferred to the Powder River SCD and the District boundaries included the entire County.

The County encompasses 2,102,400 acres of land of which 133,173 acres are cropland, 1,210,705 acres are deeded rangeland, 341,723 acres are in the Custer National Forest and 416,799 acres are State and Bureau of Land Management land.

The District is governed by a board of five supervisors who are elected by the land occupiers of the District. They carry out a program of soil erosion control, water conservation, management practices for cropland and rangeland and proper land use. They also have the power, under State law, to request assistance from any local, State or Federal agency to assist in carrying out the District's program. The District helps farmers and ranchers get technical assistance from the Soil Conservation Service of the United States Department of Agriculture on their soil and water conservation work.

Technical assistance is provided farm and ranch operators to develop basic conservation plans on their land. These plans include detailed soil surveys, range site and condition surveys, ground water surveys and other surveys of the engineering type. The various surveys

and investigations indicate proper land use and the kind and amount of conservation work needed to prevent erosion and to develop the resources of the farm or ranch to the maximum. The surveys provide basic information needed for the conservation plans developed by the farmer or rancher. The co-operator develops his conservation plan using technical assistance of the Soil Conservation Service. The SCS technicians interpret the surveys and advise the operator concerning limitations and hazards of land use and recommend needed conservation treatment. The co-operator makes the final decisions that are entered into the plan as to what will be done and when the measures will be carried out. When a plan is completed, the co-operator is extended further technical assistance for installation of planned land use adjustments and application of conservation treatment as called for in the conservation plan. A follow-up program to promote the continuing use of good cropland and rangeland management among co-operators is also maintained by the District.

The problems this District copes with are: better balance between hay and range, converting questionable cropland to permanent vegetation and proper use of rangelands. By revising and expanding existing dikes structures and developing new waterspreading systems, most operators can better utilize the spring runoffs and improve their hay base for supplemental feed production. Converting questionable cropland to grass will help to stop excessive erosion and proper use of rangeland will hold the rain where it falls, thereby increasing the grass production and replenishing the water table. The construction of the Moorhead Dam as a water control project would insure a stable source of irrigation water in the Powder River Valley instead of the present feast and famine fluctuations created by the undependable runoff.

There is a new era beginning in Powder River County. Ranchers are asking questions and looking hard at the conservation needs. Technical assistance throughout the District is helping to determine the needs and inform the ranchers of their land capabilities. The Standard Soil Survey was started in 1954 and is scheduled for completion in 1964. The Great Plains Conservation Program has been developed and is in demand. Educational programs with the school, 4-H clubs and other interested parties are in progress. It took time for the existing conditions to come about, and it will take more time to bring the best balance between man and the agricultural capabilities of the lands. When the challenge is met, it will be to the credit of all.

FISH AND GAME

Powder River County is located in an area where fishing waters are at a premium. Most streams go dry in the summer months running water only in the spring. Some warm water fishing and trout fishing are provided through storage waters in suitable farm ponds which vary in size from one to fifty acres. These ponds are important to other forms of wildlife such as ducks and antelope as they often provide the only water in an otherwise dry area. Fish for these ponds are provided by the U. S. Fish Cultural Station at Miles City.

Antelope and mule deer hunting has become an important form of recreation in this County. Sportsmen in substantial numbers visit the area from both within and out of the State.

The hunting of prairie grouse also attracts a considerable number of hunters. Several plants of wild turkeys have been made in this County, and it is expected that they will do

well. It is very probable that wild turkeys will add another important species to the game bird hunting in that area.

CUSTER NATIONAL FOREST

The Custer National Forest, with headquarters in Billings, Montana, lies in southeastern Montana, northwestern South Dakota, and southwestern North Dakota. Powder River County is one of 16 counties containing national-forest land administered by the U. S. Forest Service. The lands in the Custer National Forest embrace: (1) those set aside by Presidential proclamation as national forest, and (2) those purchased by the Federal Government as part of the emergency relief program during the drought period of the 1930's and known as national grasslands. The area of national forest lying in Powder River County was set aside by Presidential proclamation in 1907.

The history of the Custer Forest and surrounding area is of considerable interest. It was and still is a fine game country. In Powder River County there are abundant numbers of mule deer, antelope and prairie grouse. Whitetail deer, Merriams turkeys, and pheasant are present. The area was the home of several Indian tribes, who depended primarily on the vast herds of buffalo and to a lesser extent on antelope, bighorn sheep, deer, elk, etc., which grazed the range at that time.

About 1880, after the buffalo had deceased and Indian resistance lessened, large herds of cattle were moved into this country. These cattle came from Texas and Oregon; the days of extensive cattle empires and open range were ended by heavy overgrazing and a very hard winter in 1886-87. Many ranchers lost entire herds that winter and the cattle industry from that time on changed from an extensive type operation to a more intensive endeavor. The homesteaders soon followed and farming also became an important industry.

The Custer National Forest varies in topography from the lofty and rugged mountain peaks of the Beartooth Division in the western portion of the forest to the pine-covered hills and breaks in the Ashland (includes part of Powder River County) and Sioux Divisions in the southeast.

Ponderosa pine (yellow pine) is the principal species of timber found on the eastern divisions of the forest. The supply in the Ashland and Sioux Divisions is ample for the development of a much larger industry than now exists. With more intensive management, the harvest can be greatly increased. At present, the allowable cut is estimated to be 11-million board feet for the Sioux and Ashland Working Circles. Of this, approximately 5.5-million board feet of sawlogs and converted materials can be cut annually from the Powder River portion of the Ashland Division. As the mature and overmature trees are cut under good forestry practices, the young, vigorous understory trees will respond with more rapid growth. Job opportunities in the harvesting and processing of this larger allowable cut should increase several fold in the next 120-year rotation.

Many species of timber, including lodgepole pine, Douglas fir, and spruce, are found on the Beartooth and Pryor Divisions of the forest. Considerable quantities of posts or pulpwood and some sawtimber could be cut now if markets were available. Little timber of commercial value occurs on the national grasslands.

Some 14,000 cattle graze on the Powder River portion of the forest under present stocking rates. In addition, the Custer supports many different species of wildlife. These include

elk, bighorn sheep, mountain goat, moose, bear, mountain lion, and large numbers of antelope, whitetail deer and mule deer. Upland game birds found on the forest include three species of grouse, Hungarian partridge, Chinese pheasant, and wild turkey.

Fire control is an important activity. Losses from fire have not been severe in recent years. This has been the result of continual co-operation of local people, modern detection and suppression techniques, and improved transportation and communication facilities. Fire continues to be a threat, however, and receives number one priority during the summer season.

Picnic and camping facilities are maintained by the Custer National Forest for the convenience and enjoyment of the forest traveler and recreationist.

Mining and oil production are important activities on the Custer and such minerals as chromium and coal are presently found in commercial quantities. Several important oil fields are found on the national grasslands and a total of more than 80 wells are now in production. No oil production occurs in the Powder River portion of the forest; however, some coal has been mined in the past.

In Powder River County, the forest land drains into the Powder and Tongue Rivers. The soil in this area is characteristically very erosive and consequently is a high sediment producer. To prevent erosion and the production of sediment, it is important that the watersheds be maintained in such condition as to provide maximum percolation of rainfall and snowpack, thereby keeping surface runoff to a minimum.

The factor having greatest impact on watersheds in this area is livestock grazing. Therefore, extreme care must be taken in managing livestock ranges to be certain that sufficient vegetation is left after grazing to protect the soil from erosion and to promote the regeneration of new forage plants. When this is done, rainfall and snowmelt moisture will be stored in the soil for future use instead of running off rapidly to erode top soil, form gullies, and eventually lower the level of the underground water table.

Excessive overgrazing by livestock in the early days, plowing native grassland which was unsuitable for farming, and current overgrazing are the causes of most of the unsatisfactory range and watershed conditions found on much of the public and private land in this area. To correct these conditions, it is essential that the problems be recognized, stocking rates be reduced, and the land be revegetated by either natural or artificial means as conditions reqnire. Considerable effort is being extended in this direction, and progress, though slow, is encouraging. Deterioration has progressed so far in some places that such measures as check dams, terraces, dikes, and other means must be used to expedite the rehabilitation process.

Relatively little irrigation is practiced on the Custer National Forest in Powder River County. Some streams like Otter Creek are diverted for flood irrigation during the spring runoff. Reservoirs for this purpose are insignificant on forest lands in this County. There are many small dams and dugouts which have been constructed for use as stockwater impoundments.

Greater use of water is expected to occur on the national forest in the future. More stock water reservoirs will be constructed in the process of getting better range management. It is anticipated that more diversion of water for flood irrigation will occur as more intensive management is practiced on national forest lands.

SUMMARY OF IRRIGATED LAND BY RIVER BASINS IN THE FOLLOWING COUNTIES COMPLETED TO DATE

Big Horn, Broadwater, Carbon, Carter, Cascade, Custer, Deer Lodge, Fallon, Gallatin, Golden Valley, Granite, Jefferson, Lewis & Clark, Madison, Meagher, Missoula, Musselshell, Park, Powder River, Powell, Ravalli, Rosebud, Silver Bow, Stillwater, Sweet Grass, Treasure, Wheatland, Wibaux and Yellowstone

RIVER BASIN	Present Irrigated Acres	Irrigable Acres Under Present Facilities	Maximum Irrigable Acres
Missouri River Drainage Basin			
***Missouri River**	79,568.50	19,137.50	98,706.00
Jefferson River	61,291.00	9,713.00	71,004.00
Beaverhead River	40,771.00	6,076.00	46,847.00
Big Hole River	23,775.00	1,950.00	25,725.00
Madison River	39,445.00	7,660.00	47,105.00
Gallatin River	111,914.00	21,097.00	133,011.00
Smith River	32,934.00	19,679.00	52,613.00
Sun River	46,412.23	3,406.00	49,818.23
Musselshell River	64,789.00	57,870.00	122,659.00
Little Missouri River	42,332.00	1,499.00	43,831.00
Grand Total Missouri River Basin	**543,231.73**	**148,087.50**	**691,319.23**
Yellowstone River Drainage Basin			
Yellowstone River	303,501.00	96,148.00	399,649.00
Stillwater River	27,489.00	16,403.00	43,892.00
Clark Fork River	91,768.00	24,195.00	115,963.00
Big Horn River	65,395.00	25,579.00	90,974.00
Tongue River	28,170.00	7,762.00	35,932.00
Powder River	35,948.00	2,299.00	38,247.00
Grand Total Yellowstone River Basin	**552,271.00**	**172,386.00**	**724,657.00**
Columbia River Drainage Basin			
Clark Fork (Deer Lodge, Hellgate, Missoula) River	145,804.70	14,934.20	160,738.90
Bitterroot River	111,102.43	3,200.00	114,302.43
Grand Total Columbia River Basin	**256,907.13**	**18,134.20**	**275,041.33**
Grand Total in the Counties Completed to Date	**1,352,409.86**	**338,607.70**	**1,691,017.56**

* Names of streams indented on the left-hand margin indicate that they are tributaries of the first stream named above which is not indented.

IRRIGATION SUMMARY OF POWDER RIVER COUNTY BY RIVER BASINS

YELLOWSTONE RIVER BASIN	Present Irrigated Acres	Irrigable Acres Under Present Facilities	Maximum Irrigable Acres
*Yellowstone River	0	0	0
Tongue River	0	0	0
Otter Creek	1,439.00	0	1,439.00
Long Creek	38.00	0	38.00
Box Elder Creek	140.00	0	140.00
Pasture Creek	105.00	0	105.00
Bradshaw Creek	40.00	0	40.00
Bear (Second) Creek	214.00	0	214.00
East Fork Bear Creek	100.00	0	100.00
Vance Creek	109.00	0	109.00
Cedar Creek	105.00	0	105.00
Indian Creek	104.00	0	104.00
North Fork Indian Creek	0	0	0
South Fork of North Fork Indian Creek	40.00	0	40.00
Thompson Prong (Middle Fork) (South Fork) Indian Creek	130.00	0	130.00
Smith Creek	25.00	0	25.00
Renas Creek	84.00	0	84 00
Taylor Creek	125.00	0	125.00
North Fork Taylor Creek	129.00	0	129.00
South Fork Taylor Creek	61.00	0	61.00
Stag Rock Creek	15.00	0	15.00
Gate Creek	45.00	0	45.00
Field Creek	10.00	0	10.00
Ash Creek	10.00	0	10.00
Paget Creek	39.00	51.00	90.00
Elk Creek	140.00	0	140.00
Fifteen Mile Creek	130.00	0	130.00
Spring Creek	44.00	0	44.00
Ten Mile Creek	98.00	0	98.00
Newell Creek	30.00	0	30.00
Unnamed Creek	25.00	0	25.00
Unnamed Creek	11.00	0	11.00
Three Mile Creek	77.00	0	77.00
McIntosh Creek	8.00	0	8.00
Home Creek	252.00	0	252.00
Unnamed Creek	26.00	0	26.00
East Fork Otter Creek	106.00	0	106.00
Bridge (Willow) Creek	19.00	0	19.00
Beaver Creek	88.00	0	88.00
Liscomb Creek	13.00	0	13.00

* Names of streams indented on the left-hand margin indicate that they are tributaries of the first stream named above which is not indented.

IRRIGATION SUMMARY OF POWDER RIVER COUNTY BY RIVER BASINS

YELLOWSTONE RIVER BASIN—(Continued)	Present Irrigated Acres	Irrigable Acres Under Present Facilities	Maximum Irrigable Acres
Pumpkin Creek	971.00	62.00	1,033.00
Basin Creek	10.00	0	10.00
Skinners Gulch	121.00	0	121.00
Dunan (Duncan) Gulch	44.00	42.00	86.00
Six Mile Creek	57.00	0	57.00
"Fifty-four" Creek	47.00	0	47.00
Gould Creek	25.00	0	25.00
Tilton Spring Creek	5.00	0	5.00
Box Elder Creek	16.00	0	16.00
South Fork Box Elder Creek	30.00	0	30.00
Kaywah (Swenson) Creek	142.00	0	142.00
Camp Creek	0	8.00	8.00
Correll Creek	5.00	0	5.00
Spring Creek	19.00	22.00	41.00
Squaw Creek	23.00	37.00	60.00
Unnamed Draws	10.00	0	10.00
Sand Coulee	13.00	0	13.00
Little Pumpkin Creek	50.00	61.00	111.00
Gold (Griffen) Creek	48.00	0	48.00
Buckberry Creek	46.00	0	46.00
Green Creek	41.00	0	41.00
Little Porcupine Creek	23.00	0	23.00
Taylor (Stacey) Creek	22.00	0	22.00
Unnamed Creek	12.00	0	12.00
Unnamed Creek	34.00	0	34.00
Cottonwood Creek	45.00	0	45.00
Total Tongue River and Tributaries	**6,033.00**	**283.00**	**6,316.00**
Powder River	5,034.00	115.00	5,149.00
Bitter Creek	85.00	0	85.00
Trail Creek	195.00	0	195.00
Graham Creek	100.00	0	100.00
Lavering (Boot Jack) Creek	82.00	0	82.00
Buffalo Creek	185.00	0	185.00
Three Bar Creek	165.00	0	165.00
Thompson Creek	52.00	0	52.00
Dutch Creek	55.00	0	55.00
Garst (Deep) (Canyon) Creek	117.00	0	117.00
Leitner Creek	31.00	0	31.00
Bloom Creek	280.00	0	280.00
Pine Creek	35.00	0	35.00
Bay Horse Creek	508.00	0	508.00
Unnamed Stream	41.00	0	41.00
Pinto Creek	780.00	0	780.00
Buttermilk Creek	55.00	0	55.00

IRRIGATION SUMMARY OF POWDER RIVER COUNTY BY RIVER BASINS

YELLOWSTONE RIVER BASIN—(Continued)	Present Irrigated Acres	Irrigable Acres Under Present Facilities	Maximum Irrigable Acres
Fire Gulch Creek	30.00	0	30.00
Henning (Miller) (Bull Tree) Creek	13.00	0	13.00
Bridge Creek	32.00	0	32.00
Rock Creek	20.00	0	20.00
Unnamed Stream	18.00	0	18.00
Short Creek	10.00	0	10.00
Alkali Creek	21.00	0	21.00
Butte Creek	425.00	0	425.00
Unnamed Stream	8.00	0	8.00
South Fork Butte Creek	124.00	0	124.00
Unnamed Stream	20.00	0	20.00
Laura Creek	21.00	0	21.00
Sand Bank Draw	7.00	0	7.00
Cabin Creek	20.00	0	20.00
East Fork Butte Creek	0	0	0
Unnamed Stream	47.00	0	47.00
Ernest Creek	55.00	0	55.00
Deep Gulch Creek	11.00	0	11.00
Unnamed Stream	50.00	0	50.00
Cedar (Henning) Creek	70.00	0	70.00
Baking Powder Creek	110.00	0	110.00
North Fork Baking Powder Creek	0	0	0
Unnamed Stream	65.00	0	65.00
South Fork Baking Powder Creek	91.00	0	91.00
Stevens Branch Baking Powder Creek	30.00	0	30.00
Short Creek	18.00	0	18.00
Allison Creek	85.00	0	85.00
Unnamed Stream	19.00	0	19.00
Coal Bank Creek	20.00	0	20.00
Unnamed Streams	64.00	0	64.00
Deer Creek	90.00	0	90.00
Lone Tree Creek	98.00	0	98.00
Cache Creek	4.00	0	4.00
Clay Butte Creek	40.00	0	40.00
First Creek	307.00	0	307.00
Second Creek	88.00	0	88.00
Third Creek	0	0	0
Unnamed Stream	12.00	0	12.00
West Fork Third Creek	28.00	0	28.00
Unnamed Stream	5.00	0	5.00
Cedar Creek	30.00	20.00	50.00
Runoff	90.00	0	90.00
Wells	120.00	0	120.00
Sand Creek	205.00	0	205.00
Spring Creek	135.00	0	135.00

IRRIGATION SUMMARY OF POWDER RIVER COUNTY BY RIVER BASINS

YELLOWSTONE RIVER BASIN—(Continued)	Present Irrigated Acres	Irrigable Acres Under Present Facilities	Maximum Irrigable Acres
Coyote Creek	0	80.00	80.00
Bobcat Creek	140.00	0	140.00
Little Powder River	1,124.00	0	1,124.00
Deer Trail Creek	13.00	0	13.00
Sheep Creek	18.00	0	18.00
Unnamed Streams	53.00	0	53.00
Prairie Dog Creek	175.00	0	175.00
Bowers Creek	741.00	0	741.00
Unnamed Stream	10.00	0	10.00
Coal Gulch Creek	25.00	0	25.00
Rock Creek	9.00	0	9.00
Unnamed Stream	20.00	0	20.00
Allison (Little Bowers) Creek	140.00	0	140.00
Unnamed Stream	22.00	0	22.00
Prairie Creek	102.00	0	102.00
North Prong Bowers Creek	26.00	0	26.00
Mitchell Creek	127.00	0	127.00
Unnamed Streams	38.00	0	38.00
Unnamed Stream	29.00	0	29.00
Wild Bill Creek	0	0	0
Unnamed Stream	9.00	0	9.00
Unnamed Stream	8.00	0	8.00
Blacktail Creek	75.00	0	75.00
Williams Creek	117.00	0	117.00
Unnamed Stream	4.00	0	4.00
Badger Creek	8.00	0	8.00
Unnamed Stream	7.00	0	7.00
Johnson's Run (Ranch Creek)	66.00	55.00	121.00
Unnamed Stream	3.00	0	3.00
Henry Garst Draw (South Fork Ranch Creek) (Twenty-one Creek)	95.00	0	95.00
Reservoir Draw	54.00	0	54.00
Unnamed Streams	74.00	0	74.00
Unnamed Draw	216.00	0	216.00
Hay Creek	46.00	0	46.00
Little Hay Creek	0	0	0
Unnamed Stream	7.00	0	7.00
Sage Draw (Deep Creek)	15.00	0	15.00
Bobcat Creek	5.00	0	5.00
Unnamed Stream	6.00	0	6.00
Wright Creek	72.00	0	72.00
Unnamed Stream	15.00	0	15.00
South Fork Wright (Horse) (Springer) Creek	30.00	0	30.00
Curlew Creek	28.00	0	28.00

IRRIGATION SUMMARY OF POWDER RIVER COUNTY BY RIVER BASINS

YELLOWSTONE RIVER BASIN—(Continued)	Present Irrigated Acres	Irrigable Acres Under Present Facilities	Maximum Irrigable Acres
Unnamed Stream	38.00	0	38.00
Wolf Ravine (Coyote Gulch)	9.00	0	9.00
Unnamed Stream	8.00	0	8.00
Rue Creek	303.00	0	303.00
Unnamed Stream	142.00	0	142.00
Unnamed Stream	19.00	0	19.00
Preacher's Draw	40.00	15.00	55.00
Sheep Gulch	12.00	0	12.00
Peays (Gulch) Draw	45.00	0	45.00
Unnamed Stream	65.00	0	65.00
Bear Skull Creek	123.00	0	123.00
Unnamed Stream	23.00	0	23.00
Little Bear Skull Creek	20.00	0	20.00
North Fork Little Bear Skull Creek	35.00	0	35.00
Unnamed Stream	120.00	0	120.00
South Fork Little Bear Skull Creek	20.00	0	20.00
Unnamed Stream	18.00	0	18.00
Belle Creek	10.00	0	10.00
Warford Creek	19.00	0	19.00
Unnamed Streams	291.00	0	291.00
Watt Creek	107.00	0	107.00
Unnamed Stream	35.00	0	35.00
Gumbo Creek	50.00	0	50.00
Pine Creek	36.00	0	36.00
Allison Creek	25.00	0	25.00
Unnamed Stream	70.00	0	70.00
Wool Creek	50.00	0	50.00
Horse (Deep) Creek	35.00	0	35.00
Unnamed Stream	4.00	0	4.00
Dogie Creek	30.00	0	30.00
Unnamed Stream	70.00	0	70.00
Little Rough Creek	140.00	0	140.00
Sheep Creek	52.00	0	52.00
Spring Creek	31.00	0	31.00
South Prong Spring Creek	40.00	0	40.00
Plum Creek	10.00	0	10.00
Unnamed Stream	28.00	0	28.00
Rough Creek	56.00	0	56.00
Hockey (Hawkey) Creek	75.00	0	75.00
Last Chance Water (Dry Creek)	57.00	0	57.00
Unnamed Stream	20.00	0	20.00
Burton Draw	16.00	0	16.00
Fighting Butte Creek	34.00	0	34.00

IRRIGATION SUMMARY OF POWDER RIVER COUNTY BY RIVER BASINS

YELLOWSTONE RIVER BASIN—(Continued)	Present Irrigated Acres	Irrigable Acres Under Present Facilities	Maximum Irrigable Acres
Unnamed Stream	17.00	0	17.00
East Fork Little Powder River (East Fork Creek)	189.00	0	189.00
Unnamed Stream	135.00	0	135.00
Burdette Creek	149.00	0	149.00
Unnamed Stream	84.00	0	84.00
Hay Creek	140.00	0	140.00
Unnamed Stream	17.00	0	17.00
Total Little Powder River and Tributaries	**6,794.00**	**70.00**	**6,864.00**
Turner (Government) Creek	65.00	0	65.00
Wild Cat Creek	10.00	0	10.00
Big Pilgrim Creek	386.00	0	386.00
Unnamed Stream	24.00	0	24.00
Butte (William) Creek	12.00	0	12.00
West Ainsworth Coulee	14.00	0	14.00
Unnamed Creek	110.00	0	110.00
Little Pilgrim Creek	240.00	0	240.00
Hay Creek	176.00	0	176.00
Unnamed Creek	40.00	0	40.00
Poker Jim Gulch	200.00	0	200.00
Hawkey Creek	95.00	0	95.00
Little Hawkey Creek	25.00	0	25.00
Poker Jim Creek	495.00	0	495.00
Road Creek	0	0	0
Deer Creek	150.00	0	150.00
Dutch Creek	97.00	0	97.00
Rough Creek	50.00	0	50.00
Crooked Creek	55.00	0	55.00
Horse Creek	135.00	0	135.00
Cherry Creek	128.00	0	128.00
Hay Creek	195.00	0	195.00
Slaughter Creek	150.00	0	150.00
Unnamed Dry Draw	160.00	0	160.00
Foster Creek	0	140.00	140.00
Crow Creek	547.00	60.00	607.00
Oliphant Creek	15.00	0	15.00
Timber Creek	599.00	0	599.00
W. L. Creek (Barnard Coulee)	78.00	0	78.00
Mizpah Creek	2,173.00	0	2,173.00
Serviceberry Creek	106.00	0	106.00
Two Tree Butte Creek	61.00	0	61.00
Unnamed Creek	12.00	0	12.00
Road Creek	85.00	0	85.00

IRRIGATION SUMMARY OF POWDER RIVER COUNTY BY RIVER BASINS

YELLOWSTONE RIVER BASIN—(Continued)	Present Irrigated Acres	Irrigable Acres Under Present Facilities	Maximum Irrigable Acres
Bottles Creek	17.00	0	17.00
Leslie Creek	90.00	0	90.00
Wolf Creek	0	0	0
South Fork Wolf Creek	115.00	0	115.00
West Fork Wolf Creek	64.00	0	64.00
Road Creek	35.00	0	35.00
Unnamed Stream	10.00	0	10.00
Second Creek	370.00	0	370.00
Y. T. or "T" Creek	28.00	0	28.00
Road Creek	45.00	0	45.00
Ash Creek	260.00	0	260.00
North Fork Ash Creek	12.00	0	12.00
South Fork Ash Creek	79.00	0	79.00
Unnamed Draw	100.00	0	100.00
"T", (West Fork "T") (Charles) Creek	32.00	0	32.00
Lay (Lake) Creek	208.00	0	208 00
Unnamed Creek	8.00	0	8.00
Johnson Creek	25.00	0	25.00
Double Corrall Creek	164.00	0	164.00
Unnamed Creek	45.00	0	45.00
Unnamed Gulch	50.00	0	50.00
Hudson (Short) Creek	150.00	0	150.00
Lost Soldier Creek	250.00	0	250.00
Rough Creek	50.00	0	50.00
Mud Spring Creek	150.00	0	150.00
Nest Creek	90.00	0	90.00
Sheep Creek	115.00	0	115.00
Hay Creek	308.00	0	308.00
Cross "S" Creek	40.00	0	40.00
East Fork Cross "S" Creek	65.00	0	65.00
Total Mizpah Creek and Tributaries	**5,412.00**	**0**	**5,412.00**
Total Powder River and Tributaries	**27,153.00**	**485.00**	**27,638.00**
Total Irrigation in Powder River County	**33,186.00**	**768.00**	**33,954.00**

WATER RIGHT DATA—POWDER RIVER COUNTY

APPROPRIATIONS AND DECREES BY STREAMS

STREAM	APPROPRIATIONS (Filings of Record) No. of Filings	Miner's Inches	Cu. Ft. Per Sec.	DECREED RIGHTS Case No.	No. of Decrees	Miner's Inches	Cu. Ft. Per Sec.
YELLOWSTONE RIVER BASIN							
*Yellowstone River	0	0	0				
Tongue River	0	0	0				
†Post Creek	1	40	1.00				
Otter Creek	34	26,702	667.55				
Long Creek	1	720	18.00				
Cedar Creek	1	720	18.00				
Box Elder Creek	2	600	15.00				
East Fork Box Elder Creek	1	All	All				
Sunset Creek	1	360	9.00				
Pasture Creek	3	2,000	50.00				
Bradshaw Creek	5	3,740	93.50				
Little Bradshaw Creek	1	2,000	50.00				
Peterson Creek	1	160	4.00				
Ash Creek	1	280	7.00				
Myers Creek	1	200	5.00				
Alkali Spring	1	10	.25				
Bear (Second) Creek	6	7,500	187.50				
†Dry Creek	1	160	4.00				
†Pine Creek	1	200	5.00				
East Fork Bear Creek	1	800	20.00				
Vance Creek	4	7,500	187.50				
Phin (Finn) Creek	2	2,000	50.00				
Indian Creek	1	500	12.50				
North Fork Indian Creek	0	0	0				
South Fork of North Fork Indian Creek	2	1,500	37.50				
Desert Creek	1	500	12.50				
Unnamed Springs	1	1,000	25.00				
Thompson Prong (Middle Fork) (South Fork) Indian Creek	2	5,000	125.00				
Camp Creek	1	400	10.00				
Smith Creek	2	1,000	25.00				
School Section Spring	1	10	.25				
Renas Creek	1	500	12.50				
Taylor Creek	2	2,000	50.00				
†Correll Creek	1	2,400	60.00				
Taylor or North Fork Taylor Creek	1	1,000	25.00				
May Spring	1	10	.25				
Stanley Spring	1	10	.25				
South Fork Taylor Creek	1	1,000	25.00				
Burnsides Spring	1	10	.25				
Griffin Creek	1	1,000	25.00				
Gumbo Point Spring	1	10	.25				
Stag Rock Creek	1	480	12.00				
Lyon (Lion) Creek	0	0	0				
Middle Fork Lyon (Lion) Creek	1	1,500	37.50				
Field Creek	1	1,500	37.50				

* Names of streams indented on the left-hand margin indicate that they are tributaries of the first stream named above which is not indented.

WATER RIGHT DATA—POWDER RIVER COUNTY

APPROPRIATIONS AND DECREES BY STREAMS

STREAM	APPROPRIATIONS (Filings of Record) No. of Filings	Miner's Inches	Cu. Ft. Per Sec.	DECREED RIGHTS Case No.	No. of Decrees	Miner's Inches	Cu. Ft. Per Sec.
Ash Creek	2	2,800	70.00				
Coal Creek	1	200	5.00				
Paget Creek	1	400	10.00				
Elk Creek	5	1,170	29.25				
Schwind Spring	1	10	.25				
North Fork Elk Creek	1	1,760	44.00				
Fifteen Mile Creek	12	11,250	281.25				
North Fork Fifteen Mile Creek	1	3,000	75.00				
Mankameyer Spring	1	All	All				
Jacohs Gulch Spring	1	10	.25				
George Smith Spring No. 1	1	10	.25				
Ten Mile Creek	4	1,400	35.00				
Newell Creek	2	800	20.00				
Three Mile Creek	3	7,000	175.00				
South Fork Three Mile Creek	0	0	0				
Three Mile Spring	1	All	All				
Lewis Draw	1	500	12.50				
McIntosh Creek	1	400	10.00				
Sawmill Creek	1	120	3.00				
Home Creek	6	6,240	156.00				
Well Spring	1	All	All				
Blue Shale Spring	1	All	All				
East Fork Otter Creek	5	876	21.90				
Timber Creek	1	All	All				
Bridge (Willow) Creek	1	100	2.50				
Coal Creek	2	250	6.25				
Cedar Creek	1	320	8.00				
Chunning Creek	1	200	5.00				
Total Otter Creek and Tributaries	**152**	**115,798**	**2,894.95**				
Cook Creek	1	All	All				
Beaver Creek	2	1,500	37.50				
Unnamed Creek	1	4,000	100.00				
Creek No. 2	1	960	24.00				
Creek No. 1	1	720	18.00				
Cottonwood Creek	2	300	7.50				
Pumpkin Creek	10	52,280	1,307.00				
Plum Creek	1	500	12.50				
Flat Creek	1	200	5.00				
Dry Creek	2	1,000	25.00				
Unnamed Creek	2	1,000	25.00				
Reservoir Creek	1	2,400	60.00				
Basin Creek	1	1,000	25.00				
Dutchman Creek	1	1,000	25.00				
Dry Creek	2	400	10.00				
Skinners Gulch	2	1,300	32.50				
Dunan (Duncan) Gulch	2	2,400	60.00				
Litus Creek	1	500	12.50				
Winter Gulch	1	2,400	60.00				

WATER RIGHT DATA—POWDER RIVER COUNTY

APPROPRIATIONS AND DECREES BY STREAMS

STREAM	APPROPRIATIONS (Filings of Record) No. of Filings	Miner's Inches	Cu. Ft. Per Sec.	DECREED RIGHTS Case No.	No. of Decrees	Miner's Inches	Cu. Ft. Per Sec.
Six Mile Creek	2	5,000	125.00				
Short Creek	1	200	5.00				
"Fifty-four" Creek	1	1,500	37.50				
Pass Creek	1	500	12.50				
Tilton Spring Creek	1	1,160	29.00				
Box Elder Creek	1	400	10.00				
South Fork Box Elder Creek	1	200	5.00				
Kaywah (Swenson) Creek	5	2,120	53.00				
Camp Creek	1	520	13.00				
Dry Creek	2	240	6.00				
Correll Creek	2	10,500	262.50				
Spring Creek	0	0	0				
Dry Creek	1	50	1.25				
Little Pumpkin Creek	5	3,000	75.00				
Gold (Griffen) Creek	3	2,000	50.00				
Buckberry Creek	1	300	7.50				
Taylor (Stacey) Creek	1	500	12.50				
Corner Creek	1	500	12.50				
Cameron Creek	1	400	10.00				
Cottonwood Creek	1	640	16.00				
S. L. (Burning Coal Mine) (Coal Mine) Creek	6	10,000	250.00				
Lay Creek	1	80	2.00				
North Fork Lay Creek	1	60	1.50				
South Fork Lay Creek	1	60	1.50				
Total Pumpkin Creek and Tributaries	**68**	**106,310**	**2,657.75**				
Total Tongue River and Tributaries	**229**	**229,628**	**5,740.70**				
Powder River	49	88,556	2,213.90				
†Coal Creek	1	200	5.00				
†Coyote Creek	1	100	2.50				
†Log Creek	2	1,500	37.50				
†South Log Creek	1	500	12.50				
†Rock Creek	1	3,000	75.00				
†Shale Creek	1	200	5.00				
†Wesley Creek	1	500	12.50				
Line Creek	3	3,700	92.50				
Cedar Creek	4	1,600	40.00				
Bitter Creek	2	3,000	75.00				
Dry Creek	2	2,500	62.50				
Rough Creek	2	400	10.00				
Trail Creek	3	2,000	50.00				
Pasture Creek	1	2,000	50.00				
Graham Creek	1	100	2.50				
Lavering (Boot Jack) Creek	1	1,000	25.00				
Thompson Creek	2	1,100	27.50				
Timber (Tompkin) Creek	2	600	15.00				
Well Draw	1	300	7.50				
East Thompson Creek	2	400	10.00				
Flood Waters	1	2,000	50.00				

WATER RIGHT DATA—POWDER RIVER COUNTY

APPROPRIATIONS AND DECREES BY STREAMS

STREAM	APPROPRIATIONS (Filings of Record) No. of Filings	Miner's Inches	Cu. Ft. Per Sec.	DECREED RIGHTS Case No.	No. of Decrees	Miner's Inches	Cu. Ft. Per Sec.
Cliff Creek	1	800	20.00				
Flood Creek	4	5,000	125.00				
Post Creek	2	3,000	75.00				
Wolf Creek	1	800	20.00				
Short Creek	1	200	5.00				
Mexican Creek	1	200	5.00				
Buffalo Creek	2	2,500	62.50				
Spring Creek	4	6,200	155.00				
Dutch Creek	4	3,100	77.50				
Liscomb Creek	2	1,100	27.50				
Flood Waters	1	1,000	25.00				
Dry Creek	2	400	10.00				
Baker Creek	1	640	16.00				
Plum Creek	1	500	12.50				
Three Bar Creek	6	6,460	161.50				
†Correll Creek	1	3,000	75.00				
Lock Creek	1	1,000	25.00				
Reservoir Creek	1	320	8.00				
Jimmy Creek	1	320	8.00				
Jakes Creek	1	30,000	750.00				
Dry (Sandstone) (Hay) Creek	1	500	12.50				
Garst (Deep) (Canyon) Creek	5	33,080	827.00				
Clay Creek	1	280	7.00				
Basin (Cow) Creek	1	3,000	75.00				
Bonner Creek	1	360	9.00				
Leitner Creek	2	1,000	25.00				
Bloom Creek	2	8,000	200.00				
North Fork Bloom Creek	0	0	0				
Middle Fork Bloom Creek	0	0	0				
Correll Creek	1	320	8.00				
Kramer Spring	1	10	.25				
Powers Spring	1	10	.25				
Bog Hole Spring	1	10	.25				
Pine Creek	1	1,500	37.50				
Bernice Creek	1	500	12.50				
Pass Creek	1	2,000	50.00				
Tibbits Creek	1	300	7.50				
Bay Horse Creek	9	19,992.8	499.82				
Plum Creek	1	5,000	125.00				
Ellis Canyon	1	1,400	35.00				
Crooked Creek	1	1,000	25.00				
Road Creek	3	5,200	130.00				
Pinto Creek	3	3,500	87.50				
East Pinto Creek	1	1,000	25.00				
Buttermilk Creek	1	10,000	250.00				
Cow Creek	2	2,100	52.50				
Daily Creek	1	10,000	250.00				
Fire Gulch Creek	4	6,000	150.00				
East Fork Fire Gulch Creek	1	1,000	25.00				
Yarger Creek	1	80	2.00				
Bridge Creek	1	80	2.00				

WATER RIGHT DATA—POWDER RIVER COUNTY

APPROPRIATIONS AND DECREES BY STREAMS

STREAM	APPROPRIATIONS (Filings of Record) No. of Filings	Miner's Inches	Cu. Ft. Per Sec.	DECREED RIGHTS Case No.	No. of Decrees	Miner's Inches	Cu. Ft. Per Sec.
Henning (Miller) (Bull Tree) Creek	2	2,160	54.00				
Pine Creek	1	2,000	50.00				
Rock Creek	1	3,000	75.00				
Short Creek	1	200	5.00				
Alkali Creek	1	200	5.00				
Lewis Creek	1	1,280	32.00				
Butte Creek	4	7,040	176.00				
South Fork Butte Creek	1	1,942.4	48.56				
Laura Creek	1	200	5.00				
Sand Bank Draw	1	400	10.00				
East Fork Butte Creek	1	200	5.00				
Dry Creek	2	1,100	27.50				
Ernest Creek	1	1,000	25.00				
Deep Gulch Creek	1	1,000	25.00				
Flood Creek	1	1,000	25.00				
Unnamed Creek	1	300	7.50				
Cedar (Henning) Creek	7	13,300	332.50				
Upper Daily Creek	1	2,000	50.00				
Surface Waters	1	800	20.00				
N-Bar Creek	1	2,000	50.00				
Baking Powder Creek	2	3,500	87.50				
South Fork Baking Powder Creek	3	1,000	25.00				
Stevens Fork Baking Powder Creek	1	400	10.00				
Norton Gulch	1	200	5.00				
Short Creek	1	800	20.00				
Allison Creek	2	1,200	30.00				
Deer Creek	2	8,000	200.00				
Lone Tree Creek	3	2,700	67.50				
Bog (Short) Creek	4	3,900	97.50				
Dobe Creek	1	200	5.00				
Cache Creek	3	5,000	125.00				
South Fork Cache Creek	1	500	12.50				
Dry Fork Cache Creek	1	400	10.00				
Wilson Creek	1	1,000	25.00				
Clay Butte Creek	1	400	10.00				
Unnamed Creek	1	300	7.50				
First Creek	3	5,400	135.00				
Johnson Creek	4	4,800	120.00				
Second Creek	2	4,500	112.50				
Surface Water	1	300	7.50				
Middle Creek	2	3,800	95.00				
Cedar Creek	1	500	12.50				
Broadus Creek	1	1,500	37.50				
Fourth Creek	1	2,000	50.00				
Dog Creek	1	2,600	65.00				
Stewart (Stone) Creek	4	7,700	192.50				
Unnamed Creek	2	3,400	85.00				
Third Creek	3	2,500	62.50				
†Coyote Creek	1	1,000	25.00				

WATER RIGHT DATA—POWDER RIVER COUNTY

APPROPRIATIONS AND DECREES BY STREAMS

STREAM	APPROPRIATIONS (Filings of Record) No. of Filings	Miner's Inches	Cu. Ft. Per Sec.	DECREED RIGHTS Case No.	No. of Decrees	Miner's Inches	Cu. Ft. Per Sec.
Post (Wilson) Creek	4	9,900	247.50				
Wrangler (Prairie) (Ranch) (Settle) Creek	5	10,000	250.00				
Wrangle Creek	1	300	7.50				
Unnamed Creek	1	1,000	25.00				
Unnamed Creek	1	1,000	25.00				
Sand Creek	7	6,200	155.00				
(North) (East) Fork Sand Creek	2	1,400	35.00				
Prairie Creek	1	300	7.50				
Lone Tree (Brownie) (Spring) Creek	3	4,900	122.50				
Phillippi Creek	1	2,000	50.00				
Coyote Creek	2	3,200	80.00				
Bobcat Creek	1	500	12.50				
Little Powder River	21	16,660	416.50				
†Big Cottonwood Creek	2	600	15.00				
†Little Cottonwood Creek	1	500	12.50				
†Deep Creek	1	1,500	37.50				
†Morris Creek	1	2,500	62.50				
Sheep Creek	1	1,000	25.00				
Stringfellow Creek	1	600	15.00				
Prairie Dog Creek	1	1,000	25.00				
Cover Draw	1	200	5.00				
Bowers Creek	8	10,600	265.00				
Deep Creek	1	1,000	25.00				
Marsh Creek	1	120	3.00				
Coal Gulch Creek	1	1,000	25.00				
Allison (Little Bowers) Creek	1	1,000	25.00				
Rock Creek	1	600	15.00				
Prairie Creek	2	1,400	35.00				
North Prong Bowers Creek	0	0	0				
Mitchell Creek	1	100	2.50				
Blacktail Creek	4	4,300	107.50	941	1	All	All
Williams Creek	2	1,200	30.00				
Badger Creek	2	780	19.50				
Ranch Creek (Johnson's Run)	6	84,520	2,113.00				
South Fork Ranch Creek (Henry Garst Draw)	4	2,600	65.00				
Twenty-One Creek	1	100	2.50				
Reservoir Draw	1	1,000	25.00				
Rambo Gulch	1	100	2.50				
Wilson Gulch	1	100	2.50				
Unnamed Draw	1	300	7.50				
Cross Creek	1	100	2.50				
Willis Creek	1	100	2.50				
Myrtle Creek	1	400	10.00				
Deep Creek (Sage Draw)	2	1,100	27.50				
Hay Creek	1	400	10.00				
Little Hay Creek	1	44,400	1,110.00				
Wright Creek	1	1,000	25.00				

WATER RIGHT DATA—POWDER RIVER COUNTY

APPROPRIATIONS AND DECREES BY STREAMS

STREAM	APPROPRIATIONS (Filings of Record) No. of Filings	Miner's Inches	Cu. Ft. Per Sec.	DECREED RIGHTS Case No.	No. of Decrees	Miner's Inches	Cu. Ft. Per Sec.
South Fork Wright (Springer) (Horse) Creek	3	1,400	35.00				
Curlew Creek	1	400	10.00				
Wolf Ravine (Coyote Gulch)	2	700	17.50				
Rue Creek	2	20,480	512.00				
Sheep Gulch	1	648	16.20				
Peays (Gulch) Draw	1	1,152	28.80				
Bear Skull Creek	4	4,300	107.50				
Little Bear Skull Creek	2	1,100	27.50				
Belle Creek	3	3,560	89.00				
Warford Creek	2	3,000	75.00				
Watt Creek	1	2,000	50.00				
Gumbo Creek	2	2,000	50.00				
Finnegan (Spring) Creek	3	3,000	75.00				
Henrietta Creek	1	1,000	25.00				
Pine Creek	3	2,400	60.00				
Home Creek	1	200	5.00				
Allison Creek	2	900	22.50				
Wool Creek	1	1,000	25.00				
Plum Creek	1	1,000	25.00				
Porcupine Creek	1	100	2.50				
Horse (Deep) Creek	3	1,600	40.00				
North Fork Horse Creek	1	1,500	37.50				
Dogie Creek	2	3,500	87.50				
Unnamed Stream	1	250	6.25				
Little Rough Creek	3	6,000	150.00				
Pat Creek	2	600	15.00				
Sheep Creek	3	2,800	70.00				
South Fork Sheep Creek	1	400	10.00				
Spring Creek	1	2,000	50.00				
South Prong Spring Creek	1	800	20.00				
Rough Creek	3	3,600	90.00				
Skunk Creek	1	200	5.00				
Hockey (Hawkey) Creek	2	4,000	100.00				
French Creek	1	200	5.00				
Dry Creek (Last Chance Water)	4	6,100	152.50				
Flat Creek	1	200	5.00				
Burton Draw	1	500	12.50				
Fighting Butte Creek	1	2,000	50.00				
Cedar Creek	1	5,000	125.00				
Tiret Creek	1	100	2.50				
Antelope Creek	1	1,000	25.00				
Flat Creek	1	600	15.00				
East Fork Little Powder River (East Fork Creek)	6	7,900	197.50				
†Ranch Creek	1	100	2.50				
Chappo Creek	1	1,000	25.00				
Scott Creek	1	2,000	50.00				
Butte Creek	1	3,000	75.00				
Burdette Creek	2	5,500	137.50				
Unnamed Creek	1	500	12.50				

WATER RIGHT DATA—POWDER RIVER COUNTY

APPROPRIATIONS AND DECREES BY STREAMS

STREAM	APPROPRIATIONS (Filings of Record) No. of Filings	Miner's Inches	Cu. Ft. Per Sec.	DECREED RIGHTS Case No.	No. of Decrees	Miner's Inches	Cu. Ft. Per Sec.
Dry Gulch	2	2,000	50.00				
Hay Creek	1	2,000	50.00				
Dick Creek	1	1,000	25.00				
Tom Creek	1	1,000	25.00				
Harry Creek	1	1,000	25.00				
Draine Creek	1	200	5.00				
Butte Creek	5	9,200	230.00				
East Fork Butte Creek	1	1,000	25.00				
Flood Waters	2	2,400	60.00				
Plum Creek	1	300	7.50				
Annis (Antelope) (Wolfe) Creek	2	400	10.00				
Little Corrall Creek	1	200	5.00				
Corrall Creek	1	1,000	25.00				
Hell Creek	1	600	15.00				
Total Little Powder River and Tributaries	**83**	**318,470**	**7,961.75**		1	All	All
Monday Creek	2	1,300	32.50				
Turner (Government) Creek	5	3,300	82.50	797	1	All	All
Wild Cat Creek	1	500	12.50				
Unlucky Creek	1	600	15.00				
Double Creek	1	500	12.50				
Pic (T. A.) Creek	3	2,000	50.00				
Sheep (Addison & Louise) Creek	2	1,500	37.50				
Wild Cat (Kraft) Creek	2	1,500	37.50				
Big Pilgrim Creek	7	26,640	666.00				
Lighting Creek	1	All	All				
Dry Draw	1	500	12.50				
East Ainsworth Coulee	1	20	.50				
Williams Creek	1	120	3.00				
Butte Creek	1	100,000	2,500.00				
West Ainsworth Coulee	1	20	.50				
South Creek	1	480,000	12,000.00				
Jim Drake Creek	1	1,000	25.00				
Sage Hen Creek	2	1,400	35.00				
North Creek	1	2,000	50.00				
Sand Creek	1	480	12.00				
West Fork Big Pilgrim Creek	1	80	2.00				
Ash Creek	1	1,500	37.50				
Ross Creek	1	300	7.50				
Magpie Creek	1	300	7.50				
Hay Creek	1	10,000	250.00				
Poker Jim Gulch	1	400	10.00				
Wolf Creek	1	1,000	25.00				
Poker Jim Creek	2	5,000	125.00				
Strock Draw	1	500	12.50				
Butte Creek	1	1,000	25.00				
Hawkey Creek	1	5,000	125.00				
Little Hawkey Creek	1	2,500	62.50				
Road Creek	1	500	12.50				

WATER RIGHT DATA—POWDER RIVER COUNTY

APPROPRIATIONS AND DECREES BY STREAMS

STREAM	APPROPRIATIONS (Filings of Record) No. of Filings	Miner's Inches	Cu. Ft. Per Sec.	DECREED RIGHTS Case No.	No. of Decrees	Miner's Inches	Cu. Ft. Per Sec.
Deer Creek	2	1,500	37.50				
Wolf Draw	1	500	12.50				
Dutch Creek	1	200	5.00				
Rough (Little Hawkey) Creek	4	3,500	87.50				
Crooked Creek	1	1,000	25.00				
Road Creek	2	940	23.50				
Horse Creek	2	2,000	50.00				
North Fork Horse Creek	1	740.8	18.52				
South Fork Horse Creek	1	522.4	13.06				
Buffalo Creek	3	2,500	62.50				
Mud Creek	4	2,640	66.00				
Matt (Spring) Creek	2	1,000	25.00				
Short Creek	1	1,000	25.00				
Deep Coulee (Ducello, Deer Creek)	3	1,800	45.00				
Cherry Creek	3	3,500	87.50				
Hay Creek	2	2,000	50.00				
Prairie Dog Creek	1	200	5.00				
Mushroom Creek	1	120	3.00				
Slaughter Creek	4	2,500	62.50				
Dry Coulee	1	200	5.00				
Foster Creek	4	4,500	112.50				
Basin Gulch (Rough Creek)	2	1,500	37.50				
Canyon Gulch (Spring Gulch) (Olson Coulee)	4	2,280	57.00				
Dry Gulch	1	80	2.00				
Hillside Draw	1	500	12.50				
Mason (Tom) Creek	2	700	17.50				
Mason Spring	1	10	.25				
Unnamed Dry Coulee	1	500	12.50				
Dry Creek	1	200	5.00				
Butte Creek	1	500	12.50				
Dry Creek	1	500	12.50				
Crow Creek	2	3,000	75.00				
Jensen Creek	1	400	10.00				
Flat Creek	1	All	All				
Second Creek	1	1,000	25.00				
Timber Creek	3	2,800	70.00				
Mamie Creek	1	200	5.00				
Unnamed Stream	1	500	12.50				
W. L. Creek (Barnard Coulee)	3	2,900	72.50				
Stump Creek	1	1,000	25.00				
Mizpah Creek	17	24,200	605.00				
†Little Correll Creek	1	500	12.50				
Serviceberry Creek	1	800	20.00				
Bottles Creek	1	2,000	50.00				
Two Tree Butte Creek	3	3,400	85.00				
Wizer Creek	1	500	12.50				
Road Creek	1	500	12.50				
Third Creek	1	200	5.00				
Leslie (Road) Creek	4	2,800	70.00				
Middle Creek	1	1,200	30.00				

WATER RIGHT DATA—POWDER RIVER COUNTY

APPROPRIATIONS AND DECREES BY STREAMS

STREAM	APPROPRIATIONS (Filings of Record) No. of Filings	Miner's Inches	Cu. Ft. Per Sec.	DECREED RIGHTS Case No.	No. of Decrees	Miner's Inches	Cu. Ft. Per Sec.
Wolf Creek	2	3,000	75.00				
West or South Fork Wolf Creek	3	4,400	110.00				
Second Creek	1	1,500	37.50				
Y. T. Creek	2	1,800	45.00				
Road Creek	1	400	10.00				
Foster Creek	1	300	7.50				
Ty Creek (Draw)	2	3,000	75.00				
"T" (West Fork "T") (Charles) Creek	4	2,500	62.50				
Ash Creek	1	1,500	37.50				
North Fork Ash Creek	2	200	5.00				
"T" Creek	2	1,200	30.00				
Lay (Lake) Creek	2	2,000	50.00				
Johnson Creek	1	4,000	100.00				
Moonlight Creek	1	300	7.50				
Flat Creek	1	1,000	25.00				
Double Corrall Creek	7	5,500	137.50				
Unnamed Creek	1	2,000	50.00				
Dry Creek	1	500	12.50				
Alkali (Soda) Creek	2	500	12.50				
Hudson Creek	0	0	0				
Short Creek	2	5,000	125.00				
Lost Soldier Creek	7	3,900	97.50				
North Soldier Creek	1	800	20.00				
Rough Creek	1	200	5.00				
Mud Spring Creek	2	2,400	60.00				
Unnamed Stream	1	120	3.00				
Unnamed Creek	1	1,000	25.00				
Nest Creek	2	1,500	37.50				
Hay Creek	5	3,400	85.00				
Reservoir Creek	1	200	5.00				
Sheep Creek	2	1,500	37.50	697	1	1,000.00	25.00
North Prong Sheep Creek	1	500	12.50				
Jimmy Creek	3	2,500	62.50				
Dry Coulee	1	1,000	25.00				
Dick Creek	3	1,200	30.00				
Cross "S" Creek	1	1,000	25.00				
East Fork Cross "S" Creek	1	1,000	25.00				
Sand Creek	1	2,000	50.00				
Total Mizpah Creek and Tributaries	**104**	**100,920**	**2,523.00**		**1**	**1,000.00**	**25.00**
Total Powder River and Tributaries	**696**	**1,572,624.4**	**39,315.61**		**1**	**All**	**All**
Grand Total Powder River County	**927**	**1,802,252.4**	**45,056.31**		**3**	**1,000.00**	**25.00**

† These streams are not located except as being tributaries to the major stream.

DRAINAGES IN POWDER RIVER COUNTY NOT LOCATED

STREAM	No. of Filings	Miner's Inches	Cu. Ft. Per Sec.
Ape Creek	1	400	10.00
Buck Creek	1	1,000	25.00
Dugan Creek	1	2,000	50.00
Homestead Creek	1	500	12.50
Jenkins Creek	1	40	1.00
Lamb Creek	1	500	12.50
Muddy Creek	1	201	5.03
Oleson Creek	1	1,000	25.00
Reder Creek	1	1,000	25.00
Yonkee Script Spring	1	10	.25
Stepp Creek	1	300	7.50
Youngs Creek	1	All	All
Total	**12**	**6,951**	**173.78**

WATER RESOURCES SURVEY

POWDER RIVER COUNTY, MONTANA

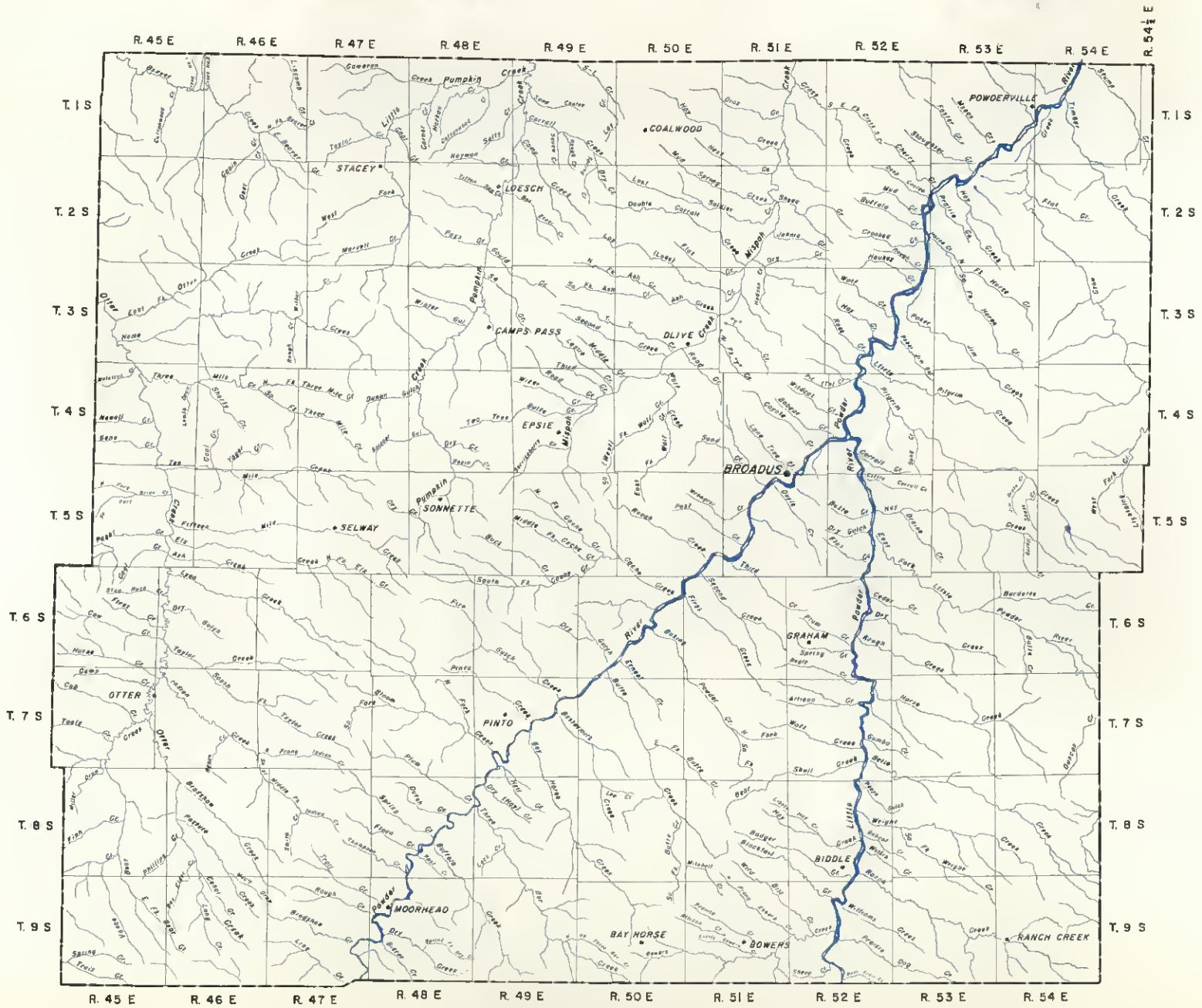
Part II

Maps Showing Irrigated Areas

Published by
STATE ENGINEER'S OFFICE
Helena, Montana
June, 1961

MAP INDEX

ALL MAPS HAVE BEEN MADE FROM AERIAL PHOTOGRAPHS



DRAINAGE MAP

of

Powder River County

MAP SYMBOL INDEX

BOUNDARIES

- COUNTY LINE
- NATIONAL FOREST LINE

DITCHES

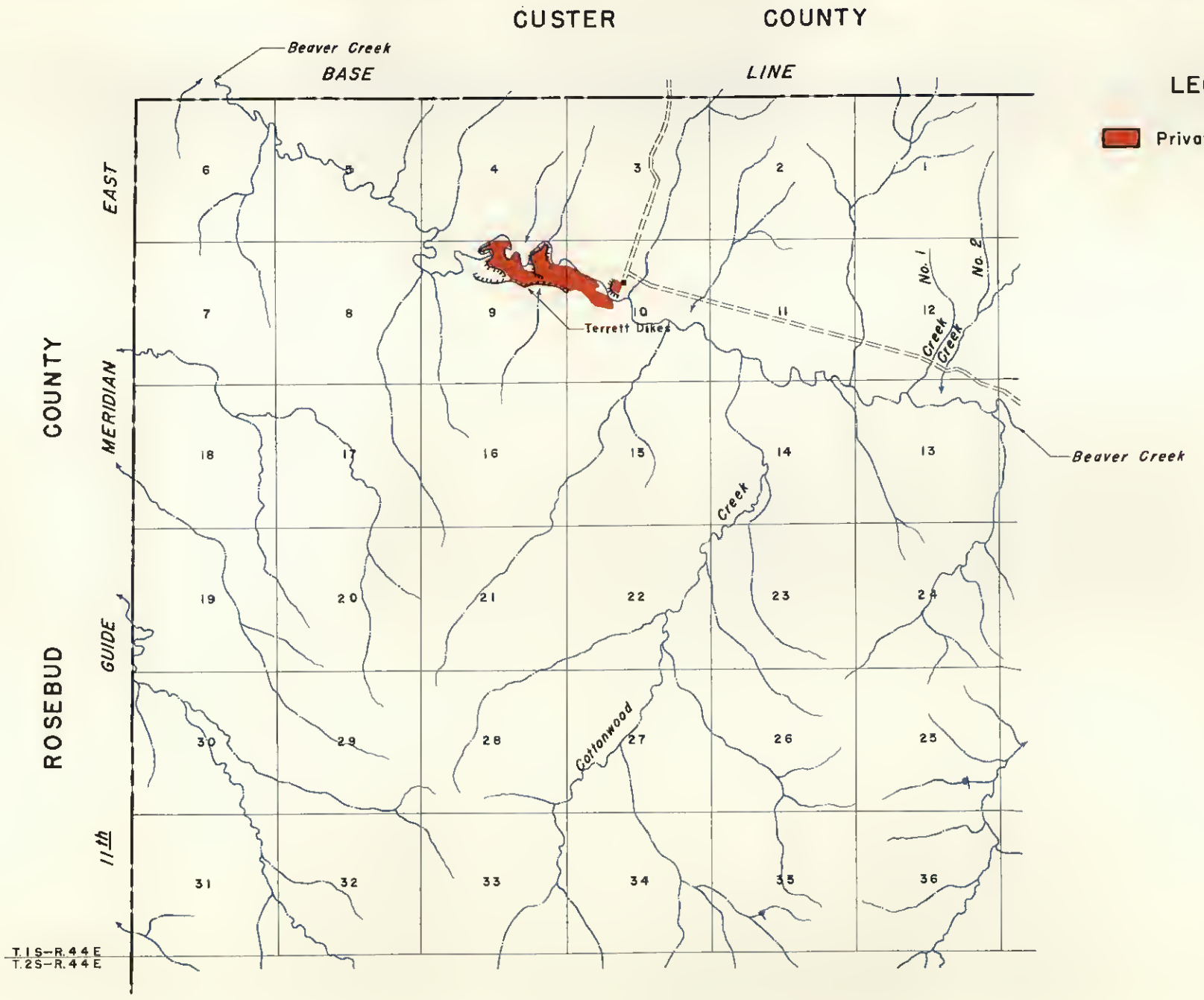
- CANALS OR DITCHES
- DRAIN DITCHES
- PROPOSED DITCHES

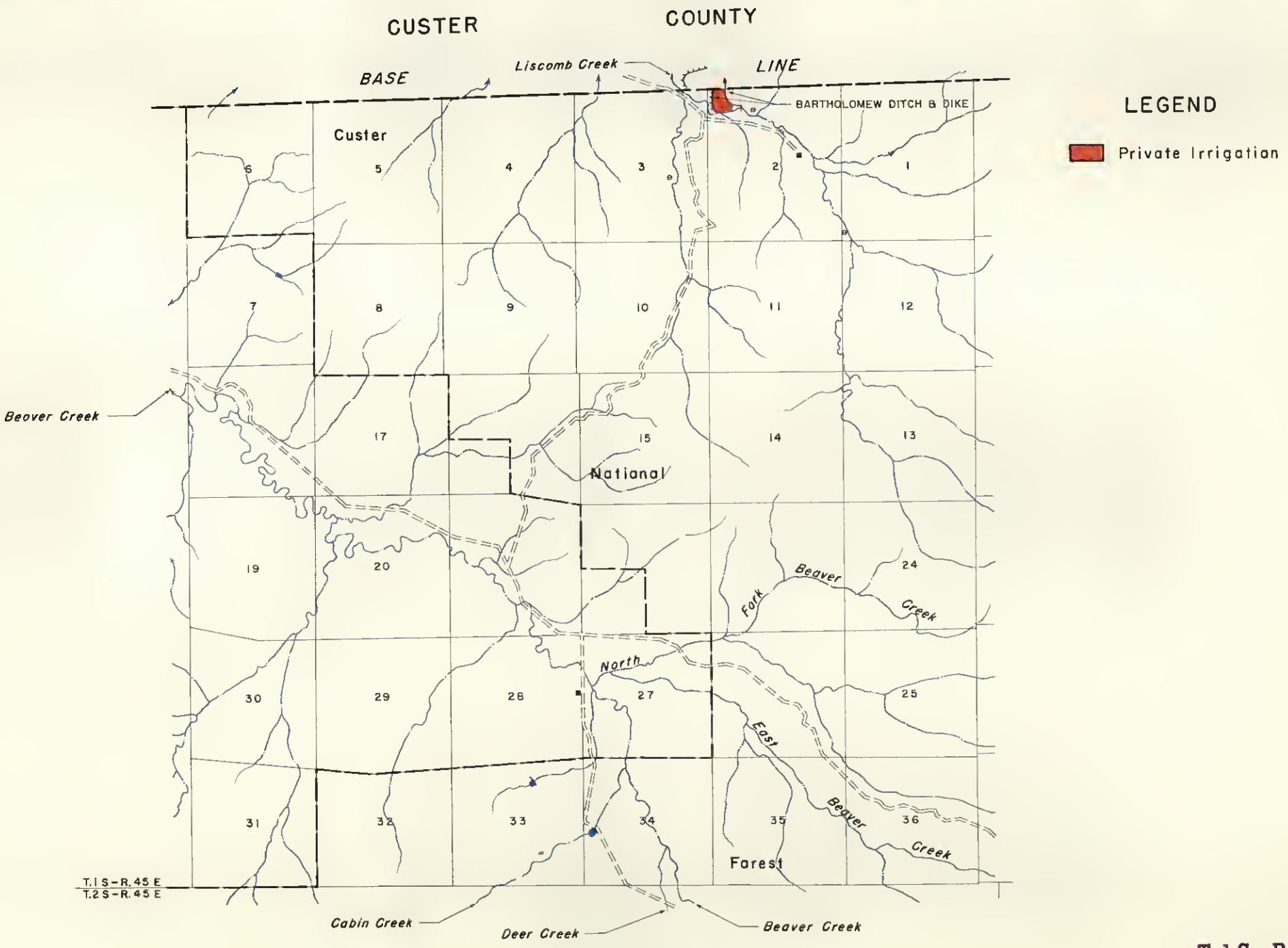
TRANSPORTATION

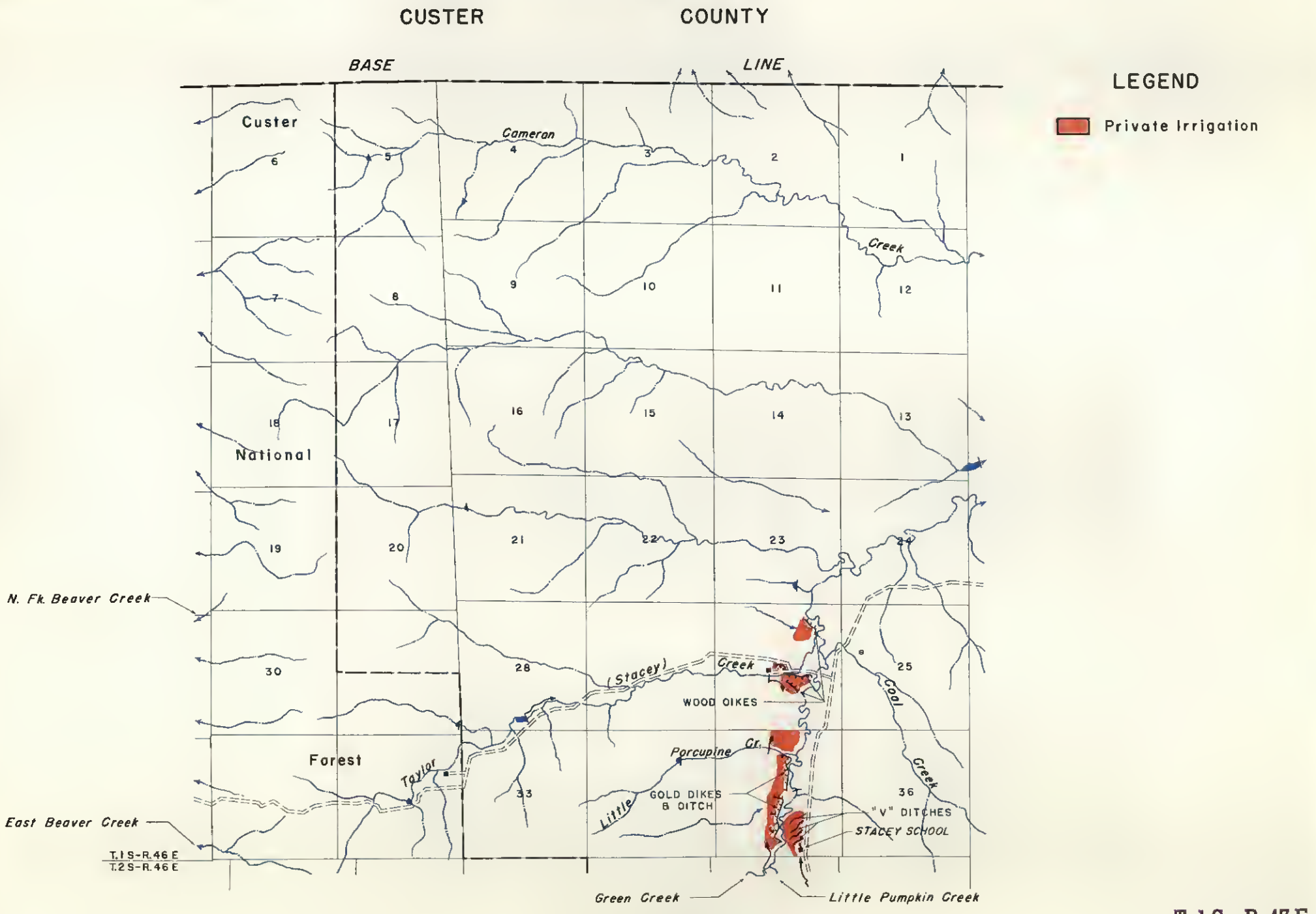
- PAVED ROADS
- UNPAVED ROADS
- RAILROADS
- STATE HIGHWAY
- U.S. HIGHWAY
- AIRPORT

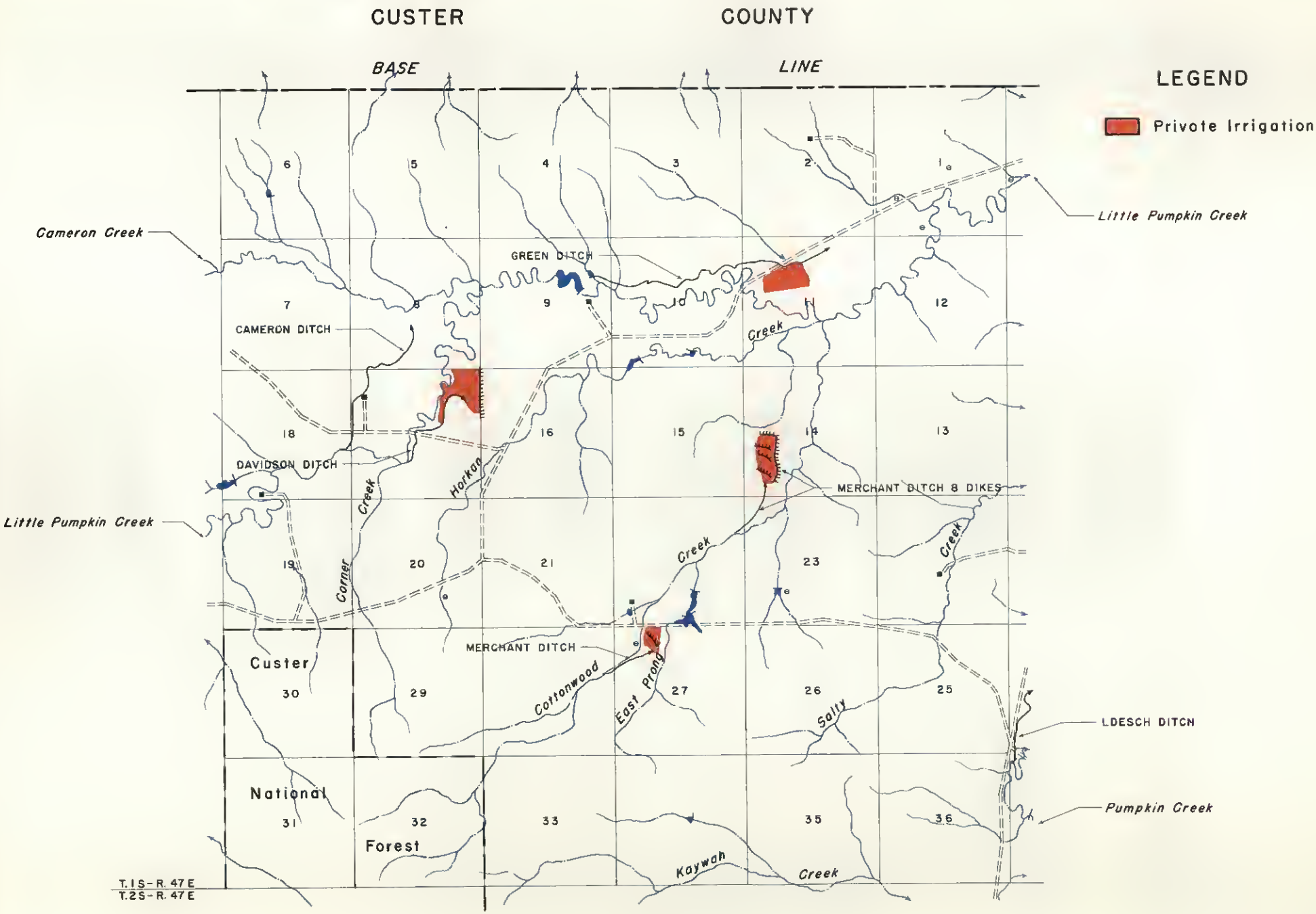
STRUCTURES & UNITS

- DAM
- DIKE
- FLUME
- SIPHON
- SPILL
- SPRINKLER SYSTEM
- WEIR
- PIPE LINE
- PUMP
- PUMP SITE
- RESERVOIR
- WELL
- NATURAL CARRIER USED AS DITCH
- SPRING
- SWAMP
- GAUGING STATION
- POWER PLANT
- STORAGE TANK
- CEMETERY
- FAIRGROUND
- FARM OR RANCH UNIT
- LOOKOUT STATION
- RANGER STATION
- RAILROAD TUNNEL
- SCHOOL
- SHAFT, MINE, OR DRIFT

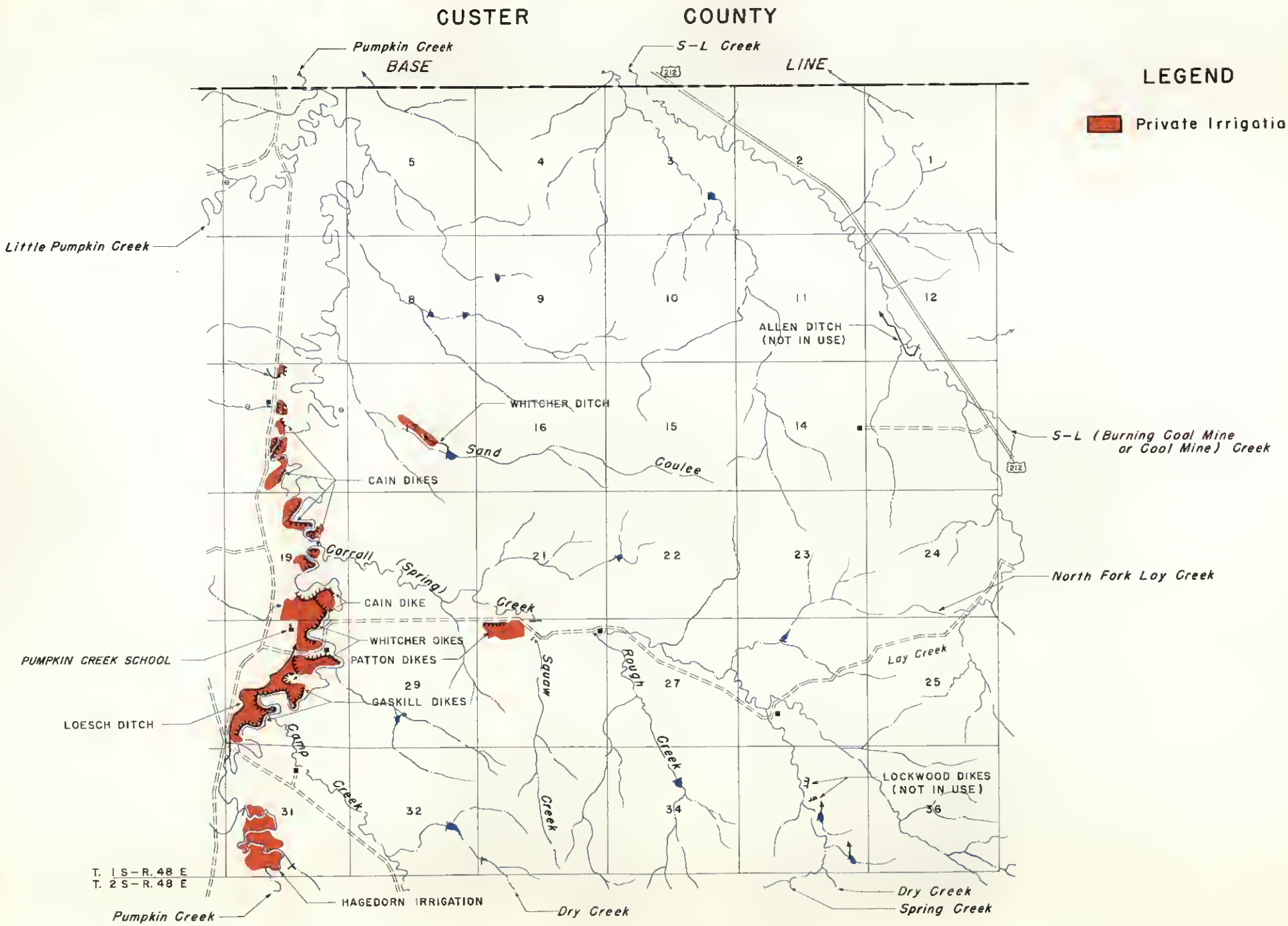

CUSTER COUNTY
Beaver Creek
BASE LINE
EAST
MERIDIAN
GUIDE
11th
ROSEBUD COUNTY
Terrett Dikes
No. 1 Creek
No. 2 Creek
Beaver Creek
Creek
Cottonwood
T.1S—R.44E
T.2S—R.44E
LEGEND
Private Irrigation
T. 1 S—R. 45 E

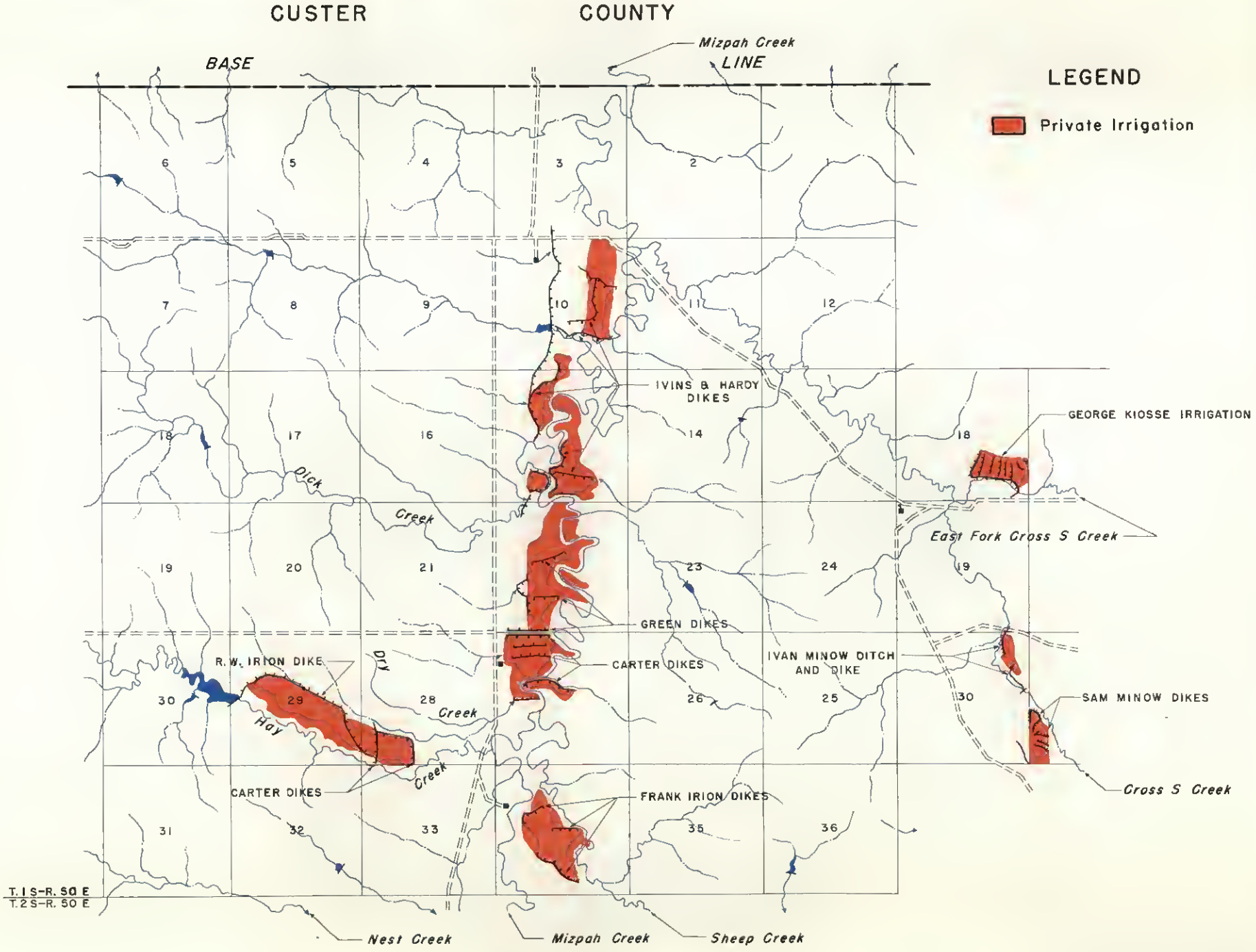

CUSTER COUNTY
BASE LINE
Liscomb Creek
BARTHOLOMEW DITCH & DIKE
Custer
National
Forest
Beaver Creek
North Fork Beaver Creek
East Beaver Creek
Cabin Creek
Deer Creek
Beaver Creek
T.1 S - R.45 E
T.2 S - R.45 E
LEGEND
Private Irrigation
T. 1 S—R. 46 E


CUSTER COUNTY
BASE LINE
Custer
Cameron
Creek
National
Forest
N. Fk. Beaver Creek
East Beaver Creek
T.1S-R.46E
T.2S-R.46E
Taylor
(Stacey) Creek
WOOD DIKES
Porcupine Cr.
Little
GOLD DIKES & DITCH
Coal Creek
"V" DITCHES
STACEY SCHOOL
Green Creek
Little Pumpkin Creek
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
28
30
33
36
LEGEND
Private Irrigation
T. 1 S—R. 47 E

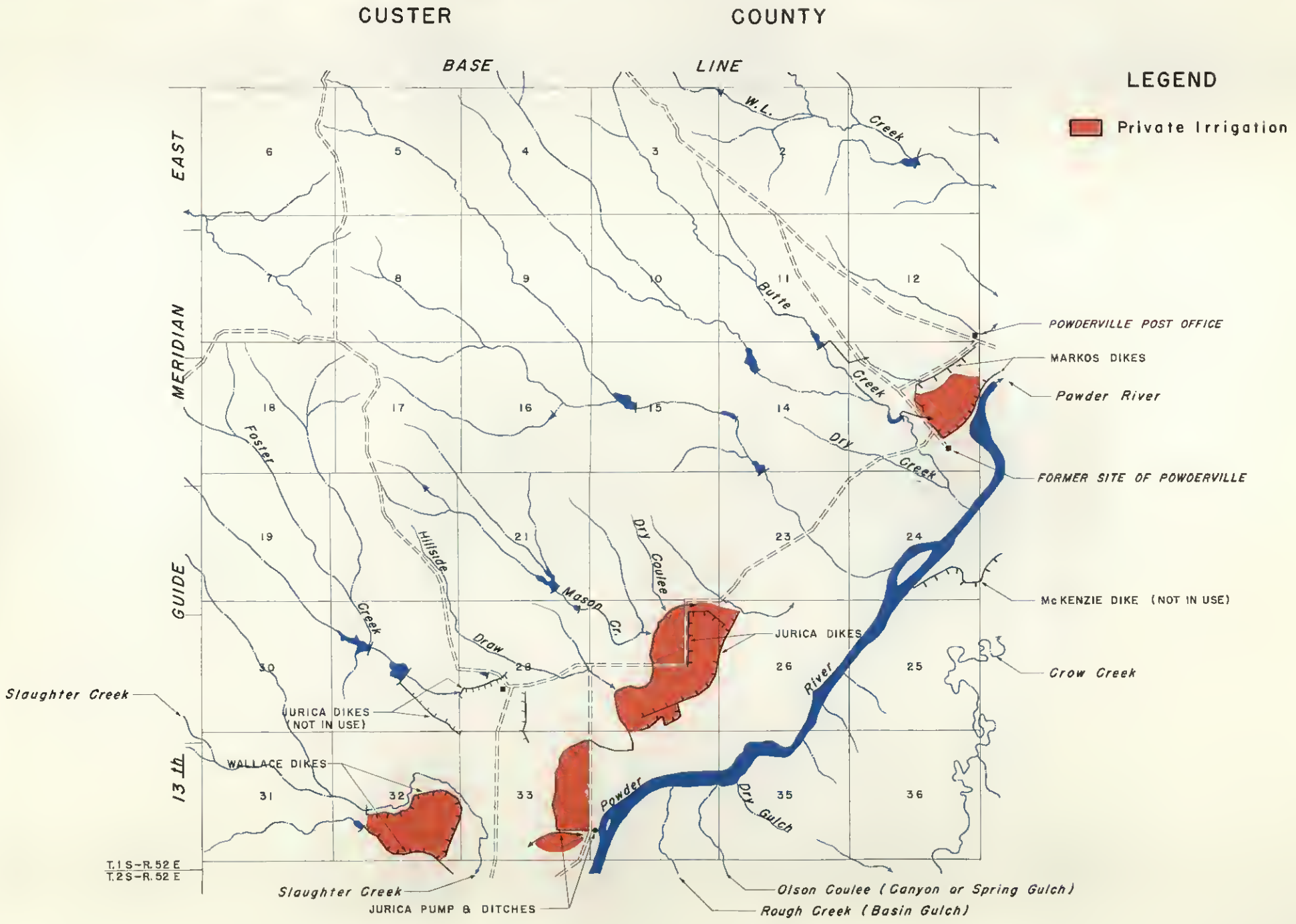

CUSTER COUNTY
BASE LINE
LEGEND
Private Irrigation
Cameron Creek
Little Pumpkin Creek
GREEN DITCH
CAMERON DITCH
DAVIDSON DITCH
Little Pumpkin Creek
Horkan Creek
Corner Creek
MERCHANT DITCH & DIKES
MERCHANT DITCH
Cottonwood Creek
East Prong
Salty Creek
LDESCH DITCH
Pumpkin Creek
Kaywah Creek
Custer National Forest
6 5 4 3 2 1
7 8 9 10 11 12
18 16 15 14 13
19 20 21 23
30 29 27 26 25
31 32 33 35 36
T.1S-R.47E
T.2S-R.47E

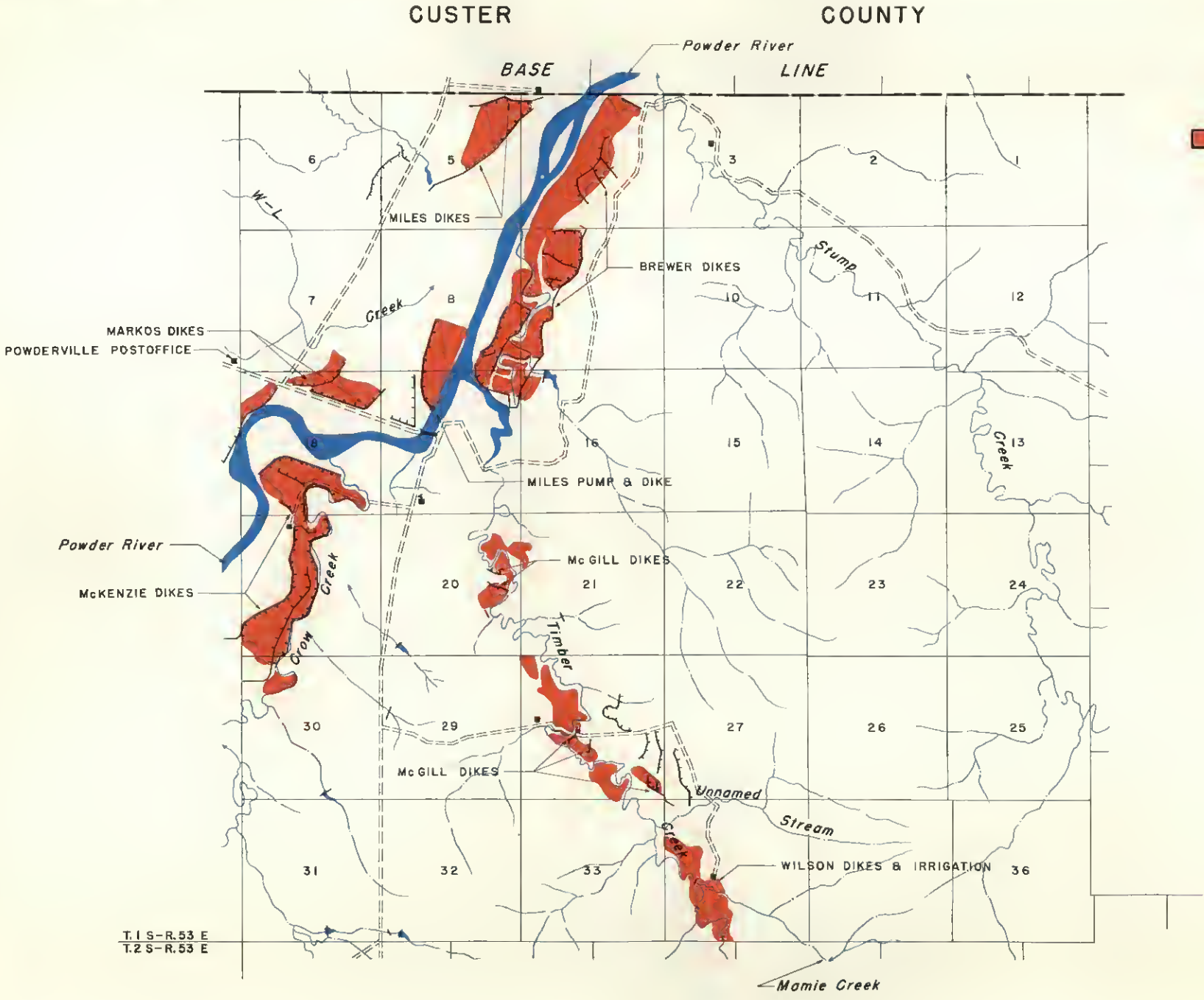
T. 1 S—R. 48 E

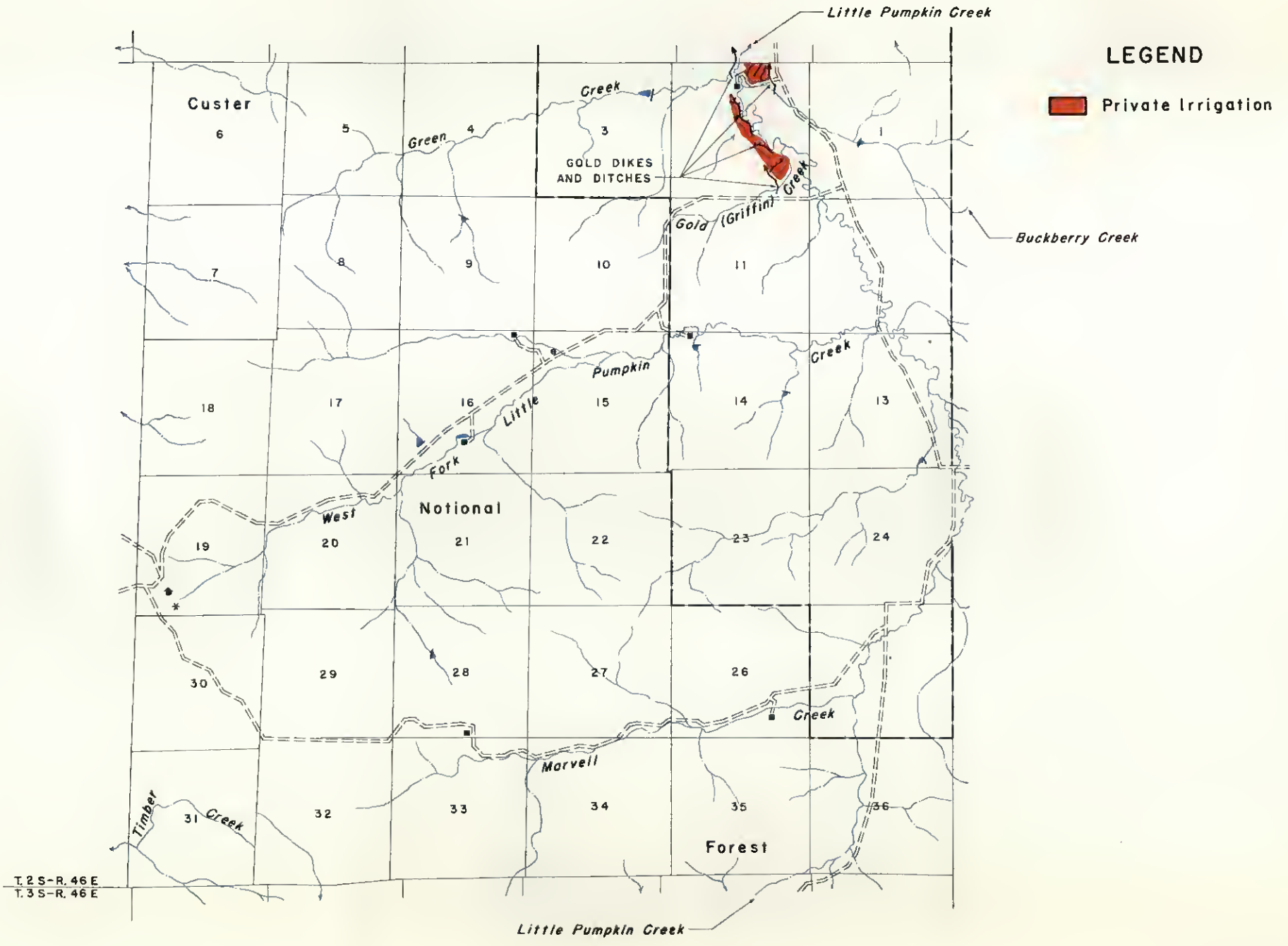

CUSTER COUNTY
Pumpkin Creek
BASE
S-L Creek
LINE
212
LEGEND
Private Irrigation
Little Pumpkin Creek
5
4
3
2
1
8
9
10
11
12
ALLEN DITCH
(NOT IN USE)
WHITCHER DITCH
16
15
14
S-L (Burning Coal Mine
or Coal Mine) Creek
Sand
Coulee
CAIN DIKES
19
Corrall
(Spring)
21
22
23
24
North Fork Loy Creek
CAIN DIKE
Creek
WHITCHER DIKES
PATTON DIKES
PUMPKIN CREEK SCHOOL
Squaw
Rough
Loy Creek
29
27
25
GASKILL DIKES
LOESCH DITCH
Camp
Creek
Creek
Creek
LOCKWOOD DIKES
(NOT IN USE)
31
32
34
36
T. 1 S-R. 48 E
T. 2 S-R. 48 E
HAGEDORN IRRIGATION
Pumpkin Creek
Dry Creek
Dry Creek
Spring Creek
T. 1 S—R. 49 E

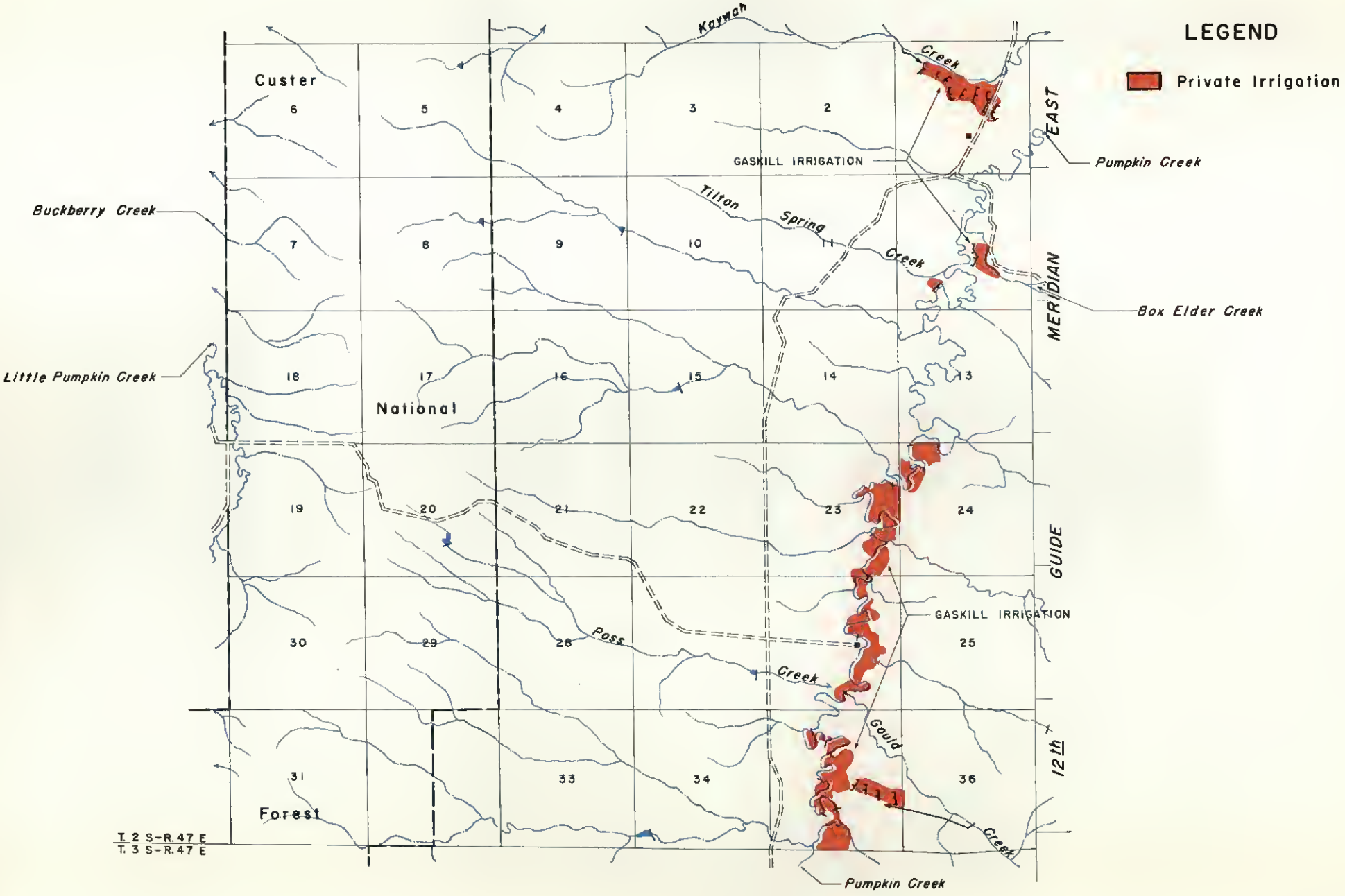

CUSTER COUNTY
BASE LINE
Mizpah Creek
LEGEND
Private Irrigation
IVINS & HARDY DIKES
GEORGE KIOSSE IRRIGATION
East Fork Cross S Creek
Dick Creek
GREEN DIKES
CARTER DIKES
IVAN MINOW DITCH AND DIKE
SAM MINOW DIKES
R.W. IRION DIKE
Dry Creek
Hay Creek
CARTER DIKES
FRANK IRION DIKES
Cross S Creek
T. 1 S–R. 50 E
T. 2 S–R. 50 E
Nest Creek
Mizpah Creek
Sheep Creek

T. 1 S—R. 51 & 52 E


CUSTER COUNTY
BASE LINE
EAST
MERIDIAN
GUIDE
13 th
LEGEND
Private Irrigation
W. L. Creek
Butte Creek
Dry Creek
Foster Creek
Hillside Draw
Mason Cr.
Dry Coulee
Powder River
Dry Gulch
POWDERVILLE POST OFFICE
MARKOS DIKES
Powder River
FORMER SITE OF POWDERVILLE
McKENZIE DIKE (NOT IN USE)
JURICA DIKES
Crow Creek
Slaughter Creek
JURICA DIKES (NOT IN USE)
WALLACE DIKES
Slaughter Creek
JURICA PUMP & DITCHES
Olson Coulee (Canyon or Spring Gulch)
Rough Creek (Basin Gulch)
T.1S-R.52E
T.2S-R.52E
T. 1 S—R. 53 E


CUSTER COUNTY
Powder River
BASE LINE
LEGEND
Private Irrigation
MILES DIKES
BREWER DIKES
MARKOS DIKES
POWDERVILLE POSTOFFICE
MILES PUMP & DIKE
Powder River
McKENZIE DIKES
McGILL DIKES
McGILL DIKES
WILSON DIKES & IRRIGATION
W-L Creek
Stump Creek
Crow Creek
Timber Creek
Unnamed Stream
Mamie Creek
T. 1 S-R. 53 E
T. 2 S-R. 53 E
T. 1 S—R. 54 E


Little Pumpkin Creek
LEGEND
Private Irrigation
Custer
Green Creek
GOLD DIKES AND DITCHES
Gold (Griffin) Creek
Buckberry Creek
Little Pumpkin Creek
West Fork
Notional
Forest
Timber Creek
Marvell Creek
Little Pumpkin Creek
T. 2 S-R. 46 E
T. 3 S-R. 46 E
T. 2 S—R. 47 E


LEGEND
Private Irrigation
Custer
National
Forest
Buckberry Creek
Little Pumpkin Creek
Kaywah Creek
Tilton Spring Creek
Poss Creek
Gould Creek
Pumpkin Creek
Box Elder Creek
GASKILL IRRIGATION
GASKILL IRRIGATION
EAST
MERIDIAN
GUIDE
12th
6
5
4
3
2
7
8
9
10
11
18
17
16
15
14
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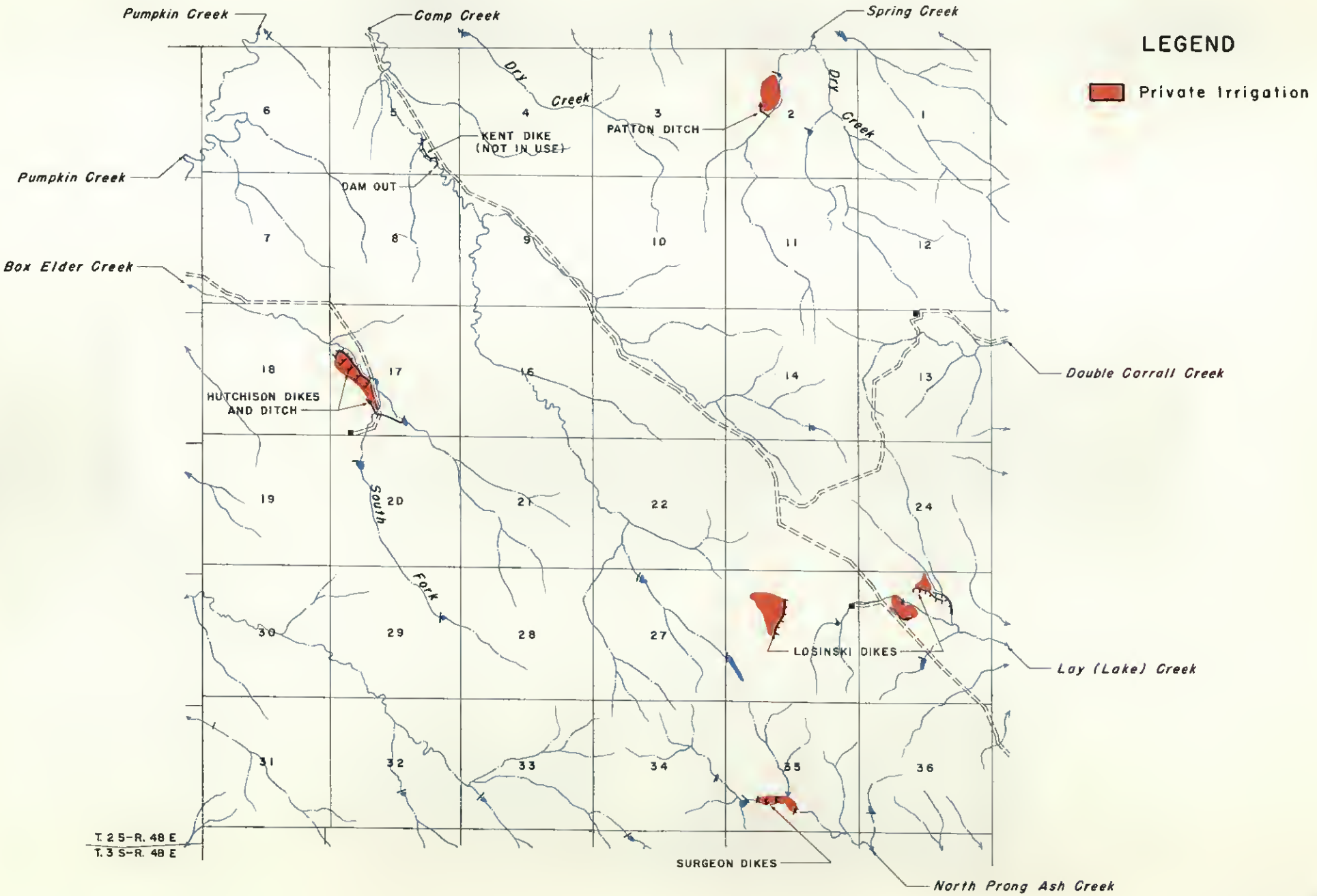
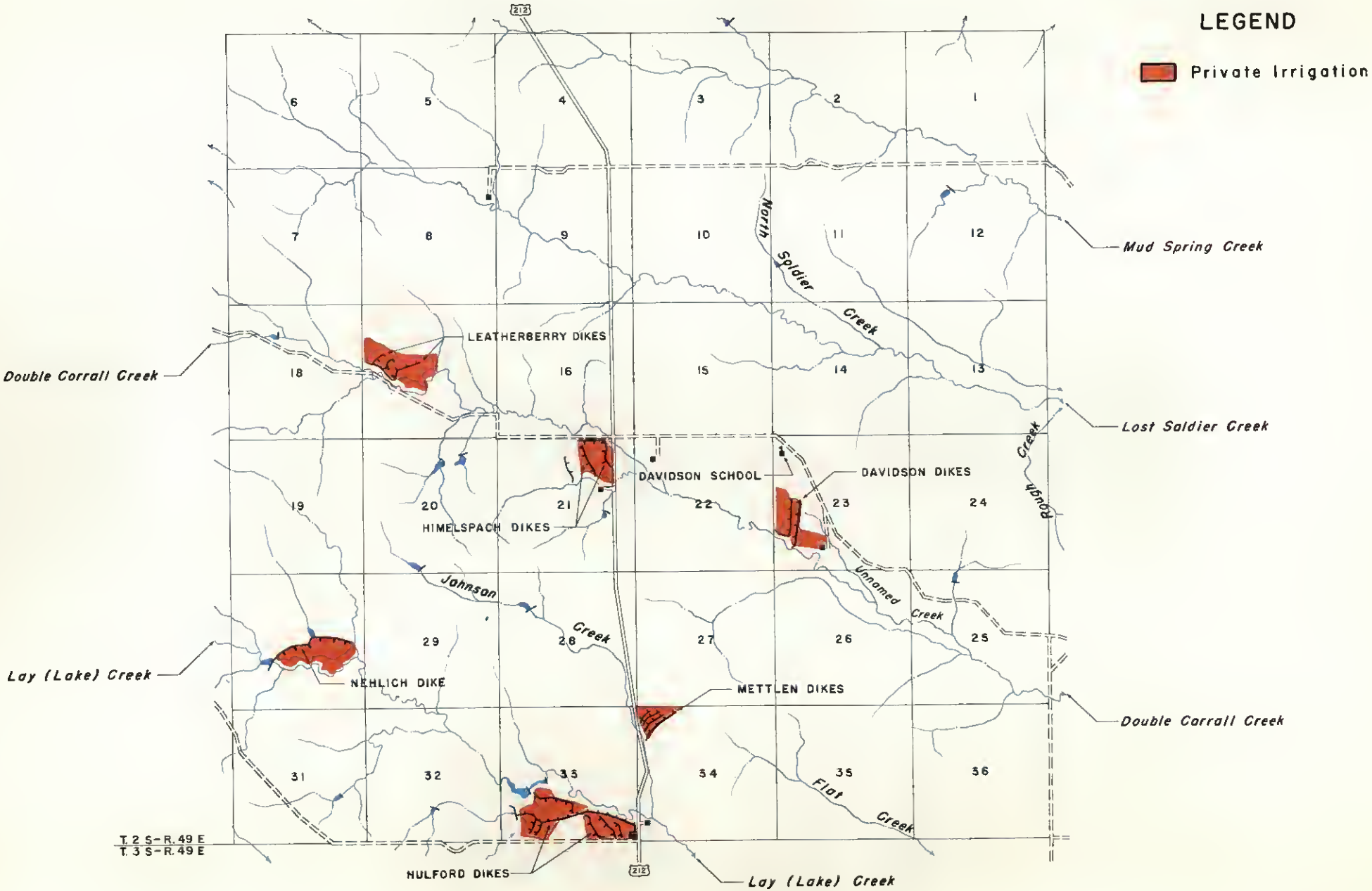
31
33
34
36
T. 2 S-R. 47 E
T. 3 S-R. 47 E

T. 2 S—R. 48 E


Pumpkin Creek
Camp Creek
Spring Creek
Dry Creek
Dry Creek
KENT DIKE
(NOT IN USE)
PATTON DITCH
DAM OUT
Pumpkin Creek
Box Elder Creek
HUTCHISON DIKES
AND DITCH
Double Corrall Creek
South Fork
LOSINSKI DIKES
Lay (Lake) Creek
SURGEON DIKES
North Prong Ash Creek
T. 2 S-R. 48 E
T. 3 S-R. 48 E
LEGEND
Private Irrigation
T. 2 S—R. 49 E


LEGEND
Private Irrigation
212
6
5
4
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11
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18
16
15
14
13
19
20
21
22
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28
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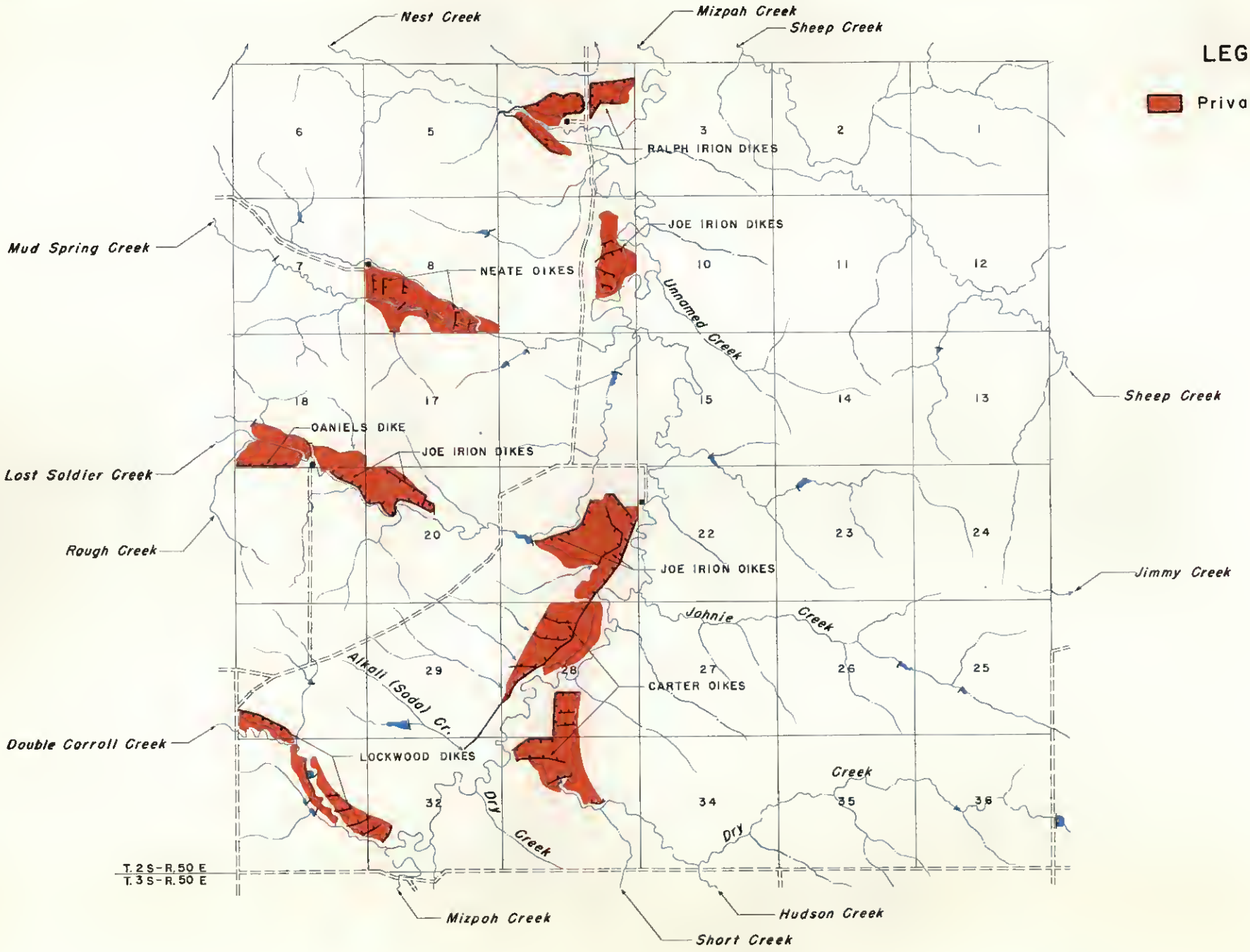
26
25
31
32
33
34
35
36
North Soldier Creek
Mud Spring Creek
Lost Saldier Creek
Double Corrall Creek
LEATHERBERRY DIKES
DAVIDSON SCHOOL
DAVIDSON DIKES
HIMELSPACH DIKES
Johnson Creek
Unnamed Creek
Lay (Lake) Creek
NEHLICH DIKE
METTLEN DIKES
Flat Creek
NULFORD DIKES
T. 2 S-R. 49 E
T. 3 S-R. 49 E

T. 2 S—R. 50 E


Nest Creek
Mizpah Creek
Sheep Creek
LEGEND
Private Irrigation
RALPH IRION DIKES
JOE IRION DIKES
Mud Spring Creek
NEATE DIKES
Unnamed Creek
Sheep Creek
OANIELS DIKE
JOE IRION DIKES
Lost Soldier Creek
Rough Creek
JOE IRION DIKES
Jimmy Creek
Johnie Creek
Alkali (Soda) Cr.
CARTER DIKES
Double Corroll Creek
LOCKWOOD DIKES
Dry Creek
Dry Creek
T. 2 S - R. 50 E
T. 3 S - R. 50 E
Mizpah Creek
Short Creek
Hudson Creek
6
5
3
2
1
7
8
10
11
12
18
17
15
14
13
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22
23
24
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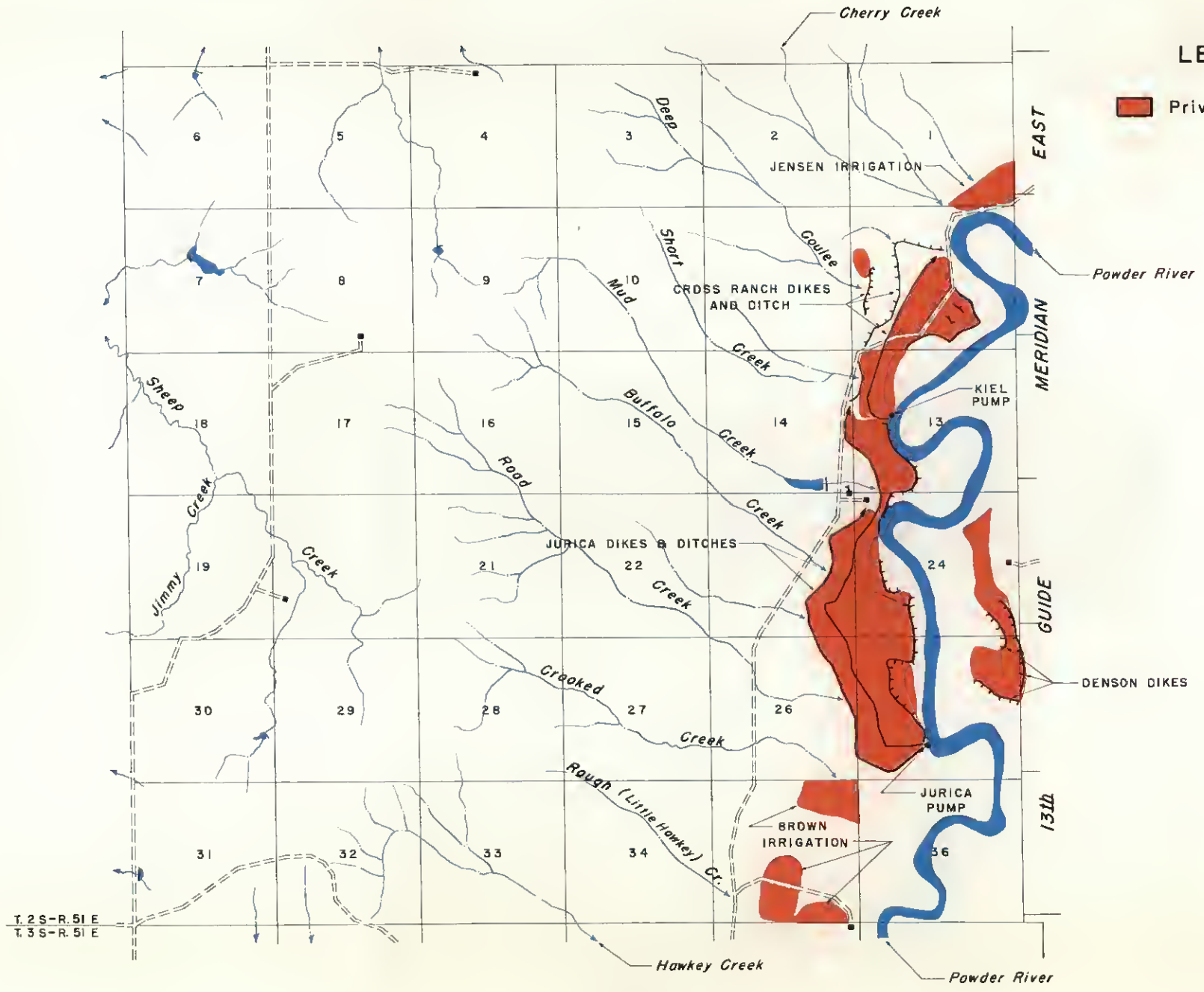
28
27
26
25
32
34
35
36

T. 2 S—R. 51 E


LEGEND
Private Irrigation
Cherry Creek
Deep
JENSEN IRRIGATION
EAST
MERIDIAN
Powder River
Short
Coulee
Mud
CROSS RANCH DIKES AND DITCH
Creek
KIEL PUMP
Sheep
Buffalo
Creek
Road
Creek
Creek
JURICA DIKES & DITCHES
Jimmy
Creek
Creek
GUIDE
DENSON DIKES
Crooked
Creek
Creek
JURICA PUMP
BROWN IRRIGATION
13th
Rough (Little Hawkey) Cr.
T. 2 S - R. 51 E
T. 3 S - R. 51 E
Hawkey Creek
Powder River
6
5
4
3
2
1
7
8
9
10
18
17
16
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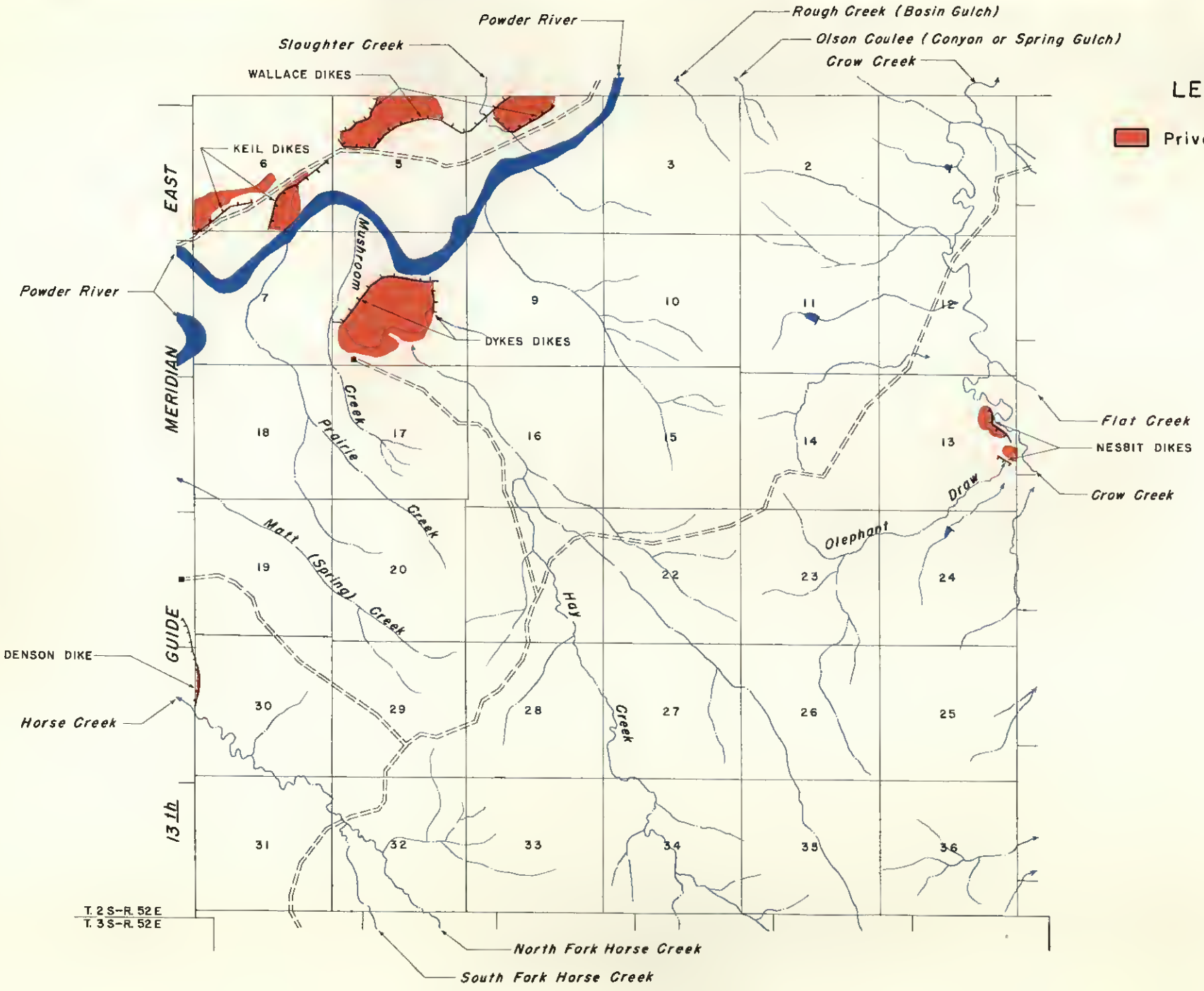
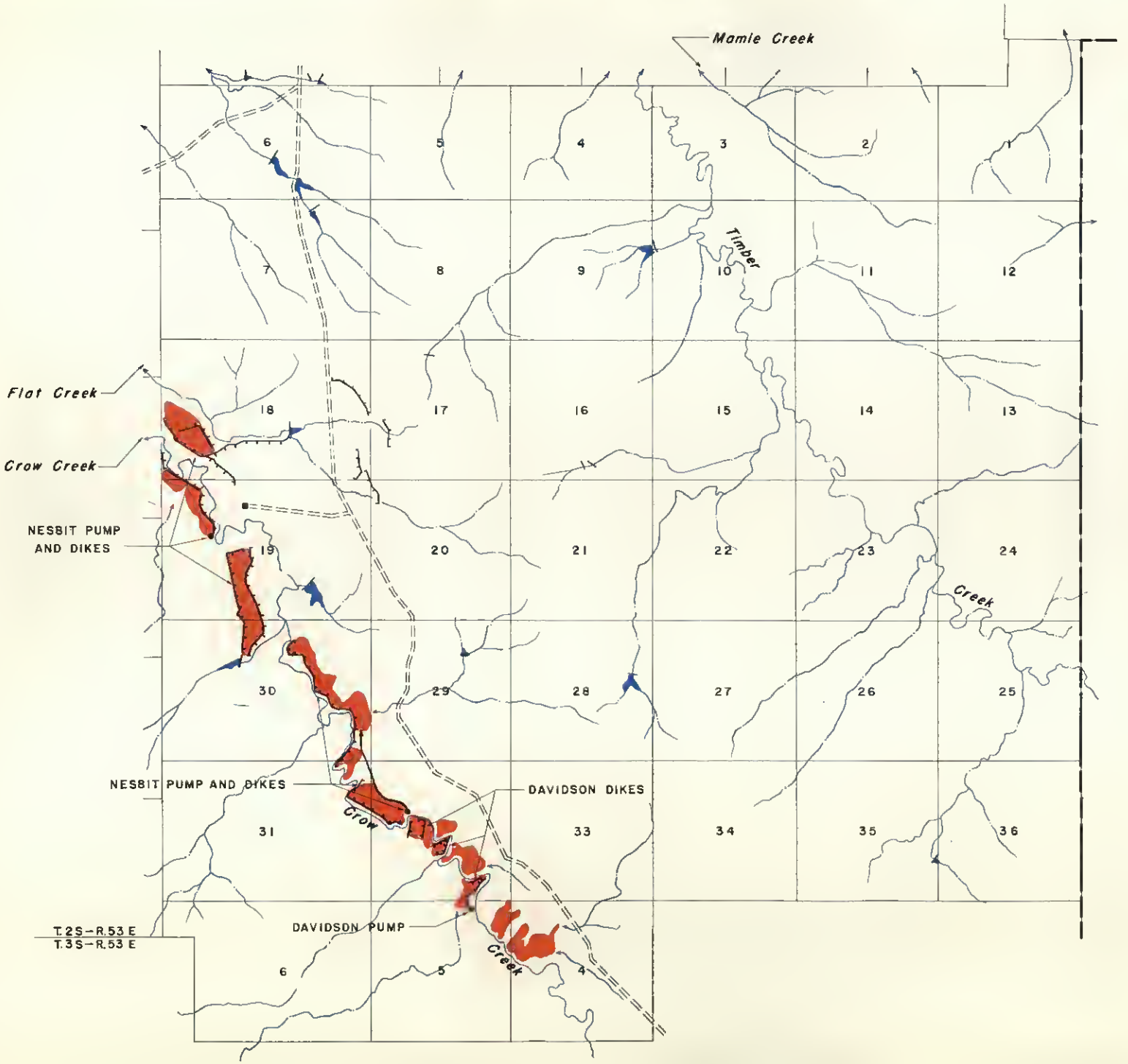
T. 2 S—R. 52 E


Powder River
Sloughter Creek
WALLACE DIKES
Rough Creek (Bosin Gulch)
Olson Coulee (Conyon or Spring Gulch)
Crow Creek
KEIL DIKES
EAST
MERIDIAN
Powder River
Mushroom
DYKES DIKES
Prairie Creek
Flat Creek
NESBIT DIKES
Crow Creek
Draw
Olephant
Matt (Spring) Creek
Hay Creek
GUIDE
DENSON DIKE
Horse Creek
13 th
T. 2 S-R. 52 E
T. 3 S-R. 52 E
North Fork Horse Creek
South Fork Horse Creek
LEGEND
Private Irrigation

T. 2 S—R. 53 E

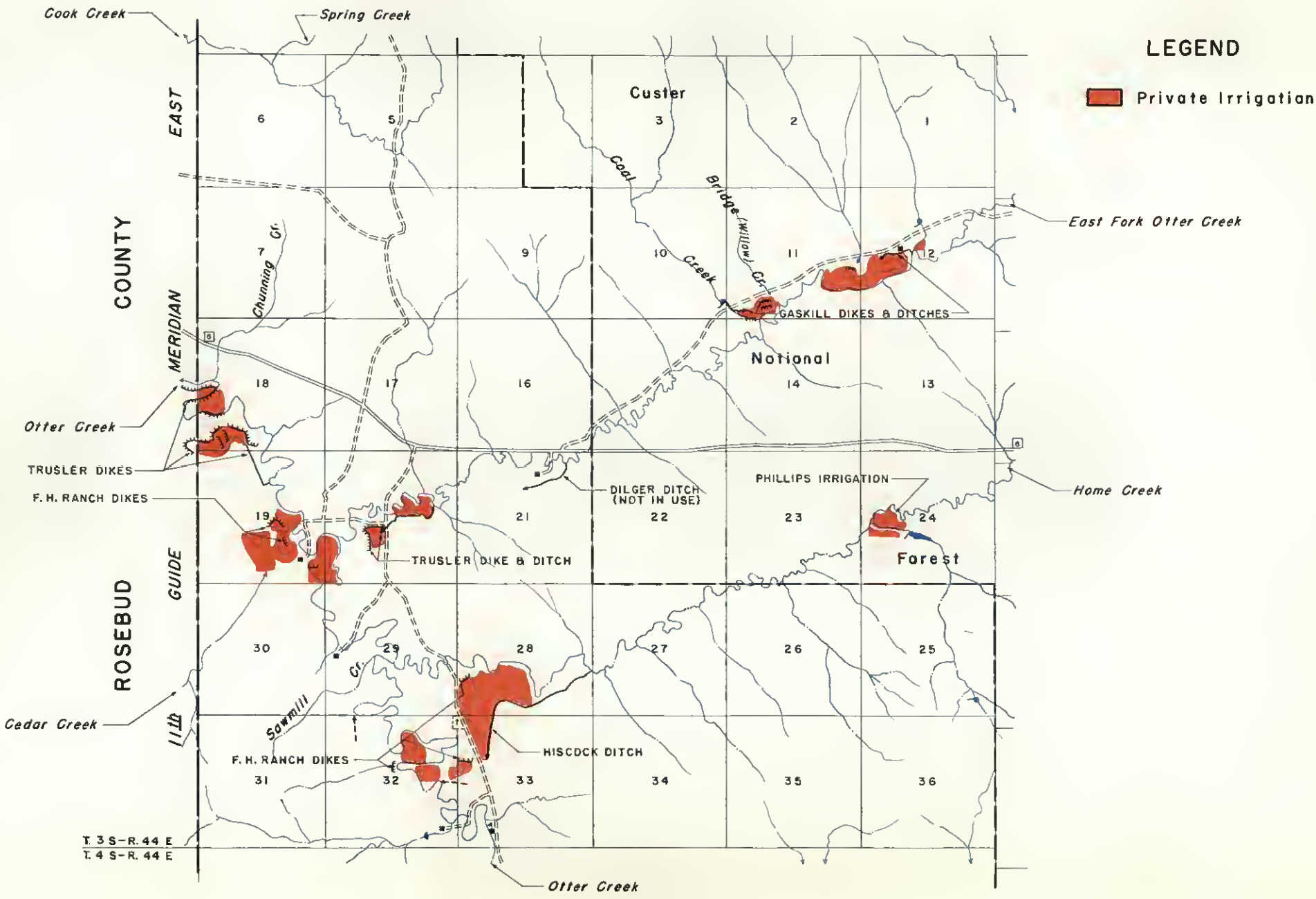


CARTER COUNTY

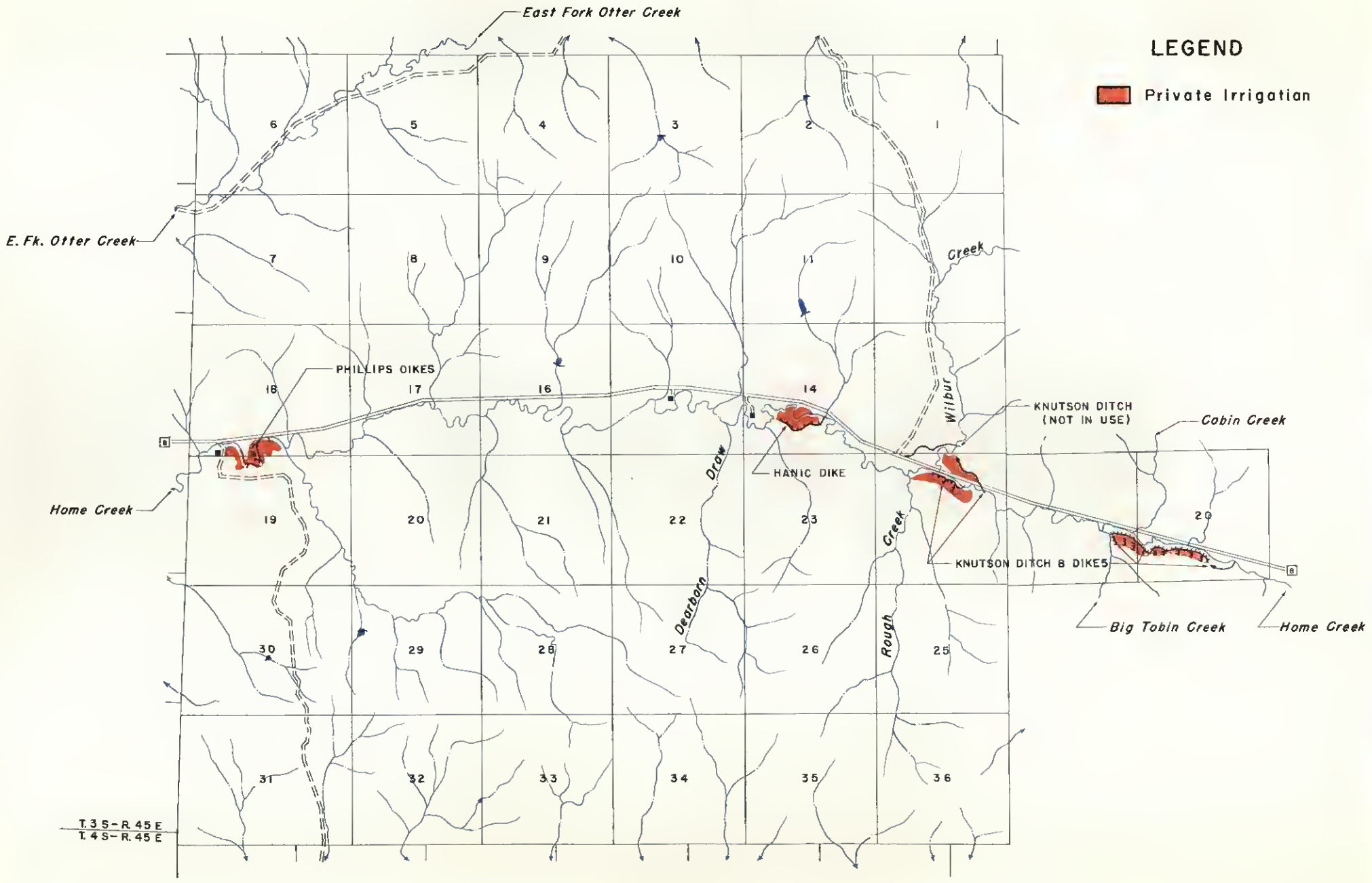
LEGEND

Private Irrigation

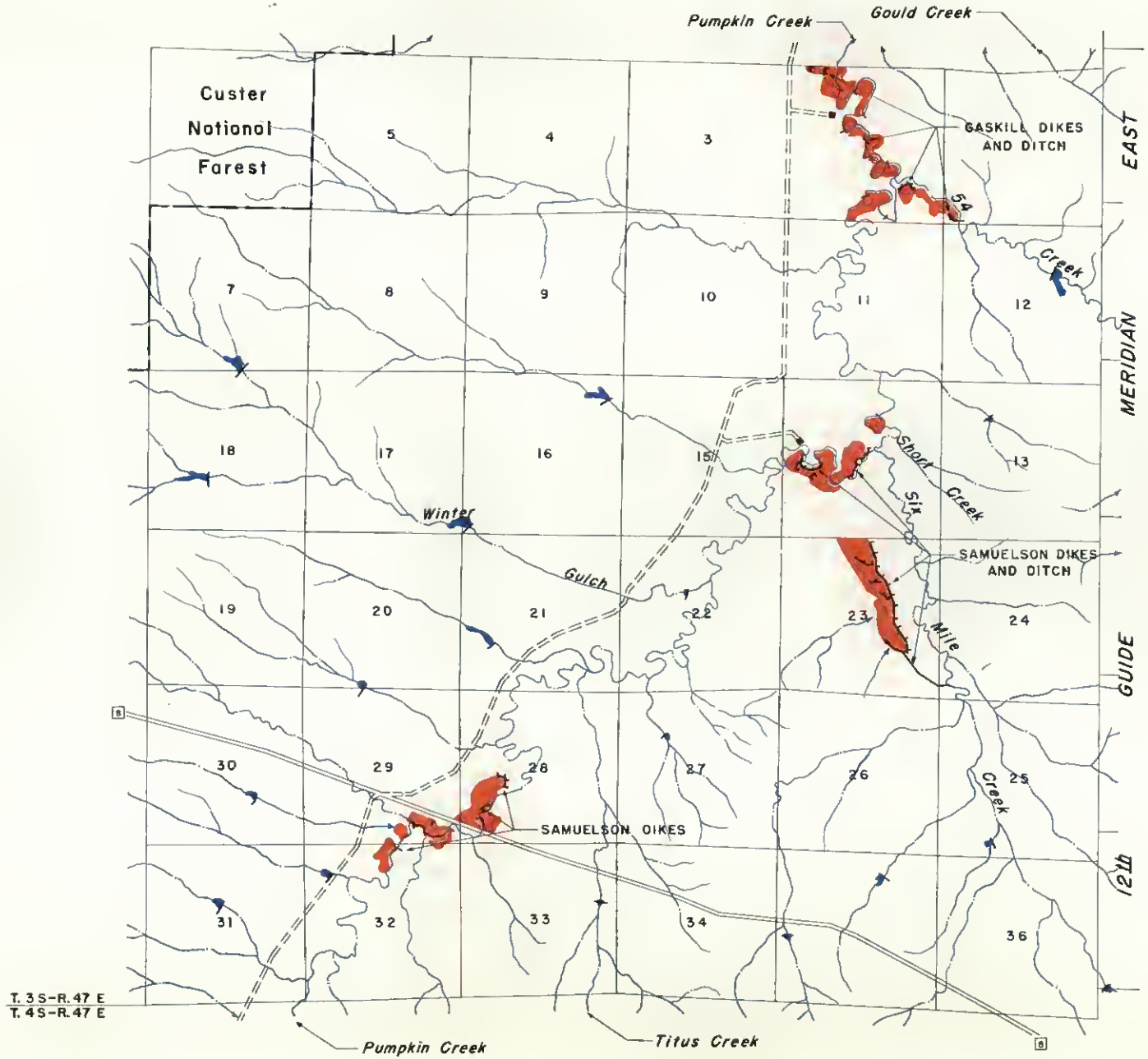
T. 2 & 3 S—R. 54 E


LEGEND
Private Irrigation
Cook Creek
Spring Creek
EAST
ROSEBUD COUNTY
MERIDIAN
GUIDE
11th
Custer
National
Forest
Coal Bridge Creek
Willow Cr.
Chunning Cr.
Sawmill Cr.
East Fork Otter Creek
GASKILL DIKES & DITCHES
Otter Creek
TRUSLER DIKES
F. H. RANCH DIKES
DILGER DITCH (NOT IN USE)
PHILLIPS IRRIGATION
Home Creek
TRUSLER DIKE & DITCH
Cedar Creek
HISCOCK DITCH
F. H. RANCH DIKES
Otter Creek
T. 3 S–R. 44 E
T. 4 S–R. 44 E

T. 3 S—R. 45 E


East Fork Otter Creek
E. Fk. Otter Creek
LEGEND
Private Irrigation
PHILLIPS DIKES
HANIC DIKE
KNUTSON DITCH
(NOT IN USE)
KNUTSON DITCH & DIKES
Cobin Creek
Home Creek
Big Tobin Creek
Home Creek
Wilbur Creek
Deerbarn Draw
Rough Creek
T. 3 S - R. 45 E
T. 4 S - R. 45 E

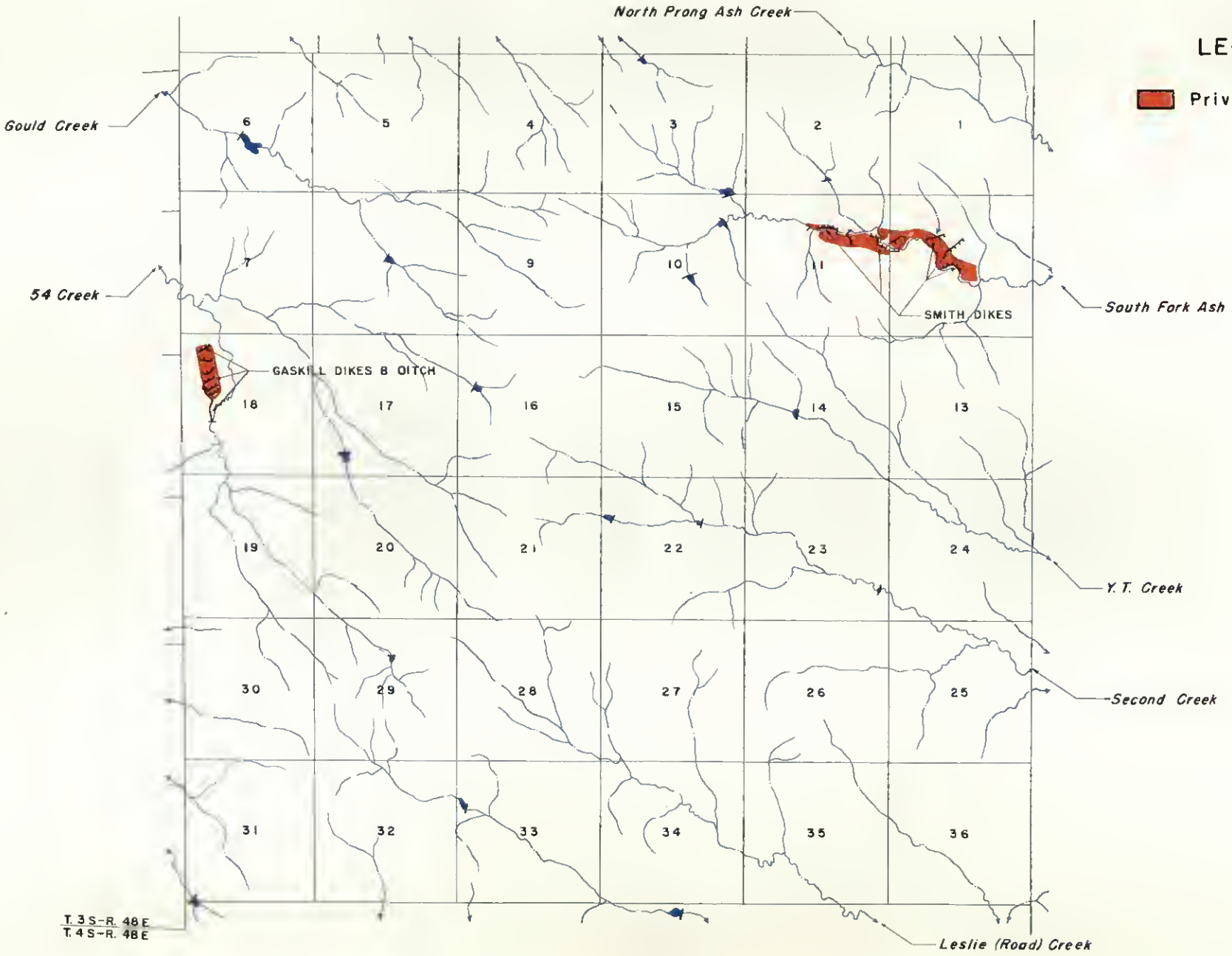
T. 3 S—R. 46 & 47 E



LEGEND

Private Irrigation

T. 3 S—R. 48 E


North Prong Ash Creek
Gould Creek
54 Creek
South Fork Ash Creek
SMITH DIKES
GASKILL DIKES & DITCH
Y. T. Creek
Second Creek
Leslie (Road) Creek
T. 3 S.-R. 48 E.
T. 4 S.-R. 48 E.
LEGEND
Private Irrigation
1
2
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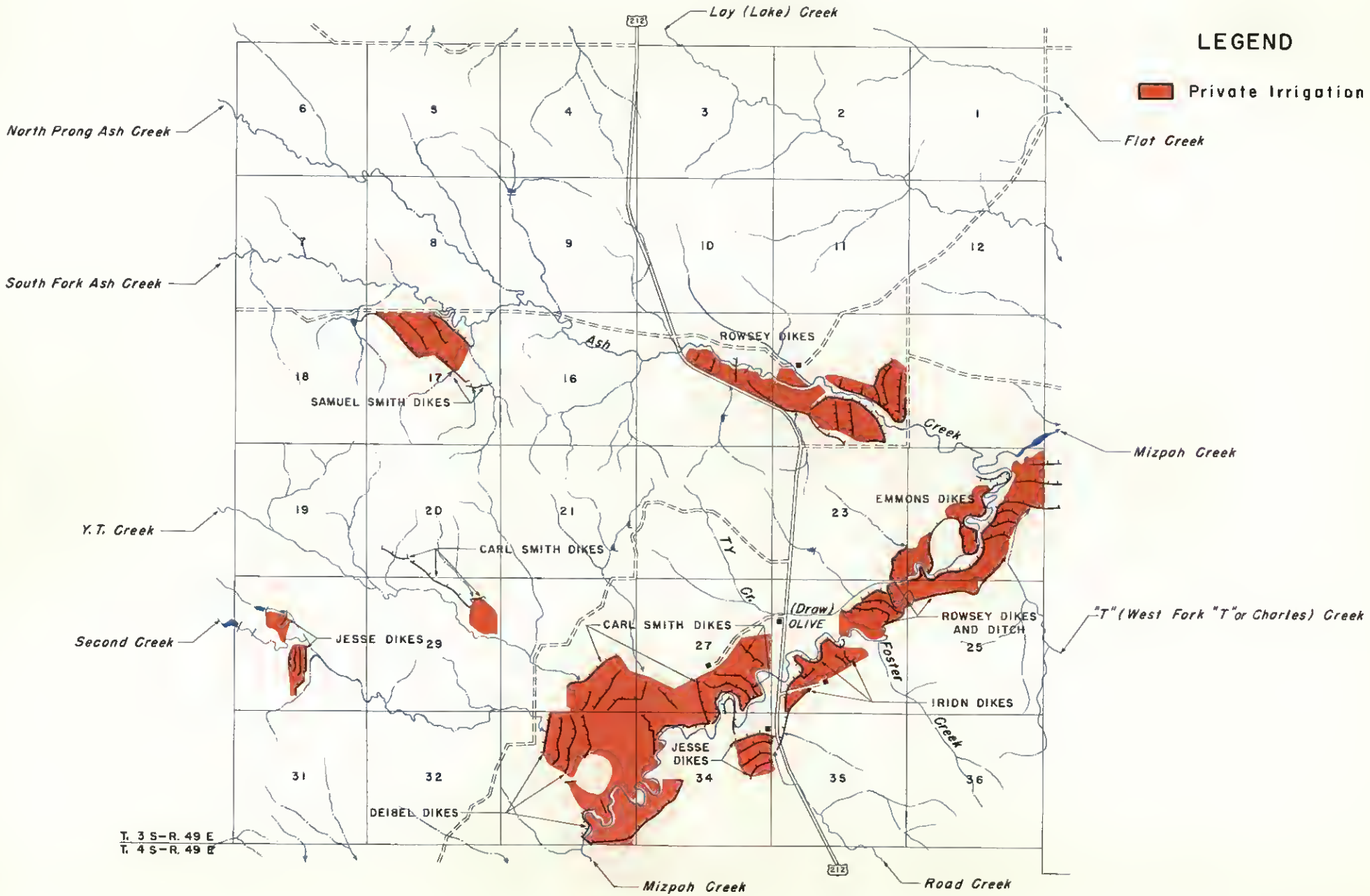
T. 3 S—R. 49 E


LEGEND
Private Irrigation
Loy (Lake) Creek
North Prong Ash Creek
Flat Creek
South Fork Ash Creek
Ash
ROWSEY DIKES
SAMUEL SMITH DIKES
Creek
Mizpah Creek
EMMONS DIKES
Y.T. Creek
CARL SMITH DIKES
TY
Cr.
(Drow)
OLIVE
ROWSEY DIKES AND DITCH
"T" (West Fork "T" or Charles) Creek
Second Creek
JESSE DIKES
CARL SMITH DIKES
Foster
IRION DIKES
Creek
JESSE DIKES
DEIBEL DIKES
T. 3 S–R. 49 E
T. 4 S–R. 49 E
Mizpah Creek
Road Creek
1
2
3
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7
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11
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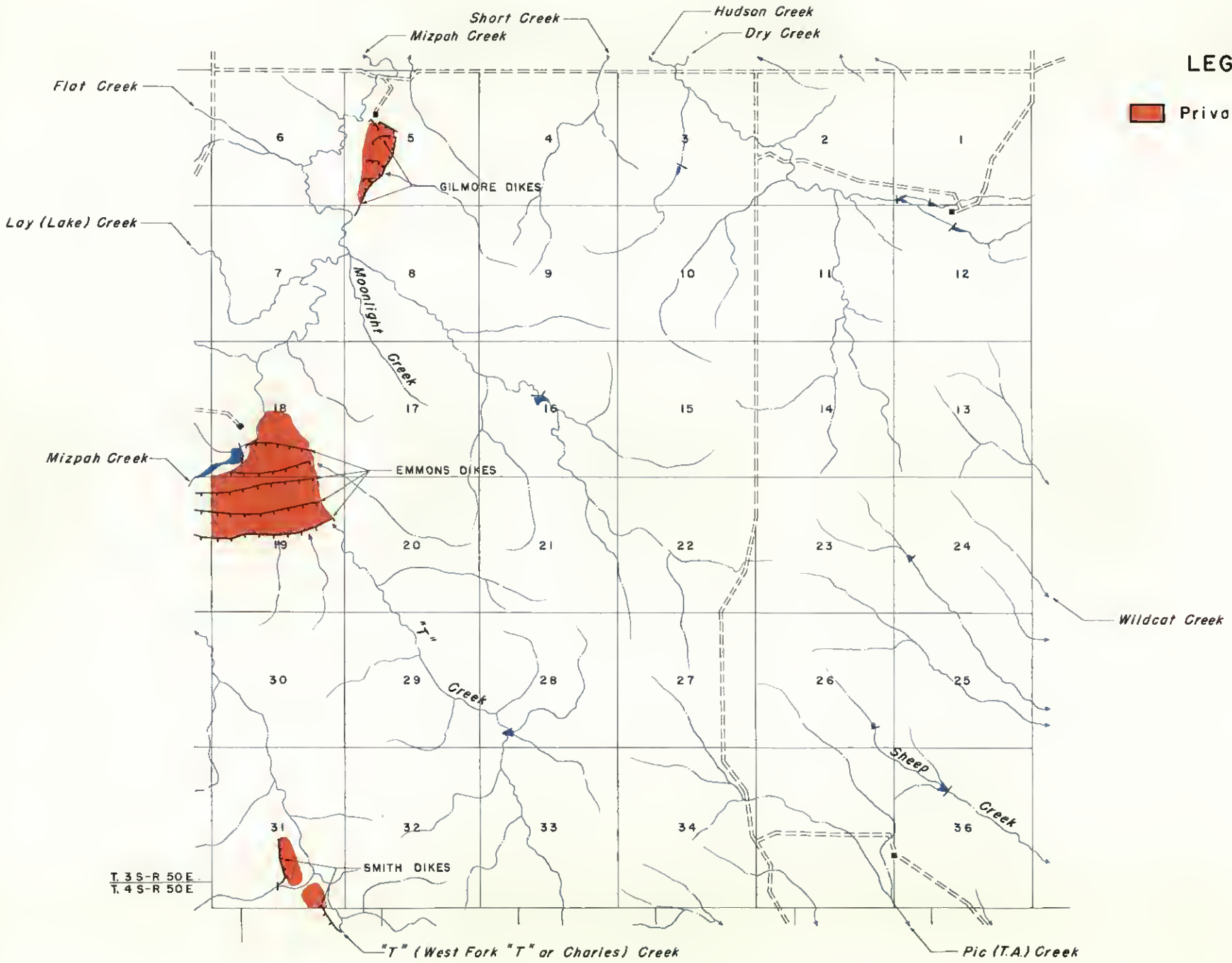
36
212

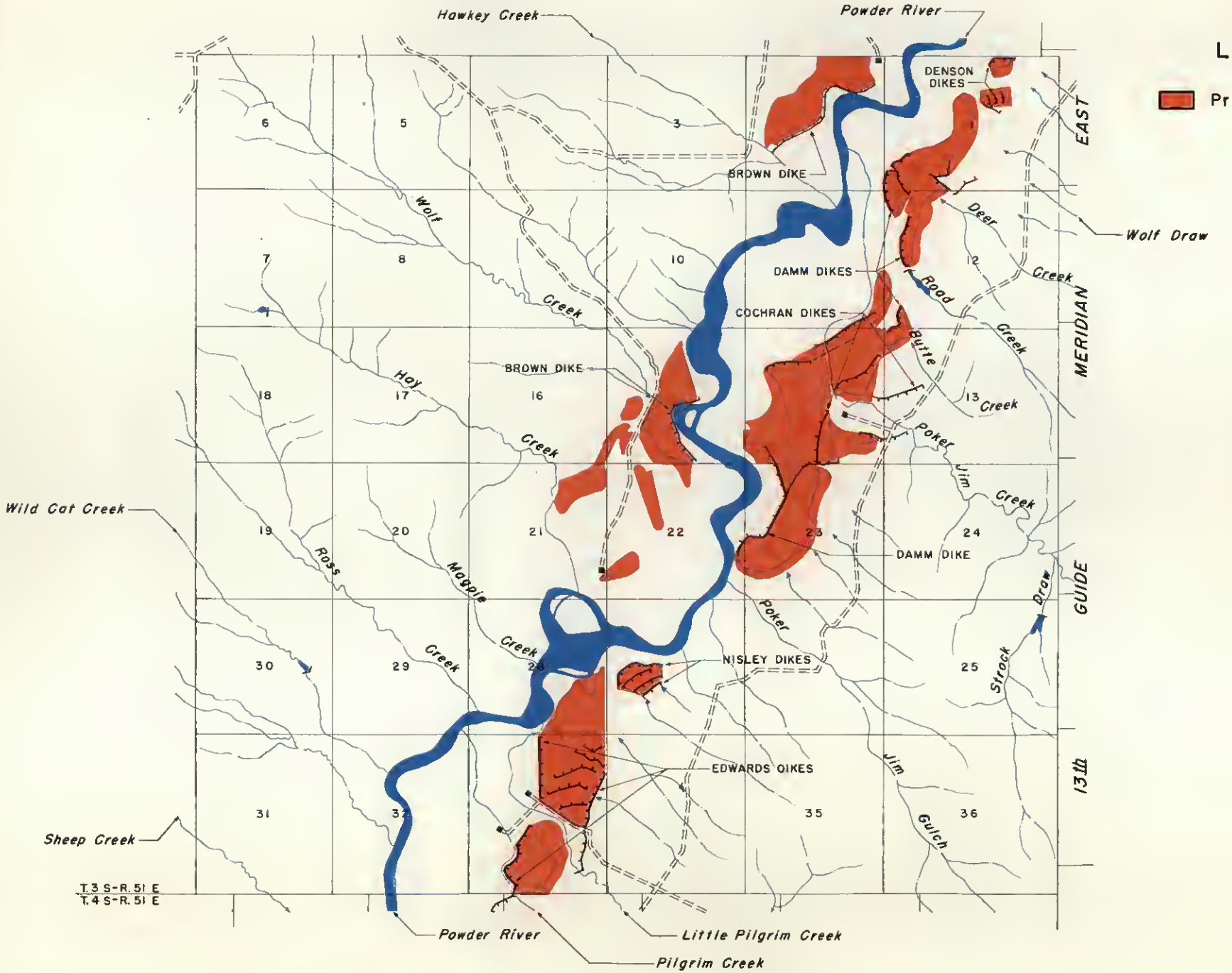
T. 3 S—R. 50 E



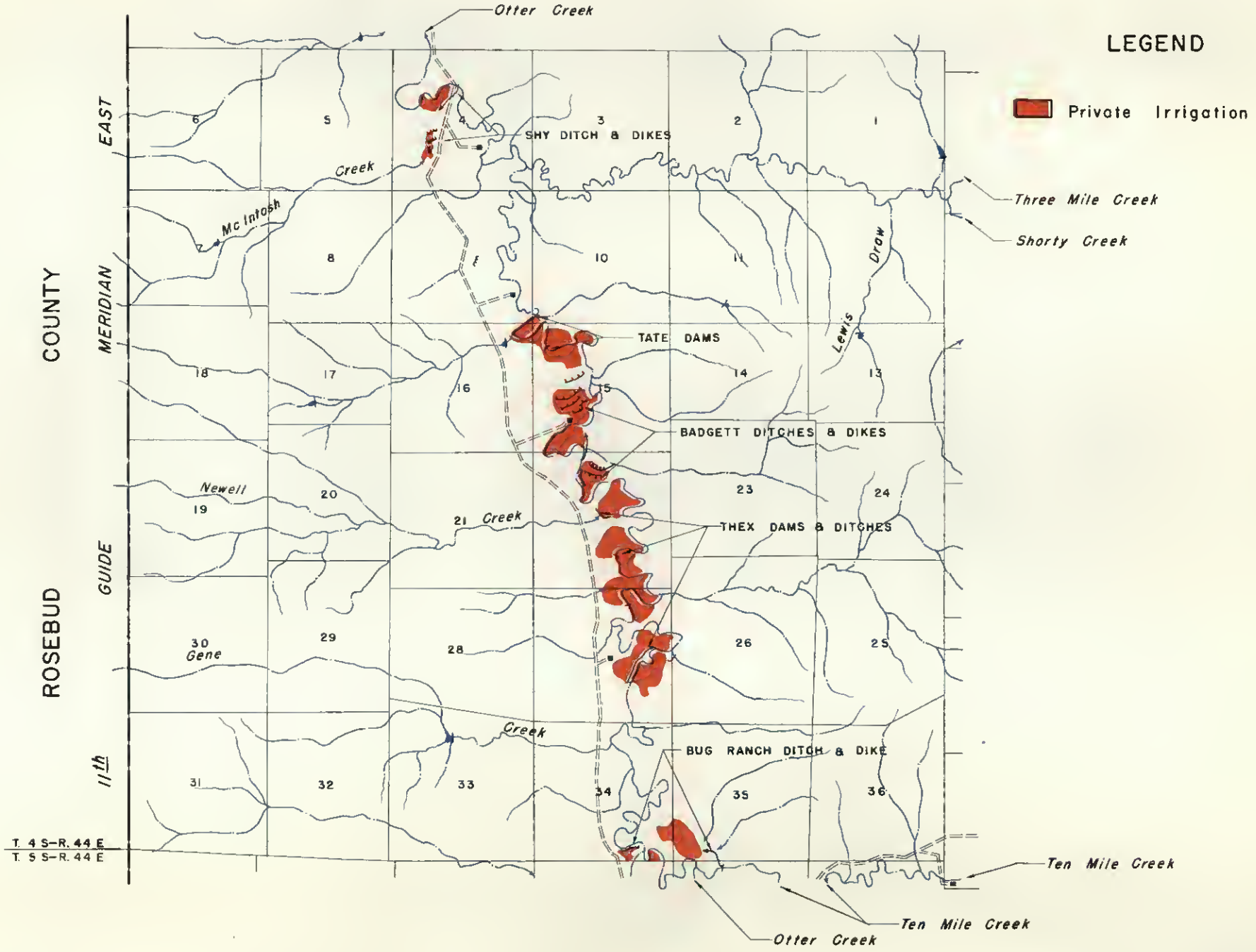
LEGEND

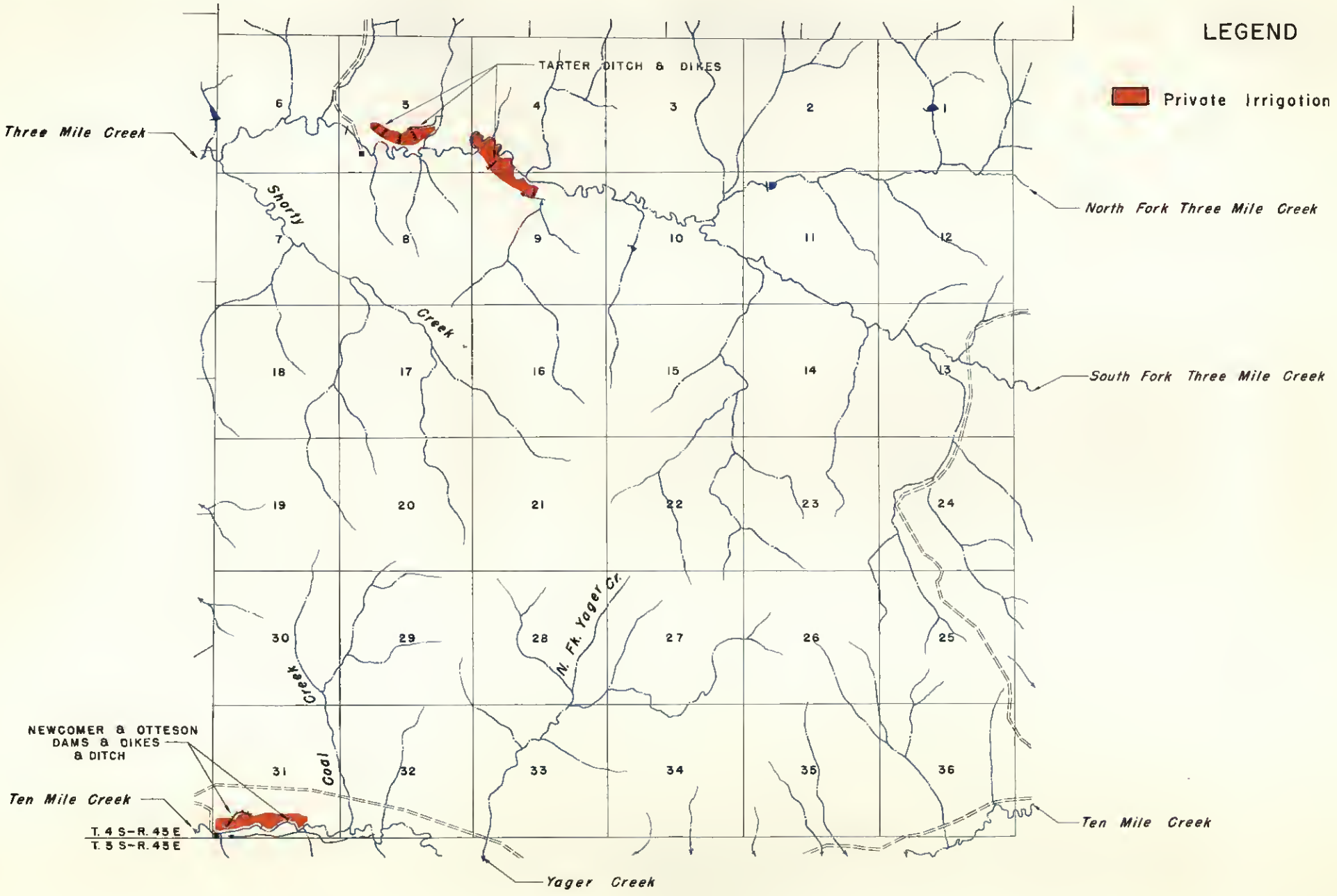
Private Irrigation

T. 3 S—R. 51 E


Hawkey Creek
Powder River
DENSON DIKES
BROWN DIKE
Wolf Creek
Deer Creek
Wolf Draw
DAMM DIKES
COCHRAN DIKES
Road Creek
Burtle Creek
BROWN DIKE
Hay Creek
Poker Jim Creek
Wild Cat Creek
DAMM DIKE
Ross Creek
Magpie Creek
Poker Draw
NISLEY DIKES
Strock Gulch
EDWARDS DIKES
Jim Gulch
Sheep Creek
T. 3 S-R. 51 E
T. 4 S-R. 51 E
Powder River
Little Pilgrim Creek
Pilgrim Creek
EAST
MERIDIAN
GUIDE
13th
LEGEND
Private Irrigation

T. 3 S—R. 52 E


LEGEND
Private Irrigation
Otter Creek
SHY DITCH & DIKES
Three Mile Creek
Shorty Creek
Drow
Lewis
TATE DAMS
BADGETT DITCHES & DIKES
THEX DAMS & DITCHES
Newell
21 Creek
Gene
Creek
BUG RANCH DITCH & DIKE
Ten Mile Creek
Otter Creek
Ten Mile Creek
McIntosh
Creek
EAST
MERIDIAN
GUIDE
11th
COUNTY
ROSEBUD
T. 4 S–R. 44 E
T. 5 S–R. 44 E
T. 4 S—R. 45 E


LEGEND
Private Irrigation
TARTER DITCH & DIKES
Three Mile Creek
North Fork Three Mile Creek
South Fork Three Mile Creek
Shorty Creek
Coal Creek
N. Fk. Yager Cr.
NEWCOMER & OTTESON DAMS & DIKES & DITCH
Ten Mile Creek
T. 4 S–R. 45 E
T. 5 S–R. 45 E
Yager Creek
Ten Mile Creek
1
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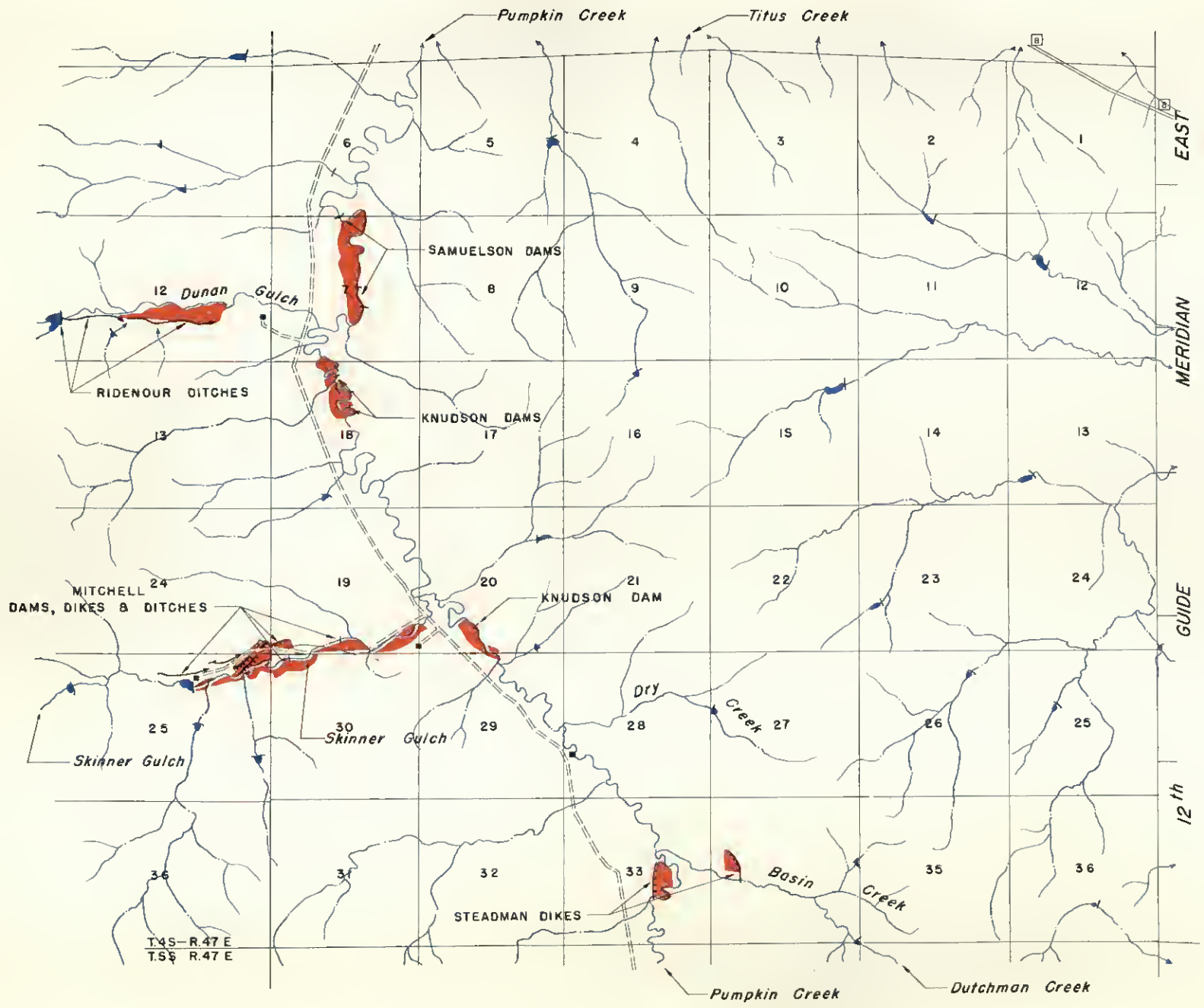
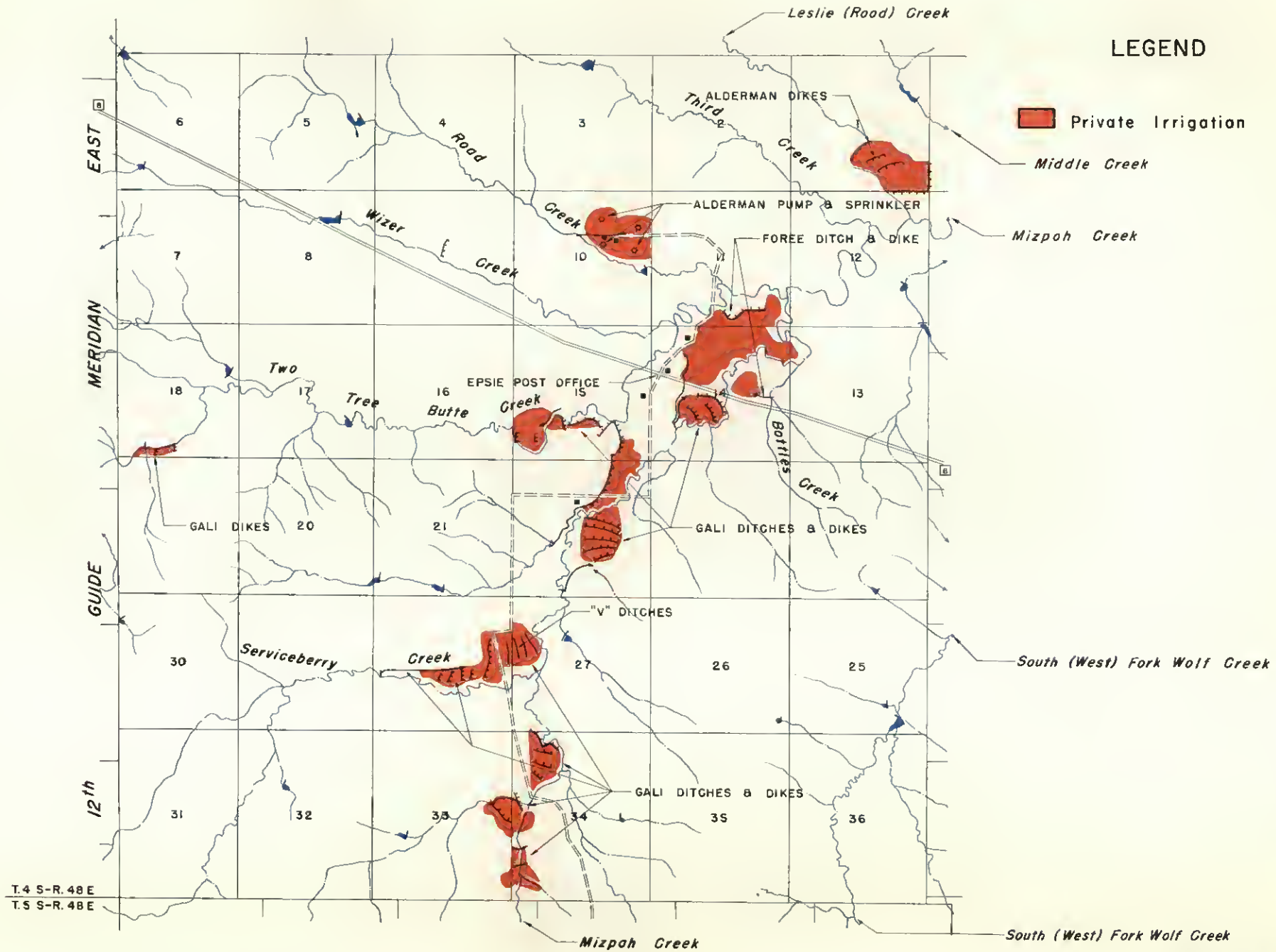
T. 4 S—R. 46 E

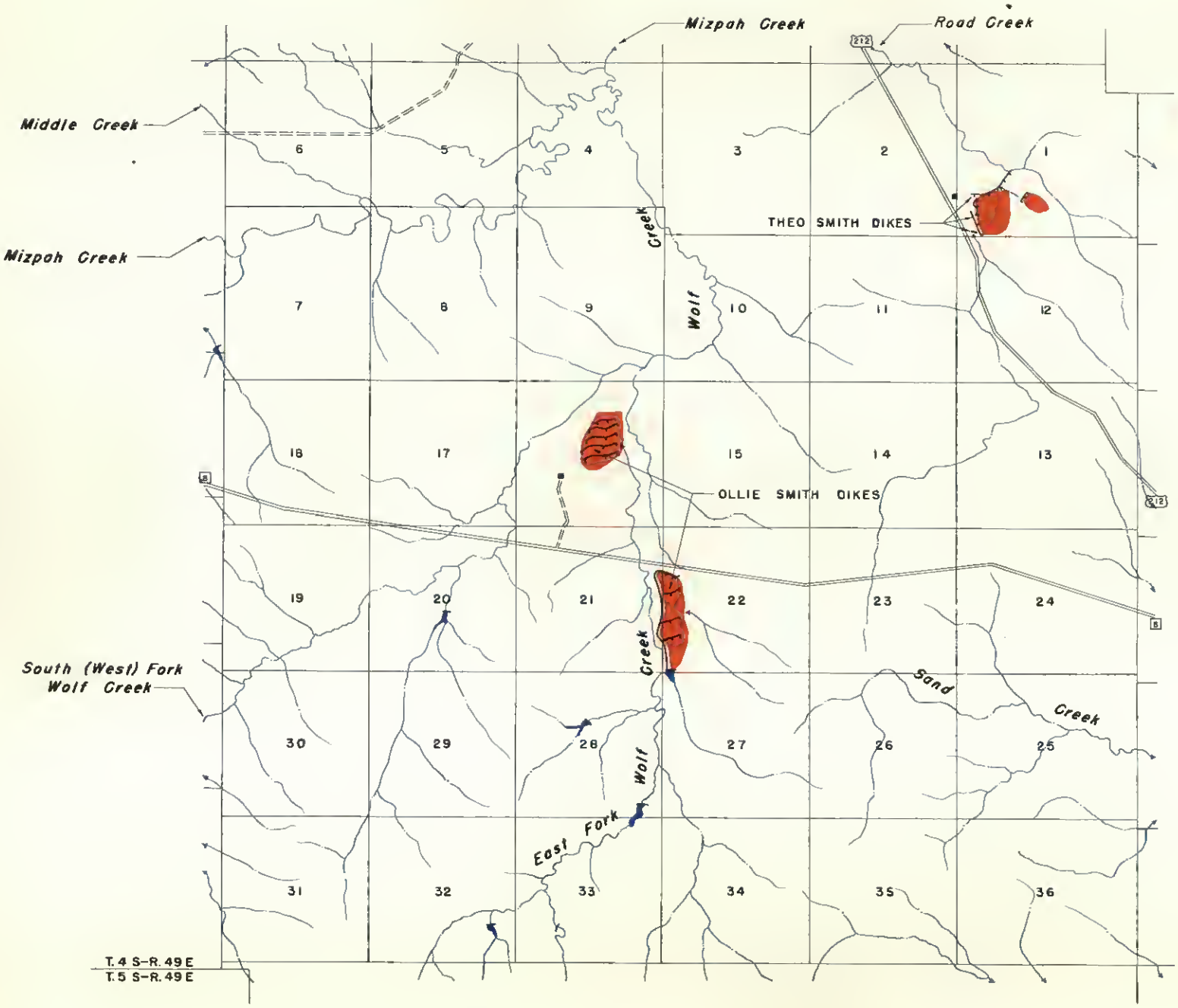


LEGEND

Private Irrigation

T. 4 S—R. 47 & 48 E

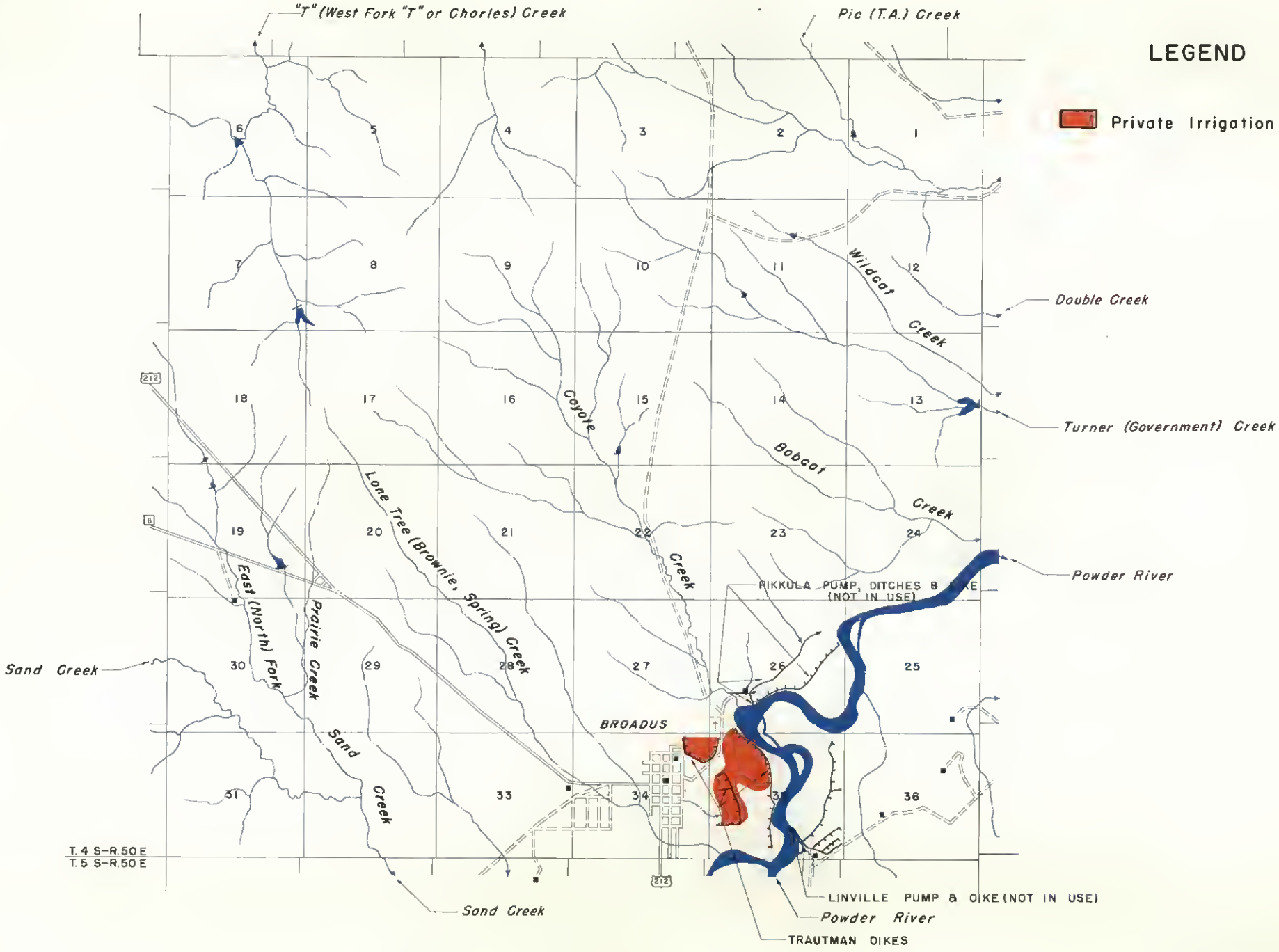

LEGEND
Private Irrigation
Leslie (Rood) Creek
Middle Creek
Mizpah Creek
South (West) Fork Wolf Creek
ALDERMAN DIKES
ALDERMAN PUMP & SPRINKLER
FOREE DITCH & DIKE
EPSIE POST OFFICE
GALI DIKES
GALI DITCHES & DIKES
"V" DITCHES
GALI DITCHES & DIKES
Third Creek
4 Road Creek
Wizer Creek
Two Tree Butte Creek
Bottles Creek
Serviceberry Creek
EAST
MERIDIAN
GUIDE
12th
T.4 S-R.48E
T.5 S-R.48E
T. 4 S—R. 49 E

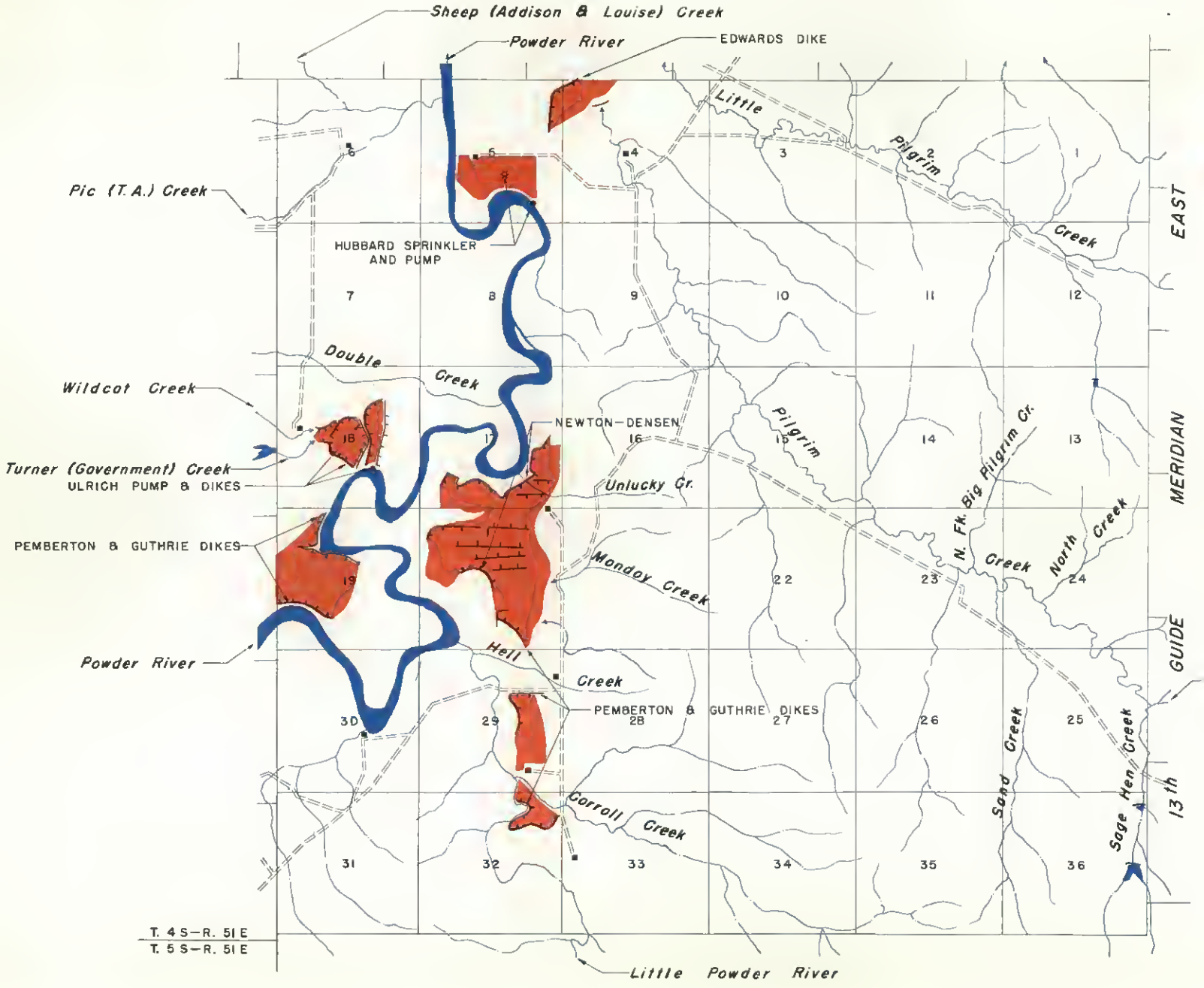


LEGEND

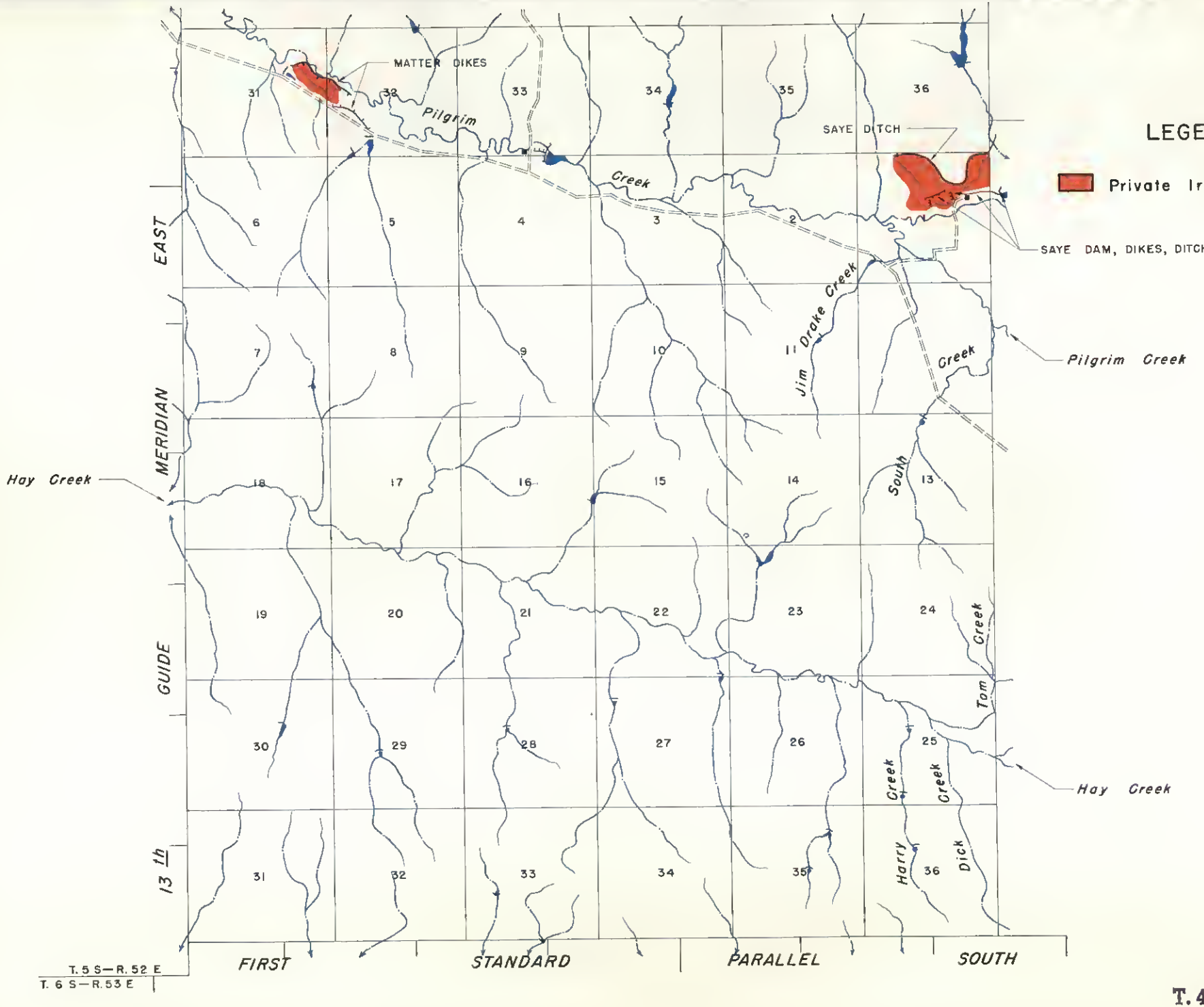
Private Irrigation

T. 4 S—R. 50 E

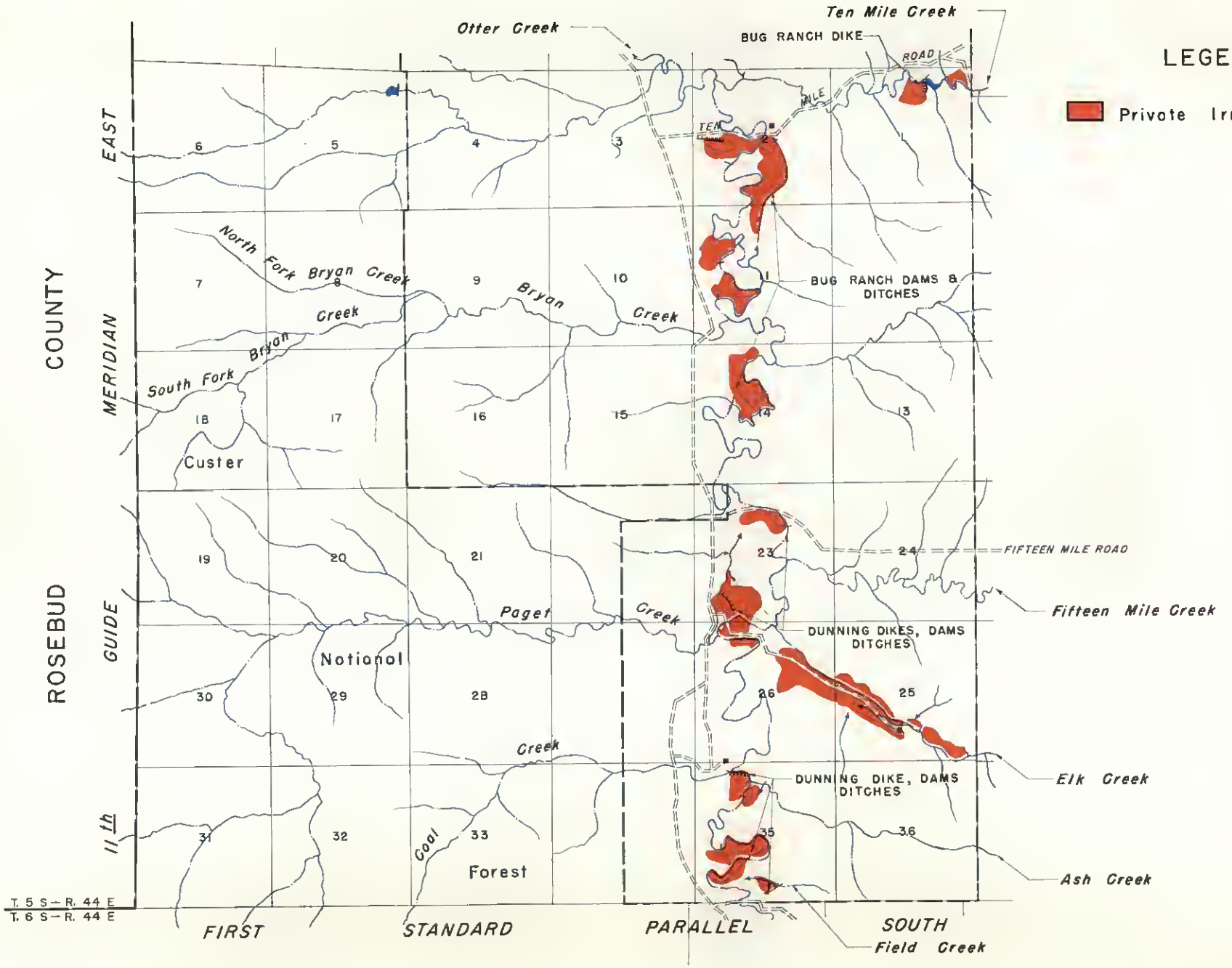

"T" (West Fork "T" or Charles) Creek
Pic (T.A.) Creek
LEGEND
Private Irrigation
Wildcat Creek
Double Creek
Turner (Government) Creek
Coyote Creek
Bobcat Creek
Lone Tree (Brownie, Spring) Creek
East (North) Fork Prairie Creek
Sand Creek
Powder River
PIKKULA PUMP, DITCHES & DIKE (NOT IN USE)
BROADUS
LINVILLE PUMP & DIKE (NOT IN USE)
Powder River
TRAUTMAN DIKES
Sand Creek
T. 4 S-R. 50 E
T. 5 S-R. 50 E
212
T. 4 S—R. 51 E


Sheep (Addison & Louise) Creek
Powder River
EDWARDS DIKE
Little Pilgrim Creek
Pic (T.A.) Creek
HUBBARD SPRINKLER AND PUMP
Double Creek
Wildcat Creek
NEWTON-DENSEN
Pilgrim Creek
Turner (Government) Creek
ULRICH PUMP & DIKES
Unlucky Cr.
N. Fk. Big Pilgrim Cr.
North Creek
PEMBERTON & GUTHRIE DIKES
Monday Creek
Powder River
Hell Creek
PEMBERTON & GUTHRIE DIKES
Corroll Creek
Sand Creek
Sage Hen Creek
T. 4 S—R. 51 E
T. 5 S—R. 51 E
Little Powder River
EAST
MERIDIAN
GUIDE
13th
Pilgrim Creek
LEGEND
Private Irrigation

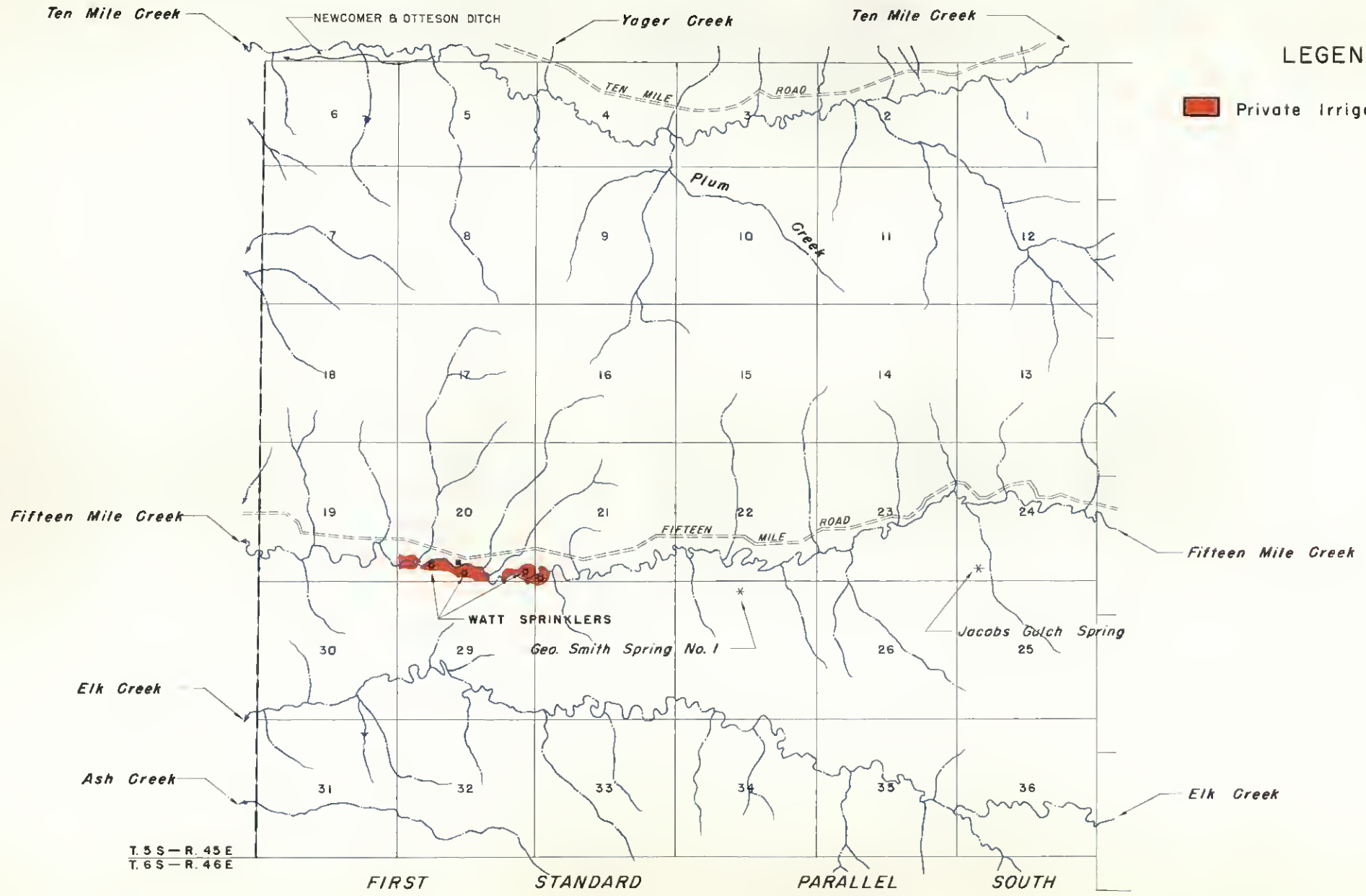
T. 4 S—R. 52 E


MATTER DIKES
Pilgrim Creek
SAYE DITCH
SAYE DAM, DIKES, DITCH
LEGEND
Private Irrigation
Pilgrim Creek
Jim Drake Creek
South Tom Creek
Hay Creek
Harry Creek
Dick Creek
Hay Creek
EAST
MERIDIAN
GUIDE
13 th
FIRST STANDARD PARALLEL SOUTH
T. 5 S—R. 52 E
T. 6 S—R. 53 E
31 32 33 34 35 36
6 5 4 3 2 1
7 8 9 10 11 12
18 17 16 15 14 13
19 20 21 22 23 24
30 29 28 27 26 25
31 32 33 34 35 36

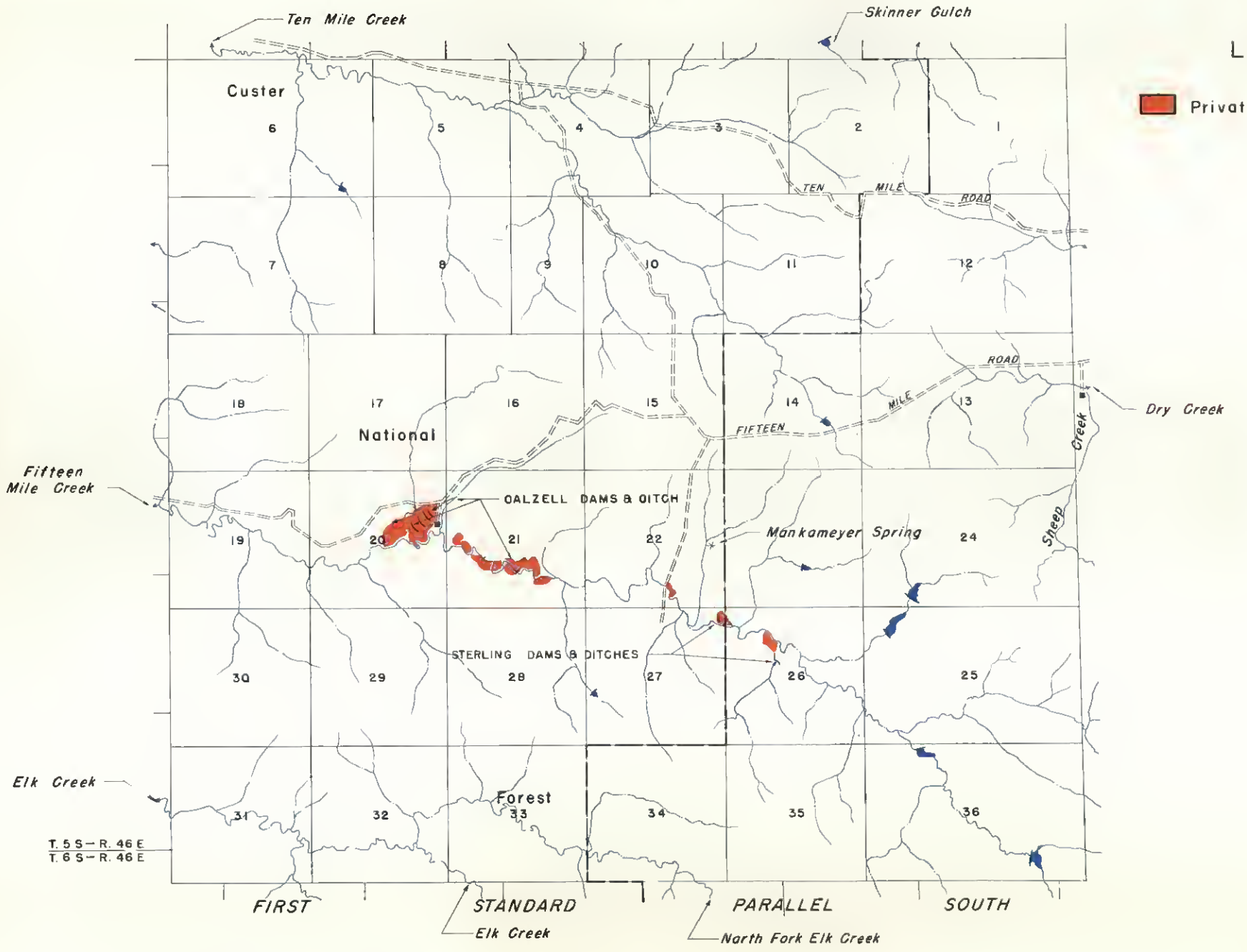
T. 4 & 5 S—R. 53 E


Otter Creek
Ten Mile Creek
BUG RANCH DIKE
ROAD
MILE
TEN
LEGEND
Private Irrigation
EAST
COUNTY
MERIDIAN
ROSEBUD
GUIDE
11 th
North Fork Bryan Creek
Bryan Creek
South Fork Bryan Creek
BUG RANCH DAMS & DITCHES
Custer
Paget Creek
Notional
Forest
Coal Creek
FIFTEEN MILE ROAD
Fifteen Mile Creek
DUNNING DIKES, DAMS DITCHES
DUNNING DIKE, DAMS DITCHES
Elk Creek
Ash Creek
Field Creek
T. 5 S — R. 44 E
T. 6 S — R. 44 E
FIRST
STANDARD
PARALLEL
SOUTH

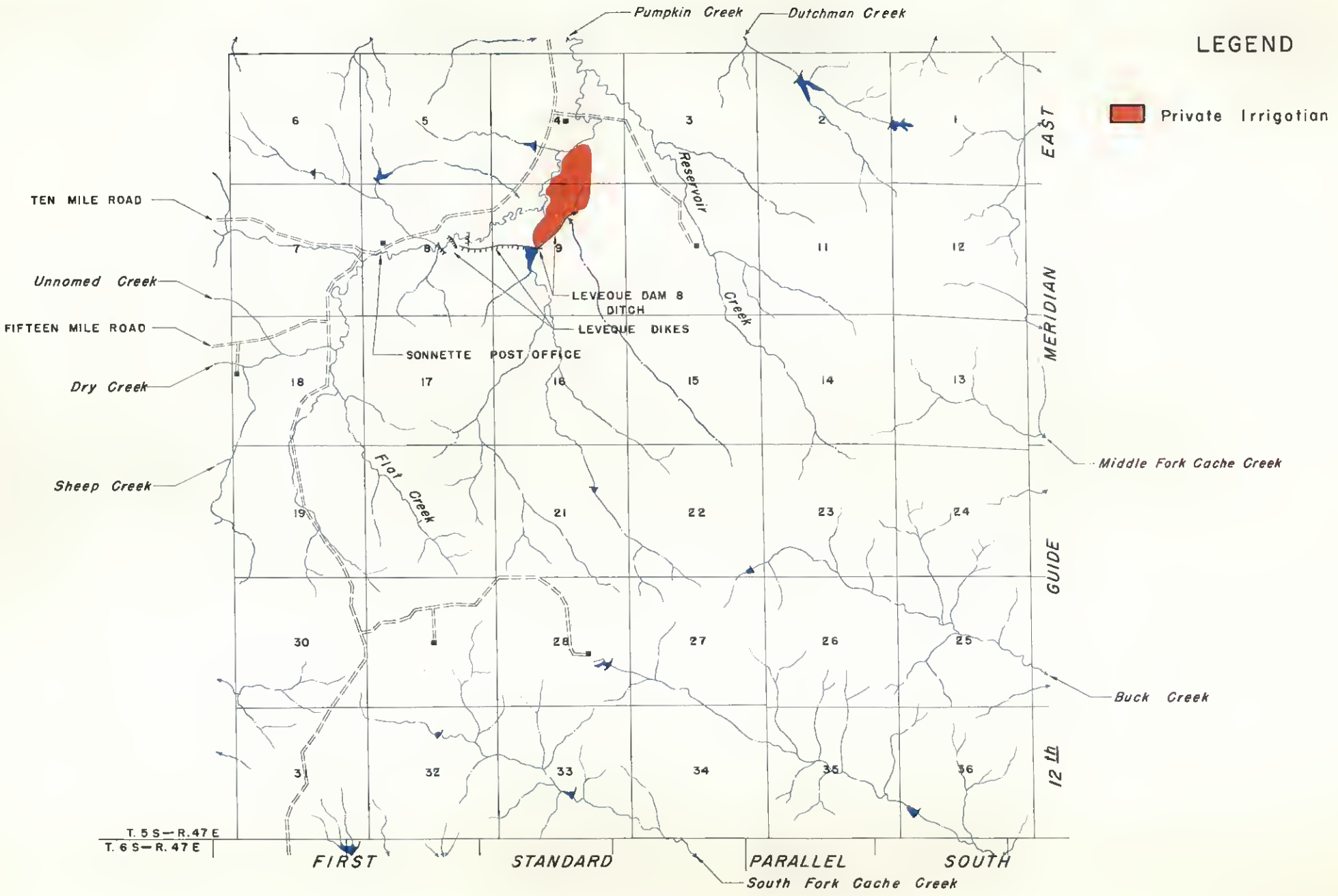
T. 5 S—R. 45 E


Ten Mile Creek
NEWCOMER & OTTESON DITCH
Yager Creek
Ten Mile Creek
TEN MILE ROAD
Plum Creek
Fifteen Mile Creek
FIFTEEN MILE ROAD
Fifteen Mile Creek
WATT SPRINKLERS
Geo. Smith Spring No. 1
Jacobs Gulch Spring
Elk Creek
Ash Creek
Elk Creek
T. 5 S — R. 45 E
T. 6 S — R. 46 E
FIRST STANDARD PARALLEL SOUTH
LEGEND
Private Irrigation

T. 5 S—R. 46 E


Ten Mile Creek
Skinner Gulch
Custer
National
Forest
TEN MILE ROAD
FIFTEEN MILE ROAD
Dry Creek
Fifteen Mile Creek
OALZELL DAMS & DITCH
Mankameyer Spring
Steep Creek
STERLING DAMS & DITCHES
Elk Creek
T. 5 S — R. 46 E
T. 6 S — R. 46 E
FIRST STANDARD PARALLEL SOUTH
Elk Creek
North Fork Elk Creek
LEGEND
Private Irrigation

T. 5 S—R. 47 E


Pumpkin Creek
Dutchman Creek
LEGEND
Private Irrigotian
TEN MILE ROAD
Unnomed Creek
FIFTEEN MILE ROAD
Dry Creek
Sheep Creek
Reservoir
Creek
LEVEQUE DAM 8 DITCH
LEVEQUE DIKES
SONNETTE POST OFFICE
Flat Creek
Middle Fork Cache Creek
Buck Creek
South Fork Cache Creek
EAST
MERIDIAN
GUIDE
12 Th
T. 5 S—R. 47 E
T. 6 S—R. 47 E
FIRST
STANDARD
PARALLEL
SOUTH
6
5
4
3
2
1
7
8
9
11
12
18
17
16
15
14
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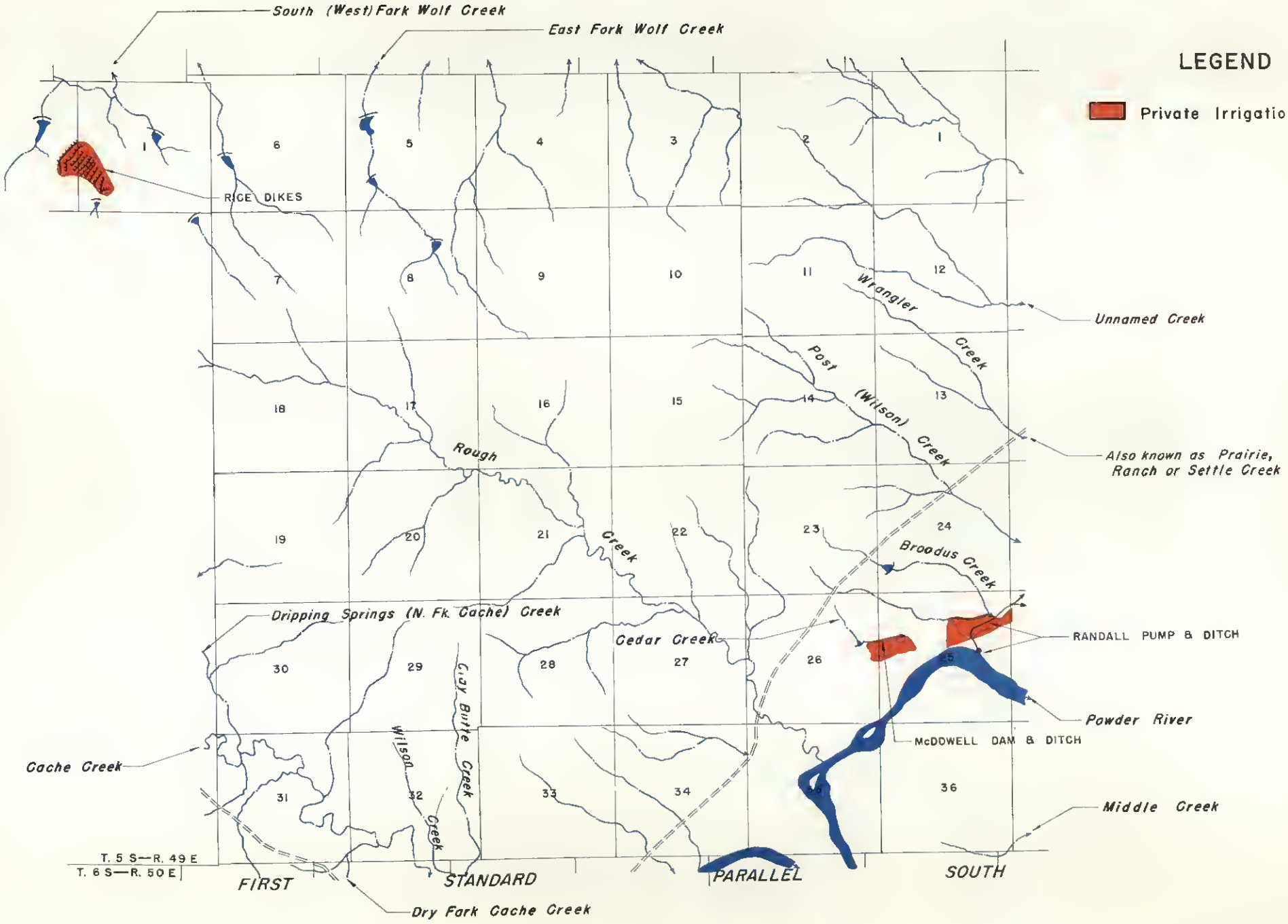
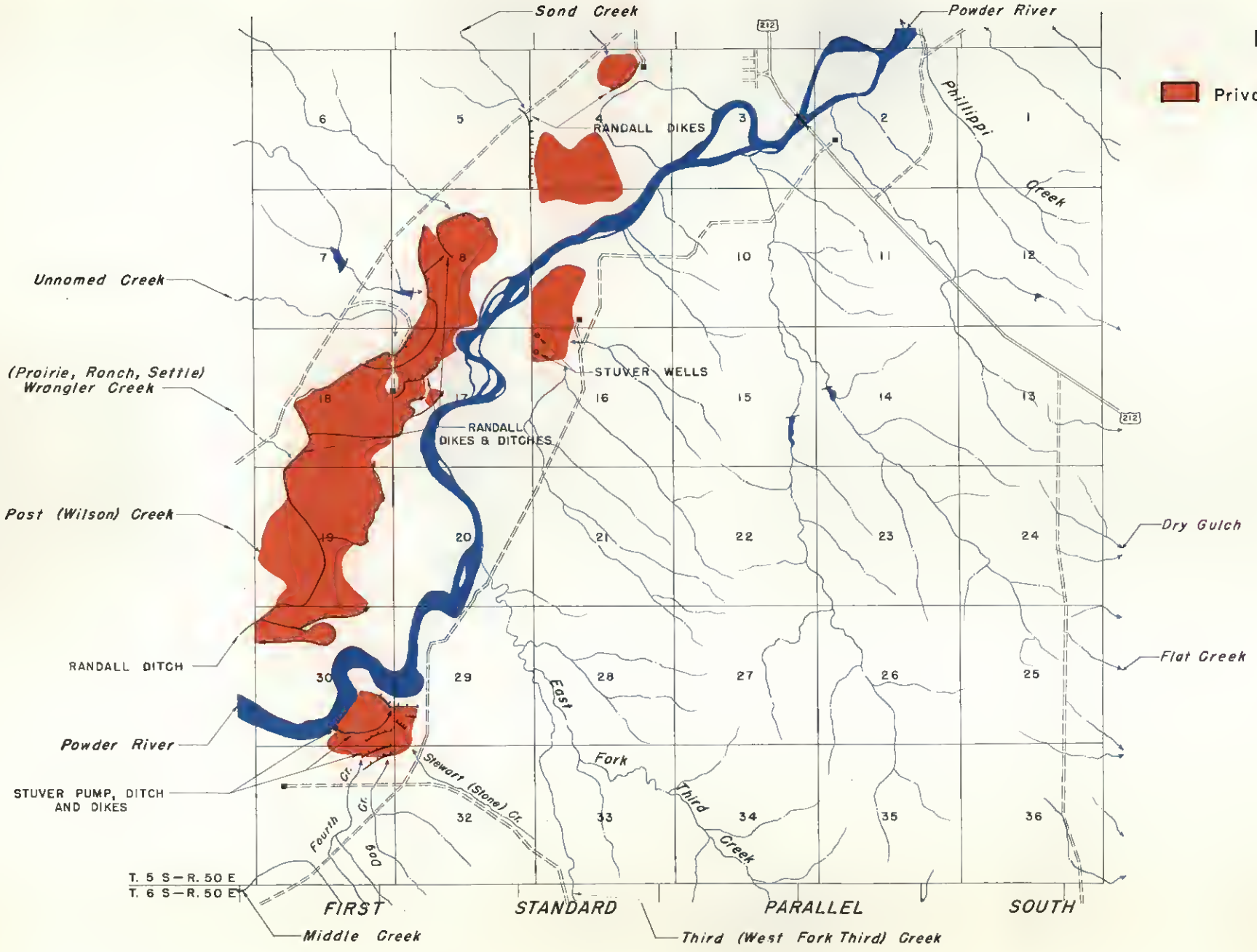
36

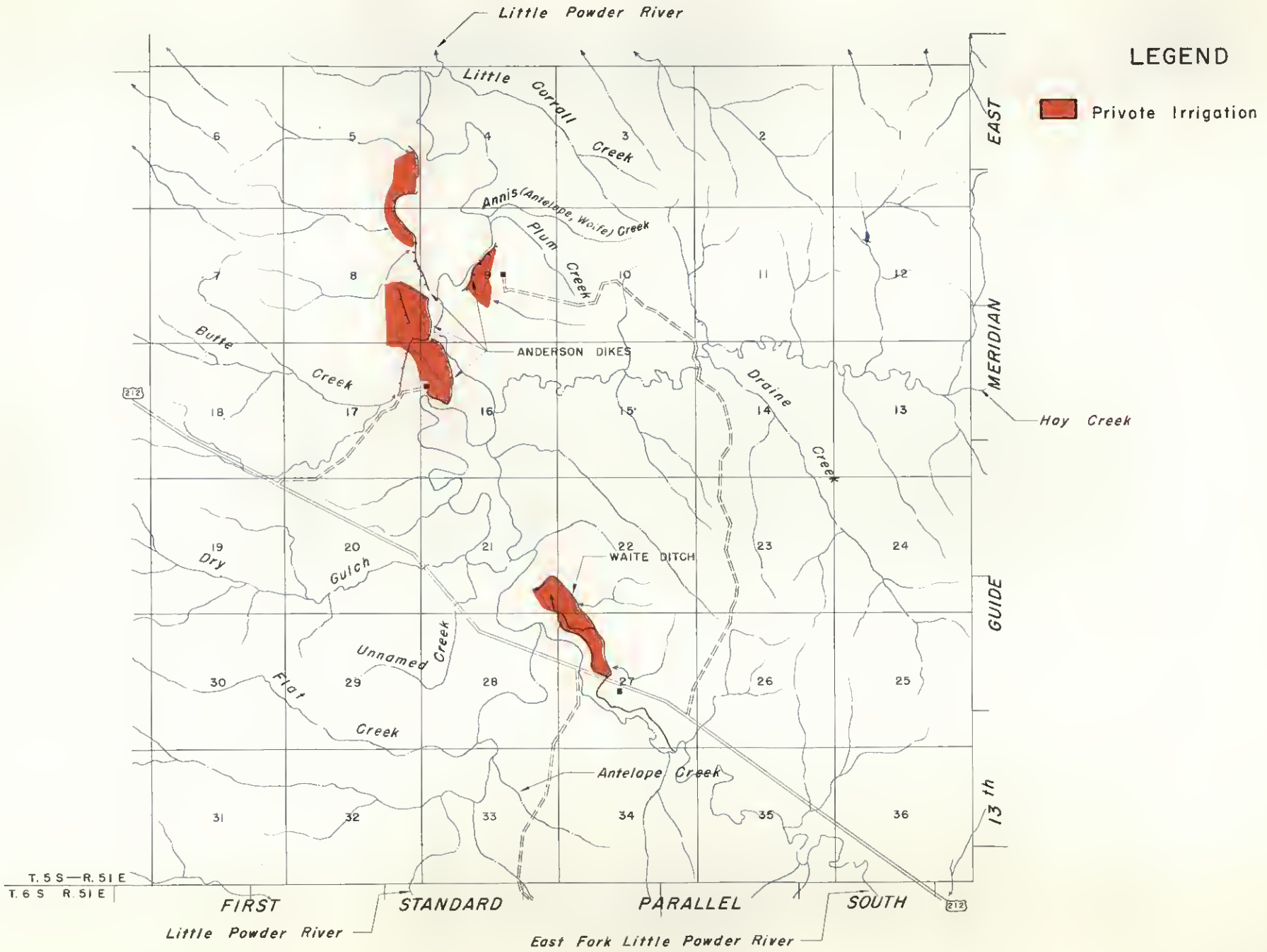
T. 5 S—R. 48 E

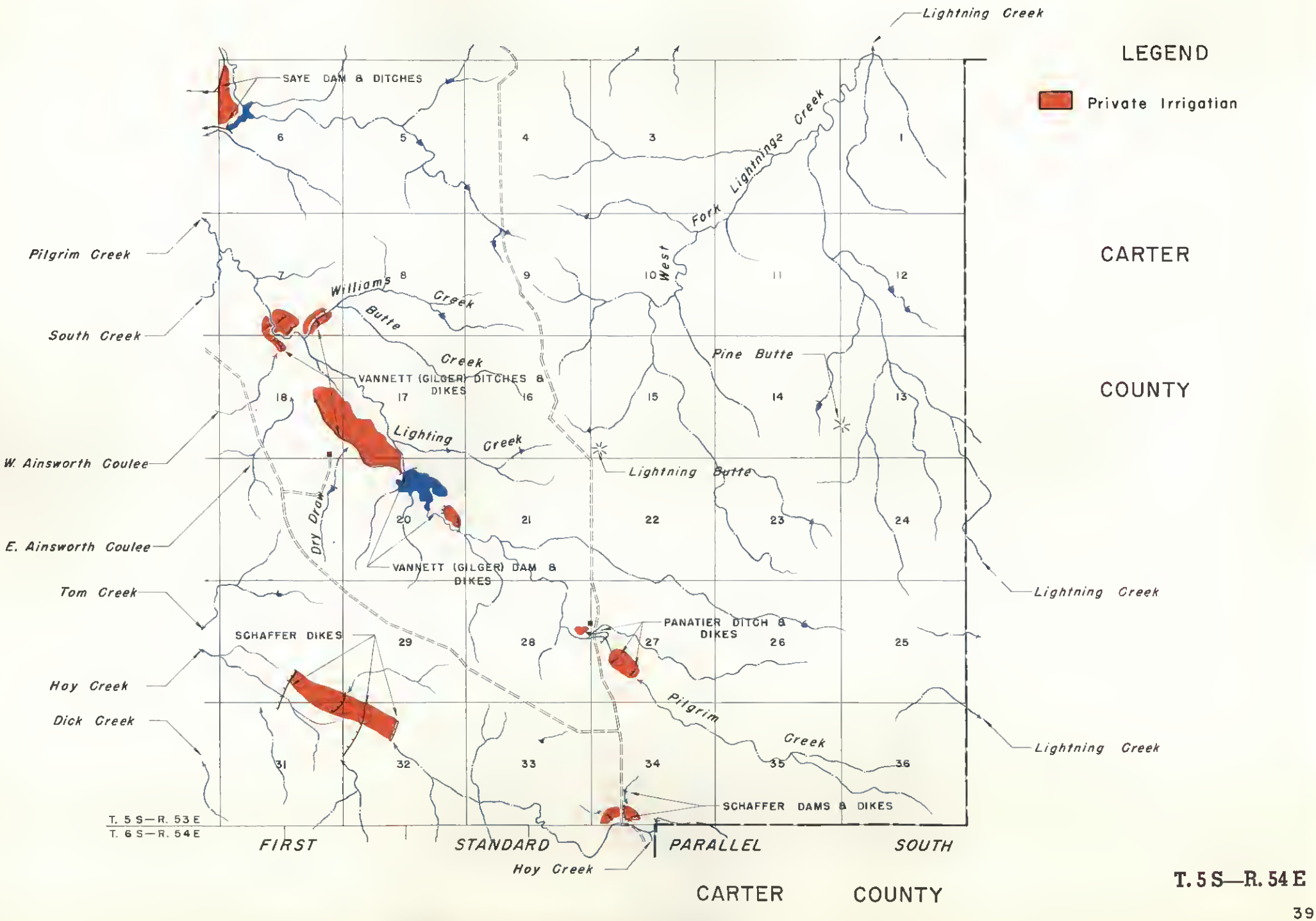

South (West) Fork Wolf Creek
East Fork Wolf Creek
LEGEND
Private Irrigation
RICE DIKES
Wrangler Creek
Unnamed Creek
Post (Wilson) Creek
Also known as Prairie, Ranch or Settle Creek
Rough Creek
Broodus Creek
Dripping Springs (N. Fk. Cache) Creek
Cedar Creek
RANDALL PUMP & DITCH
Powder River
McDOWELL DAM & DITCH
Cache Creek
Wilson Creek
Clay Butte Creek
Middle Creek
T. 5 S—R. 49 E
T. 6 S—R. 50 E
FIRST
STANDARD
PARALLEL
SOUTH
Dry Fork Cache Creek

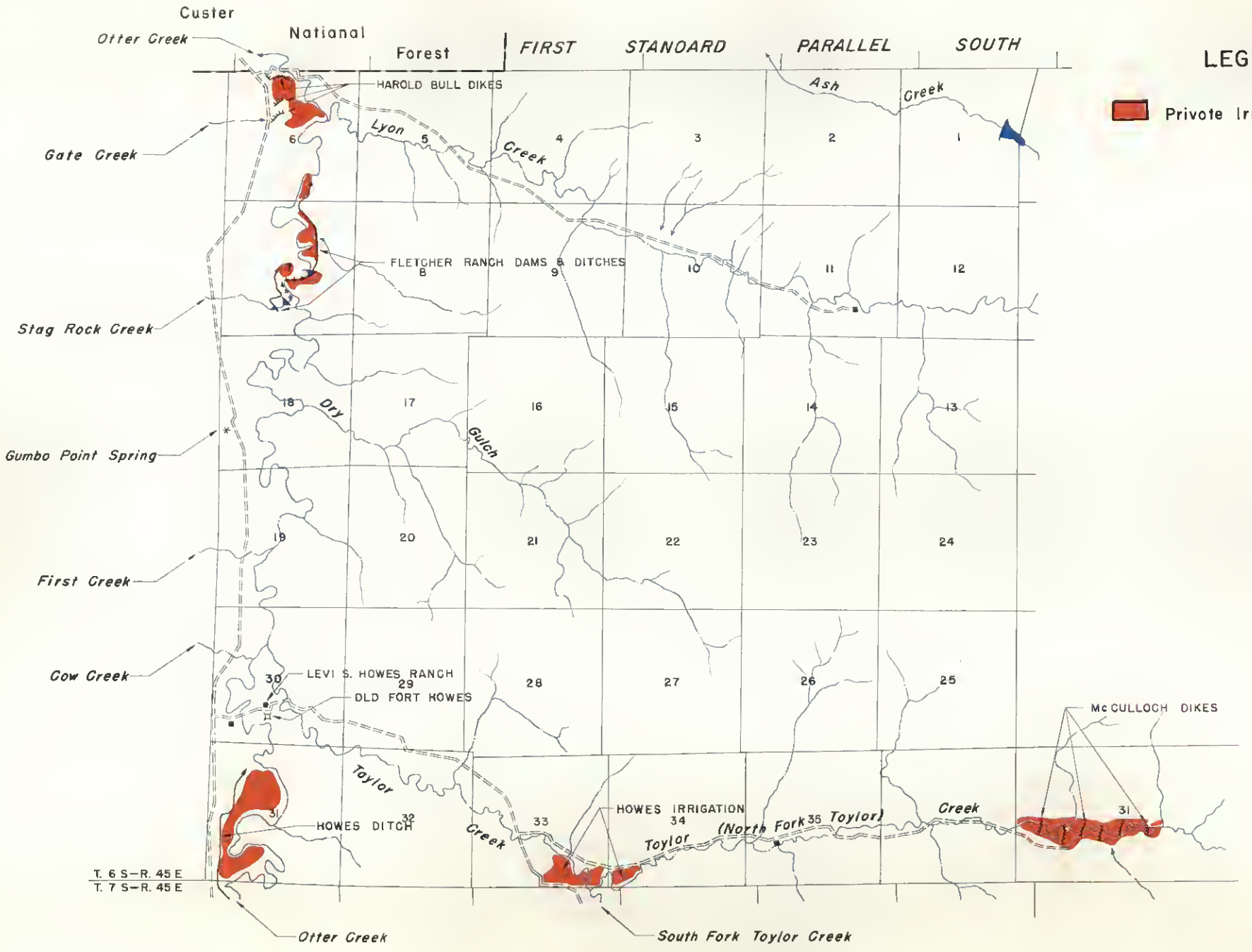
T. 5 S—R. 49 & 50 E

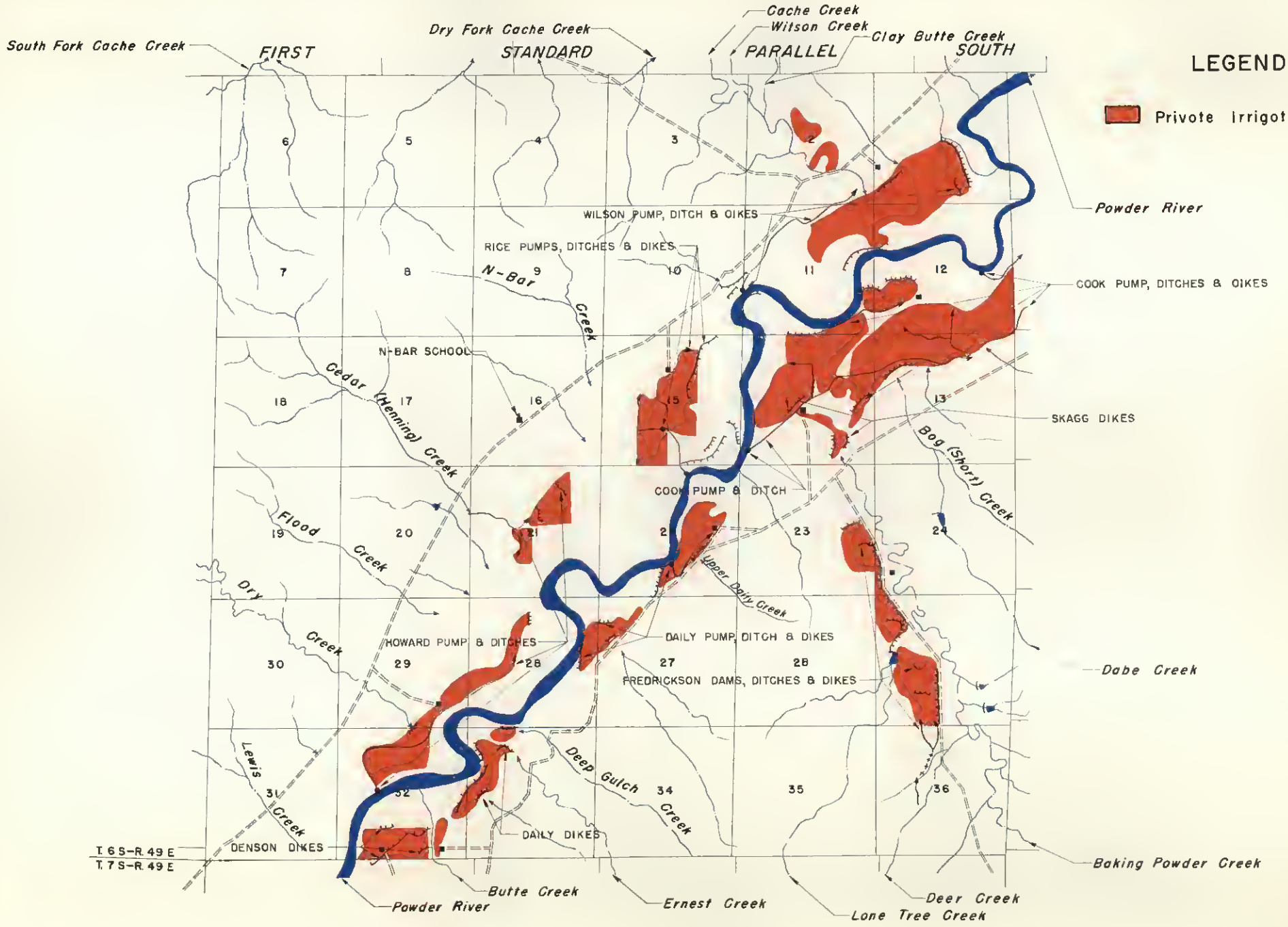

Sond Creek
Powder River
LEGEND
Private Irrigation
RANDALL DIKES
Phillippi Creek
Unnamed Creek
(Prairie, Ranch, Settle) Wrangler Creek
STUVER WELLS
RANDALL DIKES & DITCHES
Post (Wilson) Creek
Dry Gulch
RANDALL DITCH
Flat Creek
Powder River
East Fork
Third Creek
Stewart (Stone) Cr.
Fourth Cr.
Dog Cr.
STUVER PUMP, DITCH AND DIKES
T. 5 S—R. 50 E
T. 6 S—R. 50 E
FIRST STANDARD PARALLEL SOUTH
Middle Creek
Third (West Fork Third) Creek
212

T. 5 S—R. 51 E

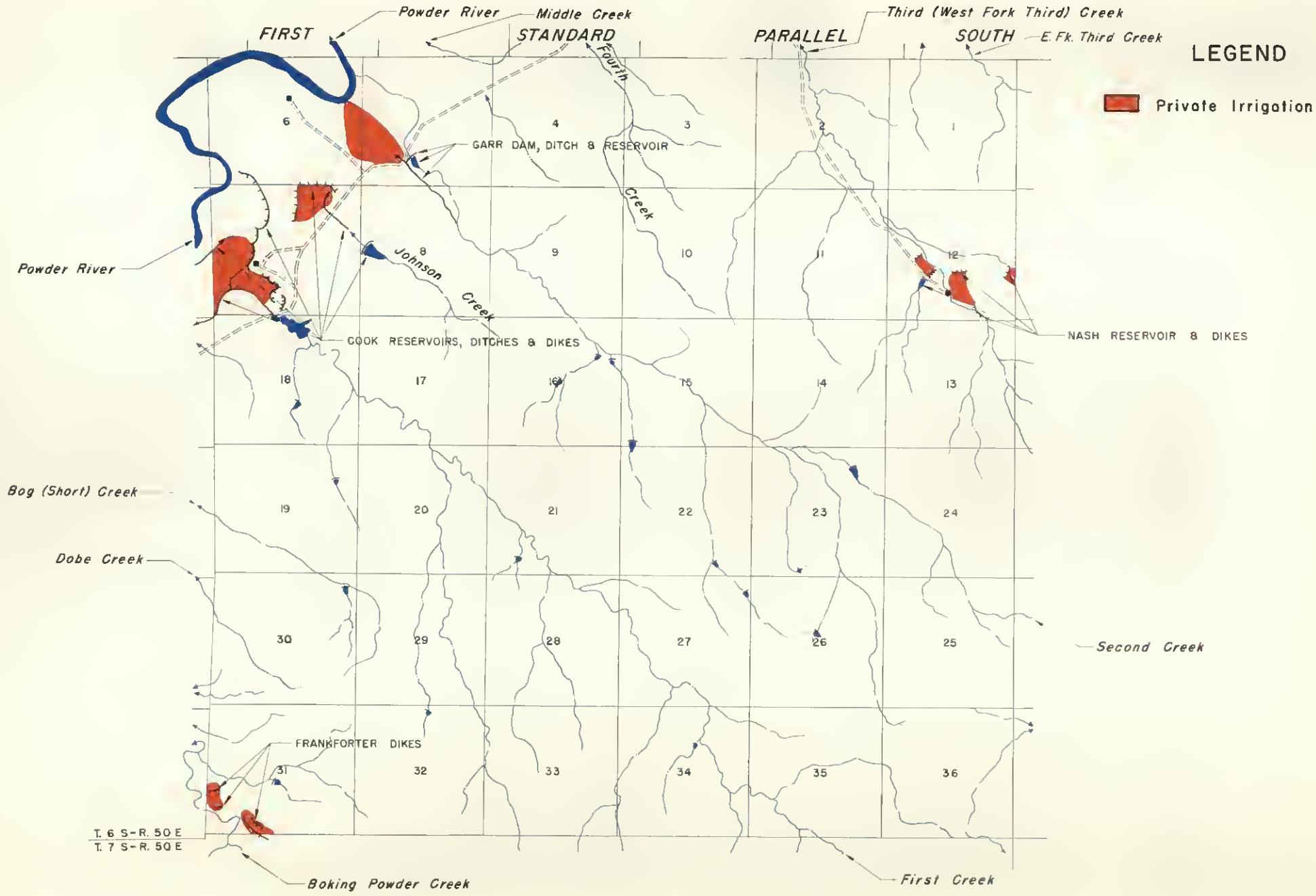

Little Powder River
Little Corrall Creek
Annis (Antelope, Wolfe) Creek
Plum Creek
Butte Creek
ANDERSON DIKES
Draine Creek
Hoy Creek
WAITE DITCH
Dry Gulch
Unnamed Creek
Flat Creek
Antelope Creek
LEGEND
Private Irrigation
EAST
MERIDIAN
GUIDE
13 th
T. 5 S—R. 51 E
T. 6 S R. 51 E
FIRST STANDARD PARALLEL SOUTH
Little Powder River
East Fork Little Powder River
T. 5 S—R. 52 E


Lightning Creek
LEGEND
Private Irrigation
SAYE DAM & DITCHES
Pilgrim Creek
South Creek
W. Ainsworth Coulee
E. Ainsworth Coulee
Tom Creek
Hoy Creek
Dick Creek
Williams Butte Creek
West Fork Lightning Creek
Pine Butte
VANNETT (GILGER) DITCHES & DIKES
Lighting Creek
Lightning Butte
Dry Draw
VANNETT (GILGER) DAM & DIKES
SCHAFFER DIKES
PANATIER DITCH & DIKES
Pilgrim Creek
SCHAFFER DAMS & DIKES
Hoy Creek
CARTER COUNTY
Lightning Creek
Lightning Creek
CARTER COUNTY
T. 5 S—R. 53 E
T. 6 S—R. 54 E
FIRST STANDARD PARALLEL SOUTH
T. 5 S—R. 54 E


Custer
National
Forest
FIRST STANDARD PARALLEL SOUTH
Otter Creek
Gate Creek
Stag Rock Creek
Gumbo Point Spring
First Creek
Cow Creek
HAROLD BULL DIKES
Lyon Creek
Ash Creek
FLETCHER RANCH DAMS & DITCHES
Dry Gulch
LEVI S. HOWES RANCH
OLD FORT HOWES
HOWES DITCH
Taylor Creek
HOWES IRRIGATION
Toylor (North Fork Toylor) Creek
McCULLOCH DIKES
T. 6 S—R. 45 E
T. 7 S—R. 45 E
Otter Creek
South Fork Toylor Creek
LEGEND
Private Irrigation
T. 6 S—R. 46 & 47 E


South Fork Cache Creek
FIRST
Dry Fork Cache Creek
STANDARD
Cache Creek
Wilson Creek
PARALLEL
Clay Butte Creek
SOUTH
LEGEND
Privote Irrigotion
Powder River
WILSON PUMP, DITCH & DIKES
RICE PUMPS, DITCHES & DIKES
N-Bar Creek
COOK PUMP, DITCHES & DIKES
N-BAR SCHOOL
Cedar (Henning) Creek
SKAGG DIKES
Bog (Short) Creek
COOK PUMP & DITCH
Flood Creek
Dry Creek
Upper Dotty Creek
HOWARD PUMP & DITCHES
DAILY PUMP, DITCH & DIKES
FREDRICKSON DAMS, DITCHES & DIKES
Dabe Creek
Lewis Creek
Deep Gulch Creek
DAILY DIKES
DENSON DIKES
T. 6 S.-R. 49 E.
T. 7 S.-R. 49 E.
Butte Creek
Powder River
Ernest Creek
Lone Tree Creek
Deer Creek
Baking Powder Creek

T. 6 S—R. 50 E


Powder River
Middle Creek
FIRST
STANDARD
Fourth
Creek
PARALLEL
Third (West Fork Third) Creek
SOUTH
E. Fk. Third Creek
LEGEND
Private Irrigation
GARR DAM, DITCH & RESERVOIR
Powder River
Johnson Creek
COOK RESERVOIRS, DITCHES & DIKES
NASH RESERVOIR & DIKES
Bog (Short) Creek
Dobe Creek
Second Creek
FRANKFORTER DIKES
T. 6 S - R. 50 E
T. 7 S - R. 50 E
Boking Powder Creek
First Creek
6
4
3
2
1
8
9
10
11
12
18
17
16
15
14
13
19
20
21
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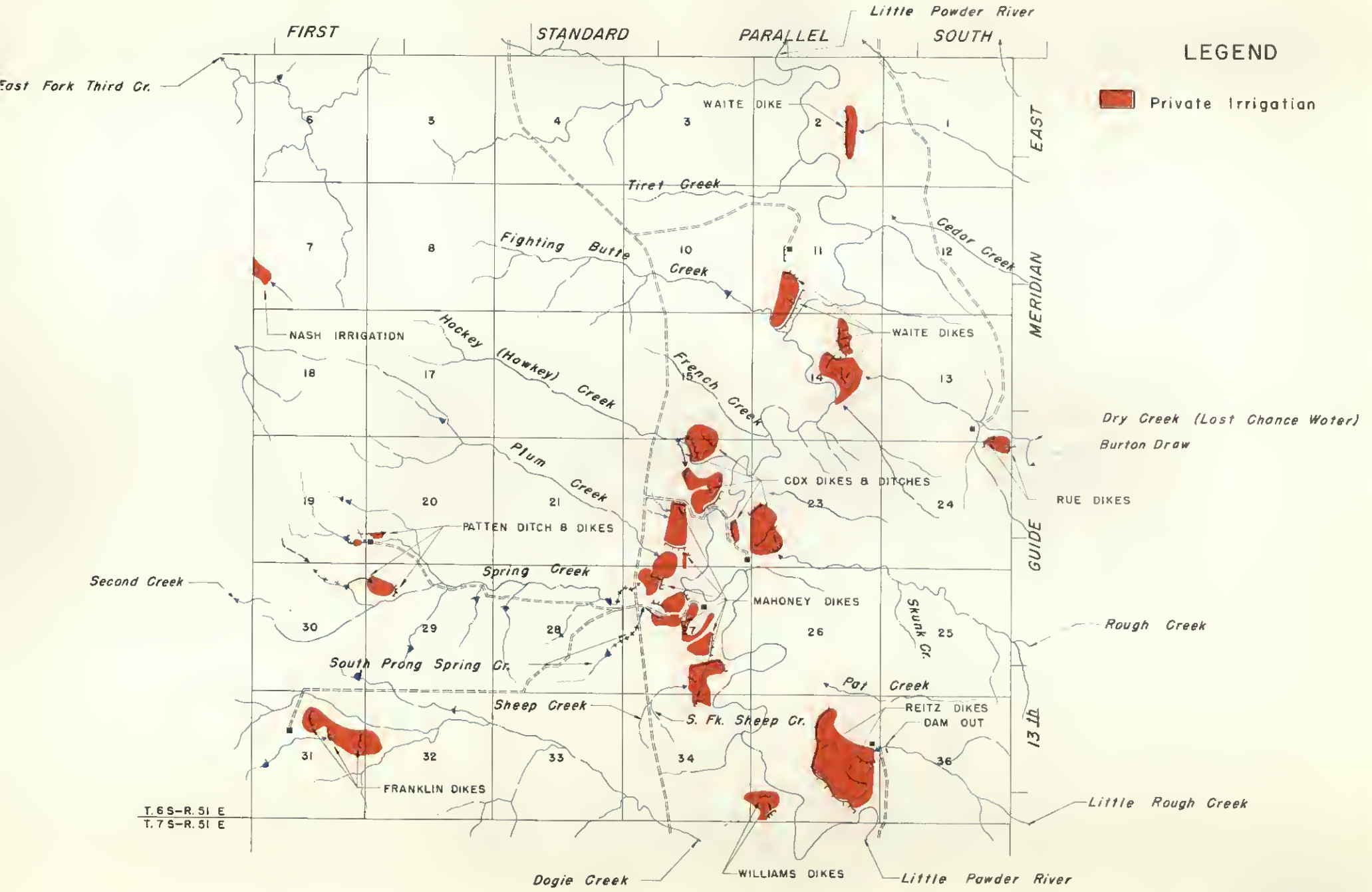
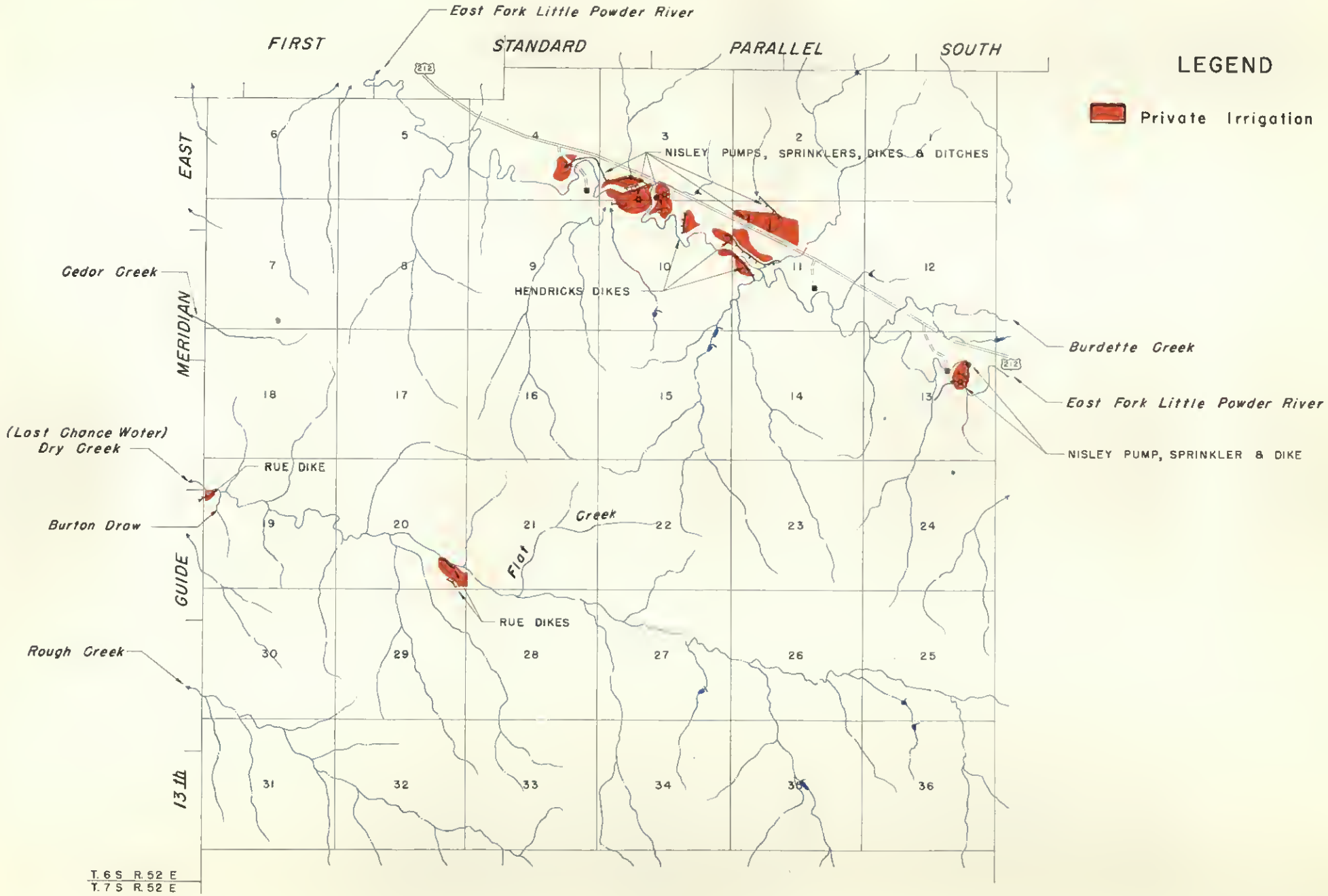
36

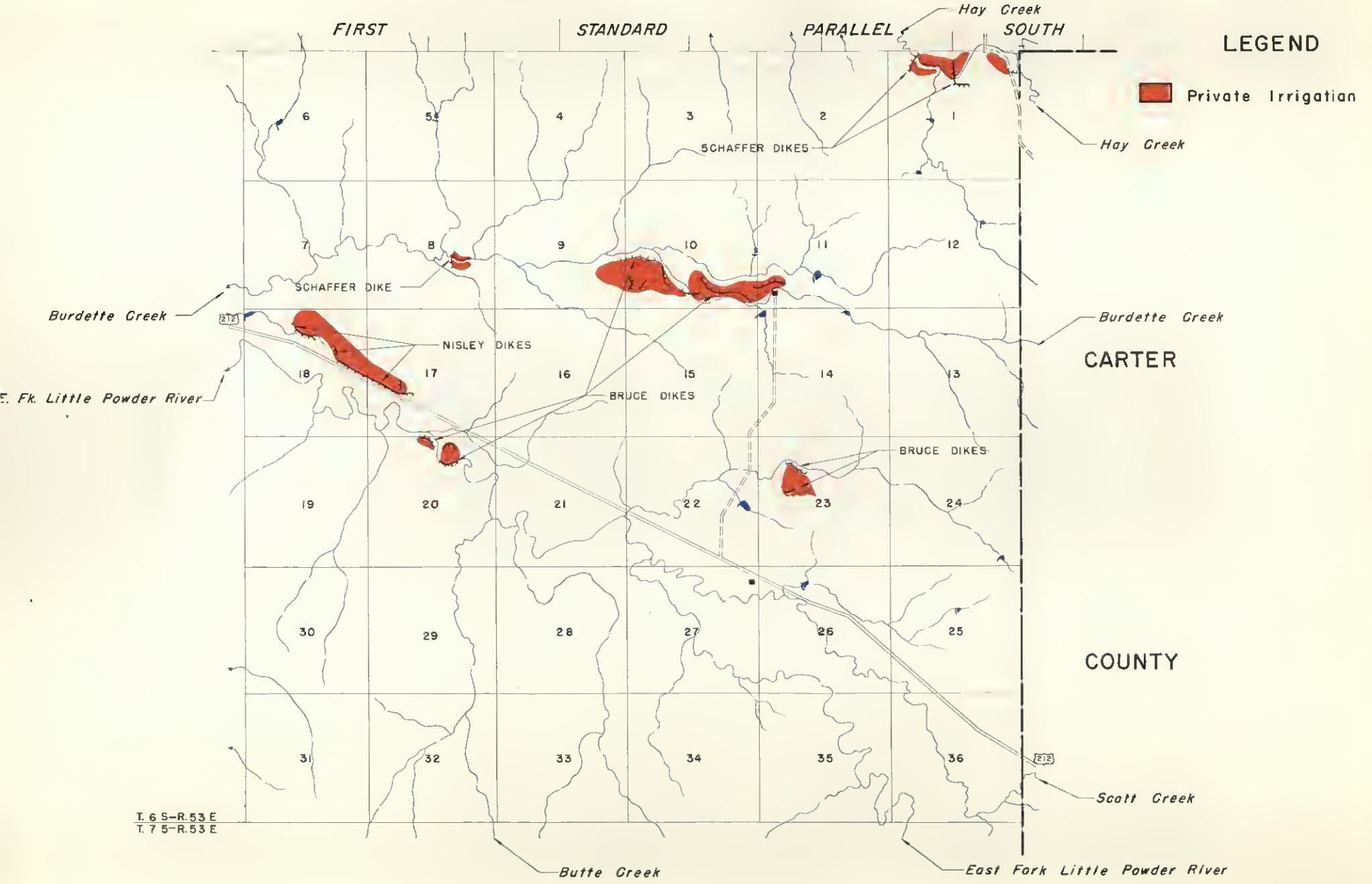
T. 6 S—R. 51 E


FIRST STANDARD PARALLEL SOUTH
EAST MERIDIAN GUIDE 13 Mi
Little Powder River
East Fork Third Cr.
WAITE DIKE
Tiret Creek
Fighting Butte Creek
Cedar Creek
NASH IRRIGATION
Hockey (Howkey) Creek
French Creek
WAITE DIKES
Dry Creek (Lost Chance Water)
Burton Draw
Plum Creek
CDX DIKES & DITCHES
RUE DIKES
PATTEN DITCH & DIKES
Second Creek
Spring Creek
MAHONEY DIKES
Skunk Cr.
Rough Creek
South Prong Spring Cr.
Pat Creek
Sheep Creek
S. Fk. Sheep Cr.
REITZ DIKES
DAM OUT
FRANKLIN DIKES
Little Rough Creek
T. 6 S–R. 51 E
T. 7 S–R. 51 E
Dogie Creek
WILLIAMS DIKES
Little Powder River
LEGEND
Private Irrigation

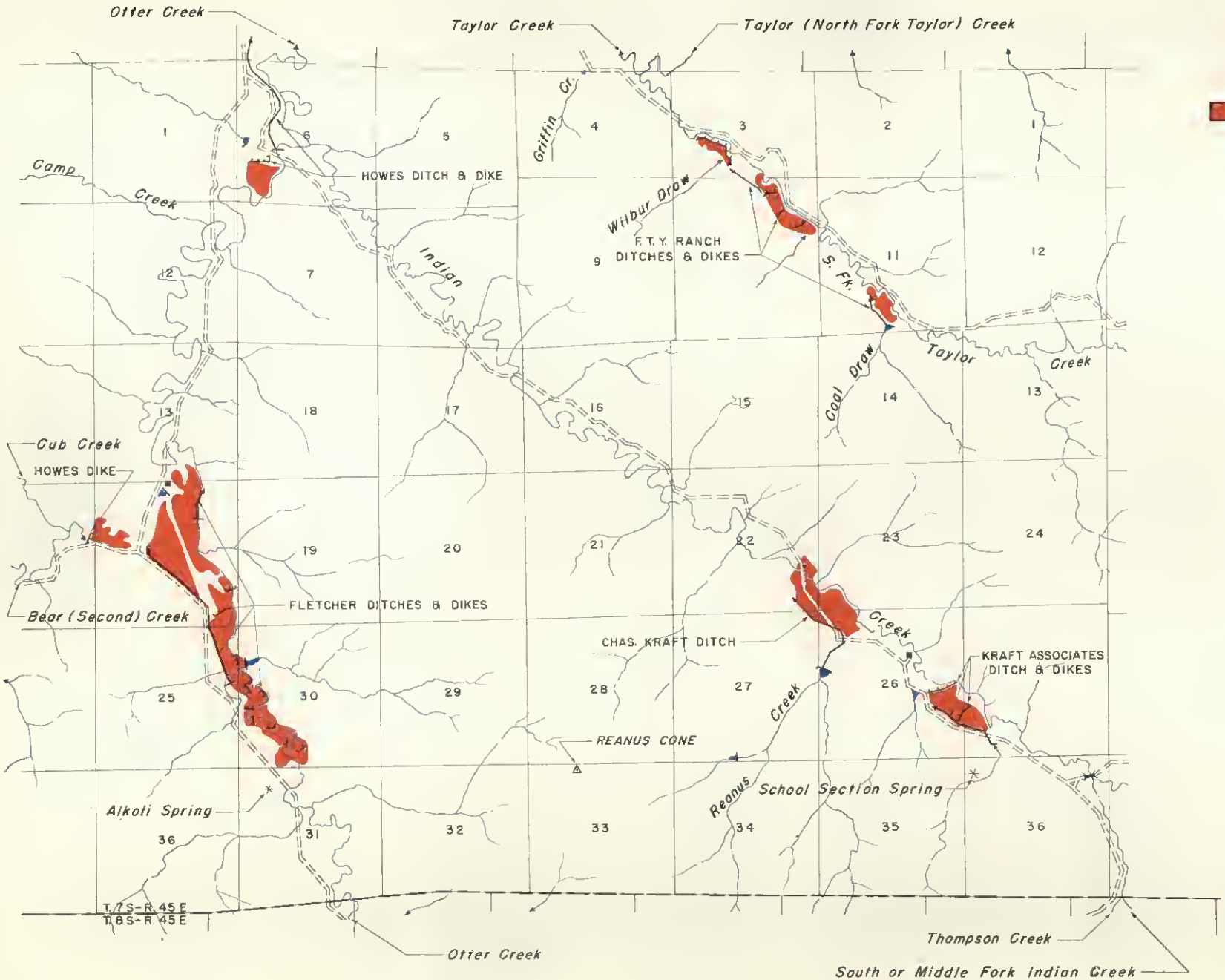
T. 6 S—R. 52 E


East Fork Little Powder River
FIRST STANDARD PARALLEL SOUTH
EAST MERIDIAN BOISE
GUIDE
13th
Cedar Creek
(Lost Chance Water) Dry Creek
Burton Draw
Rough Creek
Flat Creek
Burdette Creek
212
NISLEY PUMPS, SPRINKLERS, DIKES & DITCHES
HENDRICKS DIKES
RUE DIKE
RUE DIKES
NISLEY PUMP, SPRINKLER & DIKE
LEGEND
Private Irrigation
T. 6 S. R. 52 E.
T. 7 S. R. 52 E.

T. 6 S—R. 53 E


FIRST STANDARD PARALLEL SOUTH
Hay Creek
LEGEND
Private Irrigation
Hay Creek
SCHAFFER DIKES
SCHAFFER DIKE
Burdette Creek
Burdette Creek
NISLEY DIKES
CARTER
E. Fk. Little Powder River
BRUCE DIKES
BRUCE DIKES
COUNTY
Scott Creek
T. 6 S–R. 53 E
T. 7 S–R. 53 E
Butte Creek
East Fork Little Powder River

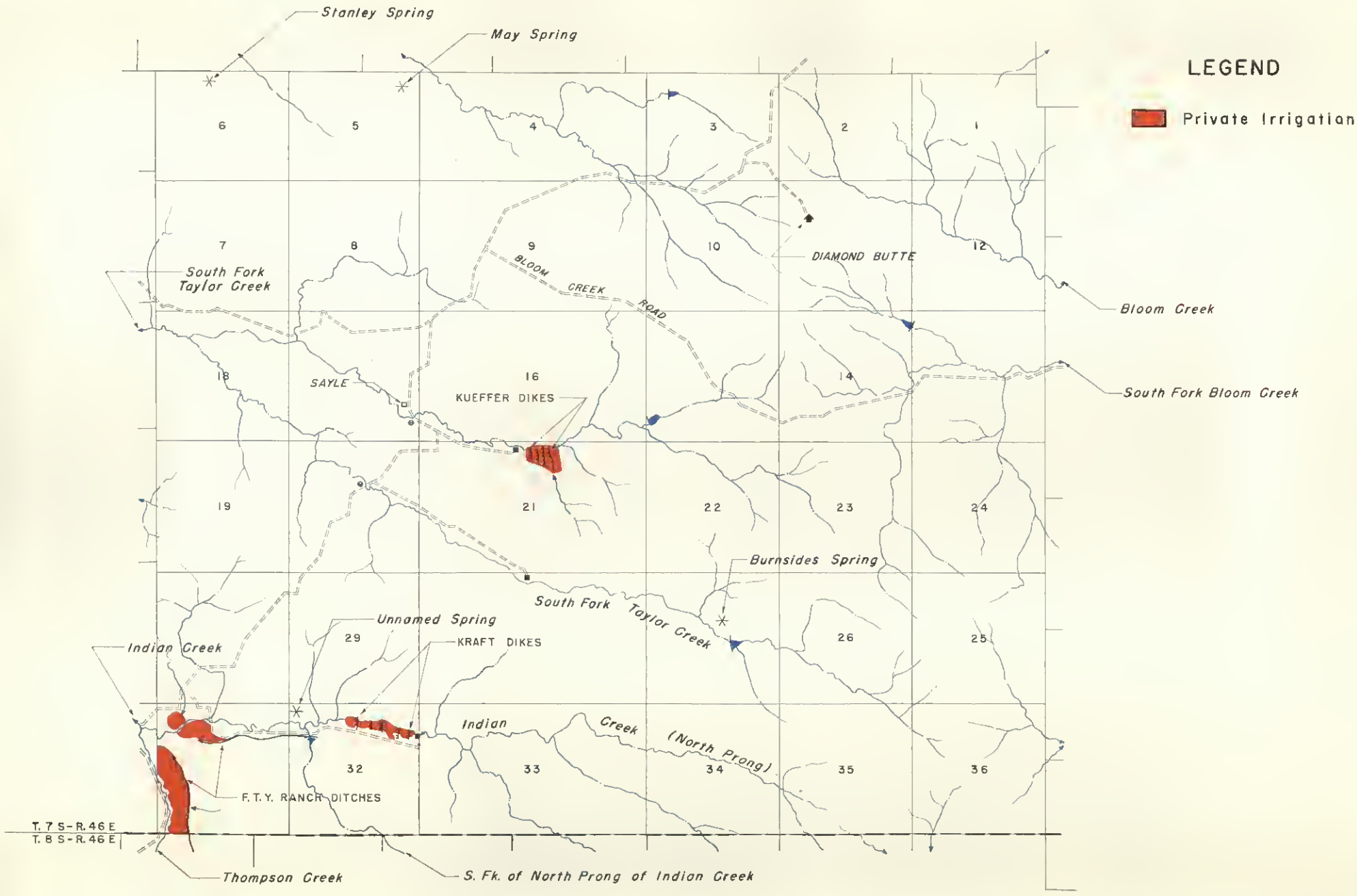
T. 6 S—R. 54 E



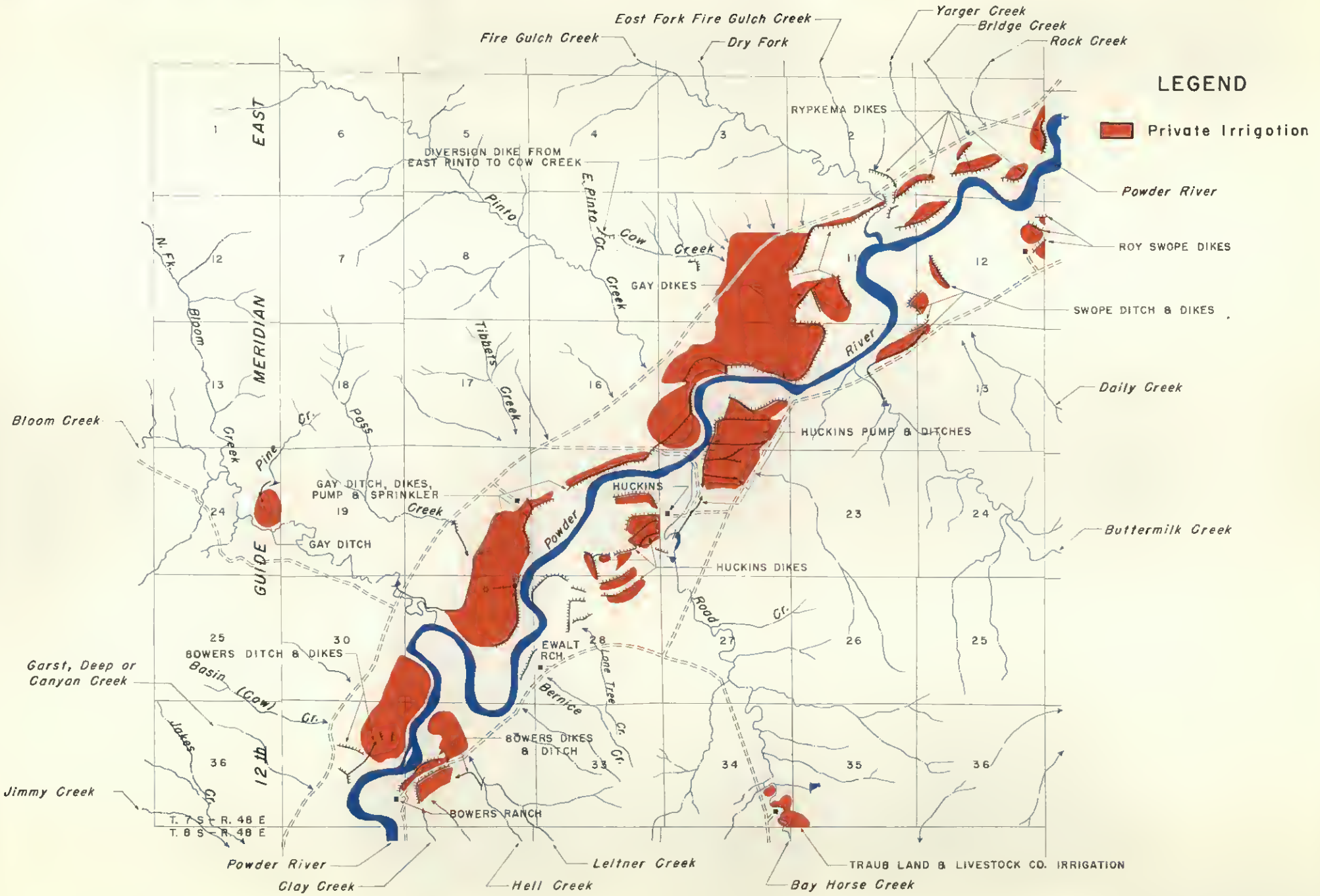
LEGEND

Private Irrigation

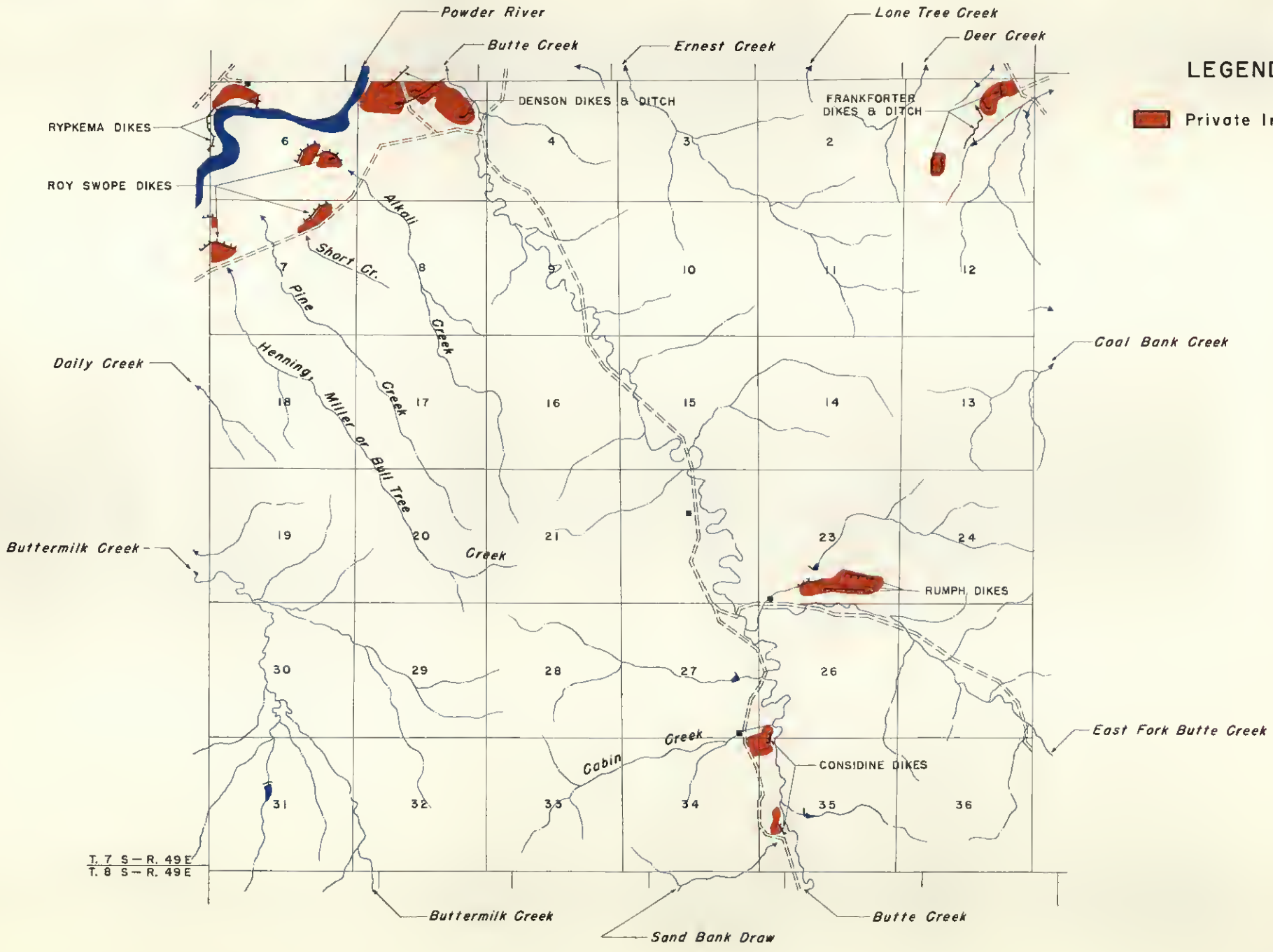
T. 7 S—R. 45 & 46 E


Stanley Spring
May Spring
LEGEND
Private Irrigation
6
5
4
3
2
1
7
8
9
10
12
DIAMOND BUTTE
South Fork Taylor Creek
BLOOM CREEK ROAD
Bloom Creek
18
SAYLE
16
KUEFFER DIKES
14
South Fork Bloom Creek
19
21
22
23
24
Burnsides Spring
South Fork Taylor Creek
Unnamed Spring
Indian Creek
29
KRAFT DIKES
26
25
Indian Creek (North Prong)
32
33
34
35
36
F.T.Y. RANCH DITCHES
T. 7 S - R. 46 E
T. 8 S - R. 46 E
Thompson Creek
S. Fk. of North Prong of Indian Creek

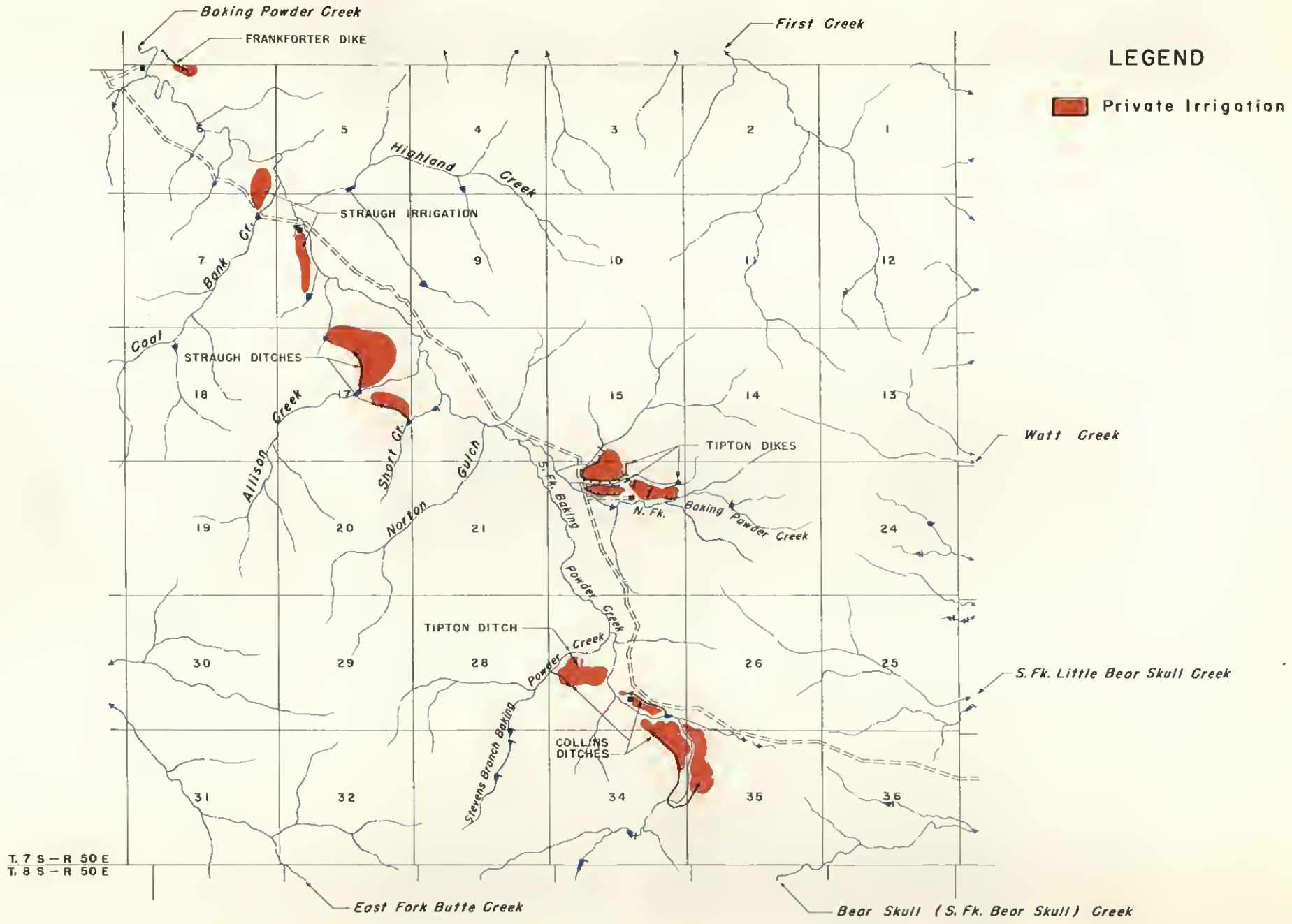
T. 7 S—R. 47 E


LEGEND
Private Irrigation
East Fork Fire Gulch Creek
Fire Gulch Creek
Dry Fork
Yarger Creek
Bridge Creek
Rock Creek
RYPKEMA DIKES
DIVERSION DIKE FROM EAST PINTO TO COW CREEK
E. Pinto Cr.
Pinto Creek
Cow Creek
GAY DIKES
Powder River
ROY SWOPE DIKES
SWOPE DITCH & DIKES
Daily Creek
HUCKINS PUMP & DITCHES
HUCKINS
HUCKINS DIKES
GAY DITCH, DIKES, PUMP & SPRINKLER
GAY DITCH
Buttermilk Creek
EWALT RCH
BOWERS DITCH & DIKES
BOWERS DIKES & DITCH
BOWERS RANCH
Garst, Deep or Canyon Creek
Basin (Cow) Cr.
Bernice Lone Tree Cr.
Jakes Cr.
Jimmy Creek
T. 7 S. - R. 48 E
T. 8 S. - R. 48 E
Powder River
Clay Creek
Leltner Creek
Hell Creek
Bay Horse Creek
TRAUB LAND & LIVESTOCK CO. IRRIGATION
Bloom Creek
N. Fk. Bloom Creek
Pine Cr.
Tibbets Creek
Pass Creek
Road Cr.
EAST
GUIDE
MERIDIAN
12th

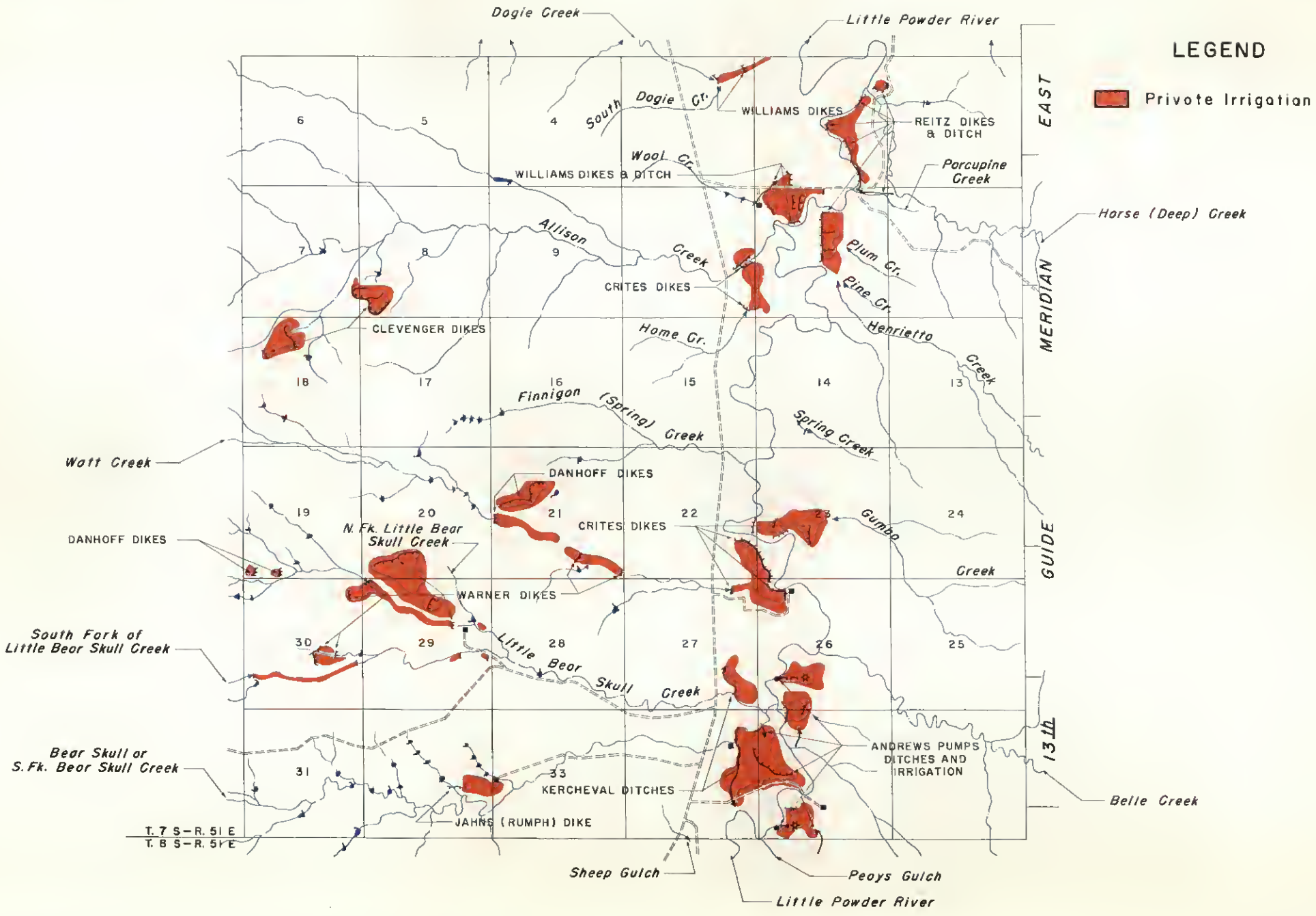
T. 7 S—R. 48 & 49 E


Powder River
Butte Creek
Ernest Creek
Lone Tree Creek
Deer Creek
DENSON DIKES & DITCH
FRANKFORTER DIKES & DITCH
RYPKEMA DIKES
ROY SWOPE DIKES
Alkali Creek
Short Cr.
Pine Creek
Henning, Miller or Bull Tree Creek
Daily Creek
Coal Bank Creek
Buttermilk Creek
RUMPH DIKES
East Fork Butte Creek
Cabin Creek
CONSIDINE DIKES
T. 7 S — R. 49 E
T. 8 S — R. 49 E
Buttermilk Creek
Sand Bank Draw
Butte Creek
LEGEND
Private Irrigation

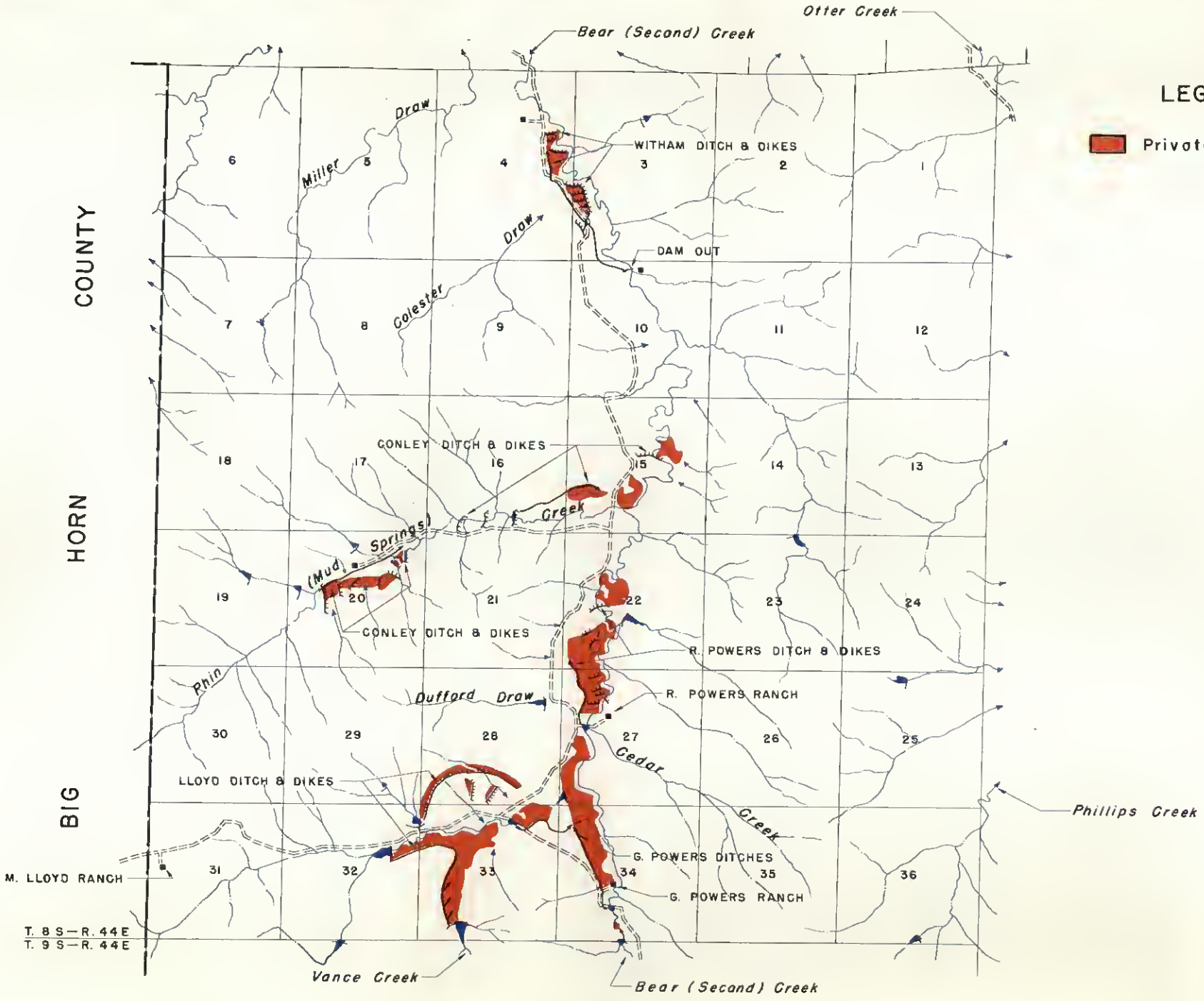
T. 7 S—R. 50 E


Boking Powder Creek
FRANKFORTER DIKE
First Creek
LEGEND
Private Irrigation
Highland Creek
STRAUGH IRRIGATION
Bank Cr.
Coal
STRAUGH DITCHES
Creek
Allison
Short Cr.
Norton Gulch
TIPTON DIKES
Watt Creek
S. Fk. Baking
N. Fk.
Baking Powder Creek
Powder Creek
TIPTON DITCH
Powder Creek
S. Fk. Little Beor Skull Creek
Stevens Branch Baking
COLLINS DITCHES
T. 7 S — R 50 E
T. 8 S — R 50 E
East Fork Butte Creek
Bear Skull (S. Fk. Beor Skull) Creek

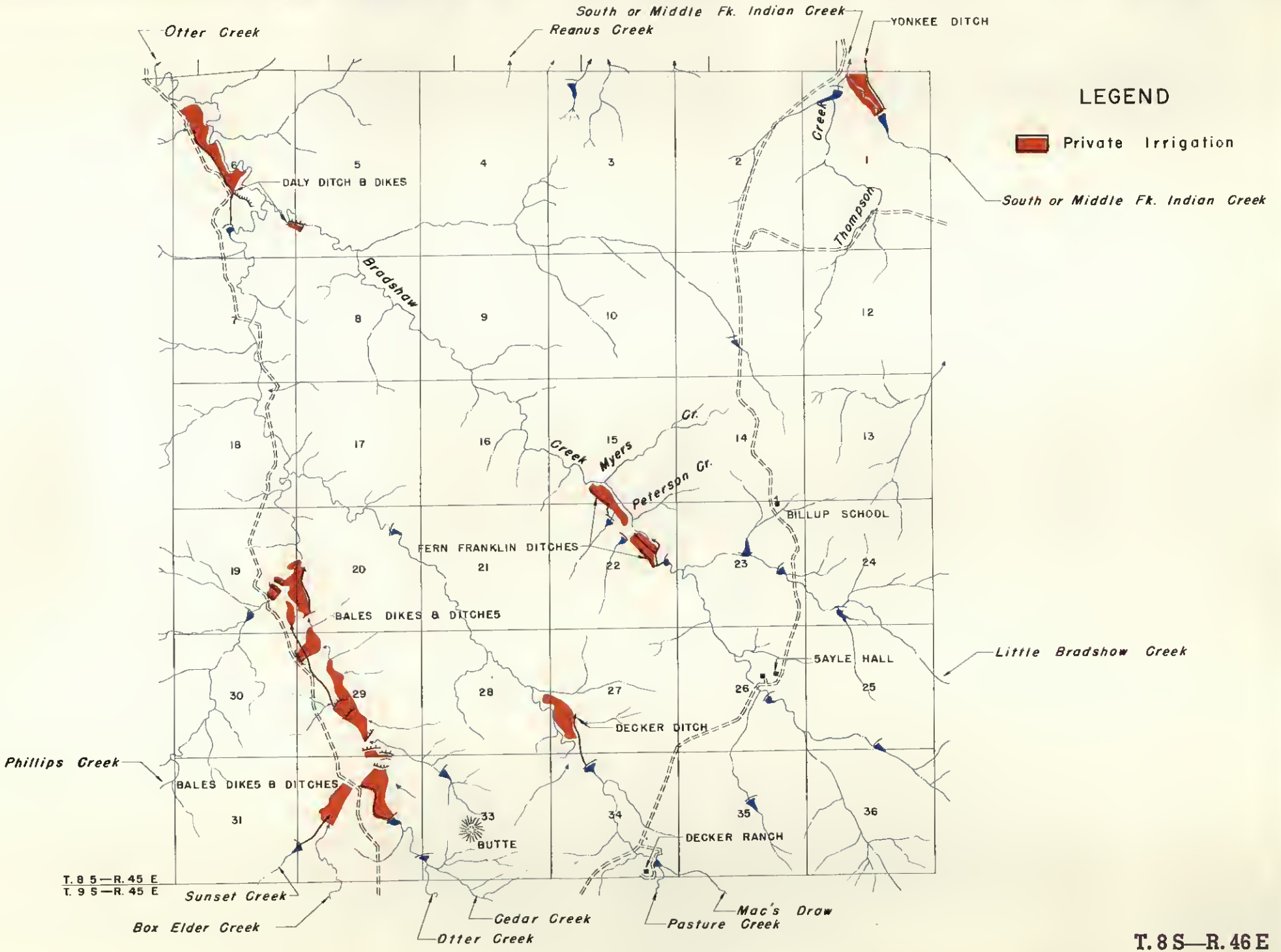
T. 7 S—R. 51 E

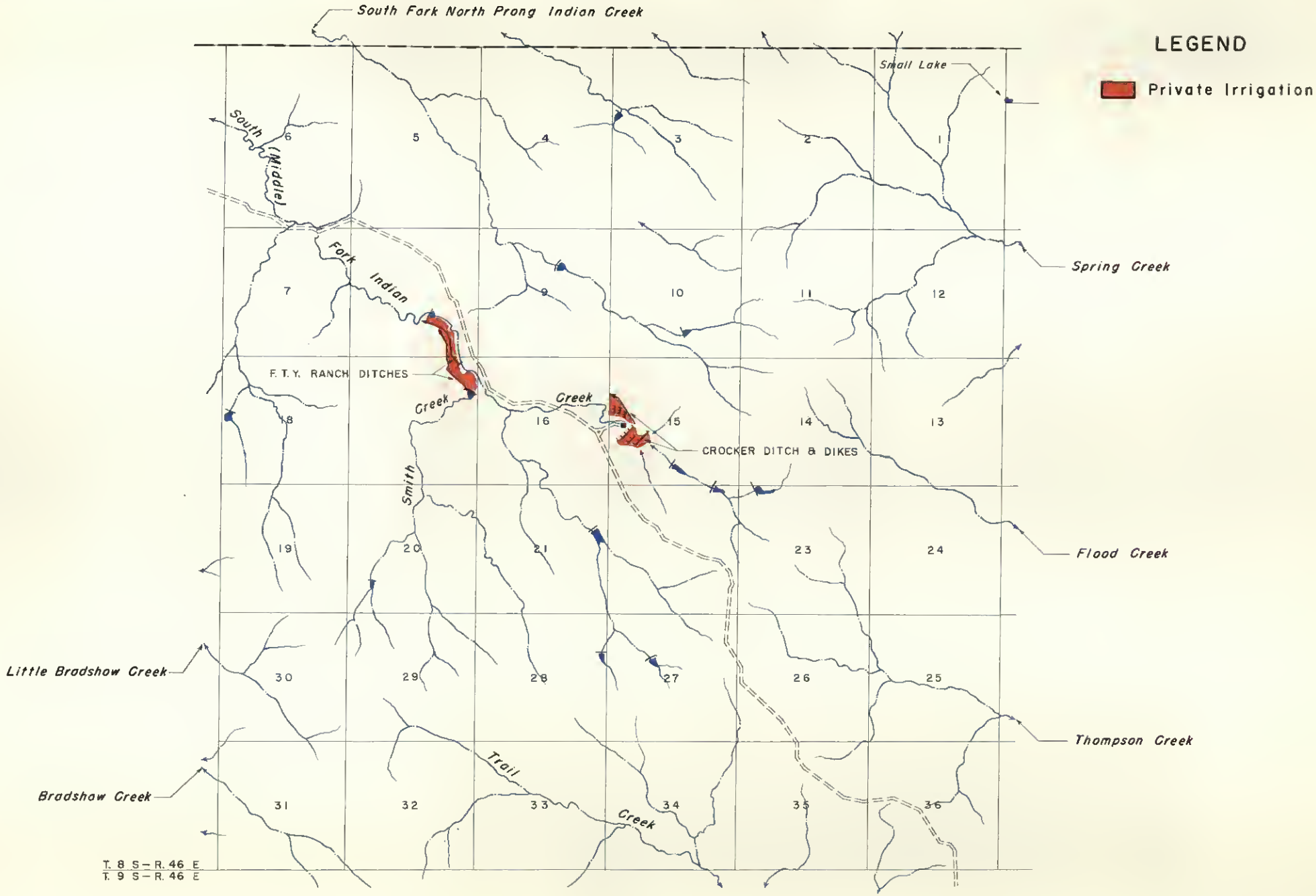

Dogie Creek
Little Powder River
LEGEND
Private Irrigation
South Dogie Cr.
WILLIAMS DIKES
REITZ DIKES & DITCH
EAST
Wool Cr.
WILLIAMS DIKES & DITCH
Porcupine Creek
Horse (Deep) Creek
Allison Creek
Plum Cr.
Pine Cr.
CRITES DIKES
CLEVENGER DIKES
Home Cr.
Henrietto Creek
MERIDIAN
Finnigon (Spring) Creek
Spring Creek
Watt Creek
DANHOFF DIKES
DANHOFF DIKES
N. Fk. Little Bear Skull Creek
CRITES DIKES
Gumbo Creek
GUIDE
WARNER DIKES
South Fork of Little Bear Skull Creek
Little Bear Skull Creek
Bear Skull or S. Fk. Bear Skull Creek
ANDREWS PUMPS DITCHES AND IRRIGATION
13TH
KERCHEVAL DITCHES
Belle Creek
JAHNS (RUMPH) DIKE
T. 7 S – R. 51 E
T. 8 S – R. 51 E
Sheep Gulch
Peoys Gulch
Little Powder River

T. 7 S—R. 52 E

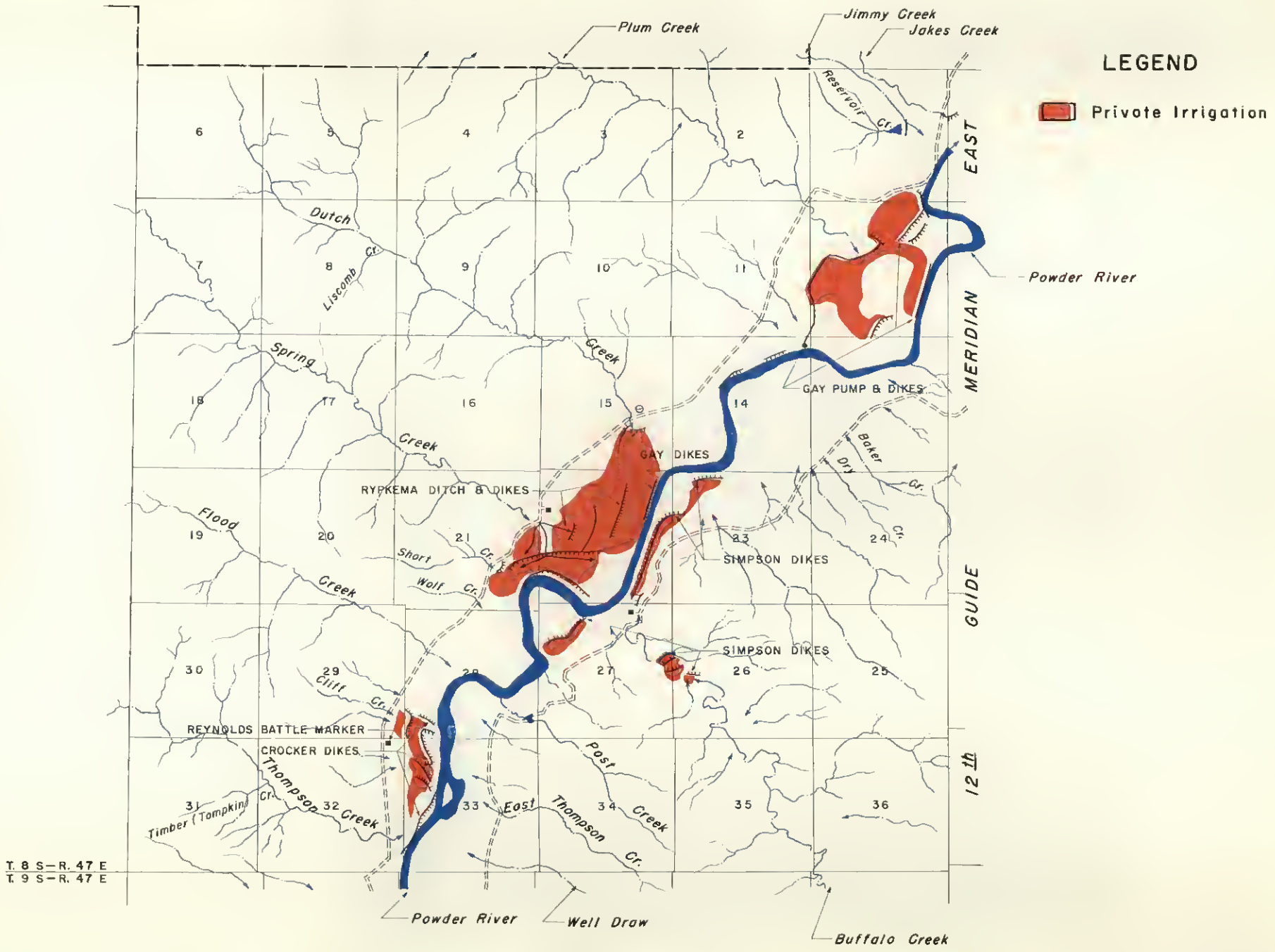

Otter Creek
Bear (Second) Creek
WITHAM DITCH & DIKES
DAM OUT
Miller Draw
Colester Draw
CONLEY DITCH & DIKES
Creek
(Mud Springs)
CONLEY DITCH & DIKES
R. POWERS DITCH & DIKES
R. POWERS RANCH
Dufford Draw
Phin
LLOYD DITCH & DIKES
Cedar Creek
G. POWERS DITCHES
G. POWERS RANCH
M. LLOYD RANCH
Phillips Creek
Vance Creek
Bear (Second) Creek
BIG HORN COUNTY
T. 8 S—R. 44 E
T. 9 S—R. 44 E
LEGEND
Private Irrigation

T. 8 S—R. 45 E

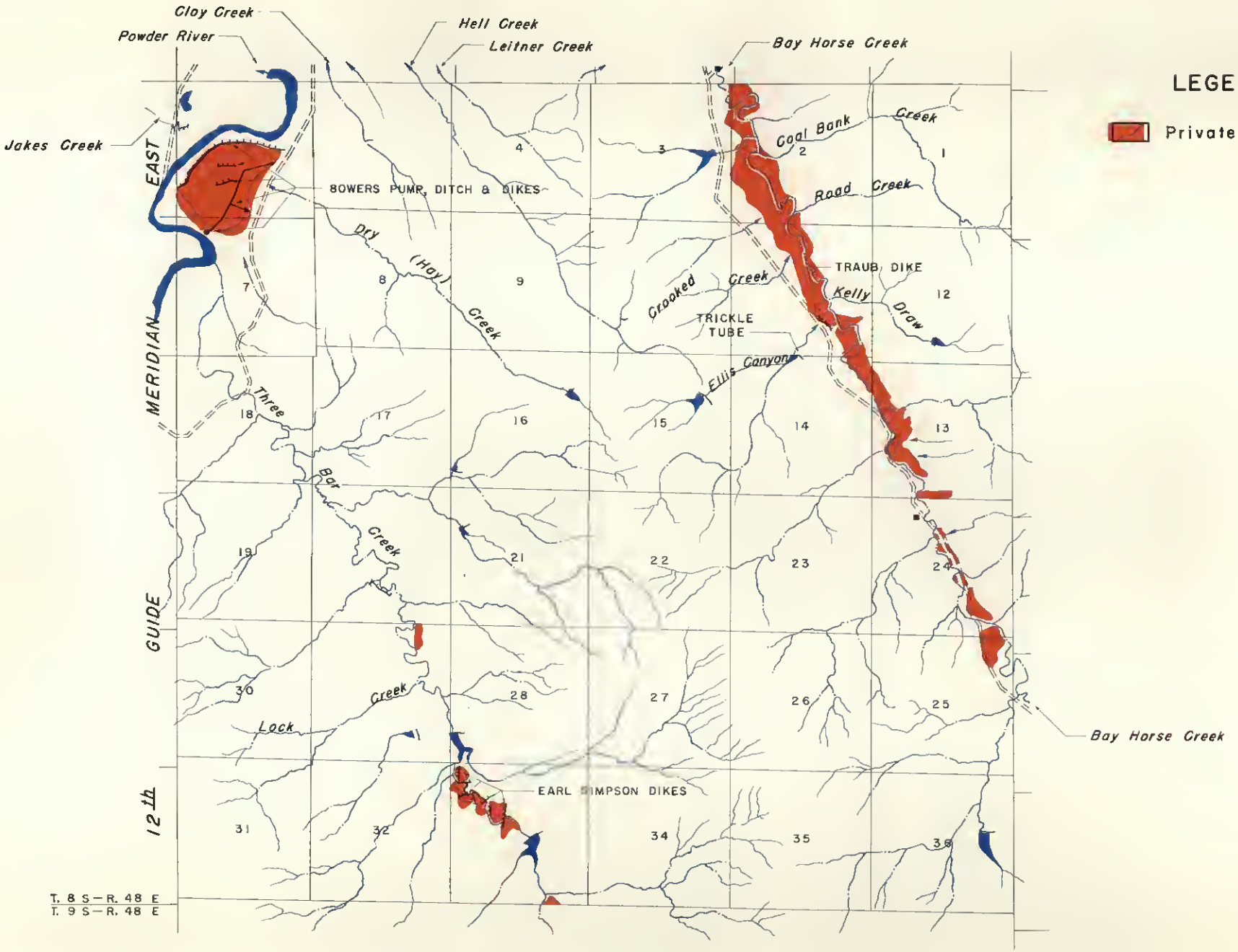

Otter Creek
Reanus Creek
South or Middle Fk. Indian Creek
YONKEE DITCH
LEGEND
Private Irrigation
South or Middle Fk. Indian Creek
Thompson Creek
DALY DITCH & DIKES
Bradshaw Creek
Myers Cr.
Peterson Cr.
BILLUP SCHOOL
FERN FRANKLIN DITCHES
BALES DIKES & DITCHES
SAYLE HALL
Little Bradshow Creek
DECKER DITCH
Phillips Creek
BALES DIKES & DITCHES
BUTTE
DECKER RANCH
T. 8 S—R. 45 E
T. 9 S—R. 45 E
Sunset Creek
Box Elder Creek
Cedar Creek
Otter Creek
Pasture Creek
Mac's Draw
T. 8 S—R. 46 E


South Fork North Prong Indian Creek
Small Lake
South (Middle) Fork Indian Creek
Spring Creek
F. T. Y. RANCH DITCHES
Smith Creek
CROCKER DITCH & DIKES
Flood Creek
Little Bradshow Creek
Thompson Creek
Bradshow Creek
Trail Creek
T. 8 S – R. 46 E
T. 9 S – R. 46 E
LEGEND
Private Irrigation

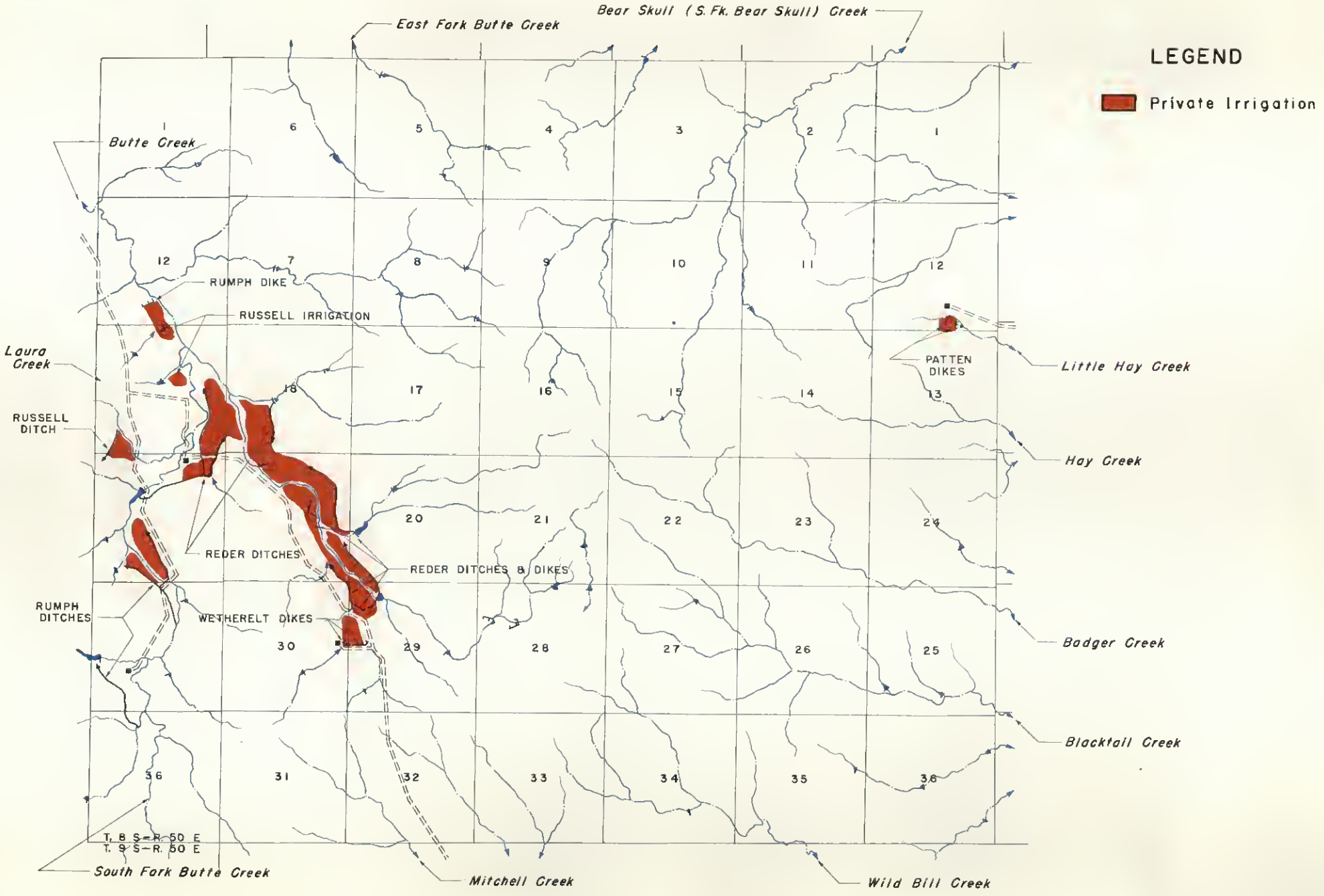
T. 8 S—R. 47 E


Plum Creek
Jimmy Creek
Jakes Creek
Reservoir Cr.
EAST
MERIDIAN
GUIDE
12th
Powder River
GAY PUMP & DIKES
GAY DIKES
RYPKEMA DITCH & DIKES
SIMPSON DIKES
SIMPSON DIKES
REYNOLDS BATTLE MARKER
CROCKER DIKES
Dutch
Liscomb Cr.
Spring
Creek
Creek
Flood
Creek
Short
Cr.
Wolf
Cr.
Baker
Dry
Cr.
Cr.
Cliff
Cr.
Thompson
Cr.
Timber (Tompkins)
Creek
East
Thompson Cr.
Post
Creek
Powder River
Well Draw
Buffalo Creek
T. 8 S—R. 47 E
T. 9 S—R. 47 E
LEGEND
Private Irrigation

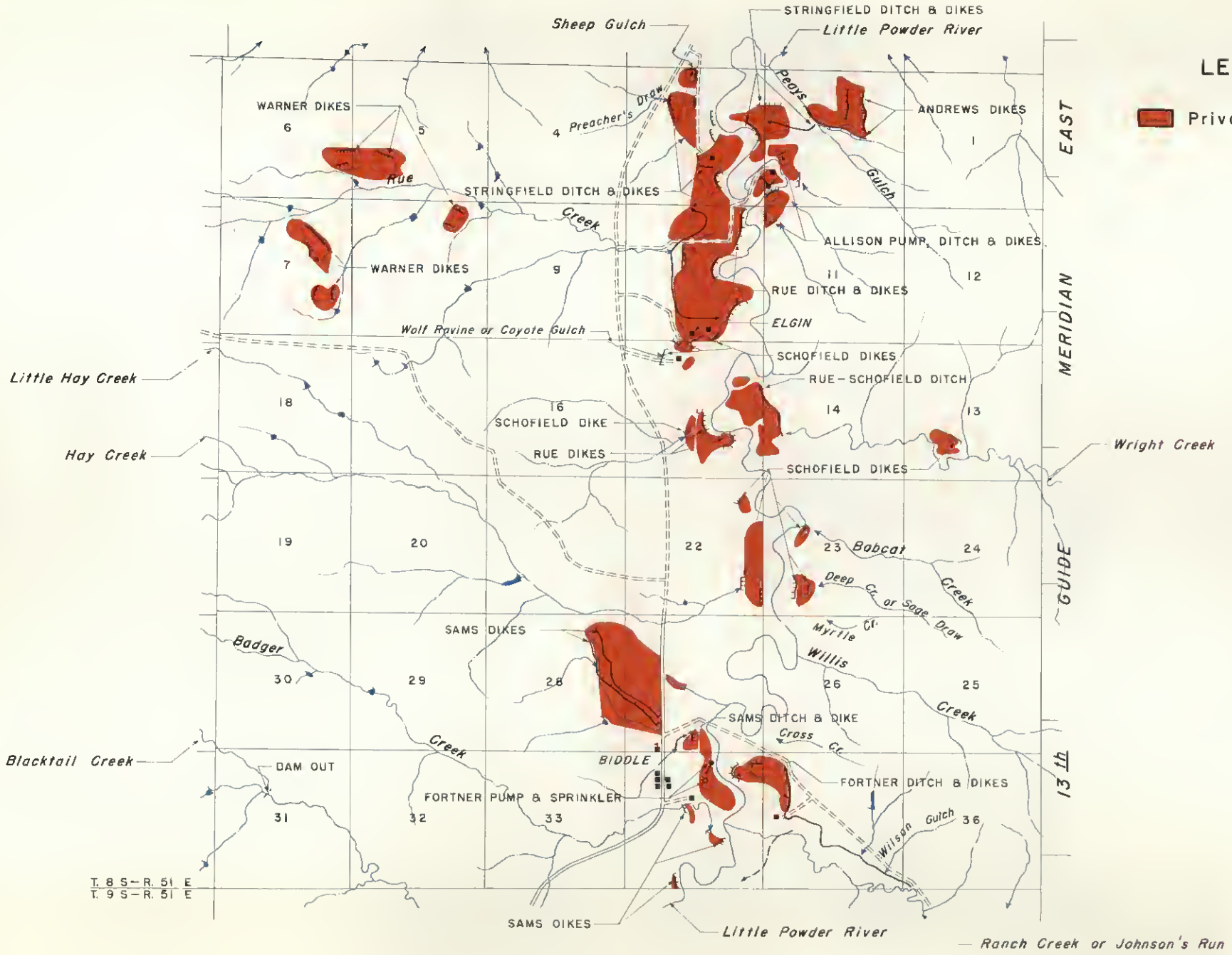
T. 8 S—R. 48 E


Cloy Creek
Powder River
Hell Creek
Leitner Creek
Bay Horse Creek
Jakes Creek
EAST
MERIDIAN
GUIDE
12th
BOWERS PUMP, DITCH & DIKES
Dry (Hay) Creek
Coal Bank Creek
Road Creek
TRAUB DIKE
Crooked Creek
Kelly Draw
TRICKLE TUBE
Ellis Canyon
Three Bar Creek
Lock Creek
EARL SIMPSON DIKES
Bay Horse Creek
T. 8 S—R. 48 E
T. 9 S—R. 48 E
LEGEND
Private Irrigation

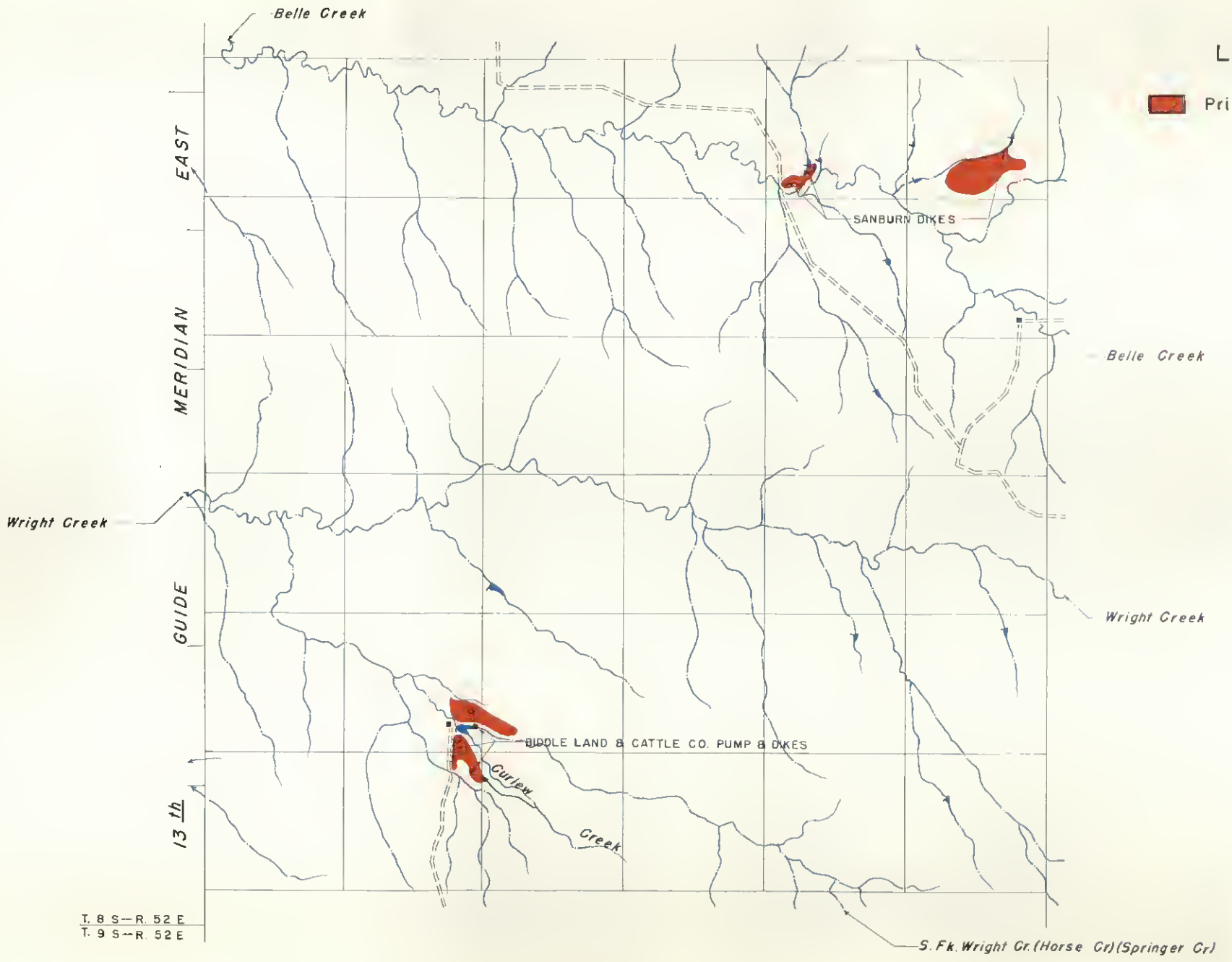
T. 8 S—R. 49 E


East Fork Butte Creek
Bear Skull (S. Fk. Bear Skull) Creek
Butte Creek
RUMPH DIKE
RUSSELL IRRIGATION
Laura Creek
RUSSELL DITCH
PATTEN DIKES
Little Hay Creek
Hay Creek
REDER DITCHES
REDER DITCHES & DIKES
RUMPH DITCHES
WETHERELT DIKES
Badger Creek
Blacktail Creek
T. 8 S—R. 50 E
T. 9 S—R. 50 E
South Fork Butte Creek
Mitchell Creek
Wild Bill Creek
LEGEND
Private Irrigation

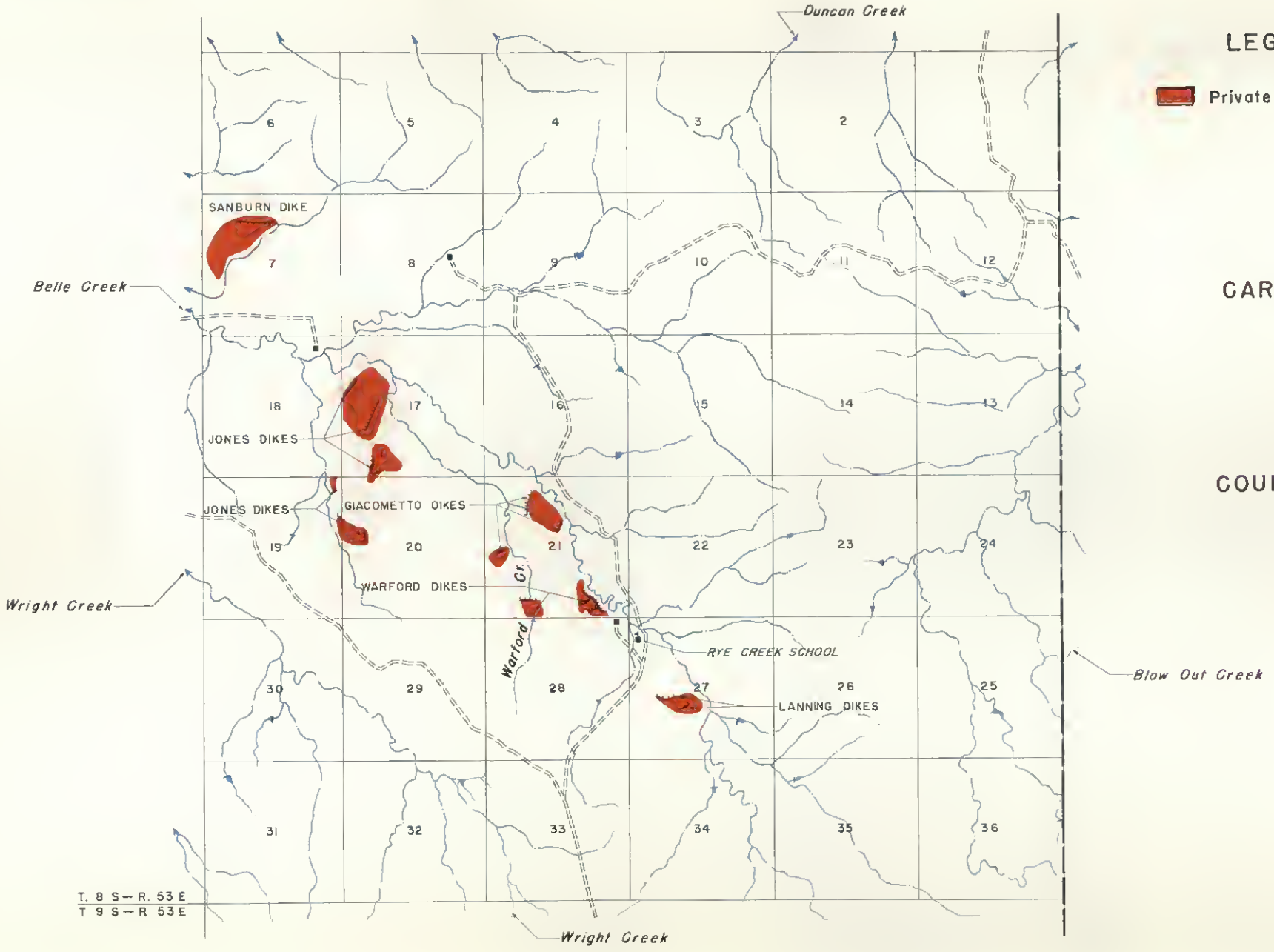
T. 8 S—R. 50 & 51 E


LEGEND
Private Irrigation
STRINGFIELD DITCH & DIKES
Little Powder River
Sheep Gulch
Peays
ANDREWS DIKES
Preacher's Draw
WARNER DIKES
Rue
Creek
STRINGFIELD DITCH & DIKES
Gulch
ALLISON PUMP, DITCH & DIKES
WARNER DIKES
RUE DITCH & DIKES
ELGIN
Wolf Ravine or Coyote Gulch
SCHOFIELD DIKES
Little Hay Creek
RUE-SCHOFIELD DITCH
SCHOFIELD DIKE
Hay Creek
RUE DIKES
SCHOFIELD DIKES
Wright Creek
Babcat
Deep Cr. or Sage Draw
Creek
Myrtle Cr.
SAMS DIKES
Badger
Willis
Creek
SAMS DITCH & DIKE
Cross Cr.
Blacktail Creek
Creek
BIDDLE
DAM OUT
FORTNER DITCH & DIKES
FORTNER PUMP & SPRINKLER
Wilson Gulch
T. 8 S—R. 51 E
T. 9 S—R. 51 E
SAMS DIKES
Little Powder River
Ranch Creek or Johnson's Run
EAST
MERIDIAN
GUIDE
13 th

T. 8 S—R. 52 E


Belle Creek
EAST
MERIDIAN
GUIDE
13 th
Wright Creek
SANBURN DIKES
Belle Creek
Wright Creek
BIDDLE LAND & CATTLE CO. PUMP & DIKES
Curlew
Creek
T. 8 S—R. 52 E
T. 9 S—R. 52 E
S. Fk. Wright Cr. (Horse Cr) (Springer Cr)
LEGEND
Private Irrigation

T. 8 S—R. 53 E


Duncan Creek
LEGEND
Private Irrigation
CARTER
COUNTY
SANBURN DIKE
Belle Creek
JONES DIKES
JONES DIKES
GIACOMETTO DIKES
WARFORD DIKES
Wright Creek
Warford Cr.
RYE CREEK SCHOOL
LANNING DIKES
Blow Out Creek
T. 8 S—R. 53 E
T 9 S—R 53 E
Wright Creek
6
5
4
3
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7
8
9
10
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18
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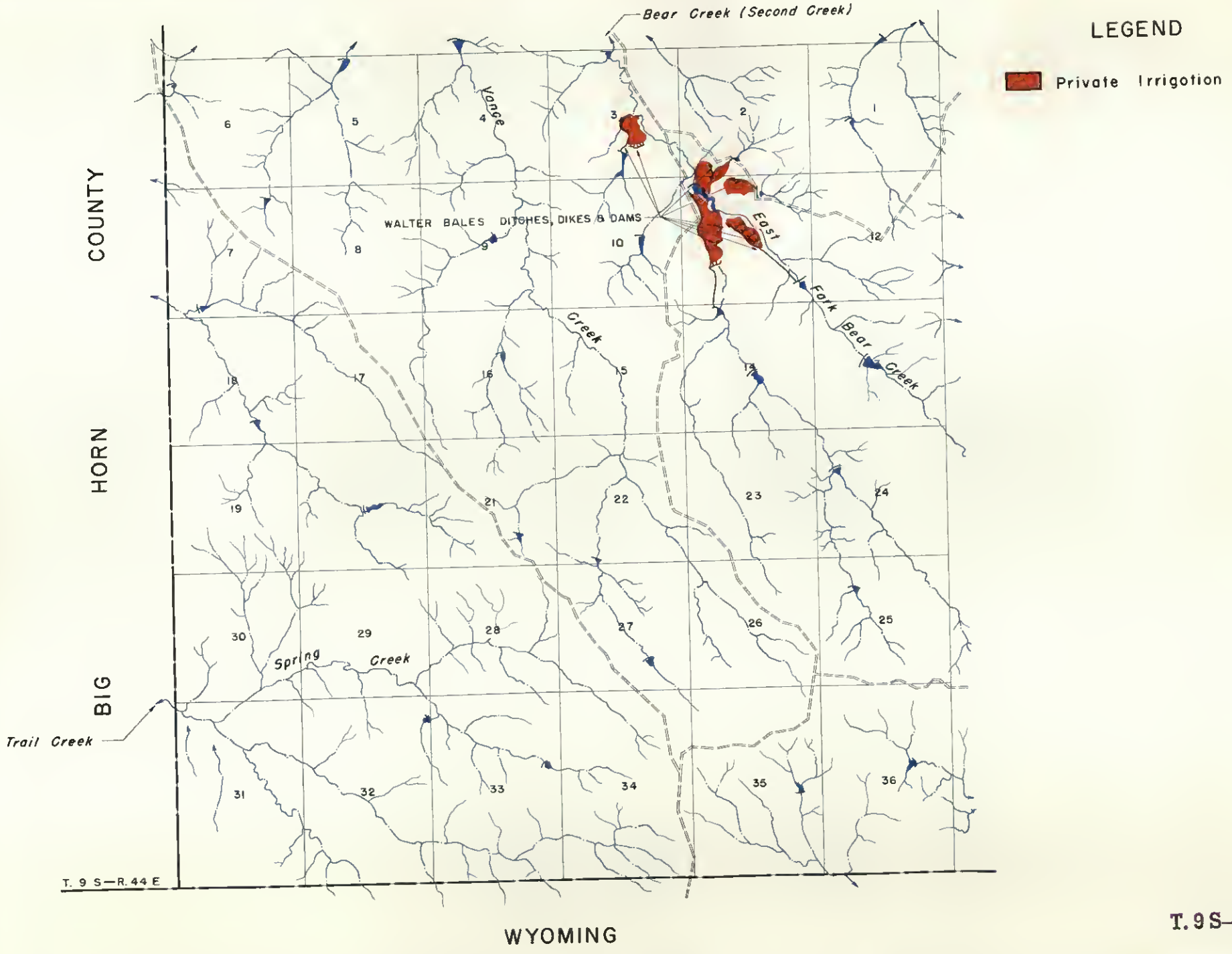
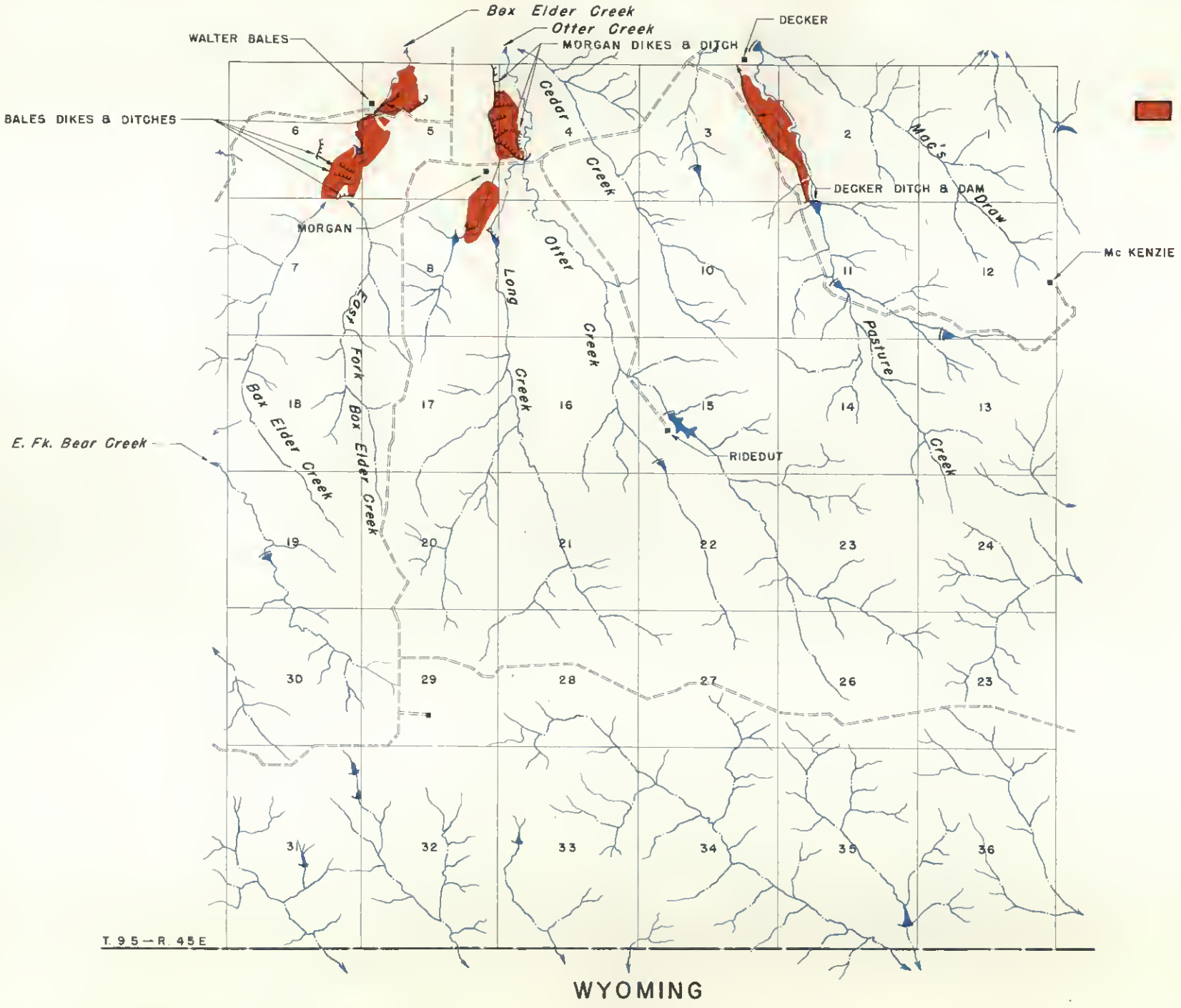
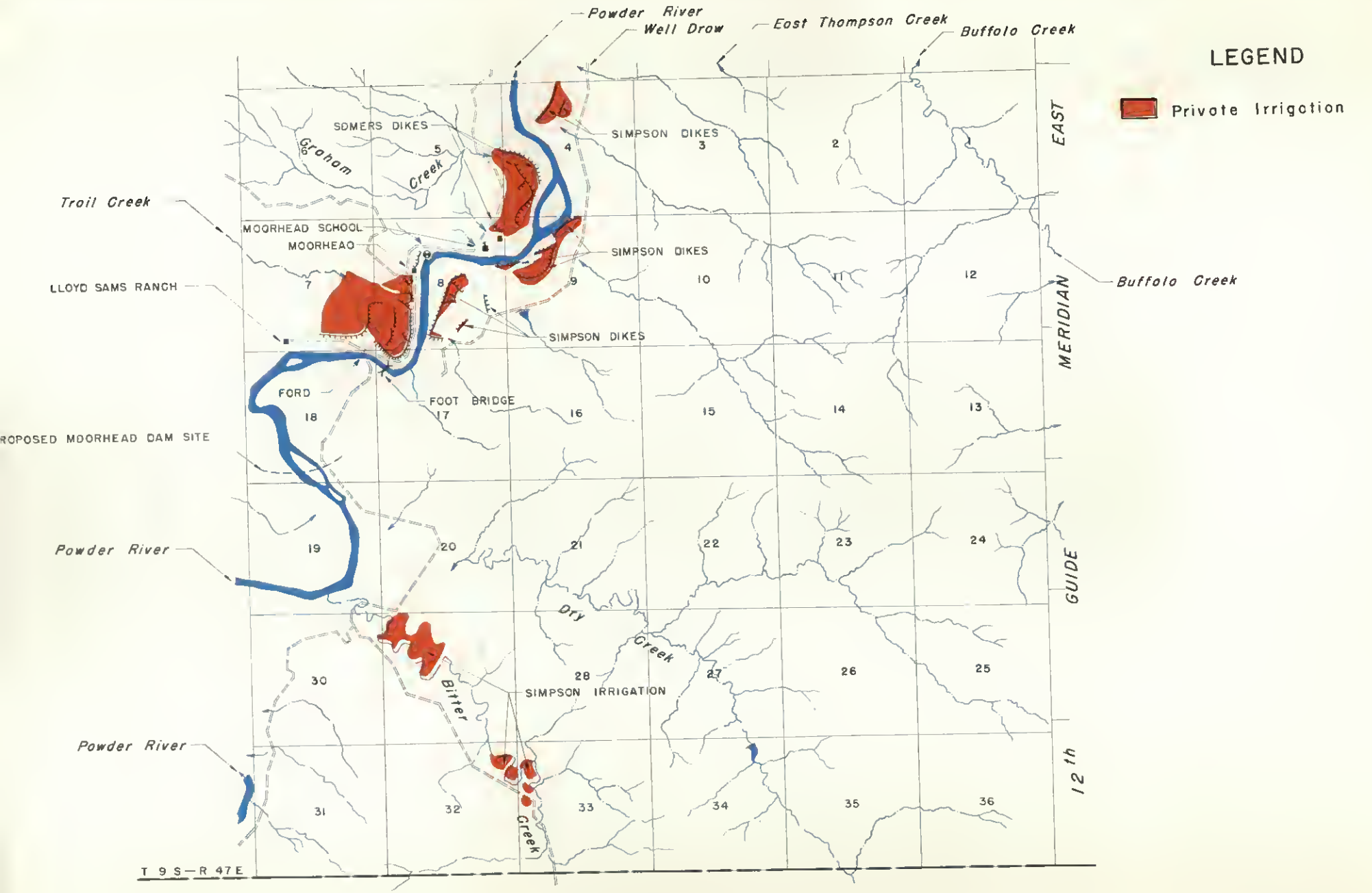
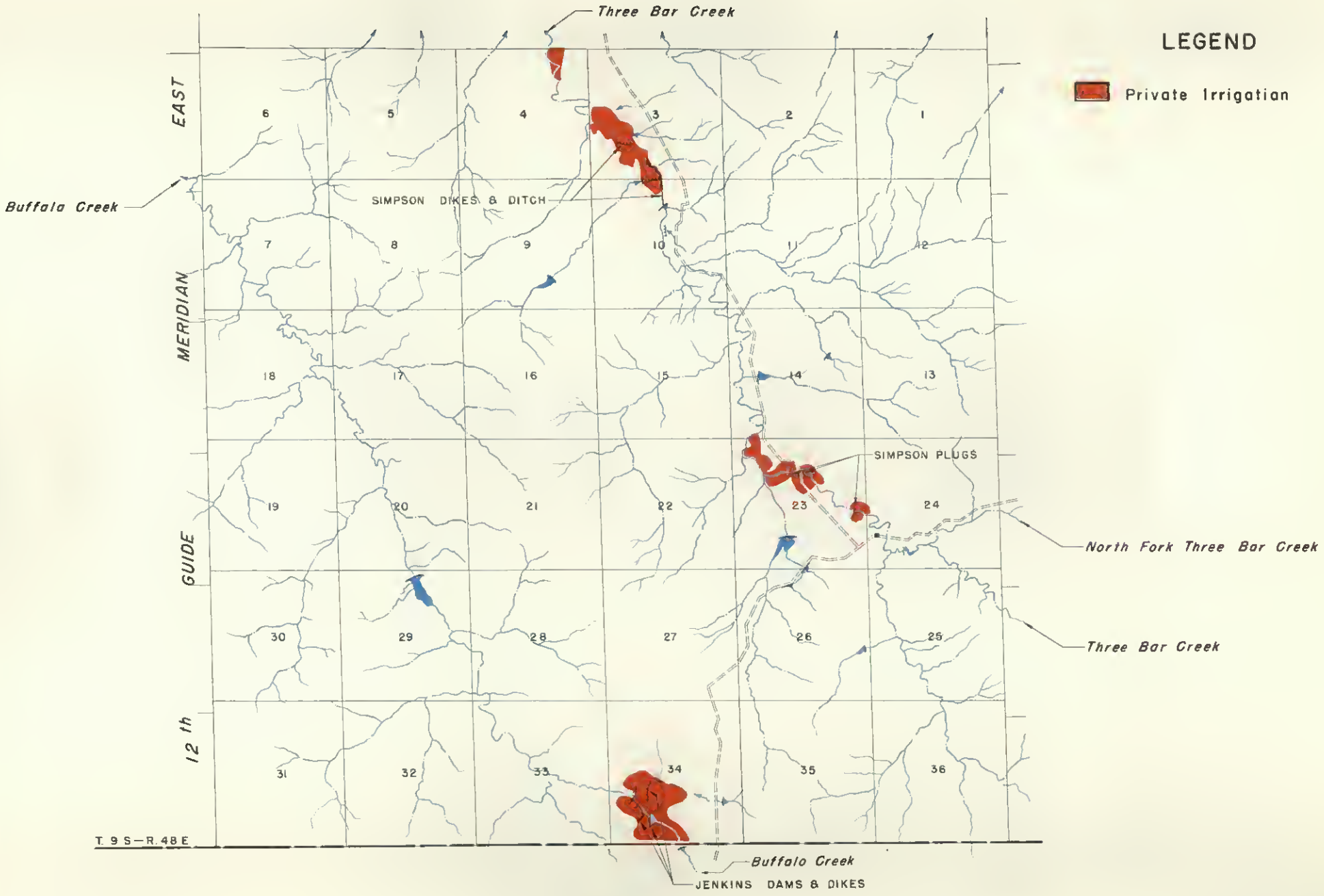
T. 8 S—R. 54 E

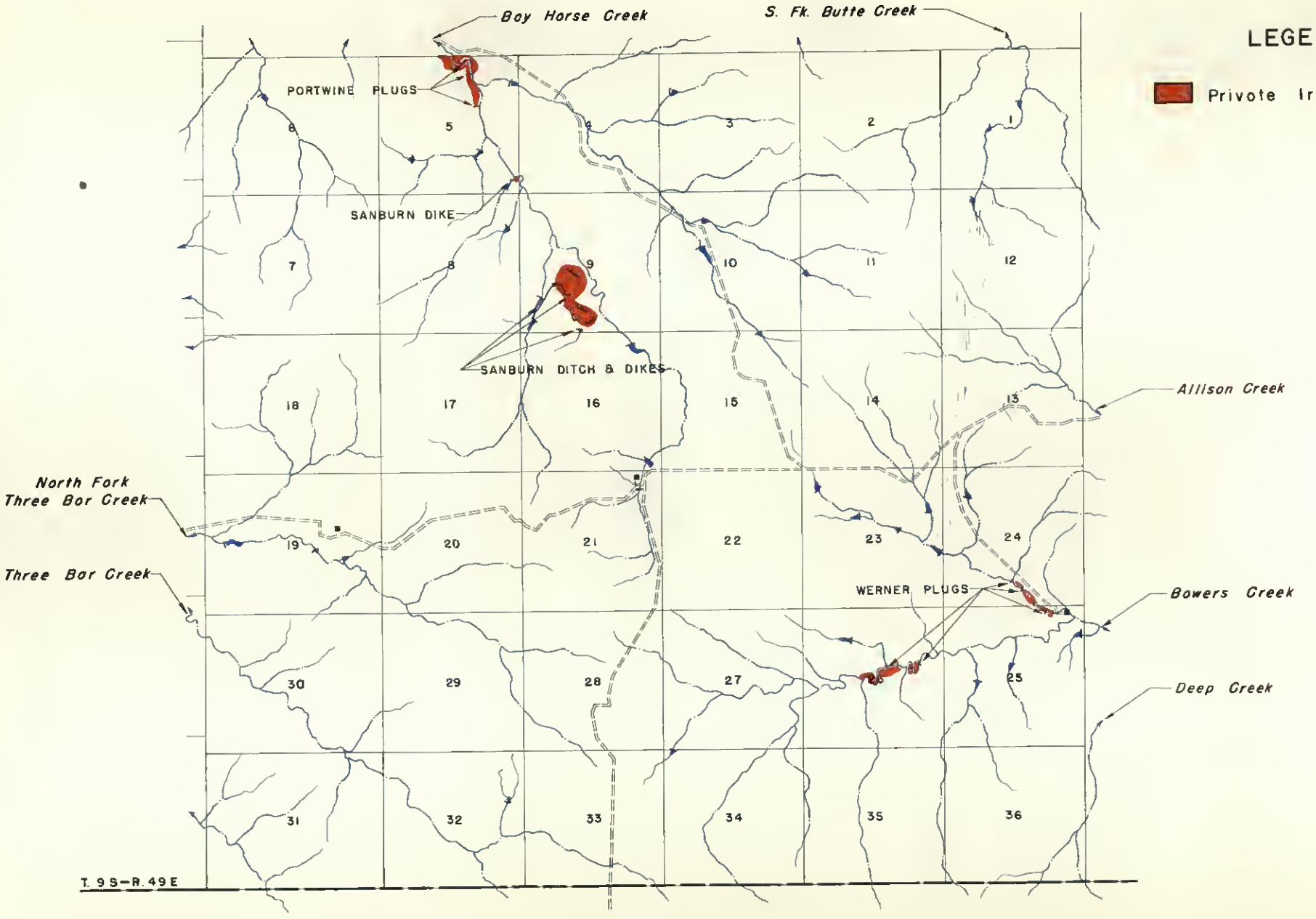

Bear Creek (Second Creek)
LEGEND
Private Irrigation
WALTER BALES DITCHES, DIKES & DAMS
Vange
East Fork Bear Creek
Creek
Spring Creek
Trail Creek
BIG HORN COUNTY
T. 9 S—R. 44 E
WYOMING
T. 9 S—R. 45 E


Box Elder Creek
Otter Creek
WALTER BALES
MORGAN DIKES & DITCH
DECKER
BALES DIKES & DITCHES
Cedar Creek
Mac's Draw
DECKER DITCH & DAM
MORGAN
Mc KENZIE
Long Otter Creek
Pasture Creek
East Fork Box Elder Creek
Box Elder Creek
E. Fk. Bear Creek
RIDEDUT
T. 9 S — R. 45 E
WYOMING
LEGEND
Private Irrigation

T. 9 S—R. 46 E

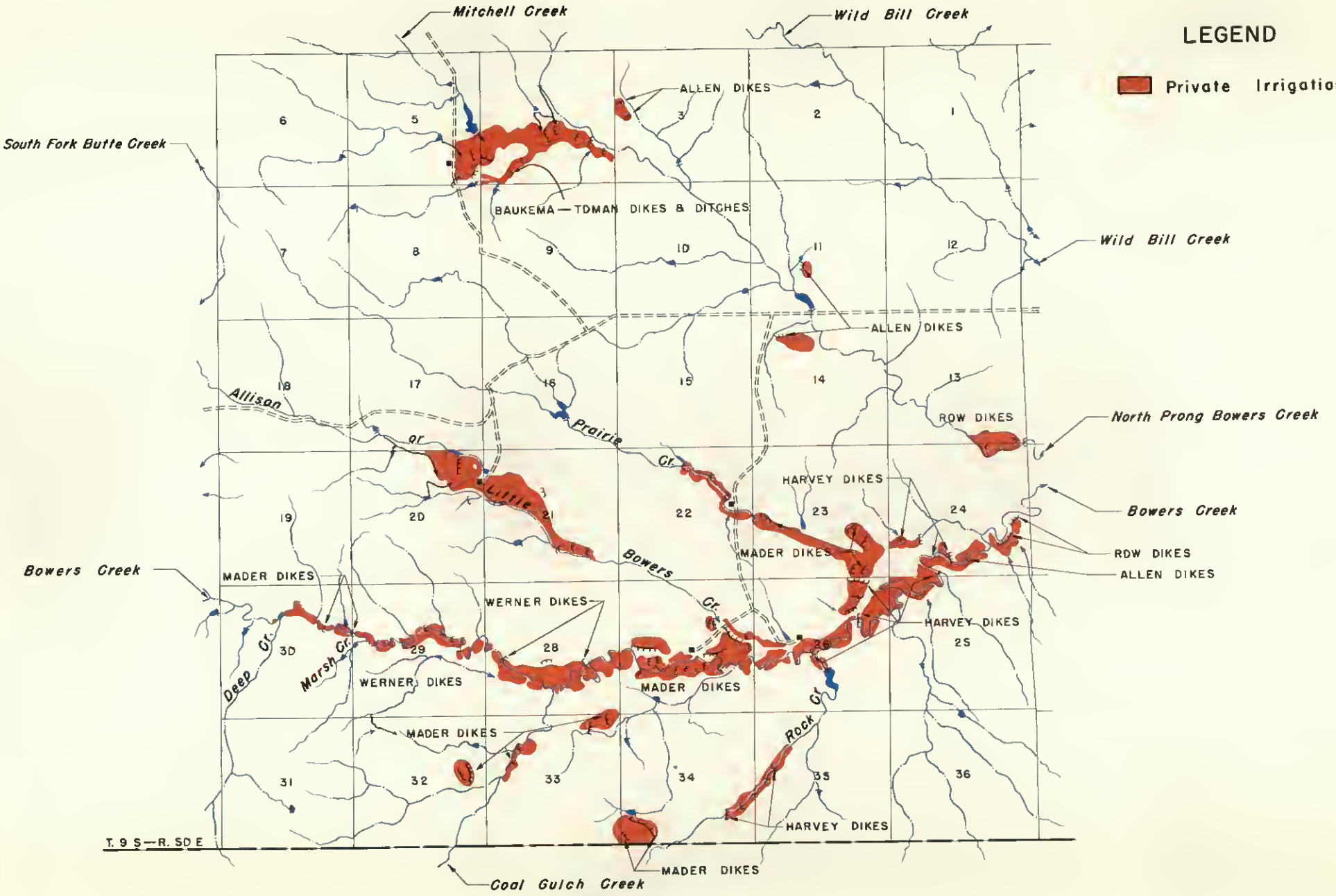

Powder River
Well Drow
East Thompson Creek
Buffalo Creek
LEGEND
Private Irrigation
SOMERS DIKES
Graham Creek
SIMPSON DIKES
EAST
Troil Creek
MOORHEAD SCHOOL
MOORHEAD
SIMPSON DIKES
LLOYD SAMS RANCH
Buffalo Creek
SIMPSON DIKES
MERIDIAN
FORD
FOOT BRIDGE
ROPOSED MOORHEAD DAM SITE
Powder River
GUIDE
Dry Creek
Bitter Creek
SIMPSON IRRIGATION
Powder River
12th
T 9 S—R 47 E
WYOMING
T. 9 S—R. 48 E


Three Bar Creek
LEGEND
Private Irrigation
EAST
MERIDIAN
GUIDE
12 th
Buffalo Creek
SIMPSON DIKES & DITCH
SIMPSON PLUGS
North Fork Three Bar Creek
Three Bar Creek
Buffalo Creek
JENKINS DAMS & DIKES
T. 9 S—R. 48 E
WYOMING
T. 9 S—R. 49 E



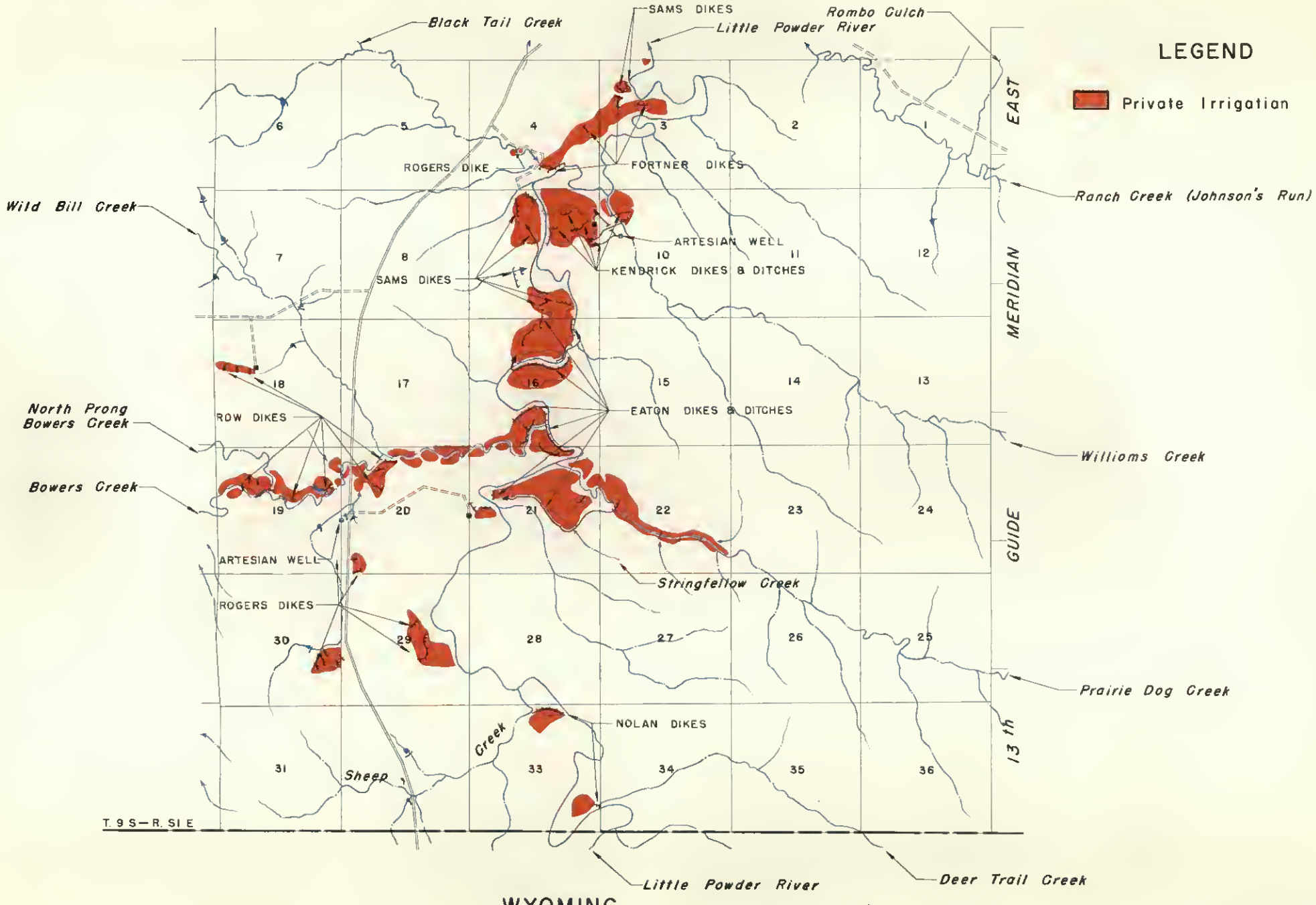
WYOMING

T. 9 S—R. 50 E



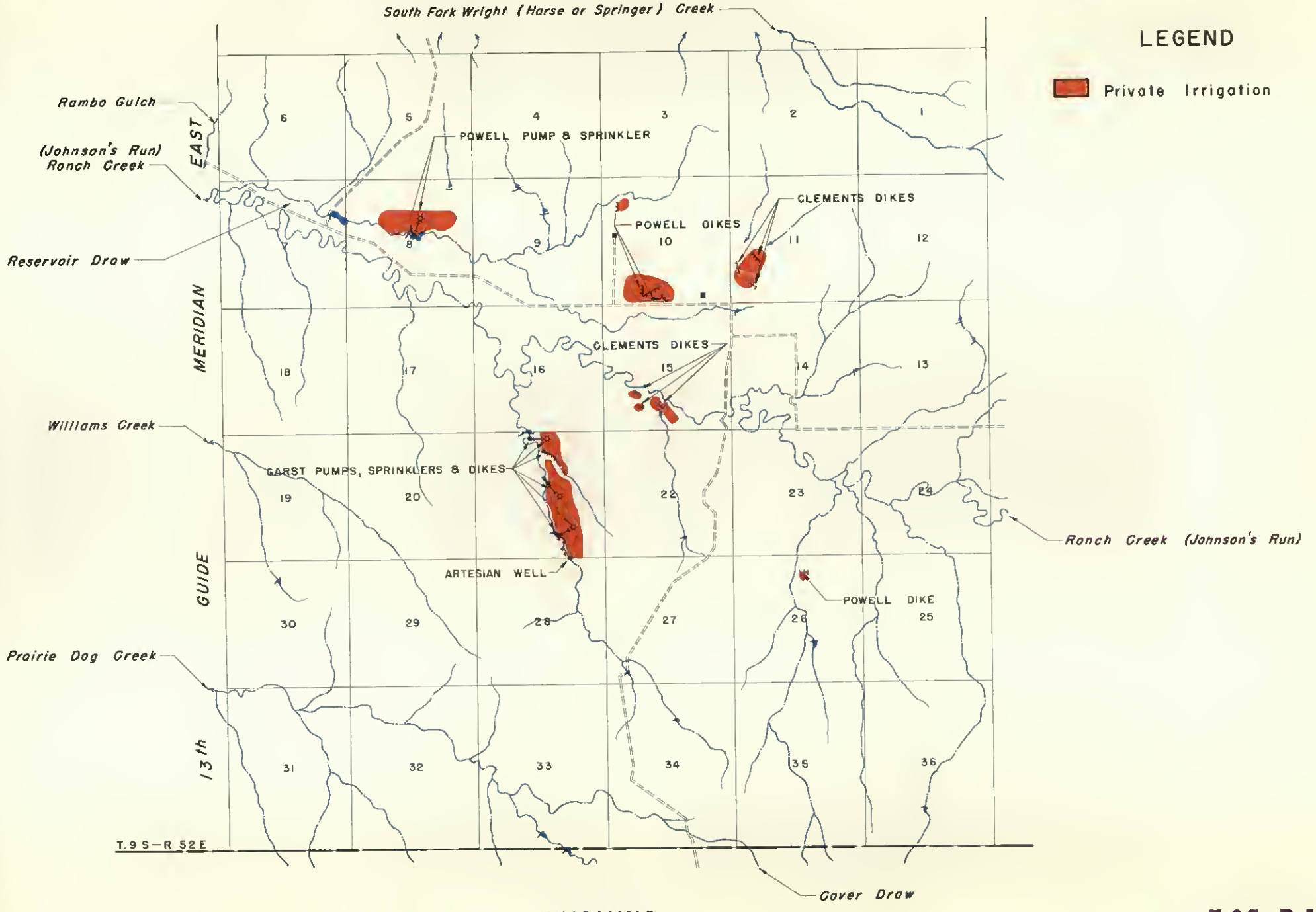
WYOMING

T. 9 S—R. 51 E



WYOMING

T. 9 S—R. 52 E



WYOMING

T.9S—R.53E