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Water Resources Survey

WATER RESOURCES LIBRARY

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Part I:
HISTORY OF LAND AND WATER
USE ON IRRIGATED AREAS

and

Part II:
MAPS SHOWING IRRIGATED AREAS
IN COLORS DESIGNATING THE
SOURCES OF SUPPLY

*Carter, Fallon, and Wibaux
Counties, Montana*

Published by
STATE ENGINEER'S OFFICE
Helena, Montana, June, 1960

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MONTANA STATE AGRICULTURAL EXPERIMENT STATION

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

June, 1960

Honorable J. Hugo Aronson
Governor of Montana
Capitol Building
Helena, Montana

Dear Governor Aronson:

Submitted herewith is a consolidated report on the Water Resources Survey of Carter, Fallon and Wibaux Counties, Montana.

This work is being carried on with funds made available to the State Engineer by the 36th Legislative Session, 1959, and in cooperation 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 counties showing in color 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**, Custer, Deer Lodge, **Fallon**, Gallatin, Golden Valley, Granite, Jefferson, Lewis and Clark, Madison, Meagher, Missoula, Musselshell, Park, 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 cooperation 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.

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The State Engineer's Office, Water Resources Survey, hereby expresses sincere appreciation to the many ranchers, farmers and stockmen who have given their helpful cooperation 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 limitation of the right by beneficial 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 and 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 50 cfs. Today, the Big Hole River with an average flow of 1,129 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 appropriator 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 a half a 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, it 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 proportioned 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 be 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 commissioner 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 be 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 them 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.

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 far 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.

Practical steps aimed at conserving ground water resources and correcting related deficiencies in surface water laws are necessary in Montana. Proposed ground water codes have been rejected by four sessions of the Montana Legislative Assembly, (1951, 1953, 1955, 1959) and proposed improvements of existing surface water laws have also failed to be enacted. The formulation and presentation of a workable ground water code, designed to protect and conserve Montana's ground water resources, to the next Legislature are essential if Montana is to avoid the problems that plague some of our sister states.

A ground water code must be based on full consideration of the intimate relation of

ground water and surface water. A central filing office where all filings, well logs, and other records (past, present, and future) for all water in use—ground or surface—should be provided for by any water code. 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 surely provide a stronger and more accurate basis for the negotiation of interstate water compacts, as well as set up a means for rapid evaluation of data for in-State litigation.

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 of land ownership. 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 as follows: From the files of the county courthouse the data required includes; land ownership, 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 land ownership 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 reports. 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 the 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 land owner, showing the name of the owner and operator, photo index number, a plat defining the ownership boundary, type of irrigation system and 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 by the description of intended place of use are listed on the field form. During the field survey, all water rights listed on the field form are verified with the land owner. 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 completing 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.

WATER RESOURCES SURVEY

CARTER COUNTY, MONTANA

PART I

**HISTORY OF LAND AND WATER USE
ON IRRIGATED AREAS**

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HISTORY AND ORGANIZATION

Carter County, located in the extreme southeastern part of Montana, was created by an act of the State Legislature on February 22, 1917. It was named in honor of Thomas Henry Carter, Montana's first representative in Congress (1891), and who later became a member of the United States Senate.

The early settlement of Carter County began with the first trail herd of cattle from Texas which was brought into the country in 1881 by the Continental Land and Cattle (Hash Knife) Company. This herd consisted of 3,000 head of cattle and they were turned loose along the Little Missouri River in the extreme southeast corner of Montana. The following year (1882), the Hash Knife brand along with several other stock outfits, trailed many thousands of horses, cattle, and sheep into this part of Montana. Among the larger stock outfits were: the Hash Knife, 101, MC, 22, TD, WL, and the Flying E brands, all coming into this area between the years of 1881-1886 and running from a few thousand to some 65,000 head of stock. Here the cattlemen found splendid range conditions for their livestock, the grass being of excellent quality, water plentiful, and many kinds of brush cover in the rolling country which provided good winter protection. The range was also comparatively free of insects, although the Texas Horn Fly migrated along with the trail herds. The cattle showed the value of their range and comfort, growing to twice their weight after being on the range for only two years, although they were several years old when brought into the country. Soon there were large shipments of cattle and sheep going East to market.

One of the nearby markets for disposal of the livestock in the Carter County area and Eastern Montana was located at Medora, North Dakota, during the years of 1883-1886. The Marquis de Mores, founder of Medora, North Dakota, was a French Nobleman born in Paris, France, June 14, 1858, and spent most of his youth in the army service of France. He resigned because he could not bear the monotony of garrison life and craved a field of greater activity.

On one of his trips to Paris, de Mores met and fell in love with Medora von Hoffman, daughter of a Wall Street, New York banker. They were married at Cannes, France, February 15, 1882, and a few months later they set sail for America and landed in New York in August, 1882. They spent the hot summer months at the von Hoffman residence at Staten Island. When autumn came, de Mores was given a place in the von Hoffman bank where he familiarized himself with the problems of exchange. During his stay in New York de Mores made a study of the cattle industry and became convinced that it had a profitable future. This, coupled with the fact that his cousin, Count Fitz-James, had hunted in Dakota and brought back stories which fired the Marquis' imagination, prompted his coming to the Bad Lands. De Mores' reasons for selecting the region at the crossing of the Northern Pacific Railroad over the Little Missouri River for his cattle enterprise may be discussed in his own words, "After a close examination of the region it has been found that all the advantages needed by the shipping point for cattle produced in the country exist at the crossing of the Little Missouri River and of the Northern Pacific Railroad."

Medora was established in 1883, when the Marquis broke a bottle of wine over the first tent and christened it Medora, in honor of his wife.

De Mores' chief enterprise in the United States was the slaughtering and transportation of beef. To accomplish this, a corporation known as the Northern Pacific Refrigerator Car Company, was formed May 12, 1883, with de Mores holding 330 of the 500 shares of stock valued at \$100 each.

In the fall of 1883, the company plant was completed at Medora and the slaughtering of beef commenced. A spur track connected the slaughter house with the main railroad track and corrals for unloading the cattle were built adjacent to the plant. One writer states that this packing plant cost the Marquis \$250,000. One of the reasons for the failure of this enterprise was the problem of furnishing beef in prime condition during the whole year as range cattle were only fat in the fall of the year.

Another well known personality well acquainted with the country along the Little Missouri River in Carter County was Theodore "Teddy" Roosevelt, who owned and operated a sizable cattle ranch south of Medora, North Dakota. In 1885, and again in 1886, Teddy Roosevelt was president of the Little Missouri Stockgrowers Association. He was always a lover of the great outdoors and while not engaged in ranching, spent much of his time hunting in the Bad Lands of Dakota and parts of eastern Montana.

In 1894, a patent for a piece of land was issued to J. H. Brummit, who had for a number of years ran a general merchandise store in Ekalaka, Montana. Wishing to sell the property as soon as the patent was issued, it was transferred to Jacob Speelmon, this being the first piece of patented land in Carter County.

With the building of the Chicago, Milwaukee, St. Paul & Pacific Railroad in 1908, through the area of what was to become Fallon County in 1913, there came another settlement of people from every walk of life, including doctors, lawyers, bankers, farmers, and many others who came to homestead land. These settlers claimed every piece of land that could be farmed and many more pieces that stood mostly on edge, which were fit for grazing purposes only.

Upon the arrival of these new types of settlers it became quite a task for the stockman to fence his tracts of land and build a home for himself. The new settlers wishing to save their crops and pasture would demand money from the stockmen for grazing privileges or keep the stock "dogged" from their homestead. Under these conditions the larger livestock operators soon went out of business and many other stockmen reduced their herds to smaller holdings.

This part of Eastern Montana, during the years of 1932, '33, and '34 were all dry years and with the drought came the infestation of grasshoppers to the range and pastures. The range land became barren, and the smaller areas that had been cultivated and farmed, started to blow, filling the air with dust. Under these conditions the livestock began to suffer for the want of feed, so in July, 1934, the government started a program to buy both cattle and sheep to stabilize the livestock market. Hoping for moisture to replenish the grassland during the drought period, most of the stockmen sold all of their livestock, except their very best breeding stock, which they shipped to other areas where they were wintered. During these dry years many of the older stockmen went out of business, while others carried on with the help of Government Resettlement Loans. Some of the younger stockmen and ranch-

ers began restocking their herd, and once again livestock are seen running on the ranges of Carter County.

The County today has an area of 3,313 square miles with approximately two thirds of this deeded land and one third public domain. There are 432 farms and ranches in the county, which average 3,521 acres in size. Three fourths of the farms and ranches are livestock operations with almost none of them used strictly for grain farming.

There is a small area of the Custer National Forest located in Carter County, between Ekalaka and Camp Crook, South Dakota. The ranging of livestock in this forest reserve is used by cattle permittees only.

The many flat areas in the county are covered with extensive flood irrigation projects. Nearly every rancher has a flood irrigation system on which alfalfa or tame hay is grown for a feed base. Conservationists of other areas have stated that Carter County has by far more flood irrigation than any other county in the state. Most of the stock ranches are of the diversified type, raising both sheep and cattle, which accounts for 144,000 sheep and 25,000 cattle carried on the county assessor's records in 1959. The sale of livestock in Carter County amounts to more than \$3,000,000 annually. Many ranchers in the northern part of the county raised some small grain in addition to livestock. Approximately 26,000 acres of wheat is raised on 92,000 acres of farm land. Spring wheat averages 12 bushels per acre and winter wheat 16 bushels per acre. In addition to wheat, many operators raise barley, oats, and corn for feed grains.

The range land in the county has an annual carrying capacity of 22-25 animal units per section, thus making it necessary for a rancher to control a rather large acreage of land. Climatic conditions are such that it is unnecessary to feed livestock only for a very short period of time during the winter. For the greater part of the winter months, livestock are grazed on the open range and fed high protein supplements.

The principal towns and smaller communities in Carter County are: Ekalaka, the County Seat, named after a Sioux Indian woman (Ijkalaka) who was the wife of David Russell, a scout, hunter, and frontiersman. To reach the town of Ekalaka visitors would travel southwest from Baker on State Highway No. 7, a distance of 40 miles. Another community of importance is Alzada, located in the southern part of the county on U. S. Highway No. 212. One interesting historical fact concerning Alzada is that it had the old-time name of "Stoneville," back in the territorial days before the establishment of a United States post office there. Many murders and killings took place at Stoneville, and it is said to have had one of the larger "Boot Hill" cemeteries of early western frontier towns. Other smaller rural communities are: Mill Iron, Chalk Buttes, Belltower, Ridgeway, Capital, Piniele, Boyes, Hammond, Ridge, and Albion.

Transportation facilities in Carter County are very limited. State Highway No. 7 branches off U. S. Highway No. 12 at Baker and follows a direction southwest to Ekalaka, where it terminates. Only 14 miles of this highway is in Carter County. In the southwestern part of the county U. S. Highway 212 enters at Boyes and leaves the county southeast of Alzada. The nearest railroad facilities are at Baker in Fallon County where travel and

freight transportation are available on the Chicago, Milwaukee, St. Paul & Pacific Railroad. An adequate network of improved gravel and graded county roads serve the people in the rural areas.

The last census of 1950, listed Carter County with an area of 3,313 square miles and a population of 2,798, ranking it 15th and 45th respectively in size and population among the 56 counties of Montana.

CLIMATE

Situated in the southeast corner of Montana along South Dakota and Wyoming boundaries, Carter County is often considered to be one of Montana's eastern "plains" counties, but this is only in relation to the very mountainous counties of the State's western half. Actually, most of the county is quite hilly, with a few mountainous sections in the northern half. South and east of Ekalaka (County Seat) several of the more hilly sections are well-forested. Principal drainages flow generally northward to north-northeastward, and consist of the Little Missouri River, Box Elder and O'Fallon Creeks, and many smaller creeks which discharge into the Powder River a few miles west of the county line. The fairly rough terrain contributes considerably to the area's climatic features, particularly between hill or mountain ranges and flat valley bottoms.

Much of the county has not been surveyed, but elevations range from about 3,000 ft. above sea level where O'Fallon Creek flows northward into Fallon County, to around 5,000 ft or more on a few of the higher peaks. Most of the county lies between elevations of about 3,200 and 3,800 ft. Characteristic of this type of topography, the more hilly and mountainous areas receive more moisture, on the average throughout the year, than the valley floors. The variations, however, are large enough to have importance, but much less pronounced than in the more mountainous western half of the State.

The climate is decidedly Continental in character, with cold and relatively dry winters, and warm summers, during which most of the year's precipitation falls. At times during midsummer, hot weather is observed, and once in a while a hot summer day will be humid as well. However, because of its relatively higher elevation (over 1,000 ft. higher) than counties to the north along the Yellowstone River, this summer heat is seldom oppressive. July maximums at Ekalaka, for example, average about 86°, about 3° cooler than along the Yellowstone River to the northwest and north. Conversely, however, average minimums in January at Ekalaka run about 7° or 8° above zero—a little warmer (by 3° or 4°) than along the Yellowstone River.

Although dry years can occur, as well as wet ones (see table), precipitation averages between about 11 inches per year in the drier areas to over 14 inches over much of the southern half. Over the higher ridges local annual averages are estimated at 18 to 20 inches. Noteworthy, however, is the fact that about 75 per cent of an average year's precipitation falls during the so-called "growing season," April 1-September 30 each year, exactly the period when it can do the most good for agriculture, and nearly all during this six-month period falls in the form of rain. Growing seasons in Carter County (between last in spring and first in fall occurrences of 32°) are fairly long, averaging 122 days at Ekalaka; but valley bottoms should experience seasons a week or two shorter than that in most years.

Records of cloudiness and sunshine have never been made anywhere in the county, but there is considerable sunny weather most of the year, except for the usual wet period from about mid-May to mid-July each year. Summer mornings are mostly clear, but afternoon cloudiness and thunderstorms are common, especially during July. Severe weather of several types can occur, but not very often. A few small tornadoes have been recorded, but only on

the order of about once in 20 years, and no deaths from tornadoes are on record. Thunderstorms produce damaging hail and lightning occasionally, but there also the phenomenon of really severe thunderstorms is observed less than once a year, and even then over limited areas. More common is windy weather, although even here speeds of 60 m.p.h. are estimated to occur not more than 5 times a year. Subzero weather covers all of the county on from 10 to 15 days a winter, usually accompanied, in the early stages of each 2-or-3-day cold spell, by some snow. Blizzard conditions are not common, occurring for brief periods only once or twice a winter. Severe blizzards are rare, with an average interval of several years between occurrences. Listed below is a tabulation of weather data observed in Carter County over the years:

CARTER COUNTY WEATHER DATA

| Station | Years of Record | Average Annual Temperature | Highest | Lowest | Years of Record | Average Annual Precipitation | Wettest Year | Driest Year |
|-----------------|-----------------------|----------------------------------|---------|--------|-----------------------|------------------------------------|--------------|--------------|
| Ekalaka | 52 ¹ | 44.2 ² | 108 | —44 | 60 ³ | 13.27 ² | 22.59 (1915) | 6.32 (1919) |
| Albion | 6 ⁴ | 41.3 | 105 | —39 | 13 ⁴ | 13.82 | 19.44 (1946) | 7.80 (1952) |
| Boyes | 7 ⁵ | 44.0 | 105 | —40 | 7 ⁵ | 14.03 | 19.62 (1957) | 9.38 (1952) |
| Alzada | — | — | — | — | 18 ⁶ | 14.42 | 21.46 (1946) | 8.17 (1952) |
| Belltower | — | — | — | — | 8 ⁵ | 11.92 | 15.79 (1953) | 8.03 (1958) |
| Ridgway | — | — | — | — | 6 ⁷ | 11.42 | 13.21 (1956) | 10.00 (1954) |
| Ridge | — | — | — | — | 7 ⁸ | 15.48 | 20.01 (1957) | 9.19 (1952) |

¹1906-1958 ²1931-1955 ³1898-1958 ⁴1946-1958 ⁵1951-1958 ⁶1941-1958 ⁷1953-1958 ⁸1952-1958

SOILS

Carter County lies in the Great Plains portion of Southeastern Montana. The County is drained by the Little Missouri River, Box Elder Creek, Little Beaver Creek, and O'Fallon Creek. Physiographically the County consists of eroded shale plains with sandstone butte remnants and deep alluvial deposits in the wider stream valleys. Clay shales cover about half the County. Clay loam to loamy shales with sandstone butte inclusions also cover almost half of the County area. Alluvial materials occur as relatively narrow bands along the principal streams and make up about 5 per cent of the total land area.

Since the factors influencing soil formation are less varied than in many sections of Montana, there are relatively few kinds of soils in Carter County. Clay and Clay loam textures predominate, but there are significant areas of loam and more sandy textured soils chiefly in the West and Northwest parts of the County. Because of the climatic zone in which they occur, the soils are intermediate in character between the Brown and Chestnut Zonal soils. The predominance of clay materials has also contributed to weakly developed zonal characteristics.

Most of the soils are best suited for range use. Soils developed on smooth slopes from loamy or sandy soil materials can be used for cultivated crops, but production is comparatively

low because of low rainfall. Some Alluvial soils are used for crops (principally hay). Since most Alluvial soils are of clay texture and some are high in salts, there is a wide variation in their suitability for cultivation either as dry-land or under irrigation.

SOURCES OF WATER SUPPLY

Situated in the extreme southeast part of Montana, Carter, Fallon, and Wibaux Counties have a similar drainage pattern of streams which follow a course northward throughout the area. Due to the location of these Counties, climate and topography play important roles in the amount of water flowing in the streams. Almost all of the drainage courses are of the intermittent type, having periods of extreme runoff occurring during the spring months and abnormal flows in the summer months, caused by heavy thunder showers.

There are many conservation methods that are practiced extensively in the Counties to control soil erosion and utilize the water for irrigation and stock purposes by the construction of reservoirs, spreader dikes, and dams.

From the Bureau of Land Management, Little Missouri River Report of May, 1959, the following quotation will explain the type of conservation and irrigation projects developed in Carter and Fallon Counties.

"The Little Missouri River Basin is a pioneer area in the development of water spreading. Water spreaders provide for the use of runoff of waters on dry range land, and may be regarded as a form of irrigation. Water is "spread" on bottom land near a stream by means of dikes. The water is provided by diversion from a stream with a diversion dam and a canal leading to the dike system. The stream is usually an intermittent draw, but it may be a stream with a small permanent flow which normally is piped through the dam, only flood waters being spread on the land.—Production of forage on the spreader area is dependent upon the runoff in the water shed of the diversion area. Care must be taken to select a site which will benefit by water spreading. Soils heavily impregnated with salts within seepage depth of the water applied may concentrate these salts on the surface and destroy the value of the development.—"

The water that is used for the bulk of the irrigation within the boundaries of Carter County (41,716 acres) is supplied by the Little Missouri River and its tributaries. In the extreme northern part, O'Fallon Creek and tributaries, and the tributaries of the Little Powder River in the southwestern part of the County, supply water for the irrigation of 2,427 acres. O'Fallon Creek and the Little Powder River drainages are located in the Yellowstone River Basin.

In Fallon County, the principal streams which supply water for irrigation of 2,442 acres are in the Yellowstone River Basin. These creeks are O'Fallon Creek and its tributaries, and Horse Creek, a tributary to Cabin Creek. A small acreage of 435 acres is irrigated in the Little Missouri River Basin from Box Elder, Little Beaver and tributaries.

Wibaux, the third smallest County in Montana (area only 889 square miles), has less than 300 acres under irrigation. In the Yellowstone River drainage of this County, the streams and their tributaries which contribute water for irrigation of 110 acres are: Cabin, Cedar, and

Box Elder Creeks. Beaver Creek and an unnamed tributary in the Little Missouri River Basin provide water for 181 acres of the 291 total acres irrigated in Wibaux County.

STREAM GAGING STATIONS

The U. S. Geological Survey measures the flow of streams, cooperating with funds supplied by several State and Federal agencies. The results are published yearly in book form as Water-Supply Papers, the latest being for the year 1958. 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 Carter, Fallon, and Wibaux Counties from the beginning of measurements through the water year 1958. The water year begins October 1 and ends September 30 of the following year.

The 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.

Measurements of discharge at points other than regular gaging stations are made occasionally. These are called Miscellaneous Discharge Measurements and are reported in annual Geological Survey Water-Supply Papers in lists at the end of each report.

Carter County

Little Missouri River at Alzada (Discontinued)

The staff gage was at the footbridge at Alzada. Prior to April 17, 1906 a staff gage was at site about 2 miles down stream. The drainage area is approximately 600 square miles. Records are available from April 1904 to November 1907. The maximum discharge observed was 3,360 cfs (March 27, 1906) and the minimum, no flow at times. The yearly runoff was 57,600 acre-feet in 1905 and 67,500 in 1906. There are small diversions above the station.

Little Missouri River near Alzada*

The water-stage recorder is 1.9 miles downstream from Thompson Creek and 4 miles north of Alzada. Prior to June 14, 1947, a staff or chain gage was used. The drainage area is approximately 780 square miles. Records are available from June 1911 to Sept. 1925, Aug.

1928 to Sept. 1932 and March 1935 to date. The maximum daily discharge was 6,000 cfs (April 4, 1944) and the minimum, no flow at times. The average discharge for 30 years (1915-16, 1917-19, 1923-25, 1930-32, 1935-58) was 74.7 cfs or 54,080 acre-feet per year. The highest annual runoff was 235,200 acre-feet (1944) and the lowest 3,550 acre-feet (1931). There are several diversions above the station for irrigation of hay meadows and some storage in coulees. Some water temperature, suspended sediment and quality of water records are available in reports of the U. S. Geological Survey.

North Creek Spreader Diversion near Alzada (Discontinued)

The water-stage recorder was just upstream from the lower end of a diversion dike, 5½ miles northwest of Alzada. The drainage area is 1.29 square miles. Records are available from May 1952 to Sept. 1956, (no winter records). The maximum discharge was 130 cfs (Aug. 5, 1944 and July 3, 1956) and the minimum, no flow most of the time.

Fallon County

Box Elder Creek near Webster*

The staff gage is half a mile upstream from Coal Bank Creek, half a mile west of South Dakota boundary line, 14 miles southeast of Webster and 33 miles southeast of Baker. Records began on Sept. 11, 1959.

Wibaux County

Beaver Creek at Wibaux*

The wire-weight gage and crest-stage indicator are at the bridge on U. S. Highway 10 at Wibaux, 12 miles upstream from Little Beaver Creek. The drainage area is 351 square miles. Records are available from April 1938 to date. The maximum discharge recorded was 3,780 cfs (Mar. 2, 1939) and the minimum, no flow at times. The flood of June 7, 1929 reached a discharge of about 30,000 cfs, from the average of 3 indirect measurements made at different sites. The average discharge for 20 years (1939-1958) was 25.6 cfs or 18,530 acre-feet per year. The highest annual runoff was 44,490 acre-feet (1944) and the lowest 1,030 acre-feet (1956). There are a few small diversions above the station for irrigation.

*These gaging stations are now in operation (1960).

ECONOMIC MINERAL DEPOSITS

Carter County is geologically situated on the northern flanks of the Black Hills uplift, and the exposures of bedrock range from mesa cappings of the Miocene Arikaree formation in the north to the Lower Cretaceous Mowry shale in the south. Lode-type metallic mineral deposits, such as those in the Black Hills, do not occur in Carter County. In this respect Carter, Fallon, and Wibaux Counties are similar, but they are dissimilar in that Carter County is not a substantial oil and gas producer. Also, the estimated reserves of lignite coal are far less in Carter than in Fallon or Wibaux Counties.

Ground water is very important in the County economy. Sub-commercial deposits of uranium are present in the Arikaree-White River formations and as trace amounts in some of the Fort Union lignite seams. Bentonite clay deposits occur in the southern part of the County, and sand and gravel are more abundant than in Fallon or Wibaux Counties.

Oil and Gas

Of the numerous wildcats drilled in Carter County only one well brought in oil. This was the Ohio-No. 1 Gov't., which was completed March 1956, in lot 4, sec. 6, T. 1 S., R. 62 E. This discovery was named the Repeat Field.^{1,2} At this time (February, 1960) only the original discovery is producing, although the Ohio Oil Company has attempted to enlarge the field by offset drilling.

Production

| | | |
|---------------------|------------|---------------|
| Oil | 1959 | 30,482 bbls. |
| Total through | 1959 | 130,482 bbls. |

Coal

The lignite coal-bearing Fort Union formation is present in the northern part of Carter County where it extends about 20 miles southward and occupies the Ekalaka syncline at the South Dakota line near Camp Crook.

Old (1910) U. S. Geological Survey reports indicate that the Fort Union may contain as many as ten seams of lignite ranging from a few inches to as much as seven feet in thickness. Some of the thicker seams may be found in outcrops in the hills to the north, south, and east of Ekalaka.

Reserves of lignite have been estimated at about 500 million tons. However, this figure must be presumed to include unworkable seams, and the lignite itself is of low grade and subject to slacking (breaking up into powder and small particles) when exposed to atmospheric conditions.

1. For the geology and history of oil and gas development, see "Oil and Gas in Montana," Montana Bureau of Mines and Geology Bulletin No. 15. (In press.)
2. For oil and gas production statistics, see the 1959 Annual Review of the Montana Oil and Gas Commission.

There are no records of commercial coal mining in Carter County, though it is likely that many small mines have been and still are operating for domestic fuel. All of the lignite is sub-commercial in grade in the present (1960) state of technology and need. It is probable that future technical advances in methods of underground burning will result in the utilization of the vast supplies of chemicals and energy from the Fort Union coal fields.

Ground Water

Small diameter pumped water wells in the Fort Union and Hell Creek formations and in the Fox Hills sandstone in northern and western Carter County supply much of the necessary domestic and stock water. Larger wells supply most of the municipalities in the County. Ground water of sufficient quantity and good quality is not easy to find in the area of Cretaceous rocks exposed in the south and east. Some wells have been drilled to the Dakota and Lakota sandstone formations at considerable depth. These formations are capable of supplying small flowing wells. The quality, however, may vary with different locations.

Uranium

Uranium compounds in small amounts were detected in carbonaceous beds of the Arikaree and White River formations by U. S. Geological Survey instrument reconnaissance. The radioactive beds are near the top of the Ekalaka Hills and the Long Pine Hills. Other possible radioactive beds may be found in the hills east of Ridgeway, in the vicinity of Arp, and near the head of Blacktail Creek. A strongly radioactive seam of lignite has been described in the area of the Long Pine Hills. Many other lignite outcrops in Carter County will excite a radioactivity detector. However, none of the radioactive seams or beds contain presently commercial amounts of uranium.

Bentonite

Bentonite is a clay formed by the alteration of volcanic dust. It has the unique property of absorbing great amounts of relatively fresh water and consequently swelling to many times its normal size. Finely ground bentonite has widespread use in the petroleum industry as a constituent of drilling mud and as a filtration agent in the petroleum refining process. There are many other industrial uses.

Bentonite may be identified in the field by the well developed popcorn-like clay bloom that forms on a weathered surface.

The famous Clay Spur bentonite bed is exposed over much of a 16 square mile area west of Alzada. Generally known as the "commercial bed" in Montana, South Dakota, and Wyoming, it contains the most productive bentonite deposits in the United States. The Clay Spur bentonite is one of the uppermost strata of the Mowry shale and ranges from a few inches to 7 feet in thickness. The Baroid Division of the National Lead Company is presently mining the Clay Spur bentonite west of Alzada.

Another bentonite bed occurs at or near the surface in the outcrop belt of the Belle Fourche shale northwest of the Little Missouri. This bed averages about 4 feet in thickness and has a characteristic red to brown coloration in its lower portion. Pinching out in the south part of sec. 18, T. 9 S., R. 59 E., it again appears as a small exposure northeast of U. S. Highway 212 in sec. 26, and again north of the highway in sec. 33, T 9 S., R. 60 E.

Sand, Gravel, Aggregate, and Road Metal Material

Extensive deposits of sand and gravel are not common in Carter County. Possible sources of commercial deposits are the gravel terraces in the Chalk Buttes area, and in T. 5 S., Rgs. 59 and 60 E. Other relatively small sand and gravel deposits are scattered throughout the County, and some may occur along the courses of the Little Missouri River and Box Elder Creek.

A possible source of road metal and other aggregate are the weathered deposits of scoria (clinker) formed by the natural burning of coal seams in northern Carter County.

BOX ELDER SOIL CONSERVATION DISTRICT

The original Box Elder Soil Conservation District was organized August 21, 1941 and contained approximately 631,000 acres. Since that time two additions have been made, the latest in July 1959. All of Carter County is now in the District with the exception of the C&B Grazing District. The total area in the Box Elder District is approximately 2,000,000 acres. There are around 400 operating units of which currently there are 224 district cooperators.

The major problems facing farmers and ranchers in this area are: Increasing native forage production; proper balance between native forage for grazing and winter feed; reliable and controlled supply of irrigation water; converting questionable cropland back to grass and controlling wind and water erosion on dry cropland. Consideration is also being given a new problem, the control of noxious weeds. These are Cocklebur, Burdock, Buffalobur, Leafy Spurge and Russian Knapweed. With a keen awareness of these problems, it is the objective of the Board of Supervisors to do everything they can to alleviate these conditions. Great strides have been and are being made by farmers and ranchers to accomplish this job.

Since the organization of the District in 1942, 13,784 acres have been planted to grass and 4,051 acres of contour stripcropping. There have been constructed 2,124 stockwater dams and 15 irrigation reservoirs storing about 3,500 acre-feet of water. Water spreading facilities have been developed on 52,853 acres which includes 638 miles of dikes and ditches.

Irrigation has in most parts been developed along the two principal drainages in the county, Box Elder Creek and the Little Missouri River. Soils in these bottom lands vary from deep to moderately deep clays to sandy loams. The land capability ranges from Class I to IV under irrigation. On Box Elder Creek, much of the bottomland soils are Class II, but due to an overflow or flood hazard, is Class VI, and as such is not suited for cultivation.

The production of fine sheep, wool and cattle are the major enterprises. The vast range areas of the District are composed of mainly Clayey, Dense Clay, Pansposts and Silty range sites. The major plant species are Western wheatgrass, Green needlegrass, Blue gama, Needle-andthread and Big sagebrush.

Dryland farming areas are scattered throughout the District, the larger areas being centered around Ekalaka, Mill Iron and Hammond communities. In the Mill Iron community, approximately 3,500 acres of dry cropland have been seeded back to grass. Many of these grass seedings have become well established and have an estimated production of one ton per acre on the better soils.

In September 1958, Carter County was designated as a Great Plains County by the Secretary of Agriculture. Under the program a long term contract can be entered into between the producer and the Secretary of Agriculture. The program emphasizes land use changes, wind erosion control and moisture conservation based on the soil survey, range site and condition survey, and management practices that in combination will provide the most enduring conservation benefits. To date there are seven Great Plains contracts in the District.

Soil Conservation Districts are 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, soil fertility management 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.

Technical assistance is provided farm and ranch operators to develop basic conservation plans for District cooperators and Great Plains Conservation plans for Great Plains applicants. These plans include detailed soil surveys, range site and condition surveys, and 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 and/or ranch to the maximum. The surveys provide basic information needed for the conservation plans developed by individuals or groups of farmers or ranchers. The District cooperator and Great Plains applicant develops his conservation plan using technical assistance of the Soil Conservation Service. The Service technicians interpret the surveys, advises the operator concerning limitations and hazards of land use, and recommends needed conservation treatment. The District cooperator or Great Plains applicant makes the final decisions that are entered in the plan as to what will be done and when its measures will be carried out. When a plan is completed, the co-operator or producer is extended further technical assistance for installation of planned land use, adjustments and application of conservation treatment as called for in the Conservation Plan or Great Plains Contract. Under a Great Plains Contract, cost sharing is provided to help make needed adjustments and application of conservation practices

FISH AND GAME

Carter County is located in an area where water is at a premium. Most streams go dry in the summer months running water only in the spring. Some warm water fishing is pro-

vided through the storage waters in 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. Warm water fish for these ponds are provided by the U. S. Fish Cultural Station at Miles City.

The prairies of Carter County support very substantial numbers of antelope and sage grouse, while mule deer occur in quantity in the timbered and rough breaks portions of the county. Whitetail deer are very numerous in the Long Pines region, located in the northern portion of the county. Merriam turkeys, introduced in 1955 in the Long Pines, have done exceptionally well and are now a member of the State's game bird list.

Although the stock-water ponds of the county produce a great deal of waterfowl, these birds have usually migrated before the hunting season. A variety of hawks, rodents, and song birds occur in the county. Bobcats and coyotes are scarce, due in part to extensive control measures of the livestock interests.

CUSTER NATIONAL FOREST

The Custer National Forest, with headquarters in Billings, Montana, embraces a wide area in southeastern Montana, in addition to smaller areas in northwestern South Dakota and southwestern North Dakota. Carter County is one of 7 Montana counties having a share in the Custer National Forest. The national forest lands lying in Carter County were set aside by Presidential proclamation in 1906 and thereby dedicated to public use for all time.

The proclaimed lands of the Custer National Forest total approximately 1,171,937 acres and are the result of the consolidation of parts, or all, of 10 separate national forests or forest reserves. These were set aside by Presidential proclamation at various times between 1891, when the Yellowstone Park Timber and Land Preserve was created, and 1906, when the Long Pines and Ekalaka Forest Reserves were established. Other forest names associated with early Custer history include Pryor, Beartooth, Otter, Sioux, Short Pines, Cave Hills, and Slim Buttes. In 1905 the administration of the forest reserves was transferred from the Department of the Interior to the Department of Agriculture, and in 1907 all forest reserves were changed to national forests. During the early years following establishment there were numerous additions, deletions, boundary adjustments, and consolidation of these lands for administrative purposes. In 1908, President Taft renamed the Otter Forest to Custer Forest in honor of General George A. Custer and this name has remained throughout the various consolidations, the last of which united the Beartooth Forest with the Custer in 1932.

The history of the Custer National Forest and surrounding country is of considerable interest. It was and still remains a fine game country. At present Carter County is the only place in the State of Montana which has a turkey season. Turkeys were successfully planted in the Long Pines by the Montana State Fish and Game Department in 1955. There are also abundant numbers of whitetailed deer, mule deer, and antelope, as well as prairie grouse. It was the home of several Indian tribes, who depended for a livelihood primarily on the vast herds of buffalo, and to a lesser extent on antelope, bighorn sheep, deer, elk, etc.

Theodore Roosevelt was one of the famous early-day cattlemen and operated two ranches near Medora, North Dakota. It was largely through his efforts that the national forest system developed much as we know it today. He foresaw the depletion of grass, timber, water, and other resources under the use they were receiving and while in office, as President of the United States, he set aside approximately 150,000,000 acres of national forest land which included that portion now found in Carter County.

Ponderosa pine (yellow pine) is the principal timber species found on the eastern divisions of the forest. The supply is ample for the development of a much larger industry than now exists. With more intensive management, the harvest can be greatly increased. Approximately 2½ million board feet of sawlogs and converted materials can be cut annually from the Long Pines and adjacent area in Carter County. 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 period.

Recreational developments are maintained by the Custer Forest for the convenience and enjoyment of the out-of-doors recreationist.

Fire control is an important activity in the forest. The fact that fire losses have not been severe in recent years is due largely to the continued cooperation 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.

In Carter County most of the national forest land drains into Box Elder Creek, the Little Missouri River, or the Powder River. The soil in this area is characteristically very erosive and is a high sediment producer. To prevent erosion and the production of sediment, it is important that the watersheds be maintained in such conditions as to provide maximum percolation of rainfall and snowpack, thereby keeping surface runoff to a minimum. The factor having greatest impact on watersheds in the 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 grazing by livestock in the early days, plowing native grassland which was unsuitable for farming, and current heavy grazing are the causes of the most unsatisfactory range and watershed conditions found through much of the public and private land in this area. To correct this condition it is essential that the problem be recognized, stocking be adjusted and the lands be revegetated either by natural or artificial means as necessary. Considerable effort has been pointed in this direction and progress, although slow, is encouraging. Deterioration has progressed so far in some places that such measures as check dams, contour terraces, and other means must be used to expedite the rehabilitation process.

There is relatively little regular irrigation from live streams carried on in Carter County, although several thousand acres are irrigated by water spreading systems. These water spreading systems consist of dams and dikes to control excessive runoff during the spring and summer months, and as conservation practices eliminate soil erosion. Some additional water storage is provided during the summer by reservoir impoundments. However, reservoirs for this purpose are not of significant importance on national forest lands in Carter County. There are, however, many small dams and dugouts which have been constructed for the purpose of making water available to livestock grazing on national forest range.

Carter County has 89,062 acres of national forest land and during 1958 received \$2,188.55. Counties annually receive 25 percent of the gross receipts from the forest for school and road purposes.

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

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

| | Present Irrigated Acres | Irrigable Acres Under Present Facilities | Maximum Irrigable Acres |
|--|-------------------------------|---|-------------------------------|
| Missouri River Drainage Basin | | | |
| *Missouri River | 71,442.00 | 16,476.00 | 87,918.00 |
| 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 | 30,304.00 | 18,398.00 | 48,702.00 |
| Sun River | 11,157.00 | 2,313.00 | 13,470.00 |
| 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 | 497,220.00 | 143,052.00 | 640,272.00 |
| 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 | 22,137.00 | 7,479.00 | 29,616.00 |
| Powder River | 8,795.00 | 1,814.00 | 10,609.00 |
| Grand Total Yellowstone River Basin | 519,085.00 | 171,618.00 | 690,703.00 |
| Columbia River Drainage Basin | | | |
| Clark Fork (Deer Lodge, Hellgate, Missoula) River | 145,804.70 | 171,618.00 | 690,703.00 |
| 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 | 1,273,212.13 | 332,804.20 | 1,606,016.33 |

*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 CARTER COUNTY BY RIVER BASINS

| | Present Irrigated Acres | Irrigable Acres Under Present Facilities | Maximum Irrigable Acres |
|--|-------------------------------|---|-------------------------------|
| MISSOURI RIVER BASIN | | | |
| *Yellowstone River | 0 | 0 | 0 |
| Powder River | 0 | 0 | 0 |
| Little Powder River | 0 | 0 | 0 |
| East Fork Powder River | 45.00 | 10.00 | 55.00 |
| Spring Creek | 0 | 0 | 0 |
| Unnamed Stream | 117.00 | 0 | 117.00 |
| Scott (Burleson) Creek | 0 | 0 | 0 |
| Unnamed Stream | 285.00 | 0 | 285.00 |
| Crow Creek | 29.00 | 0 | 29.00 |
| Dry Creek | 21.00 | 0 | 21.00 |
| Pocochesie Creek | 34.00 | 0 | 34.00 |
| O'Fallon Creek | 248.00 | 0 | 248.00 |
| Line Camp Creek | 156.00 | 0 | 156.00 |
| Unnamed Creek | 163.00 | 0 | 163.00 |
| H-7 Creek | 103.00 | 0 | 103.00 |
| Buffalo Creek | 176.00 | 0 | 176.00 |
| Maxwell Creek | 10.00 | 0 | 10.00 |
| Skunk Creek | 55.00 | 0 | 55.00 |
| Unnamed Creek | 23.00 | 0 | 23.00 |
| Lily Creek | 129.00 | 0 | 129.00 |
| Unnamed Creek | 28.00 | 0 | 28.00 |
| Dug Out Creek | 38.00 | 0 | 38.00 |
| Hay Creek | 157.00 | 0 | 157.00 |
| Antelope Creek | 86.00 | 0 | 86.00 |
| Ranch Creek | 74.00 | 0 | 74.00 |
| East Fork O'Fallon Creek | 15.00 | 0 | 15.00 |
| Hanley Creek | 114.00 | 0 | 114.00 |
| Unnamed Creek | 24.00 | 0 | 24.00 |
| Renan Creek | 27.00 | 0 | 27.00 |
| Runoff | 43.00 | 0 | 43.00 |
| Unnamed Stream | 49.00 | 0 | 49.00 |
| Spring Creek | 52.00 | 0 | 52.00 |
| Unnamed Stream | 47.00 | 0 | 47.00 |
| Runoff | 57.00 | 0 | 57.00 |
| Milk Creek | 0 | 0 | 0 |
| South Fork Milk Creek | 22.00 | 0 | 22.00 |
| Total Yellowstone River and Tributaries | 2,427.00 | 10.00 | 2,437.00 |

*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 CARTER COUNTY BY RIVER BASINS

| | Present Irrigated Acres | Irrigable Acres Under Present Facilities | Maximum Irrigable Acres |
|--------------------------------------|-------------------------------|---|-------------------------------|
| Little Missouri River | 436.00 | 8.00 | 444.00 |
| Sheldon Creek | 87.00 | 0 | 87.00 |
| Thompson Creek | 960.00 | 0 | 960.00 |
| North Fork Thompson Creek | 123.00 | 0 | 123.00 |
| Shale or Torgerson Creek | 575.00 | 0 | 575.00 |
| Unnamed Streams | 1,873.00 | 70.00 | 1,943.00 |
| Willow Creek | 20.00 | 0 | 20.00 |
| South Fork Willow Creek | 615.00 | 0 | 615.00 |
| Nelson Draw | 294.00 | 0 | 294.00 |
| Unnamed Stream | 180.00 | 0 | 180.00 |
| North Fork Willow Creek | 400.00 | 0 | 400.00 |
| Unnamed Stream | 877.00 | 0 | 877.00 |
| Gomer Draw | 113.00 | 0 | 113.00 |
| Sheep Creek | 469.00 | 42.00 | 511.00 |
| Unnamed Stream | 668.00 | 0 | 668.00 |
| Brush Creek | 172.00 | 0 | 172.00 |
| Five Mile Creek | 670.00 | 0 | 670.00 |
| Seven Mile Creek | 275.00 | 0 | 275.00 |
| Cottonwood Creek | 0 | 0 | 0 |
| South Cottonwood Creek | 0 | 0 | 0 |
| Trough Creek | 0 | 0 | 0 |
| Lost Tree Creek or Vannie Draw | 0 | 95.00 | 95.00 |
| Unnamed Streams | 0 | 125.00 | 125.00 |
| Middle Creek | 80.00 | 0 | 80.00 |
| Unnamed Stream | 196.00 | 0 | 196.00 |
| Nine Mile Creek | 65.00 | 70.00 | 135.00 |
| Big Draw | 65.00 | 0 | 65.00 |
| Twelve Mile Creek | 455.00 | 0 | 455.00 |
| Unnamed Stream | 28.00 | 0 | 28.00 |
| South Butte Creek | 337.00 | 0 | 337.00 |
| Butte or North Butte Creek | 498.00 | 0 | 498.00 |
| Hay Creek | 425.00 | 0 | 425.00 |
| Unnamed Forks Hay Creek | 193.00 | 0 | 193.00 |
| Hay Draw | 847.00 | 0 | 847.00 |
| Unnamed Stream | 654.00 | 0 | 654.00 |
| Horse or Crooked Creek | 343.00 | 38.00 | 381.00 |
| Blacktail or Bickerdyke Creek | 932.00 | 0 | 932.00 |
| Elkhorn Creek | 842.00 | 0 | 842.00 |
| Unnamed Stream | 198.00 | 0 | 198.00 |
| Bummer's Draw | 234.00 | 0 | 234.00 |

IRRIGATION SUMMARY OF CARTER COUNTY BY RIVER BASINS

| | Present Irrigated Acres | Irrigable Acres Under Present Facilities | Maximum Irrigable Acres |
|--|-------------------------------|---|-------------------------------|
| Hard Pan Creek | 142.00 | 0 | 142.00 |
| Plum Creek | 78.00 | 0 | 78.00 |
| Flat Creek | 114.00 | 0 | 114.00 |
| Butte Creek | 556.00 | 0 | 556.00 |
| Blizzard Creek | 162.00 | 0 | 162.00 |
| Runoff | 612.00 | 0 | 612.00 |
| Beaver Dam or South Beaver Dam Creek | 791.00 | 0 | 791.00 |
| Gumbo Flat or Camp Creek | 269.00 | 0 | 269.00 |
| Unnamed Stream | 50.00 | 0 | 50.00 |
| North Beaver Dam Creek | 298.00 | 0 | 298.00 |
| Thompson or Siam Creek | 240.00 | 0 | 240.00 |
| Antelope Creek | 87.00 | 0 | 87.00 |
| Cactus Creek | 0 | 53.00 | 53.00 |
| Bickerdyke Creek | 69.00 | 0 | 69.00 |
| Waste | 23.00 | 0 | 23.00 |
| Mud Creek | 366.00 | 0 | 366.00 |
| Roburge Creek | 126.00 | 0 | 126.00 |
| Taylor Creek | 258.00 | 0 | 258.00 |
| Cottonwood Creek | 1,014.00 | 0 | 1,014.00 |
| Runoff | 210.00 | 0 | 210.00 |
| Unnamed Streams | 267.00 | 28.00 | 295.00 |
| Lone Tree Creek | 174.00 | 0 | 174.00 |
| Unnamed Stream | 144.00 | 0 | 144.00 |
| Unnamed Stream | 784.00 | 0 | 784.00 |
| Finger Butte Creek | 946.00 | 0 | 946.00 |
| Unnamed Creek | 332.00 | 0 | 332.00 |
| Corrall Creek | 160.00 | 0 | 160.00 |
| Hard Pan Creek | 49.00 | 0 | 49.00 |
| Unnamed Stream | 453.00 | 0 | 453.00 |
| Seminary Creek | 27.00 | 0 | 27.00 |
| Hackberry Creek | 383.00 | 0 | 383.00 |
| A. B. Gulch | 49.00 | 0 | 49.00 |
| Berry Gulch | 141.00 | 0 | 141.00 |
| Oleson Gulch | 51.00 | 0 | 51.00 |
| Brush Creek | 193.00 | 0 | 193.00 |
| Melum or Mahlum Creek | 74.00 | 0 | 74.00 |
| Box Creek | 143.00 | 0 | 143.00 |
| Sand Creek | 87.00 | 0 | 87.00 |
| Bull Creek | 96.00 | 0 | 96.00 |
| Tie Creek | 317.00 | 0 | 317.00 |
| North Tie Creek | 158.00 | 0 | 158.00 |
| Brewer or Fish Creek | 5.00 | 0 | 5.00 |

IRRIGATION SUMMARY OF CARTER COUNTY BY RIVER BASINS

| | Present Irrigated Acres | Irrigable Acres Under Present Facilities | Maximum Irrigable Acres |
|---|-------------------------------|---|-------------------------------|
| Lende Creek or Gulch | 56.00 | 0 | 56.00 |
| Padden Draw | 182.00 | 0 | 182.00 |
| Garrison Creek or Ash Draw | 49.00 | 0 | 49.00 |
| Fork of Tie Creek | 23.00 | 0 | 23.00 |
| Foster or Rabbit Creek | 173.00 | 0 | 173.00 |
| Wickham Creek | 90.00 | 0 | 90.00 |
| Plum Creek | 0 | 46.00 | 46.00 |
| Slick Creek | 0 | 0 | 0 |
| North Slick Creek | 0 | 45.00 | 45.00 |
| South Slick Creek | 19.00 | 0 | 19.00 |
| Middle Slick or Rustler Creek | 0 | 0 | 0 |
| Cripple Creek | 59.00 | 0 | 59.00 |
| Rustler Creek | 131.00 | 0 | 131.00 |
| Box Elder Creek | 2,173.00 | 220.00 | 2,393.00 |
| West Fork Box Elder Creek | 64.00 | 0 | 64.00 |
| Unnamed Streams | 255.00 | 0 | 255.00 |
| Hugh or Hough Draw | 50.00 | 0 | 50.00 |
| Unnamed Stream | 232.00 | 0 | 232.00 |
| Unnamed Fork Box Elder Creek | 105.00 | 0 | 105.00 |
| Groat Creek | 115.00 | 0 | 115.00 |
| Steep Creek | 29.00 | 0 | 29.00 |
| Soda Creek | 0 | 0 | 0 |
| South Soda Creek | 83.00 | 108.00 | 191.00 |
| North Soda or Little Soda Creek | 117.00 | 0 | 117.00 |
| Runoff | 80.00 | 0 | 80.00 |
| Unnamed Fork Soda Creek | 138.00 | 0 | 138.00 |
| Lone Tree Draw | 146.00 | 0 | 146.00 |
| Park Creek | 128.00 | 0 | 128.00 |
| Spring Creek | 97.00 | 0 | 97.00 |
| Unnamed Fork Spring Creek | 127.00 | 0 | 127.00 |
| Clear, Clear Fork or Clearwater Creek | 144.00 | 0 | 144.00 |
| Runoff | 121.00 | 0 | 121.00 |
| Aldrich Draw | 58.00 | 0 | 58.00 |
| York Draw | 20.00 | 0 | 20.00 |
| Deep Creek | 85.00 | 0 | 85.00 |
| Whitetail Creek | 0 | 0 | 0 |
| Middle Fork Whitetail Creek | 0 | 0 | 0 |
| South Fork Whitetail Creek | 92.00 | 0 | 92.00 |
| L. O. Creek | 136.00 | 0 | 136.00 |
| Unnamed Stream | 114.00 | 0 | 114.00 |
| Trail or Hawks Nest Creek | 528.00 | 94.00 | 622.00 |

IRRIGATION SUMMARY OF CARTER COUNTY BY RIVER BASINS

| | Present Irrigated Acres | Irrigable Acres Under Present Facilities | Maximum Irrigable Acres |
|-----------------------------------|-------------------------------|---|-------------------------------|
| Unnamed Stream | 15.00 | 0 | 15.00 |
| Fork of Trail or Hawks Nest Creek | 54.00 | 0 | 54.00 |
| Muskrat Creek | 572.00 | 65.00 | 637.00 |
| Sherril Creek | 148.00 | 0 | 148.00 |
| Corral Creek | 405.00 | 50.00 | 455.00 |
| North Fork Corral Creek | 32.00 | 0 | 32.00 |
| Ikey or Isaac Creek | 75.00 | 0 | 75.00 |
| Tributary to Ikey Creek | 202.00 | 0 | 202.00 |
| Twin Draws | 251.00 | 0 | 251.00 |
| Unnamed Stream | 99.00 | 0 | 99.00 |
| Runoff | 908.00 | 0 | 908.00 |
| Unnamed Draw | 11.00 | 0 | 11.00 |
| Bull Creek | 165.00 | 0 | 165.00 |
| Hash Knife Creek | 110.00 | 0 | 110.00 |
| Wildcat Creek | 0 | 0 | 0 |
| Unnamed Draw | 34.00 | 0 | 34.00 |
| Margaret Stream | 8.00 | 0 | 8.00 |
| Ewalt Draw | 8.00 | 0 | 8.00 |
| Carrie Creek | 20.00 | 0 | 20.00 |
| McCarthy Creek | 68.00 | 0 | 68.00 |
| Foster Creek | 8.00 | 0 | 8.00 |
| Runoff | 34.00 | 0 | 34.00 |
| Matt Foster Draw | 50.00 | 0 | 50.00 |
| Cottontail Creek | 95.00 | 0 | 95.00 |
| Hard Paw or Hard Pan Creek | 104.00 | 0 | 104.00 |
| Cabin Creek | 250.00 | 0 | 250.00 |
| Flat Creek | 43.00 | 0 | 43.00 |
| Chito or Sheato Creek | 70.00 | 0 | 70.00 |
| Unnamed Stream | 61.00 | 0 | 61.00 |
| Horse Creek | 312.00 | 0 | 312.00 |
| D-4 Creek | 20.00 | 0 | 20.00 |
| Unnamed Creek | 48.00 | 0 | 48.00 |
| Buck Creek | 25.00 | 0 | 25.00 |
| Skull Creek | 200.00 | 0 | 200.00 |
| Dead Boy Creek | 175.00 | 0 | 175.00 |
| School Section or Speelman Creek | 85.00 | 0 | 85.00 |
| Horsetail Creek | 53.00 | 0 | 53.00 |
| Keltner Creek | 50.00 | 0 | 50.00 |
| Sand Creek | 148.00 | 0 | 148.00 |
| Antelope Hill Draw | 0 | 0 | 0 |
| Palmer Draw | 7.00 | 0 | 7.00 |

IRRIGATION SUMMARY OF CARTER COUNTY BY RIVER BASINS

| | Present Irrigated Acres | Irrigable Acres Under Present Facilities | Maximum Irrigable Acres |
|---|-------------------------------|---|-------------------------------|
| Buffalo Creek | 229.00 | 0 | 229.00 |
| Lone Tree Creek | 25.00 | 0 | 25.00 |
| Unnamed Draw | 794.00 | 0 | 794.00 |
| Runoff | 80.00 | 0 | 80.00 |
| Soft Water Draw | 560.00 | 0 | 560.00 |
| Runoff | 65.00 | 0 | 65.00 |
| Dry Creek | 49.00 | 0 | 49.00 |
| Lone Tree Creek | 55.00 | 0 | 55.00 |
| Big Rammie (Ramme) Creek | 219.00 | 132.00 | 351.00 |
| Unnamed Fk. Big Rammie (Ramme) Cr. | 75.00 | 0 | 75.00 |
| Spillman or Speelman or Chance Creek | 105.00 | 0 | 105.00 |
| Unnamed Stream | 12.00 | 0 | 12.00 |
| Fork of Spillman or Speelman or Chance Creek | 116.00 | 0 | 116.00 |
| Runoff | 24.00 | 0 | 24.00 |
| Chaddell Creek | 136.00 | 0 | 136.00 |
| Little Rammie (Ramme), Cottonwood or South Creek | 0 | 0 | 0 |
| Horse Camp or Twenty-two Creek | 16.00 | 0 | 16.00 |
| Unnamed Fork | 40.00 | 0 | 40.00 |
| Branch of Box Elder Creek | 35.00 | 0 | 35.00 |
| Lampkin Creek | 12.00 | 0 | 12.00 |
| Small Creek | 11.00 | 0 | 11.00 |
| Jones Creek | 12.00 | 0 | 12.00 |
| Cripple Creek | 218.00 | 0 | 218.00 |
| Ash Draw | 60.00 | 0 | 60.00 |
| Arpan Creek | 79.00 | 0 | 79.00 |
| Harmon or Twenty-two Creek | 149.00 | 0 | 149.00 |
| Unnamed Fork Twenty-two Creek | 35.00 | 0 | 35.00 |
| Unnamed Fork Twenty-two Creek | 0 | 54.00 | 54.00 |
| Hardwood Creek | 17.00 | 0 | 17.00 |
| Corral Creek | 217.00 | 0 | 217.00 |
| Red Butte Creek | 0 | 16.00 | 16.00 |
| Snow Creek | 75.00 | 0 | 75.00 |
| Coal Creek | 177.00 | 0 | 177.00 |
| Unnamed Stream | 36.00 | 0 | 36.00 |
| Spring Creek | 32.00 | 0 | 32.00 |
| Unnamed Stream | 0 | 35.00 | 35.00 |
| Horse Creek | 0 | 105.00 | 105.00 |
| Total Box Elder Creek and Tributaries | 14,025.00 | 879.00 | 14,904.00 |

IRRIGATION SUMMARY OF CARTER COUNTY BY RIVER BASINS

| | Present Irrigated Acres | Irrigable Acres Under Present Facilities | Maximum Irrigable Acres |
|---|-------------------------------|---|-------------------------------|
| Little Beaver Creek | 377.00 | 0 | 377.00 |
| Charters Creek | 91.00 | 0 | 91.00 |
| Russell, Blue Stone, Thompson or Stag- ville Creek | 386.00 | 0 | 386.00 |
| Runoff | 20.00 | 0 | 20.00 |
| Waste | 20.00 | 0 | 20.00 |
| Redlie Creek | 38.00 | 0 | 38.00 |
| Norwegian Creek or Heggen Draw | 80.00 | 0 | 80.00 |
| Senrud or Flasted Creek | 50.00 | 0 | 50.00 |
| H. S. Creek | 72.00 | 0 | 72.00 |
| Unnamed Stream | 78.00 | 0 | 78.00 |
| Total Little Missouri River and Tributaries | 41,716.00 | 1,499.00 | 43,215.00 |
| Total Irrigation in Carter County (Yellowstone and Little Missouri River Basins) | 44,143.00 | 1,509.00 | 45,652.00 |

WATER RIGHT DATA — CARTER COUNTY

APPROPRIATIONS BY STREAMS

APPROPRIATIONS
(Filings of Record)

| STREAM | Total No. of Filings | Total Miner's Inches | Total Cu. Ft. Per Sec. |
|---|----------------------------|----------------------------|------------------------------|
| MISSOURI RIVER BASIN | | | |
| *Yellowstone River | 0 | 0 | 0 |
| Powder River | 0 | 0 | 0 |
| Little Powder River | 0 | 0 | 0 |
| East Fork Powder River | 6 | 7,440 | 186.00 |
| Spring Creek | 1 | 2,400 | 60.00 |
| Unnamed Stream | 1 | 200 | 5.00 |
| Scott (Burleson) Creek | 3 | 1,300 | 32.50 |
| Unnamed Stream | 6 | 2,240 | 56.00 |
| Hay Creek | 1 | 400 | 10.00 |
| Unnamed Stream | 1 | 400 | 10.00 |
| Crow Creek | 1 | 400 | 10.00 |
| Bateman Creek | 1 | 1,000 | 25.00 |
| Stump Creek (East Fork Flag Creek) | 5 | 103,500 | 2,587.50 |
| Dry Wash | 1 | 1,140 | 28.50 |
| Dry Creek | 0 | 0 | 0 |
| Long Pine Branch | 1 | 8,000 | 200.00 |
| Spring Creek | 3 | 1,240 | 31.00 |
| Unnamed Stream | 2 | 400 | 10.00 |
| South Spring Creek | 2 | 2,900 | 72.50 |
| Thomas Draw | 1 | 0 | 0 |
| Russell Creek | 1 | 500 | 12.50 |
| Blacktail Creek | 1 | 400 | 10.00 |
| Total Powder River and Tributaries | 38 | 133,860 | 3,346.50 |
| O'Fallon Creek | 3 | 1,220 | 30.50 |
| Line Camp Creek | 3 | 1,160 | 29.00 |
| H-7 Creek | 3 | 1,100 | 27.50 |
| Little Box Elder Creek | 1 | 500 | 12.50 |
| Buffalo Creek | 2 | 1,300 | 32.50 |
| Maxwell Creek | 1 | 500 | 12.50 |
| Lily Creek | 4 | 1,400 | 35.00 |
| Stewart Creek | 1 | 200 | 5.00 |
| Unnamed Stream | 1 | 31,000 | 775.00 |
| Unnamed Stream | 1 | All | All |
| Dug Out Creek | 3 | 1,240 | 31.00 |
| Hay Creek | 3 | 5,000 | 125.00 |

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

WATER RIGHT DATA — CARTER COUNTY **APPROPRIATIONS BY STREAMS**

| STREAM | APPROPRIATIONS (Filings of Record) | | |
|--|---------------------------------------|----------------------------|------------------------------|
| | Total No. of Filings | Total Miner's Inches | Total Cu. Ft. Per Sec. |
| Short Creek | 3 | 2,000 | 50.00 |
| Antelope Creek | 3 | 1,600 | 40.00 |
| East Fork O'Fallon Creek | 4 | 3,600 | 90.00 |
| Isham Creek | 1 | All | All |
| Hanley Creek | 6 | 3,560 | 89.00 |
| West Fork Hanley Creek | 1 | 200 | 5.00 |
| Unnamed Stream | 1 | 120 | 3.00 |
| Butte Creek | 1 | 400 | 10.00 |
| Spring Creek | 1 | 200 | 5.00 |
| Ranch Creek | 2 | 1,000 | 25.00 |
| Renan Creek | 1 | 200 | 5.00 |
| Unnamed Coulees | 1 | 280 | 7.00 |
| Spring Creek | 4 | 4,310 | 107.75 |
| Unnamed Stream | 1 | 40 | 1.00 |
| Valley Creek | 1 | 300 | 7.50 |
| Unnamed Stream | 1 | 310 | 7.75 |
| Shearing Pens Creek | 1 | 200 | 5.00 |
| Timber Creek | 1 | 500 | 12.50 |
| Milk Creek | 0 | 0 | 0 |
| South Fork Milk Creek | 2 | 1,000 | 25.00 |
| Total Yellowstone River and Tributaries | 100 | 198,300 | 4,957.50 |
| Little Missouri River | 14 | 279,300 | 6,982.50 |
| Page Creek | 1 | 2,000 | 50.00 |
| Sheldon Creek | 3 | 2,500 | 62.50 |
| Unnamed Stream | 2 | 1,000 | 25.00 |
| Skelton Creek | 1 | 1,000 | 25.00 |
| Fry Creek | 1 | All | All |
| Lightning Creek | 2 | 1,000 | 25.00 |
| Dry Water Course | 2 | 1,000 | 25.00 |
| Dry Water Course | 1 | 500 | 12.50 |
| Babcock Creek | 2 | 1,800 | 45.00 |
| Dry Water Course | 1 | 500 | 12.50 |
| Dry Water Course | 1 | 500 | 12.50 |
| Leary Creek | 1 | 2,000 | 50.00 |
| Dry Water Course | 1 | 500 | 12.50 |
| Unnamed Stream | 4 | 2,000 | 50.00 |
| Thompson Creek | 3 | 30,800 | 770.00 |

WATER RIGHT DATA — CARTER COUNTY

APPROPRIATIONS BY STREAMS

APPROPRIATIONS
(Filings of Record)

| STREAM | Total No. of Filings | Total Miner's Inches | Total Cu. Ft. Per Sec. |
|--------------------------------------|----------------------------|----------------------------|------------------------------|
| Unnamed Spring | 2 | 1,000 | 25.00 |
| North Fork Thompson Creek | 4 | 8,560 | 214.00 |
| Unnamed Forks North Fk. Thompson Cr. | 3 | 720 | 18.00 |
| Unnamed Streams | 4 | 4,000 | 100.00 |
| Shale or Torgerson Creek | 2 | 2,500 | 62.50 |
| Unnamed Streams | 6 | 18,100 | 452.50 |
| North Creek | 1 | 500 | 12.50 |
| Little Creek | 1 | 500 | 12.50 |
| Locate Draw | 1 | 500 | 12.50 |
| Unnamed Stream | 4 | 2,000 | 50.00 |
| Willow Creek | 6 | 27,240 | 681.00 |
| South Fork Willow Creek | 2 | 1,500 | 37.50 |
| Nelson Washout | 1 | 1,000 | 25.00 |
| Nelson Draw | 1 | 1,000 | 25.00 |
| North Fork Willow Creek | 0 | 0 | 0 |
| Northwest Fork Willow Creek | 1 | 500 | 12.50 |
| Unnamed Stream | 5 | 1,400 | 35.00 |
| Wolf Creek | 1 | 400 | 10.00 |
| Zimmerman Draw | 6 | 13,080 | 327.00 |
| Madigan Creek | 1 | 4,800,000 | 120,000.00 |
| Gomer Draw | 1 | 640 | 16.00 |
| Sheep Creek | 5 | 4,000 | 100.00 |
| Unnamed Stream | 2 | 2,000 | 50.00 |
| Brush Creek | 2 | 1,200 | 30.00 |
| Grasshopper or Basin Creek | 2 | 1,500 | 37.50 |
| Unnamed Streams | 6 | 2,140 | 53.50 |
| Sand Hill Creek | 2 | 2,500 | 62.50 |
| Hay Draw | 1 | 500 | 12.50 |
| Unnamed Stream | 1 | 500 | 12.50 |
| Zimmerman Creek | 2 | 1,000 | 25.00 |
| Five Mile Creek | 6 | 127,800 | 3,195.00 |
| South or West Fork Five Mile Creek | 2 | 800 | 20.00 |
| Dry Water Course | 1 | 500 | 12.50 |
| East Fork Five Mile Creek | 1 | 1,000 | 25.00 |
| Dry Water Courses | 4 | 2,000 | 50.00 |
| North Fork Five Mile Creek | 1 | 500 | 12.50 |
| Dry Water Course | 1 | 1,000 | 25.00 |
| Dry Water Course | 3 | 950 | 23.75 |
| Hock Rock Gulch | 4 | 1,300 | 32.50 |

WATER RIGHT DATA — CARTER COUNTY

APPROPRIATIONS BY STREAMS

APPROPRIATIONS
(Filings of Record)

| STREAM | Total No. of Filings | Total Miner's Inches | Total Cu. Ft. Per Sec. |
|---|----------------------------|----------------------------|------------------------------|
| Novak Creek | 1 | 500 | 12.50 |
| Tributary of Five Mile Creek | 1 | 400 | 10.00 |
| Short Creek | 2 | 4,000 | 100.00 |
| Unnamed Stream | 3 | 1,100 | 27.50 |
| Dry Creek or Draw | 1 | All | All |
| Box Elder or Flume Draw | 2 | 1,040 | 26.00 |
| Seven Mile Creek | 2 | 500 | 12.50 |
| Unnamed Tributaries of Seven Mile Creek | 8 | 3,140 | 78.50 |
| Unnamed Stream | 1 | 1,000 | 25.00 |
| Cottonwood Creek | 1 | 10,000 | 250.00 |
| Soft Water Draw | 2 | 2,500 | 62.50 |
| North Cottonwood Creek | 1 | 200 | 5.00 |
| South Cottonwood Creek | 0 | 0 | 0 |
| Middle Creek | 1 | 2,000 | 50.00 |
| Unnamed Streams | 2 | 800 | 20.00 |
| South Fork Sandstone Creek | 1 | 100 | 2.50 |
| Nine Mile Creek | 3 | 3,000 | 75.00 |
| Unnamed Forks Nine Mile Creek | 2 | 1,100 | 27.50 |
| Unnamed Stream | 2 | 1,500 | 37.50 |
| Boicourt Creek | 3 | 2,500 | 62.50 |
| Unnamed Streams | 3 | 1,400 | 35.00 |
| Big Draw | 4 | 4,500 | 112.50 |
| Unnamed Stream | 1 | 500 | 12.50 |
| Short Draw | 2 | 2,000 | 50.00 |
| Unnamed Stream | 1 | 250 | 6.25 |
| Twelve Mile Creek | 3 | 1,700 | 42.50 |
| Unnamed Fork Twelve Mile Creek | 1 | 0 | 0 |
| Three Forks | 1 | 1,000 | 25.00 |
| Unnamed Stream | 2 | 1,000 | 25.00 |
| Sheep Draw | 1 | 500 | 12.50 |
| South Fork Twelve Mile Creek | 1 | All | All |
| Unnamed Streams | 4 | 2,000 | 50.00 |
| South Butte Creek | 4 | 18,000 | 450.00 |
| Unnamed Stream | 2 | 1,000 | 25.00 |
| Butte or North Butte Creek | 7 | 11,400 | 285.00 |
| Hamilton Creek | 1 | 500 | 12.50 |
| Unnamed Streams | 6 | 4,000 | 100.00 |
| Hay Creek | 3 | 5,500 | 137.50 |
| Unnamed Streams | 4 | 4,500 | 112.50 |

WATER RIGHT DATA — CARTER COUNTY
APPROPRIATIONS BY STREAMS

APPROPRIATIONS
(Filings of Record)

| STREAM | Total No. of Filings | Total Miner's Inches | Total Cu. Ft. Per Sec. |
|--------------------------------------|----------------------------|----------------------------|------------------------------|
| Hay Draw | 2 | 800 | 20.00 |
| South Finger Butte Draw | 1 | 2,000 | 50.00 |
| Unnamed Stream | 2 | 750 | 18.75 |
| Horse or Crooked Creek | 7 | 9,700 | 242.50 |
| Duck Creek | 2 | 1,300 | 32.50 |
| Buck Creek | 1 | 1,000 | 25.00 |
| Unnamed Stream | 1 | 250 | 6.25 |
| Goose Creek | 2 | 1,800 | 45.00 |
| Unnamed Forks Horse Creek | 1 | 3,738 | 93.45 |
| West Fork Horse Creek | 3 | 1,500 | 37.50 |
| Blacktail or Bickerdyke Creek | 6 | 4,500 | 112.50 |
| Jump Off Draw or Lightning Creek | 1 | 500 | 12.50 |
| Ash Creek | 1 | 500 | 12.50 |
| Unnamed Stream | 1 | 500 | 12.50 |
| Unnamed Stream | 3 | 1,500 | 37.50 |
| Elkhorn Creek | 9 | 9,500 | 237.50 |
| Dry Water Course | 1 | 500 | 12.50 |
| Short Creek | 1 | 500 | 12.50 |
| Jack Creek | 1 | 500 | 12.50 |
| Unnamed Forks Elkhorn Creek | 3 | 1,550 | 38.75 |
| Section Creek | 1 | 500 | 12.50 |
| Bummer's Draw | 2 | 1,000 | 25.00 |
| Forde Creek | 2 | 750 | 18.75 |
| Hard Pan Creek | 1 | 500 | 12.50 |
| Plum Creek | 3 | 2,000 | 50.00 |
| Flat Creek | 5 | 5,300 | 132.50 |
| North Butte Creek | 1 | 500 | 12.50 |
| Butte Creek | 3 | 3,100 | 77.50 |
| Blizzard Creek | 2 | 1,300 | 32.50 |
| Long Draw Creek | 1 | 500 | 12.50 |
| Unnamed Stream | 2 | 1,000 | 25.00 |
| Unnamed Stream | 4 | 2,100 | 52.50 |
| Beaver Dam or South Beaver Dam Creek | 5 | 6,700 | 167.50 |
| Unnamed Stream | 1 | 500 | 12.50 |
| Camp or Black Soil Creek | 3 | 2,500 | 62.50 |
| North Beaver Dam Creek | 3 | 2,500 | 62.50 |
| Unnamed Stream | 1 | 500 | 12.50 |
| Unnamed Streams | 2 | 1,000 | 25.00 |
| Enerson Creek | 1 | 300 | 7.50 |

WATER RIGHT DATA — CARTER COUNTY

APPROPRIATIONS BY STREAMS

APPROPRIATIONS
(Filings of Record)

| | Total No. of Filings | Total Miner's Inches | Total Cu. Ft. Per Sec. |
|---------------------------------|----------------------------|----------------------------|------------------------------|
| North Fork Enerson Creek | 1 | 300 | 7.50 |
| Unnamed Stream | 2 | 1,000 | 25.00 |
| Thompson or Siam Creek | 6 | 6,750 | 168.75 |
| Antelope Creek | 3 | 1,300 | 32.50 |
| Cactus Creek | 4 | 3,100 | 77.50 |
| Unnamed Stream | 2 | 1,000 | 25.00 |
| Bickerdyke Creek | 1 | All | All |
| Dry Creek | 2 | 1,250 | 31.25 |
| Mud Creek | 2 | 750 | 18.75 |
| Roburge Creek | 2 | 800 | 20.00 |
| Taylor Creek | 1 | 500 | 12.50 |
| Cottonwood Creek | 15 | 35,290 | 882.25 |
| Flat Creek | 2 | 1,100 | 27.50 |
| Unnamed Stream | 2 | 1,500 | 37.50 |
| Dry Run Creek | 2 | 1,000 | 25.00 |
| Lone Tree Creek | 4 | 3,000 | 75.00 |
| Unnamed Stream | 3 | 3,000 | 75.00 |
| Unnamed Stream | 6 | 3,500 | 87.50 |
| Finger Butte Creek | 3 | 4,500 | 112.50 |
| Corrall Creek | 6 | 6,000 | 150.00 |
| Unnamed Stream | 2 | 750 | 18.75 |
| Stempflin Creek | 1 | 500 | 12.50 |
| Hard Pan Creek | 3 | 1,500 | 37.50 |
| Bue Creek | 1 | 400 | 10.00 |
| Gumbo Creek | 2 | 700 | 17.50 |
| Unnamed Tributary Gumbo Creek | 1 | 100 | 2.50 |
| Seminary Creek | 3 | 1,900 | 47.50 |
| Forty-eight Mile Creek | 1 | 500 | 12.50 |
| Hackberry Creek | 7 | 8,980 | 224.50 |
| A. B. Gulch | 1 | 300 | 7.50 |
| Berry Gulch | 2 | 1,750 | 43.75 |
| Sand Hill Draw | 1 | 500 | 12.50 |
| Oleson Creek | 4 | 1,500 | 37.50 |
| Brush Creek | 1 | 250 | 6.25 |
| Melum or Mahlum Creek | 3 | 4,200 | 105.00 |
| Carteson Draw or Antelope Creek | 3 | 1,800 | 45.00 |
| Unnamed Stream | 1 | 500 | 12.50 |
| Carlson Creek | 1 | 160 | 4.00 |
| Box Creek | 3 | 1,500 | 37.50 |

WATER RIGHT DATA — CARTER COUNTY

APPROPRIATIONS BY STREAMS

APPROPRIATIONS
(Filings of Record)

| STREAM | Total No. of Filings | Total Miner's Inches | Total Cu. Ft. Per Sec. |
|---|----------------------------|----------------------------|------------------------------|
| Unnamed Creek | 1 | 500 | 12.50 |
| Claim Creek | 1 | 600 | 15.00 |
| Sand Creek | 5 | 5,500 | 137.50 |
| Bull Creek | 2 | 2,500 | 62.50 |
| Bank Creek | 2 | 1,120 | 28.00 |
| Tie Creek | 9 | 15,526 | 388.15 |
| North Tie Creek | 3 | 2,345 | 58.63 |
| Brewer or Fish Creek | 1 | 320 | 8.00 |
| Ash Draw | 2 | 1,000 | 25.00 |
| Unnamed Fork Tie Creek | 1 | 400 | 10.00 |
| Lende Creek or Gulch | 4 | 1,320 | 33.00 |
| Mosely Gulch | 2 | 1,000 | 25.00 |
| Unnamed Gulch | 1 | 500 | 12.50 |
| Padden Draw | 2 | 1,000 | 25.00 |
| Unnamed Stream | 1 | 250 | 6.25 |
| Garrison Creek or Ash Draw | 2 | 1,000 | 25.00 |
| Unnamed Fork Tie Creek | 1 | 400 | 10.00 |
| Foster or Rabbit Creek | 4 | 2,400 | 60.00 |
| Sawmill Gulch | 2 | 1,200 | 30.00 |
| Volin Creek | 1 | 300 | 7.50 |
| Unnamed Stream | 1 | 500 | 12.50 |
| Phelp's Draw | 1 | 4,000 | 100.00 |
| Horner Creek and Tributaries | 2 | 1,000 | 25.00 |
| Plum Creek | 2 | 800 | 20.00 |
| Slick Creek | 0 | 0 | 0 |
| North Slick Creek | 1 | 1,000 | 25.00 |
| Davis Spring | 1 | 50 | 1.25 |
| Box Spring | 1 | 50 | 1.25 |
| South Slick Creek | 6 | 4,700 | 117.50 |
| Middle Slick or Rustler Creek | 1 | 1,000 | 25.00 |
| Cripple Creek | 1 | 500 | 12.50 |
| Box Elder, West Fork Box Elder or Dry Creek | 34 | 46,700 | 1,167.50 |
| Maple Spring | 1 | 200 | 5.00 |
| Unnamed Branches and Forks Box | | | |
| Elder Creek | 5 | 2,538 | 63.45 |
| Hugh or Hough Draw | 2 | 400 | 10.00 |
| Unnamed Branch Box Elder Creek | 2 | 520 | 13.00 |
| Dry Lake Draw | 4 | 3,250 | 81.25 |
| Unnamed Streams | 6 | 3,570 | 89.25 |

WATER RIGHT DATA — CARTER COUNTY

APPROPRIATIONS BY STREAMS

APPROPRIATIONS
(Filings of Record)

| STREAM | Total No. of Filings | Total Miner's Inches | Total Cu. Ft. Per Sec. |
|--|----------------------------|----------------------------|------------------------------|
| Groat Creek | 1 | 720 | 18.00 |
| East Fork Groat Creek | 1 | 5,000 | 125.00 |
| West Fork Groat Creek | 1 | 3,400 | 85.00 |
| Unnamed Fork Box Elder Creek | 1 | 40 | 1.00 |
| Steep Creek | 2 | 3,120 | 78.00 |
| Soda Creek | 2 | 4,000 | 100.00 |
| South Soda Creek | 1 | 17,240 | 431.00 |
| North Soda or Little Soda Creek | 1 | 640 | 16.00 |
| Unnamed Tributary of South Soda Creek | 1 | 1,400 | 35.00 |
| School Section Creek | 2 | 14,100 | 352.50 |
| Lone Tree Draw | 1 | 2,000 | 50.00 |
| Park Creek | 1 | 1,600 | 40.00 |
| Spring Creek | 3 | 24,001,400 | 600,035.00 |
| Unnamed Forks Spring Creek | 3 | 4,580 | 114.50 |
| Hay Creek | 1 | 100 | 2.50 |
| Unnamed Streams | 4 | 1,265 | 31.62 |
| Unnamed Stream | 1 | 500 | 12.50 |
| Yarnell Creek | 1 | 500 | 12.50 |
| Clear, Clear Fork, or Clearwater Creek | 10 | 10,040 | 251.00 |
| North Fork Clear Creek | 2 | 3,120 | 78.00 |
| Unnamed Stream | 1 | 1,000 | 25.00 |
| Aldrich Draw | 1 | 2,240 | 56.00 |
| Bill's Creek | 1 | 2,000 | 50.00 |
| Unnamed Streams | 3 | 1,250 | 31.25 |
| York Draw | 1 | 1,200 | 30.00 |
| Deep Creek | 4 | 6,000 | 150.00 |
| Whitetail Creek | 3 | 3,000 | 75.00 |
| Middle Fork Whitetail Creek | 0 | 0 | 0 |
| South Fork Whitetail Creek | 2 | 1,000 | 25.00 |
| Unnamed Fork Whitetail Creek | 1 | 0 | 0 |
| Lone Tree Creek | 1 | 1,500 | 37.50 |
| L. O. Creek | 5 | 8,800 | 220.00 |
| Unnamed Stream | 1 | 5,000 | 125.00 |
| Mush or Prince Creek | 4 | 2,500 | 62.50 |
| Unnamed Stream | 1 | 500 | 12.50 |
| Chance Creek | 1 | 1,000 | 25.00 |
| Key Draw | 1 | 500 | 12.50 |
| Unnamed Stream | 2 | 500 | 12.50 |
| Trail or Hawks Nest Creek | 5 | 7,250 | 181.25 |

WATER RIGHT DATA — CARTER COUNTY

APPROPRIATIONS BY STREAMS

| STREAM | APPROPRIATIONS (Filings of Record) | | |
|------------------------------------|---------------------------------------|----------------------------|------------------------------|
| | Total No. of Filings | Total Miner's Inches | Total Cu. Ft. Per Sec. |
| Unnamed Streams | 2 | 1,500 | 37.50 |
| Big Draw | 1 | 2,000 | 50.00 |
| Buchanan Creek or Gumbo Draw | 3 | 2,300 | 57.50 |
| Soft Water Draw | 1 | 1,000 | 25.00 |
| Muskrat Creek | 5 | 5,300 | 132.50 |
| Unnamed Fork Muskrat Creek | 1 | 500 | 12.50 |
| Hawks Nest Creek | 1 | 4,000 | 100.00 |
| North Fork Hawks Nest Creek | 2 | 2,400 | 60.00 |
| South Fork Hawks Nest Creek | 2 | 5,120 | 128.00 |
| Unnamed Stream | 1 | 500 | 12.50 |
| Cottrell Creek | 1 | 2,000 | 50.00 |
| Sherril Creek | 2 | 2,000 | 50.00 |
| Prairie Dog Creek | 4 | 24,500 | 612.50 |
| Unnamed Streams | 2 | 550 | 13.75 |
| Corral Creek | 3 | 8,400 | 210.00 |
| North Fork Corral Creek | 1 | 1,000 | 25.00 |
| South Fork Corral Creek | 7 | 14,420 | 360.50 |
| E. E. Creek | 1 | 2,000 | 50.00 |
| Ikey or Isaac Creek | 4 | 154,600 | 3,865.00 |
| Standard Draw | 1 | 2,000 | 50.00 |
| Tributary of Ikey Creek | 1 | 4,000 | 100.00 |
| Smoke Creek | 1 | 2,000 | 50.00 |
| Twin Draws | 1 | 2,000 | 50.00 |
| Wolf or Teal Creek | 3 | 1,640 | 41.00 |
| Bull Creek | 6 | 3,780 | 94.50 |
| Hash Knife Creek | 1 | 1,600 | 40.00 |
| Jensen Creek | 1 | 800 | 20.00 |
| Wild Cat Creek | 1 | 1,000 | 25.00 |
| Margaret Stream | 1 | 280 | 7.00 |
| Carrie Creek | 2 | 5,200 | 130.00 |
| Wilson Creek | 1 | 1,200 | 30.00 |
| Carmack Stream | 1 | 300 | 7.50 |
| McCarthy Creek | 1 | 500 | 12.50 |
| Foster Creek | 2 | 2,250 | 56.25 |
| Walter Draw | 1 | 2,000 | 50.00 |
| Matt Foster Draw | 1 | 2,000 | 50.00 |
| Cottontail Creek | 1 | 1,500 | 37.50 |
| Hard Paw or Hard Pan Creek | 3 | 1,000 | 25.00 |
| Harriman Draw | 1 | 1,000 | 25.00 |

WATER RIGHT DATA — CARTER COUNTY

APPROPRIATIONS BY STREAMS

APPROPRIATIONS
(Filings of Record)

| STREAM | Total No. of Filings | Total Miner's Inches | Total Cu. Ft. Per Sec. |
|----------------------------------|----------------------------|----------------------------|------------------------------|
| Cabin Creek | 3 | 43,336 | 1,083.40 |
| North Fork Cabin Creek | 1 | 3,000 | 75.00 |
| Shults Creek | 1 | 500 | 12.50 |
| Flat Creek | 2 | 5,050 | 126.25 |
| Chito or Sheato Creek | 2 | 2,000 | 50.00 |
| Horse Creek | 1 | 2,000 | 50.00 |
| Johnny Creek | 1 | 600 | 15.00 |
| Trout Creek | 1 | 800 | 20.00 |
| Lome Creek | 1 | 2,000 | 50.00 |
| No Name Draw | 1 | 500 | 12.50 |
| Vender Creek | 1 | 1,200 | 30.00 |
| D-4 Creek | 1 | 200 | 5.00 |
| A. B. Draw | 1 | 500 | 12.50 |
| Buck Creek | 2 | 3,000 | 75.00 |
| Skull Creek | 2 | 3,000 | 75.00 |
| South Fork Skull Creek | 3 | 1,500 | 37.50 |
| South Skull Creek | 1 | 1,000 | 25.00 |
| Dead Boy Creek | 2 | 12,500 | 312.50 |
| School Section or Speelman Creek | 8 | 6,500 | 162.50 |
| No Name Draw | 1 | 1,000 | 25.00 |
| Catamount Creek | 0 | 0 | 0 |
| Unnamed Fork Catamount Creek | 1 | 80 | 2.00 |
| North Catamount Creek | 1 | 1,200 | 30.00 |
| Silver Star Creek | 1 | 500 | 12.50 |
| Gross Creek | 1 | 70 | 1.75 |
| Keltner Creek | 3 | 6,800 | 170.00 |
| Antelope Hill Draw | 1 | All | All |
| Palmer Draw | 1 | All | All |
| Unnamed Stream | 1 | 500 | 12.50 |
| Curry Creek | 1 | 1,200 | 30.00 |
| Sand Creek | 2 | 2,400 | 60.00 |
| Unnamed Fork Sand Creek | 1 | 0 | 0 |
| Bishop or Gross Creek | 4 | 3,900 | 97.50 |
| Prairie Dog Creek | 1 | 120 | 3.00 |
| Rattlesnake Creek | 1 | 800 | 20.00 |
| Cut Off Creek | 1 | 800 | 20.00 |
| Hyde or Pew Creek | 3 | 1,700 | 42.50 |
| Buffalo Creek | 9 | 17,080 | 427.00 |
| Chapman or Stone Chimney Creek | 1 | 500 | 12.50 |

WATER RIGHT DATA — CARTER COUNTY

APPROPRIATIONS BY STREAMS

APPROPRIATIONS
(Filings of Record)

| STREAM | Total No. of Filings | Total Miner's Inches | Total Cu. Ft. Per Sec. |
|--|----------------------------|----------------------------|------------------------------|
| Unnamed Draw | 1 | 20 | .50 |
| Lisle Creek or North Fork Buffalo Creek | 2 | 260 | 6.50 |
| Unnamed Draw | 1 | 600 | 15.00 |
| Fresh Water Creek | 1 | 2,400 | 60.00 |
| Foster Creek or Gulch | 1 | 200 | 5.00 |
| Unnamed Stream | 1 | 120 | 3.00 |
| Coal or Cole Bank Creek | 2 | 2,500 | 62.50 |
| Dixon Creek | 2 | 450 | 11.25 |
| Intermittent Stream | 1 | All | All |
| Lone Tree Creek | 9 | 17,560 | 439.00 |
| Piet Creek | 1 | 800 | 20.00 |
| Dry Creek | 1 | 1,200 | 30.00 |
| Lone Tree Creek | 2 | 3,200 | 80.00 |
| Last Chance or Farwell Creek | 5 | 3,998 | 99.95 |
| Sula Creek | 2 | 2,400 | 60.00 |
| Mail Box, Short, or Richmond Creek | 2 | 3,500 | 87.50 |
| Big Rammie (Ramme) Creek | 5 | 5,000 | 125.00 |
| Unnamed Stream | 1 | 240 | 6.00 |
| Dry Creek | 4 | 1,620 | 40.50 |
| Unnamed Stream | 1 | 160 | 4.00 |
| Moolick or Weber Creek | 4 | 2,100 | 52.50 |
| Unnamed Fork Big Rammie (Ramme) Cr. | 2 | 540 | 13.50 |
| Price's Gulch and Tributaries | 2 | 1,000 | 25.00 |
| Ferguson Creek | 1 | 1,200 | 30.00 |
| Chaddell Creek | 2 | 1,320 | 33.00 |
| Short Creek | 4 | 6,200 | 155.00 |
| Shedall Creek | 1 | 1,000 | 25.00 |
| Spillman, Speelman or Chance Creek | 10 | 10,200 | 255.00 |
| Unnamed Stream | 1 | 1,920 | 48.00 |
| Sykes Draw | 1 | 500 | 12.50 |
| Parkers Draw | 1 | 400 | 10.00 |
| Forest Creek | 1 | 800 | 20.00 |
| Sigler Draw | 1 | 4,000 | 100.00 |
| Baer Creek | 2 | 600 | 15.00 |
| Devil's Creek | 2 | 700 | 17.50 |
| Elgin Creek | 2 | 900 | 22.50 |
| Sage Brush Creek | 1 | 500 | 12.50 |
| Unnamed Stream | 1 | 680 | 17.00 |
| Little Rammie (Ramme), Cottonwood, or South Creek | 10 | 7,500 | 187.50 |

WATER RIGHT DATA — CARTER COUNTY

APPROPRIATIONS BY STREAMS

| STREAM | APPROPRIATIONS (Filings of Record) | | |
|---|---------------------------------------|----------------------------|------------------------------|
| | Total No. of Filings | Total Miner's Inches | Total Cu. Ft. Per Sec. |
| Promise Creek | 4 | 1,980 | 49.50 |
| Sage Creek | 1 | 500 | 12.50 |
| Horse Camp or Twenty-two Creek | 5 | 2,220 | 55.50 |
| Hoffman Creek | 1 | 500 | 12.50 |
| Small Creek | 2 | 370 | 9.25 |
| Jones Creek | 1 | 400 | 10.00 |
| Cripple Creek | 6 | 5,500 | 137.50 |
| Ash Draw | 1 | 500 | 12.50 |
| Tree Creek | 1 | 200 | 5.00 |
| Arpan Creek | 1 | 200 | 5.00 |
| Harmon or Twenty-two Creek | 4 | 1,050 | 26.25 |
| Unnamed Fork Twenty-two Creek | 1 | 2,000 | 50.00 |
| Prell Creek | 1 | 400 | 10.00 |
| Bruck Draw | 1 | 500 | 12.50 |
| Unnamed Fork Twenty-two Creek | 2 | 240 | 6.00 |
| Hard Wood Creek | 1 | 400 | 10.00 |
| Corral Creek | 0 | 0 | 0 |
| Sage or Eimer Creek | 2 | 500 | 12.50 |
| Unnamed Draw | 1 | 0 | 0 |
| Middle Fork Corral Creek | 1 | 500 | 12.50 |
| Tributary of Box Elder Creek | 1 | 680 | 17.00 |
| Round Butte Creek | 2 | 600 | 15.00 |
| Red Butte Creek | 3 | 1,500 | 37.50 |
| Snow Creek | 1 | 1,200 | 30.00 |
| Unnamed Stream | 1 | 500 | 12.50 |
| Coal Creek | 8 | 24,010 | 600.25 |
| West Fork Coal Creek or Dry Water Gulch | 3 | 1,300 | 32.50 |
| Stout Creek | 1 | 300 | 7.50 |
| Unnamed Fork Coal Creek | 1 | 520 | 13.00 |
| Brush Creek | 1 | 400 | 10.00 |
| Shepp Mountain Gulch Creek | 1 | 500 | 12.50 |
| Little Box Elder Creek | 1 | 200 | 5.00 |
| Unnamed Forks Coal Creek | 1 | 900 | 22.50 |
| Pine Creek | 1 | 100 | 2.50 |
| Spring Creek | 3 | 1,100 | 27.50 |
| Tributary of Spring Creek | 1 | 2,000 | 50.00 |
| Roger Creek | 1 | 50,000 | 1,250.00 |
| Humbolt Creek | 2 | 2,500 | 62.50 |

WATER RIGHT DATA — CARTER COUNTY

APPROPRIATIONS BY STREAMS

APPROPRIATIONS
(Filings of Record)

| STREAM | Total No. of Filings | Total Miner's Inches | Total Cu. Ft. Per Sec. |
|--|----------------------------|----------------------------|------------------------------|
| Spring Creek | 1 | 1,000 | 25.00 |
| Unnamed Fork Box Elder Creek | 2 | 560 | 14.00 |
| Rock Creek | 1 | 500 | 12.50 |
| Mike Creek | 2 | 880,000 | 22,000.00 |
| Horse Creek | 4 | 2,100 | 52.50 |
| Burt Hall Spring | 1 | 500 | 12.50 |
| Spring Creek | 3 | 1,600 | 40.00 |
| Unnamed Spring | 4 | 300 | 7.50 |
| Duck Creek | 1 | 500 | 12.50 |
| Unnamed Fork Horse Creek | 5 | 2,680 | 67.00 |
| North Fork Horse Creek | 3 | 1,000 | 25.00 |
| West Fork Horse Creek | 1 | 600 | 15.00 |
| Short Creek | 2 | 1,100 | 27.50 |
| Coal Bank Creek | 0 | 0 | 0 |
| North Fork Coal Bank Creek | 1 | 1,000 | 25.00 |
| South Fork Coal Bank Creek | 1 | 500 | 12.50 |
| South Fork South Coal Bank Creek | 1 | 500 | 12.50 |
| Little Beaver Creek | 12 | 6,340 | 158.50 |
| West Fork Little Beaver Creek | 2 | 1,500 | 37.50 |
| Ewalt Creek | 2 | 660 | 16.50 |
| Flat Creek | 1 | 200 | 5.00 |
| South Fork Beaver Creek or Sheep | | | |
| Camp Creek | 8 | 6,773 | 169.32 |
| Winger Draw | 1 | 100 | 2.50 |
| Baker or Cedar Creek | 5 | 1,200 | 30.00 |
| Unnamed Tributary of Little Beaver Cr. | 1 | 400 | 10.00 |
| Unnamed Tributary of | | | |
| Little Beaver Creek | 1 | 400 | 10.00 |
| Smith Creek | 2 | 1,400 | 35.00 |
| Big Hill Fork of Little Beaver Creek | 1 | 200 | 5.00 |
| Unnamed Stream | 1 | 80 | 2.00 |
| Pine or Plum Creek | 1 | 200 | 5.00 |
| Dry or Wear Creek | 6 | 2,710 | 67.75 |
| Big Draw | 1 | 680 | 17.00 |
| Munro Creek | 1 | 400 | 10.00 |
| School Section Creek | 4 | 800 | 20.00 |
| Dugan or Duggins Creek | 4 | 2,400 | 60.00 |
| West Fork Dugan Creek | 2 | 275 | 6.87 |
| Dead Horse Draw | 3 | 620 | 15.50 |

WATER RIGHT DATA — CARTER COUNTY

APPROPRIATIONS BY STREAMS

| STREAM | APPROPRIATIONS (Filings of Record) | | |
|--|---------------------------------------|----------------------------|------------------------------|
| | Total No. of Filings | Total Miner's Inches | Total Cu. Ft. Per Sec. |
| East Fork Dugan Creek | 2 | 275 | 6.88 |
| Unnamed Fork Dugan Creek | 1 | 250 | 6.25 |
| Dry Creek | 4 | 800 | 20.00 |
| Charters Creek | 1 | 200 | 5.00 |
| Russell, Blue Stone, Thompson, or Stagville Creek | 10 | 3,400 | 85.00 |
| Ben's Spring Creek | 1 | 200 | 5.00 |
| No Name Creeks | 1 | 4,720 | 118.00 |
| Wilson's Spring Creek | 1 | 400 | 10.00 |
| Springs and Surface Water | 1 | 100 | 2.50 |
| Indian Creek | 1 | 200 | 5.00 |
| Carter Gulch | 1 | 250 | 6.25 |
| Redlie Creek | 1 | 300 | 7.50 |
| Dry Water Draw | 3 | 1,750 | 43.75 |
| Norwegian Creek or Heggen Draw | 7 | 3,300 | 82.50 |
| Heggen Draw | 5 | 2,000 | 50.00 |
| Dry Water Course | 1 | 1,000 | 25.00 |
| Pine Creek | 1 | 100 | 2.50 |
| Senrud or Flasted Creek | 4 | 1,300 | 32.50 |
| Flasted Creek | 2 | 1,000 | 25.00 |
| Anderson Creek | 1 | 500 | 12.50 |
| H. S. Creek | 9 | 5,700 | 142.50 |
| Pine Creek | 1 | 500 | 12.50 |
| Plum Creek | 1 | 400 | 10.00 |
| Dry Moon Creek | 1 | All | All |
| Unnamed Spring | 2 | All | All |
| Anderson Gulch | 1 | 200 | 5.00 |
| Plum Cooley Creek | 1 | 300 | 7.50 |
| Hunter Draw | 2 | 2,500 | 62.50 |
| Rocky Draw | 1 | 300 | 7.50 |
| Spring Draw | 1 | 1,000 | 25.00 |
| Medicine Rocks Creek or Draw | 1 | 500 | 12.50 |
| Greasewood Creek | 3 | 1,540 | 38.50 |
| Mellor Creek | 1 | 500 | 12.50 |
| Chamberlain Creek | 2 | 400 | 10.00 |
| Sheep Camp Creek | 1 | 200 | 5.00 |
| South Fork Bone Creek | 1 | 1,000 | 25.00 |
| Total Little Missouri River and Tributaries | 1,105 | 31,418,089 | 785,452.23 |

WATER RIGHT DATA — CARTER COUNTY
APPROPRIATIONS BY STREAMS

APPROPRIATIONS
(Filings of Record)

| STREAM | Total No. of Filings | Total Miner's Inches | Total Cu. Ft. Per Sec. |
|---|----------------------------|----------------------------|------------------------------|
| Cheyenne River | 0 | 0 | 0 |
| Belle Fourche River | 0 | 0 | 0 |
| Owl Creek | 0 | 0 | 0 |
| East Fork Owl Creek | 1 | 840 | 21.00 |
| Indian Creek | 1 | 1,000 | 25.00 |
| Frozen Horse Creek | 1 | 500 | 12.50 |
| South Fork Indian Creek | 4 | 1,850 | 46.25 |
| Dry Water Course | 1 | 1,000 | 25.00 |
| Alkali Springs | 1 | 2,000 | 50.00 |
| South Indian Creek | 0 | 0 | 0 |
| Watson Draw | 1 | 1,000 | 25.00 |
| Unnamed Stream | 3 | 1,000 | 25.00 |
| Total Cheyenne River and Tributaries | 13 | 9,190 | 229.75 |
| Total Missouri River Basin | 1,218 | 31,625,579 | 790,639.48 |
| DRAINAGES IN CARTER COUNTY NOT LOCATED | | | |
| Sheep Wagon Creek | 1 | 1,000 | 25.00 |
| Unnamed Streams | 5 | 2,170 | 54.25 |
| Total | 6 | 3,170 | 79.25 |

WATER RESOURCES SURVEY

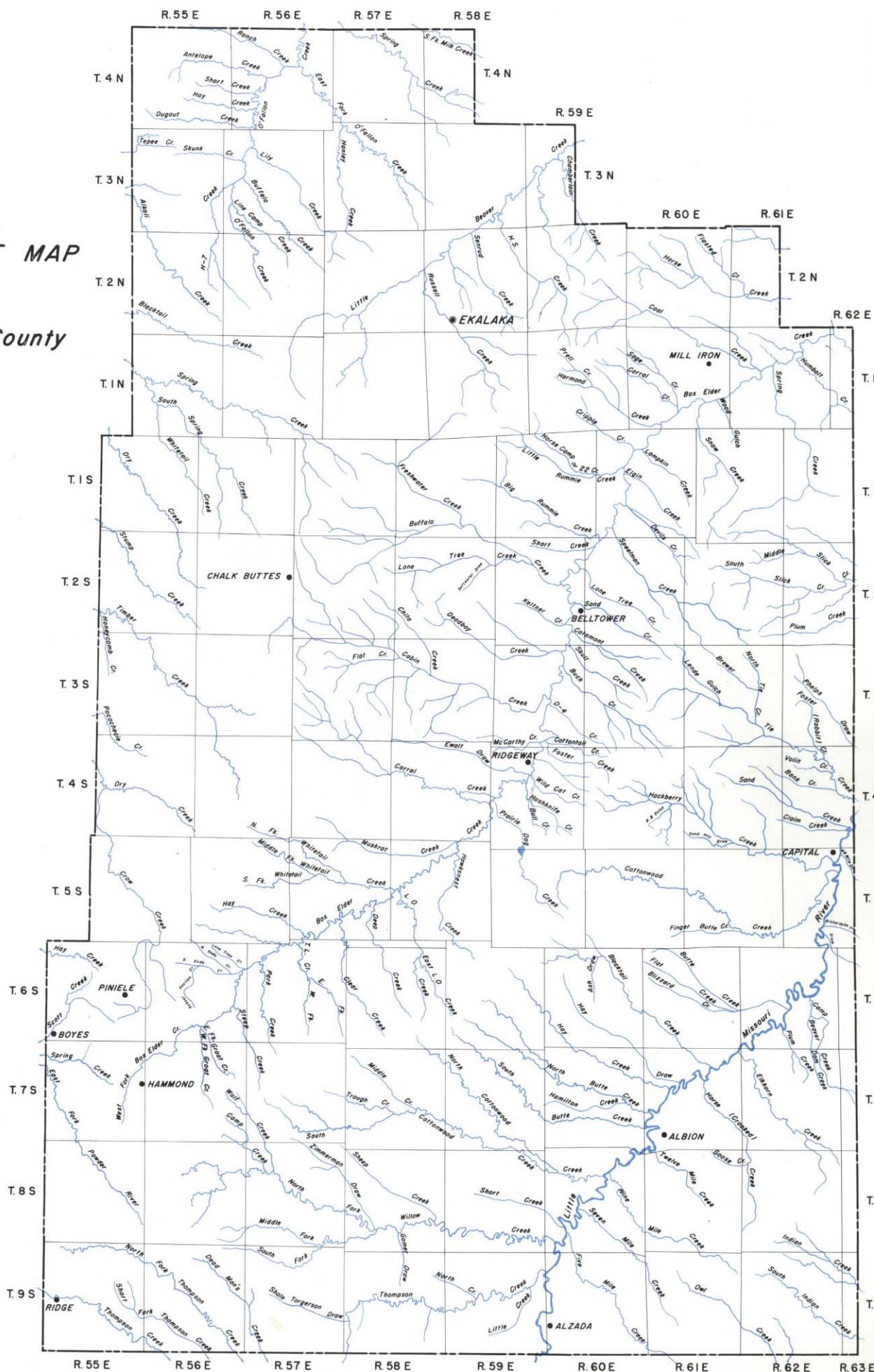
CARTER COUNTY, MONTANA

PART II

MAPS SHOWING IRRIGATED AREAS

Published by
STATE ENGINEER'S OFFICE
Helena, Montana
June, 1960

DRAINAGE MAP of **Carter County**



MAP INDEX

| Township | Range | Page | Township | Range | Page |
|----------|--------------|------|----------|--------------|------|
| 1 North | 56 East..... | 1 | 5 South | 55 East..... | 27 |
| 1 North | 58 East..... | 2 | 5 South | 56 East..... | 34 |
| 1 North | 59 East..... | 3 | 5 South | 57 East..... | 35 |
| 1 North | 60 East..... | 4 | 5 South | 58 East..... | 36 |
| 1 North | 61 East..... | 5 | 5 South | 59 East..... | 37 |
| 1 North | 62 East..... | 5 | 5 South | 60 East..... | 38 |
| 2 North | 56 East..... | 1 | 5 South | 61 East..... | 39 |
| 2 North | 57 East..... | 6 | 5 South | 62 East..... | 40 |
| 2 North | 58 East..... | 7 | 5½ South | 58 East..... | 41 |
| 2 North | 59 East..... | 8 | 6 South | 55 East..... | 42 |
| 2 North | 60 East..... | 9 | 6 South | 56 East..... | 43 |
| 3 North | 55 East..... | 10 | 6 South | 57 East..... | 44 |
| 3 North | 56 East..... | 11 | 6 South | 58 East..... | 41 |
| 3 North | 57 East..... | 12 | 6 South | 59 East..... | 45 |
| 4 North | 55 East..... | 13 | 6 South | 60 East..... | 46 |
| 4 North | 56 East..... | 14 | 6 South | 61 East..... | 47 |
| 4 North | 57 East..... | 15 | 6 South | 62 East..... | 48 |
| 4 North | 58 East..... | 16 | 6 South | 63 East..... | 48 |
| 1 South | 58 East..... | 19 | 7 South | 55 East..... | 49 |
| 1 South | 59 East..... | 17 | 7 South | 56 East..... | 50 |
| 1 South | 60 East..... | 18 | 7 South | 57 East..... | 50 |
| 2 South | 58 East..... | 19 | 7 South | 58 East..... | 51 |
| 2 South | 59 East..... | 20 | 7 South | 60 East..... | 52 |
| 2 South | 60 East..... | 21 | 7 South | 61 East..... | 53 |
| 2 South | 62 East..... | 22 | 7 South | 62 East..... | 54 |
| 3 South | 58 East..... | 23 | 8 South | 56 East..... | 55 |
| 3 South | 59 East..... | 24 | 8 South | 57 East..... | 56 |
| 3 South | 61 East..... | 25 | 8 South | 58 East..... | 57 |
| 3 South | 62 East..... | 26 | 8 South | 59 East..... | 58 |
| 4 South | 55 East..... | 27 | 8 South | 60 East..... | 59 |
| 4 South | 57 East..... | 28 | 8 South | 61 East..... | 60 |
| 4 South | 58 East..... | 29 | 9 South | 56 East..... | 61 |
| 4 South | 59 East..... | 30 | 9 South | 57 East..... | 62 |
| 4 South | 60 East..... | 31 | 9 South | 58 East..... | 63 |
| 4 South | 61 East..... | 32 | 9 South | 59 East..... | 64 |
| 4 South | 62 East..... | 33 | 9 South | 60 East..... | 65 |


ALL MAPS HAVE BEEN MADE FROM AERIAL PHOTOGRAPHS

MAP SYMBOL INDEX









BOUNDARIES

- COUNTY LINE
- NATIONAL FOREST LINE

DITCHES

-  CANALS OR DITCHES
- > DRAIN DITCHES
- > PROPOSED DITCHES

STRUCTURES & UNITS

-  DAM
-  DIKE
-  FLUME
-  SIPHON
-  SPILL
-  SPRINKLER SYSTEM
-  WEIR
- == PIPE LINE
- PUMP
- PUMP SITE
-  RESERVOIR
- ⊕ WELL
- +++ NATURAL CARRIER USED AS DITCH

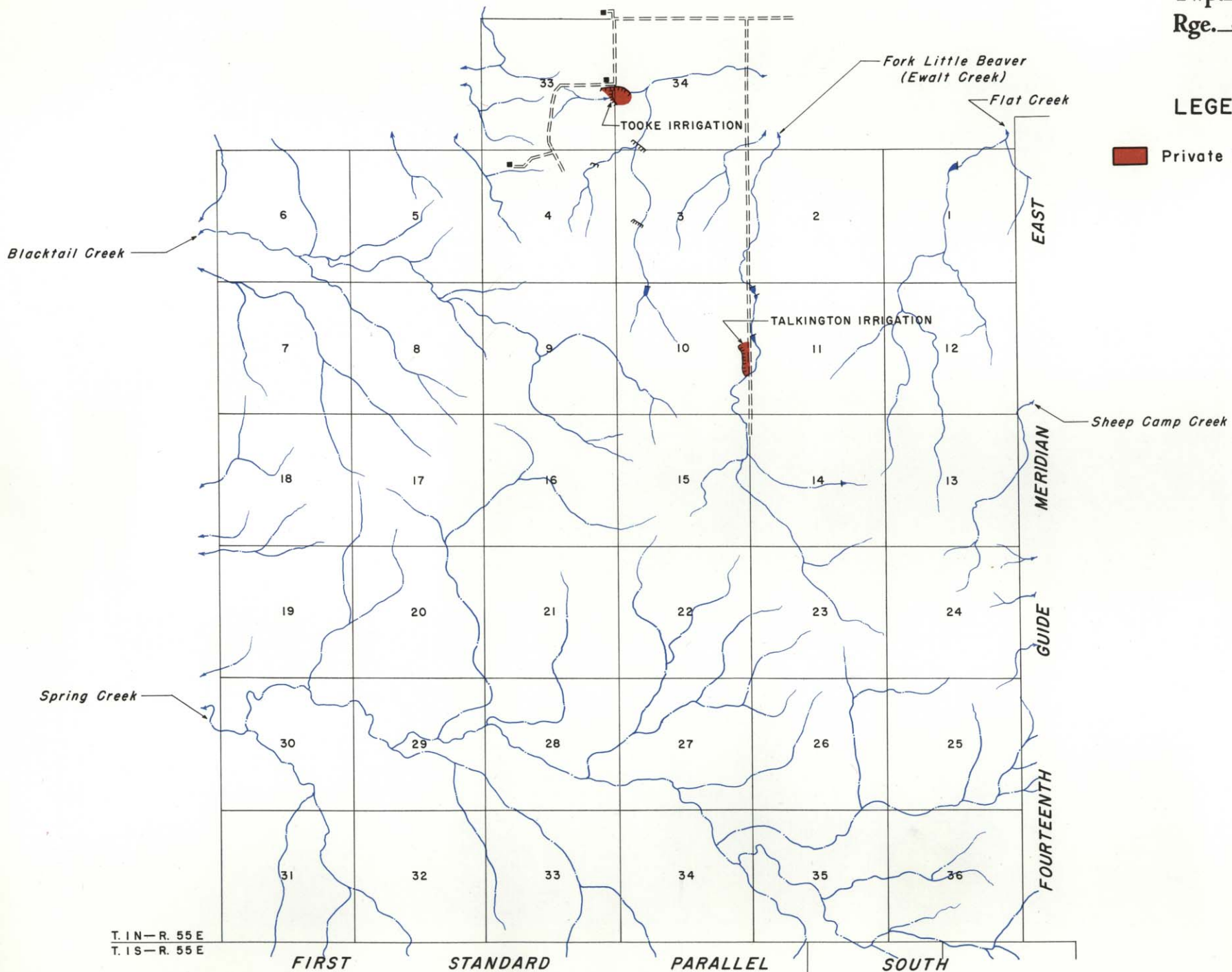
TRANSPORTATION

- == PAVED ROADS
- === UNPAVED ROADS
- +++ RAILROADS
-  STATE HIGHWAY
-  U. S. HIGHWAY
- ◇ AIRPORT
- * 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

Twp. 1 & 2 NORTH
Rge. 56 EAST

LEGEND

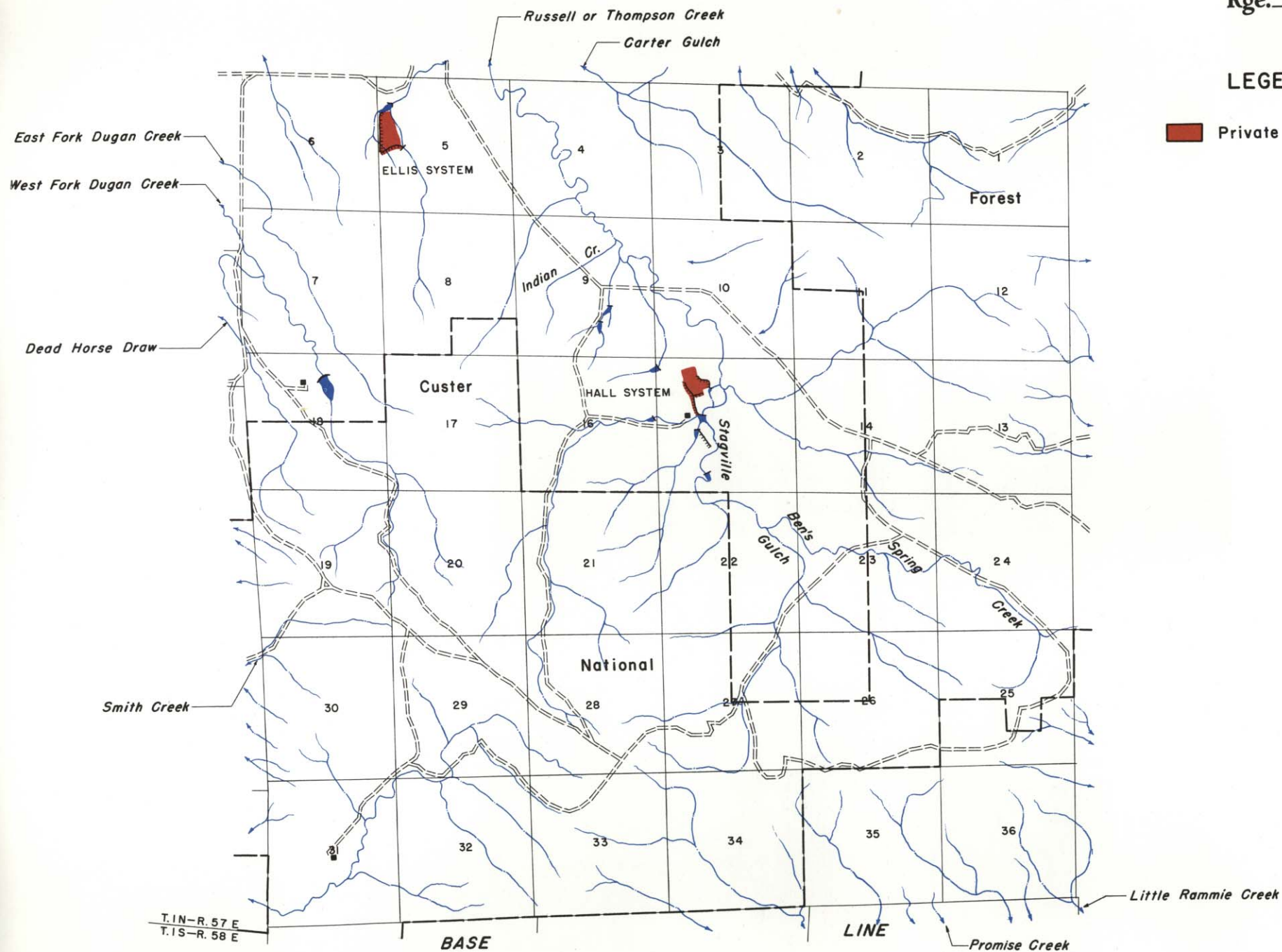
 Private Irrigation



Twp. 1 NORTH
Rge. 58 EAST

LEGEND

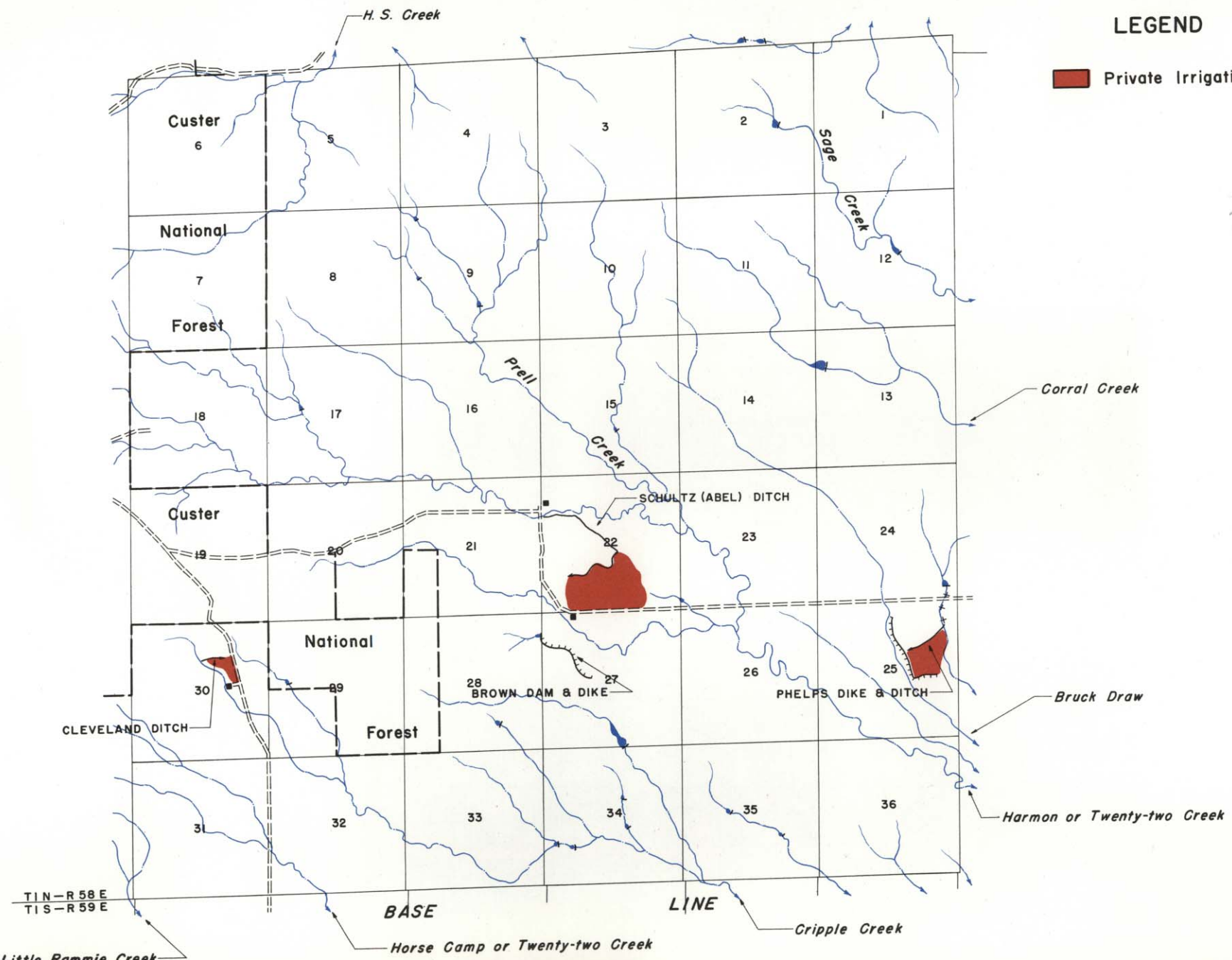
 Private Irrigation



Twp. 1 NORTH
Rge. 59 EAST

LEGEND

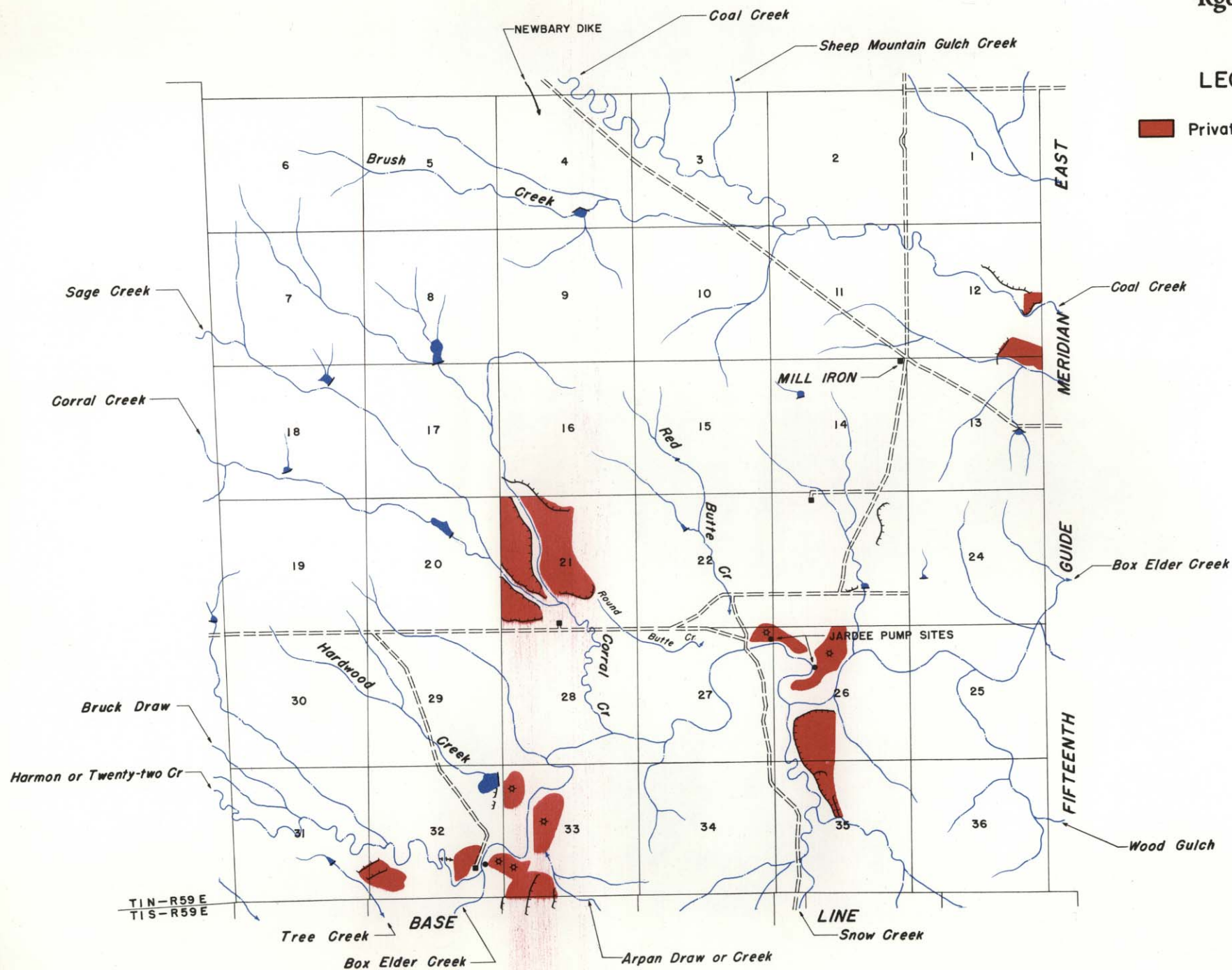
 Private Irrigation



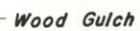
Twp. 1 NORTH
Rge. 60 EAST

LEGEND

 Private Irrigation



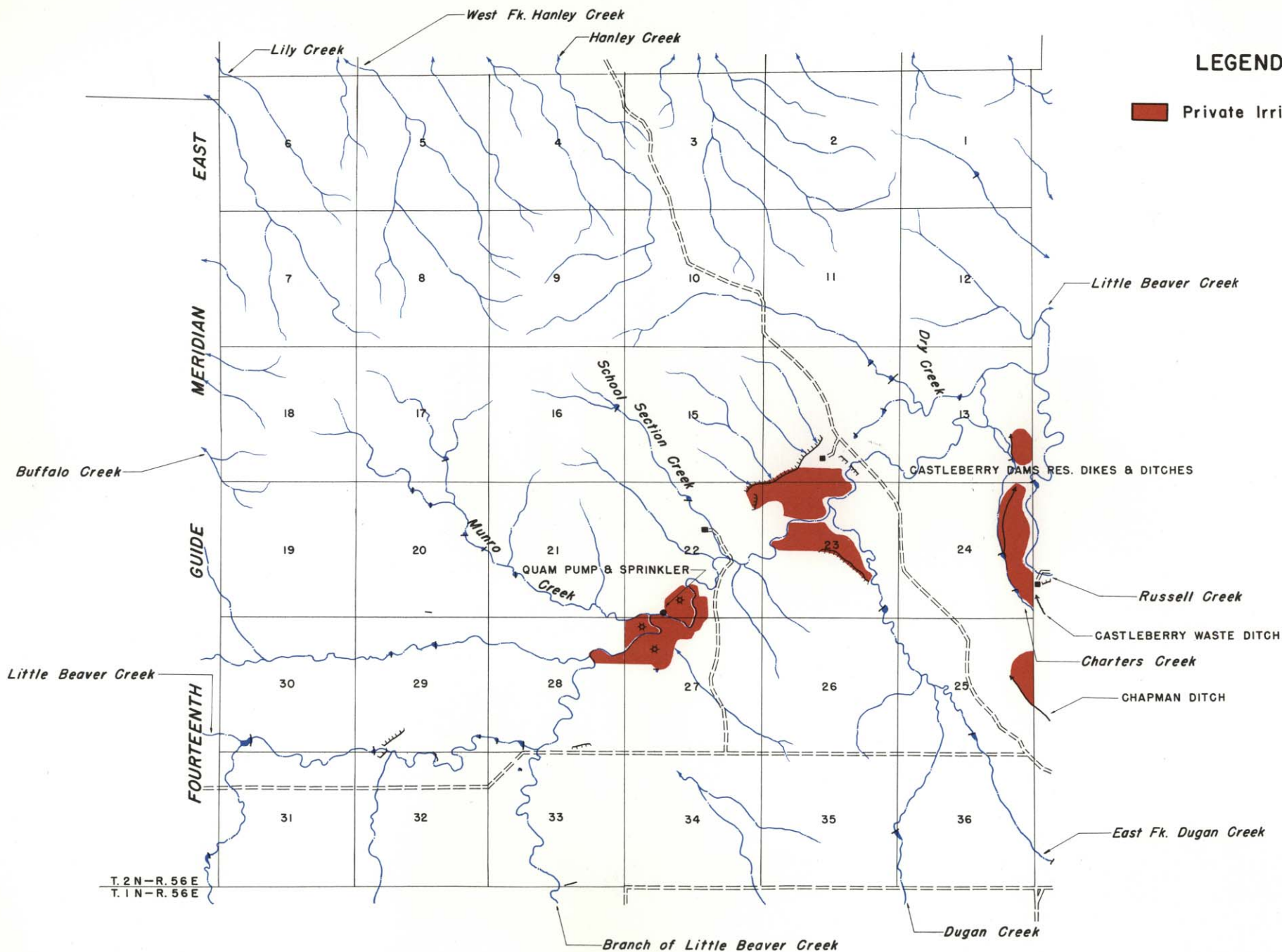
Rge. 61 & 62 EAST



Twp. 2 NORTH
Rge. 57 EAST

LEGEND

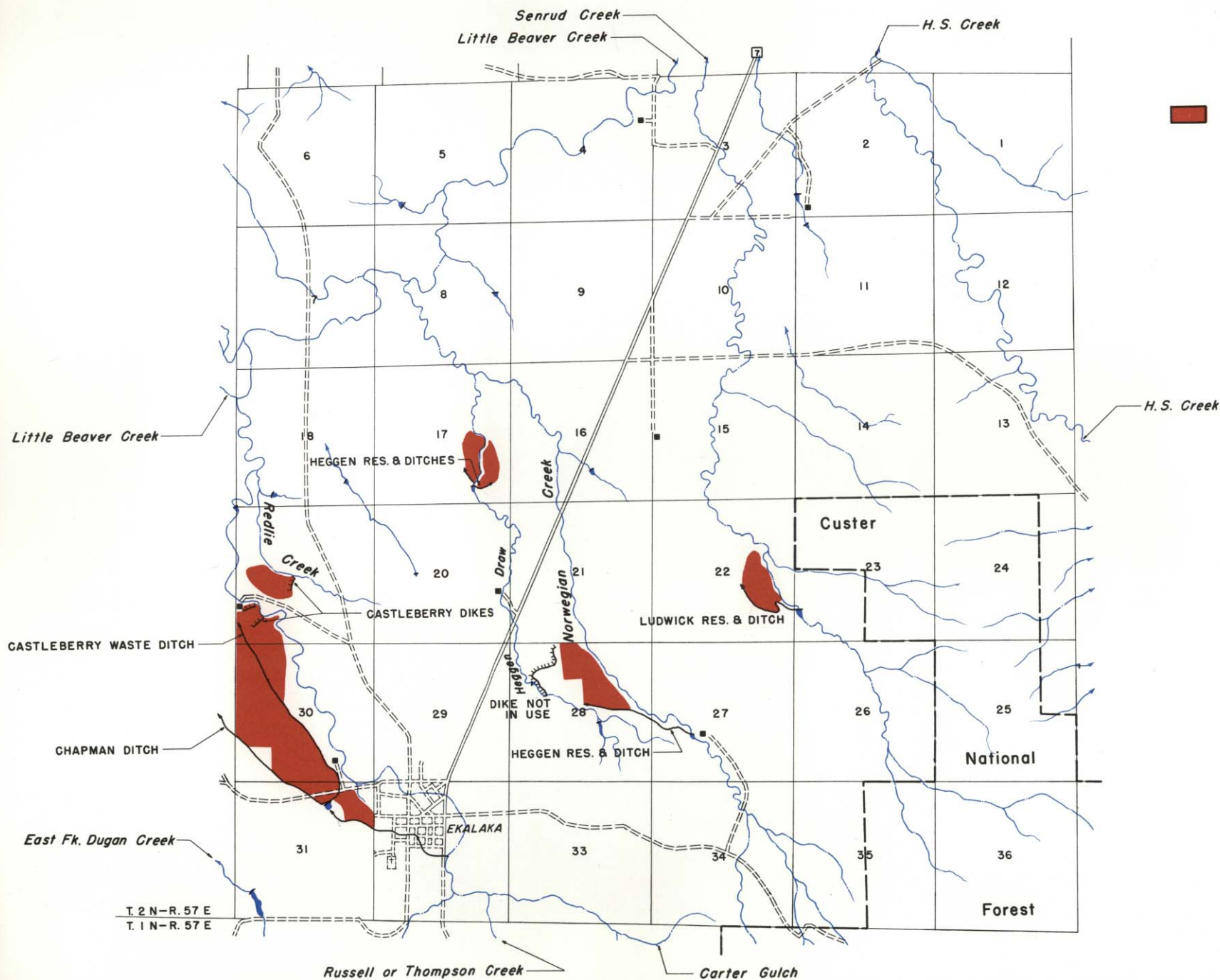
 Private Irrigation



Twp. 2 NORTH
Rge. 58 EAST

LEGEND

 Private Irrigation

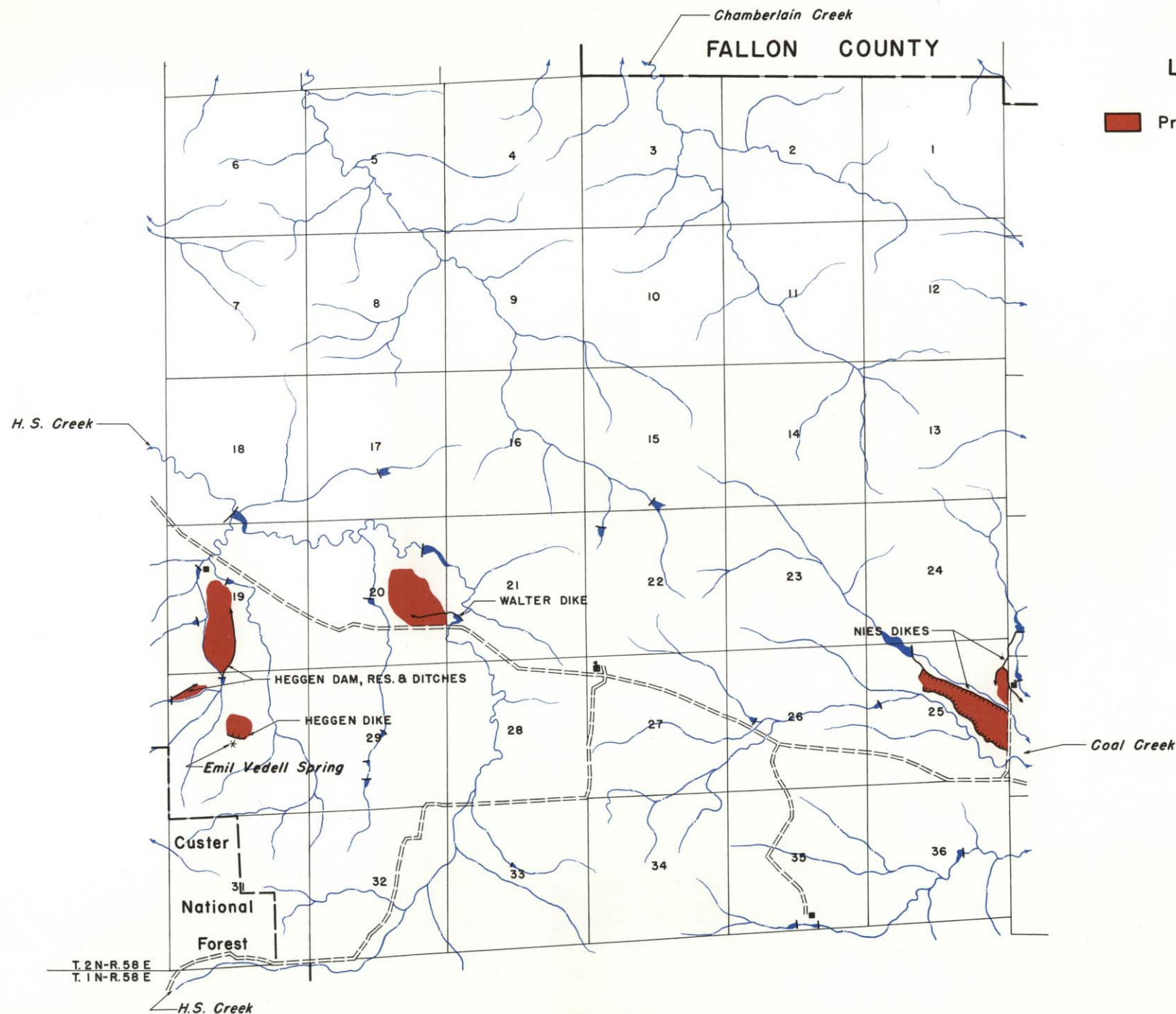


Twp. 2 NORTH
Rge. 59 EAST

Chamberlain Creek
FALLON COUNTY

LEGEND

 Private Irrigation



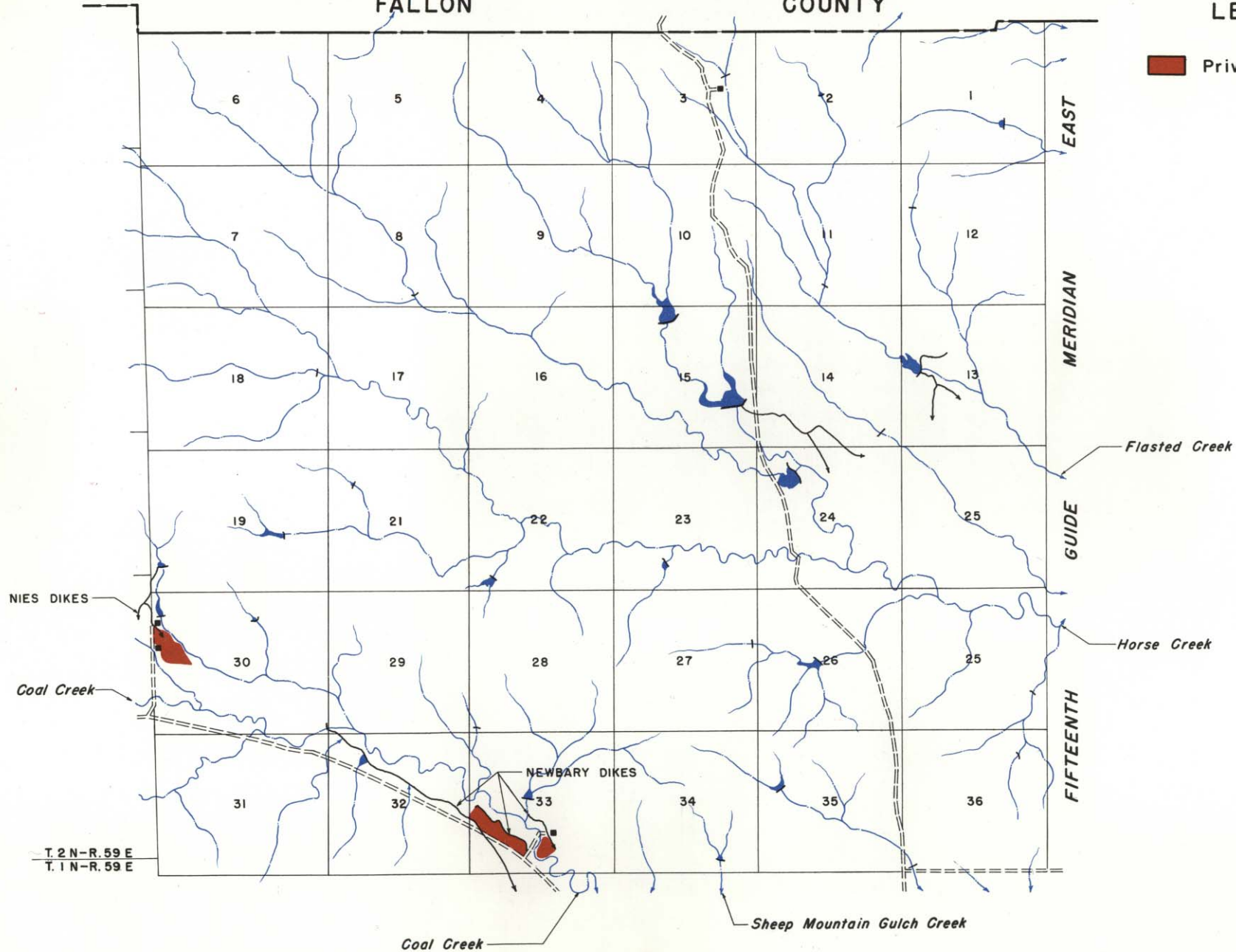
Twp. 2 NORTH
Rge. 60 EAST

FALLON

COUNTY

LEGEND

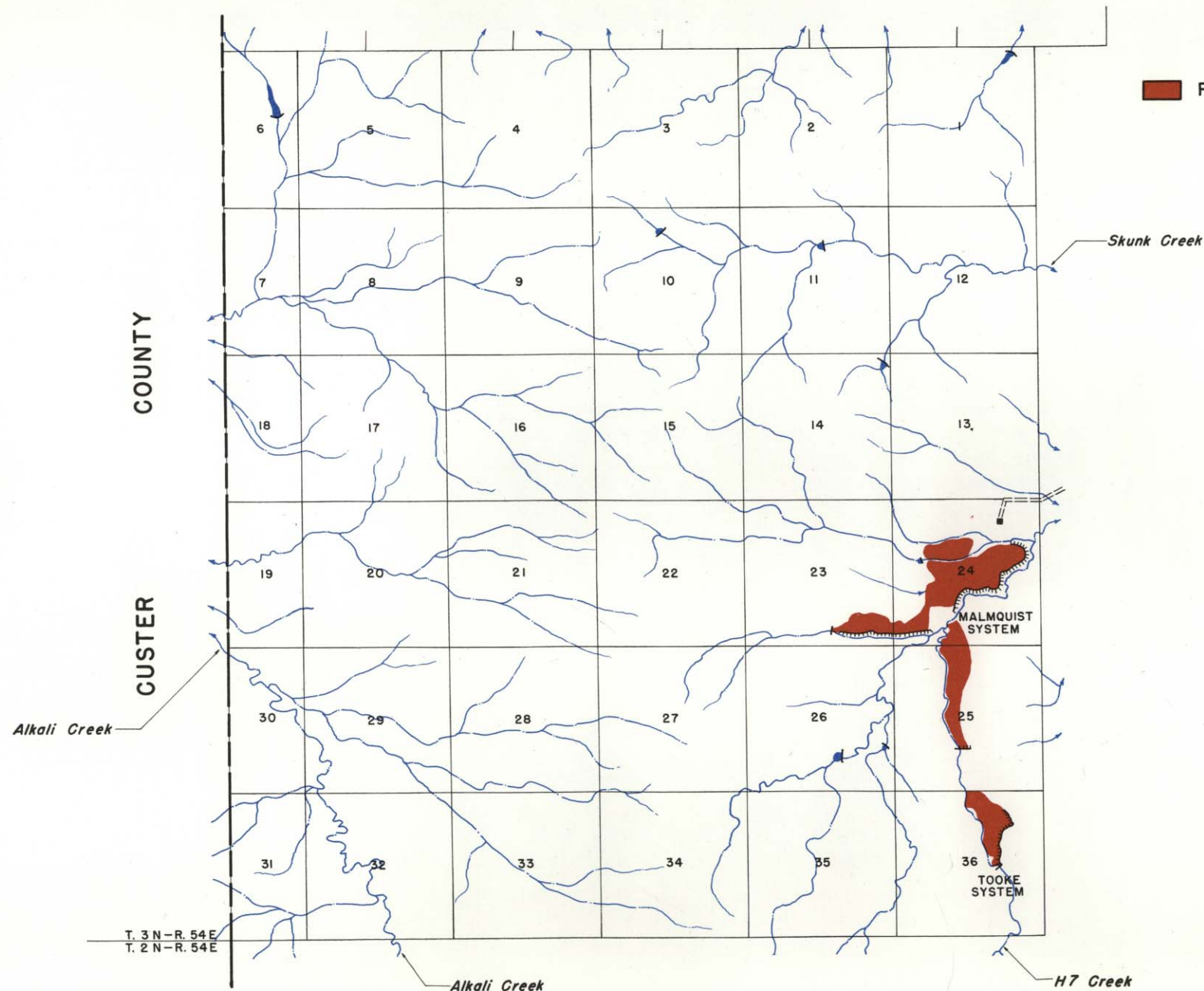
 Private Irrigation



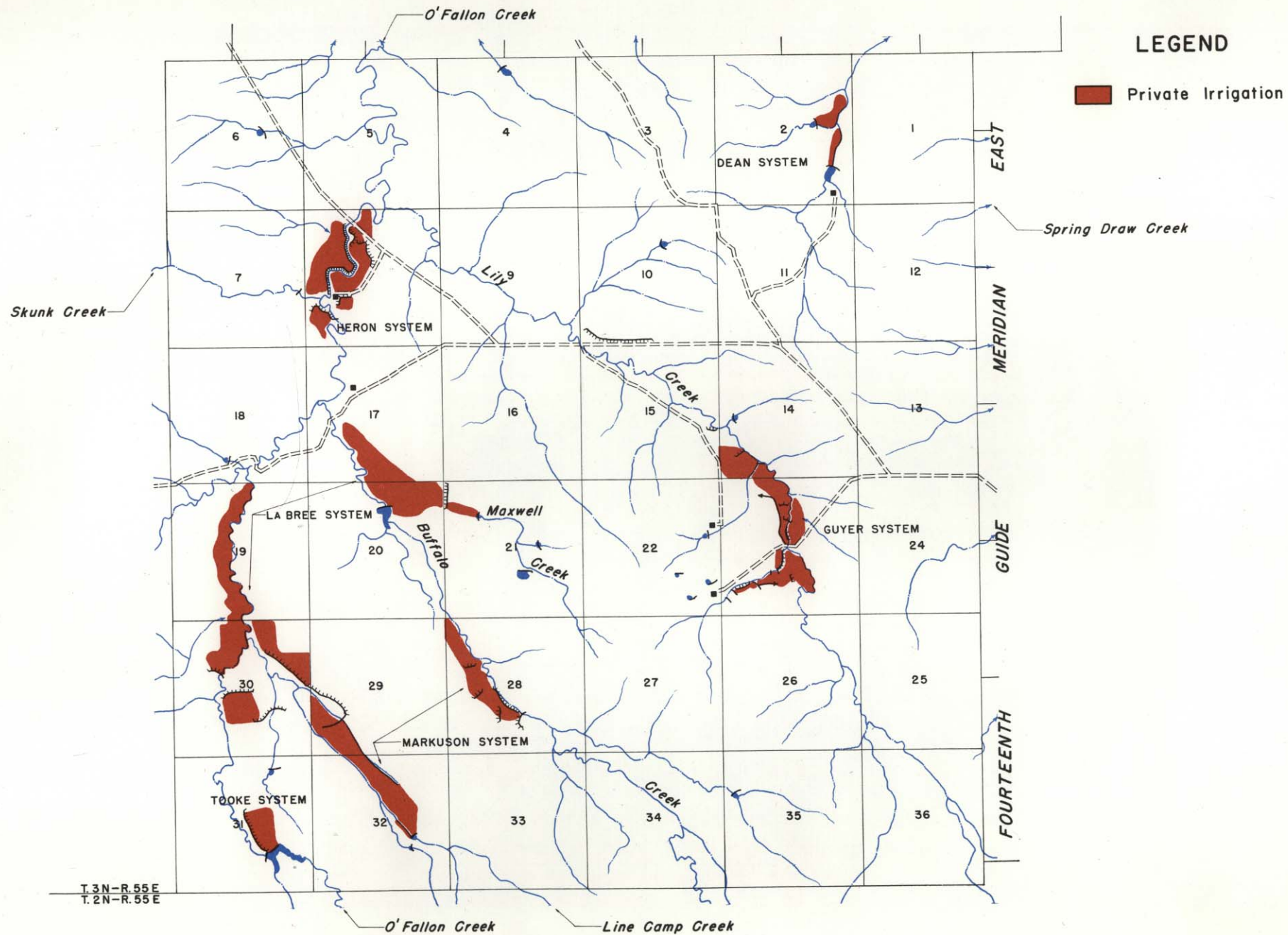
Twp. 3 NORTH
Rge. 55 EAST

LEGEND

 Private Irrigation



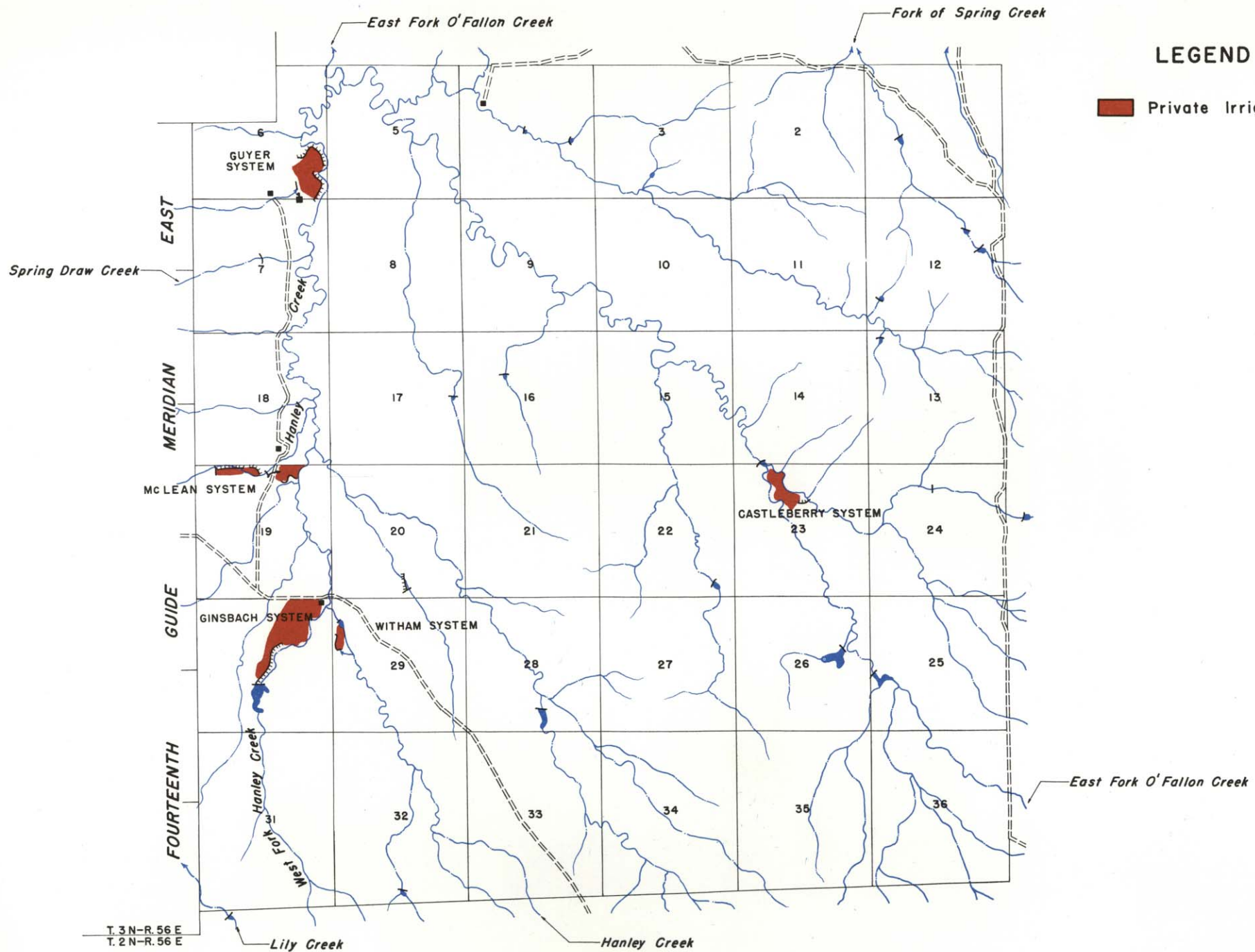
Twp. 3 NORTH
Rge. 56 EAST



Twp. 3 NORTH
Rge. 57 EAST

LEGEND

 Private Irrigation



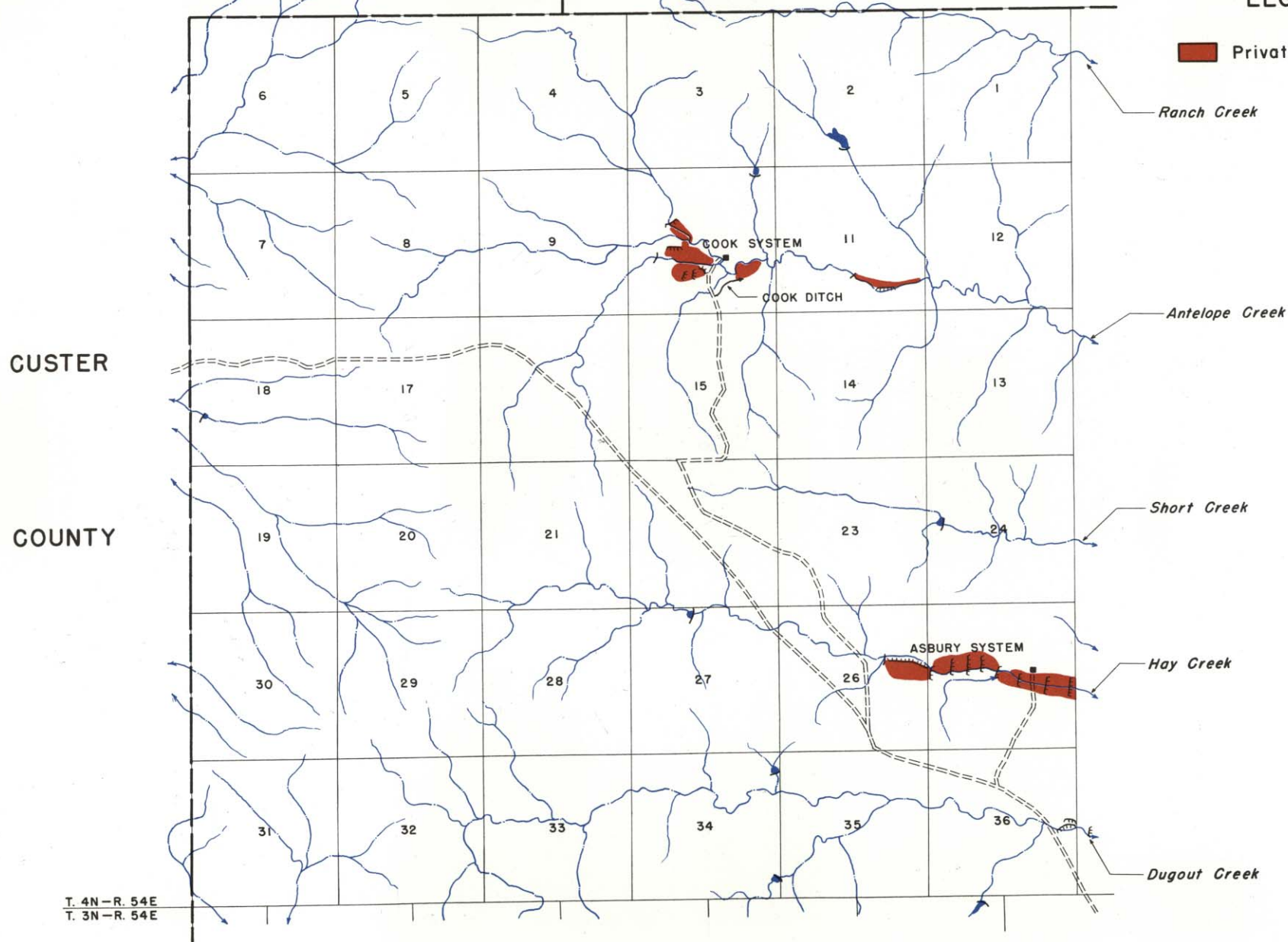
Twp. 4 NORTH
Rge. 55 EAST

CUSTER COUNTY FALLON COUNTY

FIRST STANDARD PARALLEL NORTH

LEGEND

 Private Irrigation



T. 4N-R. 54E
T. 3N-R. 54E

Twp. 4 NORTH
Rge. 56 EAST

FALLON

COUNTY

FIRST

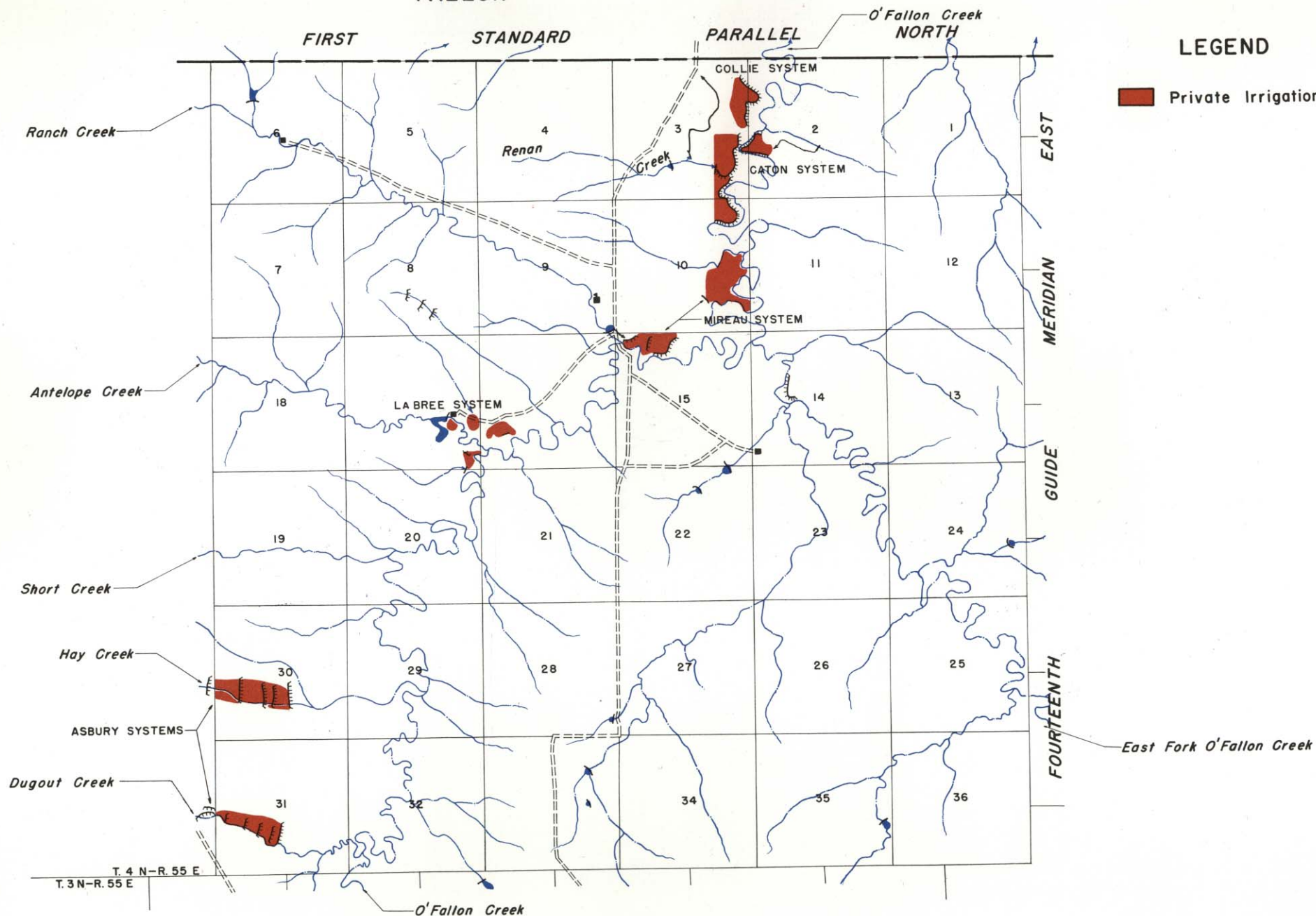
STANDARD

PARALLEL

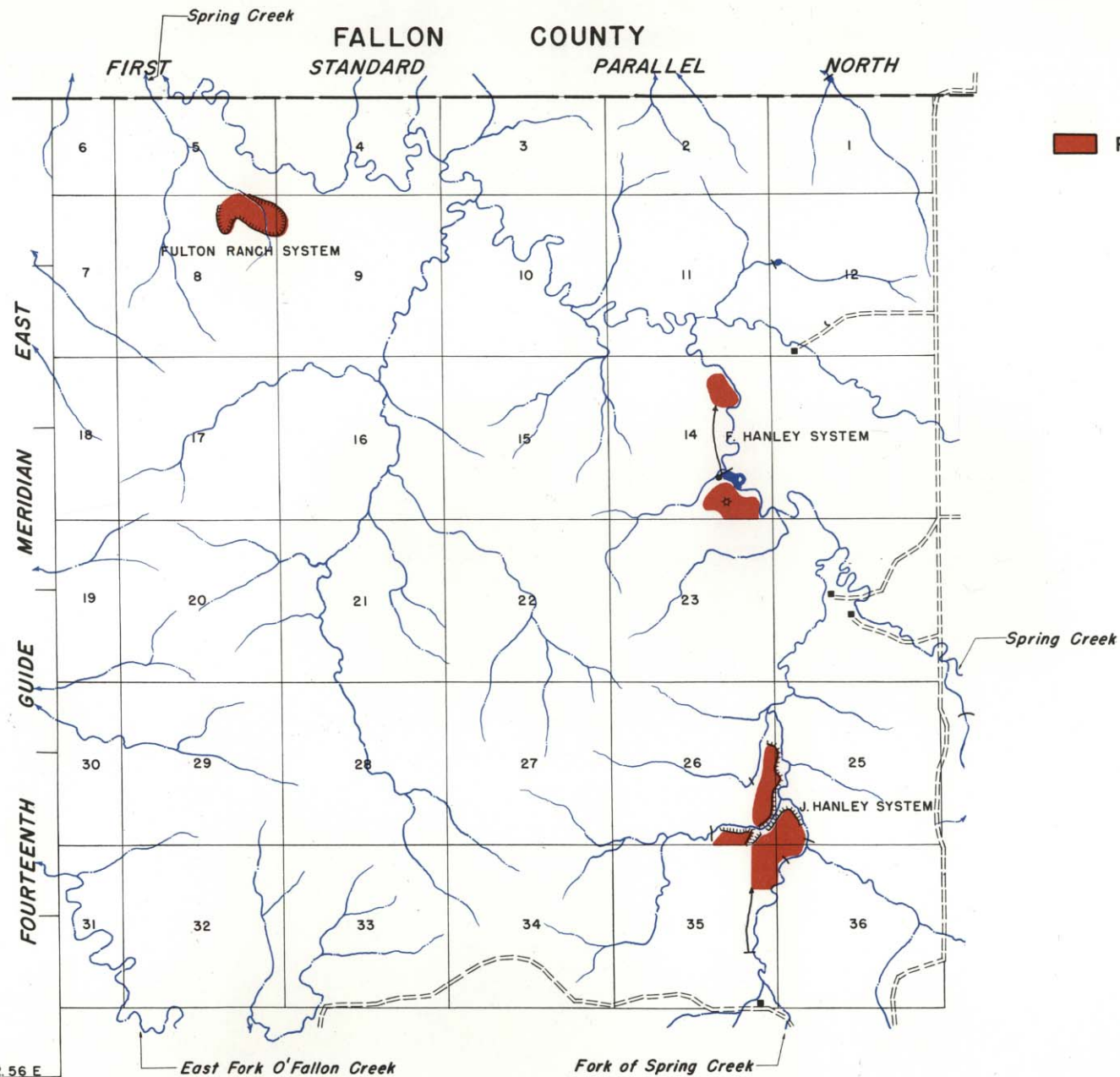
O'Fallon Creek
NORTH

LEGEND

 Private Irrigation



Twp. 4 NORTH
Rge. 57 EAST



Twp. 4 NORTH
Rge. 58 EAST

FALLON COUNTY

FIRST

STANDARD

PARALLEL

NORTH

LEGEND

 Private Irrigation

South Fork Milk Creek

RATH SYSTEM

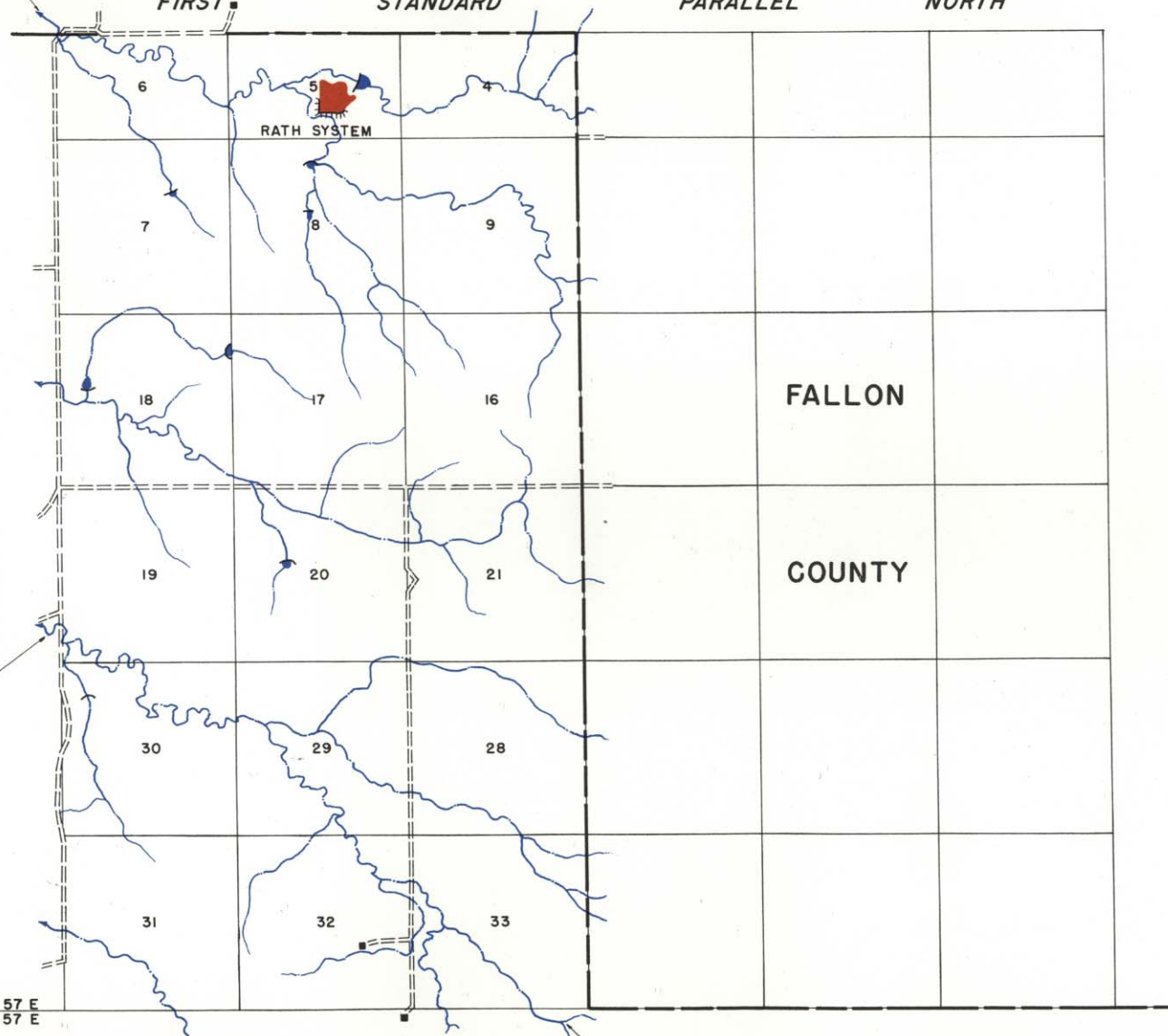
FALLON

COUNTY

Spring Creek

T. 4N-R. 57 E
T. 3N-R. 57 E

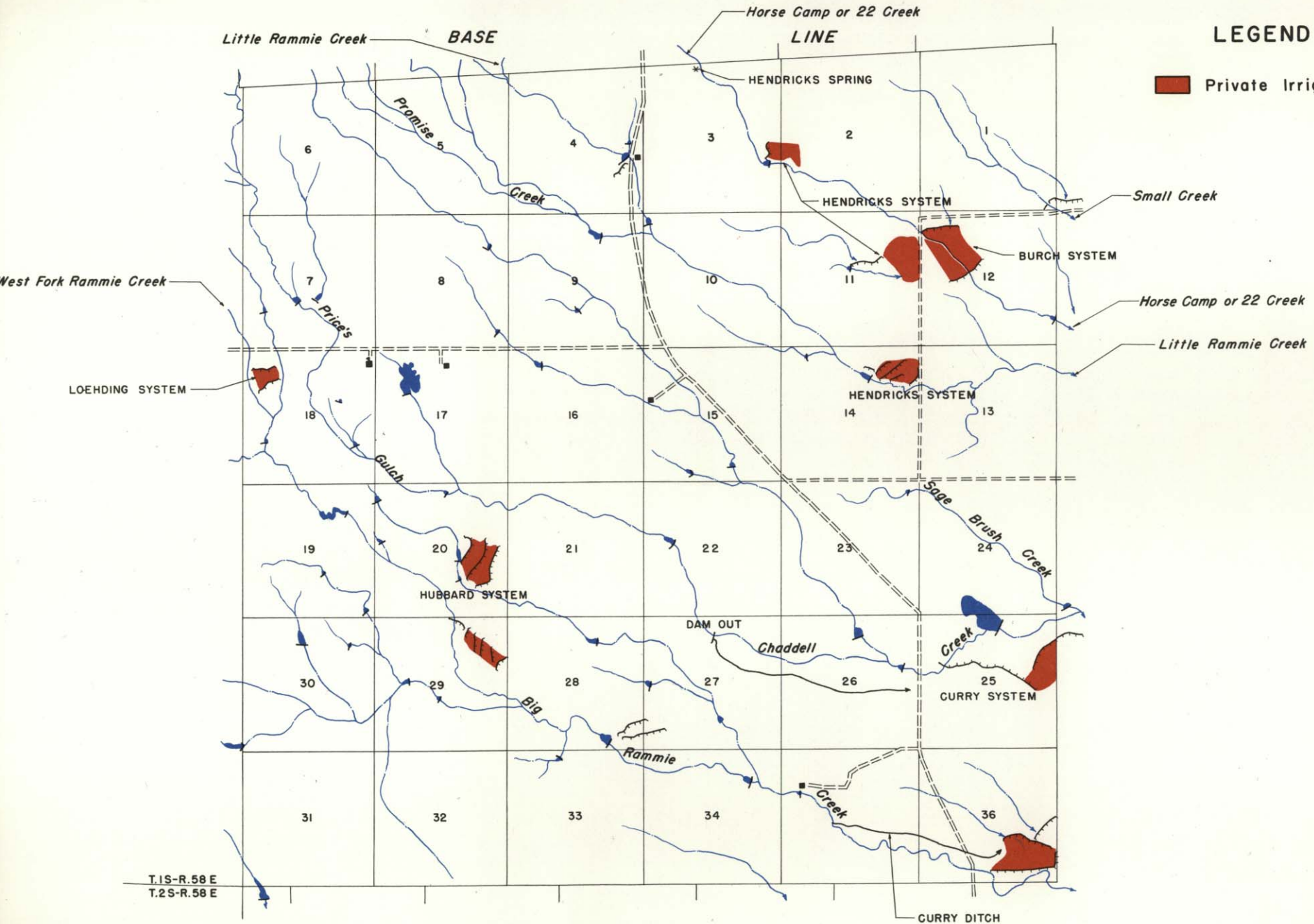
Spring Creek



Twp. 1 SOUTH
Rge. 59 EAST


LEGEND

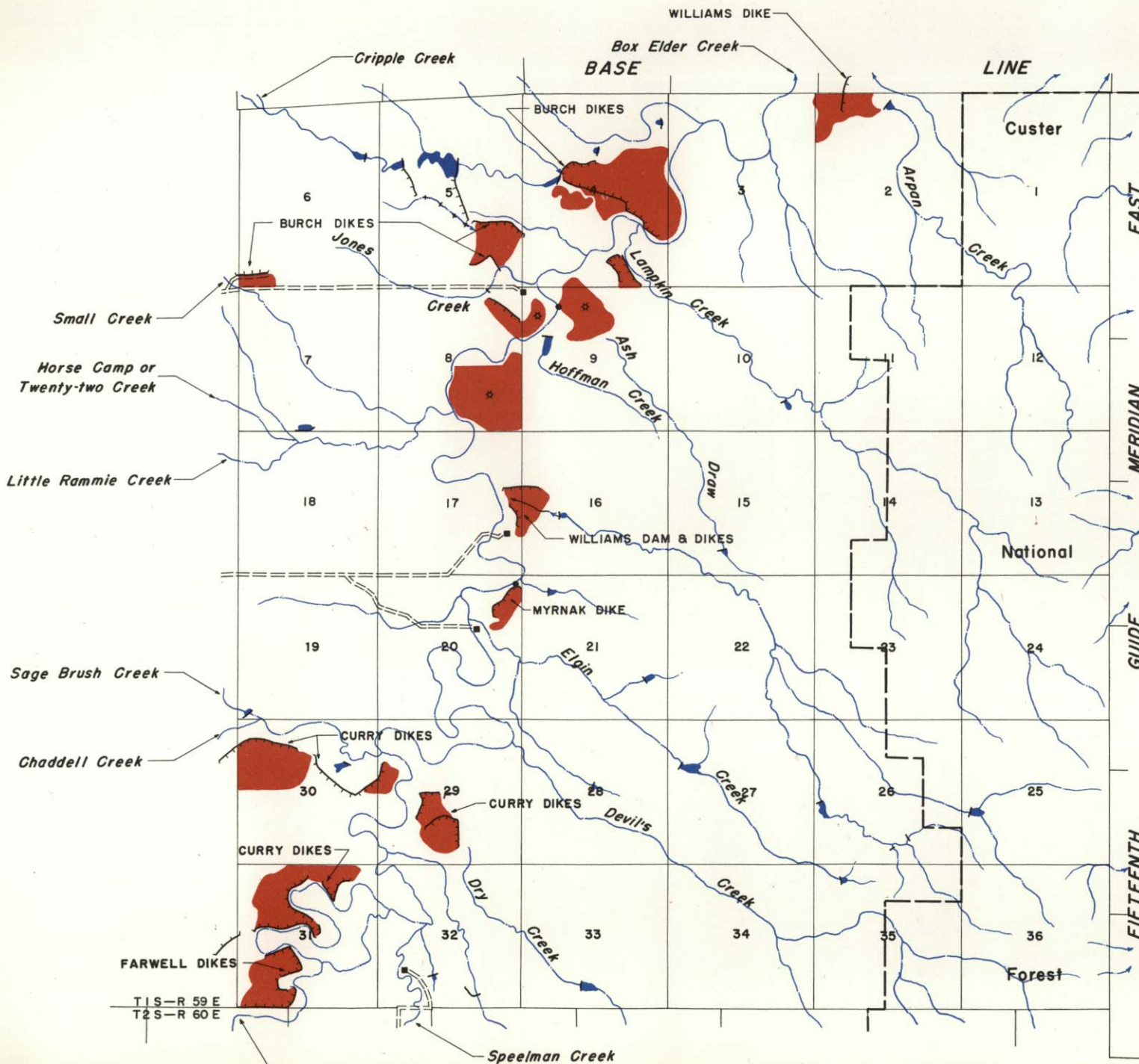
 Private Irrigation



Twp. 1 SOUTH
Rge. 60 EAST


LEGEND

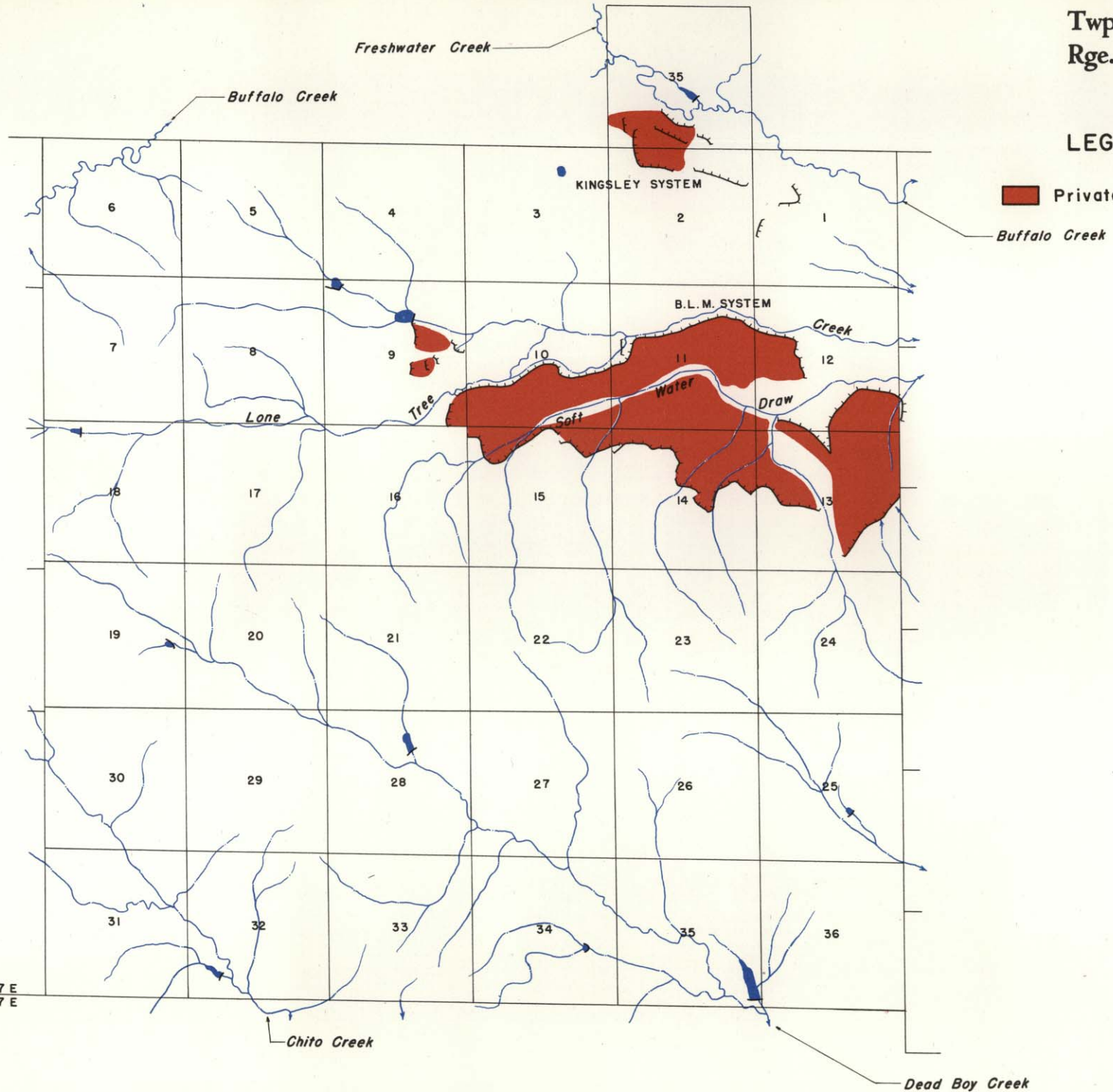
 Private Irrigation



Twp. 182 SOUTH
Rge. 58 EAST

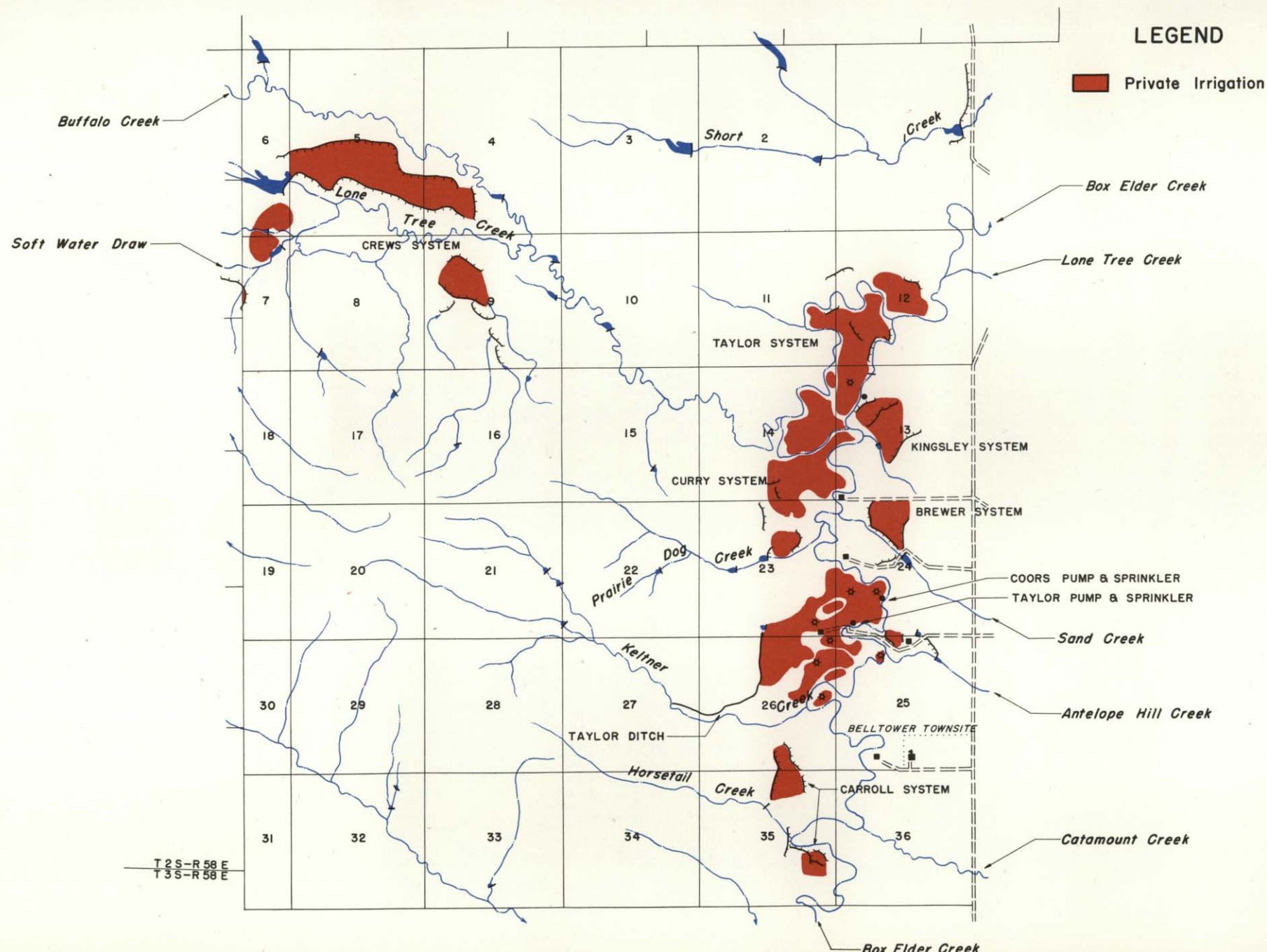
LEGEND

 Private Irrigation



T. 2 S—R. 57 E
T. 3 S—R. 57 E

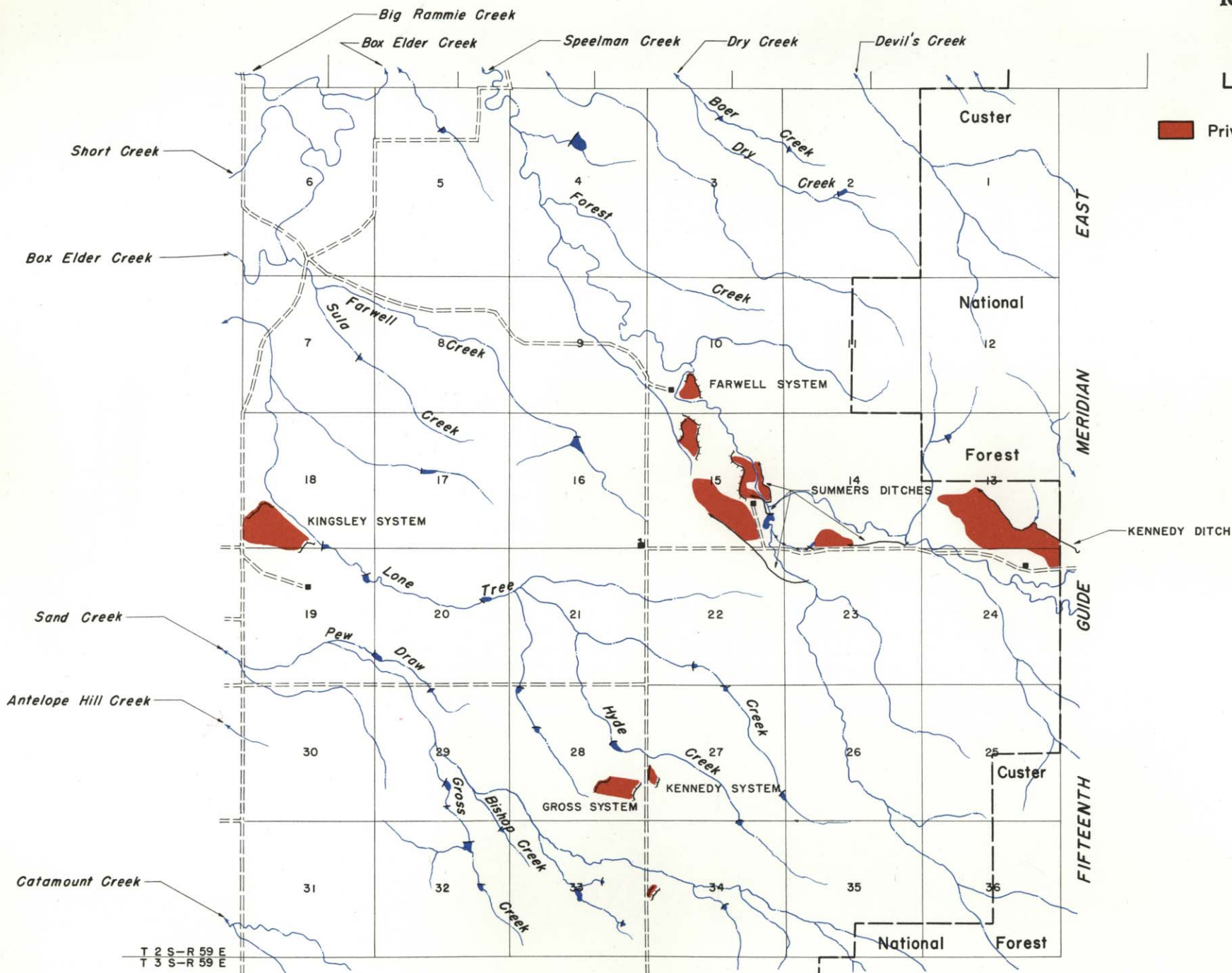
Twp. 2 SOUTH
Rge. 59 EAST



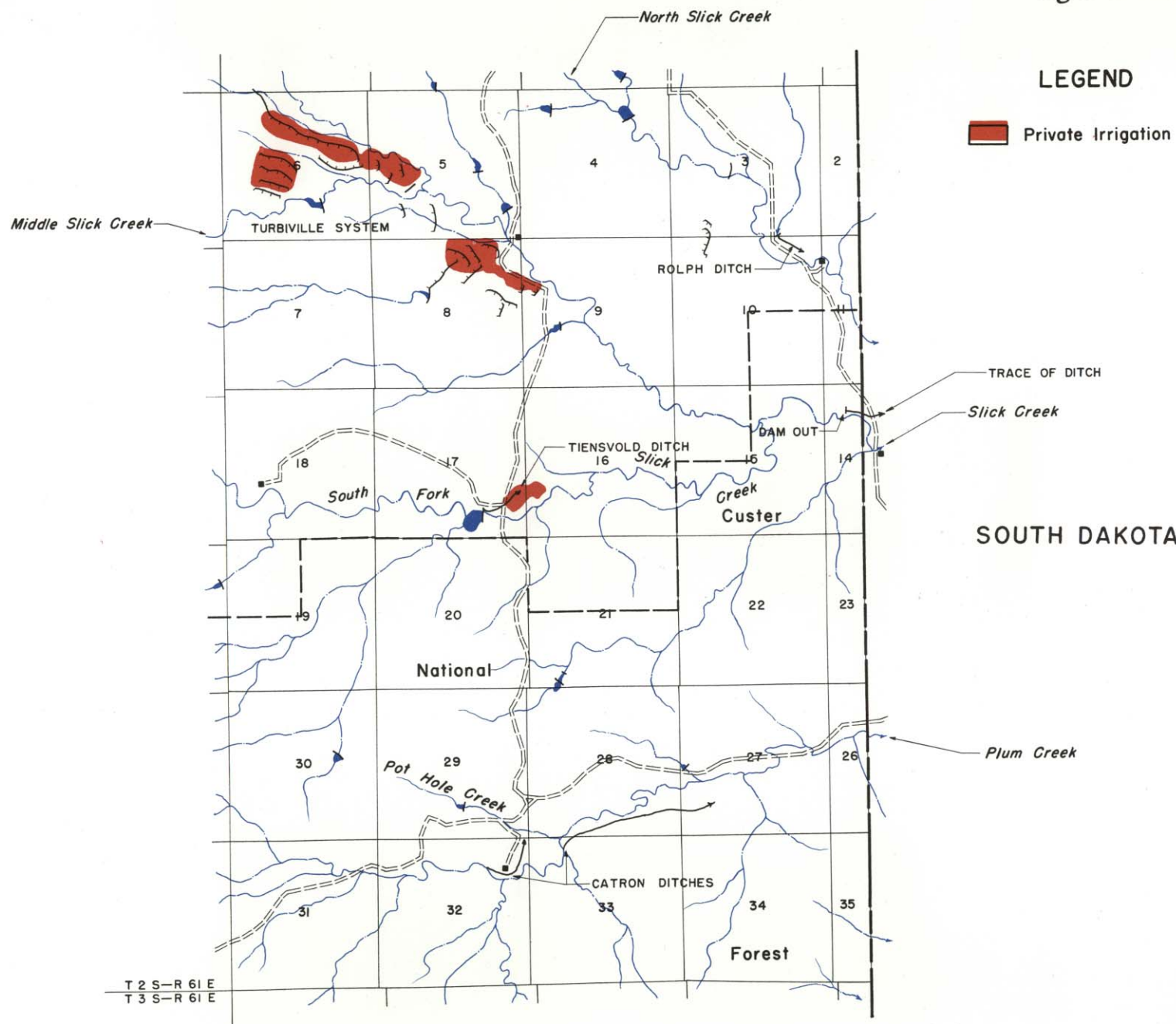
Twp. 2 SOUTH
Rge. 60 EAST

LEGEND

Private Irrigation



Twp. 2 SOUTH
Rge. 62 EAST

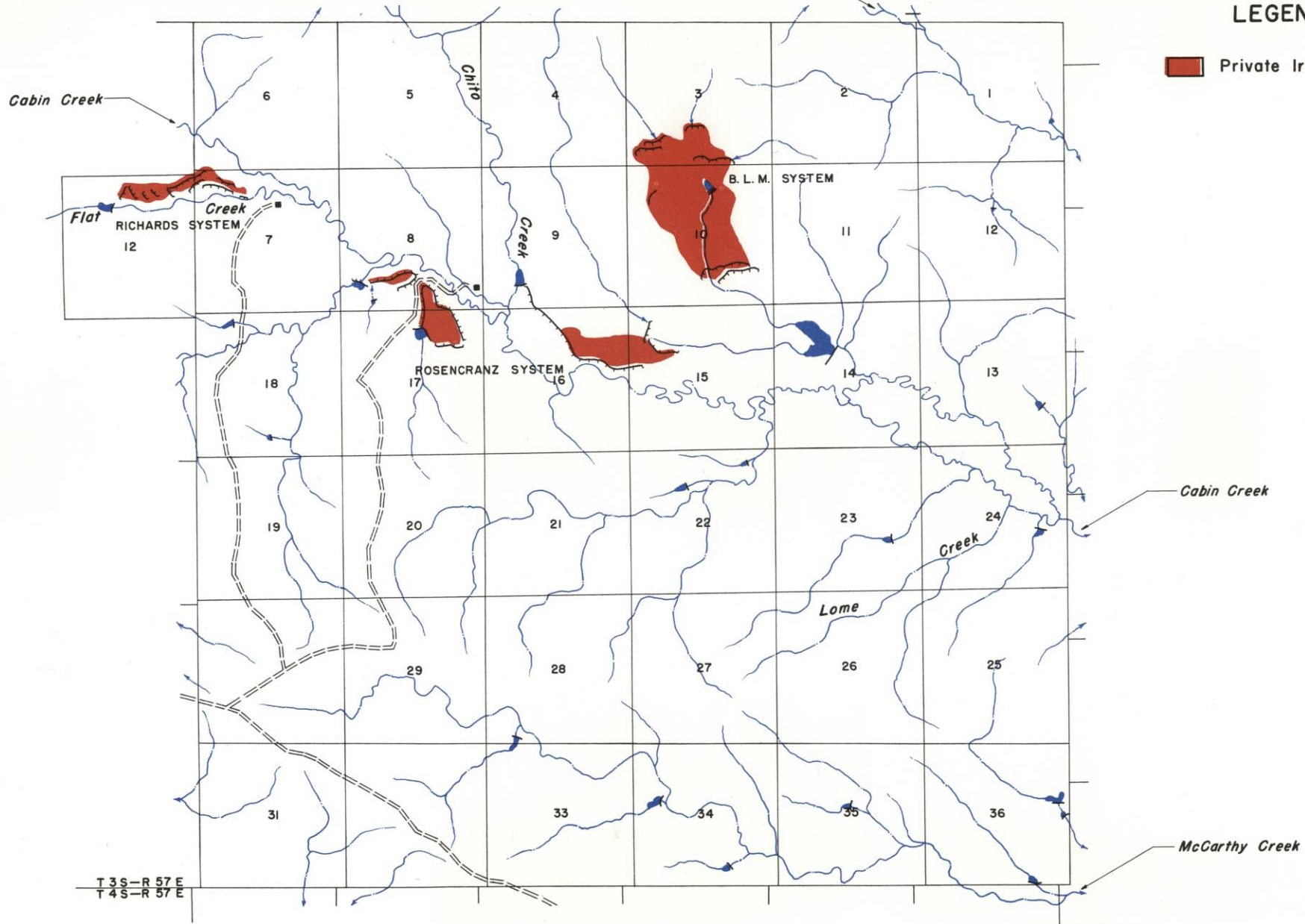


Twp. 3 SOUTH
Rge. 58 EAST

Dead Boy Creek

LEGEND

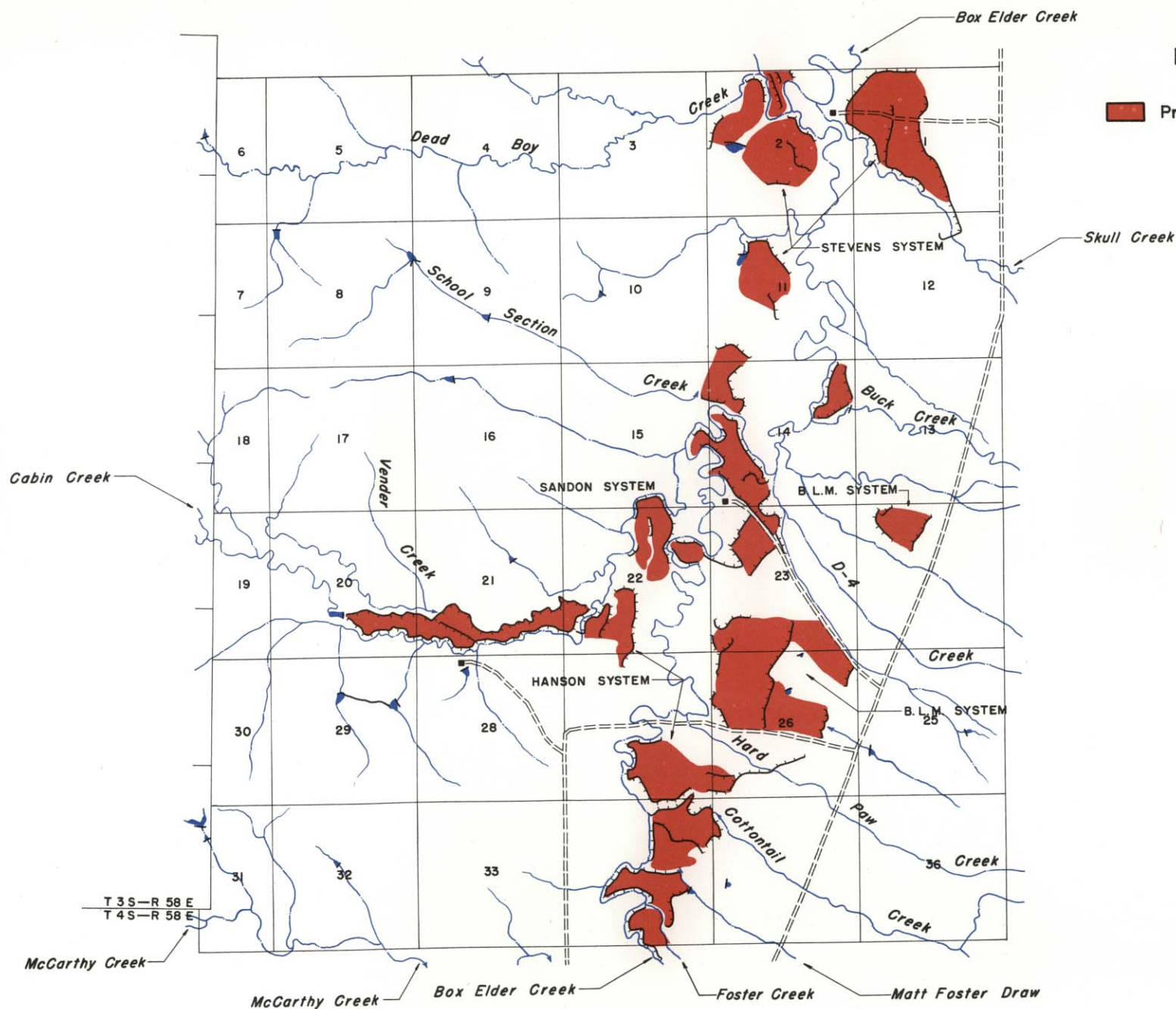
 Private Irrigation



Twp. 3 SOUTH
Rge. 59 EAST

LEGEND

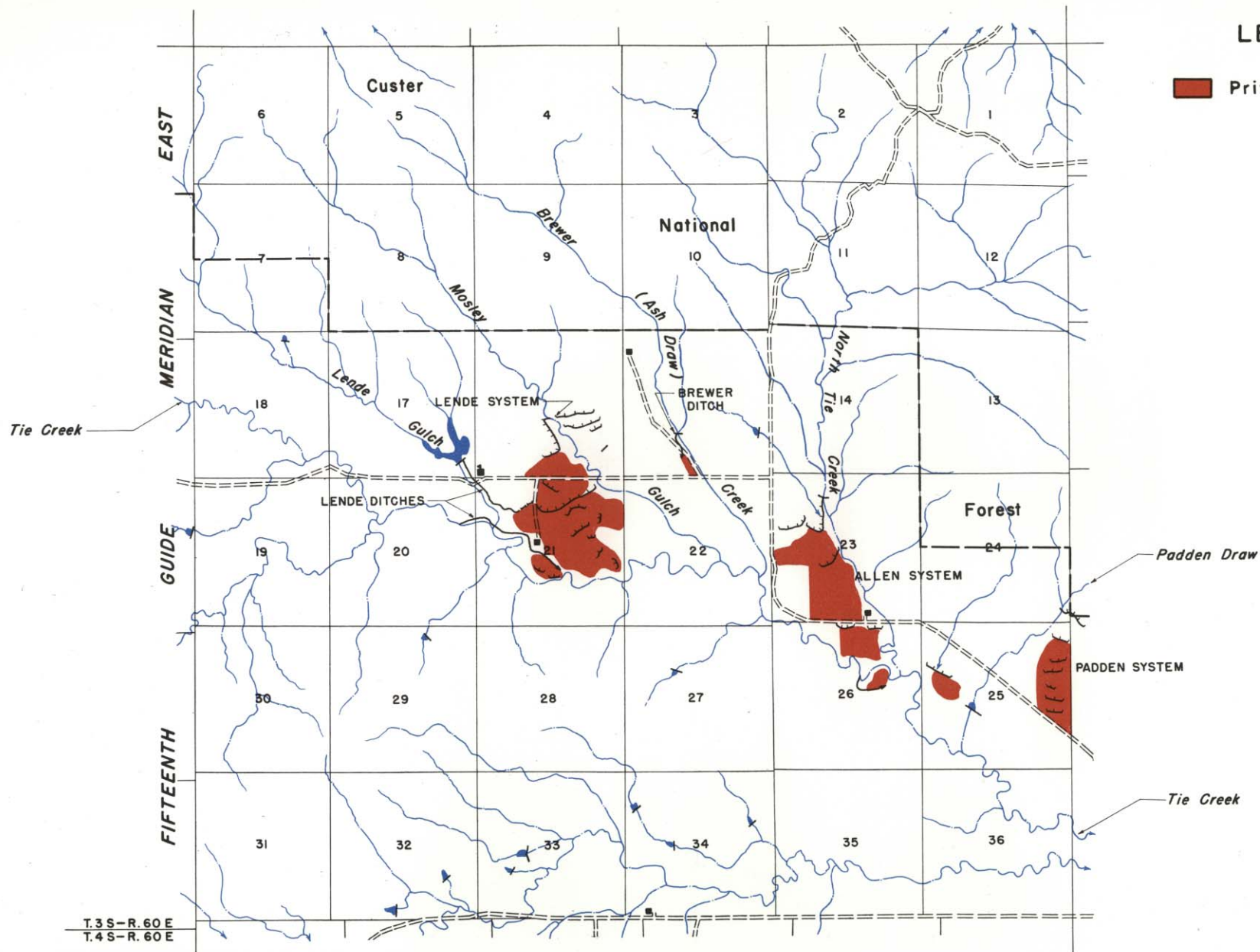
 Private Irrigation



Twp. 3 SOUTH
Rge. 61 EAST

LEGEND

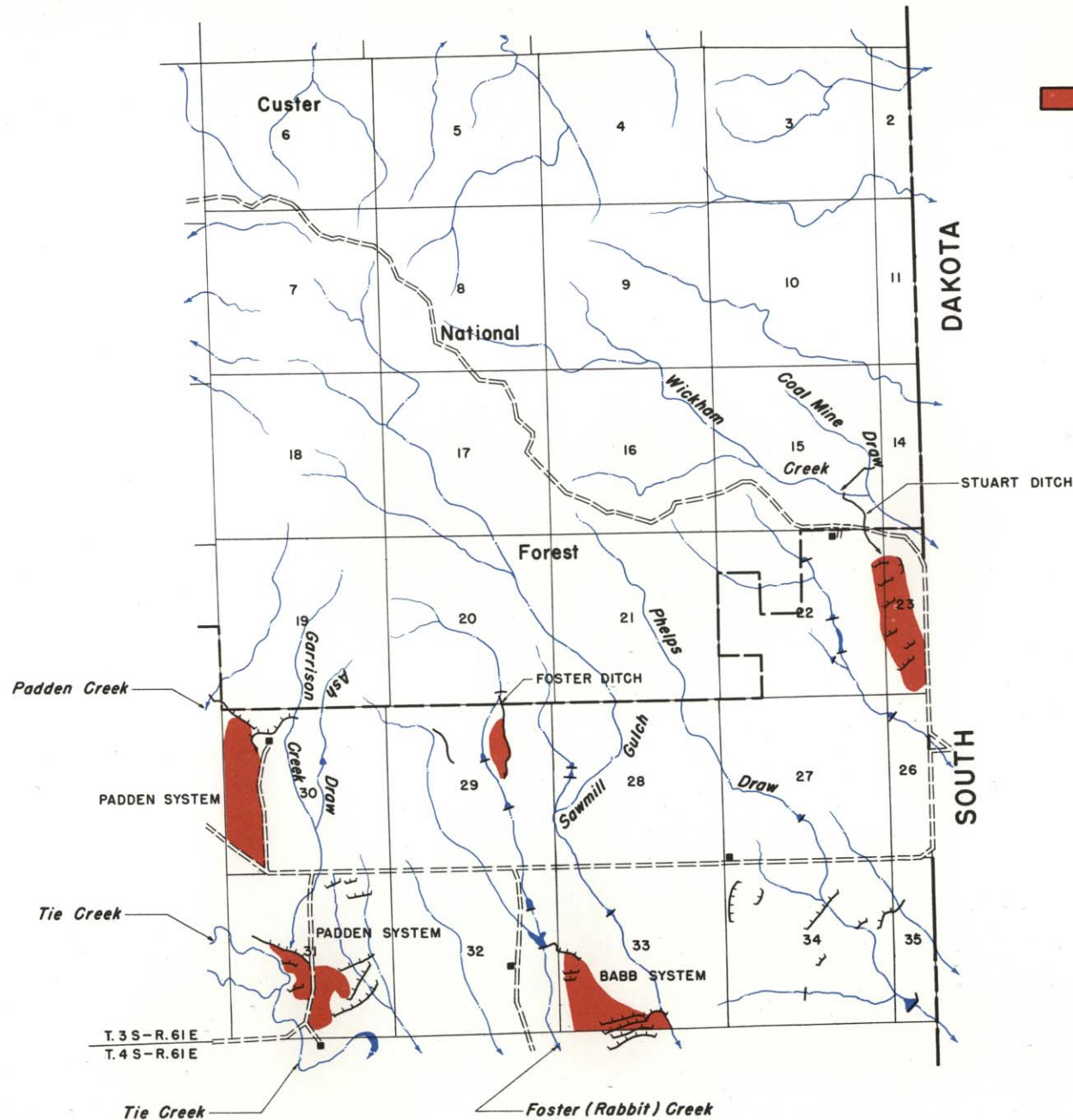
 Private Irrigation



Twp. 3 SOUTH
Rge. 62 EAST

LEGEND

 Private Irrigation

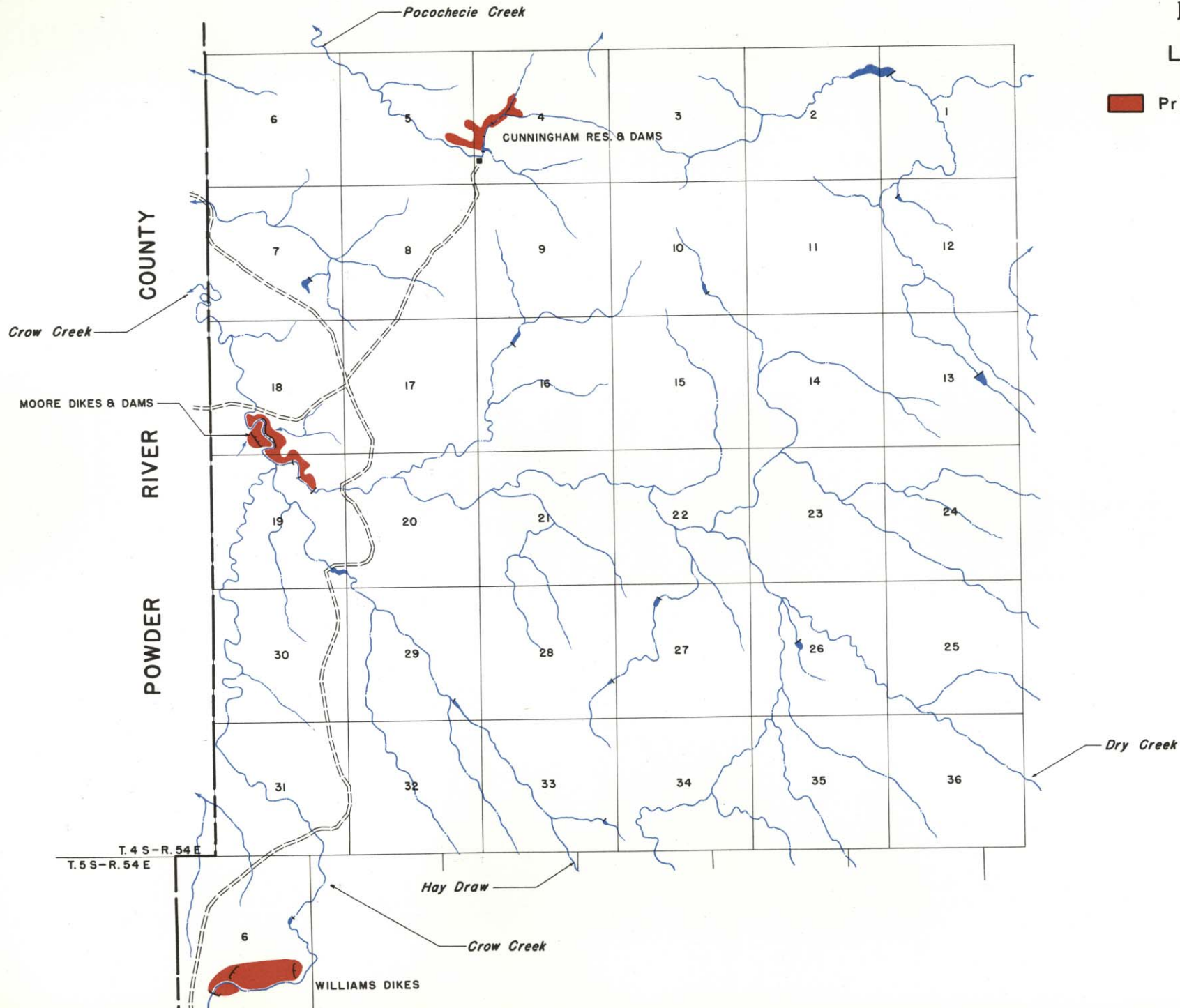


Twp. 4 SOUTH

Rge. 55 EAST

LEGEND

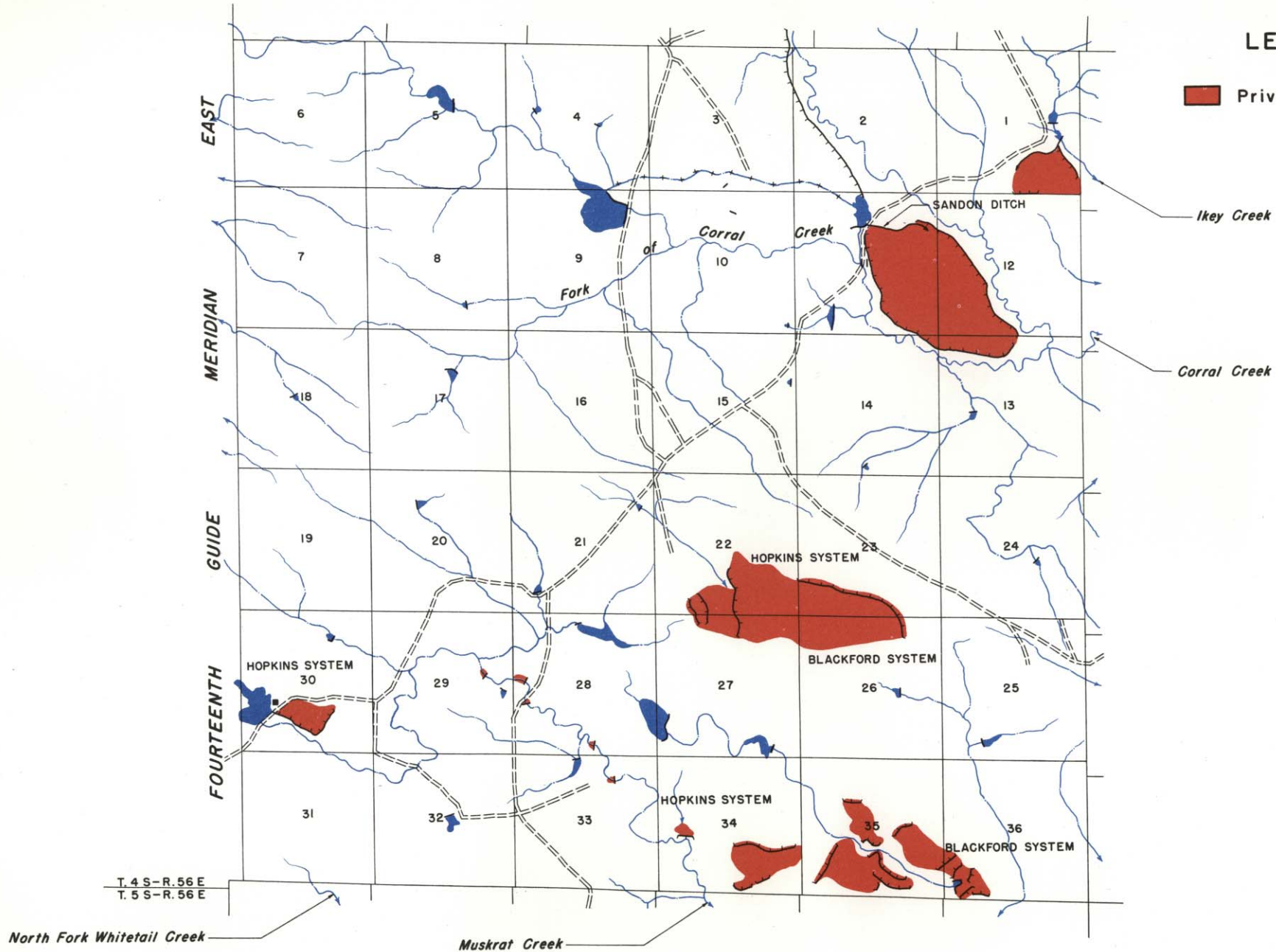
 Private Irrigation



Twp. 4 SOUTH
Rge. 57 EAST

LEGEND

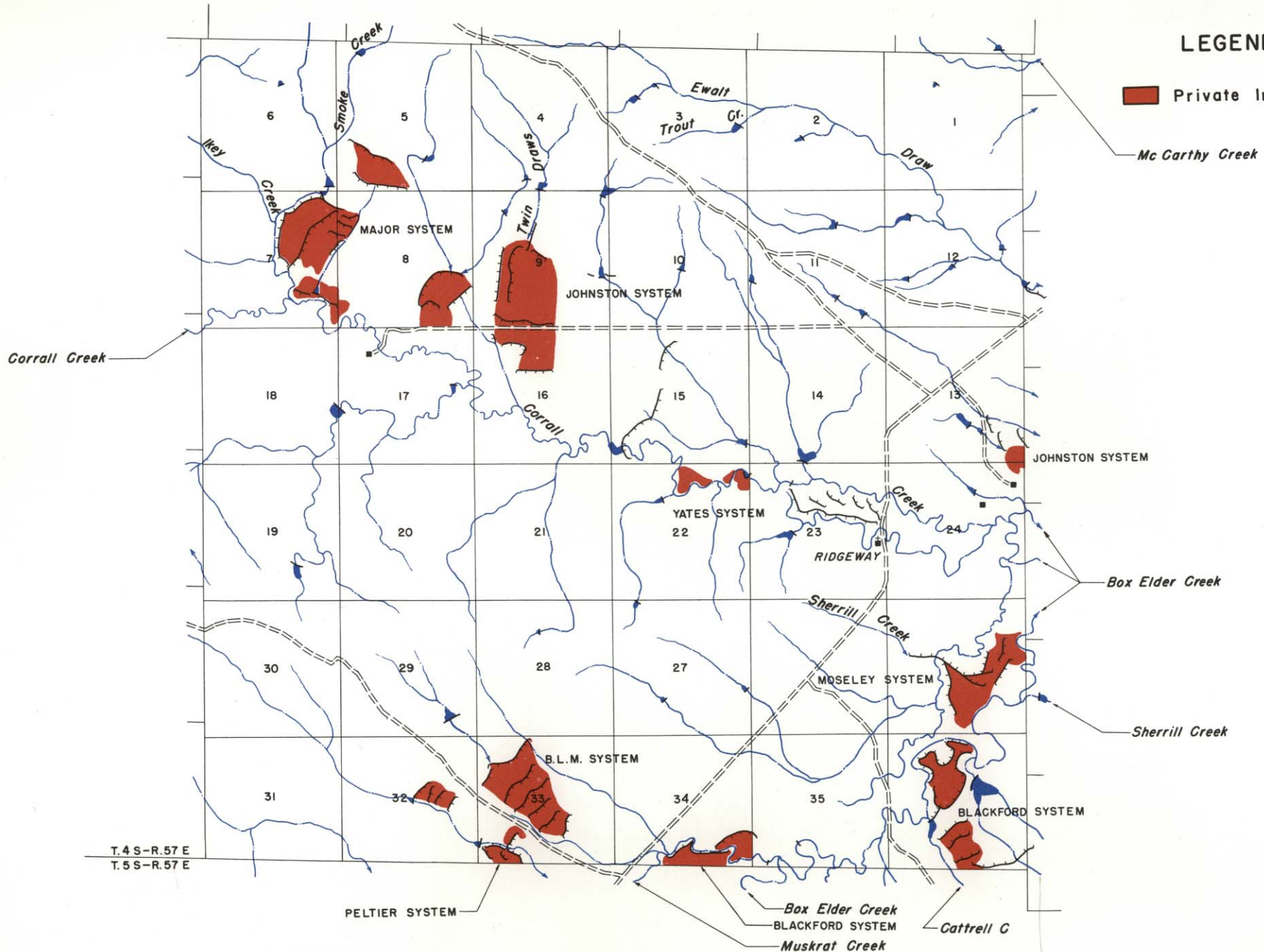
 Private Irrigation



Twp. 4 SOUTH
Rge. 58 EAST

LEGEND

 Private Irrigation

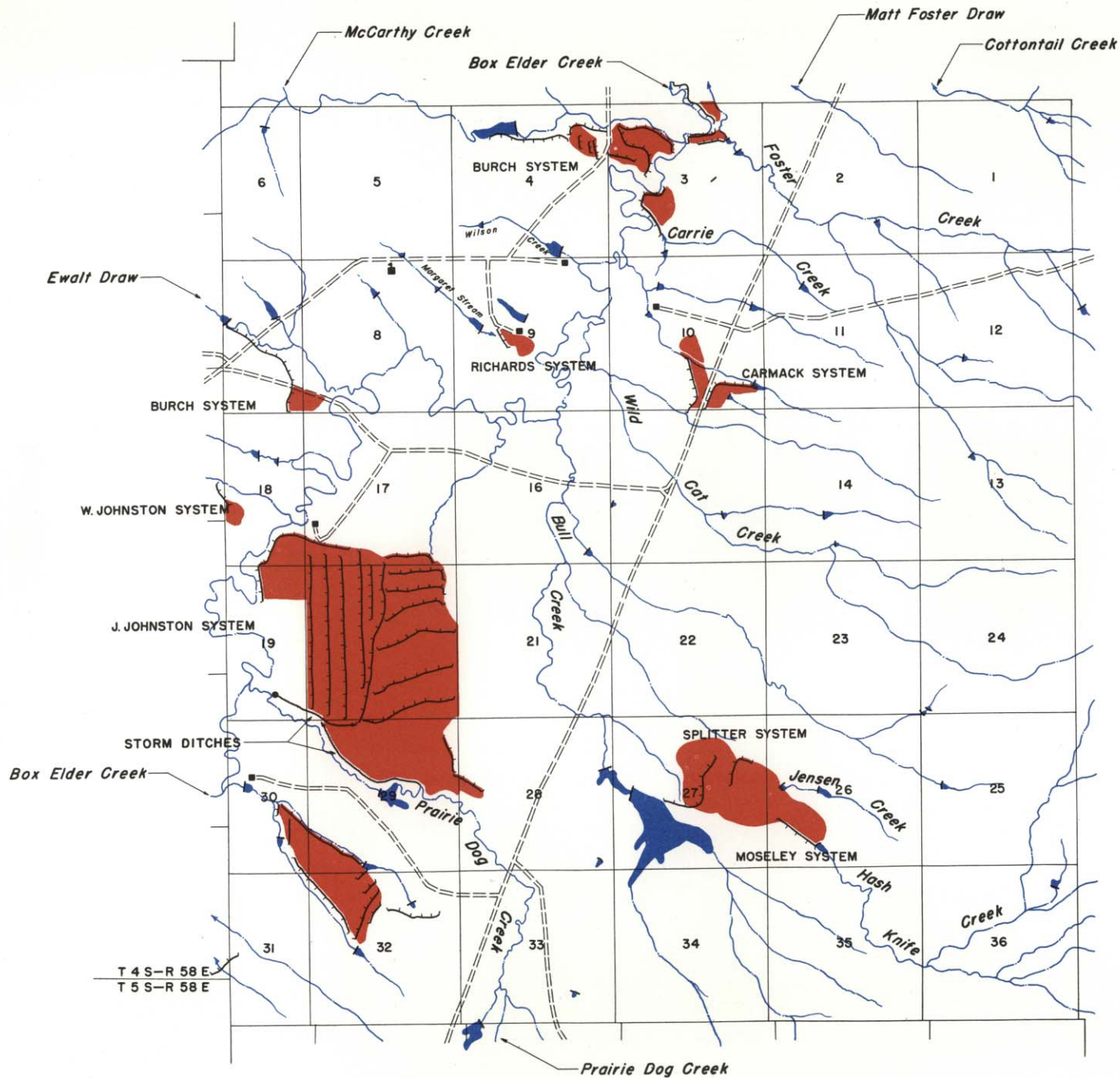


Twp. 4 SOUTH

Rge. 59 EAST

LEGEND

 Private Irrigation

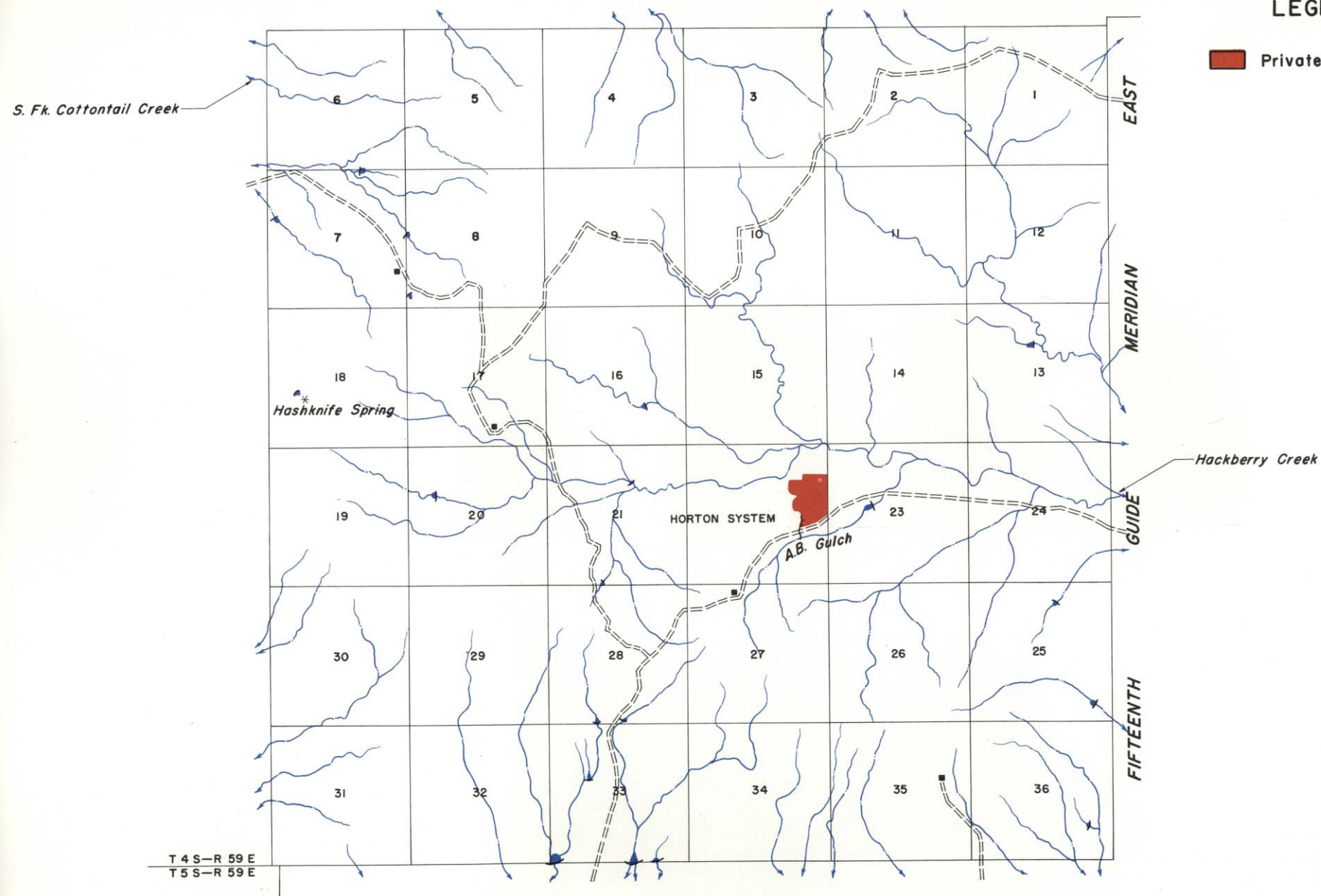


Twp. 4 SOUTH

Rge. 60 EAST

LEGEND

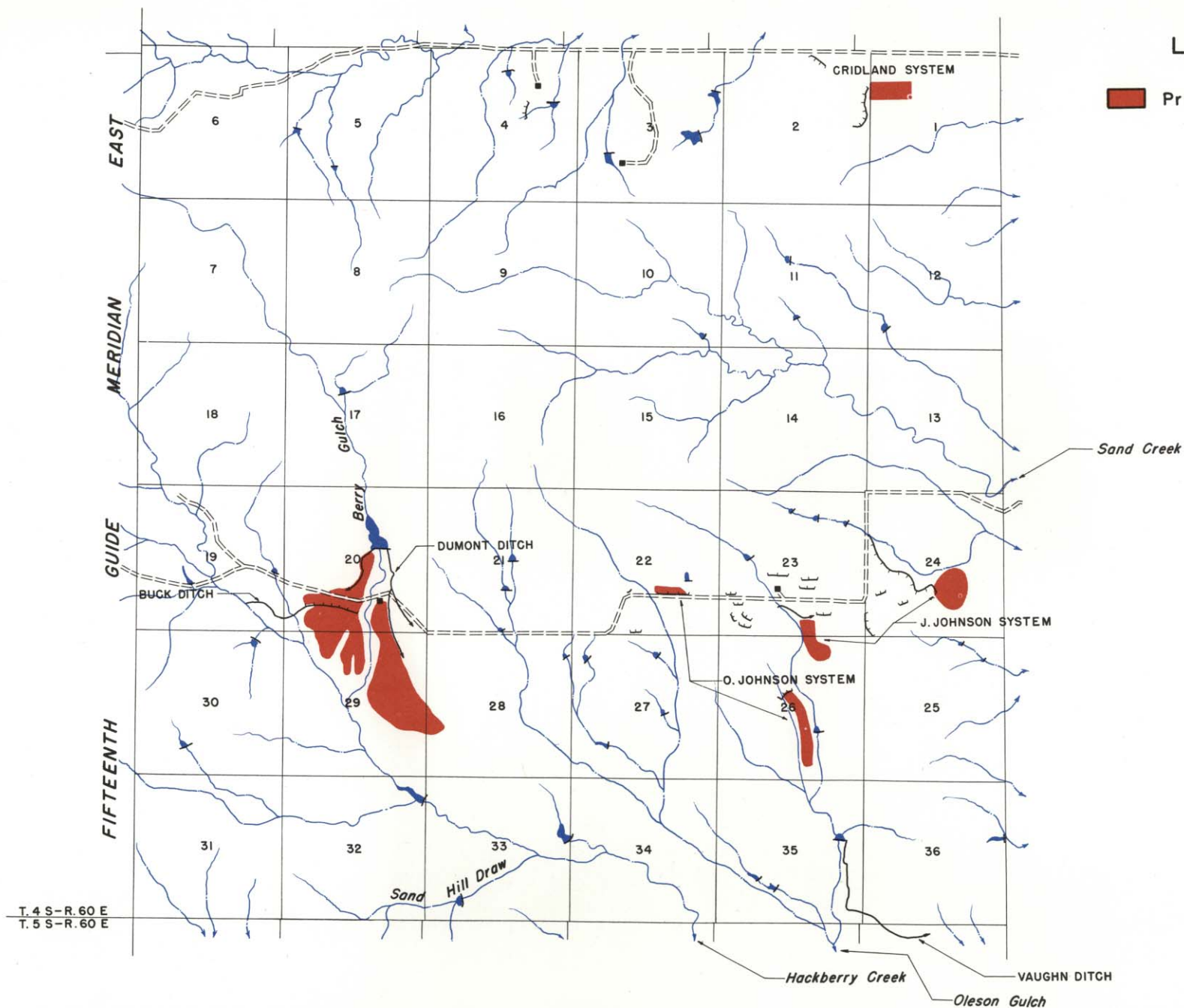
 Private Irrigation



Twp. 4 SOUTH
Rge. 61 EAST

LEGEND

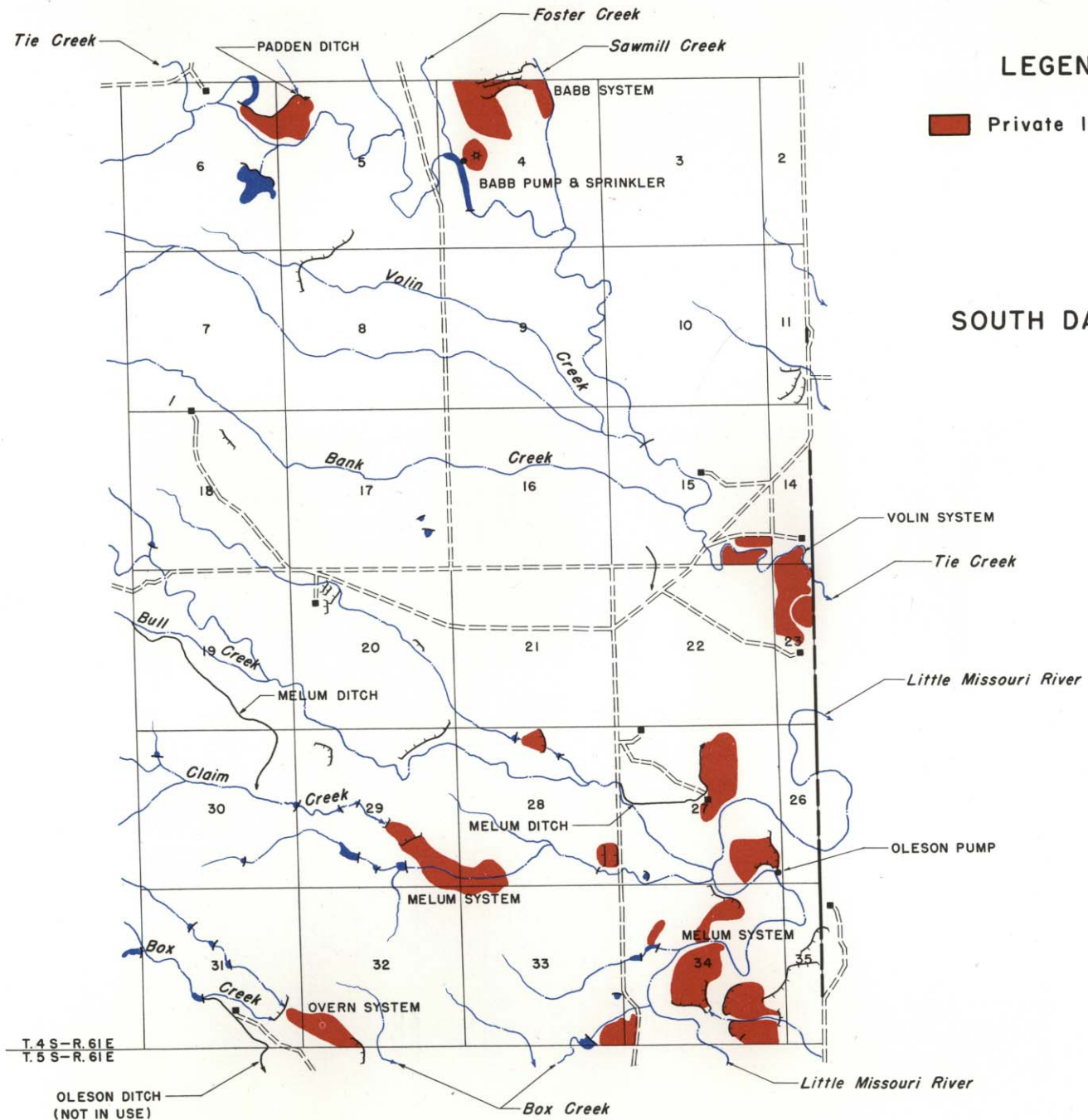
 Private Irrigation



T. 4 S - R. 60 E
T. 5 S - R. 60 E

Twp. 4 SOUTH

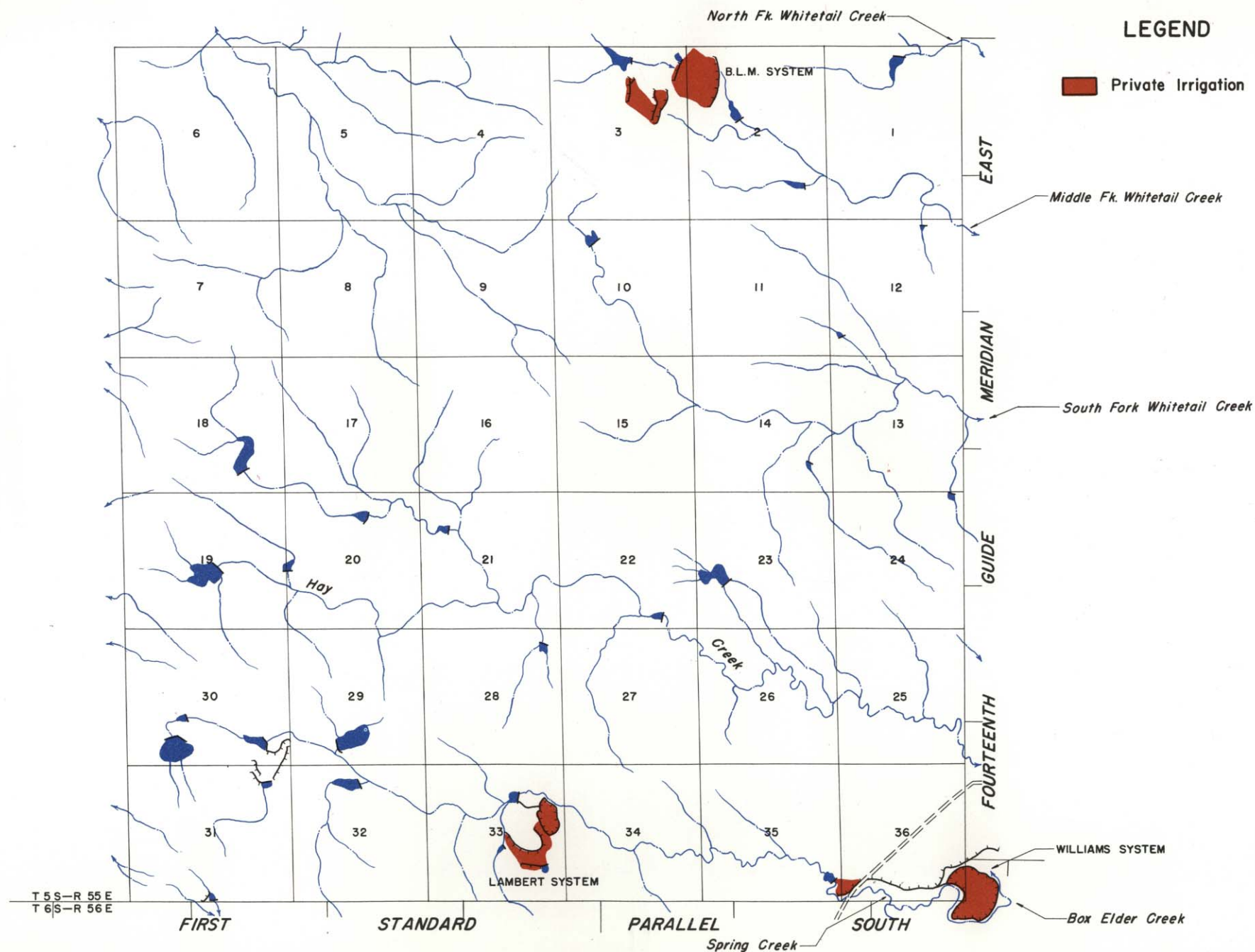
Rge. 62 EAST



Twp. 5 SOUTH
Rge. 56 EAST

LEGEND

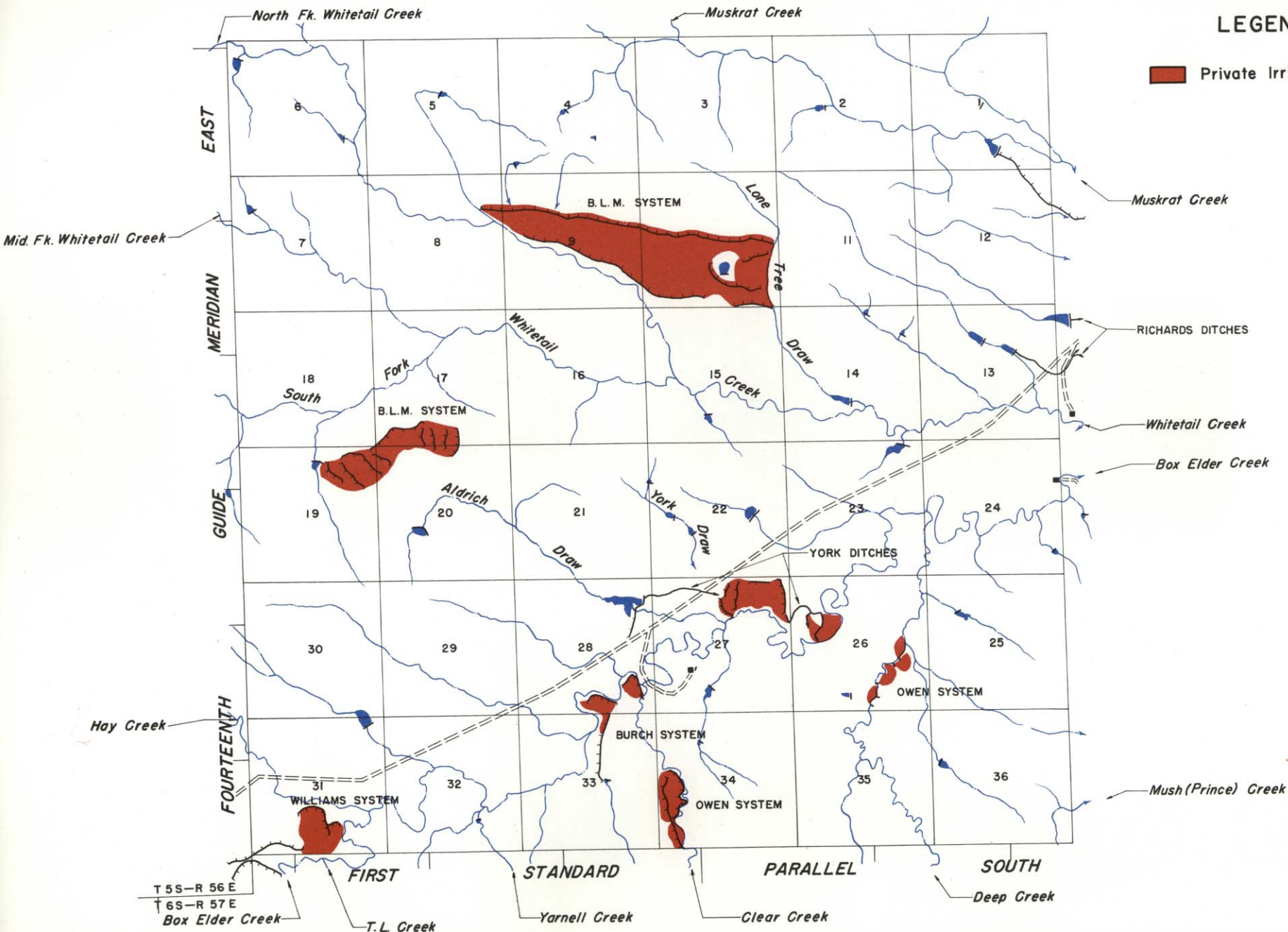
 Private Irrigation



Twp. 5 SOUTH
Rge. 57 EAST

LEGEND

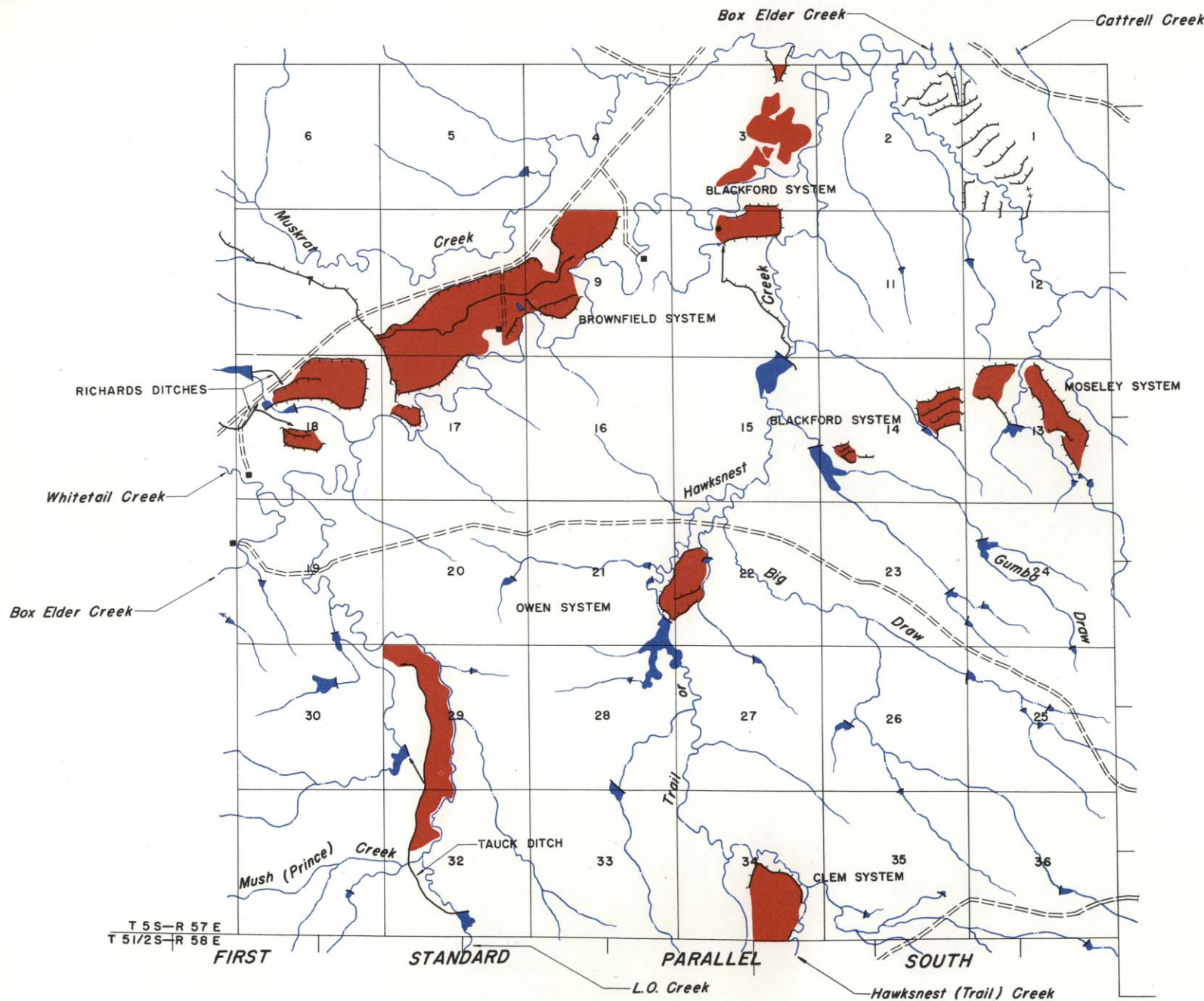
 Private Irrigation



Twp. 5 SOUTH
Rge. 58 EAST

LEGEND

 Private Irrigation

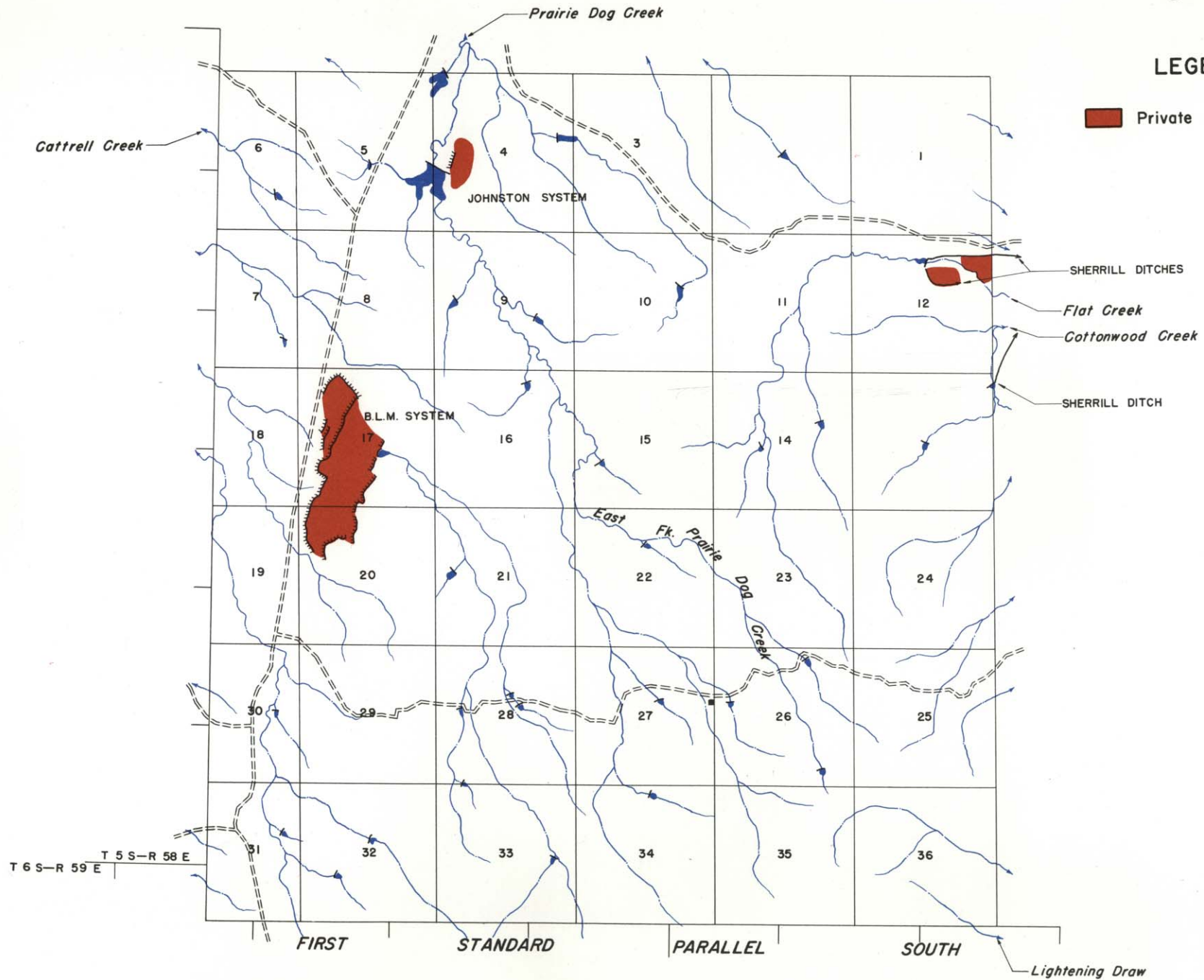


Twp. 5 SOUTH

Rge. 59 EAST

LEGEND

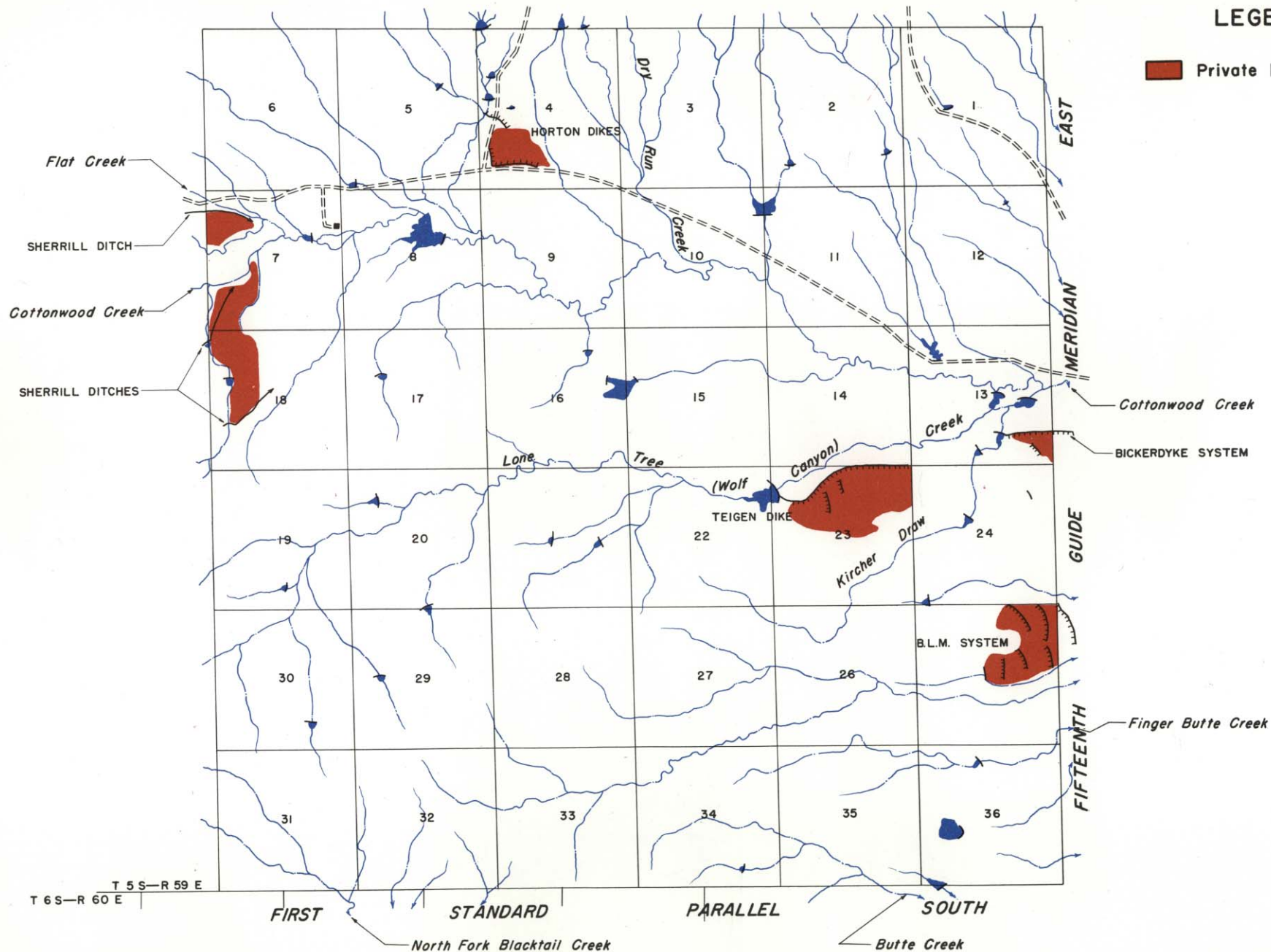
 Private Irrigation



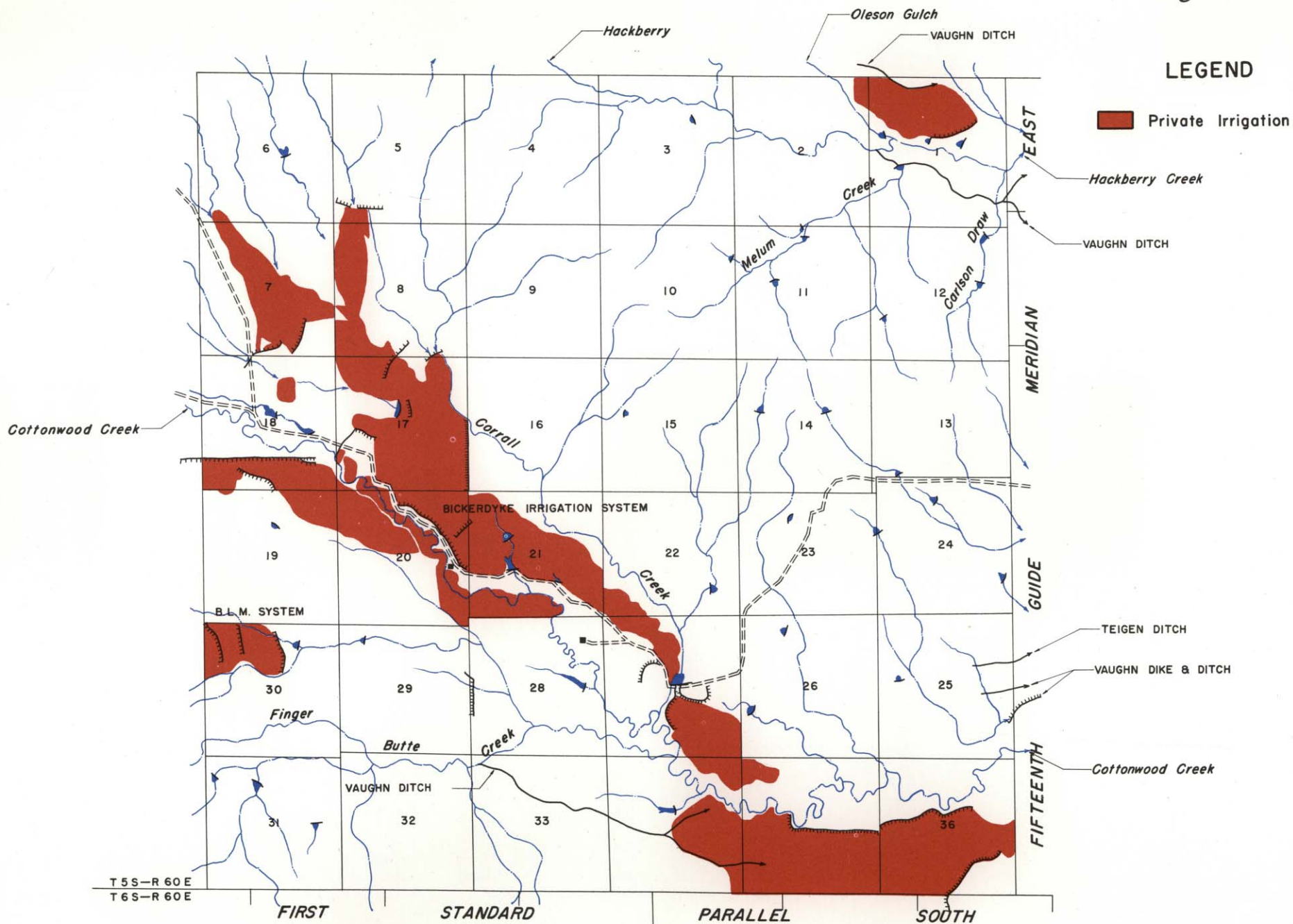
Twp. 5 SOUTH
Rge. 60 EAST

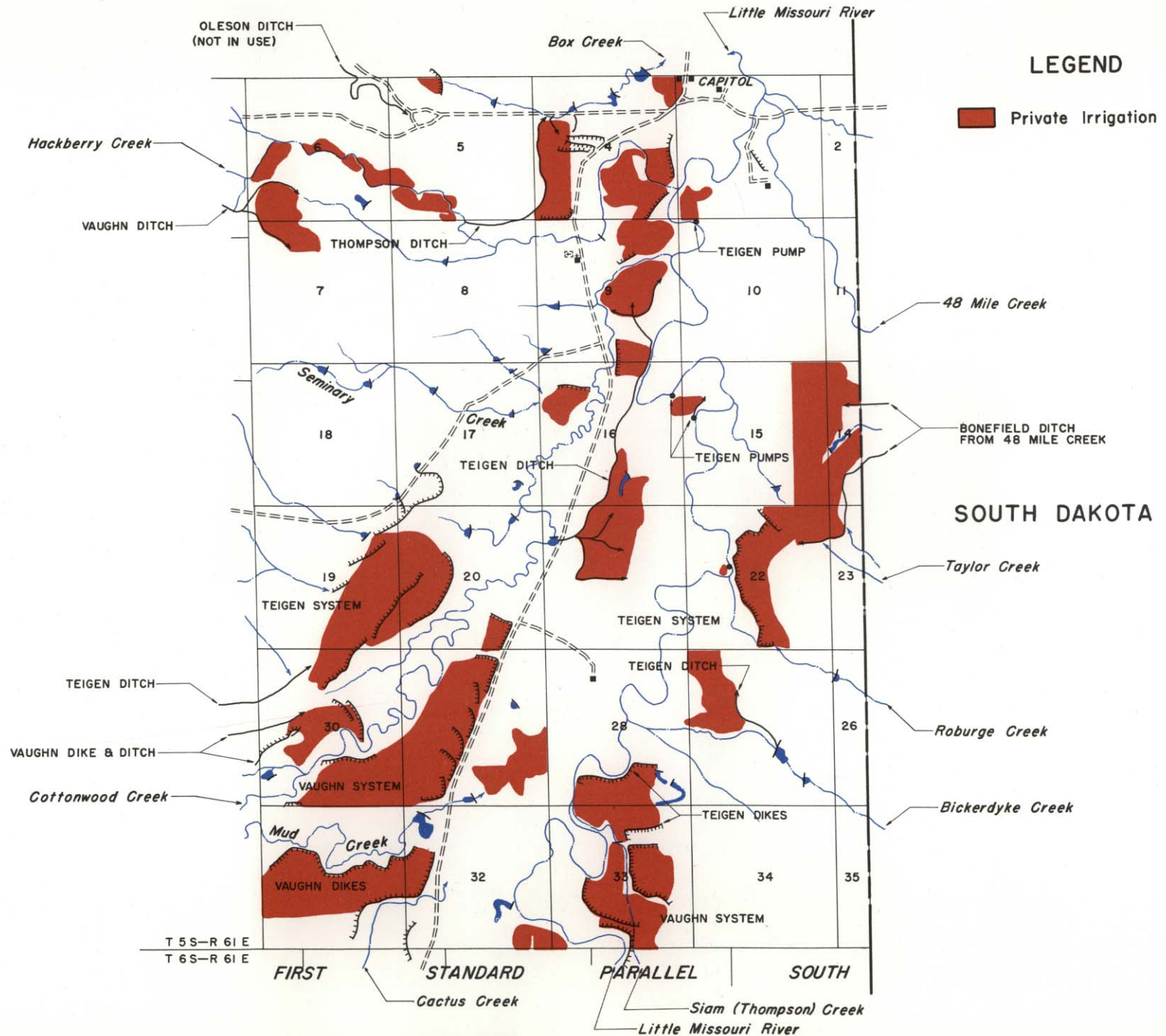
LEGEND

 Private Irrigation



Twp. 5 SOUTH
Rge. 61 EAST

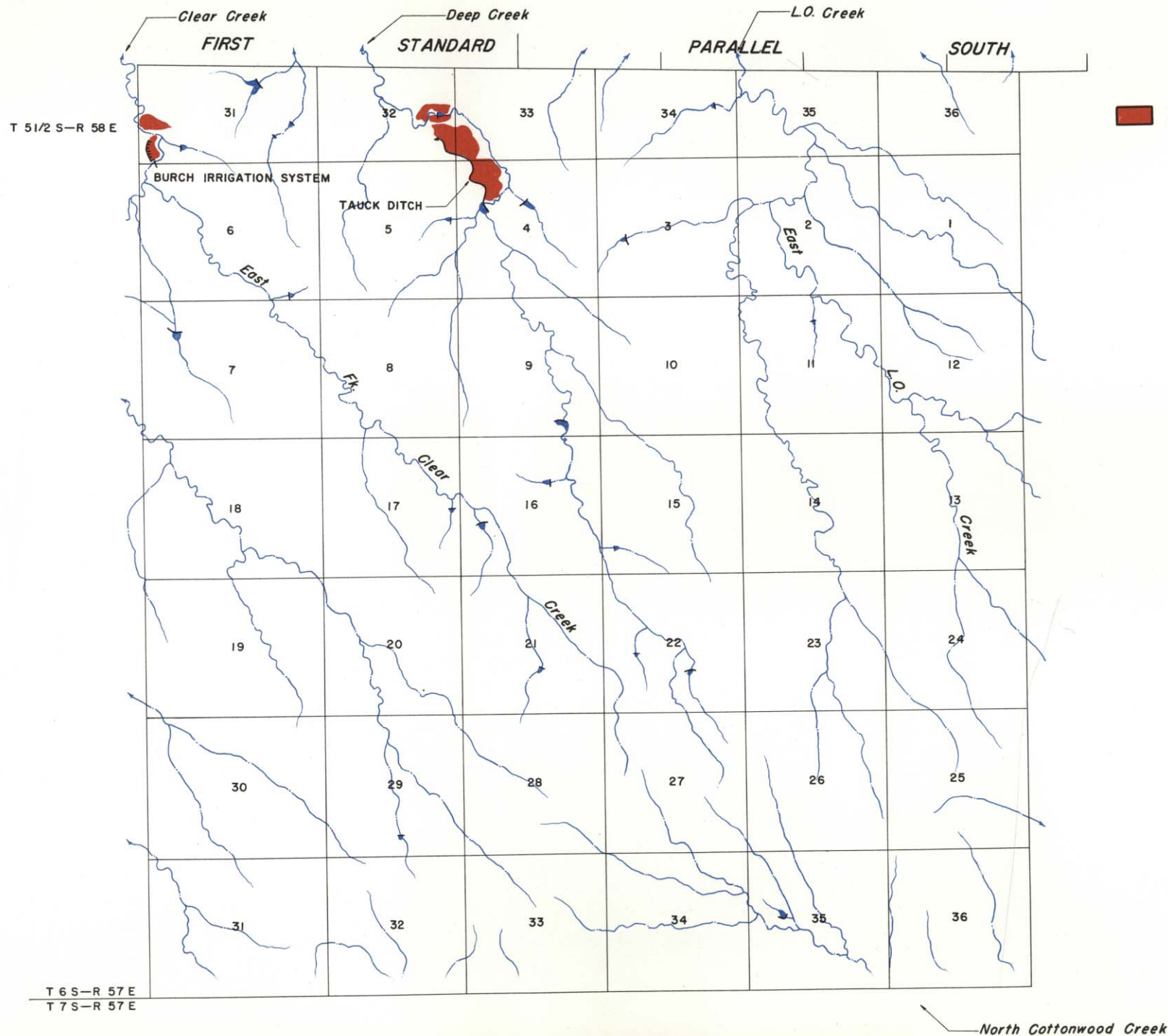




Twp. 51/2 & 6 SOUTH
Rge. 58 EAST

LEGEND

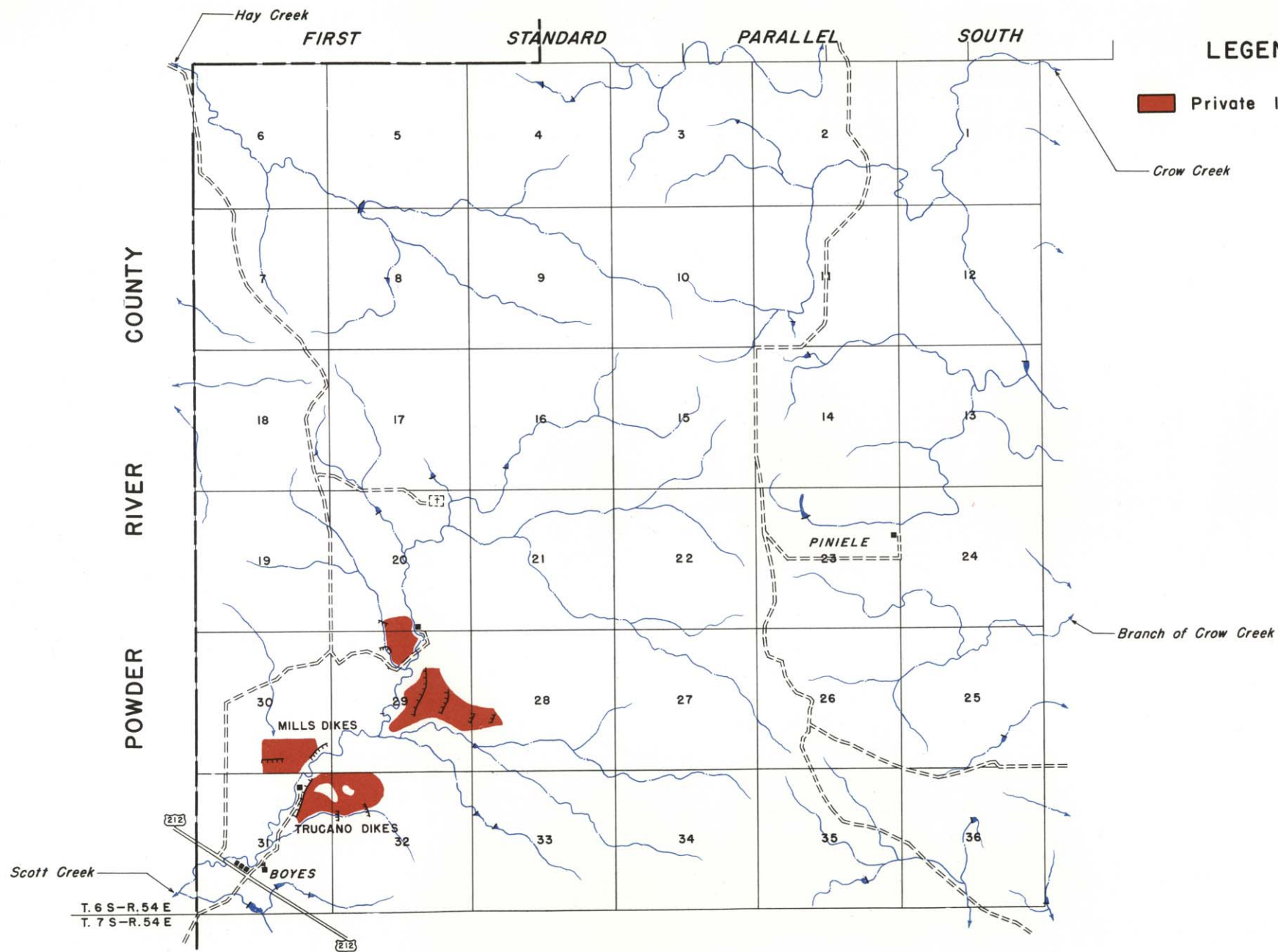
 Private Irrigation



Twp. 6 SOUTH
Rge. 55 EAST

LEGEND

 Private Irrigation



Twp. 6 SOUTH

Rge. 56 EAST

FIRST

STANDARD

PARALLEL

SOUTH

LEGEND

 Private Irrigation

EAST

MERIDIAN

GUIDE

FOURTEENTH

Crow Creek

LAMBERT DIKES

Box Elder Creek

PHILLIPPI RESERVOIR & DITCH

Steep Creek

East Fork Groat Creek

West Fork Groat Creek

PHILLIPPI RESERVOIR & DAM

GARDNER IRRIGATION SYSTEM

GARDNER DITCH & RESERVOIR

School Section

North Soda Cr. South Soda Cr.

Lone Tree Creek

Dry Lake

Drow

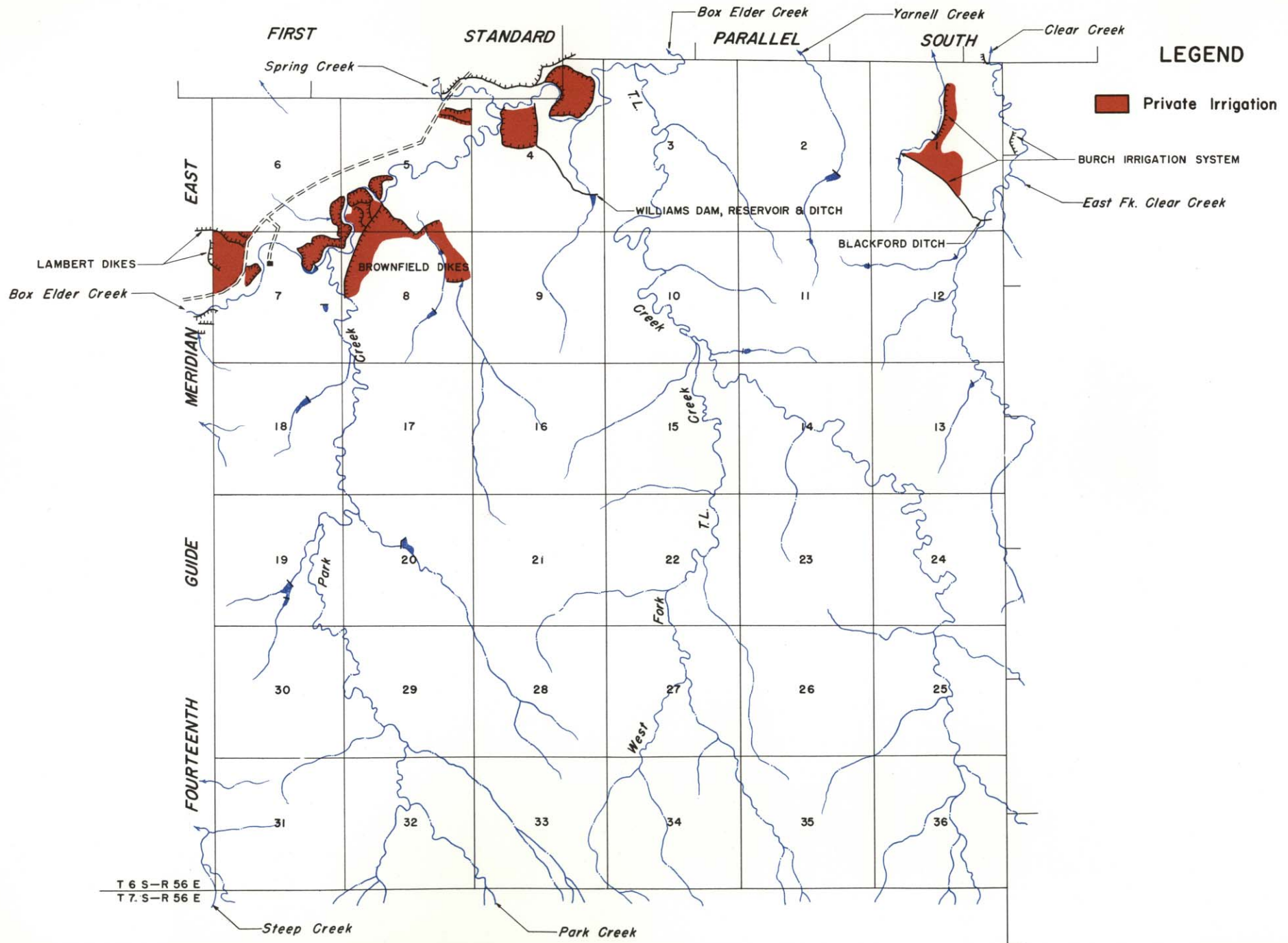
T. 6 S - R. 55 E
T. 7 S - R. 55 E

Branch of Box Elder Creek

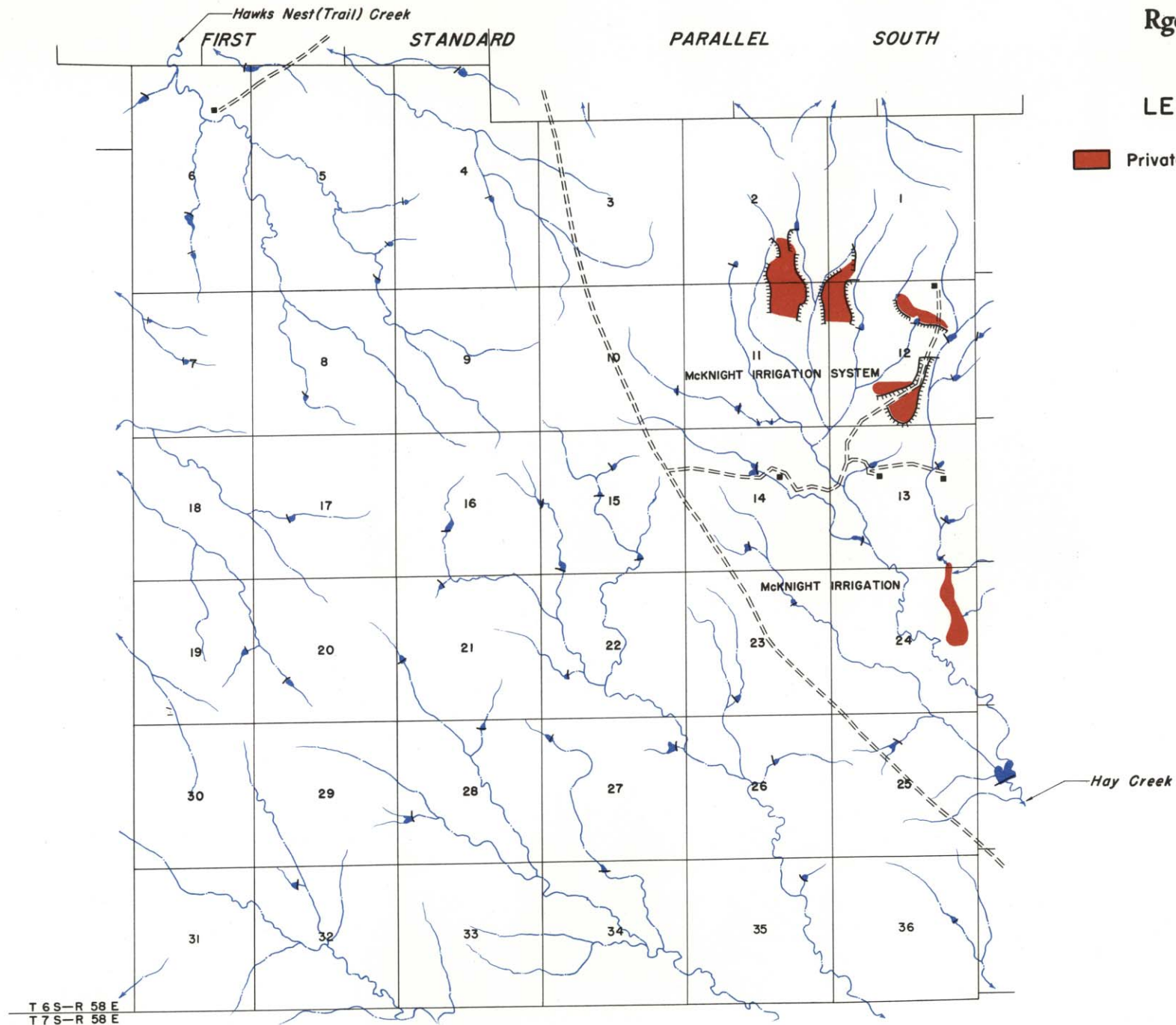
Branch of Crow Creek

Twp. 6 SOUTH

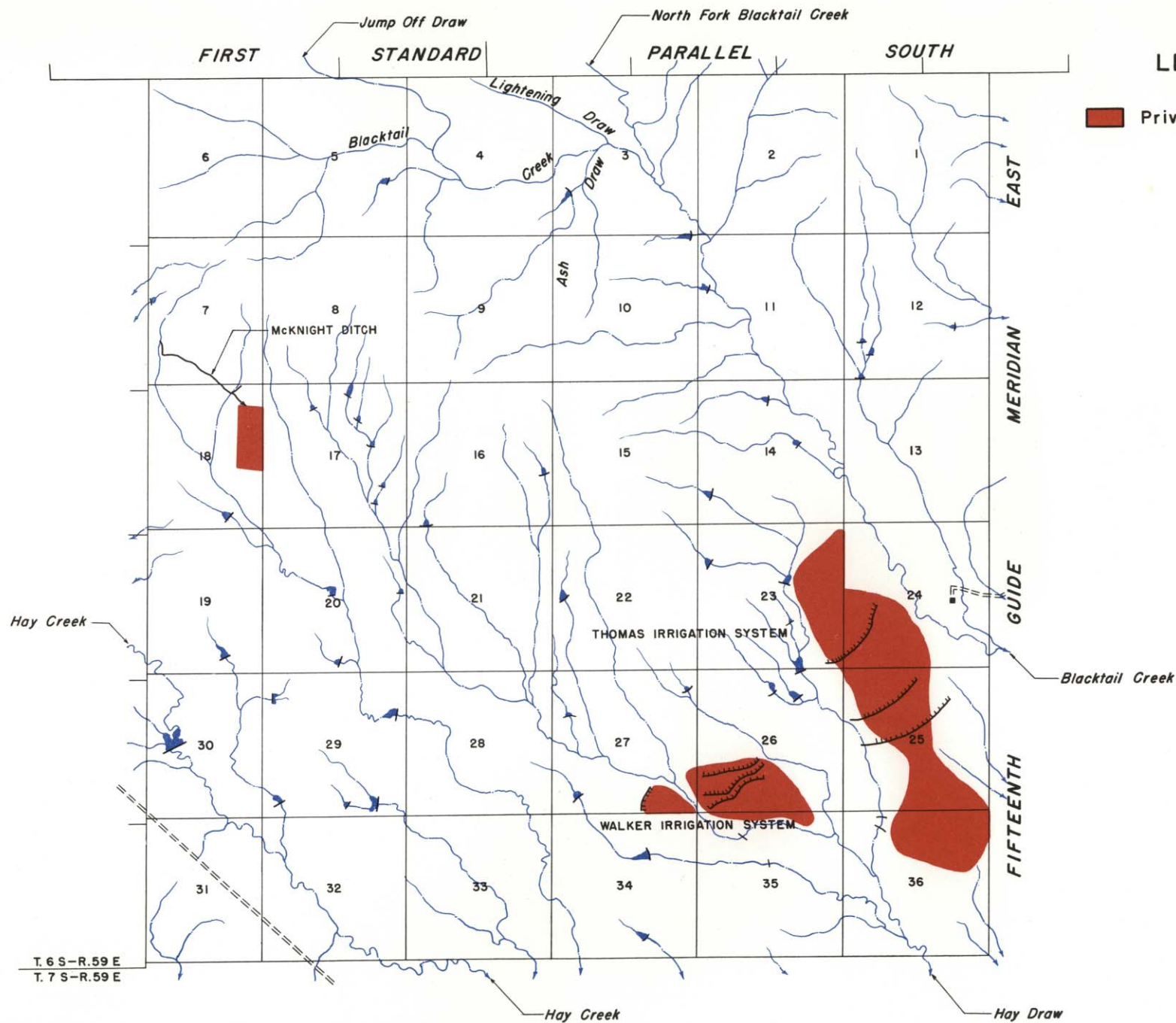
Rge. 57 EAST



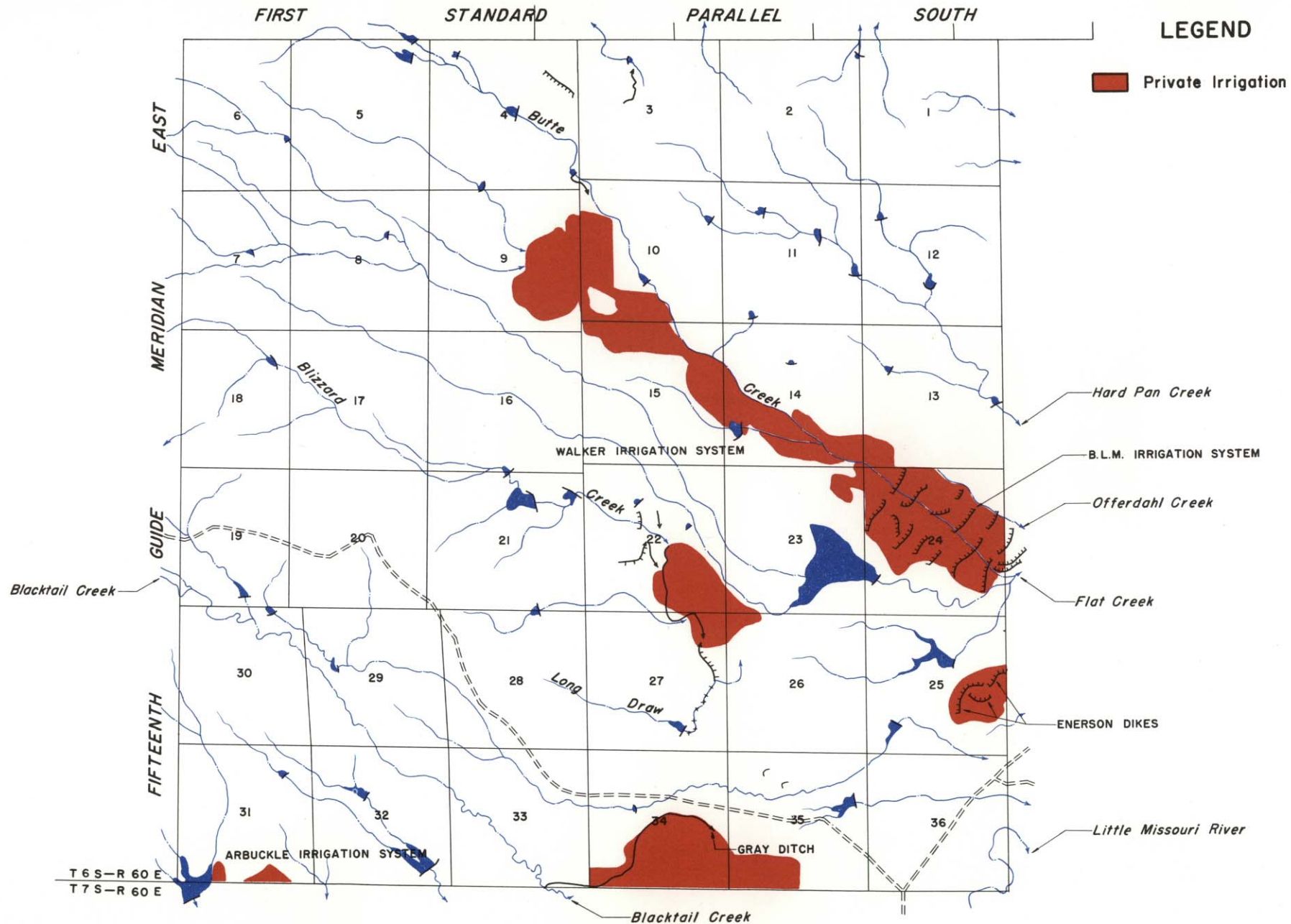
Twp. 6 SOUTH
Rge. 59 EAST



Twp. 6 SOUTH
Rge. 60 EAST



Twp. 6 SOUTH
Rge. 61 EAST



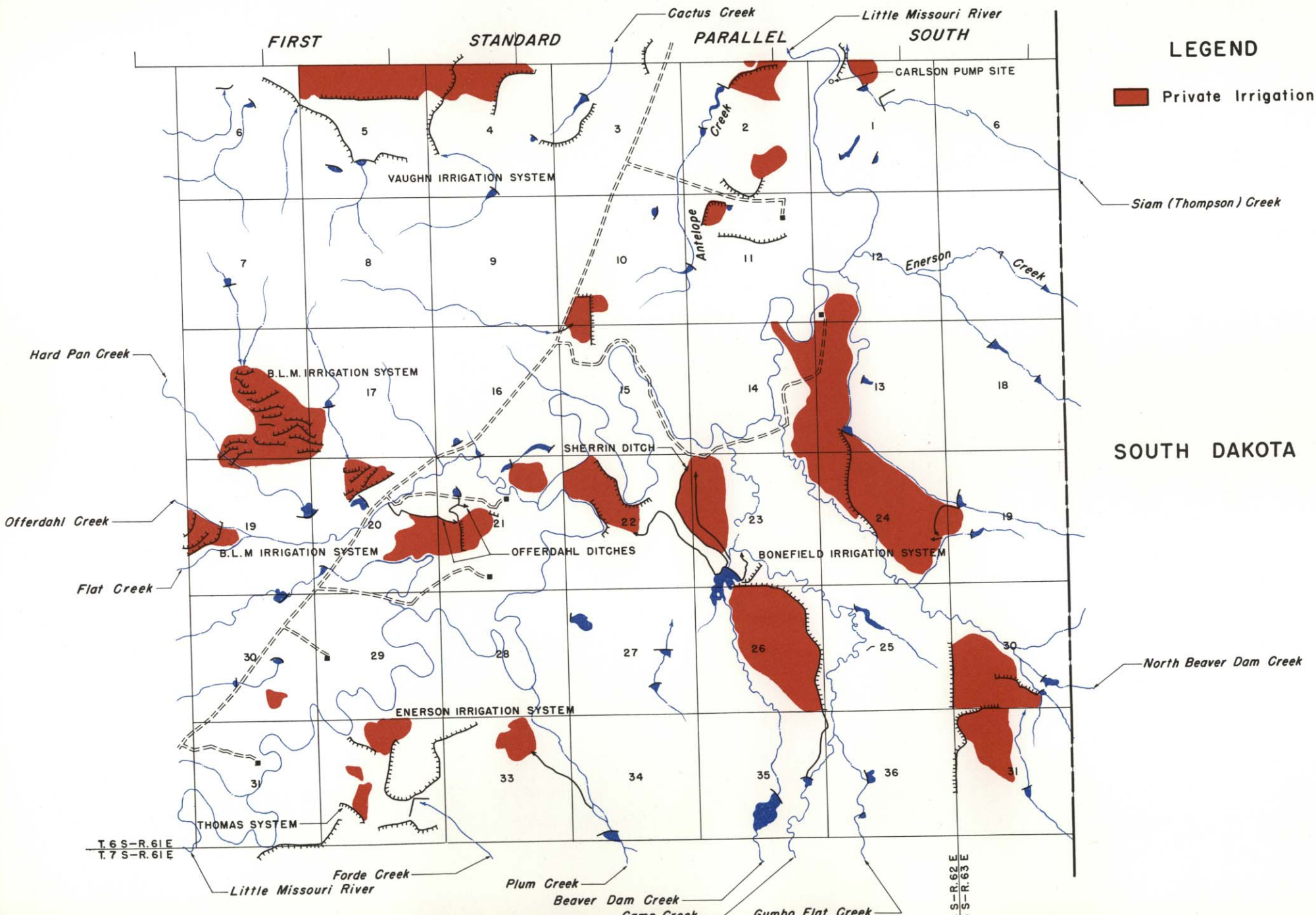
LEGEND

Private Irrigation

Siam (Thompson) Creek

SOUTH DAKOTA

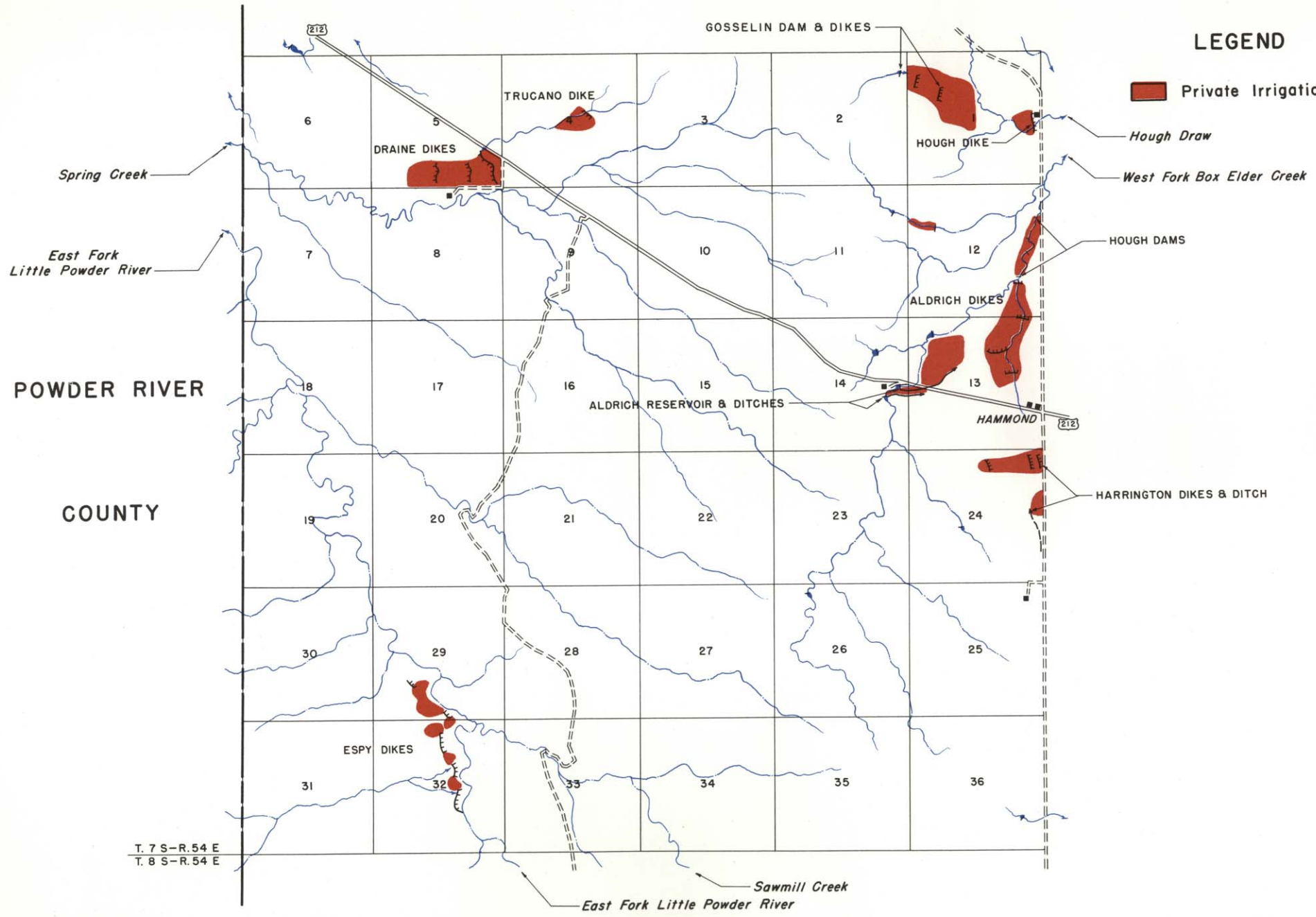
North Beaver Dam Creek



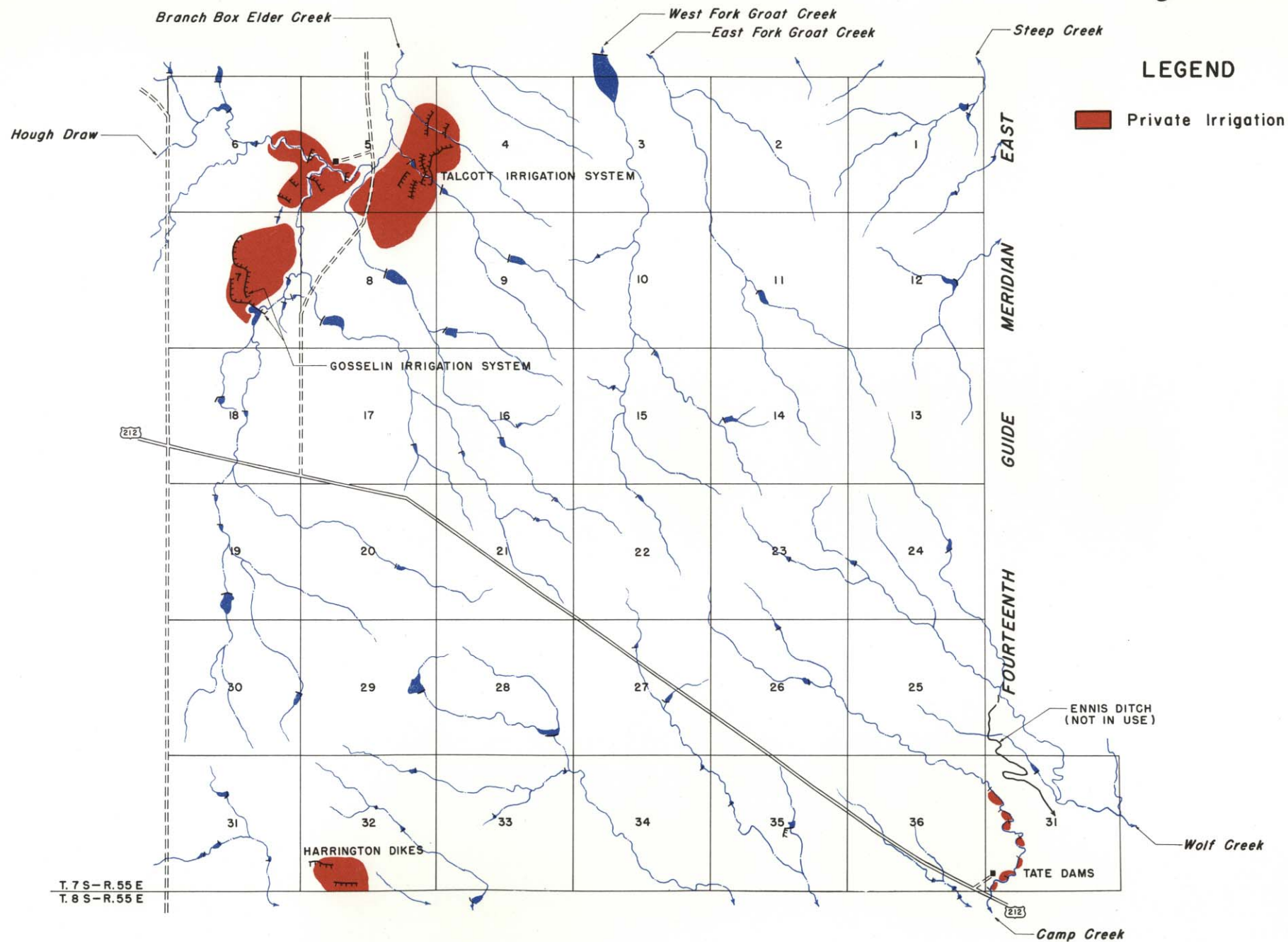
Twp. 7 SOUTH
Rge. 55 EAST

LEGEND

 Private Irrigation



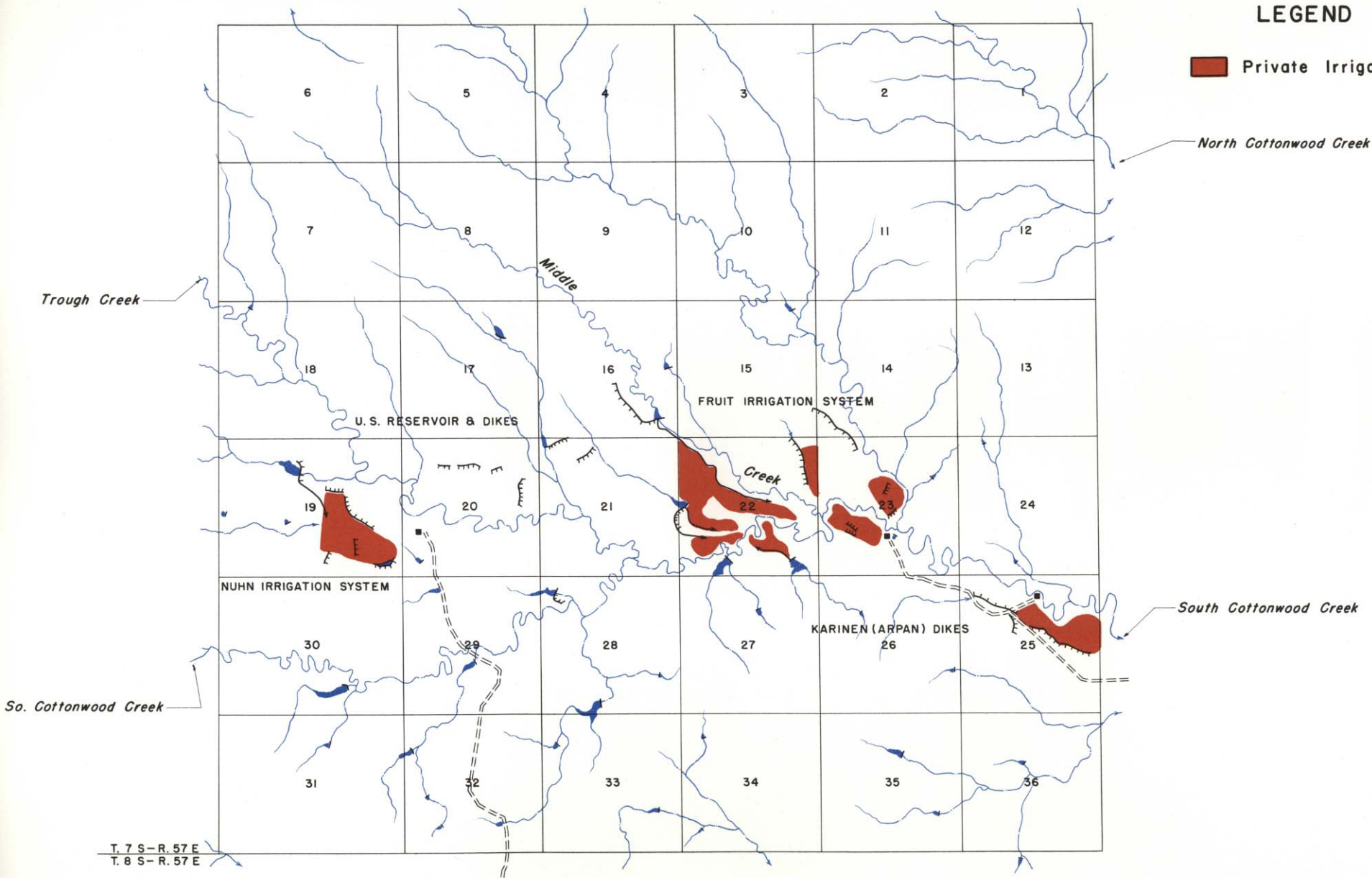
Twp. 7 SOUTH
Rge. 56 & 57 EAST



Twp. 7 SOUTH
Rge. 58 EAST

LEGEND

 Private Irrigation

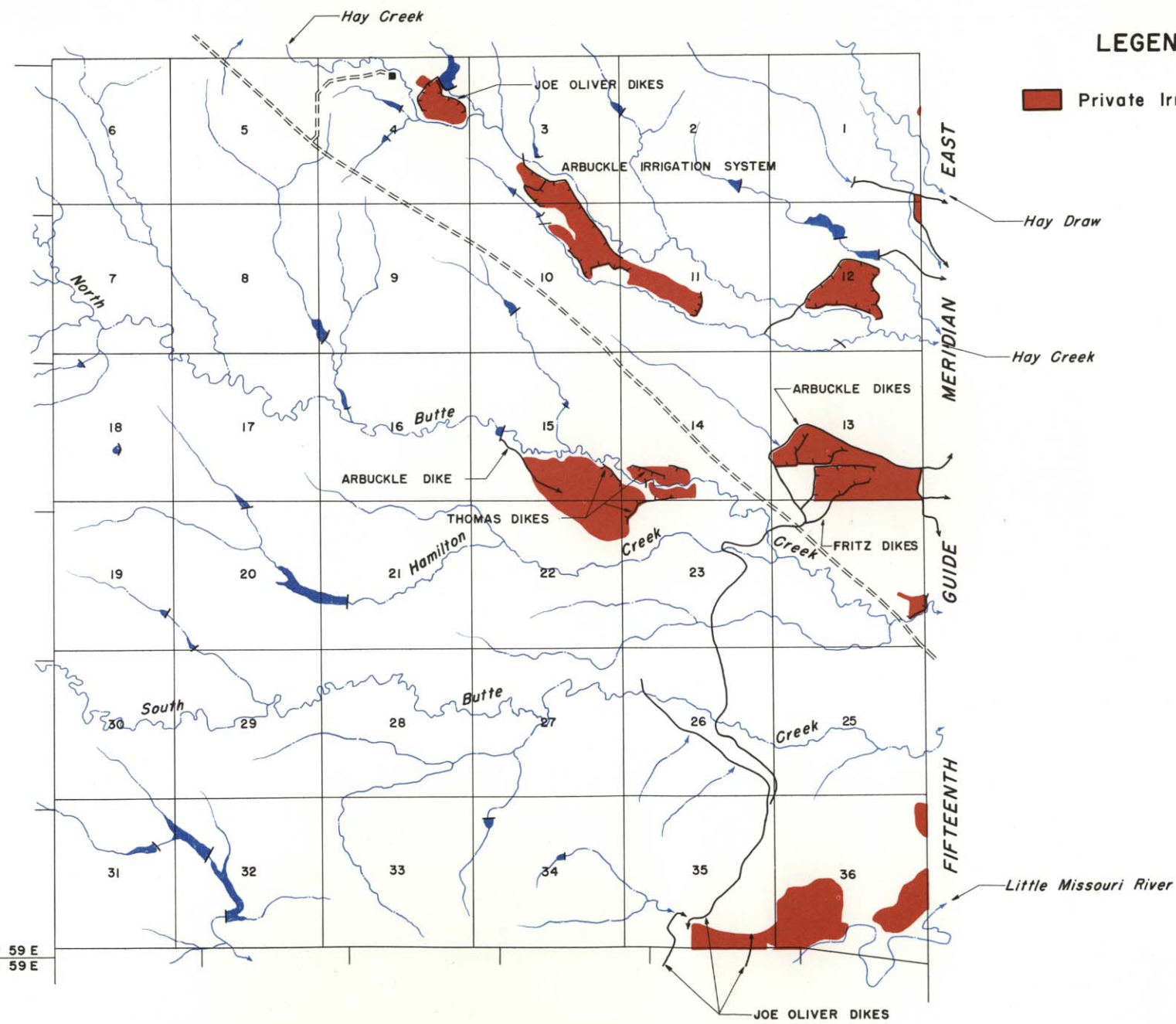


Twp. 7 SOUTH

Rge. 60 EAST

LEGEND

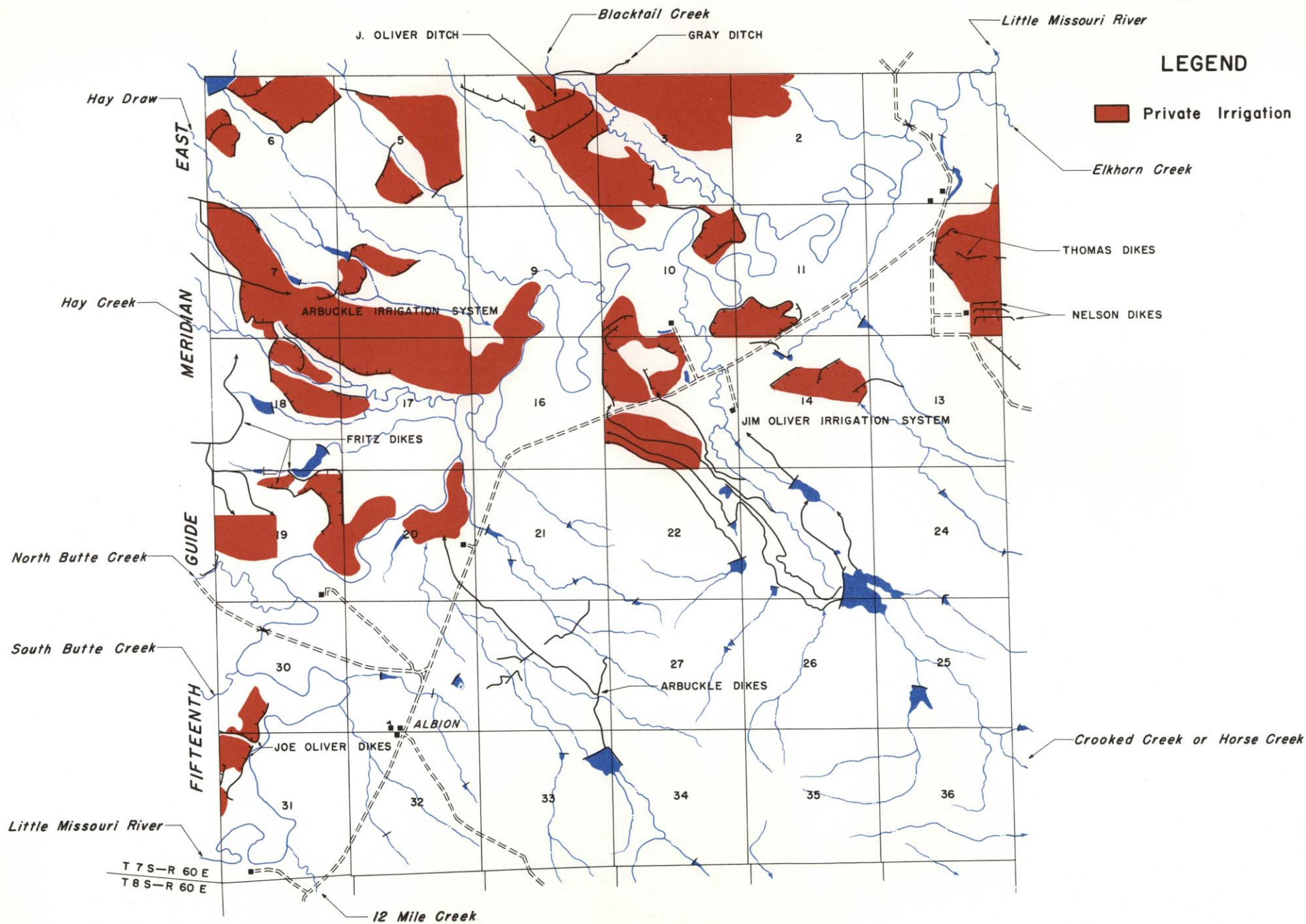
 Private Irrigation



T 7 S-R 59 E
T 8 S-R 59 E

Twp. 7 SOUTH

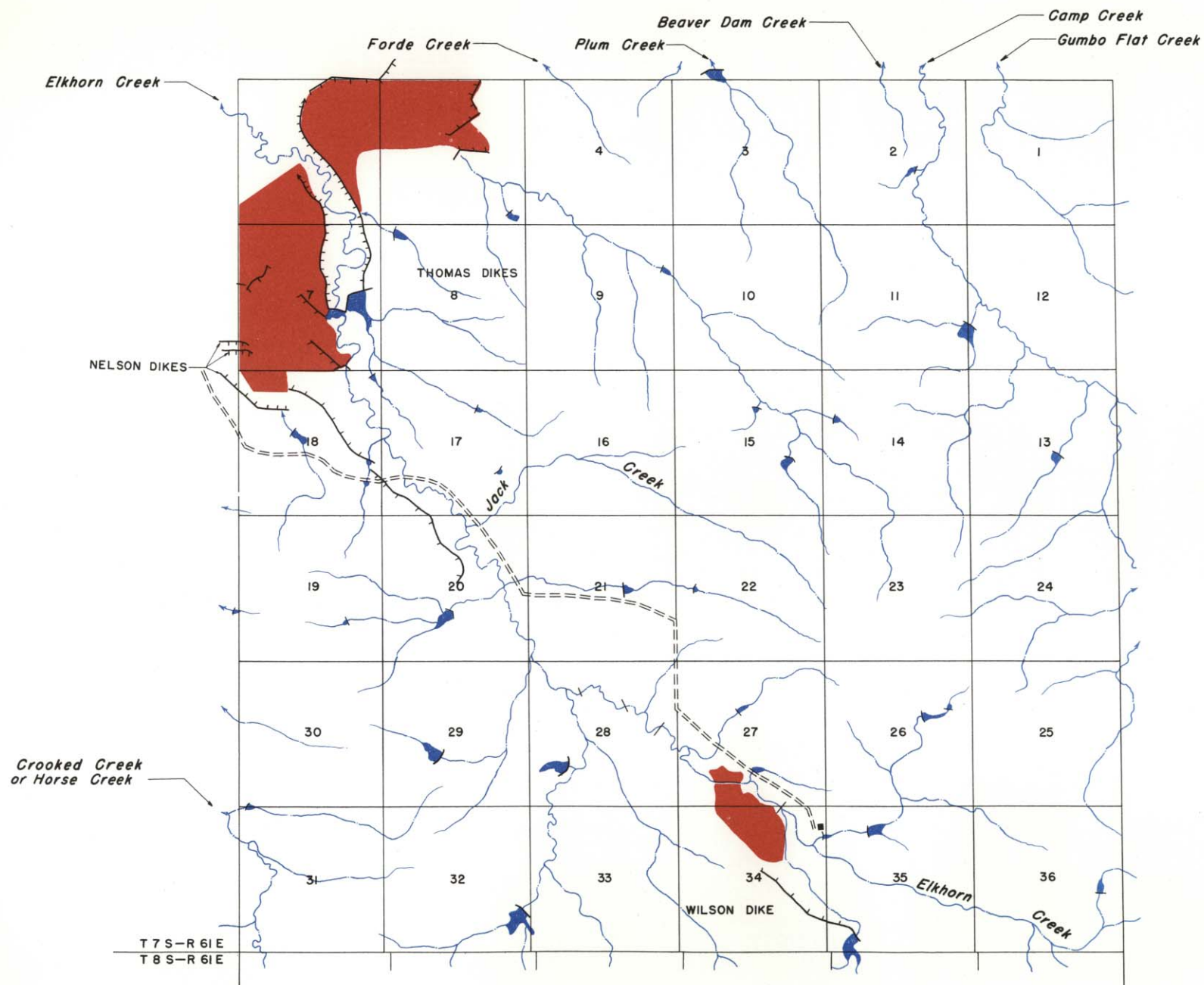
Rge. 61 EAST



Twp. 7 SOUTH
Rge. 62 EAST

LEGEND

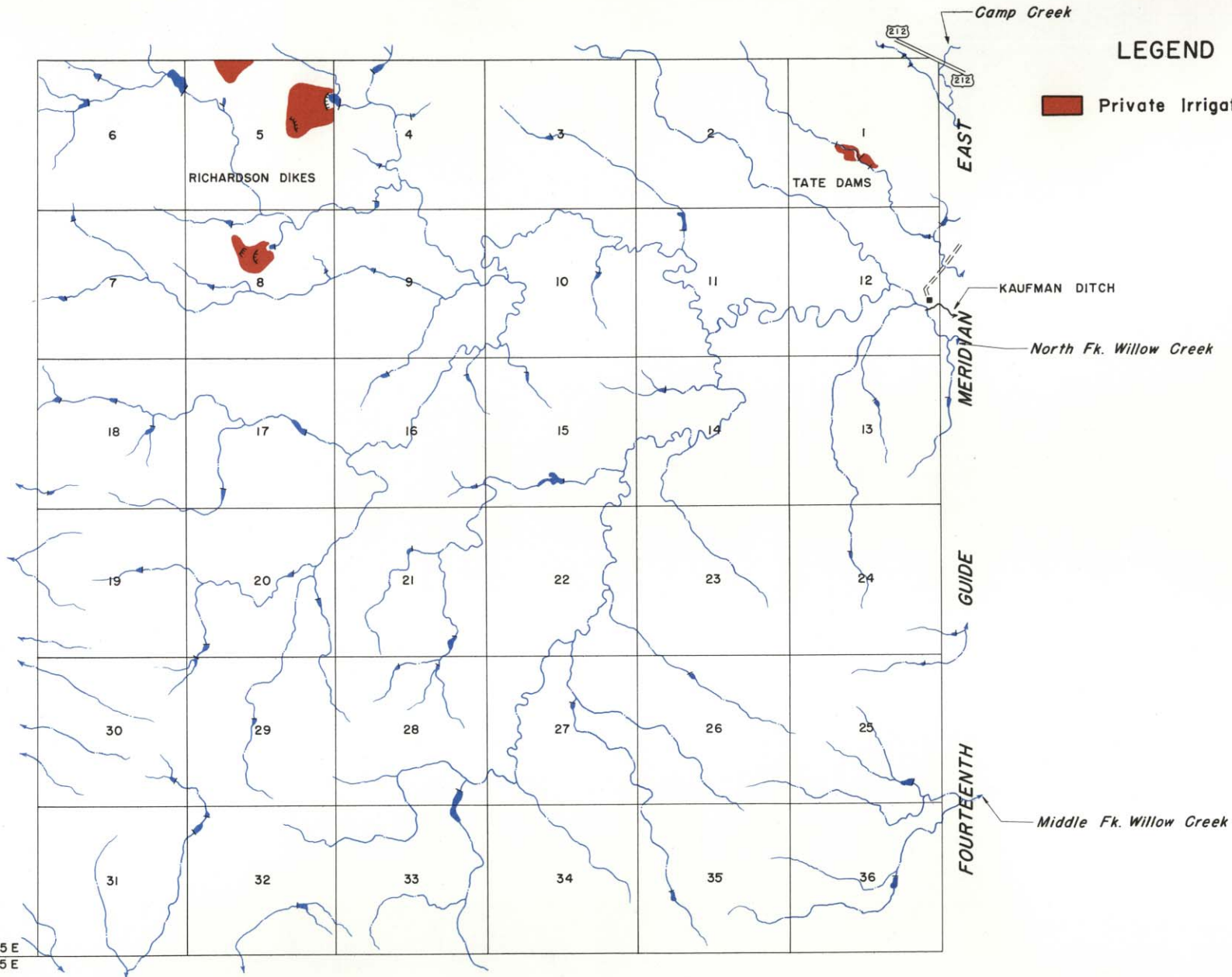
 Private Irrigation



Twp. 8 SOUTH
Rge. 56 EAST

LEGEND

 Private Irrigation



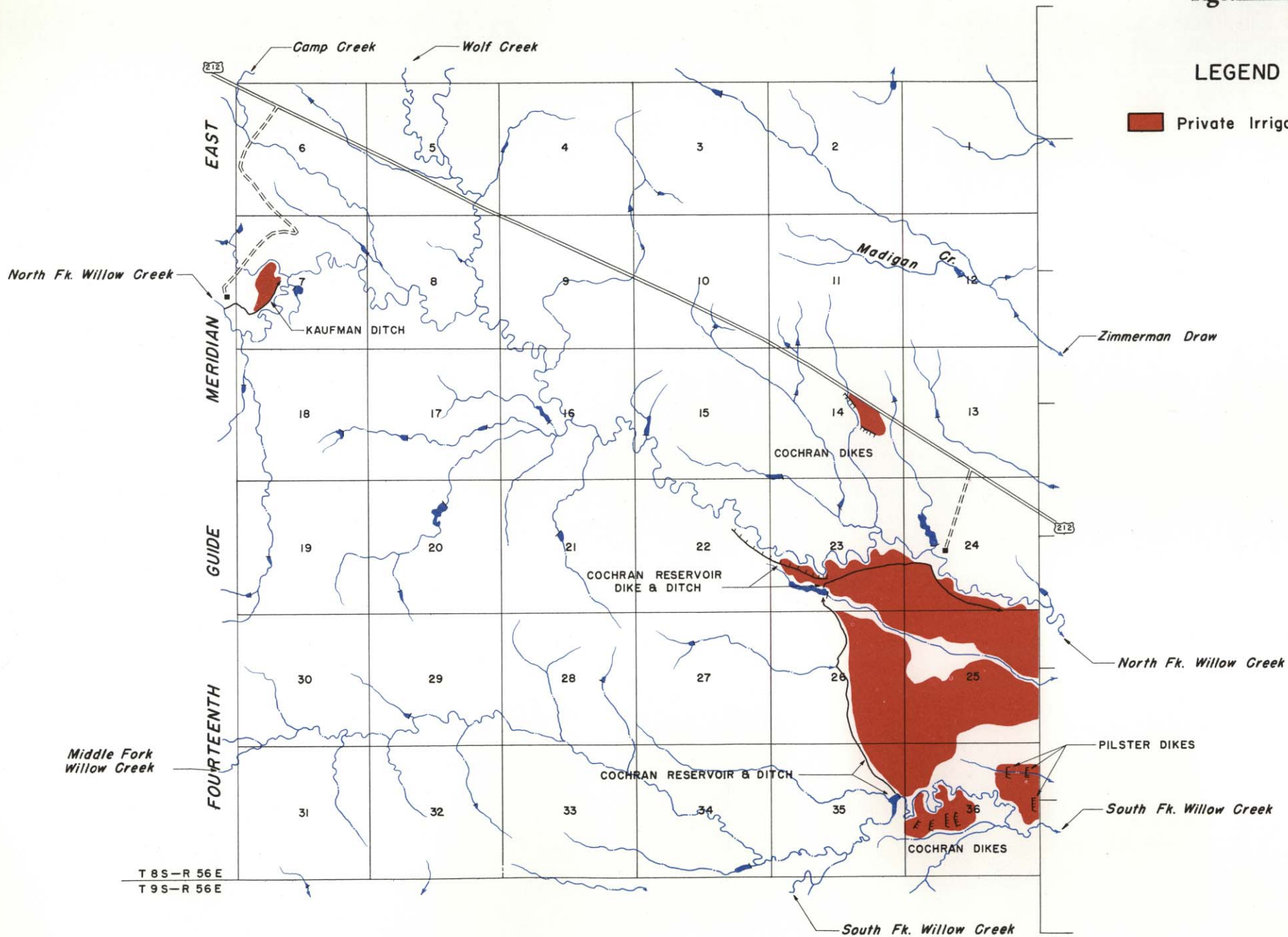
T 8 S-R 55 E
T 9 S-R 55 E

Twp. 8 SOUTH

Rge. 57 EAST

LEGEND

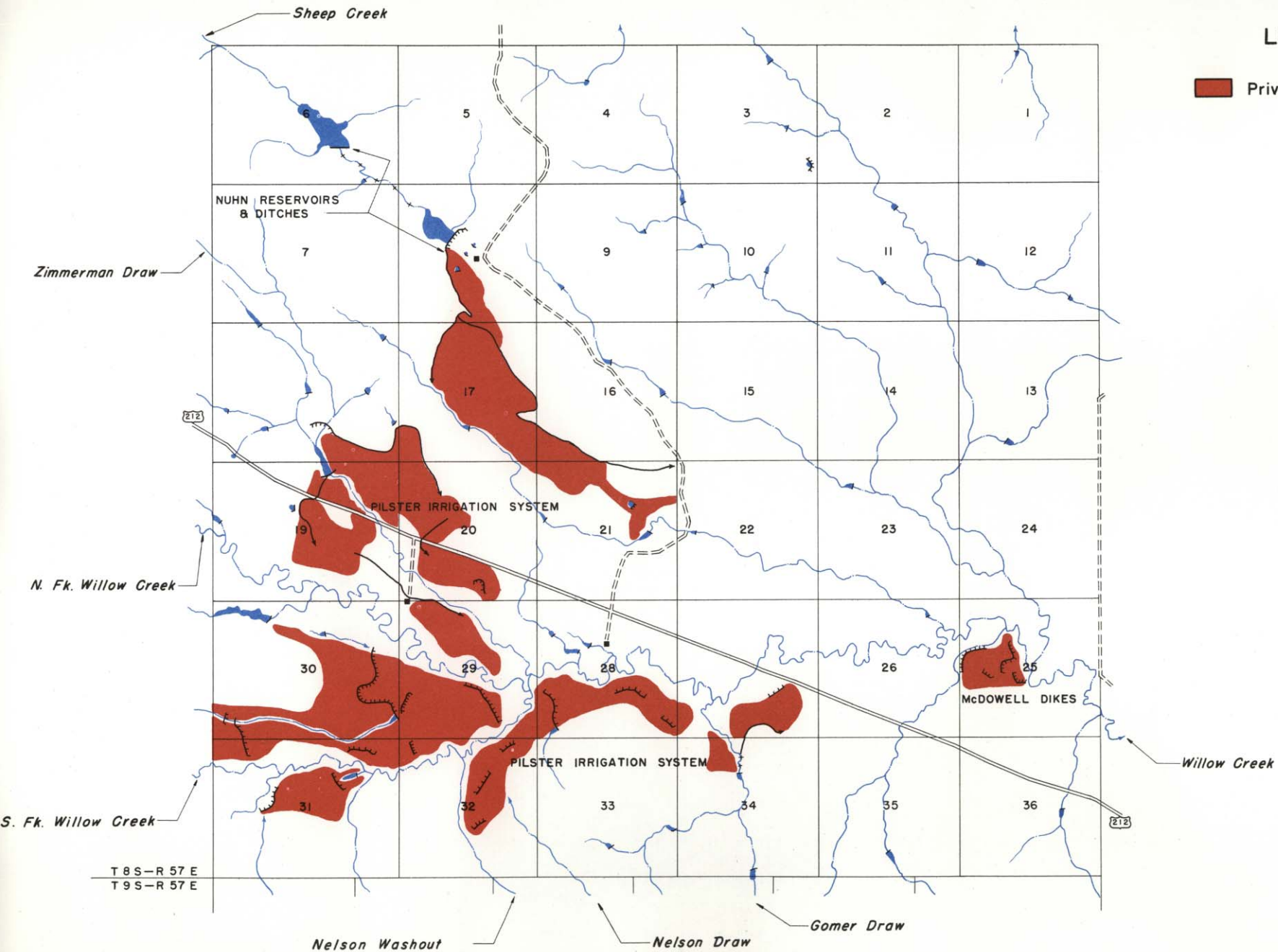
 Private Irrigation



Twp. 8 SOUTH
Rge. 58 EAST

LEGEND

 Private Irrigation

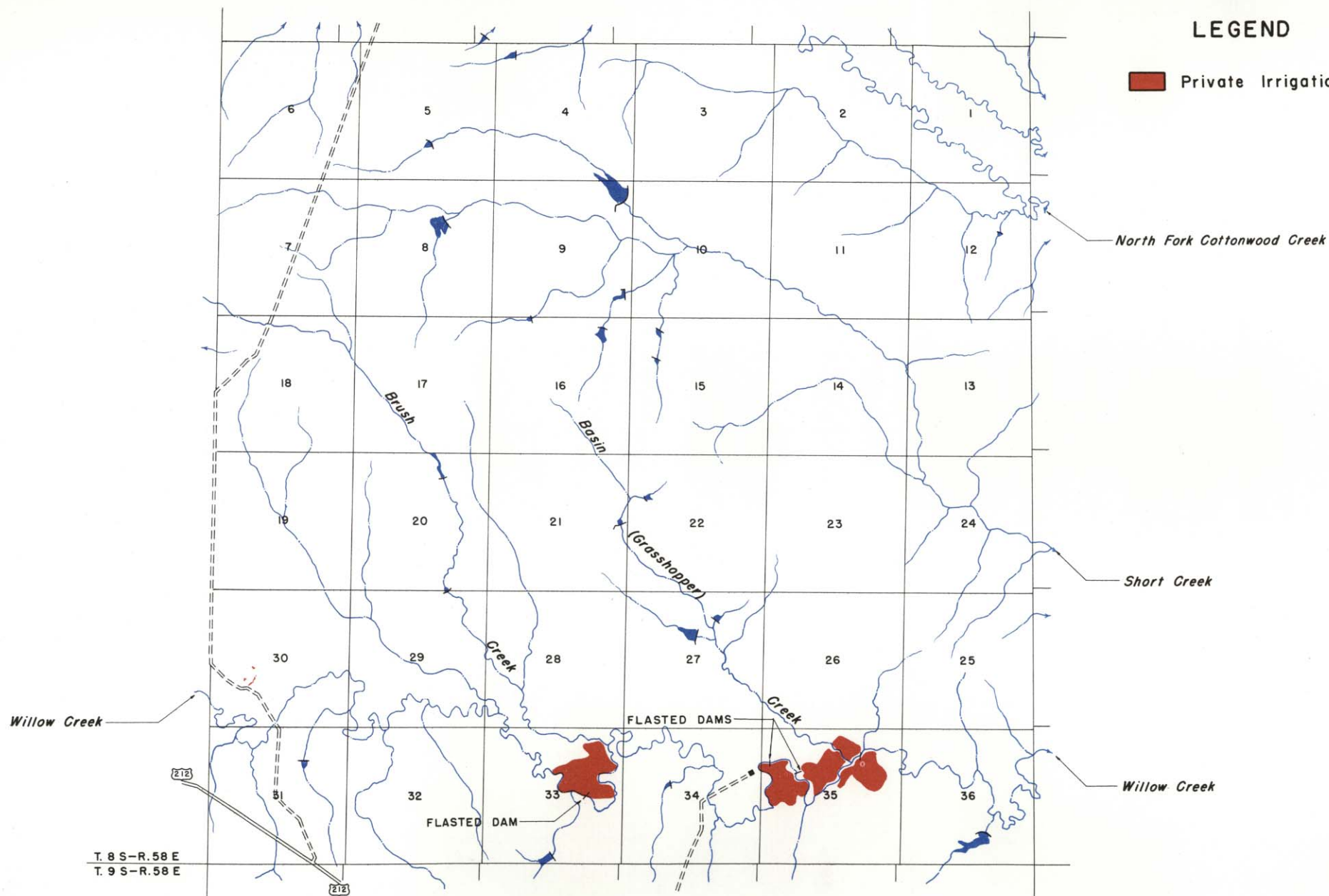


Twp. 8 SOUTH

Rge. 59 EAST

LEGEND

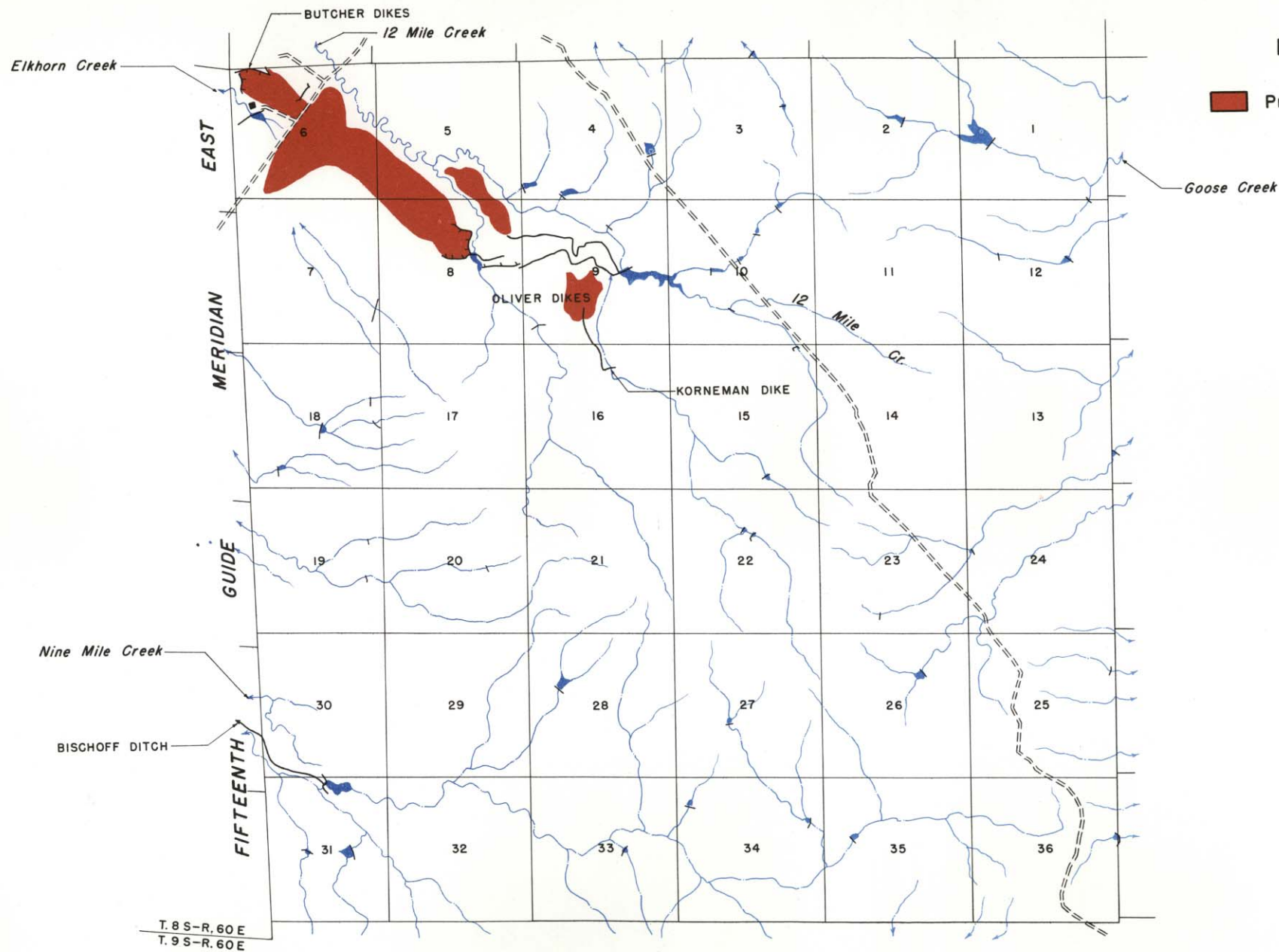
Private Irrigation



Twp. 8 SOUTH
Rge. 61 EAST

LEGEND

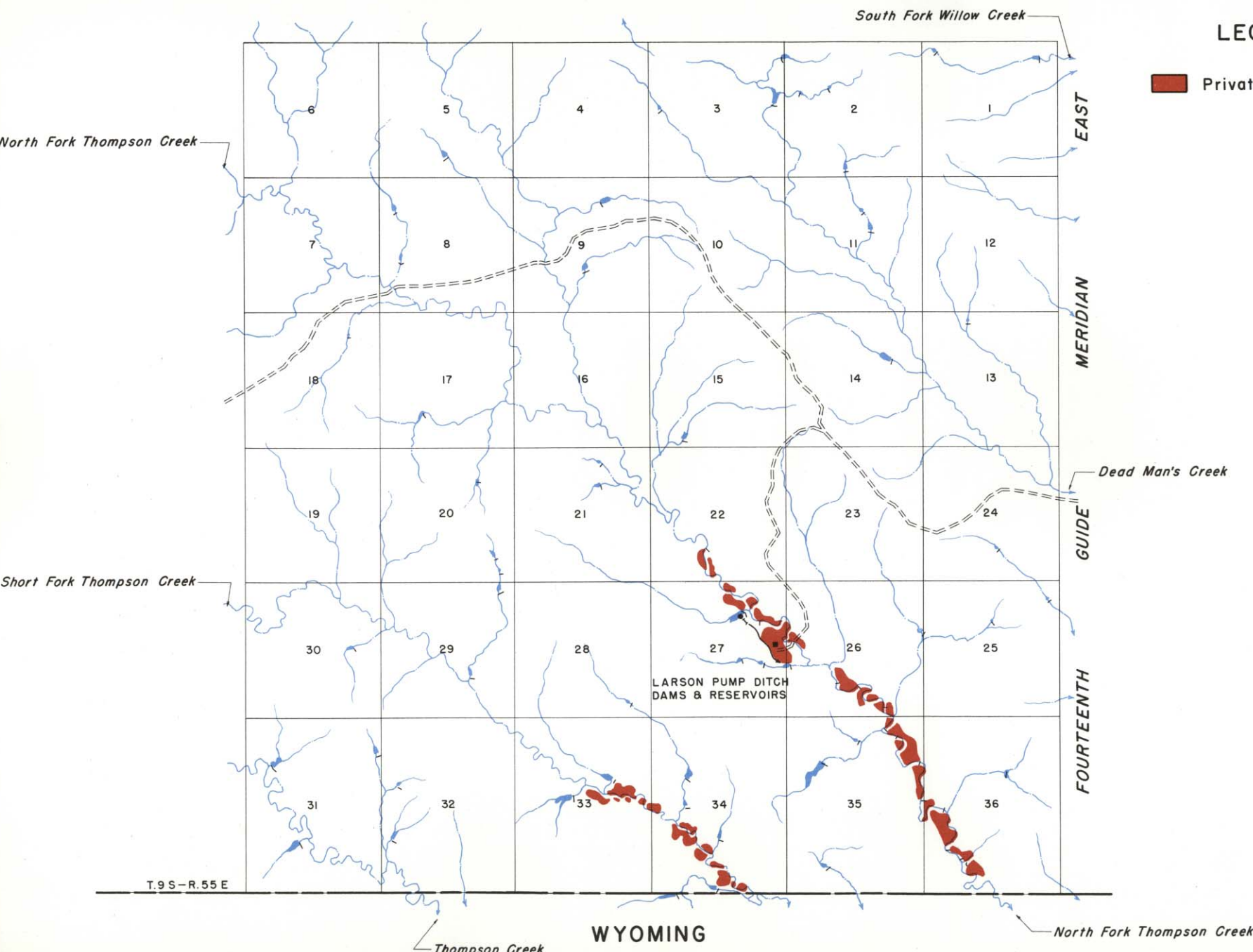
 Private Irrigation



Twp. 9 SOUTH
Rge. 56 EAST

LEGEND

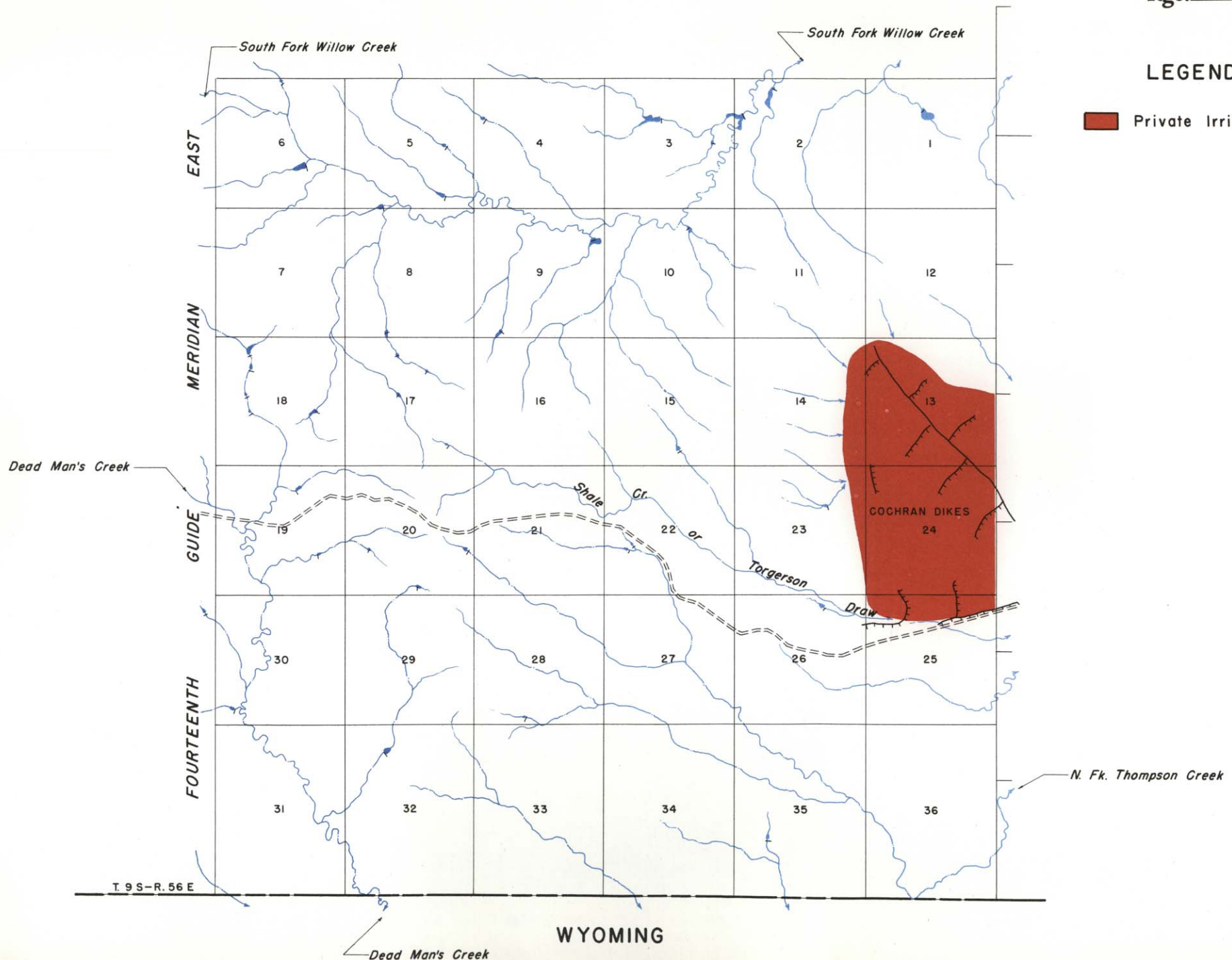
 Private Irrigation



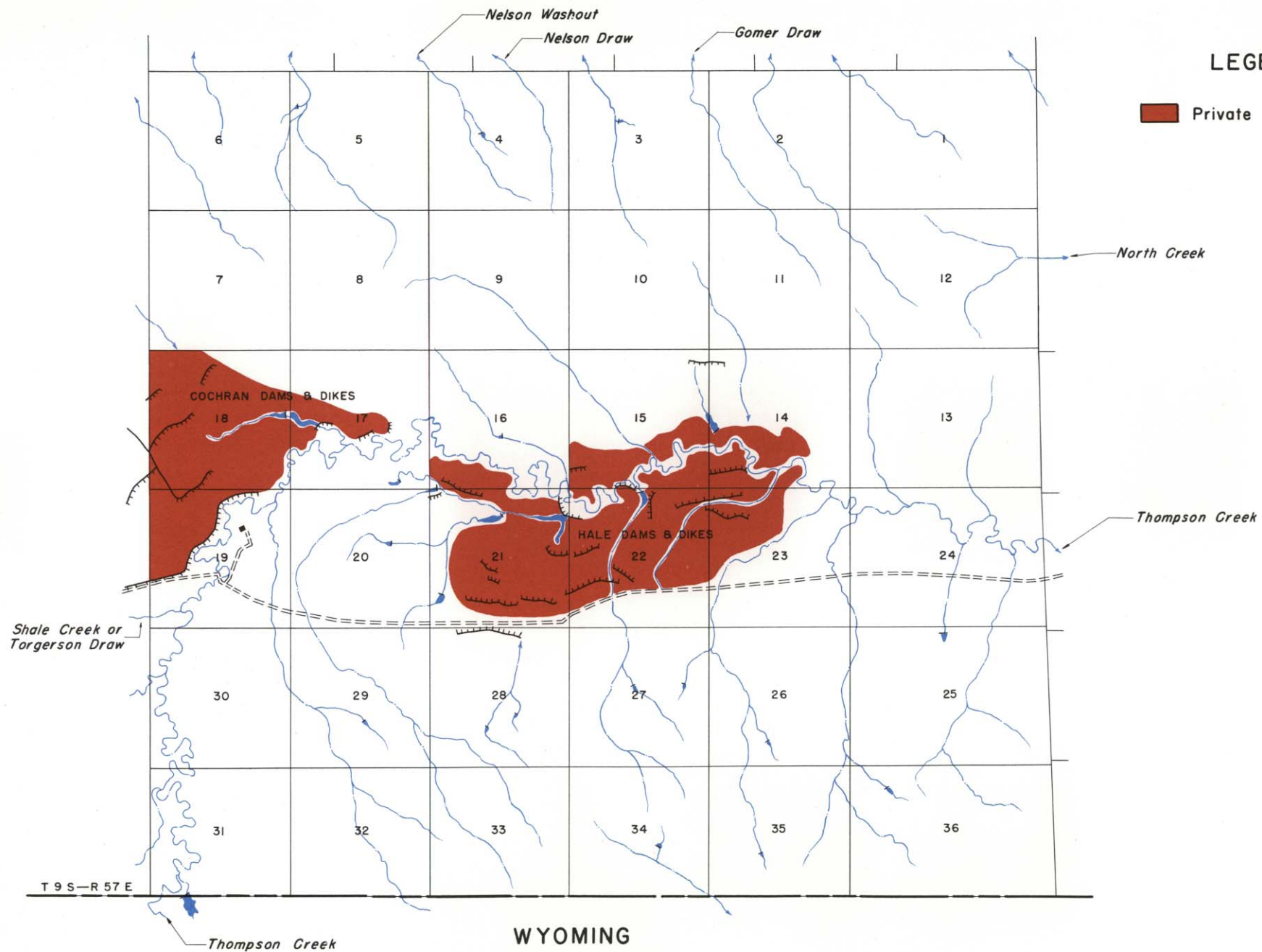
Twp. 9 SOUTH
Rge. 57 EAST

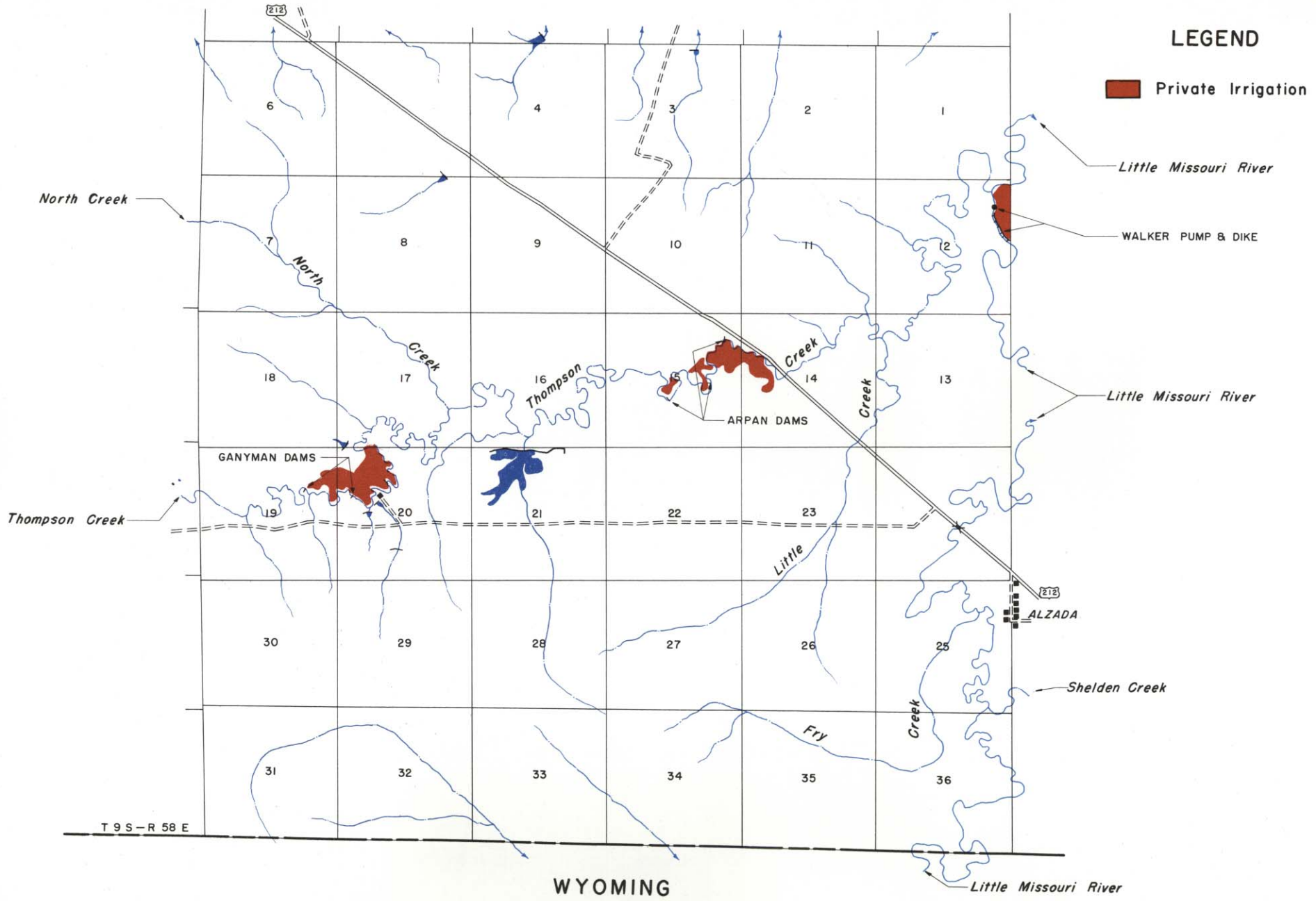
LEGEND

 Private Irrigation



Twp. 9 SOUTH
Rge. 58 EAST





Twp. 9 SOUTH
Rge. 60 EAST

LEGEND

 Private Irrigation

