A. Name of Multiple Property Listing

Historic Resources of the Soule Canal

B. Associated Historic Contexts

(Irrigation in the Arkansas River Valley - 1864-1931)
(The Gilbert Brothers, Asa Soule, and the Soule Canal - 1882-1931)

C. Form Prepared by

name/title  Christy Davis
organization  Davis Preservation  date  2013
street & number  909 ½ Kansas Avenue, Suite 7  Telephone  785-234-5053
city or town  Topeka  state  KS  zip code  66612
e-mail

D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR 60 and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation.

I hereby certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

Signature and title of certifying official  Date

State or Federal Agency or Tribal government

Signature of the Keeper  Date of Action
Historic Resources of the Soule Canal

Table of Contents for Written Narrative
Provide the following information on continuation sheets. Cite the letter and title before each section of the narrative. Assign page numbers according to the instructions for continuation sheets in National Register Bulletin How to Complete the Multiple Property Documentation Form (formerly 16B). Fill in page numbers for each section in the space below.

### E. Statement of Historic Contexts
(if more than one historic context is documented, present them in sequential order.)

- Irrigation in the Arkansas River Valley, 1864-1931  
- The Gilbert Brothers, Asa Soule and the Soule Canal, 1882-1931

### F. Associated Property Types
(Provide description, significance, and registration requirements.)

- Earthen Canal  
- Sump  
- Pumps

### G. Geographical Data

### H. Summary of Identification and Evaluation Methods
(Discuss the methods used in developing the multiple property listing.)

### I. Major Bibliographical References
(List major written works and primary location of additional documentation: State Historic Preservation Office, other State agency, Federal agency, local government, university, or other, specifying repository.)

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 460 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, PO Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Project (1024-0018), Washington, DC 20503.
E. Statement of Historic Contexts

Introduction
In the 19th century, when the vast majority of the nation’s population was engaged in farming, the only option for placing land into “productive use” was to cultivate it. But the westward-moving throngs – many enticed by railroads and persuasive speculators – encountered a new kind of landscape as they poured into the nation’s Southwest, an arid region where rainfall alone could not sustain a subsistence farm, let alone the kind of cash farms that were taking hold in the late 19th century. Southwest Kansas could only be conquered by irrigation; and in the days before technology provided for deep wells and mechanical pumping, irrigation meant gravity-fed canals or ditches.

The most infamous of the late 19th century irrigation schemes was the Eureka or Soule Canal, designed to divert water from the Arkansas River to nearby farmland while earning record profits for speculators.¹ New York millionaire Asa Soule provided the capital necessary for the remarkable project. Workers and teams of horses dug for two years before the 96-mile canal stretching across Ford and Gray counties was complete. But the effort and financial investment was no indicator of the canal’s future success as an irrigation system. The unpredictable rainfall and flow of the Arkansas River coupled with the sandy and dry soil’s tendency to absorb rather than convey the water proved a recipe for abysmal failure.

Many who lived through the 1890s bust saw the canal as a “large scar on the face of nature.” Later, it was viewed as a wasted opportunity. By the time of the Dust Bowl, Kansans romanticized about the canal’s past and bemoaned that it would “soon be a mere trace on the level wheat fields of several sections along the Arkansas River.”² Although the Soule Canal never succeeded in irrigating Kansas’ Arkansas River Valley, it remains as an example of pioneering efforts to tame the arid landscape, a cautionary tale of boom-time greed, and a relic of an approach made obsolete by advances in irrigation technology.

Irrigation in the Arkansas River Valley, 1864-1931
The Arkansas River, the nation’s sixth-longest river, flows 1469 miles east and southeast from the Rocky Mountain snowpack near Leadville, Colorado through Kansas, Oklahoma and Arkansas. For thousands of years, the Arkansas River was a trade route for Indian nations who populated the river valley. By the early 19th century, the route had been adopted by Euro-American traders who followed the Santa Fe Trail along the Arkansas River Valley through western Kansas. Like the American Indians before them, Euro-Americans founded Arkansas River Valley settlements, which include Pueblo, Colorado; Garden City, Dodge City, Great Bend, and Wichita, Kansas; Tulsa, Oklahoma and Little Rock, Arkansas. Over time, these communities were connected by railroads, like the Atchison, Topeka and Santa Fe, and highways, like U. S. Highway 50, both of which parallel the Arkansas River through western Kansas and eastern Colorado.

In western Kansas and eastern Colorado, the Arkansas River Valley falls within an ecosystem known as the Shortgrass Prairie. For thousands of years, this semi-arid region was grazed by large herds of American bison, essential to the survival of the plains tribes, including Apaches, Comanches, Kiowas and Kiowa Apaches. In 1827, just three years before the Indian Removal Act of 1830 would force immigrant tribes into the region and encourage them to adopt Euro-American farming practices, Carey and Lee’s Atlas dubbed what is now Kansas the “Great American Desert.”³

¹ The Gilbert Brothers, original canal promoters, called the canal “Eureka.” As soon as Soule became involved as an investor, however, the canal became commonly known as the “Soule Canal,” the more commonly known name still used today.
² Hutchinson News, 27 March 1931.
Long before Euro-Americans forced the plains tribes from their traditional hunting grounds, there were efforts to irrigate the region. Archeologists discovered three main irrigation ditches at El Cuartelejo, a ca. 1670 Pueblo settlement in current-day Scott County (NRHP, NHL). Unlike that of their nomadic Plains Indian counterparts, the Pueblo economy relied upon agriculture and, therefore, had a tradition of diverting water from streams to irrigate their crops.

In the 200 years that passed before Euro-Americans began settling the region, there had been few advances in irrigation technology. Without the means to pump water, early settlers were forced to rely on gravity. Euro-American efforts to irrigate the Arkansas River Valley date back to the spring of 1864, when the Bureau of Indian Affairs (BIA) hired Henry Fosdick to construct a small irrigation ditch in Colorado. Kansas experiments in ditch irrigation date back to 1873 when the enterprising government contractor George Allman constructed a mile-long irrigation ditch below a dam on the Smoky Hill River to water vegetables he sold to soldiers at Fort Wallace.⁴

The irrigation problem came into clear focus in the late 1870s as trainloads of new settlers, including thousands of farmers, arrived on the Santa Fe Railroad. By 1880, Ford County had a population of 3125.⁵ This new breed of pioneers encountered a landscape that would have been foreign to prior participants in the nation’s two-century-long westward expansion. Most non-immigrant settlers in central and western Kansas hailed from the North Midland States of Illinois, Ohio, Indiana, Iowa and Pennsylvania where average rainfalls were two to three times that of southwest Kansas.⁶ For the first time, American farmers encountered a place where hard work alone could not guarantee success.

By 1875, southwest Kansas farmers, “realizing the extreme fertility and richness of their soil, if only sufficient moisture could be obtained,” had begun experimenting with ditch irrigation.⁷ Observers, including Coronado expedition member Juan Jaramillo, had long compared the Kansas landscape to southern Europe.⁸ Clark E. Carr, a Garden City investor, compared the Arkansas River to the Nile.⁹ Now, scientists and speculators alike clamored for irrigation systems like those in “France, Italy, India and Algeria.”¹⁰

Ditch irrigation projects were designed to both meet the needs of drought-weary farmers and earn significant returns for speculators. The state’s first irrigation company was formed by the businessmen of Garden City, Kansas — including politician, real estate speculator and relentless promoter Charles Jesse (Buffalo) Jones and merchant G. W. Hollinger and Charles S. Landis. In 1879, the Garden City Irrigating Company established the first Arkansas River irrigation ditch in Kansas. Unlike the simple dammed reservoir systems that preceded them, these major ditch irrigation projects required considerable investment — sums that could only be provided by wealthy capitalists. In 1880, Jones became the first Kansas to seek financing from eastern investors. During the 1880s boom, Jones made a career of developing irrigation schemes and selling them to eastern capitalists. By 1883, there were five major irrigation projects in the Garden City area. Within a short decade, $3 million worth of ditches stretching 400 miles long had been built in the region.¹¹

---

⁵ 1880 U. S. Census data for Gray County is not available as the county was not yet established.
⁸ Jaramillo was on the expedition of Francisco Vásquez de Coronado.
⁹ Miner, West of Wichita, 181.
¹⁰ Adams, 79.
¹¹ Miner, West of Wichita, 179.
Ditch irrigation projects drove up the value of land in southwest Kansas, where the mere mention of a project could generate a "feverish excitement." Speculators often paired their irrigation projects with other efforts designed to both drive up the value of their ditches and the value of land. For instance, Buffalo Jones’ irrigation projects increased the value of lots in Garden City, the town he founded. Asa Soule plotted to have his town of Ingalls designated as a county seat to elicit a higher price from buyers of his irrigation ditch, town lots, and paper railroad.

Because major irrigation projects were beyond the reach of most farmers, they had little say in the irrigation projects whose purported purpose was to drought-proof their land. In 1889, the Hutchinson News reported that “The Eureka canal has been a grand success for speculative purposes, but a miserable failure this year for irrigating purposes.” The article blamed the canal’s failure on the lack of proper management. Many believed that irrigation should be taken out of the hands of reckless speculators and placed under the auspices of farmers’ cooperatives or the government.

By the late 1890s, however, other causes for the ditches’ failure were becoming clear. Irrigation ditches are only as good as the rivers from which they draw. And the flow of the Arkansas River was greatly affected in the late 1880s by two major factors. First, the ditches were built during an unusually wet period, when the region experienced record annual rainfalls as high as thirty inches, twice the average, providing ample supply when, ironically, there was little demand. In the late 1880s, the average rainfall had dropped to thirteen inches, and plunged below ten inches in the 1890s. Second, at the same time, Coloradans had invested heavily in irrigation schemes upriver, greatly affecting the flow in Kansas. BIA contractor Henry Fosdick’s Colorado irrigation ditch was abandoned after it was damaged in a late 1860s Indian raid. But Coloradans kept digging. In the early 1870s, George Swink, who is credited with establishing Colorado’s watermelon and cantaloupe industry, established the Rocky Ford Ditch Company in Rocky Ford, Colorado. By 1888, the 16-mile ditch was irrigating 10,000 acres of farmland. In 1884, Denver speculator Otis Haskell and his Arkansas River Land Town and Canal Company began reviving Fosdick’s ditch, which he sold to investors in 1887.

In an attempt to address Kansas farmers’ concerns that Colorado was taking more than its share of the Arkansas River, the State of Kansas established a Board of Irrigation in 1895. By then, however, the damage was done. The Arkansas River was dry – and even if Kansas farmers had been aware of the aquifer that lay beneath them, they lacked the technology to pump it to the surface. In the 1890s, 150,000 people, 25% of the region’s population, left western Kansas. The Dodge City Globe acknowledged defeat in 1895: “We desire to apologize for having applied the term ‘Italian climate’ to this part of Kansas.”

Kansans cried foul. In 1907, the U. S. Supreme Court heard the case of Kansas v. Colorado, the “first interstate suit of original jurisdiction to come before the Court.” In the case, Kansas claimed that Colorado “diverted so much water, that

---

12 Miner, West of Wichita, 183.
14 Hutchinson News, 13 October 1889.
15 Miner, West of Wichita, 215.
17 Ibid, 17.
18 Kansans were not yet aware of the Ogallala Aquifer. When the river receded underground through its sandy bottom, farmers believed it was receding into what they called the “underflow.”
19 Craig Miner, Next Year Country: Dust to Dust in Western Kansas, 1890-1940 (Lawrence: University Press of Kansas, 2006), 11.
20 Ibid, 18.
21 Sherow, 6. Interestingly, Kansan David J. Brewer was serving on the U.S. Supreme Court at the time of the 1907 decision.
by 1891-92 the ditches on the Kansas side were practically abandoned."[22] When Kansas lost the case, the Garden City Herald declared that "It is all right, Kansas has survived the hot winds, grasshoppers, the border ruffians of Missouri and she can survive the damage wrought by the border hogs of Colorado."[23] Although Kansas lost the case, the ruling "left open the possibility for future economic damage and a return to court."[24]

And Kansas did survive. Faced with what seemed to be an insurmountable problem, plucky farmers placed their faith in technology. While the Kansas attorneys in Kansas v. Colorado had (inaccurately and unsuccessfully) argued that the Arkansas River and its "underflow" were the region’s sole source of water, farmers had already begun to tap into the great underground ocean known as the Ogallala aquifer, which had been "discovered" in the 1890s. One of the world’s largest aquifers, the Ogallala covers 174,000 square miles over parts of Wyoming, South Dakota, Nebraska, Colorado, Kansas, New Mexico, Oklahoma, and Texas. Mass-produced windmills had arrived in southwest Kansas by 1894, when Aermotor Windmill Company, established in 1888, exhibited three models at the Finney County fair.[25] Soon, southwest Kansas farmers had both the means and the opportunity to irrigate their crops.

As windmills pumped up southwest Kansas property, long-lost boom-time investors took notice. Buffalo Jones, who had abandoned Garden City in the 1890s bust and had "not paid a cent of taxes" or "contributed a dollar for the benefit of the town," returned to Garden City in 1906 to "set up all sorts of claims to property that [he thought was] valuable."[26]

Investors laid plans to revive the Soule Canal, an effort touted by the Topeka Daily State Journal as "one of the big things destined to develop western Kansas."[27] The new Soule Canal was a technological hybrid; it would rely on steam-powered pumps to supply water to the gravity-fed ditch. Eventually, however, increasingly affordable combustion engines that could pull water from the depths of the aquifer would make the ditches obsolete. On March 15, 1912, the Hutchinson News announced that a hundred pumping plants in Kansas’s Arkansas Valley were "Lifting 100,000 Gallons From the Ground Per Minute...And Also Lifting Western Kansas Into Prosperity, by Irrigation." The pumps, in the words of the Garden City Telegram, "saved western Kansas."[28] Between 1900 and 1920, the populations of Ford and Gray Counties nearly tripled.[29]

The irrigation boom continued through the first half of the twentieth century as the state’s farmers supplied war-torn Europe with grain and after World War II as the booming economy afforded individual farmers the means, mostly through credit, to buy irrigation equipment. Between 1945 and 1958 alone, the state’s irrigated acreage burgeoned from 96,000 to 890,000.[30]

Despite the ability for farmers to irrigate, the battle between Kansas and Colorado for water from the Arkansas River continues. The U. S. Supreme Court made rulings in the longstanding Kansas v. Colorado case in 1902, 1907, 1943, 22 Kansas v. Colorado 206 U.S. 46 (1907).
23 Miner, Next Year Country, 102.
26 Garden City Herald, 28 July 1906, quoted in Miner, Next Year Country, 46.
28 As quoted in Hutchinson News, 15 March 1912.
29 Gray County’s population more than tripled between 1900 and 1920, from 1282 to 4712. Ford County’s almost tripled, from 5517 to 14,293. 1900 and 1920 U. S. Census, Ancestry.com, 1900 and 1920 United States Federal Census [database on-line], (Provo, UT, USA: Ancestry.com Operations, Inc., 2009), Images reproduced by FamilySearch.
30 Garden City Telegram, 19 October 1961.
1995 and 2001. In its most recent ruling in 2001, the Supreme Court ordered Colorado to pay compensatory damages for its diversion of water from the Arkansas River.

**The Gilbert Brothers, Asa Soule, and the Soule Canal - 1882-1931**

During the 1880s, railroad expansion, eastern investment and pioneer optimism created a perfect storm in southwest Kansas, a combination of circumstances that created a project so ambitious that it has captured the imagination of Kansans for more than a century.

Like the Santa Fe Trail before it, the Atchison, Topeka and Santa Fe Railroad paralleled the Arkansas River through much of Kansas. In the 1860s, the Santa Fe had received a federal land grant to finance construction of its line, which stretched southwest from Atchison and Topeka along the historic route of the Santa Fe Trail. Once it reached the Kansas-Colorado border in 1872, the Santa Fe stepped up efforts to sell its Kansas land, which amounted to nearly three million acres.\(^{31}\)

Among the regions the Santa Fe touted in its embellished promotional materials was the Arkansas River Valley. In an 1875 campaign, the Santa Fe boasted that the “The Arkansas Valley is the richest as well as the most beautiful valley on this planet and is sure to become the garden of the West.”\(^{32}\) And thousands of farmers and ranchers believed it. Within sixteen months of the railroad’s making its Garden City-area lands available for sale in 1882, the Santa Fe sold 100,000 acres there.\(^{33}\)

The Santa Fe claimed that there was “no finer country for the raising of sheep can be found than here,” and George and John Gilbert took heed. Like many Kansas pioneers, the Gilbert Brothers were born in Massachusetts, George on July 22, 1846 and John in June 1853.\(^{34}\) George married Ella Amelia Cogswell in June 1872. The Gilbert Brothers came to Kansas between 1880 and May 1882, by which time they were operating a sheep ranch near the Ford County community of Spearville.\(^{35}\) The Kansas ranching industry began to take shape in the late 1870s, as cattle and sheep filled the ecological niche once dominated by bison, which by that time were nearing extinction from over-hunting. In 1880, there were at least 80,000 sheep in western Kansas.\(^{36}\) By 1883, the *Dodge City Times* estimated the number had ballooned to two million.\(^{37}\)

In 1882, a down year in the sheep market, the Gilbert Brothers embarked on a new venture. By then, Charles Jesse “Buffalo” Jones had attracted the attention of settlers and, more importantly, investors to Garden City with his multiple irrigation canal schemes. Why shouldn’t Ford County benefit from the irrigation boom? The Gilbert Brothers formed the Eureka Irrigating Canal Company and began pitching their plan to eastern investors. On January 11, 1883, the *Dodge City Times* reported that the Gilbert Brothers had returned from Rochester, New York, where “They enlisted the favor of some capitalists in that city,” and would “shortly commence the survey of a line for an irrigating ditch.”\(^{38}\)

The survey was complete by April 1883, when John Gilbert hosted an exploratory tour of projects in Garden City and Colorado, as well as a tour of the route of the proposed Eureka Canal. The party included Santa Fe land agent and Ford

---


\(^{32}\) Atchison, Topeka and Santa Fe Railway, “Ho! For the New Kansas!” (Topeka, 1875), available online at kansasmemory.org.

\(^{33}\) Miner, *West of Wichita*, 182.


\(^{35}\) *Dodge City Times*, 18 May 1882.

\(^{36}\) *Larned Chronoscope*, 24 December 1884; 7 April 1882.

\(^{37}\) *Dodge City Times*, 1 March 1883.

\(^{38}\) *Dodge City Times*, 11 January 1883.
County Clerk George W. Potter, surveyor E. J. Baird, former Rochester Mayor H. L. Fish and fellow Rochesteran H. Martin. Fish, who was "connected with the canals in New York State," was judged by the *Dodge City Times* to be "a competent gentleman to judge of water schemes." The *Times* noted that the New Yorkers were "favorably impressed with the project, and will return to New York, where they will enlist other capitalists."  

While John Gilbert was touring southwest Kansas with New York dignitaries, his brother George was in Rochester "on business connected with this enterprise." He would remain there for months, finally announcing plans to return in June 1883 "with a party of gentlemen who will view proposed project from a personal and practical standpoint." Despite drought conditions that the *Times* deemed would be "unfavorable to the development of the project," the Gilbert Brothers were on the verge of success. Their year-long campaign finally bore fruit on October 1883, when they managed to curry the favor of New York millionaire Asa Soule.  

Asa Titus Soule was born in Duanesburg, New York to Quaker farmer Enos Soule and his wife Mary Titus Soule on August 2, 1824. In 1830, he moved with his family to Onandaga County, then to Savannah, New York where the family settled permanently. In the words of one biographical sketch, Soule's early life "was passed in comparative obscurity." In 1850, Soule was living on the family farm with his parents and seven of his siblings. By then, his father had accumulated a considerable amount of property valued at $6000.  

Soule married Marilla Sophia Hubbard on September 1, 1852 and soon thereafter the young couple welcomed a son named Wilson. Soule retained a close life-long bond to his older brother Rowland, owing in part to the fact that the two brothers married sisters. The two couples shared Rowland and Asa’s father’s home, “divided into apartments for two dwellings,” for the remainder of their lives. After their father’s death, Rowland, the oldest son, continued to farm the family property.  

But Asa set his sights on more glamorous pursuits. During his “obscure” years, Soule worked as an agent for a patent medicine business, then as an agent selling patents. In 1860, the U. S. Census reported his occupation as “Speculator.” He used his knowledge of farming and patent law to file a patent for an improved hay rack in 1868. By 1870, the family was living on a farm in Michigan, where they were, according to one source, invested in peach orchards and mineral springs. By then, Soule had also dabbled in an agricultural implements manufacturing company, managed a hotel at South Butler, New York, and worked mapping land in New Jersey and Pennsylvania. But Rochester remained his home.  

It was not until he was nearly fifty years old that the restless Asa Soule found his road to riches. Fellow Rochesteran John D. Doyle filed a patent for Hop Bitters on June 25, 1872. The concoction, whose ingredients included hops, the diuretic herb buchu, dandelion, the hallucinogen herb mandrake, and “whisky, brandy, or any other of a like nature which will answer as a preservative,” had the purported purpose of treating "general debility, loss of appetite," "urinary diseases"

---

39 *Dodge City Times*, 5 April 1883.  
40 Ibid.  
41 *Dodge City Times*, 7 June 1883.  
43 1850 U. S. Census, Ancestry.com, *1850 United States Federal Census* [database on-line], (Provo, UT, USA: Ancestry.com Operations, Inc., 2009), Images reproduced by FamilySearch. It likely that Asa worked on the farm. He was living in his father’s household in 1850; but his occupation was not listed. By 1860, he listed his occupation as “Speculator.”  
For a man with a growing family and insatiable ambition, failure was not an option. To ensure success, Soule embarked on an impressive unprecedented marketing campaign that relied on nationwide advertising and publicity stunts to create one of the first national brands. In 1879, Asa Soule signed contracts with members of a failed Albany baseball team (The Capital City’s) and created the Hop Bitters, a new professional team for Rochester. The team, which played at Hop Bitters Field, was the subject of ridicule among those who saw it as a “mere advertising dodge.”46 Soule drummed up even more controversy for his role in an infamous single-scull race in Mayville, New York.47 In return for a five percent cut in profits, Soule lured sculling luminaries Charles Courtney of New York and Edward Hanlan of Canada to Mayville for a race. Hop Bitters offered a $6000 purse for the winner. After a series of debacles and a rigged “race,” Soule demanded his five percent cut, but pulled the $6000 purse.48 Most of the schemes were successful attempts at what would today be called guerilla marketing, designed for the sole purpose of generating buzz about Hop Bitters. Principal among them was Soule’s offer of $100,000 to Rochester University in exchange for naming the school Hop Bitters University.49

As president of Hop Bitters, Soule reportedly drew an annual salary of $15,000, an exorbitant sum in the 19th century. By 1880, his household included three servants.50 Soon, he had amassed enough wealth to dive into many other speculative pursuits. In addition to his investments in southwest Kansas, detailed below, Soule was involved in a number of other interests in the booming 1880s. Soule was vice president of the Rochester and Charlotte Turnpike Road Company, on the Board of Directors for the Erie, Rochester and Lake Ontario Terminal Railway Co., owner of the Rochester Sunday Tribune, partner in the W. W. Munsell Publishing Company, and president of the Rochester Electric Railway Company.51

Soule was at the height of his power and influence in December 1882, when Spearville, Kansas ranchers John and George Gilbert first arrived in Rochester looking for financing for their canal scheme.52 It is unclear how John and George Gilbert came to be introduced to Asa Soule. Some sources imply that the Gilberts had lived in western New York. George Gilbert was married in Ontario, New York, the home of his wife’s family, thirty miles east of Rochester. Perhaps the brothers were related to the Gilberts who were the Soule’s neighbors in 1850.53

Regardless of any past connections, Soule would have been very familiar with the canal concept. Rochester owed much of its commercial and industrial success to the Erie Canal, which passed through the city.54 But the canal the Gilbert

47 Sculling is a form of rowing that was hugely popular in the late nineteenth century. It differs from team rowing in that each athlete uses two rows, one in each hand. Per Footnote 33, some claim the Soule sculling scandal killed the sport of sculling.
49 Daily Sitka (NY) Sentinel, 17 December 1897.
52 Ford County Globe, 19 December 1882, 9 January 1883, and 13 February 1883.
53 1850 U. S. Census.
54 The author has spent a great deal of time trying to find a familial connection between Asa Soule and New York canal engineer Howard Soule. So far, this research has failed to bear fruit.
Brothers planned was a different animal altogether. Unlike the Erie Canal, which was designed as a navigable commercial transportation route tying the Great Lakes to the Atlantic Ocean, the Gilberts’ canal was designed strictly for irrigation. The Gilbert Brothers eventually managed to convince Soule that their scheme was water tight. It took Soule nearly a year to carry out his due diligence; but in October 1883 he signed on to the venture.\(^55\) Although the Gilbert Brothers had named their company the Eureka Irrigating Canal Company, a name designed to attract the attention of Eastern capitalists, the project soon became synonymous with the name of the financier Asa Soule. It was a fitting name considering that Asa is a Hebrew name for “doctor” and Soule is an English surname meaning “muddy.” Asa Soule had become a Doctor of Mud.

The Soule Canal\(^56\) was the one of the most ambitious irrigation project ever attempted in Kansas.\(^57\) After construction began in April 1884, it took two years, 60 horses, 150 men and between $250,000 and $1,000,000 to dig the 96-mile channel. Men were paid $1.50 per day, more than the average daily wage for farm laborers at the time. Men with horse teams were paid $2.50 per day. The “small army” of men progressed at a brisk pace of two miles per week, completing the bulk of the project by spring 1886. The canal’s route is clear in the 1887 Everts Atlas (see Figures 1 and 2).

Once Soule was in, he was all in. He invested heavily in Gray and Ford counties, mostly in an effort to increase the value of his early holdings. Soule built Soule College on the north end of Dodge City and donated it to the Presbyterian Church.\(^58\) He founded banks in Dodge City, Ingalls and Spearville, built a light and water plant in Dodge City, and chartered the Dodge City, Trinidad and Montezuma Railway.

Like Soule, the Gilbert Brothers stepped up their southwest Kansas business pursuits in the booming mid-1880s. In 1884, they platted the town of Gilbert. In 1887, J. W. Gilbert was on the boards of both the Dodge City Street Railway and Soule College. In early 1888, the Gilbert Brothers opened Lakeview Addition, platted by Asa Soule in the area of Soule College, and endeavored to build a new bathhouse there. They established Crystal Lake Ice Company and announced plans to combine their light and water works in 1890.\(^59\)

After the Great Blizzard of 1886 decimated the state’s cattle and sheep populations, the Gilbert Brothers were likely grateful they had diversified. But they were not left unscathed by the droughts, blizzards and plagues of the late 1880s and 1890s. When the boom busted, southwest Kansas businessmen faced two daunting choices—leave at heavy losses (like Buffalo Jones) or wait out the bad times. The Gilbert Brothers stayed. In the March 28, 1891 issue of the Dodge City Democrat, an edition whose front page was devoted to advertisements for sheriff’s sales, the Gilbert Brothers announced plans to complete the canal.

Soule had challenges of his own, with increasing pressure for his southwest Kansas investments to perform as Hop Bitters’ profits declined. In 1887, a Kingston, New York court ruled that hop bitters, marketed as a treatment for alcoholism, was intoxicating. A local innkeeper was fined $50 for selling the product without a license to sell spirituous...

\(^{55}\) *Dodge City Times*, 25 October 1883.

\(^{56}\) Pronounced like “soul” or “sool” or “soolee.”

\(^{57}\) *Hutchinson News*, 4 March 1909. Charles Jesse (Buffalo) Jones was the main ditch irrigation developer in western Kansas, with many irrigation schemes. However, 96-mile Soule Canal, according to Jones’ own account, was longer than any one of his projects. Richard Josiah Hinton, *Irrigation in the United States* (U. S. Department of Agriculture, 1887), 144. “'C J Jones of Garden City writes that 'C J Jones of Garden City writes that The Great Eastern Canal has about 60 miles of main and lateral ditches and cost $110,000 The Kansas Canal has 20 miles and cost $8,000. The Garden City Canal has 15 miles and cost $6,000. The Western Canal has 16 miles and cost $7,000.'”

\(^{58}\) The property was sold to the Methodist Church in 1903. From 1913 to 1992, this was the campus of St. Mary of the Plains, a Catholic boarding school for girls that became a four-year liberal arts college in the 1950s.

\(^{59}\) *Dodge City Times*, 2 June 1887, 10 May 1888, 16 June 1888, 29 January 1890, 1 October 1890.
With the introduction of modern medicine, the general public grew increasingly skeptical of patent medicines and the opportunists who profited from them. An anecdote from the time illustrates the public sentiment. According to lore, when someone asked Soule if his product worked, he “gazed around his estate” and said “Sure it works. Look what it’s done for me.” (The story might not have seemed as plausible if the general public knew he still lived on his father’s estate, and shared a home with his brother.)

That the canal would go the way of Hop Bitters was foreshadowed by Soule’s notorious failure to secure county-seat status for the town of Ingalls, which he developed at the head of the Soule Canal. When Gray County was established in 1887, there were three main towns – Cimarron (founded 1878), Montezuma (founded 1887) and Ingalls (founded 1884). Ingalls, which Soule named after U. S. Senator John Ingalls, was located on both the Soule Canal and, like Cimarron, the Santa Fe rail line. County-seat designation was a high-stakes game in 19th-century Kansas. Such status would drive up land values in Ingalls and ensure its long-term prosperity. In a desperate (if not unprecedented) bid, Soule secured Montezuma’s support for Ingalls’ county-seat designation by promising the Dodge City, Trinidad and Montezuma Railway. After Cimarron won an October 31, 1887 election, Ingalls supporters uncovered a plot to sell votes for Cimarron. By the time the feud was settled – it took a gun battle and the state militia – Asa Soule’s fortunes had already begun to shift.

In March 1889, the Ingalls Union announced that the canal was complete and that “A large portion of Gray County will be under irrigation by next fall.” By fall, however, local support was waning. Just as the project was completed, the average annual rainfall plunged to 13 inches. The canal could only irrigate farmland in periods of heavy rainfall, at the times when farmers did not need it. Desperate farmers turned on the Gilberts. In its “Spearville Brieflets” on October 13, 1889, the Hutchinson News bemoaned that “The Eureka canal has been a grand success for speculative purposes, but a miserable failure this year for irrigating purposes on account of no one to manage it properly.”

The “miserable failure” of the canal was due in part to the nature of its construction. In its training manual on irrigation, the Food and Agriculture Organization of the United Nations identifies the many disadvantages of earthen canals. Among them are the “risk of the side slopes collapsing,” “water loss due to seepage,” and the requirement of “continuous maintenance in order to control weed growth and to repair damage done by livestock and rodents.” These shortcomings could have been averted by lining the canal with masonry; but doing so would have required an initial investment that would have been infeasible even for an eastern millionaire.

Ironically, it was heavy rainfall in 1890 that signaled the beginning of the end for the Soule Canal. “More rain has fallen in Gray County in August than any previous month for four years,” the Hutchinson News reported, “Our rain reporter says upwards of five inches has fallen in this month.” The Gilbert Brothers were forced to “put a large force of men to work repairing the damage done by the late rains to their dam at the head …”

On January 17, 1890, Asa Soule, the Doctor of Mud, died of pneumonia, further eroding the canal’s chances for success. As the rains came down – Dodge City rainfall in 1890 and 1891 was 11.7 and 32.3 inches respectively – the Gilbert

---

60 New York Times, 29 December 1887.
62 Hutchinson News, 13 October 1889.
64 Hutchinson News, 31 August 1890.
65 Ibid.
After Soule’s death, his business holdings were managed by his son Wilson, who had been his secretary since the late 1870s. In 1892, Wilson Soule dissolved the Hop Bitters Company. By then, according to one account, “the various forms of bitters which were at one time so popular [had] nothing like the sale they once had.” Annual sales had plunged to $5000. Perhaps seeing the writing on the wall, Asa Soule had discontinued his nationwide advertising and placed all bets on his investments in the West. The short version of his obituary, which was circulated nationwide, devoted one sentence to Hop Bitters— and three sentences to his western Kansas exploits. The longer accounts of his life waxed quixotic about his “devotion to truth, his justness and exactness in all his dealings, his sense of honor and his sterling integrity.” Although obituary writers estimated the value of his estate at $2,000,000, Soule’s fortune was in jeopardy.

The year his father died, Wilson Soule commissioned a massive Richardsonian Romanesque mansion in Rochester. Wilson was in the midst of a Kansas Supreme Court Case involving the Dodge City, Montezuma and Trinidad Railway Company when he died in a freak accident trying to stop a runaway horse. His family, by then greatly affected by their failed investments in the West and the Panic of 1893, was forced to leave the Rochester mansion, which they sold to photo magnate George Eastman.

Unlike Asa Soule and his ill-fated son, the Gilbert Brothers somehow managed to survive the devastating 1890s. John Gilbert, who boasted an occupation in “real estate” in the 1885 census, identified himself in the 1900 U. S. Census as a “stock grower.” Long after the ditch failed, the Gilbert Brothers clung to its prospects. They were linked to yet another failed attempt to revive the canal in 1909 in which they famously hired Eugene Ware, an attorney better-known for his poetry as “Ironquill,” to represent them in the re-purchase of the canal right-of-way from English investors.

In 1909, rumors swirled about a Denver investment company’s interest in the canal. The Hutchinson News reported that “it is the purpose of the Colorado company to dredge out the old head race, sink it deeper into the underflow, and try and provide a head of water sufficient to fill the ditch.” The rumors, it appears, were at least partly true. The effort to revive the canal was reorganized as the Arkansas Irrigation Company. According to the Topeka State Journal, “the plan to develop the Arkansas valley ditch, extending from Ingalls to Spearville” was “one of the big things destined to develop

---

66 Hutchinson News, 4 March 1909; Miner, Next Year Country, 16. When assigning blame to the Gilbert Brothers, who managed the canal, reporters called it by the name they gave it, “Eureka.”
68 1877 Rochester Directory.
70 A contribution to the history, biography and genealogy of the families named Sole, Solly, Soule, Sowel, Soulis, with other forms of spelling : from the eighth century to the present, with notes on collateral families, both foreign and American (unknown: G.T. Ridlon, 1926).
71 State v. Dodge City, Montezuma and Trinidad Railway Company, Pacific Reporter v. 36 (April 12-July 19, 1894), 755.
72 Wilson Soule is said to have spent $100,000 on his 35-room Richardsonian Romanesque mansion at 1050 East Avenue in Rochester in 1892. Eastman lived in the home until 1905 when his own Rochester mansion was completed. The building was saved from demolition and has been owned by the Asbury Methodist Church since 1950. Landmark Society of Western New York, “Soule House,” http://www.landmarksociety.org/tours/index.html?tourID=10018. (Accessed 10/31/2011.)
73 Hutchinson News 4 March 1909, 27 August 1939.
74 Hutchinson Daily News, 4 March 1909.
western Kansas.” English capital was used to construct a large reservoir at Ingalls and install a “barge with strong modern pumping and hydraulic machinery.” The work, it was said, progressed at a pace of 100 feet per day:

Strong streams of water eat away the sand and earth in front of the barge, and the mixture is driven through long pipes on the sides of the barge to the shores, where the water drains back in the canal to be used again and again in floating the barge, and by hydraulic streams in washing out a path for the canal. The sand thrown out with the water remains on the sides and forms banks for the canal five feet high. So the barge floats through the country eating a way for itself with streams of water, piling banks of sand on each side, and leaving behind it a broad deep canal that will irrigate and make fertile miles of farm lands in Gray and Ford counties.  

John Gilbert was still living in Dodge City in 1915. Like many early Kansas boosters, George Gardner Gilbert took his Kansas profits farther west and died in Orange County, California on April 11, 1929.

The 1909 improvements, which included spillways, locks and dams, can be clearly seen in a 1913 photograph (see Figure #6). But the investment bore little fruit. According to collective memory, the canal itself never held water, which would simply soak through the sandy soil, into the so-called underflow. In 1916, the Arkansas Valley Irrigation Company sold fifty miles of the canal to a Great Bend man for $150,000. The sump, or retention pond, at Ingalls “became a popular swimming hole and fishing place,” with swimmers diving from one of the two abandoned dredges. The pond was used for baptisms, boating, parties and picnics. According to reports, at least two people drowned there. But, for the most part, the state’s most ambitious irrigation project became “nothing but a weed covered ditch that catches tumble weeds.”

Kansans continued to blame the canal’s failure on Colorado, whose efforts to harness the Arkansas River by 1921 resulted not only in hundreds of miles of canals but also in an elaborate system of levees to protect its cities from flooding. But the Arkansas River knew no boundaries. On June 3, 1921, record rains swept over Colorado. The impact of the resultant flooding was magnified when the levee at Pueblo broke, sending a wave of flood waters into the city. Kansans braced as the flood waters that left hundreds of casualties and as much as $20 million in damage in their wake at Pueblo crossed the state line. “We could hear the roar as that gushing water came down through the area,” recalled Jeff Hazelton of Ingalls, “The noise could be heard for several miles.”

The Pueblo Flood of 1921 was the last straw for the Soule Canal. At Ingalls, the flood waters washed out an island in the Arkansas River, requiring a new bridge to span the river where two had before. The Hutchinson News reported that “The head of the irrigation ditch, west [sic] of Ingalls, is hardly recognizable…The river cut a channel into the sump at the west end and is racing through it at a rapid gait. The sump has been widened to about 100 feet in width, and is thrown back into the river at the east end by a sand bag dike thrown across.” It was feared that the Soule Canal would exacerbate the threat by carrying floodwaters farther afield. But “the water was finally diverted back into the regular channel.” When the flood waters receded, the barges and dredges were gone. The only evidence of the sump was the driveshaft “sticking up two to three feet above the ground.” The damage to the idle canal sump at Ingalls was nothing compared to the havoc the floods wreaked in Colorado. Locals saw it as providence; on June 27, a headline in the Hutchinson News declared that “Colorado’s Misfortune Has Been a Blessing to Arkansas Valley Through Kansas.” Unlike the failed canal, the rain and floodwaters brought much-needed relief from drought.

75 It was during this second major period of development that two steam-powered centrifugal pumps, two large dredging barges, and new spillways, locks and dams were installed at the sump.
76 Topeka Daily State Journal, 12 August 1909.
77 Miner, Next Year Country, 87.
78 Ford County Clippings, v. 3 (1939-1955), page 40, K978.1-F75.
79 Cimarron Jacksonian, 21 December 1977.
80 Hutchinson News, 20 June 1921.
81 Cimarron Jacksonian, 21 December 1977.
82 Hutchinson News, 27 June 1921.
During the Dust Bowl, desperate farmers proposed reviving the ditch by putting “down wells and tap the underflow to feed the irrigating canal when water in the river is at low stage.”^83 Apparently, the promoters still did not grasp that the vastness of the aquifer – a fact that made tapping into the river’s so-called “underflow” unnecessary. Soon, high-powered drilling equipment and inexpensive combustion engine pumps, which allowed farmers to tap the aquifer from their own land, made the ditch obsolete. The canal’s obsolescence did not go unnoticed by the state’s romantics, who bemoaned that “The old Soule Irrigation canal, which might have brought a source of untold wealth to a few western Kansas counties, is now being plowed up and leveled down by the land owners … The old irrigation canal is doomed. It will soon be a mere trace on the level wheat fields of several sections along the Arkansas river.”^84

The prophesy was partially right. In some places, particularly as Highway 50 was re-aligned over time, the canal was "leveled down." But in most places, particularly in the region’s rich ranchland, the unique cultural landscape, with its distinctive camelback humps, continues to capture the imagination of Kansans. In 1977, three local men started digging at the location where they remembered the pump shaft had been. After the men had dug ten feet down, it took a 36-ton crane about six or seven hours to free the pump. The pump is now on display outside the Santa Fe Trail Museum in Ingalls.

The Soule Canal, sometimes called “Soule’s Folly,” left many broken dreams in its wake. But the story is more than a cautionary tale of boom-time greed. The canal is a symbol of the early development of the Arkansas River Valley, legal battles over water rights, and the evolution of irrigation technology, which eventually made farming, and thus settling, southwest Kansas possible.

^84 *Hutchinson News*, 27 March 1931.
F. Associated Property Types

The property types related to the historic contexts in Section E include structures, objects, and sites associated with the Soule Canal in Gray and Ford counties from the 1880s to 1931. The period of significance for resources associated with the Soule Canal begins with the earliest construction of the earthen ditch in the early 1880s and extends to 1931 with end of the last attempts to revive the canal as a means for irrigation. These property types were determined by field visits, archival research, and conversations with landowners and area residents. Focus has been given to the Gray County segment of the Soule Canal, and, as a result, information about some resources not yet inventoried was limited. Future surveys in Gray and Ford counties may add to or alter what is known about the property types described below, or may reveal information about new property types.

The property types are largely based on function. When evaluating segments of the Soule Canal, it is recommended to first determine the functions of the extant resources. A segment of the canal is defined by an earthen ditch, which may or may not include related features such as a sump, pumps, division boxes/locks, and culverts. Although some resources may not possess individual significance, they may contribute to a larger concentration of resources that convey significant aspects of the canal's history. Specific registration requirements for these property types are outlined below.

Property Type: Earthen Canal Segment

Description
The most prominent of the canal-related property type is the irrigation ditch or canal itself. The canal, an earthen structure largely covered with grass and other vegetation, stretches from the east edge of Ingalls in Gray County to Spearville in neighboring Ford County, generally following the line of the Arkansas River, Santa Fe Rail Line, and U. S. Highway 50. From west to east, the canal was intended to divert water from the Arkansas River at a point southeast of Ingalls. It follows a northeasterly path to cross the Santa Fe Railroad at the border between Ingalls and Cimarron Townships. From there, it continues east-southeast along and north of the Santa Fe line and highway 50. The canal is not entirely intact between Ingalls and Cimarron, but there are five discernible segments. Upon reaching the west edge of Cimarron, the canal followed Canal Street.

Much of the canal has been disturbed within the city limits; however, historically, the canal crossed through Cimarron, clipping the northwest corner of block 12 and crossing Main Street at the junction of Avenue B, where a wooden bridge flanked by two concrete walks spanned the canal. **(Figure 8)** The ditch continued east along the south end of block 22, then along Avenue B, now known as Canal Avenue. It followed this line through town. Remnants of the canal, marked by a riparian landscape, still remain.

On the east edge of Cimarron, the canal is briefly interrupted by modern development, but there are two discernible segments. Nevertheless, much of the canal east of Cimarron to the Gray/Ford County line is highly intact. In Ford County, the canal continues to wind its way north of the Santa Fe tracks, cutting northeast, thence southeast in Dodge Township. East of Dodge City, nearly directly north of Fort Dodge, the canal again crosses the Santa Fe line, turns south toward Fort Dodge, then winds northeast toward Spearville, crossing the Santa Fe line a third time in the northwest corner of Spearville Township. The canal terminates at the west edge of Spearville.

First constructed in the mid-1880s, at least 50 miles of it was re-worked in 1909, with work on spillways, locks and dams. In 1939, the canal was described as 48 feet wide and six feet deep. Distinguishing features include a linear earthen ditch – of varying widths and depths – marked on both sides by pronounced camelback mounds of excavated dirt that form the

---

**1915 Sanborn Fire Insurance Map for Cimarron, Kansas.**
National Register of Historic Places
Multiple Property Documentation Form
Continuation Sheet

Section number ___ Page __ Historic Resources of the Soule Canal

The canal’s route remains clearly visible in aerial photography and on the ground. Although there are places, principally between Ingalls and Cimarron, where the earthen canal has been leveled, plowed and graded for farmland and road projects, the canal’s scale has discouraged many alterations. With the exception of the canal section within the city limits of Cimarron and Dodge City, the canal from the head at Ingalls to the terminus west of Spearville is clearly visible in aerial photographs.

The character of this property type will most often result in linear-drawn boundaries – some perhaps miles long – that are generally restricted to the resource itself (which is usually well-defined) and a small surrounding land area of approximately 5-10 meters beyond the visible structure. Land management and owner consent may prevent such large areas from being included within the boundaries of eligible canal segments.

Significance
The Soule Canal was one of the most ambitious irrigation project ever attempted in Kansas; and the bulk of the project’s time and expense was devoted to the construction of the earthen canal itself. Segments of the earthen canal or ditch, intact outside the various city limits, are the principal remaining features of the Soule Canal. Intact segments are significant under Criterion A in the areas of Agriculture and Community Planning and Development for their association with the development of agricultural irrigation in southwest Kansas during the late 19th and early 20th centuries. In the area of Agriculture, the canal’s history is tied closely to the history of irrigation in the Arkansas River Valley, as detailed in the Statement of Historic Contexts. Ditch irrigation was essential to the agricultural development of this region in the years before technology and comprehension of underground aquifers created the capacity for pump irrigation. In the area of Community Planning and Development, in tandem with other investments, like colleges, resorts and hotels, speculators like the Gilbert Brothers and Asa Soule, as well as their principal competitor Buffalo Jones, used these ambitious irrigation systems to attract new settlers to and drive up land prices in the communities they developed.

Segments of the earthen canal also may be eligible under Criterion C in the area of Engineering as examples of construction techniques associated with agricultural irrigation in late 19th-century Kansas. Although some blamed the canal’s failure on a lack of proper planning and maintenance, the canal required a great deal of engineering prowess. First, surveyors had to identify a route that would propel water along the canal using only the power of gravity. Then, project managers had to carry out the dredging using horses and graders, the best available tools.

Earthen canal segments may also be significant under Criterion D if they retain sufficient integrity to have the potential to yield important information that contributes to the understanding of the Soule Canal or 19th-century irrigation canal construction. While Criterion D is often applied to archeological sites, it can also be applied to buildings or structures if they are the principal source of the important information that is being sought, such as the construction expertise that affected the evolution of a particular building method. In the absence of primary source drawings or plans depicting methods of construction, cross sections, and dimensions, the canal segments shall be viewed as a principal source of information. Extant segments of the canal likely contain data which may be vital to any wider study of the canal or late 19th century irrigation engineering techniques.

Registration Requirements
To adequately reflect their significance, earthen canal segments must have a clear linkage to the Soule Canal. Each property must be individually evaluated for its period of significance in the areas of Agriculture, Community Planning and Development, and Engineering, though other areas may apply as well.

Earthen canal segments have the potential to be eligible for listing in the National Register of Historic Places as part of this multiple property nomination for their statewide significance under Criteria A, C, and D. Other levels of significance – local or national – may apply if the site has other associations. To be eligible under Criteria A and C, the earthen canal must retain integrity from the period of significance and physically interpret its historic use or intended historic use. Visible remains should include depressed earth flanked by mounded canal banks. Boundaries of earthen segments generally follow a winding linear pattern with a general width of 25 to 75 feet and a depth of five to 15 feet. The canal generally
follows the topography of the landscape. When possible, natural delimiters (e.g., topographical features) are preferable when determining adequate boundaries. Exceptions could include segments that incorporate other wider resources such as the sump, locks or culverts.

Eligibility under Criterion D will depend upon the data that is required for the information sought. A segment of earthen canal need not visually represent the historic period/function, but it must sufficiently contain the information sought.

The analysis of an earthen canal segment is relatively straightforward. It involves evaluating whether the integrity of the canal features are sufficiently retained along the confirmed path. Later or modern development in the vicinity of the canal is not generally a factor in determining eligibility unless that development itself physically impacts the canal. More developed areas in and around cities have much shorter and less defined segments of the canal, as is demonstrated around the community of Cimarron in Gray County. Aerial imagery, in combination with historic maps and USGS maps, and field verification are needed to confirm the location and integrity of the canal.

**Property Type: Sump**

**Description**

The retention pond or sump at the head of the canal at Ingalls provided a source of water for the canal. Early on, the canal was fed by gravity through a system of locks. A major flood in 1895 washed out the original sump, which was “constructed by [a] wing-dam of pilings.” The canal was revived in 1908, when another group of eastern investors built a new sump, sixty-five feet wide, ten feet deep and 1 ½ miles long. They built two large barges with dredges and installed two large centrifugal pumps. After the canal failed for a second time – the sandy bottom caused water to seep into the ground instead of flow through the canal – the sump became a popular fishing and swimming hole. One of the two abandoned dredges was used as a diving platform. The sump was used for recreation until it was washed away in the 1921 flood. According to the *Hutchinson News*, in 1921 the river cut a channel into the west end of the sump and was “racing through it at a rapid gait.” Over time, the site “became a browned and parched pasture used for grazing cattle … with only a few small mounds here and there to show where the sump…[was] once located.” But physical evidence of the sump remained. In 1977, a group of local adventurers excavated one of the 1908 centrifugal pumps. At that time, the location of the sump was described as “just south of the Ingalls Feedlot: a short distance south of the railroad tracks and north of the now dry Arkansas River.” The sump is now defined by an earthen depression and mounds, although it has not been studied or documented. Among the resources known to have been buried in the 1921 flood are the second centrifugal pump, locks and gates, and two dredges.

**Significance**

Because the sump was washed out in the 1921 flood and no longer interprets its historic use, it is significant only under Criterion D in the areas of Agriculture and Engineering for potential to yield information about construction techniques associated with agricultural irrigation in Kansas in the late nineteenth and early twentieth centuries. While Criterion D is often applied to archeological sites, it can also be applied to buildings or structures if they are the principal source of the important information that is being sought, such as the construction expertise that affected the evolution of a particular building method. In the absence of primary source drawings or plans depicting methods of construction, cross sections, and dimensions, the sump shall be viewed as a principal source of information. Among the related resources that may be uncovered in future investigations are the locks, dams, dredges and pumps that constituted the sump.

**Registration Requirements**

The sump has the potential to be eligible for listing in the National Register of Historic Places as part of this multiple property nomination for its statewide significance under Criterion D. Although there are only a few visible physical

---

87 *Hutchinson News*, 20 June 1921.
features of the sump on the landscape, including small mounds, a more intensive study of the sump would be needed to document its historic and current size, depth, and boundaries. Eligibility under Criterion D will depend upon the data that is required for the information sought. The sump need not visually represent the historic period/function, but it must sufficiently contain the information sought.

**Property Type: Pump**

**Description**

At least two massive centrifugal pumps were installed in the sump as part of the 1908-1909 improvements. The pumps, powered by large belts attached to steam engines on the bank of the sump, were designed to feed water into the canal. Although they “could throw a stream of 30,000 gallons of water per minute,” they failed to “throw” enough water to feed the canal, whose sandy bottom was more apt to seep than to carry water to nearby farms. The pumps were abandoned and then buried during the 1921 flood. For more than five decades, the top two to three feet of one of the pumps stuck out above the ground. With the help of a 36-ton crane, three local men raised the pump from its muddy grave in 1977. The pump was located at the sump, “just south of the Ingalls Feedlot: a short distance south of the railroad tracks and north of the now dry Arkansas River.” The excavated pump, a cast-iron implement measuring eighteen feet in height, was installed by a Denver pump engineer and manufactured by Morris Machine Works of Baldwinsville, New York. One of the first manufacturers of centrifugal pumps in the United States, Morris Machine Works was among the firms involved in the dredging of the Panama Canal. The excavated pump is now on display outside the Santa Fe Trail Museum in nearby Ingalls.

**Significance**

Pumps ushered in a new era in irrigation, in which technology leapt from a strict reliance on gravity toward a combustion-driven future. A pump-fed canal, such as that devised during the 1908-1909 improvements to the Soule Canal, occupied a transitional period between the time of gravity-fed ditches and inexpensive combustion engines that made gasoline-powered irrigation pumps available to the masses. Unfortunately, like the gravity-fed canal before it, the improved pump-powered canal was a failure as water simply soaked through the sandy floor of the canal before it could be conveyed to area farmland.

Although it is known that at least two pumps were installed during the canal’s attempted revival in 1908-1909, only one pump has been documented, and it has been relocated away from its original site. It is possible that other pumps installed during the period of significance are extant and buried. Pumps may be eligible for the National Register of Historic Places as part of this multiple property nomination under Criterion A in the areas of Agriculture and Community Planning and Development for their association with the development of agricultural irrigation in southwest Kansas during the late nineteenth and early twentieth centuries.

A pump also may be eligible under Criterion C in the area of Engineering as it relates to the construction techniques associated with agricultural irrigation in early twentieth-century Kansas.

**Registration Requirements**

To be eligible for listing in the National Register of Historic Places as part of this multiple property nomination, a pump must retain the physical features that interpret its historic function. Integrity of design, materials, and workmanship are especially key. Although elements of feeling, association, and location are important, they must be weighed carefully when assessing the eligibility of a pump. For instance, only one pump has been documented along the Soule Canal, and it has been relocated from its original site to a permanent outdoor display near the canal head in Ingalls.

---

89 Ibid.
To be eligible, this or any other relocated pump must meet Criteria Consideration B for moved properties. National Register Bulletin 15 notes “for a property whose design values or historic associations are directly dependent upon its location, any move will cause it to lose its integrity and prevent it from conveying its significance.” Exceptions to this rule can include a property that is moved within a local area and the new setting is similar to that of the original location. Although not a portable resource, the excavated pump was manufactured off-site by Morris Machine Works of Baldwinsville, New York, and has been relocated to a museum setting near the canal where it is preserved and interpreted.

Therefore, the one-known extant centrifugal pump meets Criterion Consideration B for moved properties and is eligible for listing in the National Register of Historic Places as part of this multiple property nomination under Criterion A in the areas of Agriculture and Community Planning and Development and under Criterion C in the area of Engineering. If discovered and documented, additional pumps would also be similarly eligible for listing in the National Register. If excavated and relocated, a pump must meet Criterion Consideration B.

While Criterion D is often applied to archeological sites, it can also be applied to buildings or structures if they are the principal source of the important information that is being sought, such as the construction expertise that affected the evolution of a particular building method. A pump may be significant under Criterion D if it has the potential to yield important information that contributes to the understanding of the Soule Canal or nineteenth century irrigation canal construction. In the absence of primary source drawings or plans depicting methods of construction, cross sections, and dimensions, a pump shall be viewed as a principal source of information.

Potential Additional Property Types

Division Boxes/Locks

Description
Division boxes or locks consist of a system of gates that are used to hold water or direct the flow of water. Division boxes are clear in a 1913 photograph of the sump near Ingalls (Figure 6). As documented in the 1913 photograph, the division boxes/locks consisted of dimensional lumber gates that were raised and lowered with cast-iron mechanisms. These were likely filled in during the 1921 flood. Cast-iron members similar to those shown in the 1913 photograph have been found elsewhere along the canal, including on the property of Daniel Miller (Photo 5).

It is likely that these division boxes and locks existed only at the head of the canal, where they were used to divert water into the sump before releasing into the canal. Because there is little known primary source evidence of the construction and function of these locks/division boxes, more intensive study of these features is needed to answer when and how many locks were installed along the canal and their materials and size.

Culverts

Although no historic culverts were documented during the development of this MPDF, they are known to have been constructed to carry water under bridges and rail lines. Historically, there were culverts in Cimarron to provide sidewalk crossings at the canal (See Figure 8). Although their original material has not been documented, the culverts in Cimarron were concrete by 1915. Other likely culvert locations include the places where the canal intersected other public improvements. These include historic railroad intersections southeast of Ingalls at the Cimarron Township line and two additional crossings between Dodge City and Spearville (See Figures 1 and 2). No existing culverts have been uncovered as part of the study conducted in preparation of this Multiple Property Documentation Form. Additional documentation is necessary before significance and registration requirements for culverts can be established.
G. Geographical Data

The Soule Canal stretches 96 miles across two Kansas counties, from its head near Ingalls in Gray County east to Spearville in Ford County, passing through parts of Cimarron and Dodge City. The canal has a winding path designed to create the gravitational falls necessary to keep water flowing. From Ingalls to Dodge City, the canal generally parallels the Atchison, Topeka and Santa Fe Rail Line and the Arkansas River. At Dodge City, the rail line and river part ways and the canal follows the rail line northeast to Spearville. The canal’s path is clearly identified in the 1887 Everts Atlas (Figures 1 and 2).
Historic Resources of the Soule Canal

H. Summary of Identification and Evaluation Methods

This Multiple Property Nomination is a result of a comprehensive study of the Soule Canal, carried out by Christy Davis of Davis Preservation with assistance from research assistant John Barry and KSHS staff. The project was sponsored by the Gray County Historical Society, funded in part by a Historic Preservation Fund grant from the Kansas Historical Society.

Research for this MPDF included a review of all secondary sources related to the Soule Canal, including histories of irrigation, Kansas histories, a history of the Arkansas River Valley, and brief articles in Kansas Preservation newsletter and Kansas History: A Journal of the Central Plains scholarly journal. Research also included a review of three archeological surveys carried out under the Kansas Historical Society’s contract archeology program. In addition to secondary source research, this project included a review of many primary documents heretofore unexamined. These include the review of hundreds of newspaper articles from the late 19th century to the present, which documented the canal’s history from initial conception in 1882, to the 1909 attempt to revive the canal, to the 1921 Pueblo Flood. Other primary sources included census records, patent records, historic photographs, and transcriptions of Supreme Court cases – as well as historic maps to include Sanborn Maps, the 1887 Everts Atlas and 1916 Kenyon Atlas, which identify the course of the canal. There was also a careful review of aerial images, which clearly betray the canal’s path. A great deal of information came from community members, including from discussions at two well-attended public meetings.

Historic contexts are designed to carry readers through the history of the canal from its beginning in 1882 to the final efforts to rekindle it in 1931. The Soule Canal does not exist in a vacuum. Rather, it falls within the context of hundreds of years of attempts to tame the semi-arid region of southeast Colorado and southwest Kansas. Therefore, the first context provides a brief history of the Arkansas River Valley and irrigation in the region. The second context provides a background on the cast of characters most closely associated with the scheme, Asa Soule and the Gilbert Brothers and a detailed history of the canal itself, from its beginning to present day.

Property types were identified based upon the currently visible resources, including the excavated pump and earthen canal. The integrity of the earthen canal property type is very clearly identified given the exceptional aerial photography available for the region. It is less visible on aerial photography between Ingalls and Cimarron, but several eligible segments were identified during a field visit in October 2013. Additionally, segments of the canal have been recorded by previous archeological studies completed by Robert Hoard, Randall Thies, Marsha King, and Tricia Waggoner.90

I. Bibliographical References


*A contribution to the history, biography and genealogy of the families named Sole, Solly, Soule, Sowle, Soulis, with other forms of spelling: from the eighth century to the present, with notes on collateral families, both foreign and American.* Unknown: G.T. Ridlon, 1926.


*Kansas v. Colorado*. Supreme Court of the United States (1907).


*State v. Dodge City, Montezuma and Trinidad Railway Company, Pacific Reporter* v. 36 April 12-July 19, 1894.


Lain’s *Brooklyn (NY) Directory*, 1884.

*Atchison (KS) Globe*.

*Brooklyn (NY) Eagle*.

*Cimarron (KS) Jacksonian*.

*Daily Sitka (NY) Sentinel*.

*Dodge City (KS) Times*.

*Ford County (KS) Globe*. 
United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number: I  Page: 22  Historic Resources of the Soule Canal

Garden City (KS) Telegram.

Hutchinson (KS) News.

Larned (KS) Chronoscope.

New York (NY) Times.

Figure 2: Section of Everts’ 1887 Atlas Map of Soule Canal from Gray County/Ford County Line to Spearville.
Figure 3: Groundwater Resources in Kansas. Showing aquifer in Arkansas River Valley. A Kansas Water Atlas, Kansas Water Resources Board, 1967.
Figure 4: Ca. 1883 photo showing original canal dredging by teams of horses. Kansas Historical Society.
Figure 5: Ca. 1905 photo of picnickers at the sump near Ingalls in Gray County. Kansas Historical Society.
Figure 6: 1913 Photo showing wood and cast-iron division boxes/locks. Kansas Historical Society.
Figure 7: ca. 1915 Photo showing canal and trail. Kansas Historical Society.
Figure 8: 1915 Sanborn Map of Cimarron (with closeup of intersection of Main and Avenue B), showing Soule Canal passing west to east through the north end of downtown.