



Soule Canal – Gray County Segment 2  
Name of Property

Gray County, Kansas  
County and State

**5. Classification**

**Ownership of Property**  
(Check as many boxes as apply.)

<input checked="" type="checkbox"/>	private
<input type="checkbox"/>	public - Local
<input type="checkbox"/>	public - State
<input type="checkbox"/>	public - Federal

**Category of Property**  
(Check only **one** box.)

<input type="checkbox"/>	building(s)
<input type="checkbox"/>	district
<input type="checkbox"/>	site
<input checked="" type="checkbox"/>	structure
<input type="checkbox"/>	object

**Number of Resources within Property**  
(Do not include previously listed resources in the count.)

<u>Contributing</u>	<u>Noncontributing</u>	
		buildings
		sites
2		structures
		objects
2	0	<b>Total</b>

**Number of contributing resources previously listed in the National Register**

0

**6. Function or Use**

**Historic Functions**  
(Enter categories from instructions.)

Agriculture/Subsistence: Irrigation Facility

**Current Functions**  
(Enter categories from instructions.)

Vacant/Not In Use

**7. Description**

**Architectural Classification**  
(Enter categories from instructions.)

Other: Earthen Canal

**Materials**  
(Enter categories from instructions.)

foundation: N/A  
walls: N/A  
roof: N/A  
other: Earth

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### **Narrative Description**

(Describe the historic and current physical appearance and condition of the property. Describe contributing and noncontributing resources, if applicable. Begin with a **summary paragraph** that briefly describes the general characteristics of the property, such as its location, type, style, method of construction, setting, size, and significant features. Indicate whether the property has historic integrity.)

### **Summary**

This extant portion of the Soule Canal is approximately one mile southeast of Ingalls (population 306) situated in the south half of Section 6, Township 26S, Range 28W in Gray County, Kansas. The nominated property is a linear area with two distinct portions of the canal or ditch located adjacent to the north of US Highway 50/400. (Figures 1, 2, and 3). This portion of the canal spans much of the width of Section 6 (right up to the Section 5 line) in a northwest-to-southeast orientation. Today, this segment is visible in aerial imagery, though it is much less distinct than the westernmost segment nearest Ingalls in Section 1.

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### **Elaboration**

#### *Landscape<sup>1</sup>*

This portion of the Soule Canal is located along the floor of the Arkansas River valley, at its northern edge. As such it lies within the Great Bend Lowland division of the Arkansas River Lowlands section of the Central Lowland province of the Interior Plains of North America.<sup>2</sup> The Great Bend Lowland is an undulating plain of little relief, following the Arkansas River in a 10-40 mile wide band from the Colorado border to the Oklahoma border. It is most prominent along the river's great northerly bend, downstream from Dodge City on the west through Great Bend and Wichita to Arkansas City on the east. In the Soule Canal vicinity, it is relatively narrow, and is bounded on the north and south by the High Plains. The Great Bend Lowland is in general a poorly drained area of sand dunes and sandy plains, among which are found salt marshes, ponds, and sloughs. The surface materials consist almost entirely of sands and gravels eroded from the Rocky Mountains during the Pleistocene and carried downstream by alluvial action of the Arkansas River, which flows through the area and to the east in a shallow channel bounded by a wide, flat, poorly drained river valley. The river is not confined to a single channel, but instead has a number of channels with intervening islands, which is a braided pattern characteristic of an aggrading or depositing stream. Most of the stream flow of the river is underground. Even prior to large-scale irrigation diversions, water was usually only barely visible on the surface except during times of flooding.

The vegetation of the Great Bend Lowland in prehistoric and early historic times apparently consisted of sand prairie cut through by a thin band of floodplain forest or savanna along the Arkansas river and a few of its tributaries. Waldo Wedel noted that the "...low grass-grown banks..." of the Arkansas upstream of the Little Arkansas seem to have been "...largely treeless except for occasional cottonwoods..." and in his view this was probably true for most of the region west and south of the main stream.<sup>3</sup> According to Kuchler, the potential natural vegetation of the prairie mainly included big and little bluestem, sandreed, and switchgrass, with the forested areas containing hackberry, cottonwood, willow, and elm along with various shrubs and bushes.<sup>4</sup> The trees declined markedly in terms of numbers of species and overall abundance as one moved from east to west. Tall trees, dense

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<sup>1</sup> The following three paragraphs are adapted from standard language used in reports written by the Kansas State Historical Society, Cultural Resources Division, Archeology Office.

<sup>2</sup> W.E. Schoewe, "The Geography of Kansas, Part II: Physical Geography," *Transactions of the Kansas Academy of Science* 52, no. 3 (1949): 292-296.

<sup>3</sup> Waldo R. Wedel, "An Introduction to Kansas Archeology," *Smithsonian Institution, Bureau of American Ethnology, Bulletin* (1959): 12.

<sup>4</sup> A.W. Kuchler, "A New Vegetation Map of Kansas," *Ecology* 55, no. 3 (1974): 597.

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undergrowth, and many vines were present in the extreme east, but the forests became narrower and lower westward, and often less dense, the ground covered by an impoverished version of bluestem prairie, creating a savanna effect. And due to the shifting sand bottom of the Arkansas River channel, timber was often absent for long stretches.

The Great Bend Lowland is known to have supported a wide variety of fauna including such large game animals as bison, elk, deer, antelope, and bear. Predators such as wolf, coyote, cougar, and wildcat were also present along with smaller mammals such as beaver, otter, porcupine, fox, ferret, badger, prairie dog, and rabbit as well as small rodents. Quail and wild turkey were limited to the available timber, but prairie chicken and grouse were plentiful throughout the region. Ducks, geese, and other water and shore birds could be found seasonally on marshy areas and sandhill lakes and ponds.<sup>5</sup>

### *Soule Canal Segment (2 contributing structures)*

The canal, an earthen structure largely covered with vegetation, stretches from the east edge of Ingalls in Gray County east to Spearville in neighboring Ford County, generally following the line of the Arkansas River, ATSF rail line, and U. S. Highway 50/400.

This nominated linear segment, which includes two distinct sections, is near the west end of the canal and is comprised of the second and third intact portions located nearest the long-buried sump or collecting pool that was adjacent to the Arkansas River southeast of Ingalls. These portions of the ditch include depressed earth flanked by mounded canal banks reaching heights of five to ten feet.

These two sections are briefly interrupted from one another by an area where the canal embankments are not clearly visible, though there is no obvious intrusion on the canal. Importantly, the two sections maintain visual continuity with one another, which is why they are included together within a single boundary.

### *Integrity*

The nominated canal segment retains good integrity of location, design, materials, workmanship, feeling, and association. The primary impact to the canal and its setting has been the development of US Highway 50/400, which took out a portion of the canal immediately west of the site.

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<sup>5</sup> Wedel, 12.

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**8. Statement of Significance**

**Applicable National Register Criteria**

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B Property is associated with the lives of persons significant in our past.
- C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D Property has yielded, or is likely to yield, information important in prehistory or history.

**Criteria Considerations**

(Mark "x" in all the boxes that apply.)

Property is:

- A Owned by a religious institution or used for religious purposes.
- B removed from its original location.
- C a birthplace or grave.
- D a cemetery.
- E a reconstructed building, object, or structure.
- F a commemorative property.
- G less than 50 years old or achieving significance within the past 50 years.

**Areas of Significance**

- Agriculture
- Community Planning and Development
- Engineering
- Archeology

**Period of Significance**

1884-1931

**Significant Dates**

1884, 1909, 1921, 1931

**Significant Person**

(Complete only if Criterion B is marked above.)

N/A

**Cultural Affiliation**

N/A

**Architect/Builder**

Unknown

**Period of Significance (justification)**

The period of significance for the Soule Canal – Gray County Segment 2 begins with the start of construction on the canal in 1884 to the last effort to redevelop the canal in 1931.

**Criteria Considerations (justification)**

N/A

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### **Narrative Statement of Significance**

(Provide a summary paragraph that includes level of significance, applicable criteria, justification for the period of significance, and any applicable criteria considerations.)

#### **Summary**

The Soule Canal was one of the largest irrigation projects in Kansas during the late 19th century, and the bulk of the project's time and expense was devoted to the construction of the earthen canal itself. Segments of the canal or ditch, intact outside the various city limits, are the principal remaining features of the Soule Canal. This segment of the canal, which includes two distinct and intact portions, is nominated to the National Register of Historic Places for its statewide significance under Criterion A in the areas of Agriculture and Community Planning and Development, under Criterion C in the area of Engineering, and under Criterion D in the area of Archeology for its potential to yield important information about 19<sup>th</sup> century irrigation practices and structures. It is nominated as part of the *Historic Resources of the Soule Canal* multiple property nomination and meets the registration requirements for the Earthen Canal property type as set forth in the multiple property documentation form.

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#### **Elaboration**

The following overview is taken from *Historic Resources of the Soule Canal* National Register Multiple Property Documentation Form:<sup>6</sup>

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.<sup>7</sup> 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."<sup>8</sup> Although the Soule Canal never succeeded in irrigating Kansas' Arkansas River Valley, it remains as an example of pioneering efforts to tame the arid

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<sup>6</sup> Christy Davis, *Historic Resources of the Soule Canal* National Register Multiple Property Documentation Form (Topeka, KS: Kansas Historical Society, 2013), E1.

<sup>7</sup> 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.

<sup>8</sup> *Hutchinson News*, 27 March 1931.

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landscape, a cautionary tale of boom-time greed, and a relic of an approach made obsolete by advances in irrigation technology.

Construction of the canal, which stretched between Spearville and Ingalls, began in April 1884 and continued for two years. The effort was financed by New York speculator Asa Soule, and it required “60 horses, 150 men and between \$250,000 and \$1,000,000 to dig the 96-mile channel.”<sup>9</sup> In addition to the 96-mile canal, Soule was instrumental in the development of Ingalls at the head of the canal. As Davis notes in *Historic Resources of the Soule Canal*,<sup>10</sup>

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.<sup>11</sup>

This segment of the canal represents the second-closest extant portion of the canal to the town of Ingalls, which never grew to more than a few hundred residents. The development of the canal came on the heels of the completion of the ATSF railway line, which attracted speculators and settlers to the area. The influx of people emphasized the need for adequate water supplies, and Soule was one of many who attempted to capitalize on this need by constructing an irrigation ditch.

Though the local newspapers touted the completion of the canal, a lack of rainfall in succeeding years left the canal with little, and often no, water. This, in addition to its poor construction, meant the canal was a failure. When it did rain, as it did considerably in 1890, the canal experienced washouts that required repairs. Attempts were made in 1909 and 1931 to repair the canal and make it functional, but these efforts were unsuccessful.

The route of Highway 50 was largely in place by 1918 and connected Ingalls and Cimarron with Garden City to the west and Dodge City to the east. It also passed through Kansas City, McPherson, and Great Bend in Kansas. It had “developed from associations of town boosters who planned touring routes” and began as earlier roads cobbled together.<sup>12</sup> The Kansas Legislature had established the first State Highway Commission in 1917. It developed standards for road building and served as an administrator for federally-funded projects.<sup>13</sup> The highway, particularly as it was re-aligned over time, and other secondary roads, impacted the canal in numerous places. In some areas, the canal was leveled off to accommodate roadways. Small bridges and culverts appear in some areas where roads developed over the canal, and in many cases these features were not designed to accommodate much water. As a result, road development hampered later efforts to revive the canal.<sup>14</sup>

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<sup>9</sup> Davis, E8.

<sup>10</sup> Davis, E9.

<sup>11</sup> For a complete account of the county seat war, see Christy Davis, “Gray County Courthouse (Old)” National Register of Historic Places registration form (Topeka, KS: Kansas Historical Society, 2009), Section 8, 7-9.

<sup>12</sup> Elizabeth Rosin, *Roadside Kansas* National Register Multiple Property Documentation Form (Topeka, KS: Kansas Historical Society, 2011), E9.

<sup>13</sup> Ibid, E10.

<sup>14</sup> Davis, E12.

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### *Potential for Further Study*

In the absence of primary source drawings or plans depicting methods of construction, cross sections, and dimensions, canal segments themselves are an important source of information. Extant segments of the canal likely contain data which may be vital to any wider study of the canal or late 19<sup>th</sup> century irrigation engineering techniques. The canal's location is well known, yet it has not been mapped or defined with precision. For example, the location and depth of the extant portions of the canal relative to the surrounding landscape and the Arkansas River could yield significant information regarding its construction and the nature of preservation relative to variables such as elevation and vegetation.

To date, archeological study of the canal structure has been limited to small-scale investigations largely in response to development.<sup>15</sup> More intensive archeological investigations at this property and other similar properties with extant trail segments might produce canal-era artifacts, features, or deposits that could inform a greater understanding of the resource and its construction.

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<sup>15</sup> For recent examples, see Bob Hoard, *Archeological Survey of Tract 21 (Daniel Miller), KDOT Project 50-35 KA-0423-01, Gray County, Kansas* (Submitted to KDOT, 2009); Gina Powell, *Archeological Survey of KDOT Project 50-35 KA-2383-01, Gray County, and 50-29 KA-2384-01, Ford County, Highway 50 Improvements* (Submitted to KDOT, 2012); Gina Powell, *Phase III Archeological Testing of 14GY305 AND 14GY307, Two Dugouts in Gray County, Kansas, Associated with Highway 50 Improvements* (Submitted to KDOT, 2013); Gina Powell, *Phase II Archeological Survey of KDOT Project 50-35 KA-2383-01, Gray County, and 50-29 KA-2384-01, Ford County, Northern Alternate Alignment for Highway 50 Improvements* (Submitted to KDOT, 2013). Copies available from Kansas SHPO, Topeka.

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**9. Major Bibliographical References**

**Bibliography** (Cite the books, articles, and other sources used in preparing this form.)

Davis, Christy. "Gray County Courthouse (Old)" National Register of Historic Places registration form. Topeka, KS: Kansas Historical Society, 2009.

Davis, Christy. *Historic Resources of the Soule Canal* National Register Multiple Property Documentation Form. Topeka, KS: Kansas Historical Society, 2013.

Everts, L.H. & Company. *Official State Atlas of Kansas*. Philadelphia: L.H. Everts & Co., 1887. (Original in the David Rumsey Historical Map Collection and accessed online at <http://www.davidrumsey.com>.)

Kuchler, A.W. "A New Vegetation Map of Kansas." *Ecology* 55, no. 3 (1974): 586-604.

Rosin, Elizabeth. *Roadside Kansas* National Register Multiple Property Documentation Form. Topeka, KS: Kansas Historical Society, 2011.

Schoewe, W.E. "The Geography of Kansas, Part II: Physical Geography." *Transactions of the Kansas Academy of Science* 52, no. 3 (1949): 292-296.

Wedel, Waldo R. "An Introduction to Kansas Archeology." Smithsonian Institution, Bureau of American Ethnology, *Bulletin* (1959): 12.

*Additional Soule Canal references are listed in the bibliography of the Historic Resources of the Soule Canal National Register Multiple Property Documentation Form by Christy Davis.*

**Previous documentation on file (NPS):**

- preliminary determination of individual listing (36 CFR 67 has been requested)
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey # \_\_\_\_\_
- recorded by Historic American Engineering Record # \_\_\_\_\_
- recorded by Historic American Landscape Survey # \_\_\_\_\_

**Primary location of additional data:**

- State Historic Preservation Office
  - Other State agency
  - Federal agency
  - Local government
  - University
  - Other
- Name of repository: Gray County Historical Society

Historic Resources Survey Number (if assigned): \_N/A\_

**10. Geographical Data**

**Acreeage of Property** Less than 5 acres

**Provide latitude/longitude coordinates OR UTM coordinates.**

(Place additional coordinates on a continuation page.)

**Latitude/Longitude Coordinates**

Datum if other than WGS84: \_\_\_\_\_

**SEE FIGURE 3**

(enter coordinates to 6 decimal places)

1 37. 818372 -100. 428060  
Latitude: Longitude:

2 37. 815682 -100. 419886  
Latitude: Longitude:

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3 37. 815936      -100. 418215  
Latitude:              Longitude:

4 37. 814612      -100. 414661  
Latitude:              Longitude:

5 37. 814258      -100. 414686  
Latitude:              Longitude:

6 37. 814497      -100. 415983  
Latitude:              Longitude:

7 37. 815388      -100. 417963  
Latitude:              Longitude:

8 37. 818036      -100. 428098  
Latitude:              Longitude:

**Verbal Boundary Description** (describe the boundaries of the property)

The nominated linear-shaped resource is situated in the NW ¼ of the SE ¼ and the N ½ of SW ¼ of Section 6, Township 26S, Range 28W in Gray County, Kansas. The nominated area is north of Highway 50/400.

**Boundary Justification** (explain why the boundaries were selected)

The nominated area is less than five acres and includes the extant Soule Canal segment with a small perimeter of land as noted in Figure 3.

**11. Form Prepared By**

name/title Sarah J. Martin  
organization Kansas Historical Society      date \_\_\_\_\_  
street & number 6425 SW 6<sup>th</sup> Avenue      telephone \_\_\_\_\_  
city or town Topeka      state KS      zip code 66615  
e-mail \_\_\_\_\_

**Property Owner:** (complete this item at the request of the SHPO or FPO)

name See File  
street & number \_\_\_\_\_      telephone \_\_\_\_\_  
city or town \_\_\_\_\_      state \_\_\_\_\_      zip code \_\_\_\_\_

**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 100 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 Office of Planning and Performance Management, U.S. Dept. of the Interior, 1849 C. Street, NW, Washington, DC.

**Additional Documentation**

Submit the following items with the completed form:

**Photographs**

Submit clear and descriptive photographs. The size of each digital image must be 1600x1200 pixels (minimum), at 300 ppi (pixels per inch) or larger. Key all photographs to a sketch map or aerial map. Each photograph must be

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numbered and that number must correspond to the photograph number on the photo log. For simplicity, the name of the photographer, photo date, etc. may be listed once on the photograph log and doesn't need to be labeled on every photograph.

**Photograph Log**

Name of Property: Soule Canal – Gray County Segment 2

City or Vicinity: Ingalls

County: Gray State: Kansas

Photographer: Patrick Zollner

Date Photographed: 10/30/2013

Description of Photograph(s) and number, include description of view indicating direction of camera:  
See Figure Below for Photo Directions

- 1 of 6: West portion of segment 2 (highway 50 at right), photographer standing on top of ditch, camera facing east
- 2 of 6: West portion of segment 2 (highway 50 at right), photographer standing in ditch, camera facing east
- 3 of 6: West portion of segment 2 (highway 50 at left), surveyor standing in ditch with Ingalls in background, camera facing west
- 4 of 6: West portion of segment 2 (highway 50 at left), surveyor standing in ditch with Ingalls in background, camera facing west
- 5 of 6: East portion of segment 2 (highway 50 at right), camera facing east
- 6 of 6: East portion of segment 2 (highway 50 at left), camera facing west



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**Figure 1: Contextual Aerial Image, Google 2013.**



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**Figure 2: Close-in Aerial Image, Google Earth, 2013.**



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**Figure 3: Nomination Boundary / Latitude and Longitude Points**



1. 37.818372 / -100.428060
2. 37.815682 / -100.419886
3. 37.815936 / -100.418215
4. 37.814612 / -100.414661
5. 37.814258 / -100.414686
6. 37.814497 / -100.415983
7. 37.815388 / -100.417963
8. 37.818036 / -100.428098

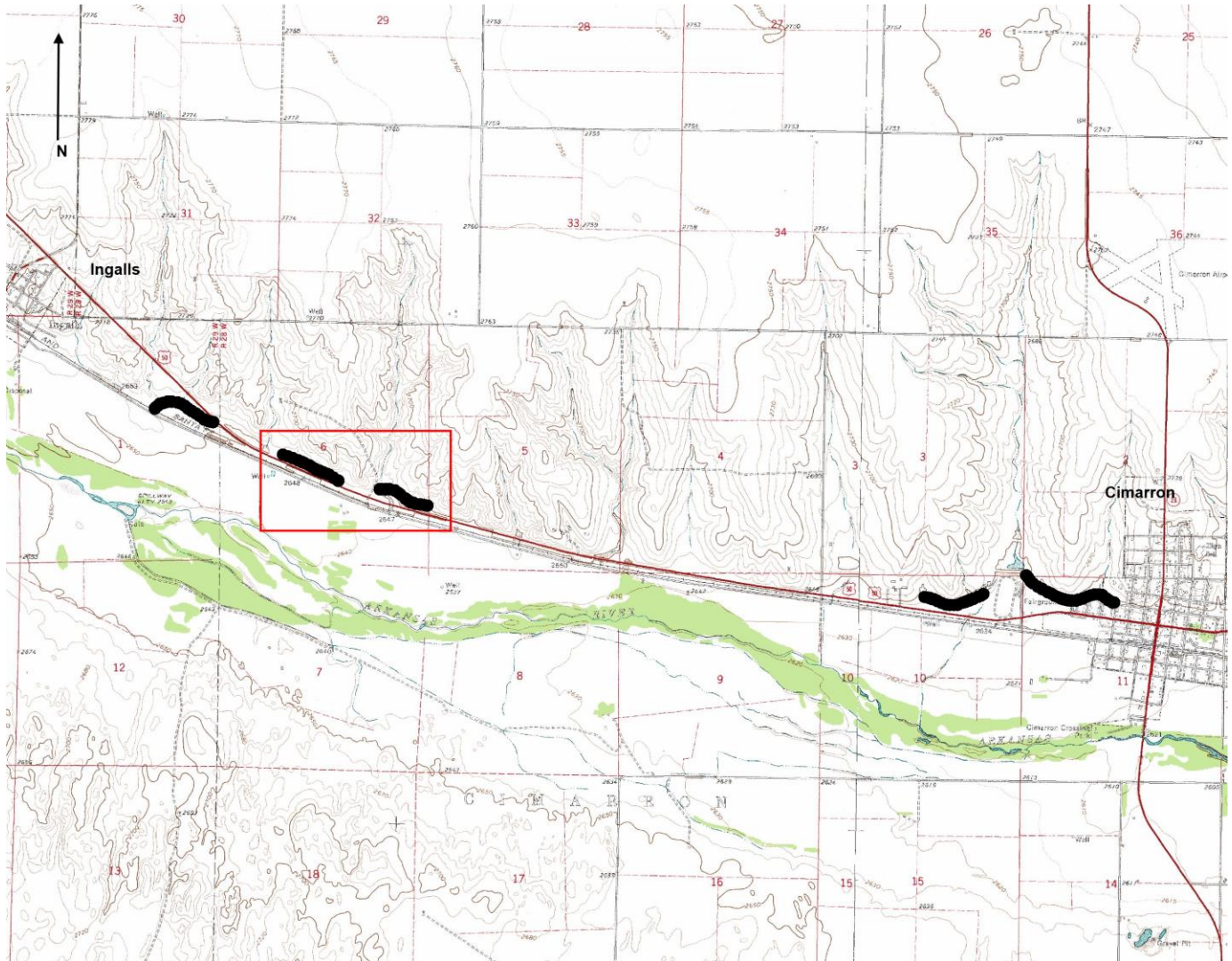
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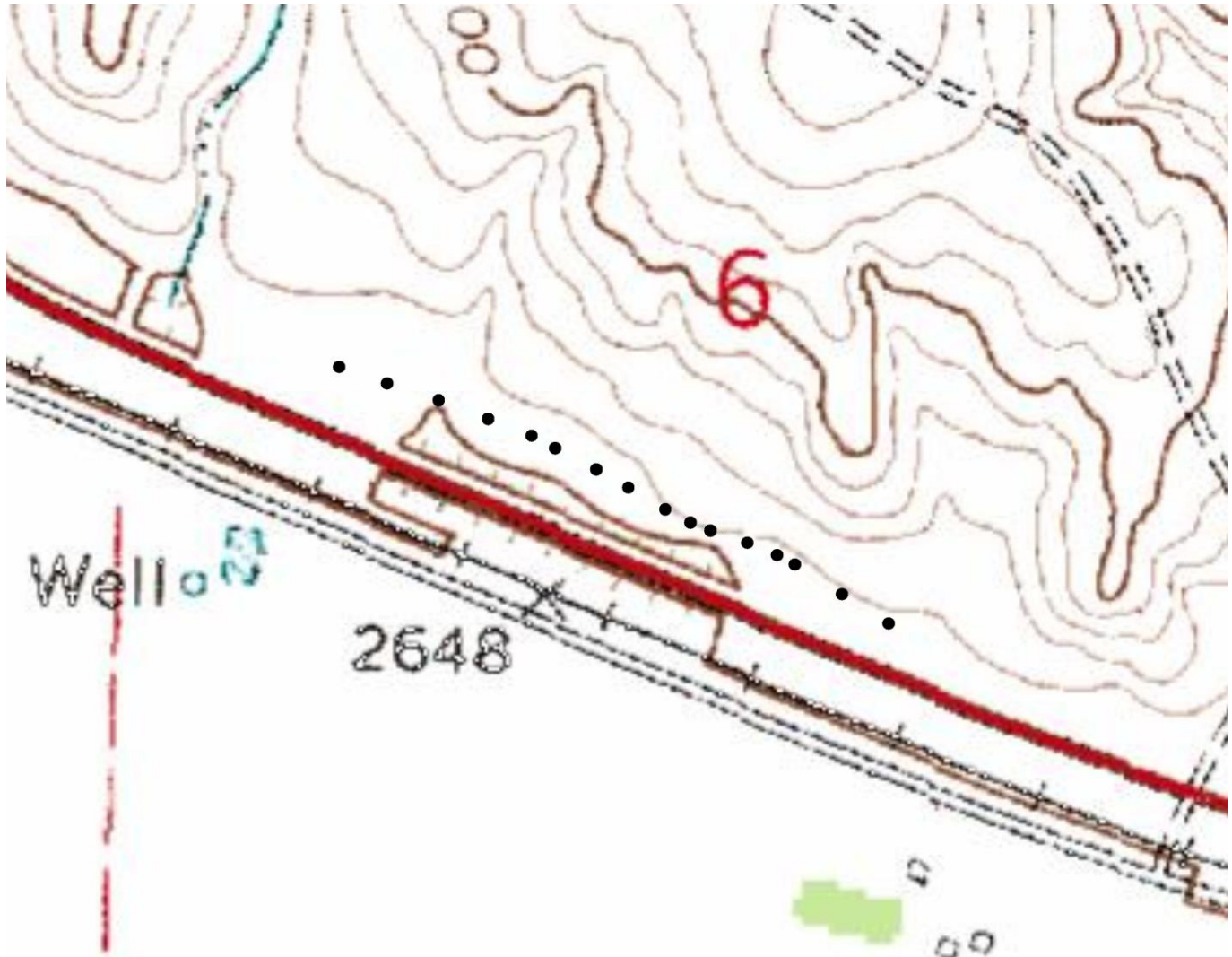
**Figure 4:** USGS Map Showing Extant Segments of Canal between Ingalls and Cimarron in Gray County, KS  
Square denotes canal sections nominated as part of this nomination.



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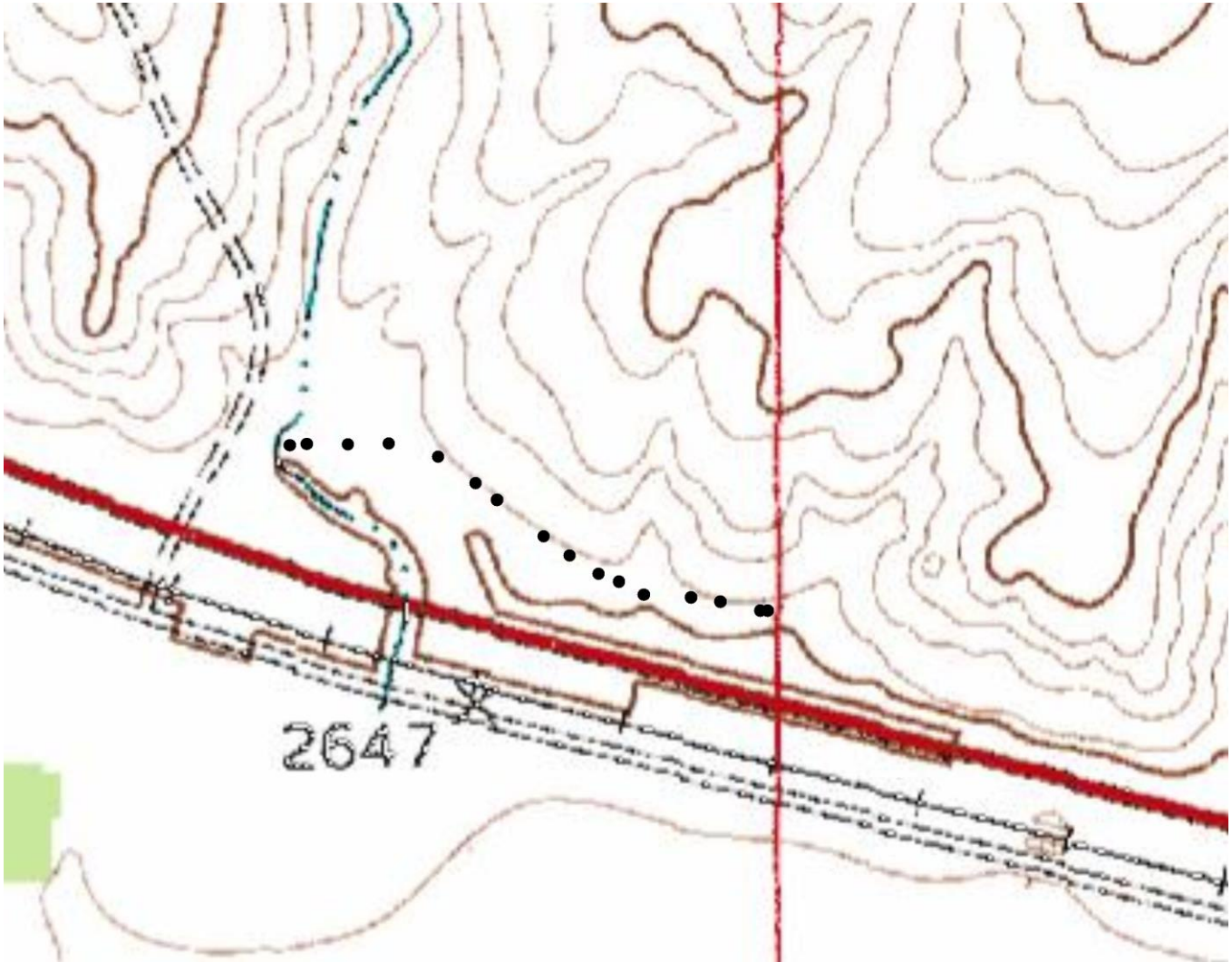
**Figure 5: USGS Map with GPS Points of Canal (West portion of Segment 2)**



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**Figure 6: USGS Map with GPS Points of Canal (East portion of Segment 2)**



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Figure 7: 1887 Everts Map. Rectangle in Section 6 denotes approximate location of nominated segment.

Everts, L.H. & Company. *Official State Atlas of Kansas*. Philadelphia: L.H. Everts & Co., 1887. (Original in the David Rumsey Historical Map Collection and accessed online at <http://www.davidrumsey.com>.)

