

**Summary Report of the Level I Documentation of the
Cattleman's Ditch, Montrose County, Colorado**

by

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Under the direction of

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INTRODUCTION

The Cedar Canon, Iron Springs Ditch and Reservoir Company of Crawford, Colorado, with coordination and input from Applegate Group, Inc. (Applegate), has been funded through the Bureau of Reclamation's (BOR) Colorado River Basin Salinity Control Program to pipe the Cedar Canon/Iron Springs/Cattleman's ditches (site 5MN9867, Cattleman's Ditch System) to reduce the amount of salt and selenium entering the Colorado River. The project is located on privately owned lands and lands managed by the Bureau of Land Management's Uncompahgre Field Office (BLM-UFO). Because the project is a federal undertaking and is federally funded, various cultural resources laws apply, including Section 106 (54 U.S.C. § 306108) of the National Historic Preservation Act (NHPA) (54 U.S.C. § 300101 et seq.). These laws require that all significant cultural resources be identified prior to planned development, and are intended to insure that historical and prehistoric cultural resources important to our national heritage are not inadvertently harmed or destroyed by federally initiated or authorized actions. The lateral was inventoried by Alpine Archaeological Consultants, Inc. (Alpine) of Montrose, Colorado, in 2016 (Reed 2016). A Memorandum of Agreement (MOA) between the BOR, Cedar Canon, Iron Springs Ditch and Reservoir Company, and the Colorado State Historic Preservation Office (SHPO) stipulated Level I Documentation as mitigation for adverse effects to the 4.67 miles (mi.) of the Cattleman's Ditch, which consists of segments 5MN9867.6 through 5MN9867.9. The specifications for Level I Documentation are presented in History Colorado Publication No. 1595 (History Colorado 2013). Cedar Canon, Iron Springs Ditch and Reservoir Company retained Alpine to conduct the Level I Documentation and supplemental narratives and to present these data in a Summary Report.

Level I Documentation is the most basic form of site documentation and closely follows the survey and recordation requirements established by the Office of Archaeology and Historic Preservation, with the additional specification that the documentation be prepared on archival bond paper and that photographic materials be archival. Photographs are stipulated to be black-and-white prints or digital images printed on fiber paper or archival-quality resin paper. Although prints are acceptable in 3-x-5-inch (in.) or larger sizes, 4-x-6-in. prints are preferred by History Colorado (History Colorado 2013).

METHODS

The information used in the preparation of the Level I Documentation was gathered during the Class III cultural resource inventory of the Cattleman's Ditch System by Project Director Charles Reed of Alpine between July 12 and 15 and August 6, 2016 (Reed 2016). The 4.67 mi. of the Cattleman's Ditch System to be piped, including all of the associated water-control structures, was recorded using a Global Positioning System (GPS) unit capable of sub-meter accuracy. Documentation also included photography and descriptions of the ditch that focused on water-control features. A list of maps and photographs are included in Appendix A. The listed maps and photo reproductions are included in Appendix B.

LOCATION AND ENVIRONMENTAL SETTING

The overall course of the Cattleman's Ditch System is in a generally northward direction (Figure 1). The ditch system includes various alignments and sections of the Cedar Canon and Iron Springs ditches, colloquially known as the Cattleman's Ditch, and recorded together as part of the Cattleman's Ditch System (site 5MN9867). The headgate for the system is on Crystal Creek, in Crystal Valley. From the headgate, the ditch flows west and northwest along the western edge of Onion Valley, before crossing along the eastern toe of Cedar Point. The ditch turns east across the toe of a small rise before crossing Alkali Creek and turning northward once again, flowing along the eastern edge of an unnamed valley and crossing Bull Creek. The ditch continues to the north prior

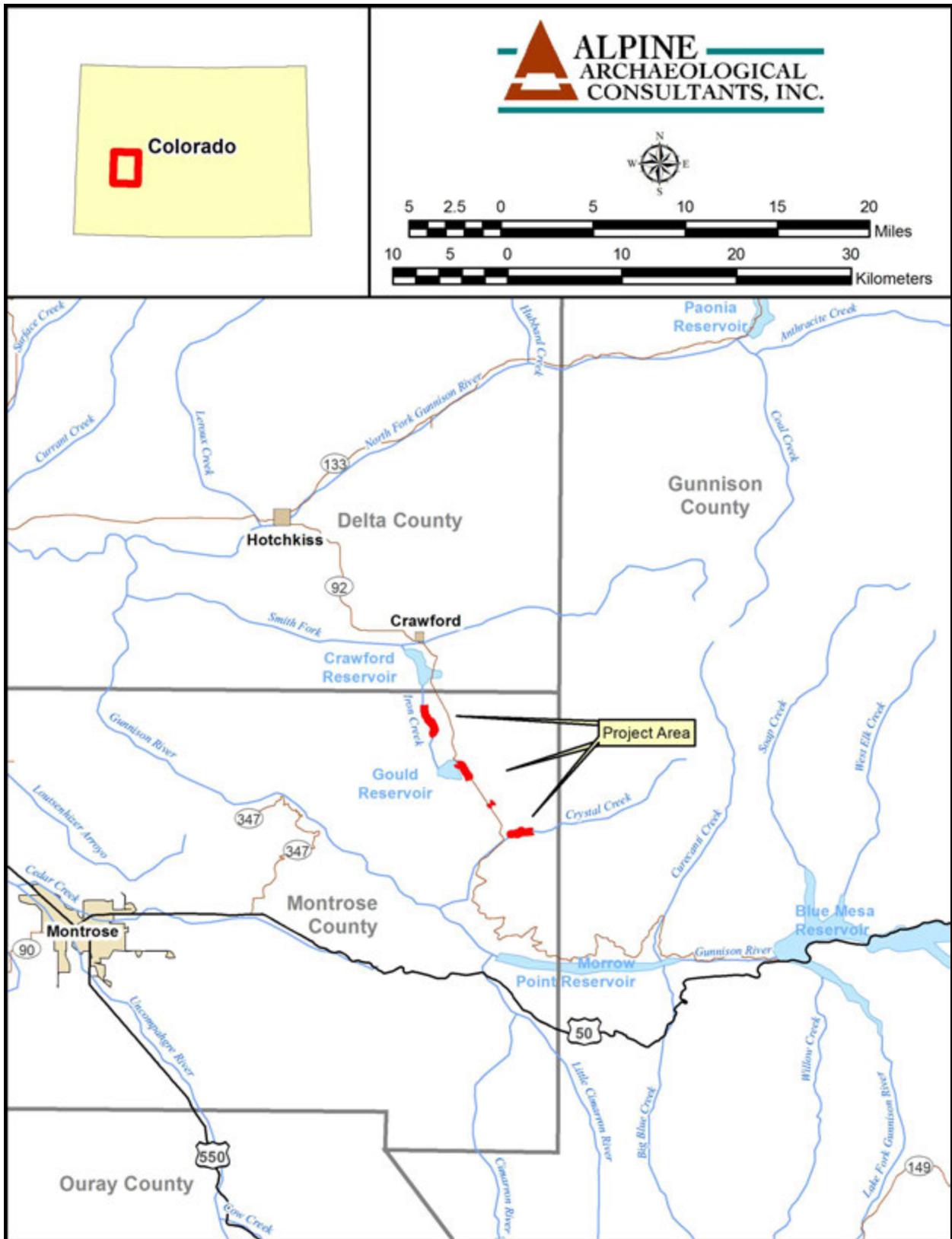


Figure 1. General location map of the project area.

to turning to the northeast and terminating within the southern end of a broad valley near Muddy Creek, where it likely returns excess water to the creek. The total length of the ditch is approximately 10 mi. The ditch system crosses both privately owned land and lands managed by the BLM-UFO.

HISTORICAL BACKGROUND

With the removal of the Utes from the area in 1881, farmers began immediately settling the Fruitland Mesa area. Many of the earliest land acquisitions in the region were filed between 1891 and 1906, all were Cash Entry Patents. Cash-entry acquisitions, as opposed to homestead entry patents, are indicative of land with highly recognized agricultural potential or of individuals who may have established themselves on the land prior to their initial filing on the parcels that they acquired. By 1907, the less desirable lands in the region were being acquired as Homestead Entry patents. To provide adequate irrigation water to the numerous farmers in the region, a number of ditches and canals were established, many of which appropriated water from Crystal Creek (such as the Fruitland Mesa Ditch, the Crystal Valley Ditch, and the Cattleman's Ditch System) or from Iron Creek (such as the Gould Canal).

In 1900, many of these smaller ditches were consolidated into a larger ditch system, creating the 10-mi.-long Cattleman's Ditch System, bringing water from its headgate on Crystal Creek and carrying it to the Maher community area. The first incarnation of the Cattleman's Ditch System was surveyed by William L. Marcy on October 16 and 17, 1883 (Montrose County Courthouse, County Clerk's Office, Ditch Plat Book 1, Page 30). At that time, the headgate was on Crystal Creek and the ditch ran northwestward through Onion Valley and returned water to Iron Creek. A second ditch pulled water from Iron Creek and ran northward to Muddy Creek, close to Caleb Maher's Store along the wagon road from Gunnison to the North Fork Valley. The ditch construction began on May 15, 1882. The claimants were G. W. Hall, W. L. Savage, A. E. Kirkbride, H. E. Niles, and others. Its water right was decreed on June 17, 1889 for 50 cubic feet per second (cfs) from Crystal Creek. The Cedar Canon and Iron Springs Ditch Company was incorporated on October 22, 1883 by Edward F. DeGraffenried, Hiram S. Kenyon, John McIntyre, and George W. Hall (directors, John McIntyre, James R. DeGraffenried, Frederick Kehr, Castle I. Miller, John Addington, James F. Young, Larkin Young, and John Puffer) (Delta County Courthouse, County Clerk's Office, Articles of Incorporation No. 177). It had \$2,200 in capital stock divided in 22 shares valued at \$100 per share; the life of the company was 20 years, and was extended for an additional 20 years on October 17, 1903. At that time, S. B. Hartman was president and Fred Kehr was secretary (Delta County Courthouse, County Clerk's Office, Articles of Incorporation No. 24716). In August 1924, S. H. Porter, George L. Tracy, and Leslie Savage formed the Cedar Canon, Iron Springs Ditch and Reservoir Company (Delta County Courthouse, County Clerk's Office, Articles of Incorporation No. 121922). The company had the same capitalization as the earlier company and was probably its direct successor. In addition to the ditch, the company indicated that it was the owner of Bald Mountain Reservoir on Crystal Creek, which was built November 12, 1900. With the establishment of the new company, the ditch seems to have reached its full length and was known informally as the Cattleman's Ditch. Attempts at extending the period that water was available in these early ditches into the later summer season resulted in the construction of numerous reservoirs on the Grand Mesa and elsewhere. Bald Mountain Reservoir, in particular, made late-season water more reliable for the Cattleman's Ditch.

DOCUMENTED SEGMENT DESCRIPTIONS

Alpine documented four previously unrecorded segments of the ditch system during the Class III inventory. Segments 5MN9867.6, 5MN9867.7, 5MN9867.8, and 5MN9867.9 are included in the current MOA as requiring Level I Documentation.

5MN9867.6

Segment 5MN9867.6 represents a 1.53-mi.-long segment of the Cattleman's Ditch System that begins at the system's headgate on Crystal Creek and heads west. The segment is on privately owned land and elevation along the segment varies between 7,960 and 8,000 ft. The segment is an earthen ditch, with varying amounts of gravels and cobbles along its base. It is generally 10–12 ft. wide, and was around 1 ft. deep at the time of recording, but has some portions that are up to 2½ ft. deep. The eastern third of the segment contours along a ridgeline above Crystal Valley. The ditch's northern bank rises steeply above the ditch to the ridge slope; the southern bank has a narrow berm, followed by a drop towards the valley below. The northern bank of the ditch is the higher bank throughout the entire segment. The central one-third of the segment opens up slightly, with lower banks on both sides of the ditch. The western one-third of the segment becomes deeply incised, with the surrounding area rising over 50 ft. above the ditch. The ditch in this area has also experienced downcutting, which has exposed shale bedrock. Vegetation in the area includes Gambel oak, wildrose, grasses, cottonwood, willow, sagebrush, flowers and forbs.

Four features were documented along segment 5MN9867.6 (Table 1). Feature 1 is the diversion point headgate on Crystal Creek for the Cattleman's Ditch System. The headgate is at a bend in Crystal Creek, just above a large drop structure in the creek. The concrete headgate off of the drop structure is 8 ft. wide. The channel in the structure continues 6 ft. prior to reaching a pair of large in-channel headgates. The headgates have 30-in.-diameter handwheels with 2-in.-diameter threaded stems. Each operates a wooden lift gate slightly over 4 ft. wide within the channel, with the gates separated by a narrow piece of concrete. The handwheels are embossed with "The R. Hardesty Mfg. Co. Denver CO" and "HB30." Both handwheels are mounted on a large, horizontal timber that rests on top of 3-ft.-long concrete supports on the channel walls of the headgate. The headgate is incorporated into the drop structure on Crystal Creek, with a 20-ft.-long concrete wall north, and upstream, of the headgate intake, and continuing for about 40 ft. (25 ft. wide) downstream and south of the headgate. The R. Hardesty Manufacturing Company is noted to have been organized in Denver in 1900 (Colorado State Historical Society 1927); indicating that these headgates likely date to the early history of the ditch.

Table 1. Summary Data for Features Observed Along Segment 5MN9867.6.

Feature No.	Feature Type	Length (ft.)	Width (ft.)	Comments
1	Headgate	21	68	Headgate on Crystal Creek, diverts water into the Cattleman's Ditch System.
2	Headgate	16	24	Dual, side-by-side headgate, diverting water into field ditch.
3	Parshall flume	23	12	Sheet-metal Parshall flume.
4	Culvert	75	21	5-ft.-diameter corrugated, metal culvert for gravel road. Upstream bank is reinforced on top and sides 8 ft.

Feature 2 represents a single headgate location composed of dual, side-by-side, top-lifting headgates that control the flow of the ditch. The headgate is 24 ft. wide and 16 ft. long. The headgates are each operated by 30-in.-diameter handwheels on 2-in.-diameter threaded stems. The handwheels are embossed with "Thompson P & S Co.," "30 in.," "2155 C," and "Denver." The handwheels operate iron sheet-metal lift gates that are 4 ft. wide. The gates regulate the flow of the ditch, that, when lowered, serve to divert water into an outlet channel on the southern side of the headgate. This outlet channel is 8 ft. wide and 12 ft. long, with a grooved stop-board dam 2 ft. from the intake of the channel; it is designed to stop water from entering the diversion channel.

Feature 3 is a sheet-metal Parshall flume. The flume measures 23 ft. long and 12 ft. wide at the intake, tapering to 8 ft. at its center and widening again to 12 ft. at its outlet. The gauge is at the intake end on the southern side of the channel. The flume is supported by concrete wing walls on both of the upstream sides of the structure, as well as on the southern side of the downstream edge of the flume. The concrete wing walls are 6 in. wide.

Feature 4 is a large culvert over which J82 Road passes. The culvert is a 5-ft.-diameter corrugated metal culvert, with the upstream bank reinforced with large tabular sandstone boulders.

5MN9867.7

Segment 5MN9867.7 is a short 0.13-mi.-long (660 ft.) segment of the Cattleman's Ditch System. The segment is on privately owned land within Onion Valley, at an elevation of 7,560 ft. Surrounding vegetation includes grasses, sparse trees, sagebrush, and forbs. The ditch is earthen, with numerous gravels along its base. The ditch ranges between 5 and 15 ft. wide, and is generally shallow. The banks along the southern half of the segment rise only a couple feet above the ditch, while the ditch is deeply incised north of Feature 3, with the ditch over 30 ft. below the surrounding valley bottom.

Three features were documented within this segment (Table 2). The features consist of a diversion headgate, a dam, and a flume. Feature 1 is a concrete diversion structure. The feature has 5-in.-thick concrete walls and diverts water to the eastern and western sides of the channel. Both sides feed water to small field ditches. The diversion outlets are 7 ft. long and empty into 12-ft.-wide ditches. The water is diverted within the headgate by hinged, sheet-metal swing gates that extend into the channel at the downstream side of the diversion outlets, held open by an iron bar that spans the structure. The opening of the swing gate can be metered to increase or decrease the volume of water flowing into the outlets. The openings of the outlets are each 14 in. wide. The overall structure has wing walls on both ends; the downstream wing walls are concrete, while the upstream are boards. The base of the diversion structure is gravel aggregate concrete. The outlet end of the structure drops the ditch roughly 8 in.

Table 2. Summary Data for Features Observed Along Segment 5MN9867.7.

FeatureNo.	Feature Type	Length (ft.)	Width (ft.)	Description
1	Diversion structure	26	12	Concrete diversion headgate with exits to field ditches on both banks. Eastern bank sheet-metal diverter closed (flush with concrete wall), western diverter open. Upstream wing walls 2-x-6 ft. boards flared into bank, rest of feature is 5-in.-thick concrete
2	Stop-board dam	0.75	21	Concrete wall that serves to back water up to increase flow through outlets in Feature 1.
3	Flumed drop structure	75	12	Corrugated metal flume, 3 ft. diameter, reinforced on upstream side by concrete wing walls and supported on northern downstream side by steel cable anchored to large metal posts on either side of the terrace bank. Flume drops water about 35 ft. into pool from which ditch enters deeply incised channel.

Feature 2 is a concrete stop-board dam about 20 ft. downstream from Feature 1. The feature consists of a 21-ft.-wide, 8-in.-thick concrete wall across the ditch. The top of each side of the wall extends 6 ft. into the ditch, and then drops 2 ft., creating a 9-ft.-wide intake passage through the wall. Angle-iron brackets are mounted on each side of the intake, which serve as board slots. Once the boards are placed horizontally into the slots, the feature serves as a dam to raise the water level to be diverted through Feature 1.

Feature 3 is a flumed drop structure. The feature consists of a corrugated metal flume, reinforced on the upstream side by concrete wing walls that support the bank and constrict water into the flume. The flume is 75 ft. long and supported on the northern, downstream side by metal cables that run to large metal posts on either side of the terrace bank. The flume drops water roughly 35 ft. into a pool, from which the ditch enters a deeply incised channel.

5MN9867.8

Segment 5MN9867.8 is a 1.01-mi.-long (5,333 ft.) segment of the earthen ditch on BLM-UFO-managed lands, extending north from where the ditch crosses under County Road (CR) E81 and thence to the northwest until it reaches the southwestern end of previously documented segment 5MN9867.2. The portion of 5MN9867.2 that abuts the 5MN9867.8 has been piped since its previous documentation (Prouty 2015). Elevation along the segment varies from 7,280 to 7360 ft. The ditch meanders in the valley bottom, varying between 4 and 8 ft. wide. The eastern bank rises 5–8 ft. above the water level and the western bank rises 3–5 ft. above the water level, at a much more gradual slope than the eastern bank. The ditch becomes more uniform in width once it starts traversing a contour above Gould Reservoir, with the eastern bank rising more steeply above the ditch. Two features were documented along the segment: a concrete diversion structure and a culvert that carries the ditch under CR E81 (Table 3).

Feature 1 is a large culvert that carries the ditch under CR E81. The culvert is 9 ft. in diameter, with the banks armored with masonry walls on both the intake and outlet ends. Feature 2 is a concrete diversion structure consisting of concrete-lined banks with a diversion gate and channel that has an overall length of 50 ft. and an average width of 10 ft. The diversion gate is 23 ft. downstream from the structure intake. The diversion gate consists of a sheet-metal swing gate that is anchored by two hinges to the central concrete divider and extends 8 ft. upstream. The opening of the gate is controlled by a hand-crank, winch, and braided cable bolted onto a length of angle iron that spans the structure. Water from the structure is diverted to the northwest and into a large field ditch, unnamed on the topographic map.

Table 3. Summary Data for Features Observed along Segment 5MN9867.8.

Feature No.	Feature Type	Length (ft.)	Width (ft.)	Description
1	Culvert	50	17	Maximum 9-ft.-wide corrugated metal culvert over which gravel road travels. Banks armored 4 ft. out and maximum 8 ft. upstream with subangular boulders on both upstream and downstream sides.
2	Diversion structure	50	10	Concrete diversion structure. Eastern channel continues as Cattleman's Ditch, the western channel exits to a large unnamed field ditch.

5MN9867.9

Segment 5MN9867.9 is a 2-mi.-long segment of ditch on privately owned land. This segment starts in Iron Canyon, labeled on the Crawford 7.5' topographic quadrangle as Iron Creek. The segment draws from the spillway of Gould Reservoir in the northwestern quarter of the northwestern quarter of Section 28 in Township 50 North, Range 6 West. Elevation along the segment varies from 6,940 to 6,760 ft. The segment extends to the north from Iron Canyon, running along the base of Fruitland Mesa, on the margins of the valley along Muddy, Iron, and Alkali creeks.

Within Iron Canyon, the ditch is generally 4 ft. wide, and between 6 in. and 1 ft. deep. The banks on the uphill/western side of the ditch rise up to a maximum of 8–10 ft. above the ditch, prior to reaching a steep pinyon-juniper-covered slope that leads up to Fruitland Mesa. The eastern bank of the ditch rises about 3 ft. above the ditch, has a narrow berm top, and then drops towards the floor

of Iron Canyon. The area along the ditch is generally heavily vegetated, with dense willows, wildrose, grasses, cottonwoods, and a variety of other riparian species. It is an earthen ditch with some gravels and varying amounts of cobbles lining its base.

Once the ditch exits Iron Canyon, it is generally 3.5–4 ft. wide and 8–12 in. deep. The banks on both sides rise about 2–3 ft. above the base of the ditch. It remains an earthen ditch, with some gravel lining its base. The ditch in this segment is flanked by agricultural fields, with much less riparian vegetation present along its length, although pockets of willow and cottonwood are still established in some places.

Nine formal features were observed along the documented segment (Table 4). These consist of diversion structures, concrete headgate structures, and culverts. Additionally, several small 2-ft.-diameter modern plastic culverts were observed in the northern portion of the segment, allowing irrigation sprinkler wheels to cross the ditch. These were not documented as features.

Feature 1 is a concrete diversion structure with 6-in.-thick concrete walls. The feature is about 32 ft. long and 10 ft. wide. The concrete channel is around 8 ft. long and around 5.5 ft. wide above the diversion split. The southern split is 8 ft. long and slightly under 5½ ft. wide; Iron Creek continues through this channel. The northern split, through which Cattleman's Ditch continues, is 8 ft. long and 2 ft. wide. The southern split's outlet channel has stop-board slots in both concrete walls for a stop-board dam to back up the water for diversion into the Cattleman's ditch.

Feature 2 is a metal culvert crossed by a two-track road. The culvert is constructed from a corrugated 2-ft.-diameter metal pipe. Feature 3 is another concrete diversion structure. The structure has 6-in.-thick concrete walls. The intake of the structure is 5 ft. wide, with one flared wing wall on the southern bank. The split is 6 ft. into the channel, with the southern split (1 ft. wide) abandoned and backfilled. The northern split, through which the ditch continues to flow, is 2½ ft. wide and 8 ft. long on the northern side of the channel, prior to a flared wing wall on the bank, while the central concrete wall continues straight for another 6 ft.

Feature 4 is a culvert that carries the ditch underneath a road. The culvert is a 2-ft.-diameter metal corrugated pipe, with the upstream edge reinforced along the bank with concrete wing walls. The feature is about 3 ft. downstream from the end of Feature 3. Feature 5 is another culvert, with a 3-ft.-diameter corrugated pipe over which a two-track road crosses.

Feature 6 is a concrete headgate structure. The structure is 8 ft. long, with U-shaped concrete walls on each bank of the ditch that extend 4 ft. into the ditch banks. The walls are grooved for a stop-board dam near the center of the structure and immediately downstream of a lift-gate headgate on the eastern side of the ditch. The headgate has a 13½-in.-diameter handwheel, 16-in.-wide gate, and a 1-in.-diameter threaded stem. The handwheel is marked with "Fresno Valves" and "H2446A." The headgate diverts water through a pipe to a field diversion box that measures 6-x-4 ft.

Feature 7 is another 3-ft.-diameter, galvanized, corrugated culvert crossed by a two-track road. Feature 8 is a second diversion headgate, constructed in the same manner and size as Feature 6, described above. The lift-gate headgate is also on the eastern side of the channel, with a 9¾-in.-diameter handwheel marked with "Fresno Valves" and "H22445A." The gate is 16 in. wide, with a 1-in.-diameter threaded stem.

Feature 9 is a concrete diversion structure with four, lift-gate headgates. All of the headgates are the same, with 10-in.-diameter handwheels embossed with "Waterman," 14½-in.-wide gates, and 1-in.-diameter threaded stems. Overall, the feature measures just over 8½ ft. long and 12 ft. wide. It has 6-in.-wide concrete walls that form a roughly L-shaped structure. Water enters the structure from the south past the first headgate, which is on the eastern side of the concrete intake.

Immediately downstream of the headgate are board-slots formed into the concrete to raise the water level to increase the amount of water diverted into the headgate. Once past the headgate, the water drops over 3 ft. onto a screen-covered, metal debris catchment grate and into a small concrete outlet on the eastern side of the channel. The intake of the outlet box is controlled by a piece of sheet metal that is bolted over the opening, but can be raised or lowered to control the amount of water entering the outlet box. The outlet box is U-shaped and measures roughly 4½ ft. wide with headgates on the northern, eastern, and southern edges.

Table 4. Summary Data for Features Observed along Segment 5MN9867.9.

Feature No.	Feature Type	Length (ft.)	Width (ft.)	Description
1	Diversion structure	32	10	Concrete diversion structure with two concrete channels. The northern outlet continues the flow of the ditch northward. The southern outlet channel allows water to flow as Iron Creek to the northeast.
2	Culvert	12	4	Metal culvert over which two-track road passes. Culvert is corrugated metal, 2 ft. in diameter.
3	Diversion structure	24	9	Concrete diversion structure with two concrete channels. The northern outlet has been abandoned and backfilled. The southern outlet channel allows the ditch to continue.
4	Culvert	23	4	Culvert of 2-ft.-diameter metal corrugated culvert pipe that a road crosses. Upstream edge reinforced along bank with slightly flared concrete wing walls that extend upstream 3 ft. Culvert pipe is 20 ft. long. Just downstream from Feature 3.
5	Culvert	14	3	Metal corrugated culvert over which a two-track road crosses ditch. Culvert is 3 ft. in diameter.
6	Headgate structure	8	12	Concrete headgate structure. Diverts water on eastern side of the channel to a field diversion box.
7	Culvert	16	3	Metal corrugated culvert over which a two-track road crosses ditch. Culvert is 3 ft. in diameter.
8	Headgate structure	8	12	Concrete headgate structure. Diverts water on eastern side of the channel to a field diversion box.
9	Headgate structure	8.5	12	Concrete split structure. Outlets to field ditch and field irrigation pipes.

SUMMARY

Level I documentation was performed on four segments, covering 4.67 mi. of the Cattleman's Ditch System (site 5MN9867.6–5MN9867.9) in advance of piping the lateral as part of the BOR's Colorado River Basin Salinity Control Program. Along the route of segment 5MN9867.6 of the Cattleman's Ditch, two headgates, a Parshall flume, and a culvert were documented. A diversion structure, stop board dam, and flumed drop structure were documented along segment 5MN9867.7. Along segment 5MN9867.8, a culvert and a diversion structure were recorded. Four culverts, three headgate structures, and two diversion structures were documented along segment 5MN9867.9. A list of maps and photographs are included in Appendix A, and the listed maps and reproductions of photographs are included in Appendix B. Original archival black-and-white photographs will also be submitted with the documentation package to the Colorado SHPO.

REFERENCES

Colorado State Historical Society

1927 *History of Colorado: Biographical, Volume IV*. Linderman Co., Inc., Denver.

History Colorado

2013 *Historic Resource Documentation, Standards for Level I, II, and III Documentation*. Colorado Historical Society Publication No. 1595. Colorado Historical Society, Office of Archaeology and Historic Preservation, Denver.

Reed, Charles A.

2016 *A Class III Cultural Resource Inventory of the Cattleman's Ditch Pipeline Project Phase II, Montrose County, Colorado*. Prepared by Alpine Archaeological Consultants, Inc., Montrose, Colorado. Prepared for Applegate Group, Inc., Denver, Colorado, on behalf of Cedar Canon, Iron Springs Ditch and Reservoir Company, Crawford, Colorado.

APPENDIX A

Level I Documentation: List of Maps and List of Photographs

List of Maps

- Photograph 1. Cattleman's Ditch (5MN9867.6) showing photographic points for Features 1–4 and landscape overviews.
- Photograph 2. Cattleman's Ditch (5MN9867.7) showing photographic points for Features 1–3 and landscape overviews.
- Photograph 3. Cattleman's Ditch (5MN9867.8) showing photographic points for Features 1–2 and landscape overviews.
- Photograph 4. Cattleman's Ditch (5MN9867.9) showing photographic points for Features 1–9 and landscape overviews.

List of Photographs

Subject: Cattleman's Ditch (Segments 5MN9867.6, 5MN9867.7, 5MN9867.8, and 5MN9867.9)
Photographer: Charles A. Reed
Dates: July 12–15, 2016 and August 6, 2016

Photographs of the Cattleman's Ditch (5MN9867.6)

- Photograph 1. Feature 1 across Crystal Creek, facing west.
- Photograph 2. Looking to the north at detail of the headgates on Crystal Creek (Feature 1).
- Photograph 3. Feature 2, a dual side-by-side headgate. View is to the west.
- Photograph 4. Looking upstream and to the east at an overview of Cattleman's Ditch (5MN9867.6).
- Photograph 5. Southwest view of Feature 3, a sheet-metal Parshall flume.
- Photograph 6. Looking to the west-northwest at Feature 4, a corrugated metal culvert.
- Photograph 7. Overview of the Cattleman's Ditch (5MN9867.6). View is to the south.
- Photograph 8. Looking to the south-southwest at an overview of Cattleman's Ditch (5MN9867.6).

Photographs of the Cattleman's Ditch (5MN9867.7)

- Photograph 1. Overview of Cattleman's Ditch (5MN9867.7) facing northwest.
- Photograph 2. Looking to the east at Feature 1, a concrete diversion headgate.
- Photograph 3. Feature 2, a stop-board dam. View is to the north.
- Photograph 4. Looking to the north-northwest at an overview of Cattleman's Ditch (5MN9867.7).
- Photograph 5. Feature 3, a corrugated metal flume. View is to the northwest.
- Photograph 6. View of flume (Feature 3) exit and 35 ft. drop into pool. View is to the east.
- Photograph 7. Looking to the west at an overview of Cattleman's Ditch (5MN9867.7).

Photographs of the Cattleman's Ditch (5MN9867.8)

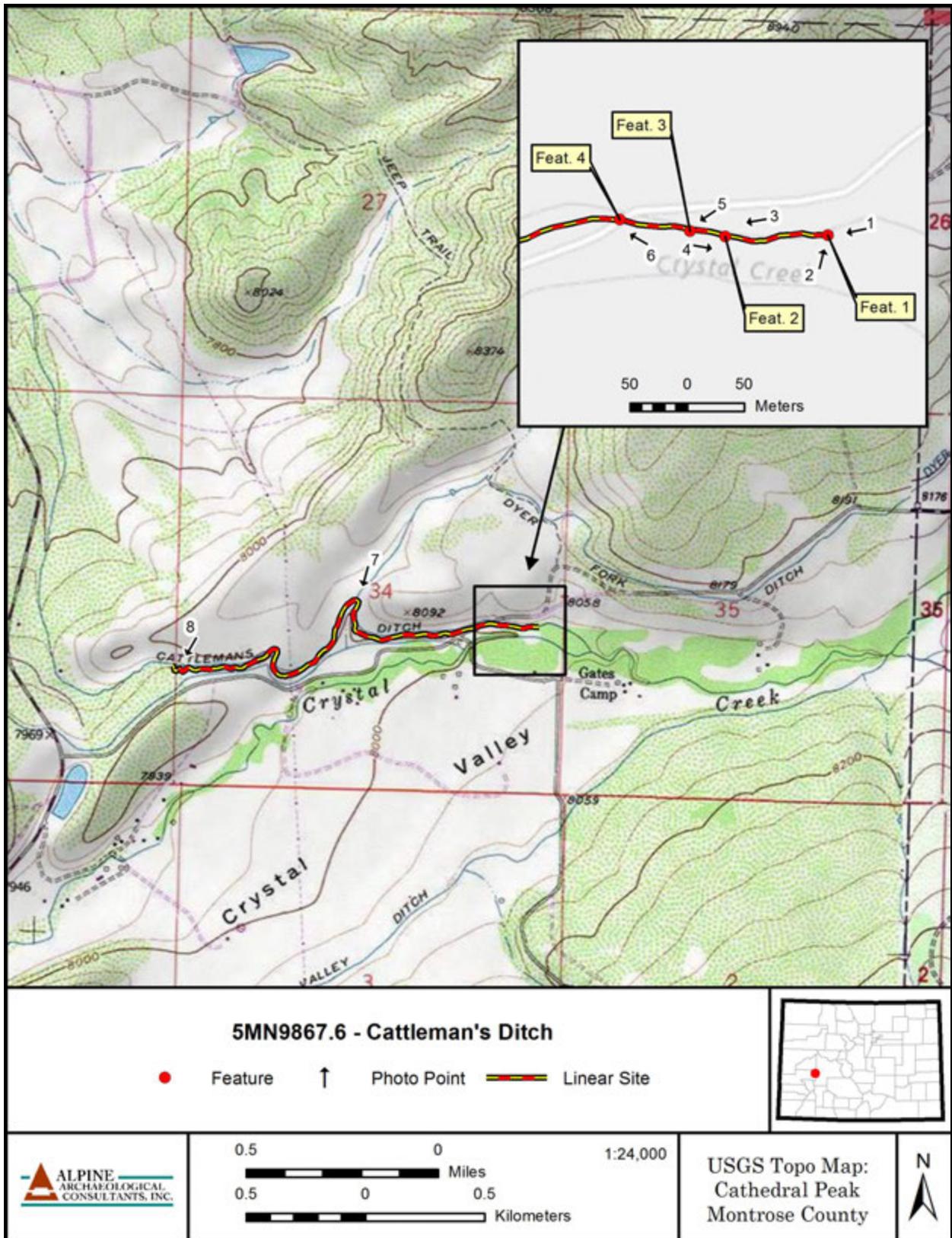
- Photograph 1. Looking to the south-southeast at Feature 1, a corrugated metal culvert.
- Photograph 2. Feature 2, a concrete diversion structure. View is to the north.
- Photograph 3. Looking to the north-northwest at an overview of Cattleman's Ditch (5MN9867.8).
- Photograph 4. Overview of Cattleman's Ditch (5MN9867.8) and Gould Reservoir. View is to west.

Photographs of the Cattleman's Ditch (5MN9867.9)

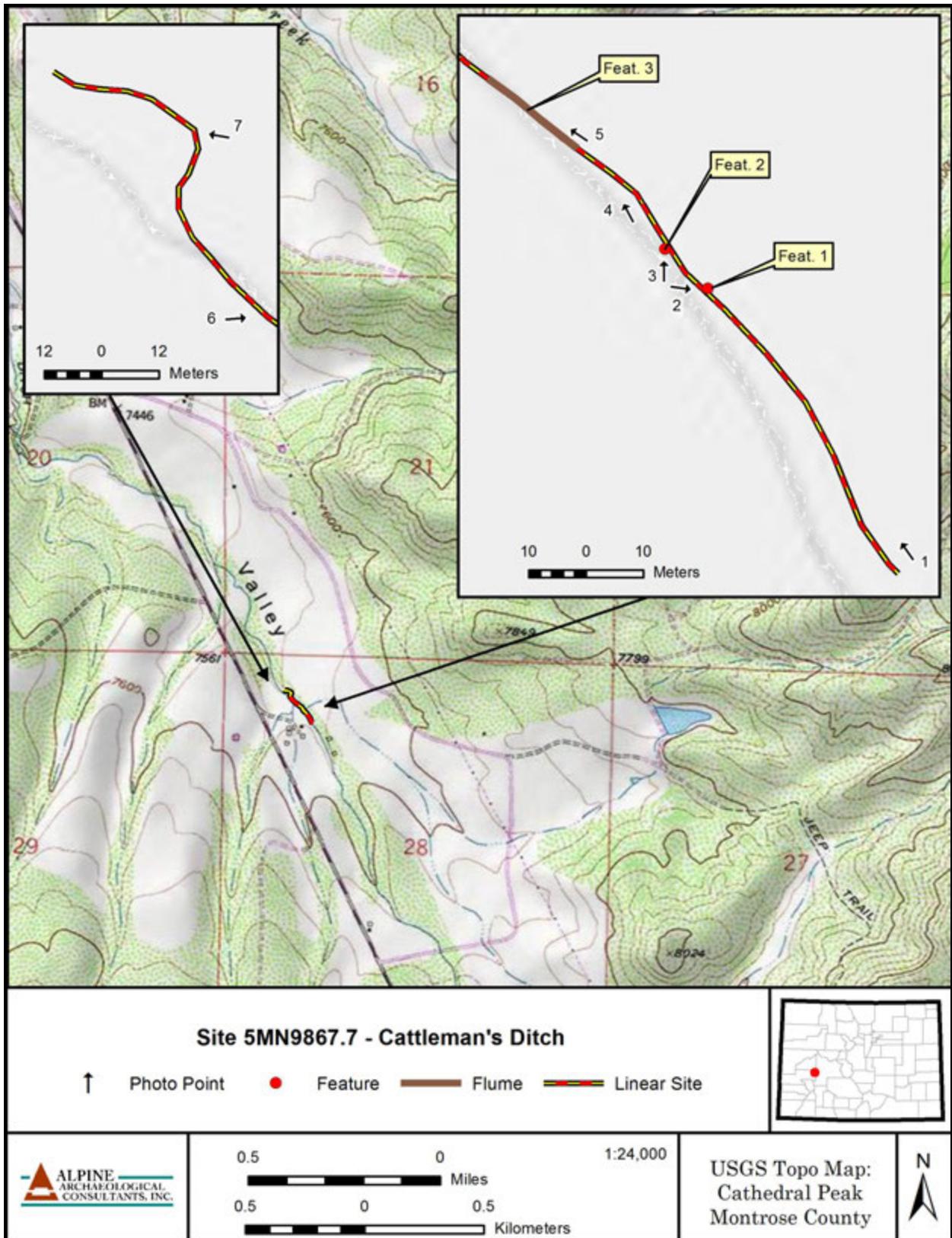
- Photograph 1. Looking to the northwest at an overview of the Cattleman's Ditch (5MN9867.9).
- Photograph 2. Feature 1, concrete diversion structure with two concrete channels. View north-northeast.
- Photograph 3. Looking upstream and to the east at Feature 1.
- Photograph 4. Feature 2, a metal culvert. View is to the southeast.
- Photograph 5. Looking upstream and southeast at an overview of Cattleman's Ditch (5MN9867.9).
- Photograph 6. Feature 3, concrete diversion structure with two concrete channels. View northwest.
- Photograph 7. Facing north, an overview of a metal corrugated culvert pipe (Feature 4).
- Photograph 8. Looking to the east-southeast at Feature 5, a metal corrugated culvert.
- Photograph 9. Overview of Cattleman's Ditch (5MN9867.9), looking upstream and to the northwest.
- Photograph 10. Plastic culvert over which sprinkler wheels cross ditch. View is to west-northwest.
- Photograph 11. Feature 6, a concrete headgate structure. View is to the south-southeast.
- Photograph 12. Facing northwest, an overview of a metal corrugated culvert (Feature 7).
- Photograph 13. Overview of the Cattleman's Ditch (5MN9867.9) facing north-northwest.
- Photograph 14. Feature 8, a concrete headgate structure. View is to the east-southeast.
- Photograph 15. Looking to the south at Feature 9, a concrete split headgate structure.

APPENDIX B

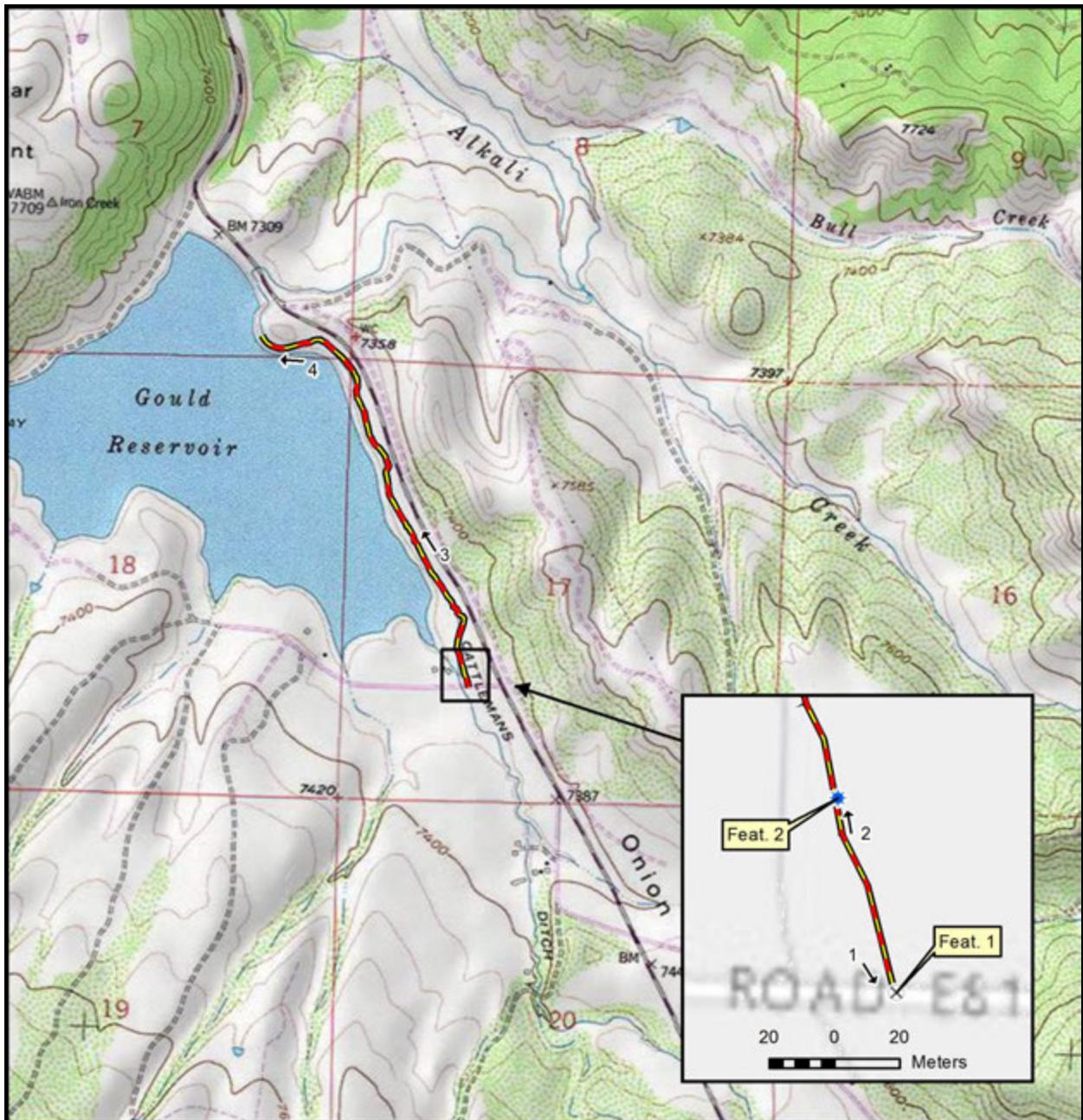
Level I Documentation: Maps and Photographs



Map 1.



Map 2.



Site 5MN9867.8 - Cattleman's Ditch

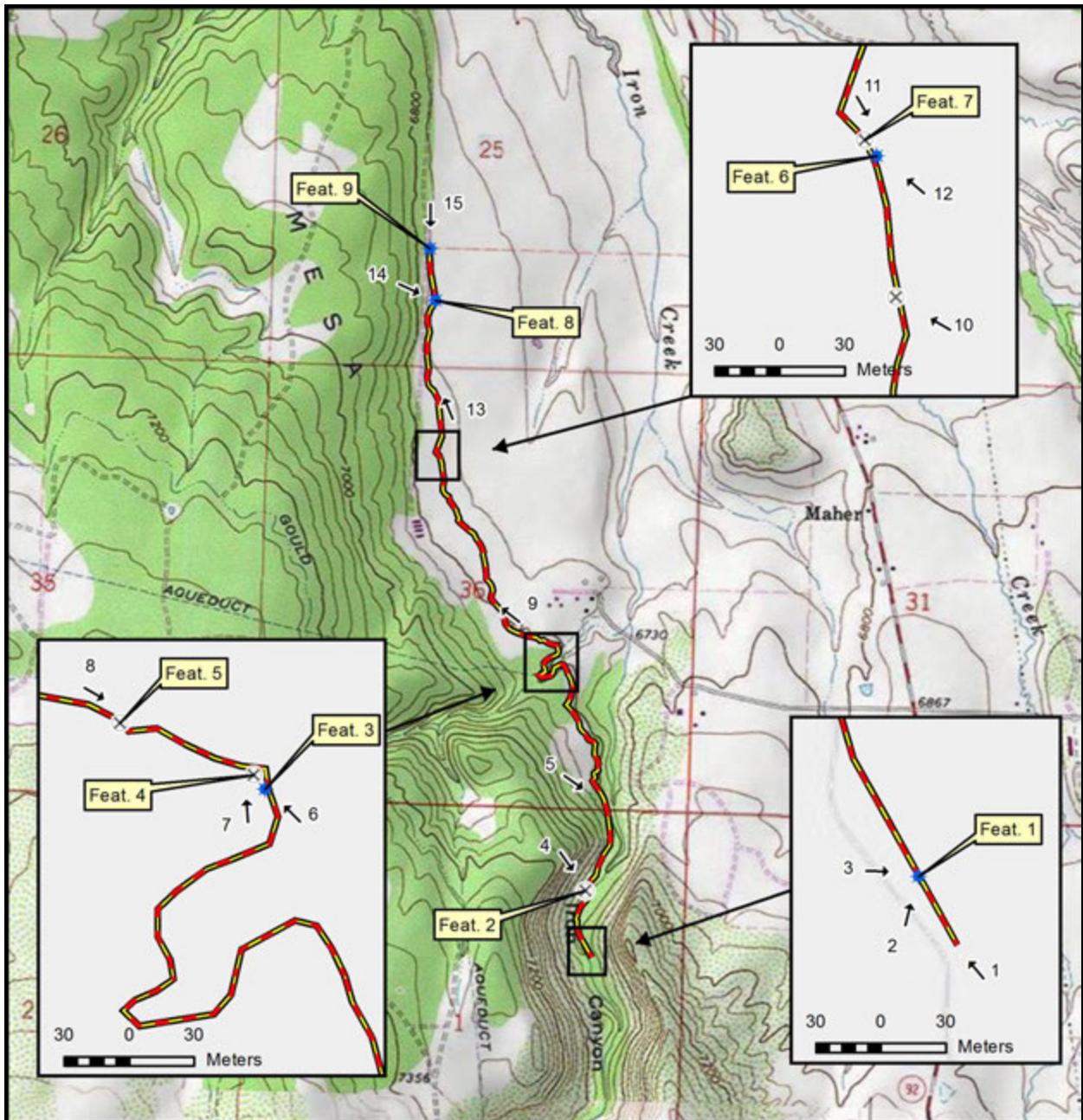
↑ Photo Point ⊗ Culvert ★ Headgate Linear Site



USGS Topo Map:
Cathedral Peak
Montrose County

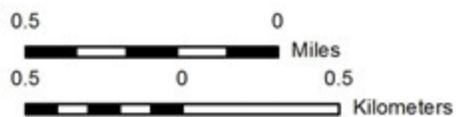


Map 3.



Site 5MN9867.9 - Cattleman's Ditch

↑ Photo Point ⊗ Culvert * Headgate Linear Site



USGS Topo Map:
Crawford
Montrose County



Map 4.

Cattleman's Ditch (5MN9867.6)



Photograph 1.



Photograph 2.

Cattleman's Ditch (5MN9867.6)



Photograph 3.



Photograph 4.

Cattleman's Ditch (5MN9867.6)



Photograph 5.



Photograph 6.

Cattleman's Ditch (5MN9867.6)



Photograph 7.



Photograph 8.

Cattleman's Ditch (5MN9867.7)



Photograph 1.



Photograph 2.

Cattleman's Ditch (5MN9867.7)



Photograph 3.



Photograph 4.

Cattleman's Ditch (5MN9867.7)



Photograph 5.



Photograph 6.

Cattleman's Ditch (5MN9867.7)



Photograph 7.

Cattleman's Ditch (5MN9867.8)



Photograph 1.



Photograph 2.

Cattleman's Ditch (5MN9867.8)



Photograph 3.



Photograph 4.

Cattleman's Ditch (5MN9867.9)



Photograph 1.



Photograph 2.

Cattleman's Ditch (5MN9867.9)



Photograph 3.



Photograph 4.

Cattleman's Ditch (5MN9867.9)



Photograph 5.



Photograph 6.

Cattleman's Ditch (5MN9867.9)



Photograph 7.



Photograph 8.

Cattleman's Ditch (5MN9867.9)



Photograph 9.



Photograph 10.

Cattleman's Ditch (5MN9867.9)



Photograph 11.



Photograph 12.

Cattleman's Ditch (5MN9867.9)



Photograph 13.



Photograph 14.

Cattleman's Ditch (5MN9867.9)



Photograph 15.