

Fire Mountain Canal Segment 5DT1277.4
and Leroux Creek Ditch Segment 5DT2005.3
Level I Historic Resource Documentation
Delta County, Colorado

Prepared for
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Bureau of Reclamation
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Abstract

On behalf of the Fire Mountain Canal and Reservoir Company, Flattops Archaeological Consultants conducted three Class III cultural resource inventories in 2016 and 2017 to support the proposed Fire Mountain Canal Piping Project located on private property in Delta County, Colorado. Segments of two eligible linear resources, the Fire Mountain Canal (5DT1277.4) and Leroux Creek Ditch (5DT2005.3), were documented during these inventories. Portions of 5DT1277.4 will be abandoned, while the remaining segment will be piped and will be destroyed. 5DT2005.3 will also be piped and will be destroyed. It is understood that the proposed actions will almost completely destroy the historic fabric of 5DT1277.4 and 5DT2005.3. As a result, mitigation of these historic linear resources will be necessary, and the recommended mitigation is Level I photographic documentation as described in History Colorado Publication No. 1595 (History Colorado 2013). This report entails a detailed recordation of the ditch segments in an archival summary report that includes 4 by 6-inch archival, black-and-white, photographic prints, plans and profiles of representative features, and detailed mapping.

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Project Summary

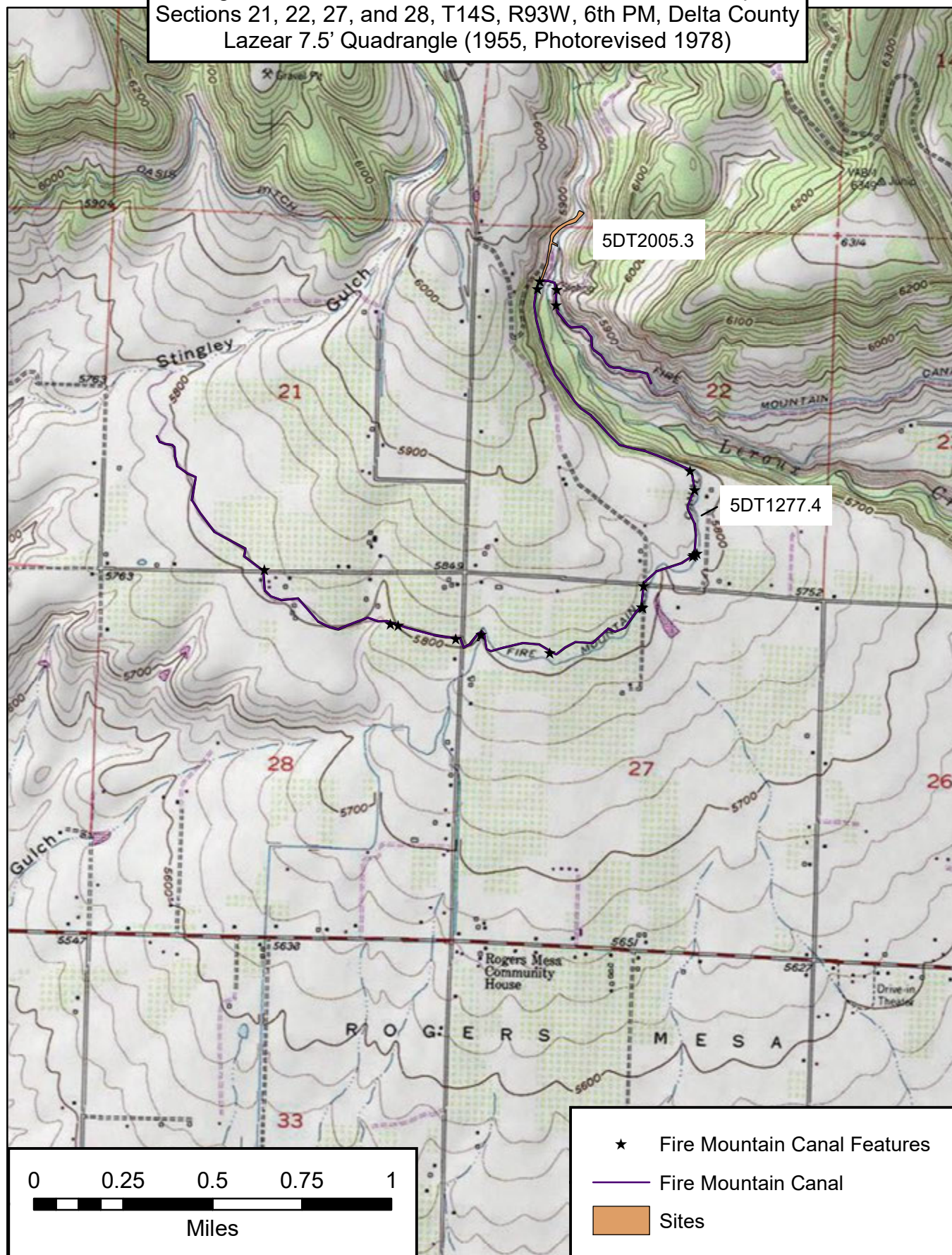
On behalf of the Fire Mountain Canal and Reservoir Company, Flattops Archaeological Consultants conducted three Class III cultural resource inventories in 2016 and 2017 to support the proposed Fire Mountain Canal Piping Project located on private property in Delta County, Colorado (McDonald 2016a, 2016b, and 2017). Segments of two eligible linear resources, the Fire Mountain Canal (5DT1277.4) and Leroux Creek Ditch (5DT2005.3), were documented during these inventories (Figure 1). Portions of 5DT1277.4 will be abandoned, while the remaining segment will be piped and will be destroyed. 5DT2005.3 will also be piped and will be destroyed. It is understood that the proposed actions will almost completely destroy the historic fabric of 5DT1277.4 and 5DT2005.3. As a result, mitigation of these historic linear resources will be necessary, and the recommended mitigation is Level I photographic documentation as described in History Colorado Publication No. 1595 (History Colorado 2013). The following summary report includes a detailed recording of the ditch segments including photographs, plans and profiles of representative features, and detailed maps. All field notes, photographs, and a copy of the master document will be retained at the FAC office in Carbondale, Colorado.

Effective Environment

Physiographically, the project area is situated in the Southern Rocky Mountains province (Fenneman 1931), and is located approximately 2.5 miles west-northwest of Hotchkiss, Colorado (Figure 2). Specifically, the project is located south of Leroux Creek and Stingley Gulch and north of Rogers Mesa. The project travels through private residences and irrigated fields for most of its length, and the entire project area has been converted to farmland of both row crops and fruit trees. Native vegetation along Leroux Creek includes small stands of cottonwoods, juniper, mountain shrubs, and grasses, and vegetation along the Fire Mountain Canal includes a riparian zone of willows, wild rose, aster, clover, alfalfa, and grasses. Surface visibility was fair. Soils are brown colluvial loam. A mantle of gravels and alluviums of Pinedale and Bull Lake age overlay a bed of Mancos Shale (Tweto 1979). Elevation of the project is approximately 5800 feet above sea level.

Ranching and recreation appear to be recent and historical activities that make use of the area surrounding the project area. Established farms and ranches are located along much of the North Fork of the Gunnison River corridor.

Figure 1: 5DT1277.4 and 5DT2005.3 Site Location Map
 Sections 21, 22, 27, and 28, T14S, R93W, 6th PM, Delta County
 Lazear 7.5' Quadrangle (1955, Photorevised 1978)



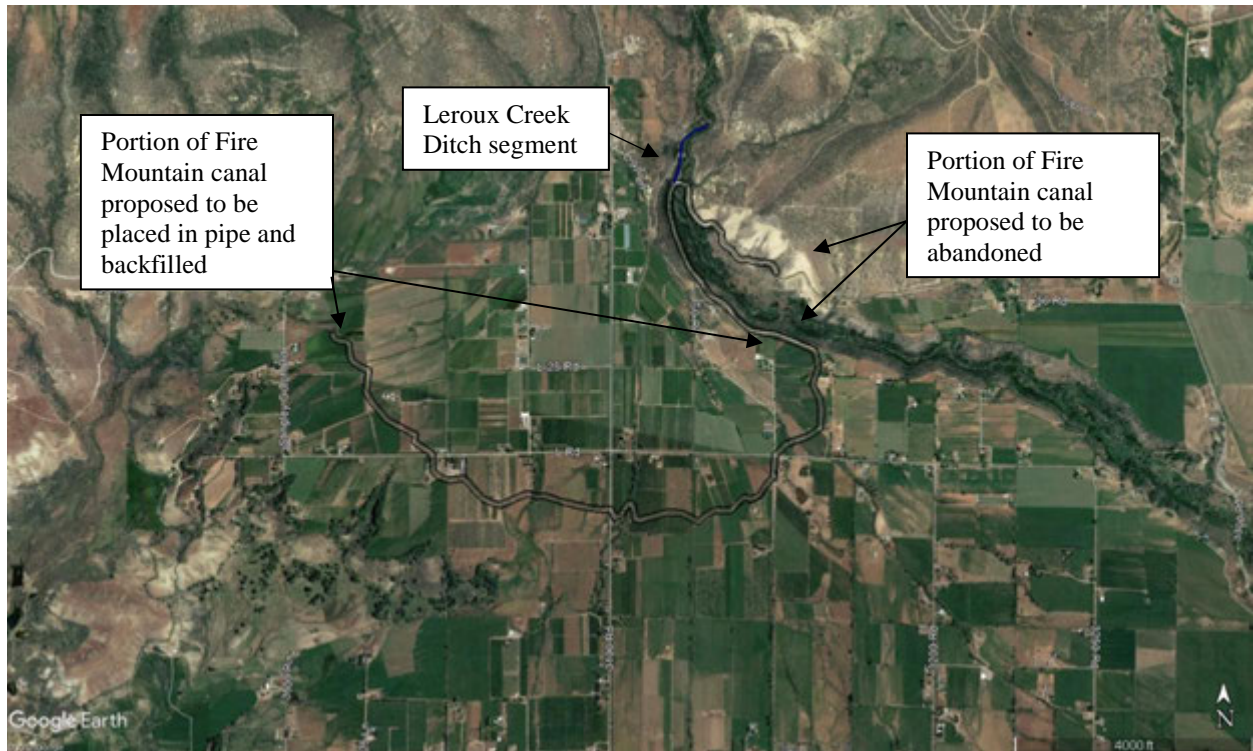


Figure 2: Google Earth overview of the project area.

Previous Work and Narrative History of the Fire Mountain Canal and Leroux Creek Ditch

A files search was conducted through the Colorado Office of Archaeology and Historic Preservation Compass database on March 1, 2018. Eleven projects have been conducted in the legal sections containing the proposed project (Table 1), resulting in the discovery and documentation of two historic linear segments, one historic site, one prehistoric site, and one prehistoric isolated find within a one-mile radius of the project area (Table 2).

Table 1: Previous projects conducted within the legal sections containing the project area.

SHPO #	Project Title/Description	Contractor	Client	Year
DT.R.NR10	A Class III Cultural Resources Survey of a Proposed Crossing, Fire Mountain Canal, Paonia Project	Bureau of Reclamation	Bureau of Reclamation	1987
MC.LM.R135	A Cultural Resource Survey of Approximately 4,155 Acres of BLM Land on the Western Slope of the Colorado Rocky Mountains (97-17), Cultural Resource Inventory - UBRA Project 1996	Aztlan Archaeology	Bureau of Land Management	1997
MC.LM.R219	An Intensive Archaeological Resource Inventory of Proposed Shoulder Improvements along SH 92 west of Hotchkiss, and SH 114 southeast of Gunnison	CDOT	CDOT	2001
DT.SC.NR42	Delta Limited Results Cultural Resource Survey Report-CSU	NRCS	Private Landowner	2007

SHPO #	Project Title/Description	Contractor	Client	Year
DT.SC.NR11	Delta Limited Results Cultural Resource Survey Report on Private Lands-Silver Spruce Partners-(748B05081DZ)	Natural Resource Conservation Service (NRCS)	Private Landowner	2008
DT.SC.NR47	Delta Limited Results Cultural Resource Survey Report-Jonathan Gates	NRCS	Private Landowner	2008
DT.SC.NR49	Delta Limited Results Cultural Resource Survey Report-Susan Hillyard	NRCS	Private Landowner	2008
DT.SC.NR18	Delta Limited Results Cultural Resource Survey Report-Tom Blanford	NRCS	Private Landowner	2009
DT.SC.NR63	Delta Limited Results Cultural Resource Survey Report—Joanna Gilbert	NRCS	Private Landowner	2009
DT.CH.R11	An Intensive Archaeological Resource Inventory of SH 92 near Stengel's Hill	CDOT	CDOT	2012
DT.R.R22	Cultural Resource Inventory of the Slack and Patterson Lateral Ditches on Rogers Mesa	Alpine Archaeological Consultants	Bureau of Reclamation	2015
None Listed	Fire Mountain Canal Easement	Flattops Archaeological Consultants	Bureau of Reclamation	2016
None Listed	Fire Mountain Canal Piping Project	Flattops Archaeological Consultants	Bureau of Reclamation	2016
None Listed	Eight Additional Areas to Support the Fire Mountain Canal Piping Project	Flattops Archaeological Consultants	Bureau of Reclamation	2017

Table 2: Previously recorded sites within a one-mile radius of the project area.

SMITHSONIAN TRINOMIAL	DESCRIPTION	ELIGIBILITY	Colorado OAH Survey ID
5DT1097	Prehistoric open lithic	Officially Not Eligible (1997)	MC.LM.R135
5DT1111	Prehistoric isolated find	Field—Not Eligible	MC.LM.R135
5DT1223	Cribb-Leitzinger-Hallenbeck Farm (Centennial Farm)	Centennial Farm (1998)	None Listed
5DT1959	Patterson Ditch	Officially Eligible (2014)	DT.R.R22
5DT1960	Slack Ditch (segment)	Officially Eligible (2014)	DT.R.R22

The General Land Office plats and homestead patent records for sections comprising the project areas were reviewed online (www.glorerecords.blm.gov). No historic features were plotted in Section 22, T14S, R23W, on the original 1883 GLO plat. Homestead patents covering the project area are listed in Table 3 and depicted in Figure 3. The majority of these homestead patents were Cash Entry Patents, which meant that the homesteaders acquired the land by paying \$1.25 per acre rather than obtaining the land for free after establishing a residence on the land for five years. Acquisitions in this way are indicative of land of recognized high agricultural potential and individuals who may have established themselves on the land prior to their initial filing on the parcels that they acquired.

Table 3: Summary information for homestead patents awarded in Sections 15, 21, 22, 27, and 28, T14S, R93W.

Name	Date Patent Awarded	Patent Document Number	Type of Patent	Section	Aliquots
Joel A. Quick	5/13/1904	144	Cash Entry	15	W ½ SW ¼
Leva and Lyman Reich	12/10/1935	040984	Homestead Entry, Stock Raising	10	SE ¼ SE ¼
				11	S ½ SW ¼
				14	E ½ SW ¼; NW ¼
				15	E ½ W ½; SW ¼ SE ¼; N ½ SE ¼
Lyman Reich	9/5/1917	08151	Cash Entry	15	NE ¼
John W. Taylor	9/1/1948	052468	Cash Entry	15	SW ¼ NW ¼
John Yoder	4/4/1890	455	Cash Entry	10	SW ¼ SW ¼
				15	NW ¼ NW ¼
Frank P. Ellington	8/27/1898	50	Cash Entry	22	NW ¼ SE ¼
Avery Allen	6/17/1891	114	Cash Entry	27	SW ¼
Aaron Allen	9/8/1891	203	Cash Entry	21	SE ¼ NW ¼; E ½ SW ¼; SW ¼ SW ¼
Sarah Rutledge	11/28/1892	420	Cash Entry	26	SW ¼ NW ¼; NW ¼ SW ¼
			Cash Entry	27	SE ¼ NE ¼; NE ¼ SE ¼
Simon May	11/23/1891	466	Cash Entry	27	SW ¼ NE ¼; W ½ SE ¼; SE ¼ SE ¼
William M. Caswell	7/11/1892	653	Cash Entry	28	N ½ NW ¼; SE ¼ NW ¼
				29	NE ¼ NE ¼
Jacob M. Jones	7/25/1892	679	Cash Entry	28	SE ¼
William F. Rogers	9/9/1890	761	Cash Entry	27	NW ¼
Samuel M. Frady	8/14/1890	779	Cash Entry	22	S ½ SE ¼
				23	SW ¼ SW ¼
				27	NE ¼ NE ¼
John E. Hanson, John F. Hanson, and Andrew C. Bailey	5/11/1911	0792	Cash Entry	20	E ½ NE ¼; SW ¼ NE ¼; NW ¼ SE ¼
				21	NW ¼ NE ¼; N ½ NW ¼; SW ¼ NW ¼
Andrew C. Bailey and John E. Hanson	7/10/1911	0792	Cash Entry	20	S ½ NE ¼; NE ¼ NE ¼; NW ¼ SE ¼

Name	Date Patent Awarded	Patent Document Number	Type of Patent	Section	Aliquots
				21	N ½ NW ¼; NW ¼ NE ¼; SW ¼ NW ¼
Alvin B. Caswell	9/9/1890	803	Cash Entry	21	SW ¼ NE ¼; W ½ SE ¼; SE ¼ SE ¼
George M. Ellington	9/9/1890	804	Cash Entry	21	NE ¼ SE ¼
				22	W ½ SW ¼; SE ¼ SW ¼
William Patterson	9/17/1890	842	Cash Entry	21	SE ¼ NE ¼
				22	SW ¼ NW ¼
	8/8/1901	842		28	SW ¼
William W. Cook	10/27/1890	903	Cash Entry	28	NE ¼
William C. May	12/7/1896	1044	Cash Entry	27	NW ¼ NE ¼
Ira Allen	4/27/1898	1084	Cash Entry	20	E ½ SE ¼
				21	NW ¼ SW ¼
Harrison H. Lyon	8/27/1901	1286	Cash Entry	22	NE ¼ SE ¼
				23	NW ¼ SW ¼
Eva K. Reed	11/17/1910	01410	Desert Land Act	22	NE ¼ SW ¼
James L. Patterson	3/18/1913	02088	Homestead Entry	28	SW ¼ NW ¼
John W. Taylor	4/5/1923	013418	Homestead Entry	16	E ½ SE ¼
				21	NE ¼ NE ¼
Robert A. James	1/7/1928	036809	Homestead Entry	15	SE ¼ SE ¼
				22	SE ¼ NE ¼; N ½ NE ¼
John F. Campbell	9/17/1935	042929	Homestead Entry	22	NW ¼ NW ¼

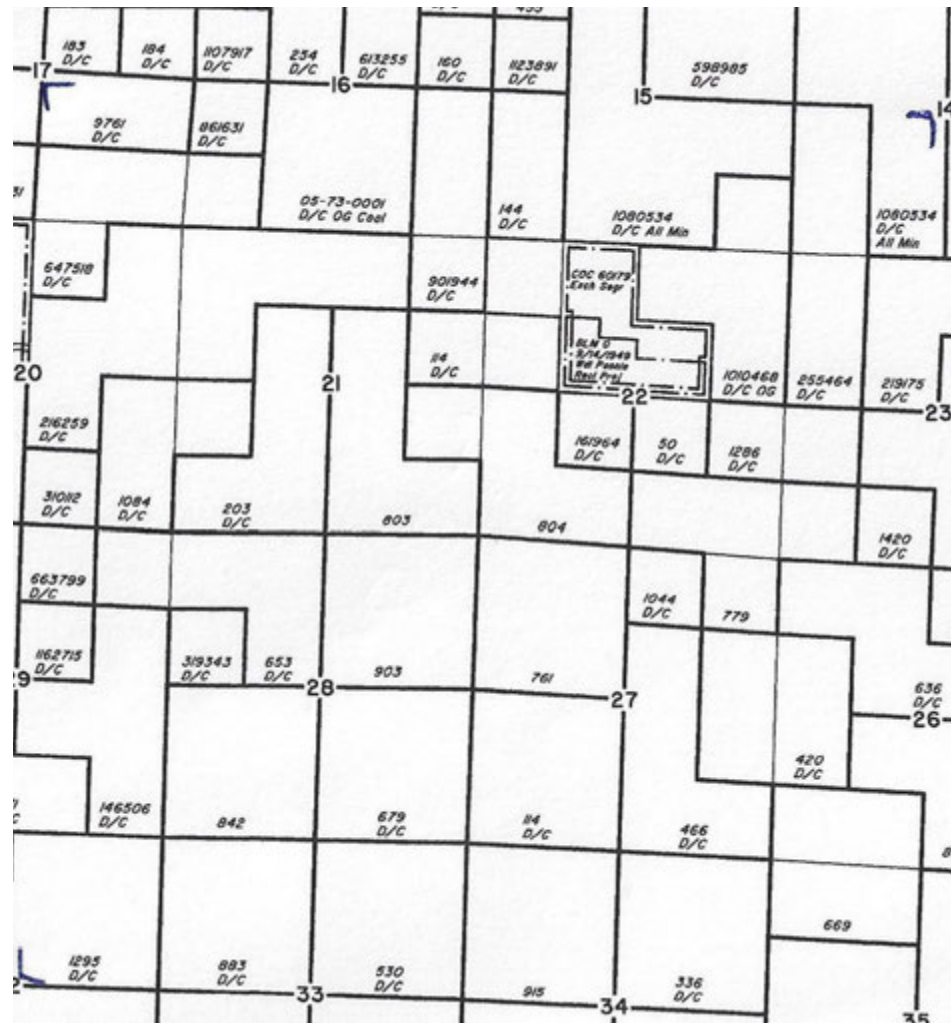


Figure 3: Enlarged portion of the Master Title Plat depicting the location of homestead patents listed in Table 3.

The first recorded European expedition to enter the vicinity of the North Fork valley was the Juan de Rivera expedition party between 1761 and 1765 (Husband 1984:IV-1). The party traveled north from Taos into the plateau country where it traded with the Utes, but got discouraging reports about the presence of gold in the area. The Rivera expedition probably traveled as far as present-day Delta, where the Gunnison and Uncompahgre Rivers meet. In 1776, the Spanish padres Francisco Dominguez and Silvestre Escalante also traveled through the region, likely crossing the North Fork just downstream of Hotchkiss.

Mexican independence opened the area to American fur trade after 1821, and in 1828 Antoine Roubidoux built a trading post near present-day Delta, Colorado (Husband 1984:IV-2). Federal exploration of the region came in the 1850's after victory in the Mexican War and the discovery of gold in California. Expeditions were led by John C. Fremont, from 1843 to 1853, and John Gunnison, in 1853, with the goals of locating transportation routes and minerals. These were followed in the 1870's by the United States Geological Survey's cataloguing and mapping

expeditions. In particular, Ferdinand Hayden surveyed the North Fork vicinity between 1873 and 1876, effectively opening the area up to settlement (Husband 1984:IV-3).

By the 1880's, the Utes had been effectively removed from the west-central portion of Colorado. The discovery of precious metals and the development of the coal industry to service the processing of the metals stimulated the rapid development of agriculture and transportation throughout western Colorado. By 1885, the North Fork valley was recognized for its fruit growing and large cattle operations. The area's economy was further balanced by the construction of the Denver and Rio Grande Railroad through nearby Delta, which facilitated farm-to-market deliveries of produce and other products, as well as the development of the coal mining industry in the Somerset area beginning in 1903.

The North Fork Valley's agricultural possibilities were discovered early on when, in 1882, Enos Hotchkiss and Sam Wade planted a variety of fruit trees near present-day Paonia and Hotchkiss (Husband 1984:IV-48, 71, and 78). The valley's fertile soil, mild climate, and numerous streams produced remarkable results, but it was quickly learned, however, that water availability limited the amount of area that could be devoted to productive agriculture. Several irrigation companies were formed between the late 1880s and early 1890s, resulting in the construction of numerous ditches, canals, and reservoirs. In addition to the Fire Mountain Canal system, the Stewart Ditch, the Overland Ditch, and the Farmer's Ditch were some of the most important water systems in the North Fork Valley (Horn and Pfirtsch 2013:6). The 32-mile long Fire Mountain Canal took water from the North Fork of the Gunnison River 10 miles above Paonia to irrigate land on Rogers, Sunnyside, and Pitkin Mesas. The canal was begun in 1896 and completed in 1901. The 21-mile long Overland Ditch took water from Leroux Creek beginning in 1893, and the 12-mile long Farmer's Ditch carried water to Hanson Mesa and nearly as far as Hotchkiss. Irrigation of the Rogers Mesa area was initially from Leroux Creek by way of the Leroux Creek Ditch.

The Leroux Ditch (a.k.a. Leroux Creek Ditch, a.k.a. Rogers Mesa Ditch) was appropriated on August 15, 1883 and adjudicated in 1889 receiving Priority No. 4. The Patterson, Allen, and Highline Ditches all took water from Leroux Creek, and were also adjudicated in 1889 with lower-ranked priorities. Through these water rights, farmers were able to irrigate their lands, although the pattern of water rights relative to the land was a patchwork and insufficient water was available for irrigation to be reliable, particularly late in the growing season. In 1896, the Fire Mountain Canal was constructed westward from its headgate on the North Fork of the Gunnison River west of Somerset. This canal reached Leroux Creek and the plat shows it passing west of the creek by simply showing an arrow (Fire Mountain Canal, Statement of Claim, Delta County Courthouse, County Clerk's Office, File No. 12096). On March 20, 1902, an amended plat of the Leroux Ditch was filed with a more precise map. The enlarged ditch took water from the same place as the original appropriation, but rather than follow the general course southeasterly to the North Fork of the Gunnison River, the ditch followed the course of what is now the extension of the Fire Mountain Canal to a point just north of the line between Sections 22 and 27, T14S, R93W. It is at this point that the plat notes the main ditch ended and thereafter divided into three laterals including the Highline, Allen, and Patterson Ditches. These ditches were all interconnected by the current route of the Fire

Mountain Canal, much of it already having been the route of the Allen Ditch in the northwestern portion of Section 27, and extending as far west as the Patterson Ditch in Section 28.

On March 24, 1903, the Leroux Ditch & Enlargement Company (LD&E Co.) was incorporated with the stated purpose to distribute water from Leroux Creek and the Fire Mountain Canal (Horn and Pfirtsh 2013:11-12). In order to consolidate the corporation's ownership in the ditches comprising the system, the LD&E Co. had all of the individuals that took delivery of water through Leroux Creek by way of the three laterals Quit Claim their interest in what had become the Leroux Creek Ditch system to the Company. It should be noted that none of the individuals relinquished their water rights, only the ditches themselves.

Despite consolidation of the delivery system and construction of storage reservoirs on the Grand Mesa, late-season water availability was frequently insufficient. In order to remedy the situation, in the middle 1930s the Bureau of Reclamation began investigating the possibility of building one or more storage reservoirs to serve the North Fork Valley. Plans to build a reservoir were authorized in 1947, but construction estimates exceeded expectations and the plans were shelved. Instead of building a new reservoir, reconstruction of the Fire Mountain Canal was considered beneficial and work commenced on the canal in 1948. As part of the planning for the project, the Leroux Creek Water Users Association (LCWUA) was incorporated on February 11, 1948 (Articles of Incorporation, Leroux Creek Water Users Association, Delta County Courthouse, County Clerk's Office, File No. 234876). This was a standard procedure for Bureau of Reclamation projects—the beneficiaries of the project were required to establish an entity as a partner in the project and to serve as the local administrator of the water system. In 1951, the government planned to construct Paonia Reservoir, extend the Fire Mountain Canal, enlarge the Overland Ditch, and improve water delivery to the Minnesota Creek Valley. When authorized in 1956 as part of the Colorado River Storage Project, only the reservoir and extension of the Fire Mountain Canal were included; both were completed in 1962 (Latousek 1995). As part of the project, reconstruction, enlargement, and extension of the Leroux Ditch was completed by the Bureau of Reclamation under contract with the LD&E Co; improvement of the water distribution laterals was not included. Existing water rights associated with the land benefitting from the Paonia Project were exchanged for shares in the LCWUA. This simplified the allocation of water to individual users and it was no longer necessary to distribute the water in accordance with the many and varied water rights that individual property owners held. As a result, the LD&E Co. upgraded their laterals and installed new concrete takeout structures beginning in 1962.

Fire Mountain Canal Segment (5DT1277.4)

The Fire Mountain Canal segment 5DT1277.4 begins along a south-facing slope rising above Leroux Creek approximately 2.5 miles northwest of Hotchkiss and wends its way south and west to where it ends just short of Stingley Gulch. The area along Leroux Creek is covered with rose brambles, junipers, and grasses, and cottonwoods edge the side of the road; the remainder of the canal crosses through private residences and fields. The soils are brown colluviums, and ground visibility was fair. The recorded segment is 3.57 miles long. At the beginning of the segment it measures approximately 18 feet wide and is approximately eight feet

deep; after the canal passes under 3100 Road it is significantly reduced in size measuring approximately three feet wide and three feet deep. A maintained access road is located along the canal, and measures approximately 20 feet wide.

The ditch alignment is not plotted on the 1883 GLO plat for T14S, R93W, but it is plotted on the 1965 version of the Lazear 7.5' USGS topographic quadrangle. The earliest appropriation for the Fire Mountain Canal is listed as September 14, 1896 and it was adjudicated on February 20, 1904 (www.cdss.state.co.us). The outtake is located at the Fire Mountain Diversion Dam, located on the North Fork of the Gunnison River near Somerset. From this point, The Fire Mountain Canal flows east 34.7 miles along the north side of the valley, ending just short of Stingley Gulch northwest of Hotchkiss. It was enlarged and extended as part of the Paonia Project, which provides full and supplemental irrigation water supplies for 15,300 acres of land in the vicinity of Paonia and Hotchkiss. Paonia Reservoir stores the flows of Muddy Creek upstream of its confluence with the North Fork of the Gunnison River. Downstream, the Fire Mountain Diversion Dam and Canal divert flows from the river for delivery to project lands in the Fire Mountain Division. Leroux Creek Division water, used downstream of the Fire Mountain Canal extension, is exchanged with the Fire Mountain Canal and Reservoir Company. These shares are used as project water by the Leroux Creek Water Users Association for irrigation of Leroux Division lands above the Fire Mountain Canal. Fire Mountain Division water is then used by the Leroux Division lands on Rogers Mesa downstream of the Fire Mountain Canal system. Improvement of existing small reservoirs in the Leroux Creek Division was accomplished independently by water users. The actual contracts for the extension and lining of Fire Mountain Canal were awarded in 1959 and 1960 and work completed in 1962 (Latousek 1995).

The Fire Mountain Canal (5DT1277) is officially eligible under Criteria A for its significance as an early and primary water gathering system in the North Fork valley, as well as its role in the execution of the Paonia Project under the direction of the U.S. Bureau of Reclamation between 1959 and 1960. The recorded segment, 5DT1277.4, functions as it was originally designed and has evidently not seen major realignments or improvements other than those completed during the Paonia Project, which are now historic in their own right and are representative of water distribution under the Paonia Project. The recorded segment has integrity of location, design, setting, workmanship, feeling, and association. Integrity of workmanship is evident for both the canal lining and earthen ditch portions, as well as for many of the more recent concrete takeout structures that were installed in the early 1960s. Portions of 5DT1277.4 will be abandoned, while the remaining segment will be piped and will be destroyed. It is understood that the proposed actions will almost completely destroy the historic fabric of 5DT1277.4, and the following description satisfies a part of the required mitigation.

Feature 1 is the siphon that moves the water in the Fire Mountain Canal from the east to the west side of Leroux Creek. The siphon consists of mirrored concrete structures on either side of Leroux Creek (Figures 4 and 5; Editor's Note: In order to improve readability, all of the figures are located after the feature descriptions). Feature 1a is the structure on the east side of Leroux Creek. At this point, the Fire Mountain Canal is approximately eight feet wide where wing walls on either side of the canal force the water through two gates (Figure 6, 7, 8, and 9). A 4-foot wide metal and concrete headgate is located on the east side; this gate is opened or

closed with a standard metal headgate valve and allows excess water to flow north into Leroux Creek (Figure 10). On the west side is a 4-foot wide lumber and concrete headgate that allows water to flow into a curvilinear measuring weir that forces the water underground; this gate is also opened and closed with a standard 30-inch metal headgate valve (Figures 11 and 12). The concrete divider is approximately six feet high and the walls are eight inches wide (Figures 13 and 14). White post-and-beam fencing (4-foot tall) is placed along the chute for safety.

Feature 1b is the structure on the west side of Leroux Creek, where the curvilinear chute is located on the east side of the structure; this feature was previously recorded as 5DT1277.2 (Horn and Harrison 2014; Figure 15). A headgate valve is located approximately ten feet upstream from the west gate, and a metal pole with a solar powered gauge is set between the two chutes (Figure 16). White post-and-beam fencing (4-foot tall) is placed along the shutes for safety (Figure 17 and 18).

Feature 1c is a gauge house situated next to a large concrete flow meter approximately 100 feet downstream from Feature 1b (Figure 19). The gauge house footprint measures approximately 4-feet by 5-feet; a door is located on the east-facing side. The walls are covered with white wood horizontal paneling, and the door is covered with corrugated sheet metal (Figures 20 and 21). At this point, the Fire Mountain Canal measures approximately 22 feet wide and is six feet deep (Figure 22).

Feature 1d is a metal measuring gauge seated in concrete; it is located 200 feet upstream from Feature 1a, and presumably aids in regulating water flow as it enters the siphon (Figure 23). It measures 22 feet in length, is 17 feet at its widest point and 10 feet at its narrowest (Figure 24). It is three feet deep, dipping to four feet deep in one section (Figure 25 and 26). At this point the canal measures approximately 17 feet across and six feet deep (Figure 6).

Feature 2 is a small takeout feature located south of Leroux Creek and approximately 0.5 miles downstream from Features 1b and 1c. It consists of a supporting concrete structure with sidewalls measuring 3-feet wide and 2-feet tall, with 6-inch thick concrete walls and a concrete floor. In the case of Feature 2, the water flows east-northeast through a 2-foot wide concrete-lined channel under the canal access road. The sidewalls have wing walls that extend into the canal at right angles on the upstream end and at 45-degree angles on the downstream end. The takeout is located along the eastern edge of the Fire Mountain Canal, which is controlled by an 8-inch valve that operates a small gate through which the diverted water flows (Figure 27). This adjustable valve allows the flow into the takeout channel to be regulated according to the decreed amount of water allowed. It is not clear if this feature is currently operational—at the time the feature was recorded the Fire Mountain Canal was running full, yet no water was being diverted through Feature 2 (Figure 28).

Feature 3 is a bridge over the Fire Mountain Canal just downstream from Feature 2. Measuring 14 feet 10 inches wide by 14 feet long, it consists of approximately 20 rough-sawn planks nailed to 2 inch by 12-inch girders (Figure 29). A two inch by four-inch strip of wood is nailed along the upstream edge of the bridge; it is missing from the downstream edge.

Feature 4 is a bridge over the Fire Mountain Canal approximately 0.2 miles upstream from L Road (Figures 30 and 31). It is constructed using rough-sawn planks nailed to two inch by twelve-inch girders. The footers are placed on concrete abutments located at either side of the canal (Figures 32, 33, and 34). Feature 4a is a footbridge consisting of two planks nailed together and set on the earthen edge of the canal on the east side and a slab of concrete on the west side (Figure 35).

Feature 5 is a small takeout feature just upstream from Feature 4 (Figure 36). It consists of a supporting concrete structure with sidewalls measuring 3-feet wide and 2-feet tall, with 6-inch thick concrete walls and a concrete floor. In the case of Feature 5, the water flows east through a 2-foot wide concrete-lined channel under the canal access road. The sidewalls have wing walls that extend into the canal at right angles on the upstream end and at 45-degree angles on the downstream end. The takeout is located along the eastern edge of the Fire Mountain Canal, which is controlled by an 8-inch valve that operates a small gate through which the diverted water flows (Figures 37 and 38). This adjustable valve allows the flow into the takeout channel to be regulated according to the decreed amount of water allowed.

Feature 6 is a large takeout feature located between Features 4 and 5 (Figure 39). It consists of a supporting concrete structure with sidewalls measuring six feet wide and four feet tall, with six-inch thick concrete walls and a concrete floor (Figures 40, 41, and 42). The takeout sidewalls have wing walls that extend into the canal at right angles on the upstream end and at 45-degree angles on the downstream end (Figure 43). The takeout is located along the eastern edge of the Fire Mountain Canal, which is controlled by a 12-inch valve that operates a gate through which the diverted water flows (Figures 33 and 35). This adjustable valve allows the flow into the takeout channel to be regulated according to the decreed amount of water allowed (Figure 44).

In the case of Feature 6, the water flows east through a 4-foot wide concrete-lined channel under the canal access road. At this point, the channel is covered by a wooden bridge constructed using approximately seven rough-sawn planks. The runners are formed using three rough-sawn planks placed side-by-side and attached to the deck on both the east and west side (Figure 45).

Feature 7 is a corrugated metal pipe through which the Fire Mountain Canal flows under L Road (Figures 46-50). L Road measures approximately 24 feet wide, and Feature 7 is approximately 20 feet long and four feet high. The culvert measures approximately 6.5-feet wide and 5-feet high. It is faced with six courses of dry-stacked sandstone pavers on either side of the road.

Feature 8 is a large takeout located just east of 3150 Road (Figures 51-53). It consists of a supporting concrete structure located at the edge of the Fire Mountain Canal with sidewalls measuring six feet wide and four-feet tall, with 6-inch thick concrete walls and a concrete floor (Figures 54 and 55). The takeout sidewalls have wing walls that extend into the canal at roughly right angles on the upstream end and at 45-degree angles on the downstream end. The takeout is located along the eastern edge of the Fire Mountain Canal, which is controlled by a 12-inch valve that operates a gate through which the diverted water flows. This adjustable valve allows

the flow into the takeout channel to be regulated according to the decreed amount of water allowed. In the case of Feature 8, the water flows south through a concrete-lined channel under the canal access road to a tri-part concrete box on the south side of the access road (Figures 56-59). The box has 3-foot tall, 6-inch thick concrete walls with a concrete floor (Figure 60). The box has an 8-inch headgate valve on three sides to direct water into various channels; one channel was buried, one channel flows into a concrete box with a grate opening and then south through a Parshall measuring device, and one channel was an earthen ditch.

In the vicinity of Features 8 and 14, the Fire Mountain Canal measures approximately 12.5 feet in width and five feet deep (Figure 52).

Feature 9 is the Slack Ditch takeout; this feature was previously recorded as 5DT1960.1 (Horn and Pfertsh 2003). Located along the south edge of the Fire Mountain Canal, the newly constructed takeout consists of a 15-foot concrete structure positioned parallel to the flow of the canal (Figures 61 and 62). The structure has a metal grate covering the opening and a valve positioned in the center of the structure. Wing walls are positioned at either end of the structure and jut out perpendicular to the water flow of the canal. The water then flows south under the canal access road and through an earthen channel for approximately 15-feet where it enters a concrete box covered by a metal grate.

Feature 10 is the Patterson Ditch takeout; this feature was previously recorded as 5DT1959.1 (Horn and Pfertsh 2003). At this point, the Fire Mountain Canal has been reduced in size to approximately four feet wide and three feet deep (Figures 63-65). The takeout for this feature is located on the south side of the canal and consists of a supporting concrete structure with sidewalls measuring 3-feet wide and 2-feet tall, with 6-inch thick concrete walls and a concrete floor. In the case of Feature 10, the water flows south through a 2-foot wide concrete-lined channel under the canal access road. The sidewalls have wing walls that extend into the canal at right angles on the upstream end and at 45-degree angles on the downstream end. The 8-inch control valve operates a small gate through which the diverted water flows (Figure 66). This adjustable valve allows the flow into the takeout channel to be regulated according to the decreed amount of water allowed. The water flows south through a recently constructed concrete diversion structure measuring approximately 20-feet wide and 32-feet long (Figure 67-69). It is divided in half, with the eastern half containing water that flows through a second control valve into a concrete box with a grated opening and on into a pipe. The western half is the overflow.

Feature 11 is a 4-foot wide concrete channel into which the Fire Mountain Canal flows; the water is directed into a section of buried pipe measuring approximately 500 feet in length before it daylights again (Figure 70). This feature is located approximately 0.2 miles west of 3100 Road. The channel has six-inch concrete wing walls pitched at a 45-degree angle to the ditch walls, and three 6-inch by 1-inch milled planks are placed on top of the pipe opening (Figures 71-73).

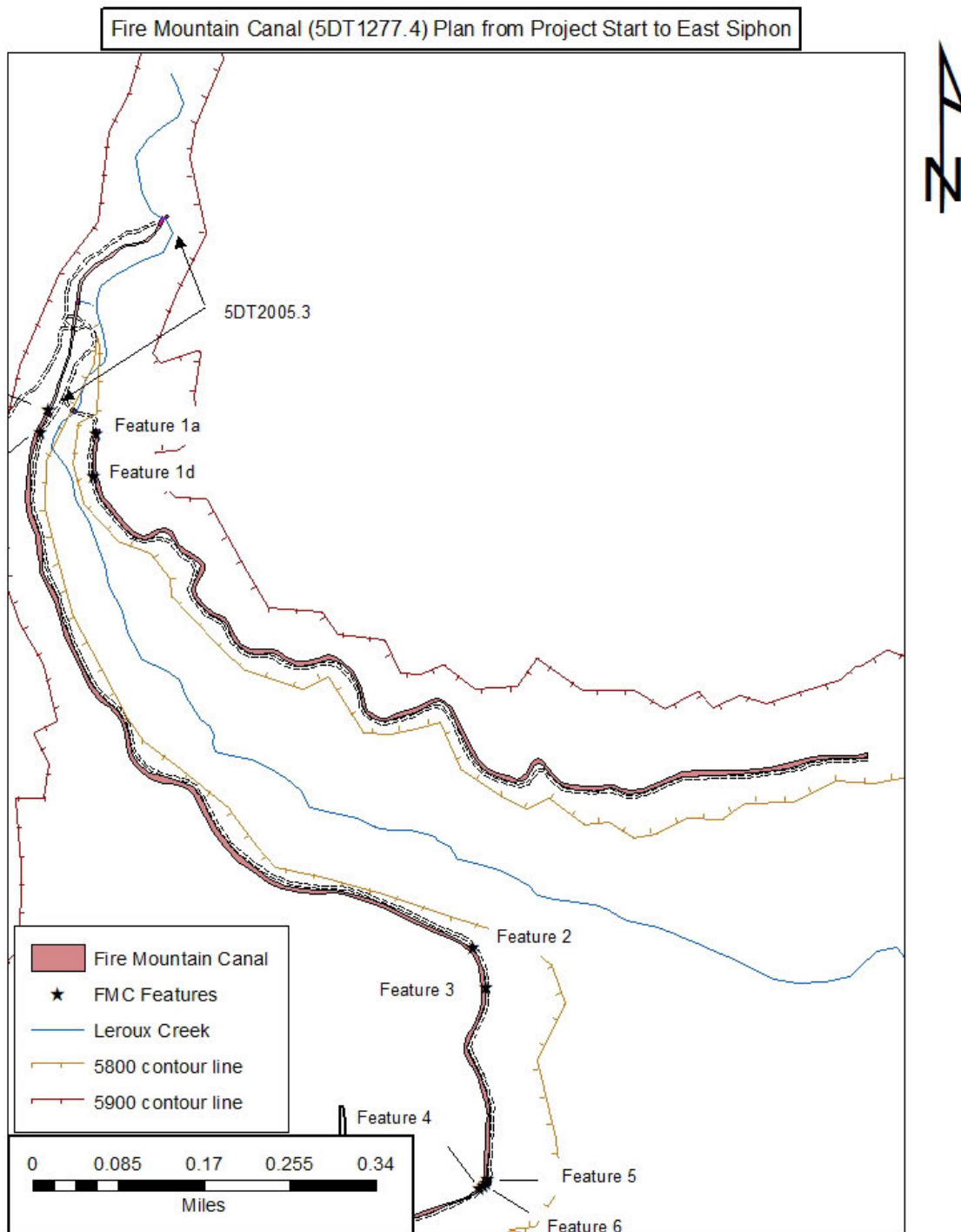
Feature 12 is marked by an 8-inch headgate valve located along the south side of the Fire Mountain Canal and a cylindrical concrete chamber with 2-inch thick walls into which the water

flows before it is diverted into pipe (Figures 74 and 75). It is located between 3100 Road and Feature 11.

Feature 13 is a small takeout located just north of L Road and west of 3100 Road (Figure 76). It consists of a supporting concrete structure with sidewalls measuring 3-feet wide and 2-feet tall, with 6-inch thick concrete walls and a concrete floor (Figure 77). In the case of Feature 13, the water flows west through a 2-foot wide concrete-lined channel under the canal access road. The sidewalls have wing walls that extend into the canal at right angles on the upstream end and at 45-degree angles on the downstream end. The takeout is located along the western edge of the Fire Mountain Canal, which is controlled by a 10-inch valve that operates a small gate through which the diverted water flows. This adjustable valve allows the flow into the takeout channel to be regulated according to the decreed amount of water allowed. A 6-foot long Parshall flow meter is located approximately 10 feet downstream from the edge of the access road (Figure 78). At this point, the Fire Mountain Canal has been reduced in size and measures approximately three feet and three feet deep (Figure 79 and 80).

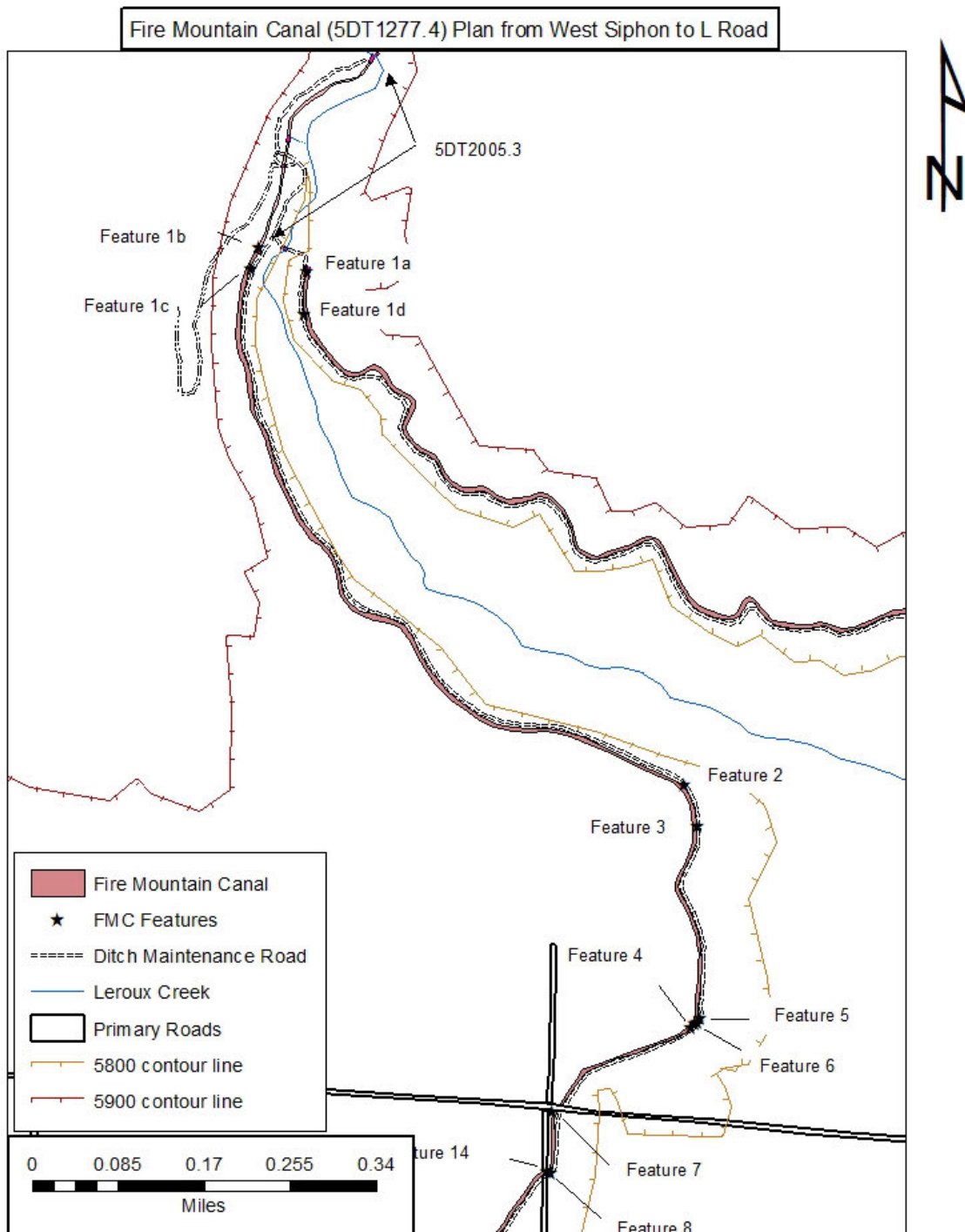
Feature 14 is a formed concrete bridge supported by a culvert measuring 11-feet wide by 10-feet high through which the Fire Mountain Canal flows (Figure 81). The bridge is part of 3150 Road and measures approximately 20-feet wide and 20-feet long.

Feature 15 is a takeout located downstream from Feature 10 and east of 3100 Road (Figures 82-85). It consists of a supporting concrete structure with sidewalls measuring 3-feet wide and 2-feet tall, with 6-inch thick concrete walls and a concrete floor. In the case of Feature 15, the takeout feature is perpendicular to the canal and monitors water flow through the canal which is controlled by a 10-inch valve that operates a small gate. The sidewalls have wing walls that extend into the canal at right angles on the upstream end and at 45-degree angles on the downstream end. An 8-foot long by 4-foot wide Parshall flow meter is located approximately 20 feet downstream from the takeout, and the canal channel has a layer of concrete applied between the two structures.



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Figure 4: Fire Mountain Canal (5DT1277.4) Plan from project start to the East Siphon (Feature 1a).



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Figure 5: Fire Mountain Canal (5DT1277.4) Plan from West Siphon (Feature 1b) to Feature 7 and L Road.

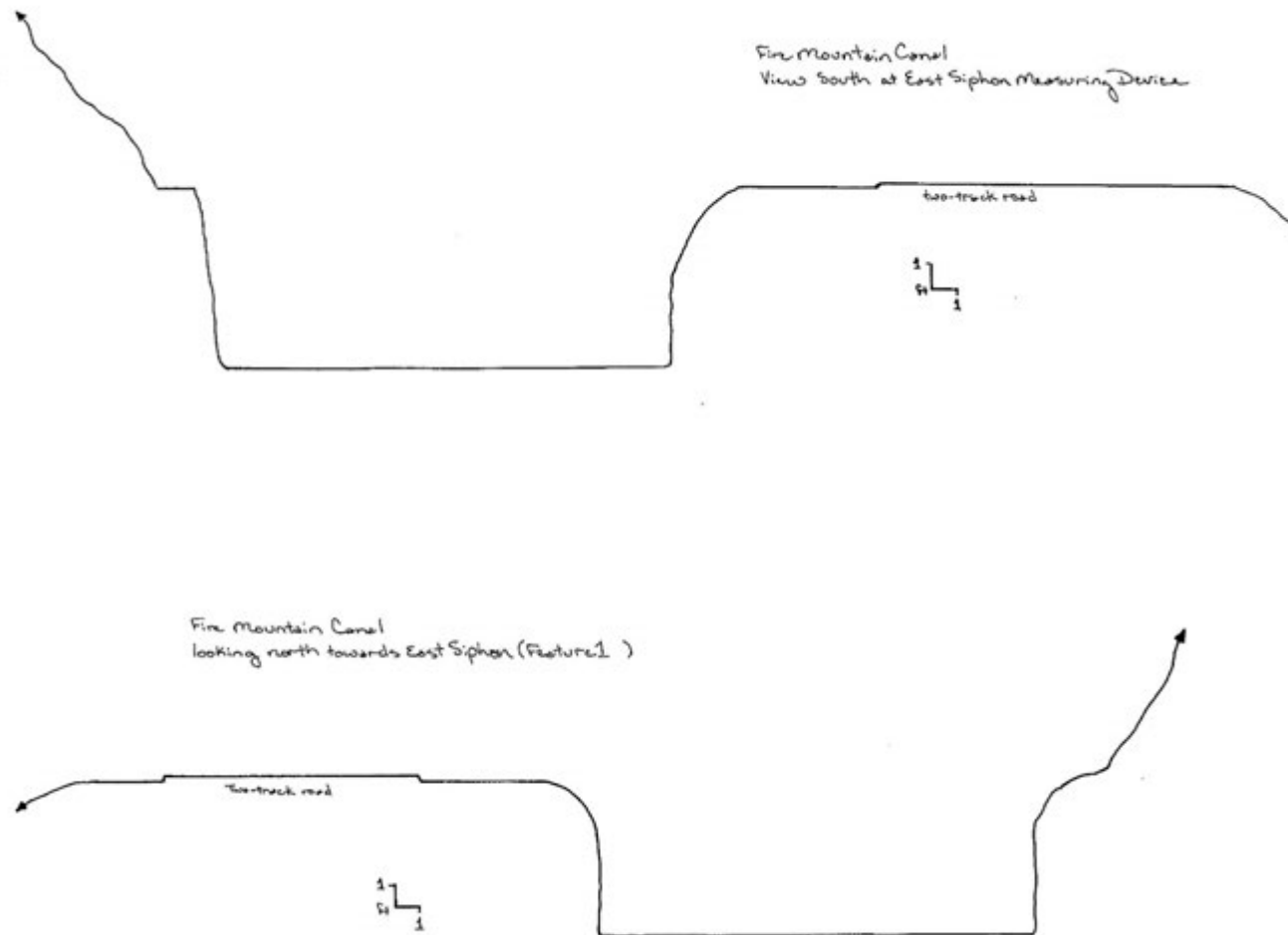


Figure 6: Profiles of the Fire Mountain Canal (5DT1277.4) in the vicinity of Feature 1a.

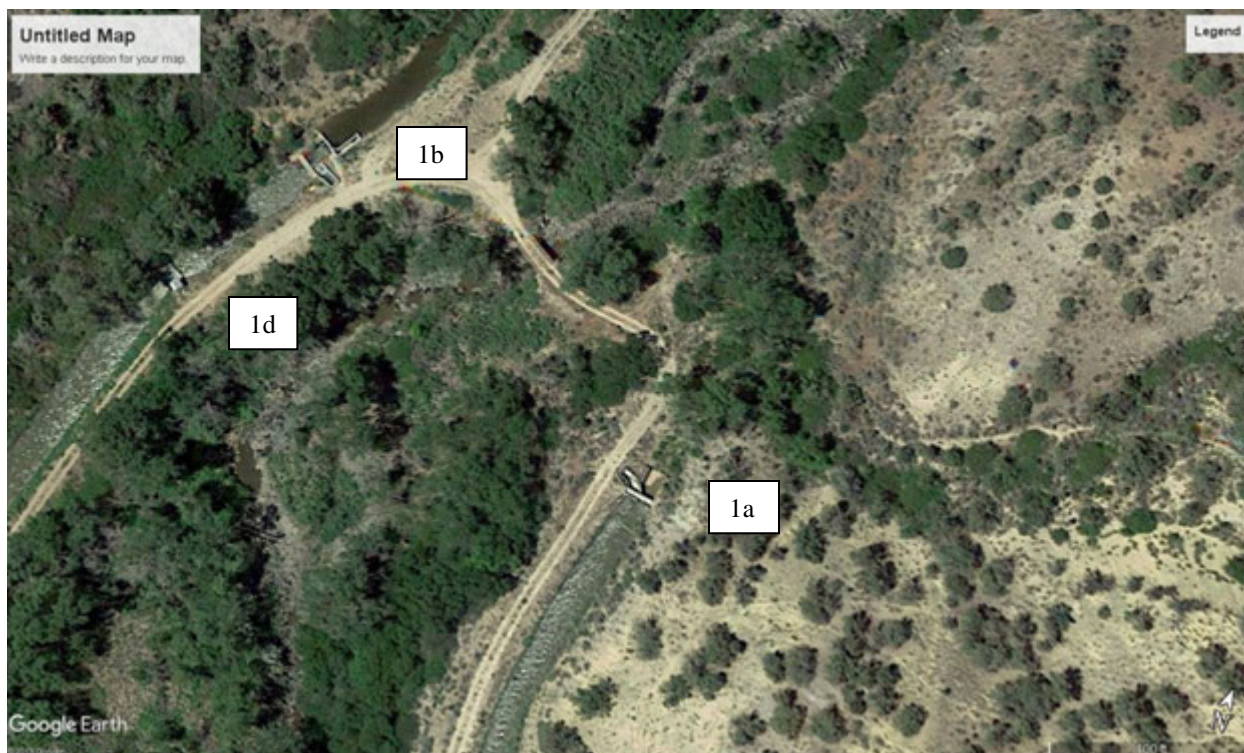


Figure 7: Google Earth overview of Feature 1 of the Fire Mountain Canal segment 5DT1277.4.



Figure 8: View down (west) at Feature 1a of the Fire Mountain Canal segment 5DT1277.4 (FAC Digital FMC Exp. 1860).

Fire Mountain Canal
East Siphon (Feature 1) Plan

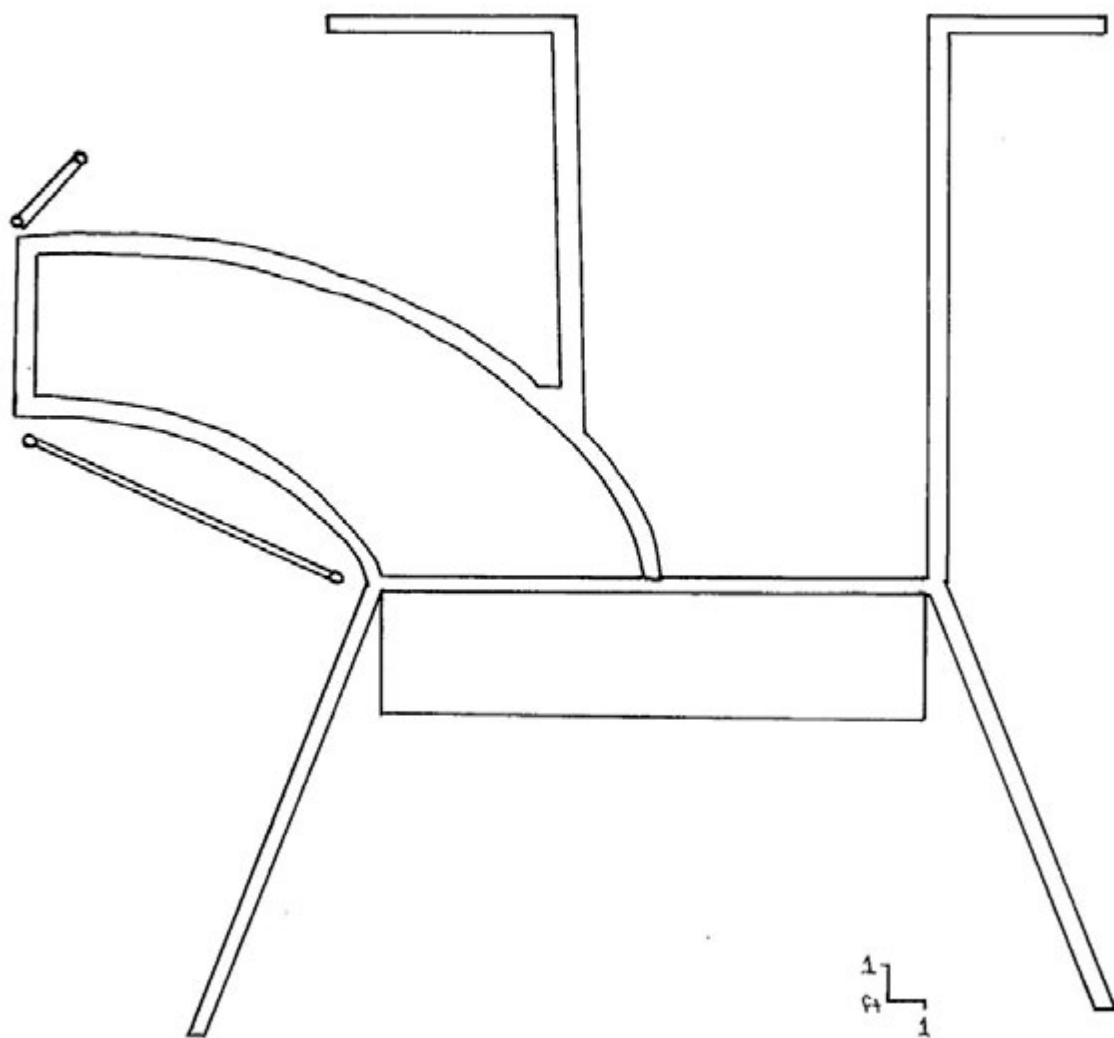


Figure 9: Plan of Feature 1a, 5DT1277.4.



Figure 10: View north at the east gate of Feature 1a of the Fire Mountain Canal segment 5DT1277.4 (FAC Digital FMC Exp. 1843).



Figure 11: View north at the west gate of Feature 1a of the Fire Mountain Canal segment 5DT1277.4 (FAC Digital FMC Exp. 1842).



Figure 12: View down at the 30" valve attached to the west gate of Feature 1a of the Fire Mountain Canal segment 5DT1277.4 (FAC Digital FMC Exp. 1849).



Figure 13: View south at the overflow channel and east gate of Feature 1a of the Fire Mountain Canal segment 5DT1277.4 (FAC Digital FMC Exp. 1854).



Figure 14: View down at the siphon channel of Feature 1a of the Fire Mountain Canal segment 5DT1277.4 (FAC Digital FMC Exp. 1857).

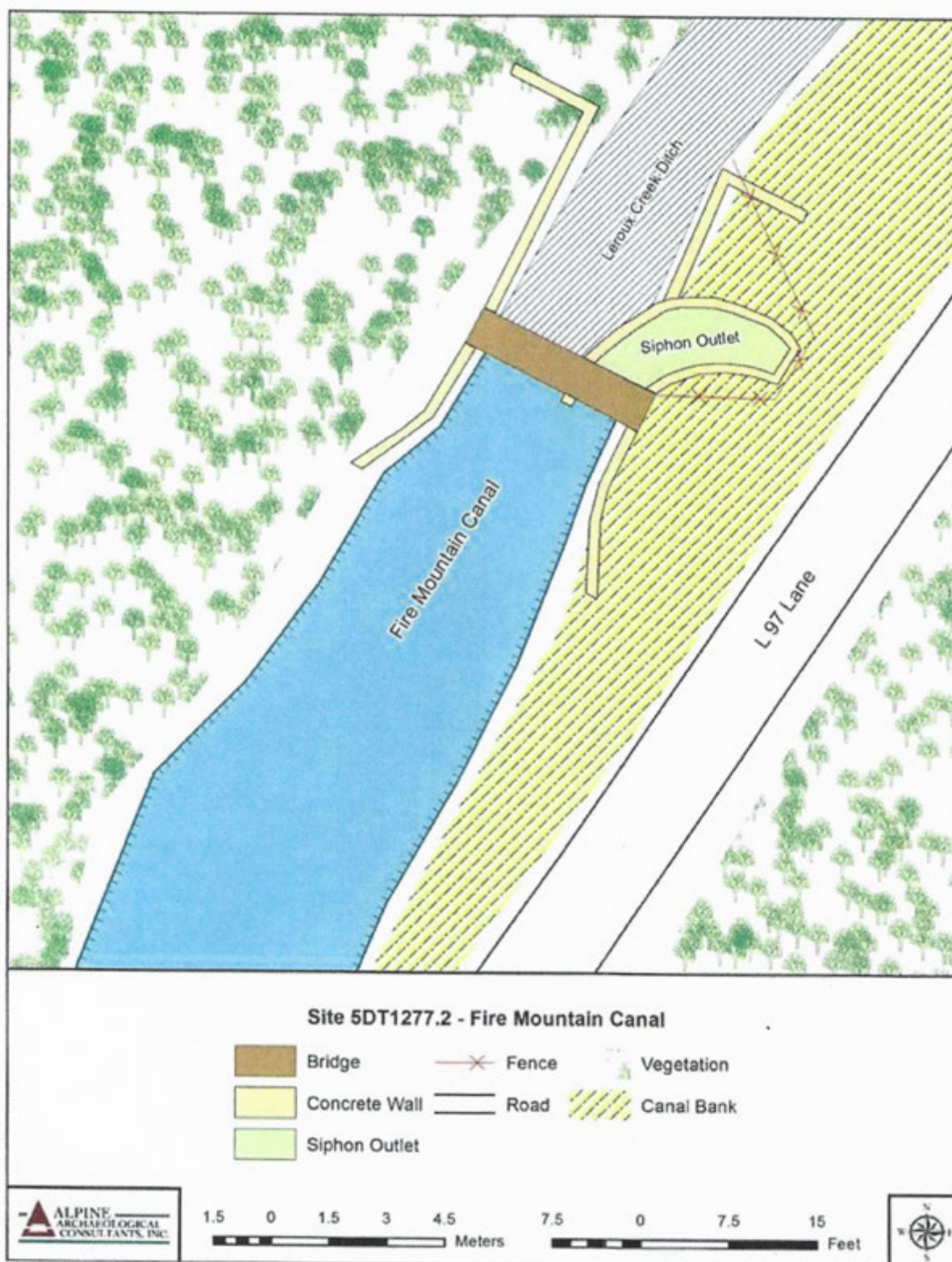


Figure 15: Feature 1b (5DT1277.2) plan (reproduced from 5DT1277.2 site form, Horn and Harrison 2014).



Figure 16: View north at the measuring weir at the point that the Leroux Creek Ditch (5DT2005.3) feeds into the Fire Mountain Canal segment 5DT1277.4 (FAC Digital FMC Exp. 1347).



Figure 17: View northeast across Feature 1b siphon of the Fire Mountain Canal segment 5DT1277.4 at high water (FAC Digital FMC Exp. 1346).



Figure 18: View northwest across Feature 1b of the Fire Mountain Canal segment 5DT1277.4 (FAC Digital FMC Exp. 1345).



Figure 19: View north towards gauge house (Feature 1c) and West Siphon (Feature 1b) of the Fire Mountain Canal segment 5DT1277.4 (FAC Digital FMC Exp. 1343).



Figure 20: View south towards gauge house (Feature 1c) of the Fire Mountain Canal segment 5DT1277.4 (FAC Digital FMC Exp. 1872).



Figure 21: View west of gauge house (Feature 1c) of the Fire Mountain Canal segment 5DT1277.4 (FAC Digital FMC Exp. 1874).

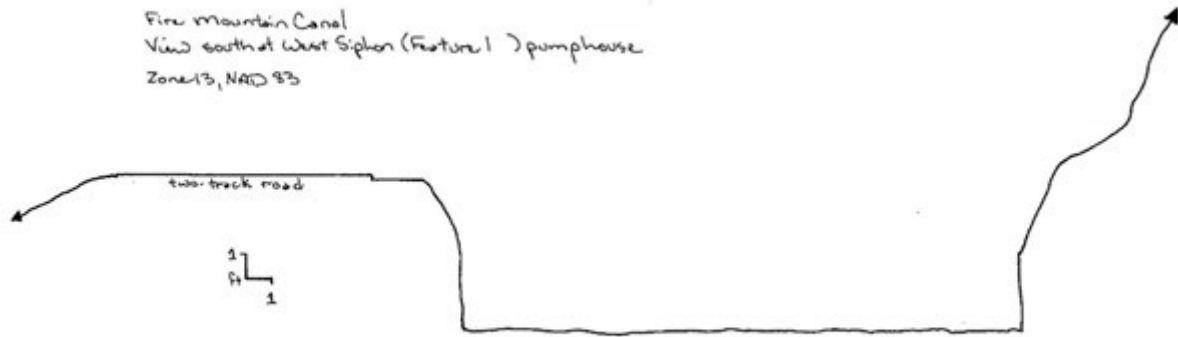


Figure 22: Profile of the Fire Mountain Canal (5DT1277.4) in the vicinity of Feature 1c.



Figure 23: View down at Feature 1d of the Fire Mountain Canal segment 5DT1277.4 at high water (FAC Digital FMC Exp. 1351).



Figure 24: View down at Feature 1d of the Fire Mountain Canal segment 5DT1277.4 (FAC Digital FMC Exp. 1829).



Figure 25: View south at Feature 1d of the Fire Mountain Canal segment 5DT1277.4 (FAC Digital FMC Exp. 1828).

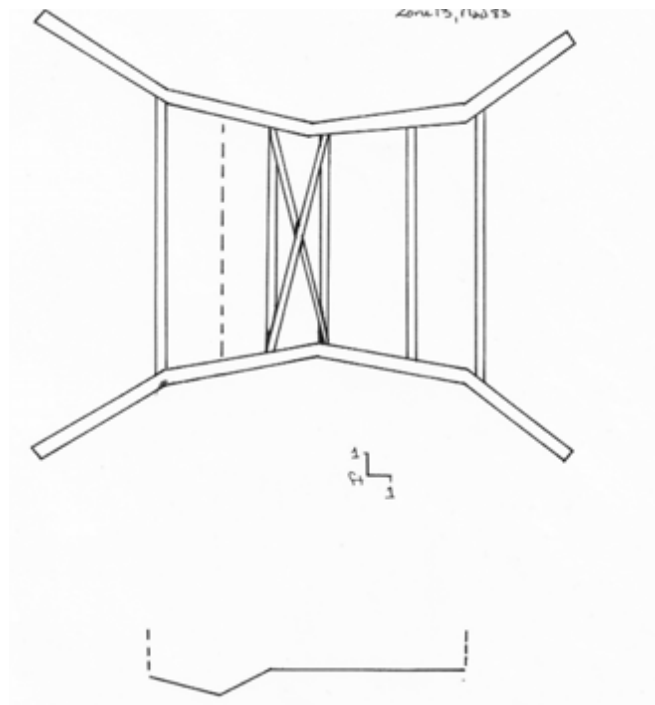


Figure 26: Plan and profile of Feature 1d, 5DT1277.4.



Figure 27: View west at Feature 2 of the Fire Mountain Canal segment 5DT1277.4 (FAC Digital FMC Exp. 1335).



Figure 28: View east across Feature 2 ditch channel, 5DT1277.4 (FAC Digital FMC Exp. 1336).



Figure 29: View west across Feature 3, 5DT1277.4 (FAC Digital FMC Exp. 1356).

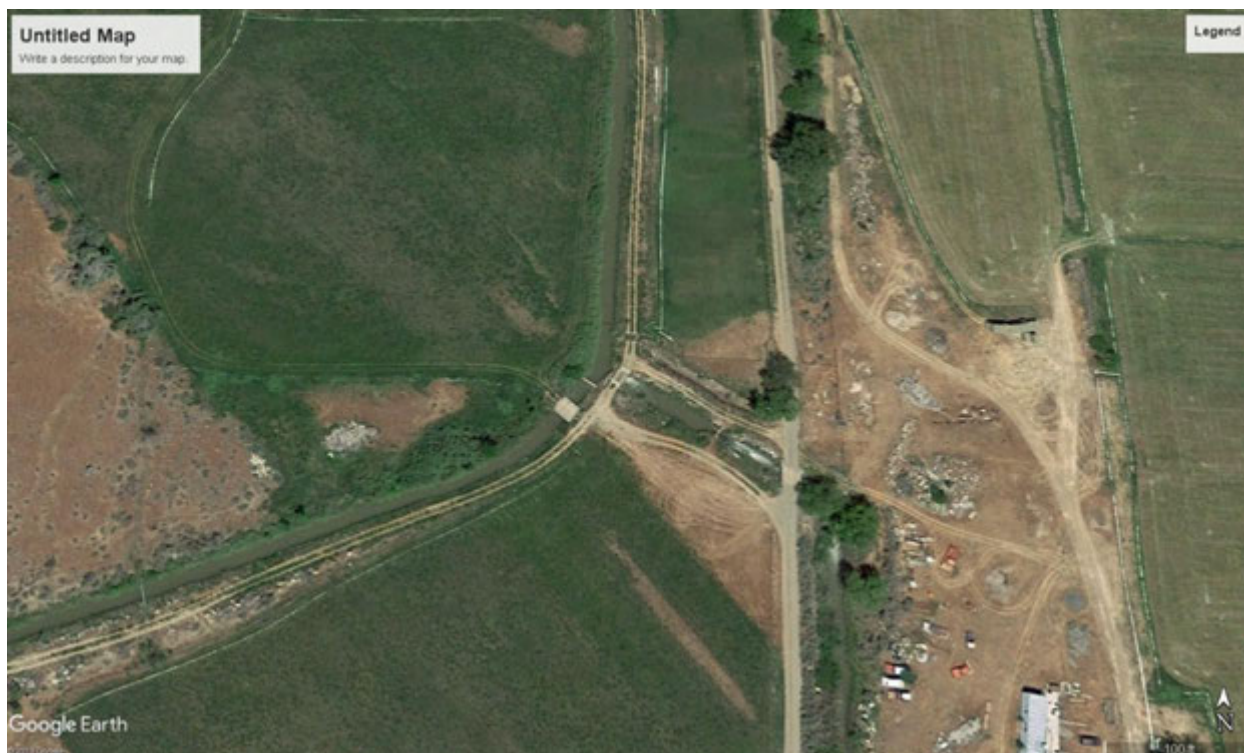


Figure 30: Google Earth view of Features 4, 4a, 5, and 6 of the Fire Mountain Canal segment 5DT1277.4.

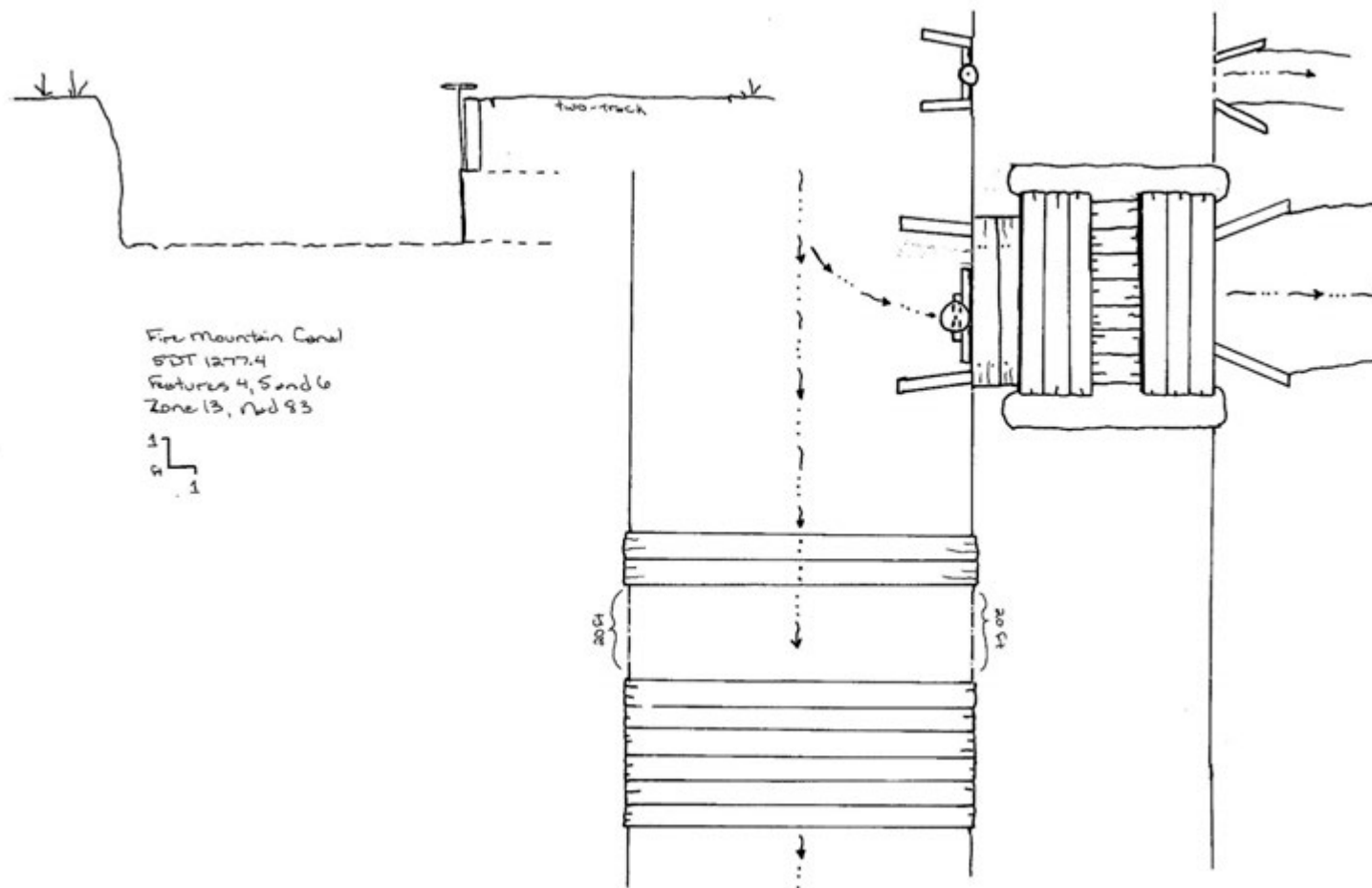


Figure 31: Plan of Features 4, 4a, 5, and 6 and profile of the Fire Mountain Canal (5DT1277.4).



Figure 32: View west across Feature 4, 5DT1277.4 (FAC Digital FMC Exp. 1325).



Figure 33: View south across Feature 4 at high water, 5DT1277.4 (FAC Digital FMC Exp. 1327).



Figure 34: View south across Features 6, 4a, and 4 at low water, 5DT1277.4 (FAC Digital FMC Exp. 4326).



Figure 35: View west across Feature 4a, 5DT1277.4 (FAC Digital FMC Exp. 1326).



Figure 36: View north across Features 4a, 5, and 6, 5DT1277.4 (FAC Digital FMC Exp. 1373).



Figure 37: View down at Feature 5, 5DT1277.4 (FAC Digital FMC Exp. 1375).



Figure 38: View downstream across the Feature 5 ditch channel during high water, 5DT1277.4 (FAC Digital FMC Exp. 1333).



Figure 39: View south across Feature 6 during high water, 5DT1277.4 (FAC Digital FMC Exp. 1331).



Figure 40: View down at the Feature 6 takeout structure, 5DT1277.4 (FAC Digital FMC Exp. 1374).

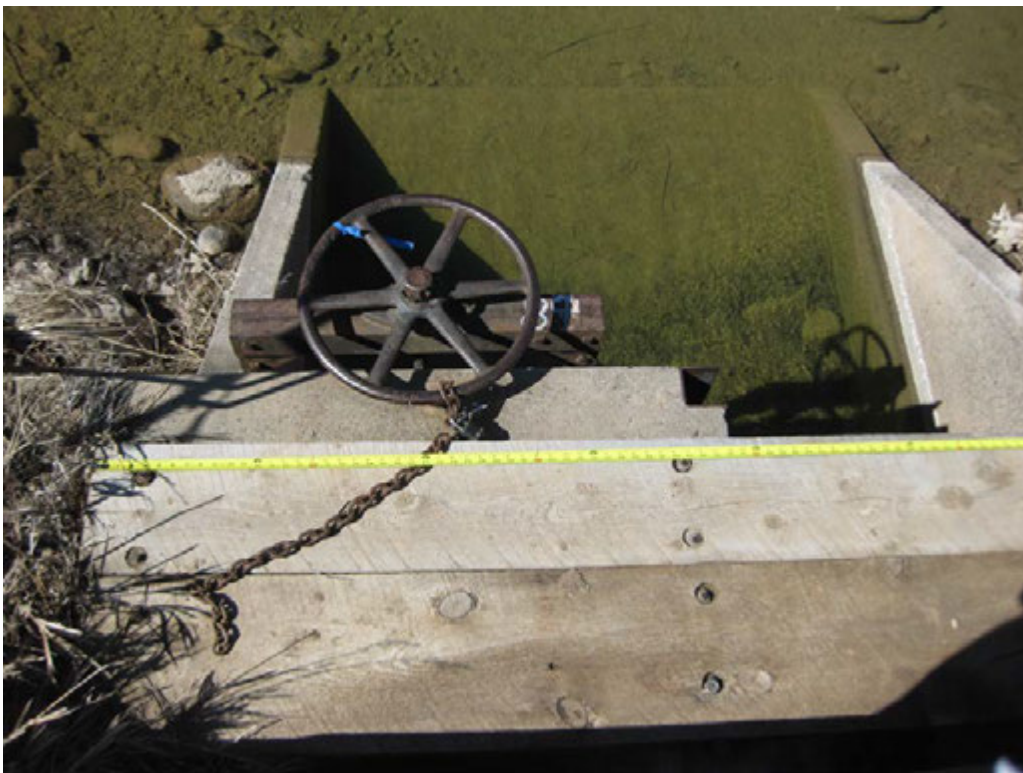


Figure 41: View down at the Feature 6 takeout structure, 5DT1277.4 (FAC Digital FMC Exp. 4323).



Figure 42: View northeast across the Feature 6 takeout structure, 5DT1277.4 (FAC Digital FMC Exp. 4327).



Figure 43: View upstream across the Feature 6 ditch channel, 5DT1277.4 (FAC Digital FMC Exp. 1377).



Figure 44: View downstream across the Feature 6 ditch channel during high water, 5DT1277.4 (FAC Digital FMC Exp. 1329).



Figure 45: View north across the bridge spanning Feature 6, 5DT1277.4 (FAC Digital FMC Exp. 1328).

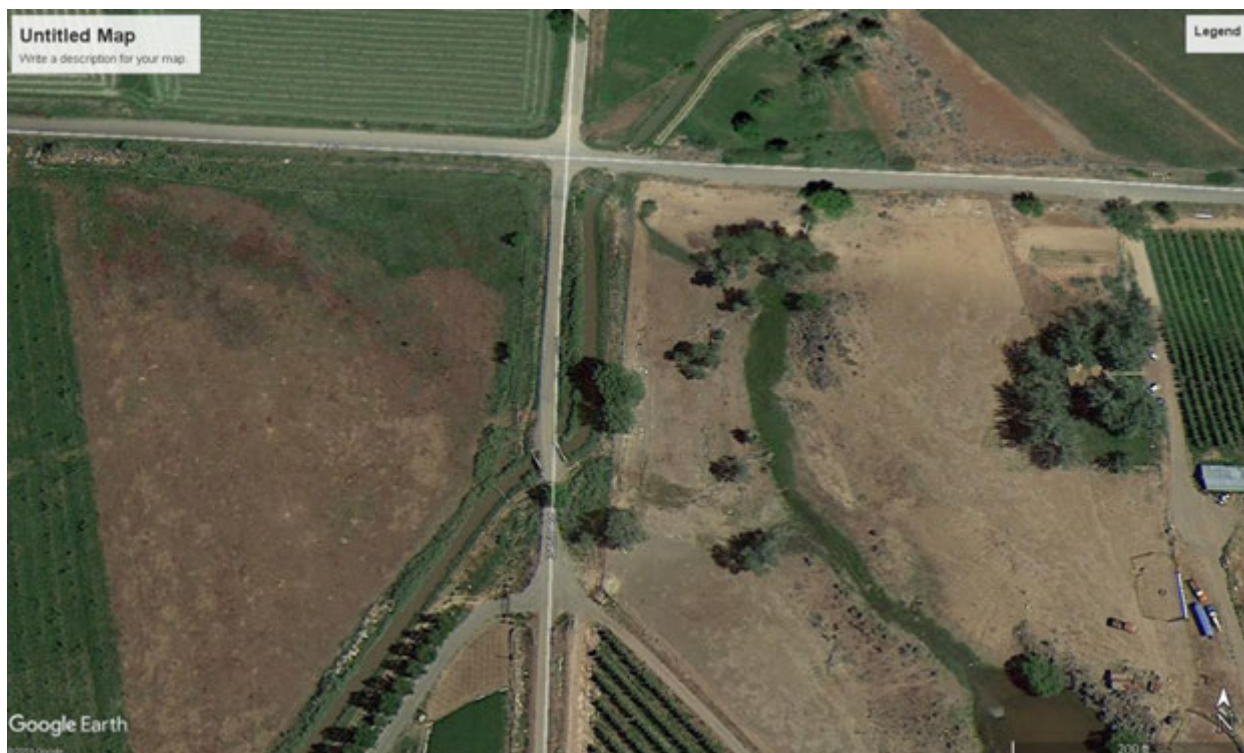


Figure 46: Google Earth view of Features 7, 8 and 14, 5DT1277.4.



Figure 47: View south across the north half of Feature 7, 5DT1277.4 (FAC Digital FMC Exp. 1372).



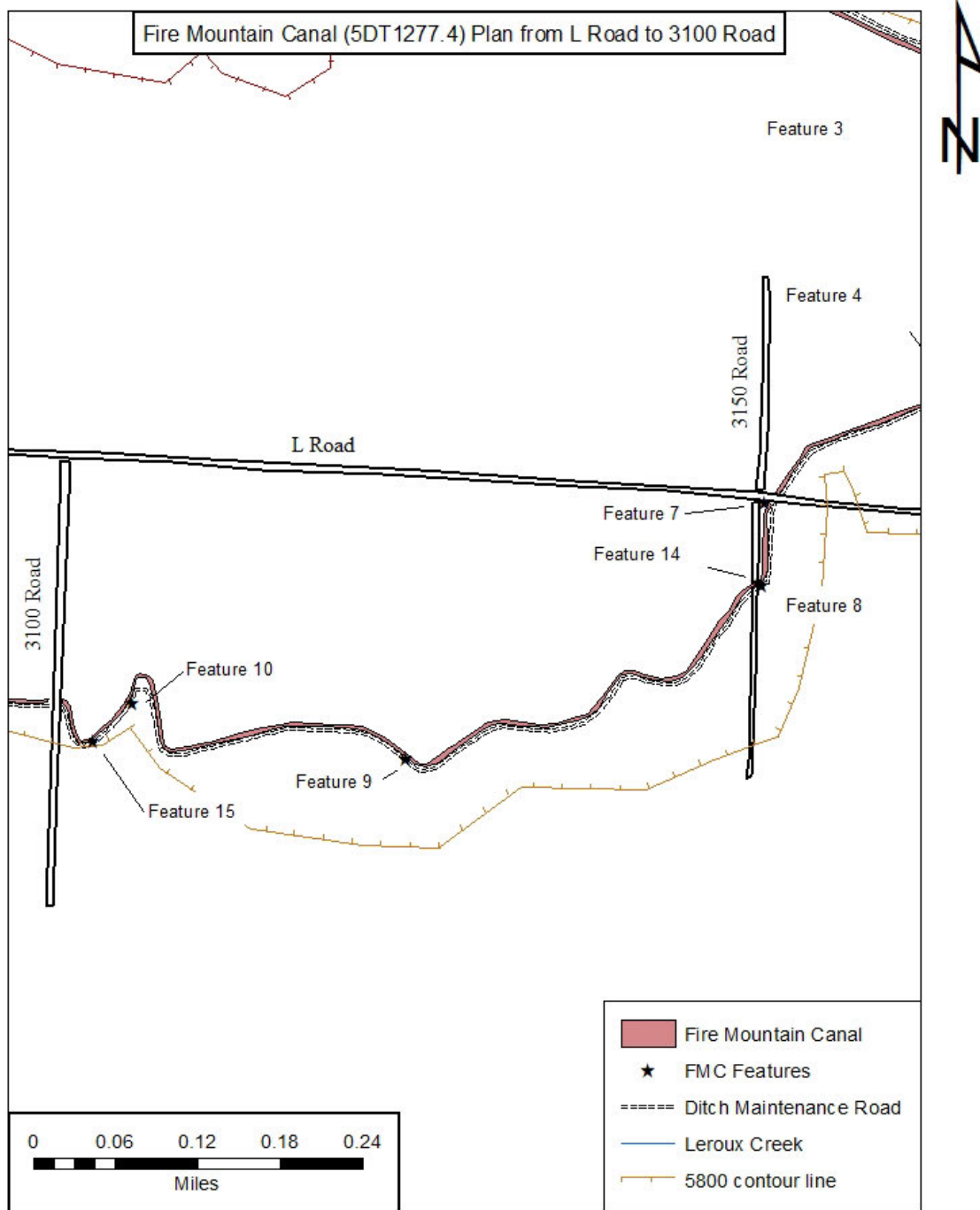
Figure 48: Close-up view of the north half of Feature 7, 5DT1277.4 (FAC Digital FMC Exp. 4328).



Figure 49: View northeast across the south half of Feature 7, 5DT1277.4 (FAC Digital FMC Exp. 1315).



Figure 50: Close-up view of the south half of Feature 7, 5DT1277.4 (FAC Digital FMC Exp. 4318).



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Figure 51: Fire Mountain Canal (5DT1277.4) plan from L Road to 3100 Road.

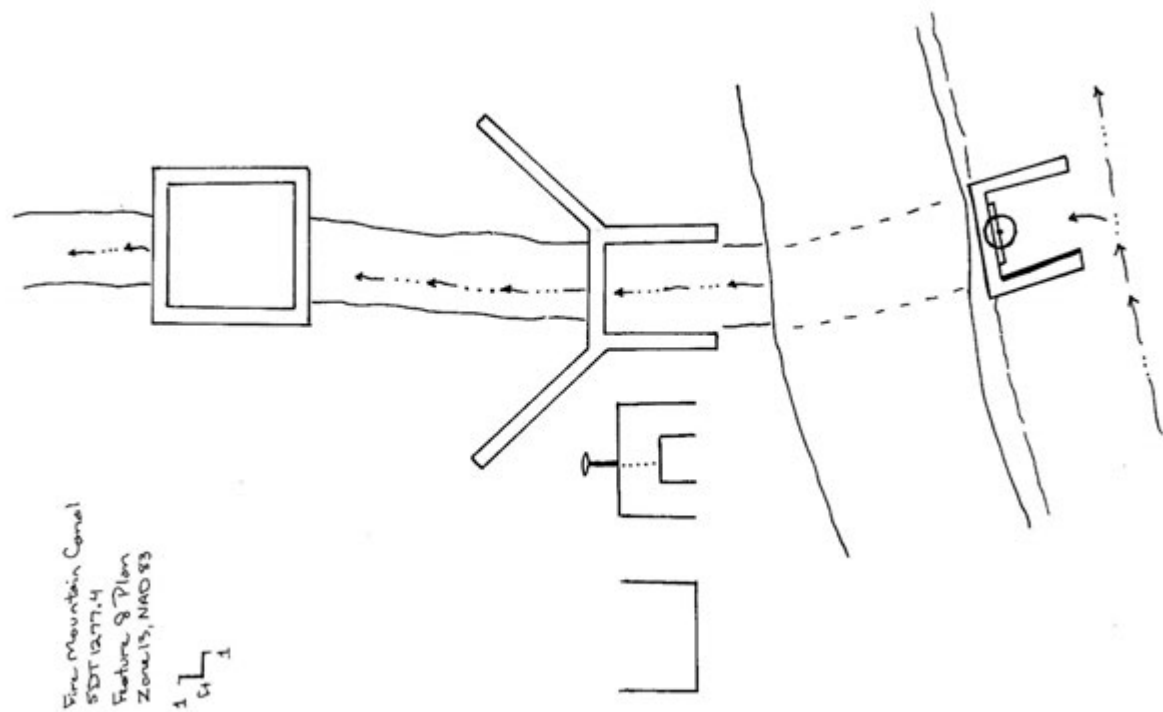


Figure 52: Plan of Feature 8, 5DT1277.4.

Fire Mountain Canal
 5DT1277.4, Profile near Feature 7, view north
 Feature 7



Gate 85



Fire Mountain Canal
 5DT1277.4
 Feature 8 profile
 Zone 13, NAO 83



Figure 53: Profiles of the Fire Mountain Canal (5DT1277.4) in the vicinity of Features 7 and 8.



Figure 54: View south across the measuring gauge for Feature 8, 5DT1277.4 (FAC Digital FMC Exp. 1929).



Figure 55: View of gate at Feature 8 takeout structure, 5DT1277.4 (FAC Digital FMC Exp. 1936).



Figure 56: View south across the tri-part structure and measuring gauge of Feature 8, 5DT1277.4 (FAC Digital FMC Exp. 1937).



Figure 57: View east across the tri-part structure of Feature 8, 5DT1277.4 (FAC Digital FMC Exp. 1927).



Figure 58: View down at the tri-part structure of Feature 8, 5DT1277.4 (FAC Digital FMC Exp. 1380).



Figure 59: View south across the tri-part and measuring gauge of Feature 8, 5DT1277.4 (FAC Digital FMC Exp. 1381).



Figure 60: Close-up view of the gate controlling water flow at the tri-part structure of Feature 8, 5DT1277.4 (FAC Digital FMC Exp. 1930).



Figure 61: View down at the Feature 8 takeout structure, 5DT1277.4 (FAC Digital FMC Exp. 1932).



Figure 62: View west across Feature 9 (Slack Ditch takeout [5DT1960.1]), 5DT1277.4 (FAC Digital FMC Exp. 1399).



Figure 63: View west across Feature 9 (Slack Ditch takeout [5DT1960.1]), 5DT1277.4 (FAC Digital FMC Exp. 1401).

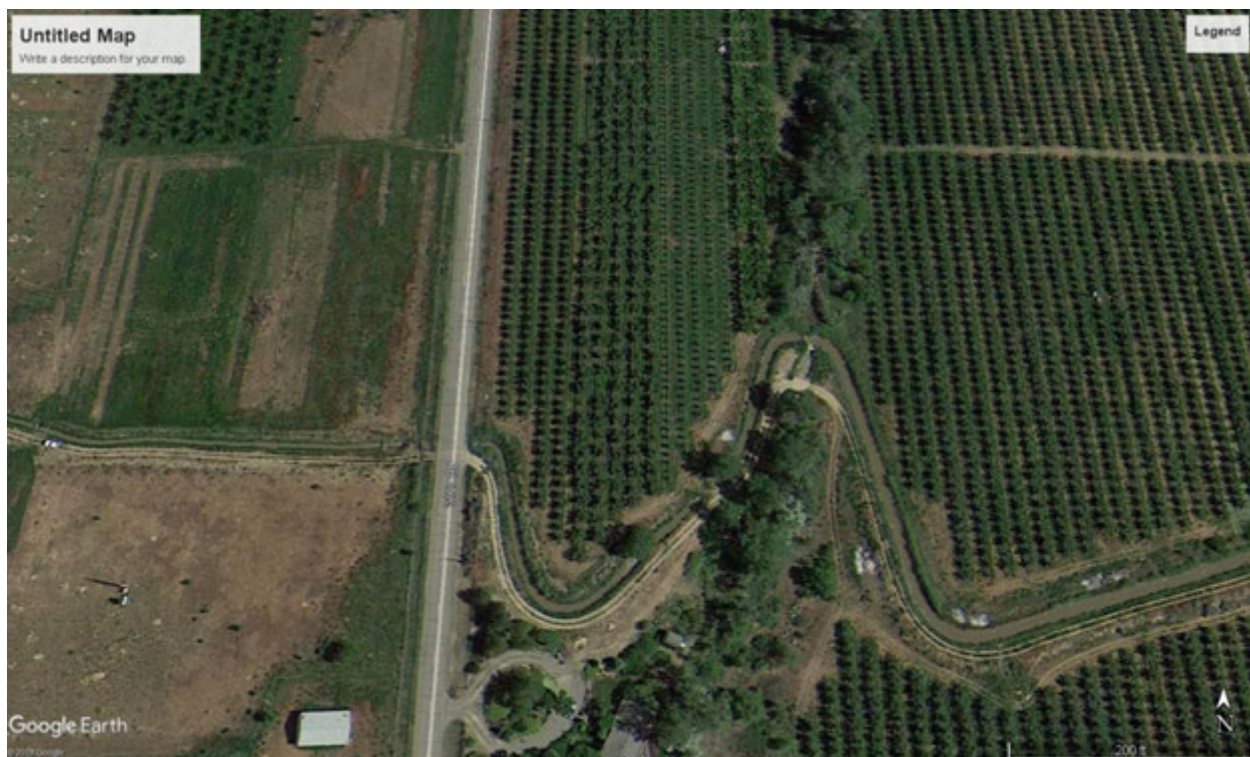


Figure 64: Google Earth view showing the Fire Mountain Canal where it cross 3100 Road.

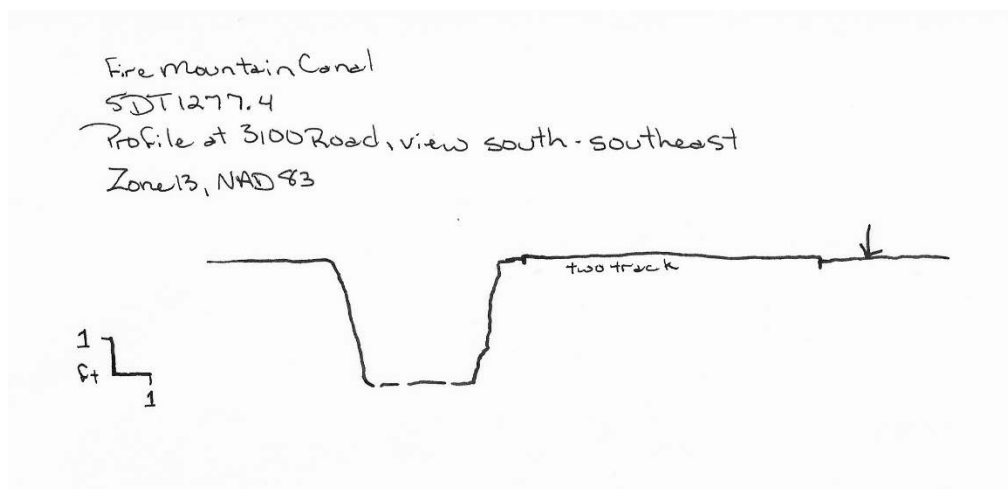


Figure 65: Profile of the Fire Mountain Canal just east of 3100 Road.



Figure 66: View east across the Fire Mountain Canal between Features 9 and 10, 5DT1277.4 (FAC Digital FMC Exp. 1393).



Figure 67: View upstream at the Patterson Ditch Canal (5DT1959.1) between the Fire Mountain Canal and the Feature 10 structure, 5DT1277.4 (FAC Digital FMC Exp. 1388).



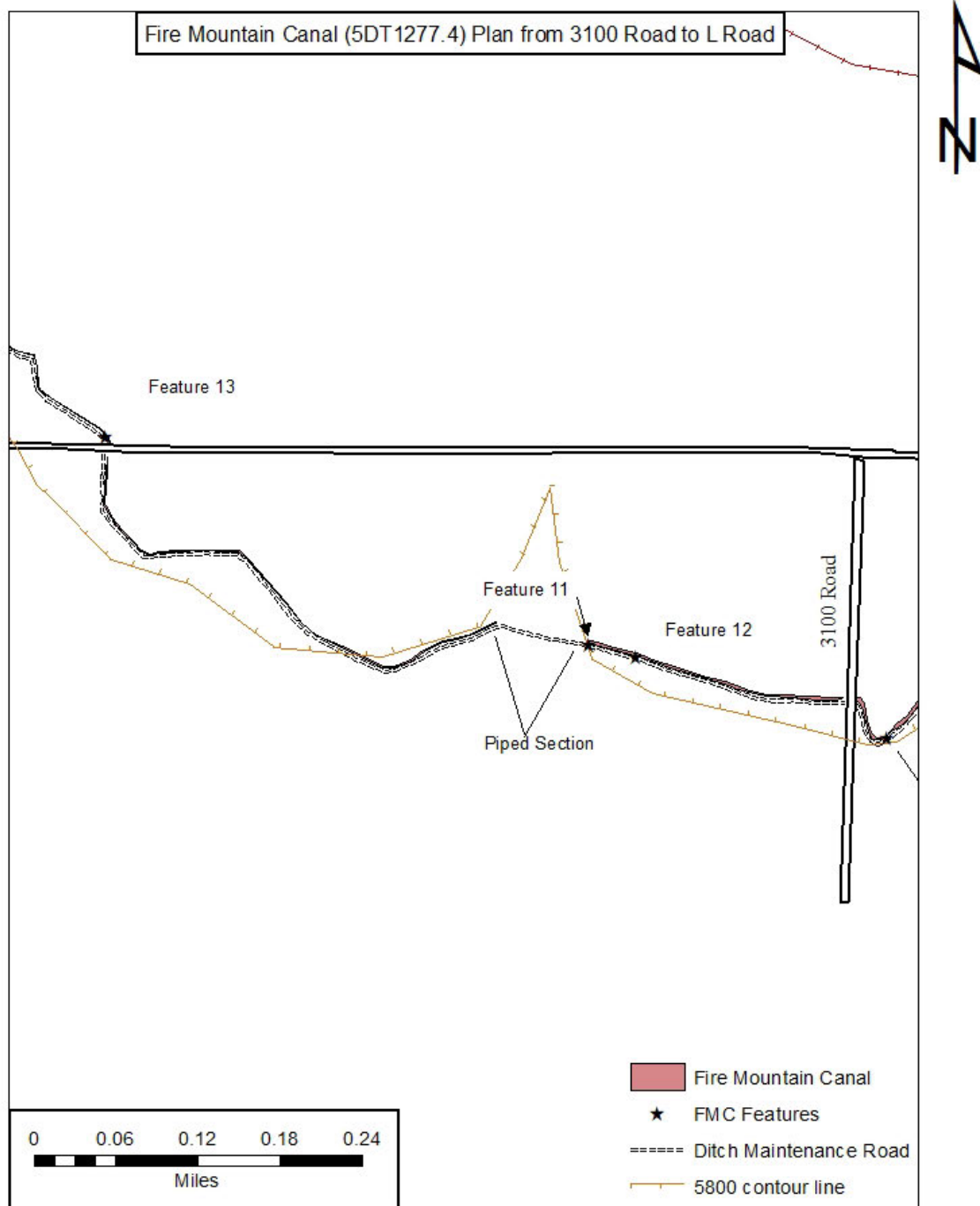
Figure 68: View south across Feature 10 (Patterson Ditch siphon [5DT1959.1]), 5DT1277.4 (FAC Digital FMC Exp. 1389).



Figure 69: View north across Feature 10 (Patterson Ditch siphon [5DT1959.1]), 5DT1277.4 (FAC Digital FMC Exp. 1390).



Figure 70: View south-southwest across Feature 10 (Patterson Ditch siphon [5DT1959.1]), 5DT1277.4 (FAC Digital FMC Exp. 1392).



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Figure 71: Fire Mountain Canal (5DT1277.4) plan between 3100 Road and L Road.



Figure 72: View west towards Feature 11 during high water, 5DT1277.4 (FAC Digital FMC Exp. 1365).



Figure 73: View northwest across Feature 11, 5DT1277.4 (FAC Digital FMC Exp. 1366).



Figure 74: View north across Feature 11, 5DT1277.4 (FAC Digital FMC Exp. 1367).



Figure 75: View south across the cistern of Feature 12, 5DT1277.4 (FAC Digital FMC Exp. 1363).



Figure 76: View north across the takeout structure of Feature 12, 5DT1277.4 (FAC Digital FMC Exp. 1364).



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Figure 77: Fire Mountain Canal (5DT1277.4) plan from L Road to project end.



Figure 78: View south across the takeout structure of Feature 13, 5DT1277.4 (FAC Digital FMC Exp. 1369).



Figure 79: View downstream across the Feature 13 ditch and measuring device at high water, 5DT1277.4 (FAC Digital FMC Exp. 1371).



Figure 80: View north across the Fire Mountain Canal at Feature 13, 5DT1277.4 (FAC Digital FMC Exp. 1370).

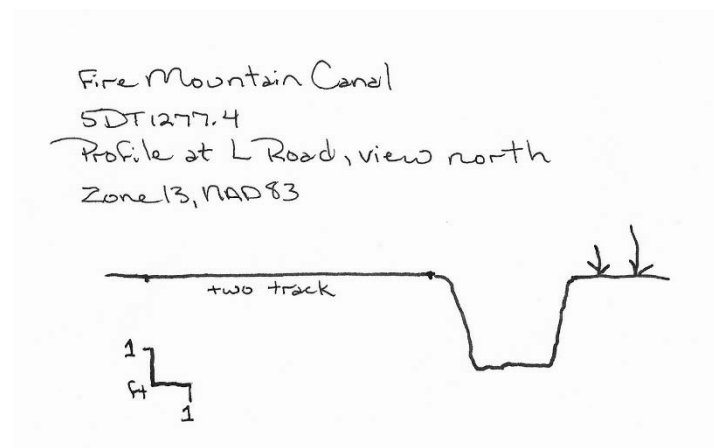


Figure 81: Fire Mountain Canal (5DT1277.4) profile just north of Feature 13.



Figure 82: View west across the Feature 8 takeout structure and Feature 14, 5DT1277.4 (FAC Digital FMC Exp. 1930).



Figure 83: View north towards Feature 15, 5DT1277.4 (FAC Digital FMC Exp. 1384).



Figure 84: View southwest towards the Feature 15 measuring device, 5DT1277.4 (FAC Digital FMC Exp. 1385).



Figure 85: View south-southwest towards the Feature 15 takeout structure, 5DT1277.4 (FAC Digital FMC Exp. 1386).



Figure 86: View down at the Feature 15 takeout structure, 5DT1277.4 (FAC Digital FMC Exp. 1387).

Leroux Creek Ditch Segment (5DT2005.3)

The Leroux Creek Ditch segment 5DT2005.3 measures approximately 59 feet wide and is 1297 feet long (Figures 87 and 88; Editor's Note: To improve readability, all of the figures are located after the feature descriptions). It is an earthen ditch that is occasionally maintained. The ditch segment is located along the base of a steep east-facing slope along the west side of Leroux Creek canyon. The hill slope rising above the ditch is covered with rose brambles, scrub oak, cottonwoods, some junipers, and grasses. The soils are brown colluviums, and ground visibility was fair.

The Leroux Creek Ditch (5DT2005) is officially determined eligible under Criteria A for its significance as an early and primary water delivery system in the Hotchkiss vicinity, as well as its role in the execution of the Paonia Project under the direction of the U.S. Bureau of Reclamation between 1959 and 1962. The recorded segment, 5DT2005.3, functions as it was originally designed and has evidently not seen major realignments or improvements other than those completed during the Paonia Project, which are now historic in their own right and are representative of water distribution under the Paonia Project. Therefore, 5DT2005.3 is field evaluated as supporting the overall eligibility of the entire resource. The recorded segment has integrity of location, design, setting, workmanship, feeling, and association. Integrity of workmanship is evident for more recent concrete takeout structures that were installed in the early 1960s. 5DT2005.3 will also be piped and will be destroyed. It is understood that the proposed action will almost completely destroy the historic fabric of 5DT2005.3. As a result, mitigation of these historic linear resources will be necessary, and the recommended mitigation is Level I photographic documentation as described in History Colorado Publication No. 1595 (History Colorado 2013). This following description satisfies a portion of the required mitigation.

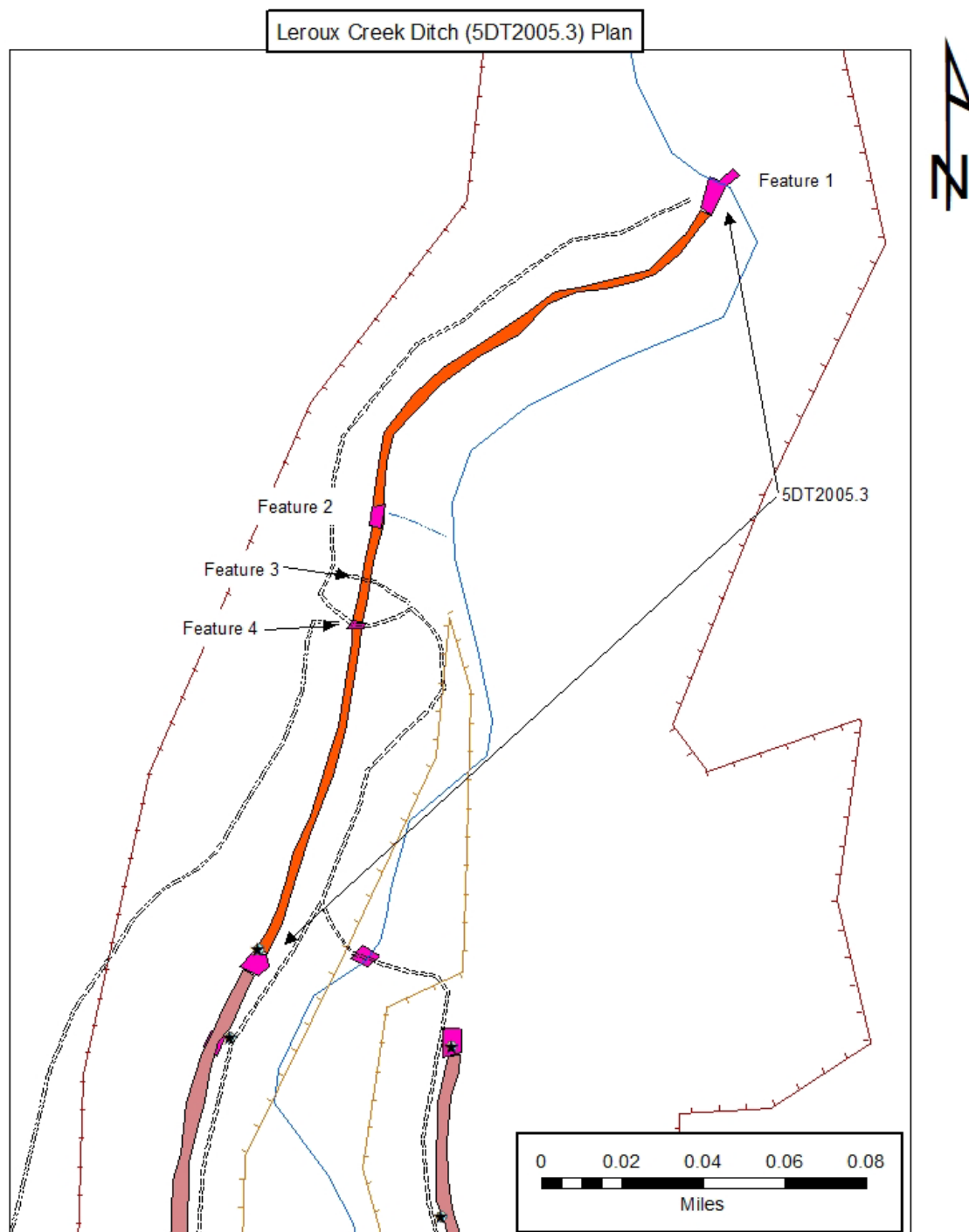
This segment includes four components: The primary diversion from Leroux Creek (Feature 1), the secondary diversion that returns water back to Leroux Creek (Feature 2), an unmaintained low-water crossing (Feature 3; Figure 89), and a measuring weir that also functions as a bridge (Feature 4; Figure 90). This segment of the Leroux Creek Ditch feeds into the west siphon of the Fire Mountain Canal (5DT1277.2). The primary diversion from Leroux Creek (Feature 1) is composed of three parts: 1) A concrete and riprap dam seated perpendicular to the flow of Leroux Creek (Figure 91); the dam measures approximately 20 feet by eight feet, with a two-foot rise (Figures 92 and 93); 2) The concrete diversion structure measuring 18 feet wide by 10 feet long; this measurement includes concrete wing walls that measure two feet wide by eight feet long (Figures 94 and 95). A metal grate is attached to the creek side to catch debris, and there is a steel pipe and steel I-beam mechanism for opening the wooden gate (Figures 96 and 97); 3) A two-foot wide concrete wing wall that extends upstream to piled boulder riprap that narrows the creek channel as it enters that diversion pool (Figures 98 and 99).

Feature 2 is a secondary diversion that returns water to Leroux Creek (Figure 100). This structure is constructed of stacked basalt cobbles and concrete mortar and is situated parallel to the flow of Leroux Creek Ditch (Figures 101 and 102). The walls of the structure measure between 1.5 and two feet thick, and the structure rises approximately 3.5 feet above the ground surface (Figure 103). There are eight-inch by six feet concrete wing walls that parallel both sides of the ditch upstream from the diversion structure. There is a three inch by 12-inch planking and

two inch by 12-inch milled lumber gate with two attached three-foot gauges that controls the flow of water through the ditch as it courses downstream towards the Fire Mountain Canal (Figures 104-106). An 8" gauge attached to a wooden gate controls the flow of water from the ditch back to the creek, and a concrete spillway located just upstream from the diversion structure also allows overflow to continue back to Leroux Creek (Figures 107 and 108). Although some of the concrete mortar is spalling away from the cobbles, the structure is in generally good condition.

Feature 4 is a bridge over the Leroux Creek Ditch that also serves as a measuring weir (Figures 109-114). The bridge measures approximately ten feet long (across the ditch) by six feet wide. The bridge is constructed of 2" by 12" planks attached to concrete abutments on either side of the ditch. There are concrete wing walls that extend both upstream and downstream from the bridge, and a measuring gauge is attached to the west side of the upstream abutment.

The ditch alignment is not plotted on the 1883 GLO plat, but it is plotted on the 1965 version of the Hotchkiss 7.5' USGS topographic quadrangle. The original appropriation for the Leroux Creek Ditch was August 20, 1883 and it was adjudicated on June 17, 1889. There have been subsequent appropriations through 1962, with the latest adjudication dating to 1992. Leroux Creek Division water, used downstream of the Fire Mountain Canal extension, is exchanged with the Fire Mountain Canal and Reservoir Company. These shares are used as project water by the Leroux Creek Water Users Association for irrigation of Leroux Division lands above the Fire Mountain Canal. Fire Mountain Division water is then used by the Leroux Division lands on Rogers Mesa downstream of the Fire Mountain Canal system. Improvement of existing small reservoirs in the Leroux Creek Division was accomplished independently by water users.



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Figure 87: Leroux Creek Ditch (5DT2005.3) plan.



Figure 88: Google Earth view of Leroux Creek Ditch (5DT2005.3) primary diversion.



Figure 89: View west across the low-water ford (Feature 3) along the Leroux Creek Ditch (5DT2005.3 [FAC Digital FMC Exp. 3596]).



Figure 90: View downstream towards the secondary diversion structure (Feature 2) and Bridge/Measuring Weir (Feature 4), 5DT2005.3 (FAC Digital FMC Exp. 3581).

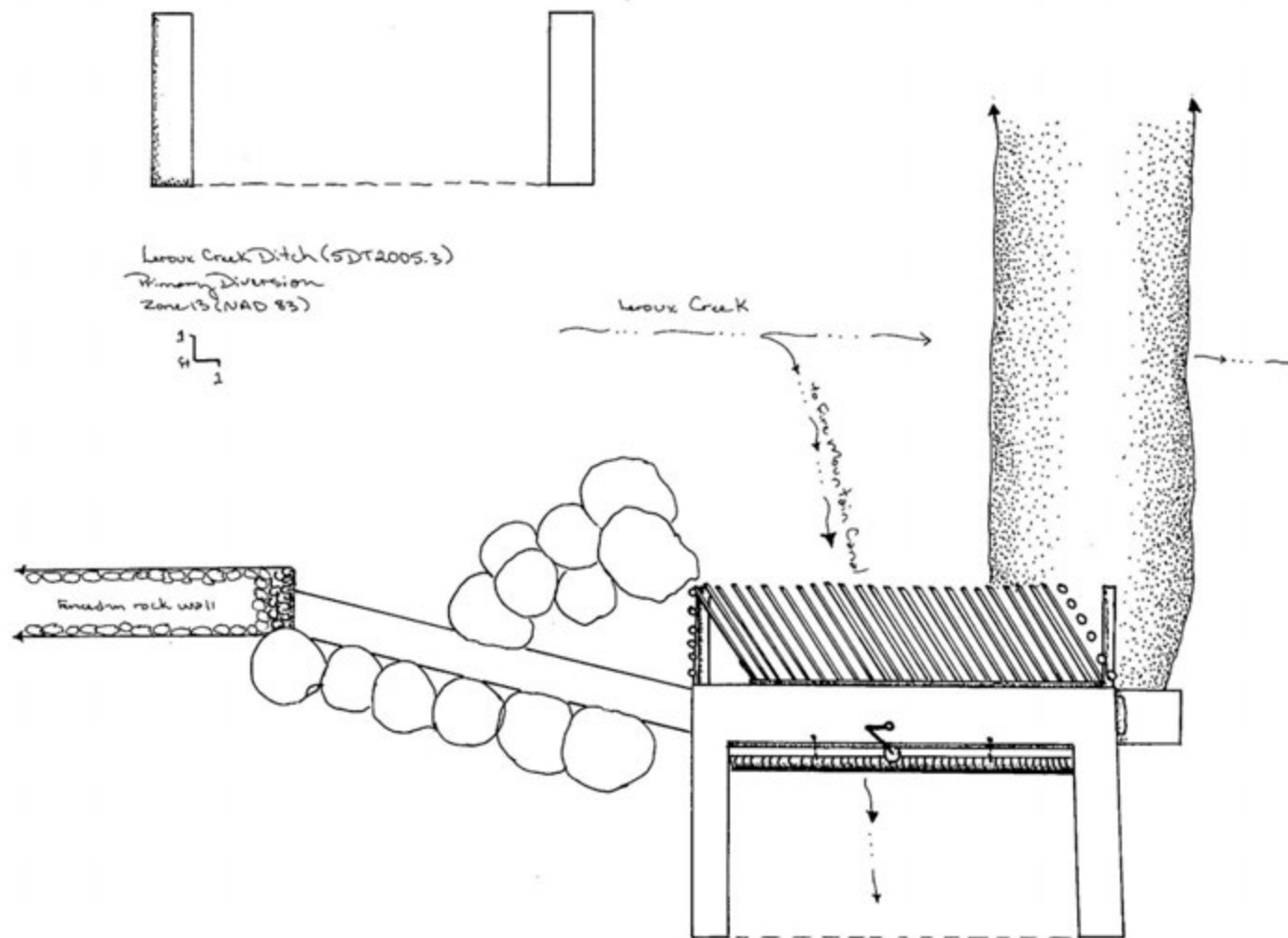


Figure 91: Plan and profile of Feature 1, 5DT2005.3.



Figure 92: View northeast across the concrete and boulder riprap dam, 5DT2005.3 (FAC Digital FMC Exp. 3587).



Figure 93: View south across the concrete and boulder riprap dam of Feature 1, 5DT2005.3 (FAC Digital FMC Exp. 1883).



Figure 94: View northeast across the primary diversion structure (Feature 1), 5DT2005.3 (FAC Digital FMC Exp. 3586).



Figure 95: View east across the primary diversion structure and dam (Feature 1), 5DT2005.3 (FAC Digital FMC Exp. 3585).



Figure 96: View northeast across the water control gate of Feature 1, 5DT2005.3 (FAC Digital FMC Exp. 1879).



Figure 97: View south across the iron-pipe grate that prevents debris from entering the Leroux Creek Ditch channel, 5DT2005.3 (FAC Digital FMC Exp. 1888).



Figure 98: View upstream at Leroux Creek from the concrete and boulder riprap dam, 5DT2005.3 (FAC Digital FMC Exp. 1886).



Figure 99: View north across boulder riprap designed to reduce the channel of Leroux Creek before entering the primary diversion area, 5DT2005.3 (FAC Digital FMC Exp. 3583).

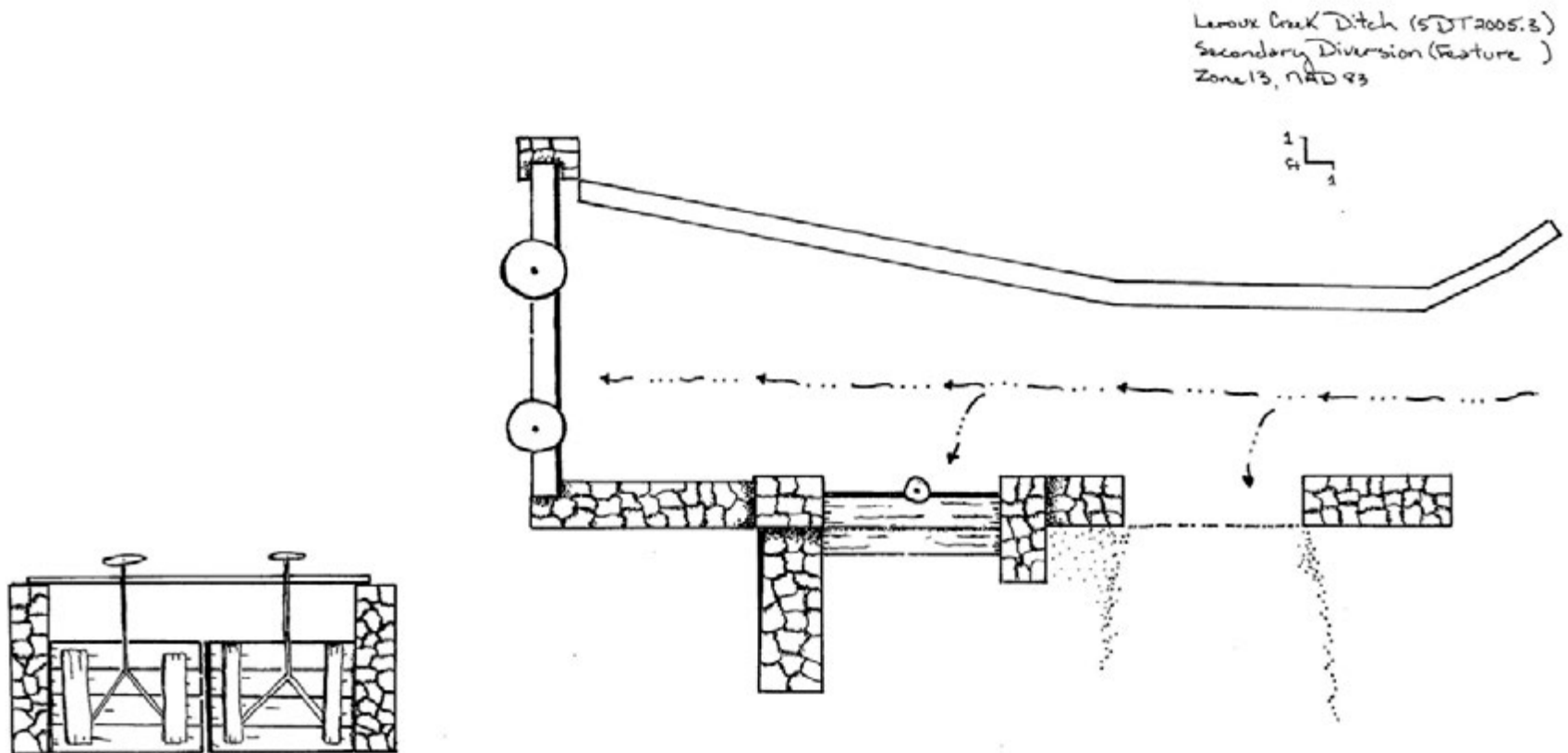


Figure 100: Plan and profile of Feature 2, 5DT2005.3.



Figure 101: View upstream at the Leroux Creek Ditch from the secondary diversion structure (Feature 2), 5DT2005.3 (FAC Digital FMC Exp. 3589).



Figure 102: View north across the secondary diversion structure (Feature 2), 5DT2005.3 (FAC Digital FMC Exp. 3590).



Figure 103: View northwest across the secondary diversion structure (Feature 2), 5DT2005.3 (FAC Digital FMC Exp. 3595).



Figure 104: View north across the water flow control gates of Feature 2, 5DT2005.3 (FAC Digital FMC Exp. 1904).



Figure 105: Close-up of the overflow gate of Feature 2, 5DT2005.3 (FAC Digital FMC Exp. 1908).



Figure 106: View downstream across the backside of the water control gates of Feature 2, 5DT2005.3 (FAC Digital FMC Exp. 1913).



Figure 107: View west across the overflow gate of Feature 2, 5DT2005.3 (FAC Digital FMC Exp. 1910).



Figure 108: View northeast across the secondary diversion structure (Feature 2), 5DT2005.3 (FAC Digital FMC Exp. 1925).



Figure 109: View downstream of the Leroux Creek Ditch (5DT2005.3 [FAC Digital FMC Exp. 1922]).

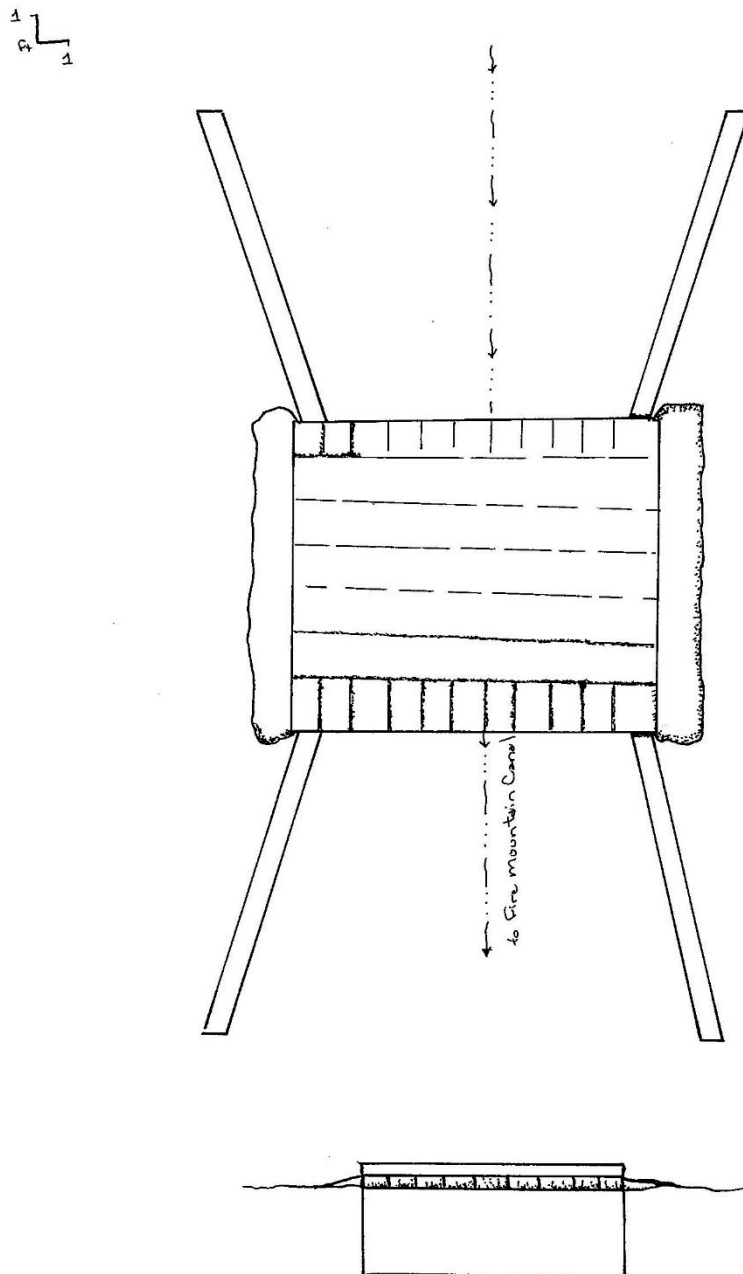


Figure 110: Plan and profile of Feature 4, 5DT2005.3.



Figure 111: View southwest across the bridge/measuring weir (Feature 4) along the Leroux Creek Ditch (5DT2005.3 [FAC Digital FMC Exp. 3598]).



Figure 112: View west across the bridge/measuring weir (Feature 4) along the Leroux Creek Ditch (5DT2005.3 [FAC Digital FMC Exp. 3601]).



Figure 113: View northwest across Feature 4, 5DT2005.3 (FAC Digital FMC Exp. 1898).



Figure 114: View south across Feature 4, 5DT2005.3 (FAC Digital FMC Exp. 1900).

Recommendations and Conclusions

Flattops Archaeological Consultants has completed Level I site documentation as outlined in the History Colorado Publication No. 1595 (History Colorado 2013) in order to mitigate the negative effects to the Fire Mountain Canal segment 5DT1277.4 and Leroux Creek Ditch segment 5DT2005.3 of the proposed action to pipe the water that flows through these structures. 5DT1277.4 was recorded in 2016 (McDonald 2016b) and 5DT2005.3 was recorded in 2017 (McDonald 2017); both segments were recommended as contributing to the overall eligibility of their respective linear resources. Due to the determination of adverse effect caused by the proposed land exchange, mitigation was undertaken through Level I site documentation, the results of which are the basis for this document.

5DT1277.4 and 5DT2005.3 are considered adequately mitigated in its entirety. Therefore, no further work is recommended for these linear segments, and cultural resource clearance is recommended.

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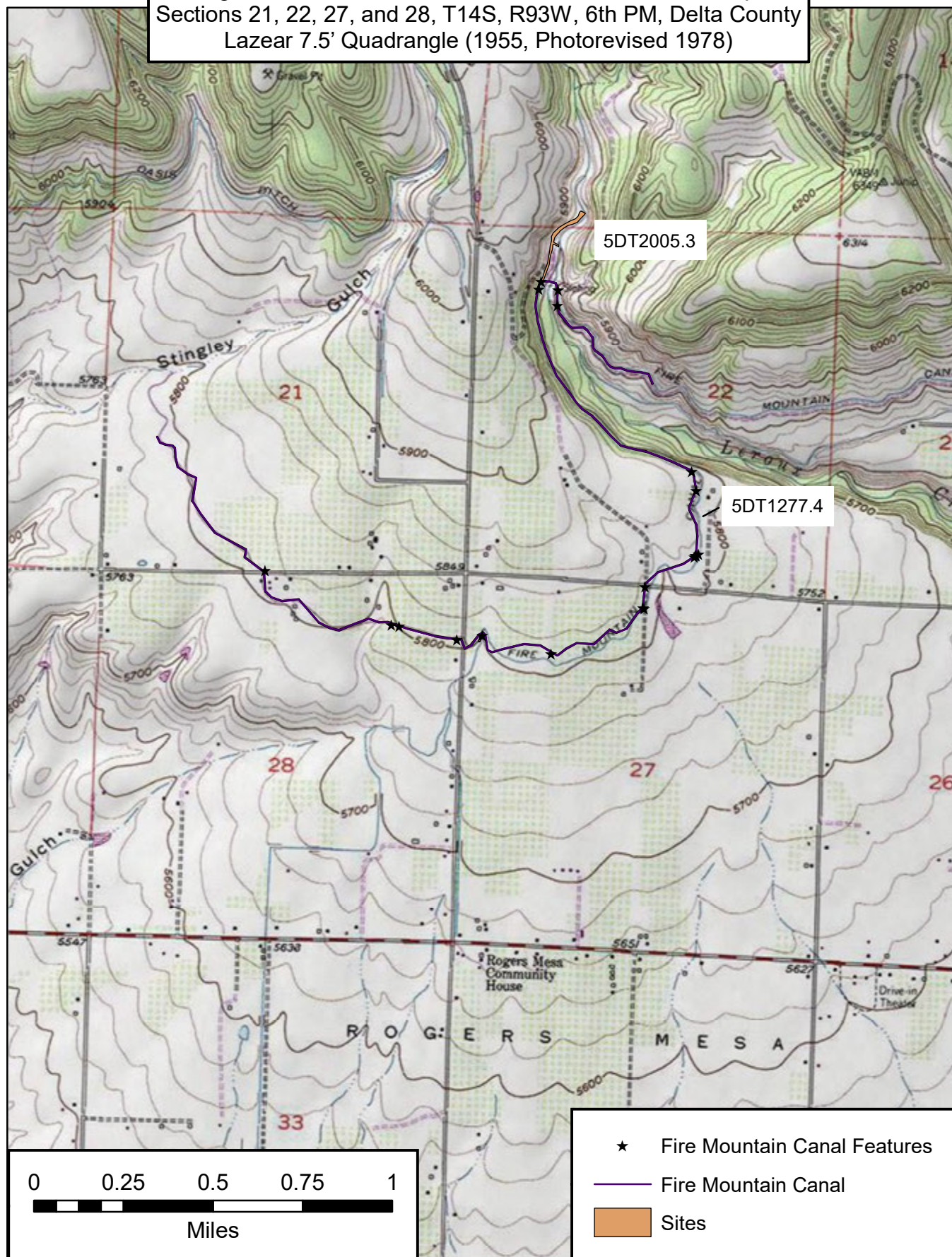
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Appendix A
Location of Cultural Resources

Figure 1: 5DT1277.4 and 5DT2005.3 Site Location Map
 Sections 21, 22, 27, and 28, T14S, R93W, 6th PM, Delta County
 Lazear 7.5' Quadrangle (1955, Photorevised 1978)



Appendix B

Site Forms (with archival 4 x 6-inch photographs,
feature plans and profiles, and detailed maps included)
5DT1277.4 and 5DT2005.3
(Privileged Information - Limited Distribution)