BUREAU OF RECLAMATION

Level II Historic Documentation of the Aspen Canal (5DT1584) Delta County, Colorado OAHP #DT.R.R32

by

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U.S. Department of the Interior 1/24/2020

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Introduction

The Colorado River Storage Project (CRSP) was the result of a hard-fought, $1.5 billion Congressional bill in 1956 which provided for controversial irrigation projects in the American West, such as Reclamation's Smith Fork Project in west-central Colorado. Flows of Smith Fork, Iron, Mud, and Alkali Creeks are regulated and utilized by the Project, located southeast of the city of Grand Junction and about 30 miles southeast of Delta, Colorado, supplementing the irrigation water supply for approximately 8,200 acres in Delta and Montrose counties and provides a full water supply for 1,423 acres of land previously not irrigated. The Smith Fork Project features include Crawford Dam and Reservoir, Smith Fork Diversion Dam, Smith Fork Feeder Canal, Aspen Canal, Clipper Canal, and recreation facilities. Crawford Reservoir stores and regulates the flows of Smith Fork, Iron Creek, and other small tributaries and private irrigation ditches from which users draw their supply. The remainder is released to Aspen Canal for conveyance to private ditches for distribution.

The Crawford Water Conservancy District (CWCD) is planning to repair 5.8 miles of the Aspen Canal located 0.5 miles west of the town of Crawford in west central Colorado in Delta County, Colorado. The purpose of the canal piping project is to rehabilitate and maintain the Aspen Canal so it may continue to be utilized for the authorized use of irrigation under the Smith Fork Project.

The topographic location of the project area is USGS 7.5' Topo Quads Crawford and Grand View Mesa, Township 15S, Range 91W, Sections 18 and 19; and Range 92W, Sections 13, 24, 25 and 36. This area is in the western foothills of the West Elk Mountains. The southern terminus of the undertaking is located at the canal's intersection with Grand View Ditch, approximately 0.5 miles west of Crawford, Colorado. From this point, the canal extends north and turns east, following the western and northern base of Youngs Peak at an average elevation of 6300' amls. The undertaking's northern terminus is located at the junction of a two-track canal access road and Cottonwood Road, south of Cottonwood Creek. The Area of Potential Effect (APE) includes the length of the canal, including 100' from the canal's centerline. Historic features and structures associated with the continued use and maintenance of Aspen Canal are located within the APE.

In July 16-18 and August 17-18, 2018, Reclamation conducted Class I and Class III cultural resource inventories for the canal project to aid compliance with Section 106 of the National Historic Preservation Act in accordance with regulations outlined in 36 CFR 800, Protection of Historic Properties. The Aspen Canal was determined to be NRHP eligible and through consultation with the Colorado SHPO, Reclamation and CWCD, Level II documentation was recommended as mitigation for the piping work. The 5.8-mile canal was documented to Level II standards within the undertaking's APE prior to any project-related ground disturbance. The documentation included photographically documenting the portion of the linear site to be impacted during the piping project and to provide a permanent record of the site prior to these impacts. The documentation is combined into a package that includes photography, a site description, geographical information system mapping (GIS) mapping, and background historical information. This is in accordance with the guidelines presented in Athearn (1990) and with the guidelines established by History Colorado (2013).

Project Background

The Department of Interior Bureau of Reclamation (Reclamation) and the Crawford Water Conservancy District (CWCD) plan to pipe approximately 5.8 miles of the Aspen Canal (5DT1584) in Delta County, Colorado (Project), thereby making the Project an undertaking subject to review under Section 106 of the National Historic Preservation Act (NHPA), 54 U.S.C. § 306108, and its implementing regulations, 36 CFR Part 800. Reclamation defined the undertaking's Area of Potential Effect (APE) as the canal easement, a 100-foot-wide corridor centered on 5.8 miles of existing canal, as well as additional proposed staging areas, totaling 83.14 acres.

In consultation with the Colorado State Historic Preservation Officer (SHPO), Reclamation determined the Aspen Canal (5DT1584) is eligible for listing in the National Register of Historic Places under Criteria A. Consultation between the SHPO and Reclamation also determined that the CWCD's proposed project and associated alterations to the canal pose an adverse effect on the historic property pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended (36 Code of Federal Regulations 800.5). Therefore, the SHPO, Reclamation, and CWCD executed a Memorandum of Agreement to resolve adverse effect through advanced documentation pursuant to OAHP Level II Historic Resource Documentation standards, and through a public outreach project. In support of the US Bureau of Reclamation's Smith Fork Project, an archaeologist for Reclamation completed Colorado Office of Archaeology and Historic Preservation (OAHP) Level II Historic Resource Documentation of the Aspen Canal (5DT1584).

The Historic Resource Documentation standards for Level II Documentation established by the OAHP includes three elements: architectural and historical narratives, archival quality photographs and measured drawings (OAHP 2007). In fulfillment of MOA Stipulation I—Mitigation, the scope of work for this project deviated from the documentation standards by using high-resolution digital photographs in lieu of medium-format black-and-white photography. Maps of the resource with feature provenance are also included as outlined in MOA. Measured drawings are *not* included for this property as this property is not significant for its design characteristics. All the above Stipulation I-- Mitigation documentation was completed prior to construction and/or any earth disturbances within the APE. The SHPO's acceptance of this treatment report fulfill Stipulation II-- General Requirements and Standards of the MOA.

In fulfillment of the MOA's Stipulation III-- Public Benefit Strategy, Reclamation provided two products for public interpretation. One is a Rehabilitation Act Section 508 compliant copy of the Level II Documentation placed on the Reclamation Western Colorado Area Office's cultural resource webpage for public access. The second is an interpretive poster created for exhibit in the Delta County Museum in Delta, Colorado, following digital review and approval of the poster draft by Colorado SHPO prior to its release to the museum. Additionally, the museum has been provided a copy of the Level II documentation as a supplement to the poster. These efforts provide a broader public benefit with stakeholder input.

Methods

The Aspen Canal (5DT1584) was photographically documented using a 16-megapixel Nikon Coolpix SW120 digital camera with a Nikkor 5X wide optical zoom 4.3-21/5mm 1:2.8-4.9 ratio ED VR. Survey data and reference points were recorded using a Trimble Geo7x GPS. The resulting photos were produced in JPEG format with at least a 300-dots-per-inch (DPI) resolution. Photographs were taken at directions to best capture the visual aspects of the canal and the surrounding landscape. Each digital photograph is associated with a specific photographic point and has metadata attached to it. Cardinal directions are depicted on the site maps and provided in the projects photo logs.

During the documentation of the canal segment, descriptive information and associated feature data were collected, noting construction methods and materials used. Historical research was completed through the examination of various historical records, including Reclamation's project files and engineering records, and History Colorado COMPASS records and reports.

Historic Context

Colorado's semiarid climate has made the development of water control necessary for settlement of the area since prehistoric times. Precipitation in the mountains falls mainly as snow from fall to spring, melting throughout the summer growing season below in the plains and valleys. Prehistoric evidence of constructed reservoirs, water catchments, masonry check dams and agricultural terraces supported life in the earliest communities in southwest Colorado.

Delta County, along with most of western Colorado, was originally inhabited by the Ute Indians. The Utes lived in bands in a gathering and hunting economy. Their way of life was disrupted as contact with the Spanish began when two parties entered the Crawford vicinity in 1760s and 1770s. These were the Juan de Rivera expedition searching for gold, then Padres Francisco Dominquez and Silvestre Escalante seeking a feasible route from Santa Fe to Monterey. Despite opportunities to trade, these encounters increased tribal conflicts. Further problems developed with the arrival of Mormon settlers and other immigrants—such as, Californians, Texans, and New Mexicans, but also from the Midwest and the East. After 1821, Mexican independence effectively opened the area to American fur traders who exploited these lands for trapping, hunting and trade routes. During the 1850s, federal government expeditions entered the area to locate mining and transportation routes. After the Civil War, the US Geological Survey (USGS) mapped the area. All expansion efforts resulted in an increasing competition between the Ute's and immigrants' quest for natural resources.

As a result of these ongoing conflicts, in 1881 the U.S. government forced the White River Utes from Colorado to the Uintah Reservation, and the following year they created the Ouray Reservation next to the Uintah Reservation in the Territory of Utah, later consolidating them. Eventually, 91% of their reservation lands had been taken due to allotment by the early 1900s. This made their traditional way of life impossible. Farming proved unsuccessful, so the Utes turned to raising sheep, cattle, and horses. Historically, some of the earliest water works in western Colorado were built to facilitate the budding mining industry by discoveries of gold, silver, and other minerals in the mountainous areas near the Continental Divide in the early to mid-1800s. Additionally, irrigation ditches and canals were built across the state to divert water from rivers and streams and carry it to cultivated fields, grass pastures, and reservoirs to support growing agricultural development. These water conveyance systems were also used to supply towns, in water-powered mills, for hydroelectric generation, and as industrial process water. Irrigation districts were formed to provide a financing and management mechanism pioneered in Utah in 1865, adopted by California in 1887. In 1901, the Colorado General Assembly passed a District Irrigation Law. Irrigation districts could be organized by a majority of landowners within their boundaries, with acquisitions and construction financed through bonds paid off by assessments on all irrigated lands in the district. Within a decade, one or more irrigation districts had been organized in most regions of Colorado. Irrigation districts became vehicle for developers of new commercial systems to finance portions of their works through public-private ownership. The Reclamation Act of 1902 began a new era for western irrigation. The Reclamation Service (renamed the Bureau of Reclamation in 1923) would build reservoirs, hydroelectric systems, and canals throughout the Western states. They would be financed by the federal government with their costs repaid by users interest-free and would then be turned over to user-organized irrigation districts (Holleran 2005).

Between 1880 and the 20th century, irrigation in Colorado moved from the local subsistence mode to the capital state mode in which government and the private sector together accomplished hydraulic control on an unprecedented scale (Holleran 2005). One such example occurred on April 11th, 1956 when Congress passed legislation—aka, the Colorado River Storage Project Act (70 Stat. 105) -- to

authorize construction of the Colorado River Storage Project (CRSP). The CRSP allowed for comprehensive development of the water resources of the Upper Basin states --Colorado, New Mexico, Utah, and Wyoming-- by providing for long-term regulatory storage of water for various purposes including, regulating the Colorado River, storing water for beneficial use (esp., agricultural), allowing Upper Basin States to utilize their Colorado River Compact apportionments, providing for the reclamation of arid lands, control of floods and generation of hydroelectric power. The Colorado River Storage Project is one of the most complex and extensive river resource developments in the world, providing more reliable water to underserved areas and having a sustaining role through long periods of drought. In the Crawford area of Delta County, Colorado, the Bureau of Reclamation constructed the Smith Fork Project-- located about 30 miles southeast of Delta, Colorado, in Delta County-- as part of the larger Colorado River Storage Project. The prime supplier of the Smith Fork Project are the Smith Fork's flows of Smith Fork, Iron, Mud and Alkali Creeks in west central Colorado which annually average 32,000 af. The project supplements the irrigation water supply for 1,423 acres of land previously not irrigated. Construction features of the project include Crawford Dam and Crawford Reservoir, Smith Fork Diversion Dam, Smith Fork Feeder Canal, Aspen Canal, Clipper Canal, and recreation facilities. This project was an effort to provide a reserve of water to supplement and regulate the private canals in the area which were often subject to late-season water shortages.

Construction funds were not appropriated for the Smith Fork Project until 1960, at which point bids were opened for what was to become a $4.43 million job. Construction activities at Smith Fork were assigned to Paul Fetzner, the Construction Engineer at the nearby, and yet unfinished, Paonia Project. Robert Jennings was the Project Manager. In fact, the same main contractor that was still in the process of building Paonia Dam-- Bud King Construction Company-- was also awarded construction of the Crawford Dam. Their low bid of $1.93 million allowed them to begin construction in October 1960. The project created numerous jobs and subcontractors were also hired, including Riverside Corporation, Bookcliff Construction and Hermanns Construction Company.

Crawford Dam is an earthfill structure, 162 feet high by 580 feet long with a volume of 1,006,00 cubic yards. The uncontrolled overflow spillway is on the left abutment of the dam and has a design capacity of 1,400 cfs. The outlet works in the right abutment carries water through a 34" diameter steel pipe controlled by four 2.25' square high-pressure gates. Construction of the 14,395 af Crawford Reservoir formed by Crawford Dam covers a surface area of 406 acres.

Figure 1. Aerial photograph of Crawford Dam – the dam, the dam spillway (right in photo), and its outlet works upon completion, Delta County, Colorado. Photo credit: Reclamation by J.D. Wright, November 1, 1962.

The Aspen Canal is one of three canals (Crawford Clipper, Grandview, and Aspen) that draws water directly from Crawford Reservoir, with others in the area being served by the Crawford Clipper Ditch (Colorado Water Conservation Board 2004). Bud King Construction Company was also selected to build the earthworks and structures for the Aspen Canal which they started work on in April 1961. Heavy,

mechanized equipment was used to build the canal. Canal excavation was accomplished using Koehring dragline excavators, Bantam backhoes, air track drilling rigs, DW-21 scrapers, and D-7 bulldozers. T30 tractors and tamping rollers were used to spread and compact the canal's earthen lining, respectively. The earth-lined Aspen Canal begins from a buried siphon pipe (fabricated by United Pipe Corporation of Pleasant Grove, Utah) extending from the north end of the dam. The canal stretches northerly for a length of 5.8 miles, feeding private ditches and small creeks from which users draw their supply. The canal itself has a bottom width of +/- 10 feet and an initial capacity of 125 cu-ft-sec. A few short stretches of the canal are underground to accommodate steeper slopes and as pipe crossings beneath roads. All construction of these features was completed in 1962 (Latousek 1995).

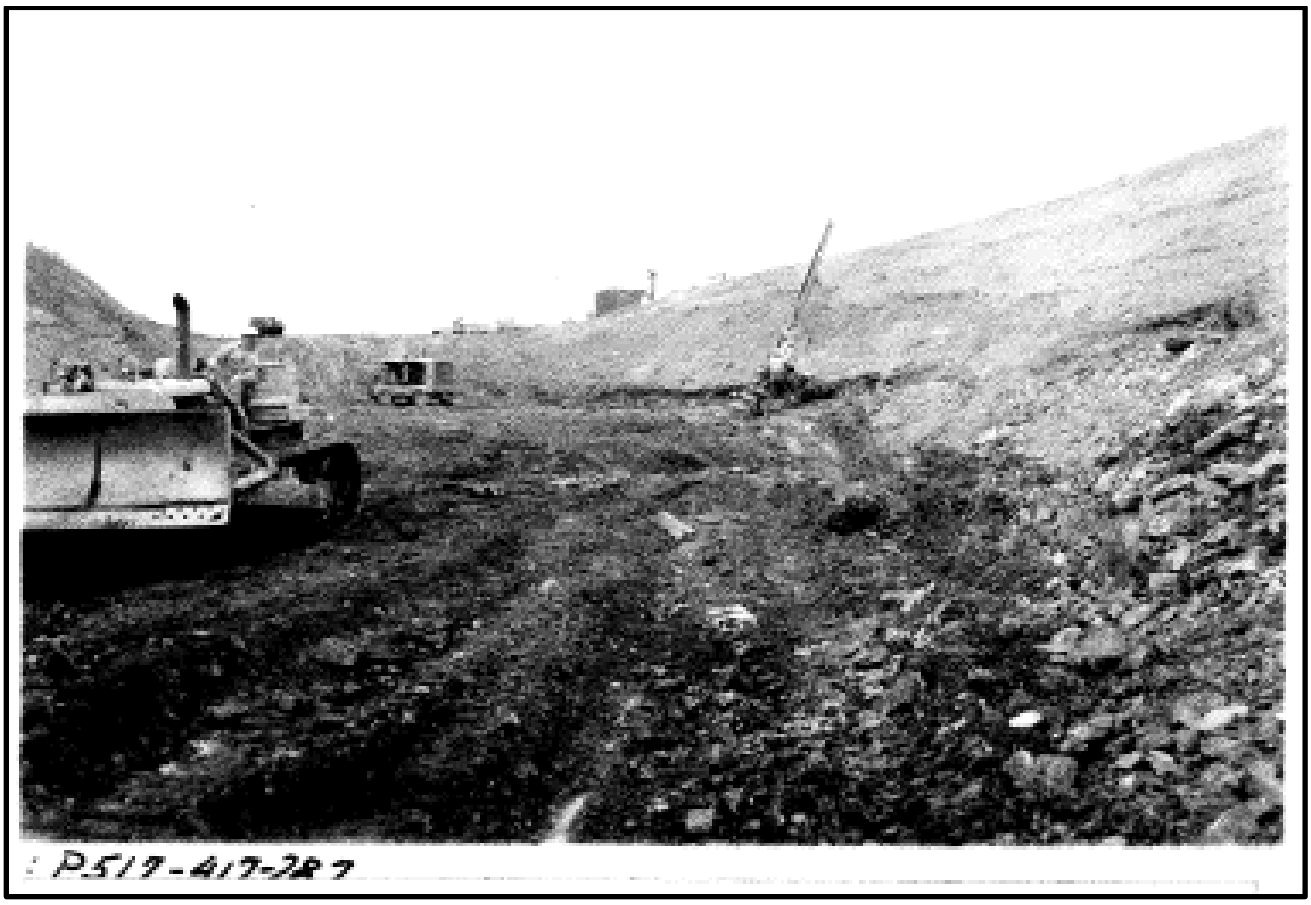


Figure 2. Overview of Aspen Canal Construction- looking downstream at air track rig drilling rock at Station 84 + 50. Work by Dan Hayes, subcontractor for Riverside Corporation, on September 29, 1961. Photo credit: Reclamation photo by E. J. Peterson.

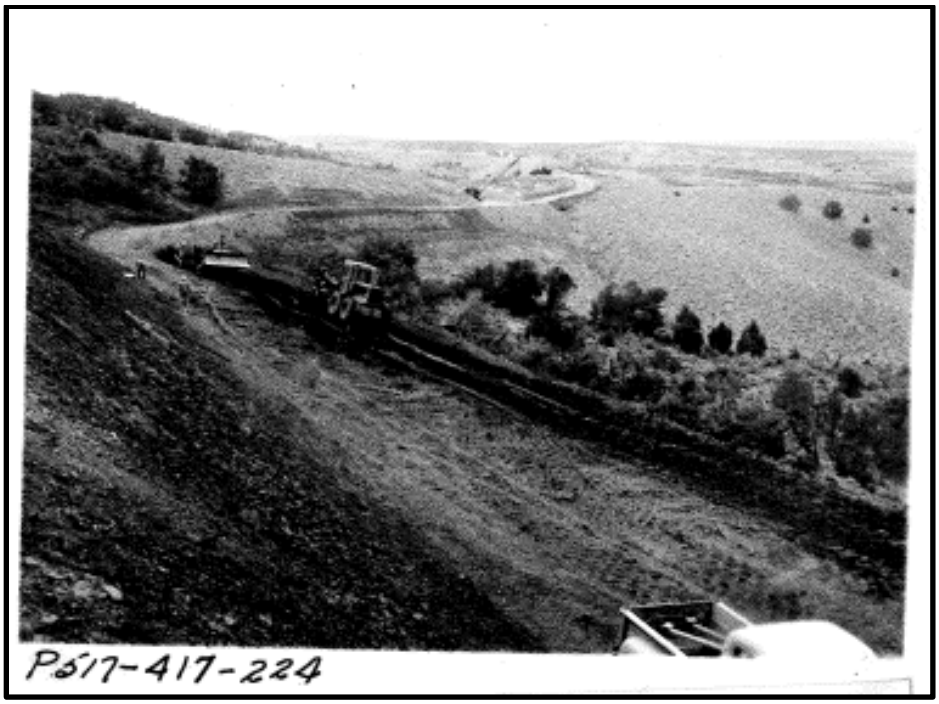


Figure 3. Aspen Canal Construction Showing Koehring Dragline- dragline in the background excavating a deep cut section at Station 232 + 50. Work by Riverside Corporation on September 29, 1961. Photo credit: Reclamation photo by E. J. Peterson.

Figure 4. Aspen Canal Construction Underway- uphill slope (on left) is a flank of Youngs Peak. Berm on right is levelled by a dozer (center of photo) and later utilized as the canal's two-track access and maintenance road. Snow-capped Elk Mountains shown in background in Delta County, Colorado.

Celebration of the Smith Fork Project and dedication ceremonies for the Crawford Dam occurred on April 20, 1963, at Crawford Reservoir, just south of the town of Crawford in Delta County, Colorado. Those in attendance included several federal, regional and local dignitaries and stakeholders, as well as members of the general public.

Figure 5. Attendees of the Dedication Ceremony for the Crawford Dam on April 20, 1963- included (from left to right): Leslie J. Savage, local civic leader and businessman; Bureau of Reclamation Commissioner, Floyd E. Dominy; Secretary Stewart L. Udall; Judge Reva Beck Bosone; Martha Savage, daughter of Leslie J. Savage; R.W. Jennings, Project Manager, Grand Junction Project's Office. Photo credit: Stan Rasmussen, Reclamation.

Figure 6. U.S. Congressman Wayne N. Aspinall Speaks to Attendees During the Ceremony- Dedication of Crawford Dam, April 20, 1963. Photo credit: Stan Rasmussen, Reclamation.

Figure 7. Overview of Attendees at the Dedication Ceremony- Dedication of Crawford Dam on April 20, 1963. Felix L. Sparks, Director of the Department of Natural Resources, State of Colorado, served as the Master of Ceremonies at the event. Photo credit: Stan Rasmussen, Reclamation.

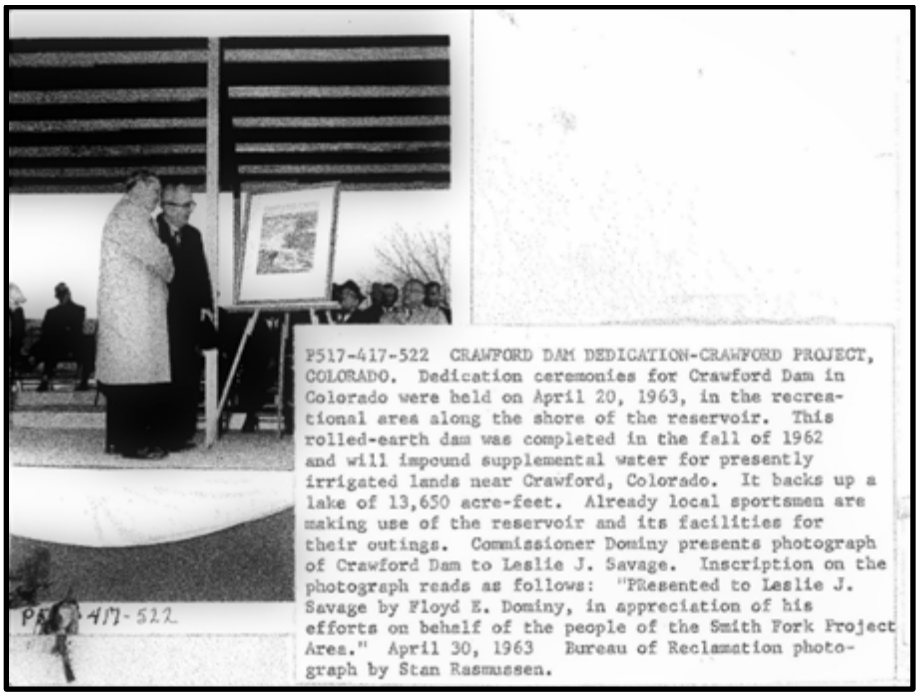


Figure 8. Photograph Presented to Leslie J. Savage at Ceremony- Photo and caption sourced from the Reclamation scrapbook for Smith Fork Project. Photo credit: Stan Rasmussen, Reclamation, April 1963.

Figure 9. On the Shores of Crawford Reservoir- The day of the Crawford Dam Dedication Ceremony (left to right): Commissioner of Reclamation, Floyd E. Dominy; U.S. Congressman and Secretary of Interior, Stewart L. Udall; Colorado Governor, Steve McNichols; Lt. Governor of Colorado, R.L. Knous; and Congressman Wayne N. Aspinall. Photo credit: Stan Rasmussen, Reclamation, April 1963.

Reclamation's 1961-1963 photo record of the Smith Fork Project construction and Crawford Dam Dedication Ceremony are black and white, 3"X5", 35mm images taken by J. D. Wright, Stan Rasmussen, E. J. Peterson and M. S. Peterson. All are on file at Reclamation's WCAO in Durango, Colorado.

Historic Property Narrative Description

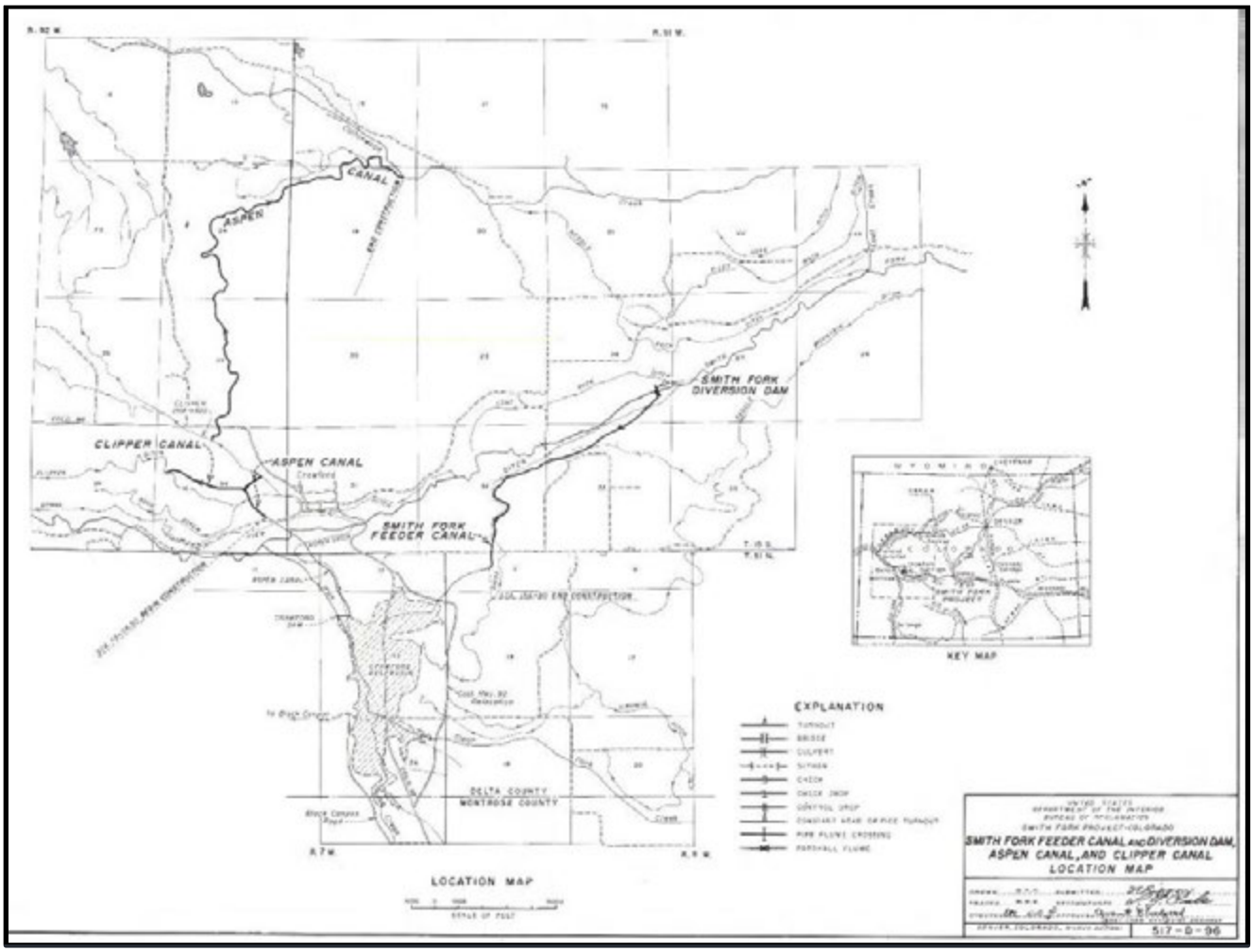


Figure 10. Location of Aspen Canal (5DT1584)- Reclamation's map of the Smith Fork Feeder Canal and Diversion Dam, Aspen Canal, and Clipper Canal (1961). The Aspen Canal segments shown are within the current project area.

The Aspen Canal (5DT1584) is one of three irrigation canal structures built in 1961 as part of the Smith Fork Project, a product of the Colorado River Storage Project (CRSP) and the Bureau of Reclamation. The Smith Fork Project was mentioned briefly in Reclamation's basin-type report of March 1946 on the Colorado River. In 1951, Reclamation issued a detailed report of the Smith Fork Project as a supplement to the 1951 report on the CRSP and participating projects. This second report, amended in October 1953, was the basis on which the project was authorized. The other two canals built for this project were Smith Fork Feeder Canal and the Clipper Canal within the same general vicinity. The project's location is in west-central Colorado approximately 30 miles southeast of Delta, west of Crawford, Colorado in Delta County.

Table 1. Aspen Canal Legal Location Information

Historic Property Name	Township/ Range	Section	**Legal Location** (6th Principal Meridian)
Aspen Canal (5DT1584)	T15S/R91 W	18	S ½ of SE ¼ of SW ¼, S ½ of SW ¼ of SE ¼
		19	N ½ of L1 of NW ¼, N ½ of NE ¼ of NW ¼
	T15S/R92 W	24	N ½ of SW ¼ of SW ¼, S ½ of SW ¼ of SW ¼, N ½ of SE ¼ of SW ¼, S ½ of SE ¼ of SW ¼, N ½ of NE ¼ of SW ¼, S ½ of NE ¼ of SW ¼, N ½ of NW ¼ of NW ¼, S ½ of NW ¼ of NW ¼, N ½ of SW ¼ of NE ¼, N ½ of Se ¼ of NE ¼, s ½ of NW ¼ of NE ¼, N ½ of NE ¼ of NE ¼, S ½ of NE ¼ of NE ¼
		25	E ½ of SE ¼ of SW ¼, N ½ of SW ¼ of SE ¼, S ½ of SW ¼ of SE ¼, W ½ of NW ¼ of SE ¼, W ½ of SW ¼ of NE ¼, E ½ of SE ¼ of NW ¼, S ½ of NE ¼ of NW ¼, N ½ of NE ¼ of NW ¼
		36	N ½ of SE ¼ of SE ¼, N ½ of SW ¼ of SE ¼, E ½ of NW ¼ of SE ¼, N ½ of NW ¼ of SE ¼, N ½ of NE ¼ of SW ¼, N ½ of NE ¼ of NE ¼, S1/2 of NE ¼ of NE ¼, N ½ of SW ¼ of NE ¼, S ½ of SW ¼ of NE ¼, N ½ of NW ¼ of NE ¼, S ½ of NW ¼ of NE ¼, E ½ of NE ¼ of NW ¼

The Aspen Canal is an open, earthen, u-shaped structure. Its approximate dimensions are 6 to 10’ wide and up to 4’ deep. It originates at an elevation of approximately 6350’ above sea level, extending from a buried siphon pipe on the north side of Crawford Dam’s outlet works associated with Crawford Reservoir. The canal has an initial capacity of 125 cubic feet per second. The earthen canal itself begins at its intersection with SW/NE-trending Grand View Ditch, contouring north along the western flanks of Youngs Peak conveying water, eventually turning from north to east along the northern flanks of Youngs Peak where it ends at its intersection with Cottonwood Creek. The total length of the canal is 5.8 miles. A siphon carries water underground in one area. Canal features include gaging stations, baffled stilling basin, precast concrete pipe culverts, drop inlets, inclined precast concrete drop, checkdrop structures, constant head orifice turnouts, pipe flume crossings, fence crossings with gates, weirs with gages, and timber operating bridges. Crawford Water Conservancy District (CWCD) has maintained the canal in its original design with minor improvements and no significant modifications.

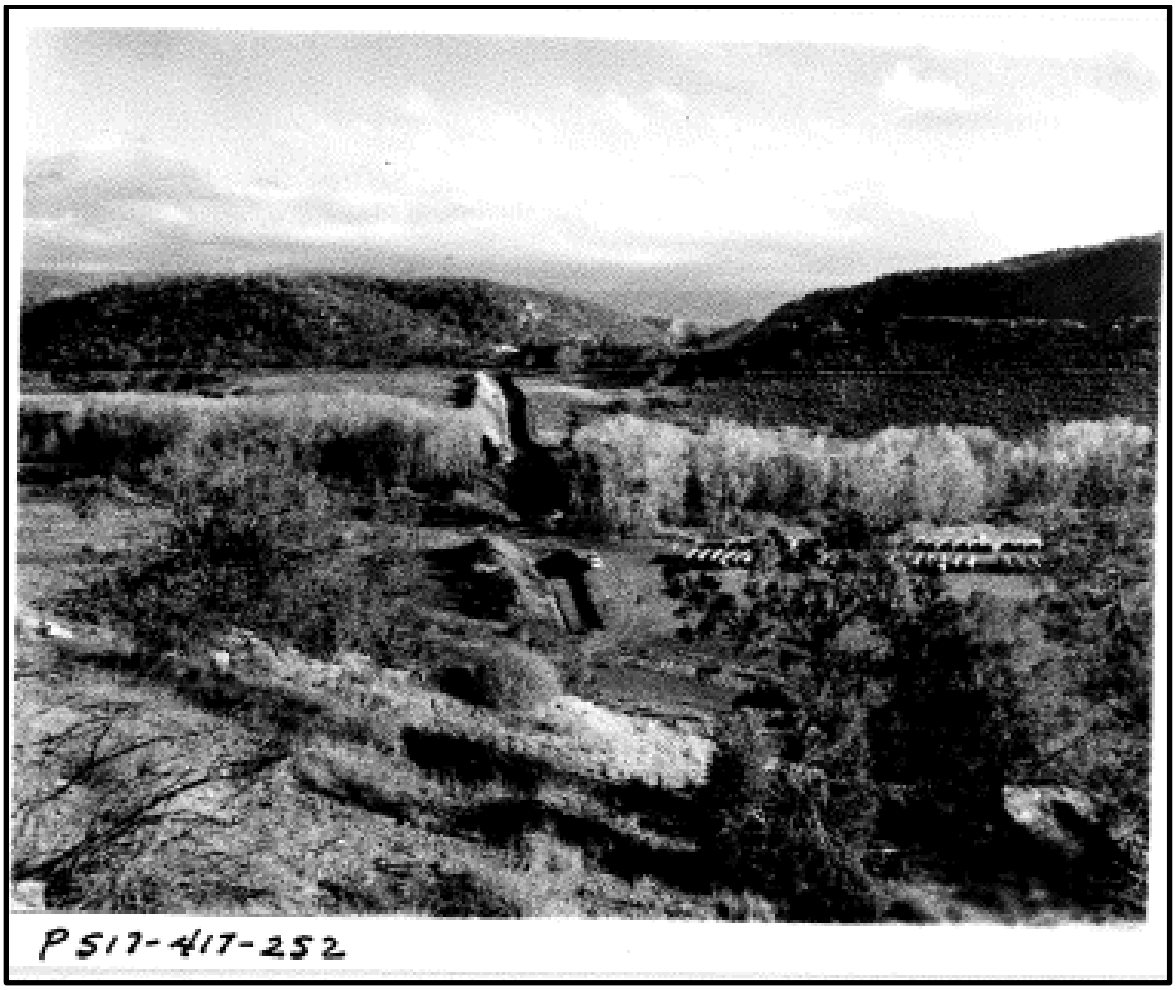


Figure 11. Aerial Photo of the Southern Terminus of the Aspen Canal Under Construction- view shows excavation, siphon pipe laying and storage, 1961, Delta County, Colorado. Work by Bud King Construction Company. Photo credit: Bureau of Reclamation photo by J.D. Wright, October 31, 1961.

Today, vegetation on site varies along the canal but is dominated by open pinyon-juniper woodlands and open sagebrush and greasewood parks with an understory of grasses. Slope on site is frequently 0-3 degrees. Soils are dominated by shale loams which are loose and largely unconsolidated. These sediments are subject to regular erosion into the canal, resulting in frequent canal maintenance. Typically, one side of the ditch utilizes the natural contour of the hillside slope and the opposite, outside wall of the ditch is an earthen berm. This berm is utilized as a two-track access and maintenance road for the canal. It is bladed and regularly maintained, is approximately 8 feet wide, and forms the outside wall of the canal.

The current Aspen Canal is an iteration of the Aspen Ditch. According to the plat of the Aspen Ditch at the Delta County Courthouse, the original date of construction of the ditch is August 13, 1900, and the canal's filing decree and adjudication dates are June 23, 1914. It took its water from Mud Creek in the vicinity of the present Crawford Reservoir and carried it across the Smith Fork to the Grandview Canal near the town of Crawford. The Aspen Canal used the water rights of the Aspen Ditch and was a completely new water delivery system from Crawford Reservoir. The beginning of the Aspen Canal, extending from the siphon across the Smith Fork, may coincide with the location of the original Aspen

Ditch, but this is uncertain. The canal extends well beyond the reach of the original ditch. When the Smith Fork Project was authorized, the water rights of the Aspen Ditch were assigned to the project. Construction of Crawford Reservoir began in 1960 and work began on the Aspen Canal in 1961. The entire Smith Fork Project was completed in 1962.

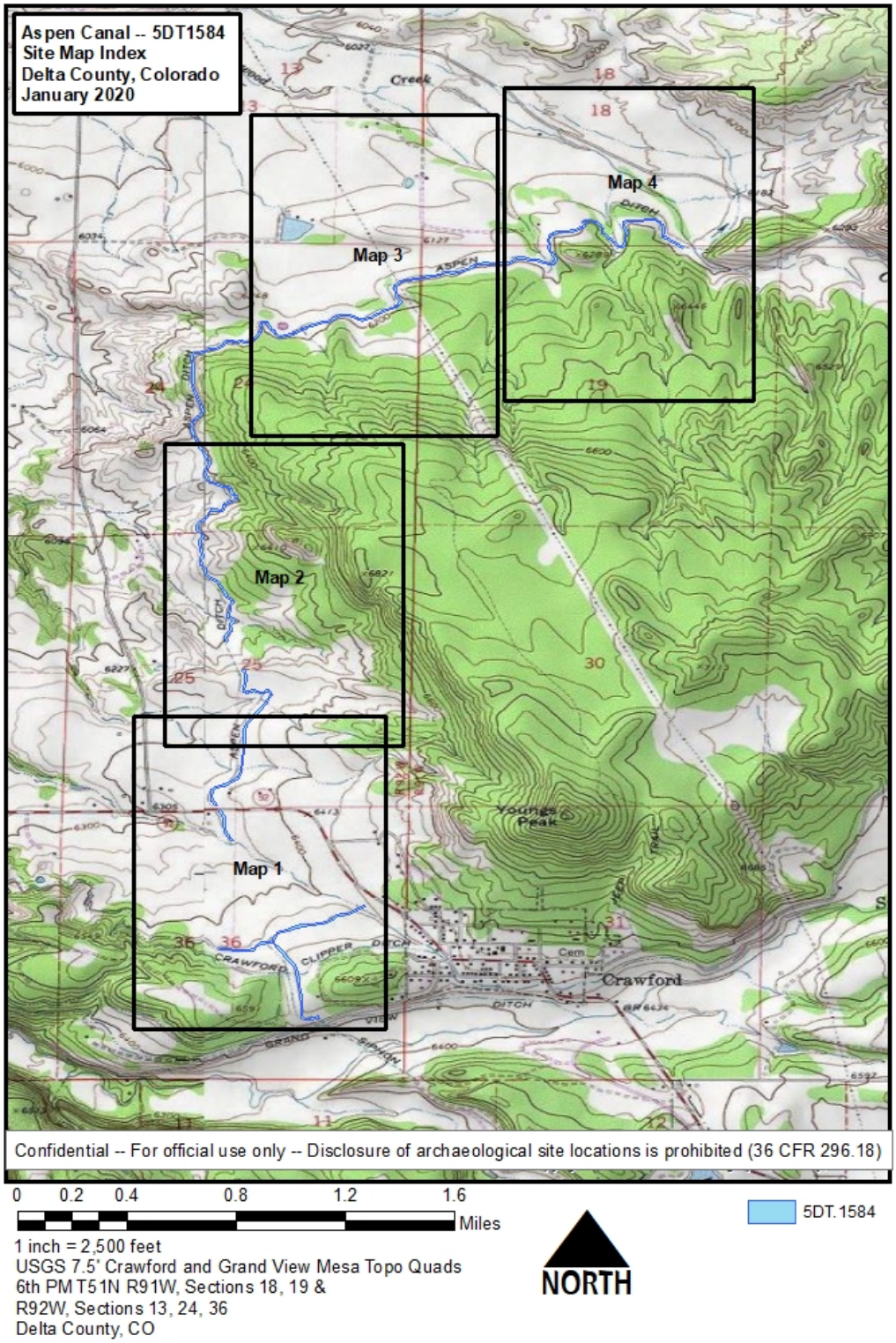
Operation and maintenance of the Smith Fork Project was turned over to the CWCD on January 1st, 1964. The benefits of the Aspen Canal are primarily agricultural, improving the irrigation supply by permitting new lands to be irrigated and providing better crop yields on lands previously inadequately watered. Predominant crops include alfalfa, grass hay, pasture, barley, oats, wheat and corn which support feed production for livestock, primarily cattle and sheep.

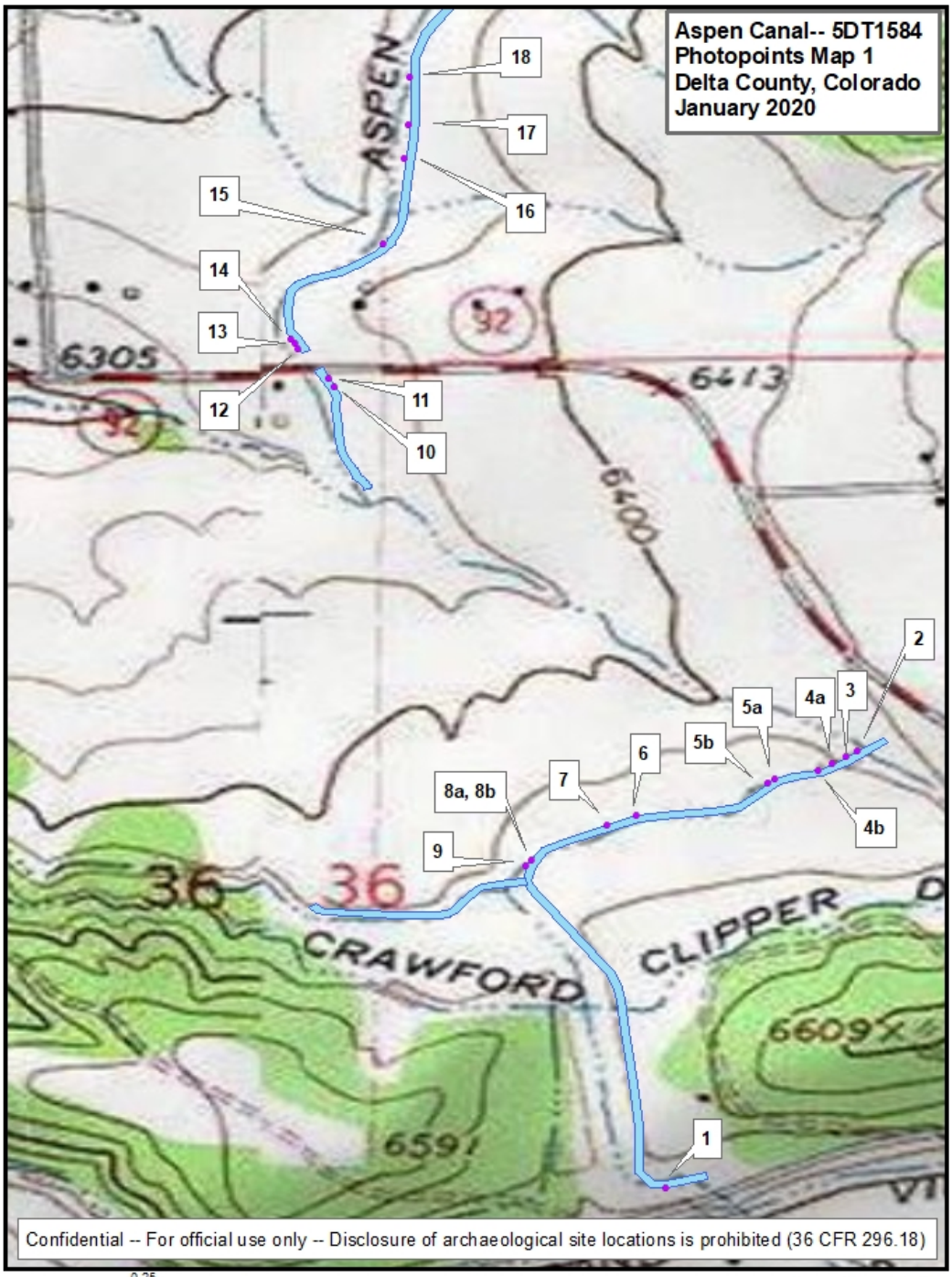
Figure 12. Overview of a Segment of the Aspen Canal- western flank of Youngs Peak on left. Maintenance and access two-track road (right) parallels canal. Reclamation archaeologist, Steve Manion, pictured, July 2018.

Although the technology available for construction of irrigation ditch systems has improved through time, many historical gravity-fed earthen ditches like the Aspen Canal have undergone very few modifications or improvements. Changes to the canal are more the result of continual use and maintenance than improvement of materials and equipment to make maintenance and water monitoring more efficient. The canal has been in continual use since its construction. Although the canal construction is not remarkable in any way, the canal functions as it was originally designed with

integrity of location, design, setting, workmanship, feeling and association. Past cultural resource surveys (i.e., two in 2005 and one in 2014) did not determine the canal was NRHP eligible since it was not part of the early water distribution system in the Crawford area and is not associated with persons important to the history of the area. Furthermore, it was argued that ongoing maintenance had, in fact, compromised the integrity of the historic canal and no unique architectural or engineering features are present. However, the records on the CO State Engineers' website show that the water for the canal as appropriated out of Iron Creek on September 3, 1946, suggest that the existing canal was incorporated into the design of the Smith Fork Project. As of 2019, the canal was built 57 years ago and its original earthen structure is unchanged. The canal was surveyed and recorded in July and August in 2018 and reassessed by Reclamation and History Colorado OAHP, respectively, and Aspen Canal (5DT1584)'s earthen structure was determined NRHP-eligible under Criterion A since it is associated with events (i.e., the Smith Fork Project) that have made a significant contribution to the broad patterns of society (i.e., water resource management, settlement and development of the region's agricultural, farming and ranching economy) as of January 2019.

Aspen Canal (5DT1584) Photopoints Maps




Aspen Canal-- 5DT1584
Photopoints Map 1
Delta County, Colorado
January 2020
18
17
16
15
14
13
12
11
10
ASPEN
92
6305
6413
6400
2
3
4a
5a
5b
6
7
8a, 8b
4b
9
36
36
CRAWFORD
CLIPPER
6609
6591
1
Confidential -- For official use only -- Disclosure of archaeological site locations is prohibited (36 CFR 296.18)
0.25
Miles
USGS 7.5' Crawford & Grand View Mesa Topo Quads
6th PM T51N R91W, Sections 18, 19 &
R92W, Sections 13, 24, 36
Delta County, CO
NORTH
Photopoints
5DT.1584


Aspen Canal -- 5DT1584
Photopoints Map 2
Delta County, Colorado
January 2020
23a, 23b
22
6400
6410
6821
DITCH
21
20
25
25
19
Confidential -- For official use only -- Disclosure of archaeological site locations is prohibited (36 CFR 296.18)
0.25
Miles
USGS 7.5' Crawford & Grand View Mesa Topo Quads
6th PM T51N R91W, Sections 18, 19 &
R92W, Sections 13, 24, 36
Delta County, CO
NORTH
Photopoints
5DT.1584


Aspen Canal -- 5DT1584
Photopoints Map 3
Delta County, Colorado
January 2020
6127
ASPEN
248
6200
24
25a
25b
26
27
28
29
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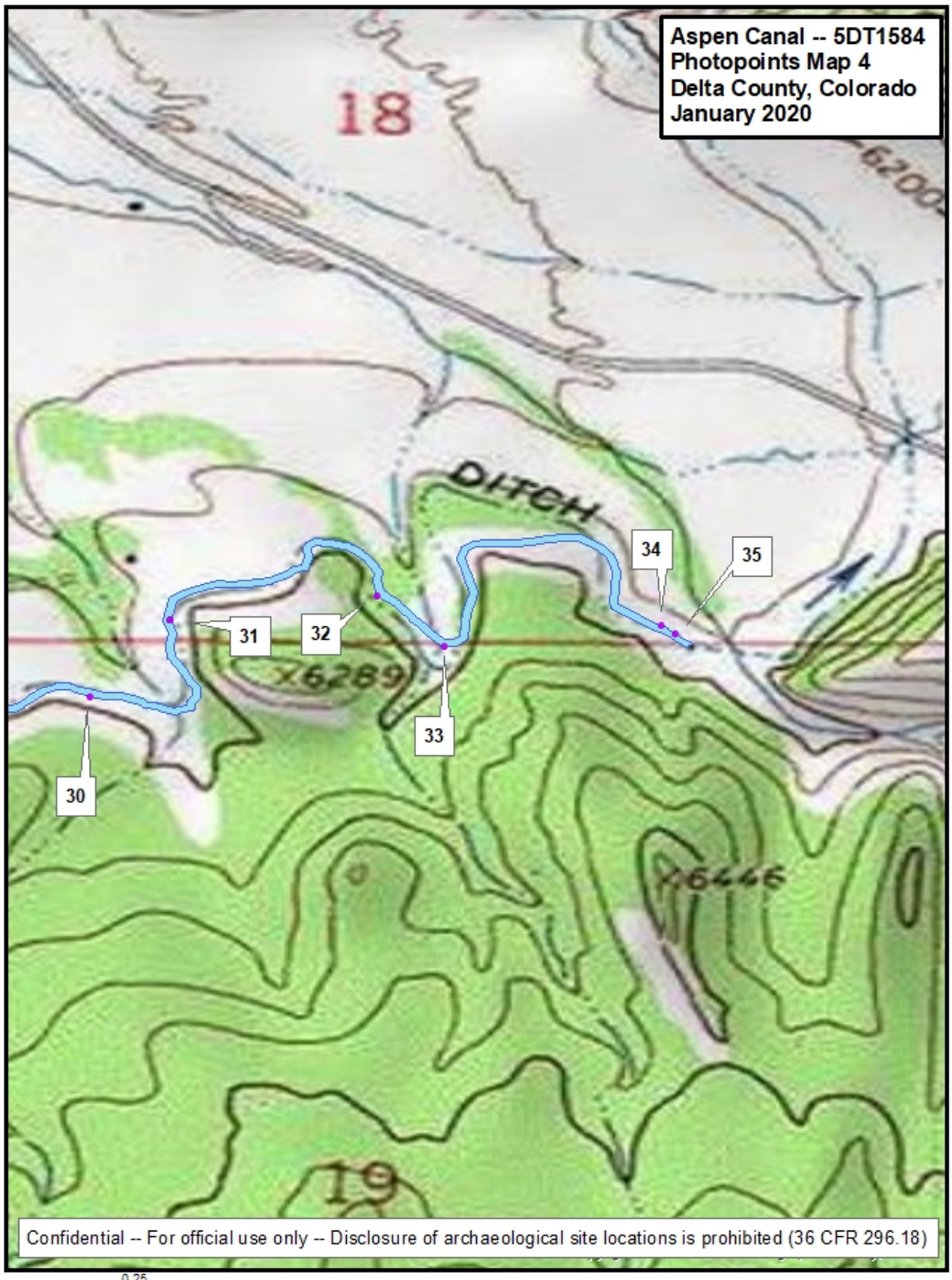
0.25
Miles
USGS 7.5' Crawford & Grand View Mesa Topo Quads
6th PM T51N R91W, Sections 18, 19 &
R92W, Sections 13, 24, 36
Delta County, CO
NORTH
Photopoints
5DT.1584


Aspen Canal -- 5DT1584
Photopoints Map 4
Delta County, Colorado
January 2020
18
DITCH
30
31
32
33
34
35
X6269
X6446
19
Confidential -- For official use only -- Disclosure of archaeological site locations is prohibited (36 CFR 296.18)
0.25
Miles
USGS 7.5' Crawford & Grand View Mesa Topo Quads
6th PM T51N R91W, Sections 18, 19 &
R92W, Sections 13, 24, 36
Delta County, CO
NORTH
Photopoints
5DT.1584

Photograph Log

Property Name: Aspen Canal (5DT1584)
Property Location: Delta County, Colorado
USGS 7.5' Crawford and Grand View Mesa Topo Quads, 6th PM Township 51S Range 91W Section 18, S ½; and Section 19, N ½
Range 92W Section 24 W ½ and NE ¼; Section 25 S ½ and N ½;
Photographer: JoAnne Young
Dates Taken: July 16-18 and August 17-18, 2018
Location of Digital File: Bureau of Reclamation, Western Colorado Area Office
185 Suttle Street, Suite 2, Durango, Colorado 81303

Table 2. Aspen Canal (5DT1584) Representative Photographs

Photo #	Description	Facing
1	A set of three constant head orifice turnout gates with 18" diameter cast iron handwheels. Metal grate provides decking across top.	W
2	Cast concrete baffled stilling basin with flare downstream of corrugated shelter house in background.	ESE
3	Corrugated steel shelter house, approximately 6' tall X 4' diam., mounted atop subsurface stilling well (not visible). Precast concrete siphon inlet in foreground.	ENE
4a	Constant head orifice turnout with two 12" cast iron hand wheels	SE
4b	Two 12" handwheels with view of two measuring gages set on interior walls of concrete constant head orifice turnout structure. Two pieces of milled lumber decking used across top of structure.	Detail
5a	Timber operating bridge and smooth metal overchute pipe spanning Aspen Canal. Steve Manion, Reclamation archaeologist pictured (right).	SE
5b	Timber operating bridge spanning Aspen Canal (opposite view of 5a).	NW
6	Precast concrete check drop structure with access bridge and cast metal handrail. Corrugated overchute pipe attached to bridge.	SE
7	Two parallel sets of lateral constant head orifice turnout gates with 18"-21" diameter cast iron handwheels (foreground) with a check inlet structure (background). Footbridge with precast concrete deck with a cast metal handrail constructed on top of a check inlet structure. Western flank of Youngs Peak in background.	N
8a	Wood plank footbridge spanning canal used as a flow gaging station. Concrete stilling basin with milled wood cover (right of footbridge).	W
8b	Detail of wood plank footbridge spanning canal used as a flow gaging station. Metal pipe attached to exterior of footbridge decking. Concrete stilling basin with milled wood cover (right of footbridge).	W
9	Detail of cast concrete pipe shelter house with milled wood cover. Subsurface stilling well and inlet pipe (beneath shelter house, not visible).	W
10	Metal Parshall flume. Pictured in background are a smooth metal overchute pipe and precast concrete drop inlet with angle iron frame, including milled wood decking.	N
11	Cast concrete constant head orifice turnout with cast iron handwheel (foreground) with precast concrete drop inlet with angle iron frame including	N

	milled wood decking. Water flows north via inlet and conveyed through pipe road crossing beneath Hwy 92 (pictured in background).	
12	Precast concrete outlet with flare emerges from pipe road crossing beneath Hwy 92 (pictured right).	N
13	Fence crossing panel spans Aspen Canal. Gate is on canal access road on west side of canal. Three cast concrete head orifice turnouts with cast iron handwheels for each are located on west edge of canal. Corrugated overchute pipe pictured in background.	S
14	Cast concrete check and drop structure with two vertical metal supports in center. Corrugated overchute pipe parallels cast concrete deck. Vertical milled lumber fascia attached to south edge of decking.	NE
15	Steel pipe overchute on concrete piers spans Aspen Canal.	E
16	Gate with fence crossing panel which spans Aspen Canal.	E
17	Corrugated overchute pipe spans Aspen Canal. West flank of Youngs Peak in background.	SE
18	Corrugated overchute pipe spans Aspen Canal.	SE
19	Precast concrete pipe drop inlet conveys water into buried pipe crossing beneath canal access road.	NE
20	Buried pipe drop (background upslope) flows downslope to a rectangular, inclined, precast concrete drop spillway with baffled stilling basin and flare.	SSE
21	Precast concrete culvert pipe with flare.	W
22	Overview of Aspen Canal. West flank of Youngs Peak (left), canal with two-track canal access road (right). Steve Manion, Reclamation archaeologist pictured (right).	S
23a	Fence crossing panel spans Aspen Canal.	E
23b	Fence crossing panel spans Aspen Canal (opposite view).	NW
24	Precast concrete culvert pipe with flare.	W
25a	Timber operating bridge.	NW
25b	Timber operating bridge (alternate view).	N
26	Gate with fence crossing panel which spans Aspen Canal.	NE
27	Precast concrete pipe culvert.	SW
28	Precast concrete check and drop structure with milled lumber decking and cast metal handrail.	W
29	One set of two constant head orifice turnouts (background) and one single constant head orifice turnout gate (foreground), each with cast iron handwheels set in concrete box structures, located on canal's north edge. Local landowner on ATV driving on canal access road (top center).	NE
30	Concrete deck above concrete check and drop structure. Canal access road on right.	W
31	Concrete deck above concrete check and drop structure Canal access road on right. Single constant head orifice head turnout and smooth pipe overchute pipe in background.	W
32	Precast concrete culvert pipe with flare.	NE
33	Precast concrete culvert pipe with flare.	WNW
34	Two parallel constant head orifice turnouts with cast iron handwheels and milled lumber decking. Drop inlet with angle iron housing and milled lumber decking on top.	E

35	Corrugated steel shelter house, approximately 6’ tall X 4’ diam., bolted on top of subsurface stilling well. Precast concrete siphon inlet (foreground) at NE end of Aspen Canal near juncture with Cottonwood Creek.	E

5DT1584—Aspen Canal
Photograph 1.

5DT1584—Aspen Canal
Photograph 2.

5DT1584—Aspen Canal
Photograph 3.

5DT1584—Aspen Canal
Photograph 4a.

5DT1584—Aspen Canal
Photograph 4b.

5DT1584—Aspen Canal
Photograph 5a.

5DT1584—Aspen Canal
Photograph 5b.

5DT1584—Aspen Canal
Photograph 6.

5DT1584—Aspen Canal
Photograph 7.

5DT1584—Aspen Canal
Photograph 8a.

5DT1584—Aspen Canal
Photograph 8b.

5DT1584—Aspen Canal
Photograph 9.

5DT1584—Aspen Canal
Photograph 10.

5DT1584—Aspen Canal
Photograph 11.

5DT1584—Aspen Canal
Photograph 12.

5DT1584—Aspen Canal
Photograph 13.

5DT1584—Aspen Canal
Photograph 14.

5DT1584—Aspen Canal
Photograph 15.

5DT1584—Aspen Canal
Photograph 16.

5DT1584—Aspen Canal
Photograph 17.

5DT1584—Aspen Canal
Photograph 18.

5DT1584—Aspen Canal
Photograph 19.

5DT1584—Aspen Canal
Photograph 20.

5DT1584—Aspen Canal
Photograph 21.

5DT1584—Aspen Canal
Photograph 22.

5DT1584—Aspen Canal
Photograph 23a.

5DT1584—Aspen Canal
Photograph 23b.

5DT1584—Aspen Canal
Photograph 24.

5DT1584—Aspen Canal
Photograph 25a.

5DT1584—Aspen Canal
Photograph 25b.

5DT1584—Aspen Canal
Photograph 26.

5DT1584—Aspen Canal
Photograph 27.

5DT1584—Aspen Canal
Photograph 28.

5DT1584—Aspen Canal
Photograph 29.

5DT1584—Aspen Canal
Photograph 30.

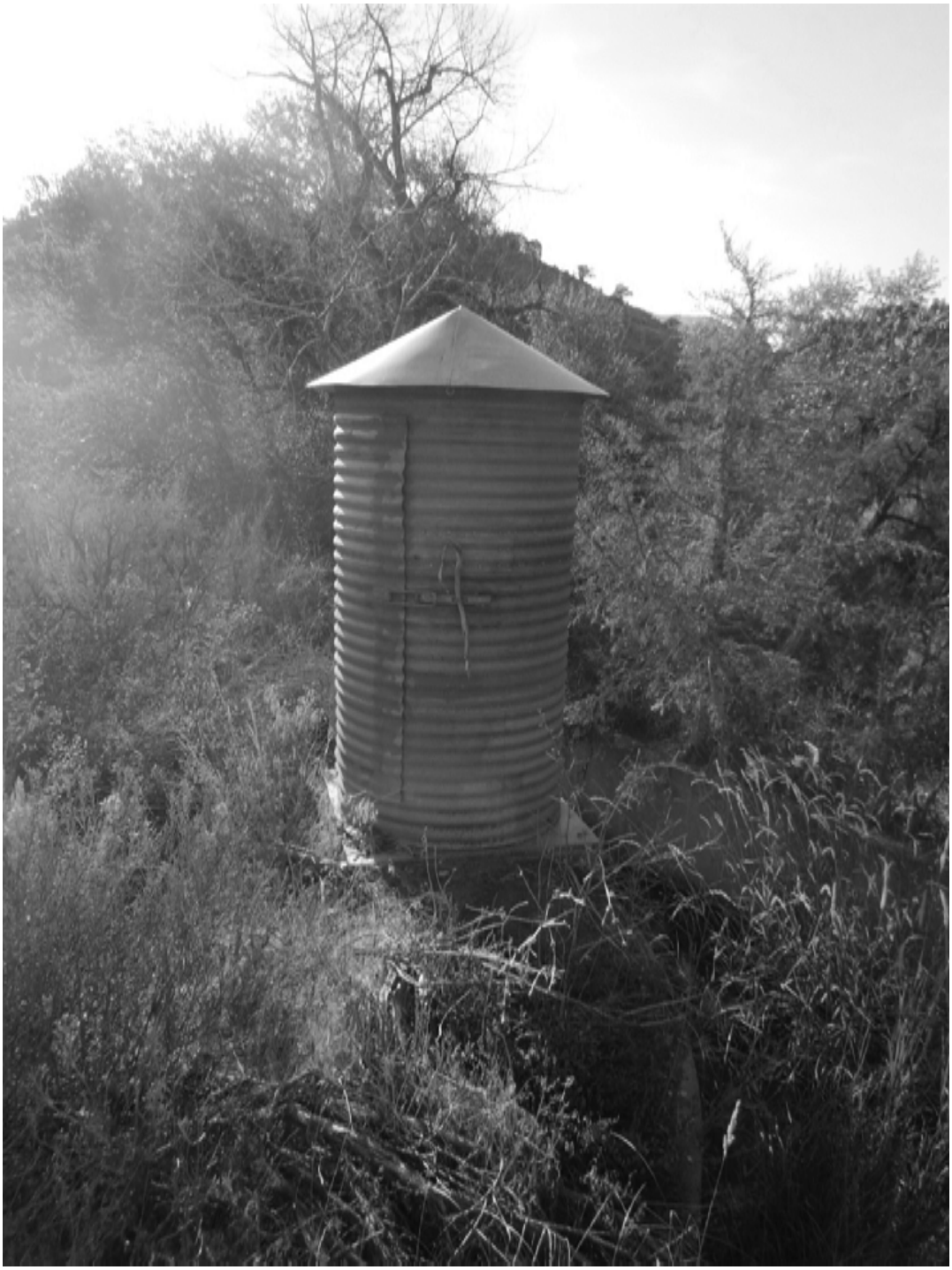
5DT1584—Aspen Canal
Photograph 31.

5DT1584—Aspen Canal
Photograph 32.

5DT1584—Aspen Canal
Photograph 33.

5DT1584—Aspen Canal
Photograph 34.

5DT1584—Aspen Canal
Photograph 35.



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Appendix A.

Reclamation's Original Measured Drawings of Aspen Canal, Smith Fork Project, 1960-1962

(Available upon request)