

**Level II Documentation of a Segment of the Government  
Highline Canal (5ME4676.41) in  
Mesa County, Colorado**

by

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## INTRODUCTION

The Grand Valley Water Users Association (GVWUA) has been funded through the Bureau of Reclamation's (Reclamation) Colorado River Basin Salinity Control Program to repair a 1.2-mile (mi.)-long segment of the Government Highline Canal. The project will entail reshaping the canal, placing a polyvinyl chloride (PVC) liner in the canal over its reshaped contour, and covering the PVC with a 3-inch (in.)-thick surface layer of shotcrete. Alpine Archaeological Consultants, Inc. (Alpine) was hired by GVWUA to conduct cultural resource tasks 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. The National Historic Preservation Act is applicable because federal lands and authorizations are involved. After the initial cultural resources inventory for the project (McKetta 2020; McKetta and Horn 2020), a Memorandum of Agreement (MOA) was enacted on June 26, 2020 between Reclamation, The Colorado Office of Archaeology and Historic Preservation (OAHP), and the GVWUA. The MOA was designed to guide the mitigation of adverse effects to the site throughout project activities. Stipulations of the MOA included a synthesis of previously conducted documentation along the canal, Level II Documentation of Government Highline Canal segment 5ME4676.41, and a framework for future decision making during canal construction projects.

Level II documentation for the affected segment of the Government Highline Canal (5ME4676.41) was completed prior to any project-related ground disturbance. The Level II documentation was completed while the canal was empty, allowing for a detailed description of construction methods and the remaining historic integrity of the canal. Field work was conducted by project archaeologist Tosh McKetta on February 13, 2020. The documentation is combined into a package that includes photography, a site description, geographical information system mapping, and background historical information. This is in accordance with the guidelines presented in Athearn (1990) and History Colorado (2013).

## METHODS

The 1.2-mi.-long segment of the Government Highline Canal was photographically documented using a 24.2-megapixel, global position system-enabled Nikon D5300 digital single-lens reflex camera mounted with an 18–55-mm Nikon lens. The resulting photographs were produced in JPEG format with at least a 300-dots-per-inch resolution. Photographs were taken from various 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 the photograph, which includes the date and time, F-stop, shutter speed, and focal length. Photographic points were recorded in the field with azimuth directions recorded for each photograph. Azimuths collected are depicted on the site maps and provided in the project's photograph 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 records housed at Reclamation's Western Colorado Area Office, the Colorado Office of Archaeology and Historic Preservation, the GVWUA, cartographic sources, Reclamation Grand Valley Project histories, Civilian Conservation Corps (CCC) camp histories (O'Brien Printing Company 1938), and other online project information. Previously recorded segments were digitized from site form 1:24,000-scale maps to create a complete spatial record of previously recorded segments. This data was used to synthesize the existing record of the canal and to inform the framework for future use.

## GRAND VALLEY PROJECT HISTORY

The Grand Valley's irrigation history began almost immediately after the removal of the Utes, with the first appropriation of water sourced from the Colorado River. Water was appropriated on August 22, 1882 in the amount of 520.81 cubic feet per second (cfs) and used to irrigate the Grand Valley. By the end of the 1890s, additional irrigation projects were envisioned and devised in an effort to put thousands more acres into cultivation. It was at that time that the Grand Valley Project

was proposed with the intent of diverting additional water from the Colorado River and transporting it through a lengthy canal along the length of the Grand Valley. The canal was planned to deliver water to previously unirrigated lands above the Grand Valley Canal to the northern portion of the valley below the Book Cliffs. A survey for the canal was completed in 1897; however, the project was a commercial endeavor for which funding never transpired (Holleran 2005; O'Brien Printing Company 1938). It was not until the formation of the Reclamation Service in 1902 that the Grand Valley Project was again proposed; it was one of six such projects slated to have lands withdrawn from the public domain to provide the necessary funding after the passage of the Reclamation Act on June 17, 1902. After the lands were withdrawn, the Reclamation Service began surveying lands, drafted engineered drawings of the system, and prepared to begin construction in 1903.

Before ground was broken, the project was put on hold, as private investors were again proposing to fund the project. Not wanting to overshadow private enterprise, the Reclamation Service discontinued work on the project. Over the span of several years, it became apparent that private investors were not able to raise the capital necessary to complete the project. As a result, the Grand Junction Chamber of Commerce approached the Secretary of the Interior in 1907 requesting that the government again consider constructing the project. After two years, approval for the project was granted and the Reclamation Service began limited construction on March 10, 1909. Within three months, the project was put on hold once more, this time because of legal considerations between the government and the future water users. The legal questions continued for several years, even though 1.5 million dollars had been secured for the project by a government feasibility study completed in 1910. Project delays continued until September 1912, at which point the Secretary of the Interior, James R. Garfield, gave the Reclamation Service authorization to begin the project. Construction of the project began on the three tunnels along the upper portions of the proposed project canal. Construction on the Grand Valley Diversion Dam began in 1913 following considerable debate concerning its design and location. To alleviate flooding concerns, the dam was built with a spillway system to better control increased water volume during flood events. The end result was the installation of a roller crest dam with six controlled roller gates. Construction of the dam continued through 1914 and into 1915 without major project delays. The first roller was installed in March 1915, with the last of the rollers installed and the dam completed in October 1916. The final product was the largest roller crest dam in the world (Simonds 1994).

### **Government Highline Canal History**

In the course of building the dam, construction also began on a massive, high-volume canal to convey the diverted irrigation water to the valley to the west. Excavations on the soon-to-be-named Government Highline Canal began in June 1913, with the headworks and diversion gates extending from the western abutment of the diversion dam. Water for the canal was diverted through nine, 7-x-7-foot (ft.), cast-iron sliding gates. The canal was constructed as a cut-and-fill feature. During its initial 1913–1914 construction, much of the fill was used to raise the grade 5 ft. along its western side. The earthwork for the initial 1.7 mi. of the canal to the first tunnel was awarded to Reynolds-Ely Construction Company. Work on this section of the canal began on July 9, 1913 and was finished just over a year later on July 14, 1914. A second earthwork contract for the canal was awarded to The Winston Brothers Company of Minneapolis, Minnesota. The contract included constructing the second leg of the canal, beginning at the southern end of the three tunnels and continuing 30 mi. westward. Work on this portion began on June 14, 1914 and was completed on June 15, 1915. A limited amount of water was released into the canal to help cure it after construction; however, water was not officially diverted into the canal until May 4, 1916. Almost immediately, the canal began to leak, particularly in those areas cut through Mancos Shale. Several attempts to address the leakage issues were undertaken, including sluicing clay through the canal and lining some sections with concrete. The measures had limited success, but the canal continued to function. The Grand Valley Project contributed significantly to agricultural production within the valley.

By the 1930s, project deterioration had a detrimental impact on the delivery of water through the system. To rectify this, the Bureau of Reclamation (renamed from the Reclamation Service in 1923) utilized the Civilian Conservation Corp (CCC) to make much needed repairs to the system beginning in 1935. The CCC established camps on project lands and began to rehabilitate project features (Simonds 1994). A portion of this work was undertaken by CCC Company 2803 working out of Camp BR-22-C. The camp was established 2 mi. east of Grand Junction and was inhabited on July 27, 1935. The 201-man work force in the camp was largely from Tulsa, Oklahoma, and to a lesser extent from Texas and Colorado. The camp was under the command of Capt. L.L. Chambers and the enrollees turned over to the Reclamation technical force to begin maintenance work on the Grand Valley Canal Project. The work completed by the enrollees consisted of replacing wooden flumes, headgates, laterals, and farm turnouts. All were replaced with metal conduits and concrete. Two miles of the main canal was concreted to prevent seepage, and areas of the canal were lined with rock to prevent bank erosion (O'Brien Printing Company 1938:23). The camp continued to complete maintenance work on the canal and was later aided by the addition of Camp BR-59-C, established at Palisade on October 16, 1935. The original company that inhabited the camp only worked on the canal project for a short period before they were transferred to California and replaced by Company 868. Company 868 was sent from Ponca, Oklahoma, where they were engaged in constructing Lake Ponca Park. The company worked on the Grand Valley Project until they were disbanded on June 30, 1938 and replaced by Company 2120. Company 2120 was made up of 100 men from Connecticut under the command of Captain Ralph A. Stevens. It was divided into three divisions—Canyon, Orchard Mesa, and the Main Canal, Palisade Division. The Canyon Division concentrated on clearing and repairing the sections of the Government Highline Canal within the Colorado River Canyon, whereas the Main Canal Division did the same type of work on portions of the canal beginning at the southern end of the tunnels and continuing westward. The Orchard Mesa Division was responsible for carrying out maintenance and repair work on the Orchard Mesa Canal on the southern side of the Colorado River. The current project area is within the Canyon Division.

In addition to the work described above, the camp also completed what was termed as “considerable rock paving” on the canyon portion of the Government Highline Canal (O'Brien Printing Company 1938:177). Given the description, it can be assumed that Camp BR-59-C was responsible for the construction of the support-facility structures and features at the dam and canal work complex where one of the “ditch riders” homes was. The camp’s involvement in the construction of the facility is further evidenced by two plaques placed at the site commemorating the CCC construction with dates of 1939 and 1940. The CCC continued as an active program working on maintenance and upgrades to the Grand Valley Project until it was terminated by Congress on June 30, 1942 following the outbreak of World War II (Pfaff 2001). Both the concrete and masonry lining are currently in poor condition from 80 years of continual erosion along the canal following the CCC repairs.

## **PREVIOUS WORK ON THE GOVERNMENT HIGHLINE CANAL**

### **Formal Documentation**

To date, 41 segments and features of the Government Highline Canal have been given numbers by OAHP. Colorado Cultural Resource Survey Linear Component forms (Table 1, Maps 4–23) for 36 of these segments are on file at OAHP, Reclamation, or GVVUA. No records could be found for five segments (5ME4676.2, 5ME4676.19, 5ME4676.20, 5ME4676.21, and 5ME4676.23). These numbers may have been procured from SHPO, but never used, or the site documentation may have been misplaced. Two other segments (5ME4676.27 and 5ME4676.29) appear to be secondary laterals that are not part of the main canal. The 34 documented segments of the main canal encompass approximately 17.75 mi. of the 55 mi. long Government Highline Canal (32.3 percent). Most of the segment recordings provide an overview of the canal with features limited to headgates and outflows. Twelve segments represent engineered features include four siphons, two tunnels, two spillways, a pumping plant, an overchute, a flume, a drop structure, and a check dam. Several

**Table 1. Previously Recorded Segments of the Government Highline Canal and Associated Sites.**

Segment or Site*	Year	Name	Length (ft.)	Township	Range	Section
1	1983	N/A	2,562	2N	2W	8
3	1997	N/A	298	1N	1W	5
4	1983	Tunnel No. 2	1,581	10S	98W	34
5	1983	Price-Stub Pumping Plant	125	11S	98W	3
6	1983	Persigo Wash Overchute	171	1N	1W	9
7	1976	Adobe Wash Flume	120	10S	101W	11
8	1983	Little Salt Wash Spill	80	2N	2W	25
9	1983	Little Salt Wash Siphon	82	2N	2W	25
10	1983	Stewart Siphon	3,825	2N	2W	15
11	1983	Highline Spill	1,462	2N	3W	5
12	1983	East Salt Creek Siphon	4,477	9S	103W	3, 11
13	1983	Drop Structure	552	9S	103W	7
14	1983	N/A	627	1N	1W	5
15	1998	Orchard Mesa Power Canal Turnout	124	10S	98W	34
16	1998	Tunnel No. 3	7,465	10S, 11S	98W	34, 3
17	1998	Price-Stub Check Structure	167	11S	98W	10
18	1998	Lewis Wash Siphon	125	1S	1E	4
22	2005	N/A	792	1N	1E	31
24	2011	N/A	12,076	10S	98W	13, 23, 26, 27
25	2013	N/A	5,717	9S	104W	11
26	2013	N/A	2,961	9S	104W	11
28	2014	N/A	409	2N	2W	15, 16
30	2015	N/A	766	2N	2W	25
31	2015	N/A	1,229	10S	98W	34
32	2015	N/A	8,164	1N	1W	22
33	2016	N/A	7,997	1N	1W	9, 15, 16
34	2016	N/A	282	1N	1W	9
35	2016	N/A	225	1N	1W	5
36	2016	N/A	710	1N	1W	15
37	2016	N/A	1,164	1N	2E	6
38	2017	N/A	17,713	11S	98W	5, 8, 9
39	2017	N/A	2,019	10S	98W	34
40	2018	N/A	1,317	2N	2W, 3W	7, 12
41	2020	N/A	6,305	11S, 1S	98W, 1E	6, 7, 21
5ME11841	2002	Government Highline Canal Bridge	N/A	1S	2E	4
5ME12482	2001	CCC Barracks, Caretaker's Residence/Dam Tender House	N/A	10S	98W	13
5ME12483	2001	Well House	N/A	10S	98W	13
5ME12484	2001	Shop	N/A	10S	98W	13
5ME12485	2001	Storage Building	N/A	10S	98W	13
5ME301	1976	Grand Valley Diversion Dam	N/A	10S	98W	13

\* Segments of secondary canals and segments without formal site forms were not included in this table.

associated sites have also been recorded. These include the NRHP-listed Grand Valley Diversion Dam (site 5ME301) and the CCC-constructed dam caretaker's house and work complex (sites 5ME12482, 5ME12483, 5ME12484, and 5ME12485). All of the named structures visible on the U.S. Geological Survey map have been formally recorded.

Previous mitigation related to canal lining projects has varied. Formal Level I documentation was used as mitigation for adverse effects on segment 5ME4676.38 (Millward 2018), and Level II documentation was used as mitigation for effects related to the lining of segments 5ME4676.24 (Pfertsh 2015) and 5ME4676.32 (Pfertsh 2016). Level II documentation has also been used as mitigation for effects to the NRHP-eligible Grand Valley Diversion Dam Work Complex (McKetta and Pfertsh 2019). The NRHP-listed Grand Valley Diversion Dam underwent Historic American Engineering Record documentation (Document Number HAER CO-90) in 2003 (Emmons 2004), and additional effects to the site continue to undergo mitigative photodocumentation (Horn 2020).

### **Other Research and Interpretation**

The Government Highline Canal has inspired numerous synthetic documents and interpretive displays not related to Section 106 compliance, including those that follow.

- The history of the canal and the Grand Valley Diversion Dam were featured in the Rocky Mountain PBS Show *Colorado Experience*. Season 7 Episode 9 of the show, titled Western Water and Power, aired on February 25, 2020.
- The canal has a Wikipedia page describing the project and its history (Wikipedia Contributors 2020).
- In 1981, Peggy Barnett of the Reclamation Montrose Projects Office wrote a synthesis of project work surveys for the Grand Valley Project (Barnett 1981).
- Wm. Joe Simonds produced a history of the Grand Valley Project in 1994 (Simonds 1994).
- Christine Pfaff, in 2010, wrote a description of the CCC's relationship to the Grand Valley Project (Pfaff 2010).
- The Palisade Irrigation District describes the canal and its history on their web page (Palisade Irrigation District 2019).
- The Palisade Historical society has interpreted the history of the canal, both on their website (Palisade Historical Society 2021) and in a 32-page booklet titled *The History of Irrigation in Palisade and East Orchard Mesa, Colorado*.

### **DESCRIPTION OF THE GOVERNMENT HIGHLINE CANAL SEGMENT 41 (5ME4676.41)**

The Government Highline Canal is a high-volume canal that carries water diverted from the Colorado River to supply additional canals and water users along its 55-mi. total length (Simonds 1994). Segment 5ME4676.41 is approximately 1 mi. west-northwest of the town of Palisade. The segment begins at the western end of Segment 32 at the crossing of 36 3/10 Road. It extends for approximately 1.2 mi. west-southwest and ends at the crossing of 35 3/10 Road. The canal crosses lands owned by Reclamation and privately owned fee lands managed by Reclamation. It was dry at the time of recording with some ice inside. The segment is crossed by two road bridges, neither of which is historical. The bridge crossing for G 7/10 Road was newly constructed, and part of the canal was stabilized as part of the bridge construction. The construction of the canal varies from concrete lined, to rock rip rapped, to earthen with occasional cobbles. In a single 75-m-long area, the rock rip rap was patterned and appeared to be the remnants of a historical wall consistent with the

description of 1930s-era CCC improvements. The canal has been maintained with modern headgates, rock rip rap, and areas of concrete lining.

Spoil from the construction of the canal created a berm on the southern side up to 12 ft. high and 40 ft. across. The far western portion of this berm is paved and incorporated into the G 4/10 Road. The canal itself is approximately 60 ft. wide and 12 ft. deep with an edge slope of 45 degrees on both sides. On the northern side is a berm 25 ft. wide that is raised 2–6 ft. above the surrounding ground surface. An intermittent ditch runs between the berm and the neighboring fields.

Nine headgates and one feature (Table 2) were found along the southern edge of the canal. The headgates are all sliding lift gates in identical steel frames 14 in. wide. These are all 10-in.-diameter hand wheels on ¾-in.-diameter stems. The gates are all cast iron in a stainless- or galvanized-steel frame. Eight of the nine handwheels have identical markings of “Fresno Valves model H22445A 701150.” The ninth was rusted and could not be read. All but one headgate had 4-ft.-wide 6–8-in.-thick concrete headwalls with parallel, angled-concrete buttresses on the interior of the canal that frame the opening to the headgate and are covered with removable steel grates. The lift gates are mounted to the interior side of the headwalls between the buttresses. The gates open into pipes that pass through the southern berm of the canal into a variety of outflow features. None of the headgates or outflow features appeared to be historical. In addition to possible historical features, two 14-in.-diameter steel pipes crossed the canal; at least one of these was a steel pipe with a modern PVC pipe inside of it. Three corrugated culverts ranging from 10–14 in. in diameter allow runoff water from orchards to the north to enter the canal.

### **FRAMEWORK FOR FUTURE WORK**

Strategies for mitigation of adverse effects to linear resources are in flux. Currently, no framework for assuring consistency in strategy selection is in place. Therefore, a reasoned approach incorporating informal guidance from OAHP is recommended. The standard design of the canal has been adequately documented in many places along existing segments. Most of the headgate and outflow features are not original to the canal and have been documented within previously recorded segments. The results of the previous documentation efforts show that many segments are homogeneous, but that does not preclude the discovery of significant features in newly investigated areas.

#### **Recommendations:**

1. Future federal undertakings along the Government Highline Canal should continue to prepare Colorado Cultural Resource Survey Linear Component Forms (Form OAHP 1418) for segments within project Areas of Potential Effect. These forms will serve to document the conditions along the canal and identify areas where the construction may be historically significant.
2. Future mitigation of adverse effects to the canal should be guided by the justification for eligibility.
  - A. Because several projects have already documented the general construction of the canal to Level II standards, future Level II documentation in many areas would be redundant and would not provide additional useful archival information or increase the knowledge of the canal’s history or construction. Level II documentation should be limited to segments that are architecturally significant (that support the eligibility of the canal under Criterion C). Relevant elements include engineering features (i.e. siphons, bridges, or tunnels) or areas that contain intact features constructed by the CCC.
  - B. For segments that lack features that support the eligibility of the canal under Criterion C, alternative mitigation is recommended.



**Table 2. Features and Headgates along Segment 5ME4676.41.**

<i>Headgate</i>	<i>Description</i>	<i>Outflow Type</i>
M2	The only headgate with different construction. It was laid along the canal edge at a 45-degree angle with no headwall or protective structure. It feeds into a ceramic pipe with its edge cut at an angle. The sediment around the top has been removed so that it still functions.	Leads into a mixture of concrete sluices, metal, and PVC pipes that are informally organized and modern.
M3	Constructed as described in text with a steel grate that is too rusted to see through.	PVC pipes underground with no outflow structure
M4	Constructed as described in text.	PVC pipes underground with no outflow structure
M5	Buried in weeds next to the bridge across G 7/10 Rd. This headgate is buried in the side of the canal where it was improved as part of bridge construction. Otherwise it is of similar construction to the others.	4-ft.-wide concrete culvert placed vertically and used as a pipe intake box. It stands 2.5 ft. above ground surface and has an unknown depth.
M6 (unlabeled)	Constructed as described in text.	6 ft. wide concrete pipe-intake box with a hand lift gate leading to a PVC irrigation pipe. It is 2 ft. above ground surface and has an unknown depth.
M 6 1/2	No triangular buttress walls. Mesh grate placed directly onto lift box. No longer appears to be functional.	No visible outflow features
M7	Constructed as described in text.	A 5-ft.-diameter, 10-ft.-deep concrete pipe-intake structure on the southern side of the berm with a PVC pipe leading from it. Intake structure has interior stairs and a flip-top metal grate cover.
M8 (unlabeled)	Unmarked and heavily sedimented, otherwise constructed as described in text.	A 6-x-6-ft. concrete pipe-intake box with three handles controlling separate outflow diversions. It is 18–24 inches above ground surface with an unknown depth.
M9	Concrete headwall and buttress walls have beveled edges and no metal grate. Otherwise, constructed as described in text	Square concrete pipe-intake box outside of project area. Has PVC pipes leading to it and an internal lift gate on outgoing pipe. It is approximately 3 ft. above the ground surface and has an unknown depth.
F1	Two concrete flume supports on either side of the canal from a removed flume where another ditch previously crossed the Government Highline Canal. The concrete flume supports are 9 ft. wide and made from poured concrete 8 in. thick. The footings contain 6-ft.-diameter semicircular depressions in the shape of the removed flume. The metal remnants of the flume are visible in the northern support, but the flume is otherwise no longer present. It does not connect to existing irrigation features on either side of the canal.	N/A

Mitigation of effects to a resource eligible under Criterion A can take many forms. Because Criterion A is concerned with events and broad patterns of historical significance, mitigation does not necessarily need to be spatially associated with the affected segment. Strategies for mitigation of effects to the Government Highline Canal under Criterion A could include, but are not limited to, interpretive signage in publicly accessible areas, new or updated exhibits at local museums detailing the history of the canal, preparation of a historical context for irrigation in the Grand Valley, or historical research on the early construction of the canal leading to an updated interpretive publication. If future guidance by Reclamation or OAHF leads to a codification of appropriate mitigations strategies, these recommendations should be revisited and revised as needed.

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## LIST OF MAPS

**Map 1:** Location of the affected segment of the Government Highline Canal (5ME4676.41).

**Map 2:** Plan map of the affected segment of the Government Highline Canal (5ME4676.41) showing feature locations as referenced in Table 2.

**Map 3:** Plan map of the affected segment of the Government Highline Canal (5ME4676.41) showing photographic points.

**Illustration 1:** Representative Profile of the Government Highline Canal (5ME4676.41).

**Maps 4–23:** Previously recorded segments of the Government Highline Canal (5ME4676).

## LIST OF PHOTOGRAPHS

**Subject:** Segment 5ME46767.41 of the Government Highline Canal, Mesa County, Colorado

**Photographer:** Tosh McKetta, Alpine Archaeological Consultants, Inc.

**Date:** February 13, 2020

**Photograph No. 1:** West-facing view showing rock, rubble, and dirt-lined section of the Government Highline Canal at the western edge of the segment (5ME4676).

**Photograph No. 2:** Northeast-facing picture of the Government Highline Canal (5ME4676.41) from G 4/10 Road along the southern bank.

**Photograph No. 3:** Southwest-facing picture of the western end of the segment of the Government Highline Canal (5ME4676.41) showing rock lining on the northern bank.

**Photograph No. 4:** East-facing context picture showing the agrarian setting of the southwestern portion of the segment of the Government Highline Canal (5ME4676.41).

**Photograph No. 5:** Feature 1, flume footings crossing the Government Highline Canal (5ME4676.41), facing northwest.

**Photograph No. 6:** Modern headgate M6, a representative example along the Government Highline Canal (5ME4676.41), facing southwest.

**Photograph No. 7:** Transition on southern bank of the Government Highline Canal (5ME4676.41) from concrete lined to dirt lined near the center of the segment, facing east-southeast.

**Photograph No. 8:** Modern culvert draining a field into the Government Highline Canal (5ME4676.41) near the center of the segment, facing west.

**Photograph No. 9:** West-facing context picture showing the central portion of the segment of the Government Highline Canal (5ME4676.41) with nearby houses and the Book Cliffs in the background.

**Photograph No. 10:** East-northeast-facing picture of the Government Highline Canal (5ME4676.41) showing cracked concrete lining near the center of the canal.

**Photograph No. 11:** Modern shotcrete lining beneath the bridge crossing of G 7/10 Road over the Government Highline Canal (5ME4676.41), facing north.

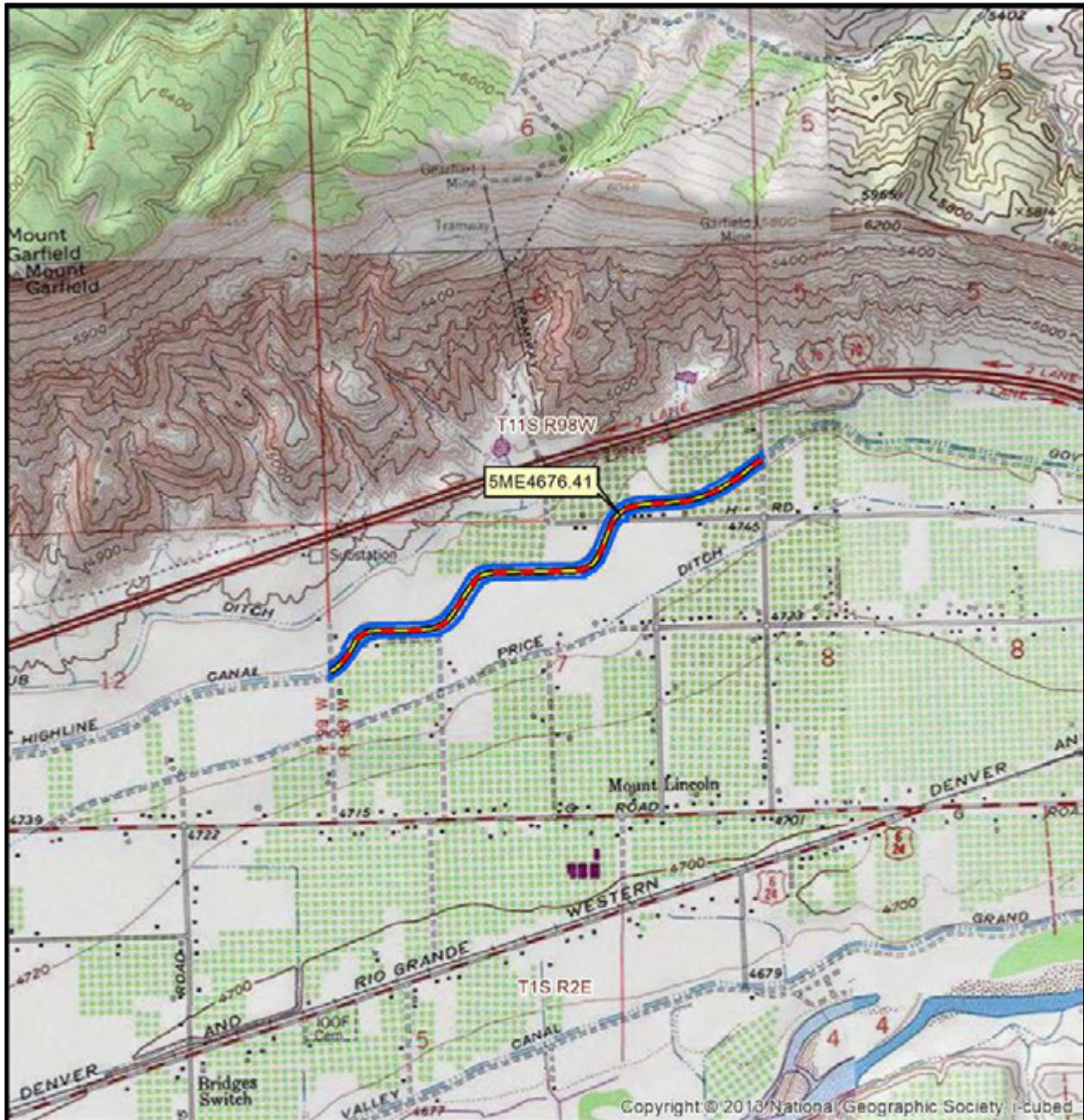
**Photograph No. 12:** East-northeast-facing view of the Government Highline Canal (5ME4676.41) where it is rubble lined on the northern bank and concrete lined on the southern bank.

**Photograph No. 13:** Northeast-facing view of rock masonry lining on a 75-m-long segment of the Government Highline Canal towards the eastern edge (5ME4676.41).

**Photograph No. 14:** Headgate M2, the only leaning gate without a headwall along the Government Highline Canal (5ME4676.41), facing northwest.

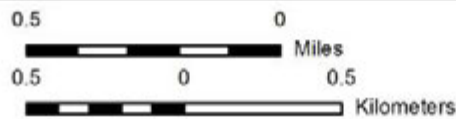
**Photograph No. 15:** Southwest-facing view of the Government Highline Canal (5ME4676.41) showing the eastern edge of the recorded segment.

5ME4676.41—Government Highline Canal  
Map 1



**Government Highline Reach 1A Project Results**

Linear Site      Inventory Area

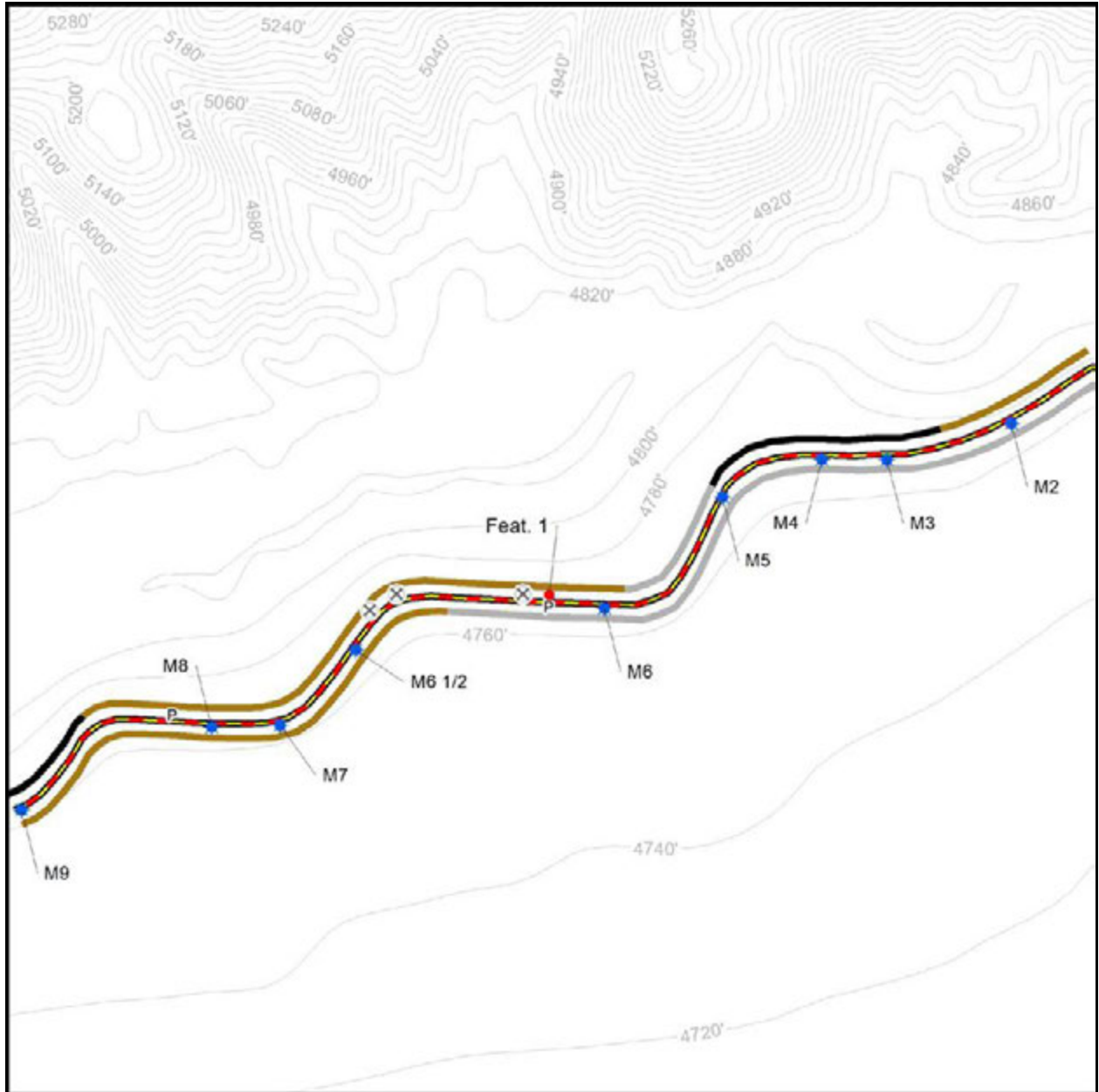


1:24,000

USGS Topo Map:  
Clifton



5ME4676.41—Government Highline Canal  
 Map 2



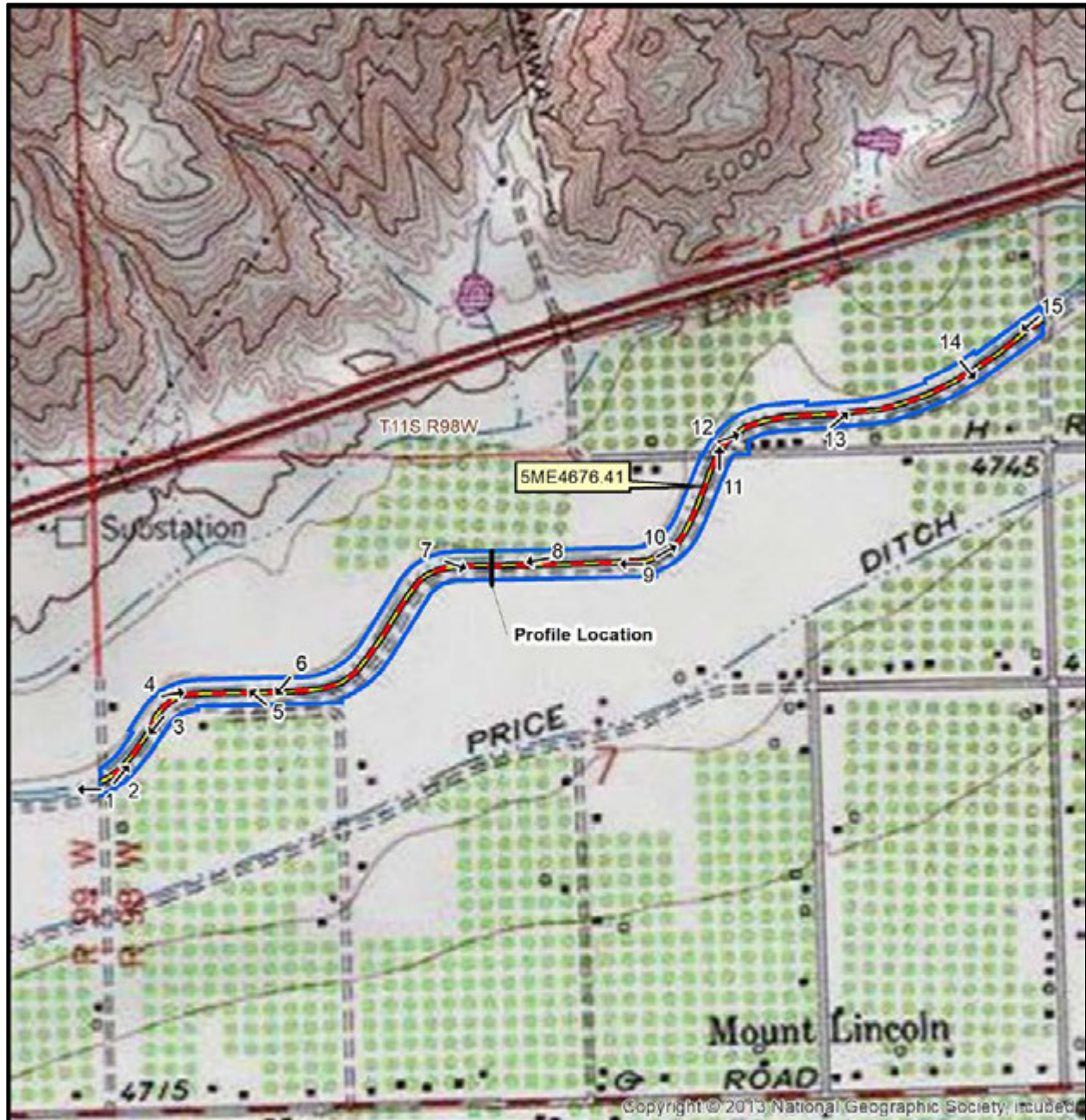
**Site 5ME4676.41**

- |   |         |   |          |   |                        |   |                 |
|---|---------|---|----------|---|------------------------|---|-----------------|
| ⊗ | Culvert | P | Pipe     | — | Concrete Lined Bank    | — | Rock Lined Bank |
| • | Feature | ★ | Headgate | — | Dirt/Rubble Lined Bank | — | Linear Site     |
|   |         |   |          | — | Contour Line           |   |                 |





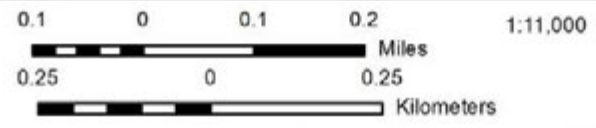
5ME4676.41—Government Highline Canal  
 Map 3



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**Government Highline Reach Canal Segment 41 Photo Points**

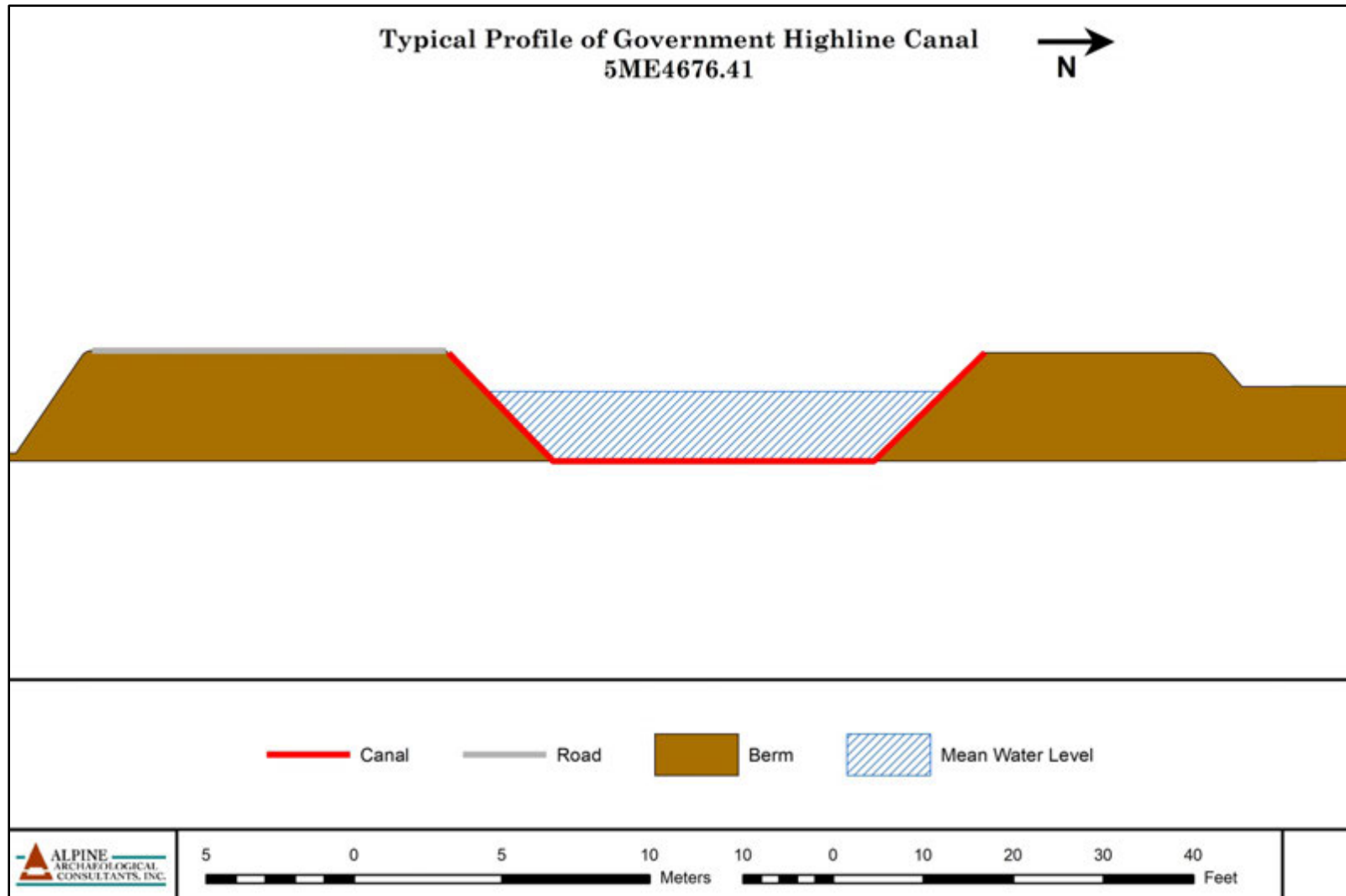
- ↑ Photo Point
- Linear Site
- Inventory Area



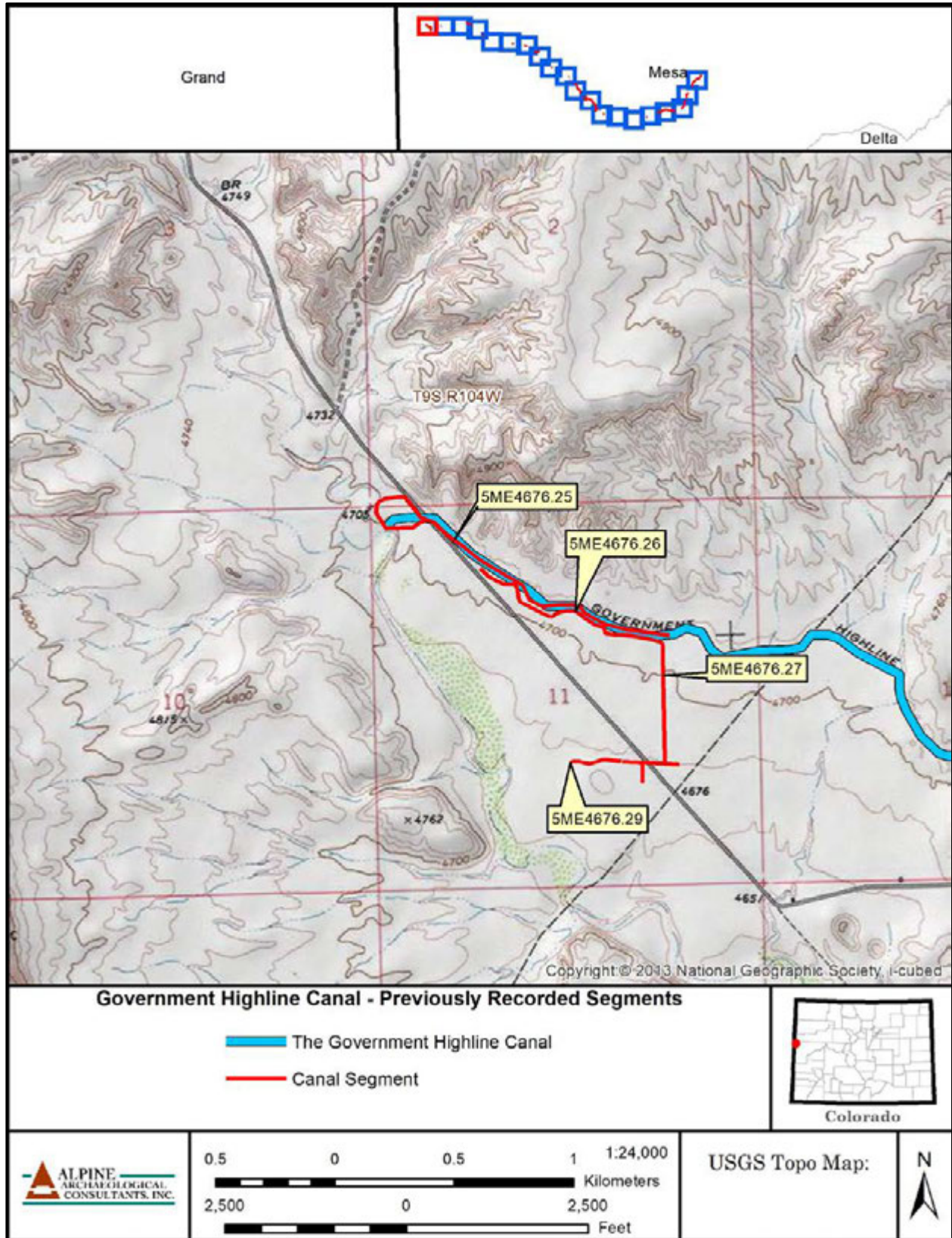
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Clifton



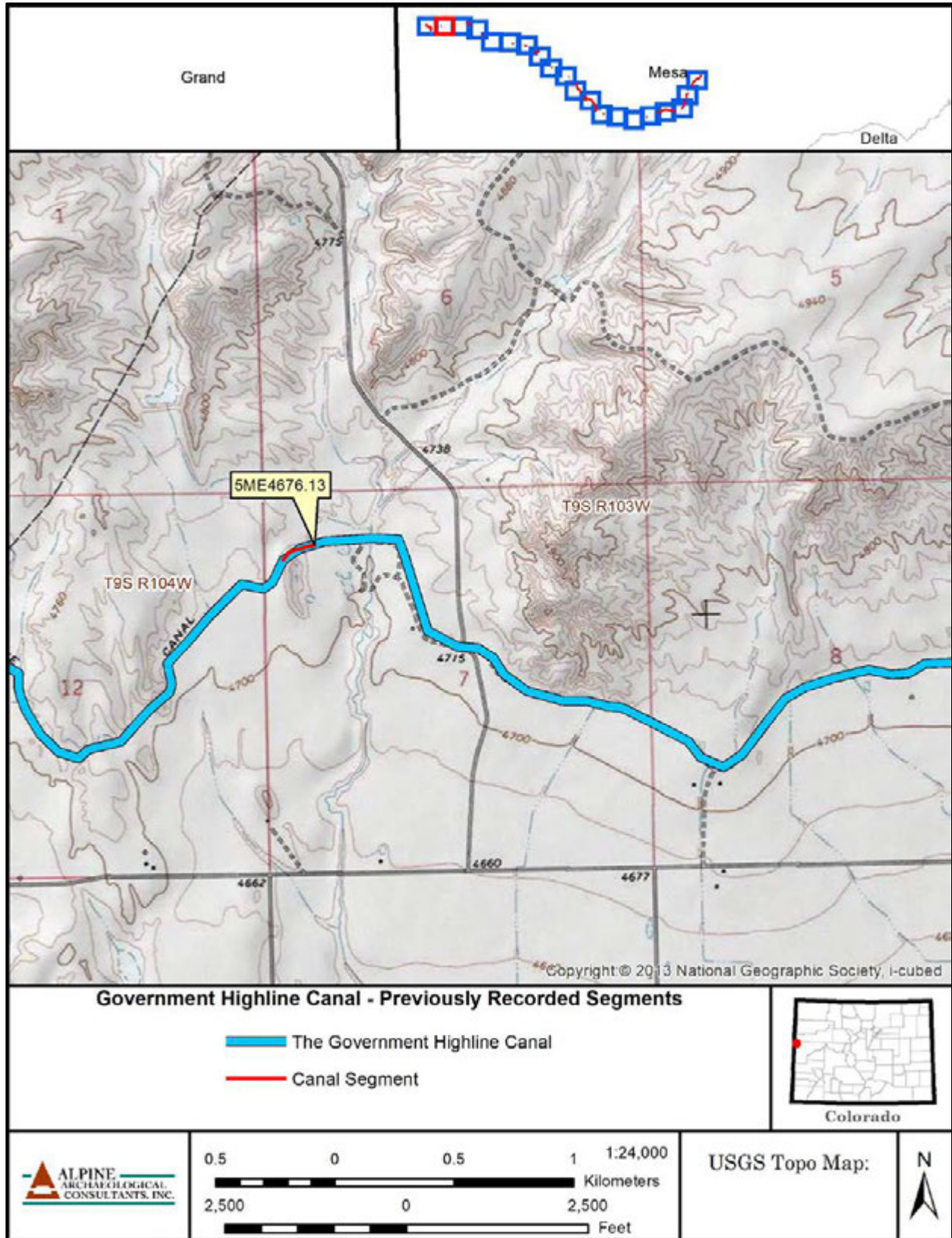
5ME4676—Government Highline Canal  
Illustration 1



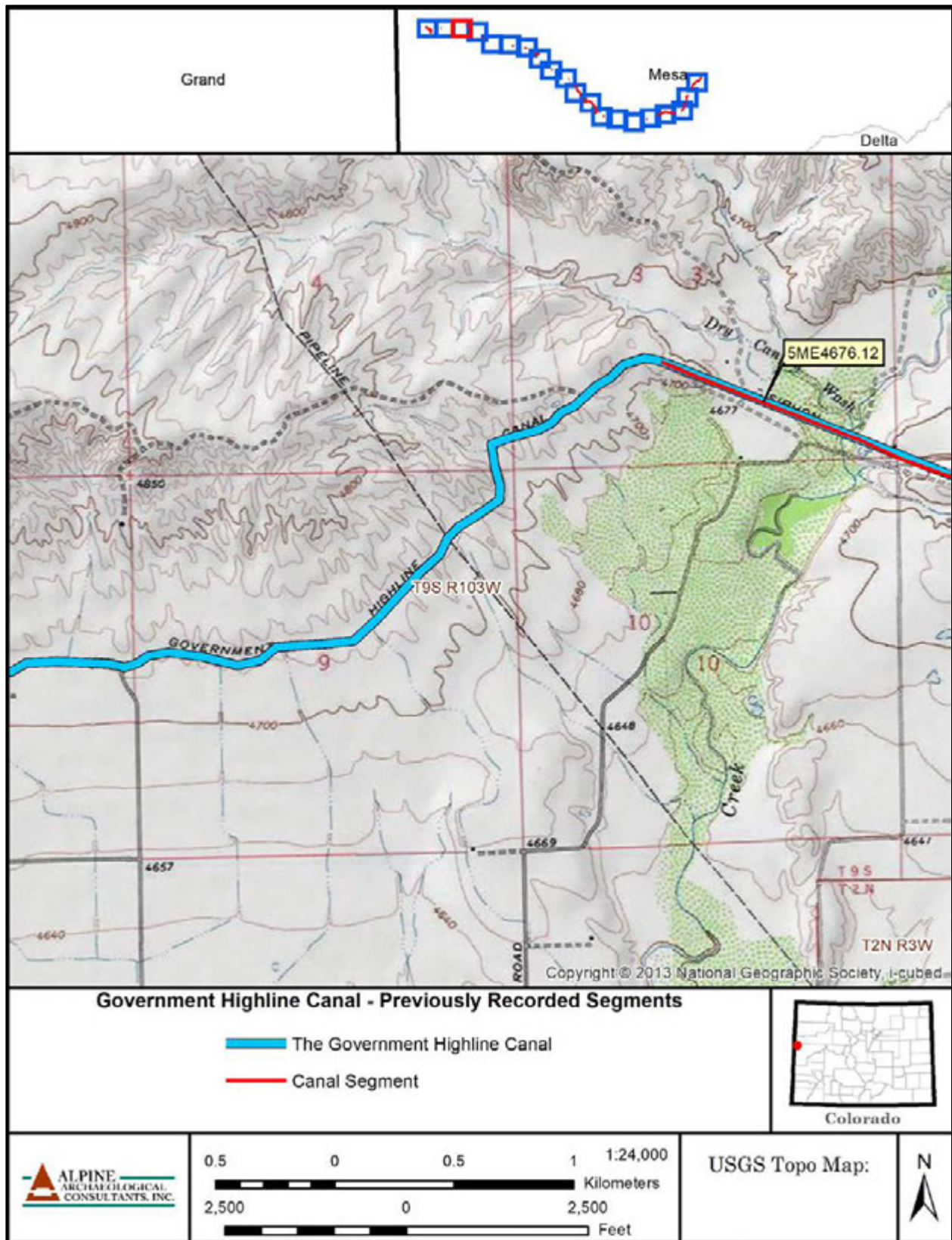
5ME4676—Government Highline Canal  
Map 4



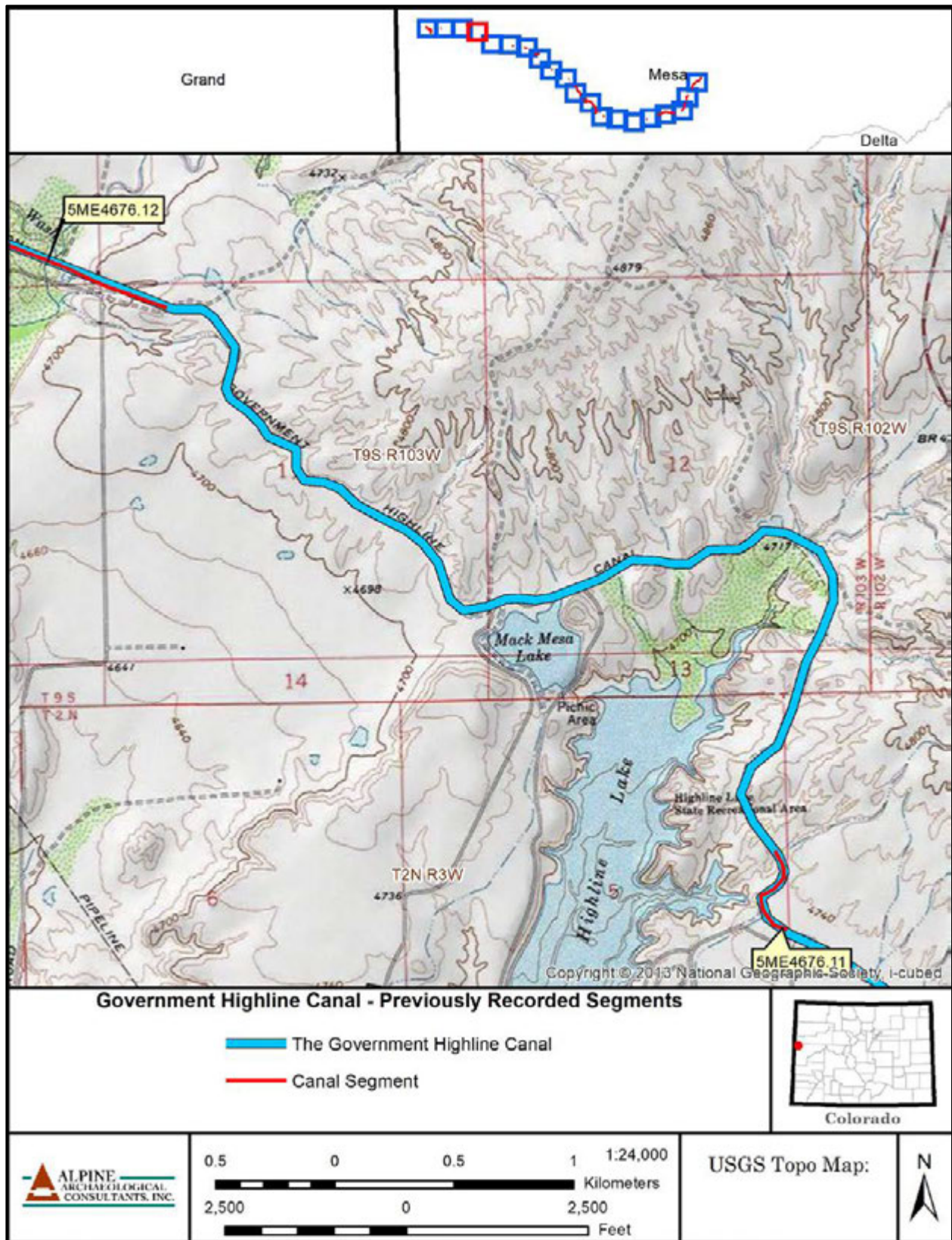
5ME4676—Government Highline Canal  
Map 5



5ME4676—Government Highline Canal  
Map 6

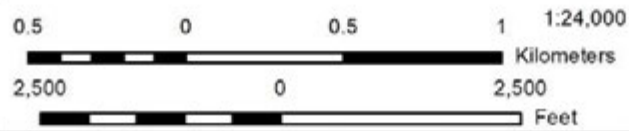


5ME4676—Government Highline Canal  
Map 7



Government Highline Canal - Previously Recorded Segments

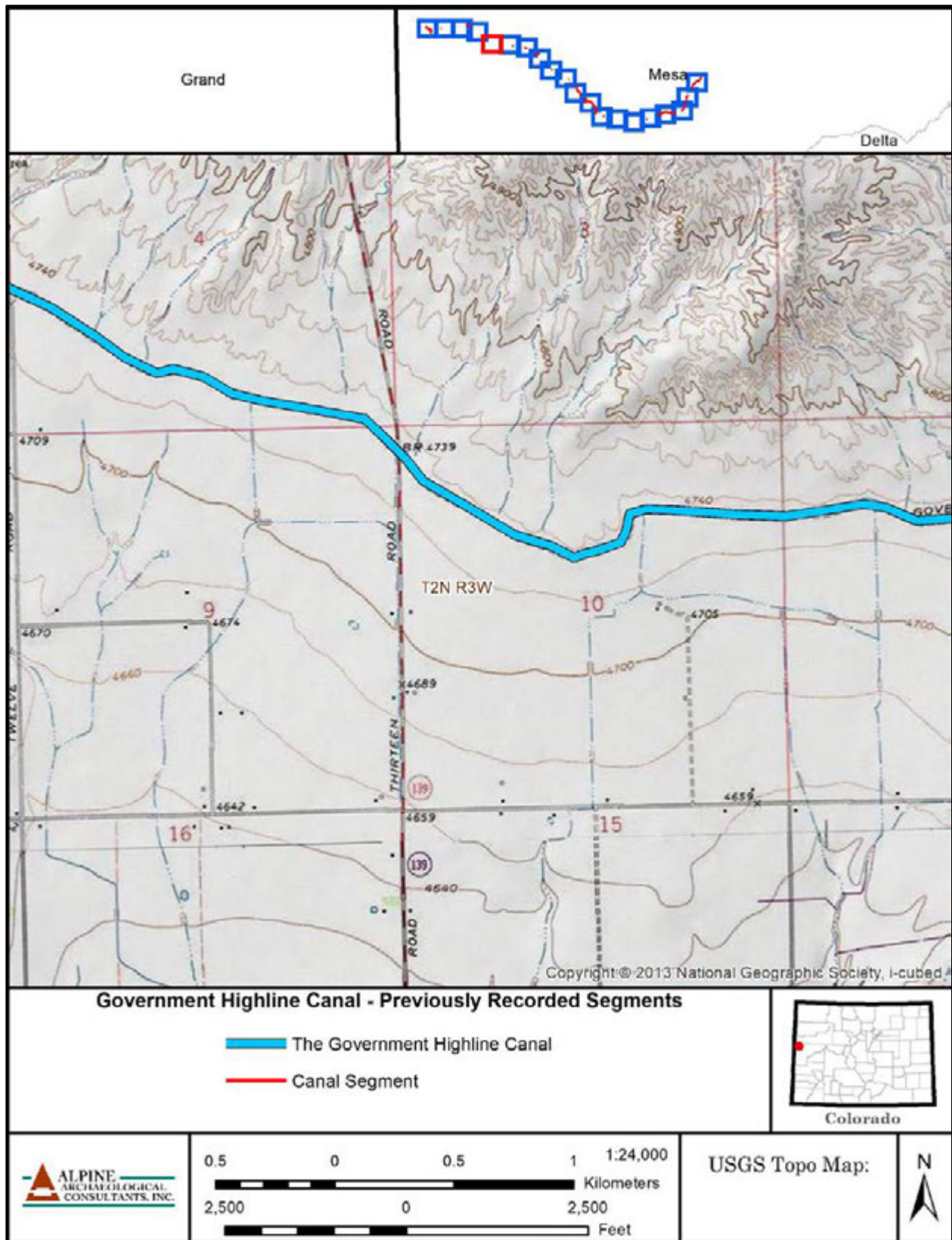
- The Government Highline Canal
- Canal Segment



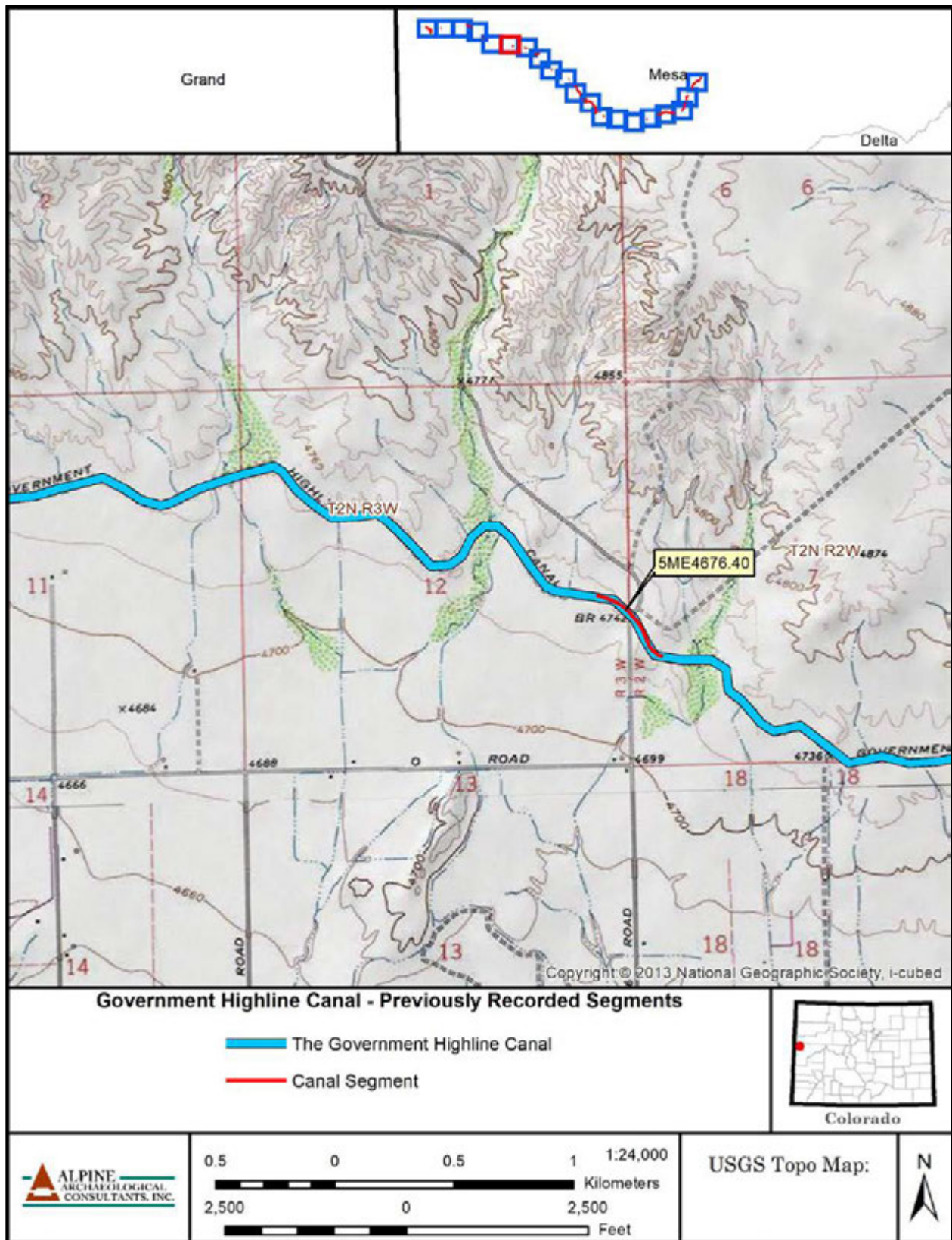
USGS Topo Map:



5ME4676—Government Highline Canal  
Map 8

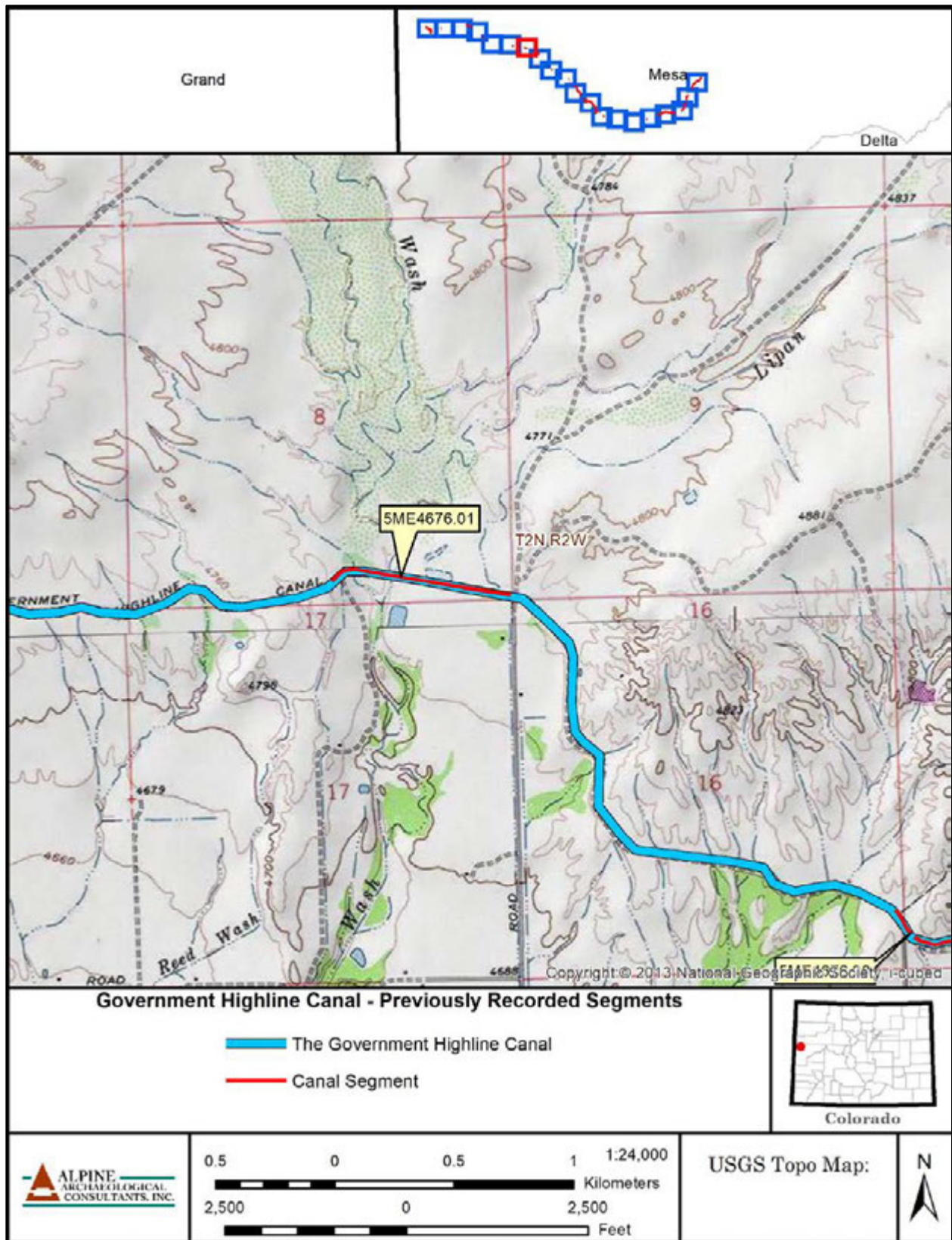


5ME4676—Government Highline Canal  
Map 9

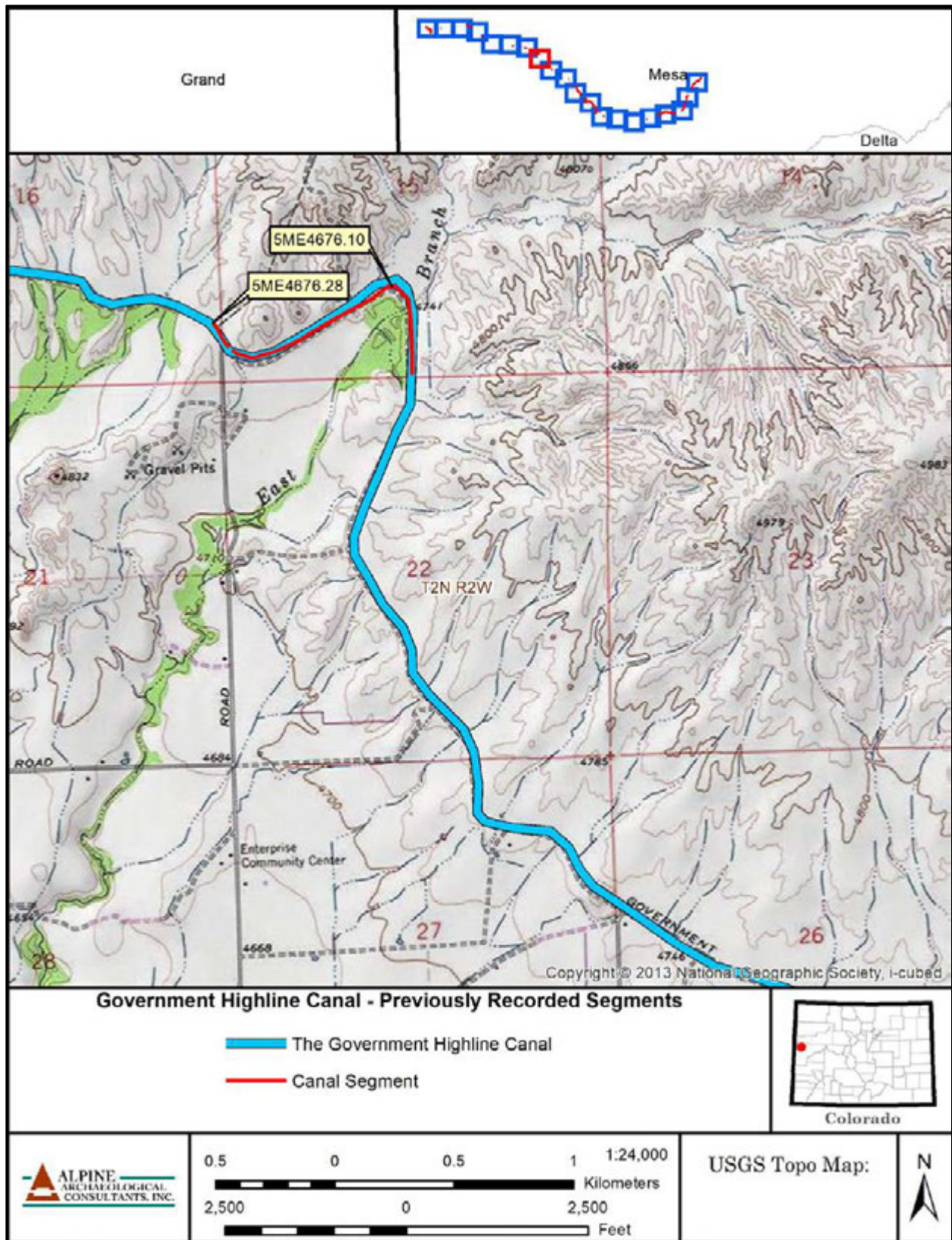




5ME4676—Government Highline Canal  
Map 10

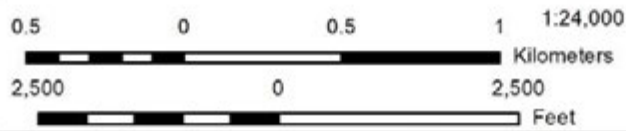


5ME4676—Government Highline Canal  
 Map 11



Government Highline Canal - Previously Recorded Segments

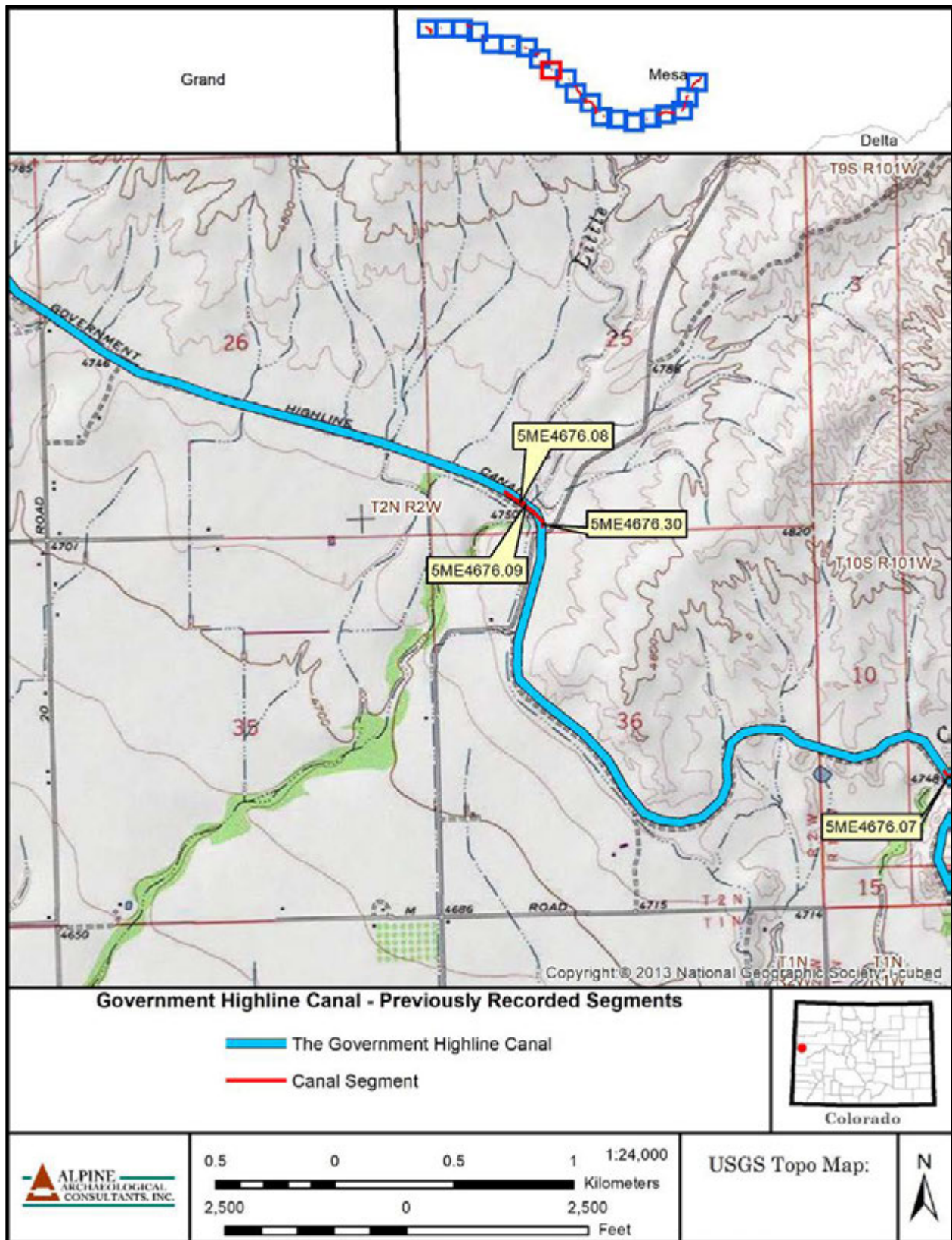
- The Government Highline Canal
- Canal Segment



USGS Topo Map:

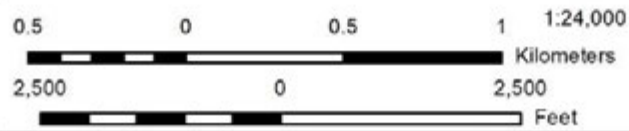


5ME4676—Government Highline Canal  
Map 12



Government Highline Canal - Previously Recorded Segments

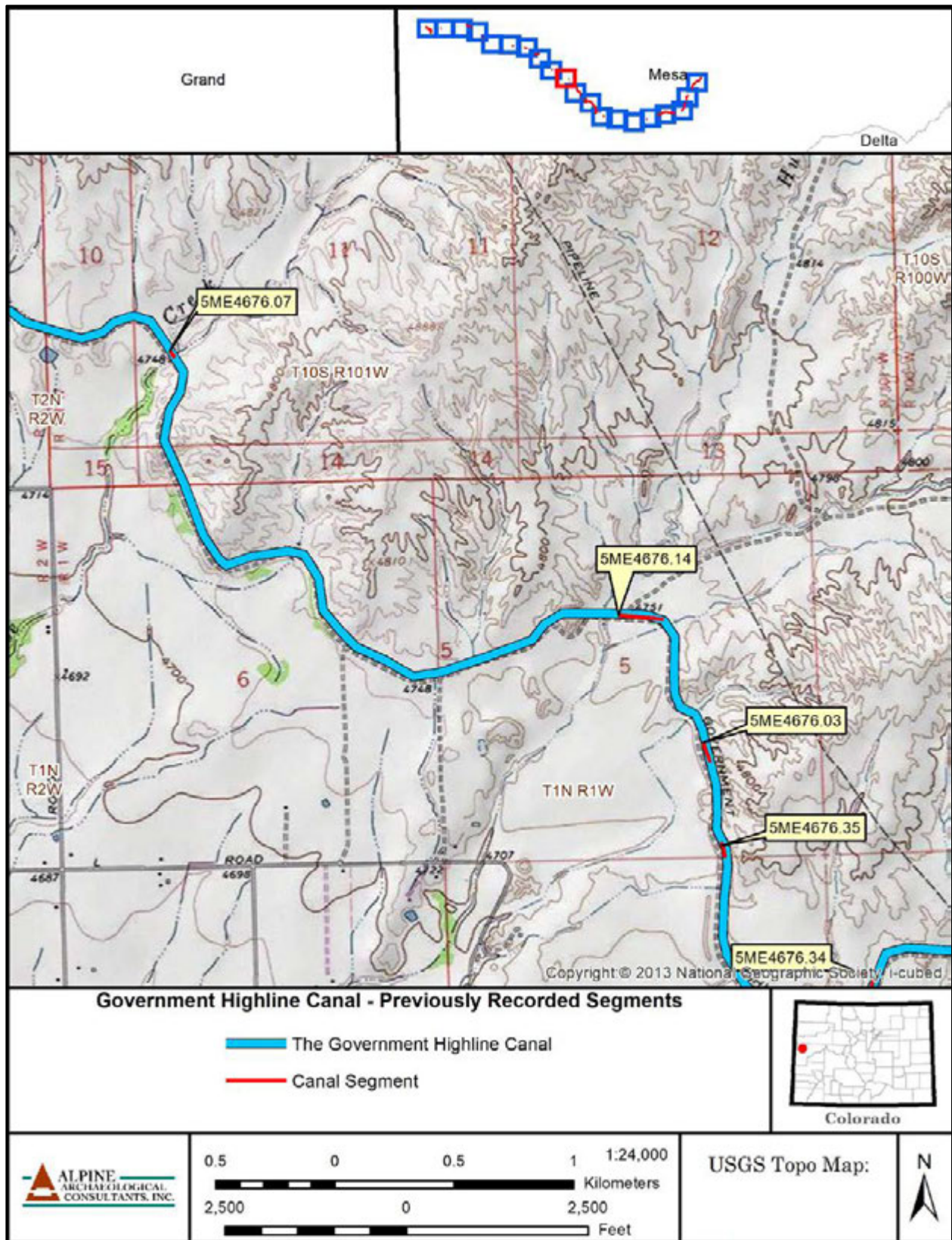
- The Government Highline Canal
- Canal Segment



USGS Topo Map:

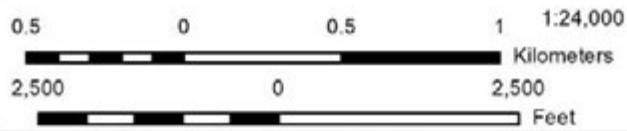


5ME4676—Government Highline Canal  
 Map 13



Government Highline Canal - Previously Recorded Segments

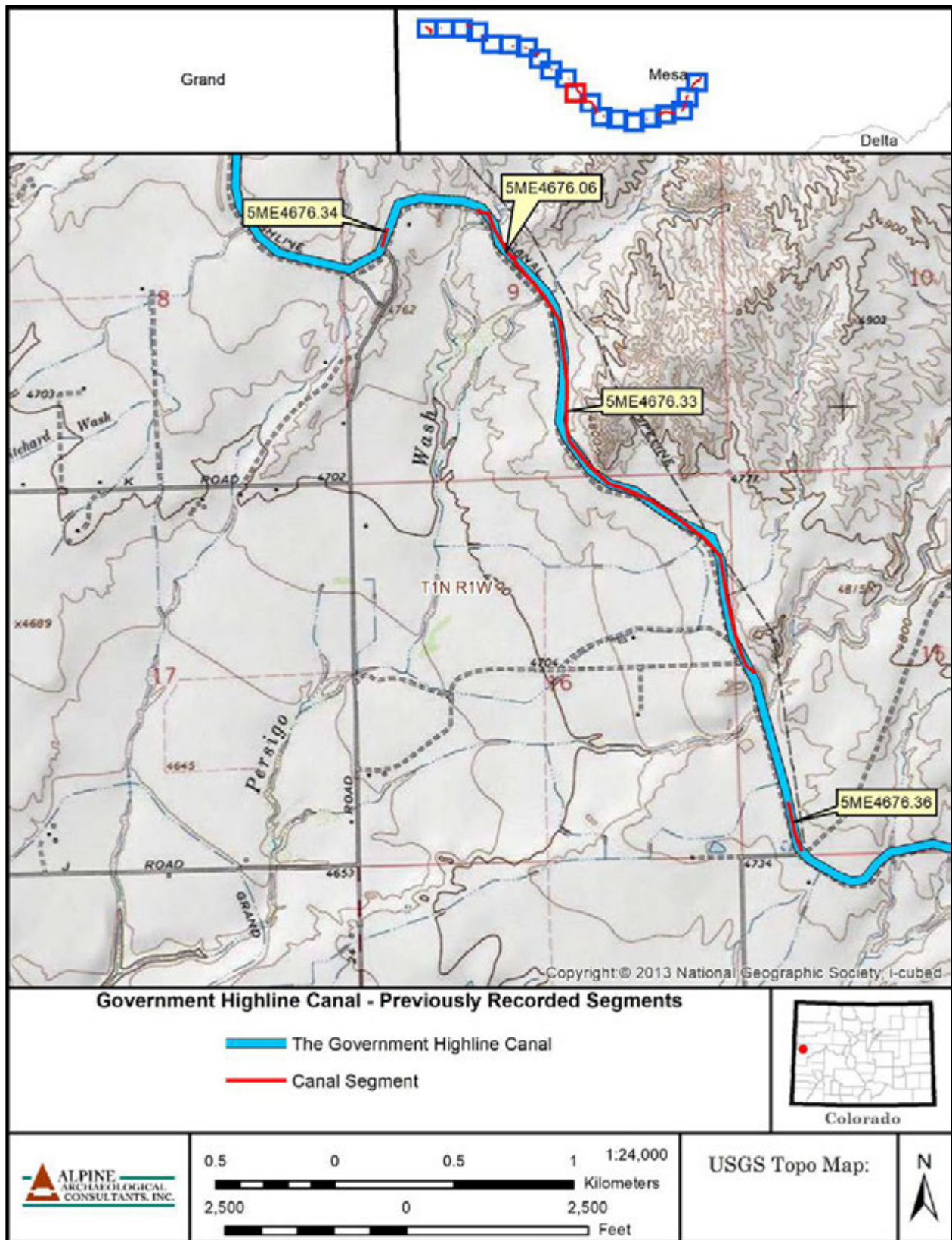
- The Government Highline Canal
- Canal Segment



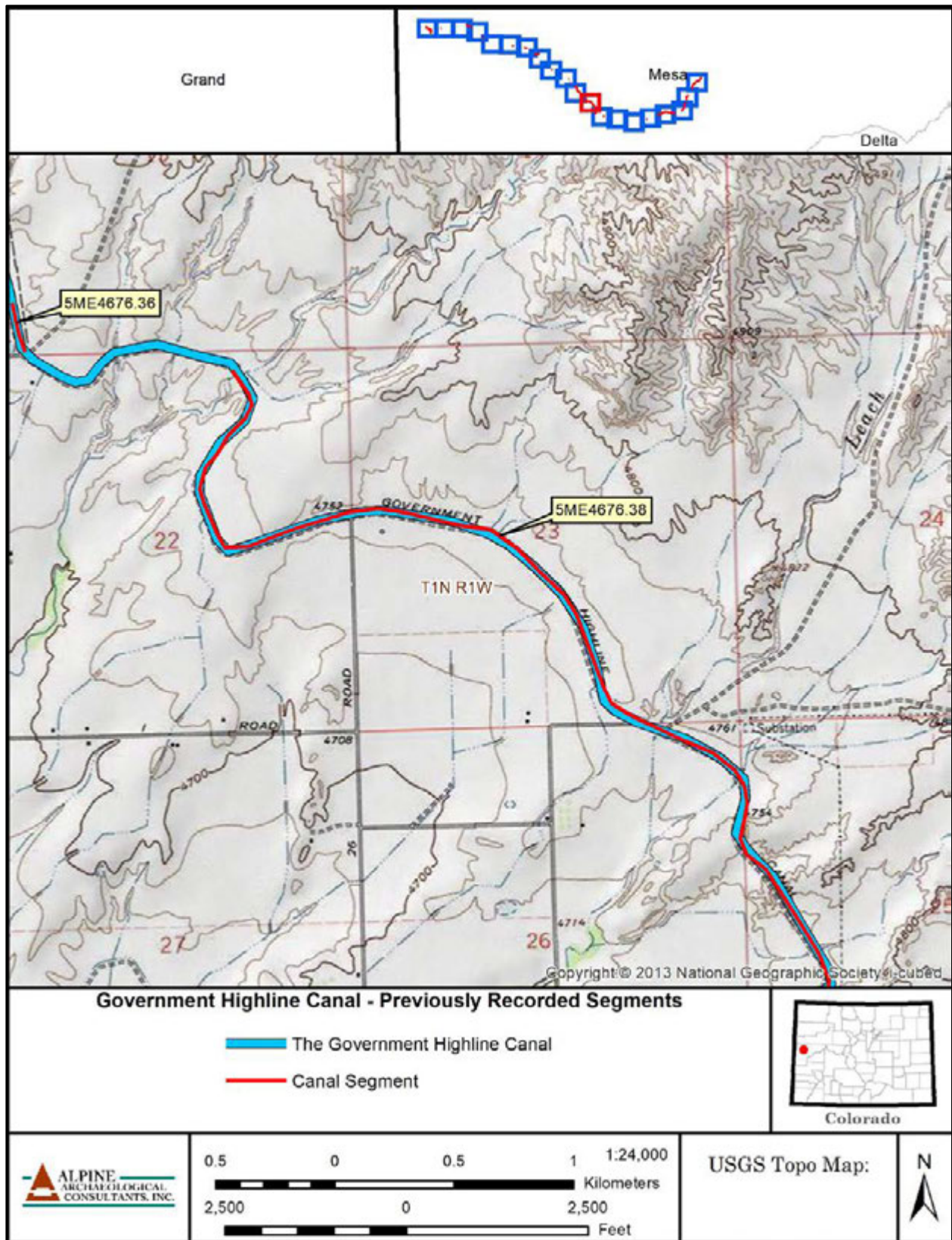
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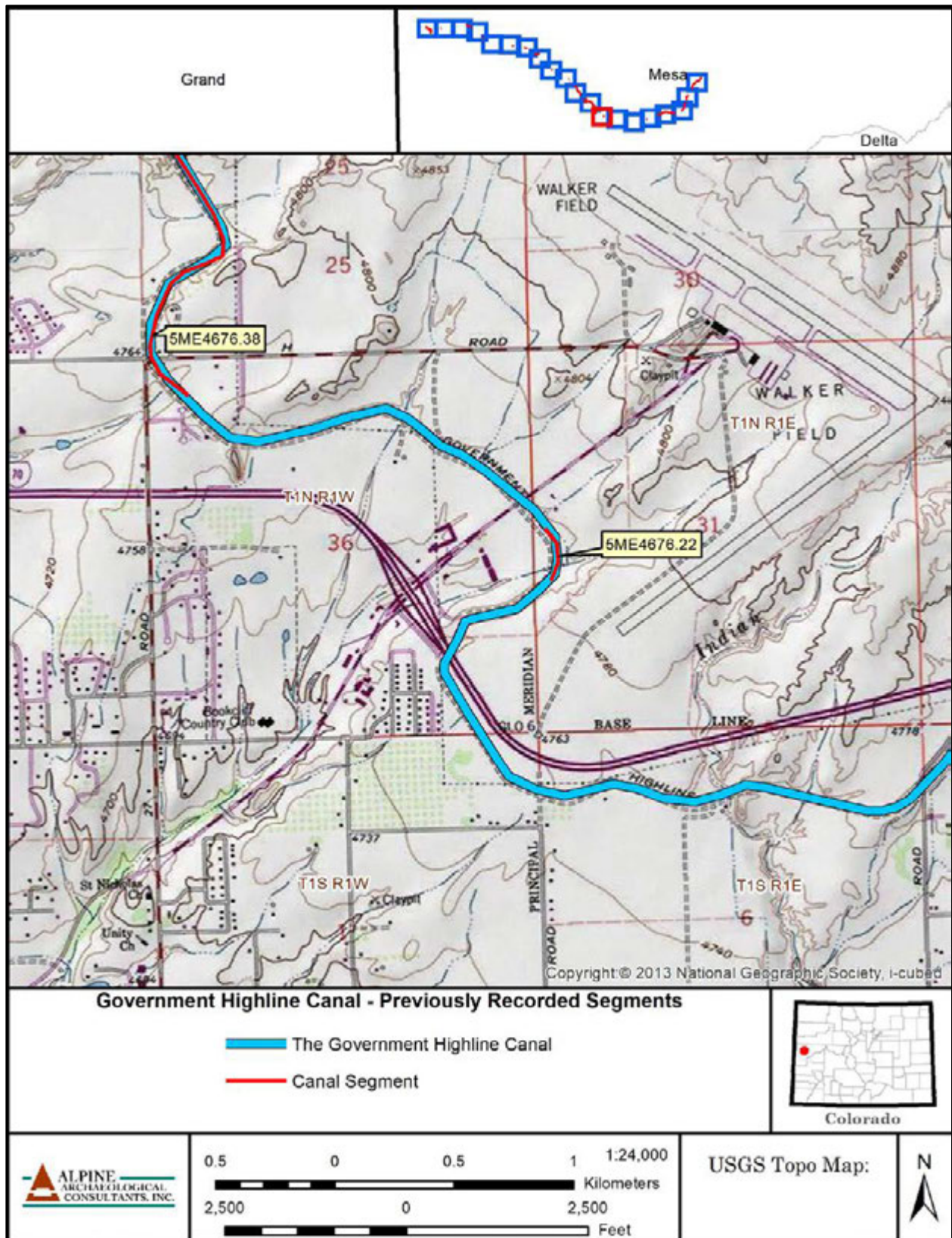
5ME4676—Government Highline Canal  
Map 14



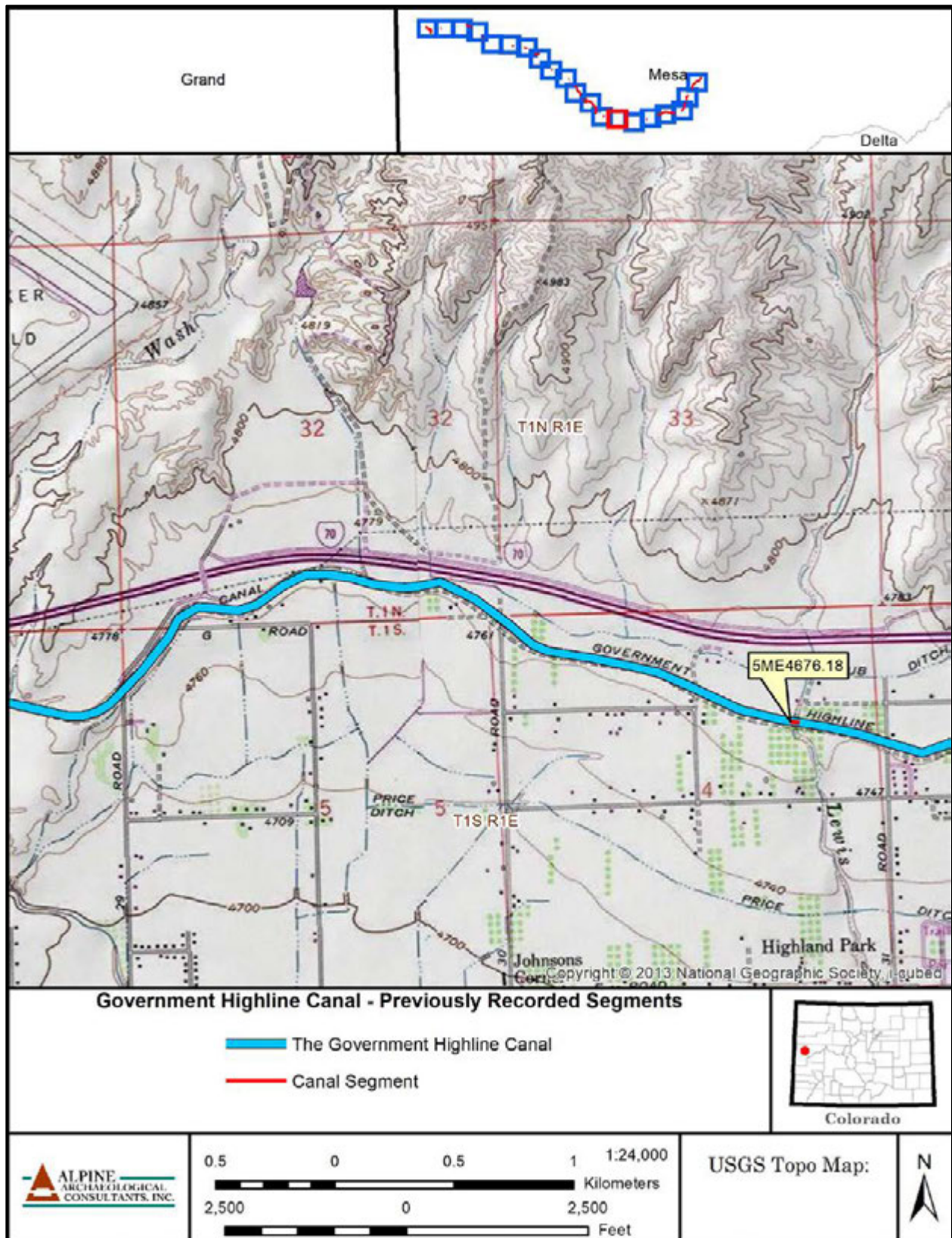
5ME4676—Government Highline Canal  
 Map 15



5ME4676—Government Highline Canal  
Map 16

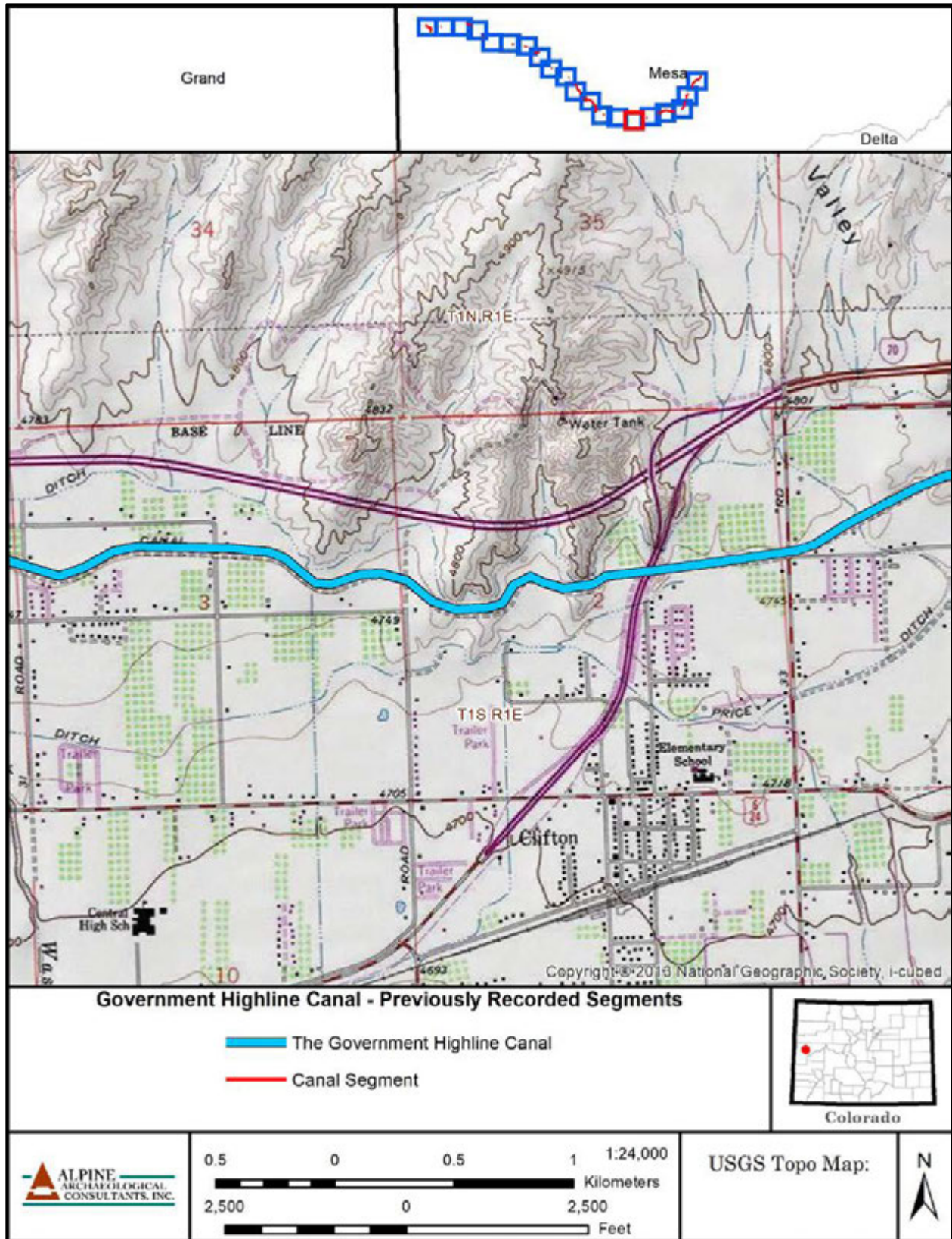


5ME4676—Government Highline Canal  
Map 17

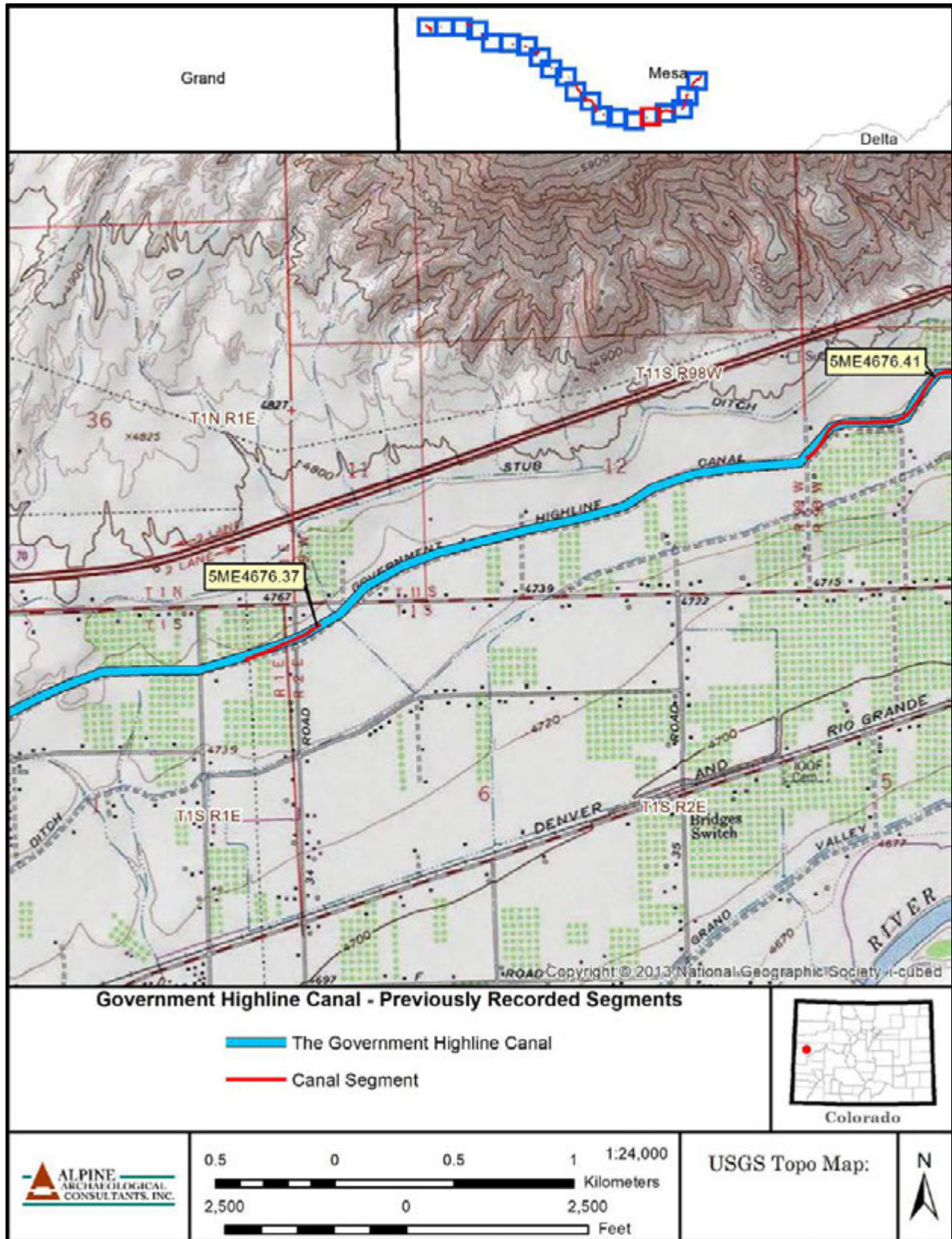




5ME4676—Government Highline Canal  
 Map 18

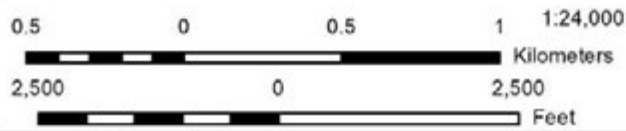


5ME4676—Government Highline Canal  
Map 19



Government Highline Canal - Previously Recorded Segments

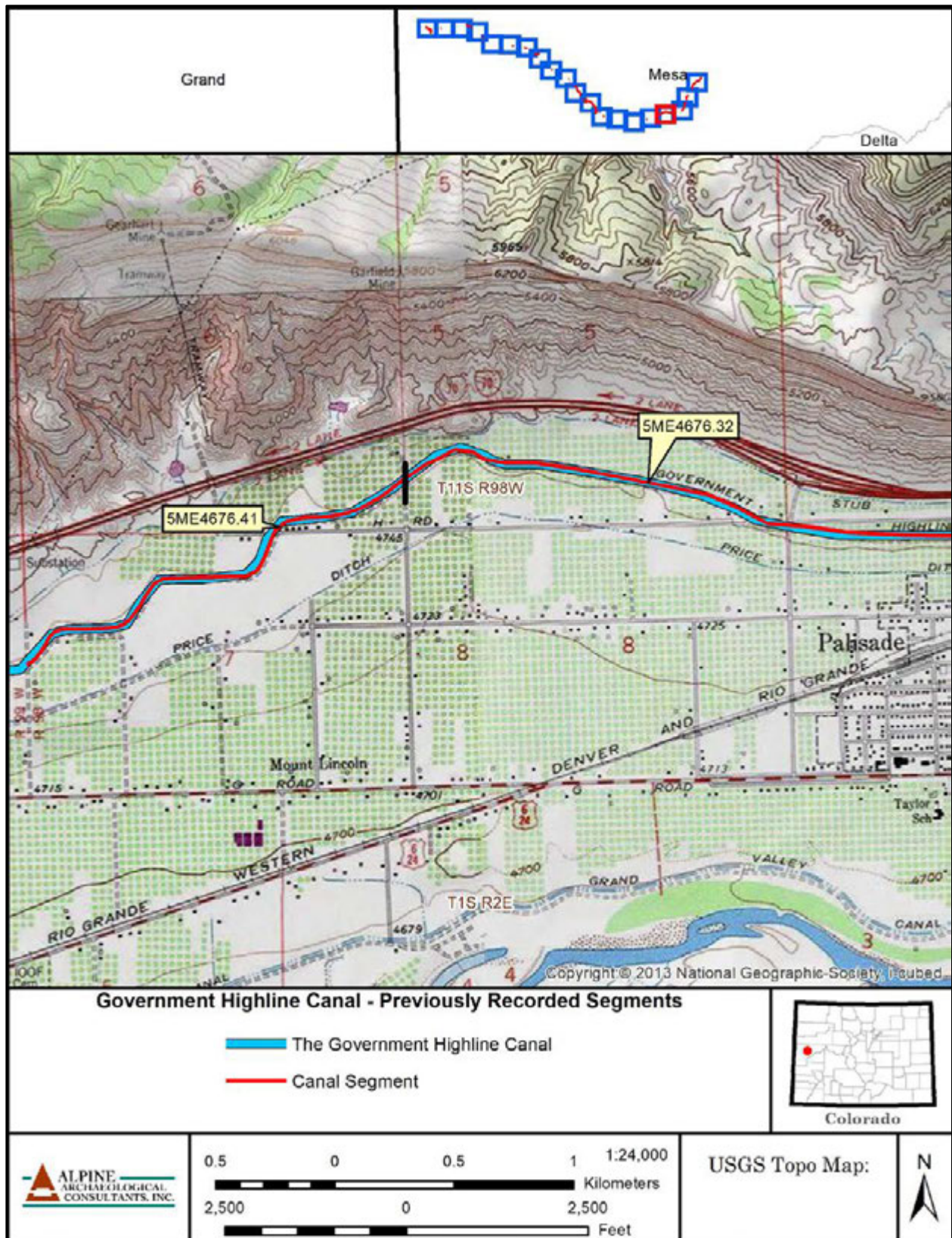
- The Government Highline Canal
- Canal Segment



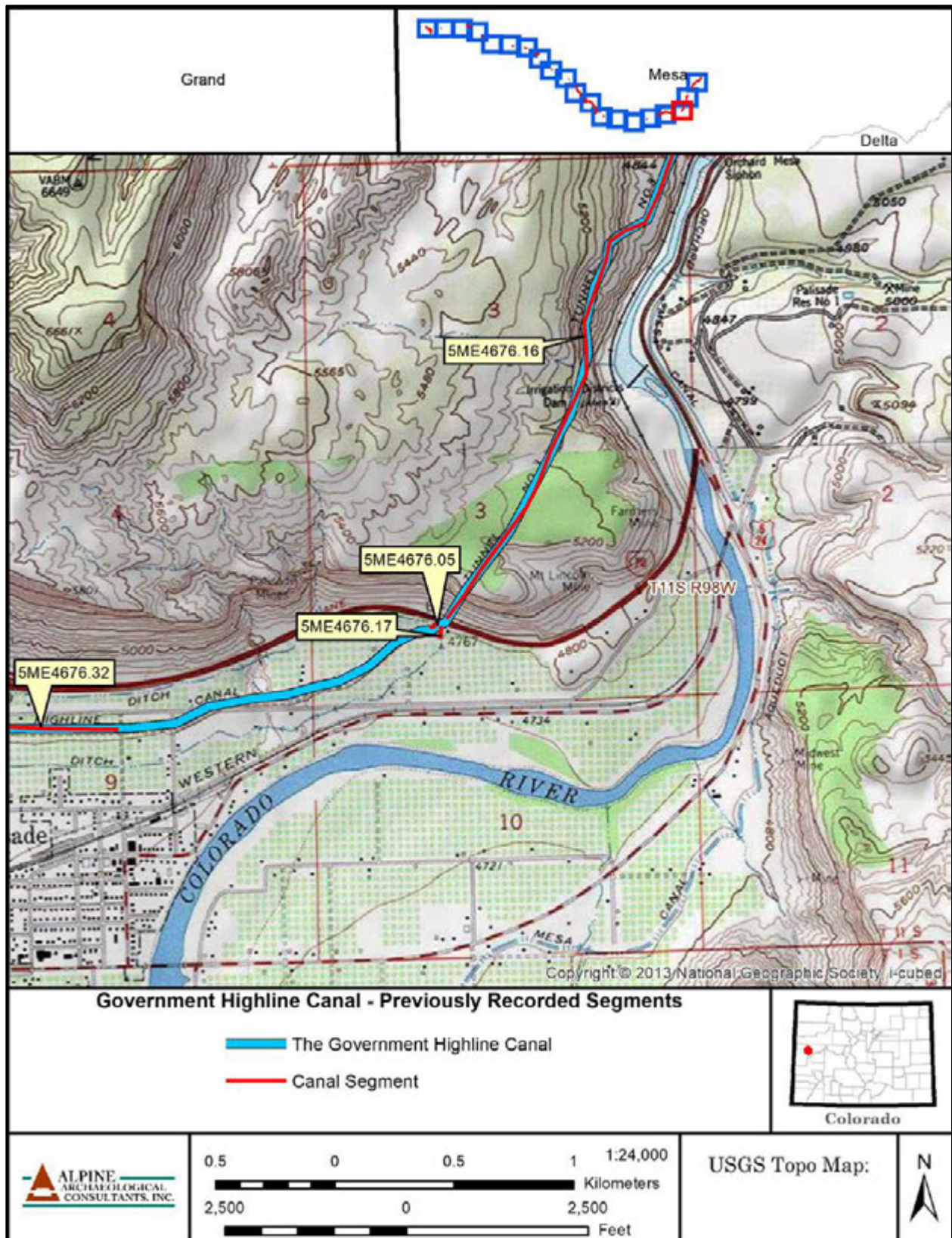
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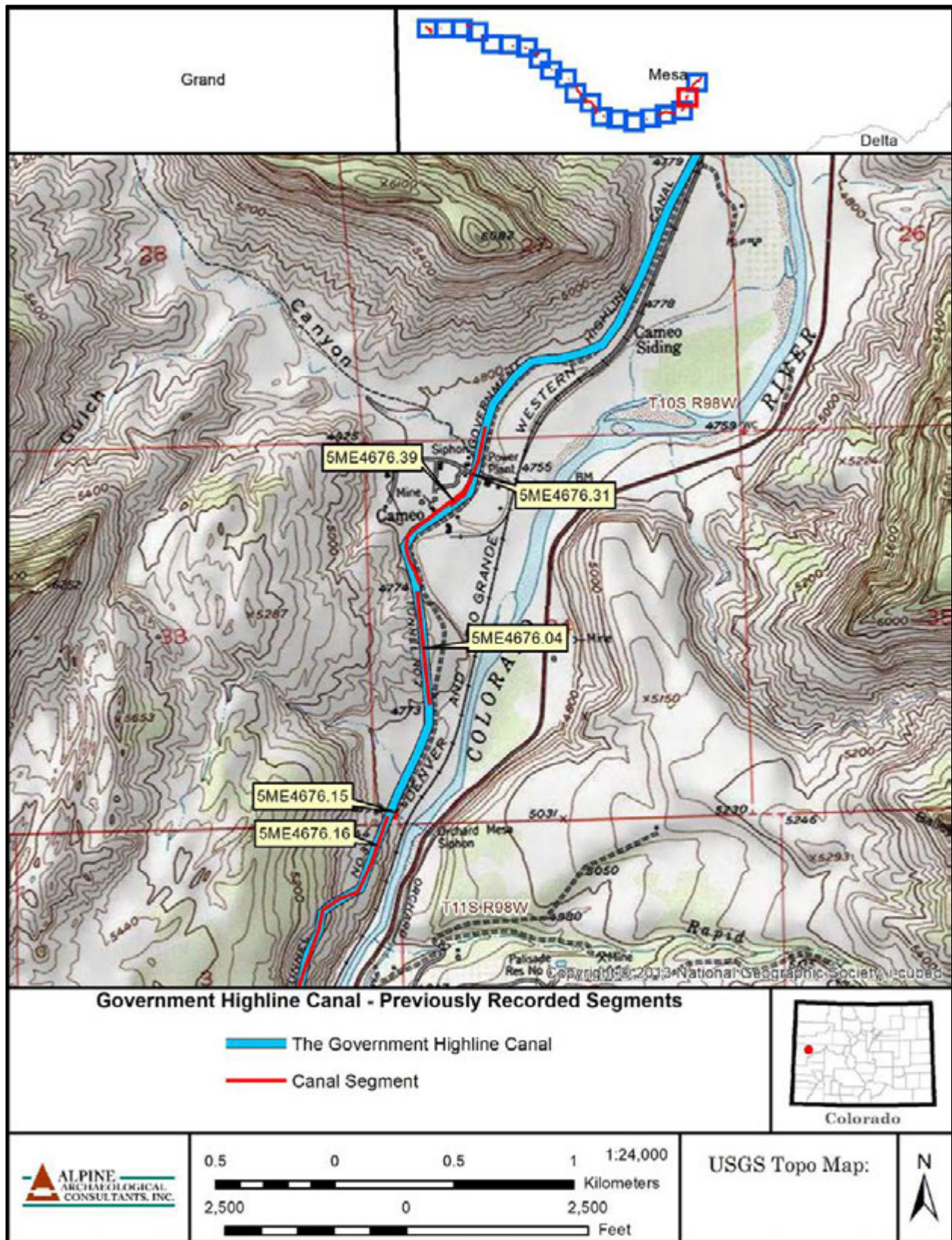
5ME4676—Government Highline Canal  
Map 20



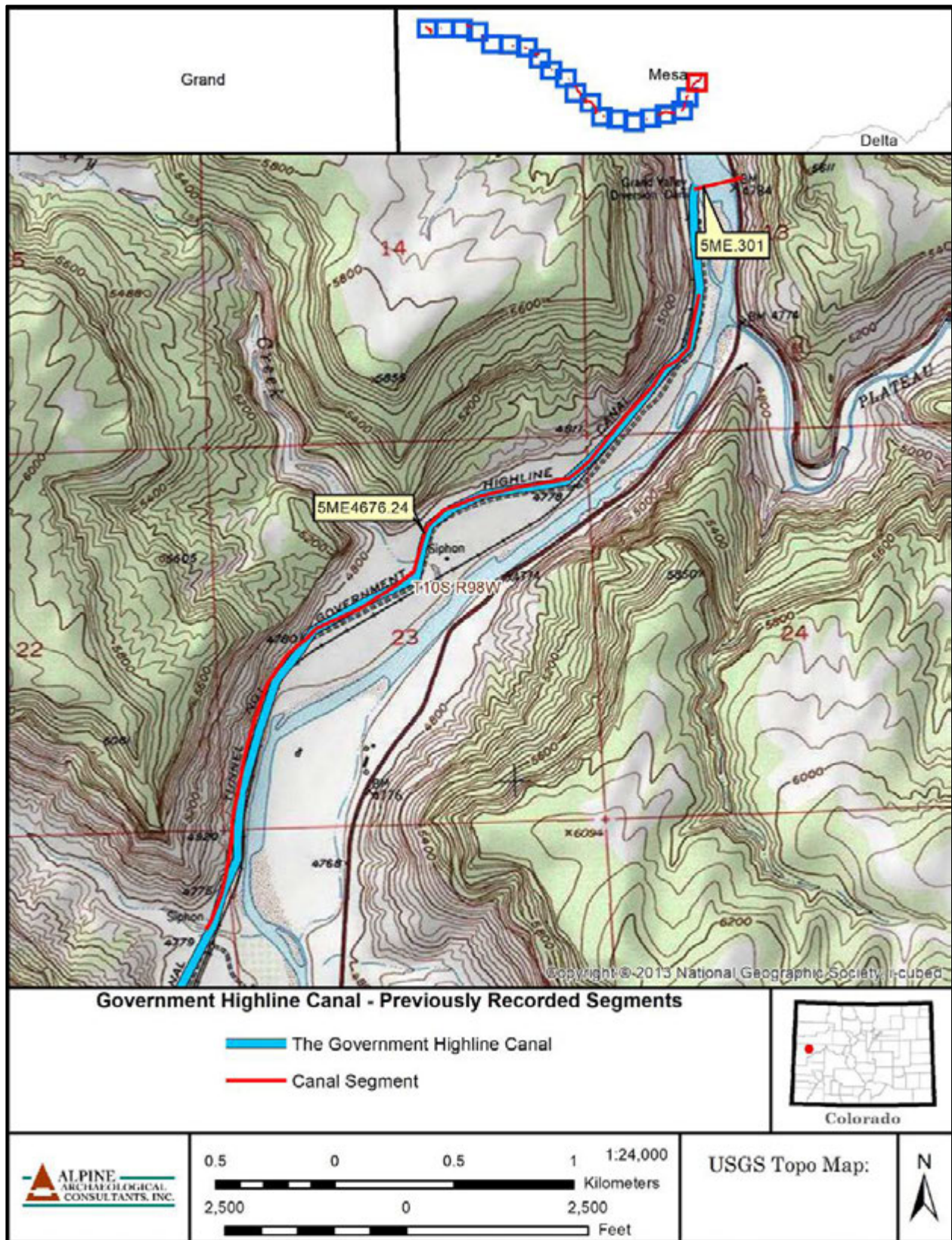
5ME4676—Government Highline Canal  
Map 21



5ME4676—Government Highline Canal  
Map 22



5ME4676—Government Highline Canal  
Map 23



**5ME4676.41—Government Highline Canal  
Photograph 1**



**5ME4676.41—Government Highline Canal  
Photograph 2**





**5ME4676.41—Government Highline Canal  
Photograph 3**



**5ME4676.41—Government Highline Canal  
Photograph 4**



**5ME4676.41—Government Highline Canal  
Photograph 5**



**5ME4676.41—Government Highline Canal  
Photograph 6**



**5ME4676.41—Government Highline Canal  
Photograph 7**



**5ME4676.41—Government Highline Canal  
Photograph 8**



**5ME4676.41—Government Highline Canal  
Photograph 9**



5ME4676.41—Government Highline Canal  
Photograph 10





5ME4676.41—Government Highline Canal  
Photograph 11



**5ME4676.41—Government Highline Canal  
Photograph 12**



5ME4676.41—Government Highline Canal  
Photograph 13



5ME4676.41—Government Highline Canal  
Photograph 14



**5ME4676.41—Government Highline Canal  
Photograph 15**

