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Governor

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Lieutenant Governor

State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Water Rights

KENT L. JONES
State Engineer/Division Director

April 4, 2017

RE: Stream Channel Alteration No. 17-54-01SA (State Only)
Tickville Gulch
Robert Price

Attached is a copy of an application to alter a natural stream, which has been submitted to the Division of Water Rights (Division) for processing.

In processing this application, the Division will work to determine if the project will:

- Unreasonably or unnecessarily affect any recreational use or the natural stream environment;
- Unreasonably or unnecessarily endanger aquatic wildlife;
- Unreasonably or unnecessarily diminish the natural channel's ability to convey high flows; or
- Impair vested water rights.

Any decision made regarding this application will be based exclusively on these four criteria. If you have information regarding these four criteria that will aid the Division in making a determination and subsequent decision, please submit this information, in writing, to this office by **April 24, 2017**. For questions or comments pertaining to all other aspects of the project, please contact the applicant listed on the front page of the application directly.

Sincerely,

Tiffany Gonzales
for Chuck Williamson, P.G.
Stream Alteration Specialist

Pc: Richard Clark - EPA
Corps of Engineers
Supervisor - U. S. Fish & Wildlife
Ross Hansen - Regional Engineer
Matt Howard - Regional Wildlife Habitat Biologist
Bill James - Wildlife Resources
Bill Damery - DEQ, Water Quality Division
Laura Ault - Forestry Fire & State Lands
RDCC Coordinator
State Parks & Recreation
Lori Hunsaker - State History
W. D. Robinson - Department of Agriculture
Kathy Holder - Department of Emergency Management



Rec. by MC 00330P
 Fee Rec. \$500.00
 Receipt # 17-0489

JOINT PERMIT APPLICATION FORM
U.S ARMY CORPS OF ENGINEERS – FOR SECTIONS 404 AND 10
UTAH STATE ENGINEER’S OFFICE – FOR NATURAL STREAM CHANNELS

Application Number 1 17-54-01SA
 (assigned by): _____ Corps _____ State Engineer

Applicant's Name (Last, First M.I. or entity if not an individual) Robert Price		Authorized Applicant Representative (if any) Horrocks Engineers		Applicant's Telephone Number and Area Code 801.432.4434 Or 801.432.4454	
				Representative's Telephone Number and Area Code 801.763.5203	
Applicant's Address (Street, RFD, Box, Number, City, State, Zip) ERM 12953 South Minuteman Drive Draper Utah 84020					
<u>X: 413638.91</u>		PROJECT LOCATION <u>Y: 4473737.72</u>			
Quarter Section(s) NW 1/4 of SW 1/4	Section 1	Township 5S	Range 2W	Base & Meridian SL B&M	
County Utah	Associated Watercourse or Watercourse to be Altered Tickville Gulch		Check one: <input type="checkbox"/> Within City Limits <input checked="" type="checkbox"/> Outside City Limits List town or nearest town: Saratoga Springs		
Project location or address: Tickville Road just north of Watts Road Lat/Long = 40.4100, -112.0175					
Brief description of project including methods and equipment to be employed to complete the work: See attached documentation for details					
Purpose (justification) of project: See attached documentation for details					
<p>RECEIVED APR 03 2017 WATER RIGHTS SALT LAKE</p>					
Is this a single and complete project or is part of a larger project, continuing project, or other related activities? If so, please describe the larger project or other related activities. Single and complete project					
If project included the discharge of dredged or fill material into a watercourse or wetland:					
Cubic yards of material:		3,600 yard to fill in old, 2,800 yards excavated from new			
Acreage or square footage of waters of the United States affected by the project:		None identified, 3' by length = 0.05 ac old, 0.04 ac new			
Source and type of fill material:		Local native soil			
Length of stream that will be impacted below ordinary high water elevation:		No OHWM identified, Old channel ~665 feet, New channel ~510'			

Alternatives (other ways to accomplish project purpose):
 No build - Does not meet the purpose and need of the project
 Stabilize existing channel in place - An adequate side slope cannot be met because of the proximity of the roadway. Channel will not be stabilized if left in place.

Describe any proposed mitigation to offset impacts to the stream channel.
 The project is replacing the channel in kind with new channel. No additional mitigation is proposed.

Cultural resource impacts:
 Are you aware of any cultural resources or any historic properties that will be impacted by the proposed project? Yes No
 If Yes, please explain:

Has a cultural resource survey been conducted on the property where the proposed project is to occur? Yes No
 If Yes, please briefly explain the survey results:
 Camp Williams has qualified staff that maintains a detailed cultural resource survey. There are no findings at this project location.

List other authorizations required by Federal, state, or local governments (i.e. National Flood Insurance Program), and the status of those authorizations.
 Military environmental process is already completed. No other authorizations required.

Estimated starting date of project: May 1, 2017	Estimated completion date: Dec 31, 2017
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Please complete the following checklist

Failure to indicate that all pertinent information has been submitted will result in your application being returned.

- Appropriate application processing fee payment (see fee schedule below).
- A clear site location map with enough detail to easily find the site, a recent aerial/satellite image of the site, and a USGS topography map (7.5 minute quadrangle map is recommended).
- Plan view and cross-sectional drawings showing all work requiring a permit, including fills, structures, borrow sites, staging areas and storage areas. The drawings must clearly demarcate the ordinary high water mark of the waters of the U.S. to be impacted and clearly illustrate where fill will be placed below the ordinary high water mark. Professional drawings are not required; however, drawings must be scaled or indicate dimensions of the work to be completed.
- A restoration plan for any areas temporarily disturbed during work, including re-contouring, revegetation with appropriate native plants and maintenance and monitoring to ensure success for the restored area.
- Ground photographs taken from various locations of the proposed disturbance area.
- Please check the box if the proposed project involves bank stabilization or protection. If so, please complete the following:
 - A description of the need for the work, including the cause of the erosion and the threat posed to structures, infrastructure, and/or public safety.
 - A narrative demonstrating the proposed activity incorporates the least damaging bank protection methods. These methods include, but are not limited to, the use of bioengineering, biotechnical design, root wads, large

woody debris, native plantings, and beach nourishment in certain circumstances. If rock must be used due to site erosion conditions, explain how the bank stabilization structure incorporates elements beneficial to aquatic organisms.

- A planting plan which involves the use of native riparian plants, unless the applicant demonstrates it is not appropriate or not practicable.
- An assessment of the likely impact the work would have on upstream, downstream and cross-stream properties. Specifically, discuss the following:
 - Will the activity accelerate deposition or erosion?
 - Will the activity involve relocation, channelization or realignment of a natural channel?
 - Will the activity result in a shift in the main flow patterns?

Application is hereby made for a permit or permits to authorize the activities described herein. I certify that I am familiar with the information contained in the application, and that to the best of my knowledge and belief, such information is true, complete and accurate. I further certify that I possess the authority to undertake the proposed activities or am acting as the duly authorized agent of the applicant which is a (check one of the following) commercial , non-commercial , or governmental entity.

Signature of Applicant  Date: 3 Apr 2017

I hereby certify that _____ is acting as my agent on this project.

Agent's address and telephone number: _____

Filing Instructions

Application supplements should be submitted on paper no larger than 11 x 17 inches or alternatively as PDF format electronic files. If more than one watercourse is to be altered as a result of the project, a separate application must be submitted for each watercourse. Application fees must be received by the Division of Water Rights at the time of application submission and must be either hand delivered or submitted through standard mail to the following address:

Utah Division of Water Rights
1594 W. North Temple, Suite 220
Salt Lake City, UT 84114-6300

Application Processing Fees

Application fees are based on the type of entity applying for the proposed stream alteration project.

Commercial Entities:	\$2000.00	per application processed.
Non-Commercial Entities:	\$100.00	per application processed.
Governmental Entities:	\$500.00	per application processed.

Project Location

Bluffdale

140

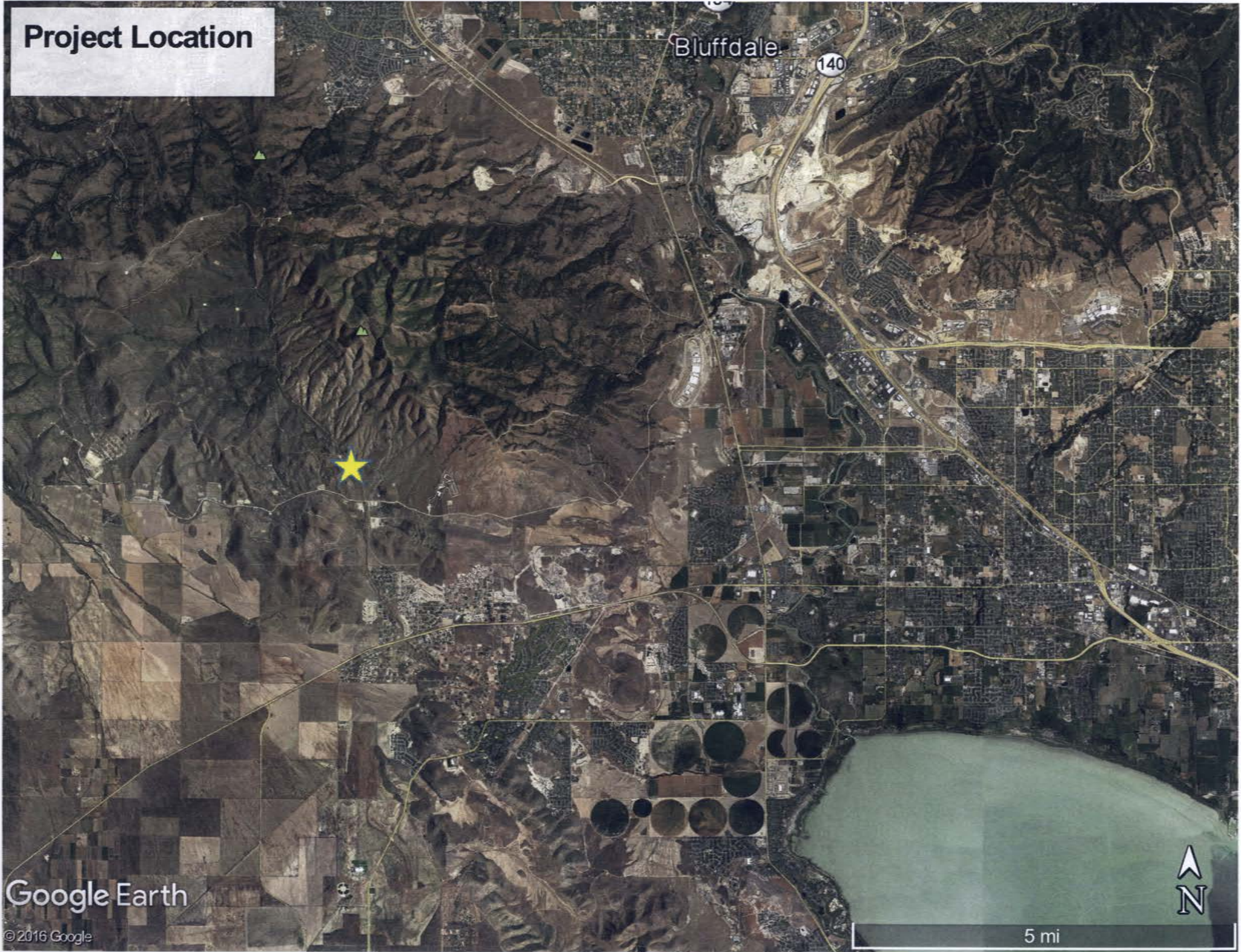


Google Earth

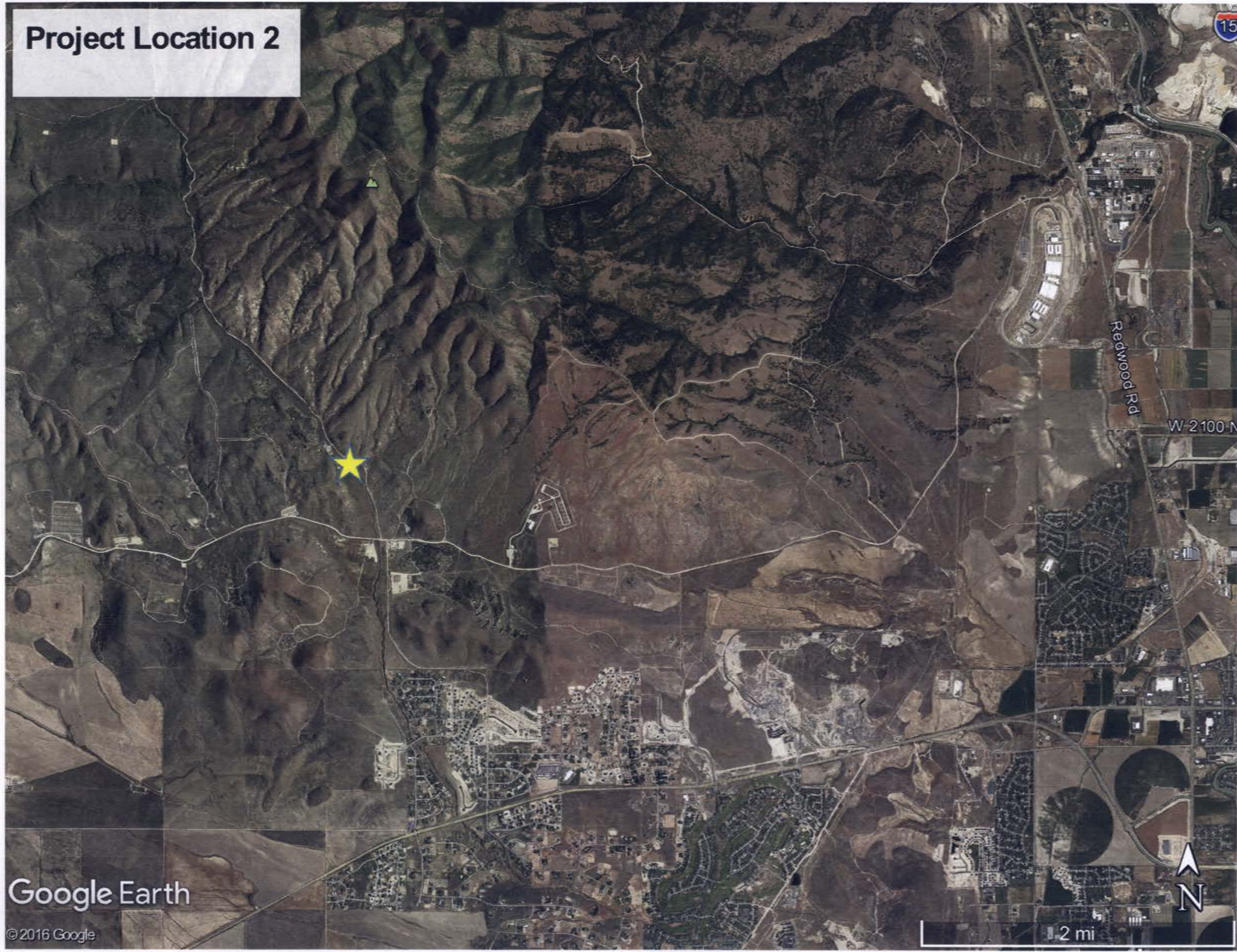
© 2016 Google



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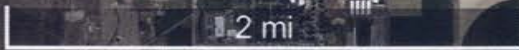


Project Location 2

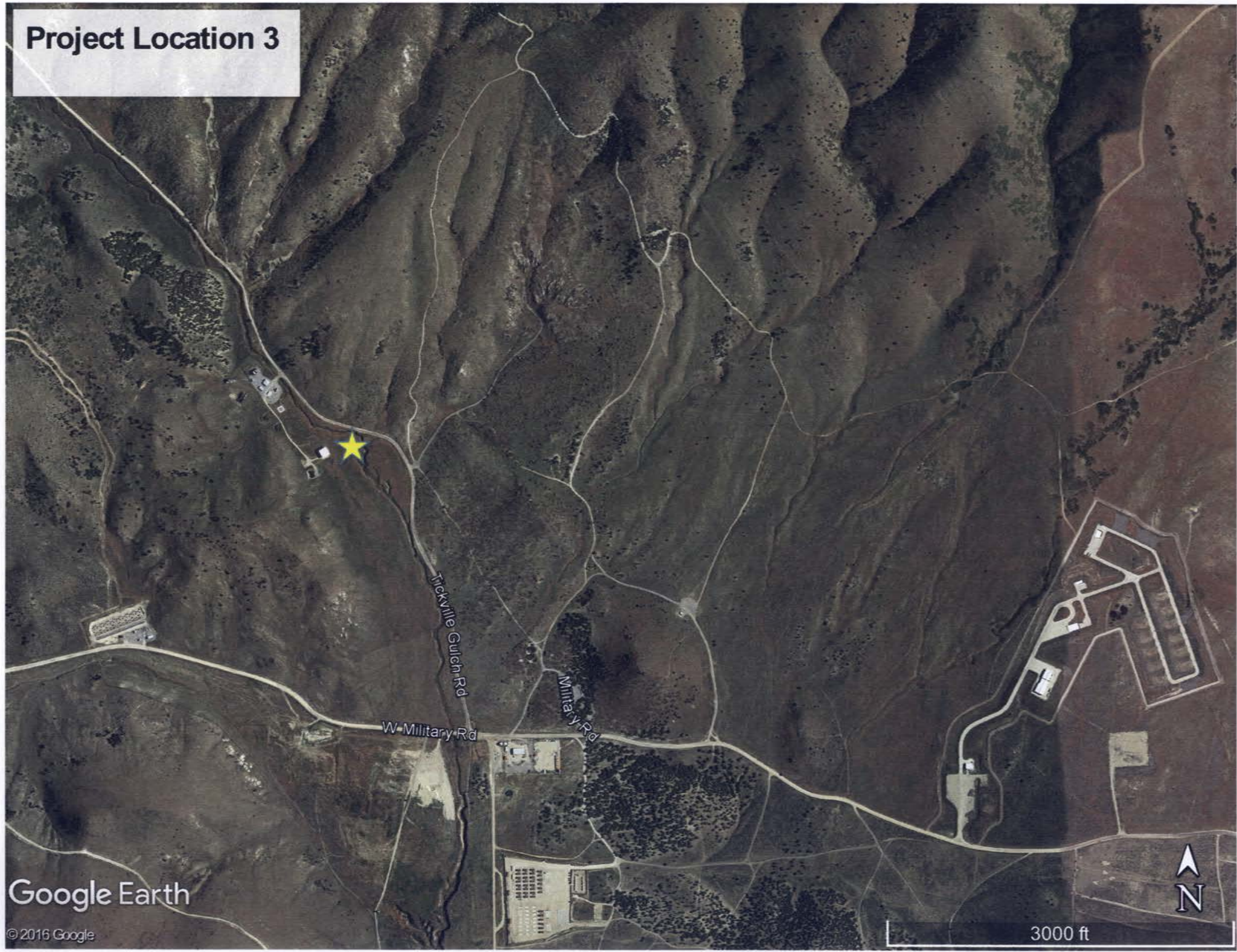


Google Earth

© 2016 Google



Project Location 3



Google Earth

© 2016 Google



3000 ft

Site Map



Google Earth

©2016 Google

200 ft



Based on field reviews, this section of the ephemeral Tickville Gulch does not have any wetlands or identifiable ordinary high water mark. This application is being submitted because of the precedence previously set of permitting actions on Camp Williams.

Project Description and Purpose

This section of Tickville Gulch is prone to erosion and has very steep banks. The bottom channel width is approximately 3 feet wide. The top of bank width ranges from 15 - 20 feet wide. The channel is approximately 12 feet deep.



Figure 1 Existing channel looking downstream

The purpose of this project is to reduce the current erosion risk by stabilizing the banks by widening the channel and flattening the side slopes. Because of the proximity of the channel to the roadway, the channel cannot be stabilized in place. A portion of the channel is only about 6 feet away from the roadway at the closest spot shown with the arrow in the photo above (cut in slightly out of view). Therefore, we are proposing to realign this portion of the channel away from the roadway to stabilize the channel.



Figure 2 Site map showing existing and proposed channels

The proposed channel is a finger of the main channel. This feature is a natural location that requires minimal disturbance of native soils and vegetation to create a realignment location. As seen in the photo below, the shape of this section is much more stable and resembles other stable sections along Tickville Gulch.



Figure 3 Looking upstream at the proposed new channel location. Eroded existing channel to the right.

As the channel length will decrease slightly with the new alignment, and an increase in slope would increase erosion risk, cross vanes will be used as erosion and grade control features. The vanes will step the channel down approximately 7 feet overall to keep the new channel slope flatter than the existing channel slope. Additional riprap will be placed at the confluence point of the old and new channel to reduce the risk of a head cut moving upstream through this area.

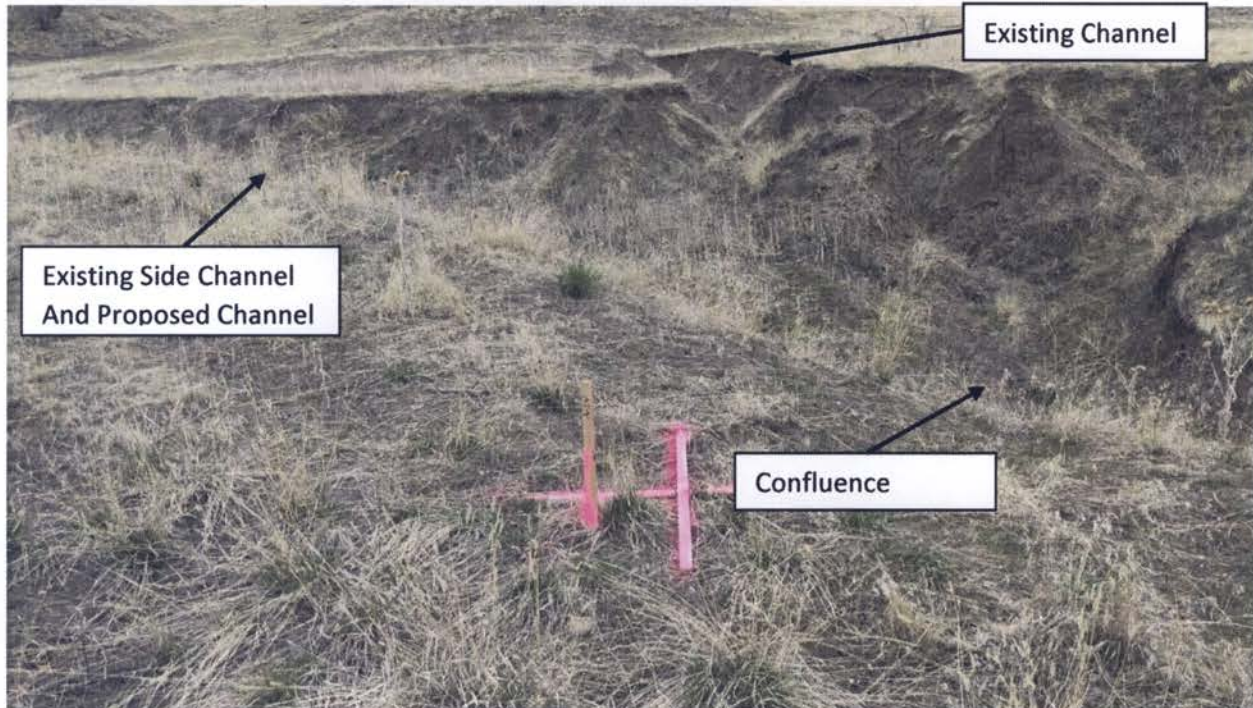


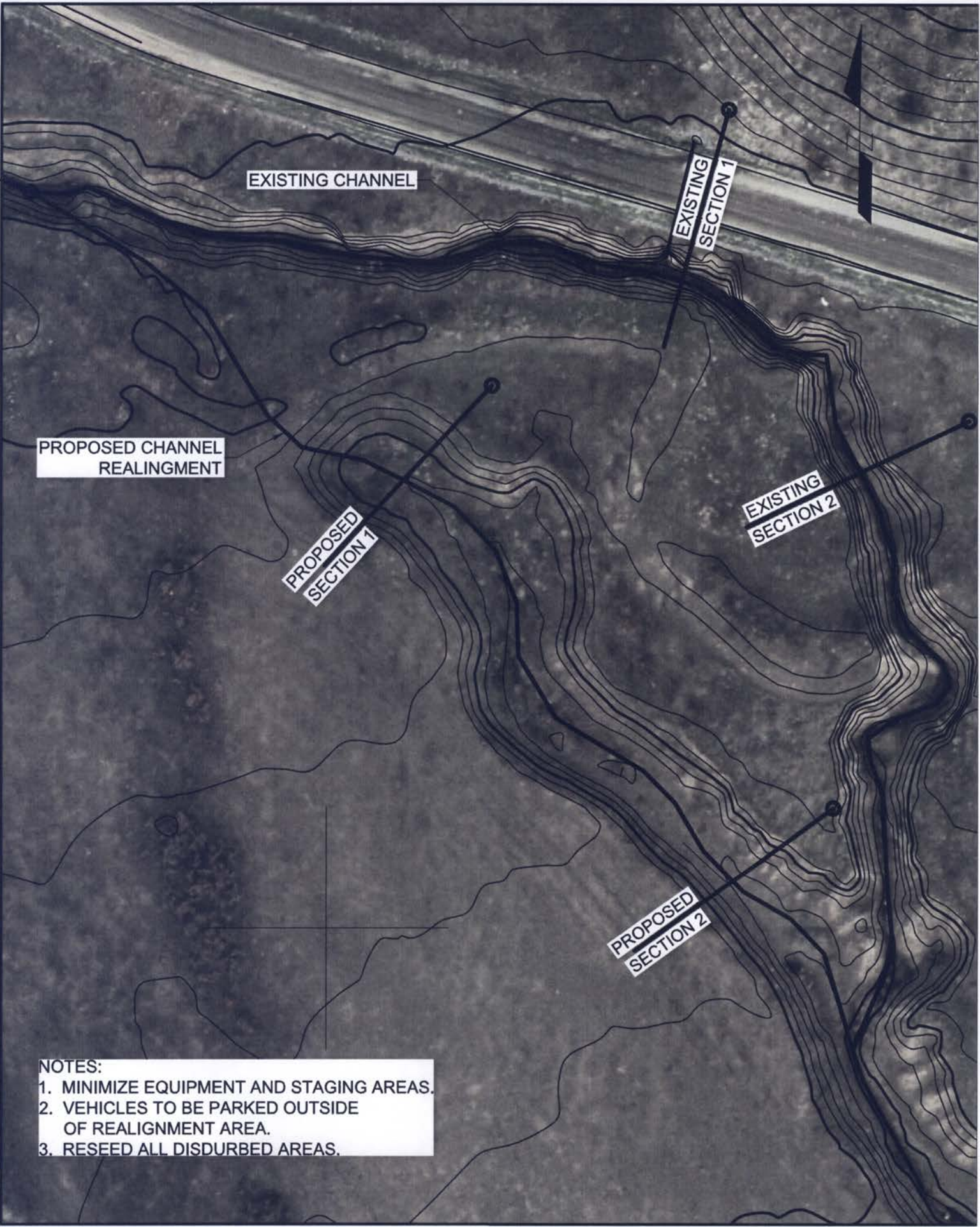
Figure 4 Existing confluence of existing main channel and the proposed realignment

Because of the steep banks and close proximity to the roadway, there is a risk of banks collapsing and causing damage to the roadway. Additionally, the channel is near the clear zone of the road and poses a serious threat to drivers of an errant vehicle. To mitigate these risks, local material excavated from the new channel and from other locations on Camp will be placed in the old channel to abandon it.

Methods to perform construction

The new channel will be prepared using a track hoe and mini excavator to form the channel and place the riprap. As much of the proposed channel will be constructed as possible before blocking the old channel and diverting water to the new channel. Weather forecasts will be monitored for rain and the switch from the old channel to the new will be performed when dry weather is predicted to limit erosion during construction.

All disturbed areas, including the abandoned channel, will be reseeded with native vegetation.



PROPOSED CHANNEL
REALIGNMENT

EXISTING CHANNEL

EXISTING
SECTION 1

PROPOSED
SECTION 1

EXISTING
SECTION 2

PROPOSED
SECTION 2

- NOTES:**
1. MINIMIZE EQUIPMENT AND STAGING AREAS.
 2. VEHICLES TO BE PARKED OUTSIDE OF REALIGNMENT AREA.
 3. RESEED ALL DISBURBED AREAS.

FILE No. 0:12017\FPG-114-1703 Tickville Gulch Realignment\Project Detail\Design\Hydraulics\FG11417_Hydro-DN.dwg - Plan - 4/03/2017 12:18pm, john


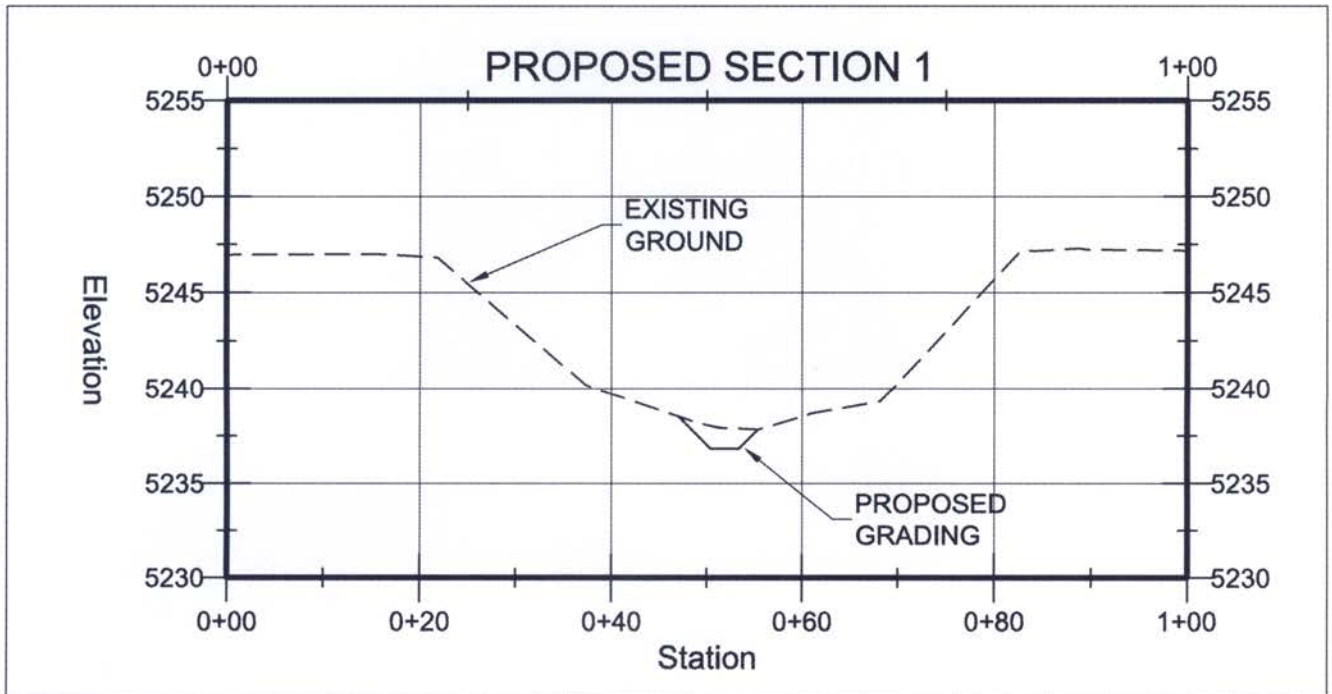
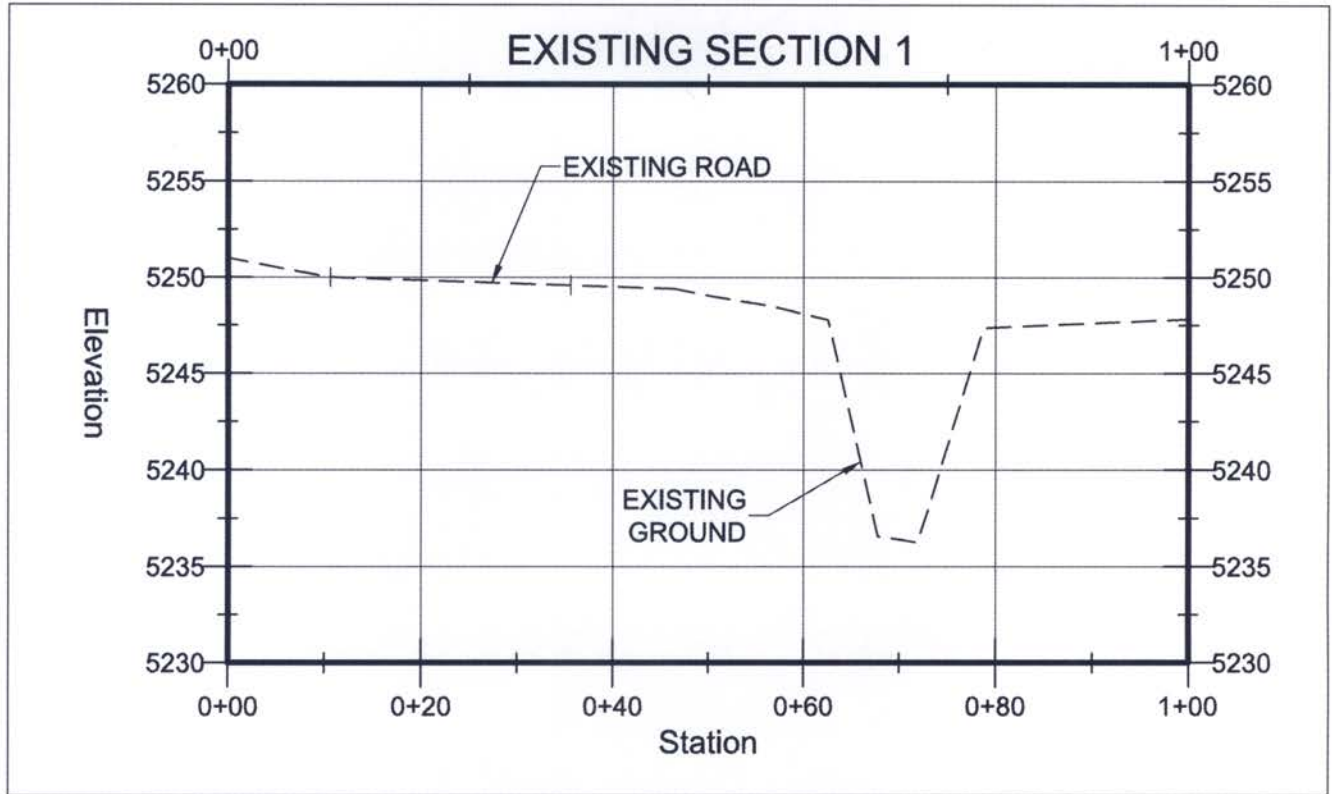
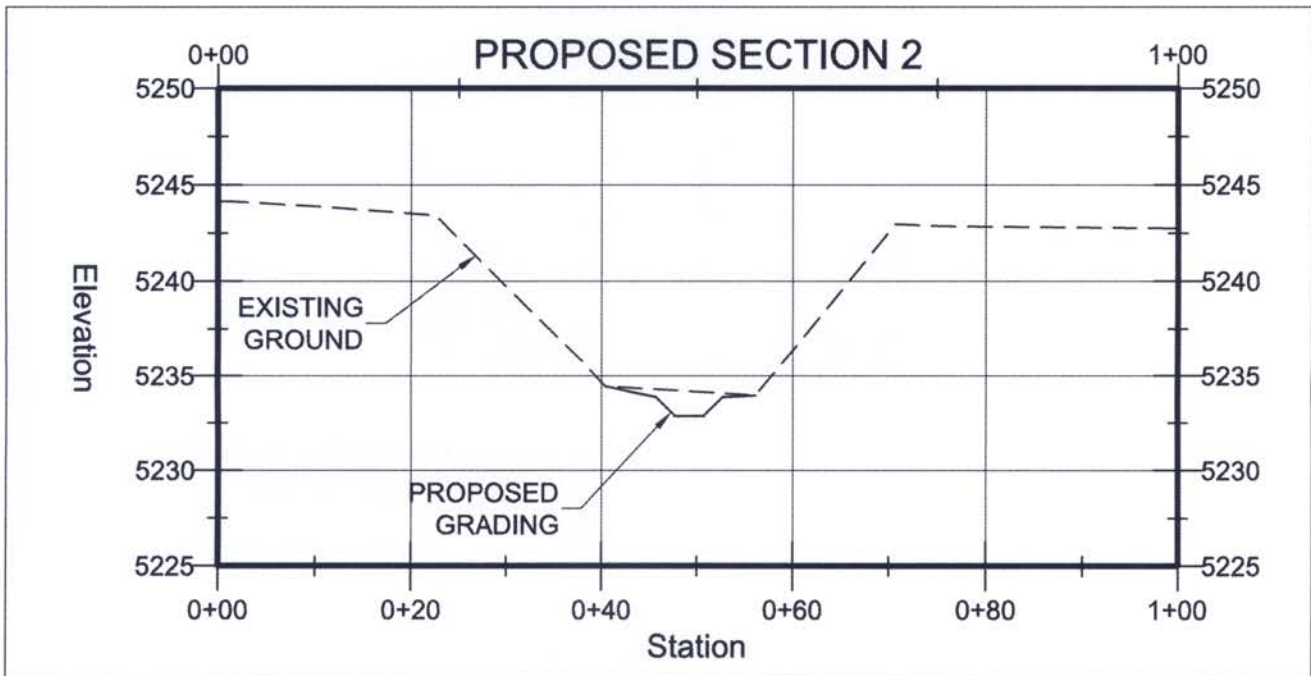
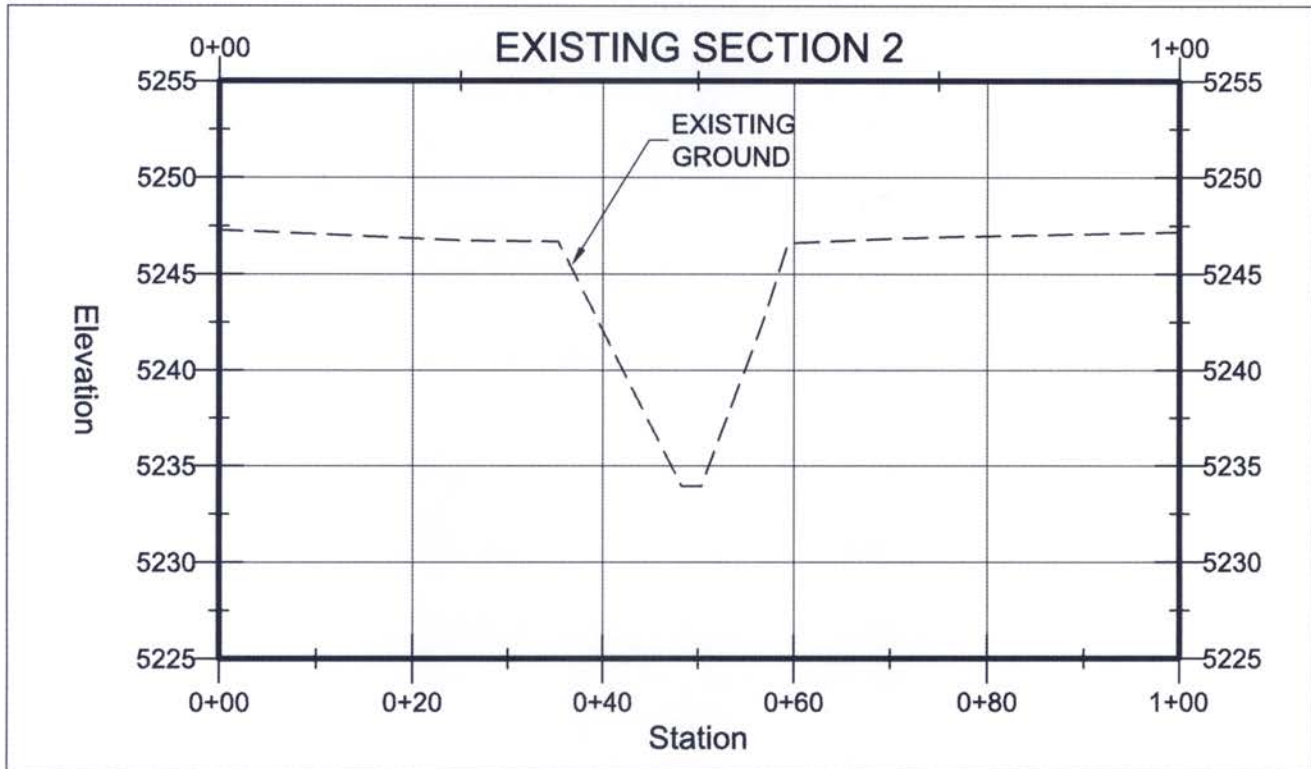
HORROCKS  ENGINEERS	2162 West Grove Parkway Suite 400 Pleasant Grove, UT 84062 (801) 763-5100
	TICKVILLE GULCH REALIGNMENT PLAN

FIGURE #1	SCALE: H: 1"=50'
	DATE: 04/03/2017



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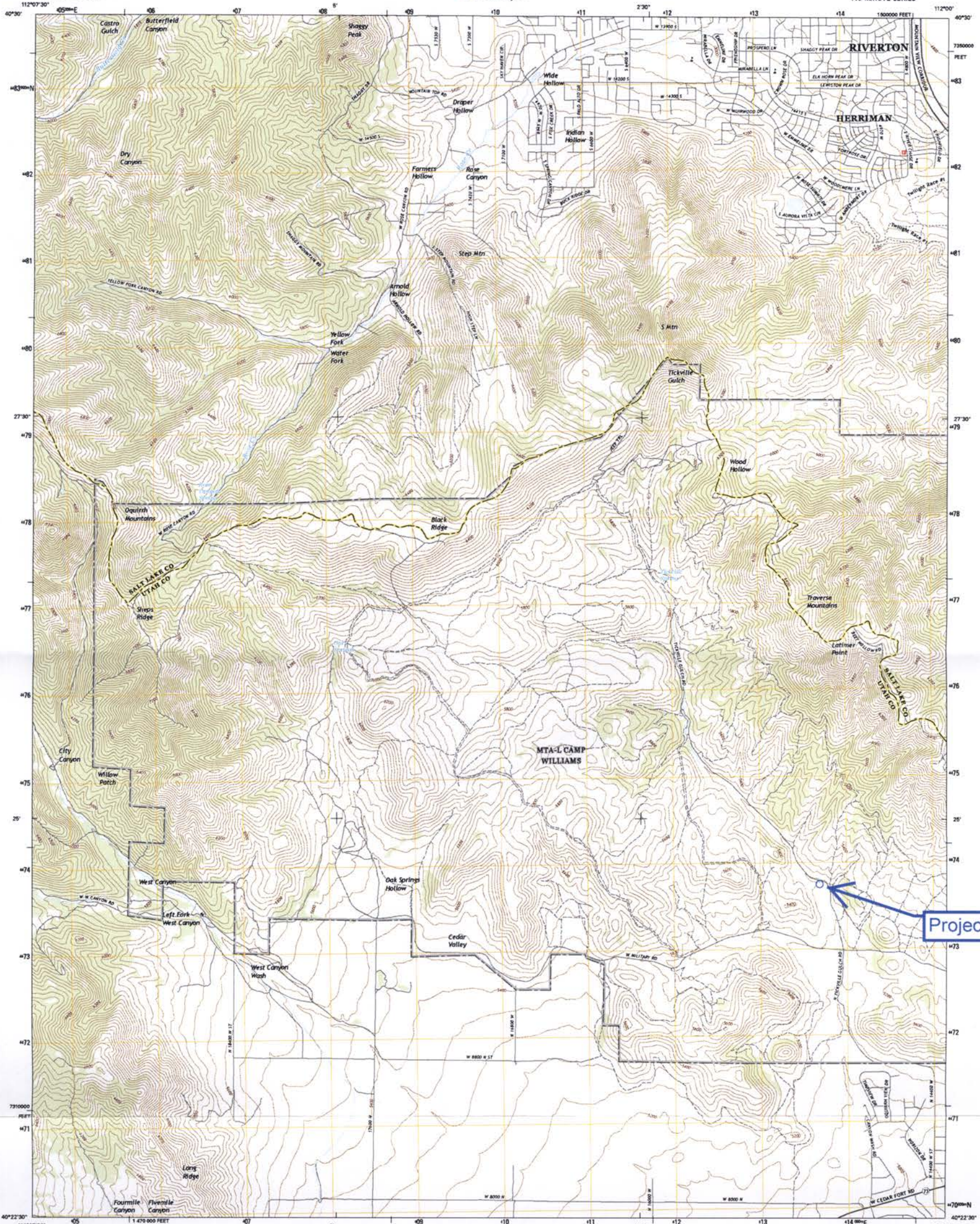




U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY



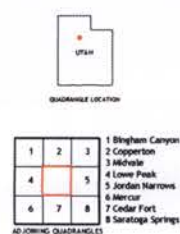
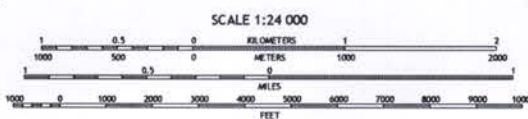
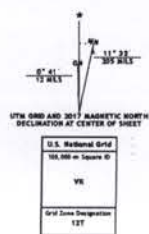
TICKVILLE SPRING QUADRANGLE
UTAH
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84) Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 12T
10 000-foot ticks: Utah Coordinate System of 1983 (central zone)

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery: NMAP, October 2014
Roads: U.S. Census Bureau, 2015 - 2016
Names: GNS, 2016
Hydrography: National Hydrography Dataset, 2014
Contours: National Elevation Dataset, 2002
Boundaries: Multiple sources; see metadata file 1972 - 2016
PAK: Land Survey System, BIA, 2016
Wetlands: FWS National Wetlands Inventory 1977 - 2014



TICKVILLE SPRING, UT
2017