ENVIRONMENTAL STUDY

Project Name: **SR-10; 3200 South to 1150 South, Price** PIN: **13664**

Project No.: **F-0010(75)66** Job/Proj: **54433**

Prepared By: **JUSTIN PETERSON**

For guidance in preparing this environmental study, refer to Chapter 4 of the UDOT Environmental Process Manual of Instruction:

http://www.udot.utah.gov/go/environmental

REQUIRED SIGNATURES

I have reviewed the information presented in this Environmental Study and I hereby attest that the document is complete and the details of the document are correct.

Reviewer (Signature): _____ **Date:** _____

Reviewer (Printed): _____

Firm/UDOT Region: _____

FEDERAL AID PROJECTS

Based upon the information provided in this document and the analysis contained herein, the State has determined that, pursuant to the provisions of 23 CFR 771.117(a), this project has no significant impacts on the environment and that there are no unusual circumstances as described in 23 CFR 771.117(b). As such, the State has determined that the project is categorically excluded from the requirements to prepare an environmental assessment or environmental impact statement under the National Environmental Policy Act per 23 CFR 771.117 d(13). The State has been assigned, and hereby certifies that it has carried out, the responsibility to make this determination pursuant to Chapter 3 of Title 23, United States Code, Section 326 and a Memorandum of Understanding dated June 30, 2014 executed between the FHWA and the State.

Approved: _____ **Date:** _____

UDOT Region Environmental Manager

1. Purpose and Need for Action

The purpose of the project is to improve the roadway and safety along the corridor. Crash data shows an increase in crashes along SR-10 as the corridor narrows from four lanes to two lanes (approximately from 1450 South to 3000 South). This is likely due in part to insufficient width (e.g., no center turn lane and narrow shoulders) for vehicles trying to make necessary movements (i.e., slow down to turn left or right) to and from adjoining properties. A three-lane section with wider shoulders would provide additional lane width, as well as provide separation between opposing traffic and turning vehicles.

There is currently no sidewalk along the corridor; pedestrians walk on the roadway shoulder. Adding sidewalks would improve pedestrian safety. The sight distance on the vertical curve near MP 67.0 is at the minimum standard; reconstructing the vertical curve will improve sight distance and safety. The pavement section along SR-10 is starting to fail due to the large volume of passenger vehicles and truck traffic. A new pavement section is needed to allow the corridor to function to the 20-year design life. The roadway drainage system is also deficient and needs to be upgraded to capture roadway runoff.

See Appendix A for the following reports that support the purpose and need for the proposed action:
- SR-10 Corridor Study, Stake Farm Road to US-6 (Project No. SP-0010(21)64E)
- SR-10 Small Project Development Memorandum

2. Description

The Proposed Action is to reconstruct SR-10 from approximate MP 65.6 to MP 67.5 (see Figure 1 in Appendix A). Reconstruction of SR-10 would include the following elements:
- Widening to accommodate a 14-foot-wide center turn lane, two 12-foot-wide travel lanes (one south bound and one north bound), and 6-foot-wide shoulders in both directions
- Adding curb, gutter, and 6-foot-wide sidewalks on both sides to serve pedestrians
- Replacing granular borrow, untreated base course, and pavement to extend the life of the pavement section
- Adding turn lanes at Roberson Road, 2750 South, and 3000 South
- Replacing driveways and matching elevation of side streets
- Relocating utilities, as needed
- Installing a new drainage system, including pipes, manholes, and inlets to collect roadway runoff
- Extending or replacing pipe and box culverts, and installing new headwalls and rip rap
- Lowering the profile at the vertical curve near MP 67.0 to improve sight distance.

Figure 2 in Appendix A illustrates the proposed typical cross section.

3. Public Hearing/Opportunity for Public Hearing

NO This project could result in public controversy or substantial impacts to adjacent properties, or substantially changes roadway geometry.

NO There are significant social, economic, environmental or other effects. If YES, a Categorical Exclusion is not applicable. Consult with UDOT Central Environmental Services.

NO UDOT/FHWA has determined that a public hearing is in the public interest.

If the answer to ANY of the above questions is YES, a public hearing or opportunity for a public hearing is required (attach documentation identifying date and location of hearing, summary of comments, and responses to substantial comments, or include certification of opportunity for hearing.)

The following types of public involvement have been provided:

NO Public Hearing in accordance with state and federal procedures

NO Opportunity for Public Hearing

YES Open House

NO Other:

YES Documentation is attached identifying the date and location of hearing, summary of comments, and responses to substantial comments; or the Certification of Opportunity for a Hearing is attached.

Comments: Public involvement efforts included meeting with impacted property owners, providing periodic project updates to the Carbon County Commission, creating and maintaining a project website, sending a postcard to property owners and stakeholders, and holding a public open house on November 17, 2016, at the Utah State Eastern Price Campus. See Appendix B for public involvement summary [currently being drafted as of 1/3/17].

4. Right-of-Way

YES Acquisition of Right-of-Way is required.

NO The right-of-way required is significant because of its size, location, use, or relationship to remaining property and abutting properties. (If the right-of-way required is significant, the project does not qualify as a Categorical Exclusion.)

Comments: The project would require 53 partial acquisitions totaling approximately 9,590.7 square feet (0.22 acres). Temporary constuction easements would affect 72 parcels and total approximately 171,841.8 square feet (3.9 acres). The project could also result in the potential full acquisition of 11 parcels (10 residential and one commercial) totaling approximately 13.23 acres. All 10 residences could potentially be relocated. Although Parcel 02-1696-0003 would be fully acquired, it would not result in the relocation of the vacant gas station unless it becomes occupied prior to construction. See the right-of-way acquisition summary table in Appendix C for more details.

5. Cultural

According to the UDOT Region NHPA/NEPA Specialist and/or the Architectural Historian, the Finding of Effect for the project is one of the following:

NO No historic properties affected

NO No adverse effect

YES Adverse effect

Project documentation for determination of eligibility and finding of effect consists of one of the following and is attached:

NO Memo from UDOT Region NEPA/NHPA Specialist and/or Architectural Historian stating a finding of No Historic Properties Affected.

YES SHPO concurrence with the Determinations of Eligibility and Finding of Effect AND memo from UDOT Region NEPA/NHPA Specialist and/or Architectural Historian stating a finding of No Adverse Effect or Adverse Effect.

YES Have letters for Native American Consultation been sent? Attach letters.

YES Have letters for federal and state agencies, CLGs, historical societies, etc. been sent? If so attach letters.

YES Do the impacts to historic properties require mitigation?

If YES, a signed Memorandum of Agreement (MOA) is attached.

Comments: The project could result in an adverse effect to nine eligible properties (2010 S., 2044 S., 2066 S., 2067 S., 2088 S., 2188 S., 2198 S., 2305 S., and 2433 S. Highway 10) and no adverse effect to 17 eligible properties. The archaeological and architectural survey reports, DOEFOE and amended DOEFOE, Native Amercian consultation letters, CLG letters, and correspondence with the ACHP are attached in Appendix D. The signed MOA between UDOT and USHPO requiring documentation of eligilbe historic properties prior to removal of the building is also included in Appendix D.

6. Paleontological

NO This project is one of the 16 types of projects listed in Stipulation III of the Memorandum of Understanding (MOU) with the Utah Geological Survey (UGS) that has no effect on paleontological resources and does not require notification to the UGS. If YES, a memo from the UDOT Region NEPA/NHPA Specialist is attached (can be included in cultural memo).

For all other projects, the UGS has been notified and has responded with the following (attach UGS letter and memo from the UDOT Region NEPA/NHPA Specialist):

YES There are no known paleontological localities in the area of potential effects and the formations in the project area have a low potential for containing fossil remains (Class 1 or 2).

NO Fossil-bearing formations (Class 3-5) and/or known paleontological localities are present in the area of potential effects, but the UDOT Region NEPA/NHPA Specialist (or paleontologist) has determined that they will not be affected by the project.

NO Fossil-bearing formations (Class 3-5) and/or known paleontological localities are present in the area of potential effects and may be affected by construction activities. A survey and/or monitoring by a qualified paleontologist is required.

Comments: Utah Geological Survey letter is attached to the cultural report (see attached Literature Review and Field Verication of Utah Department of Transportation's State Route 10 Road Widening Between MP 65.27 and MP 67.5; South Price to Ridge Road, Carbon County, Utah in Appendix D).

7. Threatened, Endangered, or Candidate Species

For Federally or State Funded Projects:

YES Project will have **"no effect"** to T&E species, or their critical habitats, protected under the Endangered Species Act. If YES, attach **"no effect"** memo or review/comments (in the case of local government projects) from UDOT's Wildlife Biologist.

NO Project **"may affect, but is not likely to adversely affect"** T&E species, or their critical habitats, protected under the Endangered Species Act. If YES, attach BA and "concurrence" from the U.S. Fish and Wildlife Services (USFWS). List all mitigation/conservation measures.

NO Project **"may affect, and is likely to adversely affect"** threatened and endangered species, or their critical habitats, protected under the Endangered Species Act. If YES, attach BA and USFWS BO. List all mitigation/conservation measures.

NO The USFWS has issued a **"jeopardy"** opinion regarding this project. If YES, attach BA and BO as above. This project cannot go forward without being reconsidered.

Comments: Clearance memo from UDOT Wildlife Biologist is attached in Appendix E.

8. Wildlife

NO Project has the potential to affect state-sensitive species, important wildlife habitat, big game migration routes, habitat connectivity, migratory birds, or fish spawning habitat or fish passage.

Memo from UDOT Wildlife Biologist is attached.

Comments: Clearance memo from UDOT Wildlife Biologist is attached in Appendix E.

9. Invasive Species

If the project involves earthwork, grading or landscaping, there is potential to introduce or spread invasive weed species.

YES Based upon location, this project has the potential to introduce or spread invasive species included on the noxious weed list of the State of Utah and the county noxious weed lists.

10. Noise

Projects that may affect noise levels to adjacent receptors include changes in roadway alignment, roadway widening and the addition of traffic lanes.

YES This project has the potential to increase noise to adjacent receptors.

YES A noise study is attached.

Comments: The noise study revealed there would be 15 residential properties impacted by the project under the worst-case traffic volumes. Due to the number of driveways connecting to SR-10, it is not possible to construct a noise barrier(s) that can provide noise mitigation for the 15 impacted properties as well as allow for property access. Gaps in a noise wall render the barrier ineffective. For this reason, no barriers were investigated and noise mitigation is neither feasible nor reasonable for this project. See noise report in Appendix F.

11. Wetlands, Water Resources, Storm Water, and Floodplains

Wetlands and Water Resources

NO The project is a type that does not have the potential to affect or cross Waters of the United States. If YES, no concurrence letter is needed.

YES Project affects waters of the United States (e.g. wetlands, mudflats, lakes, or perennial or ephemeral streams). If NO, have a UDOT Landscape Architect provide a concurrence letter stating they agree with the determination. In order to indicate "NO" on this question, answers to the following statements must also be "NO".

- **YES** Project impacts perennial, intermittent, or ephemeral streams that have a riparian vegetation component. If YES, a Programmatic General Permit 40 (PGP40), also known as a Stream Alteration Permit, from the Utah Division of Water Rights will be required.
- **NO** Project exceeds the impact limitations for streams or washes indentified in the PGP40. If YES, both a PGP40 and a separate Department of the Army permit will be required.
- **NO** Project impacts an ephemeral wash not captured under PGP40 that has an ordinary high water mark (OHWM) with a connected flow to a downstream Traditional Navigable Water and the impact below the OHWM exceeds 1/10 of an acre per crossing. If YES, a Department of the Army permit will be required.
- **YES** Project impacts a perennial or intermittent stream below the OHWM less than 1/10 of an acre per crossing. If YES, notification to the U.S. Army Corps of Engineers will be required.
- **NO** Project impacts navigable waters of the United States (Lake Powell, Flaming Gorge Reservoir, Bear Lake, Green River - mouth to 20 miles above Green River Station, Colorado River - mouth of Castle Creek to Cataract Canyon - 4.5 miles below mouth of Green River) below the OHWN. If YES, a Section 10 Department of the Army permit will be required.
- **YES** Project impacts jurisdictional wetlands. If YES, a Department of Army Nationwide Permit (NWP) will be required for wetland impacts under the 1/2 acre threshold; a Letter of Permission (LOP) will be required for wetland impacts between 1/2 and 1 acre; an Individual Permit (IP) will be required for impacts greater than 1 acre.
- **NO** Project impacts non-jurisdictional wetlands. If YES, wetland mitigation may still be required under the federal policy of "no net loss." Consult UDOT Environmental Section.

Storm Water Runoff

YES Project disturbs 1 acre or more of ground surface.

If YES, a UPDES Storm Water Discharge Permit for Construction Activities is required from the Utah Division of Water Quality.

Floodplains

YES This project requires new construction or alteration of existing structures within the FEMA designated 100-year flood plain.

If YES, a Development Permit is required from the local permit official.

Comments: Wetlands were delineated and documented in the wetland delineation report attached in Appendix G. A preliminary jurisdictional determination was obtained on June 2, 2016 (see Appendix G). The project would impact approximately 0.06 acres of wetlands (0.04 acres at Drunkards Wash and 0.02 at the unnamed wash). The project would cross 100-year flood plains that have a one percent chance of flooding in a given year (i.e., experiences flooding every 100 years) between mileposts 66.4 and 66.5 (unnamed wash) and mileposts 67.1 and 67.2 (Drunkards Wash) (see FEMA flood map in Appendix G).

12. Hazardous Waste

NO Has a visual inspection of the project area found substances that may be hazardous to human health and/or the environment?

YES This project involves excavation beyond or below the existing roadway footprint.

If YES to either question 1 or 2, then site investigations and coordination with DEQ may be necessary.

Comments: No hazardous waste sites were identified in the project area based on a search of EPA's EnviroMapper (http://www.epa.gov/emefdata/em4ef.home) and the Utah DEQ's Interactive Map (http://enviro.deq.utah.gov/) on 04/19/16. All underground storage tanks have been removed. One leaking underground storage tank located at 4201 SR-10 was properly remediated and the Utah Divison of Environmental Response and Remediation recommended that no further action needed to be taken.

13. Prime, Unique, Statewide, or Locally Important Farmland

Projects in areas whose land use maps indicate no current or future farming activities would not usually affect farmlands.

NO This project MAY affect Prime, Unique, Statewide, or Locally Important Farmlands.

N/A The Natural Resource Conservation Service letter and Form AD1006 are attached.

Comments: Land adjacent to the right-of-way is mostly developed. Parcels adjacent to the project are zoned for various residential and commercial uses based on review of the Carbon County interactive zoning map (https://maps.carbon.utah.gov) on 4/19/16.

14. Air Quality

YES This project has the potential to increase particulate matter due to construction activities.

NO This project adds or alters roadway capacity or will result in increased traffic volumes at signalized intersections.

If YES, the Air Quality Supplement is attached.

15. Relocations

YES There may be relocations of residences or businesses as a result of this project.

Comments: The project could result in the relocation of 10 residences located at 2044 S., 2066 S., 2067 S., 2078 S., 2088 S., 2188 S., 2198 S., 2305 S., 2433 S., and 2477 S. Highway 10. The vacant commercial building at 2010 S. Highway 10 was a gas station and would not be relocated unless it becomes occupied prior to construction. See the right-of-way acquisition summary table in Appendix C for more details.

16. Land Use/Urban Policy

NO This project may affect land use or urban policy.

17. Section 4(f) Properties

YES Section 4(f) properties are impacted.

YES An Individual Section 4(f) Evaluation AND written concurrence from UDOT Environmental Services on the Individual Section 4(f) determination is attached.

NO A Programmatic Section 4(f) Evaluation AND written concurrence from UDOT Environmental Services on the Programmatic Section 4(f) determination is attached.

NO The 4(f) property(s) is an historic property and the impact is considered **de minimis**.

N/A SHPO has concurred in writing on UDOT's **"no adverse effect"** determination to historic properties and has been notified of the intent to make a **de minimis** finding. Attach letter to SHPO and **de minimis** agreement letter.

NO The 4(f) property(s) is a park, recreational area, wildlife or waterfowl refuge and the impact is considered **de minimis**.

N/A The official(s) with jurisdiction have concurred, in writing, that the project will **"not adversely affect"** the activities, features, and attributes that qualify the resource for protection under Section 4(f) and have been notified of the intent to make the **de minimis** impact finding. Letters are attached.

N/A The project sponsor has provided public notice and opportunity for public review and comment. Describe public involvement efforts in the comments below.

N/A Written concurrence from UDOT Environmental Services is attached.

Comments: The individual Secton 4(f) Evaluation evaluated the Proposed Action, Widen East Alternative, and Widen West Alternative. The evaluation concluded the Proposed Action has the least overall harm. See the individual Section 4(f) Evaluation in Appendix H.

18. Other Environmental Factors Considered

This Project, except as noted and explained in attachments, will have no disproportionate, serious or lasting effect on the following:

NO Visual

NO Social/Economic

NO Title VI and/or Environmental Justice

NO Natural Resources

NO Construction

NO Energy

NO Geology/Soils

NO Wild/Scenic Rivers

NO Ecology

19. Conclusion

NO This project may have substantial controversy or significant impacts.

MITIGATION COMMITMENTS

CONSTRUCTION		Responsible
Air Quality	Requirements outlined in Standard Specification 01572 titled "Dust Control and Watering" will be followed.	Contractor
Cultural	UDOT Standard Spec 01355, Parts 3.7 and 3.8	Contractor

PRELIMINARY ENGINEERING		Responsible
Floodplains	The project will require new construction or alteration of existing structures within the FEMA 100-year flood plain. Therefore a flood plain development permit is required from the local community's permit official prior to construction.	Udot Region Environmental
Relocations	Property Owners will be compensated according to the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act, as amended.	Udot Right Of Way
Water Quality	The project will disturb 1 acre or more of ground surface. Therefore, a storm water pollution prevention plan (SWPPP) must be included in the plans.	Udot Region Environmental
Water Quality 2	UPDES Permit from the Division of Water Quality must be obtained prior to construction.	Contractor

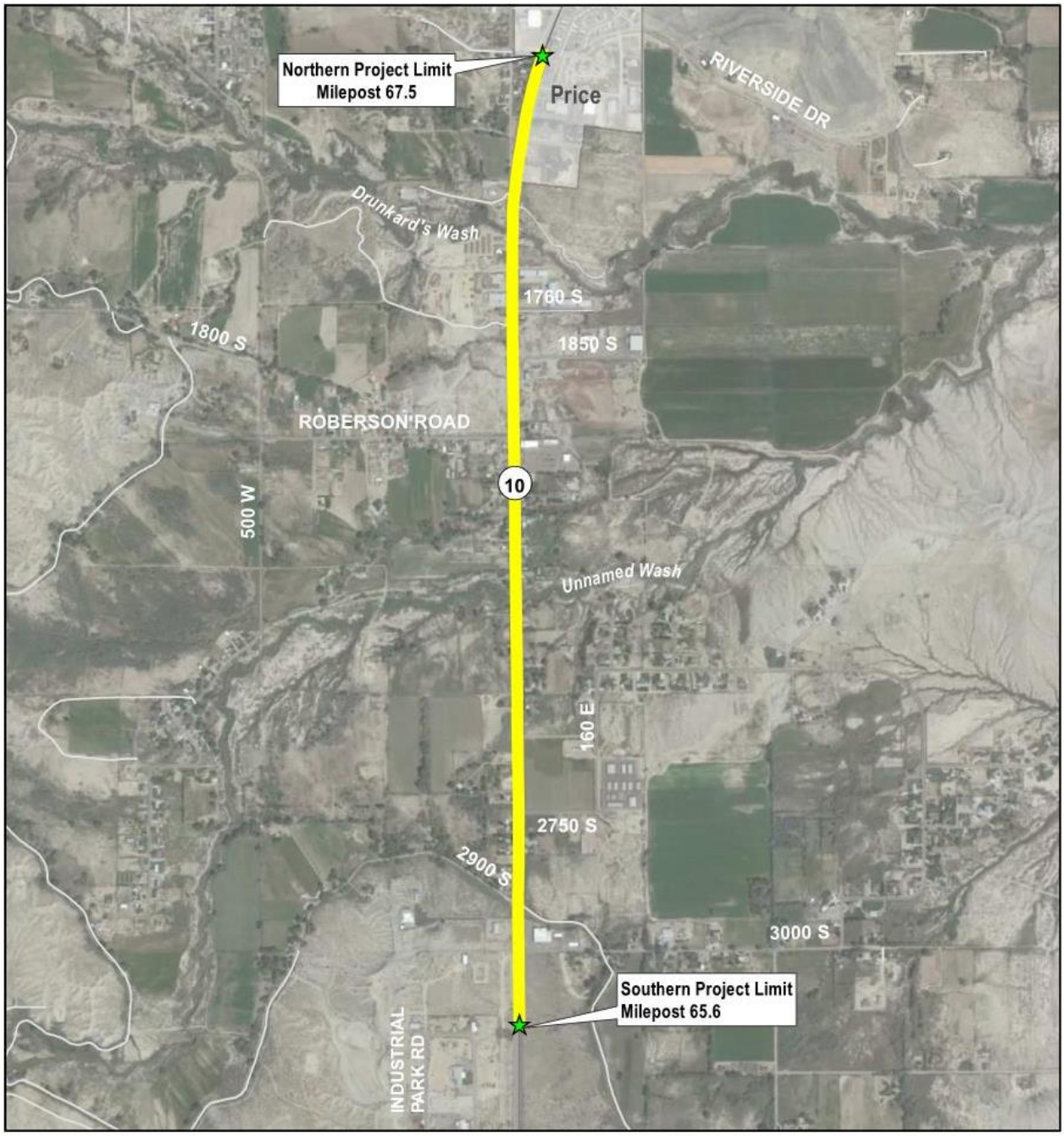
RIGHT OF WAY		Responsible
Cultural	UDOT shall be responsible for the documentation of the following buildings in Price, Utah - ?2010 S. Highway 10 - 2044 S. Highway 10 - 2066 S. Highway 10 - 2067 S. Highway 10 - 2088 S. Highway 10 - ?2188 S. Highway 10 - 2198 S. Highway 10 - 2305 S. Highway 10 - 2433 S. Highway 10 The buildings will be documented according to the Utah State Intensive Level Survey Standards (ILS) as required by SHPO. Documentation will include a completed ILS Historic Site Forms, which will be based partly on title searches and obituary research, photographs of the exterior of the buildings, photographs burned onto a gold CD, a sketch map of the property layout, aerial photograph maps indicating the location of the buildings, and a U.S. Geological Survey may (scale 1:24,000) indicating the location of the buildings.	Udot Architectural Historian

Appendix A

Contents:

Figure 1: Project Area
Figure 2: Typical Cross Section
SR-10 Corridor Study, Stake Farm Road to US-6 (Project No. SP-0010(21)64E)
SR-10 Small Project Development Memorandum

Figure 1: Project Area



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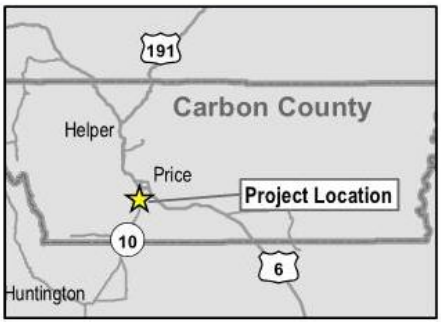
PIN: 13664



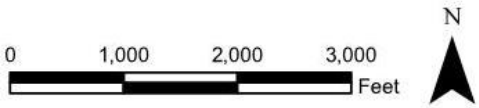
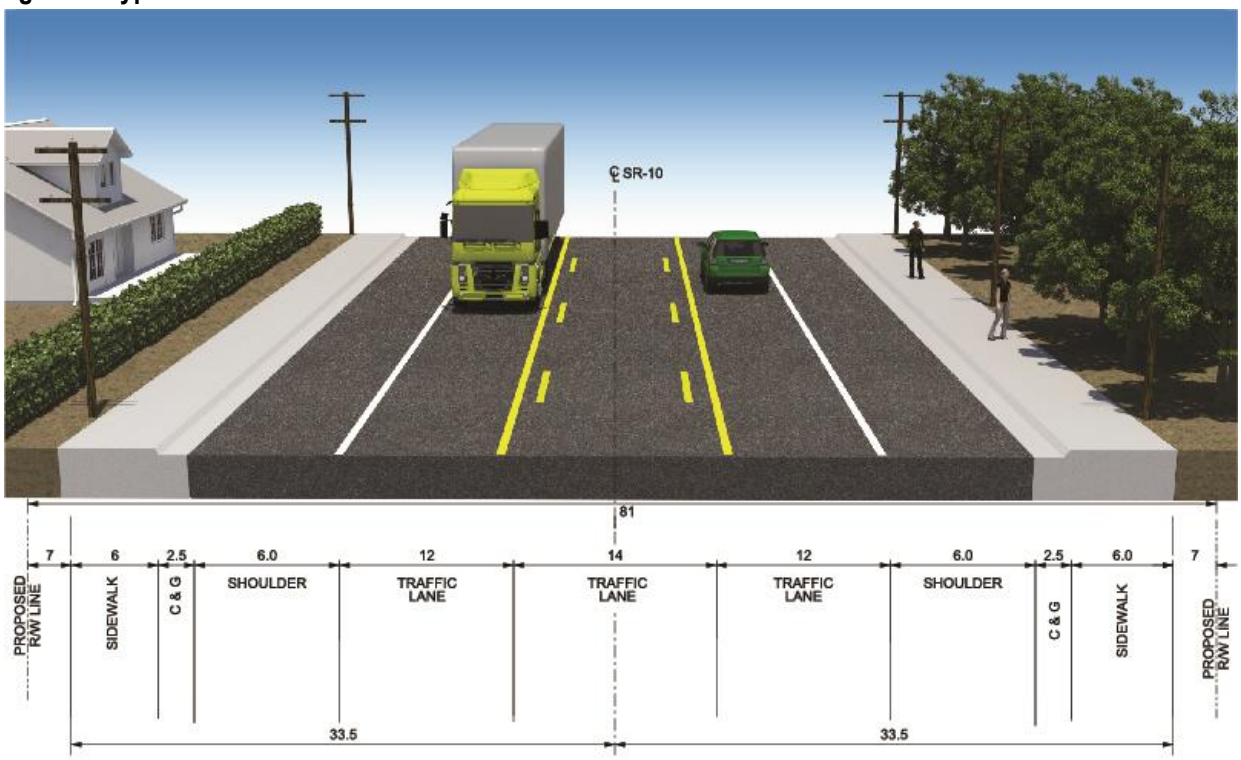


Figure 2: Typical Cross Section



SR-10 Corridor Study, Stake Farm Road to US-6

Project No. SP-0010(21)64E

Chapter 1—Purpose and Need for Action & Chapter 2—Alternatives

Prepared For:
The Utah Department of Transportation (UDOT)
Region 4

Prepared By:
H.W. Lochner, Inc.

Submitted:
November, 2004

Revised:
March, 2005

UDOT CONNECTING COMMUNITIES

SR 10

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Chapter 1 - Purpose and Need for Action Introduction

In the 1880's, State Road (SR) 10, originally known as "White River Road", provided access to the area of Emery. By 1932, after some minor upgrades due to increased vehicular traffic in the county, this gravel road became partially paved from Price to Huntington. State and Federal relief programs employed local men to pave the roadway. In 1959 the State Road Commission of Utah redesigned and built SR-10 on an alignment more or less paralleling the former route.

SR-10 is a 68-mile corridor connecting US-6 in Price, Carbon County, Utah to Huntington and Castle Dale in Emery County, and to I-70 in Sevier County, Utah. This corridor is the main north-south transportation route for commuters and industries in Carbon and Emery Counties. It also serves as a link between US-6 and I-70 for recreational travelers and communities along the corridor.

As shown in **Figure 1, Appendix**, SR-10 and US-6 are the only regional transportation corridors connecting the Price area to I-70, and each serves a separate travel corridor between Price and I-70. SR-10 connects Price with I-70 in a southwesterly direction from Price while US-6 provides this connection in a southeasterly direction. Minor paved or unimproved roads provide connections between these corridors. However, SR-10 is the only major transportation corridor to serve the Carbon County and the Castle Dale area of Emery County.

1.1 Project Location & Key Characteristics

The last major construction activities on the 1959 alignment were completed in 1979 and consisted of reconstruction and widening on the current alignment. Currently, the Utah Department of Transportation (UDOT) is reviewing the existing roadway conditions along the SR-10 corridor. The extent of this review includes safety conditions and geometrics, analysis of the traffic patterns for existing and future conditions, and evaluation of the context of the area (including economics and environmental issues).

The north-south limits of the study area extend from the Stake Farm Road to US-6 (**see Figure 2, Appendix**). The east-west limits extend approximately 2 miles west and 2 miles east from the junction of SR-10 and US-6 for the 5 mile length of the project.

Travel usage in the corridor has been increasing at a rate of 4.3% per year, based on historical traffic growth rates. This rate of traffic growth on SR-10 has been relatively constant since 1988. As the only major transportation corridor in the region, SR-10 transports people, goods and services into and out of the area. Typical users of the corridor consist of:

- Industry employees and services
- Businesses, their employees and services
- Commuters
- Recreational users
- Residential users

Industries using the SR-10 corridor are associated with the production of: coal, power, and natural gas. Coal is transported via tandem multi-axial semi-trucks to the power plants which produce power for Utah and other western states. In addition to the coal trucks, employees of these industries commute on the corridor. There are also several businesses located directly along the corridor; and approximately six of Carbon County's 30 largest employers are located along or use SR-10 for access to their businesses (Utah Department of Workforce Services, Workforce Information, September 2003). The corridor is also used as a commuter route between Price and the Castle Dale area. SR-10 is also used by recreational users traveling to the San Rafael Swell, Cleveland Dinosaur Quarry, Manti-LaSal National Forest, Skyline Drive, Huntington Lake State Park, Millsite State Park and other sites within the region. The corridor provides direct access to 55 homes within the corridor and indirect access via local roads to several housing developments adjacent to the corridor. The mix in traffic between local residents and businesses, commuters, and truckers, etc., has created access problems. As volumes continue to increase, safe access to adjacent properties and businesses will become more difficult.

SR-10 is the main corridor between the two largest population centers in this region (Carbon and Emery County). Price is the largest city in the region of Carbon and Emery Counties. Price's population of approximately 8,200 people accounts for 42 percent of the population of Carbon County as shown in **Table 1**. Further south, Huntington and Castle Dale are the largest municipalities in Emery County, accounting for 35 percent of the Emery County population.

Table 1: Regional Population

Place	2003 Population	% of County
Carbon County	19,764	---
Price	8,229	42%
Emery County	10,651	---
Huntington	2,087	20%
Castle Dale	1,618	15%

Source: Utah Governor's Office of Planning & Budget; Economic & Planning Systems

1.2 Transportation Planning

UDOT has previously conducted various studies and construction projects on SR-10 to improve capacity and safety and meet the needs of the corridor. Two corridor studies have been previously completed on SR-10 which relate to this project study area. These include:

- "SR-10 – It's Your Highway", June 2002, UDOT Region 4 Corridor study – Region 4 Construction Division Unit 4752.

- West Side Transportation Planning Project, April 2000, Southeastern Utah Association of Local Governments (SEUALG).

UDOT Corridor Study
The purpose of the 2002 UDOT Corridor Study was to characterize the built and natural environment of the entire SR-10 corridor, and describe the function and needs of the users. The report provided information about the environment of the corridor, which included landownership, rare/sensitive/threatened and endangered species, wildlife, industries, utilities, traffic patterns, traffic safety (crashes), historic/cultural, and public comments.

Information from the UDOT Corridor study was used as a basis to help understand the needs of the corridor and develop the more in-depth analysis of those needs as summarized in this chapter.

West Side Transportation Planning Project
The purpose of the 2000 West Side Transportation Planning Project was "to examine the alternatives available for developing a safe and efficient system of collector and local streets in the southwestern unincorporated area of Carbon County, which will minimize or eliminate conflicts between residential and other traffic, and which will accommodate the increased travel demand generated by anticipated growth in the area." (Project Mission Statement, p.6; *Carbon County West Side Transportation Planning Project Report to Planning and Zoning Commission, SEUALG April, 2000)*

This study provided an analysis of different alternatives to address the transportation needs of this area. An Advisory Committee, made up of community leaders and residents, established 21 criteria to evaluate the range of alternatives. The report identified 5 Alternatives: No-Build, Residential Collector, Belt Route, Dual Alternative, and a SR-10 Rehabilitation Alternative. "The results of the benefit/cost analysis and the construction cost estimates; the logical conclusion is that the Route 10 Rehabilitation alternative will provide the greatest overall potential benefits with the lowest associated costs. However, this alternative would involve the displacement of the greatest number of homes and businesses and could face considerable public opposition. The County may find implementation of this alternative politically infeasible. Accordingly, the Residential Collector alternative would be a suitable second choice. The findings of this study indicate that the Belt Route and the Dual alternatives would not provide significant benefits, relative to the costs they would impose. Unless new development in the study area greatly exceeds the levels projected in this study, the Belt Route and Dual alternatives should not be pursued." (Recommended Alternative, p.41; *Carbon County West Side Transportation Planning Project Report to Planning and Zoning Commission, SEUALG April, 2000*)

Current Construction and Planned Projects
Based on the information generated in these previous studies, UDOT is now assessing the critical needs of SR-10 between Stake Farm Road and US-6 (Mile Post (MP) 62.8 to

67.8). Several transportation system needs have been identified in this segment of SR-10 and are outlined in Section 1.4.

The following is a list of projects recently completed, currently being constructed or planned for construction.

Current or recently completed UDOT projects along SR-10:

- SR-10, SR-122 to Stake Farm Road (MP 61 to 62.8 – adjoining the current project study area to the south): Constructed acceleration and deceleration lanes at the intersection of SR-10 and SR-122 and widened shoulders between SR-122 and Stake Farm Road.
- SR-10, Huntington to Poison Springs Bench (MP 48.4 to 53.4) – Widen SR-10 from 2 lanes to 4 lanes (2 of which are climbing lanes) for 4 mile section of SR-10.
- SR-10, (MP 0 to 10) - Shoulder widening and overlay
- SR-10 at Muddy Creek – Bridge replacement
- SR-10, (Milepost 38) – Improve 5 leg intersection in Castle Dale.
- SR-10, Resurfacing projects in Huntington, Castle Dale, and Ferron
- SR-10, (Milepost 66.5) Improve vertical curve at 2000 South in Price (inside current project corridor study area)

Planned SR-10 Projects:

- Climbing lane south of Emery – Quitchapha Hill
- Interchange at MP 9 – Improve access for coal mine west of SR-10
- SR-10, Emery to Ferron – Concept development

Other Transportation Improvements in Area:

- US-31 – Resurfacing
- Ridge Road – Reconstruction and overlay
- Central Utah Rail Project – proposed 43 miles of new rail in the Sevier Valley. Purpose on the new rail is to provide a more direct connection for shippers, primarily the SUFCO coal mine. The SUFCO coal trucks do not use SR-10 so the new rail line would not relieve any of the current coal truck traffic on SR-10.

1.3 Description of the Proposed Action

The proposed action will involve consideration to safety, capacity, access, and other improvements for the purpose of addressing current and projected deficiencies in the project study area.

The southern terminus of the proposed action is located at Stake Farm Road. This termini ties physically and functionally into corridor improvements previously constructed by UDOT south of Stake Farm Road. However, the traffic analysis for this

section will extend south of Stake Farm Road to the next major intersection, SR-122. The northern terminus of the proposed action will be at the interchange at US-6.

There are twelve major intersections along the five-mile project corridor, plus numerous driveway accesses for residences and businesses. A major intersection is Ridge Road which is heavily used by coal trucks traveling to and from the Savage/Rail Co coal load-out facility; and by employees and delivery trucks of other commercial businesses located along Ridge Road. Other major intersections include: Stake Farm Road, 3450 South, 3350 South, 3000 South and the access to UPS, 2750 South, 2000 South, 1250 South, eastbound US-6 ramps, and westbound US-6 ramps.

A cross section of those within the project limits which have their only access to the corridor includes: 30 businesses, 49 residential homes, 1 church, and a mobile home park (with 22 mobile homes). Approximately six of Carbon County's 30 largest employers utilize SR-10 as the main arterial accessing their businesses.

1.4 Establishing Project Purpose and Need

In April and May of 2004, UDOT began (as a part of this corridor study) to establish the project purpose and need by evaluating the existing roadway and traffic conditions. This information is summarized in Technical Memorandum #1: Infrastructure and Geometric Deficiencies, and Technical Memorandum #2: Traffic Operations Deficiencies.

In June of 2004, after determining the existing corridor deficiencies, UDOT initiated the National Environmental Policy Act (NEPA) process to evaluate existing and future (year 2030) transportation deficiencies and possible solutions. At the beginning of the study, UDOT met with the public in open houses, agencies at a NEPA Scoping meeting, and an Advisory Committee to provide input on the needs of the corridor.

The public open houses were attended by local business owners, and residents within the corridor. Agencies participating in the NEPA Scoping meeting included: Federal Highway Administration (FHWA), U.S. Fish and Wildlife Service (USFWS), Utah Division of Wildlife Resources (DWR), Utah Division of Water Rights (DWR), U.S. Bureau of Land Management (BLM), U.S. Army Corps of Engineers (ACOE), Utah State Historical Preservation Office (SHPO), Utah Division of Water Quality (DWQ), U.S. Department of Agriculture, and Carbon County Historical Society. The Advisory Committee representatives include residents, business professionals, city, county and state representatives, and planning organizations.

The FHWA Technical Advisory T 6640.8A and 40 CFR 1502.13 provides guidance on the factors that can contribute to the purpose and need for this project. These nine factors include:

- **Project Status –**This is a summary of the activities that have occurred in the development of the proposed action. Is the proposed action included on the Long Range Plan?
- **System Linkage**- Is the proposed action a connecting link, and how does it fit in the transportation system?

- **Capacity** – Is the capacity of the present facility inadequate for the present and future traffic? What capacity is needed? What are the present and future Levels of Service (LOS) on the existing facility?
- **Transportation Demand** – How is the proposed action related to any adopted statewide and urban transportation plans?
- **Legislation** – Is this a federal, state, or local governmental mandate for the action?
- **Social Demand or Economic Development** – What role do past, present, and future population and employment growth play in the development of the proposed project? How do projected economic development and land use changes contribute to the need for the proposed action?
- **Modal interrelationships** – How does the proposed action interface with and serve to complement airports, rail, and mass transit services?
- **Safety** – Is the proposed action necessary to correct an existing or potential safety hazard? Is the existing crash rate excessively high and, if so, why? How will the proposed action correct these safety hazards?
- **Roadway Deficiencies** – Is the proposed action necessary to correct existing roadway deficiencies (i.e. substandard geometrics, load limits on structures, inadequate cross sections, and high maintenance costs), and how will these deficiencies be corrected?

1.4.1 Project Need

The need for the proposed action was defined based on the information collected as noted above (i.e. evaluation of roadway conditions, traffic analysis, agency and public input). The project was evaluated based on FHWA's guidance and factors contributing to purpose and need for a project. The following is a summary of this evaluation for each guideline.

1.4.2 Project Status

Currently, this project is not on the Statewide Transportation Improvement Program (STIP) and no other funding has been appropriated for any proposed action on this section of SR-10. The purpose of the current corridor study from Stake Farm Road to US-6 is to identify the needs of the corridor, identify alternatives that meet corridor needs, and develop costs and impacts for those alternatives.

1.4.3 System Linkage

SR-10 is an essential transportation system for the state, regional, and local transportation needs. This rural arterial provides the north-south connection between Carbon and Emery counties. SR-10 and US-6 are the only regional transportation corridors connecting the Price area and northeastern Utah to I-70. Each serves a unique travel shed area by diverging from Price in a southwesterly and southeasterly direction, respectively, connecting with I-70. Minor paved or unimproved roads connect these corridors; however, SR-10 is the only major transportation corridor to serve the Carbon County and the Castle Dale area of Emery County.

SR-10 is the only north-south connection on the east side of the Manti La Sal National Forest and the Wasatch Plateau connecting the communities of Castle Dale, Huntington, and Price with I-70 and US-6. Diamond interchanges are located at the northern and southern terminus of SR-10 at US-6 and I-70, respectfully.

This highway is used by a variety of users (commuters, residents, commercial businesses, heavy haul coal trucks, industrial businesses, recreational, etc.), providing them access to interstate highway systems, communities, employment centers, electrical power generators for the western United States, homes, and recreational sites. It is critical link in the transportation system in the area and the state.

1.4.4 Current Capacity

Level of Service (LOS) is a letter designation that describes a range of traffic operating characteristics on a particular facility. The LOS letter designation of a particular facility is related to the facility's ability to handle the vehicular demands within its capacity constraints. Six LOS categories are defined using letters A through F. LOS A represents the best level of service and generally describes operations of free flow (on uninterrupted flow facilities) and very few delays (on interrupted flow facilities). LOS F represents failing operating conditions and delays in excess of 50 seconds for an un-signalized intersection and in excess of 80 seconds for a signalized intersection.

Federal guidelines for an SR-10 type facility specify that a minimum LOS C design criteria should be met. A planning level traffic analysis was conducted for the years 2004 (existing conditions) and 2030 (design year, No-Build) assuming 15% heavy vehicles. The results are documented in Tech Memorandum #2, Traffic Operations Deficiencies and summarized in **Table 2 to Table 5**, below.

Table 2 – Traffic Analysis Results

Segment	Existing (2004)			
	No. of Lanes	**Capacity of Segment at LOS C**	**ADT**	**LOS**
Stake Farm to 3000 South	2	10,500	8,200	C
3000 South to 1500 South	2	10,500	9,700	C
1500 South to US-6	5	32,800	12,800	B

Fehr & Peers Associates, Inc. collected both morning and evening peak-hour intersection traffic counts in order to perform intersection LOS calculations at various locations along the corridor. This peak-hour LOS helps to define the existing intersection deficiencies and identify measures to improve operations.

In addition to the peak-hour intersection data collection efforts, a series of 24-hour traffic counts were collected at various locations along the SR-10 corridor from US-6 to SR-122. The 24-hour data shows that the single highest hour of traffic volume occurs from 4:00 to 5:00 p.m. **Table 3** shows the intersection LOS and delay results for the existing traffic conditions analysis.

Table 3 – Existing (2004) Background PM Peak Hour Level of Service

Intersection			Overall Intersection	
No.	**Description**	**Control**	**LOS**	**Aver. Delay (Sec/Veh)[1]**
1	US-6 WB Ramps/ SR-10	Signalized	B	12.5
2	US-6 EB Ramps/ SR-10	EB Stop	A	5.8
3	1250 South/ SR-10	EB/WB Stop	A	9.2
4	Robertson Lane (2000 South)/ SR-10	EB Stop	A	8.0
5	UPS Access/ SR-10	WB Stop	A	3.8
6	2750 South/ SR-10	WB Stop	A	3.2
7	3000 South/ SR-10	WB Stop	A	4.0
8	3350 South/ SR-10	EB Stop	A	2.9
9	3450 South/ SR-10	EB Stop	A	3.9
10	Ridge Road/ SR-10	EB/WB Stop	B	7.1
11	Stake Farm Road/ SR-10	WB Stop	B	5.5
12	SR-122/ SR-10	EB/WB Stop	A	0.8

1. This represents the worst approach and/or movement LOS and delay (seconds/vehicle) and is only reported for unsignalized intersections.
EB = Eastbound
WB = Westbound

As shown Table 3, the existing intersections are operating at or above the minimum LOS acceptable for this type of facility (LOS C).

1.4.5 Future Transportation Demand – Future Capacity

Future traffic volumes for SR-10 are based on projections from 20-years of traffic count history. The linear traffic growth rate from 1988 to 2002 **(shown in Figure 3, Appendix)** is 4.7%. It is conservative to assume, based on the previous years data, that this rate of growth will continue and the corridor users (industries – including coal and

gas, businesses, commuters, recreational and residential users) will not change. This 4.7% annual growth rate will continue into the future, resulting in traffic volumes of 16,200 AADT (at south end of corridor study) to 25,400 AADT (at north end of corridor study) in the year 2030. As shown in **Table 4**, UDOT's future projections indicate that SR-10 will operate at LOS F if modifications are not provided.

Table 4– Traffic Analysis Results

Segment	Design Year 2030 No Build			
	No. Lanes	Capacity at LOS C	ADT	LOS
Stake Farm to 3000 South	2	10,500	16,200	F
3000 South to 1500 South	2	10,500	19,300	F
1500 South to US-6	5	32,800	25,400	B

*4 lanes necessary for LOS C; however, 5 lanes would be recommended for safety to allow left turns into driveways.

Similarly, many of the intersections will operate at LOS F in 2030, as shown in **Table 5**. **Table 5** identifies the year 2030 PM peak hour level of service and delay results for each of the major intersections on the corridor.

Table 5
2030 No Build PM Peak Hour Level of Service

Intersection			Worst Movement			Overall Intersection	
No.	**Description**	**Control**	**LOS[1]**	**Movement[1]**	**Delay (Sec/Veh)[1]**	**LOS**	**Aver. Delay (Sec/Veh)[2]**
1	US-6 WB Ramps/ SR-10	Signalized	N/A	N/A	N/A	F	>80.0
2	US-6 EB Ramps/ SR-10	EB Stop	F	EB Right	>50.0	F	>50.0
3	1250 South/ SR-10	EB/WB Stop	F	EB Left	>50.0	F	>50.0
4	Robertson Lane (2000 South)/ SR-10	EB Stop	C	EB Left	24.5	F	>50.0
5	UPS Access/ SR-10	WB Stop	C	EB Left	19.1	E	38.5

6	2750 South/ SR-10	WB Stop	C	SB Left	15.1	C	24.1
7	3000 South/ SR-10	WB Stop	B	WB Right	12.9	C	18.7
8	3350 South/ SR-10	EB Stop	C	EB Left	17.8	C	16.3
9	3450 South/ SR-10	EB Stop	D	NB Left	30.0	C	16.6
10	Ridge Road/ SR-10	EB/WB Stop	D	NB Right	30.5	E	38.8
11	Stake Farm Road/ SR-10	WB Stop	D	NB Right	30.4	E	38.8

1. This represents the worst approach and/or movement LOS and delay (seconds/vehicle) and is only reported for unsignalized intersections.
2. This represents the overall intersection LOS and delay (seconds/vehicle).

Source: Fehr & Peers Associates, Inc. September 2004.

To determine how motorists use the corridor, an Origin-Destination Study was also completed on the project to determine the average distribution of traffic. It was determined, as shown on **Figure 4, Appendix, Origin/Destination Study**, that at the junction of SR-10 and US-6, 23% of the traffic on the corridor is going to or coming from the west, 13% are going to or coming from the east, and 64% remain on the corridor.

1.4.5.1 Future Planning Studies

The plans guiding future growth and development along SR-10 include the Price City General Plan adopted in April 2004 as well as Carbon County's Land Use Plan. Price has historically been the regional center for retail, office, industrial and service uses, and as a result, city officials would like to maintain and enhance that status. As a policy goal, Price City is encouraging the attraction, retention, and development of business and industry to maintain the Price's economic vitality.

There are a variety of land uses along SR-10, including regional and local commercial establishments, single family residences as well as industrial establishments. County officials have expressed in Advisory Committee meetings concerns that capacity restrictions and access issues along SR-10 are impeding economic development of the area.

Price City General Plan

Chapter 5 of the Price City General Plan discusses transportation and provides a brief overview of some of the components for a master planning effort. This plan discusses the need for public transit in the area and recommends some concepts that should be included in the Price City Transportation Master Plan. No specific improvements are suggested for the SR-10 corridor but the plan discusses alternative modes and mentions that they are strongly encouraged in Price.

Price City Transportation Master Plan

The UDOT Planning Section worked with Price City officials to complete a transportation master plan in April 2004. Some of the major issues identified in this

study include safety, railroad crossings, trails, signals, interchange aesthetics, connectivity of roadways, property access, truck traffic alternate routes, and speed limits.

This plan identifies SR-10 as a heavily traveled arterial that connects Price to the mining and trucking industry south of town. It further states within this plan that, "State Route 10 is a vital route to Utah's coal mining industry, handling coal shipments both north and south in the vicinity of Price. Oversize coal trucks use SR-10 in route to the Huntington and Hunter coal-fired steam power plants south of Price, as well as the Savage and Railco truck/rail coal transfer terminals on Ridge Road southeast of the city. Although most truck traffic travels around Price via the US-6/191 bypass, coal trucks are found on Airport Road within the city, as are local pick-up and delivery trucks serving local businesses".

Carbon County – West Side Transportation Planning Project (April 11, 2000)
In this report created by the Southeastern Utah Association of Local Governments, a summary of an investigation into the possibilities of enhancing the efficiency of the transportation network in the unincorporated areas south and west of Price was documented. This summary included an evaluation of a Belt Route (West by-pass route), Residential Collector, Dual (combined Belt Route and Residential Collector), and Route 10 Rehabilitation alternatives.

The end result of this analysis indicated that implementing any off-corridor alternatives did not provide substantial improvement to the current and future traffic problems. It was further recommended that, as a result of the cost/benefit analysis and the construction cost estimates, the logical conclusion is that the SR-10 rehabilitation alternative will provide the greatest overall potential benefits with the lowest associated costs. The SR-10 Rehabilitation alternative included:

- Expansion of the right-of-way to between 100 and 150 feet wide.
- Addition of a continuous two-way left turn lane from approximately the youth correctional facility (1395 South) to the industrial park.
- Addition of right-turn acceleration and deceleration lanes at each intersection.
- Improvements to the vertical alignment of the roadway where feasible.

In summary, traffic demand on the corridor is continuing to increase at a rate of 4.7% per year. Traffic projections indicate that the existing corridor does not have the capacity to meet the projected 2030 demand. Transportation plans for the area identify SR-10 as a vital transportation facility and recognize the need for improving SR-10 to meet the traffic demands on the corridor.

1.4.6 Legislation

Currently, there is no federal or state legislation funding improvements on SR-10 from Stake Farm Road to SR-6.

1.4.7 Social and Economic Demand

As the county seat for Carbon County, Price City is situated as the crossroads point of all major transportation corridors for Carbon and Emery Counties. As shown below, population trends show slow population growth in the region, however, traffic has been increasing in the region due to increased demographic and industry demands. Surrounding counties of Wasatch, Duchesne, Sevier, Grand, Uintah, and Utah also utilize the transportation corridors extending from Price to get access to other counties in eastern/central portion of Utah.

The following is a summary of social and economic demands of this corridor.

1.4.7.1 Population Trends

As shown in **Table 6**, the Price area has been slowly losing population over the last 20 years. Emery County experienced some growth from 1990 to 2000; however there was also a slight decline from 2000 to 2003. Despite the slow population growth in the region, traffic has been increasing on SR-10. This is largely due to a demographic shift that has occurred.

Table 6, Population Trends, 1980-2003

					Change 1980-2003	
Area	**1980**	**1990**	**2000**	**2003**	**#**	**Ann. %**
Price	9,086	8,712	8,402	8,229	-857	-0.4%
Carbon County	20,228	20,169	20,422	19,764	-464	-0.1%
Emery County	10,332	10,329	10,860	10,651	319	0.1%
State of Utah	1,461,037	1,729,227	2,233,169	2,351,467	890,430	2.1%

Source: Governor's Office of Planning and Budget; Economic & Planning Systems

Figure 5, Appendix shows the change in the driving age population from 1990 to 2000. From 1990 to 2000, there was a significant increase in the number of people of driving ages. Much of this increase came from people who were in the 5 to 9 and 10 to 14 year age groups in 1990. After 10 years, these age groups moved into the eligible driving age.

As shown in Table 7, the Governor's Office of Planning and Budget projects an annual increase in population of one percent per year in Carbon County, despite the decrease in population shown in **Table 5**, Since Price is the largest city in the county, much of this growth can be expected to occur in and around Price. By 2030, the population of Carbon County is expected to be almost 26,000.

Table 7, Population Projection, 2003-2030

Area	2003	2005	2010	2015	2020	2030	Avg. Ann. Change 2003-2030 #	Avg. Ann. Change 2003-2030 %
Carbon County	19,764	20,562	21,804	23,769	25,236	25,848	322	1.0%
Emery County	10,651	10,667	11,103	11,906	12,455	12,438	106	0.6%
State of Utah	2,351,467	2,464,633	2,787,670	3,126,736	3,371,071	3,772,042	59,977	1.8%

Source: Governor's Office of Planning and Budget; Economic & Planning Systems

1.4.7.2 Employment Trends

As shown below in **Table 8**, there were approximately 11,900 jobs in Carbon County in 2003. Government was the largest employer, with 21.5 percent of total employment. Retail and wholesale trade and services each accounted for 19 percent of all jobs. There has been an overall increase in the number of jobs in the area, with annual growth of 1.9 percent since 1990. There were 400 new jobs from 2001 to 2003.

Table 8, Employment by Sector, Carbon County, 1990-2003

SIC Classification	1990	2001	2003	Avg. Ann. Change 1990-2003 #	Avg. Ann. Change 1990-2003 %	2003 Pct. of Total
Agriculture	231	234	231	0	0.0%	1.9%
Mining	1,359	826	832	-41	-3.7%	7.0%
Construction	142	267	250	8	4.4%	2.1%
Manufacturing	288	410	407	9	2.7%	3.4%
TCPU[1]	467	545	543	6	1.2%	4.6%
Retail and Wholesale Trade	1,764	2,210	2,264	38	1.9%	19.0%
FIRE[2]	164	185	192	2	1.2%	1.6%
Services[3]	1,459	2,140	2,299	65	3.6%	19.3%
Government	2,021	2,425	2,555	41	1.8%	21.5%
Non-Farm Proprietors	1,386	2,262	2,332	73	4.1%	19.6%
Total Employment	9,281	11,504	11,905	202	1.9%	100.0%
State of Utah	724,013	1,085,057	1,117,949	30,303	3.4%	---

1) Transportation, Communications, and Public Utilities.
2) Finance, Insurance, and Real Estate.
3) Includes Private Households and Agricultural Services employment (SICs 88, 07, 08, and 09).
Source: Governor's Office of Planning and Budget; Economic & Planning Systems

Employment in Carbon County is expected to continue to grow, as shown in **Table 9**. By 2030, there will be an estimated 16,000, total (or 4,100 additional) jobs in Carbon County. This equates to an annual growth of 1.1 percent per year, or 150 new jobs each year. These new employees will place additional demands on the SR-10 corridor.

Table 9, Employment Projection, Carbon County, 2003-2030

SIC Classification	2003	2005	2010	2015	2020	2030	Avg. Ann. Change 2003-2030 #	Avg. Ann. Change 2003-2030 %
Agriculture	231	229	223	215	206	190	-2	-0.7%
Mining	832	829	822	763	658	440	-15	-2.3%
Construction	250	282	337	368	392	426	7	2.0%
Manufacturing	407	421	449	476	498	535	5	1.0%
TCPU[1]	543	553	576	601	623	669	5	0.8%
Trade	2,264	2,334	2,527	2,732	2,902	3,136	32	1.2%
FIRE[2]	192	199	216	235	249	260	3	1.1%
Services[3]	2,299	2,512	2,933	3,339	3,634	3,925	60	2.0%
Government	2,555	2,648	2,821	3,081	3,261	3,259	26	0.9%
Non-Farm Proprietors	2,332	2,402	2,604	2,827	3,001	3,194	32	1.2%
Total Employment	11,905	12,409	13,508	14,637	15,424	16,034	153	1.1%
State of Utah	1,393,965	1,470,100	1,667,638	1,854,158	1,991,534	2,217,041	30,484	1.7%

1) Transportation, Communications, and Public Utilities.
2) Finance, Insurance, and Real Estate.
3) Includes Private Households and Agricultural Services employment (SICs 88, 07, 08, and 09).
Source: Governor's Office of Planning and Budget; Economic & Planning Systems

1.4.7.3 Area Economic Goals

Local officials have developed economic goals as a part of the Price City General Plan. One of these goals is to "encourage the revitalization of the downtown area and main business corridors. Specifically, Price would like to create and pursue plans for attracting new business opportunities on Carbon Avenue and other major city streets. Carbon Avenue is the northern section of this project's limit.

Carbon County has approved development of industrial business parks and residential developments which have direct access on the project corridor or have a local road system which accesses the project corridor. Some of these business parks include: Industrial Park (3000 South), County Industrial Center (west of Ridge Road), and Ridge Road Business Park (access from Ridge Road). The residential developments are on the east and west side of SR-10 and access the corridor at 3000 South and 2000 south, respectively.

Approximately 6 of Carbon County's 30 largest employers are located along or use SR-10 for access to their businesses. These businesses or industries include:

- College of Eastern Utah Training Facility (3350 South and SR-10)
- State of Utah (Utah Department of Transportation-940 South Carbon Avenue, State Correctional Facility Division of Youth Corrections-1395 South Carbon Avenue)
- Joy Technologies Inc. (Located on Ridge Road)
- Pacificcorp – (approximately 2000 South and SR-10)

- Nelco Contractors – Located at 4520 South & 100 W. – access from SR-10)
- Carbon County Lumber Company (Located on Ridge Road)

Other major employers in Carbon County use SR-10 for shipment of goods and services. These major employers include: Savage Industries, Canyon Fuels Company, United Parcel Service, Coca-Cola, and Andalex Resources.

1.4.7.4 Major Industries

1.4.7.4.1 Coal Mining

As shown, in **Figure 6, Appendix**, Price is the crossroads of the Book Cliff, Wasatch Plateau, and Emery Coal Fields and as a result, goods and services are transported through Price. SR-10 serves as a major corridor of that crossroad.

In 2002, mines in Carbon and Emery Counties accounted for 70 percent of all coal production in Utah as shown in **Table 10**. Approximately 4.6 million tons of coal or 210,300 coals trucks travel on the SR-10 corridor per year. Carbon and Emery County mines are located predominately on the western flank of the Book Cliffs and the Eastern Wasatch Plateau. The Sufco Mine accounts for virtually all of the coal production in Sevier County. Together, Carbon and Emery Counties, plus the Sufco Mine in Sevier County account for all of Utah's coal production. Annual coal production in Carbon and Emery Counties is valued at over $440 million dollars.

Table 10, Annual Coal Production by County (Thousands of Tons), 1990-2002

County	2002 Production[1]	% of State
Carbon County	6,007	23.7%
Emery County	11,692	46.2%
Sevier County	7,600	30.0%
Total	**25,299**	**100.0%**
State of Utah	25,299	100%

[1] Thousands of Short Tons

Source: Utah Energy Office; Economic & Planning Systems

The coal mining industry can be very volatile due to changes in the price of coal and the demand for electricity, as shown in **Figure 7, Appendix.** However, demand for Utah coal is strong, and mining in the region is expected to continue for at least the next 30 years. A new mine in Crandall Canyon is anticipated to open within the next 2 years, and will be sending an additional 12 to 15 trucks per hour north on SR-10 through Price.

Transportation of Coal

Virtually all coal in Carbon and Emery County is trucked at some point in mining process. Even coal that is ultimately shipped out of the region by rail is first transported by truck from the mines. Mines in the region are located at high elevations and on steep topography in the canyons and mountains. Tandem trailer trucks are used to transport coal from the mines to rail load-out facilities or directly to power plants. The two main load-out facilities in the region are the Savage/Rail Co load out on Ridge Road (**see Figure 1, Appendix**), and the Wildcat load-out near the mouth of Price Canyon. A load-out facility transfers coal from trucks to rail cars and also blends different qualities of coal. The coal trucks coming from the north and south utilize SR-10 to travel to and from the load-out facilities or power plants.

1.4.7.4.2 Electrical Power Industry

PacifiCorp operates 3 power plants in the region. The plants run at capacity, and consume a roughly fixed amount of coal each year – approximately 8.4 million tons. The Carbon Plant is located at the mouth of Price Canyon at US-6 and SR-191. The Hunter Plant is located just south of Castle Dale, in Emery County. The Huntington Plant is located in Huntington Canyon, outside of Huntington. The Huntington Plant receives most of its coal via conveyor from the Deer Creek mine, which is located just above the power plant. The other two plants receive all of their coal from truck deliveries. Depending on where the trucks originate, most will use SR-10 at some point in their trips to and from the power plants, mines, and load-out locations.

1.4.7.5 Recreational Transportation Needs

Carbon and Emery counties offer varied scenic terrain, which provides a setting for many forms of outdoor recreation. Public lands provide opportunities for camping, backpacking, hiking, mountain biking, fishing, picnicking, hunting, horseback riding, all-terrain vehicle and motorcycle riding, water and winter sports. The primary users of these recreational resources are the local residents. However, this area is becoming more widely recognized as a place with year round recreational uses. Some of these more widely recognized sites which SR-10 provides access to include: San Rafael Swell, Wedge Overlook, Cleveland Lloyd Dinosaur Quarry, and several locations throughout the Manti LaSal National Forest.

In summary, although population trends in the region are steady and projected population growth is small (1%), social and economic factors in the region are increasing the demands on the transportation system, specifically on SR-10. Major industries in Carbon and Emery counties rely on SR-10 for the transport of goods and services. Residents of the county rely on SR-10 to access schools, churches, and commercial businesses. Recreational users, inside and outside of the county, rely on SR-10 for access to popular recreational sites. Due to these demographics and industries there is an increased demand on the SR-10 corridor from Stake Farm Road to US-6.

1.4.8 Modal Interrelationships

Transportation modes in the study area of the SR-10 corridor currently consist of mostly vehicular traffic with some pedestrian and bicycles. However, in various sections of the

study area, the roadway lanes and shoulders are narrow, and sidewalks or trails systems are not provided. One need of the corridor is to improve facilities for pedestrians and bicycles, so these modes can travel safely through the corridor.

1.4.8.1 ITS/TSM/TDM Description

Intelligent Transportation Systems (ITS) and Transportation System Management (TSM) can be described as measures that improve the efficiency of a transportation network without major new roadway construction. Applicable measures of ITS would include intersection signalization, signal coordination, and variable message signs. TSM include provisions of park and ride lots, intersection improvements such as the addition of turn pockets, acceleration and deceleration lanes, enhancement of pedestrian and cyclist facilities.

Transportation Demand Management (TDM) includes measures that seek to adjust travel patterns resulting in either reduced travel levels during the peak hour or throughout the entire day. A successful TDM program produces more mobility within the existing transportation system, boosts the economic efficiency of the current transportation infrastructure, improves air quality, saves energy, and reduces traffic congestion. Although there is some cross-over between the TSM and the TDM strategies, it is important to remember that TDM strategies are most commonly implemented by the larger employers. A continued effort by Carbon County to encourage large employers to implement TDM strategies is recommended to reduce the total number of vehicle within the SR-10 corridor during the peak commute periods of the day.

TDM measures include flexible work schedules, rideshare programs, telecommuting, discounted transit pass programs and guaranteed rides home. These strategies are usually implemented by large employers or the transit provider and include incentives to encourage employees to walk, bicycle, use public transportation, vanpool, carpool, or other alternatives to driving alone. Year 2000 census data shows that 7.1 percent of all work trips made by adults who reside in Carbon County are TDM reduced trips. This means 7.1 percent of the workers either work from home, walk, cycle, carpool, or use other non-motorized modes of transportation. The equivalent figure for the more populated Salt Lake County is also 7.1 percent.

1.4.8.2 Mass Transit Description

Potential transit measures in Carbon County might include shuttle bus service or subscription bus service to provide service from a park and ride lot to the either the mines, load-out facilities, or to the power plant in Huntington, etc. The year 2000 census data shows that 0.2 percent of all work trips made by adults who reside in Carbon County are made using transit. The same figure for the more urbanized Salt Lake County is 3.5 percent, and includes a well-developed transit system with light rail, express bus, bus and flextrans alternatives. For specific corridors such as I-15 in Salt Lake County, it has been estimated by UDOT planning that approximately 10 percent of the work trips are occurring by alternative transit modes (the combination of light rail and express bus).

Although there are no long range transit plans for this corridor, services such as those listed could potentially eliminate some of the single occupant vehicles traveling on the SR-10 corridor. However, without a transit plan in place, no significant transit system improvements (transit service, transit mode, or park and ride facilities) are assumed in No-Build scenario. Due to the rural nature of this corridor, transit modes are not conducive in solely meeting the transportation need of the corridor.

1.4.9 Safety

UDOT Traffic & Safety Division generated a four-year crash history for the major state roadways in the SR-10 corridor study area. Accidents were summarized for the four-year period from 1999 to 2002 and they are reported below. Although 2003 accident data was available, it was not included in the four-year summary because it is incomplete. Accident data was used to evaluate the accident patterns of the project area. Evaluation of crash data compares the actual rate with the expected rate. The actual severity and crash rate have been calculated for this segment of SR-10 from reported/documented crashes over the four year study period. Typically the actual rates are compared to the expected rates to provide a relative measure of how a safe a road might be presently operating. In order to derive an expected rate, UDOT calculates severity and crash rates for similar types of facilities within the state and averages them to produce these rates. Therefore, on facilities similar to SR-10 across the entire State of Utah, their average expected severity rate was 1.58 and their average crash rate was 2.45.

The expected rate is the state wide expected severity and number of accidents for a certain classification of roadway. SR-10 is classified as a rural arterial. As shown below there is a lower occurrence of accidents but a slightly higher severity than would be expected for this classification of roadway.

SR-10 – From Mile Post 62 to Mile Post 68	
Total Accidents:	96
4 Year Average ADT:	9,600
Total Fatalities:	1
4 Year Accident Average:	24.00

	Summary	
	Actual	Expected
Severity:	1.64	1.58
Rate:	1.15	2.45

A detailed review of the historical accident data for the study area shows the following profile for different types of collisions:

40% Single Vehicle Collisions (1/3 of these were collisions with wild animals)
30% Rear-end Collisions
10% Right Angle Collisions involving left turns
20% Other

Other than the collisions with the wild animals, there were no consistent contributing factors in the remainder of the single vehicle crashes. The high occurrence of rear-end collisions suggests the combination of limited sight distance, and the lack of adequate auxiliary lanes (right and left turn lanes, and shoulders), or high travel speeds for roadway conditions.

A review of the right-angle collisions involving left-turns (10% of total accidents) shows that these accidents are not concentrated at one point. However, these accidents can be identified in clusters of two or three accidents (for the 5 year period) located approximately one mile apart ranging from milepost 64 to 68 (roughly 2 crashes occurring at approximately Milepost 64 and three crashes occurring at approximately each Milepost 66, 67, and 68). These crashes could be attributed to lack of adequate shoulders, or lack of turn lane (median) for vehicles to make necessary turn movements.

Access Management

Access management becomes more important as traffic volumes increase on any roadway. Implementation of access management techniques limits the location and access options for vehicles entering or exiting the roadway. Limiting access locations reduces the number of conflict points along the roadway, and therefore helps reduce the number of potential and actual crashes. Application of access management will reduce side "friction" or the number of vehicular conflict locations of the corridor and improve traffic flow of the corridor.

The SR-10 corridor currently provides local access to many residential properties and businesses between US-6 and approximately 3450 South. From 3450 South to SR-122, access management has been limited to the intersecting roadways (3500 South, Ridge Road, and Stake Farm Road). These multiple access locations along SR-10 each contribute to the overall number of vehicular conflict points and the degradation of mobility, safety and sight distance.

A typical four-leg intersection has 32 conflict points, 16 are crossing maneuvers where vehicles will need to occupy the same location at different times to avoid a crash. Eight conflicts are merging points and 8 are diverging points at the intersection. A standard three-leg, or "T" intersection will have 9 conflict points with 3 crossing, 3 merging and 3 diverging conflicts. This is illustrated in **Figure 8, Appendix**.

Throughout the State of Utah, UDOT has classified all state owned roadways based on a hierarchical level of access management categories, each with its own attributes. Within the project limits, SR-10 has been categorized as Category 5 (Regional Priority Urban) from US-6 to approximately 1250 South, as a Category 4 (Regional Rural) from approximately 1250 South to approximately 3600 South and as a Category 2 (System Priority Rural) from approximately 3600 South through SR-122 (see appendix of Technical Memo #2 for the UDOT access management classification for the Price District).

These categories are used to provide guidance on the minimum signal spacing and access spacing. **Table 11** below provides a summary of the standards for this corridor.

Table 11, SR-10 Access Standards

Location	Category	Minimum Signal Spacing (feet)	Minimum Street Spacing (feet)	Minimum Access Spacing (feet)
SR-122 to 3600 South	2, System Priority Rural	5280	1000	1000
3600 South to 1250 South	Regional Rural	2640	660	500
1250 South to US-6	Regional Priority Urban	2640	660	350

Comparison of these corridor standards to the existing conditions show that cross street spacing meets the minimum spacing required. However, from 3600 South to US-6, the minimum access spacing requirements are not achieved. An access management plan will need to be developed for the corridor.

In summary, the high occurrence of crashes and there severity would suggest that auxiliary lanes (left turn lanes or medians, and right turn lanes or increased shoulder widths) should be provided, especially between Milepost 65 to 68. In addition, access along the corridor could also be modified to improve traffic operations.

1.4.10 Roadway Deficiencies

Geometrics of the SR-10 corridor were evaluated using the current design standards from the Utah Department of Transportation (UDOT) and American Association of State Highway Transportation Officials (AASHTO). Design standards are based upon a design speed of the corridor. For a rural arterial in a rolling terrain, the design speed can vary from 40 to 75 mph depending on the setting of the roadway. In this section of SR-10 the roadway is transitioning from a rural arterial and an urbanized arterial with curb and gutter. In the more rural, southern, section of SR-10 (Milepost 62.5 to 64.5) the appropriate design speed is 70 mph. The middle section of the corridor study (Milepost 64.5 to 66) transitions from rural arterial to urban arterial. As a result, an appropriate design speed for this section is 65 mph. In the more urbanized section with curb and gutter/sidewalks (Milepost 66 to 68) the appropriate design speed is 50 mph. A speed study of the corridor was conducted to determine to driving behavior in the corridor and verify an appropriate design speed. The following table summarizes the results:

SR-10 at Approximately 2200 South - (45 mph Posted Speed)

Northbound		Southbound	
85th Percentile Speed:	51.0 mph	85th Percentile Speed:	52.0 mph
Average Speed:	47.4 mph	Average Speed:	48.1 mph
Standard Deviation:	4.1 mph	Standard Deviation:	3.8 mph

SR-10 between Stake Farm Road & SR-122 - (65 mph Posted Speed)

Northbound		Southbound	
85th Percentile Speed:	69.0 mph	85th Percentile Speed:	67.0 mph
Average Speed:	66.4 mph	Average Speed:	63.8 mph
Standard Deviation:	3.6 mph	Standard Deviation:	4.4 mph

The following sections summarize the system's roadway deficiencies as they relate to roadway geometrics, pavement, and structure deficiencies.

1.4.10.1 Roadway Geometrics

Reviews of the existing geometrics on SR-10 were performed using as-built drawings, field reviews, survey data, and aerial mapping. The results of the detailed evaluation are provided in Technical Memorandum #1 Existing Infrastructure/Geometric Conditions. Deficiencies in roadway geometrics often contribute to poor traffic operations and crashes. Geometric elements which are closely associated to traffic operations and crashes are vertical alignment, horizontal alignment, and cross sectional features.

1.4.10.1.1 Vertical Alignment

Crashes on rural highways are often attributed to inadequate sight distance. Sight distance is the length of the roadway ahead that is continuously visible to the driver and is an important concept of roadway design as it relates to stopping, steering, and overtaking. Stopping sight distance is the sufficient distance necessary to enable a vehicle traveling at the design speed to stop before reaching a stationary object in its path. The vertical alignment for SR-10 does not meet current design standards on 50% of the vertical curves (ten out of twenty vertical curves).

There are 4.35% and 5.74% grades near Four-Mile Hill (Milepost 65) that exceed current design standards and adversely affect the traffic operations of SR-10. The maximum grade for this roadway to meet the design standards is 3% from milepost 62.8 to 66, and 4% from Milepost 66 to 68. Three segments of the roadway have grades less than the required minimum of 0.5%. Flat grade can cause poor drainage of the roadway which in turn compromises safety and traffic operations.

1.4.10.1.2 Horizontal Alignment

Sight distance and appropriate superelevation on horizontal curves are also essential for safe maneuvering through horizontal alignments. The existing SR-10 horizontal

alignment meets current design requirements for minimum radii and stopping sight distance.

1.4.10.1.3 Cross Sectional Features

Cross section elements which contribute to the safety of the roadway include cross slope of the roadway, clear zone, sideslopes, lane widths, and shoulder widths. The existing cross section of SR-10 has a variety of deficiencies. The following is a summary of the existing cross section elements:

Traffic Lanes – The through lanes are generally sufficient in width (12 feet). Based on the traffic and safety analysis, left and right turn lanes are needed at Stake Farm Road, Hamake Lane, 3500 South, 3450 South, 3350 South, 2750 South, 2550 South, 2000 South, and 1850 South.

Shoulders – The existing shoulders range from 1-4 feet wide. They are much narrower than the required minimum of 8 feet.

Side Slopes – Side slopes of 4:1 or flatter are preferred in fill areas. Generally, SR-10 roadside is sufficient with a slope of 4:1 or flatter. However, at approximately 2300 South, the side slopes are nearly 2:1 as SR-10 passes over two washes with no barrier protection.

Clear Zone – Clear zone is the area adjacent to the travel way that is clear of obstructions that could impede the safe recovery of a vehicle which has left the traveled way. Obstructions which can not be removed from the clear zone are shielded with safety devices known as end treatments which protect the motorist from more serious injury/damage than may have occurred if the vehicle would have impacted the obstruction. There are several clear zone hazards throughout the corridor. Seven water feature crossings are insufficiently shielded (using barrier) or not shielded at all. From 3000 South to Riverside Drive there are numerous utility poles and large trees within the clear zone. All existing barrier exhibits outdated end treatments.

1.4.10.2 Pavement

The pavement in the project corridor was rehabilitated in 1979 with an overlay in 1983 and has exceeded its 20 year service life. Generally, the pavement is structurally and functionally deficient. Heavy traffic loading has caused rutting in both directions the full length of the project. Many distressed areas have required extensive patching. A majority of the pavement will require substantial rehabilitation or replacement within a few years.

1.4.10.3 Structures

There are six structures in the study area. These include a box culvert at Miller Creek, a bridge over the Price River, the US-6 bridge over SR-10, and 3 box culverts at various

crossings of the Carbon Canal. The Carbon Canal box culverts span less than 20 feet and are not inventoried by UDOT. Upon visual inspection of the Carbon Canal culverts they do not appear to have any visual structural deficiencies. The remaining three structures were inspected by UDOT in December of 2003. They have sufficiency ratings of 84 or higher, out of a possible rating of 100, indicating they are structurally adequate.

The US-6 bridge clearance is 16 feet-4 inches, 8 inches below the standard minimum of 17 feet. The clearances of the remaining structures are sufficient according to initial investigation with UDOT maintenance and Carbon County.

Five of the structures would need to be widened 4-6 feet to meet current minimum width requirements of 10 feet (8 feet for shoulder and 2 feet shy distance). These would include the 4 box culverts and the bridge crossing the Price River. In addition, there is excessive scouring occurring at the southwest wingwall of the Miller Creek structure which needs repair to meet the design life of this project.

In summary, the existing roadway does not meet current AASHTO standards for vertical alignment and cross sectional features (shoulder width, clear zone), has exceeded its pavement life, and has several structures which are deficient in vertical clearance and structural width. It is recommended, based on this analysis, that these deficiencies be corrected.

1.5 Summary

The evaluation of the FHWA guidelines outlined in this chapter helped establish the project needs which should be achieved by the project solution. In summary these needs include:

1. Improving the traffic operations along the SR-10 corridor. The SR-10 corridor is a vital transportation corridor for eastern and central Utah. Increasing traffic demand on the corridor shows that the existing roadway is currently operating at the minimum acceptable LOS of C for this type of corridor. Future traffic projections of 4.7% per year show that the corridor will operate at LOS F if modifications are not provided.

2. Provide a corridor that is consistent with economic development plans of the region. SR-10 provides a corridor for the transport of approximately 77% of the coal mined in Emery County or approximately $115,000,000 of coal each year. In addition, population and employment trends continue to increase in the area. This growth creates an increased demand on the corridor. The goals of the Price City General Plan and the county are to enhance the vitality of this corridor. A safe and well functioning roadway system is essential in maintaining current needs on the corridor and meeting future economic goals. As a result an improved roadway is essential.

3. Improve safety conditions and geometrics of the SR-10 corridor. As identified there are several roadway deficiencies along the corridor. To meet current AASHTO and UDOT guidelines these deficiencies should be corrected.

Input from local, state officials and the general public helped to establishing the following purposes to meet the identified needs. Specific goals for each purpose were developed to measure the alternatives effectiveness in meeting the overall needs. In addition to those needs identified above, it was also determined that the purpose of the project should be compatible with the setting, and provide the best value for the community. Specifically the needs and purposes were identified as follows:

1. Improve safety conditions of SR-10 by:
    - Improving geometrics to meet current UDOT and AASHTO standards
    - Improving infrastructure (pavement and bridges)
2. Improve traffic operations along the SR-10 corridor by:
    - Providing LOS C or better for design year 2030
    - Improving access along the corridor
    - Enhancing multimodal systems
3. Provide corridor that is consistent with economic development plans of the region by:
    - Staying consistent with county economic development plan
4. Compatible with the setting by:
    - Being sensitive to environmental, social, and cultural impacts
5. Provide best value to the community by:
    - Providing best use of possible funds.

Chapter 2 – Alternatives

This chapter summarizes the range of solutions considered to address the purpose and need for the SR-10 corridor and outlines the alternatives being considered for further evaluation. A full range of alternatives was considered in accordance with National Environmental Policy Act (NEPA) regulations and Federal Highway Administration (FHWA) guidelines.

The development of the alternatives was based on:

- Project purpose and need,
- Public comments received at neighborhood meetings, and meetings with Carbon County and Price City officials,
- Guidance provided by the project Advisory Committee,
- Alternatives developed in previous transportation studies completed on the corridor or in the project area, and
- Input received from resource agencies.

As shown in **Appendix Figure 2.1**, a screening process was used to evaluate the overall effectiveness in meeting the project goals and objectives. These goals and objectives are identified in Section 1.5. The initial screening process considered the alternative's ability to meet the reasonableness threshold –the solution's viability and/or practicality in achieving the purpose and need objectives. Subsequent screenings (Second Screening and Third Screening) were conducted at a more comprehensive and detailed level. The Second Screening evaluated the alternatives' ability to meet the safety and capacity needs. The alternatives progressing through the Second Screening were advanced to the Third Screening, where a detailed capacity analysis was completed which calculated delay and provided a refined level of service (LOS). The Third Screening also identified economic and environmental impacts and value to the community. Alternatives that met the Third Screening criteria were advanced (see green arrows in **Appendix Figure 2.1**) for further evaluation in the environmental process.

A full range of solutions was initially identified at a descriptive level. Subsequent screenings refined the solutions to a schematic/conceptual level (screening two) and then to a preliminary engineering level (screening three). Technical screenings were completed by the project team and then presented to the project Advisory Committee and the public for additional comments and input (identified with yellow milestones markers on **Appendix Figure 2.1**).

Section 2.1 provides a summary of this alternative development and evaluation process.

2.1 Alternative Development and Evaluation Process

Alternatives were developed and analyzed based on meeting the project purpose and need objectives. These objectives include: improving safety on the corridor, improving traffic operations, consistency with economic development plans, compatibility with the setting, and providing the best value to the community.

In order to measure an alternative's ability to meet the project purpose and need, measurable goals were developed. The following is a list of these goals:

1. Improve safety conditions of SR-10 by:
    - Improving geometrics to meet current UDOT and AASHTO standards
    - Improving infrastructure (pavement and bridges)
2. Improve traffic operations along the SR-10 corridor by:
    - Providing a minimum Level of Service (LOS) C or better for design year 2030
    - Improving access along the corridor
    - Enhancing multimodal systems
3. Provide a corridor that is consistent with the region's economic development plans by:
    - Being consistent with county economic development plans
4. Be compatible with the setting by:
    - Being sensitive to environmental, social and cultural impacts
5. Provide the best value to the community by:
    - Providing for the best use of possible funds

The purpose and need goals were presented to the general public to rate and provide input and comment. The public was asked to rate the goals on a scale of 1 to 5 (5 being very important). The following is the average rating of the input received:

- Safety 4.8
- Capacity 4.6
- Compatible with the Setting 3.8
- Economics 3.7
- Best Value 3.6

These results were presented to and confirmed by the project Advisory Committee. The Advisory Committee agreed with the above ratings.

After developing the purpose and need goals, a full range of alternative solutions were developed that addressed the purpose and need of the project. Solutions were brainstormed and developed at a descriptive/qualitative level by the project design team (UDOT and consultants), by input from meetings with city and county officials, and by input from the public. Two previous studies, the UDOT Corridor Study and the West Side Transportation Planning Project (described in Section 1.2), were also used to identify possible alternative solutions. The full range of alternative solutions (outlined in **Appendix Figure 2.1**) include:

- Alternative No. 1 – No Build
- Alternative No. 2 – West Side Bypass
- Alternative No. 3 – East Side Bypass
- Alternative No. 4 – Four/Five Lane
- Alternative No. 5 – Four/Three Lane
- Alternative No. 6 – Coal Truck Traffic Only Bypass
- Alternative No. 7 – Railroad Spur
- Alternative No. 8 – Transportation System Management (TSM)/Transportation Demand Management (TDM)
- Alternative No. 9 – Transit

- Alternative No. 10 – Viaduct
- Alternative No. 11 – Local Collector Road on East or West Side
- Alternative No. 12 – Combined Alternative

As shown on **Appendix Figure 2.1** Alternative No. 12, Combined Alternative, was developed as a result of a public comments provided at the second Open House #2 and Project Design Team meeting on August 31, 2004.

2.2 Range of Alternatives

A description of each of alternatives is presented in Section 2.2 along with the analysis of the alternative during the First and Second Screening. The First Screening evaluated the alternatives ability to meet the project purpose and need criteria at a reasonableness threshold, namely, general safety, traffic operations, compatibility, and costs.

The Second Screening analyzed the alternatives ability to meet the safety and capacity needs of the corridor. Although improved safety improvements are difficult to quantify for future conditions, an alternative was considered to improve safety if deficient geometric conditions of the corridor (outlined in Chapter 1, Project Purpose and Need) were improved to meet current design standards. Capacity of the corridor was also evaluated using capacity tables produced by the Florida Department of Transportation (FDOT). These capacity tables identify capacity and LOS based on Highway Capacity Manual (HCM) methodologies. This is a cost effective method of screening a large number of alternatives. A more extensive capacity analysis using a microscopic simulation tool, CORSIM, will be used in the Third Screening. A description of the Third Screening analysis is provided in Section 2.3.

2.2.1 Alternative No. 1, No Build Alternative

Alternative Description

The No Build Alternative includes capital improvements to maintain the existing corridor (e.g. resurfacing of the corridor). The No Build Alternative does not include major or minor reconstruction items. For example, it does not include adjustments to the horizontal or vertical alignment, nor widening of the roadway surface for increased shoulders, nor additional travel lanes.

Alternative Analysis

This alternative progressed through the reasonableness threshold (First Screening) due to NEPA regulations that require the No-Build alternative to be evaluated through the environmental evaluation process. Its ability to meet basic project purpose and need criteria, namely, safety and traffic operations during the Second Screening was evaluated. The following is a summary and results of the Second Screening analysis.

Safety – Improve geometrics and infrastructure

This alternative does not provide for reconstruction of the roadway features that would improve safety. The geometric deficient vertical curves, grades, cross section features (side slopes, shoulders, and clear zone), and structural deficiencies will continue to exist.

Traffic Operations
Future 2030 No Build conditions were modeled utilizing the existing SR-10 lane geometrics, intersection control, posted speed limits, heavy vehicle percentages, and turn pocket lengths with the project 2030 PM peak hour traffic volumes. The corridor segment from US-6 to approximately 1500 South could be re-striped to accommodate a five lane cross section.

Appendix Figure 2.2 summarizes the alternatives' ability to meet capacity needs for the project area. **Table 2.1** summarizes the LOS for the 2030 No Build traffic conditions by corridor segment. A detailed description of this analysis can be found in Technical Memorandum No. 3, *SR-10 Corridor Study Future Traffic Forecasts.*

Table 2.1, 2030 No Build - Planning Level LOS

Segment	No. Lanes	Capacity (ADT) (LOS C)	Demand (ADT)	LOS
SR-122 to 3000 South	2	10,500	16,200	F
3000 South to 1500 South	2	10,500	19,300	F
1500 South to US-6	5	32,800	25,400	B

The resulting 2030 No Build LOS shown in **Figure 2.2** and **Table 2.1** indicate that this alternative results in a LOS F condition and does not meet the traffic operation needs for the corridor. In addition, this alternative does not improve access control along the corridor, nor enhance multimodal systems.

Conclusion
Although the No Build Alternative does not meet safety and capacity needs it is progressed to the third screening as required by CEQ Regulations (40CFR 1502.14, NEPA, and FHWA Technical Advisory (T6640.8A, October 30, 1987).

2.2.2 Alternative No. 2, West Side Bypass

Alternative Description
The West Side Bypass Alternative includes the construction of a bypass route west of SR-10. As shown in **Appendix Figure 2.3** the bypass would begin at Ridge Road and continue northwesterly for approximately 7.8 miles and connects with US-6 at 1550 West. The corridor has two 12-foot lanes (one lane each direction) with 8-foot shoulders. The bypass would be constructed to meet current design standards for a two-lane rural arterial. Similar to the No Build alternative, only maintenance projects will be completed on SR-10.

Consideration was given to tie this alignment in at the Westwood Boulevard and US-6 interchange. However, this alignment was modified to tie into US-6 at 1550 West based on comments (i.e. the original alignment was too circuitous would divide community facilities, and was not as good of a connection as 1550 West) from Public Open House #3.

Alternative Analysis

This alternative progressed through the reasonableness threshold (First Screening) and was evaluated on its ability to meet basic project purpose and need criteria, namely, safety and traffic operations (Second Screening). The following is a summary and results of Second Screening analysis.

Safety – Improve geometrics and infrastructure
The bypass would be constructed to meet current design standards for a rural two-lane arterial. However, this alternative would not provide for the reconstruction the SR-10 corridor which would improve safety. SR-10 will continue to exhibit deficient vertical curves, grades, cross section features (side slopes, shoulders, and clear zone), and structural deficiencies.

Traffic Operations
An origin/destination (O/D) study was completed as a part of the corridor traffic analysis in order to project the average number of vehicles that would use the bypass. A complete analysis of the O/D study can be found in Technical Memorandum #2, *Traffic Operation Deficiencies*. The O/D study, as shown in **Appendix Figure 2.4**, indicates that 23% of the vehicles traveling on SR-10 through the study area are entering or exiting US-6 to the west. Based on the O/D study, it was assumed that an average of 23% of the daily vehicles currently using SR-10 to travel between US-6 west of Price and SR-122, would shift to a bypass facility west of SR-10.

This is an aggressive assumption due to the passer-by-traffic type businesses on the existing corridor that may appeal to some of the 23% and influence them to remain on the SR-10 corridor. However, with no improvements to occur on SR-10 with this alternative and the congestion that is anticipated in the design year, it is reasonable to assume that all vehicles that could benefit by taking a bypass route would take the alternative route. **Table 2.2** shows the 2030 Westside Bypass LOS by segment, defines the capacity under current SR-10 geometric conditions and identifies the projected demand for SR-10 and the by-pass route. **Appendix Figure 2.3** presents this information graphically.

Table 2.2, 2030 Westside ByPass - Planning Level LOS

Segment	No. Lanes	Capacity (ADT) (LOS C)	Demand (ADT)	LOS
SR-10, SR-122 to Ridge Road	2	10,500	16,200	F
SR-10, Ridge Road to 3000 South	2	10,500	14,700	F
SR-10, 3000 South to 1500 South	2	10,500	14,700	F
SR-10, 1500 South to US-6	5	32,800	20,800	B
Westside By-Pass, Ridge Road to US-6	2	13,100	4,600	C

As shown in **Table 2.2**, the 2030 Westside Bypass alone cannot alleviate the need to widen the SR-10 corridor as multiple segments are failing to meet the Purpose and Need. In addition, this alternative does not improve access control along the corridor nor enhance multimodal systems.

Conclusion
This alternative did not progress as a stand alone alternative because it did not meet the purpose and need objectives for safety and traffic operations along SR-10.

2.2.3 Alternative No. 3, East Side Bypass

Alternative Description
Similar to the West Side Bypass, the East Side Bypass includes the construction of a bypass route east of SR-10. The alternative would begin at the junction of Ridge Road and SR-10 and continue easterly on Ridge Road tying into US-6 near Wellington. The corridor would have two 12-foot lanes (one lane each direction) with 8-foot shoulders. The bypass would necessitate improvements to Ridge Road to meet current design standards for a two lane rural arterial. Similar to the No Build alternative, only maintenance projects will be completed on SR-10.

Alternative Analysis
This alternative progressed through the reasonableness threshold (First Screening) and was evaluated on its ability to meet basic project purpose and need criteria, namely, safety and traffic operations (Second Screening). The following is a summary of the Second Screening analysis.

Safety – Improve geometrics and infrastructure
The bypass would be constructed to meet current design standards for a rural two-lane arterial. However, this alternative does not provide for the reconstruction of the SR-10 corridor, which would improve safety. SR-10 will continue to exhibit deficient vertical curves, grades, cross section features (side slopes, shoulders, and clear zone), and structural deficiencies.

Traffic Operations
The impacts of the projected 2030 traffic volumes were evaluated for Alternative 3 using the existing SR-10 geometries, intersection control, posted speed, heavy vehicle percentages, turn pocket lengths and assumed construction of an eastside bypass. The O/D study projected that an average of 13% (see **Appendix Figure 2.4**) of the vehicles traveling on SR-10 through the study area are entering or exiting US-6 to the east.

Analysis of the Eastside Bypass assumed that an average of 13% of the daily vehicles that are currently using SR-10 to travel between US-6 east of Price and SR-122, would shift to use a bypass facility east of SR-10. **Table 2.3** shows the 2030 Eastside Bypass LOS by segment, defines the capacity under current SR-10 geometric conditions and identifies the projected demand for SR-10 and the bypass route. **Appendix Figure 2.5** presents this information graphically.

Table 2.3, 2030 Eastside ByPass - Planning Level LOS				
Segment	**No. Lanes**	**Capacity (ADT) (LOS C)**	**Demand (ADT)**	**LOS**
SR-10, SR-122 to Ridge Road	2	10,500	16,200	F
SR-10, Ridge Road to 3000 South	2	10,500	16,200	F
SR-10, 3000 South to 1500 South	2	10,500	16,800	F
SR-10, 1500 South to US-6	5	32,800	22,900	B
Eastside Bypass, Ridge Road to US-6	2	13,100	2,500	B

As demonstrated in **Table 2.3**, the 2030 Eastside Bypass alone can not sufficiently alleviate the demand on the SR-10 corridor as several segments are projected to have a LOS of F.

In addition, this alternative does not improve access control along the SR-10 corridor nor enhance multimodal systems.

Conclusion
The Eastside Bypass was dismissed during the Second Screening because it was unable to meet purpose and need requirements for safety and traffic operations along SR-10.

2.2.4 Alternative No. 4, Four/Five Lane Alternative

Alternative Description
This alternative would widen SR-10 to a four-lane roadway (2 lanes in each direction) from Stake Farm Road to 3000 South and a five-lane roadway (2 lanes in each direction and a continuous two-way left turn lane -TWLTL) from 3000 South to US-6 (matching the existing five lane section). Travel lanes would be 12 feet wide and the center turn lane would be 14 feet. Shoulders would be widened to 10 feet. Structures would be extended and profiles adjusted to meet current horizontal and vertical clearance requirements. Modifications to the structures at US-6 will be coordinated with other projects. Pavement would be improved to meet future load requirements. Vertical curves would be constructed to meet standards. Intersections would be modified to accommodate necessary turn movements.

In addition, this alternative allows for the implementation of an access management plan (described in more detail in Technical Memorandum #3, SR-10 Corridor Future Traffic Forecasts) and the opportunity to incorporate multi-modal options into the proposed corridor cross-section.

Alternative Analysis
This alternative progressed through the reasonableness threshold (First Screening) and was evaluated on its ability to meet basic project purpose and need criteria, namely, safety and traffic operations (Second Screening). The following is a summary and results of the Second Screening analysis.

Safety – Improve geometrics and infrastructure
This alternative reconstructs the SR-10 corridor and thus improves safety. Deficient vertical curves, grades, cross section features (side slopes, shoulders, and clear zone), and existing pavement and structural deficiencies will be reconstructed to meet current AASHTO and UDOT standards. Although it is difficult to determine the actual reduction in crashes due to improved geometrics and infrastructure, the National Cooperative Highway Research Program (NCHRP) keeps extensive data on accident rates by roadway design type. NCHRP research suggests that this configuration with a continuous two-way left turn lane (TWLTL) would result in 20% fewer accidents over the current SR-10 configuration.

Traffic Operations
The 2030 4/5 Lane LOS for the SR-10 corridor was also evaluated using the same planning level methodologies identified in Technical Memorandum No. 3, SR-10 Corridor Study, Future Traffic Forecast. **Table 2.4** shows the 2030 4/5 Lane Alternative LOS by segment, defines the capacity under future geometric conditions and identifies the projected demand. **Appendix Figure 2.6** summarizes this information graphically.

Table 2.4, 2030 4/5 Lane - Planning Level LOS

Segment	No. Lanes	Capacity (ADT) (LOS C)	Demand (ADT)	LOS
SR-122 to 3000 South	4	24,600	16,200	B
3000 South to 1500 South	5	32,800	19,300	B
1500 South to US-6	5	32,800	25,400	B

The resulting 2030 4/5 Lane Alternative LOS shown in **Table 2.4** indicates that this alternative will meet the Purpose and Need for the SR-10 corridor on the daily level.

Conclusion
This alternative progressed through to the Third Screening for further evaluation because it met the purpose and need objectives for safety and traffic operations.

2.2.5 Alternative No. 5, Four/Three Lane Alternative

Alternative Description
This alternative would widen SR-10 to a four-lane roadway (2 lanes in each direction) from Stake Farm Road to 3000 South and a three-lane roadway (1 lane in each direction and a center turn lane) from 3000 South to 1500 South. The three lanes transition to five lanes from 1500 South to 1000 South, matching the five-lane cross section from 1000 South to US-6. Travel lanes would be 12 feet wide and the center turn lane would be 14 feet wide. Shoulders would be widened to 10 feet. Structures would be extended and heightened to meet current horizontal and vertical clearance requirements. Pavement would be improved to meet future load requirements. Vertical curves would be constructed to meet design standards. Intersections would be modified to accommodate the necessary turn movements.

Alternative Analysis
This alternative progressed through the reasonableness threshold (First Screening) and was evaluated on its ability to meet basic project purpose and need criteria, namely, safety and traffic operations (Second Screening). The following is a summary of the analysis of the Second Screening analysis.

Safety – Improve geometrics and infrastructure
By reconstructing the SR-10 corridor, this alternative improves safety. Deficient vertical curves, grades, cross-section features (side slopes, shoulders, and clear zone), existing pavement, and structural deficiencies will be reconstructed to meet current AASHTO and UDOT standards.

However, the change in the corridor continuity (number of traffic lanes transitions from four-lanes to three-lanes and then to five-lanes) tends to cause safety issues as cars merge in the reduced cross-section area. These transitions could be addressed with adequate signing and striping.

Traffic Operations
Future 2030 build conditions were modeled utilizing a four-lane SR-10 cross-section from SR-122 to 3000 South, a three-lane cross-section from 3000 South to 1500 South, and a five-lane cross-section from 1000 South to US-6.

Table 2.5, 2030 4/3 Lane - Planning Level LOS

Segment	No. Lanes	Capacity (LOS C)	Demand (ADT)	LOS
SR-122 to 3000 South	4	24,600	16,200	B
3000 South to 1500 South	3	13,800	19,300	F
1500 South to US-6	5	32,800	25,400	B

As shown in **Table 2.5**, the 2030 Four/Three Lane Alternative daily LOS is forecasted to fail from 3000 South to 1500 South. Second Screening **Appendix Figure 2.7** shows this information graphically.

In addition, this alternative allows for the implementation of an access management plan and the opportunity to incorporate multi-modal options into the proposed corridor cross-section.

Conclusion
This alternative was not progressed as a stand alone alternative after the Second Screening because it did not fully meet the traffic operations needs.

2.2.6 Alternative No. 6, Coal Truck Traffic Only Bypass

Alternative Description

Similar to the west side bypass, this alternative uses the same alignment as the West Side Bypass alternative; however it would only carry coal truck traffic on two lanes from Ridge Road to US-6. The West Side Bypass alignment was chosen due to the higher projected utilitzation over the east bypass route. In addition, an east side route is currently available and used by trucks and was not considered as an additive benefit for removing trucks from SR-10.

Alternative Analysis

This alternative progressed through the reasonableness threshold (First Screening) and was evaluated on its ability to meet basic project purpose and need criteria, namely, safety and traffic operations (Second Screening). The following is a summary and results of the Second Screening analysis.

Safety – Improve geometrics and infrastructure

The truck bypass would be constructed to meet current design standards for a rural two-lane arterial. However, this alternative does not reconstruct the SR-10 corridor, which would improve safety. SR-10 will continue to exhibit deficient vertical curves, grades, cross section features (side slopes, shoulders, and clear zone), and structural deficiencies. However, this alternative would separate coal trucks from standard size vehicles and thus offers some safety benefits.

Traffic Operations

This alternative evaluated the effects of the projected 2030 traffic volumes on the existing SR-10 geometries, intersection control, posted speed, heavy vehicle percentages minus the coal trucks, turn pocket lengths and assumed construction of a west side bypass. This alternative evaluated the effects of having all coal trucks restricted to the west side bypass. This is an aggressive assumption due to the passer-by-traffic type businesses on the existing corridor that may appeal to some truckers and influence them to remain on the SR-10 corridor. However, since this alternative offers no improvements to SR-10, and congestion is anticipated in the design year, it is reasonable to assume that all coal trucks which could benefit by taking a bypass route would take the alternative route.

Table 2.6 shows the 2030 Coal Truck Bypass Route LOS by segment, defines the capacity under current SR-10 geometric conditions and identifies the projected demand for SR-10 and the bypass route. **Appendix Figure 2.8** shows this information graphically.

As shown in **Table 2.6**, the 2030 Coal Truck By-Pass route alone can not sufficiently alleviate the demand on the SR-10 corridor, as several segments are failing to meet the capacity requirements of the project purpose and need.

Table 2.6, 2030 Coal Truck Bypass Route - Planning Level LOS

Segment	No. Lanes	Capacity (ADT) (LOS C)	Demand (ADT)	LOS
SR-10, SR-122 to Ridge Road	2	10,500	16,200	F

SR-10, Ridge Road to 3000 South	2	10,500	12,900	E
SR-10, 3000 South to 1500 South	2	10,500	12,900	E
SR-10, 1500 South to US-6	5	32,800	19,100	B
Westside Truck Route Bypass, Ridge Road to US-6	2	13,100	6,300	C

In addition, this alternative does not improve access control along the corridor, nor enhance multimodal systems.

Conclusion
This alternative did not progress as a stand alone alternative because it did not provide for safety and traffic operational needs on the SR-10 corridor.

2.2.7 Alternative No. 7, Railroad Spur

Alternative Description
This alternative includes building a rail line in order to reduce the amount of coal truck traffic on the SR-10 corridor. The rail line would run east of SR-10, between the Savage/Rail Co load out facility on Ridge Road and the power plants in Huntington/Castle Dale.

Alternative Analysis
This alternative progressed through the reasonableness threshold (First Screening) and was evaluated on its ability to meet basic project purpose and need criteria, namely, safety and traffic operations (Second Screening). The following is a summary and results of the Second Screening analysis.

Safety – Improve geometrics and infrastructure
This alternative would not reconstruct the SR-10 corridor and therefore does not improve safety. SR-10 will continue to exhibit deficient vertical curves, grades, cross-section features (side slopes, shoulders, and clear zone), and structural deficiencies.

Traffic Operations
Due to the location of the mines, load-out facility and power plants in the region, a rail line would only reduce truck traffic from Ridge Road to the Stake Farm Road (south end of the project corridor). It would not reduce truck traffic from Ridge Road to US-6 of the project corridor. A more detailed analysis of the railroad corridor is provided in the SR-10 Rail Alternative Memorandum. By only providing the rail line, the demand in the north and middle section would exceed the capacity. Similar to the No Build Alternative, the LOS would be F between Ridge Road and 1500 South.

In addition, this alternative does not improve access control along the corridor, nor enhance multimodal systems.

Conclusion
This alternative did not progress for further evaluation because it was unable to meet the safety and traffic operation needs on the SR-10 corridor.

2.2.8 Alternative No. 8, ITS/TSM and TDM

Alternative Description

Intelligent Transportation Systems (ITS) and Transportation System Management (TSM) are measures that improve the efficiency of a transportation network without major new roadway construction. Applicable measures of ITS would include signal coordination, and variable message signs. TSM include provision of park and ride lots, intersection signalization, addition of turn pockets at intersections, access management, acceleration and deceleration lanes, and enhancement of pedestrian and bicycle facilities.

Transportation Demand Management (TDM) includes measures that seek to adjust travel patterns resulting in either reduced travel levels during the peak hour or throughout the entire day. TDM measures include flexible work schedules, rideshare programs, telecommuting, discounted transit pass programs and guaranteed ride home. These strategies are usually implemented by large employers or the transit provider and include incentives to encourage employees to walk, bicycle, use public transportation, vanpool, carpool, or use other alternatives which would encourage multi passenger vehicles.

Alternative Analysis

This alternative progressed through the reasonableness threshold (First Screening) and was evaluated on its ability to meet basic project purpose and need criteria, namely, safety and traffic operations (Second Screening). The following is a summary and results of the Second Screening analysis.

Safety – Improve geometrics and infrastructure

This alternative would not reconstruct the SR-10 corridor and therefore does not improve safety. SR-10 will continue to exhibit deficient vertical curves, grades, cross-section features (side slopes, shoulders, and clear zone), and structural deficiencies.

TSM would improve turn lanes and some safety improvements which would improve safety. Traffic signals could be provided to improve safety at the intersections at US-6, and Ridge Road.

Traffic Operations

This alternative evaluated the effects of the projected 2030 traffic volumes on the existing SR-10 geometric conditions, intersection control, posted speed, heavy vehicle percentages, turn pocket lengths, and also assumed that current 2004 levels of ITS, TSM and TDM would continue to be implemented.

Neither ITS nor TSM measures will change the number of trips made on the roadway; however, they do improve traffic conditions by increasing the efficiency of a corridor. Currently, 7.1% of all work trips in Carbon County are TDM reduced trips that match the TDM reductions in the more populated and urbanized Salt Lake County. No greater TDM reductions were taken because of the demographics of the area.

The 2030 No Build Alternative with ITS/TSM and TDM conditions LOS for the SR-10 corridor was also evaluated using the same planning level methodologies identified in Technical Memorandum No. 3, SR-10 Corridor Study, Future Traffic Forecast. **Table 2.7** shows the LOS by segment, defines the capacity under existing geometric conditions and identifies the projected demand. **Appendix Figure 2.9** shows this information graphically.

Table 2.7, 2030 No Build with ITS/TSM & TDM - Planning Level LOS

Segment	No. Lanes	Capacity (LOS C)	Demand (ADT)	LOS
SR-122 to 3000 South	2	10,500	16,200	F
3000 South to 1500 South	2	10,500	19,300	F
1500 South to US-6	5	32,800	25,400	B

Although this alternative does enhance multimodal systems and improves access control along the corridor, these improvements by themselves do not provide a measurable improvement in traffic operations. As shown in **Table 2.7**, the alternative can not sufficiently alleviate the demand on the SR-10 corridor as multiple segments are failing to meet capacity needs.

Conclusion
This alternative was not progressed as a stand alone alternative because it failed to meet safety and traffic operation needs.

2.2.9 Alternative No. 9, Transit

Alternative Description
The Transit Alternative would implement a transit system to increase the person to capacity ratio of the existing corridor without adding travel lanes or making any improvements to the corridor. This could include shuttle bus service or subscription bus service to provide service from a park and ride lot to either the mines, load-out facilities, the Huntington power plant, the College of Eastern Utah (CEU), or other large area businesses.

Alternative Analysis
This alternative progressed through the reasonableness threshold (First Screening) and was evaluated on its ability to meet basic project purpose and need criteria, namely, safety and traffic operations (Second Screening). The following is a summary and results of the Second Screening analysis.

Safety – Improve geometrics and infrastructure
This alternative does not reconstruct the SR-10 corridor and therefore does not improve safety. SR-10 will continue to exhibit deficient vertical curves, grades, cross section features (side slopes, shoulders, and clear zone), and structural deficiencies.

Traffic Operations

This alternative evaluated the effects of the projected 2030 traffic volumes on the existing SR-10 geometric conditions, intersection control, posted speed, heavy vehicle percentages, turn pocket lengths and assumed that if a transit system were operational along the SR-10 corridor, a reduction of single occupant vehicles could occur.

The year 2000 census data shows that 0.2% of all work trips made by adults who reside in Carbon County are made using transit. As a comparison, the same figure for the more urbanized Salt Lake County is 3.5 percent and includes a well-developed transit system with light rail, express bus, bus, and flextrans alternatives. For this corridor study, a 2.0% transit usage factor was selected for the SR-10 corridor to reflect the limited future transit alternatives available to Carbon County.

Level of Service for the SR-10 corridor was also evaluated using the same planning level methodologies identified in Technical Memorandum No. 3, SR-10 Corridor Study, Future Traffic Forecast. **Table 2.8** reports the LOS by segment, defines the capacity under existing geometric conditions and identifies the projected demand. **Appendix Figure 2.10** displays this information graphically.

Table 2.8, 2030 No Build with Transit Reductions - Planning Level LOS

Segment	No. Lanes	Capacity (LOS C)	Demand (ADT)	LOS
SR-122 to 3000 South	2	10,500	15,900	F
3000 South to 1500 South	2	10,500	18,900	F
1500 South to US-6	5	32,800	24,900	B

As shown in **Table 2.8**, the 2030 No Build condition with transit reductions alone can not sufficiently alleviate the demand on the SR-10 corridor as multiple segments are failing to meet the Purpose and Need.

Conclusion
This alternative was not progressed as a stand alone alternative because it did not meet the purpose and need objectives for safety and traffic operations.

2.2.10 Alternative No. 10, Viaduct

Alternative Description
This alternative entails constructing a 3-mile viaduct over the existing SR-10 Corridor extending from 3000 South to 1500 South. The current roadway would be widened to 3 lanes (one southbound and one northbound travel lane, and one center turn lane). The viaduct would be a 2-lane raised structure with columns located in the median or on the outside of the at-grade roadway.

Alternative Analysis

This alternative was evaluated on its ability to meet project purpose and need criteria at a reasonableness threshold; namely, general safety, traffic operations, compatibility, and costs.

Safety – Improve geometrics and infrastructure
This alternative would reconstruct the roadway and, as a result, improve the deficient vertical curves, grades, cross-section features (side slopes, shoulders, and clear zone), existing pavement, and structural deficiencies on SR-10. However, columns placed in the median or outside the shoulders would introduce a hazard inside the roadway prism. Vehicles would be protected from the columns with barrier or crash cushions; however, placement of hazard within the traveled way (even when protected) is not a desirable design practice based on AASHTO design recommendations.

Ramps would be necessary at 3000 South and 1500 South to tie into the existing at-grade roadway.

Traffic Operations
Future 2030 traffic conditions would be similar to the Alternative No. 2, West Side Bypass and would not meet the purpose and need objective for the study corridor. The viaduct lanes would not have access to the intermediate street system as needed and could possibly be used less than the bypass because the viaduct would not provide vehicles with a locational advantage of taking them further west then the existing corridor.

Compatibility with the Setting
This alternative is estimated to have a higher level of impact on the natural and built environment through visual and community impacts. This alternative is not compatible with the context of this corridor.

Costs
The estimated cost for this alternative is $134,000,000, which is 4 to 7 times more expensive than the other, less impacting alternatives.

Conclusion
Although this alternative would meet safety and traffic operational needs, due to the extraordinary costs and the estimated level of impacts (visual, access, community context), this alternative was not progressed through the First Screening because it did not meet the reasonableness threshold.

2.2.11 Alternative No. 11, Local Collector Road on East Side and West Side of SR-10

Alternative Description
This alternative would provide two local collector roads, paralleling SR-10, from 3000 South to 1250 South on both the east and west sides of SR-10. The collector roads would service the numerous dwelling units currently fronting SR-10 by eliminating the front access and relocating the access to the back of the unit. No improvements to the existing corridor would

occur. This would concentrate vehicles at specific intersections along the SR-10 corridor, thus producing a more stringent form of access management by eliminating many of the overlapping conflict point locations.

Alternative Analysis

This alternative progressed through the reasonableness threshold (First Screening) and was evaluated on its ability to meet basic project purpose and need criteria, namely, safety and traffic operations (Second Screening). The following is a summary and result of the Second Screening analysis.

Safety – Improve geometrics and infrastructure

This alternative does not reconstruct the SR-10 corridor and therefore does not improve safety. SR-10 will continue to exhibit deficient vertical curves, grades, cross-section features (side slopes, shoulders, and clear zone), and structural deficiencies.

Traffic Operations

For this alternative, the projected 2030 traffic volumes on the existing SR-10 geometries, intersection control, posted speed, and heavy vehicle percentages were evaluated with some traffic being diverted to the local collector roads. It should be noted that the number of vehicles on the SR-10 corridor has not been reduced, just relocated to concentrated intersections. **Appendix Figure 2.11** shows this information graphically.

As shown in **Table 2.9**, the 2030 Local Collector Roads Alternative alone can not sufficiently alleviate the demand on the SR-10 corridor as the main segment of the corridor is failing to meet the capacity needs.

Table 2.9, 2030 Local Collector Roads - Planning Level LOS

Segment	No. Lanes	Capacity (LOS C)	Demand (ADT)	LOS
SR-122 to 3000 South	2	10,500	16,200	F
3000 South to 1500 South	2	10,500	19,300	F
1500 South to US-6	5	32,800	25,400	B
West Collector Road, 3000 South to 1250 South	2	7,000	1,050	A
East Collector Road, 3000 South to 1250 South	2	7,000	800	A

Multi-modal forms of transportation are not accommodated on the SR-10 corridor because improvements to the corridor are not provided. However, this alternative would improve access control on the SR-10 corridor. Access to residential homes or businesses could be relocated from SR-10 to the local collector roads.

Conclusion
This alternative was not progressed to the Third Screening because it did not meet the purpose and need objectives for safety, and capacity.

2.2.12 Alternative No. 12, Combined Alternative

Alternative Description
This is a combination of multiple alternatives to create a single alternative. The individual alternatives selected include:

- Alternative 2 – Westside Bypass,
- Alternative 5 – 4/3 Lane,
- Alternative 6 – Coal Truck Bypass Route,
- Alternative 8 – ITS/TSM/TDM,
- Alternative 9 – Transit Reductions.

Alternative Analysis
This alternative was developed based on public comments and the design analysis for individual alternatives that passed the First Screening. This combined alternative was evaluated on its ability to meet basic project purpose and need criteria, namely, safety and traffic operations (Second Screening). The following is a summary and results of the Second Screening analysis.

Safety – Improve geometrics and infrastructure
This alternative reconstructs the SR-10 corridor and therefore improves safety. Deficient vertical curves, grades, cross section features (side slopes, shoulders, and clear zone), existing pavement, and structural deficiencies will be reconstructed to meet current AASHTO and UDOT standards.

However, the change in the corridor continuity (number of traffic lanes changing from four lanes to three lanes and then to five lanes) tends to cause safety issues as cars merge in the reduced cross-section area.

Traffic Operations
For this alternative, the projected 2030 traffic volumes were combined with future SR-10 geometries, intersection control, posted speed, and heavy vehicle percentages minus coal trucks restricted to the bypass to complete the analysis. **Appendix Figure 2.12** shows this information graphically.

Table 2.10, 2030 Combined Alternatives - Planning Level LOS

Segment	No. Lanes	Capacity (ADT) (LOS C)	Demand (ADT)	LOS
SR-122 to 3000 South	4	24,600	15,900	B
3000 South to 1500 South	3	13,800	13,950	D
1500 South to US-6	5	32,800	19,900	B
Westside Bypass, Ridge	2	13,100	5,100	C

Road to US-6				

As shown in **Table 2.10**, the 2030 Combined Alternative does not meet the Purpose and Need for a capacity of LOS C, but would come close. The middle segment is projected to begin exhibiting LOS D in 2027.

This alternative would also provide for access management concepts and multi-modal facilities to be constructed.

Conclusion
This alternative progressed to the Third Screening for further evaluation because it met the purpose and need objectives for safety. Although his alternative did not meet the 2030 requirements, the alternative was progressed because it was within 3 years of the projected requirements and was sensitive to the context of the project.

2.3 Alternatives Progressed for Further Consideration

As explained in Section 2.2, the Second Screening evaluated each alternative's ability to meet basic purpose and need goals and objectives (safety and traffic operations). Alternatives that clearly would not meet the goals and objectives were not progressed for further evaluation. The Third Screening conducted a microscopic simulation of each progressed alternatives capacity, and determined each alternative's potential environmental impacts and costs.

During the capacity analysis of Alternative No. 4, 4/5 Lane Alternative, using the microscopic simulation, it was determined that this alternative functioned at a very high level of service. Having produced such a highly favorable LOS with Alternative No. 4, it was decided that this same level of analysis should be completed on Alternative No. 5, 4/3 Lane Alternative as a stand along alternative, even though it had not met the Second Screening criteria. The analysis results of Alternative 5 showed that a favorable LOS could be achieved. Since this more refined screening identified the 4/3 Lane Alternative as feasible, it was progressed to the Third Screening. Section 2.3.3 provides a summary of this analysis.

The following is a list of those alternatives that were progressed:

- Alternative No. 1: No Build
- Alternative No. 4: Four/Five Lane
- Alternative No. 5: Four/Three Lane
- Alternative No. 12: Combined

All the build alternatives were combined with ITS/TSM/TDM and transit components. Progressed alternatives were modeled geometrically to identify potential impacts. Alignment modifications were developed for each build alternative to minimize impacts. The following is a list of the alignment modifications of each of the above main alternatives and a short description of each:

- Alternative No. 4: Four/Five Lane Alternative. Four lanes will extended from Stake Farm Road to 3000 South. Five lanes will extend from 3000 South to 1500 South. **Appendix Figure 2.13** provides a cross-sectional view of each of the following variations.

- Alternative 4A: Five-Lane Centered – 105’ wide right-of-way (max.), 5-lane cross section (2 travel lanes in each direction and a center turn-lane) from 3000 South to 1500 South is centered on the current alignment (equivalent roadway widening on the west and east side of the existing roadway).
- Alternative 4B: Five-Lane Shift West – 105’ wide right-of-way (max.), 5-lane cross section (2 travel lanes in each direction and a center turn-lane) from 3000 South to 1500 South is shifted west of the current alignment. This was done to minimize impacts on the east side of the corridor.
- Alternative 4C: Five-Lane Shift East - 105’ wide right-of-way (max.), 5-lane cross section (2 travel lanes in each direction and a center turn-lane) from 3000 South to 1500 South is shifted east of the current alignment. This was done to minimize impacts on the west side of the corridor.
- Alternative 4D: Five-Lane Meander - 105’ wide right-of-way (max.), 5-lane cross section (2 travel lanes in each direction and a center turn-lane) from 3000 South to 1500 South meanders to the west and east from the current alignment. This was done to minimize the severity of impacts on both sides of the corridor.

- Alternative No. 5: Combined Alternative – These modifications are alignment modifications to Alternative 5 (four/three lane modifications). Four lanes will extended from Stake Farm Road to 3000 South. Three lanes will extend from 3000 South to 1500 South. **Appendix Figure 2.14** provides a cross sectional view of each of the following variations.
  - Alternative 5A: Three-Lane Centered – 81’ wide right-of-way (max.), 3-lane cross section (1 travel lane in each direction and a center turn-lane) from 3000 South to 1500 South is centered on the current alignment (equivalent roadway widening on the west and east side of the existing roadway).
  - Alternative 5B: Three-Lane Shift West – 81’ wide right-of-way (max.), 3-lane cross section (1 travel lane in each direction and a center turn-lane) from 3000 South to 1500 South is shifted west on the current alignment. This was done to minimize impacts on the east side of the corridor.
  - Alternative 5C: Three-Lane Shift East – 81’ wide right-of-way (max.), 3-lane cross section (1 travel lane in each direction and a center turn-lane) from 3000 South to 1500 South is shifted east on the current alignment. This was done to minimize impacts on the west side of the corridor.
  - Alternative 5D: Three-Lane Meander - 81’ wide right-of-way (max.), 3-lane cross section (1 travel lane in each direction and a center turn-lane). From 3000 South to 1500 South the alignment meanders to the west and east from the current alignment. This was done to minimize the severity of impacts on both sides of the corridor.
- Alternative No. 12: Combined Alternative – These modifications are similar to alignment modifications of Alternative 5 (four/three lane modifications), shown above.

The progressed alternatives and sub-alternatives were evaluated in the Third Screening for their ability to meet purpose and needs of the corridor, namely:

- Capacity
- Economic Impacts
- Environmental Impacts

- Value to the Community

The following provides the evaluation methodology for each of these project needs.

Capacity

During the Third Screening a more detailed level of capacity analysis was completed using CORSIM, a microscopic tool. Simulation was completed for the corridor by evaluating how each intersection and the corridor would function.

Early analysis of Alternative 4, during the Second Screening, indicated that the 4/5 lane alternative was sufficient. Through the CORSIM analysis (Third Screening) of Alternative No. 4, 4/5 Lane Alternative, it was determined that this alternative functioned at a very high level of service. Having produced such a favorable LOS with Alternative No. 4, it was decided that an additional simulation would be completed on Alternative No. 5, 4/3 Lane Alternative as a stand along alternative, even though it had not met the Second Screening criteria. Section 2.3.3 provides a summary of this analysis.

Environmental Impacts

Environmental impacts included relocations of residents and businesses, impacts to archaeological and historical structures, and qualitative analysis of other environmental features.

To determine if a home or business would require relocation and a complete right-of-way take, it was assumed that structures having a remaining frontage of 15 feet or less were considered to be a relocation and total take of the property. For comparison purposes, there are approximately 76 homes and 25 businesses that have direct access to SR-10.

Impacts to historical structures and archaeological sites were quantified as any impact to the property boundary (in the case of historical structures) or archaeological site. For comparison purposes, there are approximately 33 historical structures that are eligible on the National Register of Historic Places (NRHP) and 9 eligible archaeological sites along the corridor. A detailed review of these historical and archaeological sites can be found in Cultural and Fossil Resource Investigation of State Route 10, Stake Farm Road to US-6 prepared by Montgomery Archaeological Consultants.

Other environmental factors such as wetlands, wildlife, water quality, threatened and endangered species, hazardous waste, etc. were evaluated using a qualitative analysis. For this project a qualitative rating of high impact, moderate impact, or low impact were applied. A NEPA Scoping meeting with agencies was held to identify agency concerns in the area. Although agencies did not identify impacts of alternatives to environmental features, a more detailed analysis will be provided in the future environmental analysis.

Economic Analysis

This analysis examined potential impacts on land use and businesses that have been of concern to the local jurisdictions and citizens. Impacts to land use were analyzed by examining the existing land use in the study area, zoning and future land use, and planned developments.

Technical Memorandum No. 4, SR-10, Stake Farm Road to US-6, Economic Analysis, provides a detailed economic analysis and explanation of methodology.

The FHWA does not allow highway feasibility studies to consider increased land values or increased development activity as benefits in highway feasibility studies. Although some increased development often follows transportation improvements, i.e. new commercial development around an interchange, this type of development is considered a transfer of development that would have occurred elsewhere regardless of the transportation improvement. In other words, transportation projects for the most part do not by themselves generate new development or net economic growth. However, they do affect the location of that growth and may result in an area capturing more than its historical share of regional growth and development. Significant net new economic growth would not be created by any of the alternatives, but the location of growth in Carbon County can change depending on the locations of transportation facilities.

According to the Governor's Office on Planning and Budget (GOPB), employment in Carbon County is expected to grow at an annual rate of 1.1 percent per year. This economic or employment growth will occur in locations most suitable for the particular use. Improved access, safety, and travel times along SR-10 would contribute to a prospective business's location decision. With transportation improvements, SR-10 could capture a larger share of the County growth than it has in the past. Conversely, with no transportation improvements, and as access, safety, and other issues become more of a problem, economic growth is likely to occur elsewhere.

Value to the Community

This section quantifies the value of each alternative to the community compared to the costs and is based on a benefit-cost model derived from guidelines set by the federal Office of Management and Budget and the Federal Highway Administration. Technical Memorandum No. 4, SR-10, Stake Farm Road to US-6, Economic Analysis provides a detailed economic analysis and explanation of methodology. The methodology used in the benefit-cost analysis is derived from transportation planning models developed by the FHWA to help decision makers consider economic factors in their decisions. The methodology compares costs to a stream of benefits that accrue over the 30-year design life of the proposed project (transportation investment). In the case of transportation facilities, benefits can include reductions in travel time, reduced vehicle operating cost, reductions in environmental pollution (vehicle emissions), and reductions in accidents and property damage. Costs include construction (the initial cost of the investment) and maintenance.

These non-monetary benefits realized by transportation improvements can be translated into economic benefits by using factors developed by the FHWA, UDOT, EPA, and other agencies. In this analysis, they were quantified as follows:

- Travel Time - value is based on average wages. Under 2004 UDOT guidelines, the value is $11 per passenger vehicles, and $25 for commercial vehicles..
- Vehicle Operating Costs - is an estimate of vehicle maintenance and operating expenses on a per mile basis. The rate used in this analysis is $0.14 per mile based on Internal Revenue Service deductions.

- Accidents – are valued based on the accident type. The average annual cost of accidents along the study area is $4.83 million. The cost of accidents was converted to a cost per VMT (Vehicle Miles Travelled) in order to calculate the net benefit.
- Environmental Externalities (pollution) – The FHWA fleet-weighted value of emissions per mile is $0.015 per mile in 1990. This was adjusted for inflation using the Consumer Price Index (CPI).
- Construction Cost Estimates – Cost estimates were provided by the engineers and included construction, utility relocations, and ROW acquisition. UDOT assumptions of $3,400 per lane mile (2004 dollars) were assumed.
- Discount Rate – is the rate used to convert future benefits to a present value. The 4 percent rate represents current interest rates and yields on low-risk investment. It is also the rate recommended by the FHWA.

The following is a summary of the impacts of each of these alternatives under consideration during the third screening. **Figures 2.13** and **Figure 2.14** show the impacts of the alternatives with the least impacts: Alternative No. 4 and Alternative No. 5, respectively.

2.3.1 Alternative No. 1, No Build Alternative

Capacity

The longevity of the corridor's capacity under the No Build option (using a benchmark of LOS C or better) is the current year (2004). The resulting 2030 No Build intersection LOS shown in **Table 2.11** indicates that this alternative provides a LOS of F and does not meet the traffic operation needs of the corridor.

Table 2.11, 2030 No Build PM Peak Hour Level of Service

Intersection			Worst Movement			Overall Intersection	
No.	**Description**	**Control**	**LOS[1]**	**Movement[1]**	**Delay (Sec/Veh)[1]**	**LOS**	**Aver. Delay (Sec/Veh)[2]**
1	US-6 WB Ramps/ SR-10	Signalized	N/A	N/A	N/A	F	>80.0
2	US-6 EB Ramps/ SR-10	EB Stop	F	EB Right	>50.0	F	>50.0
3	1250 South/ SR-10	EB/WB Stop	F	EB Left	>50.0	F	>50.0
4	Robertson Lane (2000 South)/ SR-10	EB Stop	C	EB Left	24.5	F	>50.0
5	UPS Access/ SR-10	WB Stop	C	EB Left	19.1	E	38.5
6	2750 South/ SR-10	WB Stop	C	SB Left	15.1	C	24.1

7	3000 South/ SR-10	WB Stop	B	WB Right	12.9	C	18.7
8	3350 South/ SR-10	EB Stop	C	EB Left	17.8	C	16.3
9	3450 South/ SR-10	EB Stop	D	NB Left	30.0	C	16.6
10	Ridge Road/ SR-10	EB/WB Stop	D	NB Right	30.5	E	38.8
11	Stake Farm Road/ SR-10	WB Stop	D	NB Right	30.4	E	38.8

1. This represents the worst approach and/or movement LOS and delay (seconds/vehicle) and is only reported for unsignalized intersections.
2. This represents the overall intersection LOS and delay (seconds/vehicle).

Source: Fehr & Peers Associates, Inc. September 2004.

The time required for an average vehicle to travel on SR-10 between US-6 and SR-122 for the no-build condition has been projected to be approximately 11 minutes and 12 seconds.

Economic Impacts

The effects of this alternative on local businesses will vary depending on the type of business. There are two convenience retail establishments along the corridor that are highly dependent on passer-by-traffic, require locations with high ADT, and would potentially benefit from traffic along SR-10 under the No Build alternative. In contrast, business-to-business services such as maintenance and repair services, or primary industries such as construction or manufacturing, do not rely on high visibility, high traffic locations. Most businesses and employment centers along SR-10 are more service oriented. These service and industrial type businesses provide business-to-business services, such as maintenance and repair of equipment or mining support services. These types of businesses are not dependent on passer-by-traffic for revenue. Because the traffic situation is expected to worsen under this alternative, eventually there would be an overall negative impact on businesses, employees and customers along the corridor. **Table 2.12** summarizes the potential effects of the No Build alternative on businesses along SR-10.

Table 2.12, Economic Impacts of the No Build Alternative

Business Type	Access & Location Preferences	# Establishments along SR-10	Effects of Alternative: No-Build
Convenience Retail	High traffic, high visibility	2	Continued high ADT, although access and safety eventually become compromised (+/-)
Destination Retail	High traffic, high visibility	4	Worsening customer access and safety (-)
Industrial, Construction, Repair, Office	Employee and delivery access is priority. Often separated from retail and high traffic uses.	+/- 55	Worsening customer and employee access and safety (-)
Mining & Trucking	Prefer free flowing traffic; minimize interaction with passenger vehicles	(Regional)	Interaction with other vehicles expected to worsen (-)

Source: Economic & Planning Systems

This alternative does not have any relocation impacts. However, this alternative is not compatible with the project purpose and need in that the county wants to promote increased economic development along SR-10. The No-Build alternative does not improve access, safety, nor exhibit reasonable travel times along the corridor that could promote economic development.

Environmental Impacts

This alternative would not reconstruct or widen the existing corridor. As a result, the environmental impacts are anticipated to be low compared to other alternatives.

Value to the Community

This alternative assumes capital improvements will be made to the existing corridor with the No Build Alternative to maintain its life. The cost to provide such capital improvements is $2.2 million. This provides asphalt overlays and striping for the corridor. As shown on **Table 2.13,** additional user costs (based on vehicle miles traveled (VMT)) stemming from travel time, operating costs, safety, and environmental externalities would be necessary through the year 2030 design life.

User costs shown in **Table 2.13** quantify travel time, operating costs, safety, and environmental externalities and reflect the present value of the total user costs through 2030. Maintenance costs are expressed as the present value of maintenance costs through 2030; the construction cost is a one time cost incurred in 2008. As shown, the No Build Alternative has total user costs of over $389.2 million.

Table 2.13, User Costs: No Build Scenario

User Costs (Millions)[1]	2030 No Build
Vehicle Miles Travelled (VMT)	40,900,000
User Costs	
Travel Time - Commercial Vehicles	$58.15
Travel Time - Autos	$144.99
Vehicle Operating Costs	$61.03
Safety	$115.64
Environmental Externalities	$9.39
Total User Costs (Present Values)	$389.20
Costs	
Maintenance (Present Value)	$0.67
Construction	$2.19
Total Costs	$2.86

[1] All dollar values are reported in 2008 constant dollars

Source: HW Lochner, Fehr & Peers, Economic & Planning Systems

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2.3.2 Alternative No. 4, Four/Five Lane Alternative

Capacity

Table 2.14 reports the 2030 PM peak hour LOS and delay results for the 2030 4/5 Lane traffic conditions analyses, which were calculated using the computer modeling software, CORSIM, and following the Highway Capacity Manual (HCM) methodologies. Existing intersection control was used for all intersections except Ridge Road and the westbound US-6 ramps. These two intersections were analyzed as signalized intersections.[1]

[1] This analysis is intended to examine the general correlation between the planned level of future development and the need to install new traffic signals. It estimates future development-generated traffic compared against a sub-set of the standard traffic signal warrants recommended in the Federal Highway Administration's publication titled, *The Manual on Uniform Traffic Control Devices (MUTCD)* and associated State guidelines. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured, rather than forecasted, traffic data and a thorough study of traffic and roadway conditions by an experienced engineer. Furthermore, the decision to install a signal should not be based solely upon the warrants, since the installation of signals can lead to certain types of collisions. The responsible state or local agency should undertake regular monitoring of actual traffic conditions and accident data, and timely re-evaluation of the full set of warrants in order to prioritize and program intersections for signalization.

Table 2.14, SR-10 Corridor Study, Carbon County, Utah *2030 4/5 Lane PM Peak Hour Level of Service*							
Intersection			**Worst Movement**			**Overall Intersection**	
No.	**Description**	**Control**	**LOS[1]**	**Movement[1]**	**Delay (Sec/Veh)[1]**	**LOS**	**Aver. Delay (Sec/Veh)[2]**
1	US-6 WB Ramps/ SR-10	Signalized	N/A	N/A	N/A	C	22.5
2	US-6 EB Ramps/ SR-10	Signalized	N/A	N/A	N/A	B	11.6
3	1250 South/ SR-10	EB/WB Stop	F	EB Thru	>50.0	B	12.2
4	Robertson Lane (2000 South)/ SR-10	EB Stop	F	EB Left	>50.0	B	14.0
5	UPS Access/ SR-10	WB Stop	F	EB Left	>50.0	A	3.1
6	2750 South/ SR-10	WB Stop	F	WB Left	>50.0	A	1.8
7	3000 South/ SR-10	WB Stop	F	WB Left	>50.0	A	2.4
8	3350 South/ SR-10	EB Stop	D	EB Left	31.6	A	1.5
9	3450 South/ SR-10	EB Stop	E	EB Left	36.1	A	5.4
10	Ridge Road/ SR-10	Signalized	N/A	N/A	N/A	C	17.0
11	Stake Farm Road/ SR-10	WB Stop	E	WB Left	35.4	A	10.0

1., This represents the worst approach and/or movement LOS and delay (seconds/vehicle) and is only reported for unsignalized intersections.

2. This represents the overall intersection LOS and delay (seconds/vehicle).

Source: Fehr & Peers Associates, Inc. September 2004.

The time required for an average vehicle to travel on SR-10 between US-6 and SR-122 for the 4/5 Lane alternative has been projected to be approximately 8 minutes and 48 seconds.

Economic Impacts

This alternative is not expected to increase the net total amount of development in Carbon County or the City of Price. Overall population and employment growth around and along the corridor is expected to reflect the Governor's Office of Planning and Budget (GOPB) forecasts one percent per year for population and 1.1 percent per year for employment.

The effects of this alternative on local businesses will vary depending on the type of business. Some businesses, such as convenience retail, are highly dependent on passer-by-traffic, and require locations with high ADT. Consequently, increases or decreases in ADT could affect the number of potential customers driving past these businesses. In contrast, business-to-business services such as maintenance and repair services, or primary industries such as

construction or manufacturing, do not rely on high visibility, high traffic locations. These businesses require locations with good access for their employees, customers, and shipments. These types of businesses are often found separated from uses that generate large amounts of traffic, such as convenience or regional retail uses.

This alternative would maintain the passer-by-traffic and improve access for employees, customers, and shipments. **Table 2.15** can be used to evaluate the potential effects of this alternative on businesses along SR-10 compared to other alternatives

Table 2.15, Economic Impacts of the Four/Five Lane Alternative

Business Type	Access & Location Preferences	# Establishments along SR-10	Effects of Alternative 4/5 Lane Alternative
Convenience Retail	High traffic, high visibility	2	Better customer access and safety (+)
Destination Retail	High traffic, high visibility	4	Better customer access and safety (+)
Industrial, Construction, Repair, Office	Employee and delivery access is priority. Often separated from retail and high traffic uses.	+/- 55	Improved employee and delivery access. Increased safety, fewer turning delays and conflicts (+)
Mining & Trucking	Prefer free flowing traffic; minimize interaction with passenger vehicles	(Regional)	Improves conditions over the no-build scenario, but interaction with other vehicles still occurs.

Source: Economic & Planning Systems

Most businesses and employment centers along SR-10 are more service oriented. These service and industrial type businesses provide business-to-business services, such as maintenance and repair of equipment or mining support services. These types of businesses are not dependent on passer-by-traffic for revenue. All businesses, employees and customers would benefit from the improved access and safety.

Environmental Impacts

Figure 2.1 summarizes the environmental impacts for each alignment modification for the Four/Five Lane Alternative. Quantitative impacts for total relocations, historical impacts, and archaeological impacts were evaluated. The following is a summary of these impacts:

Proposed Relocated Residential Home(s): 9 - 23 of 76 total homes
Proposed Business Relocation(s): 1 - 4 of 25 total businesses
Historically Eligible Impact(s): 10 - 12 of 31 total eligible (5 - 9 total takes)
Archaeological Eligible Impact(s): 4 - 6 of 11 total eligible (0 - 1 total takes)

A qualitative analysis of other environmental factors was completed for this alternative. It was determined that impacts to other environmental factors are expected to be **low.**

Alternative No. 4D, 5 Lane Meander option is the alternative with the least impact. Impacts of this alternative can be seen on **Appendix Figure 2.15**.

Value to the Community

Total preliminary engineering and construction cost estimates for this alternative range from $21.5 million - $23 million. These are one-time costs. Maintenance costs are expressed as the present value of maintenance costs through 2030. The 4/5 lane alternative construction and maintenance costs are valued at $23.07 million.

User costs shown in **Table 2.16** quantify travel time, operating costs, safety, and environmental externalities and reflect the present value of the total user costs from 2009 to 2030. Total user costs are valued at $329.5 million. These costs are based upon vehicle miles traveled (VMT).

Table 2.16, User Costs for Four/Five Lane Alternative

User Costs (Millions)[1]	2030 4/5 Lane Alternative
Vehicle Miles Travelled (VMT)	40,970,000
User Costs	
Travel Time - Commercial Vehicles	$51.54
Travel Time - Autos	$113.68
Vehicle Operating Costs	$61.09
Safety	$92.60
Environmental Externalities	$10.62
Total User Costs (Present Values)	$329.53
Costs	
Maintenance (Present Value)	$1.28
Construction	$21.79
Total Costs	$23.07

[1] All dollar values are reported in 2008 constant dollars

Source: HW Lochner, Fehr & Peers, Economic & Planning Systems

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The net economic benefit of the alternative can be expressed as the sum of the changes in user costs compared to the No Build Alternative, which is the baseline for comparison. A positive change from the No Build Alternative suggests that the alternative in question is more economically beneficial, while a negative change suggests that there are tradeoffs. **Table 2.17** shows the benefit-cost ratio compared to the No Build alternative. The ratio of 2.59 suggests that the benefits of this alternative are higher than the costs.

Table 2.17, Benefit-Cost of Four/Five Lane Alternative

Cost-Benefit Factors (Millions)[1]	4/5 Lane Alternative
Vehicle Miles Travelled (VMT)	40,970,000
Benefits (Change in User Costs)	
Travel Time - Commercial Vehicles	$6.62
Travel Time - Autos	$31.31
Vehicle Operating Costs	-$0.06
Safety	$23.04
Environmental Externalities	-$1.23
Total Benefits (Present Values)	$59.67
Construction and Maintenance	
Maintenance (Present Value)	$1.28
Construction	$21.79
Total Costs	$23.07
Benefit/Cost Ratio	**2.59**
Total Net Benefits	$36.60

[1] All dollar values reported in 2008 constant dollars

Source: HW Lochner, Fehr & Peers, Economic & Planning Systems

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2.3.3 Alternative No. 5, Four/Three Lane Alternative

Capacity

Although the original traffic analysis indicated that this alternative did not meet the capacity needs of the corridor, a micro simulation analysis was completed for the corridor and each intersection. **Table 2.18** shows the PM peak hour LOS and delay results for the 2030 4/3 Lane traffic conditions analyses, which were calculated using CORSIM and following the HCM methodologies.

As shown in **Table 2.18**, during the PM peak hour, only one overall intersection LOS is forecasted to be lower than LOS C (also the case with the 4/5 Lane alternative). The overall intersection delay in the 4/3 Lane alternative is generally greater than the 4/5 Lane alternative; however, side street movements and left turns from SR-10 experience fewer delays in the 4/3 Lane alternative due to the shorter crossing time created by the smaller cross-section.

The longer side street delays experienced in the 4/5 Lane alternative can be attributed to the fact that a larger cross-section requires more time for side street vehicles to maneuver across. The future traffic volumes on SR-10 provide few gaps in the traffic stream for vehicles on the side streets. The extra time required to cross the four and five-lane cross sections restricts the

number of times during the peak hour a side street vehicle can cross the road, resulting in increased delay and queuing. Thus adding more lanes will not address the problem of side street delay for the SR-10 corridor.

Table 2.18, 2030 4/3 Lane PM Peak Hour Level of Service

Intersection			Worst Movement			Overall Intersection	
No.	**Description**	**Control**	**LOS[1]**	**Movement[1]**	**Delay (Sec/Veh)[1]**	**LOS**	**Aver. Delay (Sec/Veh)[2]**
1	US-6 WB Ramps/ SR-10	Signalized	N/A	N/A	N/A	C	19.7
2	US-6 EB Ramps/ SR-10	EB Stop	N/A	N/A	N/A	A	9.9
3	1250 South/ SR-10	EB/WB Stop	F	EB Thru	>50.0	C	17.4
4	Robertson Lane (2000 South)/ SR-10	EB Stop	F	EB Left	>50.0	B	14.1
5	UPS Access/ SR-10	WB Stop	D	WB Left	26.8	A	7.4
6	2750 South/ SR-10	WB Stop	C	WB Left	23.4	A	4.1
7	3000 South/ SR-10	WB Stop	C	WB Left	18.9	A	5.4
8	3350 South/ SR-10	EB Stop	C	EB Left	20.9	A	4.0
9	3450 South/ SR-10	EB Stop	D	NB Left	27.5	B	12.1
10	Ridge Road/ SR-10	EB/WB Stop	N/A	N/A	N/A	C	33.2
11	Stake Farm Road/ SR-10	WB Stop	E	SB Left	40.5	C	24.2

1. This represents the worst approach and/or movement LOS and delay (seconds/vehicle) and is only reported for unsignalized intersections.
2. This represents the overall intersection LOS and delay (seconds/vehicle).

Source: Fehr & Peers Associates, Inc. September 2004.

Although most of the traffic volumes on the side streets are forecasted not to meet traffic signal volume warrants, signals might be considered at select locations based on a coordinated signal system warrant, a crash experience warrant, and/or a roadway network warrant. A change in traffic control or additional side street lanes will likely improve side street delay.

The time required for an average vehicle to travel on SR-10 between US-6 and SR-122 for the 4/3 Lane alternative has been projected to be approximately 9 minutes and 51 seconds.

Economic Impacts

Similar to Alternative No. 4, Four/Five Lane Alternative, this alternative is not expected to increase the net total amount of development in Carbon County or the City of Price. Overall population and employment growth around and along the corridor is expected to reflect the Governor's Office of Planning and Budget (GOPB) forecasts one percent per year for population and 1.1 percent per year for employment.

The effects of this alternative on local businesses will vary depending on the type of business. Some businesses, such as convenience retail, are highly dependent on passer-by-traffic, and require locations with high ADT. Consequently, increases or decreases in ADT could affect the number of potential customers driving past these businesses. Most businesses and employment centers along SR-10 are more service oriented. These service and industrial type businesses provide business-to-business services, such as maintenance and repair of equipment or mining support services. These types of businesses are not dependent on passer-by-traffic for revenue. All businesses, employees and customers would benefit from the improved access and safety.

This alternative would maintain the passer-by-traffic and improve access for employees, customers, and shipments. **Table 2.19** summarizes the potential effects of this alternative on businesses along SR-10. As shown, the majority of businesses along the SR-10 corridor do not rely on high ADT and would potentially benefit from this alternative.

Table 2.19, Economic Impacts of the Four/Three Lane Alternative

Business Type	Access & Location Preferences	# Establishments along SR-10	Effects of Alternative: 4/3 Lane Alternative
Convenience Retail	High traffic, high visibility	2	Better customer access and safety (+)
Destination Retail	High traffic, high visibility	4	Better customer access and safety (+)
Industrial, Construction, Repair, Office	Employee and delivery access is priority. Often separated from retail and high traffic uses.	+/- 55	Improved employee and delivery access. Increased safety, fewer turning delays and conflicts (+)
Mining & Trucking	Prefer free flowing traffic; minimize interaction with passenger vehicles	(Regional)	Improves conditions over the no-build scenario, but interaction with other vehicles still occurs.

Source: Economic & Planning Systems

Environmental Impacts

Figure 2.1 summarizes the environmental impacts for each alignment modification for the Four/Three Lane Alternative. Quantitative impacts for relocations, historical impacts, and archaeological impacts were evaluated. The following is a summary of these impacts:

Proposed Relocated Residential Home(s):	1 - 7 of 76 total homes
Proposed Business Relocation(s):	0 - 1 of total 25 businesses
Historically Eligible Impact(s):	8 - 14 of 31 total eligible (1 - 2 total takes)
Archaeological Eligible Impact(s):	5 of 11 total eligible (1 total take)

A qualitative analysis of other environmental factors was completed for this alternative. It was determined that impacts to other environmental factors are expected to be **low.**

Alternative No. 5D, 3 Lane Meander option is the alternative with the overall least impact. Although Alternative No. 5B, West Shift Alignment has fewer historical impacts (10), Alternative No. 5D has fewer relocations (5) and historical impacts (15). These historical impacts are generally strip takes compared to Alternative No. 5B in which almost all of its historical impacts (8) are total relocations (Alternative No. 5D has only 5 historical relocations). Impacts of this alternative can be seen in **Appendix Figure 2.16.**

Value to the Community

Total preliminary engineering and construction cost estimates for this alternative range from $15.0 million to $17.5 million. These are one-time costs. Maintenance cost are expressed as the present value of maintenance costs through 2030. The 4/3 Lane Alternative construction and maintenance costs are valued at approximately $15.9 million.

User costs shown in **Table 2.20** quantify travel time, operating costs, safety, and environmental externalities and reflect the present value of the total user costs from 2009 to 2030. Total user costs are valued at $356.5 million. These costs are based upon vehicle miles traveled (VMT).

Table 2.20, User Costs for Four/Three Lane Alternative

User Costs (Millions)[1]	2030 4/3 Lane Alternative
Vehicle Miles Travelled (VMT)	40,970,000
User Costs	
Travel Time - Commercial Vehicles	$55.03
Travel Time - Autos	$137.20
Vehicle Operating Costs	$61.09
Safety	$92.60
Environmental Externalities	$10.62
Total User Costs (Present Value)	$356.54
Costs	
Maintenance (Present Value)	$1.09
Construction	$14.85
Total Costs	$15.94

[1] All dollar values are reported in 2008 constant dollars

Source: HW Lochner, Fehr & Peers, Economic & Planning Systems

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The net economic benefit of the alternative can be expressed as the sum of the changes in user costs compared to the No Build alternative, which is the baseline for comparison. A positive change from the No Build Alternative suggests that the alternative in question is more economically beneficial, while a negative change suggests that there are tradeoffs. **Table 2.21** shows the benefit-cost ratio compared to the No Build Alternative. The ratio of 2.05 suggests that this alternative passes the feasibility threshold and the benefits are higher than the costs.

Table 2.21, Benefit-Cost of Four/Three Lane Alternative

Cost-Benefit Factors (Millions)[1]	4/3 Lane Alternative
Vehicle Miles Travelled (VMT)	40,970,000
Benefits (Change in User Costs)	
Travel Time - Commercial Vehicles	$3.13
Travel Time - Autos	$7.79
Vehicle Operating Costs	-$0.06
Safety	$23.04
Environmental Externalities	-$1.23
Total Benefits (Present Values)	$32.66
Construction and Maintenance	
Maintenance (Present Value)	$1.09
Construction	$14.85
Total Costs	$15.94
Benefit/Cost Ratio	**2.05**
Total Net Benefits	$16.72

[1] All dollar values reported in 2008 constant dollars

Source: HW Lochner, Fehr & Peers, Economic & Planning Systems

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2.3.4 Alternative No. 12, Combined Alternative

Capacity

The Combined alternative provides a LOS of C or better through the year 2027. As shown in Section 2.2.12, the roadway section from 3000 South to 1500 South has a LOS of D. The north and south sections have a LOS of C or better through the year 2030 and beyond.

Due to the results of the Alternative No. 5 (acceptable LOS) a CORSIM was not conducted for Alternative No. 12. However, for comparison with other progressed alternatives, due to the

reduction in the demand on SR-10 provided by the bypass, it is anticipated that the intersection analysis for this alternative would operate better than Alternative No. 5.

Economic Impacts

Transportation projects by themselves generally do not generate net economic growth, however, they can shift growth from one area to another. Improved access, safety, and improved travel times would contribute to a prospective business's location decision. The amount of growth that would be shifted to SR-10 or the West Bypass cannot be quantified accurately because much of this growth would have occurred elsewhere in the County. However, as shown in **Table 2.22,** the West Side Bypass alternative anticipates that ADT on SR-10 would be reduced by 20 percent between Ridge Road and US-6. Convenience retail businesses would likely experience a decline in customer traffic as a result; however, there are a limited number of these businesses along the corridor. Destination retail locations would be less affected by the west bypass, since trips to these types of establishments are for a specific purpose, and are typically planned in advance.

Service oriented businesses and public administration make up the majority of employment along the corridor. These businesses would be minimally affected by any of the alternatives. It is expected that most businesses would benefit in intangible ways from improvements to SR-10. The bypass would remove some background traffic, which would allow employees and others to more easily access their place of work or job site.

As shown in **Table 2.22,** convenience retail establishments would likely experience a reduction in sales. However, the ADT is only expected to decline approximately 20 percent from current levels under the bypass alternative, and a 20 percent reduction in ADT would not necessarily result in a 20 percent reduction in retail sales. Destination type retail establishments such as auto dealerships are less dependent on ADT for customer visits. Destination shopping trips are typically planned trips for a specific purpose; therefore, reductions in ADT along SR-10 will have a minimal effect on destination retail although they may have slightly less visibility to potential customers with the decreased ADT.

Table 2.22, Economic Impacts of the Combined Alternative

Business Type	Access & Location Preferences	# Establishments along SR-10	Effects of Alternative Combined Alternative
Convenience Retail	High traffic, high visibility	2	Better customer access and safety, however, potential loss of some customer traffic (-/+)
Destination Retail	High traffic, high visibility	4	Better customer safety; however potentially less visibility. Destination trips affected minimally. (+/-)
Industrial, Construction, Repair, Office	Employee and delivery access is priority. Often separated from retail and high traffic uses.	+/- 55	Improves conditions for employees and deliveries (+)
Mining & Trucking	Prefer free flowing traffic; minimize interaction with passenger vehicles	(Regional)	Improves conditions along SR-10 by redirecting some traffic to bypass and improving SR-10 (+)

Source: Economic & Planning Systems

Environmental Impacts

Figure 2.1 summarizes the environmental impacts for each alignment modification for the Four/Three Lane Alternative. Quantitative impacts for total right-of-way takes, historical impacts, and archaeological impacts were evaluated. Impacts of this alternative can be seen on **Appendix Figure 2.16** (impacts are similar to Alternative No. 5). The environmental impacts for the West Bypass were qualitative only and estimated to be Moderate. Initial NEPA Scoping meetings with agencies did not identify significant impacts to other environmental features. If necessary, a more detailed analysis could be provided in the future.

Value to the Community

Total preliminary engineering and construction cost estimates for this alternative range from $43.1 million to $45.5 million. Estimates at the low end of the range were used for this analysis. These are one-time costs. Maintenance costs are expressed as the present value of maintenance costs through 2030. The combined alternative construction and maintenance costs are valued at approximately $45.6 million.

User costs shown in **Table 2.23** quantify travel time, operating costs, safety, and environmental externalities and reflect the present value of the total user costs from 2009 to 2030. Total user costs are valued at $342.2 million.

Table 2.23, Users Costs for Combined Alternative

User Costs (Millions)[1]	2030 Combined Alternative
Vehicle Miles Travelled (VMT)	45,100,000
User Costs	
Travel Time - Commercial Vehicles [2]	$48.22
Travel Time - Autos [2]	$120.23
Vehicle Operating Costs	$64.59
Safety	$97.90
Environmental Externalities	$11.23
Total User Costs (Present Values)	$342.16
Costs	
Maintenance (Present Value)	$2.46
Construction	$43.11
Total Costs	$45.57

[1] All dollar values are reported in 2008 constant dollars

[2] Assumes average speed along SR-10 of 33.5 mph. Cost assumptions did not include the cost of constructing and purchasing transit equipment and implementing a transit system.

Source: HW Lochner, Fehr & Peers, Economic & Planning Systems

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The net economic benefit of the alternative can be expressed as the sum of the changes in user costs compared to the No Build alternative, which is the baseline for comparison. A positive change from the No Build alternative suggests that the alternative in question is economically beneficial, while a negative change suggests that there are tradeoffs. **Table 2.24** shows the benefit-cost ratio compared to the No Build alternative. The ratio of 1.03 suggests that this alternative passes the feasibility threshold and has potential benefits compared to costs in comparison with the No Build alternative.

Table 2.24, Benefit – Costs for Combined Alternative

Cost-Benefit Factors (Millions)[1]	Combined Alternative
Vehicle Miles Travelled (VMT)	45,100,000
Benefits (Change in User Costs)	
Travel Time - Commercial Vehicles	$9.93
Travel Time - Autos	$24.76
Vehicle Operating Costs	-$3.56
Safety	$17.74
Environmental Externalities	-$1.84
Total Benefits (Present Values)	$47.03
Construction and Maintenance	
Maintenance (Present Value)	$2.46
Construction	$43.11
Total Costs	$45.57
Benefit/Cost Ratio	**1.03**
Total Net Benefits	$1.46

[1] All dollar values are reported in 2008 constant dollars

[2] Assumes average speed along SR-10 of 33.5 mph. Cost assumptions did not include the cost of constructing and purchasing transit equipement and implementing a transit system.

Source: HW Lochner, Fehr & Peers, Economic & Planning Systems

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2.4 Preliminary Recommendation

It is recommended that Alternative 1, No Build, Alternative 4D, Four/Five Lane Meander, and Alternative 5D, Four/Three Lane Meander be progressed for further evaluation. The following provides a side-by-side comparison to support this recommendation.

2.4.1 Safety

All progressed alternatives (other than Alternative No. 1, No Build) meet project purpose and need requirements for safety in that they improve the geometrics and infrastructure of SR-10.

2.4.2 Traffic Operations

Alternatives 4, 5, and 12 meet project purpose and need requirements for improving traffic operations in that they provide a minimum LOS C or better through 2030, improve access along the corridor, and enhance multi-modal systems.

Alternative No. 1, No Build alternative, provides a LOS of F and does not meet the traffic operation needs of the corridor in 2030. Alternative Nos. 4, 5, and 12, Four/Five Lane and Four/Three Lane, and Combined alternatives (respectively) provide LOS of C or better for year 2030. Only one overall intersection for both Alternative 4 and 5 have forecasted LOS lower than LOS C. The overall intersection delay in the 4/3 Lane alternative is generally greater than the 4/5 Lane alternative; however, side street movements and left turns from SR-10 experience fewer delays in the 4/3 Lane alternative due to the shorter crossing time created by the smaller cross-section.

2.4.3 Economic Impacts

Overall population and employment growth around and along the corridor is expected to reflect the Governor's Office of Planning and Budget (GOPB) forecasts one percent per year for population and 1.1 percent per year for employment. Although the transportation alternatives will not generate new development or net economic growth, they may affect the location of growth and may result in an area capturing more than its historical share of regional growth and development.

The effects of the alternatives on local businesses will vary depending on the type of business. Some businesses, such as convenience retail, are highly dependent on passer-by-traffic, and require locations with high ADT. Consequently, increases or decreases in ADT could affect the number of potential customers driving past these businesses. Most businesses and employment centers along SR-10 are more service oriented. These service and industrial type businesses provide business-to-business services, such as maintenance and repair of equipment or mining support services. These types of businesses are not dependent on passer-by-traffic for revenue. **Table 2.25** summarizes the types of businesses along the corridor and the effect of each of the alternatives.

Table 2.25, Economic Impacts to Businesses

Business Type	Access & Location Preferences	# Establishments along SR-10	Effects of Alternative		
			No-Build	4/5 or 4/3 Lane Alternative	Combined Alternative
Convenience Retail	High traffic, high visibility	2	Continued high ADT, although access and safety eventually become compromised (+/-)	Better customer access and safety (+)	Better customer access and safety, however, potential loss of some customer traffic (-/+)
Destination Retail	High traffic, high visibility	4	Worsening customer access and safety (-)	Better customer access and safety (+)	Better customer safety; however potentially less visibility. Destination trips affected minimally. (+/-)
Industrial, Construction, Repair, Office	Employee and delivery access is priority. Often separated from retail and high traffic uses.	+/- 55	Worsening customer and employee access and safety (-)	Improved employee and delivery access. Increased safety, fewer turning delays and conflicts (+)	Improves conditions for employees and deliveries (+)
Mining & Trucking	Prefer free flowing traffic; minimize interaction with passenger vehicles	(Regional)	Interaction with other vehicles expected to worsen (-)	Improves conditions over the no-build scenario, but interaction with other vehicles still occurs (+/-)	Improves conditions along SR-10 by redirecting some traffic to bypass and improving SR-10 (+)

Source: Economic & Planning Systems

Alternatives No. 4 and 5 would maintain passer-by-traffic on the SR-10 corridor and would be consistent with county economic development goals and land use plans for this corridor. Alternative 12 would direct traffic away from the SR-10 corridor and not be consistent with county plans.

2.4.4 Compatible with Setting - Environmental Impacts

Figure 2.1 summarizes the environmental impacts for each alternative. Alternatives 4D and 5D have the least overall impact of all the alternatives alignment options. **Table 2.26** compares these alternatives for total right-of-way relocations, historical and archeological impacts and qualitative analysis of other environmental factors.

Table 2.26, Environmental Impacts

Alternative No.	Total Home Relocations	Total Business Relocations	Total Historical Impacts	Total Arch. Impacts	Qualitative Analysis of Other Env. Factors
No Build	0	0	0	0	Low
Alternative 4D	9	1	12	5	Low
Alternative 5D	3	0	13	5	Low
Alternative 12D	4+	0	13+	5+	Moderate

2.4.5 Provide Best Value to the Community

Total preliminary engineering and construction cost estimates for these alternatives range from $2 million to over $40 million. These are one-time costs. Maintenance costs are expressed as

the present value of maintenance costs through 2030. Theses costs range from $0.6 to nearly $2.5 million. Combined construction and maintenance costs under the alternatives described range from $2.8 to $45.6 million.

User costs quantify travel time, operating costs, safety, and environmental externalities and reflect the present value of the total user costs through 2030. As shown in **Table 2.27**, total user costs range from $329 million to $389 million.

Table 2.27, Users Costs for All Alternatives

User Costs (Millions)[1]	2030 No Build	Alt. 4 4/5 Lane Meander	Alt. 5 4/3 Lane Meander	Alt. !2 Combined Alt.[2]
Vehicle Miles Travelled (VMT)	40,900,000	40,970,000	40,970,000	45,100,000
User Costs				
Travel Time - Commercial Vehicles	$58.15	$51.54	$55.03	$48.22
Travel Time - Autos	144.99	113.68	137.20	120.23
Vehicle Operating Costs	61.03	61.09	61.09	64.59
Safety	115.64	92.60	92.60	97.90
Environmental Externalities	9.39	10.62	10.62	11.23
Total User Costs (Present Values)	$389.20	$329.53	$356.54	$342.16
Costs				
Maintenance (Present Value)	$0.67	$1.28	$1.09	$2.46
Construction	2.19	21.79	14.85	43.11
Total Costs	$2.86	$23.07	$15.94	$45.57

1. All dollar values are reported in 2008 constant dollars.
2. An average speed of 33.5 mph was assumed for SR-10. The costs for this alternative do not include the cost of constructing/purchasing transit equipment and implementing a transit system.

Source: HW Lochner, Fehr & Peers, Economic & Planning Systems

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The net economic benefit of the alternative can be expressed as the sum of the changes in user costs compared to the No Build alternative, which is the baseline for comparison. A positive change from the No Build alternative suggests that the alternative in question is economically beneficial, while a negative change suggests that there are tradeoffs. **Table 2.28** shows the benefit-cost ratio of all the alternatives compared to the No Build alternative. In comparison to the No Build alternative, the Four/Five lane alternative has the highest benefit-cost ratio, followed by the Four/Three lane alternative, and finally the Combined alternative.

Table 2.28, Benefit – Cost Ratio for Alternatives

Cost-Benefit Factors (Millions)[1]	Alt. 4 4/5 Lane Meander	Alt. 5 4/3 Lane Meander	Alt. 12 Combined Alt.[2]
Vehicle Miles Travelled (VMT)	40,970,000	40,970,000	45,100,000
Benefits (Change in User Costs)			
Travel Time - Commercial Vehicles	$6.62	$3.13	$9.93
Travel Time - Autos	31.31	7.79	24.76
Vehicle Operating Costs	-0.06	-0.06	-3.56
Safety	23.04	23.04	17.74
Environmental Externalities	-1.23	-1.23	-1.84
Total Benefits (Present Values)	$59.67	$32.66	$47.03
Construction and Maintenance			
Maintenance (Present Value)	$1.28	$1.09	$2.46
Construction	21.79	14.85	43.11
Total Costs	$23.07	$15.94	$45.57
Benefit/Cost Ratio	**2.59**	**2.05**	**1.03**
Total Net Benefits	$36.60	$16.72	$1.46

1. All dollar values are reported in 2008 constant dollars.
2. An average speed of 33.5 mph was assumed for SR-10. The costs for this alternative do not include the cost of constructing/purchasing transit equipment and implementing a transit system.

Source: HW Lochner, Fehr & Peers, Economic & Planning Systems

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The main differences between the alternatives lie in the costs of travel time and safety. The No Build alternative has the highest travel time and highest safety costs. Alternative 4 achieves the highest reductions in travel time for both commercial vehicles and passenger vehicles.

2.4.6 Conclusion

Based on current land use, it is recommended that Alternative No. 5D be progressed as the preferred alternative because it: improves safety, meets traffic operational needs, is consistent with economic development plans, has the least impact to the setting due to fewest relocations, fewest impacts to historical and archeological sites, and low impact to other environmental factors, and has a relatively high benefit to cost ratio indicating that it would be a value to the community

However, due to input from the local community as reflected by the Advisory Committee and local government officials (see Letters of Concurrence), and if land use were to change in the future (residential zoning along the corridor were to change to commercial development), it is recommended Alternative No. 4D, Four/Five lane alternative also be progressed because the added capacity of the 5-lane section would be required to meet the increased demand.

Alternative No. 1, No Build should also be progressed per NEPA requirements.

Appendix
Chapter 1 - Purpose and Need for Action

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Figure 1.5, Change in Driving Age Population, 1990-2000
Figure 1.6, Coal Mining Operations in Utah
Figure 1.7, Coal Production, Carbon and Emery Counties, 1960-2002
Figure 1.8, Conflict Points at an Access Point

Figure 1.1, Project Location Map

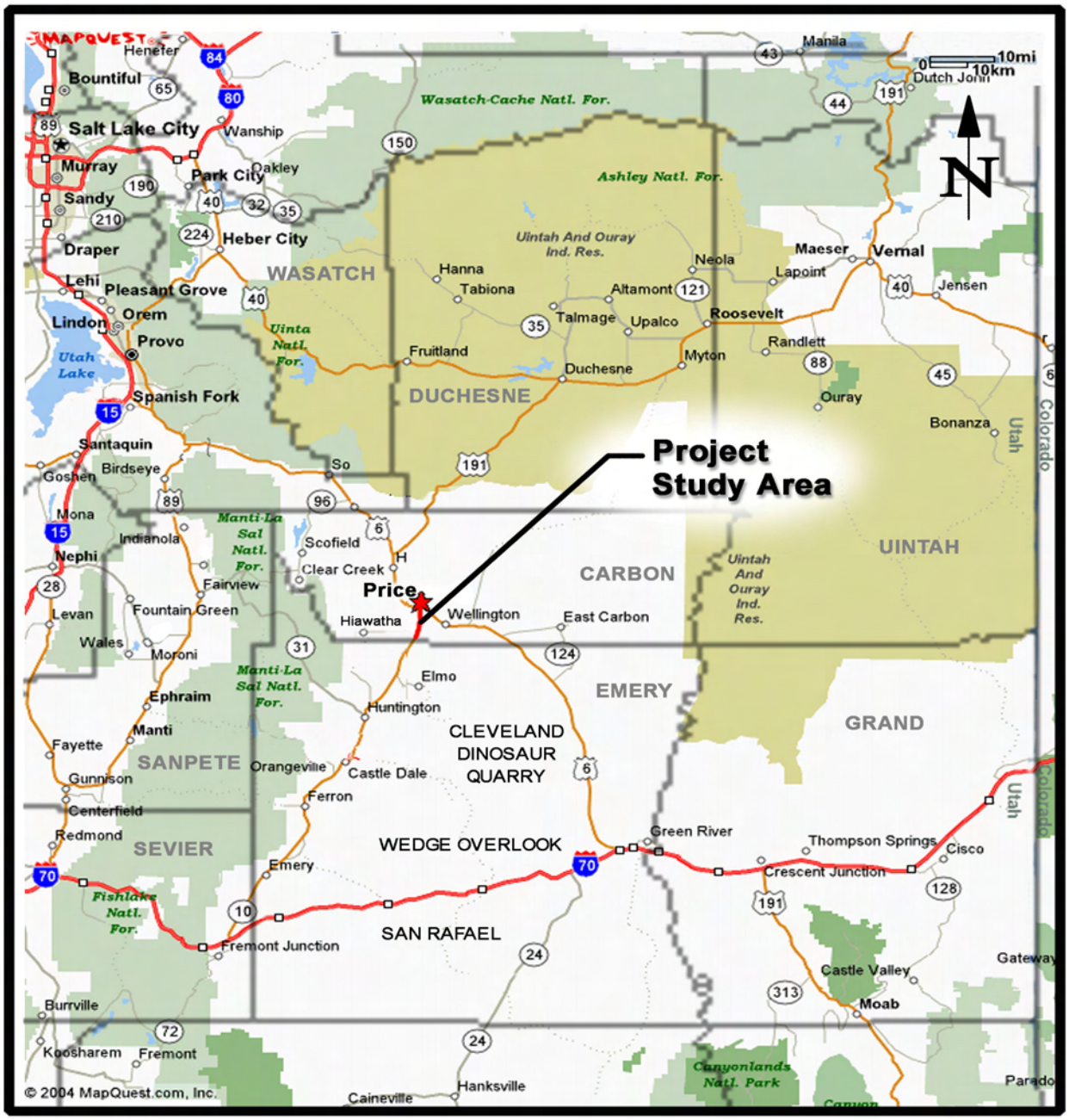

FIGURE 1.2
PROJECT STUDY AREA MAP

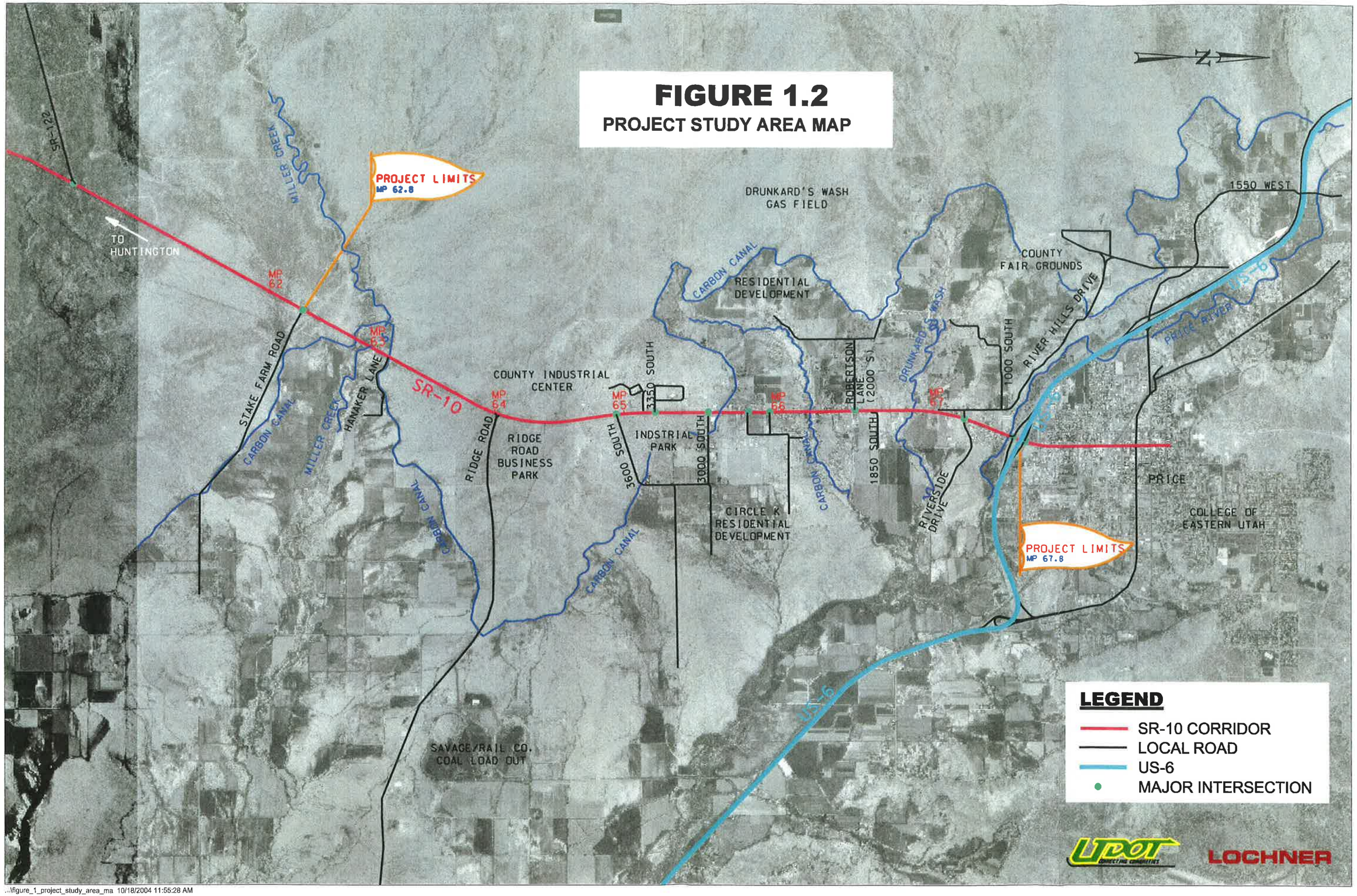

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Figure 1.3, Traffic Projections

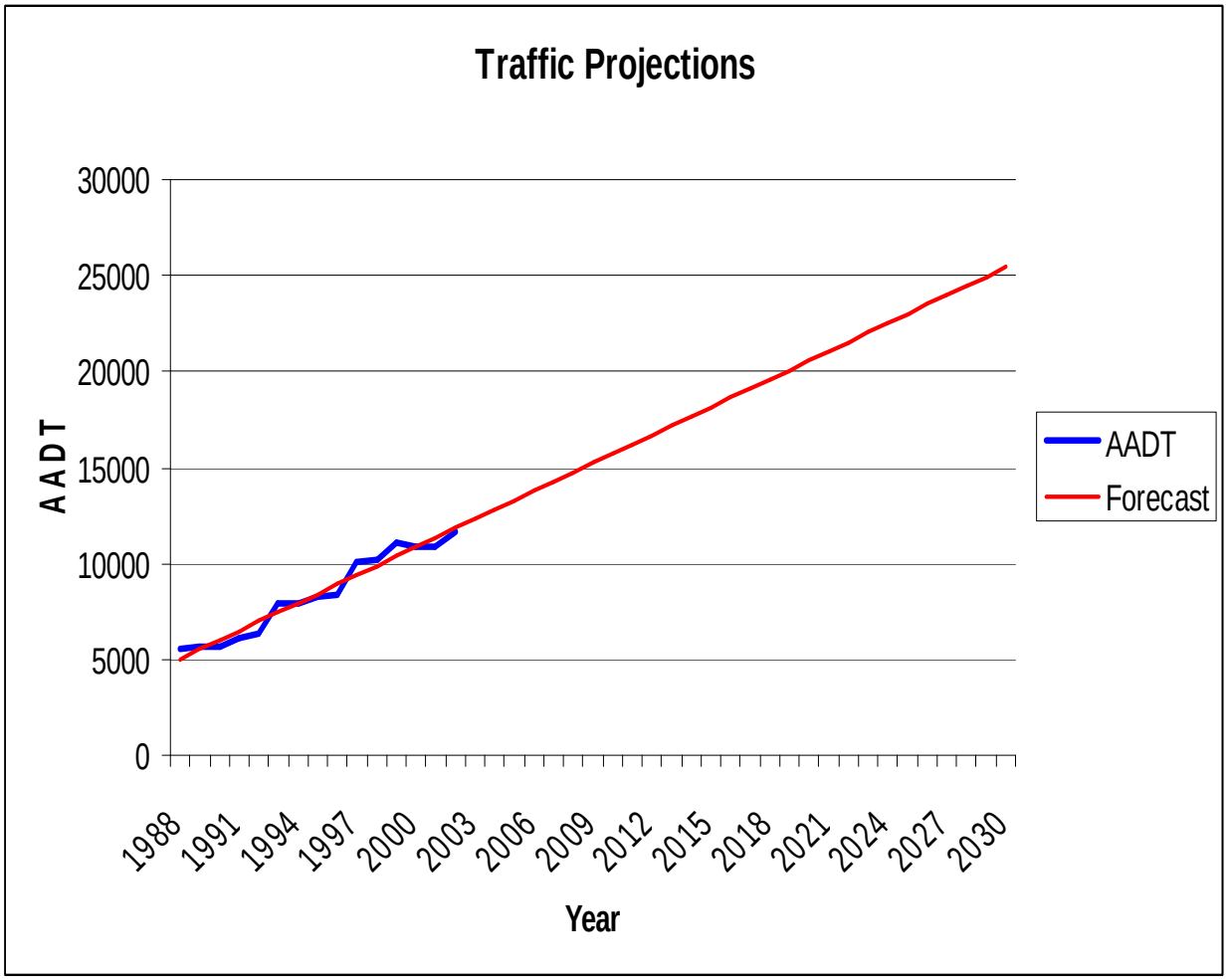


Figure 1.4, Origin / Destination

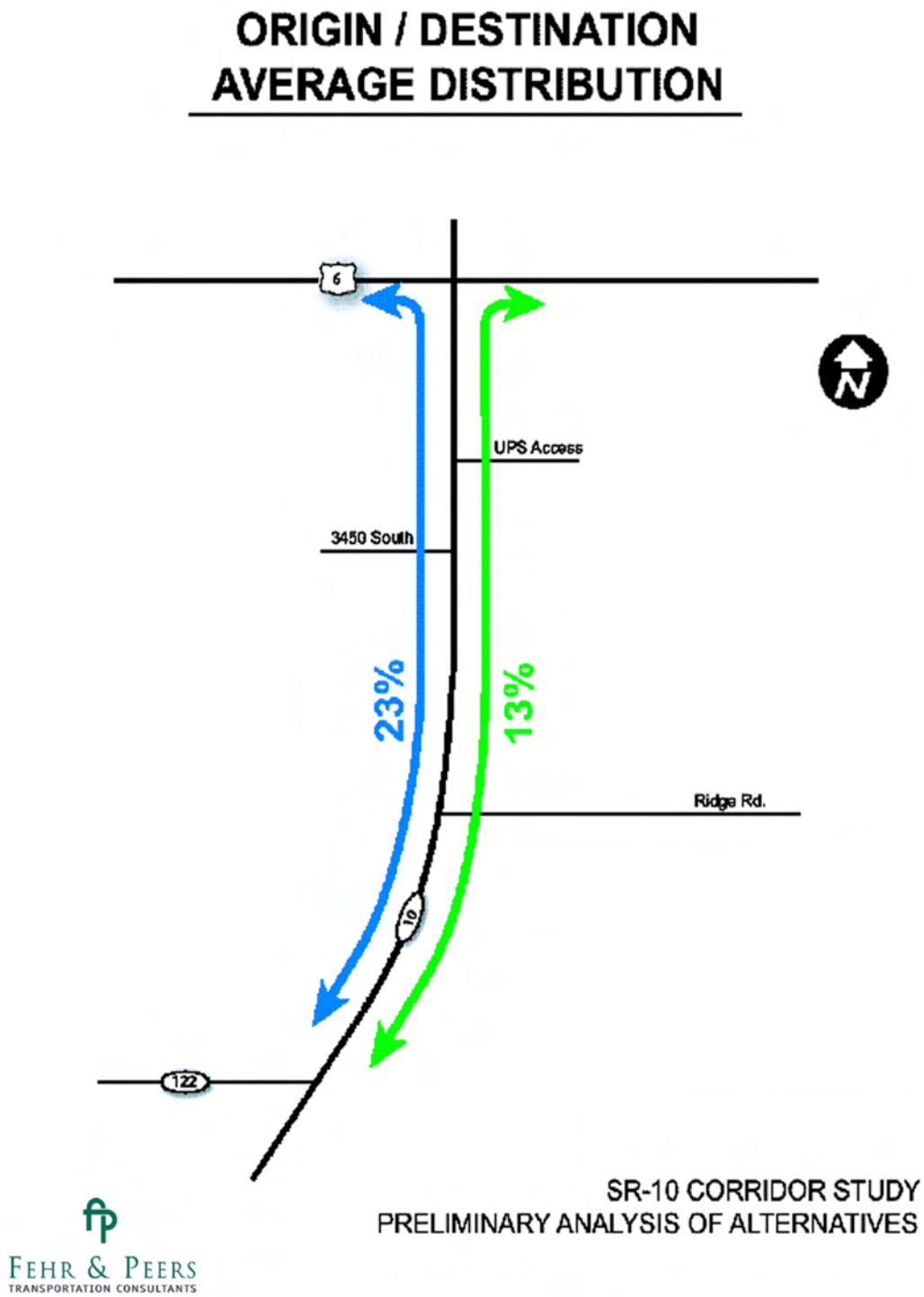


Figure 1.5, Change in Driving Age Population, 1990-2000

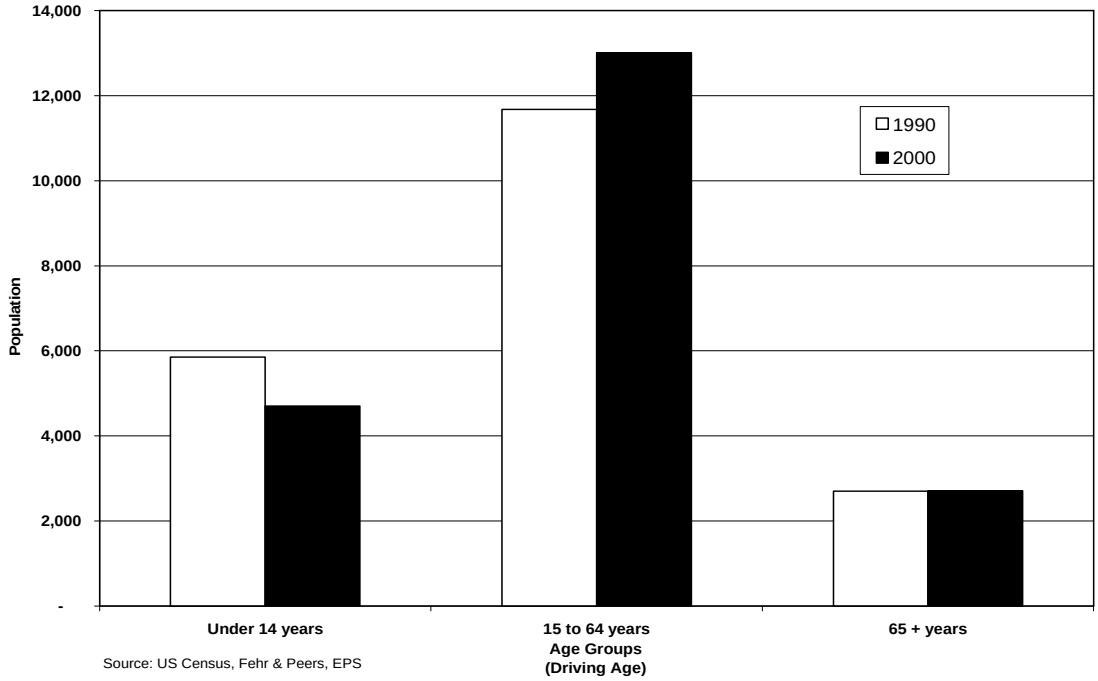


Figure 1.6, Coal Mining Operations in Utah

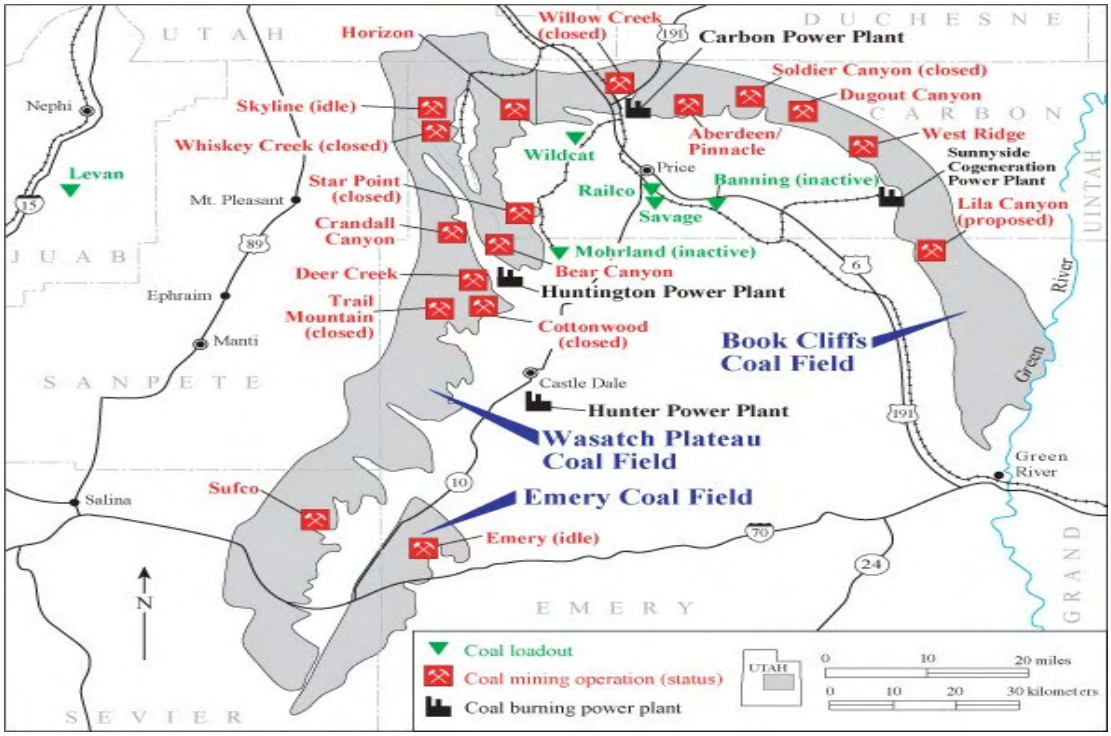
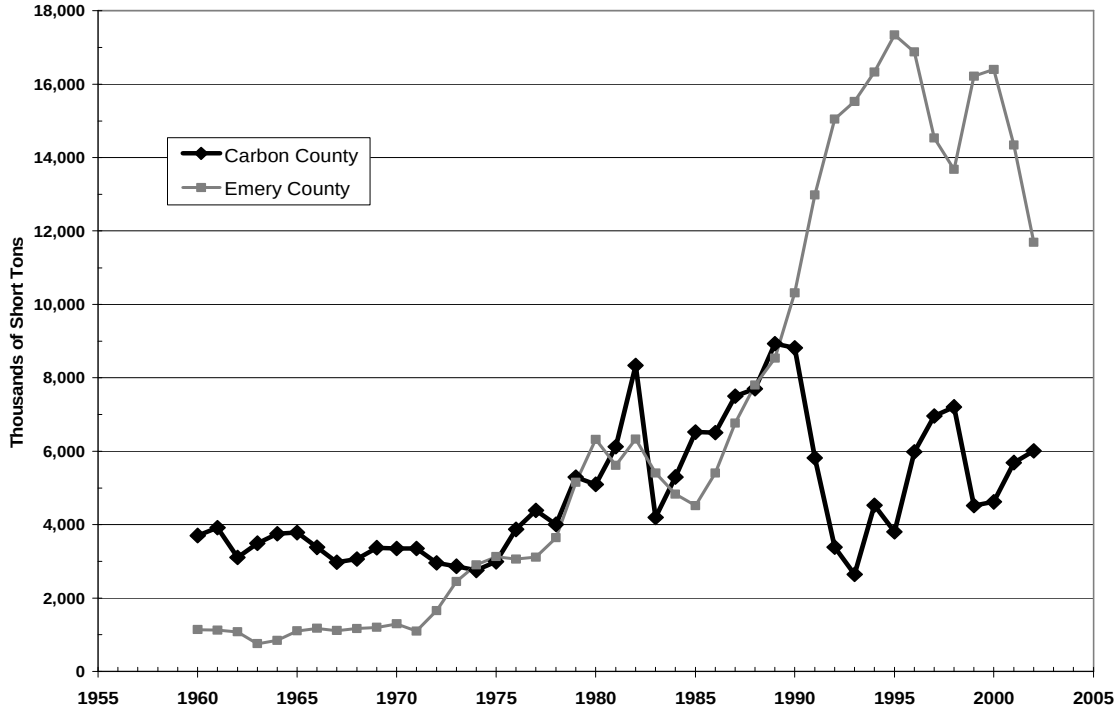
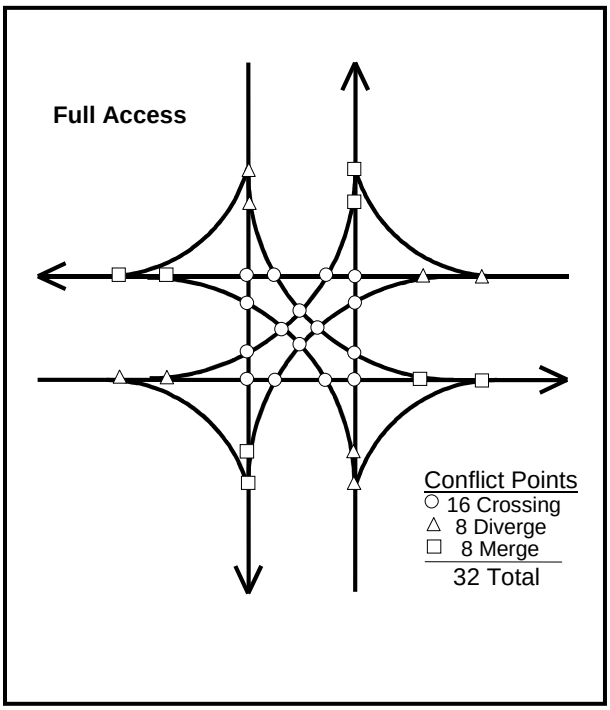


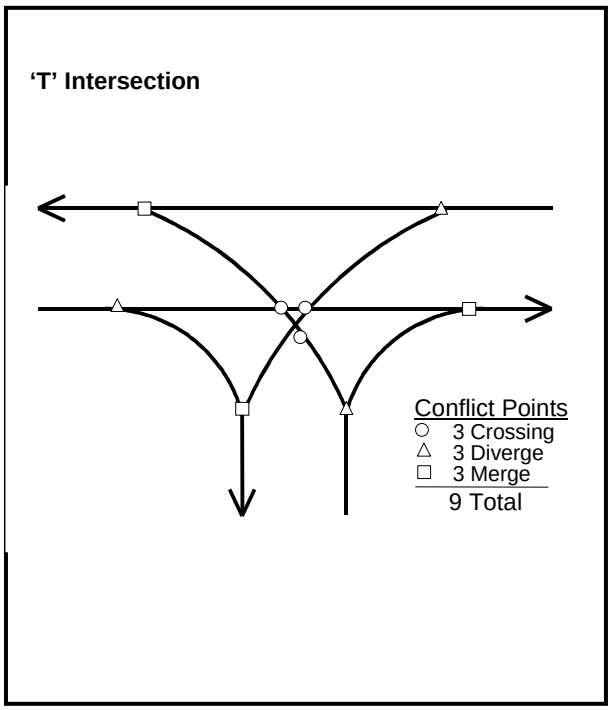
Figure 1.7, Coal Production, Carbon and Emery Counties, 1960-2002



Source: Utah Energy Office; Economic & Planning Systems

Figure 1.8, Conflict Points at an Access Point





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Chapter 2 - Alternatives

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Figure 2.4, Origin Destination Study
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Figure 2.6, 2030 4/5 Lane Capacity Analysis
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Figure 2.1, Progression of Alternatives and Evaluation Summary
SR-10, Stake Farm Road to US-6 Corridor Study

Establish Project Need - May 2004 to June 30, 2004

Held NEPA Scoping Meeting and Open House #1 - June 30, 2004

Establish Purpose and Need
-Improve Safety
-Improve Capacity
-Consistent with Economic Development plans
-Compatible with Natural and Built Environment
-Best Value to Community
Develop Universe of Solutions

Held Advisory Committee Meeting #1 - July 29, 2004
Held Open House #2 - August 17, 2004
Attended Carbon County Commission Mtg. - August 18, 2004

Alt. No.	Range of Solutions	Initial Screening - Solutions that Meet Reasonableness Threshold	Second Screening - Alternatives Ability to Meet Purpose and Need
1	No Build	→	-Does not provide for future travel demand -Does not improve safety on SR-10 corridor -Not Consistent with Economic Development Plans -Does not provide best value to Community
2	Westside Bypass	→	-Does not provide for future travel demand (Combined with TSM/TDM, Transit, Truck Relocated) LOS C in North Section Only til Year 2009 LOS C in Middle Section Only til Year 2012 LOS C in South Section Only til Year 2022 -Does not improve safety on SR-10 corridor -Not Consistent with Economic Development Plans STOP
3	Eastside Bypass	→	-Does not provide for future travel demand -Does not improve safety on SR-10 corridor -Not Consistent with Economic Development Plans STOP
4	Four/Five Lane Through	→	-Does provide for future travel demand through year 2030 -Does improve safety on SR-10 corridor -Consistent with Economic Development Plans
5	Four/Three Lane	→	-Does not provide for future travel demand North Section - 2007 Middle Section - 2015 South Section - 2022 STOP
6	Truck Traffic Only Bypass	→	-Does not provide for future travel demand -Does not improve safety on SR-10 corridor -Not Consistent with Economic Development Plans STOP
7	Railroad Spur	→	-Does not provide for future travel demand -Does not improve safety on SR-10 corridor -Not Consistent with Economic Development Plans STOP
8	ITS/TSM/TDM	→	-Does not provide for future travel demand -Does not improve safety on SR-10 corridor STOP
9	Transit	→	-Does not provide for future travel demand -Does not improve safety on SR-10 corridor STOP
10	Viaduct	Excessive cost ($134,000,000) and Impact to community STOP	
11	Local Collector Roads on East and West side of SR-10	→	-Does not provide for future travel demand -Does not improve safety on SR-10 corridor STOP
12			

Third Screening - Evaluation of Impact and Cost for Progressed Alternatives

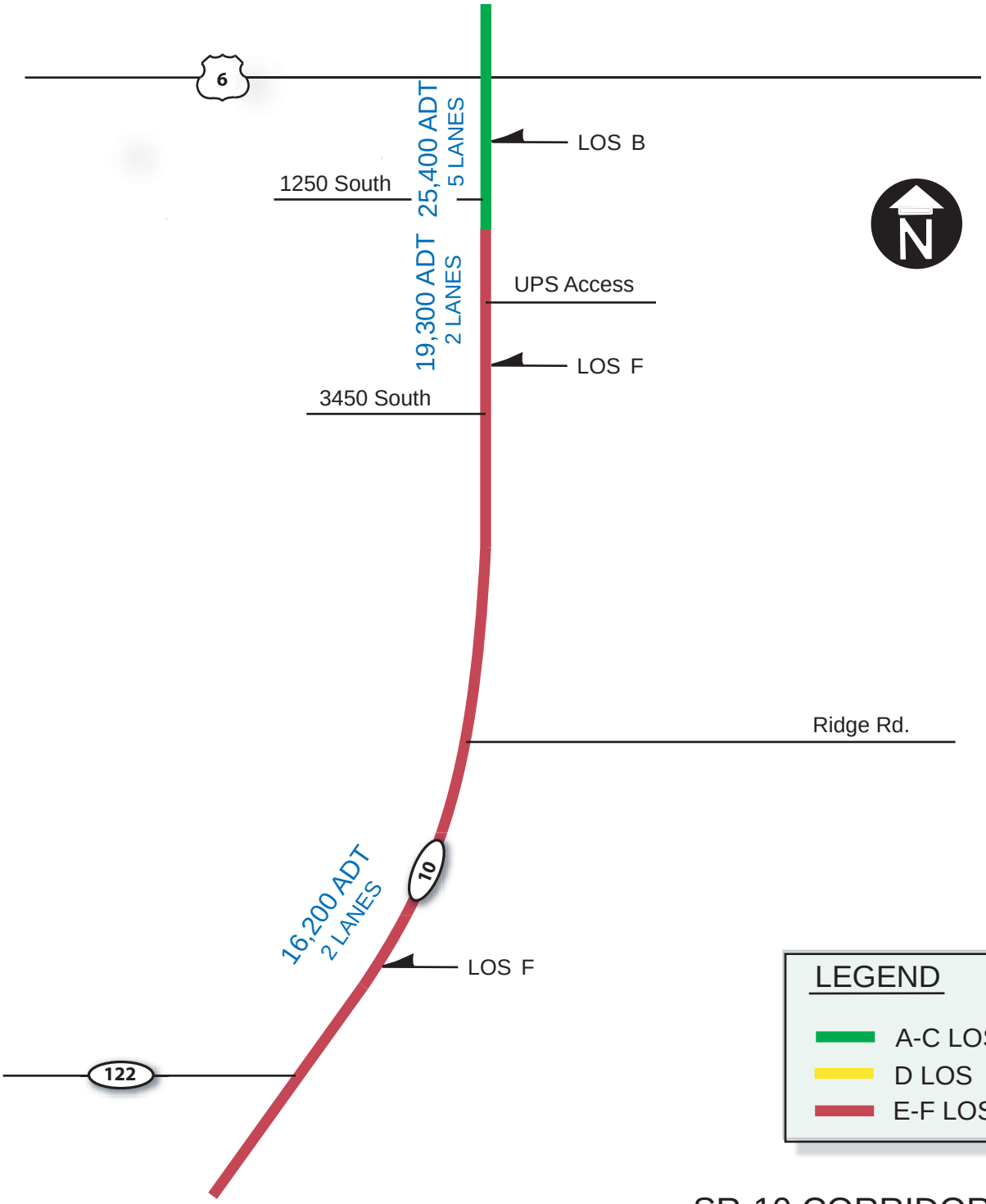
Progressed Alternative Name/Description	Variations of Progressed Alternatives	Ability to Meet Purpose and Need	Capacity Longevity: Year LOS C	Total Takes: Home	Total Takes: Business	Historical Impacts: Eligible	Arch Impacts: Eligible	Other Environmental Factors (Qualitative Analysis - Quantitative Analysis to be Completed in Future)	Total Construction Cost	Progressed Alternatives
Progressed Under NEPA Regulation →		-Does not provide for future travel demand -Does not improve safety on SR-10 corridor -Not Consistent with Economic Development Plans -Does not provide best value to Community	2004	0	0	0	0	LOW	$ 2,200,000 (Capital Improvement Cost)	→ $ 2,200,000 (Capital Improvement Costs)
Four/Five Lane →	Alternative 4A: 5-Lane Centered Alternative 4B: 5-Lane Shift West Alternative 4C: 5-Lane Shift East Alternative 4D: 5-Lane Meander (All Combined with TSM/TDM, & Transit)	-Does provide for future travel demand through year 2030 -Improves geometrics and safety on SR-10 corridor -Maintains Traffic on SR-10 Corridor/Carbon Avenue -Benefit of Corridor is high compared to cost	2030 +	22 19 16 11	2 3 1 1	15 11 10 8	8 7 7 8	LOW	Alt. 4A Cost $ 23,000,000 Alt. 4B Cost $ 22,500,000 Alt. 4C Cost $ 21,500,000 Alt. 4D Cost $ 22,000,000	→ $ 22,000,000
Combined Alternative (Developed August 31, 2004 in Project Meeting) Alternative includes: West Bypass (Alt #2) Four/Three Lane (Alt #5) Truck Traffic on Bypass Only (Alt #6) ITS/TSM/TDM (Alt #8) Transit (Alt #9) →	Alternative 12A: 3-Lane Centered Alternative 12B: 3-Lane Shift West Alternative 12C: 3-Lane Shift East Alternative 12D: 3-Lane Meander (All Combined with TSM, TDM, Transit, Truck) West Bypass	-Does provide for future travel demand through year 2027 -Does improve geometrics and safety on SR-10 corridor -Maintains Traffic on SR-10 Corridor/Carbon Avenue -Benefit of Corridor is low compared to cost	North Section - 2030+ Middle Section - 2027 South Section - 2030+	6 10 5 4 1 (Min.)	0 1 0 0 0	5 7 5 4 * To be determined in future evaluation *	8 7 7 8 * To be determined in future evaluation *	LOW LOW LOW LOW MODERATE	Alt. 5A Cost $ 16,500,000 Alt. 5B Cost $ 17,500,000 Alt. 5C Cost $ 16,500,000 Alt. 5D Cost $ 15,000,000 Alt. 2 Cost $ 14,500,000	→ $ 15,000,000 → $ 28,300,000 Total Cost $ 43,300,000

Held Advisory Committee Mtg. #2 - September 9, 2004
Held Public Open House #3 - September 21, 2004

WHAT'S NEXT ?

Next Steps:
1 - Evaluate Comments from Open House #3
2 - Seek Funding for Possible Alternatives
3 - Continue NEPA Process and Evaluate Progressed Alternatives

ALTERNATIVE #1
2030 NO BUILD



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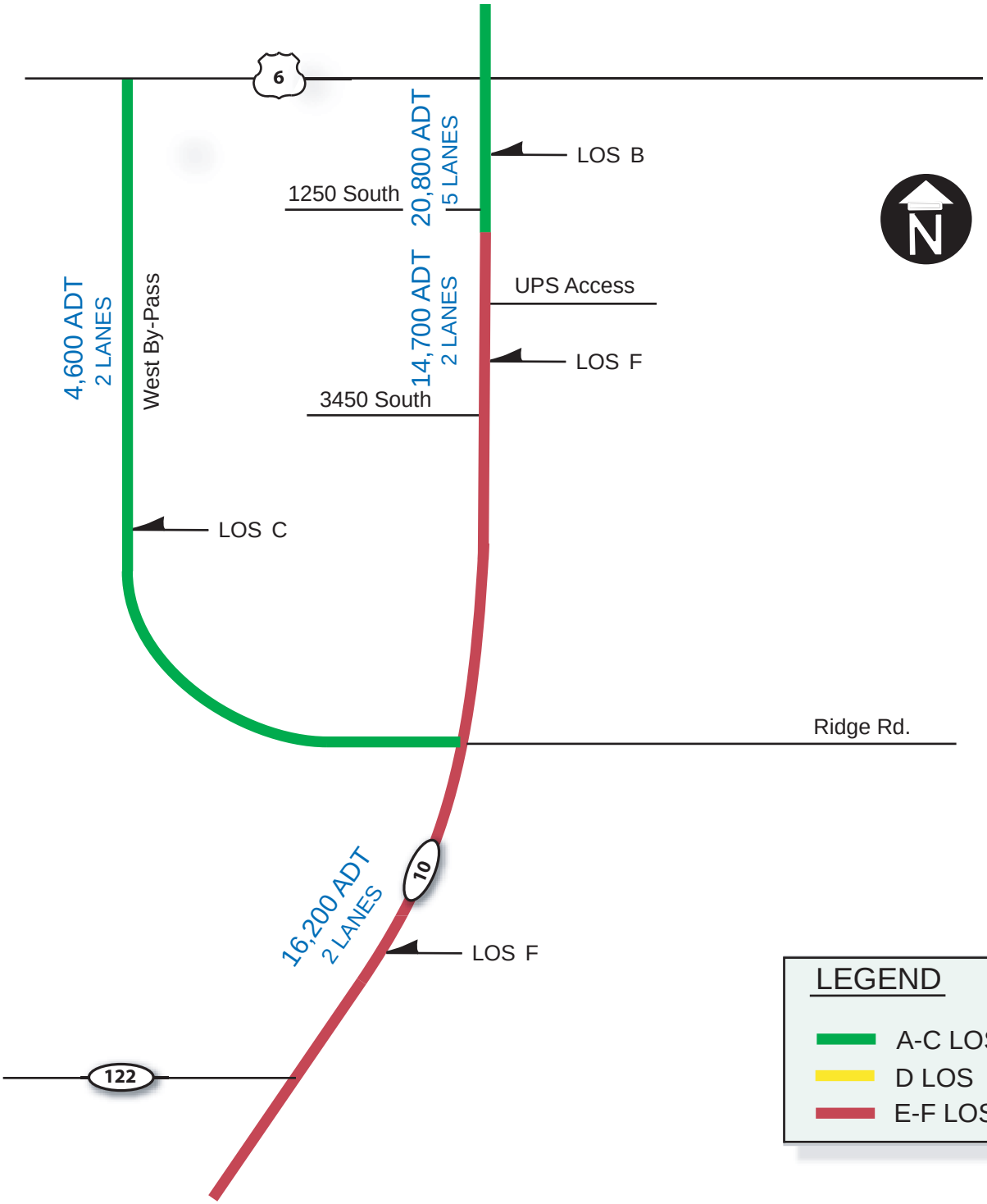
SR-10 CORRIDOR STUDY
PRELIMINARY ANALYSIS OF ALTERNATIVES

FIGURE 2.2

ALTERNATIVE #2
2030 WESTSIDE BY-PASS



LEGEND

- A-C LOS
- D LOS
- E-F LOS

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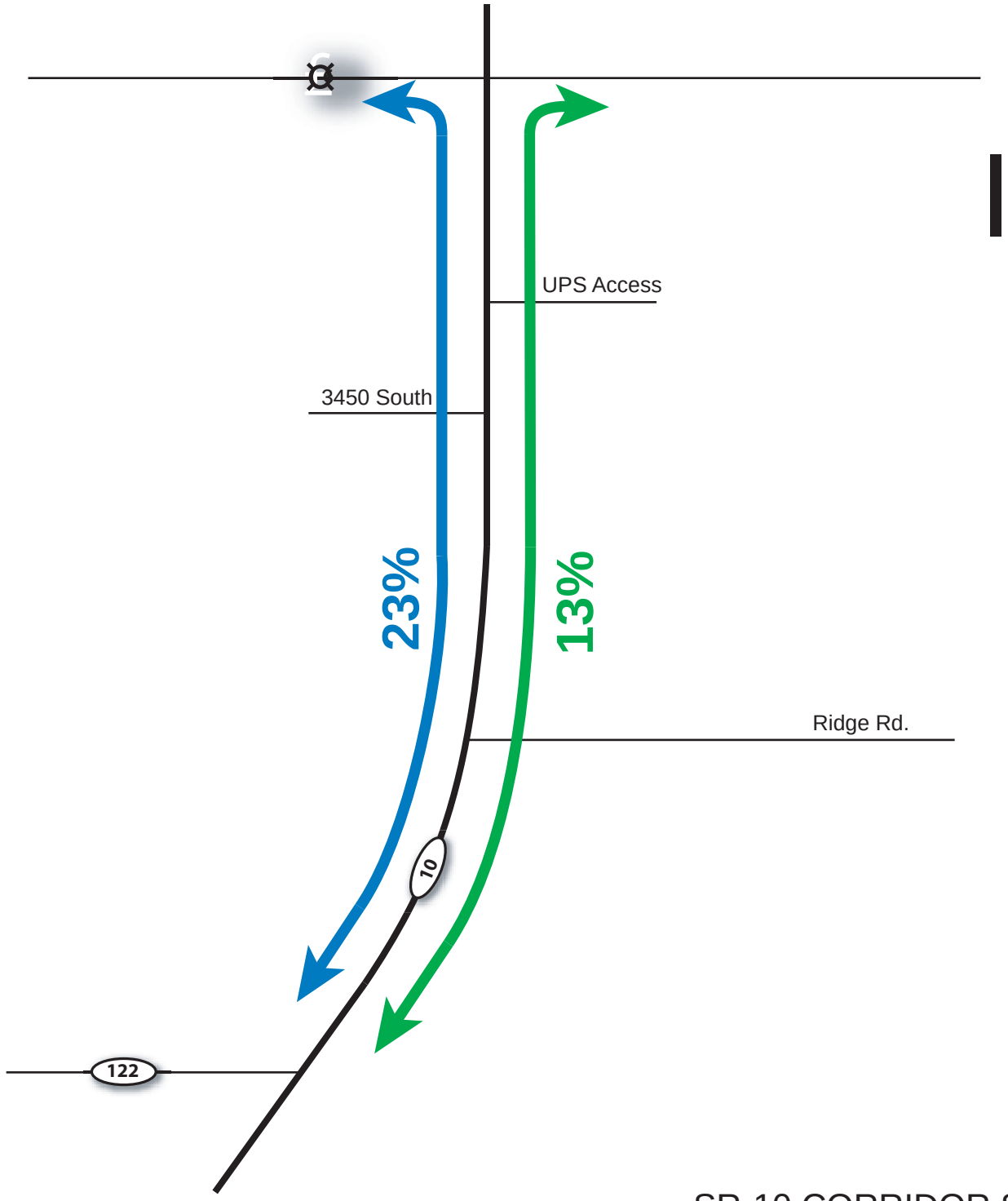
SR-10 CORRIDOR STUDY
PRELIMINARY ANALYSIS OF ALTERNATIVES

FIGURE 2.3

ORIGIN / DESTINATION AVERAGE DISTRIBUTION



SR-10 CORRIDOR STUDY
PRELIMINARY ANALYSIS OF ALTERNATIVES

FIGURE 2.4

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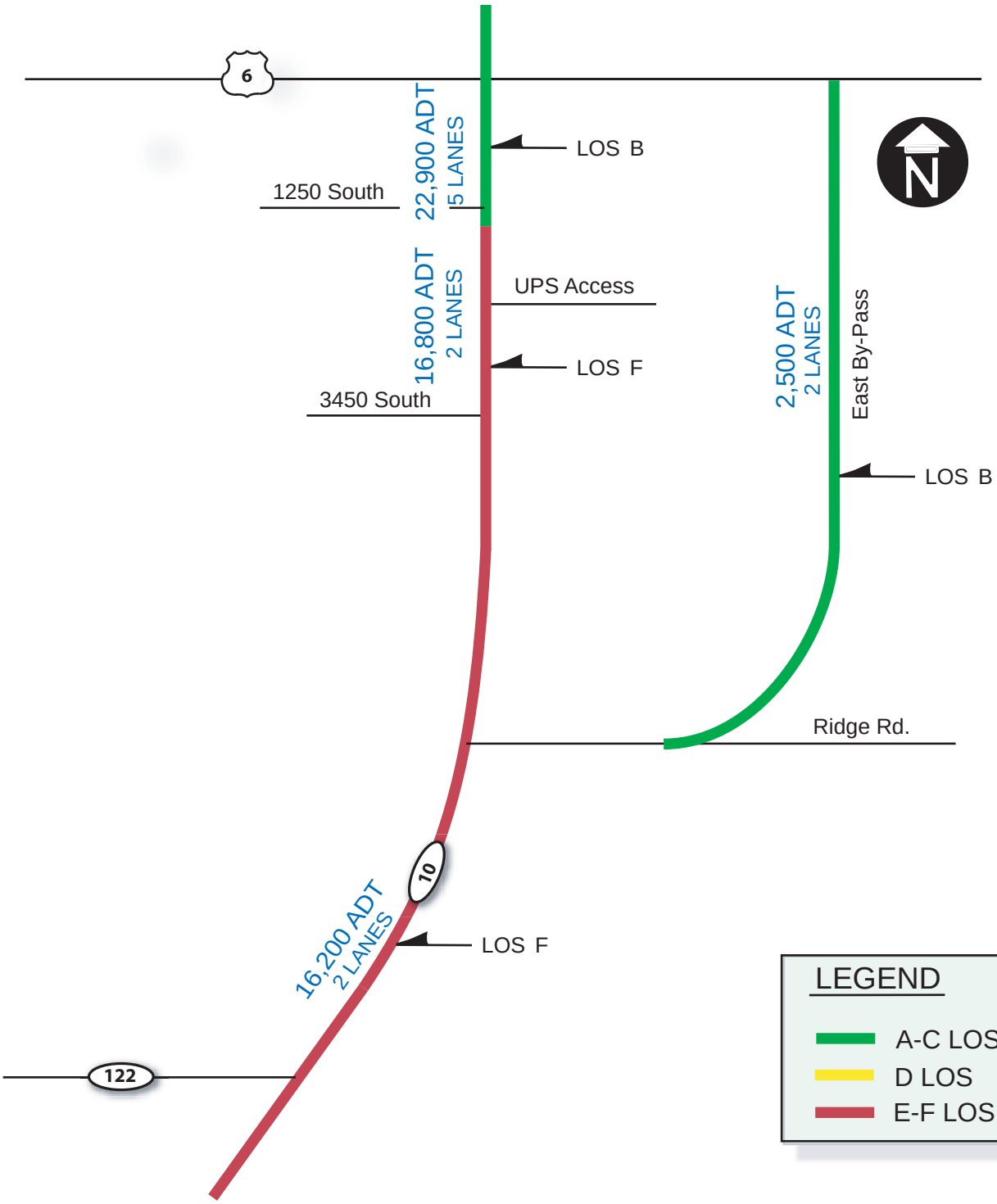
ALTERNATIVE #3
2030 EASTSIDE BY-PASS



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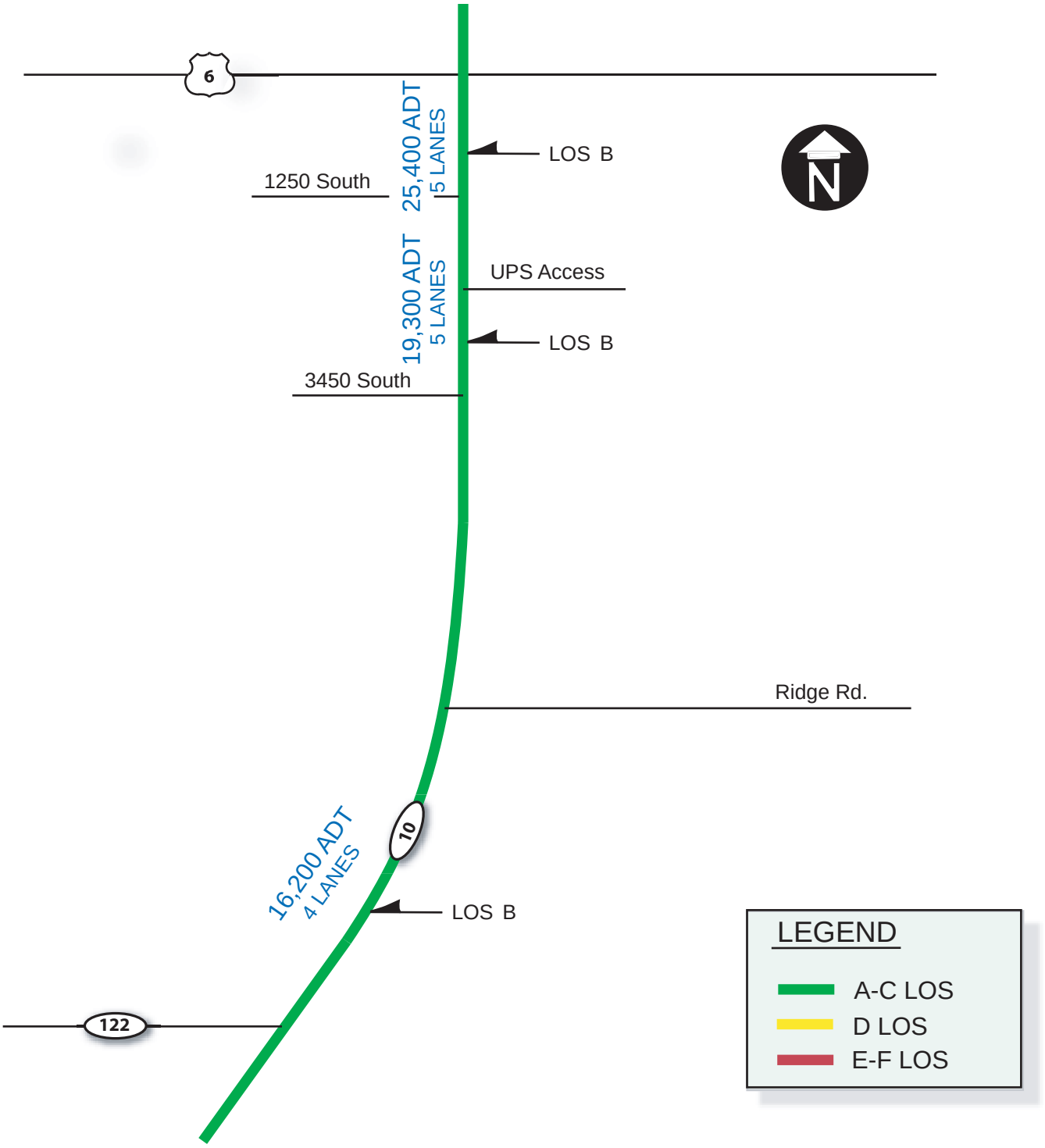
SR-10 CORRIDOR STUDY
PRELIMINARY ANALYSIS OF ALTERNATIVES

FIGURE 2.5

ALTERNATIVE #4
2030 4/5 LANE CORRIDOR



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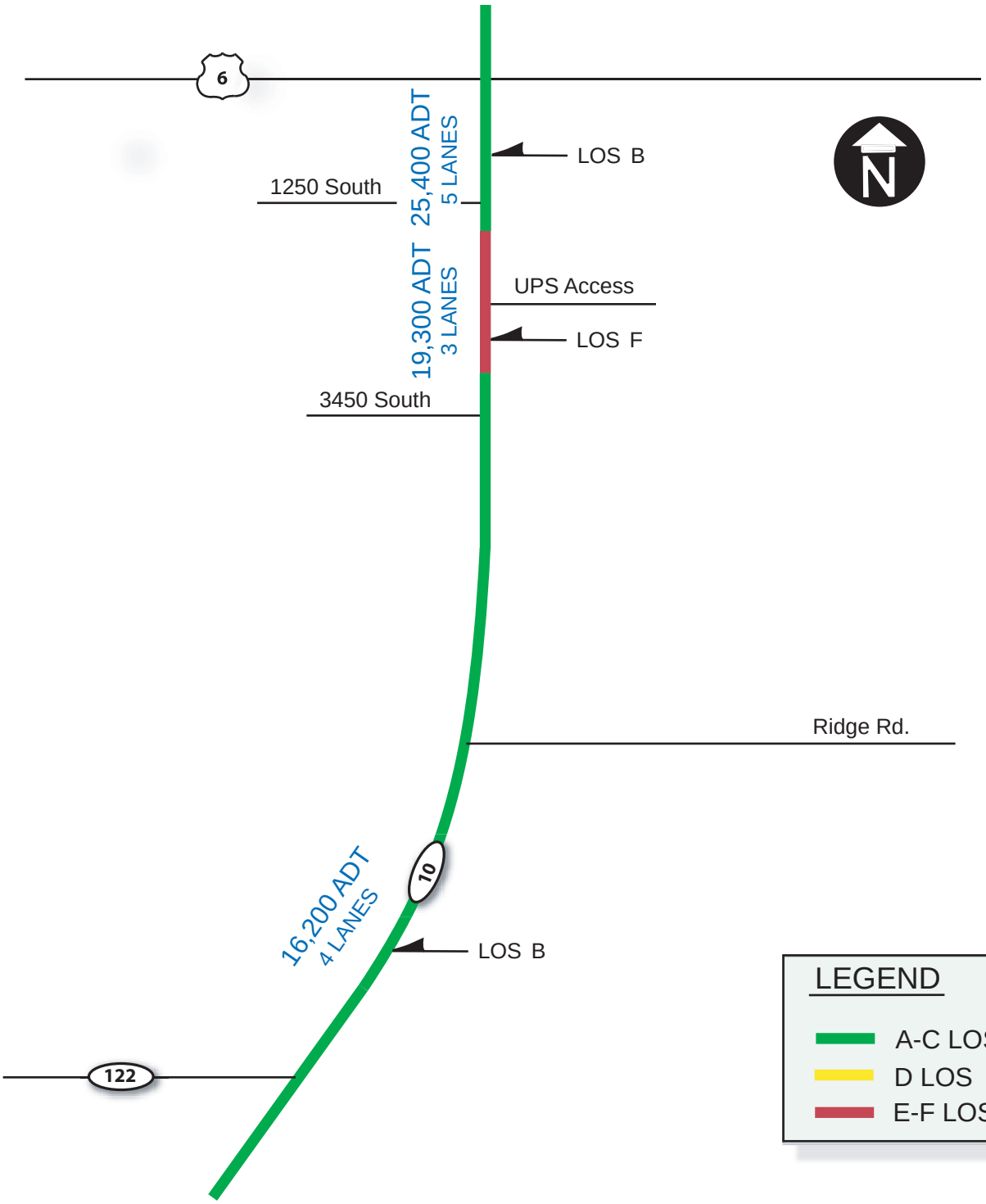
SR-10 CORRIDOR STUDY
PRELIMINARY ANALYSIS OF ALTERNATIVES
FIGURE 2.6

ALTERNATIVE #5
2030 4/3 LANE CORRIDOR



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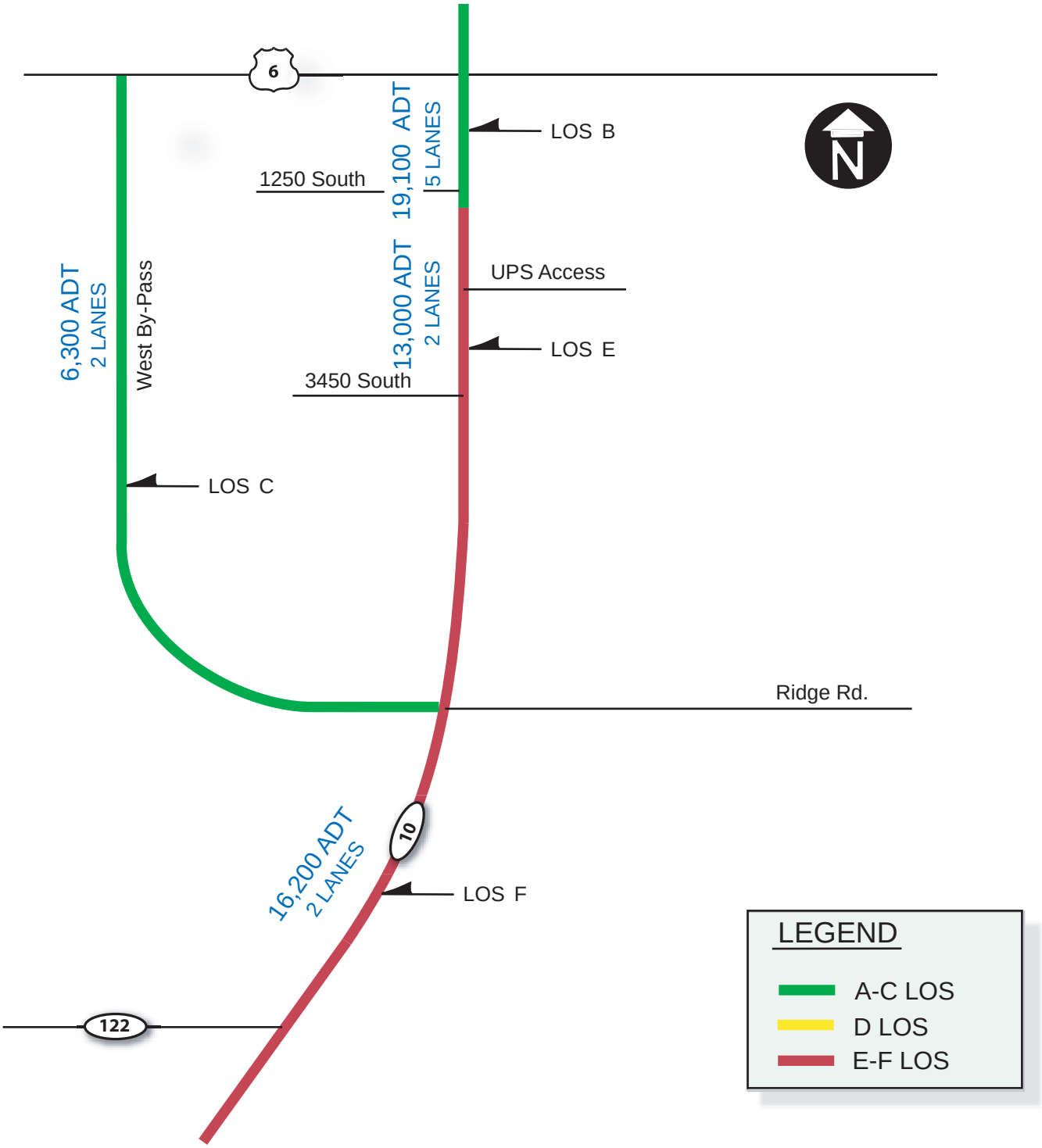
SR-10 CORRIDOR STUDY
PRELIMINARY ANALYSIS OF ALTERNATIVES
FIGURE 2.7

ALTERNATIVE #6
2030 COAL TRUCK ROUTE BY-PASS



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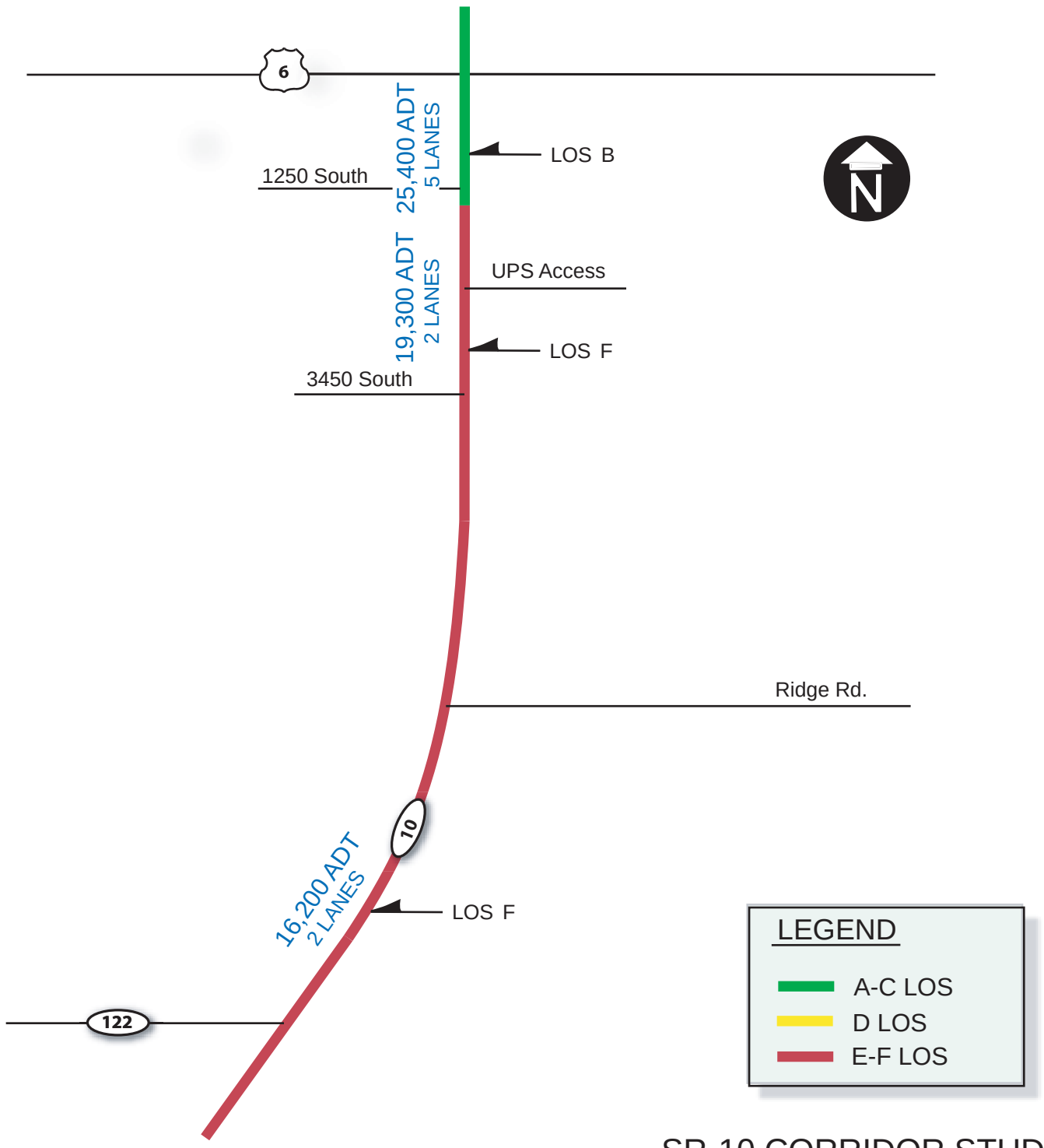
SR-10 CORRIDOR STUDY
PRELIMINARY ANALYSIS OF ALTERNATIVES

FIGURE 2.8

ALTERNATIVE #8
2030 NO BUILD WITH ITS, TSM, TDM



SR-10 CORRIDOR STUDY
PRELIMINARY ANALYSIS OF ALTERNATIVES

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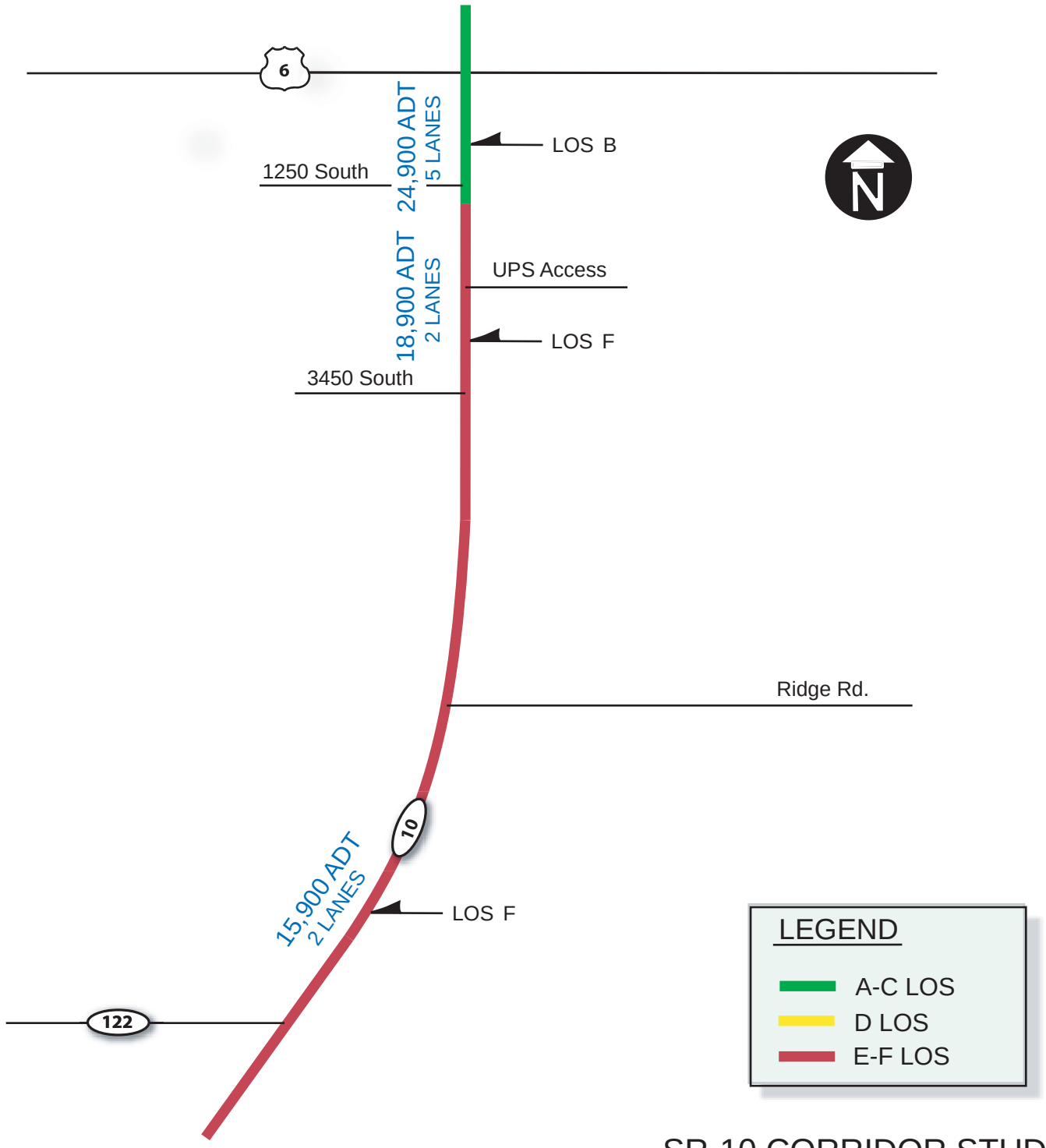
TRANSPORTATION CONSULTANTS

FIGURE 2.9

ALTERNATIVE #9

2030 NO BUILD W/ TRANSIT REDUCTIONS

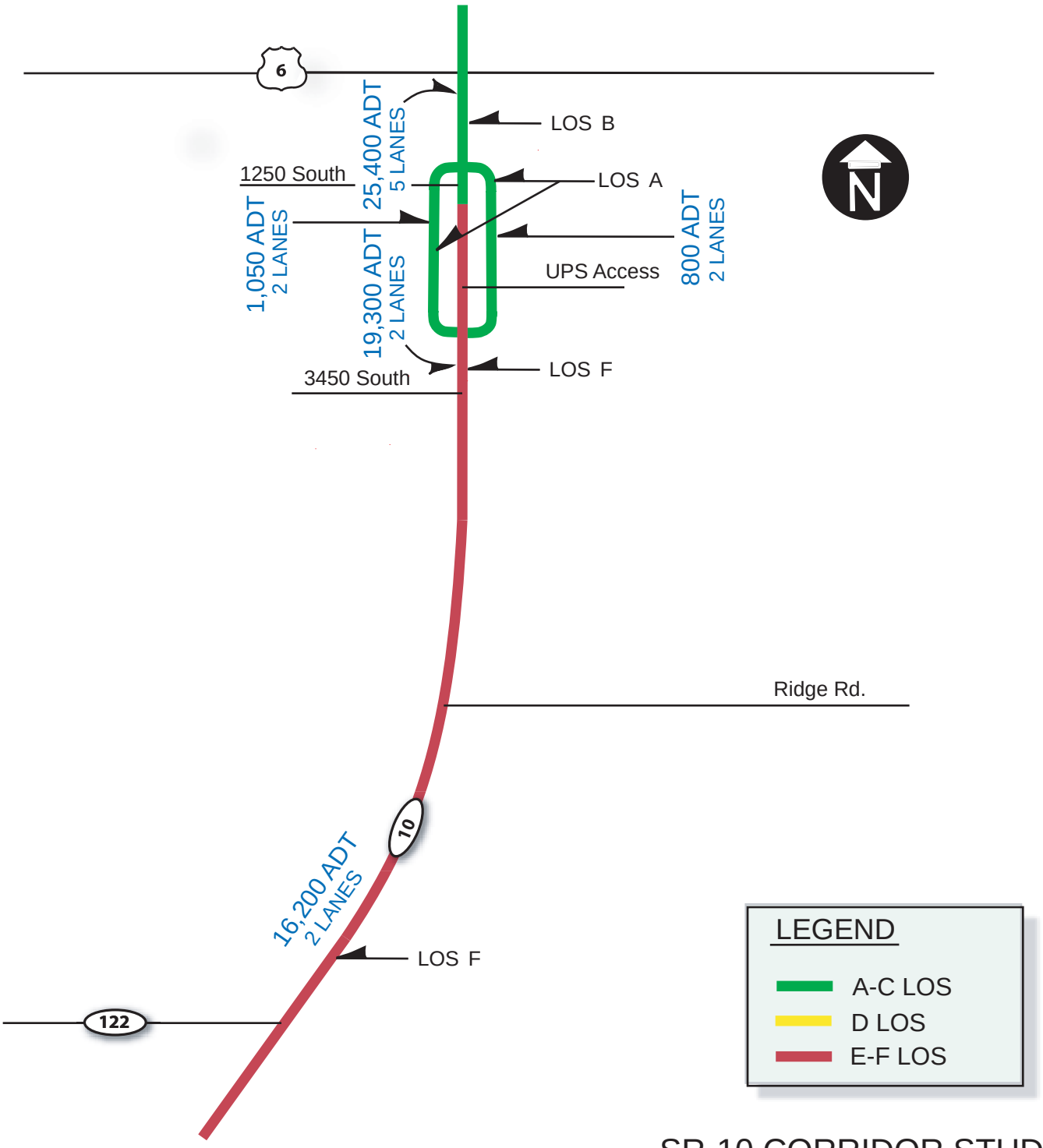


SR-10 CORRIDOR STUDY
PRELIMINARY ANALYSIS OF ALTERNATIVES

FEHR & PEERS
TRANSPORTATION CONSULTANTS

FIGURE 2.10

ALTERNATIVE #11
2030 LOCAL COLLECTOR ROADS



SR-10 CORRIDOR STUDY
PRELIMINARY ANALYSIS OF ALTERNATIVES

FEHR & PEERS
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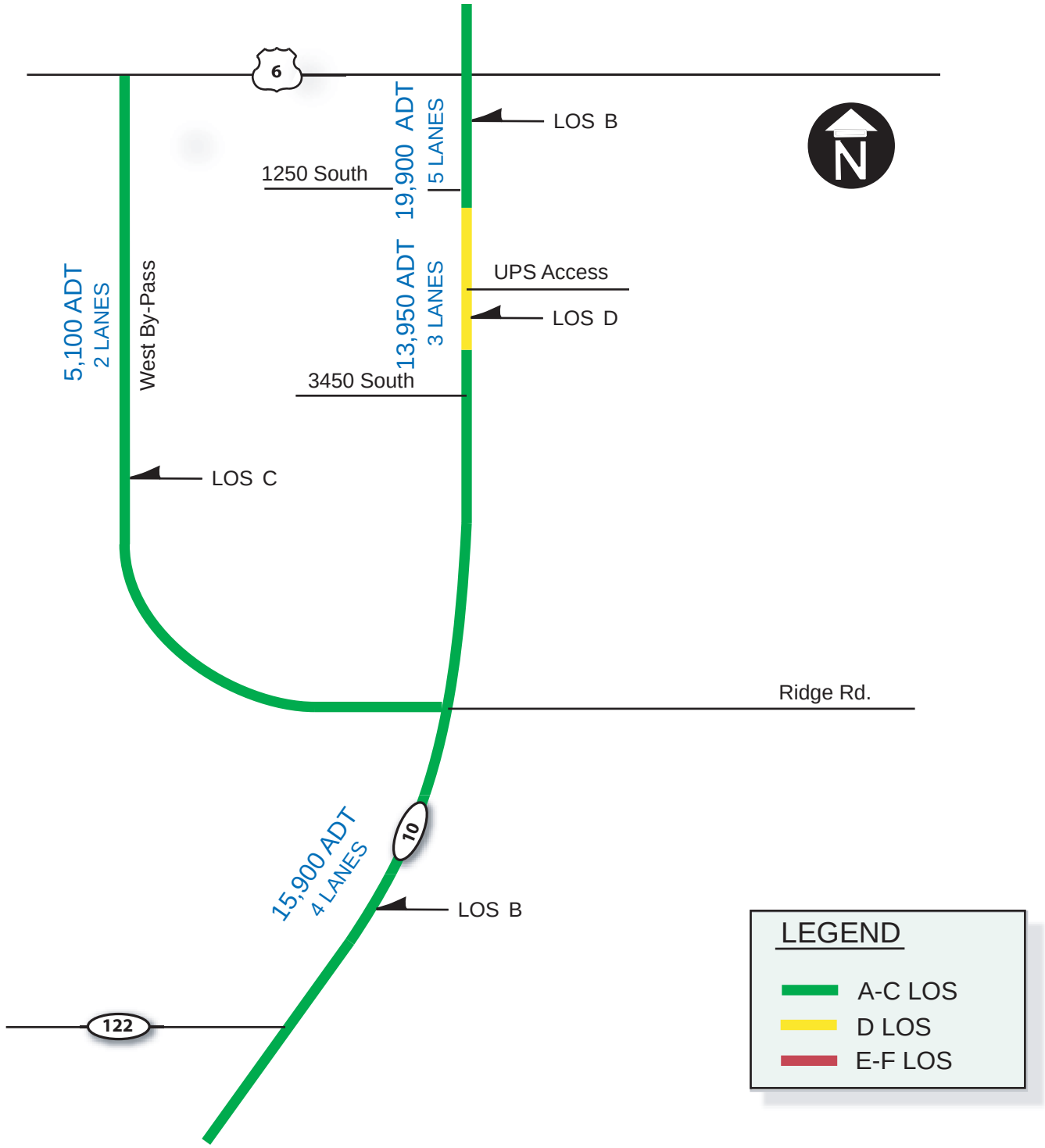
FIGURE 2.11

ALTERNATIVE #12
2030 COMBINED ALTERNATIVE - ALT #2, ALT #5, ALT #6, ALT #8, ALT #9



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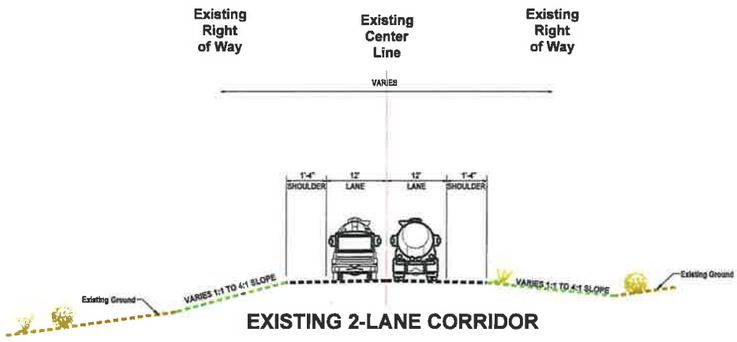
SR-10 CORRIDOR STUDY
PRELIMINARY ANALYSIS OF ALTERNATIVES

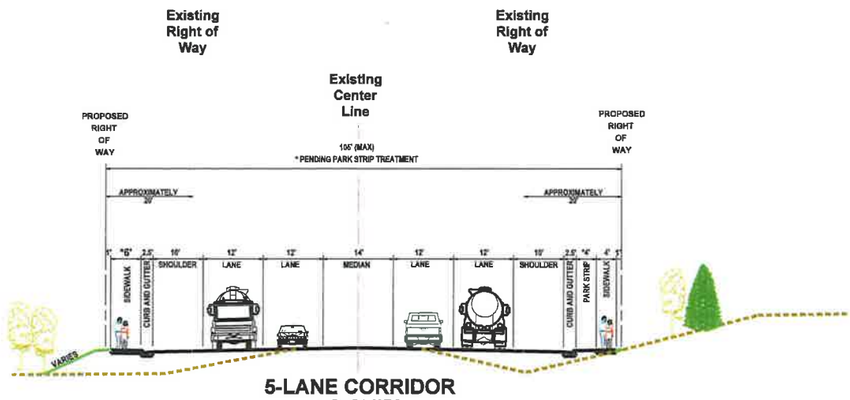
FIGURE 2.12

FIGURE 2.13

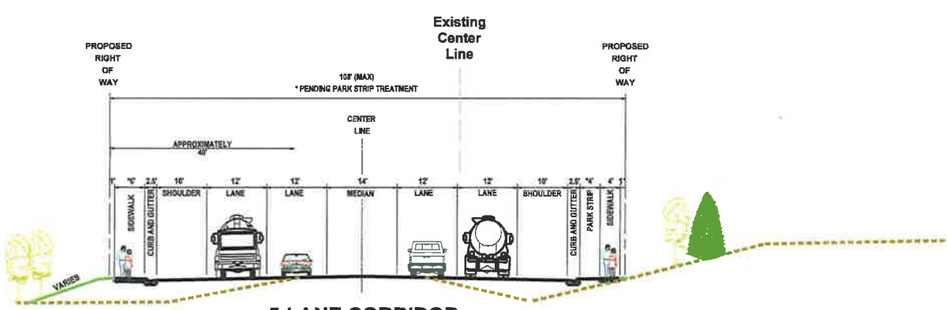
ALTERNATIVE 4 (4/5 LANE) ALIGNMENT MODIFICATION



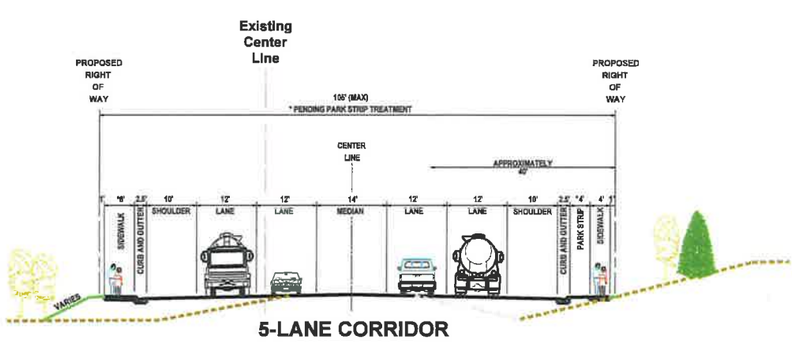
EXISTING 2-LANE CORRIDOR



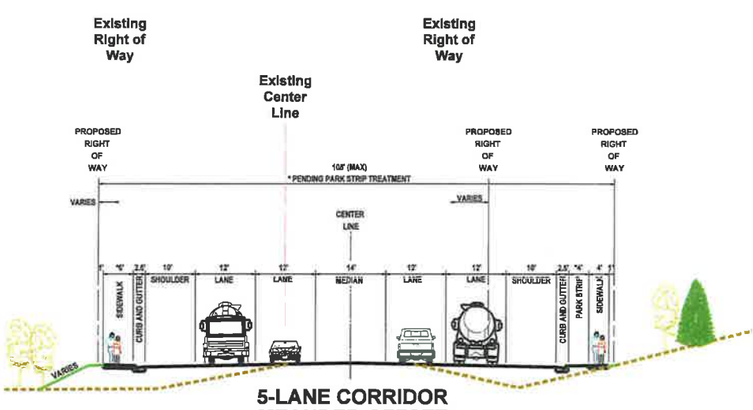
5-LANE CORRIDOR
NO SHIFT



5-LANE CORRIDOR
SHIFT WEST



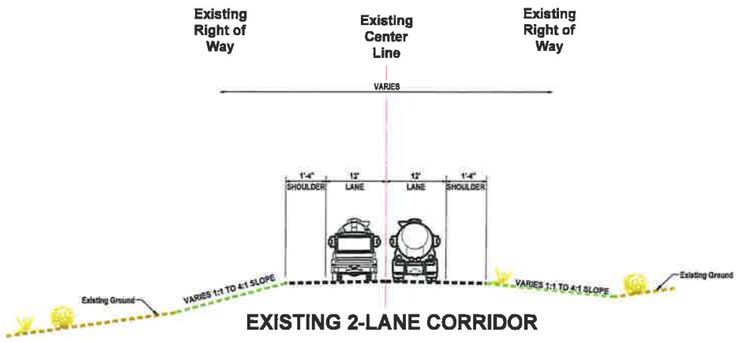
5-LANE CORRIDOR
SHIFT EAST



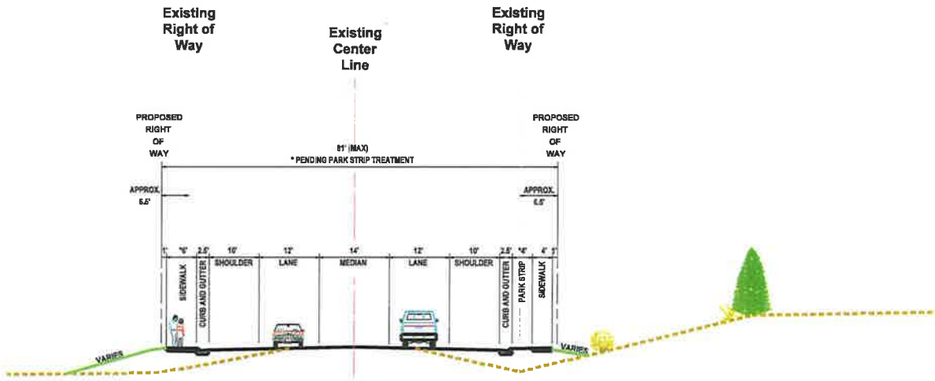
5-LANE CORRIDOR
MEANDER OFFSET

FIGURE 2.14

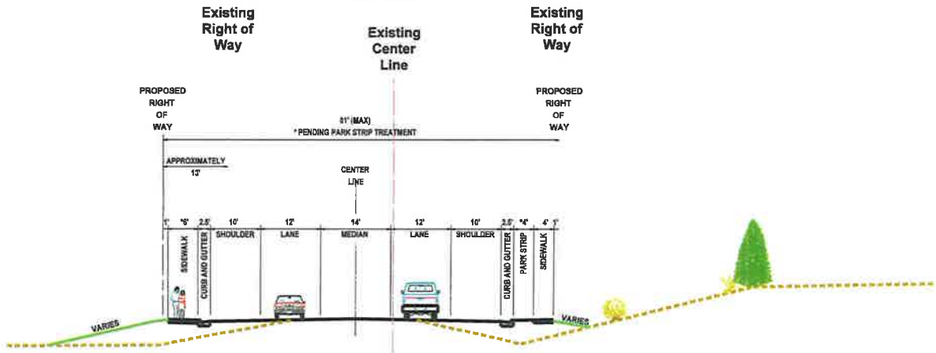
ALTERNATIVE 5 (4/3 LANE) ALIGNMENT MODIFICATION



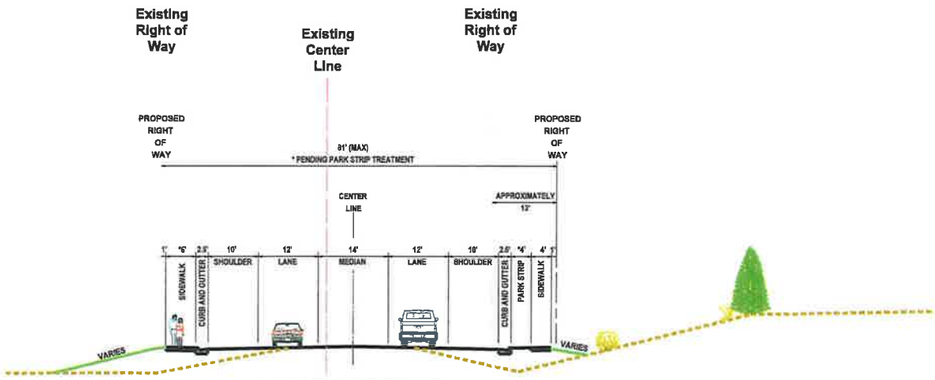
EXISTING 2-LANE CORRIDOR



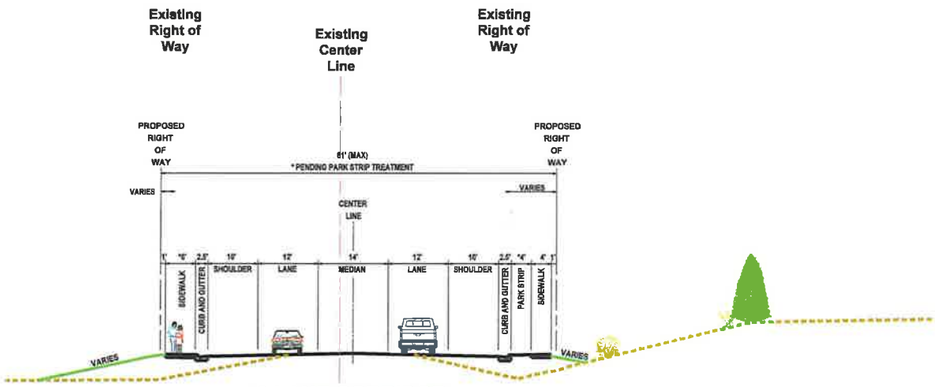
3-LANE CORRIDOR
NO SHIFT



3-LANE CORRIDOR
SHIFT WEST



3-LANE CORRIDOR
SHIFT EAST

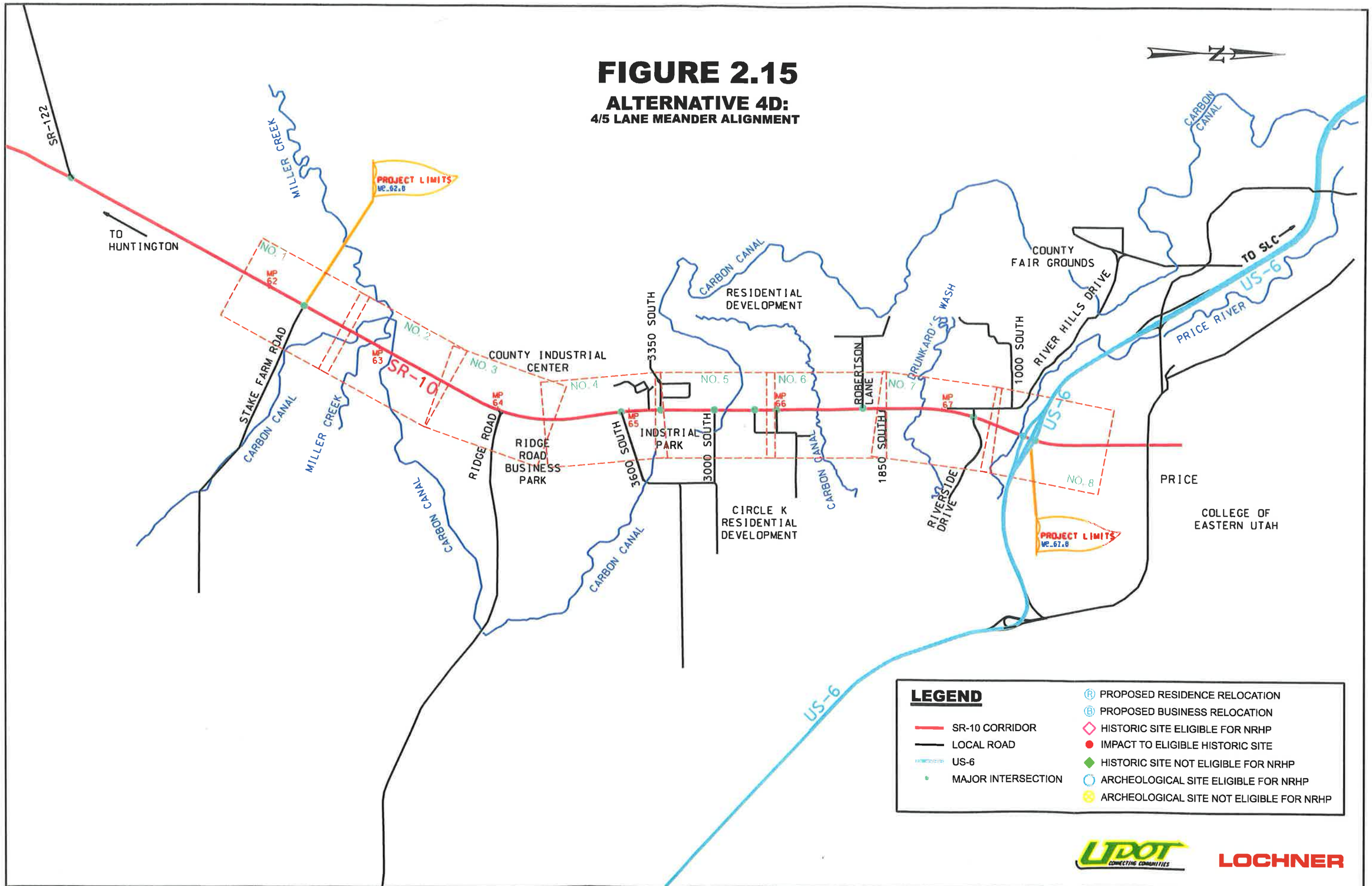


3-LANE CORRIDOR
MEANDER OFFSET

FIGURE 2.15

ALTERNATIVE 4D:

4/5 LANE MEANDER ALIGNMENT



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MATCHLINE STA. 110+00
SEE LOCATION SHEET 2

SHEET NO. 1

COUNTY CARBON

SR-10 CORRIDOR STUDY
STAKE FARM RD TO US-6
4/5 LANE MEANDER IMPACT

PROJECT NUMBER SP-0010(21)64E

UTAH DEPARTMENT OF TRANSPORTATION
REGION 4 -- RICHFIELD, UTAH
CORRIDOR STUDY

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DATE REVISIONS

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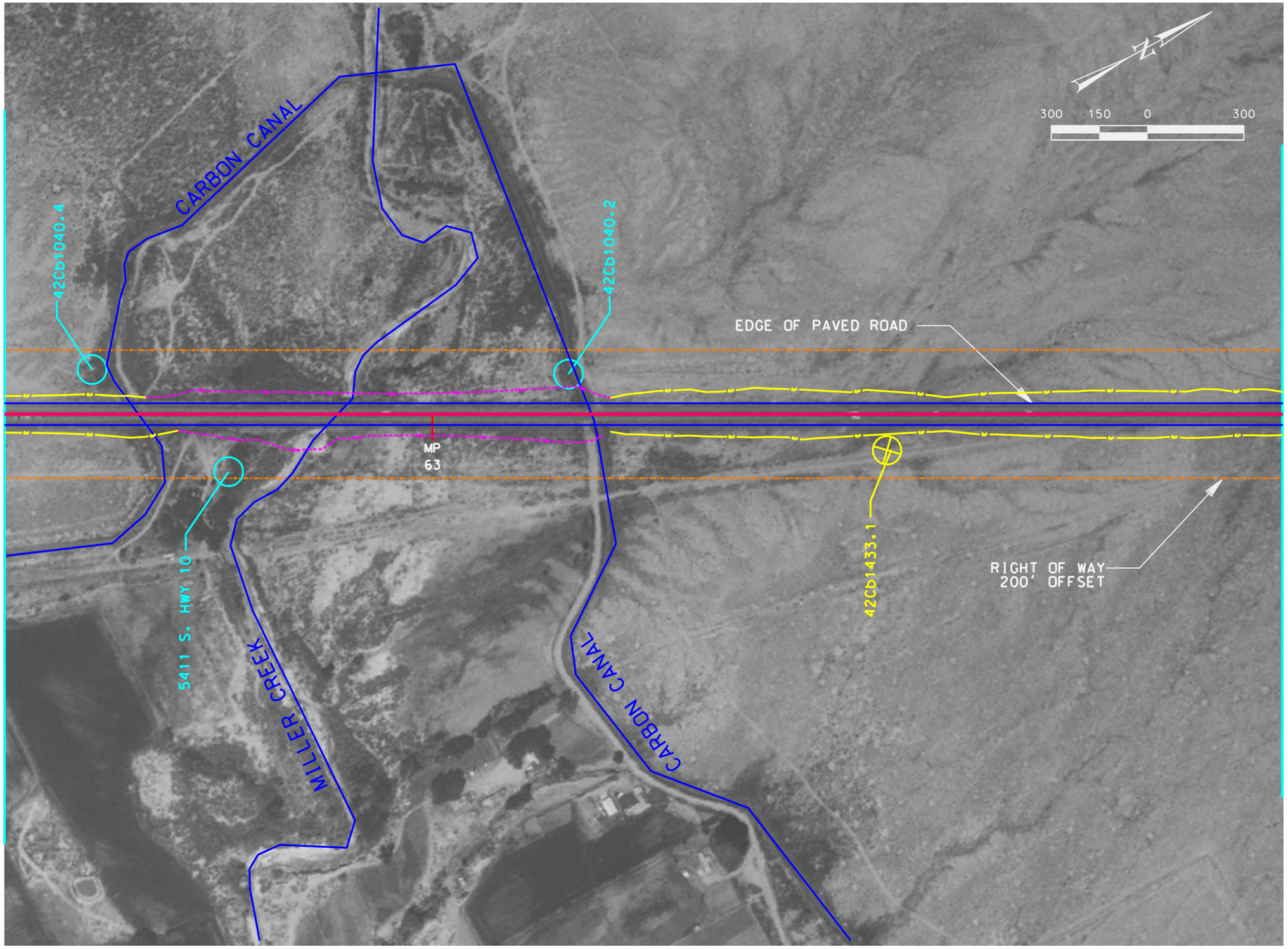
SEE LOCATION SHEET 1



MATCHLINE STA. 150+00
SEE LOCATION SHEET 3

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		ORIGINAL SUBMISSION FOR AUTHORIZATION				

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SR-10 CORRIDOR STUDY
STAKE FARM RD TO US-6
4/5 LANE MEANDER IMPACT

PROJECT NUMBER SP-0010(21)64E

CARBON COUNTY

SHEET NO. 2

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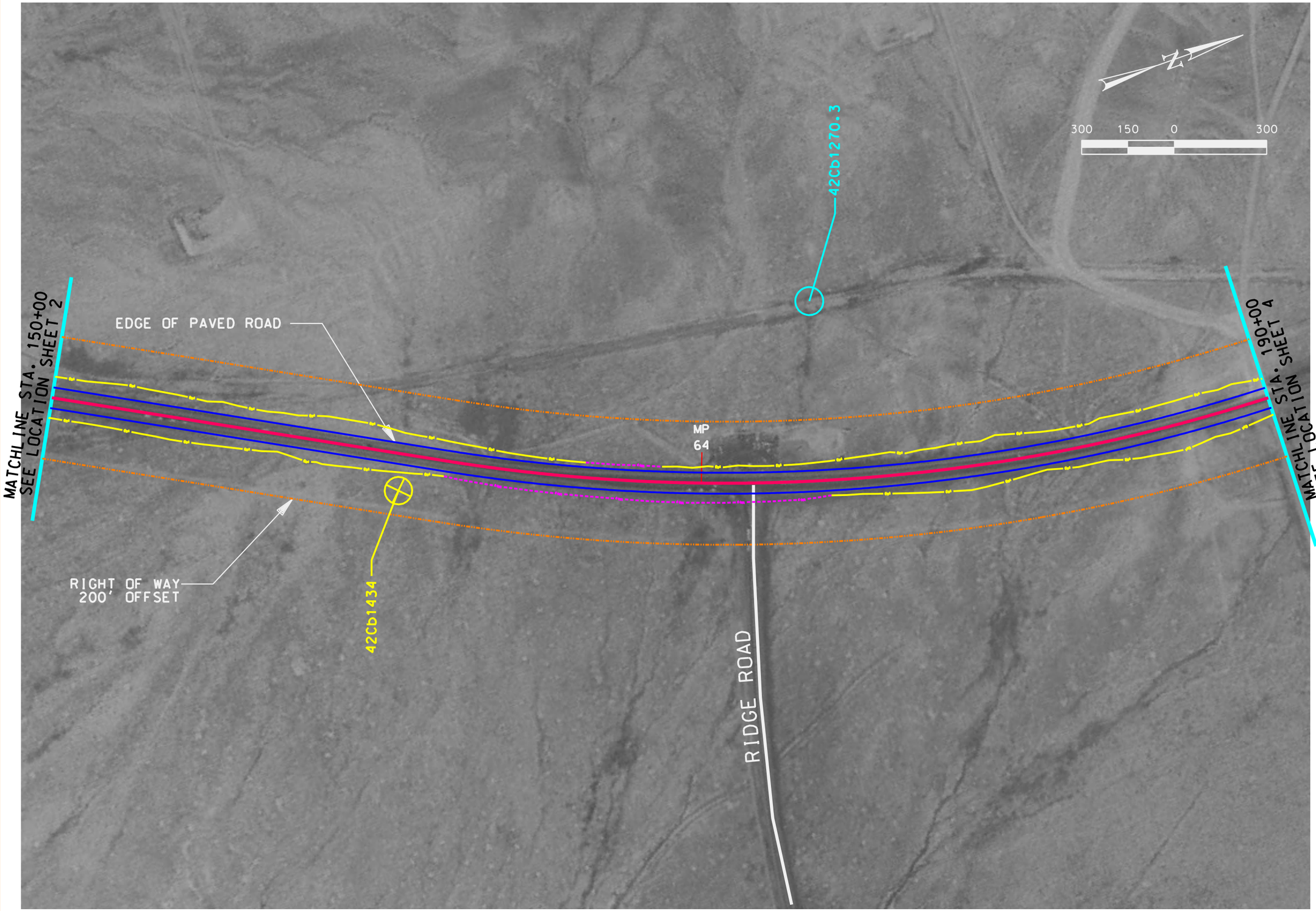

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		ORIGINAL SUBMISSION FOR AUTHORIZATION				

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SR-10 CORRIDOR STUDY
STAKE FARM RD TO US-6
4/5 LANE MEANDER IMPACT

PROJECT NUMBER SP-0010(21)64E

CARBON
COUNTY

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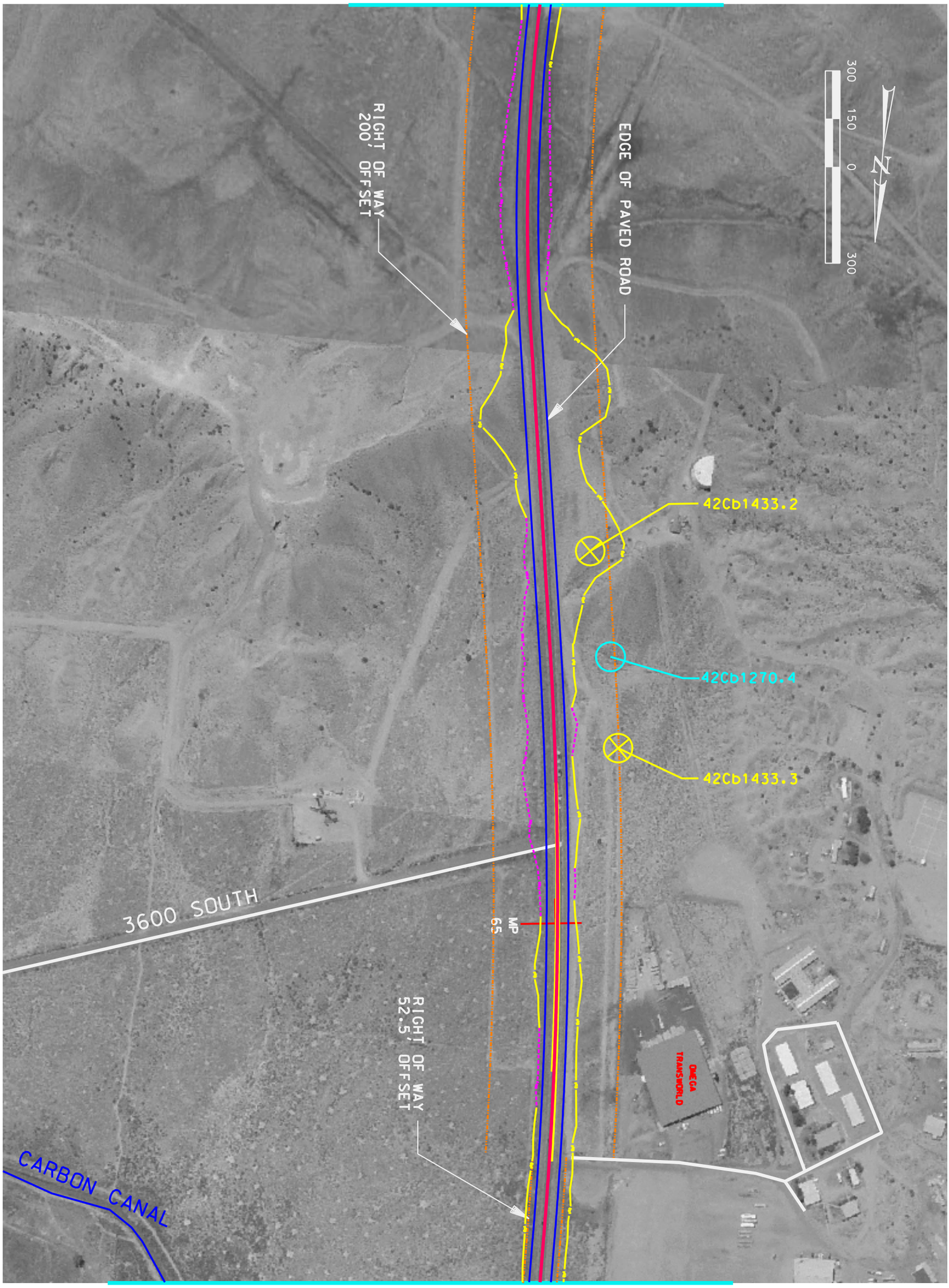

MATCHLINE STA. 230+00
SEE LOCATION SHEET 5

SHEET NO. 4

COUNTY CARBON

SR-10 CORRIDOR STUDY
STAKE FARM RD TO US-6
4/5 LANE MEANDER IMPACT

PROJECT NUMBER SP-0010(21)64E

UTAH DEPARTMENT OF TRANSPORTATION
REGION 4 -- RICHFIELD, UTAH
CORRIDOR STUDY

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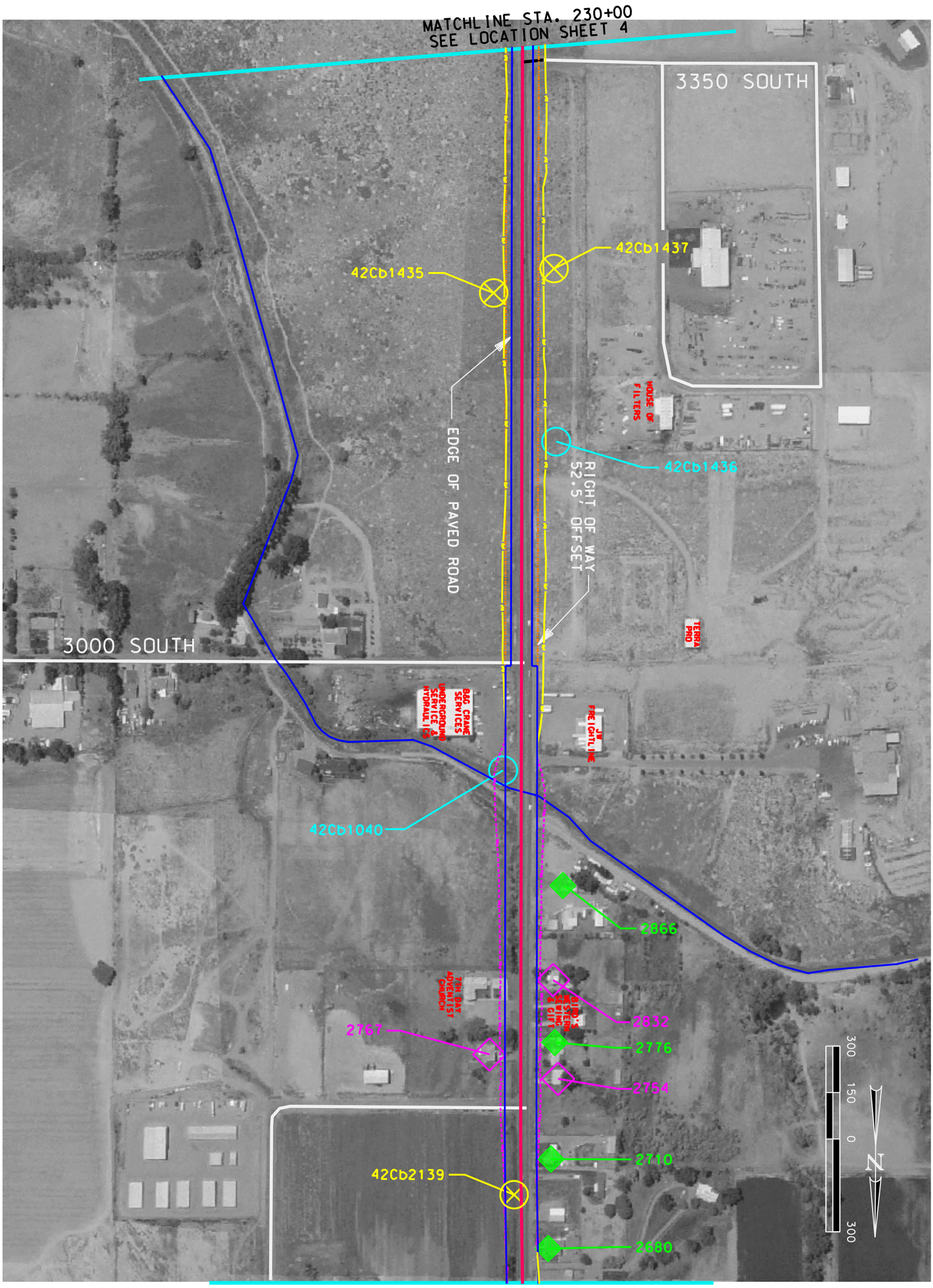

SHEET NO. 5

COUNTY CARBON

SR-10 CORRIDOR STUDY
STAKE FARM RD TO US-6
4/5 LANE MEANDER IMPACT

PROJECT NUMBER SP-0010(21)64E

UTAH DEPARTMENT OF TRANSPORTATION
REGION 4 -- RICHFIELD, UTAH
CORRIDOR STUDY

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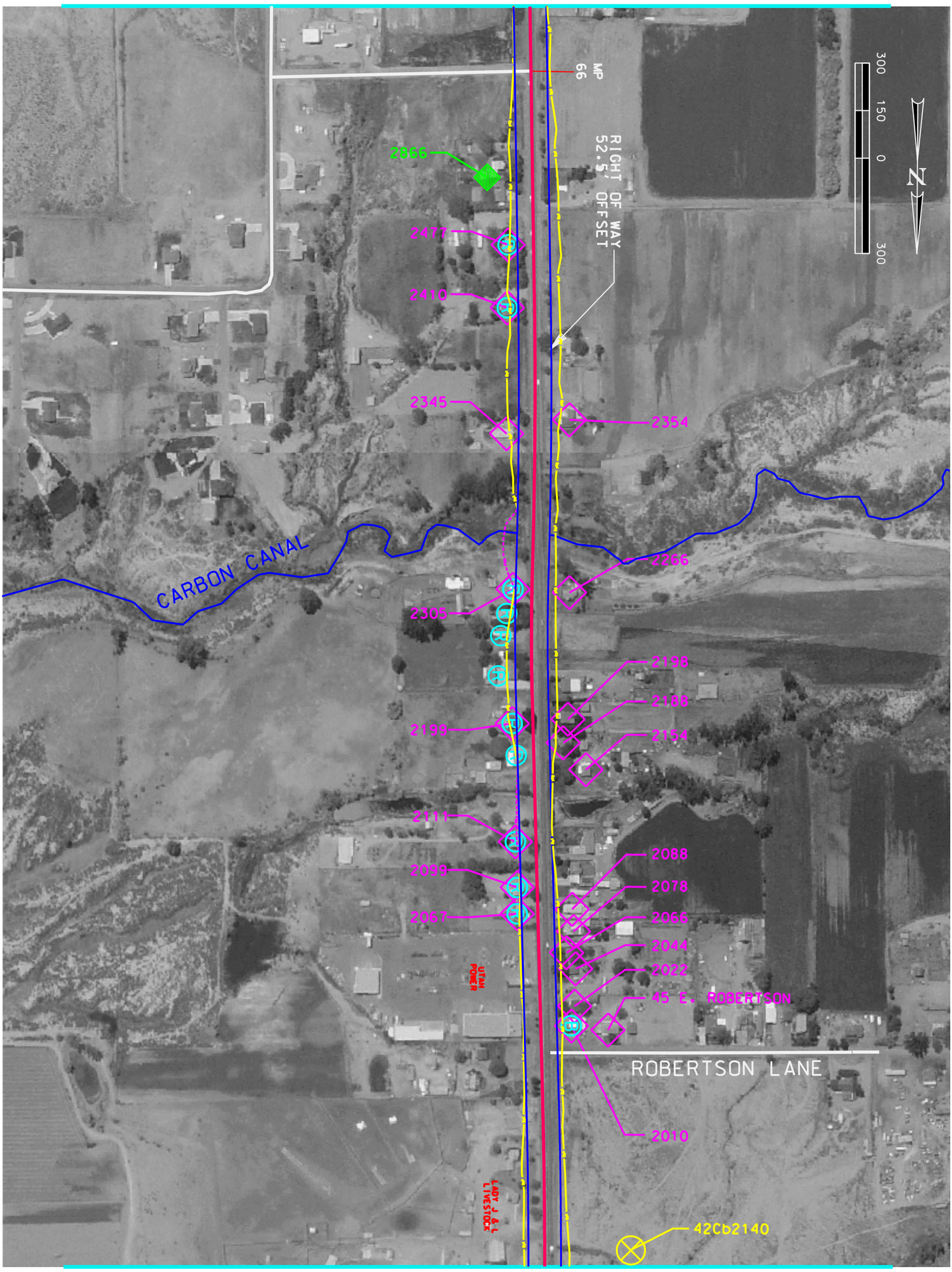
MATCHLINE STA. 270+00
SEE LOCATION SHEET 5



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SEE LOCATION SHEET 7

SHEET NO. 9	COUNTY CARBON	SR-10 CORRIDOR STUDY STAKE FARM RD TO US-6 4/5 LANE MEANDER IMPACT PROJECT NUMBER SP-0010(21)64E	UTAH DEPARTMENT OF TRANSPORTATION REGION 4 -- RICHFIELD, UTAH CORRIDOR STUDY APPROVAL RECOMM. DATE PROJECT DESIGN ENGINEER APPROVED FOR USE BY UDOT DATE PRECONSTRUCTION ENGINEER	DESIGN CHECK DRAWN CHECK QUANT. CHECK	REVIEW DATE BY

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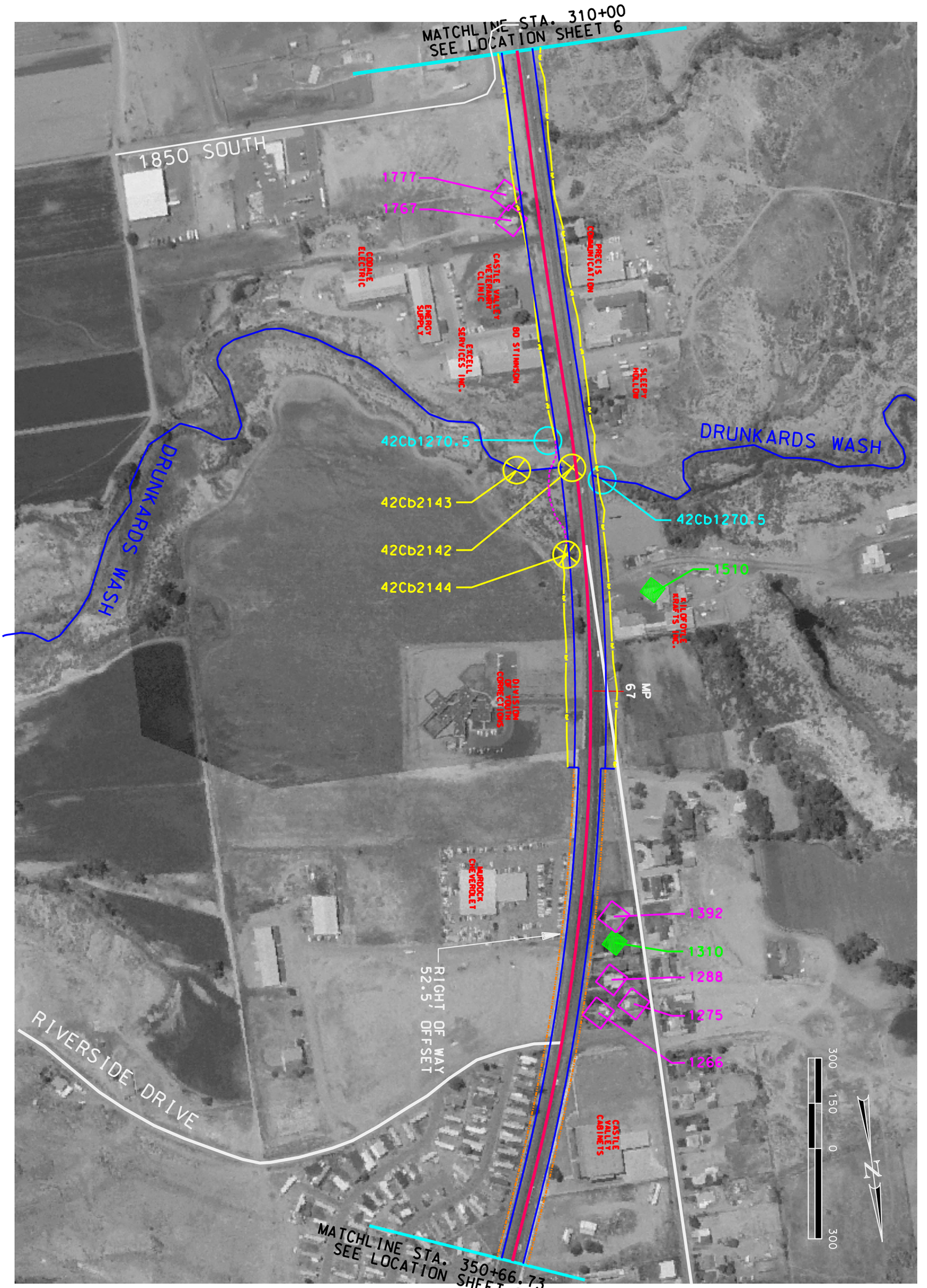

SHEET NO. 7

COUNTY CARBON

SR-10 CORRIDOR STUDY
STAKE FARM RD TO US-6
4/5 LANE MEANDER IMPACT

PROJECT NUMBER SP-0010(21)64E

UTAH DEPARTMENT OF TRANSPORTATION
REGION 4 -- RICHFIELD, UTAH
CORRIDOR STUDY

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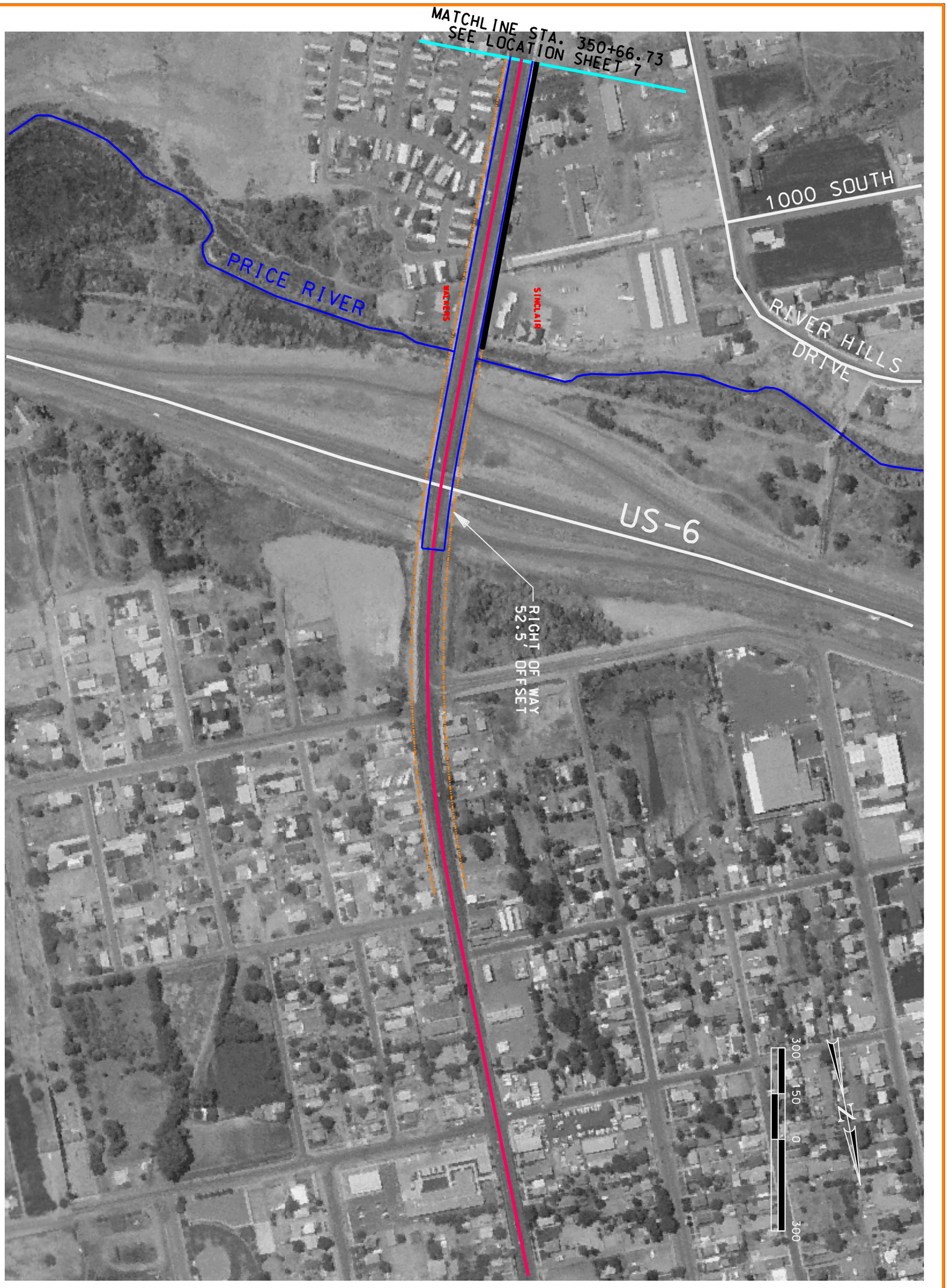
DATE REVISIONS



SHEET NO. 8

COUNTY CARBON

SR-10 CORRIDOR STUDY
STAKE FARM RD TO US-6
4/5 LANE MEANDER IMPACT

PROJECT NUMBER SP-0010(21)64E

UTAH DEPARTMENT OF TRANSPORTATION
REGION 4 -- RICHFIELD, UTAH
CORRIDOR STUDY

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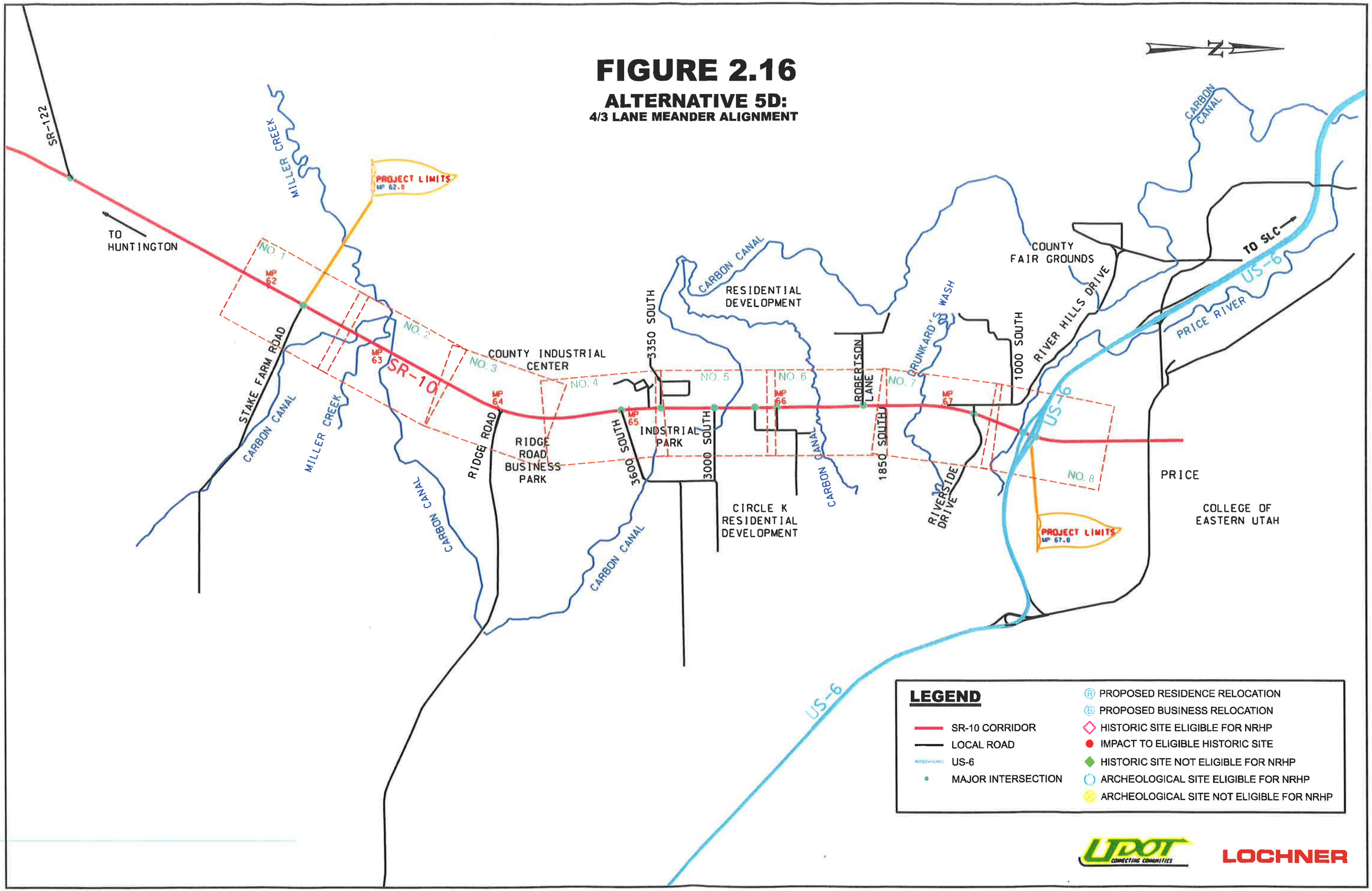
FIGURE 2.16

ALTERNATIVE 5D:

4/3 LANE MEANDER ALIGNMENT



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MATCHLINE STA. 110+00
SEE LOCATION SHEET 2

SR-10 CORRIDOR STUDY	UTAH DEPARTMENT OF TRANSPORTATION		
STAKE FARM RD TO US-6	REGION 4 -- RICHFIELD, UTAH		
4/3 LANE MEANDER IMPACT	CORRIDOR STUDY		
PROJECT NUMBER SP-0010(21)64E	APPROVAL RECOMM. ____ DATE ____ PROJECT DESIGN ENGINEER	DESIGN ____ CHECK ____	REVIEW
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DATE REVISIONS

SHEET NO. 1 COUNTY CARBON

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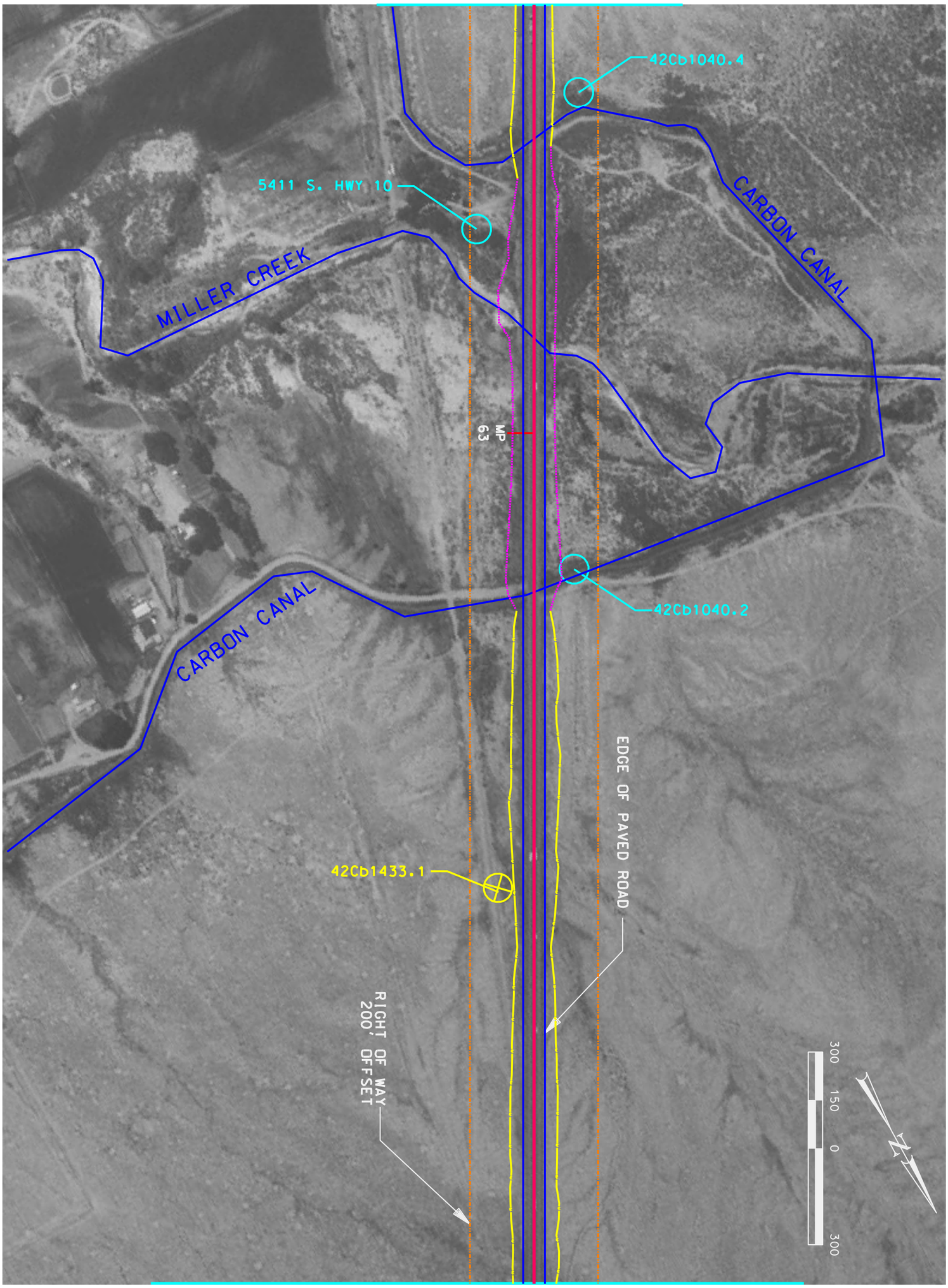
SEE LOCATION SHEET 1



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SEE LOCATION SHEET 3

SHEET NO. 2

COUNTY CARBON

SR-10 CORRIDOR STUDY
STAKE FARM RD TO US-6
4/3 LANE MEANDER IMPACT

PROJECT NUMBER SP-0010(21)64E

UTAH DEPARTMENT OF TRANSPORTATION
REGION 4 -- RICHFIELD, UTAH
CORRIDOR STUDY

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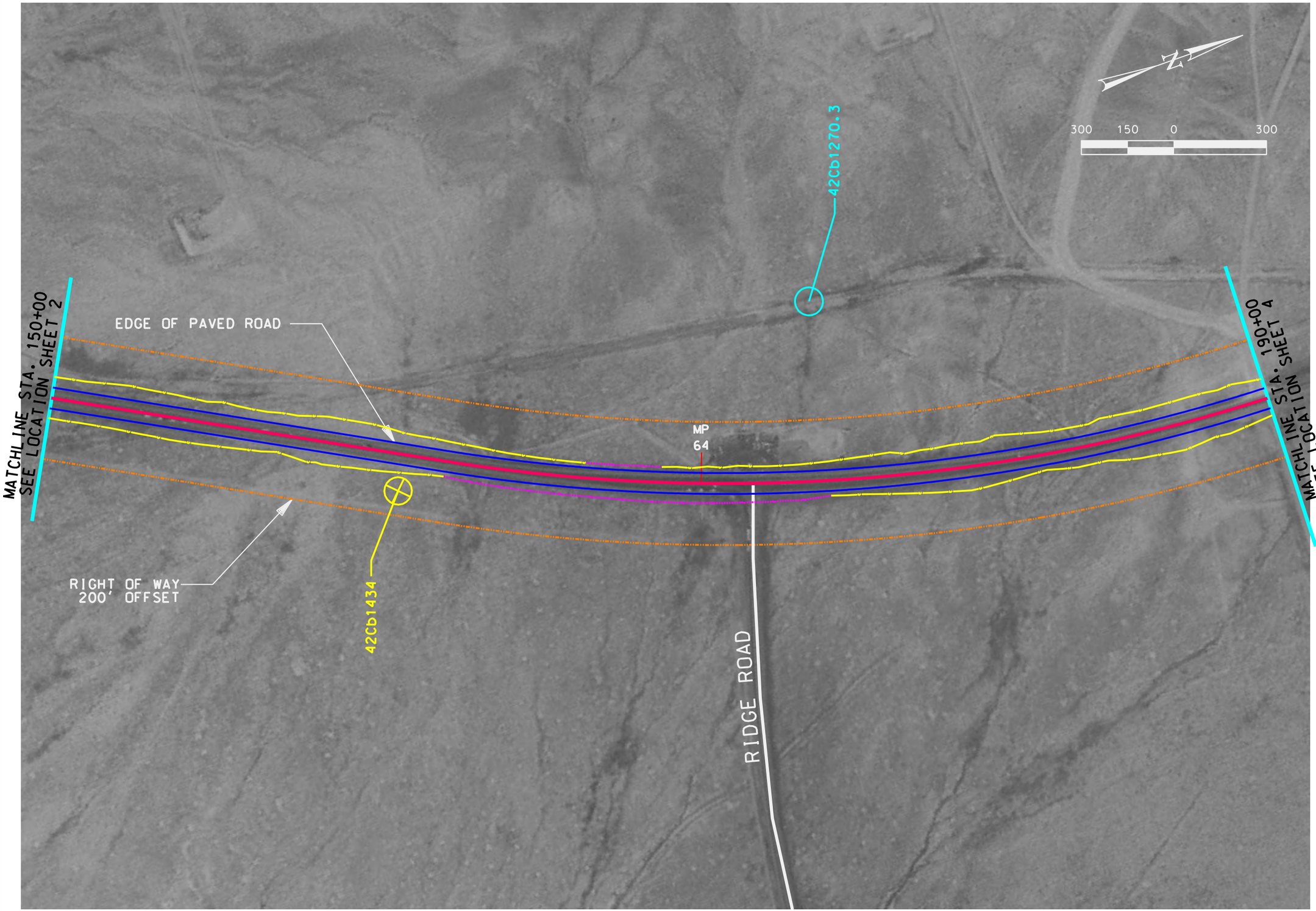
DATE REVISIONS



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UTAH DEPARTMENT OF TRANSPORTATION
REGION 4 -- RICHFIELD, UTAH
CORRIDOR STUDY

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SR-10 CORRIDOR STUDY
STAKE FARM RD TO US-6
4/3 LANE MEANDER IMPACT

PROJECT NUMBER SP-0010(21)64E

CARBON
COUNTY

SHEET NO. 3

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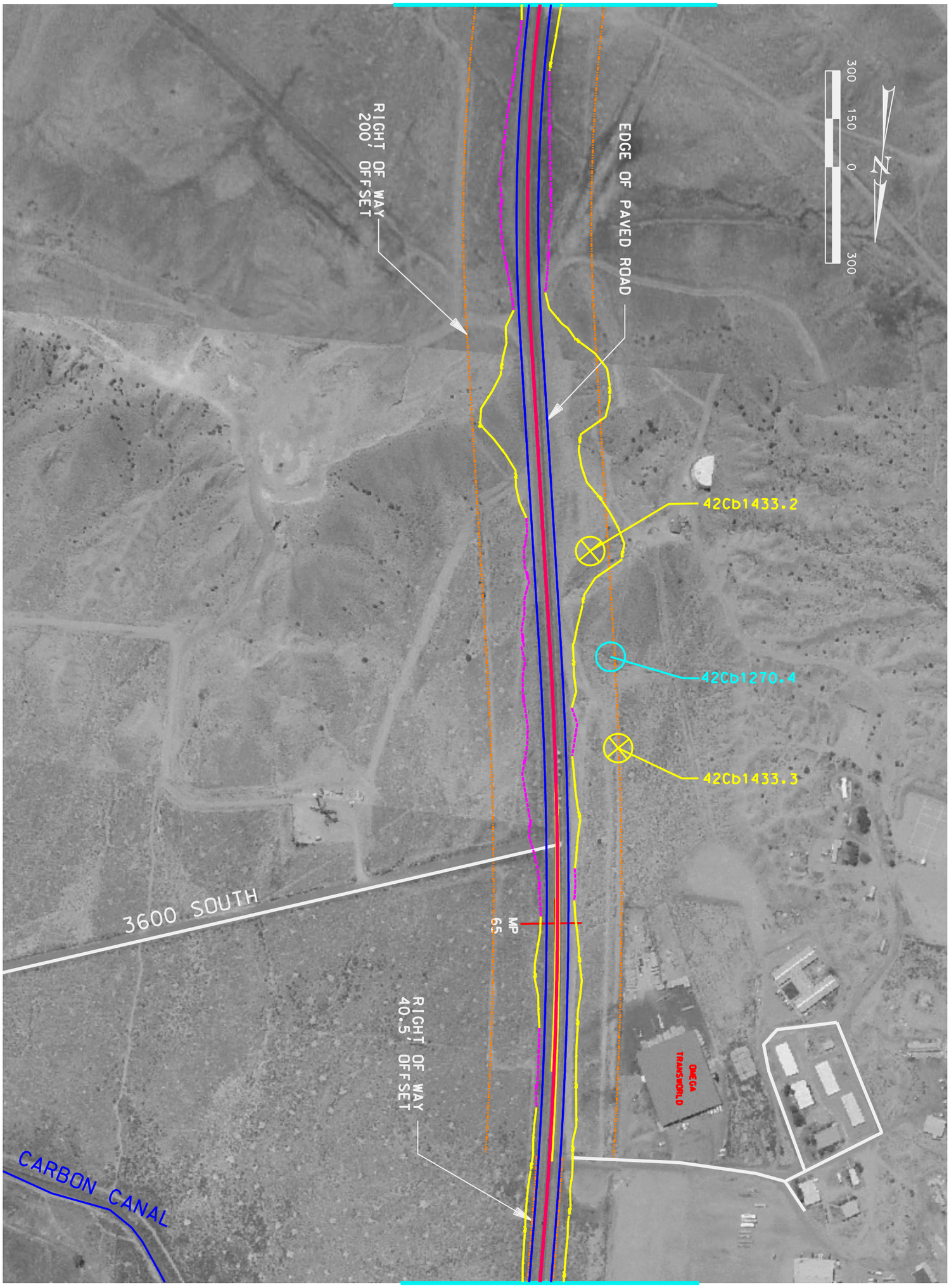
SEE LOCATION SHEET 3



MATCHLINE STA. 230+00
SEE LOCATION SHEET 5

SR-10 CORRIDOR STUDY
STAKE FARM RD TO US-6
4/3 LANE MEANDER IMPACT

PROJECT NUMBER SP-0010(21)64E

COUNTY CARBON

SHEET NO. 4

UTAH DEPARTMENT OF TRANSPORTATION
REGION 4 -- RICHFIELD, UTAH
CORRIDOR STUDY

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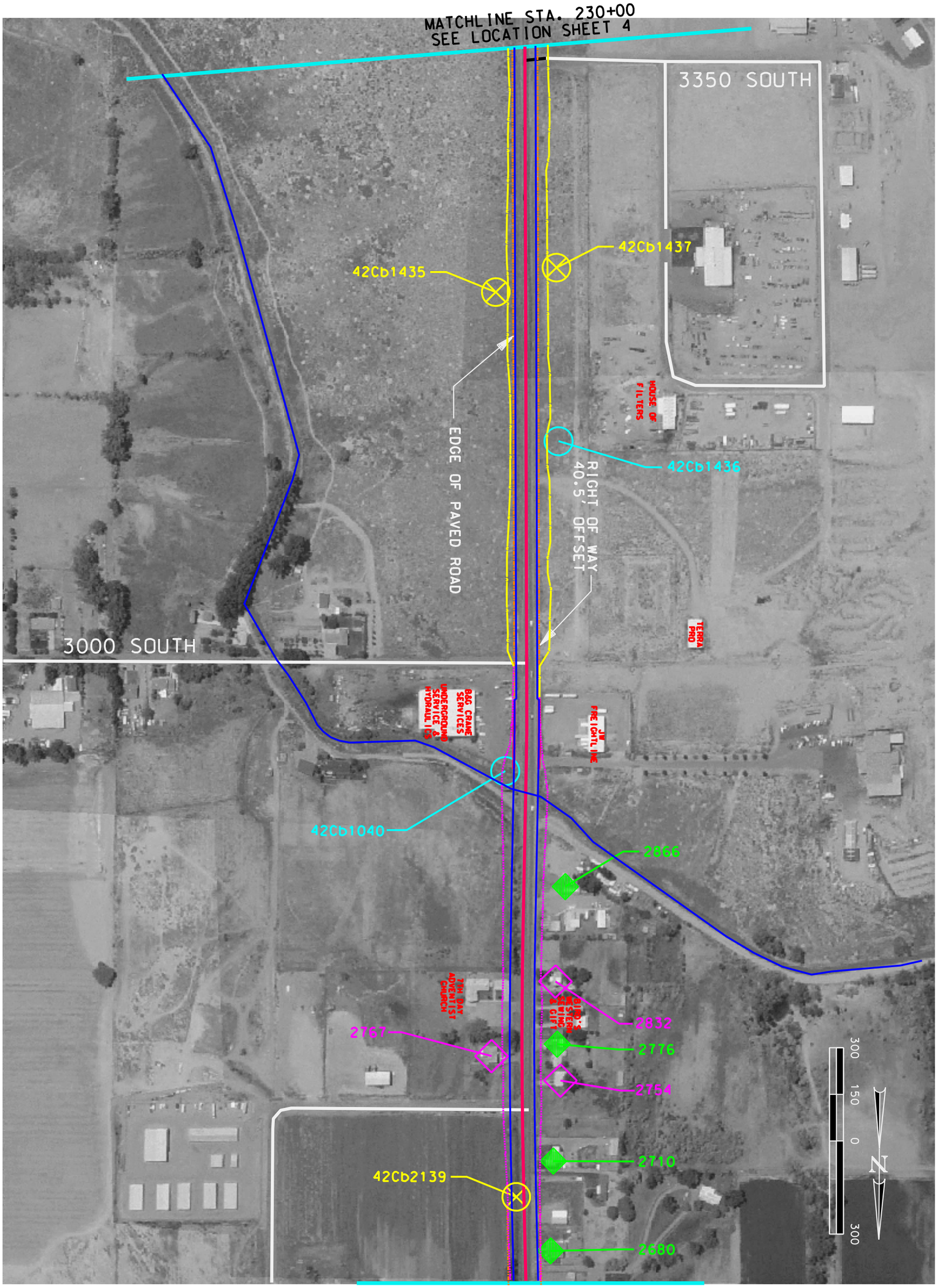
DATE REVISIONS



SHEET NO. 5

COUNTY CARBON

SR-10 CORRIDOR STUDY
STAKE FARM RD TO US-6
4/3 LANE MEANDER IMPACT

PROJECT NUMBER SP-0010(21)64E

UTAH DEPARTMENT OF TRANSPORTATION
REGION 4 -- RICHFIELD, UTAH
CORRIDOR STUDY

APPROVAL RECOMM. DATE PROJECT DESIGN ENGINEER
APPROVED FOR USE BY UDOT DATE PRECONSTRUCTION ENGINEER

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DATE
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NO.	DATE	DESIGN REV.BY	MAPS CORR.BY	PARCELS AFFECTED	REQUEST BY	REMARKS
		ORIGINAL SUBMISSION FOR AUTHORIZATION				

DATE REVISIONS

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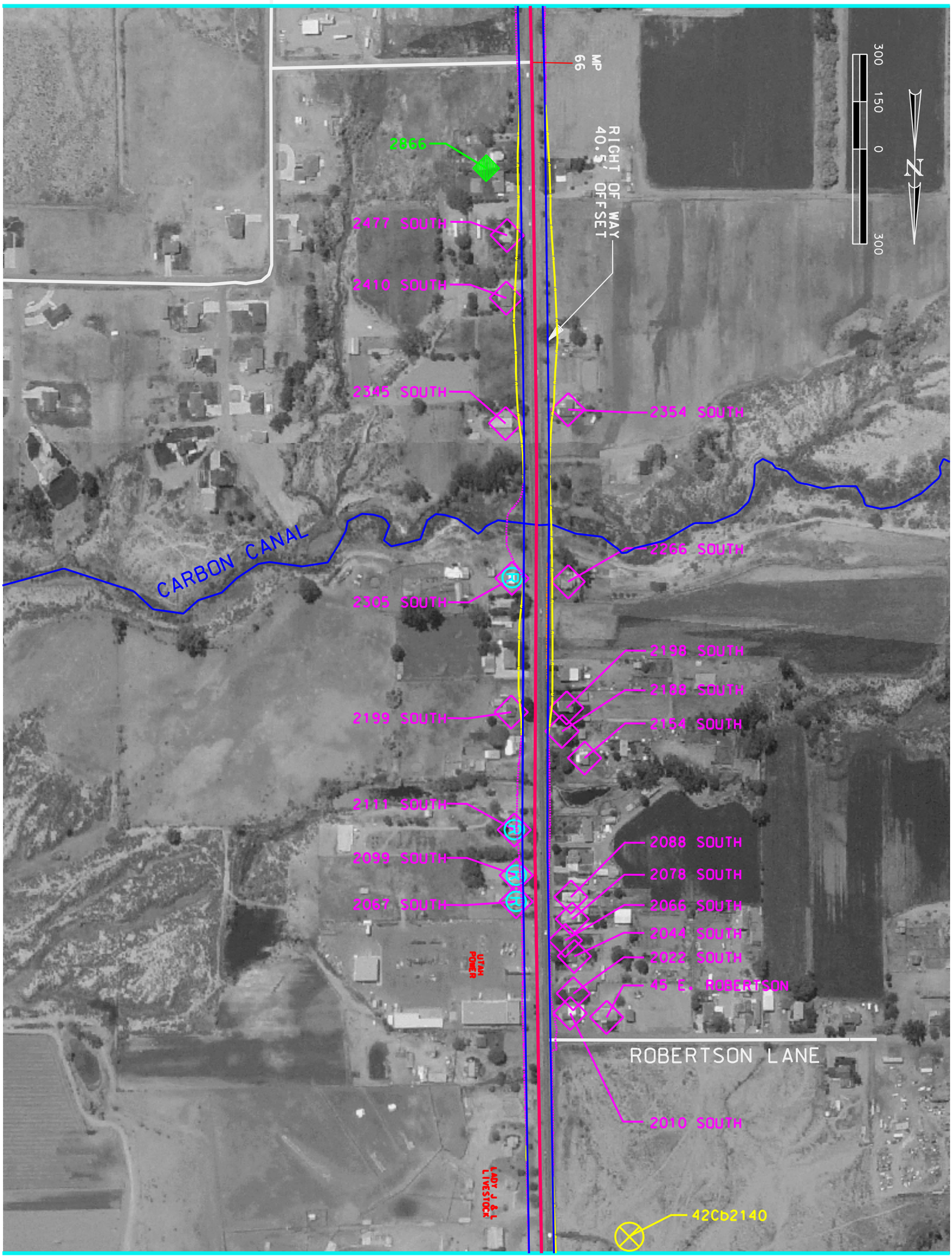
SEE LOCATION SHEET 5



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SEE LOCATION SHEET 7

SHEET NO. 6	COUNTY CARBON	SR-10 CORRIDOR STUDY STAKE FARM RD TO US-6 4/3 LANE MEANDER IMPACT PROJECT NUMBER SP-0010(21)64E	UTAH DEPARTMENT OF TRANSPORTATION REGION 4 -- RICHFIELD, UTAH CORRIDOR STUDY APPROVAL RECOMM. DATE PROJECT DESIGN ENGINEER APPROVED FOR USE BY UDOT DATE PRECONSTRUCTION ENGINEER	DESIGN CHECK DRAWN CHECK QUANT. CHECK	REVIEW DATE BY

NO.	DATE	DESIGN REV.BY	MAPS CORR.BY	PARCELS AFFECTED	REQUEST BY	REMARKS
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DATE REVISIONS

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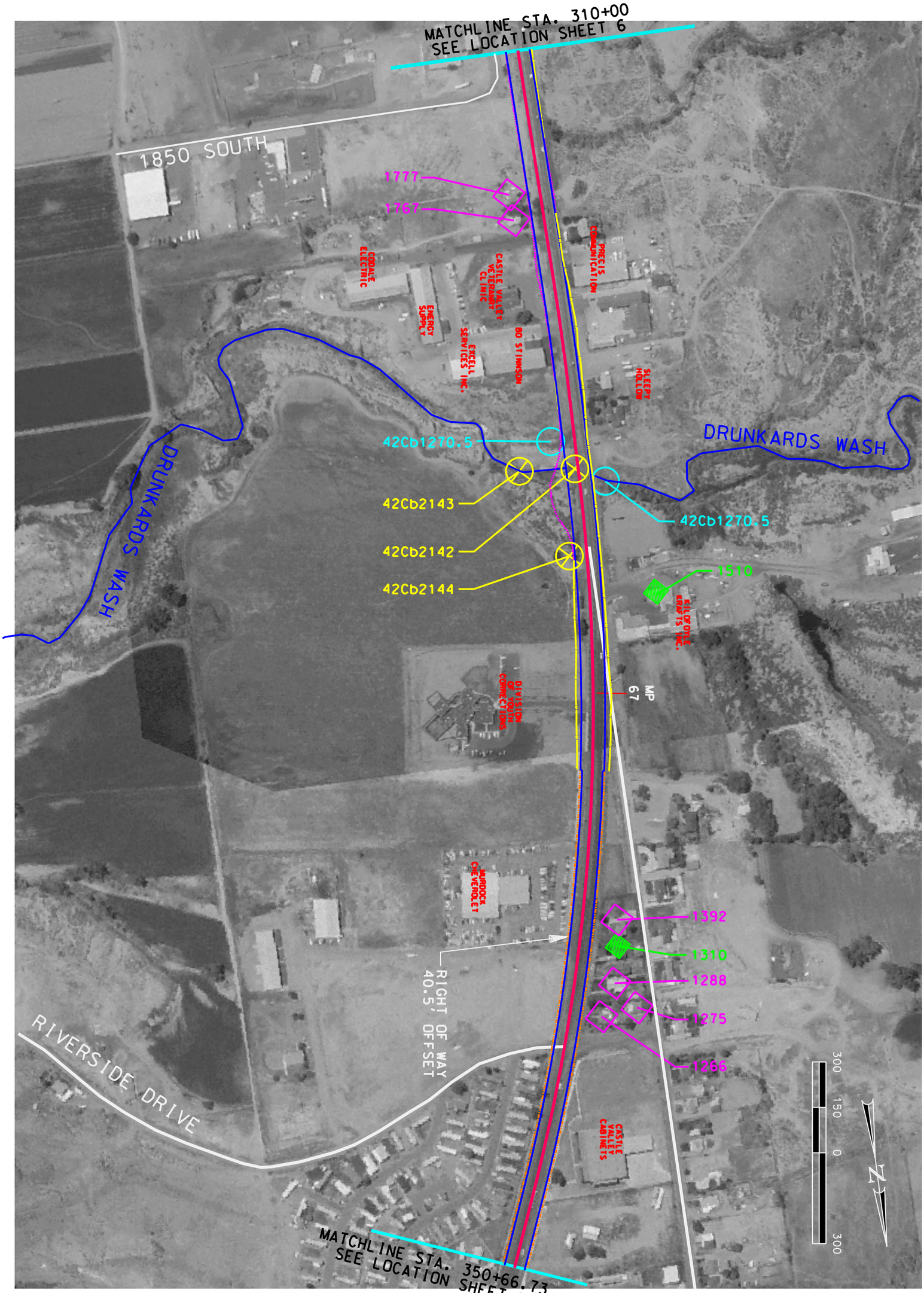

SR-10 CORRIDOR STUDY
STAKE FARM RD TO US-6
4/3 LANE MEANDER IMPACT

PROJECT NUMBER SP-0010(21)64E

SHEET NO. 7 COUNTY CARBON

UTAH DEPARTMENT OF TRANSPORTATION
REGION 4 -- RICHFIELD, UTAH
CORRIDOR STUDY

APPROVAL RECOMM. DATE PROJECT DESIGN ENGINEER
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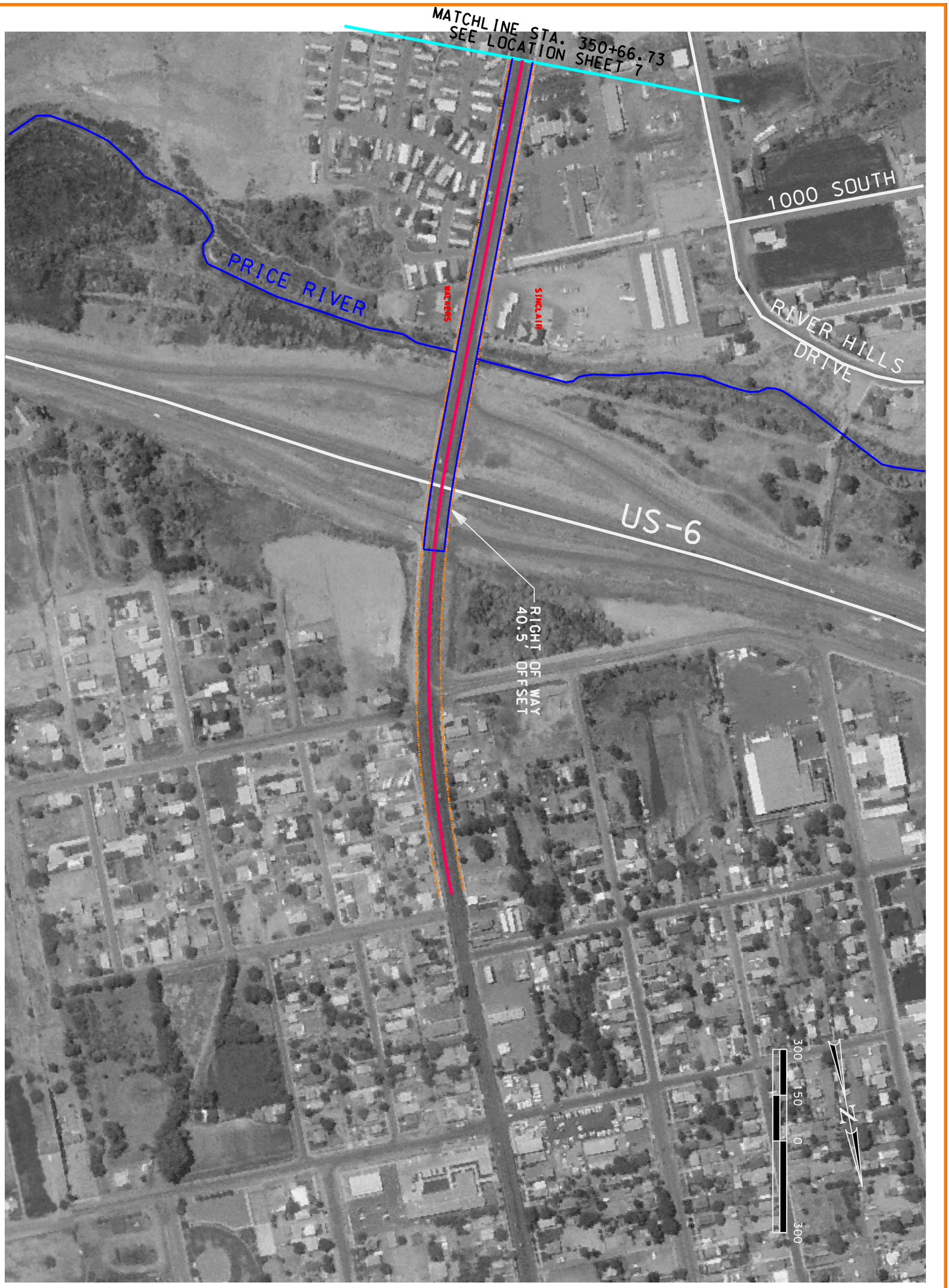

SR-10 CORRIDOR STUDY	UTAH DEPARTMENT OF TRANSPORTATION		
STAKE FARM RD TO US-6	REGION 4 -- RICHFIELD, UTAH		
4/3 LANE MEANDER IMPACT	CORRIDOR STUDY		
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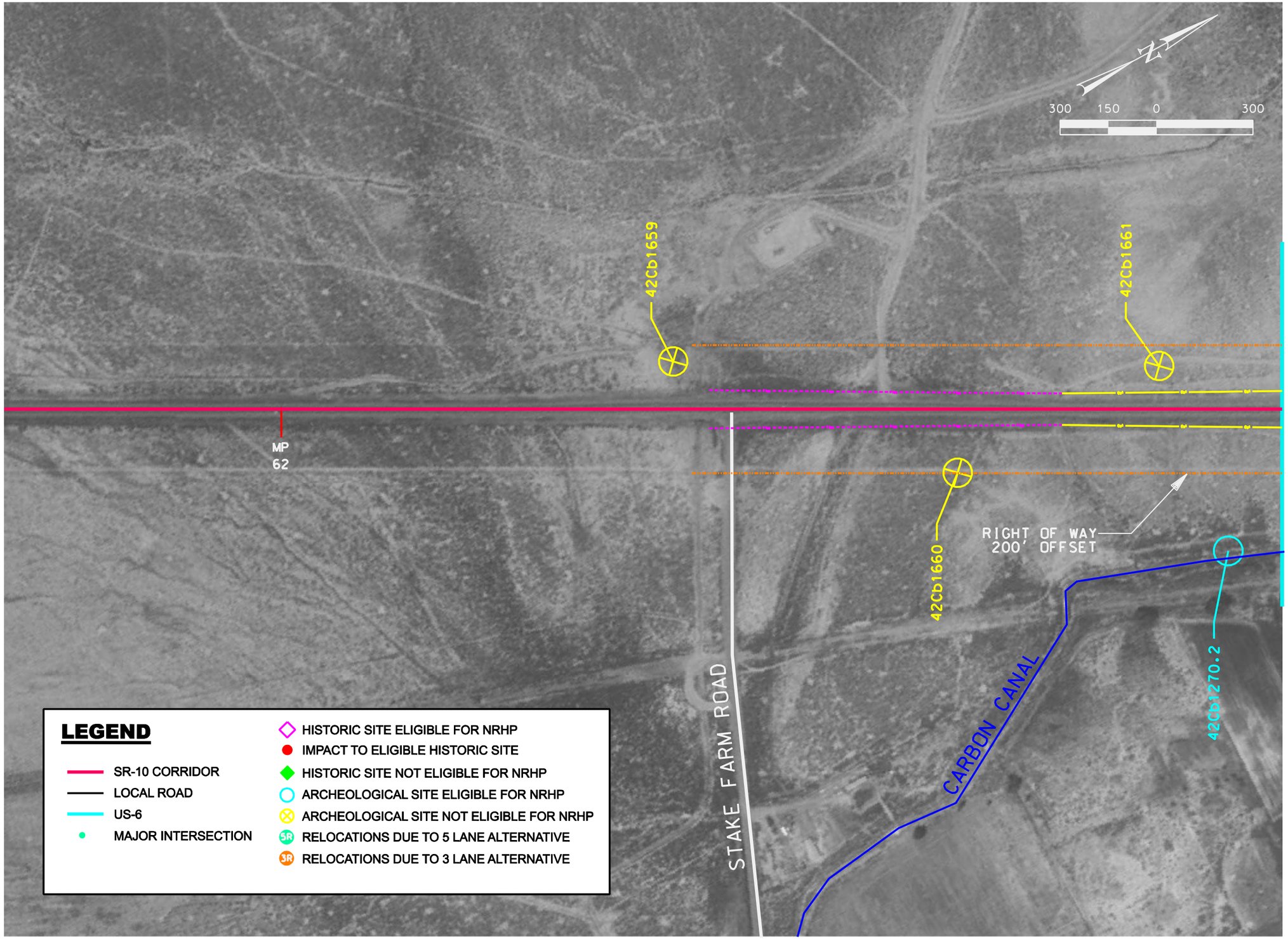

UTAH DEPARTMENT OF TRANSPORTATION
REGION 4 -- RICHFIELD, UTAH
CORRIDOR STUDY

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SR-10 CORRIDOR STUDY
STAKE FARM RD TO US-6
CORRIDOR PRESERVATION

PROJECT NUMBER SP-0010(21)64E

CARBON COUNTY

SHEET NO. 1

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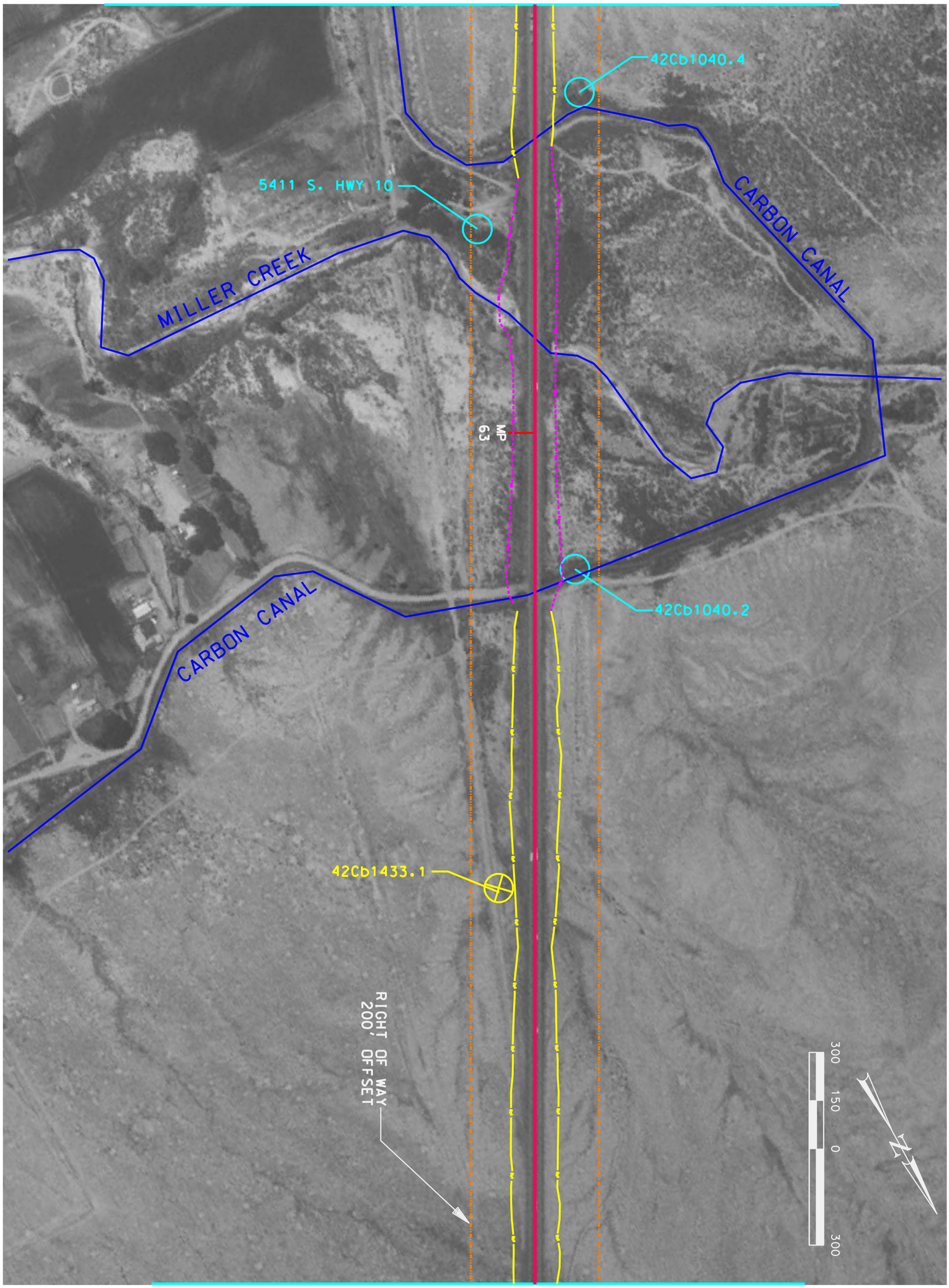

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SEE LOCATION SHEET 3

SHEET NO. 2

COUNTY CARBON

SR-10 CORRIDOR STUDY
STAKE FARM RD TO US-6
CORRIDOR PRESERVATION

PROJECT NUMBER SP-0010(21)64E

UTAH DEPARTMENT OF TRANSPORTATION
REGION 4 -- RICHFIELD, UTAH
CORRIDOR STUDY

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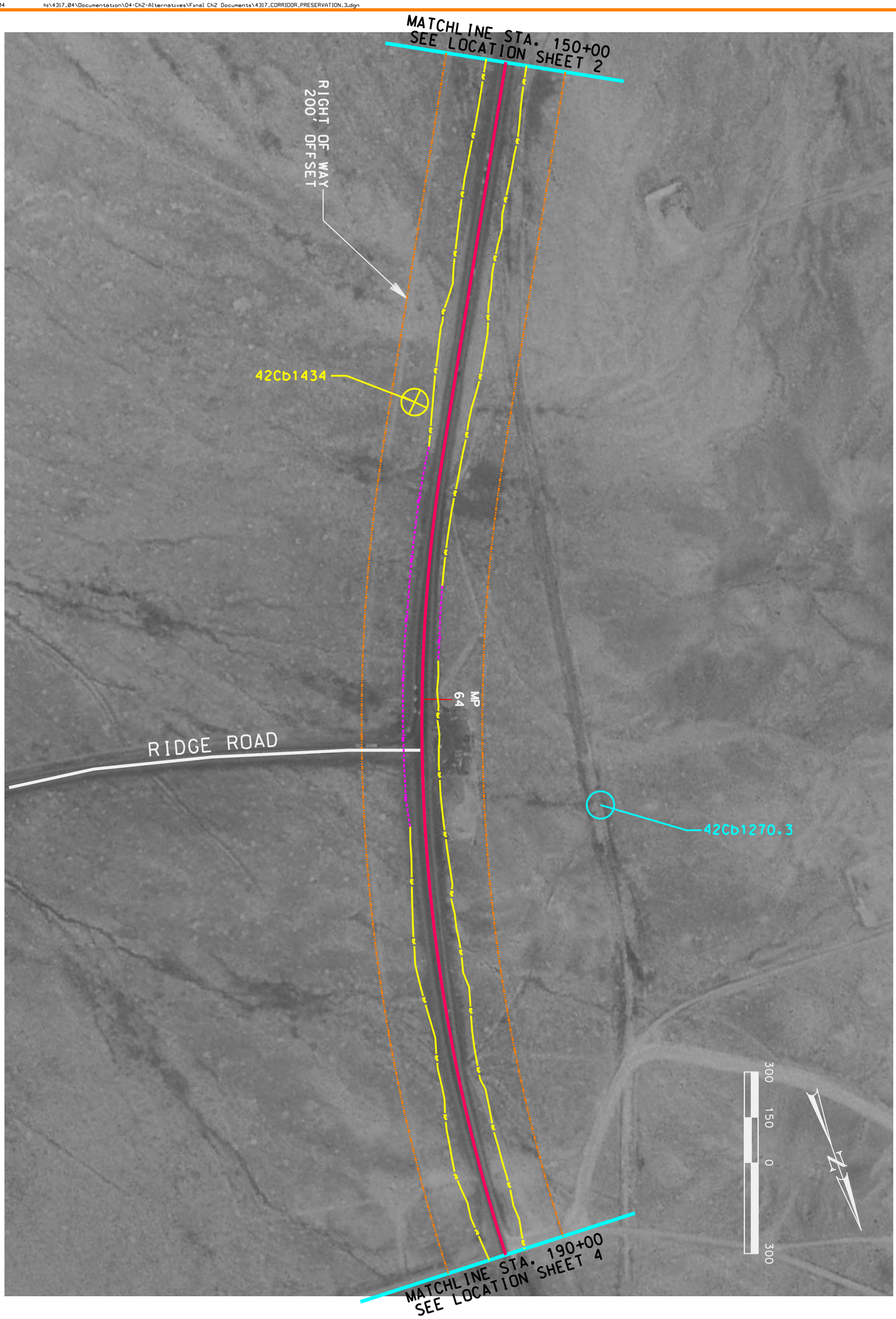

SHEET NO. 3

COUNTY: CARBON

SR-10 CORRIDOR STUDY
STAKE FARM RD TO US-6
CORRIDOR PRESERVATION

PROJECT NUMBER SP-0010(21)64E

UTAH DEPARTMENT OF TRANSPORTATION
REGION 4 -- RICHFIELD, UTAH
CORRIDOR STUDY

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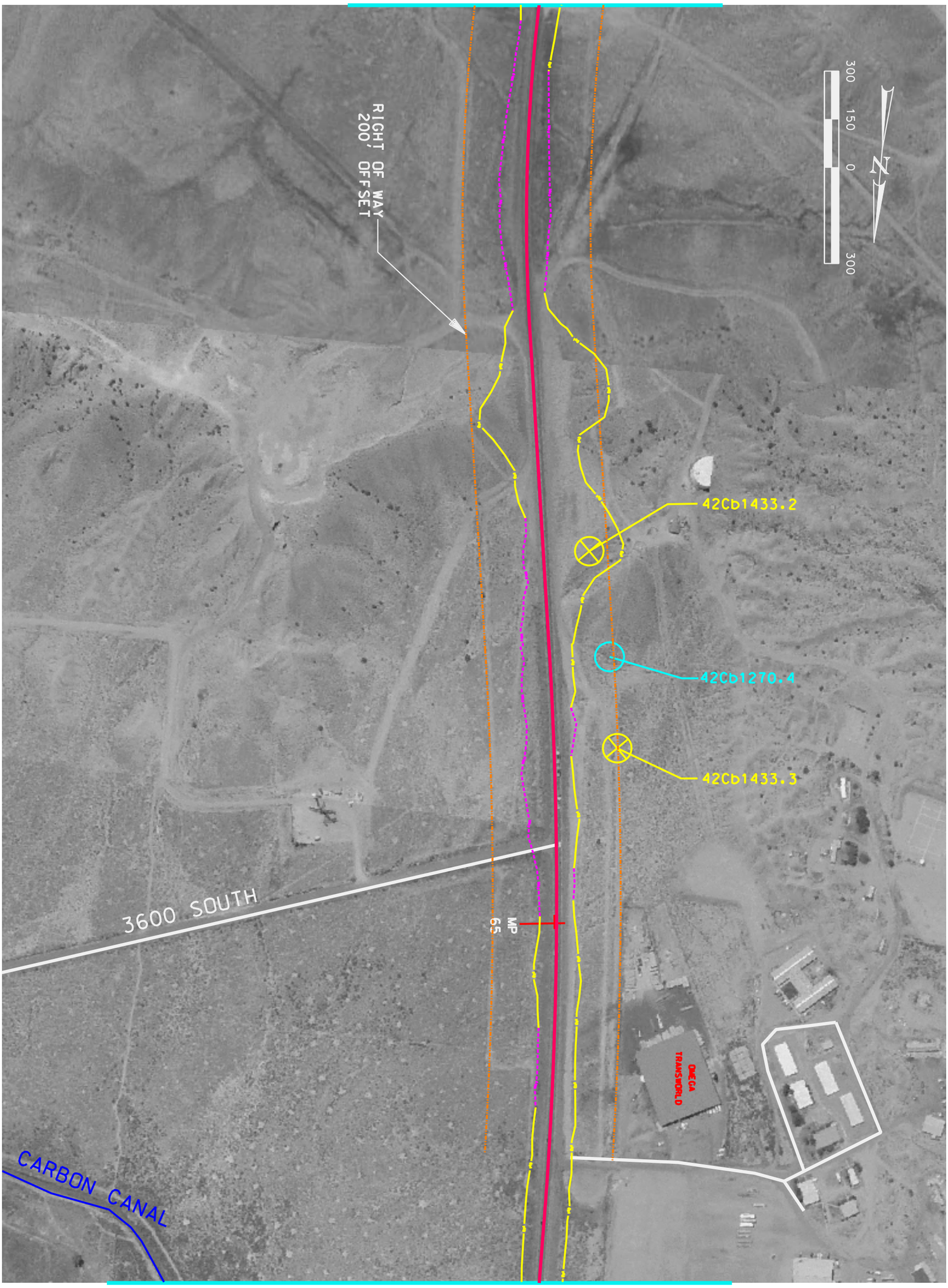

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SHEET NO. 4

COUNTY CARBON

SR-10 CORRIDOR STUDY
STAKE FARM RD TO US-6
CORRIDOR PRESERVATION

PROJECT NUMBER SP-0010(21)64E

UTAH DEPARTMENT OF TRANSPORTATION
REGION 4 -- RICHFIELD, UTAH
CORRIDOR STUDY

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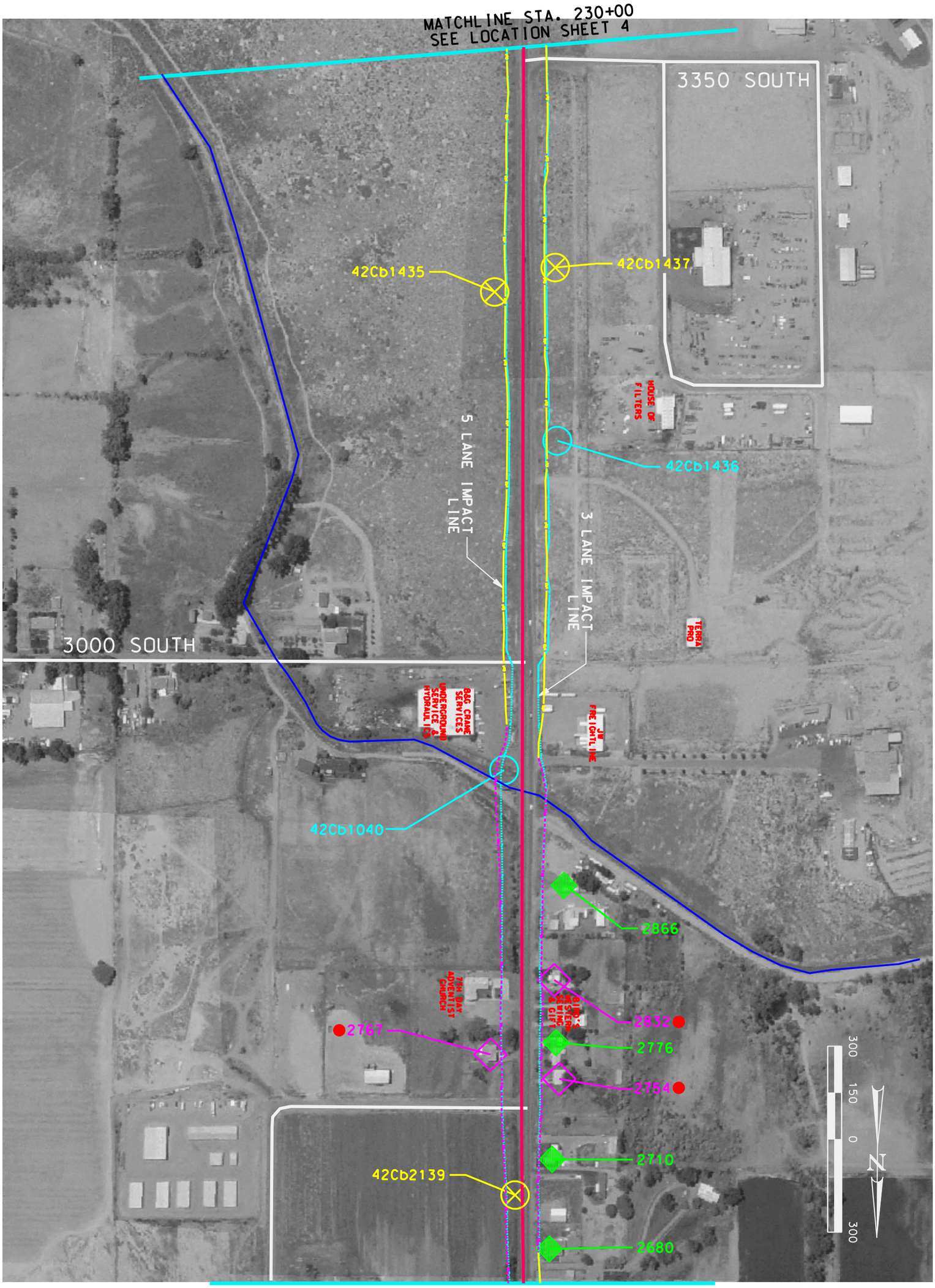

SHEET NO. 5	CARBON COUNTY	SR-10 CORRIDOR STUDY STAKE FARM RD TO US-6 CORRIDOR PRESERVATION	PROJECT NUMBER SP-0010(21)64E

UTAH DEPARTMENT OF TRANSPORTATION
REGION 4 -- RICHFIELD, UTAH
CORRIDOR STUDY

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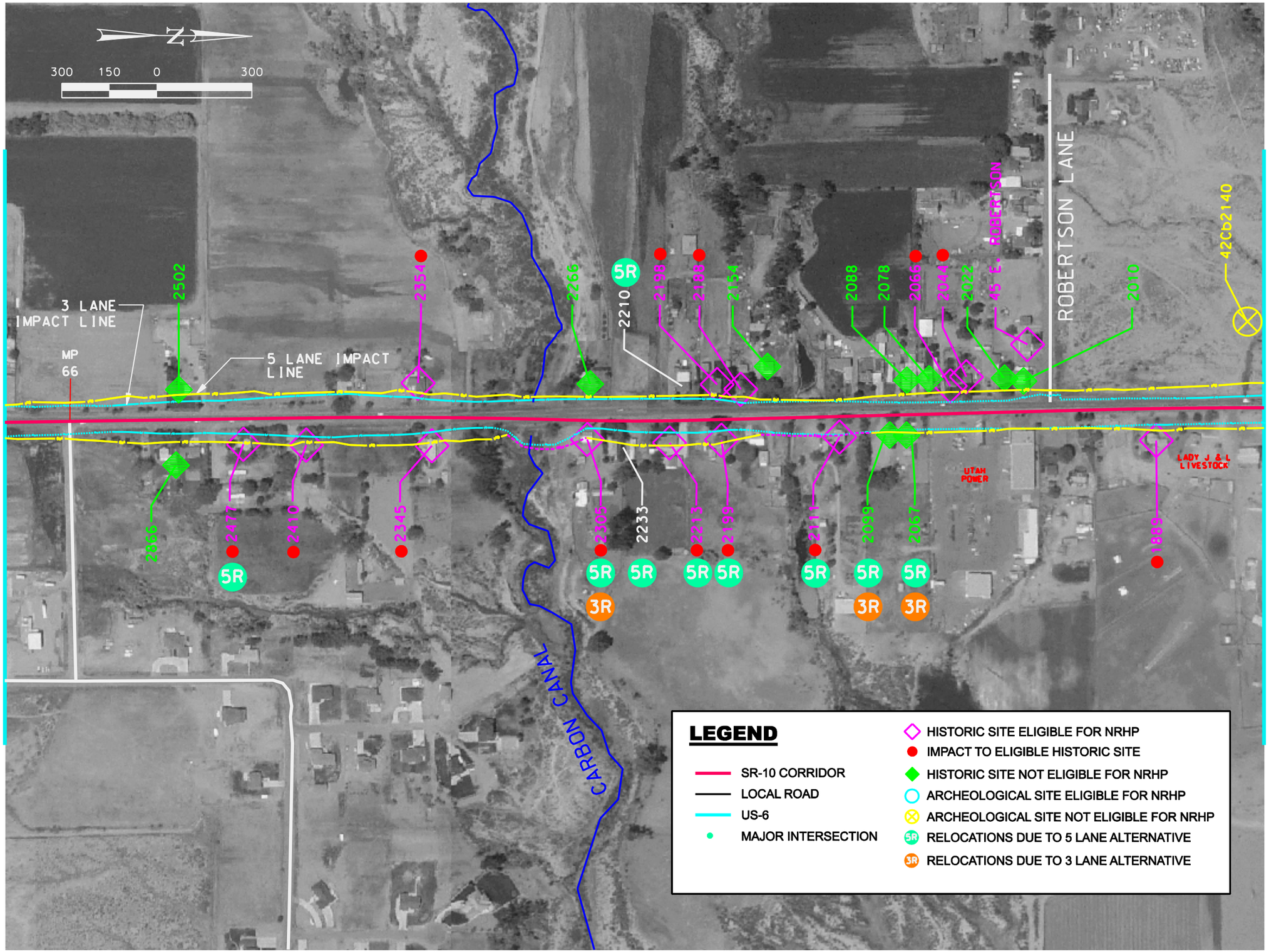

UTAH DEPARTMENT OF TRANSPORTATION
REGION 4 -- RICHFIELD, UTAH
CORRIDOR STUDY

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SR-10 CORRIDOR STUDY
STAKE FARM RD TO US-6
CORRIDOR PRESERVATION

PROJECT NUMBER SP-0010(21)64E

CARBON COUNTY

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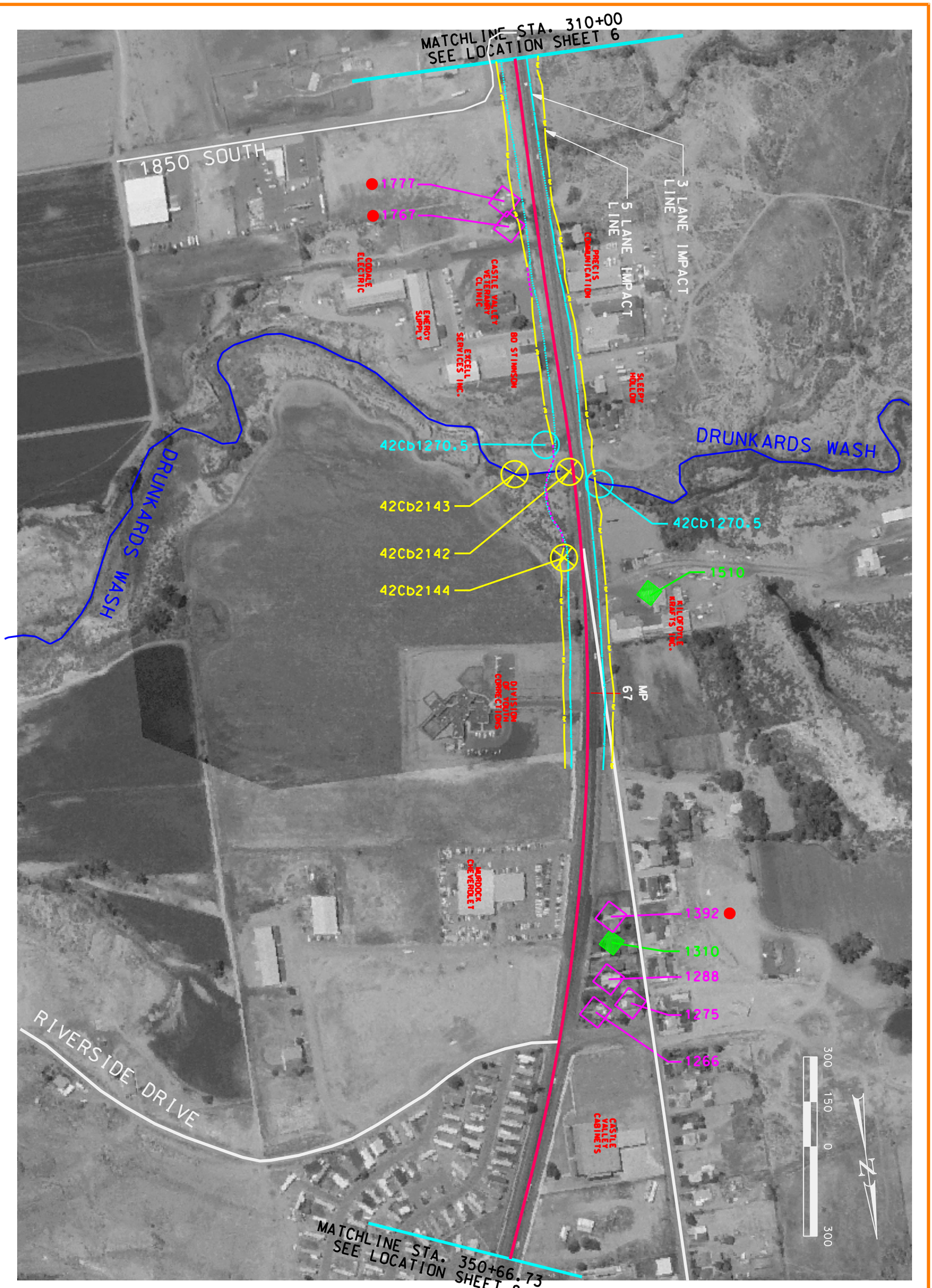

SR-10 CORRIDOR STUDY
STAKE FARM RD TO US-6
CORRIDOR PRESERVATION

PROJECT NUMBER SP-0010(21)64E

SHEET NO. 7

COUNTY CARBON

UTAH DEPARTMENT OF TRANSPORTATION
REGION 4 -- RICHFIELD, UTAH
CORRIDOR STUDY

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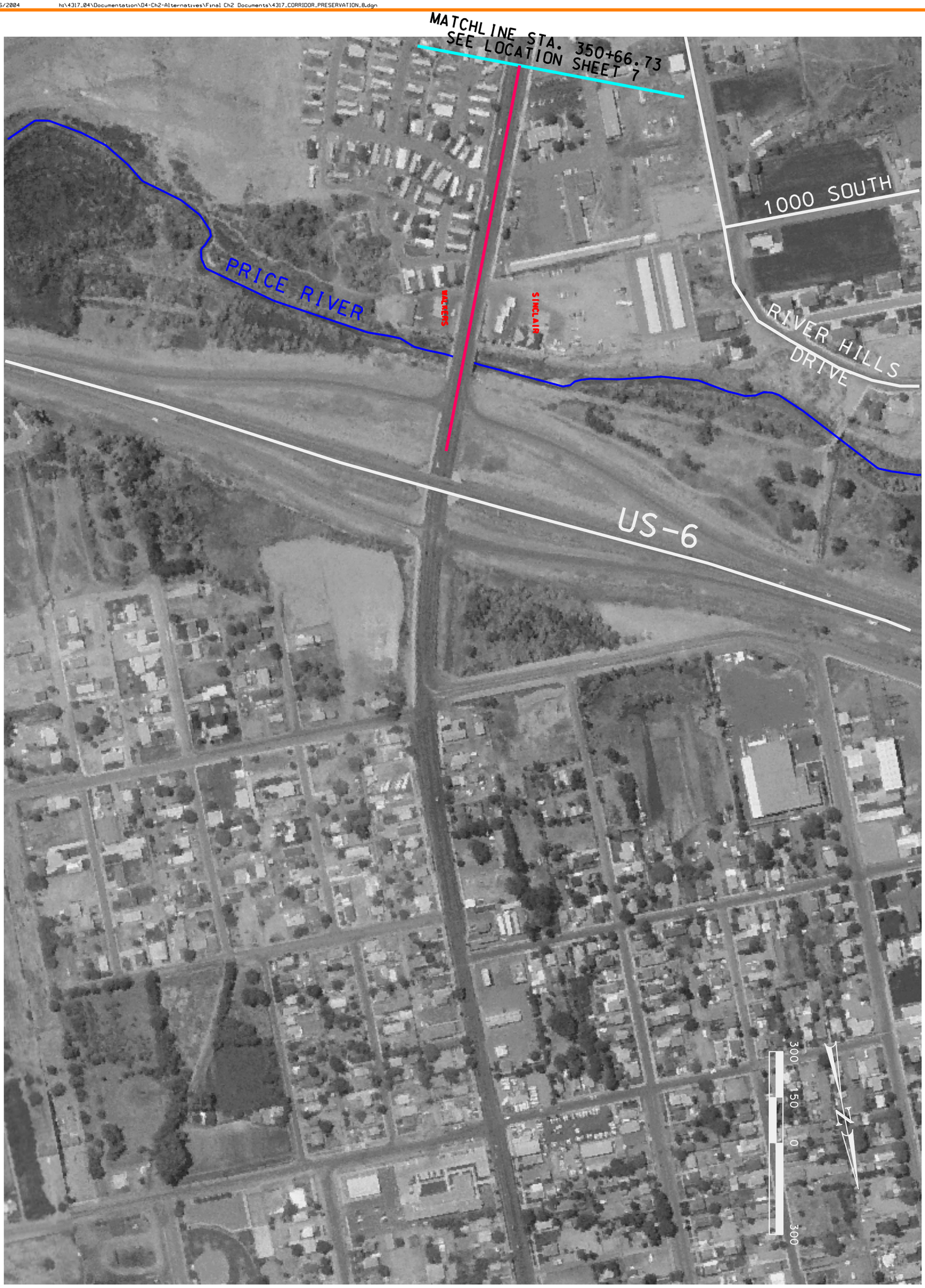

SHEET NO. 8

COUNTY CARBON

SR-10 CORRIDOR STUDY
STAKE FARM RD TO US-6
CORRIDOR PRESERVATION

PROJECT NUMBER SP-0010(21)64E

UTAH DEPARTMENT OF TRANSPORTATION
REGION 4 -- RICHFIELD, UTAH
CORRIDOR STUDY

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avenue | CONSULTANTS

MEMORANDUM

To: Utah Department of Transportation – Region 4

From: Avenue Consultants

Date: March 12, 2013

Subject: SR-10 Small Project Development

OVERVIEW

UDOT is considering a series of smaller projects to improve 3.5 miles of SR-10 (south of US-6) rather than pursue the funds necessary to improve the corridor with a single project. UDOT asked Avenue Consultants (Avenue) to review the results of the *SR-10 Corridor Study; Stake Farm Rd. to US-6* prepared in November 2004 to identify and prioritize projects. This memorandum summarizes the review of the 2004 Study, revisions made to the previous recommendations, and a prioritized list of smaller projects for the SR-10 corridor.

TRAFFIC ON SR-10

Previous Effort

The previous study, *SR-10 Corridor Study – Stake Farm Road to US-6*, completed in 2004 recommended a 5-lane roadway on SR-10 from Stake Farm Road to US-6. The study based these recommendations on projected traffic growth of approximately 4.7% per year between 1988 & 2002. Avenue supplemented the historic growth data with 10 more years of data to see how it compared to pre 2002 data. Figure 1 shows a comparison of the historical AADT counts for 2 segments of SR-10 from 1986 to 2011 from the UDOT Annual Average Daily Traffic with the reported growth rate of the previous study.

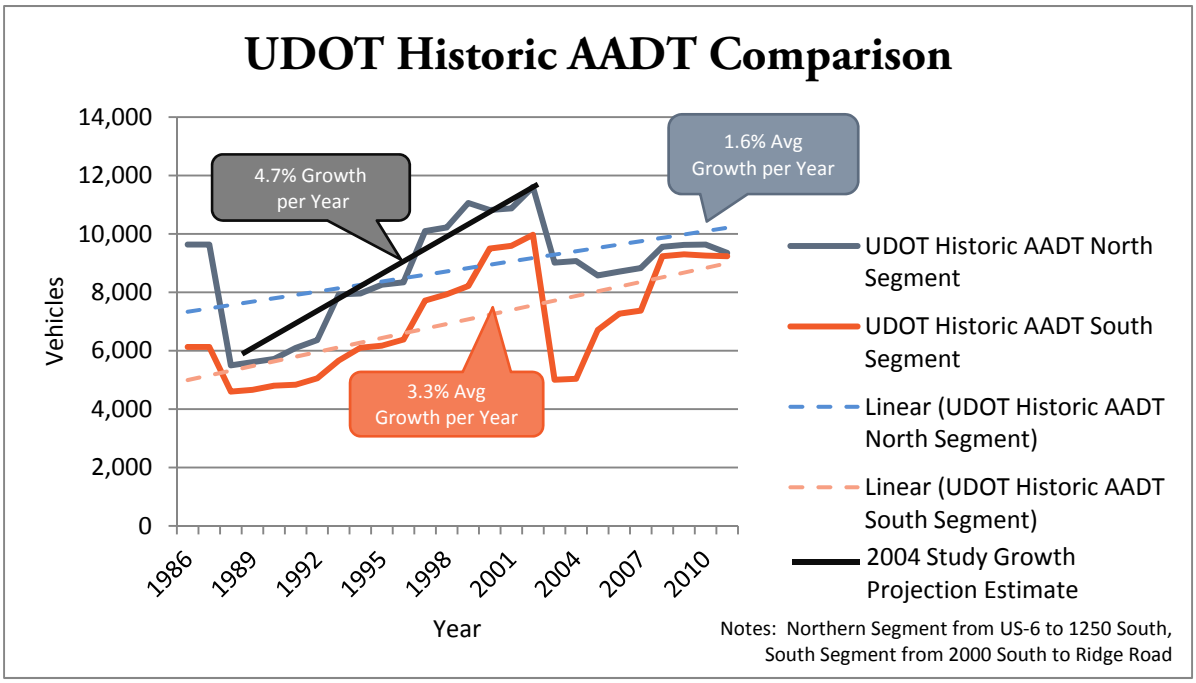


Figure 1: Historical ADT Growth on SR-10

Also shown in Figure 1 are dashed linear trend lines which consider all of the historical ADT volumes and indicate that traffic growth on SR-10 has increased closer to 1.6% to 3.3% per year depending on location. The difference in trend lines between the pre 2002 data and the current data would suggest a much lower 2030 traffic projection.

Avenue also collected ADTs on SR-10. Table 1 shows a comparison with the ADTs from the previous study.

Table 1: SR-10 Collected ADT Comparison

Approximate Location	2004 Report	Current ADT
North Segment (Between US-6 & 1300 South)	12,800	12,200
South Segment (Between 3000 South & Ridge Road)	8,200	6,900

The 2012 ADTs show that the daily traffic on SR-10 has not grown as the previous study estimated and that traffic has experienced very little change since 2004. The previous study applied the 4.7% per year growth rate to the pre 2004 ADT to project a 2030 traffic volume. Figure 2 shows a comparison of the pre 2004 ADTs with the 2012 ADTs.

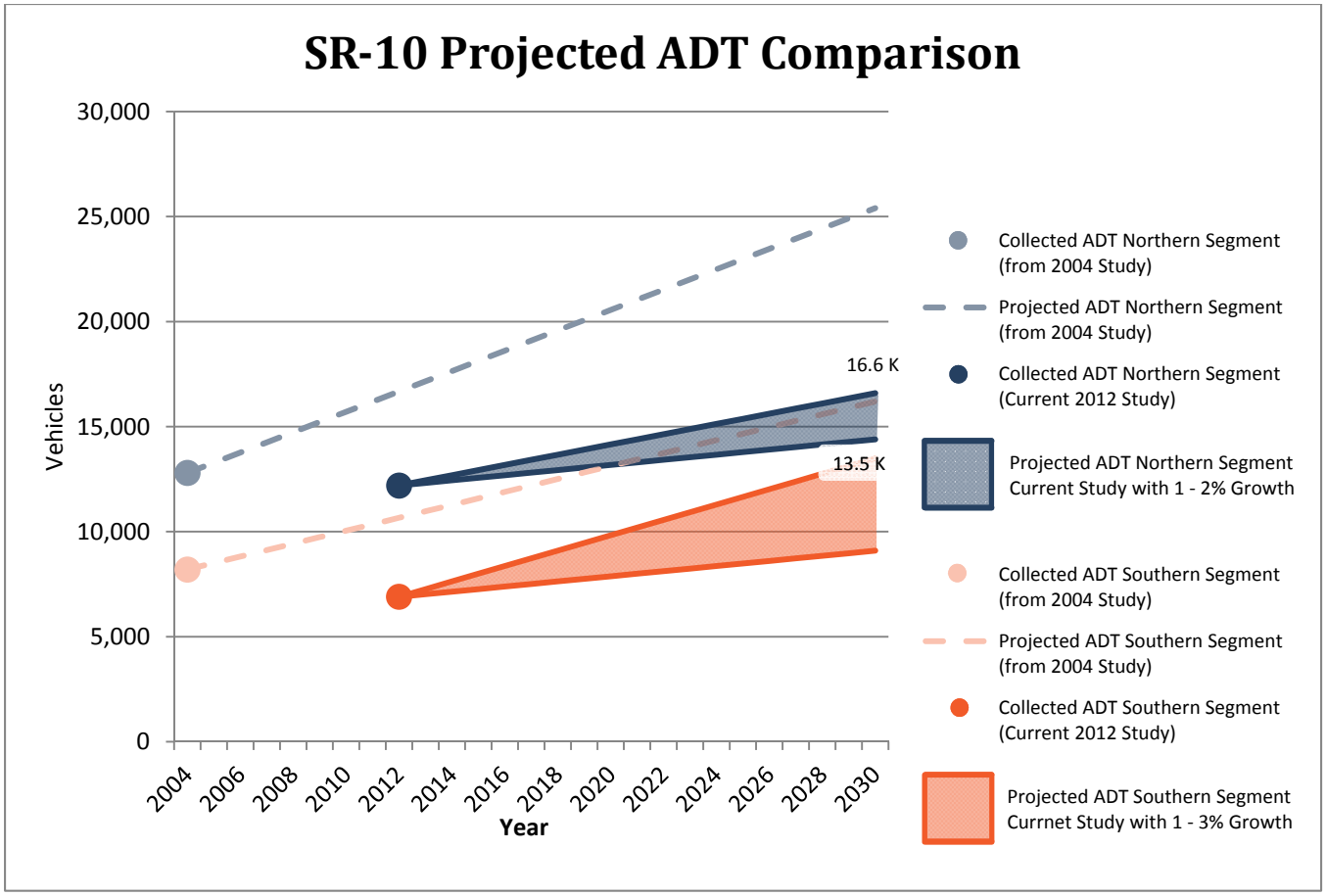


Figure 2: SR-10 Projected ADT Comparison

Our review of the 2012 traffic volumes and historic traffic growth trends on SR-10 indicate that the growth assumptions from the previous study may have over-projected the vehicular growth on SR-10 for 2030, based on historic traffic volumes. We anticipate the daily traffic on SR-10 to follow the historical trend which suggests

that the traffic should grow to somewhere between 14,400 and 16,600 vehicles by 2030 (approximately 1-2% per year). In addition, population growth projections from the Governor's Office of Planning and Budget (GOPB) project growth less than 0.5% per year over the next 20 years for both Carbon and Emery Counties. Based on updated traffic projections, a three-lane roadway (two travel lanes and a center turn lane) should likely accommodate the traffic growth over the next 20 years.

Crash Data

Avenue reviewed UDOT's latest (2008-2010) crash data on SR-10 and saw that crashes along SR-10 increase as the corridor narrows to two lanes (approximately from 1450 South to 3000 South) and are likely due in some part to insufficient width for cars to avoid these crashes (e.g. no turn lanes, shoulders, etc.). Table 2 shows an annual comparison of crash rates on SR-10 and also shows the UDOT Average Crash Rate by Functional Classification.

Table 2: Annual Crash Rate (Per 1M VMT) Comparison

	2008	2009	2010	Average
Total Corridor Crashes Per Year	24	30	12	22
Total Corridor Crash Rate	1.15	1.44	0.58	1.06
MP 67.0 to 68.0	2.59	2.88	0.86	2.30
MP 62.2 to 66.9	0.93	1.17	0.56	0.93
MP 62.0 to 62.2	0.00	1.45	0.00	1.45
UDOT Crash Rate by Functional Classification (Per 1M VMT)				
MP 62.10	Rural Minor Arterial			1.90
MP 64.27	Rural Principle Arterial			1.56
MP 66.94	Urban Principal Arterial			3.36

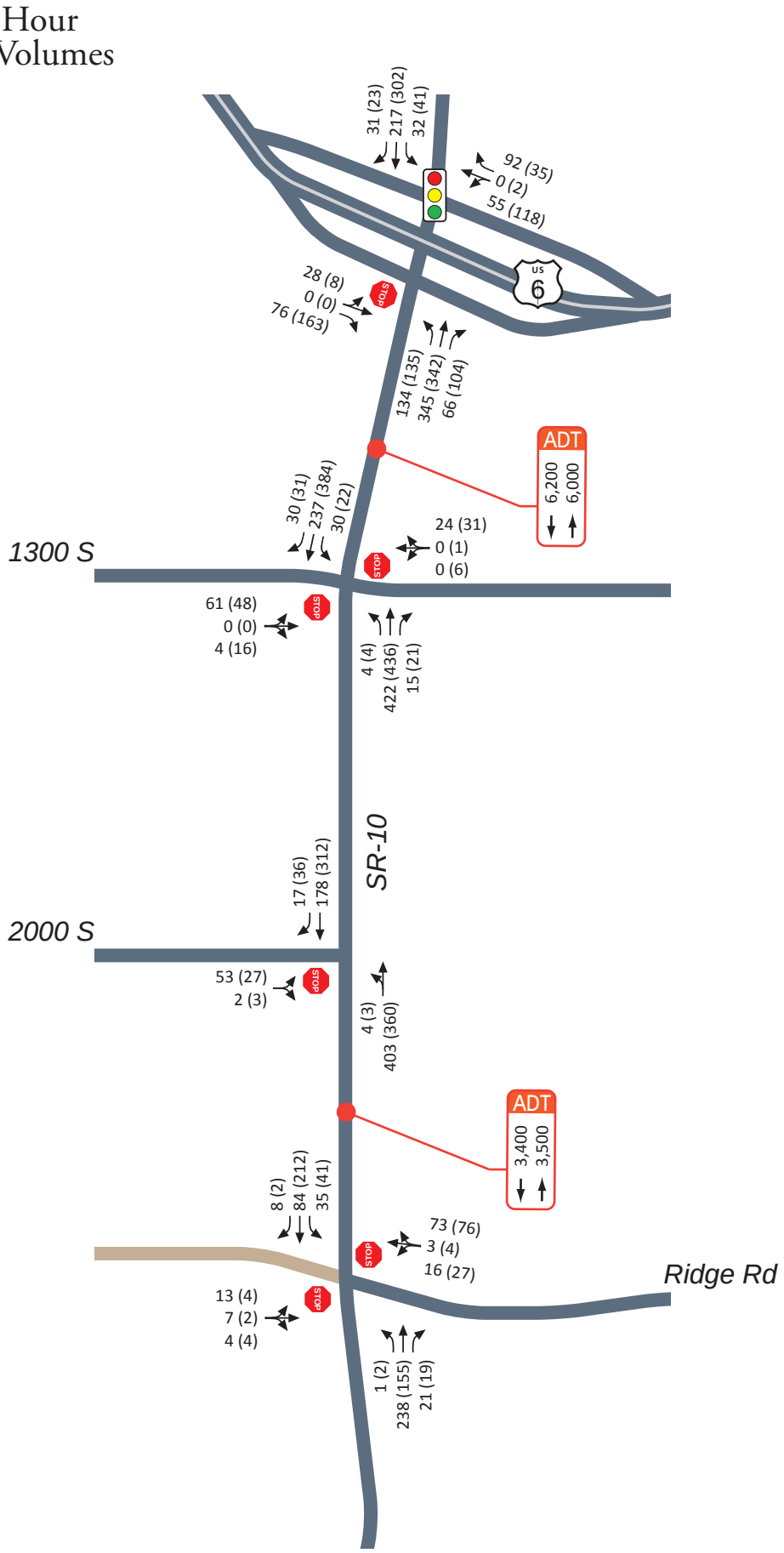
The crash statistics indicate that the crash rates on SR-10 are lower than the UDOT average crash rates for each comparable functional classification. Please see figures in the Appendix A detailing crash data by location and; number of crashes, manner of collision, and by the first harmful event.

Peak Intersection Turning Movement Volumes

Figure 3 shows the 2012 peak hour turning movement volumes along SR-10 at US-6, 1300 South, 2000 South, and at Ridge Road. The peak hour volumes at all of the intersections along the SR-10 corridor appear to have a relatively low number of peak hour vehicles and should be acceptably accommodated by a three lane roadway.

2012 Weekday Peak Hour Turning Movement Volumes

SR-10 Price, UT



AM Peak - 7:30 to 8:30
PM Peak - 4:00 to 5:00

AM (PM) Peak Hour Volumes

CORRIDOR PLAN & RECOMMENDATIONS

A three lane cross section (assuming one lane in each direction with a center turn lane and widened shoulders) will likely operate acceptably (approximately LOS D conditions) with the projected 2030 traffic volumes. The three lane section would also provide some additional width to help reduce friction and conflict with through-traveling vehicles, which could help reduce crashes on SR-10. The property adjacent to the SR-10 corridor transitions from commercial (north) to residential (central) and open rangeland (south). These varied land uses provide logical breaks to prioritize and identify projects, and are also helpful in delineating where projects with additional considerations such as adding sidewalks or striping side streets may be appropriate. We see these three corridor sections as follows:

Northern Section

Currently, the existing pavement from US-6 to 1300 South has 2 southbound lanes, a center turn lane, a single northbound lane, and sidewalk on both sides of the road. From US-6 to 1450 South, we don't anticipate any corridor changes beyond what exists. The existing peak traffic volumes on SR-10 operate at a reasonable level of service. As traffic volumes increase at the intersections within this section, future considerations for improvement include: signalized intersections, adding sidewalk farther south along SR-10, and improving the striping delineation at the 1300 South intersection.

Central Section

After 1450 South, the road transitions into a 2 lane road without sidewalk or widened shoulders from 1450 South to about 2800 South. This segment has residential frontage on both sides of SR-10. Based on the traffic, crashes, and narrow roadway width, a 3 lane cross section and widened shoulder from 1300 South to 3000 South would improve this area. The improvements for these sections are detailed in the preliminary design and should be prioritized from 1300 South to 3000 South (three $2M projects). The priority for these projects is based on the concentration of crashes around the wash/culvert crossings.

Southern Section

From 3000 South to Ridge Road and beyond, open rangeland primarily fronts SR-10. This segment of SR-10 has recently been improved with climbing lanes and acceleration or deceleration turn pockets. These recent improvements have improved safety along this section of SR-10 and may be the reason for the reduction in crashes reported in 2010. Currently, the shoulder width varies from 4 feet for long stretches between intersections to 1 foot where turn pockets develop at the intersections. Future considerations for this section of SR-10 include widening the shoulder to a consistent width of 10' (or some width to better accommodate vehicle pull-out or maneuverability to avoid crashes) along the entire length of SR-10.

PRELIMINARY DESIGN & RIGHT OF WAY IMPACTS

The 3 lane cross section design from the 2004 study was not very well developed and files from this design were missing and necessitated the development of a new design file. This new design file was built using the aerial imagery from the AGRC 2006 1 foot tiles and the AGRC parcel and land ownership shape files for Carbon County to determine Right-of-Way (ROW) impacts. The improvement recommendations consider resurfacing the

existing pavement and full depth construction for the new pavement. To account for the unknown and undefined factors, such as utility impacts, 4H properties, or other miscellaneous items that may increase the cost of the projects, Avenue included a 40% contingency on all of the construction items and an additional 15% change order contingency on the construction and aesthetic improvements anticipated costs. Avenue assumed an average cost of $12/ft^{2}for ROW strip acquisitions. The cost for ROW was based from the Carbon County Assessors 2011 Market Value for the parcels adjacent to SR-10 (averaging about $4/ft^2). This average was increased to factor in additional costs for construction easements and acquisition flexibility for the various land uses on SR-10. At the request of UDOT, Avenue broke up the corridor improvements into approximately $2 million dollar projects and listed them below according to their priority for funding and implementation.

1450 South to 2000 South (MP 67.290 to MP 66.705) - 1st Priority

The improvements for this section of road include 0.6 miles of new pavement width and widening the culvert/wash crossing at 1600 South. No additional ROW is anticipated (based on the preliminary alignment) to complete these improvements. Table 3 shows the concept level cost estimate associated with these improvements.

Table 3: SR-10 Widening 1450 South to 2000 South Concept Level Cost Estimate

Construction Items	2013 dollars	2017* dollars
Preliminary Engineering (8%)	$116,000	$131,000
Right of Way	$0	$0
Utilities	$0	$0
Construction (with a 40% Contingency)	$1,455,000	$1,943,000
Construction Engineering (10%)	$146,000	$164,000
Incentives	$30,000	$40,000
Aesthetics (1%)	$15,000	$20,000
Change Order Contingency (15%)	$221,000	$295,000
UDOT Oversight	$0	$0
Miscellaneous	$0	$0
TOTAL	**$1,983,000**	**$2,593,000**

* 2017 cost projection selected as a realistic timeframe for implementation. Projections based on UDOT Preconstruction Concept Level Estimate form dated 8-7-12. Estimate assumes yearly inflation of 3%/year for engineering services, no inflation for Right of Way (non-Urban/Suburban), and construction items are inflated using a cumulative inflation factor of 1.34 (as defined in UDOT Estimate form).

Concept level design figures are provided in Appendix B showing the edge of pavement and Carbon County parcel data.

2000 South to 2500 South (MP 66.705 to 66.205) - 2nd Priority

The improvements for this section of road include 0.5 miles of new pavement width and widening the culvert/wash crossing at 2300 South. Strips of ROW along SR-10 are likely required to complete these improvements (no full ROW acquisitions are anticipated). There may be some ROW savings obtainable by shifting the roadway alignment through this section a little farther to the west. However, this degree of design is difficult to determine with the level of accuracy from AGRC parcel data, and the overall budget falls within the project goal. Table 4 shows the concept level cost estimate associated with these improvements.

Table 4: SR-10 Widening 2000 South to 2500 South Concept Level Cost Estimate

Construction Items	2013 dollars	2017* dollars
Preliminary Engineering (8%)	$95,000	$101,000
Right of Way	$468,000	$468,000
Utilities	$0	$0
Construction (with a 40% Contingency)	$1,189,000	$1,588,000
Construction Engineering (10%)	$119,000	$134,000
Incentives	$26,000	$35,000
Aesthetics (1%)	$12,000	$16,000
Change Order Contingency (15%)	$180,000	$240,000
UDOT Oversight	$0	$0
Miscellaneous	$0	$0
TOTAL	**$2,089,000**	**$2,588,000**

* 2017 cost projection selected as a realistic timeframe for implementation. Projections based on UDOT Preconstruction Concept Level Estimate form dated 8-7-12. Estimate assumes yearly inflation of 3%/year for engineering services, no inflation for Right of Way (non-Urban/Suburban), and construction items are inflated using a cumulative inflation factor of 1.34 (as defined in UDOT Estimate form).

Concept level design figures are provided in Appendix B showing the edge of pavement and Carbon County parcel data.

2500 South to 3000 South (MP 66.205 to 65.697) - 3rd Priority

The improvements for this section of road include 0.5 miles of new pavement width. Strips of ROW along SR-10 are likely required to complete these improvements (no full ROW acquisitions are anticipated). Table 5 shows the concept level cost estimate associated with these improvements.

Table 5: SR-10 Widening 2500 South to 3000 South Concept Level Cost Estimate

Construction Items	2013 dollars	2017* dollars
Preliminary Engineering (8%)	$78,000	$88,000
Right of Way	$252,000	$252,000
Utilities	$0	$0
Construction (with a 40% Contingency)	$971,000	$1,297,000
Construction Engineering (10%)	$97,000	$109,000
Incentives	$26,000	$35,000
Aesthetics (1%)	$10,000	$13,000
Change Order Contingency (15%)	$147,000	$196,000
UDOT Oversight	$0	$0
Miscellaneous	$0	$0
TOTAL	**$1,581,000**	**$1,990,000**

* 2017 cost projection selected as a realistic timeframe for implementation. Projections based on UDOT Preconstruction Concept Level Estimate form dated 8-7-12. Estimate assumes yearly inflation of 3%/year for engineering services, no inflation for Right of Way (non-Urban/Suburban), and construction items are inflated using a cumulative inflation factor of 1.34 (as defined in UDOT Estimate form).

Concept level design figures are provided in Appendix B showing the edge of pavement and Carbon County parcel data.

Appendix A: Crash Data Figures

Figure A-1: 2008 – 2010 Crash Data by Number of Crashes

Figure A-2: 2008 – 2010 Crash Data by Manner of Collision

Figure A-3: 2008 – 2010 Crash Data by 1st Harmful Event

Figure A-4: 2008 – 2010 Crash Data by Number of Crashes (US-6 to Stake Farm Road)

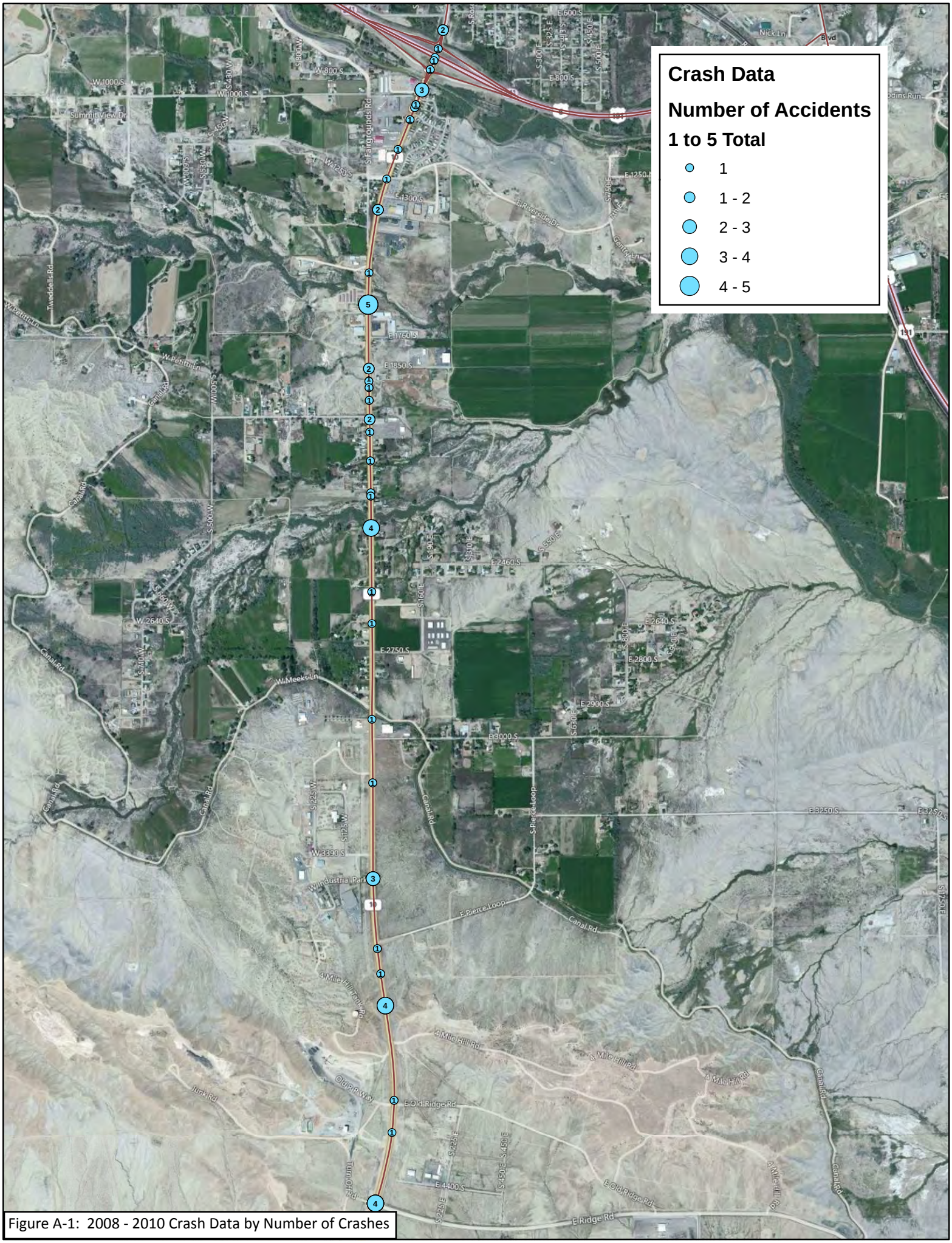


Figure A-1: 2008 - 2010 Crash Data by Number of Crashes

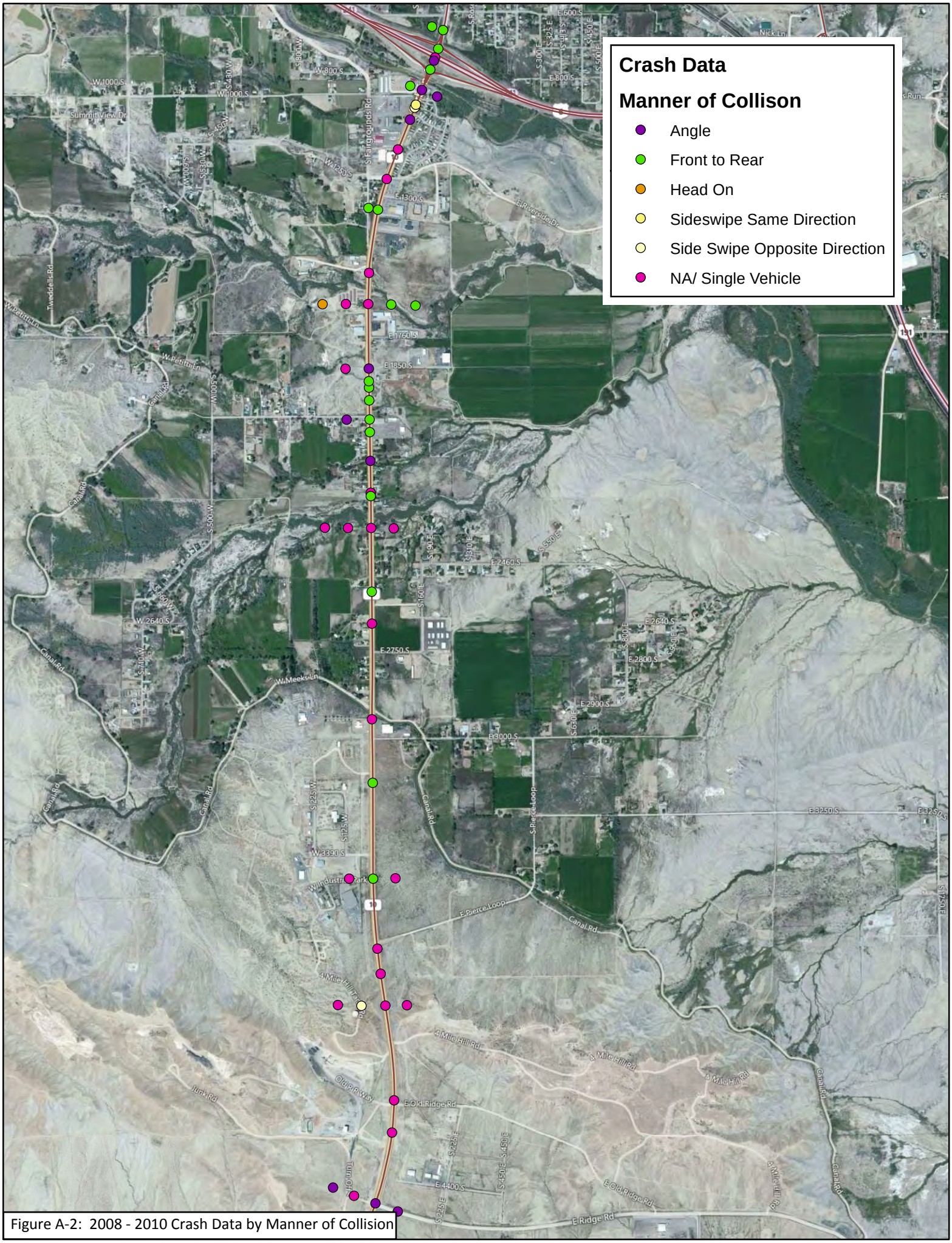


Figure A-2: 2008 - 2010 Crash Data by Manner of Collision

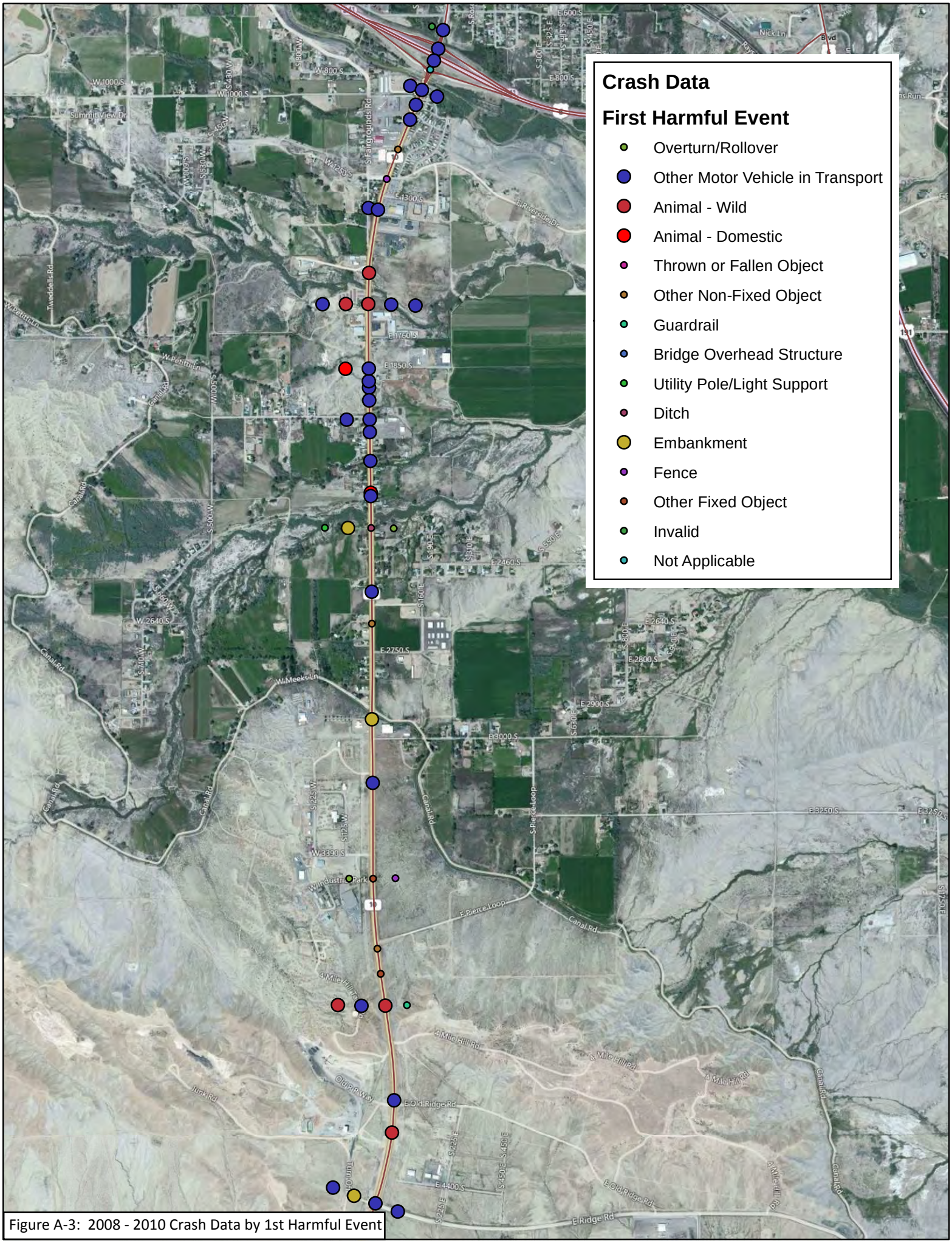


Figure A-3: 2008 - 2010 Crash Data by 1st Harmful Event

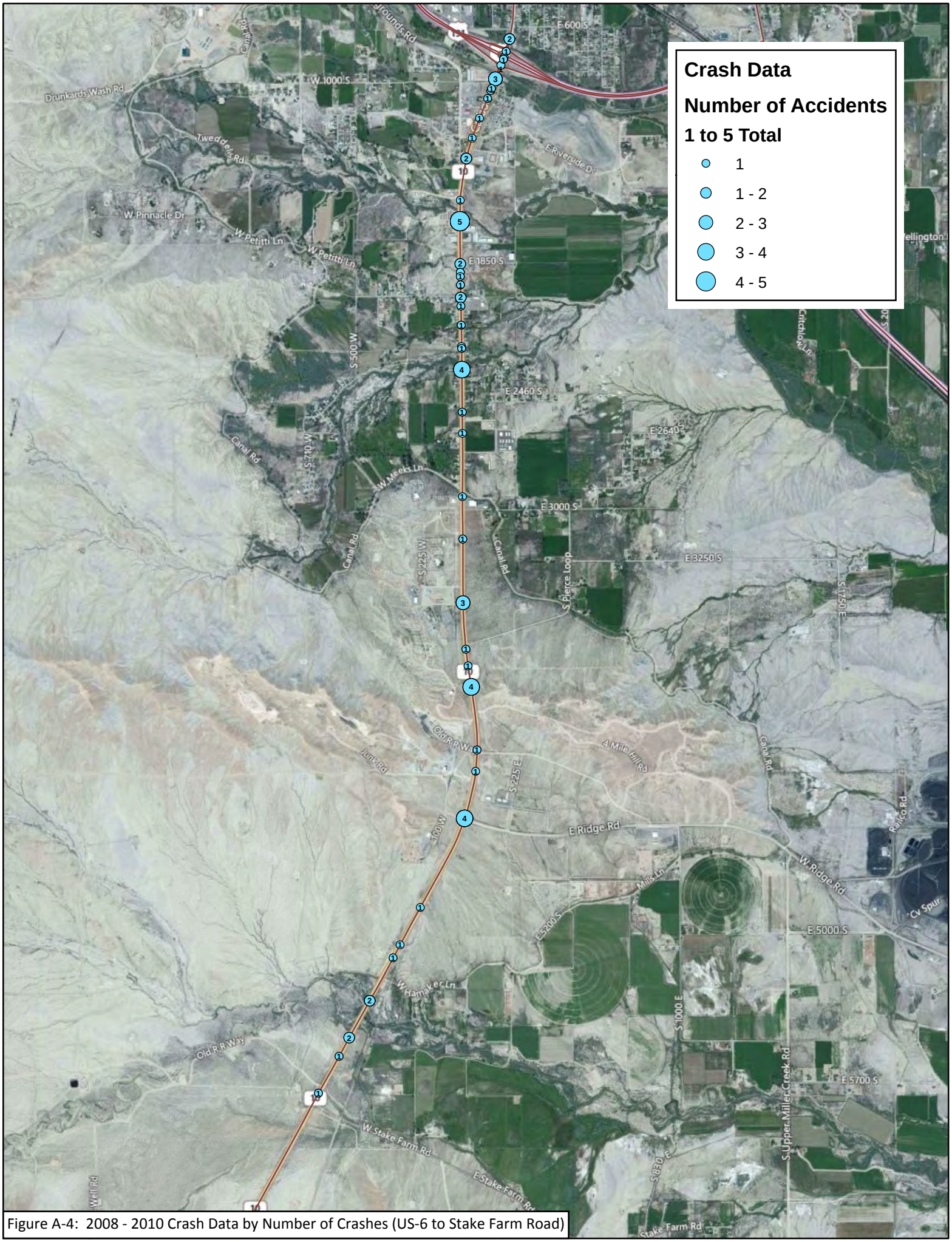


Figure A-4: 2008 - 2010 Crash Data by Number of Crashes (US-6 to Stake Farm Road)

Appendix B: Design Figures

Figure B-1: SR-10 1450 South to 2000 South Concept Design

Figure B-2: SR-10 2000 South to 2500 South Concept Design

Figure B-3: SR-10 2500 South to 3000 South Concept Design

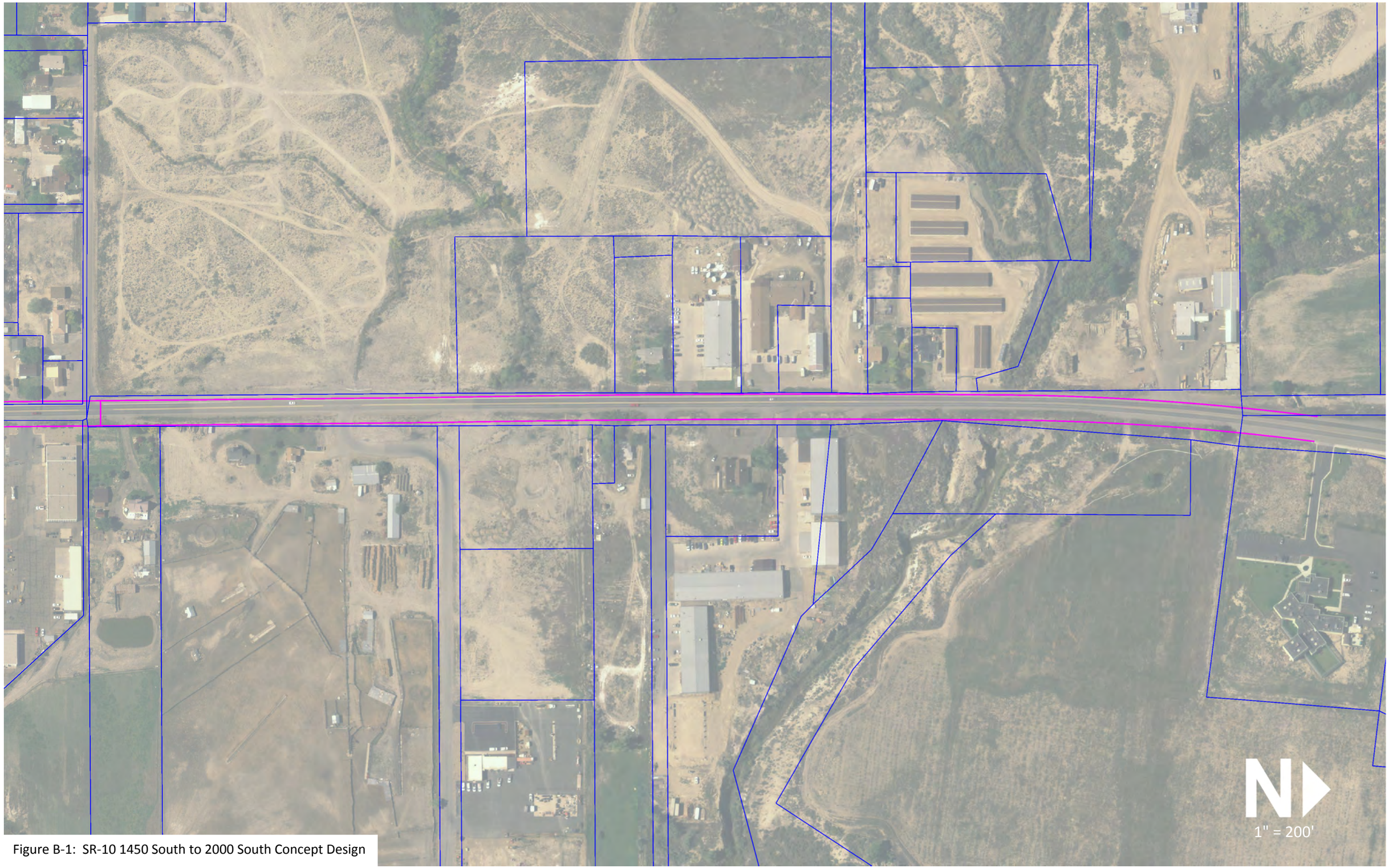


Figure B-1: SR-10 1450 South to 2000 South Concept Design

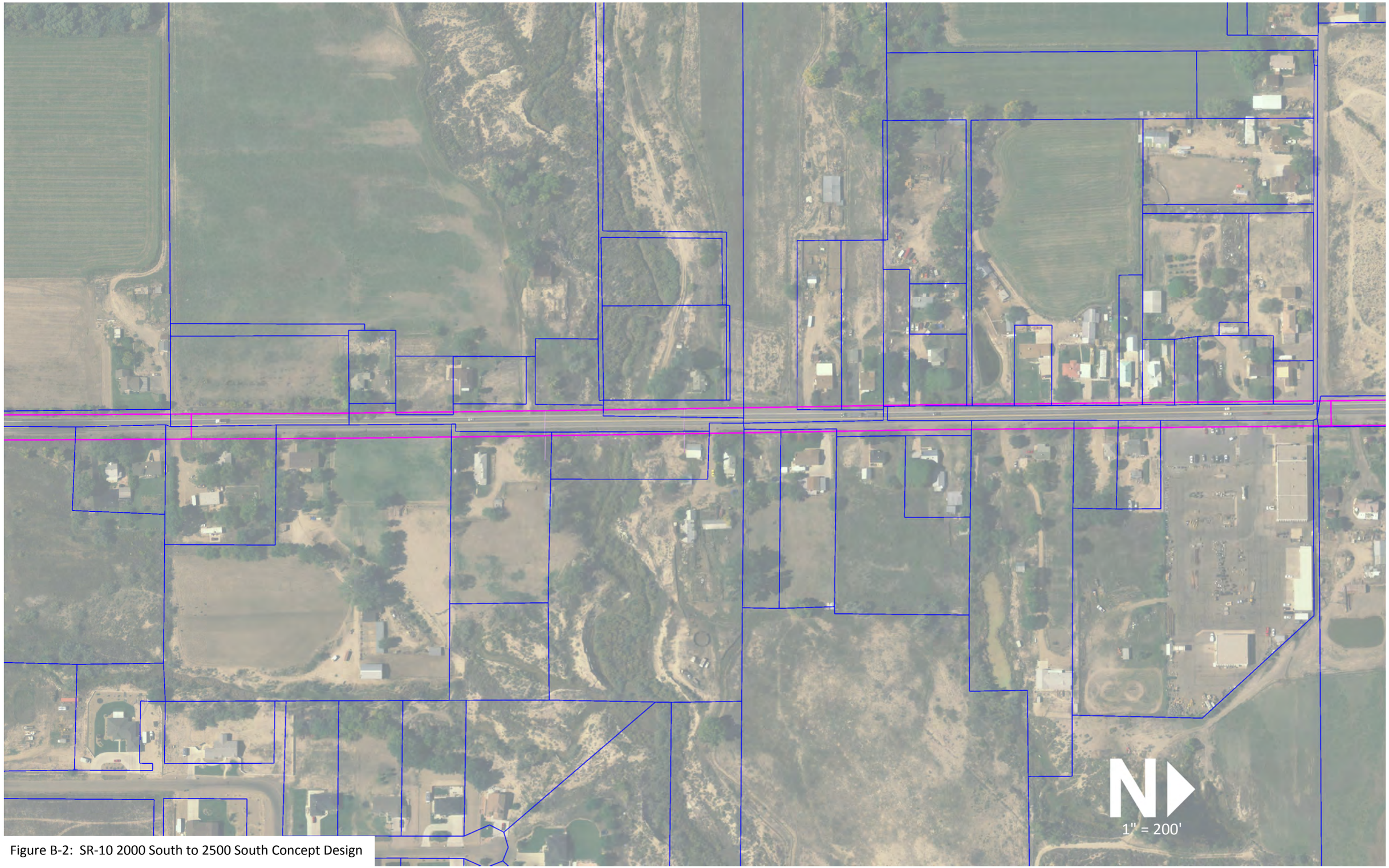


Figure B-2: SR-10 2000 South to 2500 South Concept Design

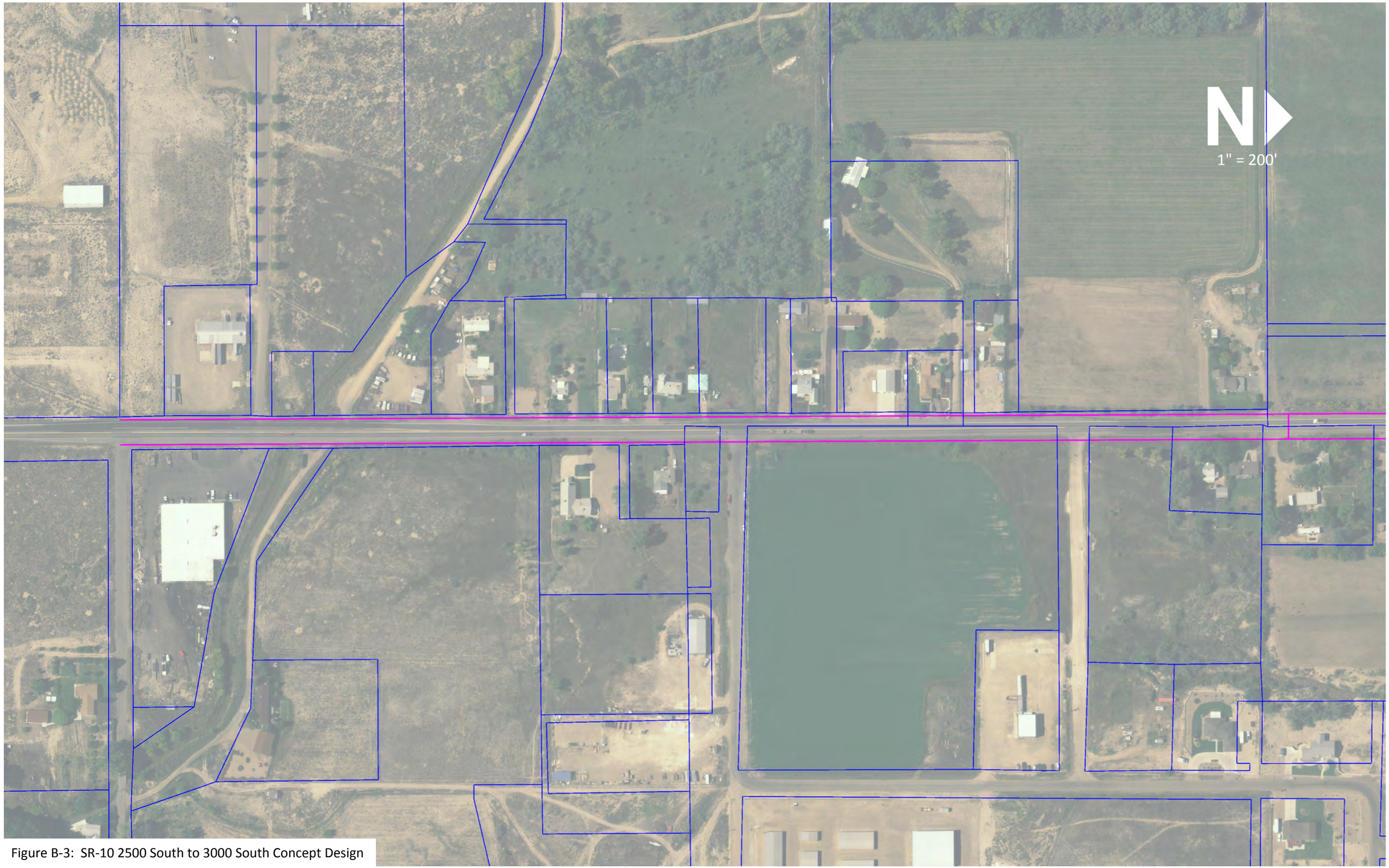


Figure B-3: SR-10 2500 South to 3000 South Concept Design

Appendix B

Contents:

Public Involvement Summary

Appendix C

Contents:

Right-of-Way Acquisition Summary Table

Right-of-Way Acquisition for SR-10; 3200 South to 1150 South, Price
PIN 13664; UDOT Project No. F-0010(75)66

UDOT Parcel Number	Parcel Number	Owner	Address	Parcel (acres)	Partial Acquisition (ft^2)	TCE (ft^2)	Full Acquisition
145	02-1696-0003	Jack and Linda Stoyanoff	2010 South Highway 10	0.16	164.42	133.61	Yes
145	02-1696-0002	Stoyanoff Rentals	2044 South Highway 10	0.56	272.82	413.40	Yes
145	02-1696-0004	Stoyanoff Rentals	2066 South Highway 10	0.16	77.28	142.08	Yes
143	02-1731-0001	William and Tony Thayn	2067 South Highway 10	0.43	71.47	1,221.74	Yes
144	02-1697-0000	Claude Andrew and Phyllis Ann Wheeler	2078 South Highway 10	0.22	96.91	184.56	Yes
142	02-1695-0000	Marilyn W. Bennett, Trustee	2088 South Highway 10	0.35	63.62	141.54	Yes
137	02-1694-0000	Madge E. Mangus and Roseann Sailors	2188 South Highway 10	0.42	19.10	568.12	Yes
134	02-1703-0000	David E. Knott	2198 South Highway 10	0.82	37.43	1,063.81	Yes
130	02-1727-0000	Sterling and Mariella Potter	2305 South Highway 10	0.75	99.10	7,955.44	Yes
128	02-1724-0000	Josiah Kyle & Etta M. Eardley	2433 South Highway 10	7.83	405.44	4,385.25	Yes
125	02-1723-0000	Everett & Lewis Investments, LLC	2477 South Highway 10	1.54	305.98	3,312.48	Yes
145	02-1696-0002	Stoyanoff Rentals	2022 South Highway 10	0.56	272.82	413.40	No
176	01-2327-0006	AJB Holdings, LLC	1300 South Carbon Avenue	7.14	0.00	313.36	No
169	01-2340-0001	Utah State Division of Facilities Construction	1335 South Carbon Avenue	5.41	0.00	104.15	No
174	01-2327-0002	AJB Holdings, LLC	1355 South Carbon Avenue	3.13	0.00	684.61	No
173	01-2340-0000	Kathy Nielson, Trustee	1365 South Carbon Avenue	1.69	0.00	273.14	No
167	02-1651-0000	Kilfoyle Krafts and Tamping Co.	1510 South Highway 10	11.45	0.00	11,286.79	No
165	02-1652-0000	Matthew D. and Elizabeth S. Diamond	1632 South Highway 10	0.29	39.97	862.49	No
166	02-1651-0002	David G. and Kathy M. Smith	1650 South Highway 10	1.46	22.96	872.18	No
162	02-1644-0001	Larry J. and Janet M. Roberts	1654 South Highway 10	0.45	50.28	1,153.35	No
158	02-1623-0011	JDMT No 2, LLC	1695 South Highway 10	2.62	0.00	399.47	No
159	02-1644-0014	Raymond and Kathryn Migliori	1700 South Highway 10	1.13	48.11	851.70	No
160	02-1644-0010	Discount Furniture	1700 South Highway 10	0.50	69.12	935.49	No
156	02-1644-0011	Lavar J. and Phyllis Gaye Jensen, TR	1750 South Highway 10	1.16	89.04	889.10	No
157	02-1623-0003	JDMT No. 3, LLC	1755 South Highway 10	1.51	0.00	2,160.14	No
155	02-1644-0003	Raymond and Kathryn Migliori	1766 South Highway 10	0.96	203.82	539.16	No
154	02-1617-0000	T. Dorathy and Jeffrey S. Davis	1767 South Highway 10	3.83	10.79	1,486.34	No
153	02-1618-0000	John Lamar and Frances Hussey	1777 South Highway 10	0.18	0.00	1,064.12	No
148	02-1608-0000	Farmland Reserve, Inc.	1899 South Highway 10	19.82	645.62	5,119.48	No
147	02-1612-0000	Iona Slaughter	1989 South Highway 10	4.98	161.95	1,235.98	No
146	02-1731-0002	Utah Power and Light Company	2001 South Highway 10	6.94	237.05	3,508.18	No
141	02-1733-0000	Stoyanoff Rentals	2099 South Highway 10	0.42	72.77	1,494.32	No
140	02-1732-0000	Dennis L. and Susan D. Waldon	2111 South Highway 10	3.67	168.17	4,406.90	No
139	02-1693-0000	Paul E. Tweddell	2122 South Highway 10	5.48	357.98	5,024.41	No
138	02-1694-0001	Sheldon D. Axelsen, ETAL	2154 South Highway 10	2.41	90.59	3,507.98	No
136	02-1729-0000	Clint C. and Amber Ellner	2177 South Highway 10	0.70	102.55	3,685.51	No
135	02-1730-0000	Gale C. and Linda J. Barnes	2199 South Highway 10	2.33	103.22	3,544.57	No

UDOT Parcel Number	Parcel Number	Owner	Address	Parcel (acres)	Partial Acquisition (ft^2)	TCE (ft^2)	Full Acquisition
133	02-1705-0000	Henry G. and Paula Mills	2210 South Highway 10	0.85	22.63	779.85	No
132	02-1728-0002	Craig A. and Lisa D. Johnson	2211 South Highway 10	2.09	146.42	4,036.66	No
131	02-1725-0000	Gust G. and Valeria Himonas, TR	2289 South Highway 10	5.42	66.05	970.66	No
129	02-1726-0000	Matthew and Tamara Pantelakis	2345 South Highway 10	2.09	157.47	4,324.61	No
126	02-1707-0000	Circle K. Ranch, LLC	2354 South Highway 10	0.42	0.00	1,678.86	No
126	02-1707-0000	Circle K. Ranch, LLC	2354 South Highway 10	0.38	73.78	4,001.96	No
127	02-1706-0002	Jonathan M. and Stevie Nik Mangum	2410 South Highway 10	0.39	40.66	2,240.97	No
124	02-1718-0000	Rodney B. and Bonnie R. Wilde	2501 South Highway 10	0.43	123.43	1,278.52	No
122	02-1708-0000	Kathleen B and John A. Yoklavich	2502 South Highway 10	24.37	32.71	2,606.92	No
123	02-1718-0001	Justin and Heather Wilde	2511 South Highway 10	0.43	137.38	1,214.73	No
121	02-1708-0002	Mirl L. and Emma B. Holley	2644 South Highway 10	0.60	0.00	1,220.47	No
120	02-1709-0000	Robert and Slyvia Ann Slama	2680 South Highway 10	0.44	6.05	725.36	No
119	02-1709-0002	Scott P. and Doreen A. Strong, Trustees	2688 South Highway 10	0.46	13.04	747.17	No
118	02-1709-0001	Irene Cripps	2698 South Highway 10	0.88	0.00	128.07	No
117	02-1684-0000	Annabell Cox	2710 South Highway 10	0.64	23.29	701.14	No
114	02-1683-0000	Steve W. and Patrice R. Rigby	2754 South Highway 10	0.96	78.53	955.47	No
112	02-1719-0000	Lynnda D. Johnson, TR	2767 South Highway 10	0.84	357.11	1,920.91	No
113	02-1682-0000	Bryan R. and Melissa J. Pierce	2776 South Highway 10	0.65	76.55	517.92	No
111	02-1681-0000	Darel D. and Minnie Anice Behunin, Trustees	2798 South Highway 10	0.65	83.84	325.69	No
110	02-1716-0006	Seventh Day Adventist, Nev-Utah	2821 South Highway 10	2.35	285.84	1,229.92	No
109	02-1680-0000	Scott L. and Susan Jensen	2832 South Highway 10	1.29	144.26	977.56	No
108	02-1678-0004	John H. and Kimberly A. Bird	2842 South Highway 10	0.99	59.73	1,354.94	No
107	02-1678-0000	Larry A. Price	2866 South Highway 10	1.67	164.12	9,539.62	No
102	02-1717-0000	JTJJ Enterprises, LTD	2989 South Highway 10	3.36	435.68	2,876.19	No
103	02-1678-0003	Old Dominion Freight Line, Inc.	2990 South Highway 10	1.23	0.00	449.20	No
101	02-1824-0000	Paul Macris	3000 South Highway 10	9.08	0.00	560.06	No
171	02-1623-0000	Idona H. Mathis	Approx. 1277 South Fairgrounds Road	0.25	0.00	124.90	No
175	02-1626-0000	Pat and Peggy Predricksen	Approx. 1277 South Fairgrounds Road	0.76	0.00	726.13	No
168	02-1670-0001	Lucille M. Sage, Trustee	Approx. 1400 South Fairgrounds Road	9.61	0.00	122.80	No
163	02-1623-0008	HDD Family Investments, LLC	Approx. 1537 South Carbon Avenue	1.36	0.00	1,129.97	No
150	02-1644-0000	Kip D. and Glenna N. Cotner	Approx. 1600 South Highway 10	78.20	230.58	3,159.95	No
151	02-1644-0017	KLM Development LLC Highway 10	Approx. 1850 South Highway 10	2.90	450.81	4,710.86	No
152	02-1615-0001	Rick Krompel	Approx. 1899 South Highway 10	2.12	47.81	4,671.86	No
149	02-1644-0023	Nielson Construction Inc.	Approx. 1950 South Highway 10	2.02	358.84	4,073.36	No
116	02-1678-0008	James A. Roberston, TR	Approx. 220 South Meeks Lane	0.34	14.04	372.29	No
126	02-1702-0000	Circle K. Ranch, LLC	Approx. 2354 South Highway 10	15.06	54.73	1,865.08	No

UDOT Parcel Number	Parcel Number	Owner	Address	Parcel (acres)	Partial Acquisition (ft^2)	TCE (ft^2)	Full Acquisition
126	02-1704-0000	Circle K. Ranch, LLC	Approx. 2354 South Highway 10	2.43	46.89	5,180.01	No
126	02-1706-0000	Circle K. Ranch, LLC	Approx. 2354 South Highway 10	1.66	113.09	5,465.48	No
126	02-1706-0000	Circle K. Ranch, LLC	Approx. 2354 South Highway 10	0.31	55.01	2,539.40	No
104	02-1679-0000	Castle Country, LLC	Approx. 2900 South Highway 10	0.31	10.26	2,497.54	No
106	02-1716-0001	Sheila S. Larsen, ETAL	Approx. 2905 South Highway 10	20.93	481.51	9,327.88	No
	02-1678-0001	Savage Companies	Approx. 2948 South Highway 10	4.71	0.00	204.25	No
115	02-1716-0000	Dino N. and Angelo Kiahtipes	Canal Road	12.99	1,883.25	9,005.32	No
115	02-1716-0000	Dino N. and Angelo Kiahtipes	Canal Road	1.94	242.36	2,217.29	No
115	02-1716-0000	Dino N. and Angelo Kiahtipes	Canal Road	4.04	326.16	2,037.93	No
164	02-1623-0004	KLM Development LLC Series Drunkards Wash	Drunkard's Wash	34.96	0.00	9,229.72	No

Note: All acreages and square footages are approximate.

Appendix D

Contents:

Determination of Eligibility and Finding of Effect (October 17, 2016)
Determination of Eligibility and Finding of Effect Amendment (November 9, 2016)
Memorandum of Agreement (November 7, 2016)
Certified Local Government Correspondence (October 25, 2016)
Advisory Council on Historic Preservation Electronic Section 106 Documentation Submittal System (e106) Form (no date)
Advisory Council on Historic Preservation Response (October 24, 2016

16-1257

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

SHANE M. MARSHALL, P.E.
Deputy Director

September 29, 2016

Mr. Cory Jensen
Senior Historic Preservation Specialist
Utah Division of State History
300 Rio Grande
Salt Lake City, UT 84101-1182

RE: UDOT Project No. F-0010(75)66, SR-10, US-6 to Ridge Road, Carbon County, Utah (PIN 13664).
Determination of Eligibility and Finding of Adverse Effect.

Dear Mr. Jensen:

The Utah Department of Transportation (UDOT) is preparing to undertake the subject federal-aid project. In accordance with Stipulation II, Part A and Appendix B of the *Memorandum of Understanding, State Assumption of Responsibility for Categorical Exclusions (23 USC §326)* (executed June 30, 2011), the UDOT assumes responsibility, assigned by the Federal Highway Administration (FHWA), for ensuring compliance with Section 106 of the NHPA and with Section 4(f) of the DOT Act of 1966, as amended. In accordance with the *Second Amended Programmatic Agreement among the FHWA, the Utah State Historic Preservation Officer, the Advisory Council on Historic Preservation, the USACE Sacramento District, and the UDOT Regarding Section 106 Implementation for Federal-Aid Transportation Projects in the State of Utah* (executed June 3, 2013), Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and U.C.A.9-8-404, the UDOT has taken into account the effects of this undertaking on historic properties, and is affording the Utah State Historic Preservation Officer (SHPO) an opportunity to comment on the undertaking. Additionally, this submission is in compliance with Section 4(f) of the Department of Transportation Act of 1966, 23 U.S.C. § 138 (as amended) and 49 U.S.C. § 303 (as amended).

PROJECT DESCRIPTION

This project proposes to construct improvements to SR-10 south of Price, in Carbon County, Utah. The project extends from approximately M.P. 65.4 to 67.5. This project includes widening to accommodate a center turn lane, adding curb, gutter and sidewalk in areas where there is a need to serve pedestrians, extending or replacing pipe and box culverts, lowering the profile at the vertical curve near M.P. 67, rehabilitating pavement, relocating utilities and rehabilitating culverts and installing headwalls, and adding turn lanes at critical intersections.

The area of potential affects (APE) has been defined as a 2.1-mile-long corridor along SR-10 that extends 200 feet from the current roadway centerline. The APE has been entirely previously surveyed for archaeology and therefore work for this project consisted of a reconnaissance level survey and field verification of known sites. This Class II inventory was conducted by Montgomery Archaeological Consultants, under State Antiquities Project Number U-15-MQ-0493s, and the results are reported in *Site Verification and Class III Inventory of Utah Department of Transportation's State Route 10 Road Widening Between MP 65.27 and MP 67.5; South Price to Ridge Road, Carbon County, Utah* (see enclosed report). A selective reconnaissance level survey was conducted to record

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Received
OCT 7, 2016
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architectural properties abutting the APE, and the results are reported in *Cultural Resources Survey State Route 10; South Price to Ridge Road, Milepost 65.276 to 76.5, Carbon County, Utah*, prepared by Bee Lufkin for Montgomery Archaeological Consultants, Inc. (see enclosed report).

The SR-10 surveys resulted in the location of 11 previously documented archaeological sites and 48 architectural properties. Of these, 4 archaeological sites and 31 architectural properties are eligible to the National Register of Historic Places (NRHP). No known traditional cultural properties or paleontological resources are located in the APE. The Determinations of Eligibility and Findings of Effects is provided in Table 1 for archaeological resources and in Table 2 for architectural properties.

ARCHAEOLOGICAL RESOURCES

Table 1. Determinations of Eligibility and Findings of Effect for Archaeological Resources

Site	Name or Description	NRHP Eligibility	Finding of Effect	Warrants preservation in place	Section 4(f) Use
42CB1040	Carbon Canal	Eligible, Criterion A and C	No Adverse Effect	No	NA
42CB1270	Old SR-10	Eligible, Criterion A	No Adverse Effect	No	NA
42CB1435	Trash Scatter	Not Eligible	No Historic Properties Affected	NA	NA
42CB1436	Trash Scatter	Eligible, Criterion D	No Historic Properties Affected	No	NA
42CB1437	Trash Scatter	Not Eligible	No Historic Properties Affected	NA	NA
42CB2139	Irrigation Ditch	Not Eligible	No Historic Properties Affected	NA	NA
42CB2140	Irrigation Ditch	Not Eligible	No Historic Properties Affected	NA	NA
42CB2141	Trash Scatter	Eligible, Criterion D	No Adverse Effect	No	NA
42CB2142	Dismantled Billboard	Not Eligible	No Historic Properties Affected	NA	NA
42CB2143	Abandoned Road Segment	Not Eligible	No Historic Properties Affected	NA	NA
42CB2144	Trash Scatter	Not Eligible	No Historic Properties Affected	NA	NA

Description of Effect to Site 42CB1040: The proposed project includes extending the culvert that carries the Carbon Canal under SR-10 on both the inlet and outlet ends. The original section of the culvert directly under the highway will not be touched. The project will affect a relatively small portion of the site and will not substantially impact or alter any contributing elements of the site or any of the character-defining features for which it was determined eligible for the NRHP. Thus, the proposed project will result in a finding of No Adverse Effect.

Description of Effect to Site 42CB1270: This proposed project includes adding headwalls and riprap at the inlet and outlet ends to the original culvert pipe that channels Drunkard Wash, but the pipe will remain in place. This culvert is all that remains of old SR-10 in this location. The project will affect a relatively small portion of the site and will not substantially impact or alter any contributing elements of the site or any of the character-defining features for which it was determined eligible for the NRHP. Thus, the proposed project will result in a finding of No Adverse Effect.

Description of Effect to Site 42CB2141: The proposed project will remove a strip of the site closest to the SR-10 edge-of-oil on the east side of the highway near MP 67.1. Site 42CB2141 comprises multiple historic time-period, single episode trash dumps. None of the documented concentrations will be touched by this construction proposal. The project will affect a relatively small portion of the site and will not substantially impact or alter any contributing elements of the site or any of the character-defining features for which it was determined eligible for the NRHP. Thus, the proposed project will result in a finding of No Adverse Effect.

ARCHITECTURAL PROPERTIES

Ms. Lufkin documented and evaluated 48 architectural properties that could be impacted by the project. All 48 are buildings, and of these, 31 are eligible for the National Register of Historic Places. The impacts are described in the paragraph following Table 2.

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
	1275 S. Fairgrounds Road	1948	Post-WWII: other / other late 20th century	EC/Eligible	No Historic Properties Affected	N/A
	?1266 S. Highway 10	1946	1-story foursquare / Post-WWII: other	EC/Eligible	No Historic Properties Affected	N/A
	1288 S. Highway 10	1948	Post-WWII: other / other late 20th century	EC/Eligible	No Historic Properties Affected	N/A
	1308 S. Highway 10	1965	Post-WWII: other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	?1310 S. Highway 10	1955	Post-WWII: other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	1332 S. Highway 10	1948	Early ranch / early ranch/rambler	EC/Eligible	No Historic Properties Affected	N/A
	1510 S. Highway 10	1935/1957	Other commercial/public / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	1632 S. Highway 10	1950	Post-WWII modern / ranch/rambler	NC/Ineligible	No Historic Properties Affected	N/A
	1654 S. Highway 10	1970	Late 20th century other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	1700 S. Highway 10	1945/1985	Late 20th century other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
1	1767 S. Highway 10	1920	1-story foursquare / Post-WWII: other / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 1,488 sq. ft.; Partial Acquisition: 116 sq. ft.	*de minimis*
1	1777 S. Highway 10	1930	1-story central block with projecting bays / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 1,056 sq. ft.	Temporary Occupancy
2	1867 S. Highway 10	1960	1-story side-gabled Post-WWII: other / other residential	EC/Eligible	No Adverse Effect; TCE: 5,119 sq. ft.; Partial Acquisition: 6,974 sq. ft.	*de minimis*
	1899 S. Highway 10	1940	1 1/2-story cross-gabled WWII-era cottage / simple Post-WWII: other	NC/Ineligible	No Historic Properties Affected	N/A
3	?2010 S. Highway 10	1944	1-story service station in Post-WWII: other	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
3	45 E. Robertson Road (2000 S.)	1950	1-story hip-roofed single dwelling ranch/rambler	EC/Eligible	No Adverse Effect; Partial Acquisition: 359 sq. ft.	*de minimis*

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
	2022 S. Highway 10	1931	Side-gabled 1-story single dwelling in Post-WWII: other / other residential type	NC/Ineligible	No Historic Properties Affected	N/A
	2032 S. Highway 10	1967	Mobile home / mobile home	EC/Eligible	No Historic Properties Affected	N/A
4	2044 S. Highway 10	1940	1-story foursquare / 20th century other	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
4	2066 S. Highway 10	1940	1-story foursquare / 20th century other	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
5	2067 S. Highway 10	1941	Ranch/rambler	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
	2078 S. Highway 10	1948	Residential / Post WWII	NC/Ineligible	No Historic Properties Affected	N/A
6	2088 S. Highway 10	1941	20th century other / other residential	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
6	2098 S. Highway 10	1970	Mobile home / mobile home	EC/Eligible	No Adverse Effect; TCE: 408 sq. ft.; Partial Acquisition: 2,093 sq. ft.	*de minimis*
	2099 S. Highway 10	1930	1-story foursquare / 20th century other	NC/Ineligible	No Historic Properties Affected	N/A
	2100 S. Highway 10	1961	1-story ranch/rambler / single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
7	2111 S. Highway 10	1954	½-story single dwelling Cape Cod/WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 4,413 sq. ft.; Partial Acquisition: 1,813 sq. ft.	*de minimis*
8	?2154 S. Highway 10	1930	1-story WWII-era cottage / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 3,512 sq. ft.; Partial Acquisition: 976 sq. ft.	*de minimis*
8	?2188 S. Highway 10	1946	1-story single dwelling clipped gable cottage	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
10	2198 S. Highway 10	1947	1-story single dwelling clipped gable cottage	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
9	2199 S. Highway 10	1945	1-story single dwelling clipped gable cottage	EC/Eligible	No Adverse Effect; TCE: 2,219 sq. ft.; Partial Acquisition: 1,111 sq. ft.	*de minimis*
12	2266 S. Highway 10	1944	1 1/2-story front-gabled other residential / Post WWII: other	EC/Eligible	No Adverse Effect; TCE: 5,187 sq. ft., Partial Acquisition: 505 sq. ft.	*de minimis*
11	2289 S. Highway 10	1925	1-story other residential / 20th century other	EC/Eligible	No Adverse Effect; TCE: 950 sq. ft.; Partial Acquisition: 704 sq. ft.	*de minimis*

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
11	2305 S. Highway 10	1947	1/2 story single dwelling post-WWII: other	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
13	2345 S. Highway 10	1946	Traditional style single dwelling WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 4,331 sq. ft.; Partial Acquisition: 1,696 sq. ft.	*de minimis*
14	2354 S. Highway 10	1939	1-story single dwelling hipped roof WWII-era cottage / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 6,625 sq. ft.; Partial Acquisition: 1,400 sq. ft.	*de minimis*
15	2410 S. Highway 10	1935	Minimal traditional / 1-story single dwelling hipped-roof WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 2,247 sq. ft.; Partial Acquisition: 435 sq. ft.	*de minimis*
16	2433 S. Highway 10	1970	1-story single-gable ranch/rambler	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
	2477 S. Highway 10	1933	1-story single dwelling WWII-era cottage / 20th century: other	NC/Ineligible	No Historic Properties Affected	N/A
	2502 S. Highway 10	1942	1-story clipped-gable cottage single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
17	2511 S. Highway 10	1945	1-story WWII-era cottage / post WW II: other	EC/Eligible	No Adverse Effect; TCE: 1,212 sq. ft.; Partial Acquisition: 1,474 sq. ft.	*de minimis*
	2680 S. Highway 10	1930	1-story single dwelling other / 20th century: other	NC/Ineligible	No Historic Properties Affected	N/A
	2710 S. Highway 10	1952	1-story early ranch/rambler single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
18	2754 S. Highway 10	1955	1-story ranch/rambler	EC/Eligible	No Adverse Effect; TCE: 954 sq. ft.; Partial Acquisition: 850 sq. ft.	*de minimis*
19	2767 S. Highway 10	1957	2-story split level single dwelling	EC/Eligible	No Adverse Effect; TCE1,935 sq. ft.; Partial Acquisition: 3,827 sq. ft.	*de minimis*
	2776 S. Highway 10	1952	1-story early ranch/rambler single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
	2798 S. Highway 10	1959	1-story post-WWII other / late 20th century: other.	NC/Ineligible	No Historic Properties Affected	N/A
20	2832 S. Highway 10	1959	1 1/2 story Cape Cod type minimal traditional	EC/Eligible	No Adverse Effect; TCE: 631 sq. ft.; Partial Acquisition: 1,555 sq. ft.	*de minimis*

Description of Effects: This proposed project requires right of way acquisitions of approximately 2 to 15 feet for 17 properties evaluated as eligible to the NRHP and whose impact is considered "No Adverse Effect. The project will have an Adverse Effect, requiring the acquisition of the building, for 9 properties. Thus, the proposed project will result in a finding of Adverse Effect and a Section 4(f) *Greater than de minimis* impact for each adversely affected property.

CONSULTATION EFFORTS

Native American consultation was initiated through letters sent to the Uintah and Ouray Ute Tribes, Shoshone-Bannock Tribes, and Northwestern Band of Shoshone Nation (sent December 16, 2015). The UDOT is continuing consultation with the Price Certified Local Government. An open house will be held so that the public will be notified of the impacts to cultural resources among other considerations.

SUMMARY

To summarize, the project will result in a finding of Adverse Effect for 9 architectural properties, a finding of No Adverse Effect for 3 archaeological sites and 17 architectural properties, and a finding of No Historic Properties Affected for all remaining architectural properties and archaeological sites. The project will also result in 9 Section 4(f) Greater than *de minimis* uses, 16 Section 4(f) *de minimis* uses, and 1 Section 4(f) temporary occupancy use. Therefore, the Finding of Effect for the proposed UDOT Project No. F-0010(75)66, SR-10, US-6 to Ridge Road, Carbon County, Utah, is **Adverse Effect**.

Please review this document and, providing you agree with the findings contained herein, sign and date the signature line at the end of this letter. Should you have any questions or need additional information, please feel free to contact Liz Robinson at 801-910-2035 or lizrobinson@utah.gov; Elizabeth Giraud at 801-965-4917 or egiraud@utah.gov, or Pam Higgins at 435-253-2524 or phiggins@utah.gov.

Sincerely,

Liz Robinson, M.A., RPA
Cultural Resources Program Manager
UDOT Environmental Services

Elizabeth Giraud
Digitally signed by Elizabeth Giraud
DN: cn=Elizabeth Giraud
Date: 2016.10.05 16:31:27 -06'00'

Elizabeth Giraud, AICP
Architectural Historian
UDOT Environmental Services

Pam Higgins
Oct 5 2016 4:22 PM

Pamela Higgins
NEPA/NHPA Specialist, Region 4 Area
UDOT Environmental Services

Enclosures

cc: Troy Torgersen, Project Manager
Eric Hansen, Environmental Manager

Regarding UDOT Project No. F-0010(75)66, SR-10, US-6 to Ridge Road, Carbon County, Utah, I concur with the Determination of Eligibility and Finding of Effect, submitted to the Utah State Historic Preservation Office in accordance with the *Second Amended Programmatic Agreement,* Section 106 of the NHPA, and U.C.A. 9-8-404, which states that the UDOT has determined that the finding is **Adverse Effect.**

Cory Jensen
Senior Historic Preservation Specialist

10/17/2016
Date

16-1460

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

SHANE M. MARSHALL, P.E.
Deputy Director

November 7, 2016

Mr. Cory Jensen
Senior Historic Preservation Specialist
Utah Division of State History
300 Rio Grande
Salt Lake City, UT 84101-1182

RE: UDOT Project No. F-0010(75)66, SR-10, US-6 to Ridge Road, Carbon County, Utah (PIN 13664). Amended Determination of Eligibility and Finding of Adverse Effect.

Dear Mr. Jensen:

The Utah Department of Transportation (UDOT) is preparing to undertake the subject federal-aid project. In accordance with Stipulation II, Part A and Appendix B of the Memorandum of Understanding, State Assumption of Responsibility for Categorical Exclusions (23 USC §326) (executed June 30, 2011), the UDOT assumes responsibility, assigned by the Federal Highway Administration (FHWA), for ensuring compliance with Section 106 of the NHPA and with Section 4(f) of the DOT Act of 1966, as amended. In accordance with the *Second Amended Programmatic Agreement among the FHWA, the Utah State Historic Preservation Officer, the Advisory Council on Historic Preservation, the USACE Sacramento District, and the UDOT Regarding Section 106 Implementation for Federal-Aid Transportation Projects in the State of Utah* (executed June 3, 2013), Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and U.C.A.9-8-404, the UDOT has taken into account the effects of this undertaking on historic properties, and is affording the Utah State Historic Preservation Officer (SHPO) an opportunity to comment on the undertaking. Additionally, this submission is in compliance with Section 4(f) of the Department of Transportation Act of 1966, 23 U.S.C. § 138 (as amended) and 49 U.S.C. § 303 (as amended).

PROJECT DESCRIPTION

This project proposes to construct improvements to SR-10 south of Price, in Carbon County, Utah. The project extends from approximately M.P. 65.4 to 67.5. This project includes widening to accommodate a center turn lane, adding curb, gutter and sidewalk in areas where there is a need to serve pedestrians, extending or replacing pipe and box culverts, lowering the profile at the vertical curve near M.P. 67, rehabilitating pavement, relocating utilities and rehabilitating culverts and installing headwalls, and adding turn lanes at critical intersections.

PREVIOUS CONSULTATION WITH THE UTAH SHPO

This letter is an addendum to the Determination of Eligibility and Findings of Effect submitted on October 7, 2016. UDOT submitted a request for consultation, making determinations of eligibility for 11 previously documented archaeological sites and 48 architectural properties. The UDOT determined that the Proposed Action would result in a finding of Adverse Effect and Section 4(f) greater than *de minimis* impact for 9 architectural properties. The determination of eligibility of the properties and the effects of the project were included in a table submitted as part of the DOEFOE ("Table 2").

DETERMINATION OF ELIGIBILITY AND FINDING OF EFFECT FOR AN ADDITIONAL PROPERTY

One eligible property, located at ?2218 S. Highway 10, was inadvertently excluded from Table 2. The primary structure associated with the property is a residential building constructed in 1958 and is an example of Early Ranch/Rambler style. The building is included in the historic architectural resource survey that accompanied the afore-mentioned DOEFOE. The project would require the acquisition of 1,111 sq. ft. along the property frontage and 781 sq. ft. for a Temporary Construction Easement (TCE), and thus the impact of the project on the property would be No Adverse Effect. This impact will result in a *de minimis* Section 4(f) use. A map of the affected property and the correct table is included.

SUMMARY

To summarize, the total number of architectural resources reviewed has changed from 48 to 49. The number of architectural properties that will be adversely affected by the project remains at 9 and the finding of No Adverse Effect remains at 3 for archaeological properties. The number of architectural properties categorized as No Adverse Effect by impacts of the project has changed from 17 to 18, and the finding of No Historic Properties Affected for all remaining architectural properties and archaeological sites remains unchanged from the previous DOEFOE. The project continues to result in 9 Section 4(f) greater than *de minimis* uses and 1 Section 4(f) temporary occupancy use. The number of properties categorized as Section 4(f) *de minimis* uses has changed from 16 to 17. The Finding of Effect for the proposed UDOT Project No. F-0010(75)66, SR-10, US-6 to Ridge Road, Carbon County, Utah, remains Adverse Effect.

Please review this document and, providing you agree with the findings contained herein, sign and date the signature line at the end of this letter. Should you have any questions or need additional information, please feel free to contact Liz Robinson at 801-910-2035 or lizrobinson@utah.gov; Elizabeth Giraud at 801-965-4917 or egiraud@utah.gov.

Sincerely,

Liz Robinson, M.A., RPA
Cultural Resources Program Manager
UDOT Environmental Services

Elizabeth Giraud, AICP
Architectural Historian
UDOT Environmental Services

Enclosures

Regarding UDOT Project No. F-0010(75)66, SR-10, US-6 to Ridge Road, Carbon County, Utah, I concur with the Determination of Eligibility and Finding of Effect regarding the property located at ?2218 S. Highway 10, submitted to the Utah State Historic Preservation Office in accordance with the Second Amended Programmatic Agreement, Section 106 of the NHPA, and U.C.A. 9-8-404, which states that the UDOT has determined that the determination of eligibility on the subject property is eligible and finding of effect is No Adverse Effect. The finding of effect of the project in its entirety remains Adverse Effect.

Cory Jensen
Senior Historic Preservation Specialist

11/9/2016
Date

SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

Figure 10

1. The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.
2. Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
	1275 S. Fairgrounds Road	1948	Post-WWII: other / other late 20th century	EC/Eligible	No Historic Properties Affected	N/A
	?1266 S. Highway 10	1946	1-story foursquare / Post-WWII: other	EC/Eligible	No Historic Properties Affected	N/A
	1288 S. Highway 10	1948	Post-WWII: other / other late 20th century	EC/Eligible	No Historic Properties Affected	N/A
	1308 S. Highway 10	1965	Post-WWII: other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	?1310 S. Highway 10	1955	Post-WWII: other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	1332 S. Highway 10	1948	Early ranch / early ranch/rambler	EC/Eligible	No Historic Properties Affected	N/A
	1510 S. Highway 10	1935/1957	Other commercial/public / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	1632 S. Highway 10	1950	Post-WWII modern / ranch/rambler	NC/Ineligible	No Historic Properties Affected	N/A
	1654 S. Highway 10	1970	Late 20th century other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	1700 S. Highway 10	1945/1985	Late 20th century other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
1	1767 S. Highway 10	1920	1-story foursquare / Post-WWII: other / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 1,488 sq. ft.; Partial Acquisition: 116 sq. ft.	*de minimis*
1	1777 S. Highway 10	1930	1-story central block with projecting bays / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 1,056 sq. ft	*de minimis*
2	1867 S. Highway 10	1960	1-story side-gabled Post-WWII: other / other residential	EC/Eligible	No Adverse Effect; TCE: 5,119 sq. ft.; Partial Acquisition: 6,974 sq. ft.	*de minimis*
	1899 S. Highway 10	1940	1 1/2-story cross-gabled	NC/Ineligible	No Historic Properties	N/A

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
			WWII-era cottage / simple Post-WWII: other		Affected	
3	?2010 S. Highway 10	1944	1-story service station in Post-WWII: other	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
3	45 E. Robertson Road (2000 S.)	1950	1-story hip-roofed single dwelling ranch/rambler	EC/Eligible	No Adverse Effect; Partial Acquisition: 359 sq. ft.	*de minimis*
	2022 S. Highway 10	1931	Side-gabled 1-story single dwelling in Post-WWII: other / other residential type	NC/Ineligible	No Historic Properties Affected	N/A
	2032 S. Highway 10	1967	Mobile home / mobile home	EC/Eligible	No Historic Properties Affected	N/A
4	2044 S. Highway 10	1940	1-story foursquare / 20th century other	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
4	2066 S. Highway 10	1940	1-story foursquare / 20th century other	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
5	2067 S. Highway 10	1941	Ranch/rambler	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
	2078 S. Highway 10	1948	Residential / Post WWII	NC/Ineligible	No Historic Properties Affected	N/A
6	2088 S. Highway 10	1941	20th century other / other residential	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
6	2098 S. Highway 10	1970	Mobile home / mobile home	EC/Eligible	No Adverse Effect; TCE: 408 sq. ft.; Partial Acquisition: 2,093 sq. ft.	*de minimis*
	2099 S. Highway 10	1930	1-story foursquare / 20th century other	NC/Ineligible	No Historic Properties Affected	N/A
	2100 S. Highway 10	1961	1-story ranch/rambler / single dwelling	NC/Ineligible	No Historic Properties Affected	N/A

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
7	2111 S. Highway 10	1954	1/2-story single dwelling Cape Cod / WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 4,413 sq. ft.; Partial Acquisition: 1,813 sq. ft.	*de minimis*
8	?2154 S. Highway 10	1930	1-story WWII-era cottage / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 3,512 sq. ft.; Partial Acquisition: 976 sq. ft.	*de minimis*
8	?2188 S. Highway 10	1946	1-story single dwelling clipped gable cottage	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
10	2198 S. Highway 10	1947	1-story single dwelling clipped gable cottage	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
9	2199 S. Highway 10	1945	1-story single dwelling clipped gable cottage	EC/Eligible	No Adverse Effect; TCE: 2,219 sq. ft.; Partial Acquisition: 1,111 sq. ft.	*de minimis*
10	?2218 S. Highway 10	1958	1-story single-gable early ranch/rambler	EC/Eligible	No Adverse Effect; TCE: 781 sq. ft.; Partial Acquisition: 244 sq. ft.	*de minimis*
12	2266 S. Highway 10	1944	1 1/2-story front-gabled other residential / Post WWII: other	EC/Eligible	No Adverse Effect; TCE: 5,187 sq. ft.; Partial Acquisition: 505 sq. ft.	*de minimis*
11	2289 S. Highway 10	1925	1-story other residential / 20th century other	EC/Eligible	No Adverse Effect; TCE: 950 sq. ft.; Partial Acquisition: 704 sq. ft.	*de minimis*
11	2305 S. Highway 10	1947	1/2 story single dwelling post-WWII: other	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
13	2345 S. Highway 10	1946	traditional style single dwelling WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 4,331 sq. ft.; Partial Acquisition: 1,696 sq. ft.	*de minimis*
14	2354 S. Highway 10	1939	1-story single dwelling	EC/Eligible	No Adverse Effect; TCE: 6,625	*de minimis*

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
			hipped roof WWII-era cottage / 20th century: other		sq. ft.; Partial Acquisition: 1,400 sq. ft.	
15	2410 S. Highway 10	1935	Minimal traditional / 1-story single dwelling hipped-roof WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 2,247 sq. ft.; Partial Acquisition: 435 sq. ft.	*de minimis*
16	2433 S. Highway 10	1970	1-story single-gable ranch/rambler	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
	2477 S. Highway 10	1933	1-story single dwelling WWII-era cottage / 20th century: other	NC/Ineligible	No Historic Properties Affected	N/A
	2502 S. Highway 10	1942	1-story clipped-gable cottage single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
17	2511 S. Highway 10	1945	1-story WWII-era cottage / post WW II: other	EC/Eligible	No Adverse Effect; TCE: 1,212 sq. ft.; Partial Acquisition: 1,474 sq. ft.	*de minimis*
	2680 S. Highway 10	1930	1-story single dwelling other / 20th century: other	NC/Ineligible	No Historic Properties Affected	N/A
	2710 S. Highway 10	1952	1-story early ranch/rambler single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
18	2754 S. Highway 10	1955	1-story ranch/rambler	EC/Eligible	No Adverse Effect; TCE: 954 sq. ft.; Partial Acquisition: 850 sq. ft.	*de minimis*
19	2767 S. Highway 10	1957	2-story split level single	EC/Eligible	No Adverse Effect; TCE: 1,935	*de minimis*

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
			dwelling		sq. ft.; Partial Acquisition: 3,827 sq. ft.	
	2776 S. Highway 10	1952	1-story early ranch/rambler single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
	2798 S. Highway 10	1959	1-story post-WWII other / late 20th century: other.	NC/Ineligible	No Historic Properties Affected	N/A
20	2832 S. Highway 10	1959	1 1/2 story Cape Cod type minimal traditional	EC/Eligible	No Adverse Effect; TCE: 631 sq. ft.; Partial Acquisition: 1,555 sq. ft.	*de minimis*

MEMORANDUM OF AGREEMENT
AMONG
THE UTAH DEPARTMENT OF TRANSPORTATION
AND THE UTAH STATE HISTORIC PRESERVATION OFFICER

REGARDING

PROJECT #: F-0010(75)66;
SR-10, 3200 South to 1150 South, Price, Carbon County, Utah

WHEREAS, the Utah Department of Transportation (UDOT) proposes to use federal funds to undertake **PROJECT #: F-0010(75)66; SR-10, 3200 South to 1150 South, Price, Carbon County**, which proposes improvements to SR-10 south of Price, in Carbon County, Utah; and

WHEREAS, in accordance with Stipulation II, Part A and Appendix B of the *Memorandum of Understanding, State Assumption of Responsibility for Categorical Exclusions (23 USC §326)* (executed June 30, 2011), the UDOT assumes responsibility, assigned by the Federal Highway Administration (FHWA), for ensuring compliance with Section 106 of the NHPA and with Section 4(f) of the DOT Act of 1966, as amended; and

WHEREAS, the UDOT has taken into account the effects of **PROJECT #: F-0010(75)66; SR-10, 3200 South to 1150 South, Price, Carbon County,** on historic properties and has determined that this undertaking will have an adverse effect on nine architectural properties eligible for inclusion in the National Register of Historic Places. UDOT has consulted with the Utah State Historic Preservation Officer (SHPO) pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f); and

WHEREAS, in accordance with the *Second Amended Programmatic Agreement Among the Federal Highway Administration, the Utah Department of Transportation, the Utah State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Section 106 Implementation for Federal-Aid Transportation Projects in the State of Utah (*executed June 3, 2013) and in accordance with 36 CFR 800.6(a)(1), the UDOT has notified the Advisory Council on Historic Preservation (Council) of its adverse effect determination with specified documentation and the Council has chosen not to participate in the consultation pursuant to 36 CFR 800.6(a)(1)(iii); and

WHEREAS, the FHWA and the UDOT have consulted with the Paiute Indian Tribe of Utah, the Uintah & Ouray Ute Indian Reservation, the Hopi Pueblo, the Cedar Band of the Paiutes, and the Shivwits Band of Paiute Indians; and the Tribes have been afforded an opportunity to review the project and have not responded with objections; and

WHEREAS, the UDOT has consulted with the Price Certified Local Government and Price City, which has not responded with objections; and

NOW, THEREFORE, the UDOT and the Utah SHPO agree that upon UDOT's decision to proceed with the undertaking, UDOT shall ensure that the following stipulations are implemented in order to take into account the effects of the undertaking on historic properties, and the stipulations shall govern the undertaking and all of its parts until this MOA expires or is terminated.

STIPULATIONS

The UDOT shall ensure that the following measures are carried out:

I. MITIGATION OF HISTORIC BUILDINGS
UDOT shall be responsible for the documentation of the following buildings in Price, Utah

- ?2010 S. Highway 10
- 2044 S. Highway 10
- 2066 S. Highway 10
- 2067 S. Highway 10
- 2088 S. Highway 10
- ?2188 S. Highway 10
- 2198 S. Highway 10
- 2305 S. Highway 10
- 2433 S. Highway 10

The buildings will be documented according to the Utah State Intensive Level Survey Standards (ILS) as required by SHPO. Documentation will include a completed ILS Historic Site Forms, which will be based partly on title searches and obituary research, photographs of the exterior of the buildings, photographs burned onto a gold CD, a sketch map of the property layout, aerial photograph maps indicating the location of the buildings, and a U.S. Geological Survey may (scale: 1:24,000) indicating the location of the buildings.

II. REPORTING: The UDOT shall ensure that any/all reports on activities carried out pursuant to this agreement are provided to the SHPO, the Council, the signatories to this MOA, and upon request, to any other interested parties.

III. PERSONNEL QUALIFICATIONS: The UDOT shall ensure that all historic work carried out pursuant to this agreement is completed by or under the direct supervision of a person or persons meeting or exceeding the Secretary of the Interior's Historic Preservation Professional Qualification Standards for History (36 CFR 61 Appendix A).

IV. DURATION: This agreement will be null and void if its terms are not carried out within five (5) years from the date of its execution. Prior to such time, the UDOT may consult with the other signatories to reconsider the terms of the agreement and amend it in accordance with Stipulation VII below.

V. DISCOVERY: The following measures regarding inadvertent discoveries of historic properties, archaeological sites, and paleontological resources will be implemented:

A. In accordance with Stipulation XI.B of the *Second Amended Programmatic Agreement among the FHWA, the Utah State Historic Preservation Officer, the Advisory Council on Historic Preservation, the USACE Sacramento District, and the UDOT Regarding Section 106 Implementation for Federal-Aid Transportation Projects in the State of Utah* (executed June 3, 2013), and pursuant to 36 CFR 800.13(b), the UDOT is providing for the protection, evaluation, and treatment of any historic property discovered prior to or during construction. Should a discovery occur, construction will stop immediately and the UDOT will consult with the SHPO, Native American tribes, and any other identified interested parties, toward developing and implementing an appropriate treatment plan prior to resuming construction. If neither the SHPO nor a Tribe files an objection within 72 hours to UDOT's plan for addressing the discovery, UDOT may carry out the requirements of 36 CFR 800.13 on behalf of FHWA, and the Council does not need to be notified.

B. UDOT Standard Specifications Section 01355, Part 3.8, Discovery of Historical, Archaeological or Paleontological Objects, Features, Sites, or Human Remains, will be enforced during this project. This specification stipulates procedures to be followed should any archaeological, historic, or paleontological resources be discovered during construction of the project. These procedures are as follows:
   1) Immediately suspend construction operations in the vicinity of the discovery if a suspected historic, archeological or paleontological item, feature, or site is encountered or if suspected human remains or encountered.
   2) Verbally notify the engineer of the nature and exact location of the findings.
   3) The Engineer contacts the UDOT region staff archaeologist, who will assess the nature of the discovery and determine the necessary course of action.
   4) Protect the discovered objects or features and provide written confirmation of the discovery to the Engineer within two calendar days.
   5) The Engineer keeps the Contractor informed concerning the status of the restriction: 1) the time necessary for the Department to handle the discovered item, feature, or site is variable, dependent on the nature and condition of the discovered item; and 2) the Engineer will provide written confirmation when work may resume in the area.

VI. DISPUTE RESOLUTION: Should any party to this agreement object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, the UDOT shall consult with the objecting parties to resolve the objection. If the UDOT determines, within 30 days, that the objection(s) cannot be resolved, the UDOT will:

A. Forward all documentation relevant to the dispute to the Council in accordance with 36 CFR 800.2(b)(2). Upon receipt of adequate documentation, the Council shall review and advise the UDOT on the resolution of the objection within 30 days. Any comment provided by the Council, and all comments from the parties to the MOA, will be taken into account by the UDOT in reaching a final decision regarding the dispute.

B. If the Council does not provide comments regarding the dispute within 30 days after receipt of adequate documentation, the UDOT may render a decision regarding the dispute. In reaching its decision, the UDOT will take into account all comments regarding the dispute from the parties to the MOA.

C. The UDOT's responsibilities to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged. The UDOT will notify all parties of its decision in writing before implementing that portion of the undertaking subject to dispute under this stipulation. The UDOT's decision will be final.

D. Further, at any time during implementation of the measures stipulated in this agreement should an objection to any such measure be raised by a member of the public, the UDOT shall take the objections into account and consult as needed with the objecting party, the SHPO, or the Council to resolve the objection.

VII. AMENDMENTS AND NONCOMPLIANCE: If any signatory to this MOA, including any invited signatory, determines that its terms will not or cannot be carried out or that an amendment to its terms must be made, that party shall immediately consult with the other parties to develop an amendment to this MOA pursuant to 36 CFR 800.6(c)(7) and 800.6(c)(8). The amendment will be effective on the date a copy signed by all of the original signatories is filed with the Council. If the signatories cannot agree to appropriate terms to amend the MOA, any signatory may terminate the agreement in accordance with Stipulation VIII, below.

VIII. TERMINATION: If an MOA is not amended following the consultation set out in Stipulation VII and Stipulation VIII, it may be terminated by any signatory or invited signatory. Within 30 days following termination, the UDOT shall notify the signatories if it will initiate consultation to execute an MOA with the

signatories under 36 CFR 800.6(c)(1) or request the comments of the Council under 36 CFR 800.7(a) and proceed accordingly.

IX. EXECUTION: Execution of this Memorandum of Agreement by the UDOT and the Utah SHPO and the submission of documentation and filing of this Memorandum of Agreement with the Council pursuant to 36 CFR 800.6(b)(1)(iv) prior to UDOT's approval of this undertaking, and implementation of its terms, serves as evidence that the UDOT has taken into account the effects of this undertaking on historic properties, and has afforded the Council an opportunity to comment on **PROJECT#: F-0010(75)66; SR-10, 3200 South to 1150 South, Price, Carbon County.**

SIGNATORIES:

UTAH DEPARTMENT OF TRANSPORTATION

10/31/16

Rick Torgersen, UDOT Region Director — Date

UTAH STATE HISTORIC PRESERVATION OFFICE

11.7.16

for c)

P. Bradford Westwood, Utah SHPO — Date

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

SHANE M. MARSHALL, P.E.
Deputy Director

October 25, 2016

Mayor Joe Picolo, Price City
PO Box 893
Price, UT 84501

RE: F-0010(75)66, SR-10; US-6 to Ridge Road CMGC, Carbon County (PIN 13664)
Notification of Project Adverse Effect to Historical Buildings

Dear Mayor Picolo:

Approximately a year ago, I communicated with you regarding a Utah Department of Transportation (UDOT) proposal to improve State Route (SR) 10 between milepost (MP) 65.4 and MP 67.5, south of Price, Carbon County, Utah. The project design is now nearing completion. Construction of the final road widening will result in adverse effects to nine buildings eligible for the National Register of Historic Places (NRHP).

This notification only concerns the implementation of Section 106 of the National Historic Preservation Act regarding the preservation of historical properties. The Environmental Division of UDOT cannot address questions regarding acquisition of property or construction dates. Nevertheless, if you have any questions or concerns regarding the adverse construction effects to historical buildings, please contact Elizabeth Giraud, UDOT Architectural Historian at 801-965-4917, egiraud@utah.gov or myself at 435-253-2524, phiggins@utah.gov. Thank you for your interest in UDOT projects.

Sincerely,

Pamela Higgins, NEPA/NHPA Specialist
UDOT Environmental, Region 4

PH

C: Mr. Nick Tatton, Price City, PO Box 893, Price, UT 84501

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

SHANE M. MARSHALL, P.E.
Deputy Director

October 25, 2016

Mr. Nick Tatton
Price City Building Development Planning and Zoning
P.O. Box 893
Price, UT 84501

RE: F-0010(75)66, SR-10; US-6 to Ridge Road CMGC, Carbon County (PIN 13664)
Notification of Project Adverse Effect to Historical Buildings

Dear Mr. Tatton:

Approximately a year ago, I communicated with you regarding a Utah Department of Transportation (UDOT) proposal to improve State Route (SR) 10 between milepost (MP) 65.4 and MP 67.5, south of Price, Carbon County, Utah. The project design is now nearing completion. Construction of the final road widening will result in adverse effects to nine buildings eligible for the National Register of Historic Places (NRHP).

This notification only concerns the implementation of Section 106 of the National Historic Preservation Act regarding the preservation of historical properties. The Environmental Division of UDOT cannot address questions regarding acquisition of property or construction dates. Nevertheless, if you have any questions or concerns regarding the adverse construction effects to historical buildings, please contact Elizabeth Giraud, UDOT Architectural Historian at 801-965-4917, egiraud@utah.gov or myself at 435-253-2524, phiggins@utah.gov. Thank you for your interest in UDOT projects.

Sincerely,

Pamela Higgins, NEPA/NHPA Specialist
UDOT Environmental, Region 4

PH

C: Carbon County Certified Local Government, 120 East Main Street, Price, UT 84510-3057

Preserving America's Heritage

Advisory Council on Historic Preservation
Electronic Section 106 Documentation Submittal System (*e*106) Form
MS Word format

Send to: *e106@achp.gov*

I. Basic information

1. **Name of federal agency** (If multiple agencies, state them all and indicate whether one is the lead agency):

   In accordance with Stipulation IX (D)(4)(e) of the Second Amended Programmatic Agreement among the FHWA, the Utah State Historic Preservation Officer, the Advisory Council on Historic Preservation, the USACE Sacramento District, and the UDOT Regarding Section 106 Implementation for Federal-Aid Transportation Projects in the State of Utah (executed June 3, 2013), the Utah Department of Transportation (UDOT) has been delegated the responsibility of notifying the Advisory Council on Historic Preservation of findings of adverse effects.

2. **Name of undertaking/project** (Include project/permit/application number if applicable):

   UDOT Project No. F-0010(75)66, SR-10, US-6 to Ridge Road, Carbon County, Utah (PIN 13664)

3. **Location of undertaking** (Indicate city(s), county(s), state(s), land ownership, and whether it would occur on or affect historic properties located on tribal lands):

   The project is located along SR-10 from approximately M.P. 65.4 to 67.5, near Price, Carbon County, Utah. The majority of the project will be within the UDOT ROW but some private lands are also involved.

4. **Name and title of federal agency official and contact person for this undertaking**, including email address and phone number:

   Bryan Dillon, FHWA Area 2 Engineer
   Email: Bryan.Dillon@dot.gov
   Phone: (801) 955-3517
   Address: 2520 West 4700 South, Suite 9A
   Salt Lake City UT 84129

   Liz Robinson, UDOT Cultural Resources Manager
   Email: lizrobinson@utah.gov
   Phone: (801) 910-2035
   Address: 4501S. 2700 West, Box 148450
   Salt Lake City UT 84114

5. Purpose of notification. Indicate whether this documentation is to:

UDOT is providing notice to the ACHP of a finding that an undertaking may adversely affect historic properties.

II. Information on the Undertaking*

6. Describe the undertaking and nature of federal involvement (if multiple federal agencies are involved, specify involvement of each):

UDOT proposes to use federal funds to construct improvements to SR-10 from approximately M.P. 65.4 to 67.5 in Carbon County. This project includes widening to accommodate a center turn lane, adding curb, gutter and sidewalk in areas where there is a need to serve pedestrians, extending or replacing pipe and box culverts, lowering the profile at the vertical curve near M.P. 67, rehabilitating pavement, relocating utilities and rehabilitating culverts and installing headwalls, and adding turn lanes at critical intersections.

7. Describe the Area of Potential Effects:

The area of direct potential affects (APE) has been defined as a 2.1-mile-long corridor along SR-10 that extends 200 feet from the current roadway centerline, approximately 51 acres of land. The APE for indirect effects included all land parcels adjoining the ROW.

8. Describe steps taken to identify historic properties:

The APE has been entirely previously surveyed for archaeology and therefore work for this project consisted of a reconnaissance level survey and field verification of known sites. A selective reconnaissance level survey was also conducted to record architectural properties abutting the APE. This work was completed by Montgomery Archaeological Consultants in 2016.

9. Describe the historic property (or properties) and any National Historic Landmarks within the APE (or attach documentation or provide specific link to this information):

The SR-10 surveys resulted in the location of 11 previously documented archaeological sites and 48 architectural properties. Of these, 4 archaeological sites and 31 architectural properties are eligible to the NRHP. See attached Determination of Eligibility/Finding of Effect for details on these resources.

10. Describe the undertaking's effects on historic properties:

Archaeological historic properties and project effects.

Site	Name or Description	NRHP Eligibility	Finding of Effect
42CB1040	Carbon Canal	Eligible, Criterion A and C	No Adverse Effect
42CB1270	Old SR-10	Eligible, Criterion A	No Adverse Effect
42CB1436	Trash Scatter	Eligible, Criterion D	No Historic Properties Affected
42CB2141	Trash Scatter	Eligible, Criterion D	No Adverse Effect

Site 42CB1040: The proposed project includes extending the culvert that carries the Carbon Canal under SR-10 on both the inlet and outlet ends. The original section of the culvert directly under the highway will not be touched.

Site 42CB1270: This proposed project includes adding headwalls and riprap at the inlet and outlet ends to the original culvert pipe that channels Drunkard Wash, but the pipe will remain in place. This culvert is all that remains of old SR-10 in this location.

Site 42CB1436: Site will be avoided

Site 42CB2141: **:** The proposed project will remove a strip of the site closest to the SR-10 edge of the pavement on the east side of the highway near MP 67.1. Site 42CB2141 comprises multiple historic time-period, single episode trash dumps. None of the documented concentrations will be touched by this construction proposal.

Architectural historic properties and project effects.

Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect
1275 S. Fairgrounds Road	1948	Post-WWII: other / other late 20th century	EC/Eligible	No Historic Properties Affected
?1266 S. Highway 10	1946	1-story foursquare / Post-WWII: other	EC/Eligible	No Historic Properties Affected
1288 S. Highway 10	1948	Post-WWII: other / other late 20th century	EC/Eligible	No Historic Properties Affected
1332 S. Highway 10	1948	Early ranch / early ranch/rambler	EC/Eligible	No Historic Properties Affected
1767 S. Highway 10	1920	1-story foursquare / Post-WWII: other / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 1,488 sq. ft.; Partial Acquisition: 116 sq. ft.
1777 S. Highway 10	1930	1-story central block with projecting bays / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 1,056 sq.ft.
1867 S. Highway 10	1960	1-story side-gabled Post-WWII: other / other residential	EC/Eligible	No Adverse Effect; TCE: 5,119 sq. ft.; Partial Acquisition: 6,974 sq. ft.
?2010 S. Highway 10	1944	1-story service station in Post-WWII: other	EC/Eligible	Adverse Effect; Structure will be acquired by the project
45 E. Robertson Road (2000 S.)	1950	1-story hip-roofed single dwelling ranch/rambler	EC/Eligible	No Adverse Effect; Partial Acquisition: 359 sq. ft.
2032 S. Highway 10	1967	Mobile home / mobile home	EC/Eligible	No Historic Properties Affected
2044 S. Highway 10	1940	1-story foursquare / 20th century other	EC/Eligible	Adverse Effect; Structure will be demolished by the project
2066 S. Highway 10	1940	1-story foursquare / 20th century other	EC/Eligible	Adverse Effect; Structure will be acquired by the project
2067 S. Highway 10	1941	Ranch/rambler	EC/Eligible	Adverse Effect; Structure will be acquired by the project
2088 S. Highway 10	1941	20th century other / other residential	EC/Eligible	Adverse Effect; Structure will be acquired by the project
2098 S. Highway 10	1970	Mobile home / mobile home	EC/Eligible	No Adverse Effect; TCE: 408 sq. ft.; Partial Acquisition: 2,093 sq. ft.
2111 S. Highway 10	1954	½-story single dwelling Cape Cod/WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 4,413 sq. ft.; Partial Acquisition: 1,813 sq. ft.
?2154 S. Highway 10	1930	1-story WWII-era cottage / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 3,512 sq. ft.; Partial Acquisition: 976 sq. ft.
?2188 S. Highway 10	1946	1-story single dwelling clipped gable cottage	EC/Eligible	Adverse Effect; Structure will be acquired by the project
2198 S. Highway 10	1947	1-story single dwelling clipped gable cottage	EC/Eligible	Adverse Effect; Structure will be acquired by the project
2199 S. Highway 10	1945	1-story single dwelling	EC/Eligible	No Adverse Effect; TCE: 2,219 sq. ft.;

Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect
		clipped gable cottage		Partial Acquisition: 1,111 sq. ft.
2266 S. Highway 10	1944	1 1/2-story front-gabled other residential / Post WWII: other	EC/Eligible	No Adverse Effect; TCE: 5,187 sq. ft., Partial Acquisition: 505 sq. ft.
2289 S. Highway 10	1925	1-story other residential / 20th century other	EC/Eligible	No Adverse Effect; TCE: 950 sq. ft.; Partial Acquisition: 704 sq. ft.
2305 S. Highway 10	1947	1/2 story single dwelling post-WWII: other	EC/Eligible	Adverse Effect; Structure will be acquired by the project
2345 S. Highway 10	1946	Traditional style single dwelling WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 4,331 sq. ft.; Partial Acquisition: 1,696 sq. ft.
2354 S. Highway 10	1939	1-story single dwelling hipped roof WWII-era cottage / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 6,625 sq. ft.; Partial Acquisition: 1,400 sq. ft.
2410 S. Highway 10	1935	Minimal traditional / 1-story single dwelling hipped-roof WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 2,247 sq. ft.; Partial Acquisition: 435 sq. ft.
2433 S. Highway 10	1970	1-story single-gable ranch/rambler	EC/Eligible	Adverse Effect; Structure will be acquired by the project
2511 S. Highway 10	1945	1-story WWII-era cottage / post WW II: other	EC/Eligible	No Adverse Effect; TCE: 1,212 sq. ft.; Partial Acquisition: 1,474 sq. ft.
2754 S. Highway 10	1955	1-story ranch/rambler	EC/Eligible	No Adverse Effect; TCE: 954 sq. ft.; Partial Acquisition: 850 sq. ft.
2767 S. Highway 10	1957	2-story split level single dwelling	EC/Eligible	No Adverse Effect; TCE1,935 sq. ft.; Partial Acquisition: 3,827 sq. ft.
2832 S. Highway 10	1959	1 1/2 story Cape Cod type minimal traditional	EC/Eligible	No Adverse Effect; TCE: 631 sq. ft.; Partial Acquisition: 1,555 sq. ft.

11. Explain how this undertaking would adversely affect historic properties (include information on any conditions or future actions known to date to avoid, minimize, or mitigate adverse effects):

The project will require the acquisition and removal of 9 properties. UDOT design was able to minimize impacts to the remaining 17 eligible properties to small acquisitions that will not impact the structure or character-defining features.

12. Provide copies or summaries of the views provided to date by any consulting parties, Indian tribes or Native Hawai'ian organizations, or the public, including any correspondence from the SHPO and/or THPO.

Native American consultation was initiated through letters sent to the Uintah and Ouray Ute Tribes, Pueblo of Hopi, Paiute Indian Tribe of Utah and the Shivwits and Cedar Bands of Paiute (sent December 18, 2015). The Paiute Indian Tribe of Utah was the only tribe to respond and they had no concerns with the project. The UDOT is continuing consultation with the Price Certified Local Government. Consultation with the public is ongoing but no comments on the adverse effects to historic properties have been received.

* see *Instructions for Completing the ACHP* e*106 Form*

III. Optional Information

13. Please indicate the status of any consultation that has occurred to date. Are there any consulting parties involved other than the SHPO/THPO? Are there any outstanding or unresolved concerns or issues that the ACHP should know about in deciding whether to participate in consultation?

No unresolved issues or concerns from the consulting parties remain.

14. Does your agency have a website or website link where the interested public can find out about this project and/or provide comments? Please provide relevant links:

No.

15. Is this undertaking considered a "major" or "covered" project listed on the Federal Infrastructure Projects Permitting Dashboard or other federal interagency project tracking system? If so, please provide the link or reference number:

No.

The following are attached to this form (check all that apply):

_**X**_ Section 106 consultation correspondence

_**X**_ Maps, photographs, drawings, and/or plans

___ Additional historic property information

___ Other:

16-1257

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

SHANE M. MARSHALL, P.E.
Deputy Director

September 29, 2016

Mr. Cory Jensen
Senior Historic Preservation Specialist
Utah Division of State History
300 Rio Grande
Salt Lake City, UT 84101-1182

RE: UDOT Project No. F-0010(75)66, SR-10, US-6 to Ridge Road, Carbon County, Utah (PIN 13664).
Determination of Eligibility and Finding of Adverse Effect.

Dear Mr. Jensen:

The Utah Department of Transportation (UDOT) is preparing to undertake the subject federal-aid project. In accordance with Stipulation II, Part A and Appendix B of the *Memorandum of Understanding, State Assumption of Responsibility for Categorical Exclusions (23 USC §326)* (executed June 30, 2011), the UDOT assumes responsibility, assigned by the Federal Highway Administration (FHWA), for ensuring compliance with Section 106 of the NHPA and with Section 4(f) of the DOT Act of 1966, as amended. In accordance with the *Second Amended Programmatic Agreement among the FHWA, the Utah State Historic Preservation Officer, the Advisory Council on Historic Preservation, the USACE Sacramento District, and the UDOT Regarding Section 106 Implementation for Federal-Aid Transportation Projects in the State of Utah* (executed June 3, 2013), Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and U.C.A.9-8-404, the UDOT has taken into account the effects of this undertaking on historic properties, and is affording the Utah State Historic Preservation Officer (SHPO) an opportunity to comment on the undertaking. Additionally, this submission is in compliance with Section 4(f) of the Department of Transportation Act of 1966, 23 U.S.C. § 138 (as amended) and 49 U.S.C. § 303 (as amended).

PROJECT DESCRIPTION

This project proposes to construct improvements to SR-10 south of Price, in Carbon County, Utah. The project extends from approximately M.P. 65.4 to 67.5. This project includes widening to accommodate a center turn lane, adding curb, gutter and sidewalk in areas where there is a need to serve pedestrians, extending or replacing pipe and box culverts, lowering the profile at the vertical curve near M.P. 67, rehabilitating pavement, relocating utilities and rehabilitating culverts and installing headwalls, and adding turn lanes at critical intersections.

The area of potential affects (APE) has been defined as a 2.1-mile-long corridor along SR-10 that extends 200 feet from the current roadway centerline. The APE has been entirely previously surveyed for archaeology and therefore work for this project consisted of a reconnaissance level survey and field verification of known sites. This Class II inventory was conducted by Montgomery Archaeological Consultants, under State Antiquities Project Number U-15-MQ-0493s, and the results are reported in *Site Verification and Class III Inventory of Utah Department of Transportation's State Route 10 Road Widening Between MP 65.27 and MP 67.5; South Price to Ridge Road, Carbon County, Utah* (see enclosed report). A selective reconnaissance level survey was conducted to record

Environmental Services Division • Telephone (801) 965-4173 • Facsimile (801) 965-4796 • www.udot.utah.gov
Calvin Rampton Complex • 4501 South 2700 West • Mailing Address P.O. Box 148450 • Salt Lake City, Utah 84114-8450

Received
OCT 7, 2016
USHPO

architectural properties abutting the APE, and the results are reported in *Cultural Resources Survey State Route 10: South Price to Ridge Road, Milepost 65.276 to 76.5, Carbon County, Utah*, prepared by Bee Lufkin for Montgomery Archaeological Consultants, Inc. (see enclosed report).

The SR-10 surveys resulted in the location of 11 previously documented archaeological sites and 48 architectural properties. Of these, 4 archaeological sites and 31 architectural properties are eligible to the National Register of Historic Places (NRHP). No known traditional cultural properties or paleontological resources are located in the APE. The Determinations of Eligibility and Findings of Effects is provided in Table 1 for archaeological resources and in Table 2 for architectural properties.

ARCHAEOLOGICAL RESOURCES

Table 1. Determinations of Eligibility and Findings of Effect for Archaeological Resources

Site	Name or Description	NRHP Eligibility	Finding of Effect	Warrants preservation in place	Section 4(f) Use
42CB1040	Carbon Canal	Eligible, Criterion A and C	No Adverse Effect	No	NA
42CB1270	Old SR-10	Eligible, Criterion A	No Adverse Effect	No	NA
42CB1435	Trash Scatter	Not Eligible	No Historic Properties Affected	NA	NA
42CB1436	Trash Scatter	Eligible, Criterion D	No Historic Properties Affected	No	NA
42CB1437	Trash Scatter	Not Eligible	No Historic Properties Affected	NA	NA
42CB2139	Irrigation Ditch	Not Eligible	No Historic Properties Affected	NA	NA
42CB2140	Irrigation Ditch	Not Eligible	No Historic Properties Affected	NA	NA
42CB2141	Trash Scatter	Eligible, Criterion D	No Adverse Effect	No	NA
42CB2142	Dismantled Billboard	Not Eligible	No Historic Properties Affected	NA	NA
42CB2143	Abandoned Road Segment	Not Eligible	No Historic Properties Affected	NA	NA
42CB2144	Trash Scatter	Not Eligible	No Historic Properties Affected	NA	NA

Description of Effect to Site 42CB1040: The proposed project includes extending the culvert that carries the Carbon Canal under SR-10 on both the inlet and outlet ends. The original section of the culvert directly under the highway will not be touched. The project will affect a relatively small portion of the site and will not substantially impact or alter any contributing elements of the site or any of the character-defining features for which it was determined eligible for the NRHP. Thus, the proposed project will result in a finding of No Adverse Effect.

Description of Effect to Site 42CB1270: This proposed project includes adding headwalls and riprap at the inlet and outlet ends to the original culvert pipe that channels Drunkard Wash, but the pipe will remain in place. This culvert is all that remains of old SR-10 in this location. The project will affect a relatively small portion of the site and will not substantially impact or alter any contributing elements of the site or any of the character-defining features for which it was determined eligible for the NRHP. Thus, the proposed project will result in a finding of No Adverse Effect.

Description of Effect to Site 42CB2141: The proposed project will remove a strip of the site closest to the SR-10 edge-of-oil on the east side of the highway near MP 67.1. Site 42CB2141 comprises multiple historic time-period, single episode trash dumps. None of the documented concentrations will be touched by this construction proposal. The project will affect a relatively small portion of the site and will not substantially impact or alter any contributing elements of the site or any of the character-defining features for which it was determined eligible for the NRHP. Thus, the proposed project will result in a finding of No Adverse Effect.

ARCHITECTURAL PROPERTIES

Ms. Lufkin documented and evaluated 48 architectural properties that could be impacted by the project. All 48 are buildings, and of these, 31 are eligible for the National Register of Historic Places. The impacts are described in the paragraph following Table 2.

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
	1275 S. Fairgrounds Road	1948	Post-WWII: other / other late 20th century	EC/Eligible	No Historic Properties Affected	N/A
	?1266 S. Highway 10	1946	1-story foursquare / Post-WWII: other	EC/Eligible	No Historic Properties Affected	N/A
	1288 S. Highway 10	1948	Post-WWII: other / other late 20th century	EC/Eligible	No Historic Properties Affected	N/A
	1308 S. Highway 10	1965	Post-WWII: other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	?1310 S. Highway 10	1955	Post-WWII: other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	1332 S. Highway 10	1948	Early ranch / early ranch/rambler	EC/Eligible	No Historic Properties Affected	N/A
	1510 S. Highway 10	1935/1957	Other commercial/public / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	1632 S. Highway 10	1950	Post-WWII modern / ranch/rambler	NC/Ineligible	No Historic Properties Affected	N/A
	1654 S. Highway 10	1970	Late 20th century other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	1700 S. Highway 10	1945/1985	Late 20th century other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
1	1767 S. Highway 10	1920	1-story foursquare / Post-WWII: other / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 1,488 sq. ft.; Partial Acquisition: 116 sq. ft.	*de minimis*
1	1777 S. Highway 10	1930	1-story central block with projecting bays / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 1,056 sq. ft.	Temporary Occupancy
2	1867 S. Highway 10	1960	1-story side-gabled Post-WWII: other / other residential	EC/Eligible	No Adverse Effect; TCE: 5,119 sq. ft.; Partial Acquisition: 6,974 sq. ft.	*de minimis*
	1899 S. Highway 10	1940	1 1/2-story cross-gabled WWII-era cottage / simple Post-WWII: other	NC/Ineligible	No Historic Properties Affected	N/A
3	?2010 S. Highway 10	1944	1-story service station in Post-WWII: other	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
3	45 E. Robertson Road (2000 S.)	1950	1-story hip-roofed single dwelling ranch/rambler	EC/Eligible	No Adverse Effect; Partial Acquisition: 359 sq. ft.	*de minimis*

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
	2022 S. Highway 10	1931	Side-gabled 1-story single dwelling in Post-WWII: other / other residential type	NC/Ineligible	No Historic Properties Affected	N/A
	2032 S. Highway 10	1967	Mobile home / mobile home	EC/Eligible	No Historic Properties Affected	N/A
4	2044 S. Highway 10	1940	1-story foursquare / 20th century other	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
4	2066 S. Highway 10	1940	1-story foursquare / 20th century other	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
5	2067 S. Highway 10	1941	Ranch/rambler	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
	2078 S. Highway 10	1948	Residential / Post WWII	NC/Ineligible	No Historic Properties Affected	N/A
6	2088 S. Highway 10	1941	20th century other / other residential	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
6	2098 S. Highway 10	1970	Mobile home / mobile home	EC/Eligible	No Adverse Effect; TCE: 408 sq. ft.; Partial Acquisition: 2,093 sq. ft.	*de minimis*
	2099 S. Highway 10	1930	1-story foursquare / 20th century other	NC/Ineligible	No Historic Properties Affected	N/A
	2100 S. Highway 10	1961	1-story ranch/rambler / single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
7	2111 S. Highway 10	1954	½-story single dwelling Cape Cod/WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 4,413 sq. ft.: Partial Acquisition: 1,813 sq. ft.	*de minimis*
8	?2154 S. Highway 10	1930	1-story WWII-era cottage / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 3,512 sq. ft.; Partial Acquisition: 976 sq. ft.	*de minimis*
8	?2188 S. Highway 10	1946	1-story single dwelling clipped gable cottage	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
10	2198 S. Highway 10	1947	1-story single dwelling clipped gable cottage	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
9	2199 S. Highway 10	1945	1-story single dwelling clipped gable cottage	EC/Eligible	No Adverse Effect; TCE: 2,219 sq. ft.; Partial Acquisition: 1,111 sq. ft.	*de minimis*
12	2266 S. Highway 10	1944	1 1/2-story front-gabled other residential / Post WWII: other	EC/Eligible	No Adverse Effect: TCE: 5,187 sq. ft., Partial Acquisition: 505 sq. ft.	*de minimis*
11	2289 S. Highway 10	1925	1-story other residential / 20th century other	EC/Eligible	No Adverse Effect; TCE: 950 sq. ft.: Partial Acquisition: 704 sq. ft.	*de minimis*

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
11	2305 S. Highway 10	1947	1/2 story single dwelling post-WWII: other	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
13	2345 S. Highway 10	1946	Traditional style single dwelling WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 4,331 sq. ft.; Partial Acquisition: 1,696 sq. ft.	*de minimis*
14	2354 S. Highway 10	1939	1-story single dwelling hipped roof WWII-era cottage / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 6.625 sq. ft.; Partial Acquisition: 1,400 sq. ft.	*de minimis*
15	2410 S. Highway 10	1935	Minimal traditional / 1-story single dwelling hipped-roof WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 2,247 sq. ft.; Partial Acquisition: 435 sq. ft.	*de minimis*
16	2433 S. Highway 10	1970	1-story single-gable ranch/rambler	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
	2477 S. Highway 10	1933	1-story single dwelling WWII-era cottage / 20th century: other	NC/Ineligible	No Historic Properties Affected	N/A
	2502 S. Highway 10	1942	1-story clipped-gable cottage single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
17	2511 S. Highway 10	1945	1-story WWII-era cottage / post WW II: other	EC/Eligible	No Adverse Effect; TCE: 1,212 sq. ft.; Partial Acquisition: 1,474 sq. ft.	*de minimis*
	2680 S. Highway 10	1930	1-story single dwelling other / 20th century: other	NC/Ineligible	No Historic Properties Affected	N/A
	2710 S. Highway 10	1952	1-story early ranch/rambler single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
18	2754 S. Highway 10	1955	1-story ranch/rambler	EC/Eligible	No Adverse Effect; TCE: 954 sq. ft.; Partial Acquisition: 850 sq. ft.	*de minimis*
19	2767 S. Highway 10	1957	2-story split level single dwelling	EC/Eligible	No Adverse Effect; TCE1,935 sq. ft.; Partial Acquisition: 3,827 sq. ft.	*de minimis*
	2776 S. Highway 10	1952	1-story early ranch/rambler single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
	2798 S. Highway 10	1959	1-story post-WWII other / late 20th century: other.	NC/Ineligible	No Historic Properties Affected	N/A
20	2832 S. Highway 10	1959	1 1/2 story Cape Cod type minimal traditional	EC/Eligible	No Adverse Effect; TCE: 631 sq. ft.; Partial Acquisition: 1,555 sq. ft.	*de minimis*

Description of Effects: This proposed project requires right of way acquisitions of approximately 2 to 15 feet for 17 properties evaluated as eligible to the NRHP and whose impact is considered "No Adverse Effect. The project will have an Adverse Effect, requiring the acquisition of the building, for 9 properties. Thus, the proposed project will result in a finding of Adverse Effect and a Section 4(f) *Greater than de minimis* impact for each adversely affected property.

CONSULTATION EFFORTS

Native American consultation was initiated through letters sent to the Uintah and Ouray Ute Tribes, Shoshone-Bannock Tribes, and Northwestern Band of Shoshone Nation (sent December 16, 2015). The UDOT is continuing consultation with the Price Certified Local Government. An open house will be held so that the public will be notified of the impacts to cultural resources among other considerations.

SUMMARY

To summarize, the project will result in a finding of Adverse Effect for 9 architectural properties, a finding of No Adverse Effect for 3 archaeological sites and 17 architectural properties, and a finding of No Historic Properties Affected for all remaining architectural properties and archaeological sites. The project will also result in 9 Section 4(f) Greater than *de minimis* uses, 16 Section 4(f) *de minimis* uses, and 1 Section 4(f) temporary occupancy use. Therefore, the Finding of Effect for the proposed UDOT Project No. F-0010(75)66, SR-10, US-6 to Ridge Road, Carbon County, Utah, is **Adverse Effect**.

Please review this document and, providing you agree with the findings contained herein, sign and date the signature line at the end of this letter. Should you have any questions or need additional information, please feel free to contact Liz Robinson at 801-910-2035 or lizrobinson@utah.gov; Elizabeth Giraud at 801-965-4917 or egiraud@utah.gov, or Pam Higgins at 435-253-2524 or phiggins@utah.gov.

Sincerely,

Liz Robinson, M.A., RPA
Cultural Resources Program Manager
UDOT Environmental Services

Elizabeth Giraud
Digitally signed by Elizabeth Giraud
DN: cn=Elizabeth Giraud
Date: 2016.10.05 16:31:27 -06'00'

Elizabeth Giraud, AICP
Architectural Historian
UDOT Environmental Services

Pam Higgins
Oct 5 2016 4:22 PM

Pamela Higgins
NEPA/NHPA Specialist, Region 4 Area
UDOT Environmental Services

Enclosures

cc: Troy Torgersen, Project Manager
Eric Hansen, Environmental Manager

Regarding UDOT Project No. F-0010(75)66, SR-10, US-6 to Ridge Road, Carbon County, Utah, I concur with the Determination of Eligibility and Finding of Effect, submitted to the Utah State Historic Preservation Office in accordance with the *Second Amended Programmatic Agreement,* Section 106 of the NHPA, and U.C.A. 9-8-404, which states that the UDOT has determined that the finding is **Adverse Effect.**

Cory Jensen
Senior Historic Preservation Specialist

10/17/2016
Date

U.S. Department of Transportation
Federal Highway Administration

Utah Division

2520 West 4700 South, Suite 9A
Salt Lake City, UT 84129-1874
(801) 955-3500
(801) 955-3539

December 18, 2015

In Reply Refer To:
HDA-UT

Mr. Herman G. Honanie, Chairman
Pueblo of Hopi
P.O. Box 123
Kykotsmovi, AZ 86039

Subject: UDOT Project Number F-0010(75)66
SR-10; South Price to Ridge Road, Carbon County (PIN 13664)
Project Notification and Invitation to be a Section 106 Consulting Party

Dear Mr. Honanie:

To improve safety conditions, the Utah Department of Transportation (UDOT) is proposing to improve State Route (SR) 10 between milepost (MP) 65.4 and MP 67.5, south of Price, Carbon County, Utah. Crash data shows an increase in number of collisions in this segment of the highway corridor as it narrows to two lanes (approximately from 1450 South to 3000 South). This segment is without turn lanes and the shoulders are narrow leaving insufficient width for cars to avoid accidents. Additionally, pedestrians currently walk on the roadway shoulder increasing the potential for pedestrian and vehicle impacts. Finally, the sight distance on the vertical curve near MP 67 is deficient, raising the potential for head-on encounters near the top of the curve. The proposed construction could potentially include the following elements:

- Widening to accommodate a center turn lane
- Widening shoulders
- Adding curb, gutter and sidewalk in areas where there is a need to serve pedestrians
- Extending or replacing pipe and box culverts
- Lowering the profile at the vertical curve near MP 67
- Adding turn lanes at critical intersections

Widening SR-10 to include a three-lane section with wider shoulders would provide drivers with more room to avoid other vehicles. Adding curb, gutter and sidewalks would improve pedestrian safety. Lowering the pavement profile at MP 67 will improve vehicular sight distance and safety. The project is federally-funded and a project footprint map is attached.

In accordance with Section 106 of the National Historic Preservation Act (NHPA) and the Second Amended Programmatic Agreement among the Federal Highway Administration, the Utah Department of Transportation, the Utah State Historic Preservation Officer, the USACE Sacramento District, and the Advisory Council on Historic Preservation Regarding Section 106 Implementation for Federal-Aid Transportation Projects in the State of Utah (Section 106 PA) (signed into effect June 3, 2013), the FHWA will be responsible for consultation with Native American tribes/bands on this project. In accordance with Stipulation II, Part A and Appendix B

of the Renewed Memorandum of Understanding, State Assumption of Responsibility for Categorical Exclusions (23 USC §326), the UDOT assumes responsibility, assigned by the FHWA, for ensuring compliance with Section 106 of the NHPA, except for Native American consultation.

In compliance with the 106 PA, the FHWA requests that you review the information in this letter to determine if there are any historic properties of traditional religious and/or cultural importance that may be affected by the proposed undertaking. If you feel that there are any historic properties that may be impacted, we request your notification as such and your participation as a consulting party during the development of the environmental document. Please be assured that, in accordance with confidentiality and disclosure stipulations in Section 304 of the NHPA, the FHWA and the UDOT will maintain strict confidentiality about certain types of information regarding traditional religious and/or cultural places that may be affected by this proposed undertaking.

At your request, the FHWA and the UDOT staff will be available to meet with you to discuss any concerns you might have about the project. Should you have any questions or concerns about this project and/or wish to be a consulting party, feel free to contact me at 801-955-3517 or at bryan.dillon@dot.gov, or Pamela Higgins at 435-253-2524 or at phiggins@utah.gov. We would also appreciate any suggestions you might have about other groups or individuals that we should contact regarding this project or ways that we may more effectively consult with your Tribe/Band.

To facilitate our consultation with you regarding this project, we would greatly appreciate a response to this letter within 30 days of receipt.

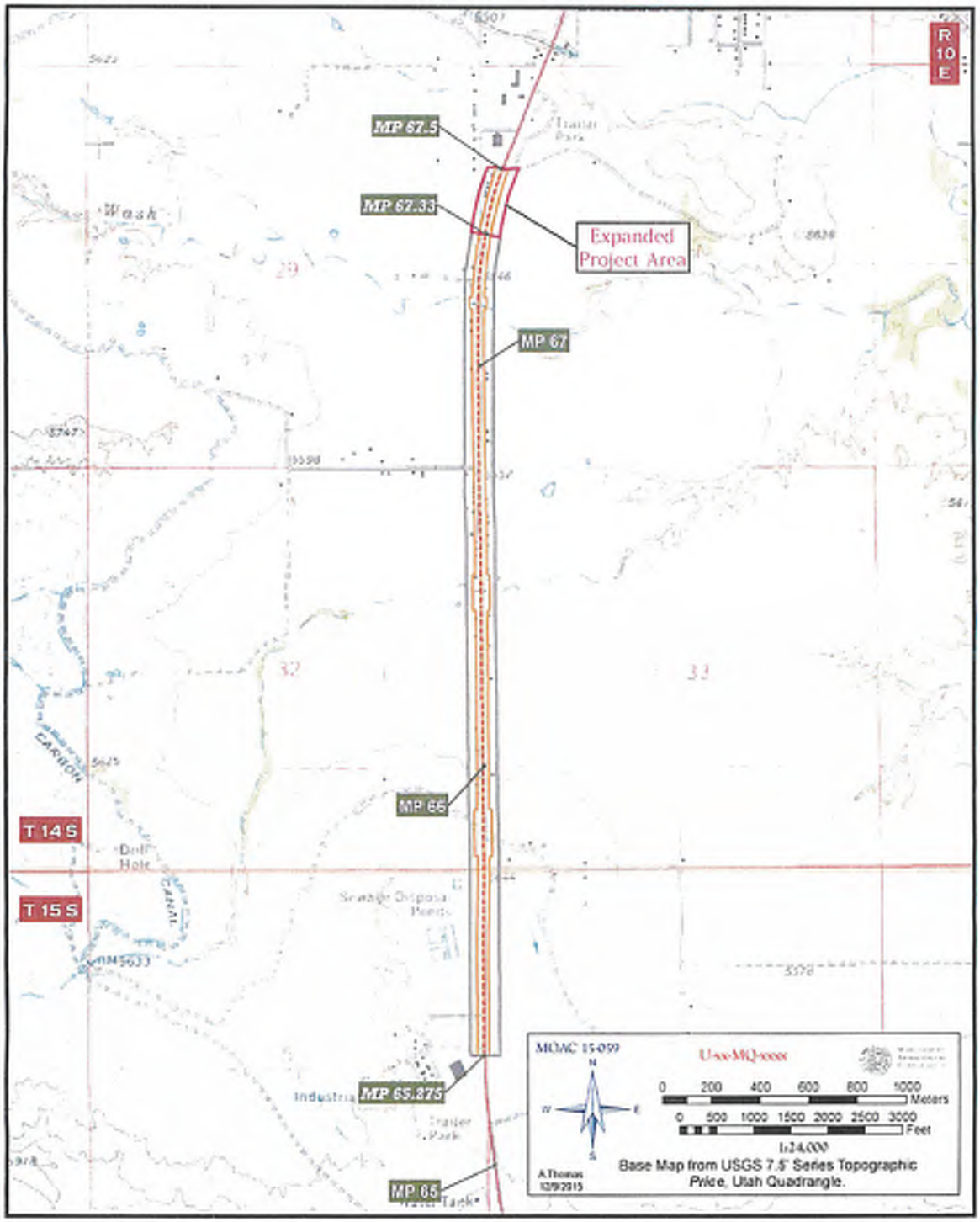
Thank you for your attention to this project notification and any comments you may have.

Yours truly,

for Bryan Dillon,
Area Engineer, Region 4

Enclosure: (1)

C: Mr. Leigh Kuwanwisiwma, Director, Hopi Cultural Preservation Office
Pamela Higgins, NEPA/NHPA Specialist - UDOT Region 4


R 10 E
MP 67.5
MP 67.33
Expanded Project Area
MP 67
MP 66
MP 65.875
MP 65
T 14 S
T 15 S
Industrial
Sewage Disposal Ponds
Trailer Park
Wash
Golf Hole
CARBON
MOMC 15-099
U-xx-MQ-xxxx
N
W
E
S
0 200 400 600 800 1000 Meters
0 500 1000 1500 2000 2500 3000 Feet
1:24,000
A.Thomas
12/9/2015
Base Map from USGS 7.5' Series Topographic
Price, Utah Quadrangle.

IDENTICAL COPIES OF THIS LETTER SENT TO:

Original to:	CC to:
Ms. Gari Lafferty, Tribal Chairwoman Paiute Indian Tribe of Utah 440 North Paiute Drive Cedar City, UT 84721	Ms. Dorena Martineau Cultural Resource Representative Paiute Indian Tribe of Utah 440 North Paiute Drive Cedar City, UT 84721
Mr. Gordon Howell, Chairman Uintah & Ouray Ute Indian Reservation PO Box 190 Ft. Duchesne, UT 84026	Ms. Betsy Chapoose, Director Cultural Rights and Protection Department The Ute Indian Tribe PO Box 190 Ft. Duchesne, UT 84026
Mr. Herman G. Honanie, Chairman Pueblo of Hopi P.O. Box 123 Kykotsmovi, AZ 86039	Mr. Leigh Kuwanwisiwma, Director Hopi Cultural Preservation Office Pueblo of Hopi P.O. Box 123 Kykotsmovi, AZ 86039

PROJECT INITIAL TRIBAL NOTIFICATION FORM SENT TO THE FOLLOWING (IN ACCORDANCE WITH TRIBAL SECTION 106 PAs; SENT BY THE UDOT REGION ARCHAEOLOGIST):

Original to:	CC to:
Ms. Lora E. Tom, Band Chairwoman Cedar Band of the Paiute Indians 4655 North Utah Trail Enoch, UT 84720	Ms. Vala Parashonts Cultural Resource Representative Cedar Band of the Paiute Indians 533 South 640 West Cedar City, UT 84721
Ms. Jetta Wood, Band Chairwoman Shivwits Band of the Paiute Indian Tribe of Utah 6060 West 3650 North Ivins, UT 84738	Ms. Shanan Anderson Cultural Resources Director Shivwits Band of the Paiute Indian Tribe of Utah 6060 West 3650 North Ivins, UT 84738

UDOT Project Initial Tribal Notification Form
Section 106 Consultation

Date: December 18, 2015
UDOT PIN/Project: 13664; F-0010(75)66; SR-10; South Price to Ridge Road, Carbon County
Contact Name: Pamela Higgins
Address: 210 West 800 South, Richfield, UT 84701
Telephone: (435) 253-2524
Email: phiggins@utah.gov

Project Description

To improve safety conditions, the Utah Department of Transportation (UDOT) is proposing to improve State Route (SR) 10 between milepost (MP) 65.4 and MP 67.5, south of Price, Carbon County, Utah. Crash data shows an increase in number of collisions in this segment of the highway corridor as it narrows to two lanes (approximately from 1450 South to 3000 South). This segment is without turn lanes and the shoulders are narrow leaving insufficient width for cars to avoid accidents. Additionally, pedestrians currently walk on the roadway shoulder increasing the potential for pedestrian and vehicle impacts. Finally, the sight distance on the vertical curve near MP 67 is deficient, raising the potential for head-on encounters near the top of the curve. The proposed construction could potentially include the following elements:

- Widening to accommodate a center turn lane
- Widening shoulders
- Adding curb, gutter and sidewalk in areas where there is a need to serve pedestrians
- Extending or replacing pipe and box culverts
- Lowering the profile at the vertical curve near MP 67
- Adding turn lanes at critical intersections

Widening SR-10 to include a three-lane section with wider shoulders would provide drivers with more room to avoid other vehicles. Adding curb, gutter and sidewalks would improve pedestrian safety. Lowering the pavement profile at MP 67 will improve vehicular sight distance and safety. The project is federally-funded and a project footprint map is attached.

Archaeological Potential (Prehistoric or Historic Sites)

- ☐ Known prehistoric sites in the project area
- ☒ Known historic sites in the project area
- ☐ Likely to find prehistoric sites in the project area
- ☐ Likely to find historic sites in the project area
- ☐ Unlikely to find prehistoric sites in the project area
- ☐ Unlikely to find historic sites in the project area
- ☐ No expected ground disturbance
- ☐ Other:

Additional Information/Comments

The project inventory has been previously inventoried and no prehistoric sites were located inside the UDOT ROW.

Tribal Information

Tribe: Shivwits Band of the Paiute Indian Tribe of Utah
Name of tribal contact/representative: Ms. Jetta Wood, Band Chairwoman
Address: 6060 West 3650 North
City, State, Zip: Ivins, UT 84738
Telephone:
Email:
Copies to: Ms. Shanan Anderson, Cultural Resources Director, Shivwits Band of the Paiute Indian Tribe of Utah

Comments

1. Do you wish to be a Section106 consulting party on this project?	☐ Yes	☐ No	☐ Not Sure
2. If you do not wish to be a Section 106 consulting party, do you wish to continue to be involved in the development of this project?	☐ Yes	☐ No	☐ Not Sure
Note: If your answer is "Not Sure," UDOT will continue to provide information.			
3. Are you aware of any traditional religious or culturally important places in or near the project area?	☐ Yes	☐ No	☐ Not Sure
4. If yes, can you share details about the place (e.g., location and other characteristics) and any concerns you may have?	☐ Yes	☐ No	
5. Is this information sensitive?	☐ Yes	☐ No	

Additional Comments

Name of person completing this form, if different from above:
Signature: Date:

UDOT Project Initial Tribal Notification Form
Section 106 Consultation

Date: December 18, 2015
UDOT PIN/Project: 13664; F-0010(75)66; SR-10; South Price to Ridge Road, Carbon County
Contact Name: Pamela Higgins
Address: 210 West 800 South, Richfield, UT 84701
Telephone: (435) 253-2524
Email: phiggins@utah.gov

Project Description

To improve safety conditions, the Utah Department of Transportation (UDOT) is proposing to improve State Route (SR) 10 between milepost (MP) 65.4 and MP 67.5, south of Price, Carbon County, Utah. Crash data shows an increase in number of collisions in this segment of the highway corridor as it narrows to two lanes (approximately from 1450 South to 3000 South). This segment is without turn lanes and the shoulders are narrow leaving insufficient width for cars to avoid accidents. Additionally, pedestrians currently walk on the roadway shoulder increasing the potential for pedestrian and vehicle impacts. Finally, the sight distance on the vertical curve near MP 67 is deficient, raising the potential for head-on encounters near the top of the curve. The proposed construction could potentially include the following elements:

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- Adding turn lanes at critical intersections

Widening SR-10 to include a three-lane section with wider shoulders would provide drivers with more room to avoid other vehicles. Adding curb, gutter and sidewalks would improve pedestrian safety. Lowering the pavement profile at MP 67 will improve vehicular sight distance and safety. The project is federally-funded and a project footprint map is attached.

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- ☐ Known prehistoric sites in the project area
- ☒ Known historic sites in the project area
- ☐ Likely to find prehistoric sites in the project area
- ☐ Likely to find historic sites in the project area
- ☐ Unlikely to find prehistoric sites in the project area
- ☐ Unlikely to find historic sites in the project area
- ☐ No expected ground disturbance
- ☐ Other:

Additional Information/Comments

The project inventory has been previously inventoried and no prehistoric sites were located inside the UDOT ROW.

Tribal Information

Tribe: Cedar Band of the Paiute Indians
Name of tribal contact/representative: Ms. Lora E. Tom, Band Chairwoman
Address: 4655 North Utah Trail
City, State, Zip: Enoch, UT 84720
Telephone: (435) 586-9433
Email: lora.tom@ihs.gov
Copies to: Ms. Vala Parashonts, Cultural Resource Representative, 533 South 640 West, Enoch, UT 84720

Comments

1. Do you wish to be a Section106 consulting party on this project?	☐ Yes	☐ No	☐ Not Sure
2. If you do not wish to be a Section 106 consulting party, do you wish to continue to be involved in the development of this project?	☐ Yes	☐ No	☐ Not Sure
Note: If your answer is "Not Sure," UDOT will continue to provide information.			
3. Are you aware of any traditional religious or culturally important places in or near the project area?	☐ Yes	☐ No	☐ Not Sure
4. If yes, can you share details about the place (e.g., location and other characteristics) and any concerns you may have?	☐ Yes	☐ No	
5. Is this information sensitive?	☐ Yes	☐ No	

Additional Comments

Name of person completing this form, if different from above:
Signature: Date:

THE PAIUTE INDIAN TRIBE OF UTAH

440 North Paiute Drive • Cedar City, Utah 84721 • (435) 586-1112 • Fax (435) 586-7388

January 21, 2016

Bryan Dillon, Area Engineer, Region 4
U. S. Department of Transportation
Federal Highway Administration
Utah Division
2520 West 4700 South, Suite 9-A
Salt Lake City, Utah 84118-1847

Dear Mr. Dillon,

Subject: UDOT Project Number F-0010(75)66 sr-10; South Price to Ridge Road, Carbon County (PIN 13664)

The Paiute Indian Tribe of Utah is in receipt of your letter December 18, 2015 and has reviewed the material and do not have any objections pertaining to the project named above. At this time we are aware of any cultural resource sites, practices, or locations of importance in the tribe's traditional religions or culture. As you are aware the Tribes support the identification and avoidance of prehistoric archaeological sites and Traditional Cultural Properties.

The Paiute Tribe sincerely appreciates the effort you and your staff have made to consult with the tribe.

Sincerely,

Dorena Martineau/Cultural Resources
Paiute Indian Tribe of Utah
435-586-1112 ext. 107

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

SHANE M. MARSHALL, P.E.
Deputy Director

December 16, 2015

Mayor Joe Picolo
Price City
185 East Main Street
PO Box 893
Price, UT 84501

RE: F-0010(75)66, SR-10; US-6 to Ridge Road CMGC, Carbon County (PIN 13664)
Project Notification and Request to be a Consulting Party

Dear Mayor Picolo:

To improve safety conditions, the Utah Department of Transportation (UDOT) is proposing to improve State Route (SR) 10 between milepost (MP) 65.4 and MP 67.5, south of Price, Carbon County, Utah. A project footprint map is attached. Crash data shows an increase in number of collisions in this segment of the highway corridor as it narrows to two lanes (approximately from 1450 South to 3000 South). This segment is without turn lanes and the shoulders are narrow leaving insufficient width for cars to avoid accidents. Additionally, pedestrians currently walk on the roadway shoulder increasing the potential for pedestrian and vehicle impacts. Finally, the sight distance on the vertical curve near MP 67 is deficient, raising the potential for head-on encounters near the top of the curve. The proposed construction could potentially include the following elements:

- Widening to accommodate a center turn lane
- Widening shoulders
- Adding curb, gutter and sidewalk in areas where there is a need to serve pedestrians
- Extending or replacing pipe and box culverts
- Lowering the profile at the vertical curve near MP 67
- Adding turn lanes at critical intersections

Widening SR-10 to include a three-lane section with wider shoulders would provide drivers with more room to avoid other vehicles. Adding curb, gutter and sidewalks would improve pedestrian safety. Lowering the pavement profile at MP 67 will improve vehicular sight distance and safety.

To widen this section of SR-10 properly, it is likely that new ROW will be needed. The current ROW ranges from 60 ft. to 80 ft. wide. The proposed ROW width will total approximately 100 ft. Existing transportation corridor is either owned by UDOT or is a prescriptive easement through private property. The project is federally-funded.

The proposed widening may potentially result in adverse effects to eligible historic properties. If UDOT determines this type of construction impact, appropriate cultural resource treatment is assured by UDOT policy, federal, and state regulations.

If you have any questions or concerns, please contact 435-253-2524 or phiggins@utah.gov. Thank you for your efforts.

Sincerely,

Pam Higgins

Pamela Higgins, NEPA/NHPA Specialist
UDOT, Region 4

PH/attachment

C: Mr. Nick Tatton, Price CLG, P.O. Box 893, Price, UT 84501
Carbon County CLG, 120 East Main Street, Price, UT 84510-3057

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

SHANE M. MARSHALL, P.E.
Deputy Director

June 6, 2016

Mr. Mr. Timm Kennedy
United States Army Corps of Engineers
Bountiful Regulatory Office
533 West 2600 South, Suite 150
Bountiful, UT 84010

RE: F-0010(75)66; US-191; SR-10; South Price to Ridge Road, Carbon County
Project Notification

Dear Mr. Kennedy:

To improve safety conditions, the Utah Department of Transportation (UDOT) is proposing to improve State Route (SR) 10 between milepost (MP) 65.4 and MP 67.5, south of Price, Carbon County, Utah. Crash data shows an increase in number of collisions in this segment of the highway corridor as it narrows to two lanes (approximately from 1450 South to 3000 South). This segment is without turn lanes and the shoulders are narrow leaving insufficient width for cars to avoid accidents. Additionally, pedestrians currently walk on the roadway shoulder increasing the potential for pedestrian and vehicle impacts. Finally, the sight distance on the vertical curve near MP 67 is deficient, raising the potential for head-on encounters near the top of the curve. The proposed construction could potentially include the following elements:

- Widening to accommodate a center turn lane
- Widening shoulders
- Adding curb, gutter and sidewalk in areas where there is a need to serve pedestrians
- Extending or replacing pipe and box culverts, potentially impacting wetlands
- Lowering the profile at the vertical curve near MP 67
- Adding turn lanes at critical intersections

Widening SR-10 to include a three-lane section with wider shoulders would provide drivers with more room to avoid other vehicles. Adding curb, gutter and sidewalks would improve pedestrian safety. Lowering the pavement profile at MP 67 will improve vehicular sight distance and safety. The project is federally funded and a project footprint map is attached.

An archaeological consultant and an architectural historian have completed cultural resource inventory (CRI) of the entire project area. The following table summarizes archaeological site information:

Site Number	Site Type	NRHP Assessment	Land Status
42Cb1040	Carbon Canal	Eligible, Criterion A and C	UDOT ROW
42Cb1270	Old SR-10	Eligible, Criterion A	UDOT ROW
42Cb1435	Trash Scatter	Not Eligible	Private Land
42Cb1436	Trash Scatter	Eligible, Criterion D	Private Land
42Cb1437	Trash Scatter	Not Eligible	Private Land
42Cb2139	Irrigation Ditch	Not Eligible	Private Land
42Cb2140	Irrigation Ditch	Not Eligible	Private Land
42Cb2141	Trash Scatter	Eligible, Criterion D	Private Land
42Cb2142	Dismantled Billboard	Not Eligible	Private Land
42Cb2143	Abandoned Road Segment	Not Eligible	Private Land
42Cb2144	Trash Scatter	Not Eligible	Private Land

The architectural information is in a separate report. If you would like a table reflecting those findings, please let me know.

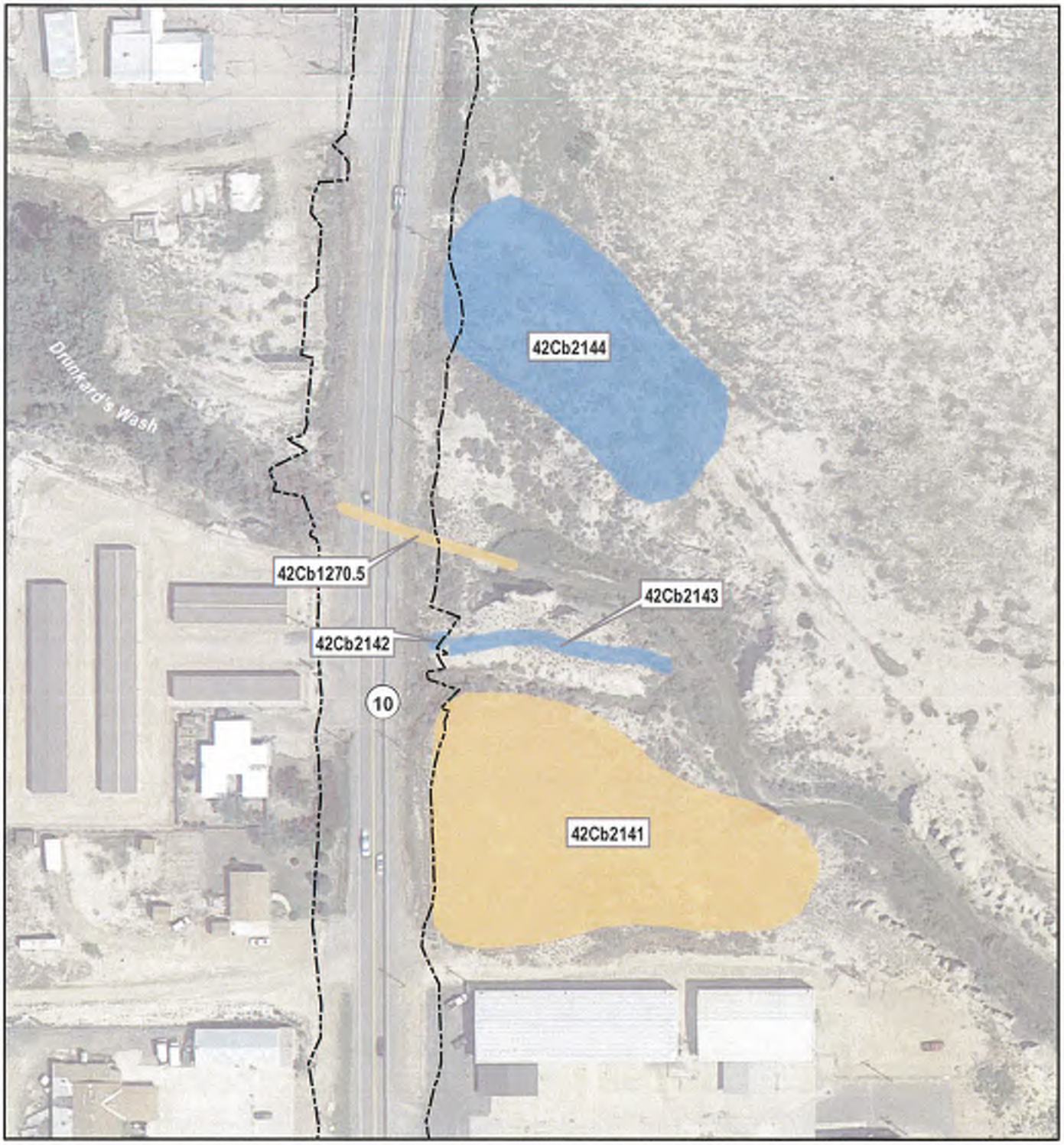
Thank you for your time and comments. If you have any questions or concerns regarding this proposal, please call 435-253-2524 or contact phiggins@utah.gov.

Sincerely,

Pam Higgins

Pamela Higgins, NEPA/NHPA Specialist
UDOT, Region 4

PH/attachment



SR-10; South Price to Ridge Road
Project No.: F-0010(75)66
PIN: 13664

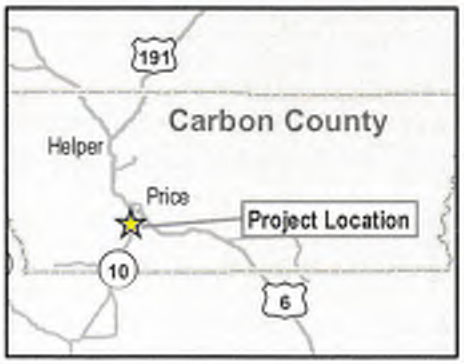
Figure 21

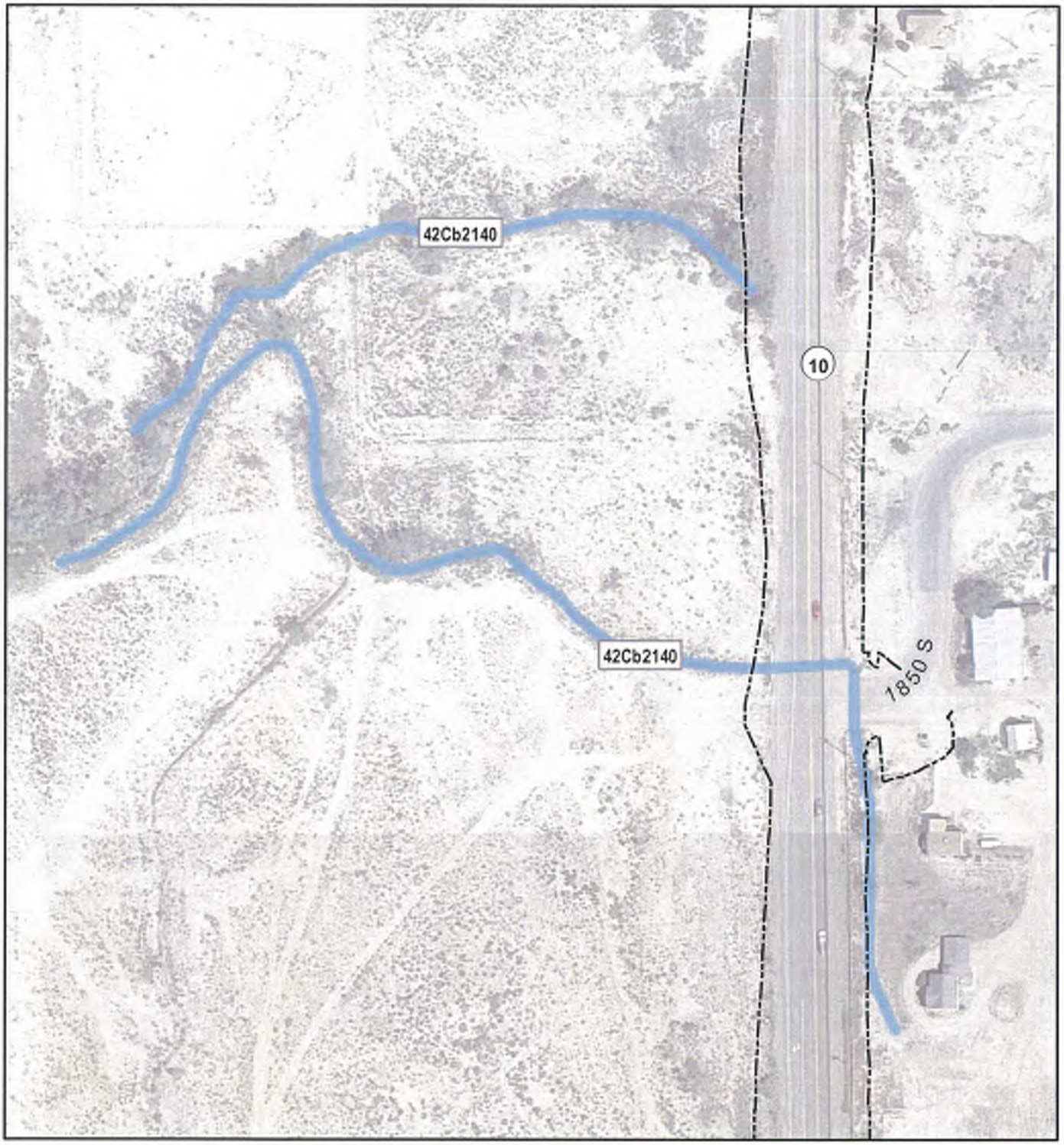
Archaeological Sites

- Eligible
- Not Eligible
- Cut and Fill Line

0 50 100 150 200
Scale in Feet

N





SR-10; South Price to Ridge Road
Project No.: F-0010(75)66
PIN: 13664

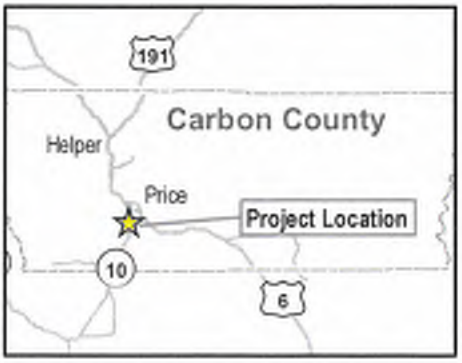
Figure 22

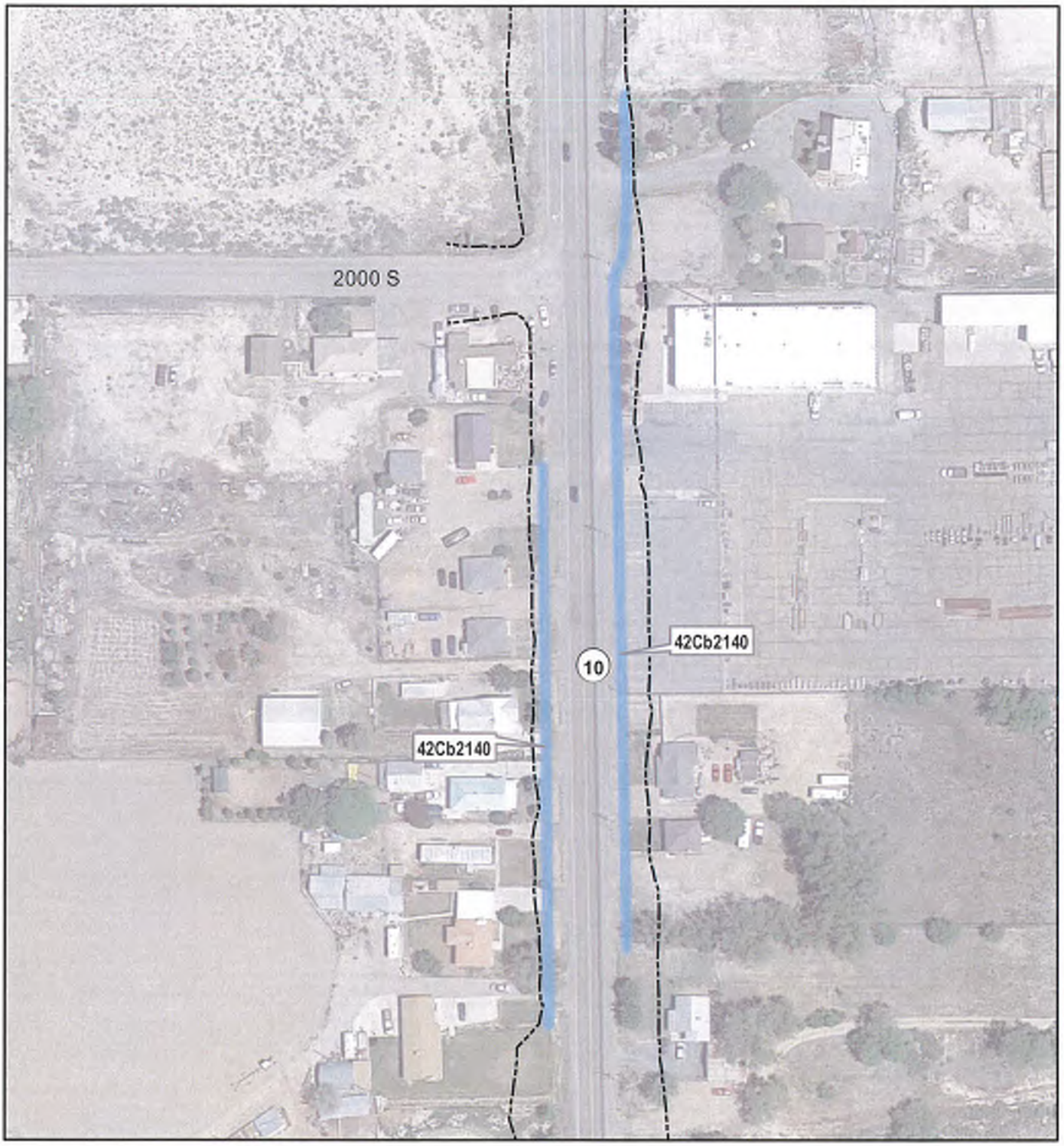
Archaeological Sites

- Eligible
- Not Eligible
- Cut and Fill Line

0 50 100 150 200
Scale in Feet

N





SR-10; South Price to Ridge Road
Project No.: F-0010(75)66
PIN: 13664

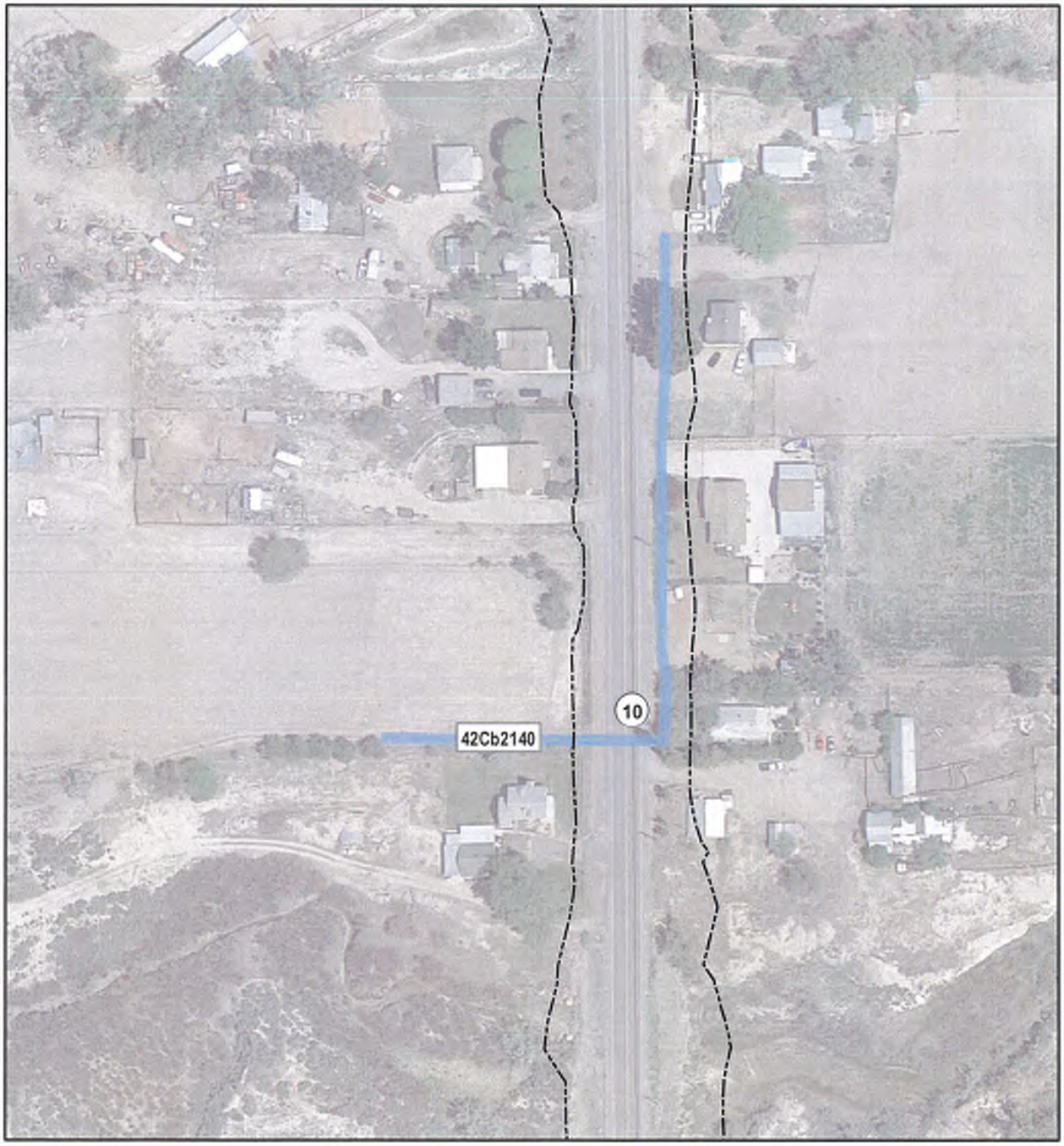
Figure 23

Archaeological Sites

- Eligible
- Not Eligible
- Cut and Fill Line

0 50 100 150 200
Scale in Feet

N



SR-10; South Price to Ridge Road
Project No.: F-0010(75)66
PIN: 13664

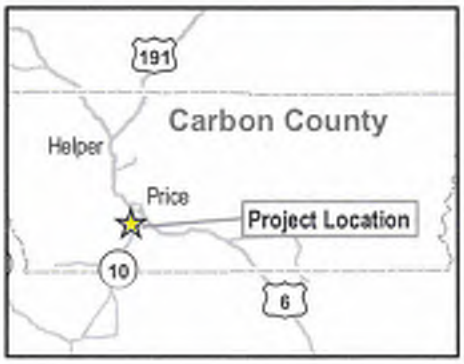
Figure 24

Archaeological Sites

- Eligible
- Not Eligible
- Cut and Fill Line

0 50 100 150 200
Scale in Feet

N



SR-10; South Price to Ridge Road
Project No.: F-0010(75)66
PIN: 13664

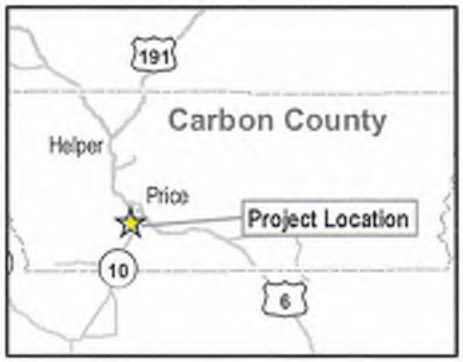
Figure 25

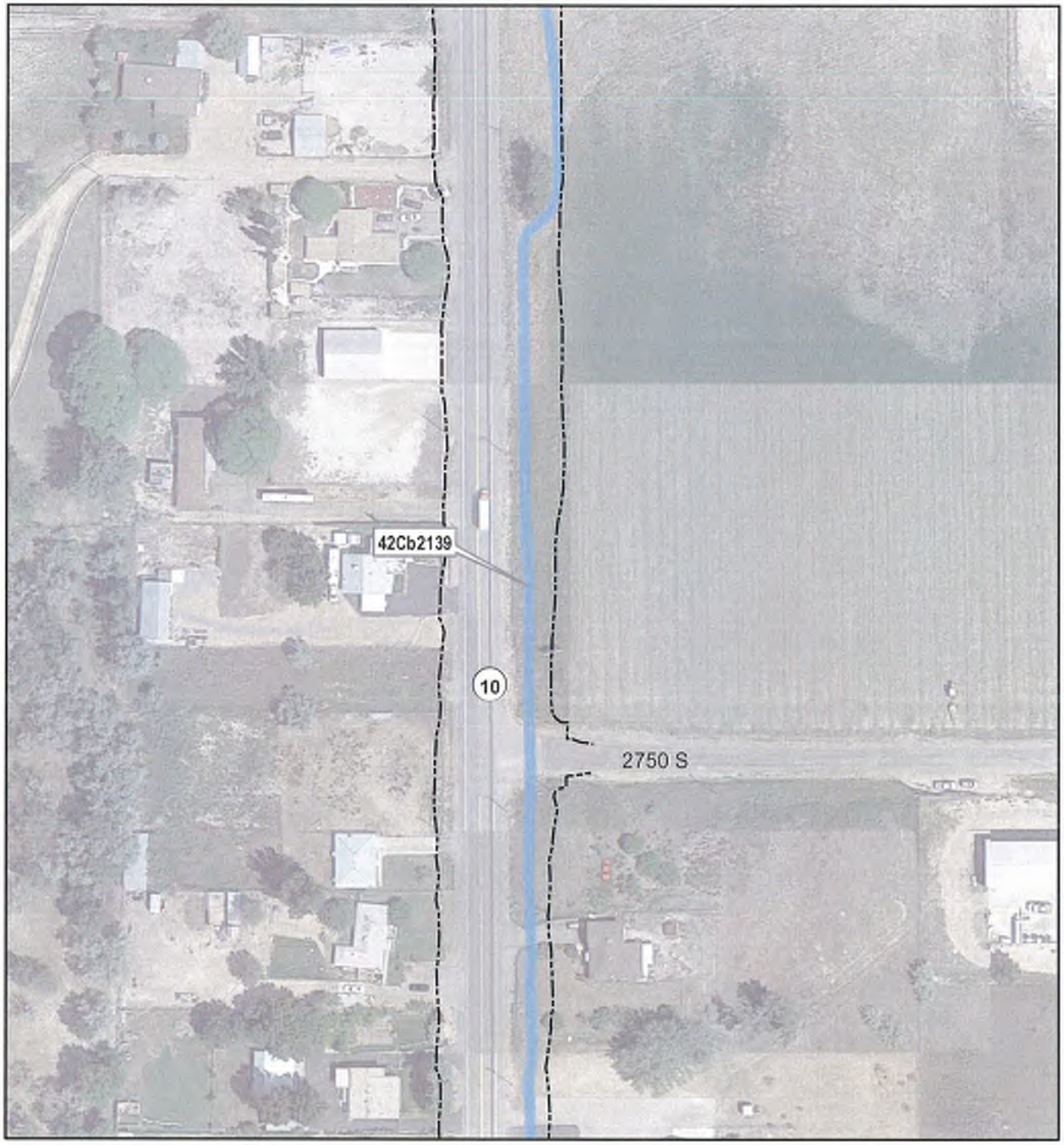
Archaeological Sites

- Eligible
- Not Eligible
- Cut and Fill Line

0 50 100 150 200
Scale in Feet

N





SR-10; South Price to Ridge Road
Project No.: F-0010(75)66
PIN: 13664

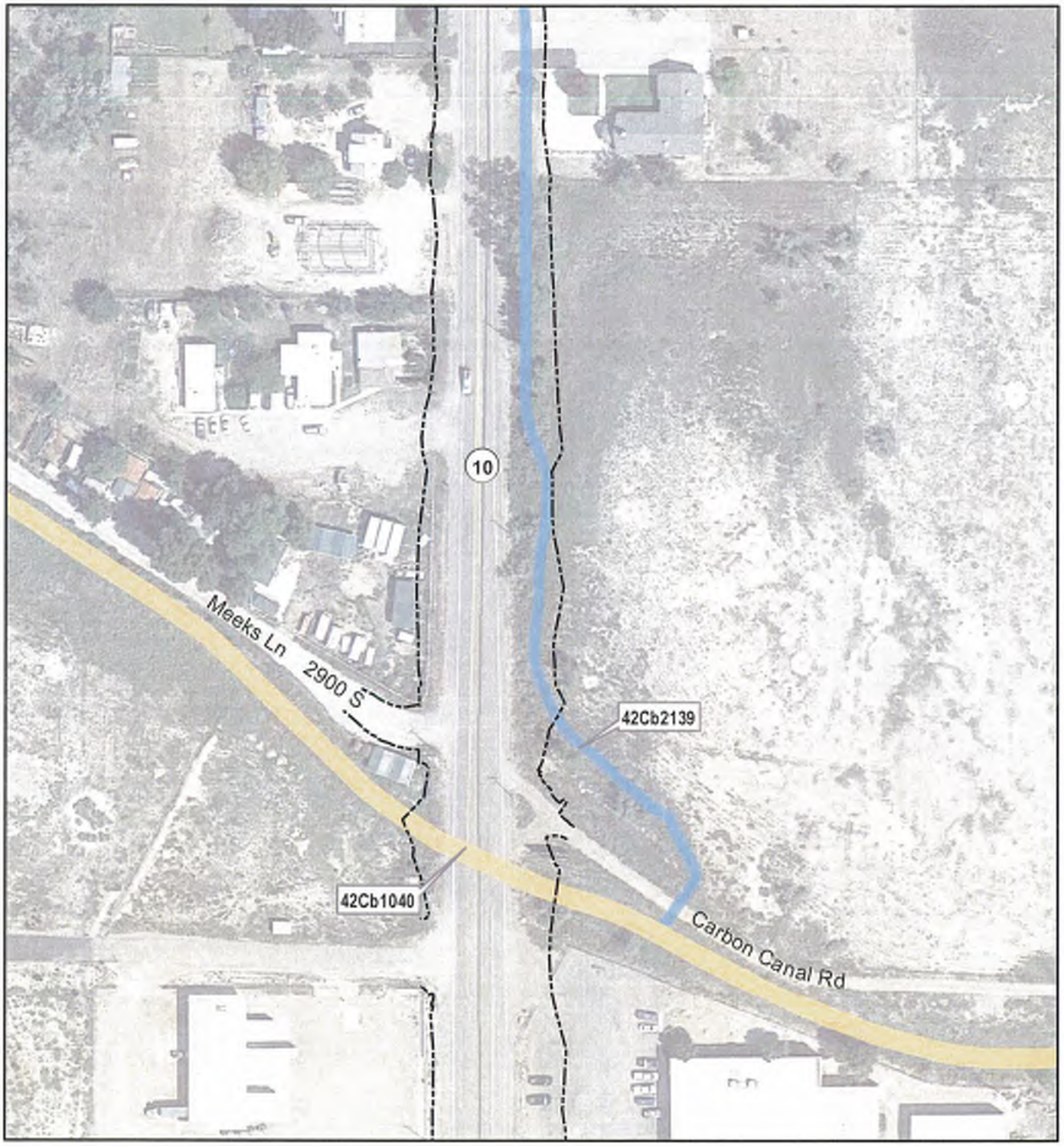
Figure 26

Archaeological Sites

- Eligible
- Not Eligible
- Cut and Fill Line

0 50 100 150 200
Scale in Feet

N



SR-10; South Price to Ridge Road
Project No.: F-0010(75)66
PIN: 13664

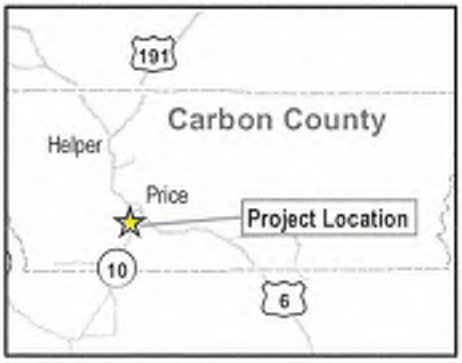
Figure 27

Archaeological Sites

- Eligible
- Not Eligible
- Cut and Fill Line

0 50 100 150 200
Scale in Feet

N



SR-10; South Price to Ridge Road
Project No.: F-0010(75)66
PIN: 13664

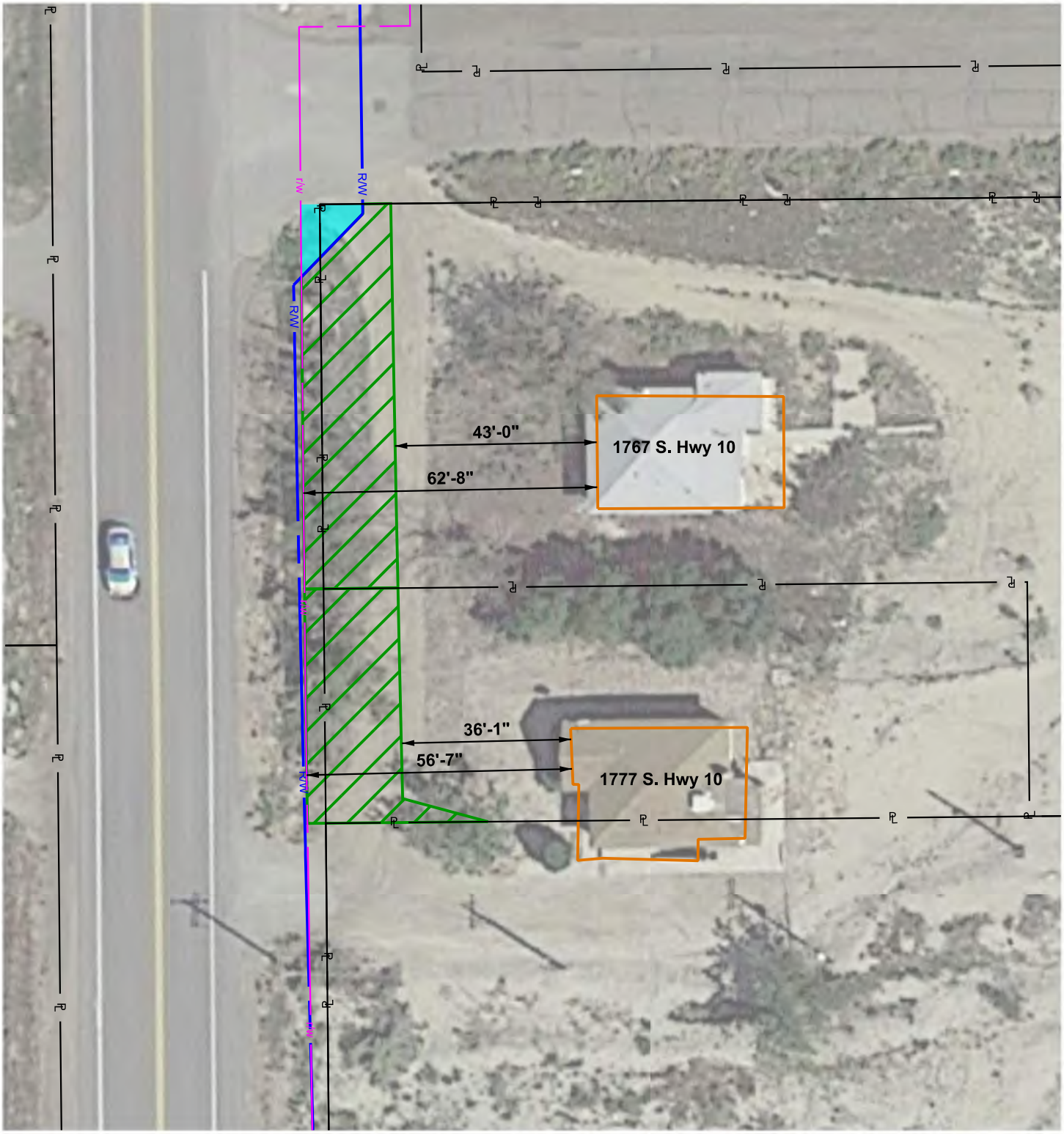
Figure 28

Archaeological Sites

- Eligible
- Not Eligible
- Cut and Fill Line

0 50 100 150 200
Scale in Feet

N



SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

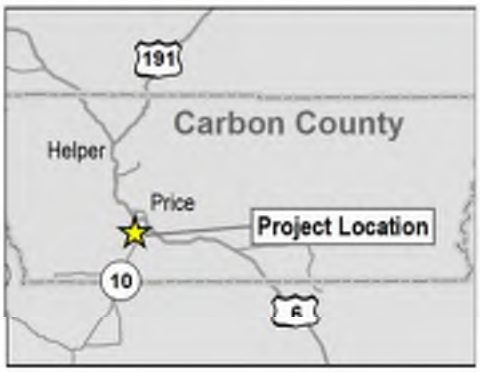
Figure 1

1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line



SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

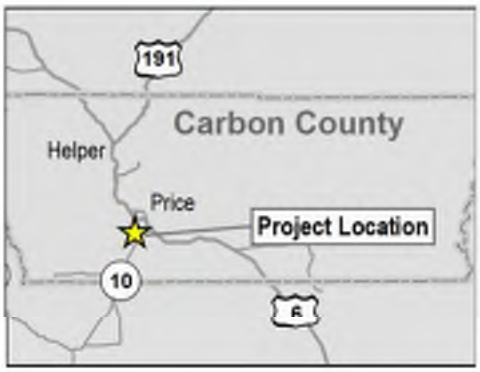
Figure 2

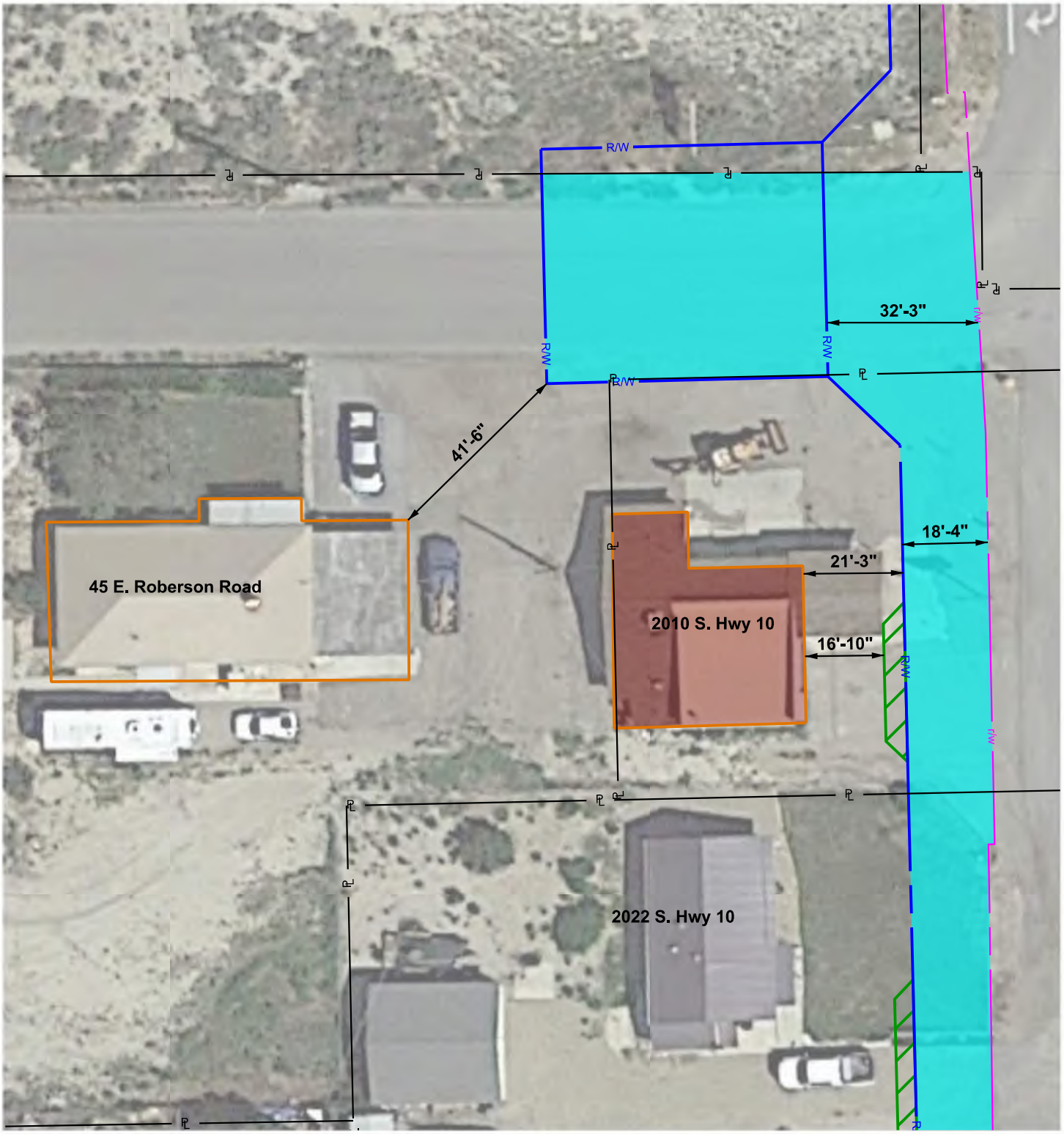
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

N

0 10 20 30 40 50
Scale In Feet

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

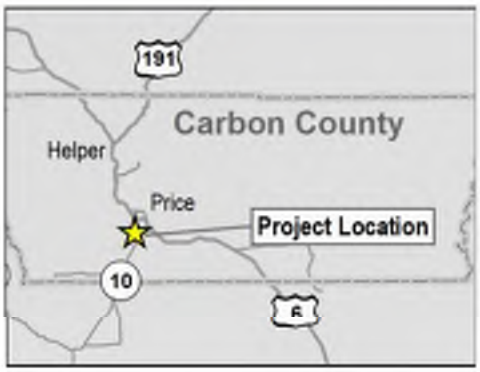
Figure 3

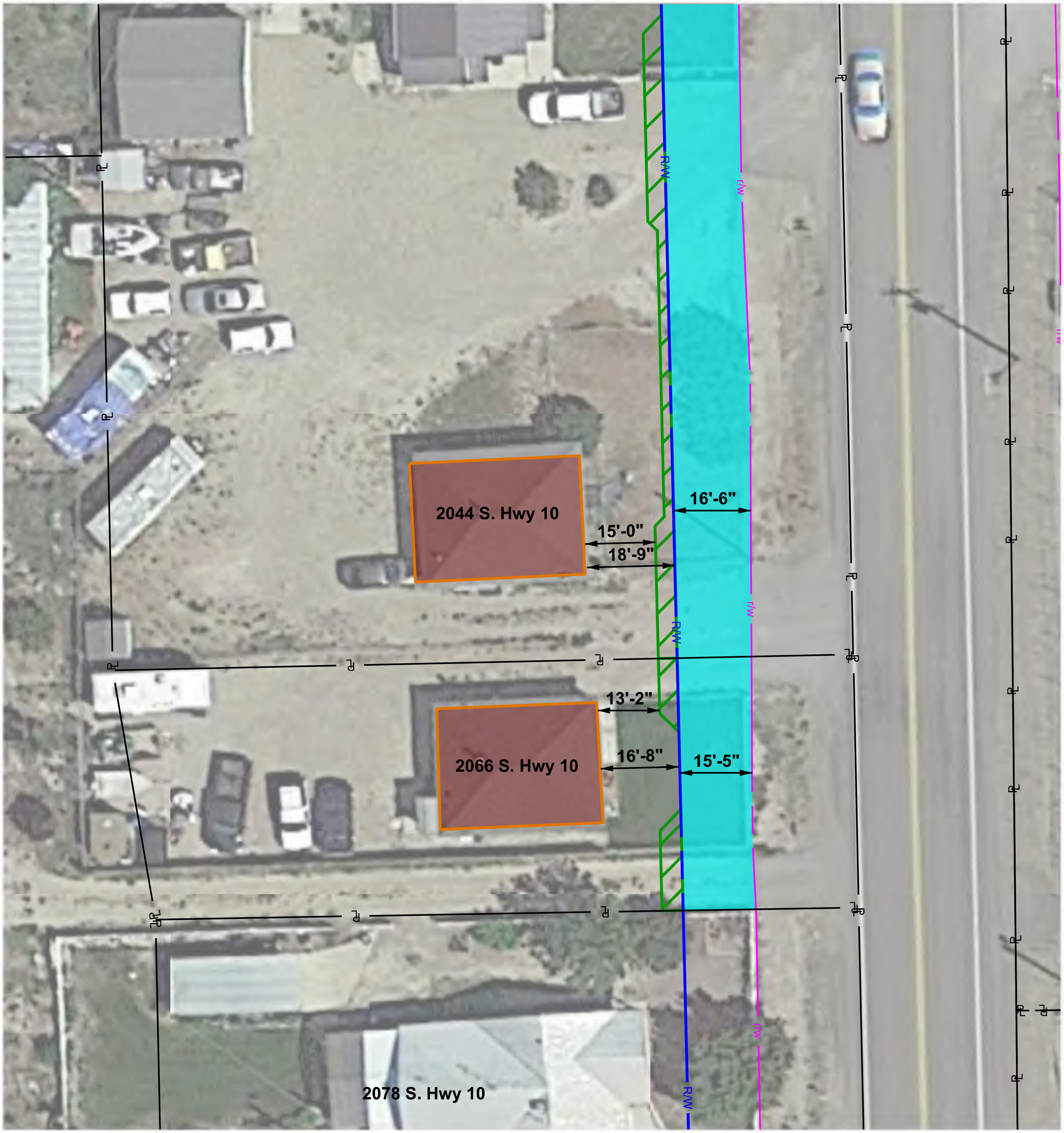
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

Figure 4

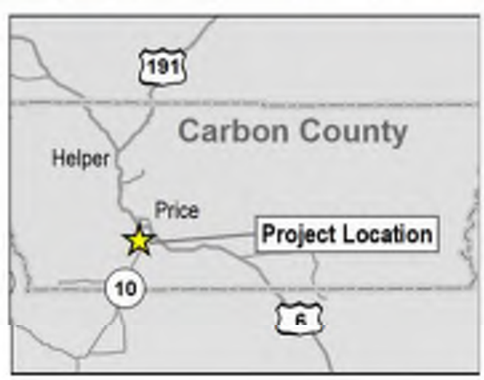
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

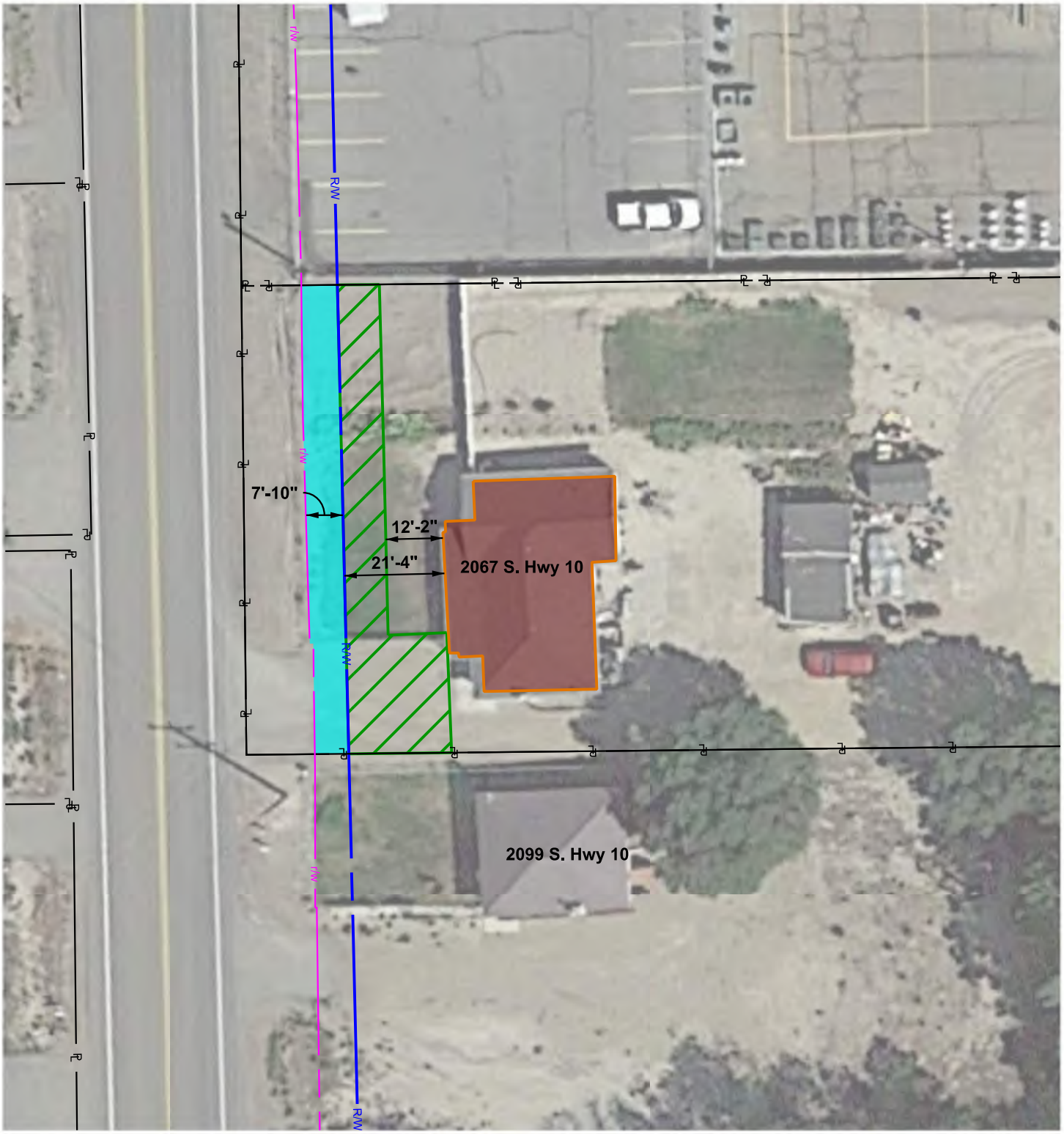
N

0 10 20 30 40 50

Scale In Feet

- Partial Acquisition
- Temporary Construction Easement
- Relocation/Full Acquisition
- Eligible Historic Building
- Easement Line
- Proposed Right-of-Way Line
- Existing Right-of-Way Line
- Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

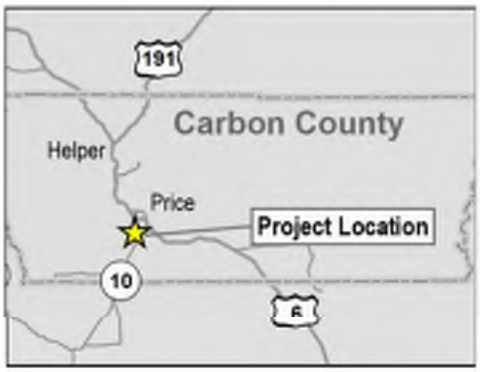
Figure 5

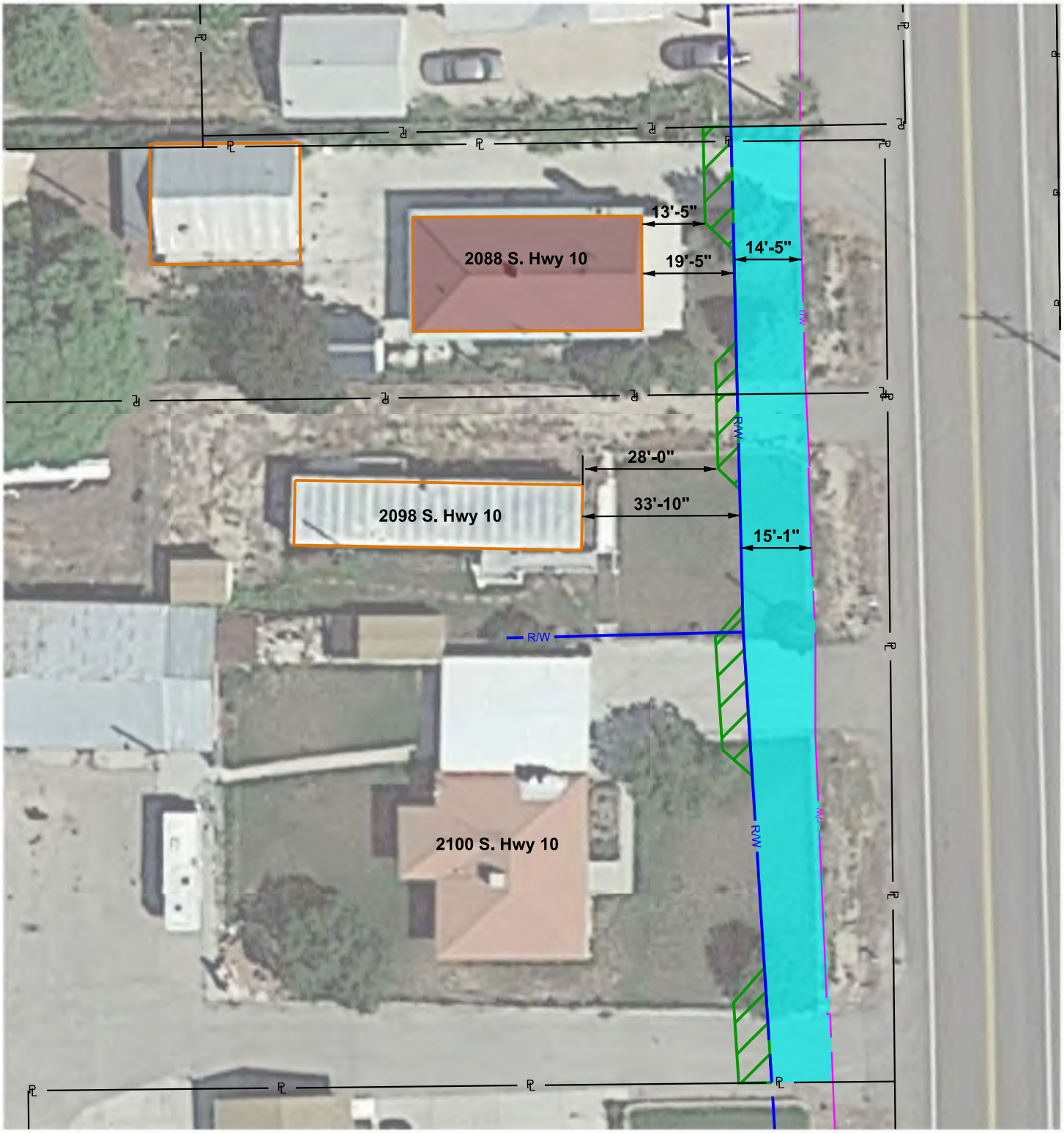
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

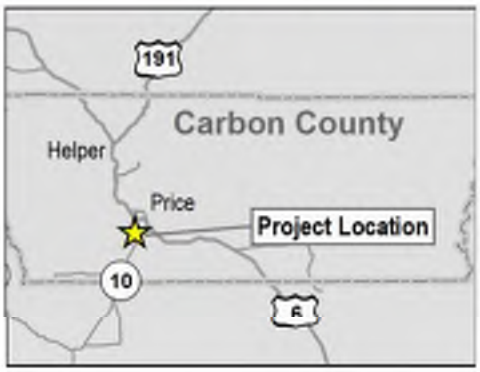
Figure 6

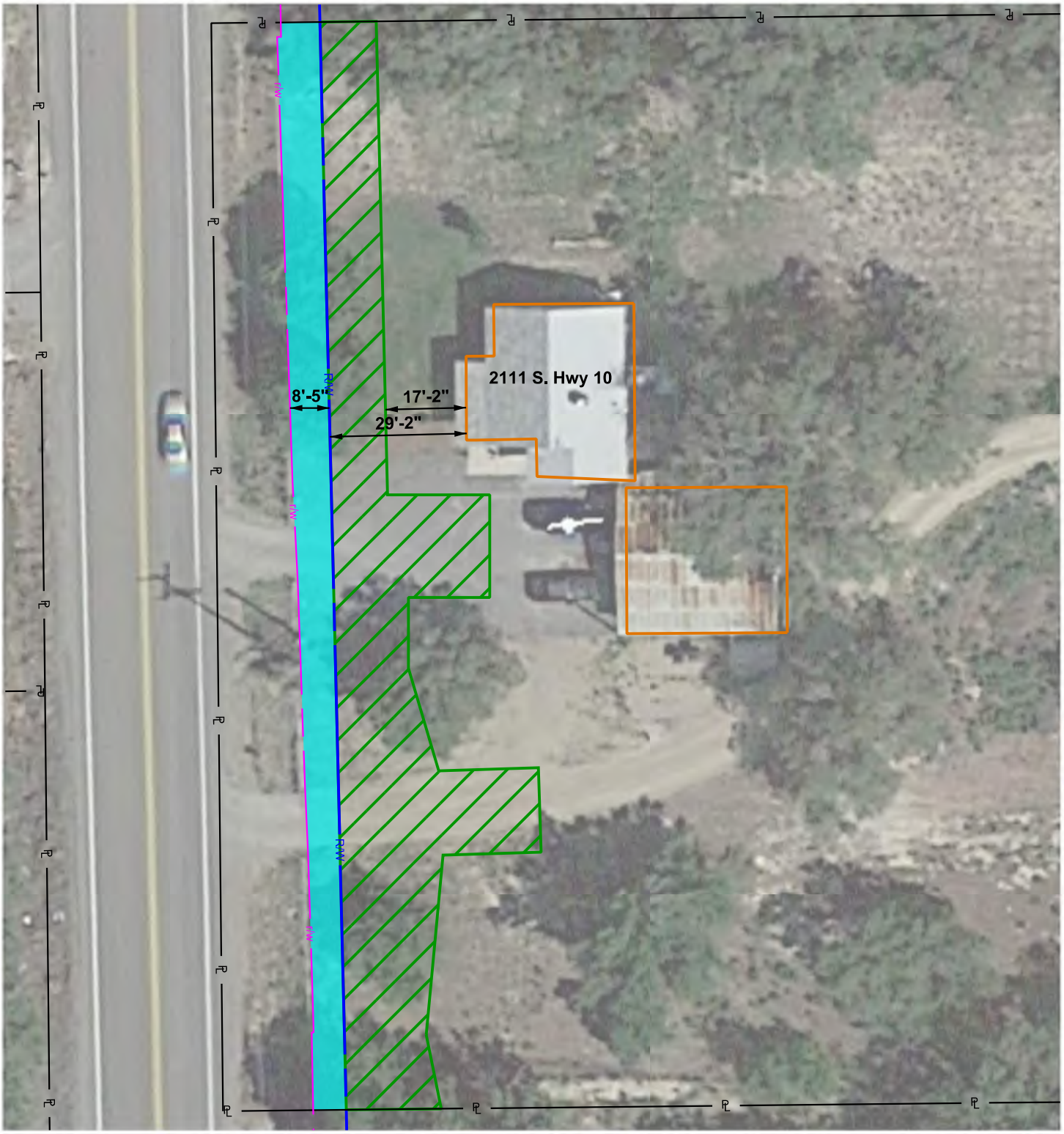
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

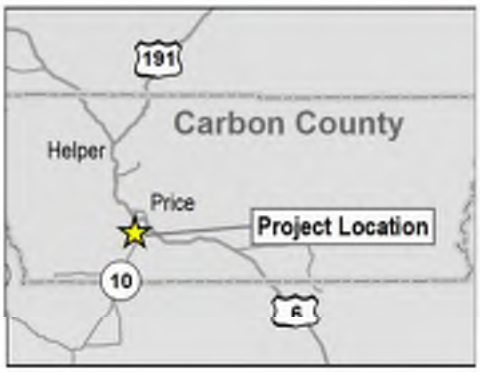
Figure 7

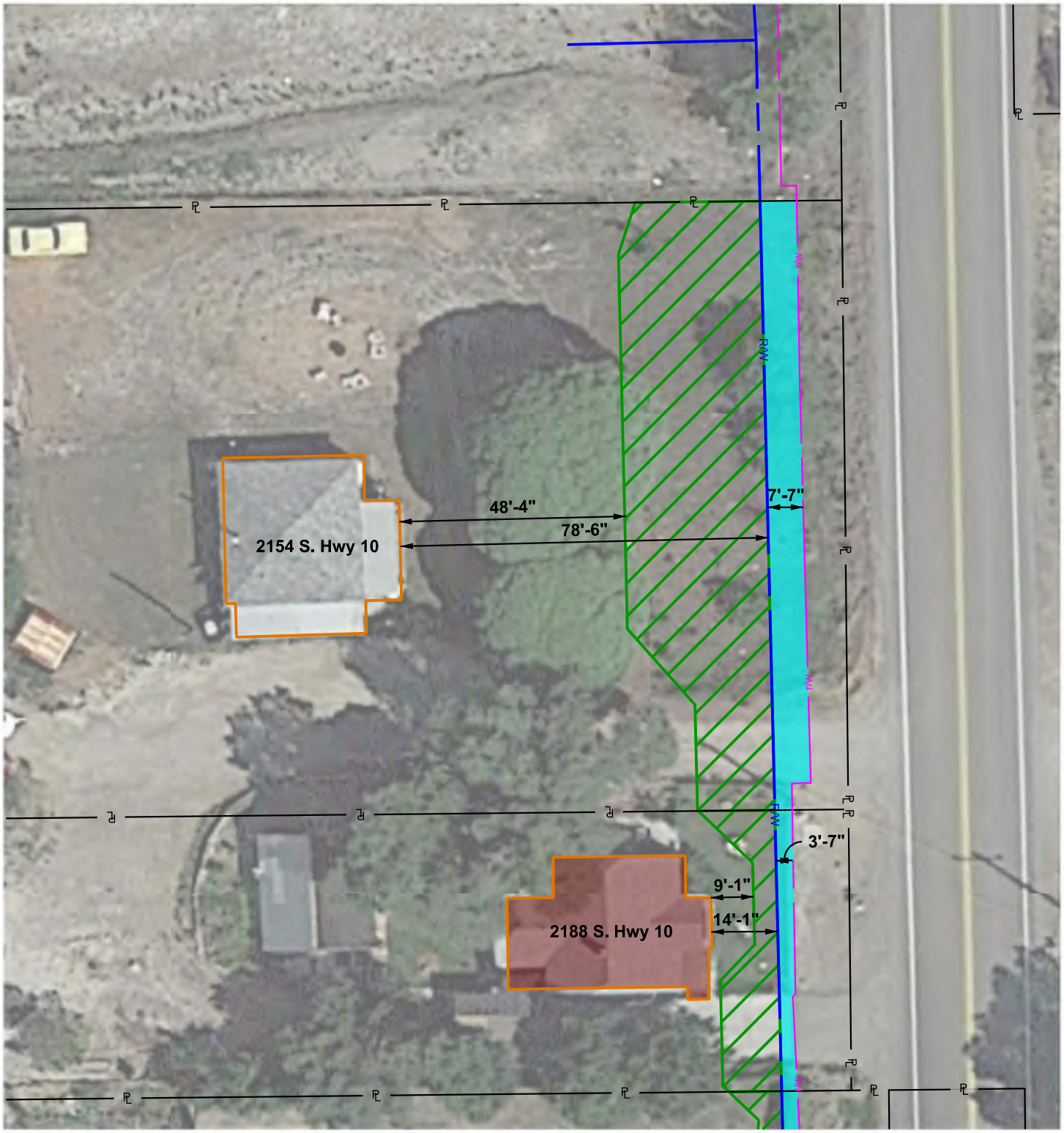
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

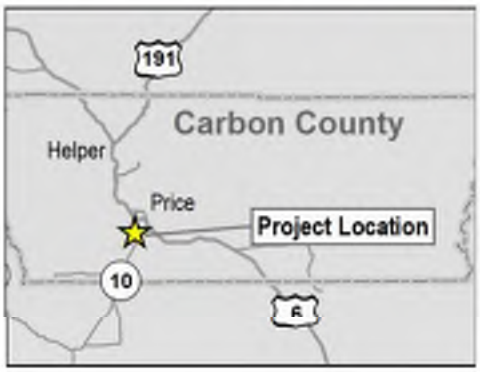
Figure 8

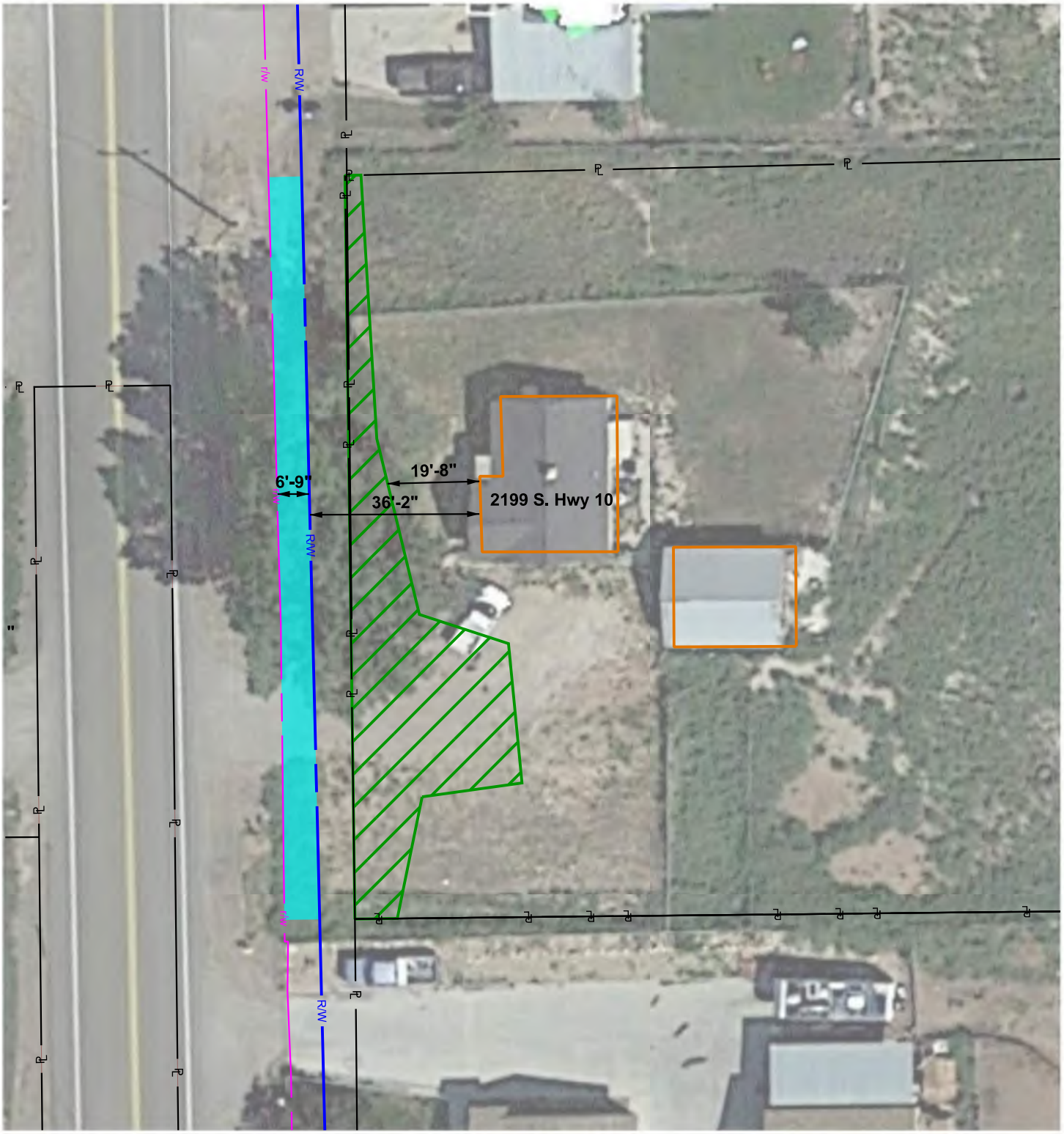
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

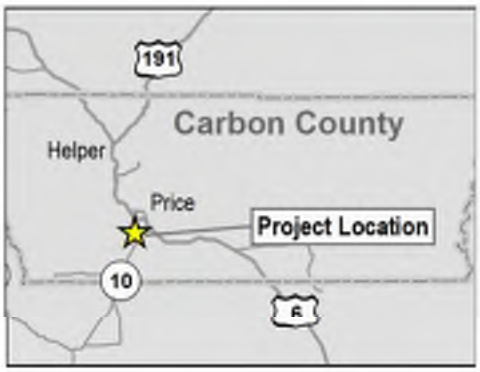
Figure 9

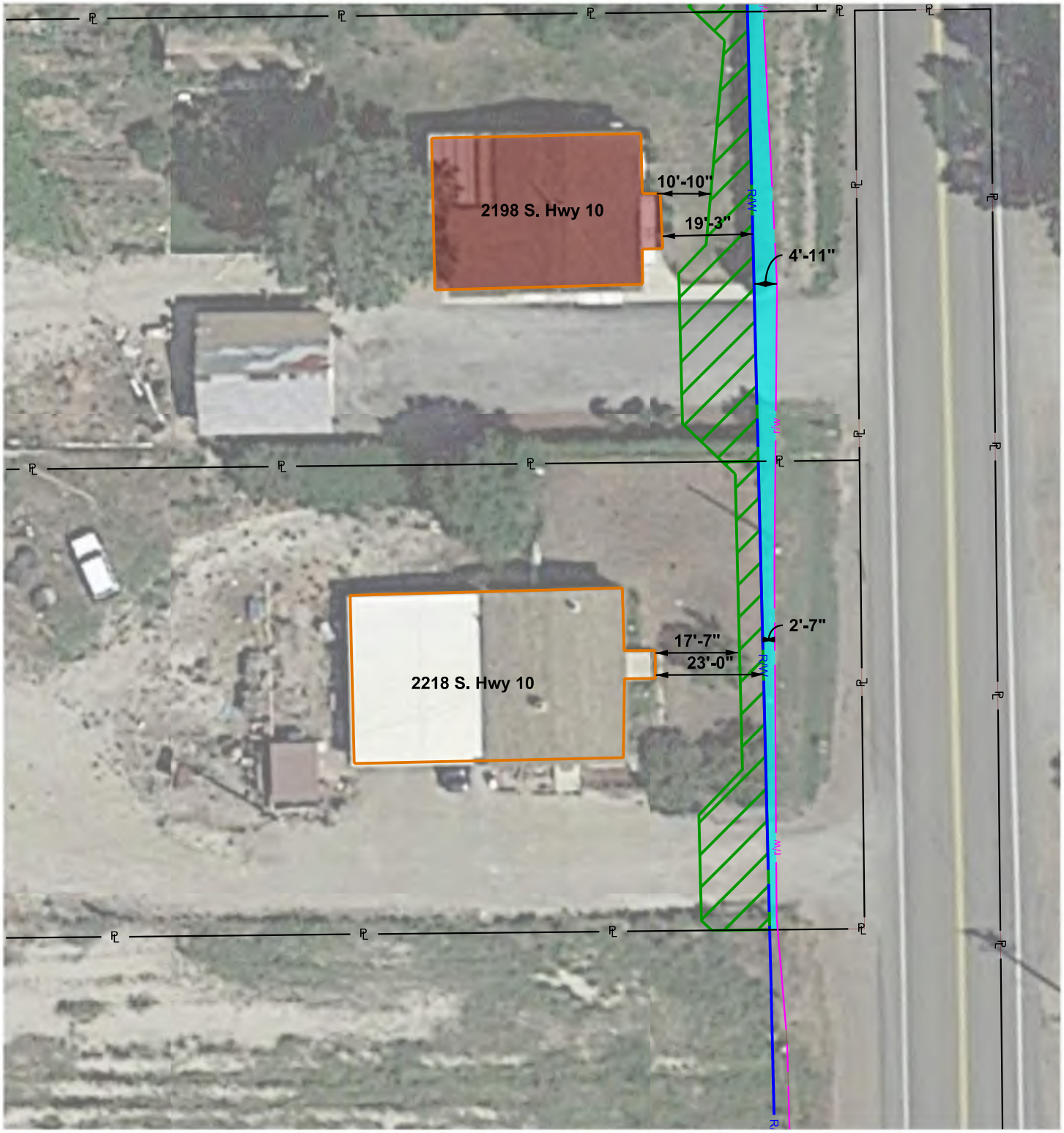
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line

N

0 10 20 30 40 50
Scale In Feet





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

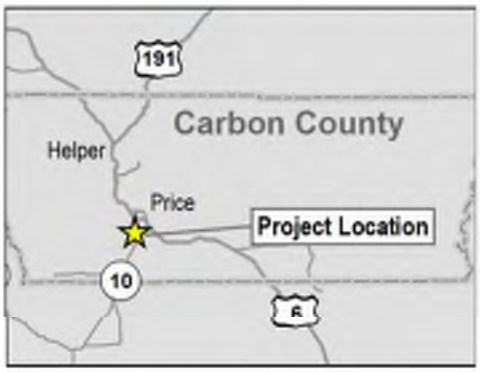
Figure 10

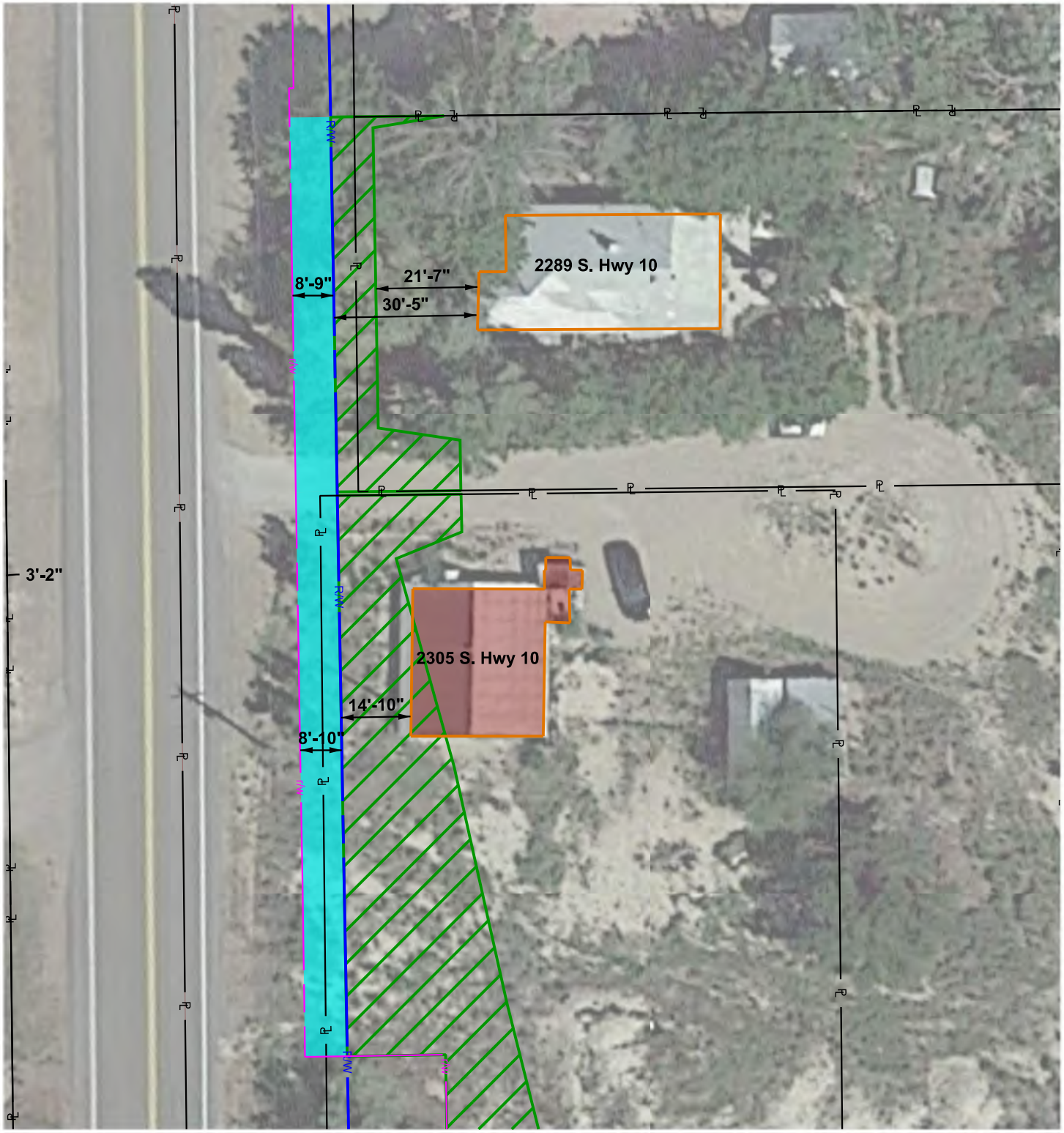
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

N

0 10 20 30 40 50
Scale In Feet

- Partial Acquisition
- Temporary Construction Easement
- Relocation/Full Acquisition
- Eligible Historic Building
- Easement Line
- Proposed Right-of-Way Line
- Existing Right-of-Way Line
- Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

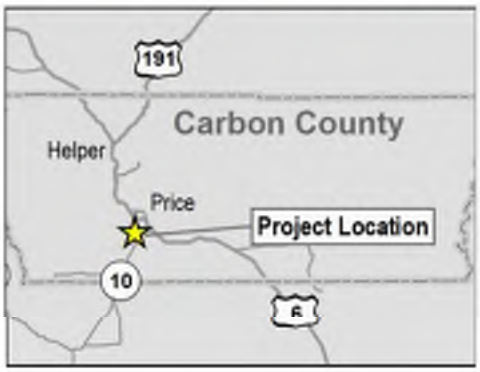
Figure 11

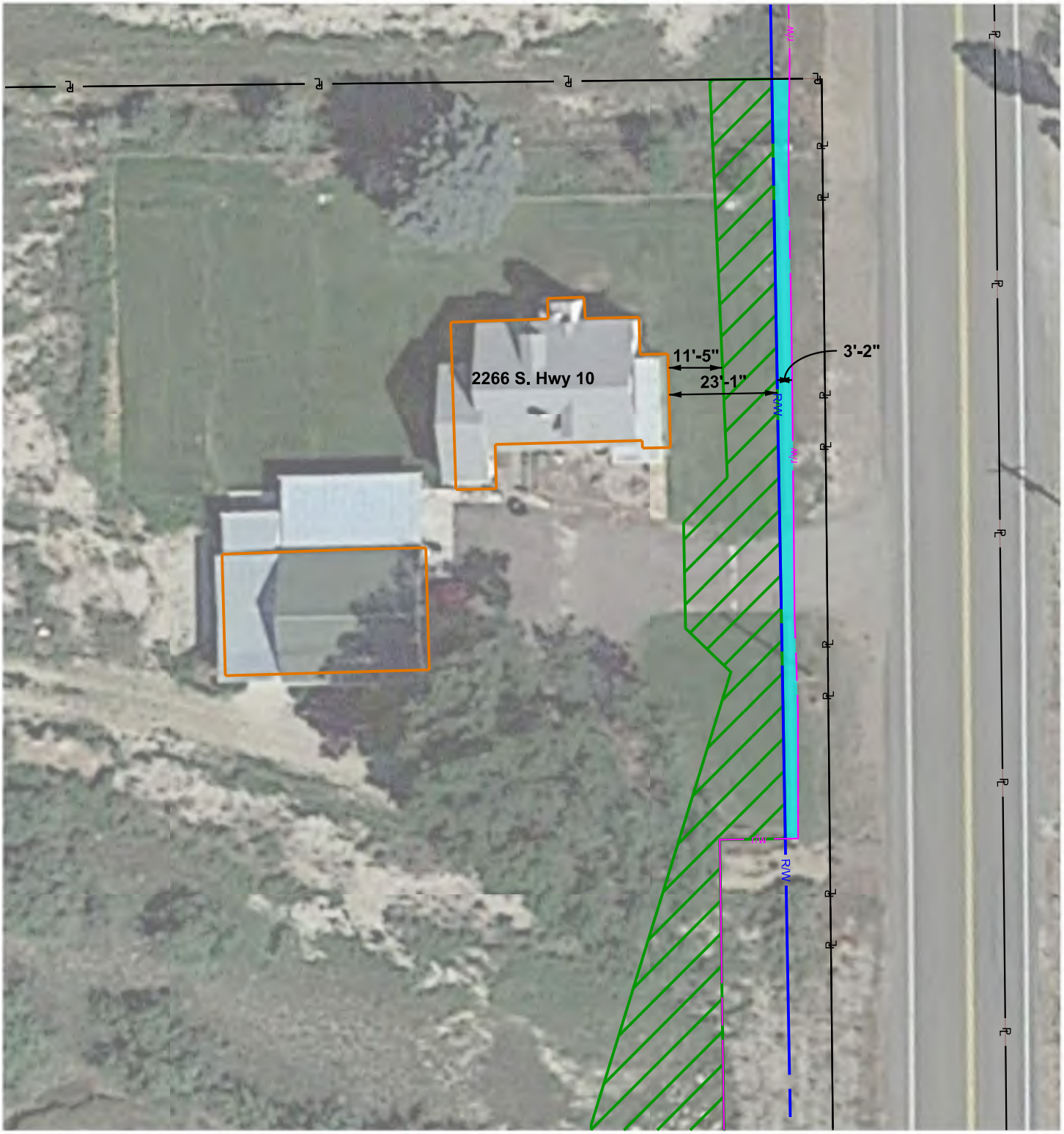
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

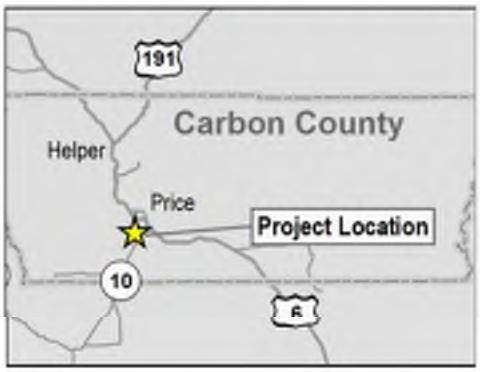
Figure 12

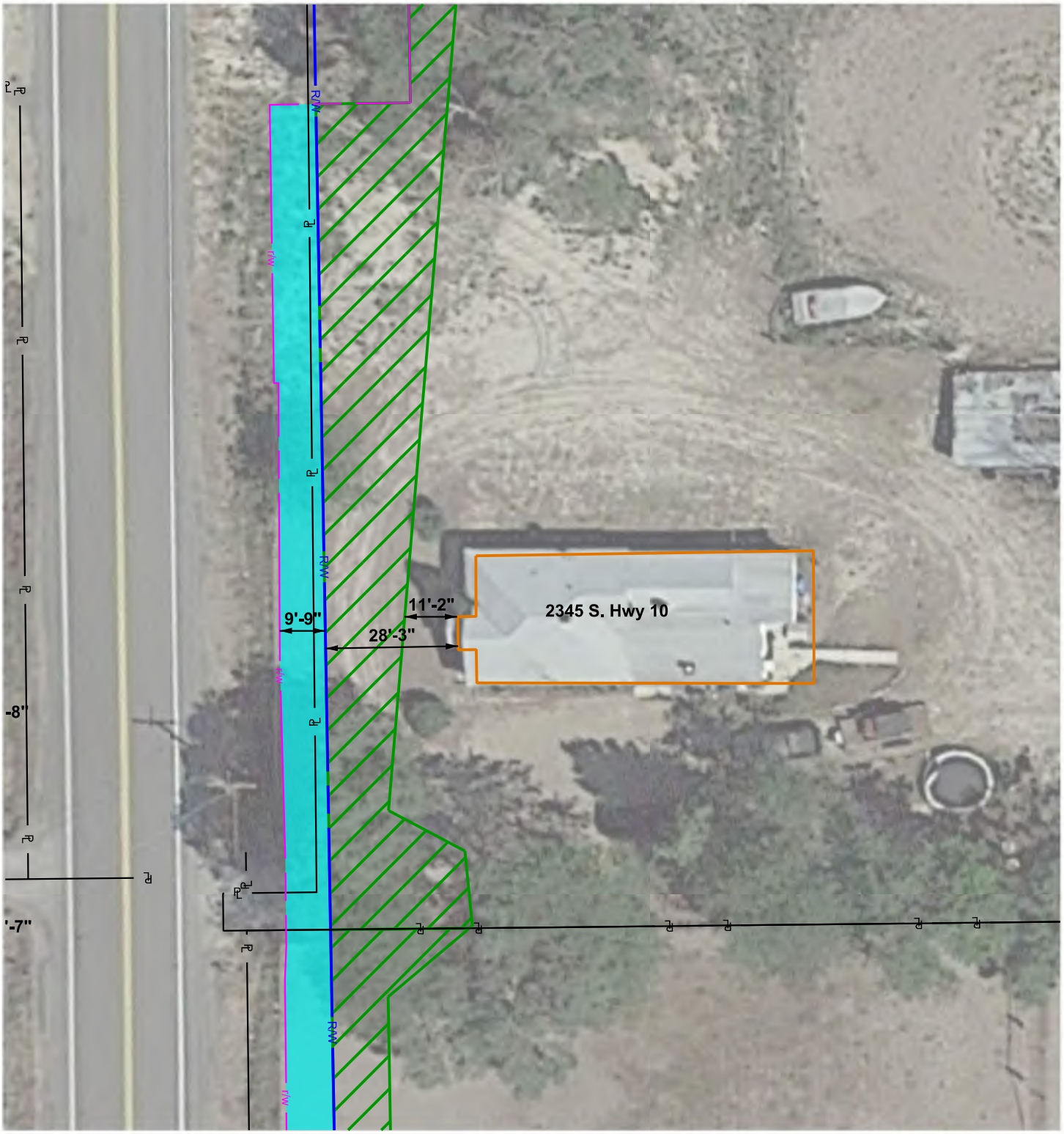
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

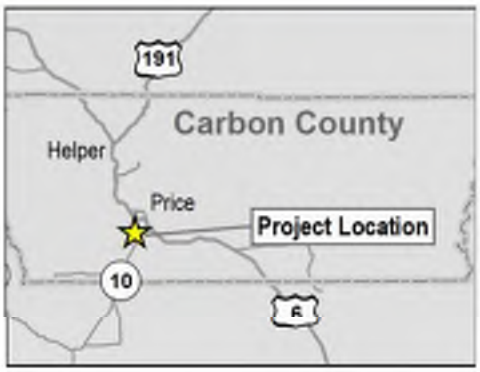
Figure 13

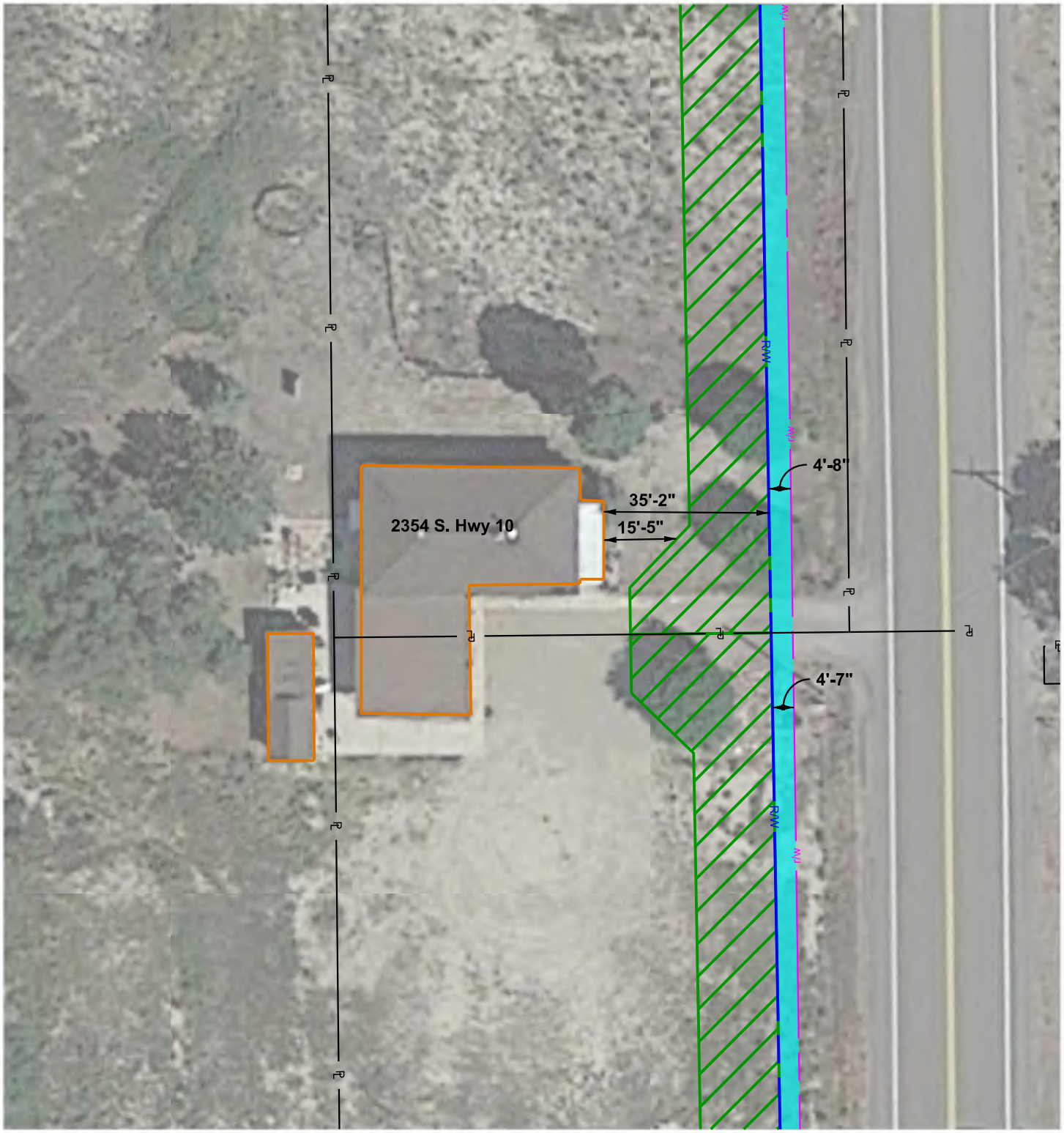
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

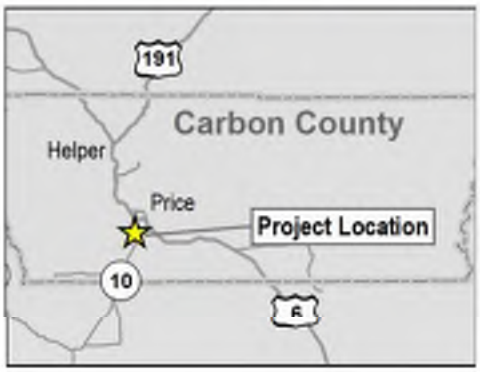
Figure 14

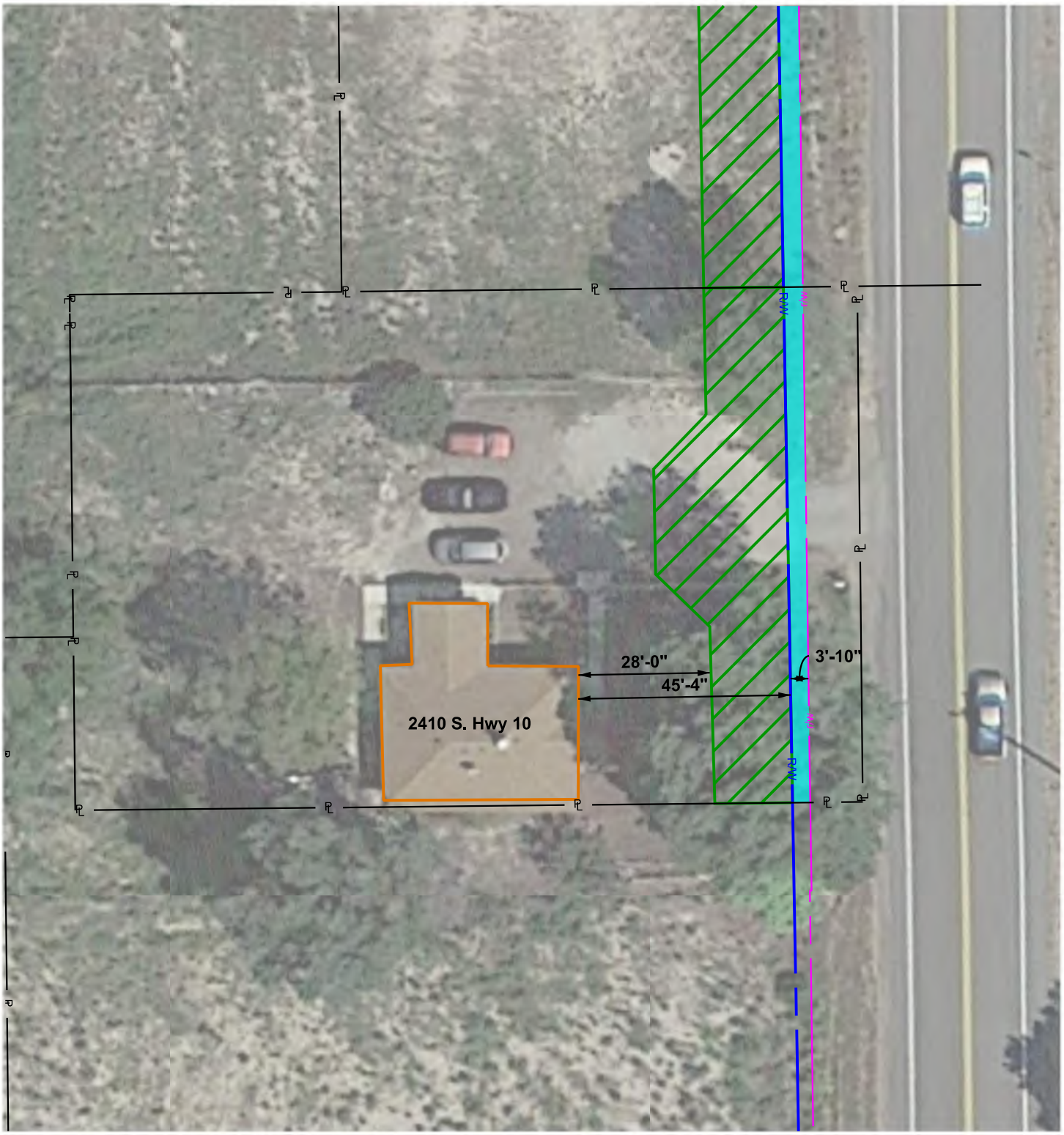
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

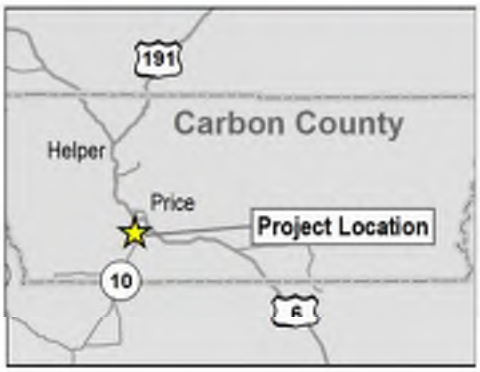
Figure 15

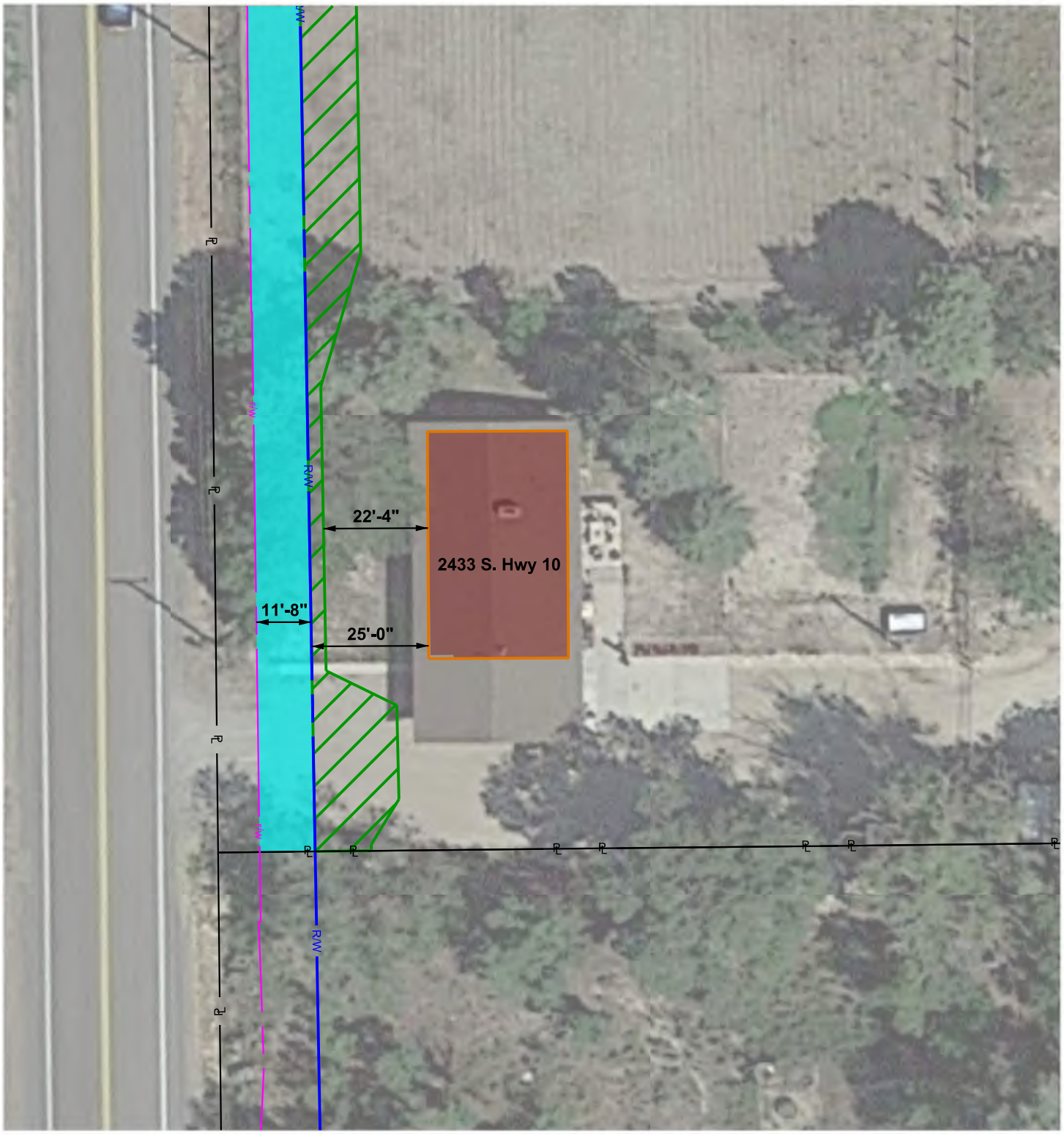
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

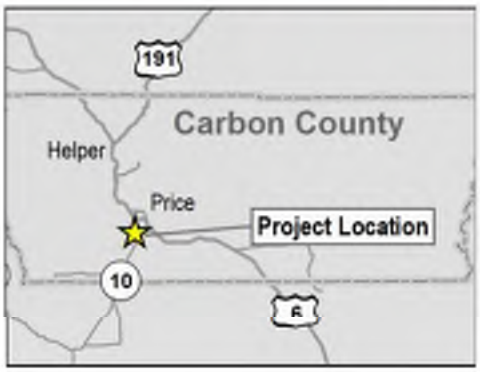
Figure 16

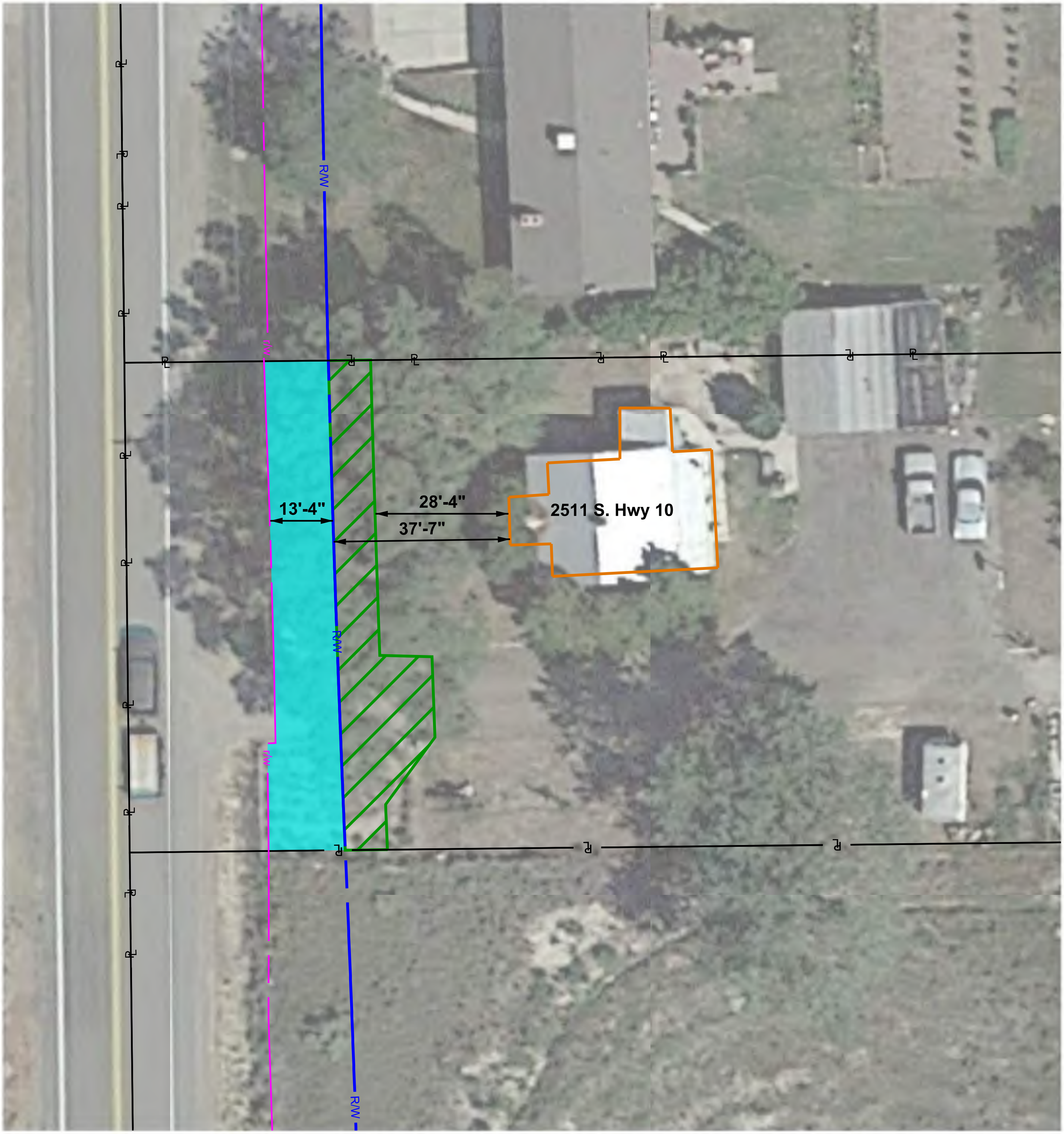
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line

N

0 10 20 30 40 50
Scale In Feet





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

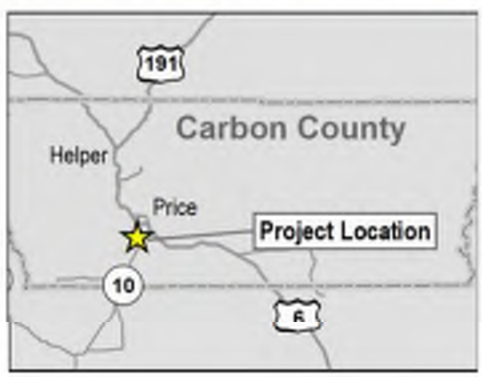
Figure 17

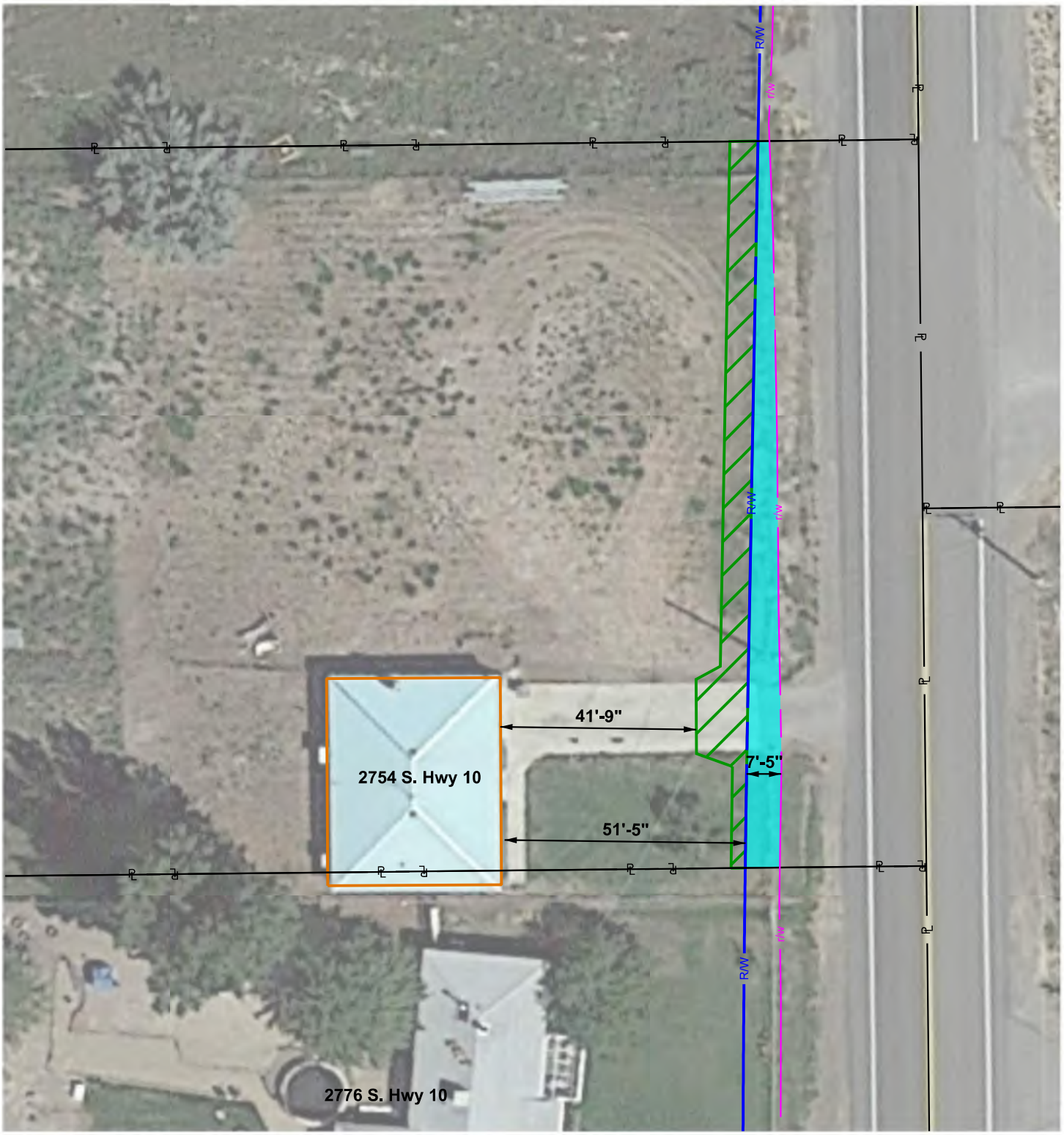
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

- Partial Acquisition
- Temporary Construction Easement
- Relocation/Full Acquisition
- Eligible Historic Building
- Easement Line
- Proposed Right-of-Way Line
- Existing Right-of-Way Line
- Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

Figure 18

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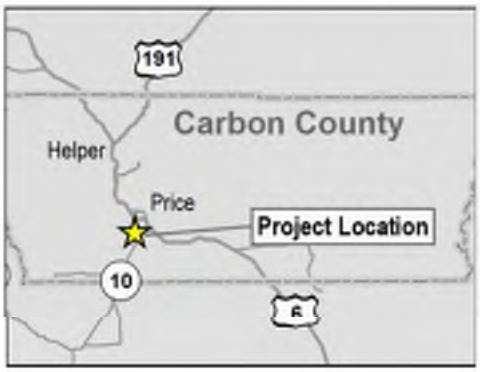
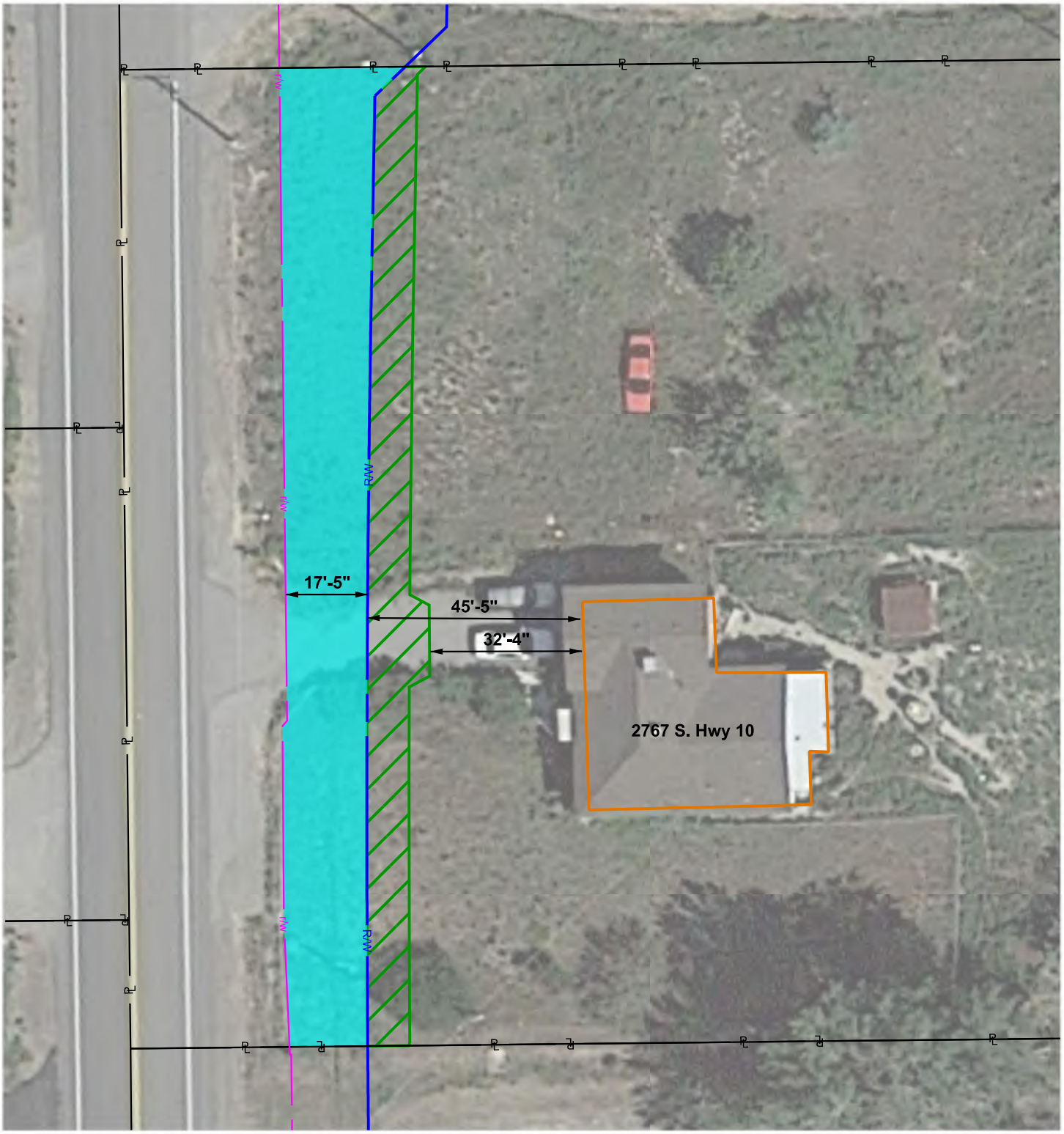
0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

Figure 19

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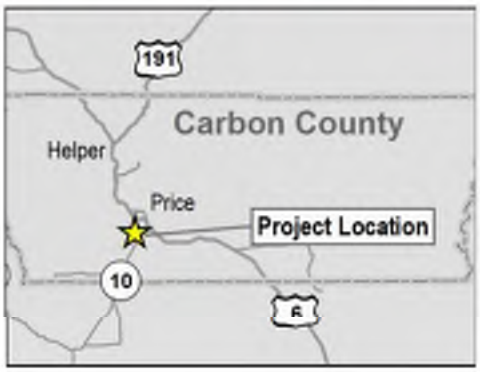
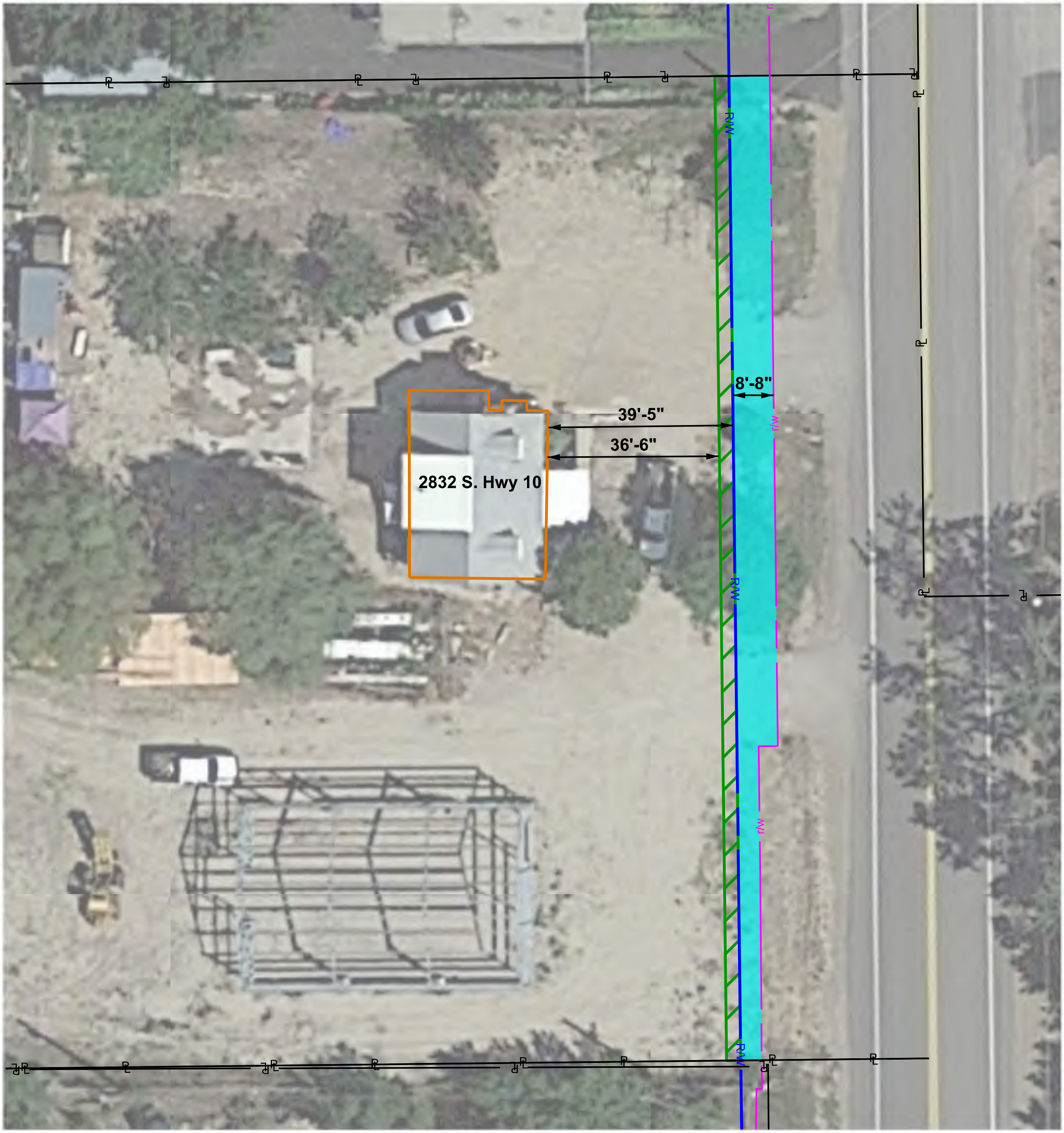
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

Figure 20

1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

N

0 10 20 30 40 50

Scale In Feet

- Partial Acquisition
- Temporary Construction Easement
- Relocation/Full Acquisition
- Eligible Historic Building
- Easement Line
- Proposed Right-of-Way Line
- Existing Right-of-Way Line
- Property Line

Preserving America's Heritage

October 24, 2016

Ms. Liz Robinson
Cultural Resources Manager
Department of Transportation
Utah Division
4501 South 2700 West
P.O. Box 148450
Salt Lake City, UT 84114

Ref: *Proposed SR-10 Improvements from US-6 to Ridge Road*
Carbon County, Utah
UDOT Project No. F-0010(75)66

Dear Ms. Robinson:

The Advisory Council on Historic Preservation (ACHP) has received your notification and supporting documentation regarding the adverse effects of the referenced undertaking on a property or properties listed or eligible for listing in the National Register of Historic Places. Based upon the information provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of our regulations, "Protection of Historic Properties" (36 CFR Part 800), does not apply to this undertaking. Accordingly, we do not believe that our participation in the consultation to resolve adverse effects is needed. However, if we receive a request for participation from the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO), affected Indian tribe, a consulting party, or other party, we may reconsider this decision. Additionally, should circumstances change, and it is determined that our participation is needed to conclude the consultation process, please notify us.

Pursuant to 36 CFR §800.6(b)(1)(iv), you will need to file the final Memorandum of Agreement (MOA), developed in consultation with the Utah State Historic Preservation Office (SHPO), and any other consulting parties, and related documentation with the ACHP at the conclusion of the consultation process. The filing of the MOA, and supporting documentation with the ACHP is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with the notification of adverse effect. If you have any questions or require further assistance, please contact MaryAnn Naber at 202-517- 0218 or via e-mail at mnaber@achp.gov.

Sincerely,

LaShavio Johnson

LaShavio Johnson
Historic Preservation Technician
Office of Federal Agency Programs

Appendix E

Contents:

UDOT Wildlife Biologist Clearance Memo

Memorandum

To: Andrea Clayton, P.E. Project Manager
Lochner Engineers

From: Paul W. West, Wildlife Program Manager
UDOT, Environmental Services

P.W.W.

Date: December 8, 2015

Re: F-0010(75)66 – SR-10; U.S. 6 to Ridge Road, Carbon County (PIN 13664)

CC: Brandon Weston – UDOT, Environmental Services
Randall Taylor – UDOT, Region 4
Eric Hansen – UDOT, Region 4
Ashley Green – UDWR, Headquarters
Daniel Eddington – UDWR, Southeastern Region
Makeda Hanson – UDWR, Southeastern Region
Lloyd Neeley – UDOT, Maintenance

Encls:

I understand that the Utah Department of Transportation (UDOT) is proposing to construct improvements to SR-10 south of Price, in Carbon County, Utah. The project extends from approximately M.P. 65.4 to 67.5 (see location map). This project could potentially include the following elements:

- Widening to accommodate a center turn lane
- Adding curb, gutter and sidewalk in areas where there is a need to serve pedestrians
- Extending or replacing pipe and box culverts
- Lowering the profile at the vertical curve near M.P. 67
- Adding turn lanes at critical intersections

A review of the 2015 Utah Division of Wildlife Resources, Utah Natural Heritage Program (UDWR/UNHP) database indicates that no federally listed, threatened, endangered or candidate species, or any critical habitat would be affected by this project.

In accordance with the U.S. Fish and Wildlife Service memo dated January 27, 2006, they do not issue concurrence letters for “no-effect” determinations. Therefore, this memo is being issued in-lieu of their concurrence for your environmental documentation.

In addition, I have evaluated the above-referenced project with regard to wildlife issues as required in the UDOT Environmental Study Form.

Based on the UDWR/UNHP 2015 database and Greater Sage Grouse 2015 mapping, UDOT's 2015 Utah Wildlife-Vehicle Collision Reporter, and UDOT's Wildlife Connectivity 2007 database, it is my opinion that this project should not negatively affect state-sensitive species, important wildlife habitat, big game migration routes, habitat connectivity, migratory birds, fish spawning habitat, or fish passage.

If you have any questions, please call me at (801) 633-8747, or email me at paulwest@utah.gov.

Northern Project Limit

MP 67.5

Price

RIVERSIDE DR

Drunkard's Wash

1760 S

1800 S

1850 S

2000 S

10

500 W

160 E

2750 S

2900 S

3000 S

500 E

INDUSTRIAL PARK RD

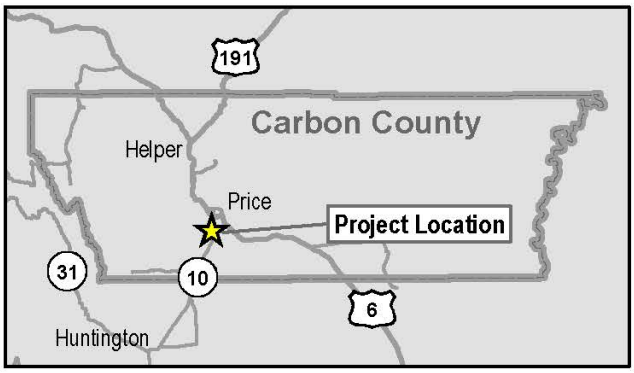
Southern Project Limit

MP 65.4

SR-10; South Price to Ridge Road
Project No.: F-0010(75)66
PIN: 13664

0 1,000 2,000 3,000 Feet

N



Appendix F

Contents:

Noise Assessment

Noise Assessment

SR-10; South Price to Ridge Road

PIN 13664

Carbon County, Utah

April 2016

Prepared by:

LOCHNER

1245 East Brickyard Road, Ste. 400
Salt Lake City, UT 84106

Prepared for:

UDOT Keeping Utah Moving

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Appendix C: Traffic Noise Model Results
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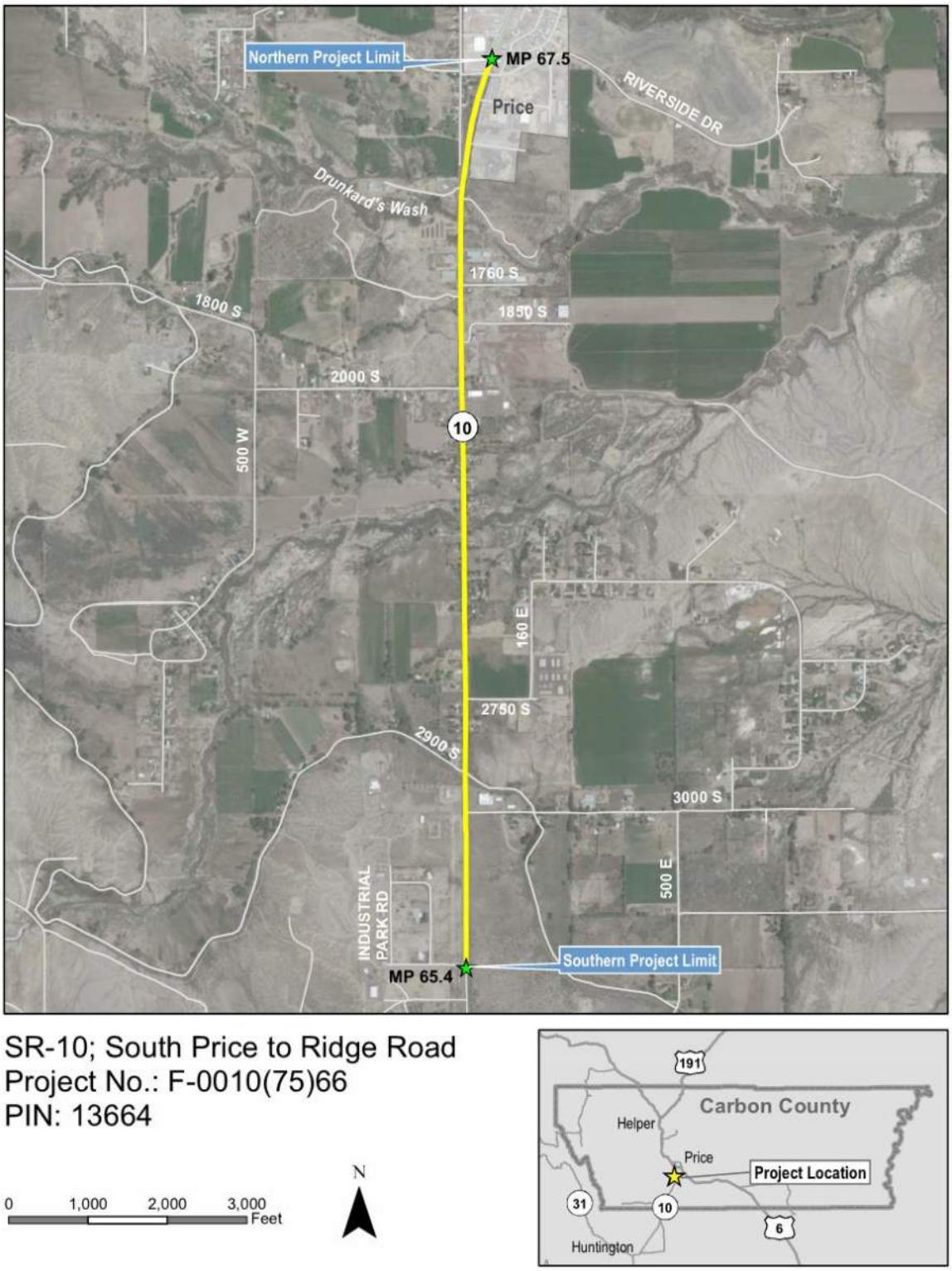
1. INTRODUCTION

This study addresses the traffic-generated noise impacts from the proposed improvement of State Route 10 (SR-10) between South Price and Ridge Road in Carbon County, Utah. The purpose of the project is to improve safety. Crash data shows an increase in crashes along SR-10 as the corridor narrows to two lanes. A three-lane section with wider shoulders would provide additional width to reduce friction and conflict. The project extends from approximately milepost (MP) 65.4 to MP 67.5 and could include widening to provide a center turn lane, the widening of shoulders, addition of curb, gutter and sidewalks, extension or replacement of pipe and box culverts, and the addition of turn lanes at critical intersections. The location of the proposed project is shown in Figure 1.

This project meets the definition of a "Type I Project" as listed in the February 2014 Utah Department of Transportation (UDOT) Noise Abatement Policy (08A2-01) (Policy) primarily because it adds an auxiliary lane to SR-10. Current land use along the project is a mix of residential and commercial. The Policy establishes certain noise level criteria for these different land uses. The purpose of this noise analysis is to determine if the improvements associated with this project will cause noise levels to approach or exceed the criteria, or if there is predicted to be a substantial increase in traffic-generated noise levels due to the improvement.

Construction noise impacts are discussed in Section 7.

Figure 1: Project Overview



2. FUNDAMENTALS OF TRAFFIC NOISE

The following is a brief discussion of fundamental traffic noise concepts.

Sound, Noise and Acoustics

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through the air to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound.

In acoustics, the fundamental model consists of a sound source, a receptor, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receptor determines the sound level and characteristics of the noise perceived by the receptor.

Frequency

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz). For example, a frequency of 250 cycles per second is referred to as 250 Hz. High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

Sound Pressure Levels and Decibels

The amplitude of pressure waves generated by a sound source determines the loudness of that source. Sound pressure amplitude is measured in micro-Pascals (mPa). One mPa is approximately one hundred billionth (0.00000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to 100,000,000 mPa. Because of this huge range of values, sound is rarely expressed in terms of mPa. Instead, a logarithmic scale is used to describe sound pressure level (SPL) in terms of decibels (dB). The threshold of hearing for young people is about 0 dB, which corresponds to 20 mPa.

Addition of Decibels

Because decibels are logarithmic units, SPL cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3 dB increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one vehicle produces 70 dB when it passes an observer, two vehicles passing simultaneously would not produce 140 dB. Instead, they would combine to produce 73 dB.

A-Weighted Decibels

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Although the intensity of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited in the range of audible frequencies as well as in the way it perceives the SPL in that range. People are most sensitive to the frequency range of 1,000–8,000 Hz, and perceive sounds within that range better than sounds of the same amplitude in higher or lower frequencies. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies. Then, an "A-weighted" sound level, or dB(A), can be computed based on this information.

The A-weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments of the relative loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Noise levels for traffic noise reports are typically reported in terms of A-weighted decibels or dB(A). Table 1 describes typical A-weighted noise levels for various noise sources.

Table 1: Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dB(A))	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1000 feet		
	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	**— 70 —**	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	**— 60 —**	
		Large business office
Quiet urban daytime	**— 50 —**	Dishwasher next room
Quiet urban nighttime	**— 40 —**	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	**— 0 —**	Lowest threshold of human hearing

Source: Caltrans 2013

Human Response to Changes in Noise Levels

As discussed above, doubling sound energy results in a 3 dB increase in sound. Under controlled conditions in a laboratory, the trained, healthy human ear is able to discern 1 dB changes in sound levels, when exposed to steady, pure-tone signals in the midfrequency (1,000–8,000 Hz) range. In typical noisy environments, changes in noise of 1 to 2 dB are generally not perceptible. However, it is widely accepted that people are able to begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5 dB increase is generally perceived as a distinctly noticeable increase, and a 10 dB increase is generally perceived as a doubling of loudness. Therefore, a doubling of sound energy, such as by doubling the volume of traffic on a highway, which would result in a 3 dB increase in sound, would generally be perceived as barely detectable.

Noise Descriptors

Noise in the daily environment fluctuates over time. Some fluctuations are minor, but some are substantial. Some noise levels occur in regular patterns, but others are random. Some noise levels fluctuate rapidly, but others slowly. Some noise levels vary widely, but others are relatively constant. Various noise descriptors have been developed to describe time-varying noise levels. The following are the noise descriptors most commonly used in traffic noise analysis:

- **Equivalent Sound Level (Leq):** Leq represents an average of the sound energy occurring over a specified period. In effect, Leq is the steady-state sound level containing the same acoustical energy as the time-varying sound that actually occurs during the same period. The 1-hour A-weighted equivalent sound level (Leq[h]) is the energy average of A-weighted sound levels occurring during a one-hour period, and is the basis for Noise Abatement Criteria (NAC) used by UDOT and the Federal Highway Administration (FHWA).
- **Percentile-Exceeded Sound Level (Lxx):** Lxx represents the sound level exceeded for a given percentage of a specified period (e.g., L10 is the sound level exceeded 10 percent of the time, and L90 is the sound level exceeded 90 percent of the time).
- **Maximum Sound Level (Lmax):** Lmax is the highest instantaneous sound level measured during a specified period.
- **Day-Night Level (Ldn):** Ldn is the energy average of A-weighted sound levels occurring over a 24-hour period, with a 10 dB penalty applied to A-weighted sound levels occurring during nighttime hours between 10 p.m. and 7 a.m.
- **Community Noise Equivalent Level (CNEL):** Similar to Ldn, CNEL is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10 dB penalty applied to A-weighted sound levels occurring during the nighttime hours between 10 p.m. and 7 a.m., and a 5 dB penalty applied to the A-weighted sound levels occurring during evening hours between 7 p.m. and 10 p.m.

Sound Propagation

When sound propagates over a distance, it changes in level and frequency content. The manner in which noise reduces with distance depends on the following factors.

Geometric Spreading

Sound from a localized source (i.e., a point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point source. Highways consist of several localized noise sources on a defined path, and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source.

Ground Absorption

The propagation path of noise from a highway to a receptor is usually very close to the ground. Noise attenuation from ground absorption and reflective-wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 feet. For acoustically hard sites, such as sites with a reflective surface between the source and the receptor, such as a parking lot or body of water, no excess ground attenuation is assumed. For acoustically absorptive or soft sites such as soft dirt, grass, or scattered bushes and trees, an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance.

Atmospheric Effects

Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (more than 500 feet) from the highway due to atmospheric temperature inversion when temperatures increase with elevation. Other factors such as air temperature, humidity, and turbulence can also have significant effects.

Shielding by Natural or Human-Made Features

A large object or barrier in the path between a noise source and a receptor can substantially attenuate noise levels at the receptor. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features, such as hills and dense woods, and human-made features such as buildings and walls, can substantially reduce noise levels. Walls are often constructed between a source and a receptor specifically to reduce noise. A barrier that breaks the line of sight between a source and a receptor will typically result in at least 5 dB of noise reduction. Taller barriers provide increased

noise reduction. Vegetation between the highway and receptor is rarely effective in reducing noise because it does not create a solid barrier.

3. FEDERAL REGULATIONS AND STATE POLICIES

This noise report has been assessed in accordance with federal regulations (Title 23 of the Code of Federal Regulations (CFR) Part 772) and state policy (February 2014 UDOT Noise Abatement Policy (08A2-01)).

Federal Regulations

23 CFR 772

Under 23 CFR 772, procedures are provided for preparing operational and construction noise studies and evaluating noise abatement considered for federal and federal-aid highway projects. Per 23 CFR 772.7, projects are categorized as Type I, Type II, or Type III projects.

FHWA defines a Type I project as a proposed federal or federal-aid highway project for the construction of a highway on a new location or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment of the highway. The following projects are also considered to be Type I projects:

- The addition of a through-traffic lane(s). This includes the addition of a through-traffic lane that functions as a high-occupancy vehicle lane, high-occupancy toll lane, bus lane, or truck climbing lane.
- The addition of an auxiliary lane, except when the auxiliary lane is a turn lane.
- The addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange.
- Restriping existing pavement for the purpose of adding a through-traffic lane or an auxiliary lane.
- The addition of a new or substantial alteration of a weigh station, rest stop, ride-share lot, or toll plaza.

If a project is determined to be a Type I project under this definition, the entire project area as defined in the environmental document is a Type I project.

A Type II project is a noise barrier retrofit project that involves no changes to highway capacity or alignment. A Type III project is a project that does not meet the classifications of a Type I or Type II project. Type III projects do not require a noise analysis.

Under 23 CFR 772.11, noise abatement must be considered for Type I projects if the project is predicted to result in a traffic noise impact. In such cases, 23 CFR 772 requires that the project

sponsor "consider" noise abatement before adoption of the final National Environmental Policy Act document. This process involves identification of noise abatement measures that are reasonable, feasible, and likely to be incorporated into the project, and of noise impacts for which no apparent solution is available.

Traffic noise impacts, as defined in 23 CFR 772.5, occur when the predicted noise level in the design year approaches or exceeds the NAC specified in 23 CFR 772, or a predicted noise level substantially exceeds the existing noise level (a "substantial" noise increase). The terms "substantial increase" or "approach" are not specifically defined in 23 CFR 772. The UDOT Noise Abatement Policy defines a "substantial increase" as a 10 dB(A) increase over existing noise levels and "approach" as 1 dB(A) below the NAC. These criteria are further described below.

Table 2 summarizes NAC corresponding to various land use activity categories. Activity categories and related traffic noise impacts are determined based on the actual or permitted land use in a given area.

State Regulations and Policies

The noise impacts for the proposed improvements have been assessed in accordance with the February 2014 UDOT Noise Abatement Policy (08A2-01) (Policy). The Policy was developed to be consistent with Type I, II and III projects as defined in 23 CFR 772.

In order to determine the degree of impact of highway traffic noise on human activity, the NAC put forth in the Policy were used. The NAC, listed in Table 2 for various activities, represent noise levels that when approached or exceeded, require consideration of noise abatement. The NAC apply to areas having regular human use and where lowered noise levels would be a benefit. The NAC are given in terms of the A-weighted, hourly equivalent sound level in decibels or dB(A).

The UDOT Policy provides a second criterion for assessing impact. For some locations, a project may impose a large increase in noise levels over existing levels, although the levels may not reach the NAC. If the noise level increases 10 dB(A) between the existing and future worst-case conditions then the property is considered impacted and a variety of abatement measures must be considered.

Table 2: Noise Abatement Criteria (NAC)[1]

Activity Category	FHWA Criteria Leq(h)	UDOT Criteria Leq(h)[2]	Description of Activity
A	57 (Exterior)	56 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67 (Exterior)	66 (Exterior)	Residential
C	67 (Exterior)	66 (Exterior)	Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings
D	52 (Interior)	51 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios
E	72 (Exterior)	71 (Exterior)	Hotels, motels, offices, restaurants/bars and other developed lands, properties or activities not included in A–D or F
F	—	—	Agricultural, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing
G	—	—	Undeveloped lands that are not permitted

1. Hourly A-weighted sound level decibels (dB(A))
2. Hourly A-weighted sound level in decibels reflecting a 1 dB(A) "approach" value below 23 CFR 772 values

Source: February 2014 UDOT Noise Abatement Policy (08A2-01

4. STUDY METHODS AND PROCEDURES

Methods for Identifying Land Use and Selecting Noise Measurement and Modeling Receiver Locations

An investigation was conducted to identify land uses that could be subject to traffic and construction noise impacts from the proposed project. Existing land uses in the project area were categorized by land use type and activity category as defined in Table 2, and extent of frequent human use. As stated in the Policy, noise abatement is only considered where frequent human use occurs and where a lowered noise level would be of benefit. Although all land uses are evaluated in this analysis, the focus is on locations of frequent human use that would benefit from a lowered noise level. Accordingly, this impact analysis focuses on locations with defined outdoor activity areas, such as residential backyards and common use areas at multi-family residences, as well as local parks and outdoor recreation facilities.

The noise-sensitive areas were identified from aerial mapping, taking into consideration the limits and locations of the proposed improvements.

Short-term measurement locations were selected to represent each major developed area within the project area. Short-term measurement locations were selected to serve as representative modeling locations. These measurement locations are shown in Appendix A.

Field Measurement Procedures

Noise measurements were collected at four locations on December 29, 2015, using a Larson Davis 824 sound level meter. Each measurement was a minimum of 20 minutes in length at each location.

Traffic was classified and counted during the measurements (see Appendix A). Vehicles were classified as automobiles, medium-duty trucks, and heavy-duty trucks. An automobile was defined as a vehicle with two axles and four tires that is designed primarily to carry passengers. Small vans and light trucks were included in this category. Medium-duty trucks included all cargo vehicles with two axles and six tires. Heavy-duty trucks included all vehicles with three or more axles. Posted speeds were also noted.

Temperature and wind speed were recorded manually during the measurements. Wind speeds typically ranged from 0 to 5 miles per hour (mph). Temperatures ranged from 19 to 22°F.

Traffic Noise Level Prediction Methods

An FHWA-approved highway noise prediction computer model (FHWA Traffic Noise Model (TNM), Version 2.5) was used to determine the traffic-generated noise for existing (2014) and worst-case future (2035) conditions. The model accounts for such factors as ground absorption, roadway geometry, receptor distance, vehicle speeds, and volumes of passenger cars, medium trucks (vehicles with two axles/six tires) and heavy trucks (three axles or more).

Noise levels have been predicted for that hour of the day when the vehicle volume, operating speed, and number of heavy trucks combine to produce the worst traffic noise conditions. That worst hour typically is experienced when traffic is flowing at level of service C.

Traffic data was obtained from the traffic statistics page on the UDOT website. Appendix B includes a discussion of how traffic data for the project was developed and includes supporting calculations as well.

Methods for Identifying Traffic Noise Impacts

The assessment of traffic noise impacts requires two comparisons:

- The noise levels under build conditions must be compared to the applicable NAC. This comparison determines the compatibility of noise levels under build conditions and present land use.
- The noise levels under existing conditions must be compared to those under build conditions. This comparison shows the change in noise levels that will occur between the present time and the design year if the project is built.

Methods for Consideration of Abatement

If a noise impact is identified, the abatement measures listed in the Policy may be considered. The abatement measures include: traffic management, noise insulation, and the construction of noise barriers.

Traffic Management

Traffic management measures that are considered effective to reduce traffic noise include speed reduction and the restriction of heavy truck traffic. Speed reduction along this project is not considered a viable alternative. The necessary speed limit reduction in order to reduce traffic noise is very large and would not likely be observed. SR-10 serves as a truck route; restricting heavy truck traffic is contrary to one of the purposes of the road and is therefore not feasible.

Noise Insulation

Noise insulation may only routinely be considered for facilities such as public schools. Since none of the impacts occur inside this type of property, noise insulation was not considered.

Noise Barriers

The construction of noise barriers has been considered for the impacted receptors. Preliminary barrier investigations were performed to determine their feasibility. For a barrier to be effective, it should be continuous along the roadway adjacent to the impacted site or sites. Openings for pedestrian or vehicular access greatly reduce the ability of a noise barrier to reduce noise levels. For safety purposes, a barrier should also not be taller than the distance from the barrier to the curb line.

In addition to physical constraints, the feasibility of a noise barrier is based on its effectiveness in reducing traffic noise levels. Per the Policy, a minimum reduction of 5 dB(A) at 75 percent of the front-row receptors is required for a barrier to be considered feasible.

The cost of a noise abatement measure is considered reasonable by the Policy if the cost of the measure per benefitted property does not exceed a set cost index. The cost index varies

according to the unit cost of the barrier being recommended. For this study, the cost index is $30,000 per benefitted residence and $360 per linear foot for parks, schools, churches, and other Category A, C, D and E land uses. In the analysis, each residential unit is considered a single residential property. To remain in compliance with 23 CFR 772, the cost analysis must also consider properties that are not impacted but would also benefit from the construction of a noise barrier. The Policy defines "benefitted" as an 8 dB(A) reduction in sound levels. Per the Procedures secton of the Policy, a substantial reduction in noise levels should be attempted with a minimum acceptable reduction of 8 dB(A) at 75 percent of the front-row receptors for a barrier to be considered reasonable.

Per the Procedures section of the Policy, barrier costs are estimated to be $20 per square foot of noise wall. This estimate is based on a current average unit cost for noise barrier and takes into consideration the undeveloped area and an assumed lack of construction difficulties.

5. EXISTING NOISE ENVIRONMENT

Existing Land Uses

An investigation was conducted to identify land uses that could be subject to traffic and construction noise impacts from the proposed project. The following land uses were identified in the project area:

- Single-family and multi-family residences: Activity Category B
- Places of Worship: Activity Category D (interior)

None of the commercial land uses in the project area were found to have any outdoor activities that would be considered noise-sensitive.

Although all developed land uses are evaluated in this analysis, noise abatement is only considered for areas of frequent human use that would benefit from a lowered noise level. Accordingly, this impact analysis focuses on locations with defined outdoor activity areas, such as residential backyards and common-use areas at multi-family residences as well as local parks and outdoor recreation facilities.

Noise Measurement Results

The existing noise environment in the project area is characterized in Table 3, based on noise monitoring that was conducted.

The measurements were used to validate the use of a noise model to predict existing and future noise levels. For all four measurement locations, model results, indicated below as TNM Predicted Noise Level, were within 3 dB(A) of the measured values, which indicates that the

noise model is reasonably accurate. Table 3 compares measured and modeled noise levels at each measurement location. Details of the measurements are included in Appendix A.

Table 3: Comparison of Recorded Modeled Noise Levels

Site	Field Measured Noise Level dB(A)	TNM Predicted Noise Level dB(A)	Delta
A	61	62	-1
B	64	65	-1
C	63	65	-2
D	56	57	-1

6. FUTURE NOISE ENVIRONMENT, IMPACTS, AND ABATEMENT CONSIDERED

Future Noise Environment and Impacts

Impact assessments were performed for 51 residential properties and two churches. These properties were represented by 53 receptors, which are listed in Table 4 along with their TNM predicted results, and shown in Appendix D Included for each study area are the applicable NAC land use category and the worst hourly equivalent sound level that will occur on a regular basis for the existing and proposed conditions.

Table 4: Noise Analysis Locations and Results[1]

Receptor	Properties Represented	NAC Land Use Category	Noise Abatement Criteria – dB(A)	Noise Levels dB(A)		
				Existing (2014)	Build[1] (2035)	Increase
R001	1	B	66	55	57	2
R002	1	B	66	59	60	1
R003	Church	D	51	38	39	1
R004	1	B	66	61	63	2
R005	1	B	66	63	64	1
R006	1	B	66	61	63	2
R007	1	B	66	64	65	1
R008	1	B	66	64	65	1
R009	1	B	66	62	64	2
R010	1	B	66	61	62	1
R011	1	B	66	62	64	2
R012	1	B	66	62	63	1
R013	1	B	66	64	65	1
R014	1	B	66	**70**	**72**	2
R015	1	B	66	**70**	**72**	2
R016	1	B	66	64	65	1
R017	1	B	66	**71**	**72**	1

Table 4: Noise Analysis Locations and Results[1]

Receptor	Properties Represented	NAC Land Use Category	Noise Abatement Criteria – dB(A)	Noise Levels dB(A)		
				Existing (2014)	Build[1] (2035)	Increase
R018	1	B	66	63	64	1
R019	1	B	66	64	65	1
R020	1	B	66	62	63	1
R021	1	B	66	**66**	**67**	1
R022	1	B	66	**70**	**71**	1
R023	1	B	66	64	65	1
R024	1	B	66	**66**	**67**	1
R025	1	B	66	64	**66**	2
R026	1	B	66	64	65	1
R027	1	B	66	63	64	1
R028	1	B	66	**69**	**70**	1
R029	1	B	66	63	65	2
R030	1	B	66	**66**	**67**	1
R031	1	B	66	**67**	**68**	1
R032	1	B	66	**69**	**70**	1
R033	1	B	66	58	61	3
R034	1	B	66	62	64	2
R035	1	B	66	64	**66**	2
R036	1	B	66	**67**	**68**	1
R037	1	B	66	62	64	2
R038	1	B	66	62	64	2
R039	1	B	66	61	63	2
R040	1	B	66	60	62	2
R041	1	B	66	63	64	1
R042	1	B	66	58	61	3
R043	1	B	66	62	63	1
R044	1	B	66	53	55	2
R045	1	B	66	53	55	2
R046	1	B	66	**69**	**72**	3
R047	1	B	66	60	62	2
R048	1	B	66	60	61	1
R049	1	B	66	62	64	2
R050	1	B	66	63	64	1
R051	1	B	66	**69**	**71**	2
R052	Church	D	51	46	47	1
R053	1	B	66	60	62	2

*1. Noise impacts are shown in **BOLD.***

The existing outdoor traffic noise levels range from 53 to 71 dB(A), and the proposed outdoor roadway traffic noise levels will range from 55 to 72 dB(A), representing a 1 to 3 dB(A) increase over existing noise levels. The existing indoor (Church) traffic noise levels range from 38 to 46 dB(A) and the proposed indoor traffic noise levels will range from 39 to 47 dB(A), a 1 dB(A) increase over existing noise levels. For reference purposes, an increase of 3 dB is considered barely perceivable, and an increase of 10 dB is considered to double the loudness.

A comparison of the design year build noise levels with the applicable NAC, as shown in Table 2, reveals that *15 residential properties are predicted to be impacted by traffic noise. No properties in the study area will be substantially higher than existing levels* (defined as a 10 dB(A) increase). See Table 4 and Appendix C for results of the noise modeling.

Preliminary Noise Abatement Analysis

Due to the number of driveways connecting to SR-10, it is not possible to construct a noise barrier(s) that can provide noise mitigation for the 15 impacted properties as well as allow for property access. Gaps in a noise wall render the barrier ineffective. For this reason, no barriers were investigated and noise mitigation is neither feasible nor reasonable for this project.

7. CONSTRUCTION NOISE

Land uses that are sensitive to traffic noise are also sensitive to construction noise. Methods of controlling construction noise include establishing the hours that construction equipment can be operated and defining permissible sound levels at those times. In view of this, UDOT has developed a specification that establishes construction noise control. This specification can be found in the current UDOT Standard Specifications for Road and Bridge Construction, Specification 01355, Environmental Protection, Part 3, Sub-section 3.6, "Noise Control." The contractor will be required to conform to this specification to reduce the impact of construction noise on the surrounding community.

8. COORDINATION WITH LOCAL OFFICIALS

To assist local authorities in exercising land use control over the undeveloped lands adjacent to the roadways proposed for this project, land use compatibility noise data was developed. The 66 dB(A) contour will typically fall approximately 120 feet from the SR-10 centerline and the 71 dB(A) contour will typically fall approximately 70 feet from the SR-10 centerline.

Although the noise contour information is based on the results of the noise modeling, it is not site-specific for any area along proposed SR-10. Variations in terrain, the roadway profile, the proximity to intersections, and existing development can result in changes to the distances to

these noise contours. This information is intended to provide a general guide for future planning, but should not be used in the final design or layout of future development.

9. CONCLUSIONS

This study reveals that for the worst-case traffic volumes, there will be 15 residential properties impacted by noise from the project. Existing (2014) outdoor noise levels range from 53 dB(A) to 71 dB(A). Outdoor noise levels for the design year (2035) build condition range from 55 dB(A) to 72 dB(A). Existing (2014) indoor noise levels range from 38 dB(A) to 46 dB(A). Indoor noise levels for the design year (2035) build condition range from 39 dB(A) to 47 dB(A).

Various mitigation measures were considered and none were found to be feasible or reasonable.

Appendix A: Noise Field Measurements

Key to Abbreviations

Abbreviations appearing in the TNM printouts

Crit'n	Critical value defining a noise level impact
Crit'n Sub'l Inc	Critical value defining a substantial increase impact
LAeq1h	One-hour, A-weighted equivalent sound energy level
No.	Object Number (Used by TNM)
Snd Lvl	Sound Level
TNM	Traffic Noise Model

LOCHNER

Memorandum

To: Elisa Albury

From: Erica Salutz

Subject: SR-10; US-6 to Ridge Road CMGC
Noise Study
Proposed Noise Field Measurements

Date: December 1, 2015

Noise measurements are proposed to be performed at four sites along the project in order to aid in the determination of the existing loudest-hour equivalent noise levels and the creation of validated Traffic Noise Models for noise-sensitive areas in the vicinity of the project.

Sufficient data will be gathered during noise measurements to construct a validated noise model, including traffic volumes, vehicle mixes and speeds, weather conditions, foliage types and density, identification of noise sources other than traffic and a record of any abnormal events which if included in the data would skew the results. Sketches showing monitor locations will be prepared and photographs of the measurement area will be taken.

Noise measurements along existing traffic noise sources will be 20 minutes in duration at a minimum. Measurements will be conducted preferably on a Tuesday, Wednesday or Thursday. As long as the traffic is moving the measurement data is useful. During stop-and-go conditions measurements should not be performed unless the congested condition can be attributed to the typical effect of a nearby traffic signal.

The four proposed sites are described below (See attached Map):

Site A – Residences along the east side of SR-10 south of 1760 S: The measurement should be taken in the front yard of the homes along SR-10, even with the face of the building. Traffic on SR-10 should be counted and the average speed noted.

Site B – Residences along the east side of SR-10 south of Roberson Rd: The measurement should be taken in the front yard of the homes along SR-10, even with the face of the building. Traffic on SR-10 should be counted and the average speed noted.

Site C – Residences along the east side of SR-10 north of 2750 S St: The measurement should be taken in the front yard of the homes along SR-10, even with the face of the building. Traffic on SR-10 should be counted and the average speed noted.

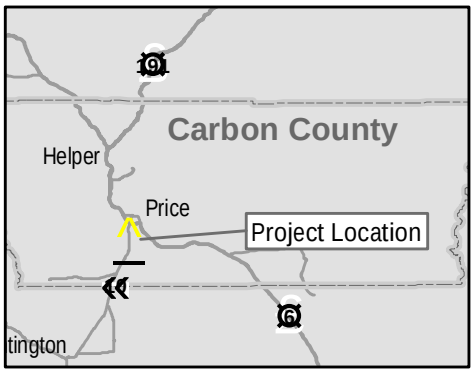
Site D – Church Parking lot: The measurement should be taken in front of the church along SR-10, even with the face of the building. Traffic on SR-10 should be counted and the average speed noted.

SR-10; South Price to Ridge Road
Project No.: F-0010(75)66
PIN: 13664

Noise Monitoring Locations

Noise Monitoring Location

0 1,000 2,000 Feet



H.W. LOCHNER, INC.	NOISE MEASUREMENT DATA SHEET

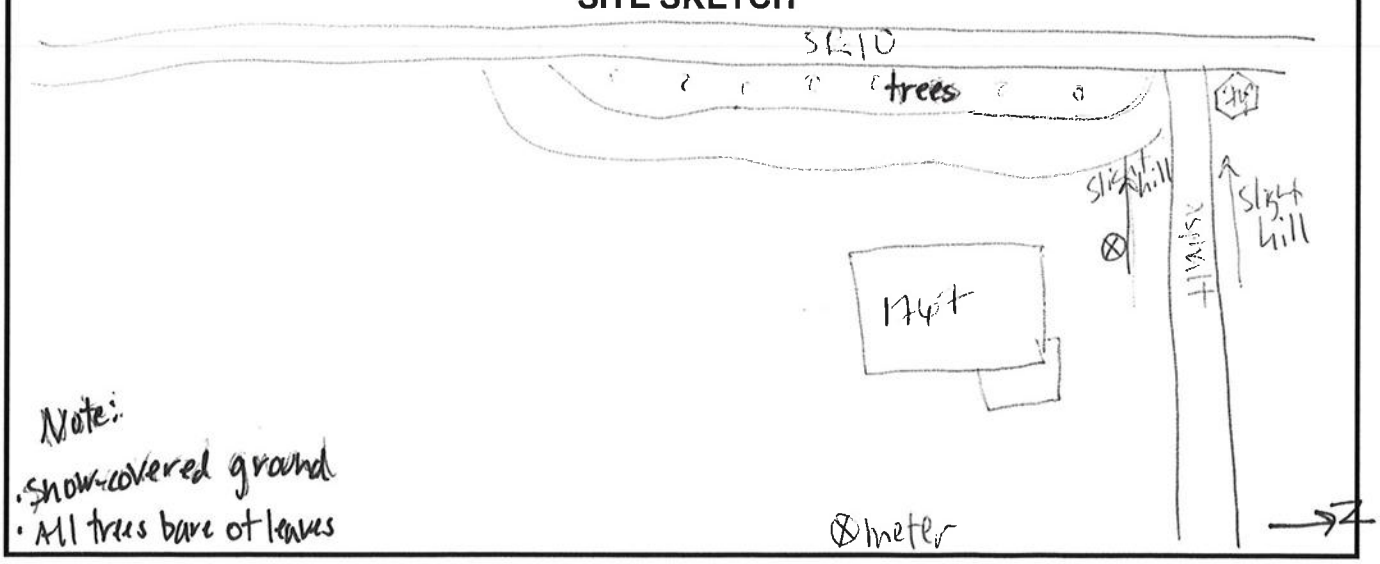
SITE NUMBER: Site A
PROJECT: 13664 SR-10;US-6 to Ridge Rd.
SITE DESCRIPTION: Res. East of SR-10 South of 1760 S
DATE: 12/29/15
START TIME: 11:32AM
EVENT NUMBER: #11
END TIME: 11:52 AM
TECHNICIAN: E. Albury
DURATION: 20:20 min.
CALIBRATION: START 94.0 DB END — DB
WEATHER DATA: SKY CONDITION clear TEMP 20°
WIND: START 2-5 MPH END 0 MPH DIRECTION E/SE
EQUIPMENT: METER Larson-Davis 824 CALIBRATOR LD CAL200
RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____
RESULTS: Leq 61.2 Lmax 74.0

TRAFFIC DATA

ROAD	SR-10		Street to East			
	N	S	E	W		
TRAFFIC SPEED mph	45-50	45-50	20	5-10		
AUTOMOBILES	96	74	3	2		
MEDIUM TRUCKS	4	3	Ø	Ø		
HEAVY TRUCKS	5	Ø	Ø	Ø		

Includes Light Trucks
2-Axels, 6 Tires
3 or more Axels

SITE SKETCH



Note:
· Snow-covered ground
· All trees bare of leaves

MAJOR SOURCES: cars, semis
BACKGROUND NOISE: semi idle across street to NW
UNUSUAL EVENTS: 13mins dogs barking
OTHER NOTES:

Photo 1. Site A, Looking South

Photo 2. Site A, Looking West

Integrating Sound Level Meter Summary
Translated: 06-Jan-2016 12:50:27

File Translated: I:\CHI\PRJ\000005148\Field Noise Measurements\NoiseMeasurements_122915\Data_122915\5148_SiteA_29Dec15i.slmdl
Model Number: 824
Serial Number: A1255
Firmware Rev: 4.290
Software Version: 3.120
Name: H.W. Lochner, Inc.
Descr1: 20 N. Wacker, Suite 1200
Descr2: Chicago, Illinois 60606
Setup: SLM.ism
Setup Descr: Simple Integrating SLM
Location: 5148_SR-10_SiteA_122915
Note 1:
Note 2:

Current Any Data
Start Time: 29-Dec-2015 15:35:47
Elapsed Time: 00:20:20.7

	A Weight	C Weight	Flat
Leq:	61.2 dBA	67.7 dBC	68.7 dBF
SEL:	92.0 dBA	98.6 dBC	99.5 dBF
Peak:	86.2 dBA	93.6 dBC	94.1 dBF
	29-Dec-2015 15:37:52	29-Dec-2015 15:38:10	29-Dec-2015 15:38:10
Lmax (slow):	74.0 dBA	86.1 dBC	86.7 dBF
	29-Dec-2015 15:37:53	29-Dec-2015 15:38:11	29-Dec-2015 15:38:11
Lmin (slow):	36.4 dBA	55.0 dBC	57.0 dBF
	29-Dec-2015 15:52:25	29-Dec-2015 15:52:22	29-Dec-2015 15:52:23
Lmax (fast):	75.9 dBA	88.6 dBC	89.1 dBF
	29-Dec-2015 15:37:53	29-Dec-2015 15:38:10	29-Dec-2015 15:38:10
Lmin (fast):	35.8 dBA	53.9 dBC	55.1 dBF
	29-Dec-2015 15:52:28	29-Dec-2015 15:38:45	29-Dec-2015 15:49:39
Lmax (impulse):	76.9 dBA	89.0 dBC	89.6 dBF
	29-Dec-2015 15:37:53	29-Dec-2015 15:38:10	29-Dec-2015 15:38:10
Lmin (impulse):	36.3 dBA	55.4 dBC	57.4 dBF
	29-Dec-2015 15:52:23	29-Dec-2015 15:52:24	29-Dec-2015 15:52:24

HWL							7 January 2016					
ECS							TNM 2.5					
							Calculated with TNM 2.5					
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		5148_SR-10										
RUN:		Site A										
BARRIER DESIGN:		INPUT HEIGHTS						Average pavement type shall be used unless				
								a State highway agency substantiates the use				
ATMOSPHERICS:		68 deg F, 50% RH						of a different type with approval of FHWA.				
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
SiteA	1	1	0.0	61.9	66	61.9	10	----	61.9	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	1	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

H.W. LOCHNER, INC.	NOISE MEASUREMENT DATA SHEET

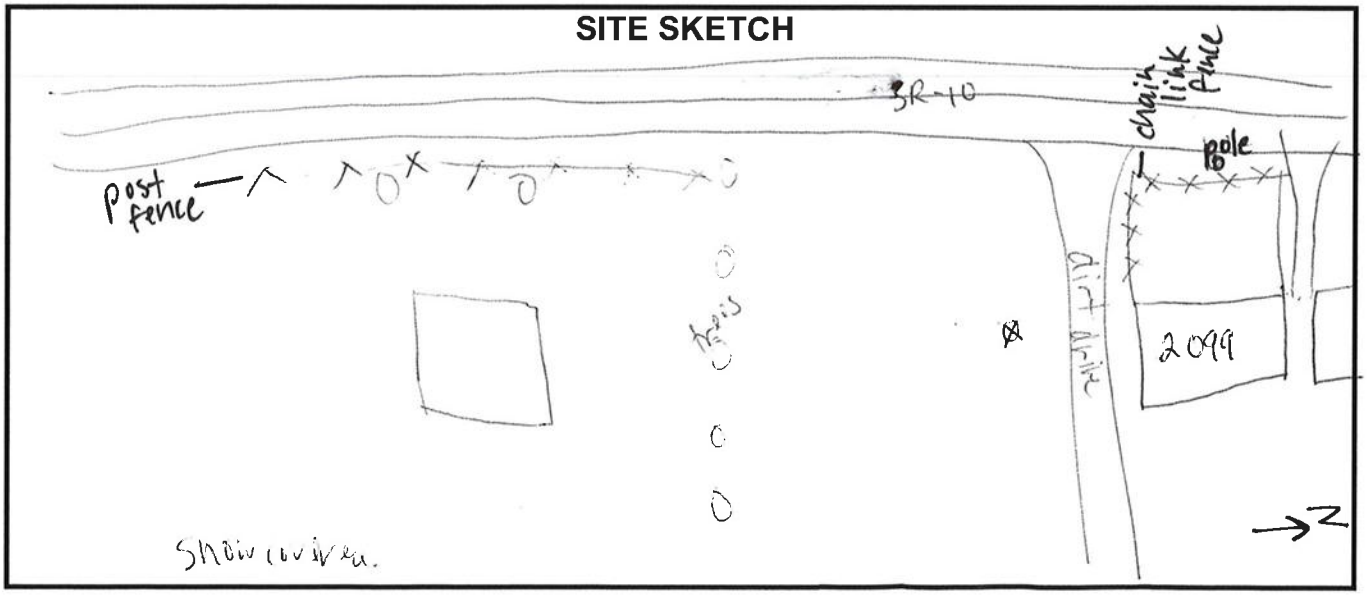
SITE NUMBER: Site B
PROJECT: 13664 SR-10;US-6 to Ridge Rd.
SITE DESCRIPTION: Res. East of SR-10 south of Robertson Rd.
DATE: 12/29/15
START TIME: 12:21 pm
EVENT NUMBER: #13
END TIME:
TECHNICIAN: E. Albury
DURATION: 20:18
CALIBRATION: START – DB END – DB
WEATHER DATA: SKY CONDITION Clear TEMP 19°F
WIND: START 2-5 MPH END MPH DIRECTION E
EQUIPMENT: METER LD 824 CALIBRATOR LD CAL200
RESPONSE: FAST SLOW BATTERY CHECK
RESULTS: Leq 64.3 Lmax 84.8

TRAFFIC DATA

ROAD	SR-10					
	N	S	E	W		
TRAFFIC SPEED	50 mph	50 mph				
AUTOMOBILES	79	68				
MEDIUM TRUCKS	5	3				
HEAVY TRUCKS	2	5				

Includes Light Trucks
2-Axels, 6 Tires
3 or more Axels

SITE SKETCH



MAJOR SOURCES: cars trucks heavy trucks
BACKGROUND NOISE: 12:35 train horn some songbirds 18:22 train horn
UNUSUAL EVENTS: 2:44 siren NB
OTHER NOTES:

Photo 3. Site B, Looking Southeast

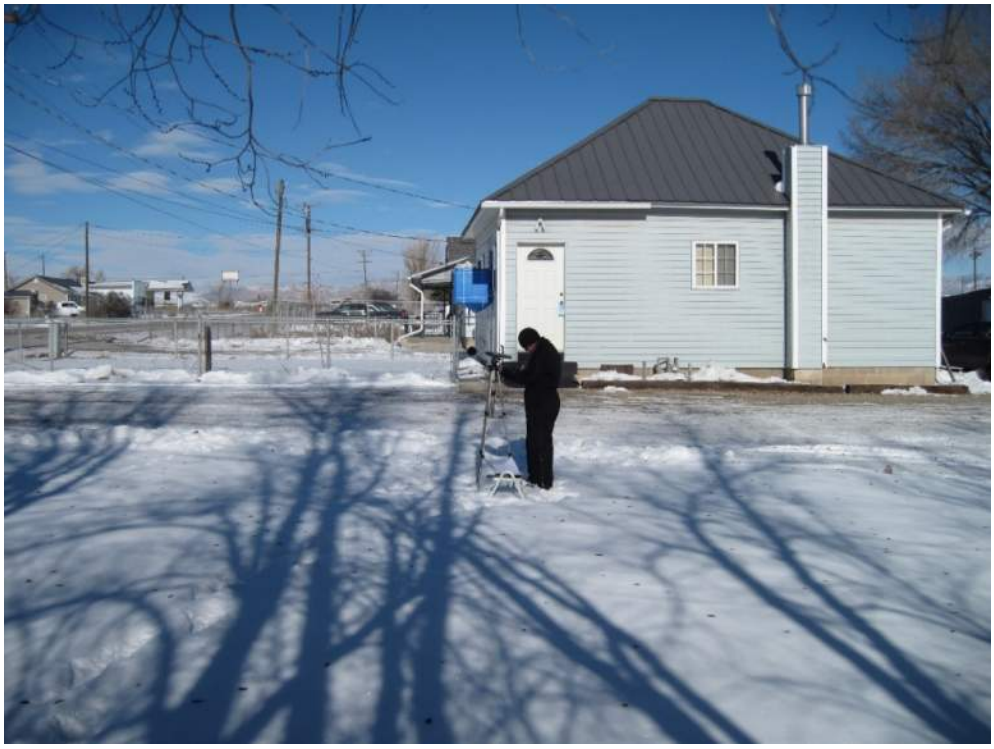


Photo 4. Site B, Looking North

Integrating Sound Level Meter Summary
Translated: 06-Jan-2016 12:52:49

File Translated: I:\CHI\PRJ\000005148\Field Noise Measurements\NoiseMeasurements_122915\Data_122915\5148_SiteB_29Dec15i.slmdl
Model Number: 824
Serial Number: A1255
Firmware Rev: 4.290
Software Version: 3.120
Name: H.W. Lochner, Inc.
Descr1: 20 N. Wacker, Suite 1200
Descr2: Chicago, Illinois 60606
Setup: SLM.ism
Setup Descr: Simple Integrating SLM
Location: 5148_SR10_SiteB_121915
Note 1:
Note 2:

Current Any Data
Start Time: 29-Dec-2015 16:24:45
Elapsed Time: 00:20:18.7

	A Weight	C Weight	Flat
Leq:	64.3 dBA	68.4 dBC	69.1 dBF
SEL:	95.2 dBA	99.3 dBC	100.0 dBF
Peak:	96.0 dBA	96.6 dBC	96.9 dBF
	29-Dec-2015 16:27:36	29-Dec-2015 16:27:36	29-Dec-2015 16:37:01
Lmax (slow):	84.8 dBA	85.5 dBC	85.5 dBF
	29-Dec-2015 16:27:37	29-Dec-2015 16:27:37	29-Dec-2015 16:27:37
Lmin (slow):	31.9 dBA	46.4 dBC	50.4 dBF
	29-Dec-2015 16:39:02	29-Dec-2015 16:39:00	29-Dec-2015 16:31:35
Lmax (fast):	87.9 dBA	89.0 dBC	89.0 dBF
	29-Dec-2015 16:27:36	29-Dec-2015 16:27:36	29-Dec-2015 16:27:36
Lmin (fast):	31.2 dBA	43.8 dBC	47.3 dBF
	29-Dec-2015 16:39:02	29-Dec-2015 16:38:52	29-Dec-2015 16:38:52
Lmax (impulse):	89.4 dBA	90.5 dBC	90.5 dBF
	29-Dec-2015 16:27:36	29-Dec-2015 16:27:36	29-Dec-2015 16:27:36
Lmin (impulse):	31.7 dBA	47.5 dBC	51.3 dBF
	29-Dec-2015 16:39:01	29-Dec-2015 16:38:52	29-Dec-2015 16:28:40

HWL							7 January 2016					
ECS							TNM 2.5					
							Calculated with TNM 2.5					
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		5148_SR-10										
RUN:		Site B										
BARRIER DESIGN:		INPUT HEIGHTS						Average pavement type shall be used unless				
								a State highway agency substantiates the use				
ATMOSPHERICS:		68 deg F, 50% RH						of a different type with approval of FHWA.				
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
SiteB	2	1	0.0	64.6	66	64.6	10	----	64.6	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	1	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

H.W. LOCHNER, INC.	NOISE MEASUREMENT DATA SHEET

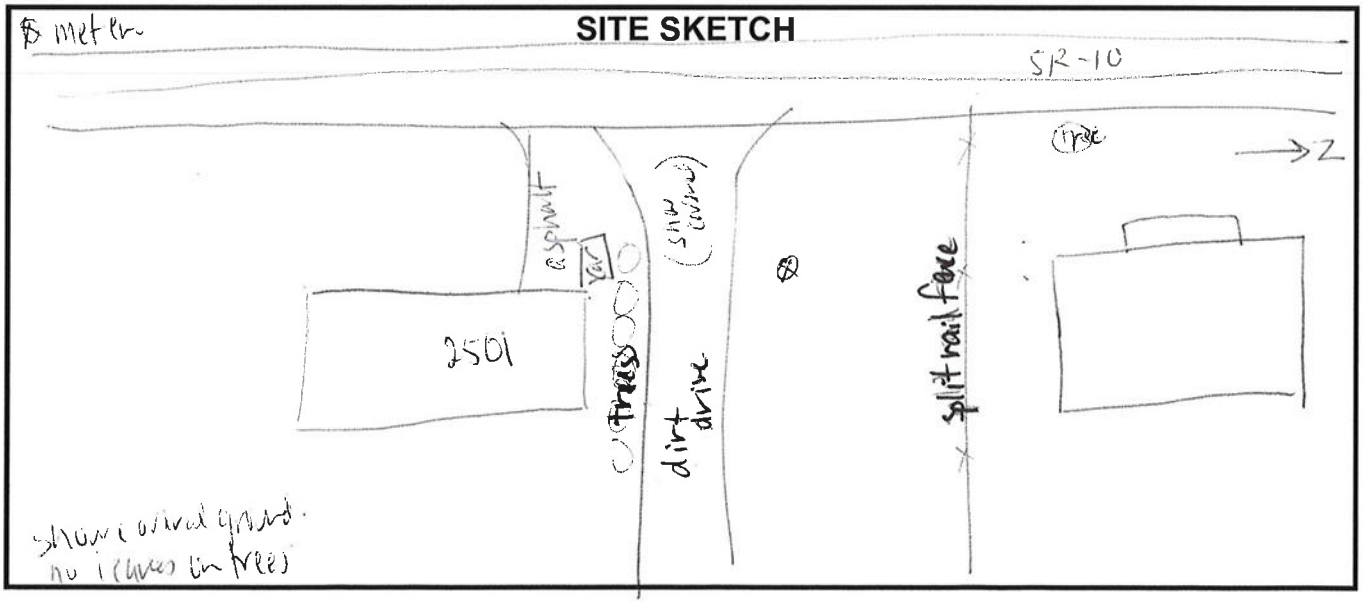
SITE NUMBER: Site C
PROJECT: 13664 SR-10;US-6 to Ridge Rd.
SITE DESCRIPTION: Res. East of SR-10 north of 2750 S.
DATE: 12/29/15
START TIME: 1:52
EVENT NUMBER: #14
END TIME:
TECHNICIAN: E. Albury
DURATION: 20:19
CALIBRATION: START — DB END — DB
WEATHER DATA: SKY CONDITION Clear TEMP 22°F
WIND: START 5 MPH END MPH DIRECTION SE
EQUIPMENT: METER LD 824 CALIBRATOR LD CAL200
RESPONSE: FAST SLOW BATTERY CHECK
RESULTS: Leq 63.0 Lmax 78.0 dBA

TRAFFIC DATA

ROAD	SR-10					
	N	S	E	W		
TRAFFIC SPEED mph	50	50				
AUTOMOBILES	71	65				
MEDIUM TRUCKS	6	3				
HEAVY TRUCKS	9	7				

Includes Light Trucks
2-Axels, 6 Tires
3 or more Axels

SITE SKETCH



MAJOR SOURCES: traffic - cars, lt trucks, med trucks
BACKGROUND NOISE: dripping water off roof (melting snow) at hs. to N
UNUSUAL EVENTS:
OTHER NOTES:

Photo 5. Site C, Looking West

Photo 6. Site C, Looking East

Integrating Sound Level Meter Summary
Translated: 06-Jan-2016 12:53:09

File Translated: I:\CHI\PRJ\000005148\Field Noise Measurements\NoiseMeasurements_122915\Data_122915\5148_SiteC_29Dec15i.slmdl
Model Number: 824
Serial Number: A1255
Firmware Rev: 4.290
Software Version: 3.120
Name: H.W. Lochner, Inc.
Descr1: 20 N. Wacker, Suite 1200
Descr2: Chicago, Illinois 60606
Setup: SLM.ism
Setup Descr: Simple Integrating SLM
Location: 5148_SR10_SiteC_122915
Note 1:
Note 2:

Current Any Data
Start Time: 29-Dec-2015 17:55:15
Elapsed Time: 00:20:19.2

	A Weight	C Weight	Flat
Leq:	63.0 dBA	70.7 dBC	71.3 dBF
SEL:	93.8 dBA	101.6 dBC	102.2 dBF
Peak:	94.4 dBA	99.2 dBC	100.0 dBF
	29-Dec-2015 18:04:52	29-Dec-2015 18:04:52	29-Dec-2015 18:04:52
Lmax (slow):	78.0 dBA	87.0 dBC	87.7 dBF
	29-Dec-2015 18:04:53	29-Dec-2015 17:57:33	29-Dec-2015 17:57:33
Lmin (slow):	34.1 dBA	44.0 dBC	46.0 dBF
	29-Dec-2015 18:12:00	29-Dec-2015 18:09:08	29-Dec-2015 18:09:08
Lmax (fast):	81.5 dBA	88.2 dBC	88.8 dBF
	29-Dec-2015 18:04:52	29-Dec-2015 17:57:32	29-Dec-2015 17:57:32
Lmin (fast):	33.5 dBA	42.8 dBC	44.9 dBF
	29-Dec-2015 18:11:59	29-Dec-2015 18:09:07	29-Dec-2015 18:12:01
Lmax (impulse):	82.7 dBA	88.8 dBC	89.5 dBF
	29-Dec-2015 18:04:52	29-Dec-2015 17:57:31	29-Dec-2015 17:57:31
Lmin (impulse):	33.8 dBA	44.4 dBC	46.8 dBF
	29-Dec-2015 18:05:43	29-Dec-2015 18:09:07	29-Dec-2015 18:09:09

HWL							8 January 2016					
ECS							TNM 2.5					
							Calculated with TNM 2.5					
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		5148_SR-10										
RUN:		Site C										
BARRIER DESIGN:		INPUT HEIGHTS						Average pavement type shall be used unless				
								a State highway agency substantiates the use				
ATMOSPHERICS:		68 deg F, 50% RH						of a different type with approval of FHWA.				
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
SiteC	3	1	0.0	64.7	66	64.7	10	----	64.7	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	1	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

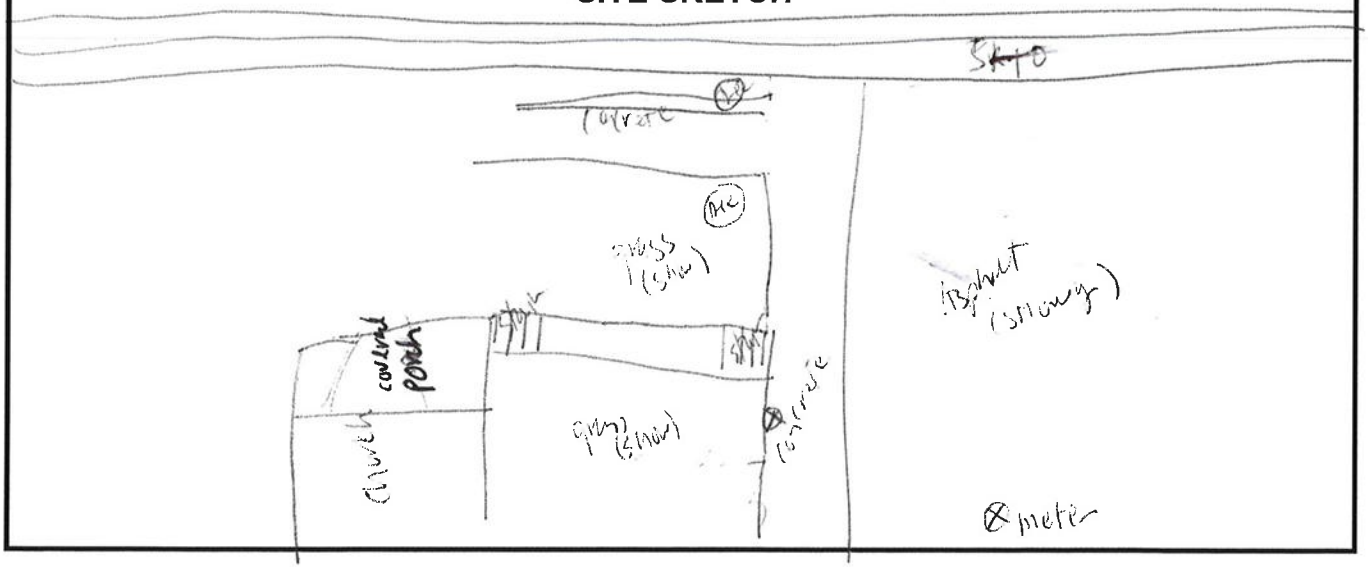
H.W. LOCHNER, INC.	NOISE MEASUREMENT DATA SHEET

SITE NUMBER: Site D
PROJECT: 13664 SR-10;US-6 to Ridge Rd.
SITE DESCRIPTION: Church Parking Lot
DATE: 12/29/15
START TIME: 2:27 pm
EVENT NUMBER: #15
END TIME:
TECHNICIAN: E. Albury
DURATION: 20:40
CALIBRATION: START — DB END 93.8 DB
WEATHER DATA: SKY CONDITION Partly TEMP 21°F
WIND: START 0-5 MPH END 0 MPH DIRECTION E/SE
EQUIPMENT: METER Larson Davis 824 CALIBRATOR LD CAL 200
RESPONSE: FAST SLOW BATTERY CHECK 70%
RESULTS: Leq 56.1 Lmax 72.2

TRAFFIC DATA

ROAD	SR-10					
	N	S	E	W		
TRAFFIC SPEED	45	45				
AUTOMOBILES	66	73				
MEDIUM TRUCKS	6	5				
HEAVY TRUCKS	7	3				

SITE SKETCH



MAJOR SOURCES: Cars, trucks
BACKGROUND NOISE:
UNUSUAL EVENTS: 17:14 jet overhead dogs 20:00
OTHER NOTES:

Photo 7. Site D, Looking East

Photo 8. Site D, Looking West

Integrating Sound Level Meter Summary
Translated: 06-Jan-2016 12:53:26

File Translated: I:\CHI\PRJ\000005148\Field Noise Measurements\NoiseMeasurements_122915\Data_122915\5148_SiteD_29Dec15i.slmdl
Model Number: 824
Serial Number: A1255
Firmware Rev: 4.290
Software Version: 3.120
Name: H.W. Lochner, Inc.
Descr1: 20 N. Wacker, Suite 1200
Descr2: Chicago, Illinois 60606
Setup: SLM.ism
Setup Descr: Simple Integrating SLM
Location: 5148_SR10_SiteD_122915
Note 1:
Note 2:

Current Any Data
Start Time: 29-Dec-2015 18:30:26
Elapsed Time: 00:20:40.7

	A Weight		C Weight		Flat
Leq:	56.1 dBA		66.8 dBC		67.5 dBF
SEL:	87.0 dBA		97.8 dBC		98.5 dBF
Peak:	87.4 dBA		98.4 dBC		98.7 dBF
	29-Dec-2015 18:50:58	29-Dec-2015	18:50:57	29-Dec-2015	18:50:57
Lmax (slow):	72.2 dBA		87.8 dBC		88.2 dBF
	29-Dec-2015 18:50:58	29-Dec-2015	18:50:59	29-Dec-2015	18:50:59
Lmin (slow):	28.1 dBA		43.7 dBC		46.0 dBF
	29-Dec-2015 18:36:34	29-Dec-2015	18:36:11	29-Dec-2015	18:36:11
Lmax (fast):	75.2 dBA		90.0 dBC		90.5 dBF
	29-Dec-2015 18:50:58	29-Dec-2015	18:50:59	29-Dec-2015	18:50:59
Lmin (fast):	26.7 dBA		42.4 dBC		44.0 dBF
	29-Dec-2015 18:36:31	29-Dec-2015	18:36:11	29-Dec-2015	18:36:40
Lmax (impulse):	76.0 dBA		91.2 dBC		91.7 dBF
	29-Dec-2015 18:50:58	29-Dec-2015	18:50:59	29-Dec-2015	18:50:59
Lmin (impulse):	27.3 dBA		43.4 dBC		46.7 dBF
	29-Dec-2015 18:36:31	29-Dec-2015	18:30:26	29-Dec-2015	18:30:26

HWL							8 January 2016					
ECS							TNM 2.5					
							Calculated with TNM 2.5					
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		5148_SR-10										
RUN:		SiteD										
BARRIER DESIGN:		INPUT HEIGHTS						Average pavement type shall be used unless				
								a State highway agency substantiates the use				
ATMOSPHERICS:		68 deg F, 50% RH						of a different type with approval of FHWA.				
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
SiteD	4	1	0.0	57.2	66	57.2	10	----	57.2	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	1	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Appendix A. Table 1: Results of Field Measurements

Site	Field Measured Noise Level dB(A)	TNM Predicted Noise Level dB(A)	Delta	Notes
A	61	62	-1	
B	64	65	-1	
C	63	65	-2	
D	56	57	-1	

Appendix B: Traffic Used in the Noise Analysis

LOCHNER

Lochner
225 West Washington Street
12th Floor
Chicago, IL 60606

T 312.372.3011
F 312.372.5974

Memorandum

To: Project File (HWL #5148)

From: Erica Salutz

Subject: SR-10 - US 6 to Ridge Road
Traffic Noise Study
Traffic Data

Date: July 21, 2015

Current (2015) traffic was not provided for SR-10, but 2014 traffic is readily available from various sources for roadways in the project area and therefore 2014 was used in the analysis of the existing condition.

2014 traffic data was collected for SR-10 from the UDOT traffic statistics. AADT for SR-10, South of Roberson is 9790 with 5% medium trucks and 11% heavy trucks. AADT for SR-10, North of Roberson is 10075 with 5% medium trucks and 11% heavy trucks.

2035 volumes were calculated for SR-10 based on a 1.1% growth rate from the 2014 volumes. The historical data provided by the UDOT website shows a 1.1% growth rate for this segment of roadway.

A 50/50 split was assumed for all two-way roadways and a 10% DHV volume was used to calculate peak-hour volumes.

A spreadsheet is attached which shows how the traffic was calculated for use in the noise modelling. Also attached are printouts from the UDOT website.

Operating speeds were based on posted limits. SR-10 is modelled at 45 mph.

The volume of traffic for SR-10 which would operate at LOS C is 656 vehicles. Existing volumes on SR-10 are less than the LOS C volume so they will be used in the existing model. LOS C volumes will be used for proposed model, as required by the policy.

SR-10
US-6 to Ridge Road

Roadway	Year	#Lanes	ADT	DHV	D split	MT %	HT %	Base Volume*	Volumes for Model Cars	MT	HT
SR-10 NB - North of Roberson	2014	1	10075	10	50	5	11	504	424	25	55
SR-10 SB - North of Roberson	2014	1	10075	10	50	5	11	504	424	25	55
SR-10 NB - South of Roberson	2014	1	9790	10	50	5	11	490	412	24	54
SR-10 SB - South of Roberson	2014	1	9790	10	50	5	11	490	412	24	54
Growth Rate = 1.1%											
SR-10 NB - North of Roberson	2035	1	12410	10	50	5	11	621	522	31	68
SR-10 SB - North of Roberson	2035	1	12410	10	50	5	11	621	522	31	68
SR-10 NB - South of Roberson	2035	1	12059	10	50	5	11	603	507	30	66
SR-10 SB - South of Roberson	2035	1	12059	10	50	5	11	603	507	30	66
LOS C volumes											
SR-10 NB	2035	1				5	11	656	551	33	72
SR-10 SB	2035	1				5	11	656	551	33	72

2014 Traffic on Utah Highways

ROUTE NAME	BEG. ACCUM. MILEAGE	END ACCUM. MILEAGE	BEGIN MILEAGE LOCATION DESCRIPTION	2014 AADT	2013 AADT	2012 AADT
0009	011.378	012.458	300 South via State St - 500 N La Verkin	12,580	12,470	11,920
0009	012.458	012.641	SR 17 State St via 500 N - 100 E La Verkin	5,815	5,765	5,510
0009	012.641	018.580	100 East La Verkin - Mill St Virgin	3,170	3,145	3,005
0009	018.580	027.847	Mill Street Virgin - Center St Rockville	1,860	1,775	1,740
0009	027.847	030.077	Center St Rockville via Main St - Kinesava Dr Springdale	2,235	2,140	2,090
0009	030.077	032.662	Kinesava Dr Springdale via Zion Park Blvd - West Entrance	2,985	2,850	2,790
0009	044.771	057.075	East Entrance Zion Nat'l Park Via SR 9 - SR 89 Mt Carmel Jct	380	360	355
0010	000.000	008.560	I 70 via SR 10 - Consol Mine Rd	3,415	3,365	3,250
0010	008.560	012.426	Consol Mine Rd via SR 10 - 200 W Emery	1,905	1,875	1,815
0010	012.426	012.926	200 W via SR 10 (Main St) - 300 E Emery	1,940	1,910	1,845
0010	012.926	026.731	300 E Emery via SR 10 (Main St) - 100 S Millsite St Park Ferron	5,510	5,420	5,245
0010	026.731	027.472	100 S Millsite St Park via SR 10 (State St) - 500 N Ferron	4,650	4,580	4,425
0010	027.472	030.403	500 N Ferron via SR 10 - Center St Clawson	4,395	4,325	4,185
0010	030.403	034.700	Center St Clawson via SR 10 - SR 57	6,220	6,125	5,925
0010	034.700	037.747	SR 57 via SR 10 - 100 W Castledale	4,265	4,200	4,060
0010	037.747	038.342	100 W via SR 10 (Main St) - 500 E Castledale	6,335	6,235	6,030
0010	038.342	041.233	500 E Castledale via SR 10 (Main St) - SR 29 Orangeville	6,775	6,670	6,450
0010	041.233	046.554	SR 29 Orangeville via SR 10 - 400 S Huntington	5,865	5,775	5,585
0010	046.554	047.583	400 S via SR 10 (Main St) - SR 31 Cleveland Res Huntington	6,980	6,870	6,645
0010	047.583	048.291	SR 31 Cleveland Res via SR 10 - 400 E Huntington	7,245	7,135	6,900
0010	048.291	049.383	400 E Huntington via SR 10 - SR 155 Cleveland	5,645	5,555	5,370
0010	049.383	056.600	SR 155 Cleveland via SR 10 - SR 155 Cleveland *ATR 427*	4,240	4,070	3,770
0010	056.600	060.937	SR 155 Cleveland via SR 10 - SR 122 Hiawatha	6,900	6,795	6,570
0010	060.937	064.274	SR 122 Hiawatha via SR 10 - Ridge Rd (4500 S)	7,375	7,260	7,020
0010	064.274	066.749	Ridge Rd (4500 S) via SR 10 - Roberson Rd (2000 S)	10,075	9,965	10,220
0010	066.749	067.506	Roberson Rd (2000 S) via SR 10 - 1250 S Price	9,790	9,375	9,140
0010	067.506	067.913	1250 S via SR 10 - SR 6 Price	9,985	9,565	9,320
0010	067.913	068.720	SR 6 via SR 10 Carbon Ave - Main St Price	10,965	10,500	10,235
0010	068.720	068.816	Main St via SR 10 Carbon Ave - SR 55 (100 N) Price	8,815	8,445	8,230
0012	000.000	013.598	SR 89 Bryce Cyn Jct via SR 12 - SR 63 Bryce Cyn	2,460	2,315	2,305
0012	013.598	021.078	SR 63 Bryce Cyn via SR 12 - Center St Tropic	1,835	1,725	1,720
0012	021.078	021.677	Center St via Main St - Francisco Lane Tropic	1,550	1,460	1,455
0012	021.677	025.657	Francisco Ln Tropic via SR 12 - Kodachrome Basin Rd Cannonville	1,335	1,260	1,255
0012	025.657	029.220	Kodachrome Basin Rd Cannonville via SR 12 - 100 E Henrieville	1,160	1,095	1,090
0012	029.220	058.968	100 E Henrieville via SR 12 - 500 W Escalante	770	725	725
0012	058.968	059.830	500 W via Main St - 300 E Escalante	1,305	1,230	1,225
0012	059.830	060.404	300 E via SR 12 - Road Right (300 S) Escalante	1,245	1,170	1,165
0012	060.404	064.392	300 S Escalante via SR 12 - Hole in the Rock Rd	790	745	740
0012	064.392	083.270	Hole in the Rock Rd via SR 12 - Hells Backbone Rd	515	485	480
0012	083.270	086.352	Hells Backbone Rd via SR 12 - Burr Trail Rd	530	500	495
0012	086.352	106.644	Burr Trail Rd (Boulder) via SR 12 - Wild Cat Visitors Center	615	580	575
0012	106.644	110.523	Wild Cat Visitor Center via SR 12 - Wayne Co Line	285	265	265
0012	110.523	116.769	Garfield/Wayne Co Line via SR 12 - Road Left in Grover	420	395	390
0012	116.769	118.179	Road Left in Grover via SR 12 - Teasdale Rd (Rt 3262)	560	525	525
0012	118.179	122.863	Teasdale Road via SR 12 - SR 24 Torrey	575	540	535
0013	000.000	001.343	SR 91 via SR 13 (Main St) - SR 90 (200 S) Brigham City	16,960	16,245	15,830
0013	001.343	001.642	SR 90 (200 S) via SR 13 (Main St) - Forest St Brigham City	13,465	12,900	12,570
0013	001.642	002.872	Forest St via SR 13 (Main St) - SR 38 (900 N) Brigham City	14,420	13,810	13,460
0013	002.872	004.853	SR 38 (Main St) via SR 13 - Waterly Ln Brigham City	4,590	4,400	4,285
0013	004.853	005.576	Waterly Ln via SR 13 - I 15 Brigham City	5,330	5,105	4,980
0013	005.576	006.546	I 15 via SR 13 - 2800 W Corinne	8,215	8,085	7,820
0013	006.546	009.158	2800 W via SR 13 - 4800 W Corinne	7,785	7,665	7,410
0013	009.158	009.988	SR 83 via SR 13 (4800 W) - Corrine Cutoff Corinne	1,610	1,585	1,535
0013	009.988	012.693	Corinne Cutoff via SR 13 (4800 W) Corinne - 5400 N Bear River City	1,740	1,710	1,655
0013	012.693	013.991	5400 N via SR 13 (4700 W) - 6400 N Bear River	1,605	1,580	1,530
0013	013.991	014.792	6400 N via SR 13 (4700 W) - Buddhist Church Rd Bear River	1,725	1,700	1,645
0013	014.792	017.915	Buddist Church Rd via SR 13 - I 15	1,365	1,345	1,300
0013	017.915	019.177	I 15 via SR 13 (5200 W) - 10400 N Elwood	6,790	6,680	6,460
0013	019.177	020.176	10400 N Elwood via SR 13 (5200 W) - SR 102 (Main St) Tremonton	6,180	6,115	6,270
0013	020.176	021.177	SR 102 (Main St) via SR 13 (1600 E) - 12000 N Tremonton	4,340	4,295	4,405

2014 Truck Traffic on Utah Highways

ROUTE NAME	BEG. ACCUM. MILEAGE	END ACCUM. MILEAGE	BEGIN MILEAGE LOCATION DESCRIPTION	2014 AADT	Single	Combo
0009	011.378	012.458	300 South via State St - 500 N La Verkin	12,580	23%	4%
0009	012.458	012.641	SR 17 State St via 500 N - 100 E La Verkin	5,815	23%	4%
0009	012.641	018.580	100 East La Verkin - Mill St Virgin	3,170	15%	5%
0009	018.580	027.847	Mill Street Virgin - Center St Rockville	1,860	15%	5%
0009	027.847	030.077	Center St Rockville via Main St - Kinesava Dr Springdale	2,235	15%	5%
0009	030.077	032.662	Kinesava Dr Springdale via Zion Park Blvd - West Entrance	2,985	15%	5%
0009	044.771	057.075	East Entrance Zion Nat'l Park Via SR 9 - SR 89 Mt Carmel Jct	380	15%	11%
0010	000.000	008.560	I 70 via SR 10 - Consol Mine Rd	3,415	7%	58%
0010	008.560	012.426	Consol Mine Rd via SR 10 - 200 W Emery	1,905	8%	56%
0010	012.426	012.926	200 W via SR 10 (Main St) - 300 E Emery	1,940	8%	55%
0010	012.926	026.731	300 E Emery via SR 10 (Main St) - 100 S Millsite St Park Ferron	5,510	8%	50%
0010	026.731	027.472	100 S Millsite St Park via SR 10 (State St) - 500 N Ferron	4,650	9%	45%
0010	027.472	030.403	500 N Ferron via SR 10 - Center St Clawson	4,395	10%	40%
0010	030.403	034.700	Center St Clawson via SR 10 - SR 57	6,220	11%	35%
0010	034.700	037.747	SR 57 via SR 10 - 100 W Castledale	4,265	12%	29%
0010	037.747	038.342	100 W via SR 10 (Main St) - 500 E Castledale	6,335	13%	24%
0010	038.342	041.233	500 E Castledale via SR 10 (Main St) - SR 29 Orangeville	6,775	14%	19%
0010	041.233	046.554	SR 29 Orangeville via SR 10 - 400 S Huntington	5,865	14%	14%
0010	046.554	047.583	400 S via SR 10 (Main St) - SR 31 Cleveland Res Huntington	6,980	13%	20%
0010	047.583	048.291	SR 31 Cleveland Res via SR 10 - 400 E Huntington	7,245	14%	16%
0010	048.291	049.383	400 E Huntington via SR 10 - SR 155 Cleveland	5,645	15%	12%
0010	049.383	056.600	SR 155 Cleveland via SR 10 - SR 155 Cleveland *ATR 427*	4,240	5%	9%
0010	056.600	060.937	SR 155 Cleveland via SR 10 - SR 122 Hiawatha	6,900	5%	10%
0010	060.937	064.274	SR 122 Hiawatha via SR 10 - Ridge Rd (4500 S)	7,375	5%	10%
0010	064.274	066.749	Ridge Rd (4500 S) via SR 10 - Roberson Rd (2000 S)	10,075	5%	11%
0010	066.749	067.506	Roberson Rd (2000 S) via SR 10 - 1250 S Price	9,790	5%	11%
0010	067.506	067.913	1250 S via SR 10 - SR 6 Price	9,985	5%	12%
0010	067.913	068.720	SR 6 via SR 10 Carbon Ave - Main St Price	10,965	5%	12%
0010	068.720	068.816	Main St via SR 10 Carbon Ave - SR 55 (100 N) Price	8,815	5%	13%
0012	000.000	013.598	SR 89 Bryce Cyn Jct via SR 12 - SR 63 Bryce Cyn	2,460	14%	8%
0012	013.598	021.078	SR 63 Bryce Cyn via SR 12 - Center St Tropic	1,835	11%	6%
0012	021.078	021.677	Center St via Main St - Francisco Lane Tropic	1,550	13%	7%
0012	021.677	025.657	Francisco Ln Tropic via SR 12 - Kodachrome Basin Rd Cannonville	1,335	15%	7%
0012	025.657	029.220	Kodachrome Basin Rd Cannonville via SR 12 - 100 E Henrieville	1,160	17%	9%
0012	029.220	058.968	100 E Henrieville via SR 12 - 500 W Escalante	770	19%	11%
0012	058.968	059.830	500 W via Main St - 300 E Escalante	1,305	16%	8%
0012	059.830	060.404	300 E via SR 12 - Road Right (300 S) Escalante	1,245	15%	8%
0012	060.404	064.392	300 S Escalante via SR 12 - Hole in the Rock Rd	790	13%	8%
0012	064.392	083.270	Hole in the Rock Rd via SR 12 - Hells Backbone Rd	515	12%	9%
0012	083.270	086.352	Hells Backbone Rd via SR 12 - Burr Trail Rd	530	11%	9%
0012	086.352	106.644	Burr Trail Rd (Boulder) via SR 12 - Wild Cat Visitors Center	615	10%	9%
0012	106.644	110.523	Wild Cat Visitor Center via SR 12 - Wayne Co Line	285	9%	9%
0012	110.523	116.769	Garfield/Wayne Co Line via SR 12 - Road Left in Grover	420	11%	7%
0012	116.769	118.179	Road Left in Grover via SR 12 - Teasdale Rd (Rt 3262)	560	14%	5%
0012	118.179	122.863	Teasdale Road via SR 12 - SR 24 Torrey	575	17%	3%
0013	000.000	001.343	SR 91 via SR 13 (Main St) - SR 90 (200 S) Brigham City	16,960	11%	5%
0013	001.343	001.642	SR 90 (200 S) via SR 13 (Main St) - Forest St Brigham City	13,465	11%	6%
0013	001.642	002.872	Forest St via SR 13 (Main St) - SR 38 (900 N) Brigham City	14,420	11%	8%
0013	002.872	004.853	SR 38 (Main St) via SR 13 - Waterly Ln Brigham City	4,590	11%	10%
0013	004.853	005.576	Waterly Ln via SR 13 - I 15 Brigham City	5,330	11%	11%
0013	005.576	006.546	I 15 via SR 13 - 2800 W Corinne	8,215	11%	13%
0013	006.546	009.158	2800 W via SR 13 - 4800 W Corinne	7,785	11%	15%
0013	009.158	009.988	SR 83 via SR 13 (4800 W) - Corrine Cutoff Corinne	1,610	12%	18%
0013	009.988	012.693	Corinne Cutoff via SR 13 (4800 W) Corinne - 5400 N Bear River City	1,740	13%	20%
0013	012.693	013.991	5400 N via SR 13 (4700 W) - 6400 N Bear River	1,605	14%	22%
0013	013.991	014.792	6400 N via SR 13 (4700 W) - Buddhist Church Rd Bear River	1,725	15%	24%
0013	014.792	017.915	Buddist Church Rd via SR 13 - I 15	1,365	15%	27%
0013	017.915	019.177	I 15 via SR 13 (5200 W) - 10400 N Elwood	6,790	16%	29%
0013	019.177	020.176	10400 N Elwood via SR 13 (5200 W) - SR 102 (Main St) Tremonton	6,180	15%	28%
0013	020.176	021.177	SR 102 (Main St) via SR 13 (1600 E) - 12000 N Tremonton	4,340	14%	26%

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	ECS
Agency/Co.	HWL
Date Performed	1/12/2016
Analysis Time Period	
Highway	SR-10
From/To	US-6 to Ridge Road
Jurisdiction	Carbon County
Analysis Year	2035
Description	

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.95	
Shoulder width	10.0	ft	% Trucks and buses	16	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	2.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	0	%
Up/down	-	%	Access point density	1	/mi

Analysis direction volume, Vd 656 veh/h
Opposing direction volume, Vo 656 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		1.1	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.984		0.984	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	702	pc/h	702	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.3	mi/h
Free-flow speed, FFSd	44.8	mi/h
Adjustment for no-passing zones, fnp	0.3	mi/h
Average travel speed, ATSd	33.5	mi/h
Percent Free Flow Speed, PFFS	74.9	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	691 pc/h	691 pc/h

Base percent time-spent-following,(note-4) BPTSFd	63.4	%
Adjustment for no-passing zones, fnp	12.9	
Percent time-spent-following, PTSFd	69.8	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.44	
Peak 15-min vehicle-miles of travel, VMT15	345	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1312	veh-mi
Peak 15-min total travel time, TT15	10.3	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	3200	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	33.5	mi/h
Percent time-spent-following, PTSFd (from above)	69.8	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	-	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	690.5
Effective width of outside lane, We	32.00
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	5.29
Bicycle LOS	E

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Appendix C: Traffic Noise Model Results

Key to Abbreviations

Abbreviations appearing in the TNM printouts

Crit'n	Critical value defining a noise level impact
Crit'n Sub'l Inc	Critical value defining a substantial increase impact
LAeq1h	One-hour, A-weighted equivalent sound energy level
No.	Object Number (Used by TNM)
Snd Lvl	Sound Level
TNM	Traffic Noise Model

HWL 14 January 2016
ECS TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 5148_SR-10
RUN: Existing
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R001	1	1	0.0	55.4	66	55.4	10	----	55.4	0.0	8	-8.0
R002	2	1	0.0	58.9	66	58.9	10	----	58.9	0.0	8	-8.0
R003	3	1	0.0	58.2	66	58.2	10	----	58.2	0.0	8	-8.0
R004	4	1	0.0	61.0	66	61.0	10	----	61.0	0.0	8	-8.0
R005	5	1	0.0	62.6	66	62.6	10	----	62.6	0.0	8	-8.0
R006	6	1	0.0	61.3	66	61.3	10	----	61.3	0.0	8	-8.0
R007	7	1	0.0	63.5	66	63.5	10	----	63.5	0.0	8	-8.0
R008	8	1	0.0	63.7	66	63.7	10	----	63.7	0.0	8	-8.0
R009	9	1	0.0	62.1	66	62.1	10	----	62.1	0.0	8	-8.0
R010	10	1	0.0	61.0	66	61.0	10	----	61.0	0.0	8	-8.0
R011	11	1	0.0	61.5	66	61.5	10	----	61.5	0.0	8	-8.0
R012	12	1	0.0	62.0	66	62.0	10	----	62.0	0.0	8	-8.0
R013	13	1	0.0	64.0	66	64.0	10	----	64.0	0.0	8	-8.0
R014	14	1	0.0	70.3	66	70.3	10	Snd Lvl	70.3	0.0	8	-8.0
R015	15	1	0.0	70.1	66	70.1	10	Snd Lvl	70.1	0.0	8	-8.0
R016	16	1	0.0	64.2	66	64.2	10	----	64.2	0.0	8	-8.0
R017	17	1	0.0	70.9	66	70.9	10	Snd Lvl	70.9	0.0	8	-8.0
R018	18	1	0.0	62.6	66	62.6	10	----	62.6	0.0	8	-8.0
R019	19	1	0.0	63.8	66	63.8	10	----	63.8	0.0	8	-8.0
R020	20	1	0.0	61.5	66	61.5	10	----	61.5	0.0	8	-8.0
R021	21	1	0.0	66.1	66	66.1	10	Snd Lvl	66.1	0.0	8	-8.0
R022	22	1	0.0	69.7	66	69.7	10	Snd Lvl	69.7	0.0	8	-8.0
R023	23	1	0.0	64.0	66	64.0	10	----	64.0	0.0	8	-8.0
R024	24	1	0.0	65.7	66	65.7	10	----	65.7	0.0	8	-8.0

R025	25	1	0.0	64.3	66	64.3	10	----	64.3	0.0	8	-8.0
R026	26	1	0.0	63.5	66	63.5	10	----	63.5	0.0	8	-8.0
R027	27	1	0.0	62.5	66	62.5	10	----	62.5	0.0	8	-8.0
R028	28	1	0.0	68.6	66	68.6	10	Snd Lvl	68.6	0.0	8	-8.0
R029	29	1	0.0	63.4	66	63.4	10	----	63.4	0.0	8	-8.0
R030	30	1	0.0	65.6	66	65.6	10	----	65.6	0.0	8	-8.0
R031	31	1	0.0	66.8	66	66.8	10	Snd Lvl	66.8	0.0	8	-8.0
R032	32	1	0.0	68.9	66	68.9	10	Snd Lvl	68.9	0.0	8	-8.0
R033	33	1	0.0	57.7	66	57.7	10	----	57.7	0.0	8	-8.0
R034	34	1	0.0	62.3	66	62.3	10	----	62.3	0.0	8	-8.0
R035	35	1	0.0	64.3	66	64.3	10	----	64.3	0.0	8	-8.0
R036	36	1	0.0	66.9	66	66.9	10	Snd Lvl	66.9	0.0	8	-8.0
R037	37	1	0.0	61.9	66	61.9	10	----	61.9	0.0	8	-8.0
R038	38	1	0.0	61.5	66	61.5	10	----	61.5	0.0	8	-8.0
R039	39	1	0.0	61.1	66	61.1	10	----	61.1	0.0	8	-8.0
R040	40	1	0.0	60.4	66	60.4	10	----	60.4	0.0	8	-8.0
R041	41	1	0.0	62.6	66	62.6	10	----	62.6	0.0	8	-8.0
R042	42	1	0.0	57.9	66	57.9	10	----	57.9	0.0	8	-8.0
R043	43	1	0.0	61.6	66	61.6	10	----	61.6	0.0	8	-8.0
R044	44	1	0.0	52.7	66	52.7	10	----	52.7	0.0	8	-8.0
R045	45	1	0.0	52.9	66	52.9	10	----	52.9	0.0	8	-8.0
R046	46	1	0.0	69.4	66	69.4	10	Snd Lvl	69.4	0.0	8	-8.0
R047	47	1	0.0	60.3	66	60.3	10	----	60.3	0.0	8	-8.0
R048	48	1	0.0	59.9	66	59.9	10	----	59.9	0.0	8	-8.0
R049	49	1	0.0	61.9	66	61.9	10	----	61.9	0.0	8	-8.0
R050	50	1	0.0	62.6	66	62.6	10	----	62.6	0.0	8	-8.0
R051	51	1	0.0	68.8	66	68.8	10	Snd Lvl	68.8	0.0	8	-8.0
R052	52	1	0.0	66.0	66	66.0	10	Snd Lvl	66.0	0.0	8	-8.0
R053	53	1	0.0	59.8	66	59.8	10	----	59.8	0.0	8	-8.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	53	0.0	0.0	0.0
All Impacted	12	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

HWL 14 January 2016
ECS TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 5148_SR-10
RUN: Proposed
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R001	1	1	0.0	56.6	66	56.6	10	----	56.6	0.0	8	-8.0
R002	2	1	0.0	59.9	66	59.9	10	----	59.9	0.0	8	-8.0
R003	3	1	0.0	59.4	66	59.4	10	----	59.4	0.0	8	-8.0
R004	4	1	0.0	62.6	66	62.6	10	----	62.6	0.0	8	-8.0
R005	5	1	0.0	63.9	66	63.9	10	----	63.9	0.0	8	-8.0
R006	6	1	0.0	62.9	66	62.9	10	----	62.9	0.0	8	-8.0
R007	7	1	0.0	64.6	66	64.6	10	----	64.6	0.0	8	-8.0
R008	8	1	0.0	64.9	66	64.9	10	----	64.9	0.0	8	-8.0
R009	9	1	0.0	63.5	66	63.5	10	----	63.5	0.0	8	-8.0
R010	10	1	0.0	62.2	66	62.2	10	----	62.2	0.0	8	-8.0
R011	11	1	0.0	63.8	66	63.8	10	----	63.8	0.0	8	-8.0
R012	12	1	0.0	62.9	66	62.9	10	----	62.9	0.0	8	-8.0
R013	13	1	0.0	65.1	66	65.1	10	----	65.1	0.0	8	-8.0
R014	14	1	0.0	71.7	66	71.7	10	Snd Lvl	71.7	0.0	8	-8.0
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R017	17	1	0.0	72.2	66	72.2	10	Snd Lvl	72.2	0.0	8	-8.0
R018	18	1	0.0	64.0	66	64.0	10	----	64.0	0.0	8	-8.0
R019	19	1	0.0	65.1	66	65.1	10	----	65.1	0.0	8	-8.0
R020	20	1	0.0	62.6	66	62.6	10	----	62.6	0.0	8	-8.0
R021	21	1	0.0	67.2	66	67.2	10	Snd Lvl	67.2	0.0	8	-8.0
R022	22	1	0.0	71.0	66	71.0	10	Snd Lvl	71.0	0.0	8	-8.0
R023	23	1	0.0	64.5	66	64.5	10	----	64.5	0.0	8	-8.0
R024	24	1	0.0	66.8	66	66.8	10	Snd Lvl	66.8	0.0	8	-8.0

R025	25	1	0.0	65.5	66	65.5	10	----	65.5	0.0	8	-8.0
R026	26	1	0.0	64.9	66	64.9	10	----	64.9	0.0	8	-8.0
R027	27	1	0.0	63.7	66	63.7	10	----	63.7	0.0	8	-8.0
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R029	29	1	0.0	64.6	66	64.6	10	----	64.6	0.0	8	-8.0
R030	30	1	0.0	67.0	66	67.0	10	Snd Lvl	67.0	0.0	8	-8.0
R031	31	1	0.0	68.3	66	68.3	10	Snd Lvl	68.3	0.0	8	-8.0
R032	32	1	0.0	70.0	66	70.0	10	Snd Lvl	70.0	0.0	8	-8.0
R033	33	1	0.0	60.5	66	60.5	10	----	60.5	0.0	8	-8.0
R034	34	1	0.0	64.4	66	64.4	10	----	64.4	0.0	8	-8.0
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R036	36	1	0.0	68.4	66	68.4	10	Snd Lvl	68.4	0.0	8	-8.0
R037	37	1	0.0	63.6	66	63.6	10	----	63.6	0.0	8	-8.0
R038	38	1	0.0	63.7	66	63.7	10	----	63.7	0.0	8	-8.0
R039	39	1	0.0	62.6	66	62.6	10	----	62.6	0.0	8	-8.0
R040	40	1	0.0	62.0	66	62.0	10	----	62.0	0.0	8	-8.0
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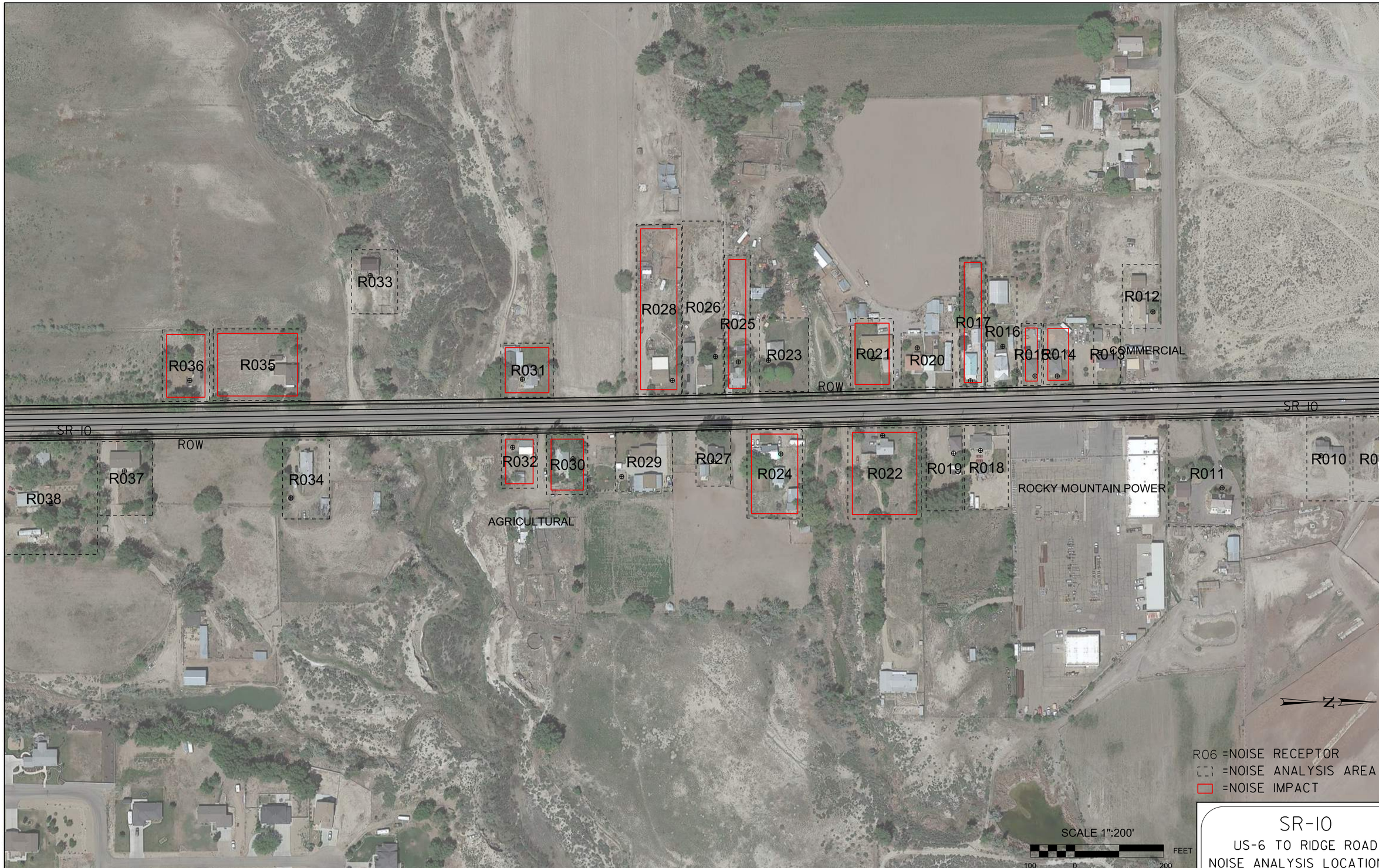
R049	49	1	0.0	63.5	66	63.5	10	----	63.5	0.0	8	-8.0
R050	50	1	0.0	64.3	66	64.3	10	----	64.3	0.0	8	-8.0
R051	51	1	0.0	70.9	66	70.9	10	Snd Lvl	70.9	0.0	8	-8.0
R052	52	1	0.0	67.4	66	67.4	10	Snd Lvl	67.4	0.0	8	-8.0
R053	53	1	0.0	62.2	66	62.2	10	----	62.2	0.0	8	-8.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	53	0.0	0.0	0.0
All Impacted	14	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Appendix D: Noise Analysis Locations

SR-10
US-6 TO RIDGE ROAD
NOISE ANALYSIS LOCATIONS
SHEET 1 OF 3



SR-10
US-6 TO RIDGE ROAD
NOISE ANALYSIS LOCATIONS
SHEET 2 OF 3

SR-10
US-6 TO RIDGE ROAD
NOISE ANALYSIS LOCATIONS
SHEET 3 OF 3

Appendix G

Contents:

Wetland Delineation Report

Preliminary Jurisdictional Determination

FEMA Flood Insurance Rate Map

Wetland and Waters of the U.S. Delineation

SR-10; US-6 to Ridge Road

Carbon County, Utah

May 2016

Wetland Resources

Wetland and Waters of the U.S. Delineation

SR-10; US-6 to Ridge Road

Project No. F-0010(75)66

PIN 13664

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May 2016

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- Waters of the U.S. Channels 2
- Irrigation Canals and Ditches 2

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- Irrigation Canals and Ditches 3

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Appendix A: Maps

Appendix B: Photos

Appendix C: Wetland Data Sheets

Appendix D: Soil Descriptions

Appendix E: OHWM Datasheets

Appendix F: Ditch/Canal Cross Sections

A. INTRODUCTION

A Wetland and Waters of the U.S. delineation was conducted in October 2015 along 2.2 miles of SR-10 near Price, Utah in Carbon County (Appendix A: Map 1). The project area includes 35 feet from the edge of existing pavement on both side of the highway, plus extra width in the vicinity of two drainages. The delineation was conducted for Lochner Engineering who is providing environmental and engineering services for the Utah Department of Transportation on the project. To get to the project area from the intersection of US-6 and SR-10 in Price, Utah, continue south on SR-10 for 0.4 miles and you will be at the northern terminus of the project area.

B. METHODOLOGY

Wetland Resources surveyed the project area for wetlands, ephemeral channels, and irrigation ditches on October 7, 2015 and April 27, 2016.

Wetlands

The wetland delineation was completed in accordance with the U.S. Army Corps of Engineers' 1987 Wetland Delineation Manual (USACOE 1987) and the Arid West Supplement (USACOE 2008). All potential wetland areas were checked for wetland indicators. The following procedure was implemented at each sample point:

1. The herbaceous and shrub plant species within a five foot radius of the sample point were recorded, as directed in the 1987 Manual (USACOE 1987). A 30 foot radius was used for tree species (USACOE 1987). The percent of relative cover for each species was determined by estimating areal cover. The indicator status of each species was determined by using the National Wetland Plant List: Arid West (Lichvar 2012). If a plant species comprised at least 20 percent of the total relative cover in its stratum, it was considered to be a dominant plant species. If more than 50 percent of the dominant plant species had an indicator status of obligate (OBL), facultative wetland (FACW), or facultative (FAC), the sample point met the wetland vegetation parameter.

2. A 20 inch-deep soil pit was dug at each sample point to assess soil characteristics. Soil color, texture, and moisture at different depths within the soil profile were recorded. Color was determined by comparing a moistened soil sample with the Munsell Soil Color Charts. If the soil characteristics met the hydric soil criteria provided in the Arid West Supplement and the Field Indicators of Hydric Soils (NRCS 2006) manuals, the sample point met the wetland soils parameter.

3. Each soil pit was examined to determine correlation with the wetland hydrology criteria. Field indicators of periodic saturation and/or inundation include redox features, drainage patterns in the wetland, sulfur odor, gleyed soils, soils with low chroma, sediment deposits, salt crust, surface soil cracks, or water stained leaves. If at least one primary indicator or two secondary indicators were present, the sample point met the wetland hydrology parameter.

If a sample point met all three parameters, it was classified as occurring in a wetland. Wetland boundaries were surveyed by Wetland Resources using a sub-meter accuracy Trimble GPS unit.

Waters of the U.S. Channels
The Waters of the U.S. channel survey was conducted in accordance with the Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (Lichvar and McColley 2008), and the Updated Datasheet for the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States (Curtis and Lichvar 2010). A channel must exhibit a clear OHWM to be considered jurisdictional. The Waters of the U.S. channels were surveyed using a sub-meter GPS unit. OHWM data sheets were completed for Waters of the U.S. channels that were not ditches.

Irrigation Ditches and Canals
Irrigation ditches and canals were surveyed using a sub-meter GPS unit, but no OHWM data sheets were completed for these features. Recent EPA and Corps guidance states that non-tidal ditches (including roadside and agricultural ditches) are not Waters of the U.S. unless they have a bed, bank, and ordinary high water mark; connect directly or through other tributaries to a traditional navigable or interstate water; and have at least one of the following four characteristics:

- natural streams that have been altered (e.g., channelized, straightened or relocated);
- ditches that have been excavated in waters of the U.S., including wetlands;
- ditches that have relatively permanent flowing or standing water; or
- ditches that connect two or more jurisdictional waters of the U.S.

C. Results and Discussion

Wetlands
The 36-acre project area contains two wetland areas, two natural stream channels, one irrigation canal, and one small irrigation ditch. The project area occurs in a very arid desert environment dominated by a sparse salt desert shrub plant community. With a few exceptions, the project area occurs mostly within the existing SR-10 highway right-of-way (ROW), which has been disturbed by road and utility construction. Field conditions at the time of the delineation were typical for October and April in northern Utah. There had been light precipitation several days prior to the delineation fieldwork, but the area was not saturated from recent precipitation and is not irrigated. Central Utah has been experiencing drought conditions for several years.

Maps 2 through 8 in Appendix A show the project features overlaid on a U.S. Geological Survey (USGS) topographic map and on 2015 high resolution aerial photography. Photos of the project area are provided in Appendix B. Wetland datasheets are provided in Appendix C. Wetland acreages are provided in Table 1.

W1 - This palustrine emergent wetland occurs adjacent to Drunkards Wash and supports threesquare bulrush (*Scirpus pungens*), scratchgrass (*Muhlenbergia asperifolia*), reed canary grass (*Phalaris arundinacea*), saltgrass, and some areas of coyote willow (*Salix exigua*) and tamarix (*Tamarix chinensis*). A complete list of plant species identified in the wetlands is provided in Table 2. The wetlands occur adjacent to the drainage east of the highway, the banks on the west side of the highway are steeper and do not support any wetland vegetation above the OHWM. The soils in the wetland area are classified as Ravola-Gullied lands complex and exhibited a matrix color of 10YR4/2 with 15% redox, meeting the criteria for depleted matrix. A detailed description of the soils in the project area can be found in Appendix D. The soils in the wetland were saturated

at the surface at the time of the delineation, and the water table was at a depth of only 8 inches, meeting the wetland hydrology criteria. Hydrology is provided by the apparently perennial flow in Drunkards Wash. Map 4; Sample Points 1 and 2; Photos 1 and 2.

W2 - This palustrine emergent and scrub-shrub wetland occurs adjacent to a tributary of Drunkards Wash and supports threesquare bulrush (*Scirpus* pungens), scratchgrass (*Muhlenbergia asperifolia*), reed canary grass (*Phalaris arundinacea*), saltgrass, and some areas of coyote willow (*Salix exigua*), tamarix, and Russian olive. The broad floodplain wetlands occur east of the highway, the banks on the west side of the highway are steeper and do not support as much wetland vegetation above the OHWM. The soils in the wetland area are classified as Ravola-Gullied lands complex and exhibited a matrix color of 10YR4/2 with 15% redox, meeting the criteria for depleted matrix. The soils in the wetland were saturated at the surface at the time of the delineation, and the water table was at a depth of only 8 inches, meeting the wetland hydrology criteria. Hydrology is provided by the apparently perennial flow in the tributary channel. Map 7; Sample Points 3 through 12; Photos 3 through 5.

No interstate or foreign commerce associated with the aquatic resources were observed or documented within the project area. The property is privately owned so is not open for public recreation.

The uplands in the project area are dominated by crested wheatgrass, cheatgrass, clasping pepperweed, rubber rabbitbrush, greasewood, and low sage. A complete list of upland species identified in the project area can be found in Table 3. The soils in the upland areas were dry and did not exhibit any indicators of hydric soil or wetland hydrology.

Waters of the U.S. Channels

The project area includes two natural stream channels. Dimensions of the Waters of the U.S. channels is provided in Table 4. OHWM datasheets are provided in Appendix E.

C1 - Drunkards Wash. This perennial stream averages 8 feet wide. The stream supports wetlands on the east side of the highway (W1), but the banks are steeper on the west side of the highway and do not support wetland vegetation above the OHWM. Drunkards Wash is a tributary to the Price River. Map 4; Photo 6.

C2 - This unnamed perennial stream is a tributary to Drunkards Wash and averages 8 feet wide. The stream supports a broad wetland floodplain on the east side of the highway (W2). Map 7; Photos 7 and 8.

Irrigation Ditches and Canals

The project area contains one small irrigation ditch and one irrigation canal. Dimensions of the irrigation features are provided in Table 5 and cross-sections are provided in Appendix F. Both of these irrigation features are likely jurisdictional since it appears that they both have relatively permanent water based on the wetland vegetation along the banks.

D-1 – This 3 foot wide unnamed irrigation ditch occurs on the west side of the highway. The ditch flows into a culvert under the highway that does not daylight in an obvious location on the east side of the highway. Map 5; Photo 9.

D-2 – This 5 foot wide unnamed drainage ditch occurs on the east side of the highway across from a man-made stock pond. The stock pond was excavated and contains a pump for irrigation use. The outlet for the stock pond is several feet higher than the bottom of the pond and consists of a

culvert running under the highway and discharging in this drainage ditch. The man-made stock pond is not jurisdictional. Map 6; Photos 10 and 11.

D-3 – Carbon Canal. This 20 foot wide canal flows under the highway in a concrete box culvert. The water in the canal is diverted out of the Price River between Spring Glen and Carbonville, and it dead ends in the desert between Elmo and Victor. Map 8; Photo 12.

Table 1. Wetland Acreages

Wetland Number	PEM Wetland (acres)	PSS Wetland (acres)	Lat/Long
W-1	0.06	0	39.57736 -110.81553
W-2	0.77	0.77	39.56693 -110.81510
Total	**0.83**	**0.77**	

Table 2. Wetland plant species identified in the project area.

Botanical Name	Common Name	Indicator Status
Distichlis spicata	saltgrass	FAC
Elaeagnus angustifolia	Russian olive	FAC
Muhlenbergia asperifolia	scratchgrass	FACW
Phalaris arundinacea	reed canary grass	FACW
Salix exigua	coyote willow	OBL
Schoenoplectus pungens	threesquare bulrush	OBL
Tamarix chinensis	tamarix	FAC
Typha latifolia	common cattail	OBL

Table 3. Upland plant species identified in the project area.

Botanical Name	Common Name	Indicator Status
Artemisia arbuscula	low sage	UPL
Agropyron cristatum	crested wheatgrass	UPL
Bassia hyssopifolia	five-hook bassia	FACU
Bromus inermis	smooth brome	FACU
Bromus tectorum	Cheatgrass	UPL
Chrysothamnus nauseosus	rubber rabbitbrush	FACU
Lepidium perfoliatum	clasping pepperweed	FACU
Iva axillaris	povertyweed	FAC
Sarcobatus vermiculatus	greasewood	FACU

Table 4. Waters of the U.S. Acreages

Waters of the U.S.	Linear Feet	Acres	Lat/Long
C-1	157	0.046	39.57730 -110.81556
C-2	1,260	0.203	39.56697 -110.81563
Total	**1,417**	**0.249**	

Table 5. Ditch and Canal Acreages

Waters of the U.S.	Linear Feet	Acres	Lat/Long
D-1	12	0.001	39.57327 -110.81624
D-2	66	0.008	39.56697 -110.81563
D-3	161	0.072	39.55815 -110.81602
Total	**239**	**0.081**	

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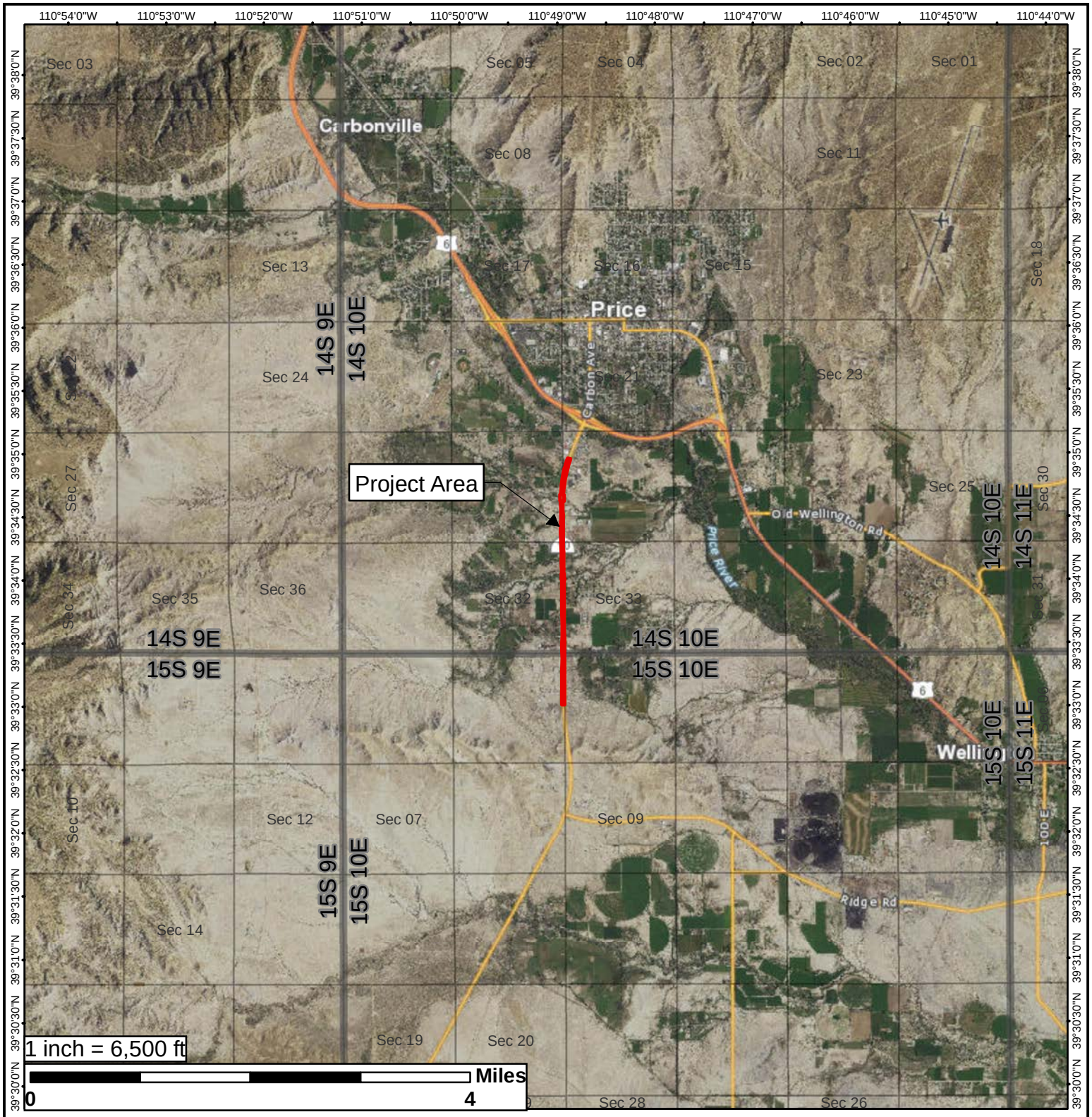
APPENDIX A: MAPS



Project Location

SR 10;
US 6 to Ridge Road

Sections 28, 29, 32, 33
in T14S, R10E
Sections 4, 5
in T15S, R10E

Legend

Project Area

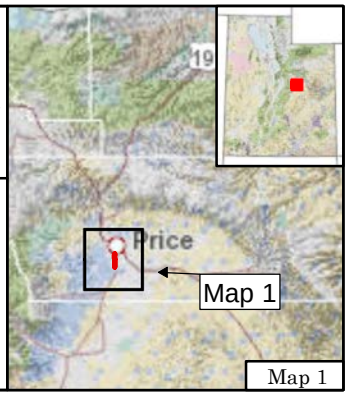
Projection:
NAD 83 UTM Zone 12N

Source:
AGRC Basemap-Hybrid

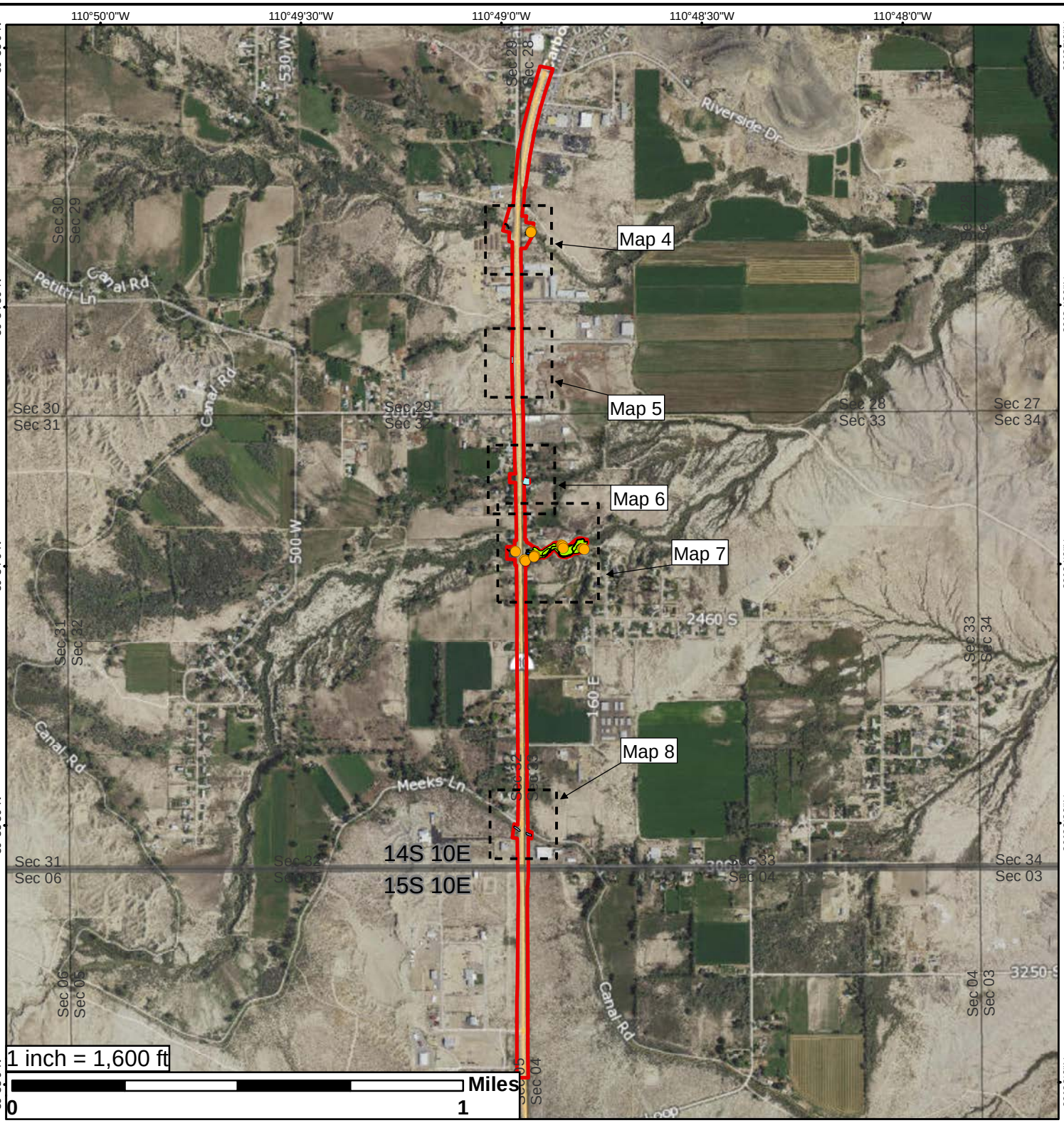
Survey Performed by
Todd Sherman

Wetland Resources, Inc.

Created: 10/12/2015
Author: CMM



Map 1



Aerial Overview

SR 10;
US 6 to Ridge Road

Sections 28, 29, 32, 33
in T14S, R10E
Sections 4, 5
in T15S, R10E

Legend

- Project Area
- Ditch/Canal with OHWM
- Waters of the U.S. with OHWM
- Sample Point (SP)
- Palustrine Emergent Wetland (PEM)

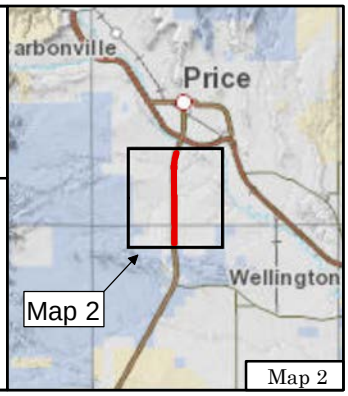
Projection:
NAD 83 UTM Zone 12N

Source:
AGRC Basemap-Hybrid

Survey Performed by
Todd Sherman

Wetland Resources, Inc.

Created: 5/5/2016
Author: CMM



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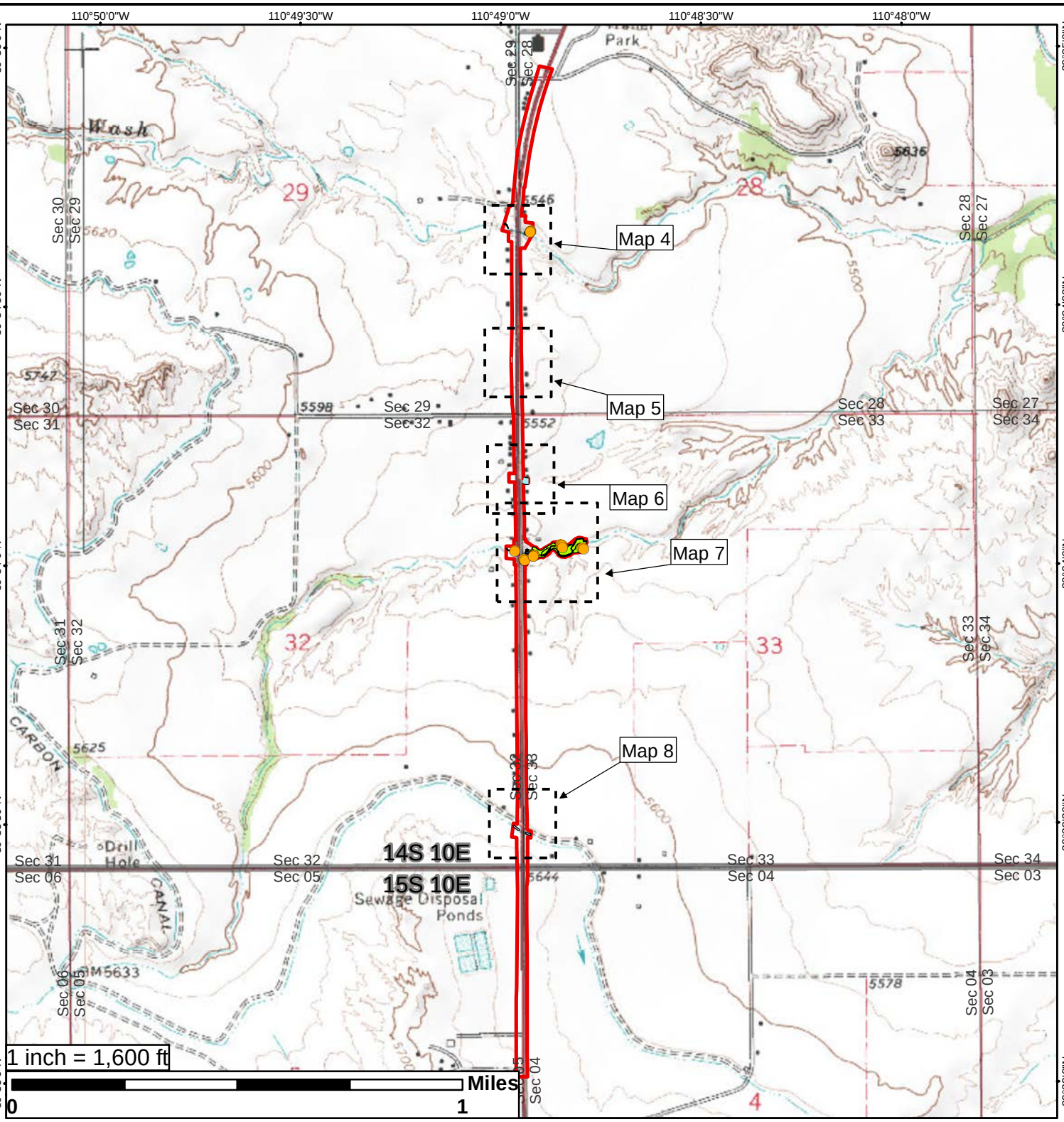


Topographic Overview

SR 10;
US 6 to Ridge Road

Sections 28, 29, 32, 33
in T14S, R10E
Sections 4, 5
in T15S, R10E

Legend

- Project Area
- Ditch/Canal with OHWM
- Waters of the U.S. with OHWM
- Sample Point (SP)
- Palustrine Emergent Wetland (PEM)

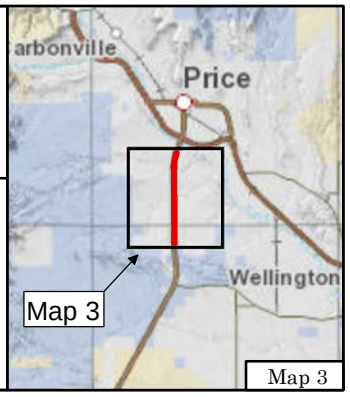
Projection:
NAD 83 UTM Zone 12N

Source:
AGRC Basemap-Topo
Price q2228 24k Quad

Survey Performed by
Todd Sherman

Wetland Resources, Inc.

Created: 5/5/2016
Author: CMM



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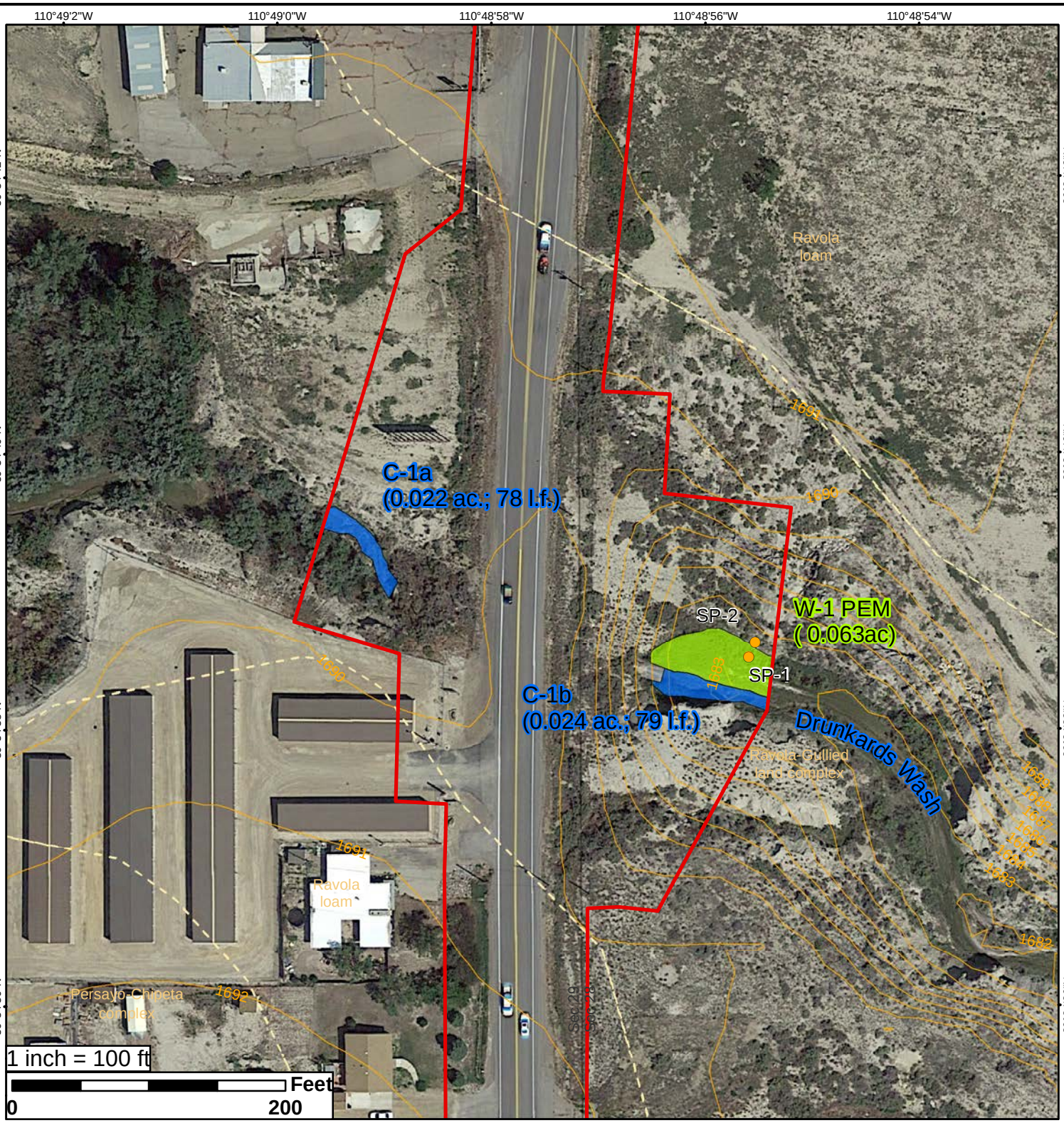

Delineation Detail

SR 10;
US 6 to Ridge Road

Project Dimensions:

Note: dimensions include entire project area

Project Area:
= 35.950 ac
Wetlands
= 1.603 ac
Ditch/Canal
= 0.081 ac; 239 l.f.
Waters of the U.S.
= 0.249 ac; 1,417 l.f.

Legend

- Project Area
- Sample Point (SP)
- Palustrine Emergent Wetland (PEM)
- Waters of the U.S.
- Soils
- Contours (1m height interval)

Projection:

NAD 83 UTM Zone 12N

Source:

2016 Google Imagery

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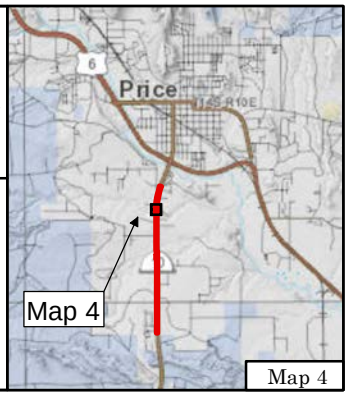
S

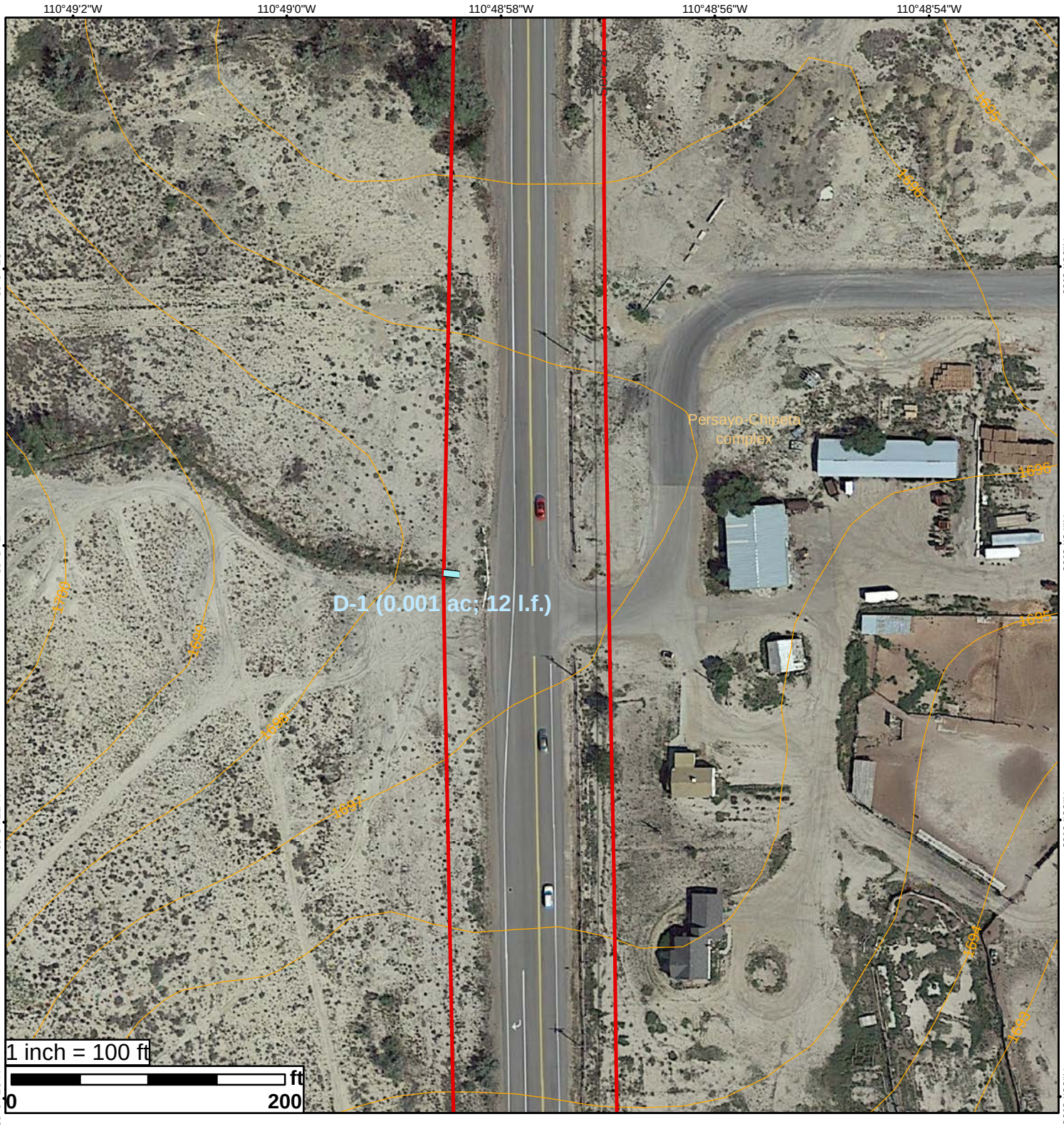
Survey Performed by
Todd Sherman

Wetland Resources, Inc.

Created: 11/24/2015
Author: CMM



Map 4



Delineation Detail

SR 10;
US 6 to Ridge Road

Project Dimensions:

Note: dimensions include entire project area

Project Area:
= 35.950 ac
Wetlands
= 1.603 ac
Ditch/Canal
= 0.081 ac; 239 l.f.
Waters of the U.S.
= 0.249 ac; 1,417 l.f.

Legend

- Project Area
- Ditch/Canal with OHWM
- Soils
- Contours (1m height interval)

Projection:

NAD 83 UTM Zone 12N

Source:

2016 Google Imagery

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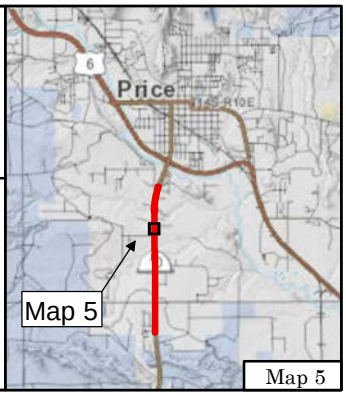
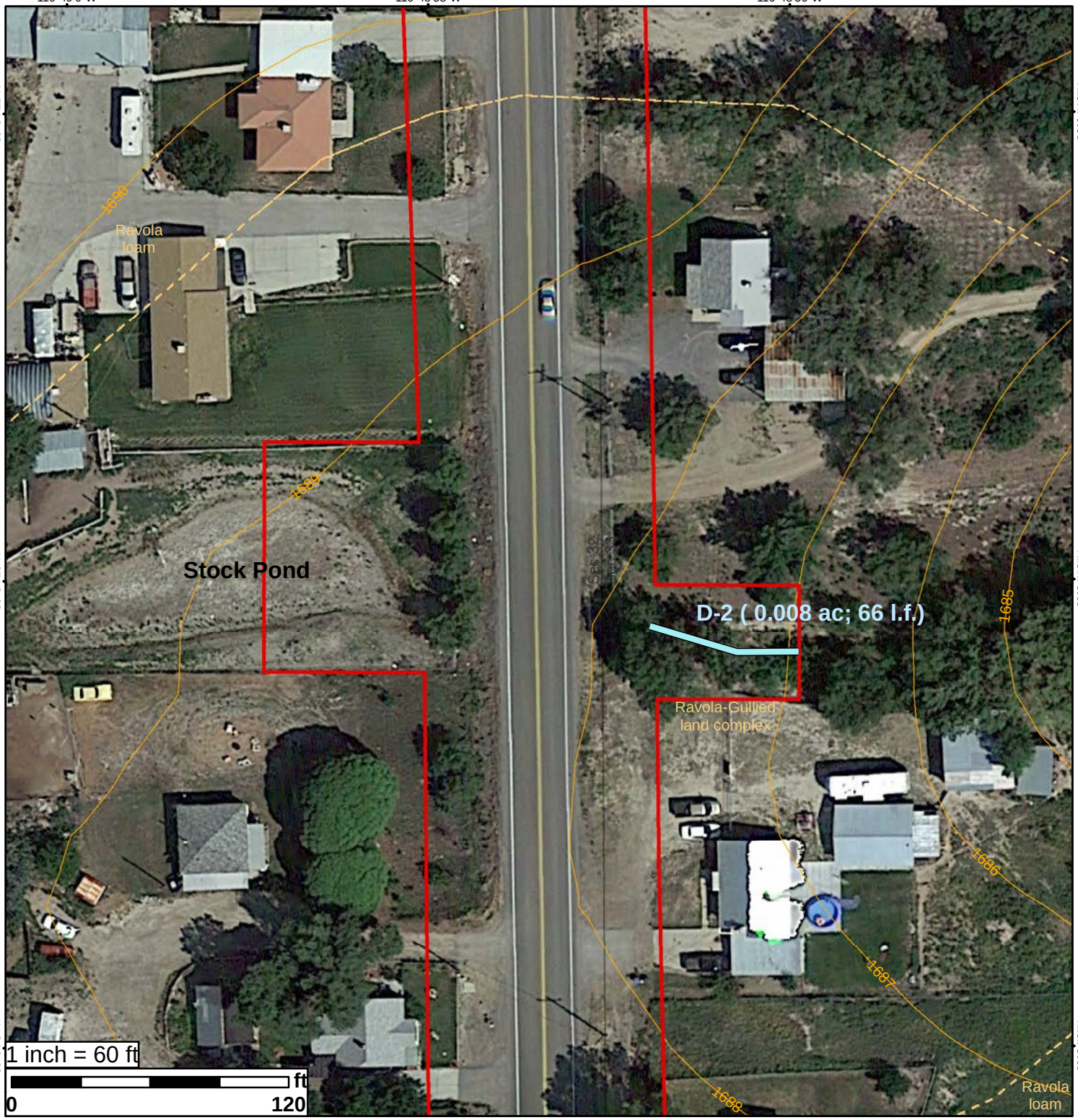
Survey Performed by
Todd Sherman

Wetland Resources, Inc.

Created: 5/5/2016
Author: CMM



Map 5



Delineation Detail

SR 10;
US 6 to Ridge Road

Project Dimensions:

Note: dimensions include entire project area

Project Area:
= 35.950 ac
Wetlands
= 1.603 ac
Ditch/Canal
= 0.081 ac; 239 l.f.
Waters of the U.S.
= 0.249 ac; 1,417 l.f.

Legend

- Project Area
- Ditch/Canal with OHWM
- Soils
- Contours (1m height interval)

Projection:

NAD 83 UTM Zone 12N

Source:

2016 Google Imagery

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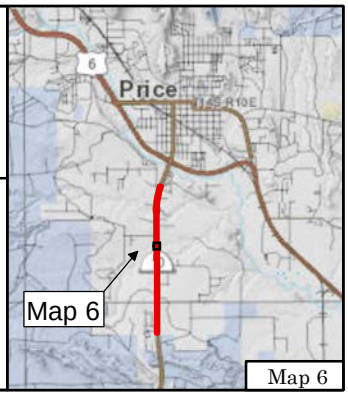
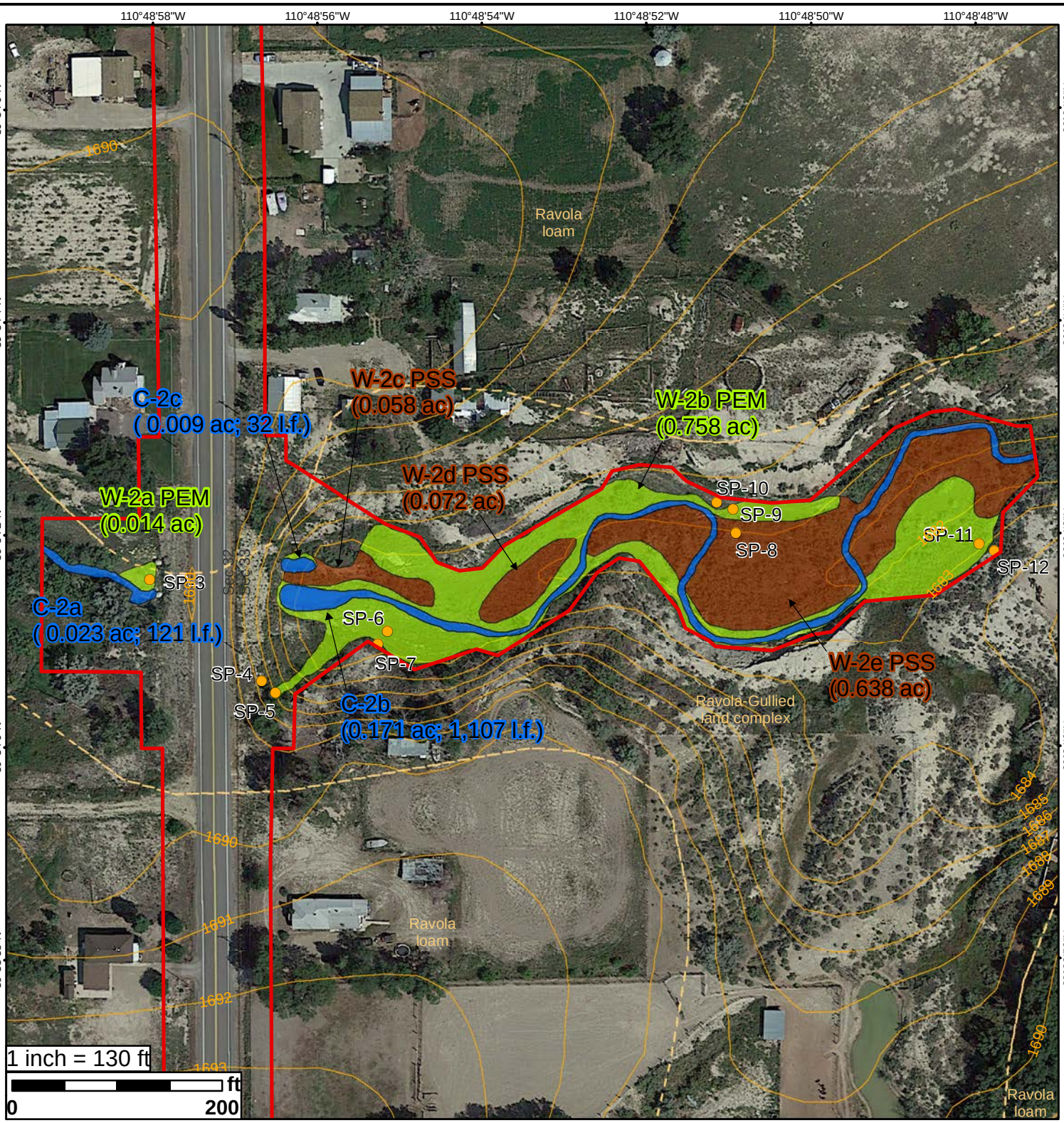
Survey Performed by
Todd Sherman

Wetland Resources, Inc.

Created: 5/5/2016
Author: CMM



Map 6



Delineation Detail

SR 10;
US 6 to Ridge Road

Project Dimensions:

Note: dimensions include entire project area

Project Area:
= 35.950 ac
Wetlands
= 1.603 ac
Ditch/Canal
= 0.081 ac; 239 l.f.
Waters of the U.S.
= 0.249 ac; 1,417 l.f.

Legend

- Project Area
- Waters of the U.S. with OHWM

Wetlands

- Palustrine Emergent (PEM)
- Palustrine Scrub Shrub (PSS)
- Soils
- Contours (1m height interval)

Projection:

NAD 83 UTM Zone 12N

Source:

2016 Google Imagery

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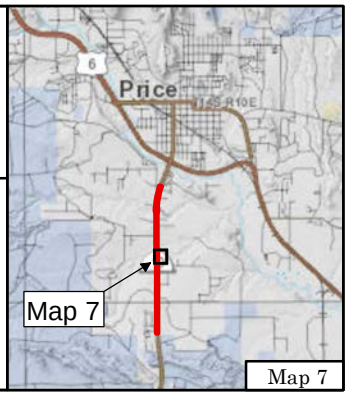
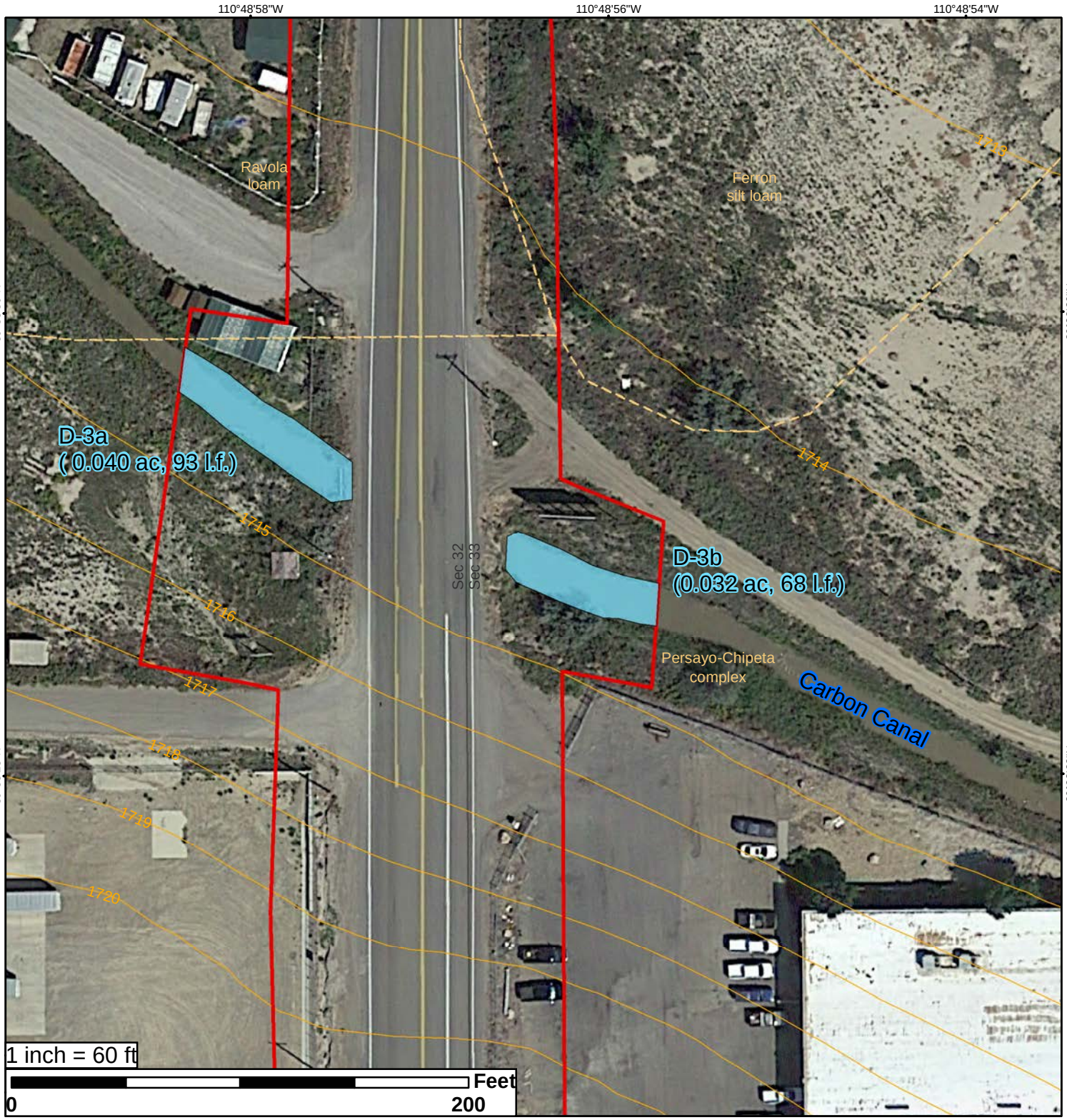
Survey Performed by
Todd Sherman

Wetland Resources, Inc.

Created: 5/5/2016
Author: CMM



Map 7



Delineation Detail

SR 10;
US 6 to Ridge Road

Project Dimensions:

Note: dimensions include entire project area

Project Area:
= 35.950 ac
Wetlands
= 1.603 ac
Ditch/Canal
= 0.081 ac; 239 l.f.
Waters of the U.S.
= 0.249 ac; 1,417 l.f.

Legend

- Project Area
- Ditch/Canal with OHWM
- Soils
- Contours (1m height interval)

Projection:

NAD 83 UTM Zone 12N

Source:

2016 Google Imagery

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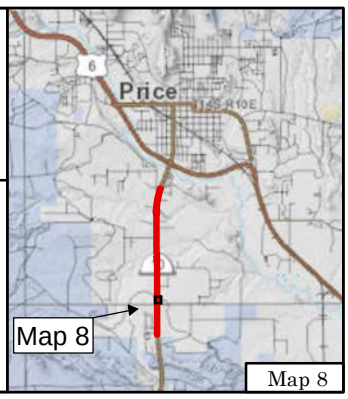
Survey Performed by
Todd Sherman

Wetland Resources, Inc.

Created: 5/5/2016
Author: CMM



Map 8

APPENDIX B: PHOTOS

Photo 1.
Wetland W-1 on the floodplain of Drunkards Wash.

Photo 2.
Wetland W-1 on the floodplain of Drunkards Wash.

Photo 3.
Tributary to Drunkards Wash and Wetland W-2b on the east side of SR-10.

Photo 4.
Tributary to Drunkards Wash and Wetland W-2a on the west side of SR-10.

Photo 5.
Tributary to Drunkards Wash and Wetland W-2b and W-2e on the east side of SR-10.

Photo 6.
Drunkards Wash (C-1) on the west side of highway with steep banks and no wetlands.

Photo 7.
Tributary to Drunkards Wash (C-2) on the west side of SR-10 with steep banks and no wetlands.

Photo 8.
Tributary to Drunkards Wash(C-2) on the east side of SR-10.

Photo 9.
Irrigation ditch D-1.

Photo 10.
Drainage ditch (D-2).

Photo 11.
Stock pond on west side of highway that outlets into drainage ditch D-2.

Photo 12.
Carbon Canal (D-3).

APPENDIX C: WETLAND DATA SHEETS

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: State Route 10 **City/County:** Price **Sampling Date:** 27-Apr-16

Applicant/Owner: Utah Department of Transportation **State:** UT **Sampling Point:** 01

Investigator(s): Todd Sherman **Section, Township, Range:** S 28 T 14S R 10E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

Subregion (LRR): LRR D **Lat.:** 515847 E **Long.:** 4380867 N **Datum:** WGS84

Soil Map Unit Name: Ravola-Gullied land complex **NWI classification:** PEM

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks: Wetlands on the floodplain of Drunkards Wash.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0		= Total Cover	
Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0		= Total Cover	
Herb Stratum (Plot size:)				
1. Schoenoplectus pungens	50	☑	71.4%	OBL
2. Phragmites australis	10	☐	14.3%	FACW
3. Distichlis spicata	10	☐	14.3%	FAC
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	70		= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0		= Total Cover	

% Bare Ground in Herb Stratum: 30 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	50	x 1 =	50
FACW species	10	x 2 =	20
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	70 (A)		100 (B)

Prevalence Index = B/A = 1.429

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

The floodplain is dominated by wetland species.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: 01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		Matrix %	Redox Features Color (moist)		Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR	4/2	100%						Silt Loam	
8-20	10YR	4/2	85%	5YR	4/6	15%	C	M	Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

The soils meet the criteria for depleted matrix.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	8
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

The soils were saturated at the surface, and the water table was at a depth of 8".

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: State Route 10 **City/County:** Price **Sampling Date:** 27-Apr-16

Applicant/Owner: Utah Department of Transportation **State:** UT **Sampling Point:** 02

Investigator(s): Todd Sherman **Section, Township, Range:** S 28 T 14S R 10E

Landform (hillslope, terrace, etc.): Footslope **Local relief (concave, convex, none):** convex **Slope:** 15.0 % / 8.5 °

Subregion (LRR): LRR D **Lat.:** 515847 E **Long.:** 4380867 N **Datum:** WGS84

Soil Map Unit Name: Ravola-Gullied land complex **NWI classification:** Upland

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks: Upland adjacent to SP-1.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0		= Total Cover	

Sapling/Shrub Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Sarcobatus vermiculatus	40	☑	80.0%	FACU
2. Chrysothamnus nauseosus	10	☑	20.0%	UPL
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	50		= Total Cover	

Herb Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Distichlis spicata	15	☑	25.0%	FAC
2. Agropyron cristatum	15	☑	25.0%	UPL
3. Grindelia squarrosa	15	☑	25.0%	FACU
4. Bassia hyssopifolia	15	☑	25.0%	FACU
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	60		= Total Cover	

Woody Vine Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0		= Total Cover	

% Bare Ground in Herb Stratum: 40 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	16.7%	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	70	x 4 =	280
UPL species	25	x 5 =	125
Column Totals:	110 (A)		450 (B)

Prevalence Index = B/A = 4.091

Hydrophytic Vegetation Indicators:

- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:

The area does not meet the wetland vegetation criteria.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: 02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		Matrix %	Redox Features Color (moist)		Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	10YR	4/3	100%						Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

No indicators of hydric soil.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

No indicators of wetland hydrology.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: State Route 10 **City/County:** Price **Sampling Date:** 07-Oct-15

Applicant/Owner: Utah Department of Transportation **State:** UT **Sampling Point:** 03

Investigator(s): Todd Sherman **Section, Township, Range:** S 33 T 14S R 10E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °

Subregion (LRR): LRR D **Lat.:** 515828 E **Long.:** 4379693 N **Datum:** WGS84

Soil Map Unit Name: Ravola-Gullied land complex **NWI classification:** PEM

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks: Wetlands adjacent to a tributary of Drunkards Wash.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0		= Total Cover	

Sapling/Shrub Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0		= Total Cover	

Herb Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Festuca pratensis	60	☑	60.0%	FACU
2. Schoenoplectus pungens	20	☑	20.0%	OBL
3. Muhlenbergia asperifolia	20	☑	20.0%	FACW
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	100		= Total Cover	

Woody Vine Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0		= Total Cover	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	20	x 1 =	20
FACW species	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals:	100 (A)		300 (B)

Prevalence Index = B/A = 3.000

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

The area meets the wetland vegetation criteria.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: 03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		Matrix %	Redox Features Color (moist)		Redox %	Type[1]	Loc[2]	Texture	Remarks
0-20	2.5Y	5/2	95%	5YR	4/6	5%	C	M	Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

The soils meet the criteria for depleted matrix.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☑ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 8

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

The soils were saturated in the upper profile and exhibit oxidized rhizospheres.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: State Route 10 **City/County:** Price **Sampling Date:** 07-Oct-15

Applicant/Owner: Utah Department of Transportation **State:** UT **Sampling Point:** 04

Investigator(s): Todd Sherman **Section, Township, Range:** S 33 T 14S R 10E

Landform (hillslope, terrace, etc.): Footslope **Local relief (concave, convex, none):** convex **Slope:** 0.0 % / 0.0 °

Subregion (LRR): LRR D **Lat.:** 515828 E **Long.:** 4379693 N **Datum:** WGS84

Soil Map Unit Name: Ravola-Gullied land complex **NWI classification:** Upland

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks: Upland adjacent to SP-5.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0		= Total Cover	
Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0		= Total Cover	
Herb Stratum (Plot size:)				
1. Iva axillaris	20	☑	33.3%	FAC
2. Agropyron cristatum	20	☑	33.3%	UPL
3. Bassia hyssopifolia	10	☐	16.7%	FACU
4. Bromus inermis	10	☐	16.7%	FACU
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	60		= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0		= Total Cover	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	20	x 4 =	80
UPL species	20	x 5 =	100
Column Totals:	60 (A)		240 (B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:

The area does not meet the wetland vegetation criteria.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: 04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		Matrix %	Redox Features Color (moist)		Redox %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR	4/3	100%						Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

No indicators of hydric soil.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

No indicators of wetland hydrology.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: State Route 10 **City/County:** Price **Sampling Date:** 07-Oct-15

Applicant/Owner: Utah Department of Transportation **State:** UT **Sampling Point:** 05

Investigator(s): Todd Sherman **Section, Township, Range:** S 33 T 14S R 10E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 5.0 % / 2.9 °

Subregion (LRR): LRR D **Lat.:** 515828 E **Long.:** 4379693 N **Datum:** WGS84

Soil Map Unit Name: Ravola-Gullied land complex **NWI classification:** PEM

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks: Wetlands adjacent to a tributary of Drunkards Wash.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0		= Total Cover	

Sapling/Shrub Stratum (Plot size:)				
1. Salix exigua	100	☑	100.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	100		= Total Cover	

Herb Stratum (Plot size:)				
1. Phalaris arundinacea	100	☑	100.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	100		= Total Cover	

Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0		= Total Cover	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	200	x 2 =	400
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	200 (A)		400 (B)

Prevalence Index = B/A = 2.000

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

The area meets the wetland vegetation criteria.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: 05

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		Matrix %	Redox Features Color (moist)		Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	N	3/1	100%						Clay Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☑ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

The soils meet the criteria for loamy gleyed matrix.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	8
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

The soils were saturated at the surface, and the water table was at a depth of 8".

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: State Route 10 **City/County:** Price **Sampling Date:** 27-Apr-16

Applicant/Owner: Utah Department of Transportation **State:** UT **Sampling Point:** 06

Investigator(s): Todd Sherman **Section, Township, Range:** S 33 T 14S R 10E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 1.0 % / 0.6 °

Subregion (LRR): LRR D **Lat.:** 515828 E **Long.:** 4379693 N **Datum:** WGS84

Soil Map Unit Name: Ravola-Gullied land complex **NWI classification:** PEM

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks: Wetlands on the floodplain of a tributary to Drunkards Wash.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0		**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)				
1. Salix exigua	15	☑	100.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	15		**= Total Cover**	
Herb Stratum (Plot size:)				
1. Schoenoplectus pungens	80	☑	80.0%	OBL
2. Phalaris arundinacea	20	☑	20.0%	FACW
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	100		**= Total Cover**	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0		**= Total Cover**	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	100.0%	(A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	80	x 1 =	80
FACW species	35	x 2 =	70
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	115 (A)		150 (B)

Prevalence Index = B/A = 1.304

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

The floodplain is dominated by wetland species.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: 06

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		Matrix %	Redox Features Color (moist)		Redox %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR	4/2	80%	5Y	4/6	20%	C	M	Silt Loam	redox below 6"

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

The soils meet the criteria for depleted matrix.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	5
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

The soils were saturated at the surface, and the water table was at a depth of 5".

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: State Route 10 **City/County:** Price **Sampling Date:** 27-Apr-16

Applicant/Owner: Utah Department of Transportation **State:** UT **Sampling Point:** 07

Investigator(s): Todd Sherman **Section, Township, Range:** S 33 T 14S R 10E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR): LRR D **Lat.:** 515828 E **Long.:** 4379693 N **Datum:** WGS84

Soil Map Unit Name: Ravola-Gullied land complex **NWI classification:** Upland

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks: Upland adjacent to SP-6.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:)	**Absolute % Cover**	**Dominant Species? Rel.Strat. Cover**	**Indicator Status**
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1. Chrysothamnus nauseosus	20	☑ 57.1%	UPL
2. Sarcobatus vermiculatus	15	☑ 42.9%	FACU
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	35	**= Total Cover**	
Herb Stratum (Plot size:)			
1. Lepidium perfoliatum	30	☑ 100.0%	FACU
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	30	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 70 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	0.0%	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	45	x 4 =	180
UPL species	20	x 5 =	100
Column Totals:	65 (A)		280 (B)

Prevalence Index = B/A = 4.308

Hydrophytic Vegetation Indicators:

- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:

The area does not meet the wetland vegetation criteria.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: 07

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		Matrix %	Redox Features Color (moist)		Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	10YR	4/3	100%						Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

No indicators of hydric soil.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

No indicators of wetland hydrology.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: State Route 10 **City/County:** Price **Sampling Date:** 27-Apr-16

Applicant/Owner: Utah Department of Transportation **State:** UT **Sampling Point:** 08

Investigator(s): Todd Sherman **Section, Township, Range:** S 33 T 14S R 10E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 1.0 % / 0.6 °

Subregion (LRR): LRR D **Lat.:** 515962 E **Long.:** 4379741 N **Datum:** WGS84

Soil Map Unit Name: Ravola-Gullied land complex **NWI classification:** PSS

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks: Shrub wetland on the floodplain of a tributary to Drunkards Wash.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0		= Total Cover	

Sapling/Shrub Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Tamarix chinensis	60	☑	85.7%	FAC
2. Elaeagnus angustifolia	10	☐	14.3%	FAC
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	70		= Total Cover	

Herb Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Distichlis spicata	80	☑	88.9%	FAC
2. Schoenoplectus pungens	10	☐	11.1%	OBL
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	90		= Total Cover	

Woody Vine Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0		= Total Cover	

% Bare Ground in Herb Stratum: 10 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	0	x 2 =	0
FAC species	150	x 3 =	450
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	160 (A)		460 (B)

Prevalence Index = B/A = 2.875

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

The floodplain is dominated by wetland species.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: 08

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		Matrix %	Redox Features Color (moist)		Redox %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR	4/2	80%	5Y	4/6	20%	C	M	Silt Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

The soils meet the criteria for depleted matrix.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	11
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

The soils were saturated at the surface, and the water table was at a depth of 11".

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: State Route 10 **City/County:** Price **Sampling Date:** 27-Apr-16

Applicant/Owner: Utah Department of Transportation **State:** UT **Sampling Point:** 09

Investigator(s): Todd Sherman **Section, Township, Range:** S 33 T 14S R 10E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 1.0 % / 0.6 °

Subregion (LRR): LRR D **Lat.:** 515962 E **Long.:** 4379741 N **Datum:** WGS84

Soil Map Unit Name: Ravola-Gullied land complex **NWI classification:** PEM

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks: Wetlands on the floodplain of a tributary to Drunkards Wash.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0		= Total Cover	

Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0		= Total Cover	

Herb Stratum (Plot size:)				
1. Schoenoplectus pungens	70	☑	73.7%	OBL
2. Distichlis spicata	25	☑	26.3%	FAC
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	95		= Total Cover	

Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0		= Total Cover	

% Bare Ground in Herb Stratum: 5 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	70	x 1 =	70
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	95 (A)		145 (B)

Prevalence Index = B/A = 1.526

Hydrophytic Vegetation Indicators:

☑ **Dominance Test is > 50%**

☑ **Prevalence Index is ≤3.0** [1]

☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**

☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

The floodplain is dominated by wetland species.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: 09

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		Matrix %	Redox Features Color (moist)		Redox %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR	4/2	80%	5YR	4/6	20%	C	M	Silt Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

The soils meet the criteria for depleted matrix.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	5
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

The soils were saturated at the surface, and the water table was at a depth of 5".

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: State Route 10 **City/County:** Price **Sampling Date:** 27-Apr-16

Applicant/Owner: Utah Department of Transportation **State:** UT **Sampling Point:** 10

Investigator(s): Todd Sherman **Section, Township, Range:** S 33 T 14S R 10E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 1.0 % / 0.6 °

Subregion (LRR): LRR D **Lat.:** 515962 E **Long.:** 4379741 N **Datum:** WGS84

Soil Map Unit Name: Ravola-Gullied land complex **NWI classification:** Upland

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks: Upland adjacent to SP-9.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0		= Total Cover	

Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0		= Total Cover	

Herb Stratum (Plot size:)				
1. Bassia hyssopifolia	30	☑	50.0%	FACU
2. Distichlis spicata	30	☑	50.0%	FAC
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	60		= Total Cover	

Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0		= Total Cover	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	50.0%	(A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	60 (A)		210 (B)

Prevalence Index = B/A = 3.500

Hydrophytic Vegetation Indicators:

- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:

The area does not meet the wetland vegetation criteria.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		Matrix %	Redox Features Color (moist)		Redox %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR	4/3	100%						Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

No indicators of hydric soil.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

No indicators of wetland hydrology.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: State Route 10 **City/County:** Price **Sampling Date:** 27-Apr-16

Applicant/Owner: Utah Department of Transportation **State:** UT **Sampling Point:** 11

Investigator(s): Todd Sherman **Section, Township, Range:** S 33 T 14S R 10E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 1.0 % / 0.6 °

Subregion (LRR): LRR D **Lat.:** 515962 E **Long.:** 4379741 N **Datum:** WGS84

Soil Map Unit Name: Ravola-Gullied land complex **NWI classification:** PEM

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks: Wetlands on the floodplain of a tributary to Drunkards Wash.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0		= Total Cover	

Sapling/Shrub Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Tamarix chinensis	10	☑	50.0%	FAC
2. Elaeagnus angustifolia	10	☑	50.0%	FAC
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	20		= Total Cover	

Herb Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Phalaris arundinacea	40	☑	40.0%	FACW
2. Typha latifolia	40	☑	40.0%	OBL
3. Schoenoplectus pungens	20	☑	20.0%	OBL
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	100		= Total Cover	

Woody Vine Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0		= Total Cover	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species	40	x 2 =	80
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	120 (A)		200 (B)

Prevalence Index = B/A = 1.667

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

The floodplain is dominated by wetland species.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: 11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		Matrix %	Redox Features Color (moist)		Redox %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR	4/2	80%	5YR	4/6	20%	C	M	Silt Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

The soils meet the criteria for depleted matrix.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	5
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

The soils were saturated at the surface, and the water table was at a depth of 5".

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: State Route 10 **City/County:** Price **Sampling Date:** 27-Apr-16

Applicant/Owner: Utah Department of Transportation **State:** UT **Sampling Point:** 12

Investigator(s): Todd Sherman **Section, Township, Range:** S 33 T 14S R 10E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 1.0 % / 0.6 °

Subregion (LRR): LRR D **Lat.:** 515962 E **Long.:** 4379741 N **Datum:** WGS84

Soil Map Unit Name: Ravola-Gullied land complex **NWI classification:** Upland

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks: Upland adjacent to SP-11

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0		= Total Cover	

Sapling/Shrub Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Chrysothamnus nauseosus	40	☑	66.7%	UPL
2. Sarcobatus vermiculatus	10	☐	16.7%	FACU
3. Artemisia arbuscula	10	☐	16.7%	UPL
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	60		= Total Cover	

Herb Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	0		= Total Cover	

Woody Vine Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0		= Total Cover	

% Bare Ground in Herb Stratum: 100 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	50	x 5 =	250
Column Totals:	60 (A)		290 (B)

Prevalence Index = B/A = 4.833

Hydrophytic Vegetation Indicators:

- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:

The area does not meet the wetland vegetation criteria.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: 12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		Matrix %	Redox Features Color (moist)		Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	10YR	4/3	100%						Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

No indicators of hydric soil.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

No indicators of wetland hydrology.

APPENDIX D: SOIL DESCRIPTIONS

Carbon Area, Utah, Parts of Carbon and Emery Counties

31—Ferron silt loam

Map Unit Setting

National map unit symbol: jx53
Elevation: 5,380 to 5,680 feet
Mean annual precipitation: 6 to 16 inches
Mean annual air temperature: 45 to 53 degrees F
Frost-free period: 115 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Ferron and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ferron

Setting

Landform: Alluvial flats, alluvial fans
Landform position (three-dimensional): Dip, talf
Down-slope shape: Concave
Across-slope shape: Concave, convex
Parent material: Alluvium derived from sandstone and shale

Typical profile

A1 - 0 to 3 inches: silt loam
C1cs - 3 to 15 inches: loam
C2 - 15 to 60 inches: very fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 12 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Available water storage in profile: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: B/D

Ecological site: Wet Saline Meadow (Inland saltgrass) (R034XY024UT)

Minor Components

Hunting

Percent of map unit: 5 percent

Saltair

Percent of map unit: 5 percent
Landform: Alluvial flats
Landform position (three-dimensional): Dip, talf
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: Desert Salty Silt (Iodinebush) (R028AY132UT)

Data Source Information

Soil Survey Area: Carbon Area, Utah, Parts of Carbon and Emery Counties
Survey Area Data: Version 7, Jul 31, 2014

Carbon Area, Utah, Parts of Carbon and Emery Counties

59—Killpack clay loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: jx62
Elevation: 5,380 to 5,680 feet
Mean annual precipitation: 6 to 8 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 115 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Killpack and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Killpack

Setting

Landform: Hillslopes
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium over residuum weathered from shale

Typical profile

Ap - 0 to 9 inches: clay loam
C1 - 9 to 23 inches: clay loam
C2cs - 23 to 29 inches: silty clay loam
Cr - 29 to 33 inches: weathered bedrock

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Minor Components

Persayo
Percent of map unit: 5 percent

Billings
Percent of map unit: 5 percent

Chipeta
Percent of map unit: 3 percent

Libbings
Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: Wet Saline Meadow (Inland saltgrass) (R034XY024UT)

Data Source Information

Soil Survey Area: Carbon Area, Utah, Parts of Carbon and Emery Counties
Survey Area Data: Version 7, Jul 31, 2014

Carbon Area, Utah, Parts of Carbon and Emery Counties

80—Persayo-Chipeta complex

Map Unit Setting

National map unit symbol: jx6v
Elevation: 5,280 to 6,080 feet
Mean annual precipitation: 6 to 16 inches
Mean annual air temperature: 45 to 53 degrees F
Frost-free period: 115 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Persayo and similar soils: 55 percent
Chipeta and similar soils: 35 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Persayo

Setting

Landform: Hillslopes
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium over residuum weathered from sandstone and shale

Typical profile

A1 - 0 to 3 inches: loam
C1 - 3 to 12 inches: silty clay loam
Cr - 12 to 16 inches: weathered bedrock

Properties and qualities

Slope: 3 to 20 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to moderately saline (0.0 to 8.0 mmhos/cm)
Available water storage in profile: Very low (about 2.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Desert Loamy Clay (Shadscale) (R034XY109UT)

Description of Chipeta

Setting

Landform: Hillslopes
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium over residuum weathered from shale

Typical profile

A1 - 0 to 5 inches: silty clay loam
C1, C2cs - 5 to 17 inches: silty clay
Cr - 17 to 21 inches: weathered bedrock

Properties and qualities

Slope: 3 to 20 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 15.0
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: D
Ecological site: Desert Shallow Clay (Mat Saltbush) (R034XY117UT)
Other vegetative classification: Desert Shallow Clay (Mat Saltbush) (034XY117UT_1)

Minor Components

Saltair

Percent of map unit: 5 percent
Landform: Swales
Landform position (three-dimensional): Dip, talf
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: Desert Salty Silt (Iodinebush) (R028AY132UT)

Killpack

Percent of map unit: 5 percent

Data Source Information

Soil Survey Area: Carbon Area, Utah, Parts of Carbon and Emery Counties
Survey Area Data: Version 7, Jul 31, 2014

Carbon Area, Utah, Parts of Carbon and Emery Counties

90—Ravola loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: jx76
Elevation: 5,400 to 5,800 feet
Mean annual precipitation: 6 to 8 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 115 to 140 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Ravola and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ravola

Setting

Landform: Valley floors, alluvial fans
Landform position (three-dimensional): Talf
Down-slope shape: Linear, concave
Across-slope shape: Concave, convex
Parent material: Alluvium derived from sandstone and shale

Typical profile

A11 - 0 to 2 inches: loam
C1 - 2 to 23 inches: loam
C2, C3 - 23 to 60 inches: silt loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Available water storage in profile: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A

Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Minor Components

Billings
Percent of map unit: 10 percent

Hunting, moderately saline
Percent of map unit: 5 percent

Ravola, silty clay loam surface
Percent of map unit: 5 percent

Data Source Information

Soil Survey Area: Carbon Area, Utah, Parts of Carbon and Emery Counties
Survey Area Data: Version 7, Jul 31, 2014

Carbon Area, Utah, Parts of Carbon and Emery Counties

92—Ravola-Gullied land complex

Map Unit Setting

National map unit symbol: jx78
Elevation: 5,280 to 5,980 feet
Mean annual precipitation: 6 to 8 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 115 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Ravola and similar soils: 70 percent
Gullied land: 20 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ravola

Setting

Landform: Alluvial fans, valley floors
Landform position (three-dimensional): Talf
Down-slope shape: Concave, linear
Across-slope shape: Convex, concave
Parent material: Alluvium derived from sandstone and shale

Typical profile

A11 - 0 to 2 inches: loam
C1 - 2 to 23 inches: loam
C2, C3 - 23 to 60 inches: silt loam

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Available water storage in profile: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A
Ecological site: Desert Loam (Shadscale) (R034XY106UT)

Description of Gullied Land

Setting

Landform: Valley floors
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Concave

Typical profile

H1 - 0 to 60 inches: variable

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e

Minor Components

Green river

Percent of map unit: 8 percent
Landform: Flood plains
Landform position (three-dimensional): Dip, talf
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: Wet Saline Streambank (Coyote willow) (R034XY026UT)
Other vegetative classification: Wet Saline Streambank (Coyote Willow) (034XY026UT_2)

Killpack

Percent of map unit: 2 percent

Data Source Information

Soil Survey Area: Carbon Area, Utah, Parts of Carbon and Emery Counties
Survey Area Data: Version 7, Jul 31, 2014

APPENDIX E: OHWM DATASHEETS

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: SR-10
Project Number:
Stream: Drunkards Wash
Investigator(s): Todd Sherman

Date: 10/7/15
Town: Price
Photo begin file#:

Time: CS-1
State: Utah
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☑ / N ☐ Is the site significantly disturbed?

Location Details:
Section 28, T14S, R10E

Projection: UTM12N **Datum:** WGS84
Coordinates: 515836 E 4380865 N

Potential anthropogenic influences on the channel system:

The channel has been culverted under SR-10.

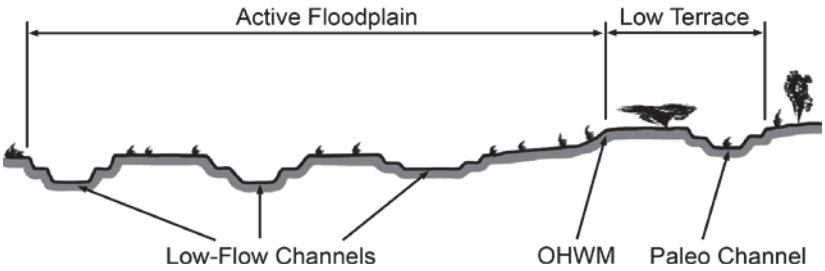
Brief site description:

The perennial stream channel is approximately 8 feet wide and supports wetlands in some areas of the floodplain.

Checklist of resources (if available):

- ☑ Aerial photography
  Dates:
- ☑ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

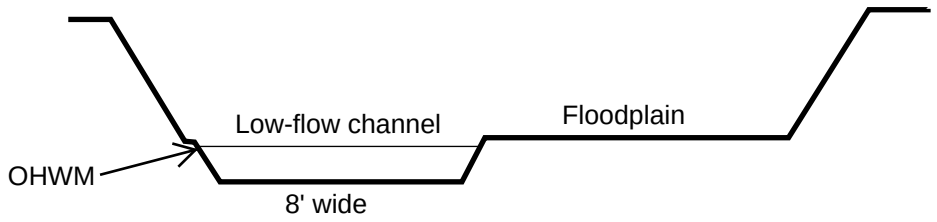


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Project ID: **Cross section ID:** CS-1 **Date:** 10/7/15 **Time:**

Cross section drawing:



OHWM

GPS point: CS-1

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

The OHWM is defined by a change in the sediment texture in the channel versus on the floodplain, the lack of vegetation below the OHWM, and the obvious break in the bank slope.

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: CS-1

Characteristics of the floodplain unit:

Average sediment texture: coarse sand and gravel

Total veg cover: 0 % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [x] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

The low-flow channel is characterized by the presence of a bed and bank and the obvious surface relief.

Project ID: **Cross section ID:** CS-1 **Date:** 10/7/15 **Time:**

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: CS-1

Characteristics of the floodplain unit:

Average sediment texture: loam

Total veg cover: 100 % Tree: _____% Shrub: _____% Herb: 100 %

Community successional stage:

- ☐ NA
- ☑ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☑ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

The active floodplain is characterized by wetland vegetation that is laid over from overbank flow. There are no low terraces associated with this stream in the project area - there are very high steep banks on either side of the floodplain.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: SR-10
Project Number:
Stream: unnamed tributary to Drunkards Wash
Investigator(s): Todd Sherman

Date: 10/7/15
Town: Price
Photo begin file#:

Time: CS-2
State: Utah
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☑ / N ☐ Is the site significantly disturbed?

Location Details:
Section 33, T14S, R10E

Projection: UTM12N **Datum:** WGS84
Coordinates: 515791 E 4379723 N

Potential anthropogenic influences on the channel system:

The channel has been culverted under SR-10.

Brief site description:

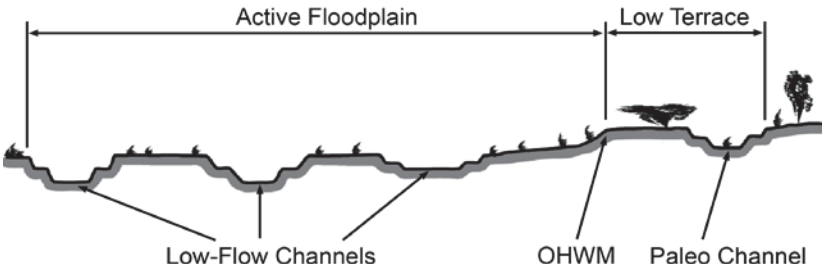
The perennial stream channel is approximately 8 feet wide and supports wetlands along much of its banks.

Checklist of resources (if available):

- ☑ Aerial photography
  Dates:
- ☑ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

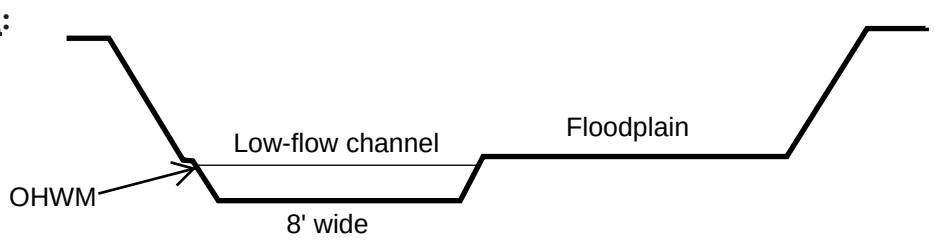


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Project ID: **Cross section ID:** CS-2 **Date:** 10/7/15 **Time:**

Cross section drawing:



OHWM

GPS point: CS-2

Indicators:

- ☑ Change in average sediment texture
- ☐ Change in vegetation species
- ☑ Change in vegetation cover
- ☑ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

The OHWM is defined by a change in the sediment texture in the channel versus on the floodplain, the lack of vegetation below the OHWM, and the obvious break in the bank slope.

Floodplain unit:

☑ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: CS-2

Characteristics of the floodplain unit:

Average sediment texture: coarse sand and gravel

Total veg cover: 0 % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☑ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☑ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

The low-flow channel is characterized by the presence of a bed and bank and the obvious surface relief.

Project ID: **Cross section ID:** CS-2 **Date:** 10/7/15 **Time:**

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: CS-2

Characteristics of the floodplain unit:

Average sediment texture: loam

Total veg cover: 100 % Tree: _____% Shrub: _____% Herb: 100 %

Community successional stage:

- ☐ NA
- ☑ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☑ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

The active floodplain is characterized by wetland vegetation that is laid over from overbank flow. There are no low terraces associated with this stream in the project area - there are very high steep banks on either side of the floodplain.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

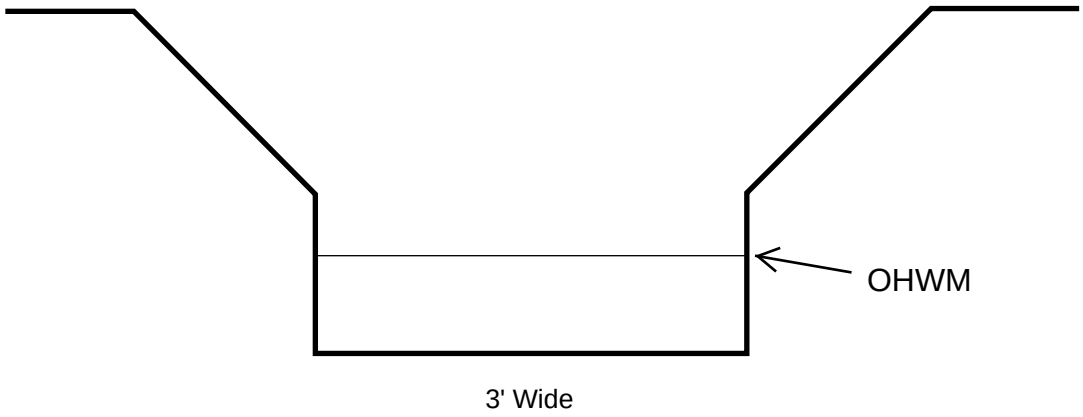
- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

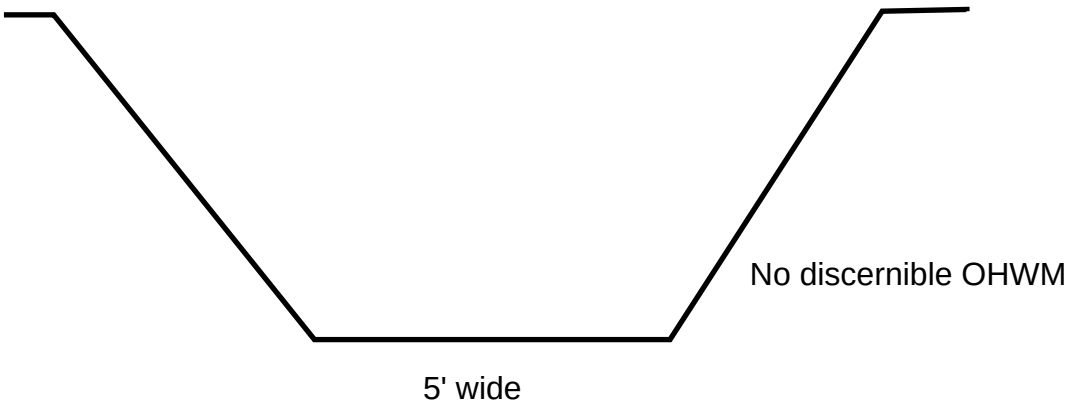
- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

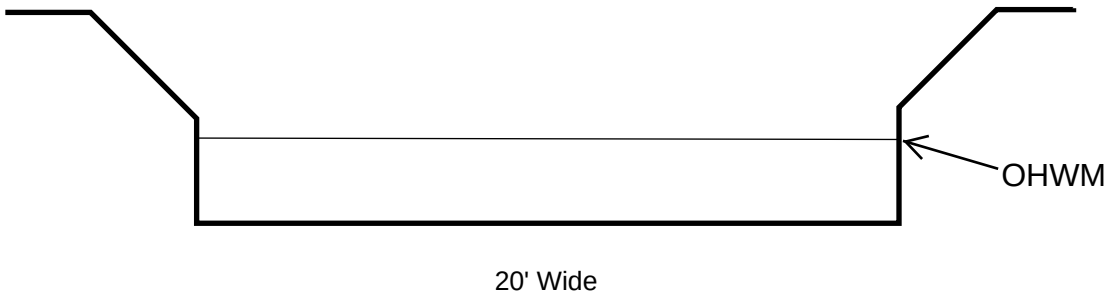
APPENDIX F: DITCH/CANAL CROSS SECTIONS



Cross Section 1. Unnamed Irrigation Ditch (D-1).



Cross Section 2. Unnamed Drainage Ditch (D-2).



Cross Section 3. Carbon Canal (D-2).

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

June 2, 2016

Regulatory Division (SPK-2015-01102)

UDOT Region 4
Attn: Mr. Clayton Wilson
210 West 800 South
Richfield, Utah 84701

Dear Mr. Wilson:

We are responding to your May 27, 2016 request for a preliminary jurisdictional determination (JD), in accordance with our Regulatory Guidance Letter (RGL) 08-02, for the US-6 to Ridge Road, SR-10 site. The approximately 36-acre project site is located along SR-10, at Latitude 39.5666°, Longitude -110.8150°, in Price, Carbon County, Utah (enclosure 1).

Based on available information, we concur with the amount and location of wetlands and/or other water bodies on the site as depicted on the enclosed May 5, 2016 "Delineation Detail, SR 10; US 6 to Ridge Road" drawings prepared by Wetland Resources, Inc. (enclosure 2). The approximately 1.6 acres of wetlands and 1,656 linear feet of streams or ditches present within the survey area are potential waters of the United States regulated under Section 404 of the Clean Water Act.

We have enclosed a copy of the *Preliminary Jurisdictional Determination Form* for this site (enclosure 3). Please sign and return a copy of the completed form to this office, but keep the original for your records. Once we receive a copy of the form with your signature we can accept and process a Pre-Construction Notification or permit application for your proposed project.

You should not start any work in potentially jurisdictional waters of the United States unless you have Department of the Army permit authorization for the activity. You may request an approved JD for this site at any time prior to starting work within waters. In certain circumstances, as described in RGL 08-02, an approved JD may later be necessary.

You should provide a copy of this letter and notice to all other affected parties, including any individual who has an identifiable and substantial legal interest in the property.

This preliminary determination has been conducted to identify the potential limits of wetlands and other water bodies which may be subject to U.S. Army Corps of Engineers' jurisdiction for the particular site identified in this request. A Notification of Appeal Process and Request for Appeal form is enclosed to notify you of your options with this determination (enclosure 4). This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are U.S. Department of Agriculture (USDA) program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer survey from the link on our website at www.spk.usace.army.mil/Missions/Regulatory.aspx.

Please refer to identification number SPK-2015-01102 in any correspondence concerning this project. If you have any questions, please contact Ashley Kraetsch at the Bountiful Regulatory Office, 533 West 2600 South, Suite 150, Bountiful, UT 84010, by email at *Ashley.M.Kraetsch@usace.army.mil*, or telephone at 801-295-8380 extension 13.

Sincerely,

Jason Gipson
Chief, Utah-Nevada Branch
Regulatory Division

Enclosures

cc: (w/ encls)

Todd Sherman, Wetland Resources (todd@wetlandresources.net)

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 12. The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was derived from multiple sources. Base map files were compiled from the U.S. Geological Survey, 1989 and 2007, National Geodetic Survey, 2007, U.S. Census Bureau, 2000, U.S. Bureau of Land Management, 2007, and Farm Service Agency Aerial Photography Field Office, 2006.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

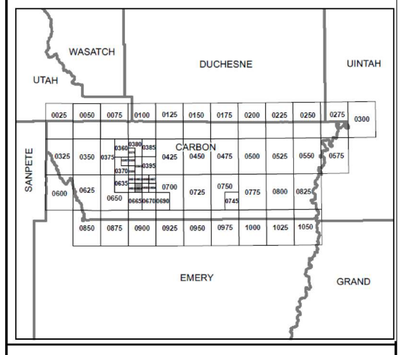
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

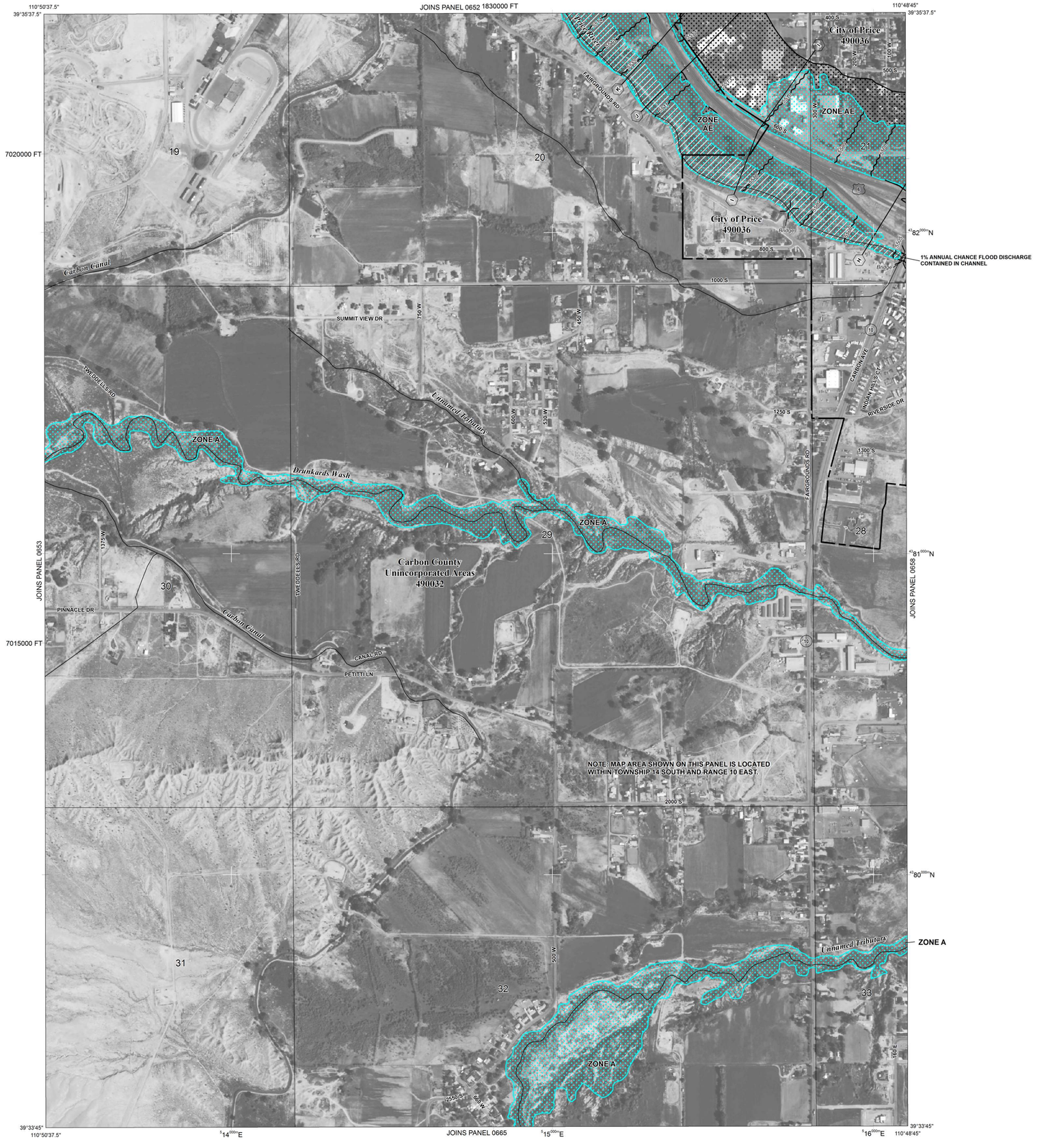
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map**, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange (FMIX) at **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip.

STATE OF UTAH FIRM PANEL LOCATOR DIAGRAM





LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary

0.2% annual chance floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

Limit of Moderate Wave Action

513 — Base Flood Elevation line and value; elevation in feet*

(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

Cross section line

Transect line

Culvert, Flume, Penstock or Aqueduct

Road or Railroad Bridge

Footbridge

87°07'45", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere

$^{39}76^{000m}$N — 1000-meter Universal Transverse Mercator grid values, zone 12N

600000 FT — 5000-foot grid values: Utah State Plane coordinate system, Central zone (FIPSZONE 4302), Lambert Conformal Conic projection

DX5510 × — Bench mark (see explanation in Notes to Users section of this FIRM panel)

● M1.5 — River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
May 2, 2012

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0654E

FIRM

FLOOD INSURANCE RATE MAP

CARBON COUNTY, UTAH

AND INCORPORATED AREAS

PANEL 654 OF 1050

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CARBON COUNTY	490032	0654	E
PRICE, CITY OF	490036	0654	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
49007C0654E

EFFECTIVE DATE
MAY 2, 2012

Federal Emergency Management Agency

Appendix H

Contents:

Section 4(f) Evaluation

SR-10; 3200 South to 1150 South, Price
Section 4(f) Evaluation

December 2016

Utah Department of Transportation

UDOT Project No. F-0010(75)66

UDOT PIN 13664

1.0 INTRODUCTION

The Utah Department of Transportation (UDOT), in cooperation with the Federal Highway Administration (FHWA), proposes to make roadway improvements to address current safety issues along State Route (SR) 10 between mileposts (MP) 65.4 and 67.5. The proposed improvements are subject to the National Environmental Policy Act (NEPA), Section 4(f) of the Department of Transportation Act of 1966 (Section 4(f)), and Section 106 of the National Historic Preservation Act (NHPA) because they will utilize federal funds administered by the FHWA under the Federal-Aid Highway Program.

The proposed improvements are within a category of actions designated by the FHWA as Categorically Excluded (CE) under NEPA. UDOT is responsible for processing CEs under the FHWA/UDOT NEPA CE Assignment MOU (see Second Renewed Memorandum of Understanding between Federal Highway Administration, Utah Division and the Utah Department of Transportation, State Assumption of Responsibility for Categorical Exclusions (June 30, 2014)). As part of the MOU, UDOT is also responsible for complying with Section 106 of the NHPA as well as Section 4(f).

This Section 4(f) evaluation has been prepared in conjunction with the CE being prepared for the planned improvements to SR-10. This evaluation relies, in part, on information generated by UDOT's compliance with NHPA Section 106 for the proposed action.

2.0 Proposed Action

This section summarizes the project purpose and need and the Proposed Action.

2.1 Study Area

The proposed project is located south of Price, Utah in Carbon County. The study area is on SR-10, between approximate MP 65.6 and MP 67.5 (see Figure 1).

Figure 1. Study Area

2.2 Purpose and Need

The purpose of the project is to improve the roadway and safety along the corridor. Crash data shows an increase in crashes along SR-10 as the corridor narrows from four lanes to two lanes (approximately from 1450 South to 3000 South). This is likely due in part to insufficient width (e.g., no center turn lane and narrow shoulders) for vehicles trying to make necessary movements (i.e., slow down to turn left or right) to and from adjoining properties. A three-lane section with wider shoulders would provide additional lane width, as well as provide separation between opposing traffic and turning vehicles. (Avenue Consultants 2013)

There is currently no sidewalk along the corridor; pedestrians walk on the roadway shoulder. Adding sidewalks would improve pedestrian safety.

The sight distance on the vertical curve near MP 67.0 is at the minimum standard; reconstructing the vertical curve will improve sight distance and safety. The pavement section along SR-10 is starting to fail due to the large volume of passenger vehicles and truck traffic. A new pavement section is needed to allow the corridor to function to the 20-year design life. The roadway drainage system is also deficient and needs to be upgraded to capture roadway runoff. (Lochner 2004)

2.3 Proposed Action

The Proposed Action is to reconstruct SR-10 from approximate MP 65.6 to MP 67.5 (see Figure 1). Reconstruction of SR-10 would include the following elements:

- Widening to accommodate a 14-foot-wide center turn lane, two 12-foot-wide travel lanes (one south bound and one north bound), and 6-foot-wide shoulders in both directions
- Adding curb, gutter, and 6-foot-wide sidewalks on both sides to serve pedestrians
- Replacing granular borrow, untreated base course, and pavement to extend the life of the pavement section
- Adding turn lanes at Roberson Road, 2750 South, and 3000 South
- Replacing driveways and matching elevation of side streets
- Relocating utilities, as needed
- Installing a new drainage system, including pipes, manholes, and inlets to collect roadway runoff
- Extending or replacing pipe and box culverts, and installing new headwalls and rip rap
- Lowering the profile at the vertical curve near MP 67.0 to improve sight distance.

The Proposed Action would widen SR-10 on both sides of a meandering alignment to minimize impacts to adjacent properties. Figure 2 illustrates the proposed typical cross section and Figure 3 shows the alignment of the Proposed Action.

Figure 2. Typical Cross Section

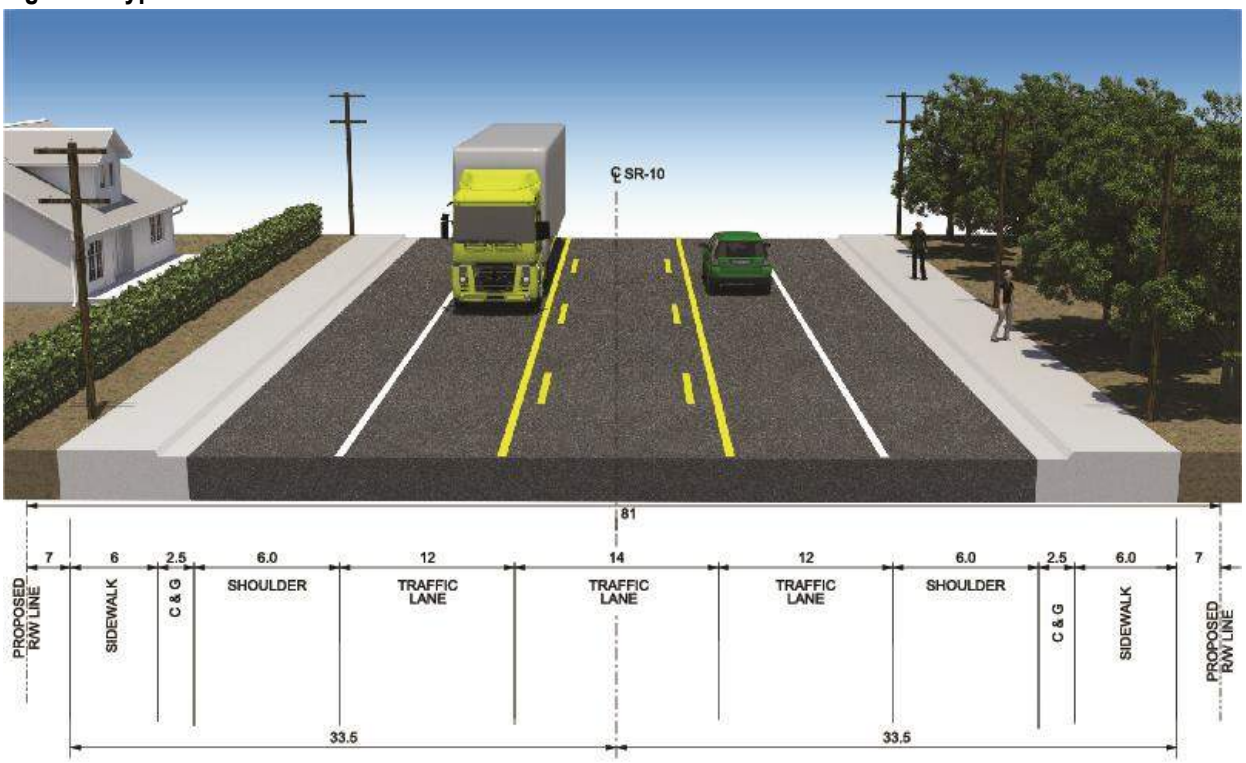


Figure 3. Proposed Action (1 of 6)

Figure 3. Proposed Action (2 of 6)

Figure 3. Proposed Action (3 of 6)

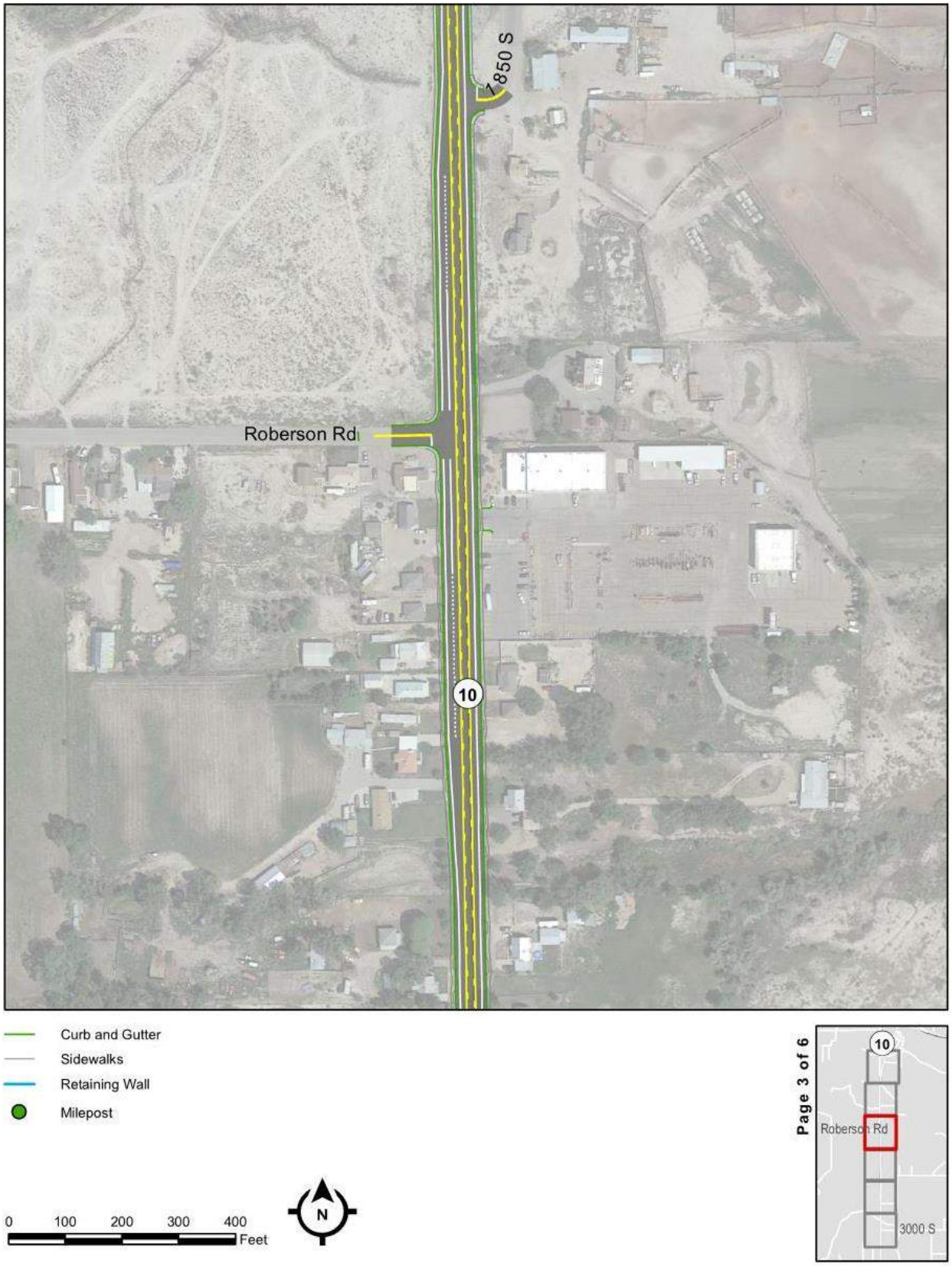
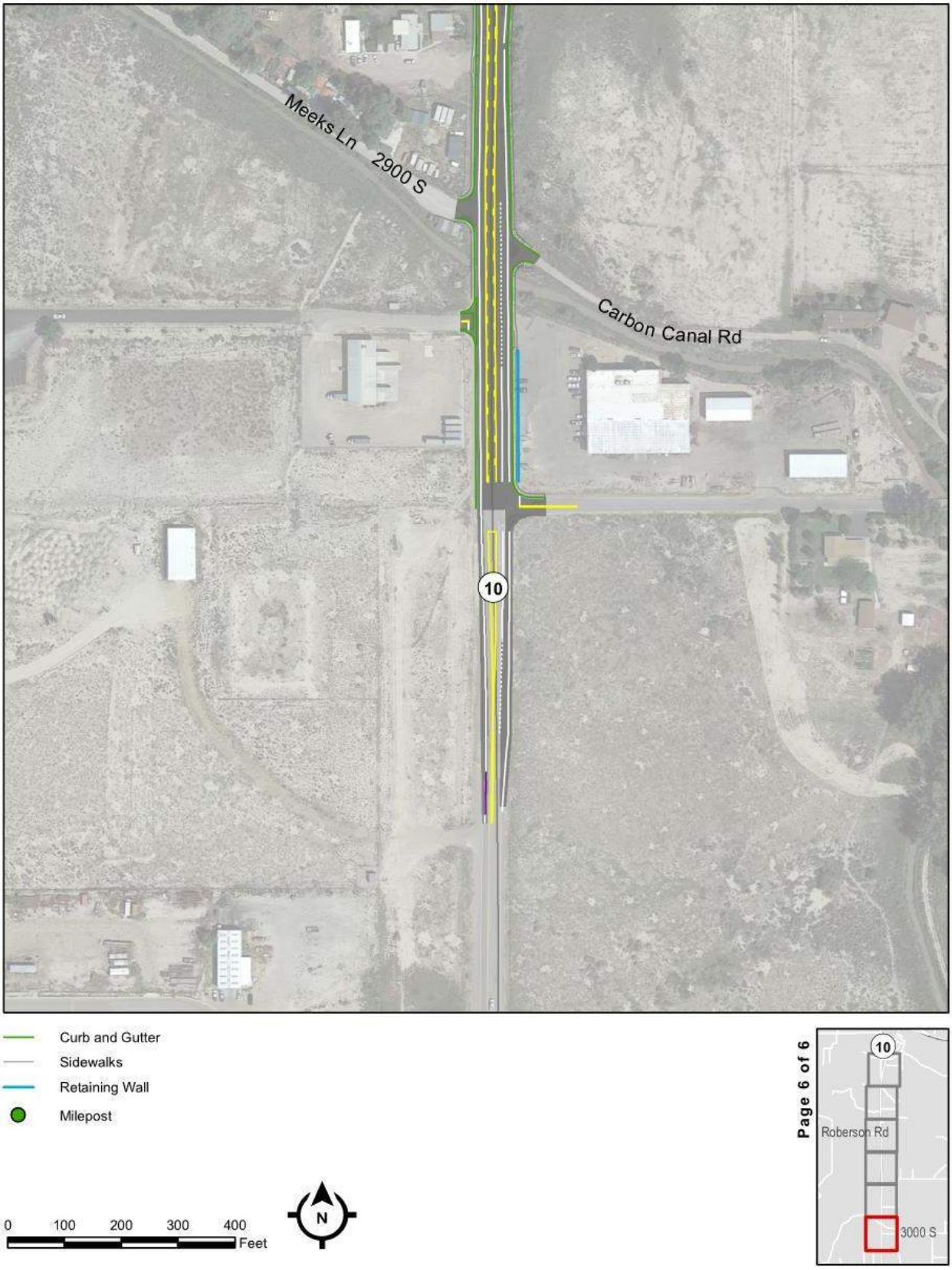


Figure 3. Proposed Action (4 of 6)

Figure 3. Proposed Action (5 of 6)

Figure 3. Proposed Action (6 of 6)



3.0 Regulatory Setting

The proposed project is expected to utilize federal funding through the Federal Aid Highway Program administered by FHWA; therefore, the project must comply with Section 4(f). Section 4(f) refers to the original section in the U.S. Department of Transportation Act of 1966 which established the requirement for consideration of park and recreational lands, wildlife and waterfowl refuges, and historic sites in transportation project development. The law, now codified in 49 U.S.C 303 and 23 U.S.C. 138, is implemented by the FHWA through the regulations in 23 CFR Part 774 and through a guidance document that supplements the regulations, titled the "Section 4(f) Policy Paper" (FWHA, July 2012). Pursuant to the FHWA/UDOT NEPA CE Assignment MOU, UDOT has responsibility for implementing Section 4(f), 23 CFR Part 774 (Regulations) and the Section 4(f) Policy Paper for the proposed project.

3.1 Regulatory Requirements for Section 4(f) Evaluation and Approval of Section 4(f) Uses

Under Section 4(f), a transportation project may not cause the "use" of a "Section 4(f) property" unless specific requirements are met. As defined in Section 774.17 of the Regulations, a Section 4(f) property "means publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance." The "use" of a Section 4(f) property occurs when:

1. Land is permanently incorporated into a transportation facility;
2. There is a temporary occupancy of land that is adverse in terms of the statute's preservation purpose as determined by the criteria in 23 CFR 774.13(d); or
3. There is "constructive use" of a Section 4(f) property as determined by the criteria in 23 CFR 774.15.

Section 4(f) prohibits UDOT, as FHWA's delegate, from approving the use of any Section 4(f) property for a transportation project except as follows (see 23 CFR Section 774.3):

- First, the use of Section 4(f) property can be approved upon a finding that the use would have only a *de minimis* impact on that property. When a finding of *de minimis* impacts is made, there is no requirement to seek alternatives that would avoid the use of that property.
- Second, a use with a greater than *de minimis* impact on a Section 4(f) property (hereafter referred to as a "greater than *de minimis* use") can be approved upon a determination that 1) there is no feasible and prudent alternative to the use of land; and 2) the action includes all possible planning to minimize harm to that property.
- Third, where there are greater than *de minimis* uses and no feasible and prudent avoidance alternative can be identified, UDOT may approve only the alternative that 1) causes the least overall harm in light of the statute's preservation purpose; and 2) the alternative selected must include all possible planning, as defined in 23 CFR 774.17, to minimize harm to the Section 4(f) property.

An alternative is not "feasible" for purposes of Section 4(f) if it "cannot be built as a matter of sound engineering judgement." An alternative is not "prudent" if it:

- Compromises the project to a degree that is unreasonable to proceed with the project in light of its stated purpose and need;
- Results in unacceptable safety or operational problems;
- After reasonable mitigation, still causes:
    - Severe social, economic, or environmental impacts;
    - Severe disruption to established communities;
    - Severe disproportionate impacts to minority or low income populations; or
    - Severe impacts to environmental resources protected under other Federal statutes (see 23 CFR 774.17).

When no feasible and prudent avoidance alternative for a greater than *de minimis* use can be identified, the alternative with the "least overall harm" is determined by balancing the following factors:

- The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property);
- The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection;
- The relative significance of each Section 4(f) property;
- The views of the official(s) with jurisdiction over each Section 4(f) property;
- The degree to which each alternative meets the purpose and need for the project;
- After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and
- Substantial differences in costs among the alternatives (see 23 CFR 774.3(c)).

If the assessment of overall harm finds that two or more alternatives are substantially equal, UDOT can approve any of those alternatives (Section 4(f) Policy Paper 3.3.3.1).

3.2 De Minimis Section 4(f) Impact

As noted above, upon finding that a Section 4(f) use would have only a *de minimis* impact on a Section 4(f) resource, that use can be allowed and does not require further analysis of potential avoidance alternatives. For Section 4(f) properties that are parks, recreation areas, or refuges, a finding of *de minimis* impact applies only if the transportation program or project will not adversely affect the activities, features, and attributes of the park, recreation area, or wildlife or waterfowl refuge. This finding requires the concurrence of the official with jurisdiction over the resource, after the public has been given an opportunity to comment (23 CFR Sections 774.5(b)(2) and 774.17).

For Section 4(f) resources that are historic properties, a finding of *de minimis* impact applies only if the transportation program or project will have either *no effect* or *no adverse effect* on the historic property. These findings require the concurrence of the Utah State Historic Preservation Office (USHPO), which has

jurisdiction over historic properties in Utah, and must be developed in coordination with any consulting parties involved in the NHPA Section 106 process (as further described below) (see 23 CFR 774.5(b)(1)).

3.3 Temporary Occupancy

Temporary Occupancy is identified in 23 CFR 774.13(d) as an exception to the Section 4(f) approval requirement, if the following conditions are met:

1. Duration must be temporary, i.e., less than the time needed for construction of the project, and there should be no change in ownership of land;
2. Scope of the work must be minor, i.e., both the nature and the magnitude of the changes to the Section 4(f) property are minimal;
3. There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis;
4. The land being used must be fully restored, i.e., the property must be returned to a condition which is at least as good as that which existed prior to the project; and
5. There must be documented agreement of the official(s) with jurisdiction over the Section 4(f) regarding the above conditions.

4.0 Identification of Section 4(f) Properties and Determinations of Use

This section describes the Section 4(f) properties within the study area that could be affected by the proposed action alternative. The study area was examined for publicly owned parks, recreational areas, wildlife and waterfowl refuges, and historic properties.

4.1 Publicly Owned Parks, Recreation Areas, Wildlife and Waterfowl Refuges

File searches, field reviews, and correspondence with city and county officials took place to identify potential Section 4(f) properties in the study area. There are no publicly owned parks, recreation areas, or wildlife and waterfowl refuges in the study area.

4.2 Historic Properties

An historic property is considered significant, and is protected under Section 4(f), if it is listed on or is eligible for listing on the National Register of Historic Places (NHRP) (see 23 CFR 774.17). The determination of eligibility, and the evaluation of project effects on listed and eligible properties, is made by UDOT in consultation with the USHPO as part of the delegated NHPA Section 106 process.

As part of the Section 106 process, literature searches and field surveys for architectural and archaeological properties were conducted to determine whether historic properties are located in the study area. According to the Section 106 implementing regulations (36 CFR 800.16) the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties is defined as the Area of Potential Affect (APE). The APE for the project is shown on Figure 1.

The architectural survey (*Literature and Field Verification of Utah Department of Transportation's State Route 10 Road Widening Between MP 65.27 and MP 67.5; South Price to Ridge Road, Carbon County, Utah* (March 3, 2016)) identified 31 eligible historic architectural properties within the study area.

A survey was also undertaken to locate archaeological resources within the study area (*Site Verification and Class III Inventory of Utah Department of Transportation's State Route 10 Road Widening Between MP 65.27 and MP 67.5; South Price to Ridge Road, Carbon County, Utah (March 6, 2016)*). The survey located four eligible archaeological sites in the study area. None of the four eligible archaeological sites warrant preservation in place and, therefore, Section 4(f) does not apply.

4.3 Determination of Use

Twenty-seven eligible historic architectural properties would be impacted by the Proposed Action. Pursuant to the Section 106 process, a finding of *no adverse effect* has been made for 18 of these properties, with a finding of *adverse effect* for the other nine properties. The impacted properties, and their determination and description of effects, are identified in Table 1.

USHPO has given its written concurrence with these findings, and has been informed by UDOT that it intends to make Section 4(f) *de minimis* impact determinations for 17 of the 18 *no adverse effect* properties. The remaining *no adverse effect* property would be a Section 4(f) temporary occupancy (see Determination of Eligibility/Finding of Effect (DOEFOE) in Appendix A). The temporary occupancy of 1777 S. Highway 10 was determined based on the criteria listed in Section 3.3. A temporary construction easement would be required to construct a side slope from the widened roadway elevation to the existing ground elevation. As such, construction efforts would be shorter than the timeframe to needed to construct the project; ownership would not change; there would be no permanent adverse effects nor interference with protected activities, features, or attributes; and the area would be fully restored.

Table 1. Impacts to Section 4(f) Properties (square footage is approximate)

Address	Date	Style/Type	Finding of Effect	Section 4(f) Use
?2010	1944	1-story service station in Post-WWII: other	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
	1940	1-story foursquare / 20th century other	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*

Table 1. Impacts to Section 4(f) Properties (square footage is approximate)

Address	Date	Style/Type	Finding of Effect	Section 4(f) Use
2044 S. Highway 10				
2066 S. Highway 10	1940	1-story foursquare / 20th century other	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
2067 S. Highway 10	1941	Ranch/rambler	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
2088 S. Highway 10	1941	20th century other / other residential	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
?2188 S. Highway 10	1946	1-story single dwelling clipped gable cottage	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
2198 S. Highway 10	1947	1-story single dwelling clipped gable cottage	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
	1947	1/2 story single dwelling post-WWII: other	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*

Table 1. Impacts to Section 4(f) Properties (square footage is approximate)

Address	Date	Style/Type	Finding of Effect	Section 4(f) Use
2305 S. Highway 10				
2433 S. Highway 10	1970	1-story single-gable ranch/rambler	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
1767 S. Highway 10	1920	1-story foursquare / Post-WWII: other / 20th century: other	No Adverse Effect; Temporary Construction Easement (TCE): 1,488 sq. ft.; Partial Acquisition: 116 sq. ft.	*de minimis*
1867 S. Highway 10	1960	1-story side-gabled Post-WWII: other / other residential	No Adverse Effect; TCE: 5,119 sq. ft.; Partial Acquisition: 6,974 sq. ft.	*de minimis*
45 E. Roberson Road (2000 S.)	1950	1-story hip-roofed single dwelling ranch/rambler	No Adverse Effect; Partial Acquisition: 359 sq. ft.	*de minimis*
2098 S. Highway 10	1970	Mobile home / mobile home	No Adverse Effect; TCE: 408 sq. ft.; Partial Acquisition: 2,093 sq. ft.	*de minimis*

Table 1. Impacts to Section 4(f) Properties (square footage is approximate)

Address	Date	Style/Type	Finding of Effect	Section 4(f) Use
2111 S. Highway 10	1954	1/2-story single dwelling Cape Cod / WWII-era cottage	No Adverse Effect; TCE: 4,413 sq. ft.; Partial Acquisition: 1,813 sq. ft.	*de minimis*
?2154 S. Highway 10	1930	1-story WWII-era cottage / 20th century: other	No Adverse Effect; TCE: 3,512 sq. ft.; Partial Acquisition: 976 sq. ft.	*de minimis*
2199 S. Highway 10	1945	1-story single dwelling clipped gable cottage	No Adverse Effect; TCE: 2,219 sq. ft.; Partial Acquisition: 1,111 sq. ft.	*de minimis*
?2218 S. Highway 10	1958	1-story single-gable early ranch/rambler	No Adverse Effect; TCE: 781 sq. ft.; Partial Acquisition: 244 sq. ft.	*de minimis*
2266 S. Highway 10	1944	1 1/2-story front-gabled other residential / Post WWII: other	No Adverse Effect; TCE: 5,187 sq. ft.; Partial Acquisition: 505 sq. ft.	*de minimis*
2289 S. Highway 10	1925	1-story other residential / 20th century other	No Adverse Effect; TCE: 950 sq. ft.; Partial Acquisition: 704 sq. ft.	*de minimis*

Table 1. Impacts to Section 4(f) Properties (square footage is approximate)

Address	Date	Style/Type	Finding of Effect	Section 4(f) Use
2345 S. Highway 10	1946	traditional style single dwelling WWII-era cottage	No Adverse Effect; TCE: 4,331 sq. ft.; Partial Acquisition: 1,696 sq. ft.	*de minimis*
2354 S. Highway 10	1939	1-story single dwelling hipped roof WWII-era cottage / 20th century: other	No Adverse Effect; TCE: 6,625 sq. ft.; Partial Acquisition: 1,400 sq. ft.	*de minimis*
2410 S. Highway 10	1935	Minimal traditional / 1-story single dwelling hipped-roof WWII-era cottage	No Adverse Effect; TCE: 2,247 sq. ft.; Partial Acquisition: 435 sq. ft.	*de minimis*
2511 S. Highway 10	1945	1-story WWII-era cottage / post WW II: other	No Adverse Effect; TCE: 1,212 sq. ft.; Partial Acquisition: 1,474 sq. ft.	*de minimis*
2754 S. Highway 10	1955	1-story ranch/rambler	No Adverse Effect; TCE: 954 sq. ft.; Partial Acquisition: 850 sq. ft.	*de minimis*
2767 S. Highway 10	1957	2-story split level single dwelling	No Adverse Effect; TCE: 1,935 sq. ft.; Partial Acquisition: 3,827 sq. ft.	*de minimis*

Table 1. Impacts to Section 4(f) Properties (square footage is approximate)

Address	Date	Style/Type	Finding of Effect	Section 4(f) Use
2832 S. Highway 10	1959	1 1/2 story Cape Cod type minimal traditional	No Adverse Effect; TCE: 631 sq. ft.; Partial Acquisition: 1,555 sq. ft.	*de minimis*
1777 S. Highway 10	1930	1-story central block with projecting bays / 20th century: other	No Adverse Effect; TCE: 1,056 sq. ft.	Temporary Occupancy

Implementation of the Proposed Action would result in a greater than *de minimis* use of nine properties, all of which are located on SR-10 (three on the east side and six on the west side). These properties would be acquired and the buildings would be demolished to widen SR-10 (see Figure 4).

Implementation of the Proposed Action would result in a *de minimis* use of 17 properties. Seventeen properties are located on SR-10 (eight on the east side and eight on the west side). These parcels would be affected by the partial acquisition of property to widen SR-10. A partial acquisition is required from one property located on Roberson Road, west of SR-10 to allow SR-10 to tie into Roberson Road (see Figure 4).

One property on the east side of SR-10 would be affected by a temporary construction easement, which would result in a temporary occupancy.

5.0 Avoidance Alternatives, Least Overall Harm Analysis, and Measures to Minimize Harm

This section describes the consideration of potential total avoidance alternatives, a determination of the alternative with least overall harm, and measures to avoid and minimize impacts to individual Section 4(f) properties.

5.1 Avoidance Alternatives

Before UDOT can approve a greater than *de minimis* use of a Section 4(f) resource, feasible and prudent alternatives to avoid that use must be considered. Where an action would cause *de minimis* uses of some properties and greater than *de minimis* uses for others, avoidance alternatives need not be considered for the properties with *de minimis* impacts (Section 4(f) Policy Paper 3.3.3.1).

There are no feasible and prudent location alternatives (i.e., the re-routing of the entire project along a different alignment) or alternatives using different transportation modes to avoid the use of Section 4(f) resources because the purpose of the project is to improve vehicular and pedestrian safety, and replace the pavement section to extend the operational life of SR-10. The No-Action Alternative would leave the safety problems and operational life of SR-10 unaddressed and would not meet the purpose and need of the project. Therefore, the only potential avoidance alternatives would be alignment modifications that might avoid Section 4(f) properties.
Using the same cross section as the Proposed Action (see Figure 2), two potential avoidance alternatives were developed: Widen East and Widen West (see Figure 4).

The Proposed Action is a meandering alternative that widens SR-10 on both sides to minimize property impacts. It would result in greater than *de minimis* uses of nine Section 4(f) properties, one temporary occupancy, and 17 *de minimis* uses. The Proposed Action would also result in full acquisition of two properties and partial acquisition of 38 properties that do not qualify for protection under Section 4(f).

The Widen West Alternative would hold the existing right-of-way at the existing location on the east side and widen to the west of SR-10. It would result in greater than *de minimis* uses of 10 Section 4(f) properties, temporary occupancy of 11 properties, and 6 *de minimis* uses. It would also result in full acquisition of 7 properties and partial acquisition of 19 properties that do not qualify for protection under Section 4(f).

The Widen East Alternative would hold the existing right-of-way at the existing location on the west side and widen to the east of SR-10. It would result in greater than *de minimis* uses of eight Section 4(f) properties, temporary occupancy of 16 properties, and four *de minimis* uses. It would also result in full acquisition of five properties and partial acquisition of 12 properties that do not qualify for protection under Section 4(f).

Table 2 summarizes the Section 4(f) and right-of-way impacts for the Proposed Action, Widen West Alternative, and Widen East Alternative. It is not possible to modify the alignment of SR-10 to avoid the use of all Section 4(f) properties.

Table 2. Comparison of Section 4(f) and Right-of-Way Impacts

Type of Use / Property Acquisition	Proposed Action	Widen West	Widen East
Greater than *de minimis*	9	10	8
De Minimis	17	6	4
Temporary Occupancy	1	11	16
Non-4(f) Full Acquisition	2	7	5
Non-4(f) Partial Acquisition	38	19	12

Figure 4. Right-of-way Impact Comparison of Section 4(f) Resources (1 of 3)

Figure 4. Right-of-way Impact Comparison of Section 4(f) Resources (2 of 3)

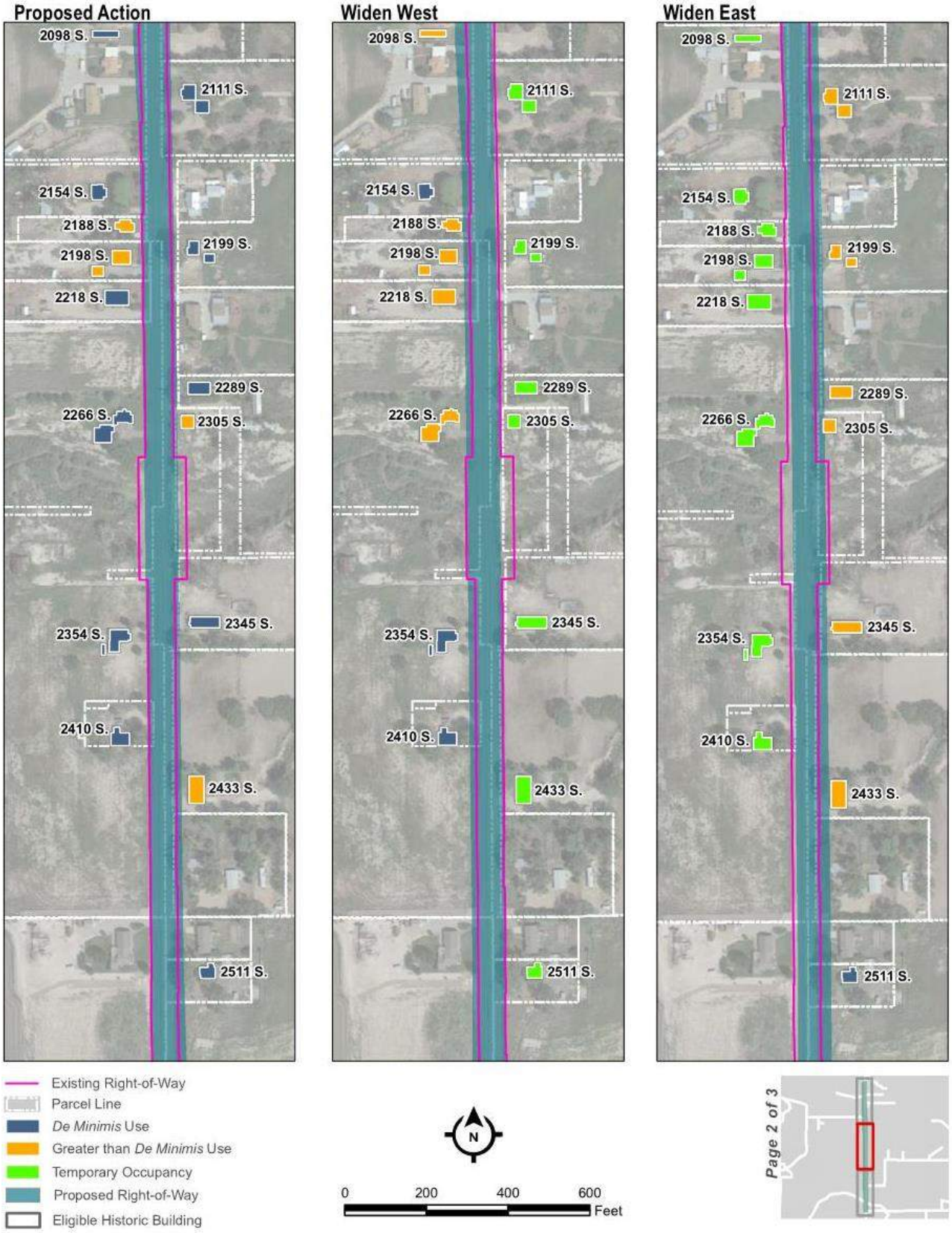
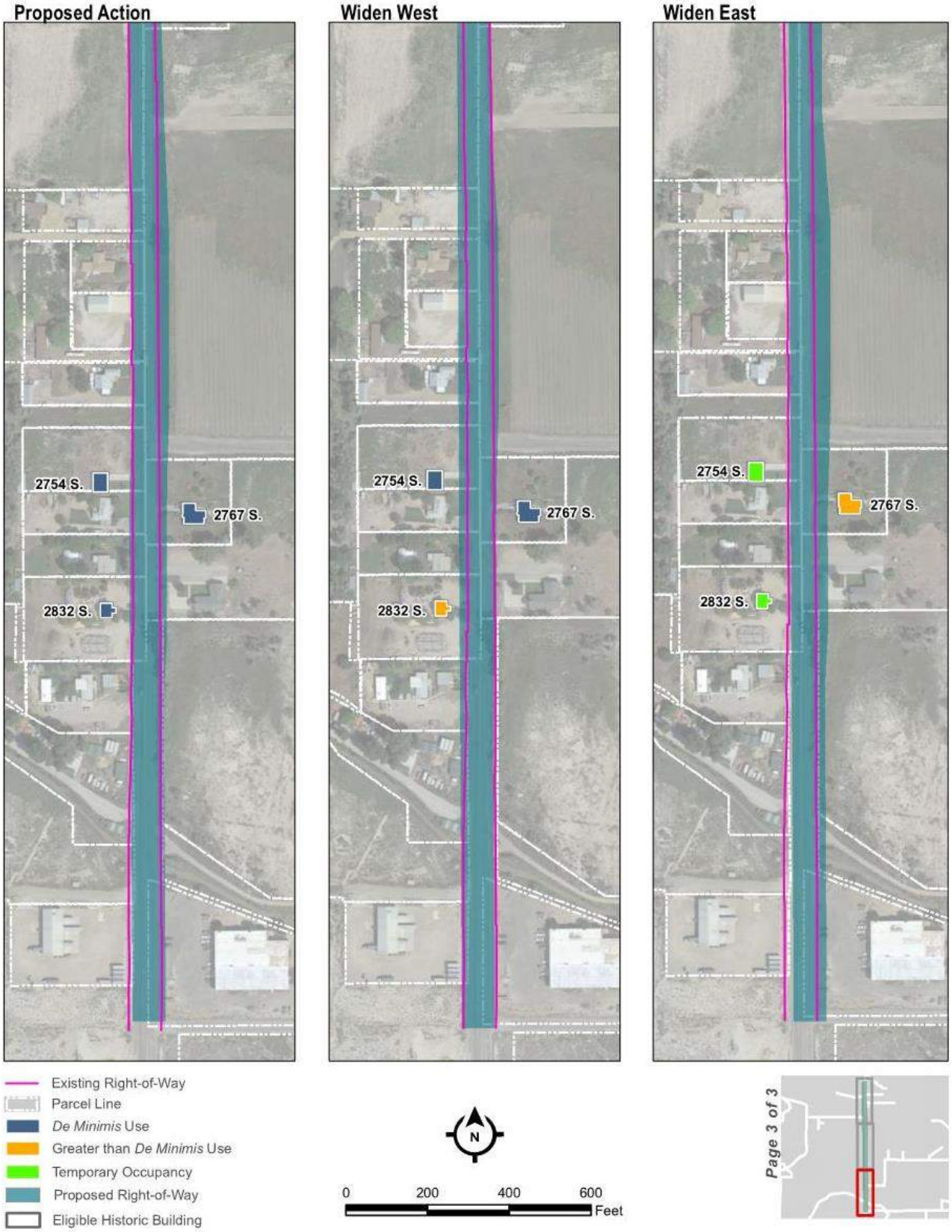


Figure 4. Right-of-way Impact Comparison of Section 4(f) Resources (3 of 3)



5.2 Least Overall Harm Analysis

Because there is not a feasible and prudent avoidance alternative, an analysis was conducted to determine which of the alternatives considered would result in the least overall harm. This analysis first addresses and, where possible, quantifies the least harm factors for each alternative. Then, the analysis compares the alternatives to determine the least overall harm.

5.2.1 Significance, Mitigation, and Severity of Section 4(f) Harm

Because all of the Section 4(f) properties potentially used by the alternatives are historic, their significance was determined using criteria set forth in 36 CFR 60 and National Register Bulletin 15 in conjunction with the USHPO ratings for architectural properties (Andrus 1990, rev. 2002). Consultation between UDOT and the USHPO staff regarding historic properties was held throughout the environmental process. All archaeological or historic architectural resources must be evaluated under four specific criteria and with consideration of seven elements of integrity to be considered significant and thus eligible for inclusion on the NRHP. An archaeological or historic architectural resource may be considered eligible for inclusion on the NRHP under one or more criteria:

A. Is associated with events that have made a significant contribution to the broad patterns of our history; or
B. Is associated with the lives of persons significant in our past; or
C. Embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction; or
D. Yielded, or may be likely to yield, information important to prehistory or history.

Sites and buildings considered significant, and potentially eligible for the NRHP under one of the four aforementioned criteria must also be evaluated for integrity of location, design, setting, materials, workmanship, feeling, and association. To be eligible for the NRHP, a site/building must possess integrity of those elements directly related to the criterion or criteria under which it would be determined eligible.

Because all Section 4(f) properties in the study area are historic homes, the relative significance of the eligible properties potentially impacted by the alignments was determined using USHPO ratings. These ratings are ES (Eligible-Significant), EC (Eligible-Contributing), and NC (Non-Contributing). The majority of eligible homes in the APE date from 1940 to 1959. These homes are overwhelmingly simple, one-story structures with gable roofs, closed eves, and minimal architectural detail. Homes pre-dating 1940 are simple, one-story foursquare structures, the majority of which were relocated along SR-10 from nearby mining towns, such as Hiawatha, after coal mines were closed. Other architectural styles along SR-10 include ranch, split-level, basement, Cape Cod, and clipped-gable cottage. All properties in the study area warranted an EC rating. There is no difference in significance between the properties subject to a greater than *de minimis* use.

Mitigation will be completed for the historic properties incurring greater than *de minimis* uses. Mitigation was determined through consultation between UDOT and USHPO, and formalized in a Memorandum of Agreement (MOA) signed on November 7, 2016 (see Appendix A). Mitigation includes documenting the affected properties according to the Utah State Intensive Level Survey Standards. The mitigation will reduce the severity of the Section 4(f) harm, but not to the extent that it will no longer be a greater than *de minimis* use. It is not expected that mitigation for the affected properties will differ in a way that makes the remaining impacts more or less severe for any of these properties.

Based on the above information, the Widen East Alternative would result in the fewest Section 4(f) properties subject to a greater than *de minimis* use (8) followed by the Proposed Action (9) and Widen West Alternative (10); therefore, the Widen East Alternative would cause slightly less harm to Section 4(f) properties.

5.2.2 Views of the Official with Jurisdiction

The official with jurisdiction over all Section 4(f) properties is the USHPO. The USHPO expressed its views on the project and agreed to the determinations regarding the Proposed Action through written concurrence documented in the DOEFOE letter dated October 17, 2016 and the amendment letter signed on November 9, 2016 (see Appendix A).

5.2.3 Purpose and Need and Cost

All of the alternatives, except the No-Action Alternative, would equally fulfill the project's purpose and need. The Widen West Alternative would be the least expensive alternative with a total cost of approximately $18.6 million (in 2016 dollars) followed by the Proposed Action (approximately $18.9 million) and Widen East Alternative (approximately $19.4 million) (see Table 3). These differences are primarily attributable to varying right-of-way costs associated with the number of partial and full acquisitions required to widen SR-10. Considering the overall cost of the project, these cost differences are not substantially different.

Table 3. Comparison of Costs[1]

	Proposed Action	Widen West	Widen East
Total (millions)	$18.9	$18.6	$19.4
Difference Compared to Proposed Action	NA	-1.6%	2.6%

1. Costs were estimated using 2016 dollars.

5.2.4 Non-Section 4(f) Impacts

The only difference in the non-Section 4(f) impacts between the alternatives is the number of property acquisitions and the resulting impacts on property owners (see Table 2). Overall, the Proposed Action has the fewest number of full acquisitions of non-Section 4(f) properties (2), followed by the Widen East Alternative (5) and Widen West Alternative (7).

The Widen East Alternative also has notable impacts to parcels that would be partially acquired. Widening to the east would require shortening the driveway to the front door of the Seventh Day Adventist meeting house at 2821 S. Highway 10 by approximately 10 feet. The Widen East Alternative would also result in the loss of parking stalls and reconfiguration of the parking lot associated with PacifiCorp's maintenance facility. 1850 South would be moved to the east to increase the turning radius onto SR-10. As a result, one agricultural structure would be removed. In addition, overhead electric distribution and communication lines would be relocated closer to homes that would not be fully acquired and relocated.

5.2.5 Least Overall Harm

By comparing all alternatives to the least overall harm criteria, it has been determined the Proposed Action would result in the least overall harm. The Proposed Action represents the best design for minimizing right-of-way impacts along both sides of the corridor. Where possible, the alignment meanders to take advantage of vacant or agricultural fields to avoid the full acquisition and relocation of property. As a result, the Proposed Action would require more partial acquisitions (combination of non-Section 4(f) partial acquisitions and *de minimis* impacts to Section 4(f) properties) but fewer total full acquisitions than the other alternatives. The Proposed Action would result in 11 full acquisitions compared to 17 for the Widen West Alternative and 13 for the Widen East Alternative. The Proposed Action performs better than the Widen West alternative because it has fewer greater than *de minimis* uses and full acquisitions of non-Section 4(f) properties.

Although the Proposed Action would result in one additional greater than *de minimis* use compared to the Widen East Alternative, it would require fewer full acquisitions overall and would cost less. The Proposed Action also performs better because it would not require the realignment of 1850 South and removal of one agricultural structure. In addition, the Proposed Action would not impact the driveway to the Seventh Day Adventist meeting house nor would it reconfigure the PacifiCorp parking lot. Although the Proposed Action would relocate overhead utilities along the east side of SR-10, the Widen East Alternative would relocate these utilities closer to residences not fully acquired and relocated.

In summary, the Proposed Action has fewer greater than *de minimis* uses of Section 4(f) properties compared to the Widen West Alternative. Although the Proposed Action has one more greater than *de minimis* use compared to the Widen East Alternative, it would not have the additional and relatively significant impacts associated with the Seventh Day Adventist meeting house, PacifiCorp property, the agricultural structure at 1850 South, and full acquisition of three additional properties; therefore, it was determined the Proposed Action has the least overall harm.

Relative significance was not a determining factor because all properties in the study area warranted an EC rating. The number of *de minimis* impacts was also not a determining factor because the impacts would be negligible.

5.3 Measures to Minimize Harm/All Possible Planning

Appropriate design modifications were applied to minimize impacts to Section 4(f) properties while still ensuring pedestrian and vehicular safety. These modifications included reducing the width of shoulders from 10 feet to 6 feet and additional right-of-way needed for overhead utilities from 15 feet to 7 feet; eliminating three-foot wide park strips; and meandering the alignment of SR-10 approximately 10 feet to the west north of Roberson Road and approximately 10 feet to the east south of the unnamed wash (approximately 2305 South). These minimization measures, together with the mitigation that will be implemented for the greater than *de minimis* uses discussed in Section 5.2.1, demonstrate compliance with the "all possible" requirements of the Section 4(f) regulations (see 23 CFR 774.3(a)(2)).

6.0 Coordination

Section 4(f) implementing regulations state that coordination with both the official with jurisdiction over the Section 4(f) property and with the Department of Interior must occur (23 CFR 774.5(a)). Because the Section 4(f) properties affected by the proposed action are historic properties, the USHPO is the official with jurisdiction that must be consulted. UDOT, on behalf of FHWA, has consulted with the USHPO regarding the proposed properties being used for transportation purposes, including their eligibility on the NRHP, and the Section 106 effects of the Proposed Action. The USHPO has signed the DOEFOE, which includes an assessment of these factors. Correspondence with the USHPO, including the MOA, is attached as Appendix A. Coordination with the USHPO is ongoing..

This Section 4(f) evaluation will be submitted to the Department of Interior for review and comment as required by the Section 4(f) regulations. Coordination between Carbon County and affected property owners, though not required for Section 4(f) purposes, is ongoing through letters, individual landowner meetings, and a public meeting. UDOT also informed and solicited views from Price City – a certified local government (CLG) – regarding the adverse effects the Proposed Action would have on eligible historic properties (sent October 25, 2016). No additional information was received from the CLG.

As part of the Section 106 consultation process, UDOT initiated consultation with Native American Tribes including the Pueblo of Hopi, Paiute Indian Tribe of Utah, Uintah and Ouray Ute Tribes, Cedar Band of the Paiute Indians, and Shivwits Band of the Paiute Indian Tribe of Utah (sent December 18, 2015). The Paiute Indian Tribe of Utah was the only tribe that responded. The tribe has no objections to the project.

The public was notified of the Proposed Action's potential effect on historic properties at an open house held on November 17, 2016, through a public notice published in the Sun Advocate on November 10, and November 17, 2016, and individual mailers sent to property owners affected by the project, as well as interested parties. Display boards explaining the Section 106 and Section 4(f) processes as well as a map showing the location of greater than *de minimis* uses under the Proposed Action were available for viewing at the meeting. Copies of the meeting materials and public notices are included in Appendix B. No public comments were received regarding impacts to historic properties.

7.0 Summary of Section 4(f) Determination

No feasible and prudent avoidance alternatives were identified as a result of this analysis. Of the alternatives that were evaluated to avoid and minimize impacts to the Section 4(f) properties, the Proposed Action would have the least overall harm for the purposes of Section 4(f) while meeting the project's purpose and need. After all possible planning to minimize harm, the Proposed Action would result in greater than *de minimis* use of nine Section 4(f) properties, temporary occupancy of one Section 4(f) property, and *de minimis* impacts to 17 properties. However, the Proposed Action would result in the fewest number of full acquisitions overall. Impacts to Section 4(f) properties will be further minimized and mitigated through an MOA executed by UDOT and the USHPO pursuant to Section 106 of the NHPA.

References

Andrus, Patrick W. 1990, Rev. 2002. *How to Apply the National Register Criteria for Evaluation*. National Register Bulletin 15. U.S. Department of the Interior, National Park Service. Washington, D.C.

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Lochner. 2005. SR-10 Corridor Study, Stake Farm Road to US-6.

U.S. General Publications Office. 2016. Electronic Code of Federal Regulations (23 CFR 774).

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U.S. General Publications Office. 2016. Electronic Code of Federal Regulations (36 CFR 800).

Appendix A
Correspondence

Contents:

Determination of Eligibility and Finding of Effect (October 17, 2016)
Determination of Eligibility and Finding of Effect Amendment (November 9, 2016)
Memorandum of Agreement (November 7, 2016)
Certified Local Government Correspondence (October 25, 2016)
Advisory Council on Historic Preservation Electronic Section 106 Documentation Submittal System (e106) Form (no date)
Advisory Council on Historic Preservation Response (October 24, 2016)

16-1257

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

SHANE M. MARSHALL, P.E.
Deputy Director

September 29, 2016

Mr. Cory Jensen
Senior Historic Preservation Specialist
Utah Division of State History
300 Rio Grande
Salt Lake City, UT 84101-1182

RE: UDOT Project No. F-0010(75)66, SR-10, US-6 to Ridge Road, Carbon County, Utah (PIN 13664).
Determination of Eligibility and Finding of Adverse Effect.

Dear Mr. Jensen:

The Utah Department of Transportation (UDOT) is preparing to undertake the subject federal-aid project. In accordance with Stipulation II, Part A and Appendix B of the *Memorandum of Understanding, State Assumption of Responsibility for Categorical Exclusions (23 USC §326)* (executed June 30, 2011), the UDOT assumes responsibility, assigned by the Federal Highway Administration (FHWA), for ensuring compliance with Section 106 of the NHPA and with Section 4(f) of the DOT Act of 1966, as amended. In accordance with the *Second Amended Programmatic Agreement among the FHWA, the Utah State Historic Preservation Officer, the Advisory Council on Historic Preservation, the USACE Sacramento District, and the UDOT Regarding Section 106 Implementation for Federal-Aid Transportation Projects in the State of Utah* (executed June 3, 2013), Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and U.C.A.9-8-404, the UDOT has taken into account the effects of this undertaking on historic properties, and is affording the Utah State Historic Preservation Officer (SHPO) an opportunity to comment on the undertaking. Additionally, this submission is in compliance with Section 4(f) of the Department of Transportation Act of 1966, 23 U.S.C. § 138 (as amended) and 49 U.S.C. § 303 (as amended).

PROJECT DESCRIPTION

This project proposes to construct improvements to SR-10 south of Price, in Carbon County, Utah. The project extends from approximately M.P. 65.4 to 67.5. This project includes widening to accommodate a center turn lane, adding curb, gutter and sidewalk in areas where there is a need to serve pedestrians, extending or replacing pipe and box culverts, lowering the profile at the vertical curve near M.P. 67, rehabilitating pavement, relocating utilities and rehabilitating culverts and installing headwalls, and adding turn lanes at critical intersections.

The area of potential affects (APE) has been defined as a 2.1-mile-long corridor along SR-10 that extends 200 feet from the current roadway centerline. The APE has been entirely previously surveyed for archaeology and therefore work for this project consisted of a reconnaissance level survey and field verification of known sites. This Class II inventory was conducted by Montgomery Archaeological Consultants, under State Antiquities Project Number U-15-MQ-0493s, and the results are reported in *Site Verification and Class III Inventory of Utah Department of Transportation's State Route 10 Road Widening Between MP 65.27 and MP 67.5; South Price to Ridge Road, Carbon County, Utah* (see enclosed report). A selective reconnaissance level survey was conducted to record

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Received
OCT 7, 2016
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architectural properties abutting the APE, and the results are reported in *Cultural Resources Survey State Route 10; South Price to Ridge Road, Milepost 65.276 to 76.5, Carbon County, Utah*, prepared by Bee Lufkin for Montgomery Archaeological Consultants, Inc. (see enclosed report).

The SR-10 surveys resulted in the location of 11 previously documented archaeological sites and 48 architectural properties. Of these, 4 archaeological sites and 31 architectural properties are eligible to the National Register of Historic Places (NRHP). No known traditional cultural properties or paleontological resources are located in the APE. The Determinations of Eligibility and Findings of Effects is provided in Table 1 for archaeological resources and in Table 2 for architectural properties.

ARCHAEOLOGICAL RESOURCES

Table 1. Determinations of Eligibility and Findings of Effect for Archaeological Resources

Site	Name or Description	NRHP Eligibility	Finding of Effect	Warrants preservation in place	Section 4(f) Use
42CB1040	Carbon Canal	Eligible, Criterion A and C	No Adverse Effect	No	NA
42CB1270	Old SR-10	Eligible, Criterion A	No Adverse Effect	No	NA
42CB1435	Trash Scatter	Not Eligible	No Historic Properties Affected	NA	NA
42CB1436	Trash Scatter	Eligible, Criterion D	No Historic Properties Affected	No	NA
42CB1437	Trash Scatter	Not Eligible	No Historic Properties Affected	NA	NA
42CB2139	Irrigation Ditch	Not Eligible	No Historic Properties Affected	NA	NA
42CB2140	Irrigation Ditch	Not Eligible	No Historic Properties Affected	NA	NA
42CB2141	Trash Scatter	Eligible, Criterion D	No Adverse Effect	No	NA
42CB2142	Dismantled Billboard	Not Eligible	No Historic Properties Affected	NA	NA
42CB2143	Abandoned Road Segment	Not Eligible	No Historic Properties Affected	NA	NA
42CB2144	Trash Scatter	Not Eligible	No Historic Properties Affected	NA	NA

Description of Effect to Site 42CB1040: The proposed project includes extending the culvert that carries the Carbon Canal under SR-10 on both the inlet and outlet ends. The original section of the culvert directly under the highway will not be touched. The project will affect a relatively small portion of the site and will not substantially impact or alter any contributing elements of the site or any of the character-defining features for which it was determined eligible for the NRHP. Thus, the proposed project will result in a finding of No Adverse Effect.

Description of Effect to Site 42CB1270: This proposed project includes adding headwalls and riprap at the inlet and outlet ends to the original culvert pipe that channels Drunkard Wash, but the pipe will remain in place. This culvert is all that remains of old SR-10 in this location. The project will affect a relatively small portion of the site and will not substantially impact or alter any contributing elements of the site or any of the character-defining features for which it was determined eligible for the NRHP. Thus, the proposed project will result in a finding of No Adverse Effect.

Description of Effect to Site 42CB2141: The proposed project will remove a strip of the site closest to the SR-10 edge-of-oil on the east side of the highway near MP 67.1. Site 42CB2141 comprises multiple historic time-period, single episode trash dumps. None of the documented concentrations will be touched by this construction proposal. The project will affect a relatively small portion of the site and will not substantially impact or alter any contributing elements of the site or any of the character-defining features for which it was determined eligible for the NRHP. Thus, the proposed project will result in a finding of No Adverse Effect.

ARCHITECTURAL PROPERTIES

Ms. Lufkin documented and evaluated 48 architectural properties that could be impacted by the project. All 48 are buildings, and of these, 31 are eligible for the National Register of Historic Places. The impacts are described in the paragraph following Table 2.

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
	1275 S. Fairgrounds Road	1948	Post-WWII: other / other late 20th century	EC/Eligible	No Historic Properties Affected	N/A
	?1266 S. Highway 10	1946	1-story foursquare / Post-WWII: other	EC/Eligible	No Historic Properties Affected	N/A
	1288 S. Highway 10	1948	Post-WWII: other / other late 20th century	EC/Eligible	No Historic Properties Affected	N/A
	1308 S. Highway 10	1965	Post-WWII: other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	?1310 S. Highway 10	1955	Post-WWII: other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	1332 S. Highway 10	1948	Early ranch / early ranch/rambler	EC/Eligible	No Historic Properties Affected	N/A
	1510 S. Highway 10	1935/1957	Other commercial/public / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	1632 S. Highway 10	1950	Post-WWII modern / ranch/rambler	NC/Ineligible	No Historic Properties Affected	N/A
	1654 S. Highway 10	1970	Late 20th century other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	1700 S. Highway 10	1945/1985	Late 20th century other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
1	1767 S. Highway 10	1920	1-story foursquare / Post-WWII: other / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 1,488 sq. ft.; Partial Acquisition: 116 sq. ft.	*de minimis*
1	1777 S. Highway 10	1930	1-story central block with projecting bays / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 1,056 sq. ft.	Temporary Occupancy
2	1867 S. Highway 10	1960	1-story side-gabled Post-WWII: other / other residential	EC/Eligible	No Adverse Effect; TCE: 5,119 sq. ft.; Partial Acquisition: 6,974 sq. ft.	*de minimis*
	1899 S. Highway 10	1940	1 1/2-story cross-gabled WWII-era cottage / simple Post-WWII: other	NC/Ineligible	No Historic Properties Affected	N/A
3	?2010 S. Highway 10	1944	1-story service station in Post-WWII: other	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
3	45 E. Robertson Road (2000 S.)	1950	1-story hip-roofed single dwelling ranch/rambler	EC/Eligible	No Adverse Effect; Partial Acquisition: 359 sq. ft.	*de minimis*

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
	2022 S. Highway 10	1931	Side-gabled 1-story single dwelling in Post-WWII: other / other residential type	NC/Ineligible	No Historic Properties Affected	N/A
	2032 S. Highway 10	1967	Mobile home / mobile home	EC/Eligible	No Historic Properties Affected	N/A
4	2044 S. Highway 10	1940	1-story foursquare / 20th century other	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
4	2066 S. Highway 10	1940	1-story foursquare / 20th century other	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
5	2067 S. Highway 10	1941	Ranch/rambler	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
	2078 S. Highway 10	1948	Residential / Post WWII	NC/Ineligible	No Historic Properties Affected	N/A
6	2088 S. Highway 10	1941	20th century other / other residential	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
6	2098 S. Highway 10	1970	Mobile home / mobile home	EC/Eligible	No Adverse Effect; TCE: 408 sq. ft.; Partial Acquisition: 2,093 sq. ft.	*de minimis*
	2099 S. Highway 10	1930	1-story foursquare / 20th century other	NC/Ineligible	No Historic Properties Affected	N/A
	2100 S. Highway 10	1961	1-story ranch/rambler / single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
7	2111 S. Highway 10	1954	½-story single dwelling Cape Cod/WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 4,413 sq. ft.; Partial Acquisition: 1,813 sq. ft.	*de minimis*
8	?2154 S. Highway 10	1930	1-story WWII-era cottage / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 3,512 sq. ft.; Partial Acquisition: 976 sq. ft.	*de minimis*
8	?2188 S. Highway 10	1946	1-story single dwelling clipped gable cottage	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
10	2198 S. Highway 10	1947	1-story single dwelling clipped gable cottage	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
9	2199 S. Highway 10	1945	1-story single dwelling clipped gable cottage	EC/Eligible	No Adverse Effect; TCE: 2,219 sq. ft.; Partial Acquisition: 1,111 sq. ft.	*de minimis*
12	2266 S. Highway 10	1944	1 1/2-story front-gabled other residential / Post WWII: other	EC/Eligible	No Adverse Effect; TCE: 5,187 sq. ft., Partial Acquisition: 505 sq. ft.	*de minimis*
11	2289 S. Highway 10	1925	1-story other residential / 20th century other	EC/Eligible	No Adverse Effect; TCE: 950 sq. ft.; Partial Acquisition: 704 sq. ft.	*de minimis*

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
11	2305 S. Highway 10	1947	1/2 story single dwelling post-WWII: other	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
13	2345 S. Highway 10	1946	Traditional style single dwelling WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 4,331 sq. ft.; Partial Acquisition: 1,696 sq. ft.	*de minimis*
14	2354 S. Highway 10	1939	1-story single dwelling hipped roof WWII-era cottage / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 6,625 sq. ft.; Partial Acquisition: 1,400 sq. ft.	*de minimis*
15	2410 S. Highway 10	1935	Minimal traditional / 1-story single dwelling hipped-roof WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 2,247 sq. ft.; Partial Acquisition: 435 sq. ft.	*de minimis*
16	2433 S. Highway 10	1970	1-story single-gable ranch/rambler	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
	2477 S. Highway 10	1933	1-story single dwelling WWII-era cottage / 20th century: other	NC/Ineligible	No Historic Properties Affected	N/A
	2502 S. Highway 10	1942	1-story clipped-gable cottage single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
17	2511 S. Highway 10	1945	1-story WWII-era cottage / post WW II: other	EC/Eligible	No Adverse Effect; TCE: 1,212 sq. ft.; Partial Acquisition: 1,474 sq. ft.	*de minimis*
	2680 S. Highway 10	1930	1-story single dwelling other / 20th century: other	NC/Ineligible	No Historic Properties Affected	N/A
	2710 S. Highway 10	1952	1-story early ranch/rambler single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
18	2754 S. Highway 10	1955	1-story ranch/rambler	EC/Eligible	No Adverse Effect; TCE: 954 sq. ft.; Partial Acquisition: 850 sq. ft.	*de minimis*
19	2767 S. Highway 10	1957	2-story split level single dwelling	EC/Eligible	No Adverse Effect; TCE1,935 sq. ft.; Partial Acquisition: 3,827 sq. ft.	*de minimis*
	2776 S. Highway 10	1952	1-story early ranch/rambler single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
	2798 S. Highway 10	1959	1-story post-WWII other / late 20th century: other.	NC/Ineligible	No Historic Properties Affected	N/A
20	2832 S. Highway 10	1959	1 1/2 story Cape Cod type minimal traditional	EC/Eligible	No Adverse Effect; TCE: 631 sq. ft.; Partial Acquisition: 1,555 sq. ft.	*de minimis*

Description of Effects: This proposed project requires right of way acquisitions of approximately 2 to 15 feet for 17 properties evaluated as eligible to the NRHP and whose impact is considered "No Adverse Effect. The project will have an Adverse Effect, requiring the acquisition of the building, for 9 properties. Thus, the proposed project will result in a finding of Adverse Effect and a Section 4(f) *Greater than de minimis* impact for each adversely affected property.

CONSULTATION EFFORTS

Native American consultation was initiated through letters sent to the Uintah and Ouray Ute Tribes, Shoshone-Bannock Tribes, and Northwestern Band of Shoshone Nation (sent December 16, 2015). The UDOT is continuing consultation with the Price Certified Local Government. An open house will be held so that the public will be notified of the impacts to cultural resources among other considerations.

SUMMARY

To summarize, the project will result in a finding of Adverse Effect for 9 architectural properties, a finding of No Adverse Effect for 3 archaeological sites and 17 architectural properties, and a finding of No Historic Properties Affected for all remaining architectural properties and archaeological sites. The project will also result in 9 Section 4(f) Greater than *de minimis* uses, 16 Section 4(f) *de minimis* uses, and 1 Section 4(f) temporary occupancy use. Therefore, the Finding of Effect for the proposed UDOT Project No. F-0010(75)66, SR-10, US-6 to Ridge Road, Carbon County, Utah, is **Adverse Effect**.

Please review this document and, providing you agree with the findings contained herein, sign and date the signature line at the end of this letter. Should you have any questions or need additional information, please feel free to contact Liz Robinson at 801-910-2035 or lizrobinson@utah.gov; Elizabeth Giraud at 801-965-4917 or egiraud@utah.gov, or Pam Higgins at 435-253-2524 or phiggins@utah.gov.

Sincerely,

Liz Robinson, M.A., RPA
Cultural Resources Program Manager
UDOT Environmental Services

Elizabeth Giraud
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Elizabeth Giraud, AICP
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Pam Higgins
Oct 5 2016 4:22 PM

Pamela Higgins
NEPA/NHPA Specialist, Region 4 Area
UDOT Environmental Services

Enclosures

cc: Troy Torgersen, Project Manager
Eric Hansen, Environmental Manager

Regarding UDOT Project No. F-0010(75)66, SR-10, US-6 to Ridge Road, Carbon County, Utah, I concur with the Determination of Eligibility and Finding of Effect, submitted to the Utah State Historic Preservation Office in accordance with the *Second Amended Programmatic Agreement,* Section 106 of the NHPA, and U.C.A. 9-8-404, which states that the UDOT has determined that the finding is **Adverse Effect.**

Cory Jensen
Senior Historic Preservation Specialist

10/17/2016
Date

16-1460

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

SHANE M. MARSHALL, P.E.
Deputy Director

November 7, 2016

Mr. Cory Jensen
Senior Historic Preservation Specialist
Utah Division of State History
300 Rio Grande
Salt Lake City, UT 84101-1182

RE: UDOT Project No. F-0010(75)66, SR-10, US-6 to Ridge Road, Carbon County, Utah (PIN 13664). Amended Determination of Eligibility and Finding of Adverse Effect.

Dear Mr. Jensen:

The Utah Department of Transportation (UDOT) is preparing to undertake the subject federal-aid project. In accordance with Stipulation II, Part A and Appendix B of the Memorandum of Understanding, State Assumption of Responsibility for Categorical Exclusions (23 USC §326) (executed June 30, 2011), the UDOT assumes responsibility, assigned by the Federal Highway Administration (FHWA), for ensuring compliance with Section 106 of the NHPA and with Section 4(f) of the DOT Act of 1966, as amended. In accordance with the *Second Amended Programmatic Agreement among the FHWA, the Utah State Historic Preservation Officer, the Advisory Council on Historic Preservation, the USACE Sacramento District, and the UDOT Regarding Section 106 Implementation for Federal-Aid Transportation Projects in the State of Utah* (executed June 3, 2013), Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and U.C.A.9-8-404, the UDOT has taken into account the effects of this undertaking on historic properties, and is affording the Utah State Historic Preservation Officer (SHPO) an opportunity to comment on the undertaking. Additionally, this submission is in compliance with Section 4(f) of the Department of Transportation Act of 1966, 23 U.S.C. § 138 (as amended) and 49 U.S.C. § 303 (as amended).

PROJECT DESCRIPTION

This project proposes to construct improvements to SR-10 south of Price, in Carbon County, Utah. The project extends from approximately M.P. 65.4 to 67.5. This project includes widening to accommodate a center turn lane, adding curb, gutter and sidewalk in areas where there is a need to serve pedestrians, extending or replacing pipe and box culverts, lowering the profile at the vertical curve near M.P. 67, rehabilitating pavement, relocating utilities and rehabilitating culverts and installing headwalls, and adding turn lanes at critical intersections.

PREVIOUS CONSULTATION WITH THE UTAH SHPO

This letter is an addendum to the Determination of Eligibility and Findings of Effect submitted on October 7, 2016. UDOT submitted a request for consultation, making determinations of eligibility for 11 previously documented archaeological sites and 48 architectural properties. The UDOT determined that the Proposed Action would result in a finding of Adverse Effect and Section 4(f) greater than *de minimis* impact for 9 architectural properties. The determination of eligibility of the properties and the effects of the project were included in a table submitted as part of the DOEFOE ("Table 2").

DETERMINATION OF ELIGIBILITY AND FINDING OF EFFECT FOR AN ADDITIONAL PROPERTY

One eligible property, located at ?2218 S. Highway 10, was inadvertently excluded from Table 2. The primary structure associated with the property is a residential building constructed in 1958 and is an example of Early Ranch/Rambler style. The building is included in the historic architectural resource survey that accompanied the afore-mentioned DOEFOE. The project would require the acquisition of 1,111 sq. ft. along the property frontage and 781 sq. ft. for a Temporary Construction Easement (TCE), and thus the impact of the project on the property would be No Adverse Effect. This impact will result in a *de minimis* Section 4(f) use. A map of the affected property and the correct table is included.

SUMMARY

To summarize, the total number of architectural resources reviewed has changed from 48 to 49. The number of architectural properties that will be adversely affected by the project remains at 9 and the finding of No Adverse Effect remains at 3 for archaeological properties. The number of architectural properties categorized as No Adverse Effect by impacts of the project has changed from 17 to 18, and the finding of No Historic Properties Affected for all remaining architectural properties and archaeological sites remains unchanged from the previous DOEFOE. The project continues to result in 9 Section 4(f) greater than *de minimis* uses and 1 Section 4(f) temporary occupancy use. The number of properties categorized as Section 4(f) *de minimis* uses has changed from 16 to 17. The Finding of Effect for the proposed UDOT Project No. F-0010(75)66, SR-10, US-6 to Ridge Road, Carbon County, Utah, remains Adverse Effect.

Please review this document and, providing you agree with the findings contained herein, sign and date the signature line at the end of this letter. Should you have any questions or need additional information, please feel free to contact Liz Robinson at 801-910-2035 or lizrobinson@utah.gov; Elizabeth Giraud at 801-965-4917 or egiraud@utah.gov.

Sincerely,

Liz Robinson, M.A., RPA
Cultural Resources Program Manager
UDOT Environmental Services

Elizabeth Giraud, AICP
Architectural Historian
UDOT Environmental Services

Enclosures

Regarding UDOT Project No. F-0010(75)66, SR-10, US-6 to Ridge Road, Carbon County, Utah, I concur with the Determination of Eligibility and Finding of Effect regarding the property located at ?2218 S. Highway 10, submitted to the Utah State Historic Preservation Office in accordance with the Second Amended Programmatic Agreement, Section 106 of the NHPA, and U.C.A. 9-8-404, which states that the UDOT has determined that the determination of eligibility on the subject property is eligible and finding of effect is No Adverse Effect. The finding of effect of the project in its entirety remains Adverse Effect.

Cory Jensen
Senior Historic Preservation Specialist

11/9/2016
Date

SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

Figure 10

1. The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.
2. Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
	1275 S. Fairgrounds Road	1948	Post-WWII: other / other late 20th century	EC/Eligible	No Historic Properties Affected	N/A
	?1266 S. Highway 10	1946	1-story foursquare / Post-WWII: other	EC/Eligible	No Historic Properties Affected	N/A
	1288 S. Highway 10	1948	Post-WWII: other / other late 20th century	EC/Eligible	No Historic Properties Affected	N/A
	1308 S. Highway 10	1965	Post-WWII: other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	?1310 S. Highway 10	1955	Post-WWII: other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	1332 S. Highway 10	1948	Early ranch / early ranch/rambler	EC/Eligible	No Historic Properties Affected	N/A
	1510 S. Highway 10	1935/1957	Other commercial/public / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	1632 S. Highway 10	1950	Post-WWII modern / ranch/rambler	NC/Ineligible	No Historic Properties Affected	N/A
	1654 S. Highway 10	1970	Late 20th century other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	1700 S. Highway 10	1945/1985	Late 20th century other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
1	1767 S. Highway 10	1920	1-story foursquare / Post-WWII: other / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 1,488 sq. ft.; Partial Acquisition: 116 sq. ft.	*de minimis*
1	1777 S. Highway 10	1930	1-story central block with projecting bays / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 1,056 sq. ft	*de minimis*
2	1867 S. Highway 10	1960	1-story side-gabled Post-WWII: other / other residential	EC/Eligible	No Adverse Effect; TCE: 5,119 sq. ft.; Partial Acquisition: 6,974 sq. ft.	*de minimis*
	1899 S. Highway 10	1940	1 1/2-story cross-gabled	NC/Ineligible	No Historic Properties	N/A

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
			WWII-era cottage / simple Post-WWII: other		Affected	
3	?2010 S. Highway 10	1944	1-story service station in Post-WWII: other	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
3	45 E. Robertson Road (2000 S.)	1950	1-story hip-roofed single dwelling ranch/rambler	EC/Eligible	No Adverse Effect; Partial Acquisition: 359 sq. ft.	*de minimis*
	2022 S. Highway 10	1931	Side-gabled 1-story single dwelling in Post-WWII: other / other residential type	NC/Ineligible	No Historic Properties Affected	N/A
	2032 S. Highway 10	1967	Mobile home / mobile home	EC/Eligible	No Historic Properties Affected	N/A
4	2044 S. Highway 10	1940	1-story foursquare / 20th century other	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
4	2066 S. Highway 10	1940	1-story foursquare / 20th century other	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
5	2067 S. Highway 10	1941	Ranch/rambler	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
	2078 S. Highway 10	1948	Residential / Post WWII	NC/Ineligible	No Historic Properties Affected	N/A
6	2088 S. Highway 10	1941	20th century other / other residential	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
6	2098 S. Highway 10	1970	Mobile home / mobile home	EC/Eligible	No Adverse Effect; TCE: 408 sq. ft.; Partial Acquisition: 2,093 sq. ft.	*de minimis*
	2099 S. Highway 10	1930	1-story foursquare / 20th century other	NC/Ineligible	No Historic Properties Affected	N/A
	2100 S. Highway 10	1961	1-story ranch/rambler / single dwelling	NC/Ineligible	No Historic Properties Affected	N/A

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
7	2111 S. Highway 10	1954	1/2-story single dwelling Cape Cod / WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 4,413 sq. ft.; Partial Acquisition: 1,813 sq. ft.	*de minimis*
8	?2154 S. Highway 10	1930	1-story WWII-era cottage / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 3,512 sq. ft.; Partial Acquisition: 976 sq. ft.	*de minimis*
8	?2188 S. Highway 10	1946	1-story single dwelling clipped gable cottage	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
10	2198 S. Highway 10	1947	1-story single dwelling clipped gable cottage	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
9	2199 S. Highway 10	1945	1-story single dwelling clipped gable cottage	EC/Eligible	No Adverse Effect; TCE: 2,219 sq. ft.; Partial Acquisition: 1,111 sq. ft.	*de minimis*
10	?2218 S. Highway 10	1958	1-story single-gable early ranch/rambler	EC/Eligible	No Adverse Effect; TCE: 781 sq. ft.; Partial Acquisition: 244 sq. ft.	*de minimis*
12	2266 S. Highway 10	1944	1 1/2-story front-gabled other residential / Post WWII: other	EC/Eligible	No Adverse Effect; TCE: 5,187 sq. ft.; Partial Acquisition: 505 sq. ft.	*de minimis*
11	2289 S. Highway 10	1925	1-story other residential / 20th century other	EC/Eligible	No Adverse Effect; TCE: 950 sq. ft.; Partial Acquisition: 704 sq. ft.	*de minimis*
11	2305 S. Highway 10	1947	1/2 story single dwelling post-WWII: other	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
13	2345 S. Highway 10	1946	traditional style single dwelling WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 4,331 sq. ft.; Partial Acquisition: 1,696 sq. ft.	*de minimis*
14	2354 S. Highway 10	1939	1-story single dwelling	EC/Eligible	No Adverse Effect; TCE: 6,625	*de minimis*

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
			hipped roof WWII-era cottage / 20th century: other		sq. ft.; Partial Acquisition: 1,400 sq. ft.	
15	2410 S. Highway 10	1935	Minimal traditional / 1-story single dwelling hipped-roof WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 2,247 sq. ft.; Partial Acquisition: 435 sq. ft.	*de minimis*
16	2433 S. Highway 10	1970	1-story single-gable ranch/rambler	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
	2477 S. Highway 10	1933	1-story single dwelling WWII-era cottage / 20th century: other	NC/Ineligible	No Historic Properties Affected	N/A
	2502 S. Highway 10	1942	1-story clipped-gable cottage single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
17	2511 S. Highway 10	1945	1-story WWII-era cottage / post WW II: other	EC/Eligible	No Adverse Effect; TCE: 1,212 sq. ft.; Partial Acquisition: 1,474 sq. ft.	*de minimis*
	2680 S. Highway 10	1930	1-story single dwelling other / 20th century: other	NC/Ineligible	No Historic Properties Affected	N/A
	2710 S. Highway 10	1952	1-story early ranch/rambler single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
18	2754 S. Highway 10	1955	1-story ranch/rambler	EC/Eligible	No Adverse Effect; TCE: 954 sq. ft.; Partial Acquisition: 850 sq. ft.	*de minimis*
19	2767 S. Highway 10	1957	2-story split level single	EC/Eligible	No Adverse Effect; TCE: 1,935	*de minimis*

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
			dwelling		sq. ft.; Partial Acquisition: 3,827 sq. ft.	
	2776 S. Highway 10	1952	1-story early ranch/rambler single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
	2798 S. Highway 10	1959	1-story post-WWII other / late 20th century: other.	NC/Ineligible	No Historic Properties Affected	N/A
20	2832 S. Highway 10	1959	1 1/2 story Cape Cod type minimal traditional	EC/Eligible	No Adverse Effect; TCE: 631 sq. ft.; Partial Acquisition: 1,555 sq. ft.	*de minimis*

MEMORANDUM OF AGREEMENT
AMONG
THE UTAH DEPARTMENT OF TRANSPORTATION
AND THE UTAH STATE HISTORIC PRESERVATION OFFICER

REGARDING

PROJECT #: F-0010(75)66;
SR-10, 3200 South to 1150 South, Price, Carbon County, Utah

WHEREAS, the Utah Department of Transportation (UDOT) proposes to use federal funds to undertake **PROJECT #: F-0010(75)66; SR-10, 3200 South to 1150 South, Price, Carbon County**, which proposes improvements to SR-10 south of Price, in Carbon County, Utah; and

WHEREAS, in accordance with Stipulation II, Part A and Appendix B of the *Memorandum of Understanding, State Assumption of Responsibility for Categorical Exclusions (23 USC §326)* (executed June 30, 2011), the UDOT assumes responsibility, assigned by the Federal Highway Administration (FHWA), for ensuring compliance with Section 106 of the NHPA and with Section 4(f) of the DOT Act of 1966, as amended; and

WHEREAS, the UDOT has taken into account the effects of **PROJECT #: F-0010(75)66; SR-10, 3200 South to 1150 South, Price, Carbon County,** on historic properties and has determined that this undertaking will have an adverse effect on nine architectural properties eligible for inclusion in the National Register of Historic Places. UDOT has consulted with the Utah State Historic Preservation Officer (SHPO) pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f); and

WHEREAS, in accordance with the *Second Amended Programmatic Agreement Among the Federal Highway Administration, the Utah Department of Transportation, the Utah State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Section 106 Implementation for Federal-Aid Transportation Projects in the State of Utah (*executed June 3, 2013) and in accordance with 36 CFR 800.6(a)(1), the UDOT has notified the Advisory Council on Historic Preservation (Council) of its adverse effect determination with specified documentation and the Council has chosen not to participate in the consultation pursuant to 36 CFR 800.6(a)(1)(iii); and

WHEREAS, the FHWA and the UDOT have consulted with the Paiute Indian Tribe of Utah, the Uintah & Ouray Ute Indian Reservation, the Hopi Pueblo, the Cedar Band of the Paiutes, and the Shivwits Band of Paiute Indians; and the Tribes have been afforded an opportunity to review the project and have not responded with objections; and

WHEREAS, the UDOT has consulted with the Price Certified Local Government and Price City, which has not responded with objections; and

NOW, THEREFORE, the UDOT and the Utah SHPO agree that upon UDOT's decision to proceed with the undertaking, UDOT shall ensure that the following stipulations are implemented in order to take into account the effects of the undertaking on historic properties, and the stipulations shall govern the undertaking and all of its parts until this MOA expires or is terminated.

STIPULATIONS

The UDOT shall ensure that the following measures are carried out:

I. MITIGATION OF HISTORIC BUILDINGS
UDOT shall be responsible for the documentation of the following buildings in Price, Utah

- ?2010 S. Highway 10
- 2044 S. Highway 10
- 2066 S. Highway 10
- 2067 S. Highway 10
- 2088 S. Highway 10
- ?2188 S. Highway 10
- 2198 S. Highway 10
- 2305 S. Highway 10
- 2433 S. Highway 10

The buildings will be documented according to the Utah State Intensive Level Survey Standards (ILS) as required by SHPO. Documentation will include a completed ILS Historic Site Forms, which will be based partly on title searches and obituary research, photographs of the exterior of the buildings, photographs burned onto a gold CD, a sketch map of the property layout, aerial photograph maps indicating the location of the buildings, and a U.S. Geological Survey may (scale: 1:24,000) indicating the location of the buildings.

II. REPORTING: The UDOT shall ensure that any/all reports on activities carried out pursuant to this agreement are provided to the SHPO, the Council, the signatories to this MOA, and upon request, to any other interested parties.

III. PERSONNEL QUALIFICATIONS: The UDOT shall ensure that all historic work carried out pursuant to this agreement is completed by or under the direct supervision of a person or persons meeting or exceeding the Secretary of the Interior's Historic Preservation Professional Qualification Standards for History (36 CFR 61 Appendix A).

IV. DURATION: This agreement will be null and void if its terms are not carried out within five (5) years from the date of its execution. Prior to such time, the UDOT may consult with the other signatories to reconsider the terms of the agreement and amend it in accordance with Stipulation VII below.

V. DISCOVERY: The following measures regarding inadvertent discoveries of historic properties, archaeological sites, and paleontological resources will be implemented:

A. In accordance with Stipulation XI.B of the *Second Amended Programmatic Agreement among the FHWA, the Utah State Historic Preservation Officer, the Advisory Council on Historic Preservation, the USACE Sacramento District, and the UDOT Regarding Section 106 Implementation for Federal-Aid Transportation Projects in the State of Utah* (executed June 3, 2013), and pursuant to 36 CFR 800.13(b), the UDOT is providing for the protection, evaluation, and treatment of any historic property discovered prior to or during construction. Should a discovery occur, construction will stop immediately and the UDOT will consult with the SHPO, Native American tribes, and any other identified interested parties, toward developing and implementing an appropriate treatment plan prior to resuming construction. If neither the SHPO nor a Tribe files an objection within 72 hours to UDOT's plan for addressing the discovery, UDOT may carry out the requirements of 36 CFR 800.13 on behalf of FHWA, and the Council does not need to be notified.

B. UDOT Standard Specifications Section 01355, Part 3.8, Discovery of Historical, Archaeological or Paleontological Objects, Features, Sites, or Human Remains, will be enforced during this project. This specification stipulates procedures to be followed should any archaeological, historic, or paleontological resources be discovered during construction of the project. These procedures are as follows:
   1) Immediately suspend construction operations in the vicinity of the discovery if a suspected historic, archeological or paleontological item, feature, or site is encountered or if suspected human remains or encountered.
   2) Verbally notify the engineer of the nature and exact location of the findings.
   3) The Engineer contacts the UDOT region staff archaeologist, who will assess the nature of the discovery and determine the necessary course of action.
   4) Protect the discovered objects or features and provide written confirmation of the discovery to the Engineer within two calendar days.
   5) The Engineer keeps the Contractor informed concerning the status of the restriction: 1) the time necessary for the Department to handle the discovered item, feature, or site is variable, dependent on the nature and condition of the discovered item; and 2) the Engineer will provide written confirmation when work may resume in the area.

VI. DISPUTE RESOLUTION: Should any party to this agreement object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, the UDOT shall consult with the objecting parties to resolve the objection. If the UDOT determines, within 30 days, that the objection(s) cannot be resolved, the UDOT will:

A. Forward all documentation relevant to the dispute to the Council in accordance with 36 CFR 800.2(b)(2). Upon receipt of adequate documentation, the Council shall review and advise the UDOT on the resolution of the objection within 30 days. Any comment provided by the Council, and all comments from the parties to the MOA, will be taken into account by the UDOT in reaching a final decision regarding the dispute.

B. If the Council does not provide comments regarding the dispute within 30 days after receipt of adequate documentation, the UDOT may render a decision regarding the dispute. In reaching its decision, the UDOT will take into account all comments regarding the dispute from the parties to the MOA.

C. The UDOT's responsibilities to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged. The UDOT will notify all parties of its decision in writing before implementing that portion of the undertaking subject to dispute under this stipulation. The UDOT's decision will be final.

D. Further, at any time during implementation of the measures stipulated in this agreement should an objection to any such measure be raised by a member of the public, the UDOT shall take the objections into account and consult as needed with the objecting party, the SHPO, or the Council to resolve the objection.

VII. AMENDMENTS AND NONCOMPLIANCE: If any signatory to this MOA, including any invited signatory, determines that its terms will not or cannot be carried out or that an amendment to its terms must be made, that party shall immediately consult with the other parties to develop an amendment to this MOA pursuant to 36 CFR 800.6(c)(7) and 800.6(c)(8). The amendment will be effective on the date a copy signed by all of the original signatories is filed with the Council. If the signatories cannot agree to appropriate terms to amend the MOA, any signatory may terminate the agreement in accordance with Stipulation VIII, below.

VIII. TERMINATION: If an MOA is not amended following the consultation set out in Stipulation VII and Stipulation VIII, it may be terminated by any signatory or invited signatory. Within 30 days following termination, the UDOT shall notify the signatories if it will initiate consultation to execute an MOA with the

signatories under 36 CFR 800.6(c)(1) or request the comments of the Council under 36 CFR 800.7(a) and proceed accordingly.

IX. EXECUTION: Execution of this Memorandum of Agreement by the UDOT and the Utah SHPO and the submission of documentation and filing of this Memorandum of Agreement with the Council pursuant to 36 CFR 800.6(b)(1)(iv) prior to UDOT's approval of this undertaking, and implementation of its terms, serves as evidence that the UDOT has taken into account the effects of this undertaking on historic properties, and has afforded the Council an opportunity to comment on **PROJECT#: F-0010(75)66; SR-10, 3200 South to 1150 South, Price, Carbon County.**

SIGNATORIES:

UTAH DEPARTMENT OF TRANSPORTATION

10/31/16

Rick Torgersen, UDOT Region Director — Date

UTAH STATE HISTORIC PRESERVATION OFFICE

11.7.16

for c)

P. Bradford Westwood, Utah SHPO — Date

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

SHANE M. MARSHALL, P.E.
Deputy Director

October 25, 2016

Mayor Joe Picolo, Price City
PO Box 893
Price, UT 84501

RE: F-0010(75)66, SR-10; US-6 to Ridge Road CMGC, Carbon County (PIN 13664)
Notification of Project Adverse Effect to Historical Buildings

Dear Mayor Picolo:

Approximately a year ago, I communicated with you regarding a Utah Department of Transportation (UDOT) proposal to improve State Route (SR) 10 between milepost (MP) 65.4 and MP 67.5, south of Price, Carbon County, Utah. The project design is now nearing completion. Construction of the final road widening will result in adverse effects to nine buildings eligible for the National Register of Historic Places (NRHP).

This notification only concerns the implementation of Section 106 of the National Historic Preservation Act regarding the preservation of historical properties. The Environmental Division of UDOT cannot address questions regarding acquisition of property or construction dates. Nevertheless, if you have any questions or concerns regarding the adverse construction effects to historical buildings, please contact Elizabeth Giraud, UDOT Architectural Historian at 801-965-4917, egiraud@utah.gov or myself at 435-253-2524, phiggins@utah.gov. Thank you for your interest in UDOT projects.

Sincerely,

Pamela Higgins, NEPA/NHPA Specialist
UDOT Environmental, Region 4

PH

C: Mr. Nick Tatton, Price City, PO Box 893, Price, UT 84501

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

SHANE M. MARSHALL, P.E.
Deputy Director

October 25, 2016

Mr. Nick Tatton
Price City Building Development Planning and Zoning
P.O. Box 893
Price, UT 84501

RE: F-0010(75)66, SR-10; US-6 to Ridge Road CMGC, Carbon County (PIN 13664)
Notification of Project Adverse Effect to Historical Buildings

Dear Mr. Tatton:

Approximately a year ago, I communicated with you regarding a Utah Department of Transportation (UDOT) proposal to improve State Route (SR) 10 between milepost (MP) 65.4 and MP 67.5, south of Price, Carbon County, Utah. The project design is now nearing completion. Construction of the final road widening will result in adverse effects to nine buildings eligible for the National Register of Historic Places (NRHP).

This notification only concerns the implementation of Section 106 of the National Historic Preservation Act regarding the preservation of historical properties. The Environmental Division of UDOT cannot address questions regarding acquisition of property or construction dates. Nevertheless, if you have any questions or concerns regarding the adverse construction effects to historical buildings, please contact Elizabeth Giraud, UDOT Architectural Historian at 801-965-4917, egiraud@utah.gov or myself at 435-253-2524, phiggins@utah.gov. Thank you for your interest in UDOT projects.

Sincerely,

Pamela Higgins, NEPA/NHPA Specialist
UDOT Environmental, Region 4

PH

C: Carbon County Certified Local Government, 120 East Main Street, Price, UT 84510-3057

Preserving America's Heritage

Advisory Council on Historic Preservation
Electronic Section 106 Documentation Submittal System (*e*106) Form
MS Word format

Send to: *e106@achp.gov*

I. Basic information

1. **Name of federal agency** (If multiple agencies, state them all and indicate whether one is the lead agency):

   In accordance with Stipulation IX (D)(4)(e) of the Second Amended Programmatic Agreement among the FHWA, the Utah State Historic Preservation Officer, the Advisory Council on Historic Preservation, the USACE Sacramento District, and the UDOT Regarding Section 106 Implementation for Federal-Aid Transportation Projects in the State of Utah (executed June 3, 2013), the Utah Department of Transportation (UDOT) has been delegated the responsibility of notifying the Advisory Council on Historic Preservation of findings of adverse effects.

2. **Name of undertaking/project** (Include project/permit/application number if applicable):

   UDOT Project No. F-0010(75)66, SR-10, US-6 to Ridge Road, Carbon County, Utah (PIN 13664)

3. **Location of undertaking** (Indicate city(s), county(s), state(s), land ownership, and whether it would occur on or affect historic properties located on tribal lands):

   The project is located along SR-10 from approximately M.P. 65.4 to 67.5, near Price, Carbon County, Utah. The majority of the project will be within the UDOT ROW but some private lands are also involved.

4. **Name and title of federal agency official and contact person for this undertaking**, including email address and phone number:

   Bryan Dillon, FHWA Area 2 Engineer
   Email: Bryan.Dillon@dot.gov
   Phone: (801) 955-3517
   Address: 2520 West 4700 South, Suite 9A
   Salt Lake City UT 84129

   Liz Robinson, UDOT Cultural Resources Manager
   Email: lizrobinson@utah.gov
   Phone: (801) 910-2035
   Address: 4501S. 2700 West, Box 148450
   Salt Lake City UT 84114

5. Purpose of notification. Indicate whether this documentation is to:

UDOT is providing notice to the ACHP of a finding that an undertaking may adversely affect historic properties.

II. Information on the Undertaking*

6. Describe the undertaking and nature of federal involvement (if multiple federal agencies are involved, specify involvement of each):

UDOT proposes to use federal funds to construct improvements to SR-10 from approximately M.P. 65.4 to 67.5 in Carbon County. This project includes widening to accommodate a center turn lane, adding curb, gutter and sidewalk in areas where there is a need to serve pedestrians, extending or replacing pipe and box culverts, lowering the profile at the vertical curve near M.P. 67, rehabilitating pavement, relocating utilities and rehabilitating culverts and installing headwalls, and adding turn lanes at critical intersections.

7. Describe the Area of Potential Effects:

The area of direct potential affects (APE) has been defined as a 2.1-mile-long corridor along SR-10 that extends 200 feet from the current roadway centerline, approximately 51 acres of land. The APE for indirect effects included all land parcels adjoining the ROW.

8. Describe steps taken to identify historic properties:

The APE has been entirely previously surveyed for archaeology and therefore work for this project consisted of a reconnaissance level survey and field verification of known sites. A selective reconnaissance level survey was also conducted to record architectural properties abutting the APE. This work was completed by Montgomery Archaeological Consultants in 2016.

9. Describe the historic property (or properties) and any National Historic Landmarks within the APE (or attach documentation or provide specific link to this information):

The SR-10 surveys resulted in the location of 11 previously documented archaeological sites and 48 architectural properties. Of these, 4 archaeological sites and 31 architectural properties are eligible to the NRHP. See attached Determination of Eligibility/Finding of Effect for details on these resources.

10. Describe the undertaking's effects on historic properties:

Archaeological historic properties and project effects.

Site	Name or Description	NRHP Eligibility	Finding of Effect
42CB1040	Carbon Canal	Eligible, Criterion A and C	No Adverse Effect
42CB1270	Old SR-10	Eligible, Criterion A	No Adverse Effect
42CB1436	Trash Scatter	Eligible, Criterion D	No Historic Properties Affected
42CB2141	Trash Scatter	Eligible, Criterion D	No Adverse Effect

Site 42CB1040: The proposed project includes extending the culvert that carries the Carbon Canal under SR-10 on both the inlet and outlet ends. The original section of the culvert directly under the highway will not be touched.

Site 42CB1270: This proposed project includes adding headwalls and riprap at the inlet and outlet ends to the original culvert pipe that channels Drunkard Wash, but the pipe will remain in place. This culvert is all that remains of old SR-10 in this location.

Site 42CB1436: Site will be avoided

Site 42CB2141: **:** The proposed project will remove a strip of the site closest to the SR-10 edge of the pavement on the east side of the highway near MP 67.1. Site 42CB2141 comprises multiple historic time-period, single episode trash dumps. None of the documented concentrations will be touched by this construction proposal.

Architectural historic properties and project effects.

Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect
1275 S. Fairgrounds Road	1948	Post-WWII: other / other late 20th century	EC/Eligible	No Historic Properties Affected
?1266 S. Highway 10	1946	1-story foursquare / Post-WWII: other	EC/Eligible	No Historic Properties Affected
1288 S. Highway 10	1948	Post-WWII: other / other late 20th century	EC/Eligible	No Historic Properties Affected
1332 S. Highway 10	1948	Early ranch / early ranch/rambler	EC/Eligible	No Historic Properties Affected
1767 S. Highway 10	1920	1-story foursquare / Post-WWII: other / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 1,488 sq. ft.; Partial Acquisition: 116 sq. ft.
1777 S. Highway 10	1930	1-story central block with projecting bays / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 1,056 sq.ft.
1867 S. Highway 10	1960	1-story side-gabled Post-WWII: other / other residential	EC/Eligible	No Adverse Effect; TCE: 5,119 sq. ft.; Partial Acquisition: 6,974 sq. ft.
?2010 S. Highway 10	1944	1-story service station in Post-WWII: other	EC/Eligible	Adverse Effect; Structure will be acquired by the project
45 E. Robertson Road (2000 S.)	1950	1-story hip-roofed single dwelling ranch/rambler	EC/Eligible	No Adverse Effect; Partial Acquisition: 359 sq. ft.
2032 S. Highway 10	1967	Mobile home / mobile home	EC/Eligible	No Historic Properties Affected
2044 S. Highway 10	1940	1-story foursquare / 20th century other	EC/Eligible	Adverse Effect; Structure will be demolished by the project
2066 S. Highway 10	1940	1-story foursquare / 20th century other	EC/Eligible	Adverse Effect; Structure will be acquired by the project
2067 S. Highway 10	1941	Ranch/rambler	EC/Eligible	Adverse Effect; Structure will be acquired by the project
2088 S. Highway 10	1941	20th century other / other residential	EC/Eligible	Adverse Effect; Structure will be acquired by the project
2098 S. Highway 10	1970	Mobile home / mobile home	EC/Eligible	No Adverse Effect; TCE: 408 sq. ft.; Partial Acquisition: 2,093 sq. ft.
2111 S. Highway 10	1954	½-story single dwelling Cape Cod/WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 4,413 sq. ft.; Partial Acquisition: 1,813 sq. ft.
?2154 S. Highway 10	1930	1-story WWII-era cottage / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 3,512 sq. ft.; Partial Acquisition: 976 sq. ft.
?2188 S. Highway 10	1946	1-story single dwelling clipped gable cottage	EC/Eligible	Adverse Effect; Structure will be acquired by the project
2198 S. Highway 10	1947	1-story single dwelling clipped gable cottage	EC/Eligible	Adverse Effect; Structure will be acquired by the project
2199 S. Highway 10	1945	1-story single dwelling	EC/Eligible	No Adverse Effect; TCE: 2,219 sq. ft.;

Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect
		clipped gable cottage		Partial Acquisition: 1,111 sq. ft.
2266 S. Highway 10	1944	1 1/2-story front-gabled other residential / Post WWII: other	EC/Eligible	No Adverse Effect; TCE: 5,187 sq. ft., Partial Acquisition: 505 sq. ft.
2289 S. Highway 10	1925	1-story other residential / 20th century other	EC/Eligible	No Adverse Effect; TCE: 950 sq. ft.; Partial Acquisition: 704 sq. ft.
2305 S. Highway 10	1947	1/2 story single dwelling post-WWII: other	EC/Eligible	Adverse Effect; Structure will be acquired by the project
2345 S. Highway 10	1946	Traditional style single dwelling WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 4,331 sq. ft.; Partial Acquisition: 1,696 sq. ft.
2354 S. Highway 10	1939	1-story single dwelling hipped roof WWII-era cottage / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 6,625 sq. ft.; Partial Acquisition: 1,400 sq. ft.
2410 S. Highway 10	1935	Minimal traditional / 1-story single dwelling hipped-roof WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 2,247 sq. ft.; Partial Acquisition: 435 sq. ft.
2433 S. Highway 10	1970	1-story single-gable ranch/rambler	EC/Eligible	Adverse Effect; Structure will be acquired by the project
2511 S. Highway 10	1945	1-story WWII-era cottage / post WW II: other	EC/Eligible	No Adverse Effect; TCE: 1,212 sq. ft.; Partial Acquisition: 1,474 sq. ft.
2754 S. Highway 10	1955	1-story ranch/rambler	EC/Eligible	No Adverse Effect; TCE: 954 sq. ft.; Partial Acquisition: 850 sq. ft.
2767 S. Highway 10	1957	2-story split level single dwelling	EC/Eligible	No Adverse Effect; TCE1,935 sq. ft.; Partial Acquisition: 3,827 sq. ft.
2832 S. Highway 10	1959	1 1/2 story Cape Cod type minimal traditional	EC/Eligible	No Adverse Effect; TCE: 631 sq. ft.; Partial Acquisition: 1,555 sq. ft.

11. Explain how this undertaking would adversely affect historic properties (include information on any conditions or future actions known to date to avoid, minimize, or mitigate adverse effects):

The project will require the acquisition and removal of 9 properties. UDOT design was able to minimize impacts to the remaining 17 eligible properties to small acquisitions that will not impact the structure or character-defining features.

12. Provide copies or summaries of the views provided to date by any consulting parties, Indian tribes or Native Hawai'ian organizations, or the public, including any correspondence from the SHPO and/or THPO.

Native American consultation was initiated through letters sent to the Uintah and Ouray Ute Tribes, Pueblo of Hopi, Paiute Indian Tribe of Utah and the Shivwits and Cedar Bands of Paiute (sent December 18, 2015). The Paiute Indian Tribe of Utah was the only tribe to respond and they had no concerns with the project. The UDOT is continuing consultation with the Price Certified Local Government. Consultation with the public is ongoing but no comments on the adverse effects to historic properties have been received.

* see *Instructions for Completing the ACHP* e*106 Form*

III. Optional Information

13. Please indicate the status of any consultation that has occurred to date. Are there any consulting parties involved other than the SHPO/THPO? Are there any outstanding or unresolved concerns or issues that the ACHP should know about in deciding whether to participate in consultation?

No unresolved issues or concerns from the consulting parties remain.

14. Does your agency have a website or website link where the interested public can find out about this project and/or provide comments? Please provide relevant links:

No.

15. Is this undertaking considered a "major" or "covered" project listed on the Federal Infrastructure Projects Permitting Dashboard or other federal interagency project tracking system? If so, please provide the link or reference number:

No.

The following are attached to this form (check all that apply):

_**X**_ Section 106 consultation correspondence

_**X**_ Maps, photographs, drawings, and/or plans

___ Additional historic property information

___ Other:

16-1257

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

SHANE M. MARSHALL, P.E.
Deputy Director

September 29, 2016

Mr. Cory Jensen
Senior Historic Preservation Specialist
Utah Division of State History
300 Rio Grande
Salt Lake City, UT 84101-1182

RE: UDOT Project No. F-0010(75)66, SR-10, US-6 to Ridge Road, Carbon County, Utah (PIN 13664).
Determination of Eligibility and Finding of Adverse Effect.

Dear Mr. Jensen:

The Utah Department of Transportation (UDOT) is preparing to undertake the subject federal-aid project. In accordance with Stipulation II, Part A and Appendix B of the *Memorandum of Understanding, State Assumption of Responsibility for Categorical Exclusions (23 USC §326)* (executed June 30, 2011), the UDOT assumes responsibility, assigned by the Federal Highway Administration (FHWA), for ensuring compliance with Section 106 of the NHPA and with Section 4(f) of the DOT Act of 1966, as amended. In accordance with the *Second Amended Programmatic Agreement among the FHWA, the Utah State Historic Preservation Officer, the Advisory Council on Historic Preservation, the USACE Sacramento District, and the UDOT Regarding Section 106 Implementation for Federal-Aid Transportation Projects in the State of Utah* (executed June 3, 2013), Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and U.C.A.9-8-404, the UDOT has taken into account the effects of this undertaking on historic properties, and is affording the Utah State Historic Preservation Officer (SHPO) an opportunity to comment on the undertaking. Additionally, this submission is in compliance with Section 4(f) of the Department of Transportation Act of 1966, 23 U.S.C. § 138 (as amended) and 49 U.S.C. § 303 (as amended).

PROJECT DESCRIPTION

This project proposes to construct improvements to SR-10 south of Price, in Carbon County, Utah. The project extends from approximately M.P. 65.4 to 67.5. This project includes widening to accommodate a center turn lane, adding curb, gutter and sidewalk in areas where there is a need to serve pedestrians, extending or replacing pipe and box culverts, lowering the profile at the vertical curve near M.P. 67, rehabilitating pavement, relocating utilities and rehabilitating culverts and installing headwalls, and adding turn lanes at critical intersections.

The area of potential affects (APE) has been defined as a 2.1-mile-long corridor along SR-10 that extends 200 feet from the current roadway centerline. The APE has been entirely previously surveyed for archaeology and therefore work for this project consisted of a reconnaissance level survey and field verification of known sites. This Class II inventory was conducted by Montgomery Archaeological Consultants, under State Antiquities Project Number U-15-MQ-0493s, and the results are reported in *Site Verification and Class III Inventory of Utah Department of Transportation's State Route 10 Road Widening Between MP 65.27 and MP 67.5; South Price to Ridge Road, Carbon County, Utah* (see enclosed report). A selective reconnaissance level survey was conducted to record

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Received
OCT 7, 2016
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architectural properties abutting the APE, and the results are reported in *Cultural Resources Survey State Route 10: South Price to Ridge Road, Milepost 65.276 to 76.5, Carbon County, Utah*, prepared by Bee Lufkin for Montgomery Archaeological Consultants, Inc. (see enclosed report).

The SR-10 surveys resulted in the location of 11 previously documented archaeological sites and 48 architectural properties. Of these, 4 archaeological sites and 31 architectural properties are eligible to the National Register of Historic Places (NRHP). No known traditional cultural properties or paleontological resources are located in the APE. The Determinations of Eligibility and Findings of Effects is provided in Table 1 for archaeological resources and in Table 2 for architectural properties.

ARCHAEOLOGICAL RESOURCES

Table 1. Determinations of Eligibility and Findings of Effect for Archaeological Resources

Site	Name or Description	NRHP Eligibility	Finding of Effect	Warrants preservation in place	Section 4(f) Use
42CB1040	Carbon Canal	Eligible, Criterion A and C	No Adverse Effect	No	NA
42CB1270	Old SR-10	Eligible, Criterion A	No Adverse Effect	No	NA
42CB1435	Trash Scatter	Not Eligible	No Historic Properties Affected	NA	NA
42CB1436	Trash Scatter	Eligible, Criterion D	No Historic Properties Affected	No	NA
42CB1437	Trash Scatter	Not Eligible	No Historic Properties Affected	NA	NA
42CB2139	Irrigation Ditch	Not Eligible	No Historic Properties Affected	NA	NA
42CB2140	Irrigation Ditch	Not Eligible	No Historic Properties Affected	NA	NA
42CB2141	Trash Scatter	Eligible, Criterion D	No Adverse Effect	No	NA
42CB2142	Dismantled Billboard	Not Eligible	No Historic Properties Affected	NA	NA
42CB2143	Abandoned Road Segment	Not Eligible	No Historic Properties Affected	NA	NA
42CB2144	Trash Scatter	Not Eligible	No Historic Properties Affected	NA	NA

Description of Effect to Site 42CB1040: The proposed project includes extending the culvert that carries the Carbon Canal under SR-10 on both the inlet and outlet ends. The original section of the culvert directly under the highway will not be touched. The project will affect a relatively small portion of the site and will not substantially impact or alter any contributing elements of the site or any of the character-defining features for which it was determined eligible for the NRHP. Thus, the proposed project will result in a finding of No Adverse Effect.

Description of Effect to Site 42CB1270: This proposed project includes adding headwalls and riprap at the inlet and outlet ends to the original culvert pipe that channels Drunkard Wash, but the pipe will remain in place. This culvert is all that remains of old SR-10 in this location. The project will affect a relatively small portion of the site and will not substantially impact or alter any contributing elements of the site or any of the character-defining features for which it was determined eligible for the NRHP. Thus, the proposed project will result in a finding of No Adverse Effect.

Description of Effect to Site 42CB2141: The proposed project will remove a strip of the site closest to the SR-10 edge-of-oil on the east side of the highway near MP 67.1. Site 42CB2141 comprises multiple historic time-period, single episode trash dumps. None of the documented concentrations will be touched by this construction proposal. The project will affect a relatively small portion of the site and will not substantially impact or alter any contributing elements of the site or any of the character-defining features for which it was determined eligible for the NRHP. Thus, the proposed project will result in a finding of No Adverse Effect.

ARCHITECTURAL PROPERTIES

Ms. Lufkin documented and evaluated 48 architectural properties that could be impacted by the project. All 48 are buildings, and of these, 31 are eligible for the National Register of Historic Places. The impacts are described in the paragraph following Table 2.

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
	1275 S. Fairgrounds Road	1948	Post-WWII: other / other late 20th century	EC/Eligible	No Historic Properties Affected	N/A
	?1266 S. Highway 10	1946	1-story foursquare / Post-WWII: other	EC/Eligible	No Historic Properties Affected	N/A
	1288 S. Highway 10	1948	Post-WWII: other / other late 20th century	EC/Eligible	No Historic Properties Affected	N/A
	1308 S. Highway 10	1965	Post-WWII: other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	?1310 S. Highway 10	1955	Post-WWII: other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	1332 S. Highway 10	1948	Early ranch / early ranch/rambler	EC/Eligible	No Historic Properties Affected	N/A
	1510 S. Highway 10	1935/1957	Other commercial/public / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	1632 S. Highway 10	1950	Post-WWII modern / ranch/rambler	NC/Ineligible	No Historic Properties Affected	N/A
	1654 S. Highway 10	1970	Late 20th century other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
	1700 S. Highway 10	1945/1985	Late 20th century other / other late 20th century	NC/Ineligible	No Historic Properties Affected	N/A
1	1767 S. Highway 10	1920	1-story foursquare / Post-WWII: other / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 1,488 sq. ft.; Partial Acquisition: 116 sq. ft.	*de minimis*
1	1777 S. Highway 10	1930	1-story central block with projecting bays / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 1,056 sq. ft.	Temporary Occupancy
2	1867 S. Highway 10	1960	1-story side-gabled Post-WWII: other / other residential	EC/Eligible	No Adverse Effect; TCE: 5,119 sq. ft.; Partial Acquisition: 6,974 sq. ft.	*de minimis*
	1899 S. Highway 10	1940	1 1/2-story cross-gabled WWII-era cottage / simple Post-WWII: other	NC/Ineligible	No Historic Properties Affected	N/A
3	?2010 S. Highway 10	1944	1-story service station in Post-WWII: other	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
3	45 E. Robertson Road (2000 S.)	1950	1-story hip-roofed single dwelling ranch/rambler	EC/Eligible	No Adverse Effect; Partial Acquisition: 359 sq. ft.	*de minimis*

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
	2022 S. Highway 10	1931	Side-gabled 1-story single dwelling in Post-WWII: other / other residential type	NC/Ineligible	No Historic Properties Affected	N/A
	2032 S. Highway 10	1967	Mobile home / mobile home	EC/Eligible	No Historic Properties Affected	N/A
4	2044 S. Highway 10	1940	1-story foursquare / 20th century other	EC/Eligible	Adverse Effect; Structure will be demolished by the project	Greater than *de minimis*
4	2066 S. Highway 10	1940	1-story foursquare / 20th century other	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
5	2067 S. Highway 10	1941	Ranch/rambler	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
	2078 S. Highway 10	1948	Residential / Post WWII	NC/Ineligible	No Historic Properties Affected	N/A
6	2088 S. Highway 10	1941	20th century other / other residential	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
6	2098 S. Highway 10	1970	Mobile home / mobile home	EC/Eligible	No Adverse Effect; TCE: 408 sq. ft.; Partial Acquisition: 2,093 sq. ft.	*de minimis*
	2099 S. Highway 10	1930	1-story foursquare / 20th century other	NC/Ineligible	No Historic Properties Affected	N/A
	2100 S. Highway 10	1961	1-story ranch/rambler / single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
7	2111 S. Highway 10	1954	½-story single dwelling Cape Cod/WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 4,413 sq. ft.: Partial Acquisition: 1,813 sq. ft.	*de minimis*
8	?2154 S. Highway 10	1930	1-story WWII-era cottage / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 3,512 sq. ft.; Partial Acquisition: 976 sq. ft.	*de minimis*
8	?2188 S. Highway 10	1946	1-story single dwelling clipped gable cottage	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
10	2198 S. Highway 10	1947	1-story single dwelling clipped gable cottage	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
9	2199 S. Highway 10	1945	1-story single dwelling clipped gable cottage	EC/Eligible	No Adverse Effect; TCE: 2,219 sq. ft.; Partial Acquisition: 1,111 sq. ft.	*de minimis*
12	2266 S. Highway 10	1944	1 1/2-story front-gabled other residential / Post WWII: other	EC/Eligible	No Adverse Effect: TCE: 5,187 sq. ft., Partial Acquisition: 505 sq. ft.	*de minimis*
11	2289 S. Highway 10	1925	1-story other residential / 20th century other	EC/Eligible	No Adverse Effect; TCE: 950 sq. ft.: Partial Acquisition: 704 sq. ft.	*de minimis*

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Figure	Address	Date	Style/Type	SHPO Rating/NRHP Eligibility	Finding of Effect	Section 4(f) Use
11	2305 S. Highway 10	1947	1/2 story single dwelling post-WWII: other	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
13	2345 S. Highway 10	1946	Traditional style single dwelling WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 4,331 sq. ft.; Partial Acquisition: 1,696 sq. ft.	*de minimis*
14	2354 S. Highway 10	1939	1-story single dwelling hipped roof WWII-era cottage / 20th century: other	EC/Eligible	No Adverse Effect; TCE: 6.625 sq. ft.; Partial Acquisition: 1,400 sq. ft.	*de minimis*
15	2410 S. Highway 10	1935	Minimal traditional / 1-story single dwelling hipped-roof WWII-era cottage	EC/Eligible	No Adverse Effect; TCE: 2,247 sq. ft.; Partial Acquisition: 435 sq. ft.	*de minimis*
16	2433 S. Highway 10	1970	1-story single-gable ranch/rambler	EC/Eligible	Adverse Effect; Structure will be acquired by the project	Greater than *de minimis*
	2477 S. Highway 10	1933	1-story single dwelling WWII-era cottage / 20th century: other	NC/Ineligible	No Historic Properties Affected	N/A
	2502 S. Highway 10	1942	1-story clipped-gable cottage single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
17	2511 S. Highway 10	1945	1-story WWII-era cottage / post WW II: other	EC/Eligible	No Adverse Effect; TCE: 1,212 sq. ft.; Partial Acquisition: 1,474 sq. ft.	*de minimis*
	2680 S. Highway 10	1930	1-story single dwelling other / 20th century: other	NC/Ineligible	No Historic Properties Affected	N/A
	2710 S. Highway 10	1952	1-story early ranch/rambler single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
18	2754 S. Highway 10	1955	1-story ranch/rambler	EC/Eligible	No Adverse Effect; TCE: 954 sq. ft.; Partial Acquisition: 850 sq. ft.	*de minimis*
19	2767 S. Highway 10	1957	2-story split level single dwelling	EC/Eligible	No Adverse Effect; TCE1,935 sq. ft.; Partial Acquisition: 3,827 sq. ft.	*de minimis*
	2776 S. Highway 10	1952	1-story early ranch/rambler single dwelling	NC/Ineligible	No Historic Properties Affected	N/A
	2798 S. Highway 10	1959	1-story post-WWII other / late 20th century: other.	NC/Ineligible	No Historic Properties Affected	N/A
20	2832 S. Highway 10	1959	1 1/2 story Cape Cod type minimal traditional	EC/Eligible	No Adverse Effect; TCE: 631 sq. ft.; Partial Acquisition: 1,555 sq. ft.	*de minimis*

Description of Effects: This proposed project requires right of way acquisitions of approximately 2 to 15 feet for 17 properties evaluated as eligible to the NRHP and whose impact is considered "No Adverse Effect. The project will have an Adverse Effect, requiring the acquisition of the building, for 9 properties. Thus, the proposed project will result in a finding of Adverse Effect and a Section 4(f) *Greater than de minimis* impact for each adversely affected property.

CONSULTATION EFFORTS

Native American consultation was initiated through letters sent to the Uintah and Ouray Ute Tribes, Shoshone-Bannock Tribes, and Northwestern Band of Shoshone Nation (sent December 16, 2015). The UDOT is continuing consultation with the Price Certified Local Government. An open house will be held so that the public will be notified of the impacts to cultural resources among other considerations.

SUMMARY

To summarize, the project will result in a finding of Adverse Effect for 9 architectural properties, a finding of No Adverse Effect for 3 archaeological sites and 17 architectural properties, and a finding of No Historic Properties Affected for all remaining architectural properties and archaeological sites. The project will also result in 9 Section 4(f) Greater than *de minimis* uses, 16 Section 4(f) *de minimis* uses, and 1 Section 4(f) temporary occupancy use. Therefore, the Finding of Effect for the proposed UDOT Project No. F-0010(75)66, SR-10, US-6 to Ridge Road, Carbon County, Utah, is **Adverse Effect**.

Please review this document and, providing you agree with the findings contained herein, sign and date the signature line at the end of this letter. Should you have any questions or need additional information, please feel free to contact Liz Robinson at 801-910-2035 or lizrobinson@utah.gov; Elizabeth Giraud at 801-965-4917 or egiraud@utah.gov, or Pam Higgins at 435-253-2524 or phiggins@utah.gov.

Sincerely,

Liz Robinson, M.A., RPA
Cultural Resources Program Manager
UDOT Environmental Services

Elizabeth Giraud
Digitally signed by Elizabeth Giraud
DN: cn=Elizabeth Giraud
Date: 2016.10.05 16:31:27 -06'00'

Elizabeth Giraud, AICP
Architectural Historian
UDOT Environmental Services

Pam Higgins
Oct 5 2016 4:22 PM

Pamela Higgins
NEPA/NHPA Specialist, Region 4 Area
UDOT Environmental Services

Enclosures

cc: Troy Torgersen, Project Manager
Eric Hansen, Environmental Manager

Regarding UDOT Project No. F-0010(75)66, SR-10, US-6 to Ridge Road, Carbon County, Utah, I concur with the Determination of Eligibility and Finding of Effect, submitted to the Utah State Historic Preservation Office in accordance with the *Second Amended Programmatic Agreement,* Section 106 of the NHPA, and U.C.A. 9-8-404, which states that the UDOT has determined that the finding is **Adverse Effect.**

Cory Jensen
Senior Historic Preservation Specialist

10/17/2016
Date

U.S. Department of Transportation
Federal Highway Administration

Utah Division

2520 West 4700 South, Suite 9A
Salt Lake City, UT 84129-1874
(801) 955-3500
(801) 955-3539

December 18, 2015

In Reply Refer To:
HDA-UT

Mr. Herman G. Honanie, Chairman
Pueblo of Hopi
P.O. Box 123
Kykotsmovi, AZ 86039

Subject: UDOT Project Number F-0010(75)66
SR-10; South Price to Ridge Road, Carbon County (PIN 13664)
Project Notification and Invitation to be a Section 106 Consulting Party

Dear Mr. Honanie:

To improve safety conditions, the Utah Department of Transportation (UDOT) is proposing to improve State Route (SR) 10 between milepost (MP) 65.4 and MP 67.5, south of Price, Carbon County, Utah. Crash data shows an increase in number of collisions in this segment of the highway corridor as it narrows to two lanes (approximately from 1450 South to 3000 South). This segment is without turn lanes and the shoulders are narrow leaving insufficient width for cars to avoid accidents. Additionally, pedestrians currently walk on the roadway shoulder increasing the potential for pedestrian and vehicle impacts. Finally, the sight distance on the vertical curve near MP 67 is deficient, raising the potential for head-on encounters near the top of the curve. The proposed construction could potentially include the following elements:

- Widening to accommodate a center turn lane
- Widening shoulders
- Adding curb, gutter and sidewalk in areas where there is a need to serve pedestrians
- Extending or replacing pipe and box culverts
- Lowering the profile at the vertical curve near MP 67
- Adding turn lanes at critical intersections

Widening SR-10 to include a three-lane section with wider shoulders would provide drivers with more room to avoid other vehicles. Adding curb, gutter and sidewalks would improve pedestrian safety. Lowering the pavement profile at MP 67 will improve vehicular sight distance and safety. The project is federally-funded and a project footprint map is attached.

In accordance with Section 106 of the National Historic Preservation Act (NHPA) and the Second Amended Programmatic Agreement among the Federal Highway Administration, the Utah Department of Transportation, the Utah State Historic Preservation Officer, the USACE Sacramento District, and the Advisory Council on Historic Preservation Regarding Section 106 Implementation for Federal-Aid Transportation Projects in the State of Utah (Section 106 PA) (signed into effect June 3, 2013), the FHWA will be responsible for consultation with Native American tribes/bands on this project. In accordance with Stipulation II, Part A and Appendix B

of the Renewed Memorandum of Understanding, State Assumption of Responsibility for Categorical Exclusions (23 USC §326), the UDOT assumes responsibility, assigned by the FHWA, for ensuring compliance with Section 106 of the NHPA, except for Native American consultation.

In compliance with the 106 PA, the FHWA requests that you review the information in this letter to determine if there are any historic properties of traditional religious and/or cultural importance that may be affected by the proposed undertaking. If you feel that there are any historic properties that may be impacted, we request your notification as such and your participation as a consulting party during the development of the environmental document. Please be assured that, in accordance with confidentiality and disclosure stipulations in Section 304 of the NHPA, the FHWA and the UDOT will maintain strict confidentiality about certain types of information regarding traditional religious and/or cultural places that may be affected by this proposed undertaking.

At your request, the FHWA and the UDOT staff will be available to meet with you to discuss any concerns you might have about the project. Should you have any questions or concerns about this project and/or wish to be a consulting party, feel free to contact me at 801-955-3517 or at bryan.dillon@dot.gov, or Pamela Higgins at 435-253-2524 or at phiggins@utah.gov. We would also appreciate any suggestions you might have about other groups or individuals that we should contact regarding this project or ways that we may more effectively consult with your Tribe/Band.

To facilitate our consultation with you regarding this project, we would greatly appreciate a response to this letter within 30 days of receipt.

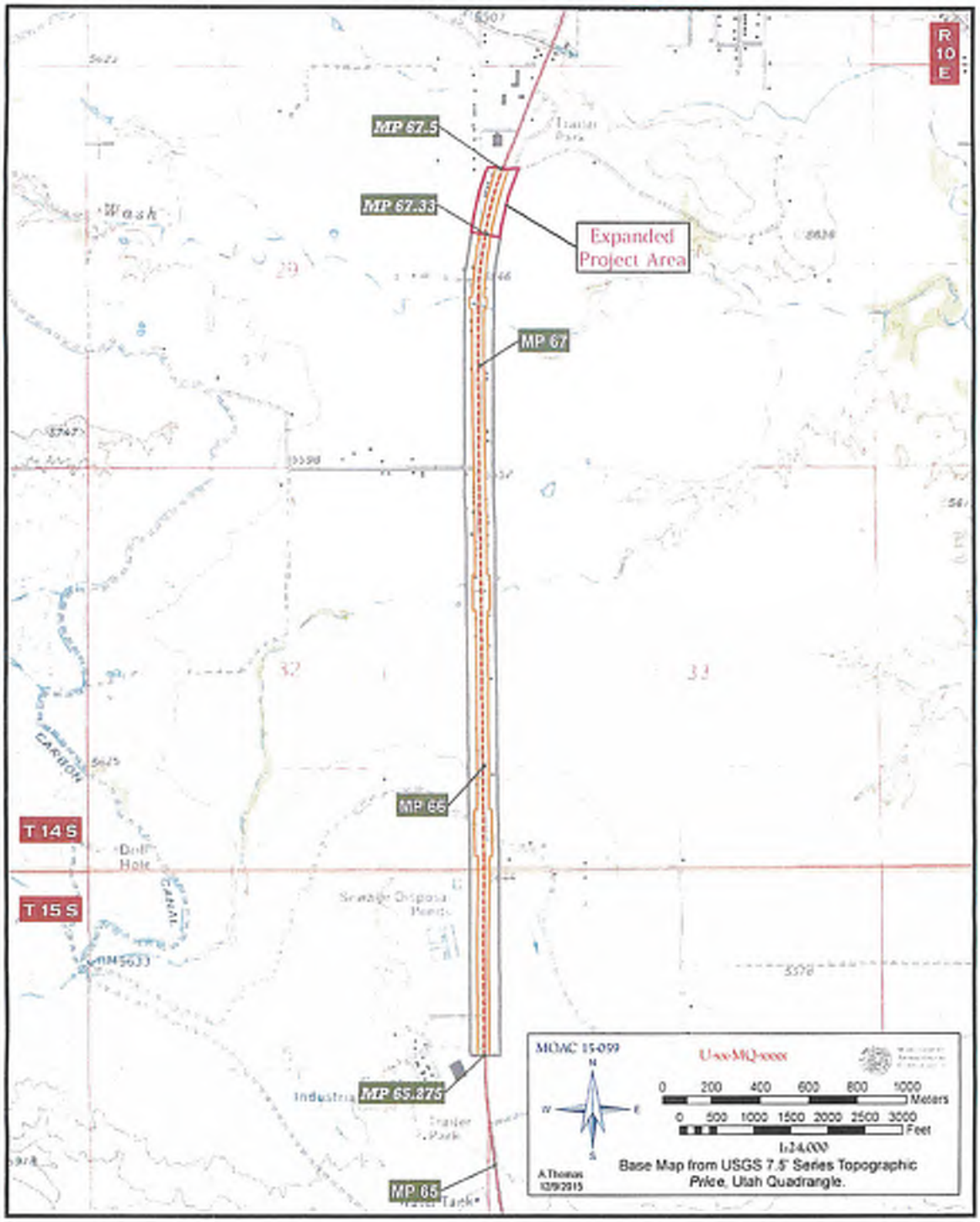
Thank you for your attention to this project notification and any comments you may have.

Yours truly,

for Bryan Dillon,
Area Engineer, Region 4

Enclosure: (1)

C: Mr. Leigh Kuwanwisiwma, Director, Hopi Cultural Preservation Office
Pamela Higgins, NEPA/NHPA Specialist - UDOT Region 4


R 10 E
MP 67.5
MP 67.33
Expanded Project Area
MP 67
MP 66
MP 65.875
MP 65
T 14 S
T 15 S
Industrial
Sewage Disposal Ponds
Trailer Park
Wash
Golf Hole
CARBON
MOMC 15-099
U-xx-MQ-xxxx
N
W
E
S
0 200 400 600 800 1000 Meters
0 500 1000 1500 2000 2500 3000 Feet
1:24,000
A.Thomas
12/9/2015
Base Map from USGS 7.5' Series Topographic
Price, Utah Quadrangle.

IDENTICAL COPIES OF THIS LETTER SENT TO:

Original to:	CC to:
Ms. Gari Lafferty, Tribal Chairwoman Paiute Indian Tribe of Utah 440 North Paiute Drive Cedar City, UT 84721	Ms. Dorena Martineau Cultural Resource Representative Paiute Indian Tribe of Utah 440 North Paiute Drive Cedar City, UT 84721
Mr. Gordon Howell, Chairman Uintah & Ouray Ute Indian Reservation PO Box 190 Ft. Duchesne, UT 84026	Ms. Betsy Chapoose, Director Cultural Rights and Protection Department The Ute Indian Tribe PO Box 190 Ft. Duchesne, UT 84026
Mr. Herman G. Honanie, Chairman Pueblo of Hopi P.O. Box 123 Kykotsmovi, AZ 86039	Mr. Leigh Kuwanwisiwma, Director Hopi Cultural Preservation Office Pueblo of Hopi P.O. Box 123 Kykotsmovi, AZ 86039

PROJECT INITIAL TRIBAL NOTIFICATION FORM SENT TO THE FOLLOWING (IN ACCORDANCE WITH TRIBAL SECTION 106 PAs; SENT BY THE UDOT REGION ARCHAEOLOGIST):

Original to:	CC to:
Ms. Lora E. Tom, Band Chairwoman Cedar Band of the Paiute Indians 4655 North Utah Trail Enoch, UT 84720	Ms. Vala Parashonts Cultural Resource Representative Cedar Band of the Paiute Indians 533 South 640 West Cedar City, UT 84721
Ms. Jetta Wood, Band Chairwoman Shivwits Band of the Paiute Indian Tribe of Utah 6060 West 3650 North Ivins, UT 84738	Ms. Shanan Anderson Cultural Resources Director Shivwits Band of the Paiute Indian Tribe of Utah 6060 West 3650 North Ivins, UT 84738

UDOT Project Initial Tribal Notification Form
Section 106 Consultation

Date: December 18, 2015
UDOT PIN/Project: 13664; F-0010(75)66; SR-10; South Price to Ridge Road, Carbon County
Contact Name: Pamela Higgins
Address: 210 West 800 South, Richfield, UT 84701
Telephone: (435) 253-2524
Email: phiggins@utah.gov

Project Description

To improve safety conditions, the Utah Department of Transportation (UDOT) is proposing to improve State Route (SR) 10 between milepost (MP) 65.4 and MP 67.5, south of Price, Carbon County, Utah. Crash data shows an increase in number of collisions in this segment of the highway corridor as it narrows to two lanes (approximately from 1450 South to 3000 South). This segment is without turn lanes and the shoulders are narrow leaving insufficient width for cars to avoid accidents. Additionally, pedestrians currently walk on the roadway shoulder increasing the potential for pedestrian and vehicle impacts. Finally, the sight distance on the vertical curve near MP 67 is deficient, raising the potential for head-on encounters near the top of the curve. The proposed construction could potentially include the following elements:

- Widening to accommodate a center turn lane
- Widening shoulders
- Adding curb, gutter and sidewalk in areas where there is a need to serve pedestrians
- Extending or replacing pipe and box culverts
- Lowering the profile at the vertical curve near MP 67
- Adding turn lanes at critical intersections

Widening SR-10 to include a three-lane section with wider shoulders would provide drivers with more room to avoid other vehicles. Adding curb, gutter and sidewalks would improve pedestrian safety. Lowering the pavement profile at MP 67 will improve vehicular sight distance and safety. The project is federally-funded and a project footprint map is attached.

Archaeological Potential (Prehistoric or Historic Sites)

- ☐ Known prehistoric sites in the project area
- ☒ Known historic sites in the project area
- ☐ Likely to find prehistoric sites in the project area
- ☐ Likely to find historic sites in the project area
- ☐ Unlikely to find prehistoric sites in the project area
- ☐ Unlikely to find historic sites in the project area
- ☐ No expected ground disturbance
- ☐ Other:

Additional Information/Comments

The project inventory has been previously inventoried and no prehistoric sites were located inside the UDOT ROW.

Tribal Information

Tribe: Shivwits Band of the Paiute Indian Tribe of Utah
Name of tribal contact/representative: Ms. Jetta Wood, Band Chairwoman
Address: 6060 West 3650 North
City, State, Zip: Ivins, UT 84738
Telephone:
Email:
Copies to: Ms. Shanan Anderson, Cultural Resources Director, Shivwits Band of the Paiute Indian Tribe of Utah

Comments

1. Do you wish to be a Section106 consulting party on this project?	☐ Yes	☐ No	☐ Not Sure
2. If you do not wish to be a Section 106 consulting party, do you wish to continue to be involved in the development of this project?	☐ Yes	☐ No	☐ Not Sure
Note: If your answer is "Not Sure," UDOT will continue to provide information.			
3. Are you aware of any traditional religious or culturally important places in or near the project area?	☐ Yes	☐ No	☐ Not Sure
4. If yes, can you share details about the place (e.g., location and other characteristics) and any concerns you may have?	☐ Yes	☐ No	
5. Is this information sensitive?	☐ Yes	☐ No	

Additional Comments

Name of person completing this form, if different from above:
Signature: Date:

UDOT Project Initial Tribal Notification Form
Section 106 Consultation

Date: December 18, 2015
UDOT PIN/Project: 13664; F-0010(75)66; SR-10; South Price to Ridge Road, Carbon County
Contact Name: Pamela Higgins
Address: 210 West 800 South, Richfield, UT 84701
Telephone: (435) 253-2524
Email: phiggins@utah.gov

Project Description

To improve safety conditions, the Utah Department of Transportation (UDOT) is proposing to improve State Route (SR) 10 between milepost (MP) 65.4 and MP 67.5, south of Price, Carbon County, Utah. Crash data shows an increase in number of collisions in this segment of the highway corridor as it narrows to two lanes (approximately from 1450 South to 3000 South). This segment is without turn lanes and the shoulders are narrow leaving insufficient width for cars to avoid accidents. Additionally, pedestrians currently walk on the roadway shoulder increasing the potential for pedestrian and vehicle impacts. Finally, the sight distance on the vertical curve near MP 67 is deficient, raising the potential for head-on encounters near the top of the curve. The proposed construction could potentially include the following elements:

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- Adding turn lanes at critical intersections

Widening SR-10 to include a three-lane section with wider shoulders would provide drivers with more room to avoid other vehicles. Adding curb, gutter and sidewalks would improve pedestrian safety. Lowering the pavement profile at MP 67 will improve vehicular sight distance and safety. The project is federally-funded and a project footprint map is attached.

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- ☐ Likely to find prehistoric sites in the project area
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- ☐ Unlikely to find prehistoric sites in the project area
- ☐ Unlikely to find historic sites in the project area
- ☐ No expected ground disturbance
- ☐ Other:

Additional Information/Comments

The project inventory has been previously inventoried and no prehistoric sites were located inside the UDOT ROW.

Tribal Information

Tribe: Cedar Band of the Paiute Indians
Name of tribal contact/representative: Ms. Lora E. Tom, Band Chairwoman
Address: 4655 North Utah Trail
City, State, Zip: Enoch, UT 84720
Telephone: (435) 586-9433
Email: lora.tom@ihs.gov
Copies to: Ms. Vala Parashonts, Cultural Resource Representative, 533 South 640 West, Enoch, UT 84720

Comments

1. Do you wish to be a Section106 consulting party on this project?	☐ Yes	☐ No	☐ Not Sure
2. If you do not wish to be a Section 106 consulting party, do you wish to continue to be involved in the development of this project?	☐ Yes	☐ No	☐ Not Sure
Note: If your answer is "Not Sure," UDOT will continue to provide information.			
3. Are you aware of any traditional religious or culturally important places in or near the project area?	☐ Yes	☐ No	☐ Not Sure
4. If yes, can you share details about the place (e.g., location and other characteristics) and any concerns you may have?	☐ Yes	☐ No	
5. Is this information sensitive?	☐ Yes	☐ No	

Additional Comments

Name of person completing this form, if different from above:
Signature: Date:

THE PAIUTE INDIAN TRIBE OF UTAH

440 North Paiute Drive • Cedar City, Utah 84721 • (435) 586-1112 • Fax (435) 586-7388

January 21, 2016

Bryan Dillon, Area Engineer, Region 4
U. S. Department of Transportation
Federal Highway Administration
Utah Division
2520 West 4700 South, Suite 9-A
Salt Lake City, Utah 84118-1847

Dear Mr. Dillon,

Subject: UDOT Project Number F-0010(75)66 sr-10; South Price to Ridge Road, Carbon County (PIN 13664)

The Paiute Indian Tribe of Utah is in receipt of your letter December 18, 2015 and has reviewed the material and do not have any objections pertaining to the project named above. At this time we are aware of any cultural resource sites, practices, or locations of importance in the tribe's traditional religions or culture. As you are aware the Tribes support the identification and avoidance of prehistoric archaeological sites and Traditional Cultural Properties.

The Paiute Tribe sincerely appreciates the effort you and your staff have made to consult with the tribe.

Sincerely,

Dorena Martineau/Cultural Resources
Paiute Indian Tribe of Utah
435-586-1112 ext. 107

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

SHANE M. MARSHALL, P.E.
Deputy Director

December 16, 2015

Mayor Joe Picolo
Price City
185 East Main Street
PO Box 893
Price, UT 84501

RE: F-0010(75)66, SR-10; US-6 to Ridge Road CMGC, Carbon County (PIN 13664)
Project Notification and Request to be a Consulting Party

Dear Mayor Picolo:

To improve safety conditions, the Utah Department of Transportation (UDOT) is proposing to improve State Route (SR) 10 between milepost (MP) 65.4 and MP 67.5, south of Price, Carbon County, Utah. A project footprint map is attached. Crash data shows an increase in number of collisions in this segment of the highway corridor as it narrows to two lanes (approximately from 1450 South to 3000 South). This segment is without turn lanes and the shoulders are narrow leaving insufficient width for cars to avoid accidents. Additionally, pedestrians currently walk on the roadway shoulder increasing the potential for pedestrian and vehicle impacts. Finally, the sight distance on the vertical curve near MP 67 is deficient, raising the potential for head-on encounters near the top of the curve. The proposed construction could potentially include the following elements:

- Widening to accommodate a center turn lane
- Widening shoulders
- Adding curb, gutter and sidewalk in areas where there is a need to serve pedestrians
- Extending or replacing pipe and box culverts
- Lowering the profile at the vertical curve near MP 67
- Adding turn lanes at critical intersections

Widening SR-10 to include a three-lane section with wider shoulders would provide drivers with more room to avoid other vehicles. Adding curb, gutter and sidewalks would improve pedestrian safety. Lowering the pavement profile at MP 67 will improve vehicular sight distance and safety.

To widen this section of SR-10 properly, it is likely that new ROW will be needed. The current ROW ranges from 60 ft. to 80 ft. wide. The proposed ROW width will total approximately 100 ft. Existing transportation corridor is either owned by UDOT or is a prescriptive easement through private property. The project is federally-funded.

The proposed widening may potentially result in adverse effects to eligible historic properties. If UDOT determines this type of construction impact, appropriate cultural resource treatment is assured by UDOT policy, federal, and state regulations.

If you have any questions or concerns, please contact 435-253-2524 or phiggins@utah.gov. Thank you for your efforts.

Sincerely,

Pam Higgins

Pamela Higgins, NEPA/NHPA Specialist
UDOT, Region 4

PH/attachment

C: Mr. Nick Tatton, Price CLG, P.O. Box 893, Price, UT 84501
Carbon County CLG, 120 East Main Street, Price, UT 84510-3057

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

SHANE M. MARSHALL, P.E.
Deputy Director

June 6, 2016

Mr. Mr. Timm Kennedy
United States Army Corps of Engineers
Bountiful Regulatory Office
533 West 2600 South, Suite 150
Bountiful, UT 84010

RE: F-0010(75)66; US-191; SR-10; South Price to Ridge Road, Carbon County
Project Notification

Dear Mr. Kennedy:

To improve safety conditions, the Utah Department of Transportation (UDOT) is proposing to improve State Route (SR) 10 between milepost (MP) 65.4 and MP 67.5, south of Price, Carbon County, Utah. Crash data shows an increase in number of collisions in this segment of the highway corridor as it narrows to two lanes (approximately from 1450 South to 3000 South). This segment is without turn lanes and the shoulders are narrow leaving insufficient width for cars to avoid accidents. Additionally, pedestrians currently walk on the roadway shoulder increasing the potential for pedestrian and vehicle impacts. Finally, the sight distance on the vertical curve near MP 67 is deficient, raising the potential for head-on encounters near the top of the curve. The proposed construction could potentially include the following elements:

- Widening to accommodate a center turn lane
- Widening shoulders
- Adding curb, gutter and sidewalk in areas where there is a need to serve pedestrians
- Extending or replacing pipe and box culverts, potentially impacting wetlands
- Lowering the profile at the vertical curve near MP 67
- Adding turn lanes at critical intersections

Widening SR-10 to include a three-lane section with wider shoulders would provide drivers with more room to avoid other vehicles. Adding curb, gutter and sidewalks would improve pedestrian safety. Lowering the pavement profile at MP 67 will improve vehicular sight distance and safety. The project is federally funded and a project footprint map is attached.

An archaeological consultant and an architectural historian have completed cultural resource inventory (CRI) of the entire project area. The following table summarizes archaeological site information:

Site Number	Site Type	NRHP Assessment	Land Status
42Cb1040	Carbon Canal	Eligible, Criterion A and C	UDOT ROW
42Cb1270	Old SR-10	Eligible, Criterion A	UDOT ROW
42Cb1435	Trash Scatter	Not Eligible	Private Land
42Cb1436	Trash Scatter	Eligible, Criterion D	Private Land
42Cb1437	Trash Scatter	Not Eligible	Private Land
42Cb2139	Irrigation Ditch	Not Eligible	Private Land
42Cb2140	Irrigation Ditch	Not Eligible	Private Land
42Cb2141	Trash Scatter	Eligible, Criterion D	Private Land
42Cb2142	Dismantled Billboard	Not Eligible	Private Land
42Cb2143	Abandoned Road Segment	Not Eligible	Private Land
42Cb2144	Trash Scatter	Not Eligible	Private Land

The architectural information is in a separate report. If you would like a table reflecting those findings, please let me know.

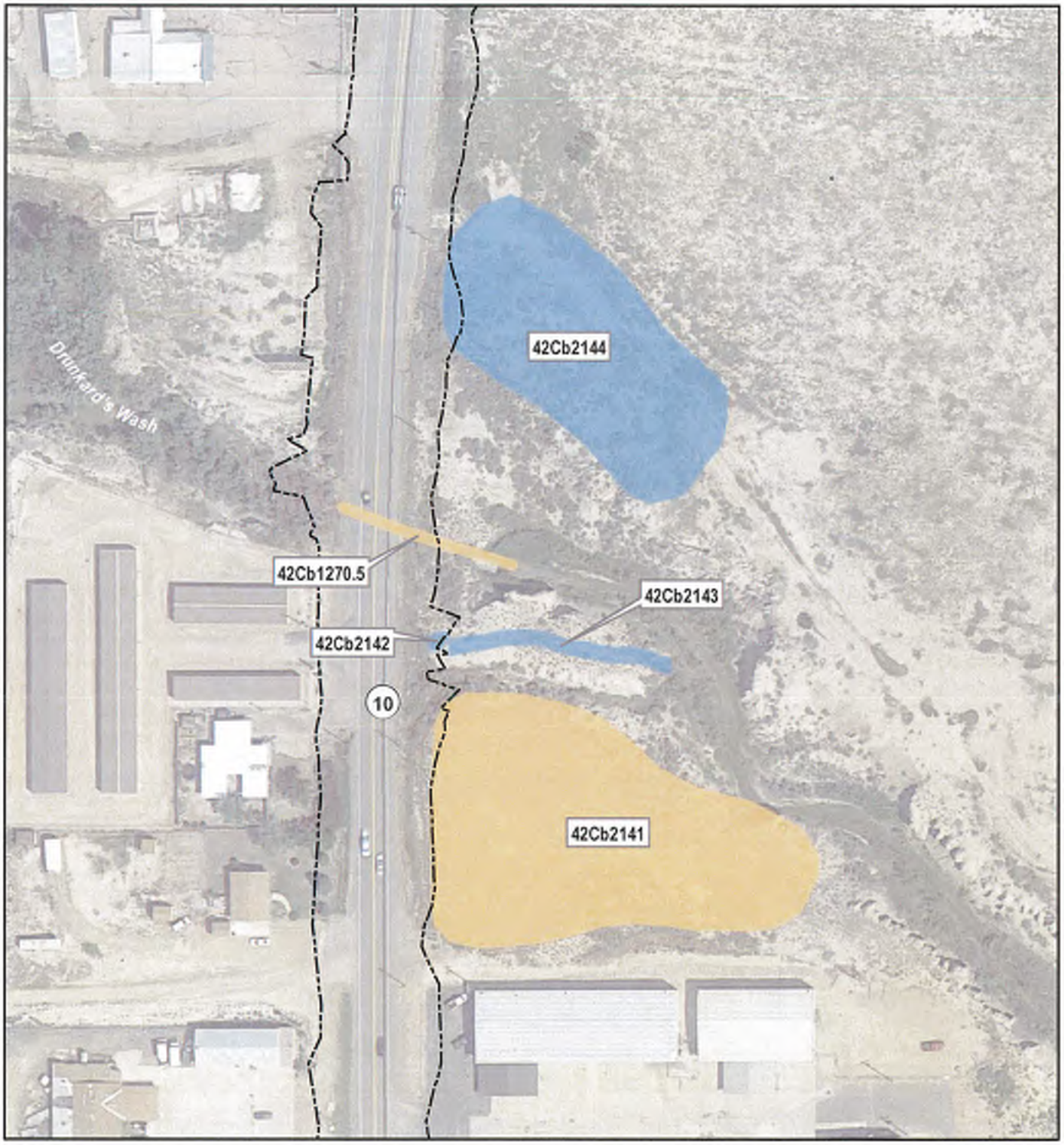
Thank you for your time and comments. If you have any questions or concerns regarding this proposal, please call 435-253-2524 or contact phiggins@utah.gov.

Sincerely,

Pam Higgins

Pamela Higgins, NEPA/NHPA Specialist
UDOT, Region 4

PH/attachment



SR-10; South Price to Ridge Road
Project No.: F-0010(75)66
PIN: 13664

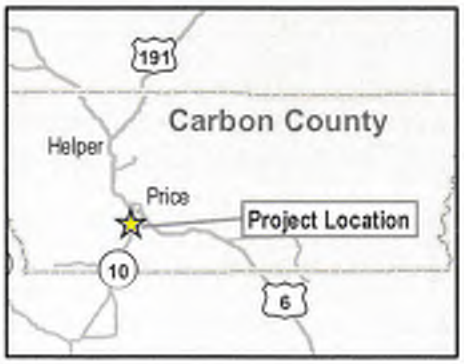
Figure 21

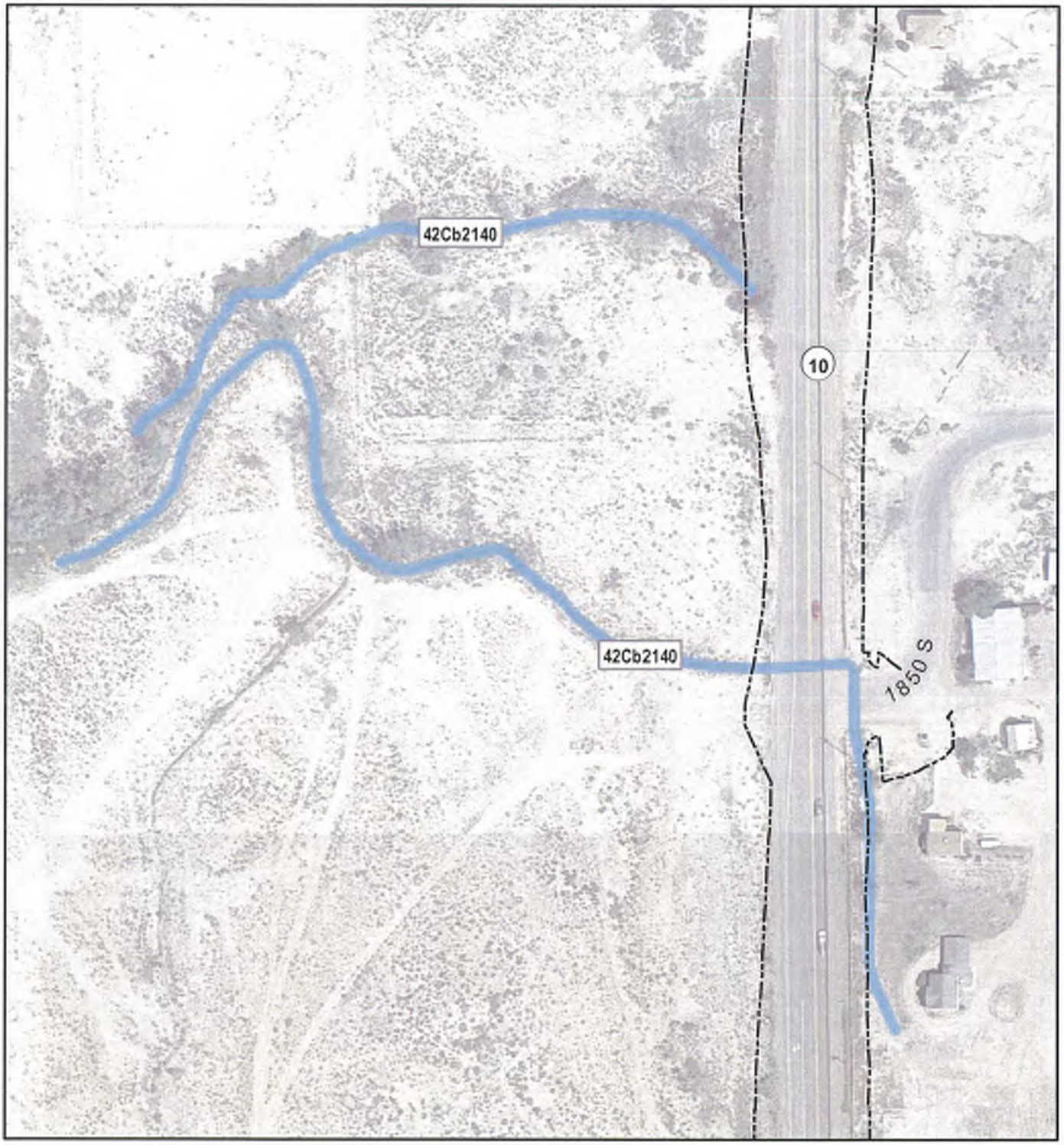
Archaeological Sites

- Eligible
- Not Eligible
- Cut and Fill Line

0 50 100 150 200
Scale in Feet

N





SR-10; South Price to Ridge Road
Project No.: F-0010(75)66
PIN: 13664

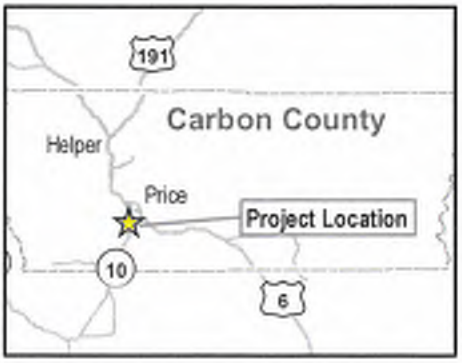
Figure 22

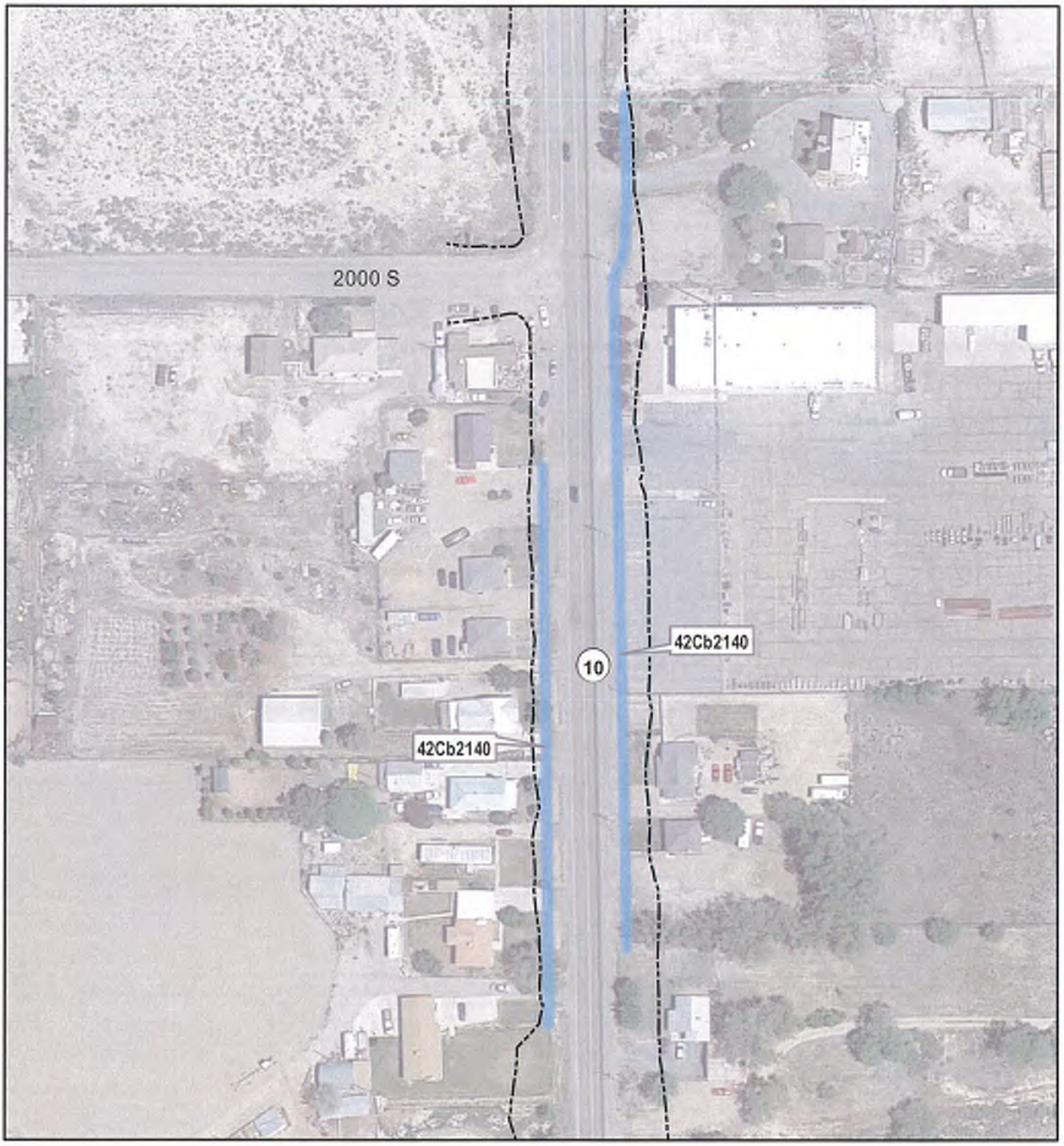
Archaeological Sites

- Eligible
- Not Eligible
- Cut and Fill Line

0 50 100 150 200
Scale in Feet

N





SR-10; South Price to Ridge Road
Project No.: F-0010(75)66
PIN: 13664

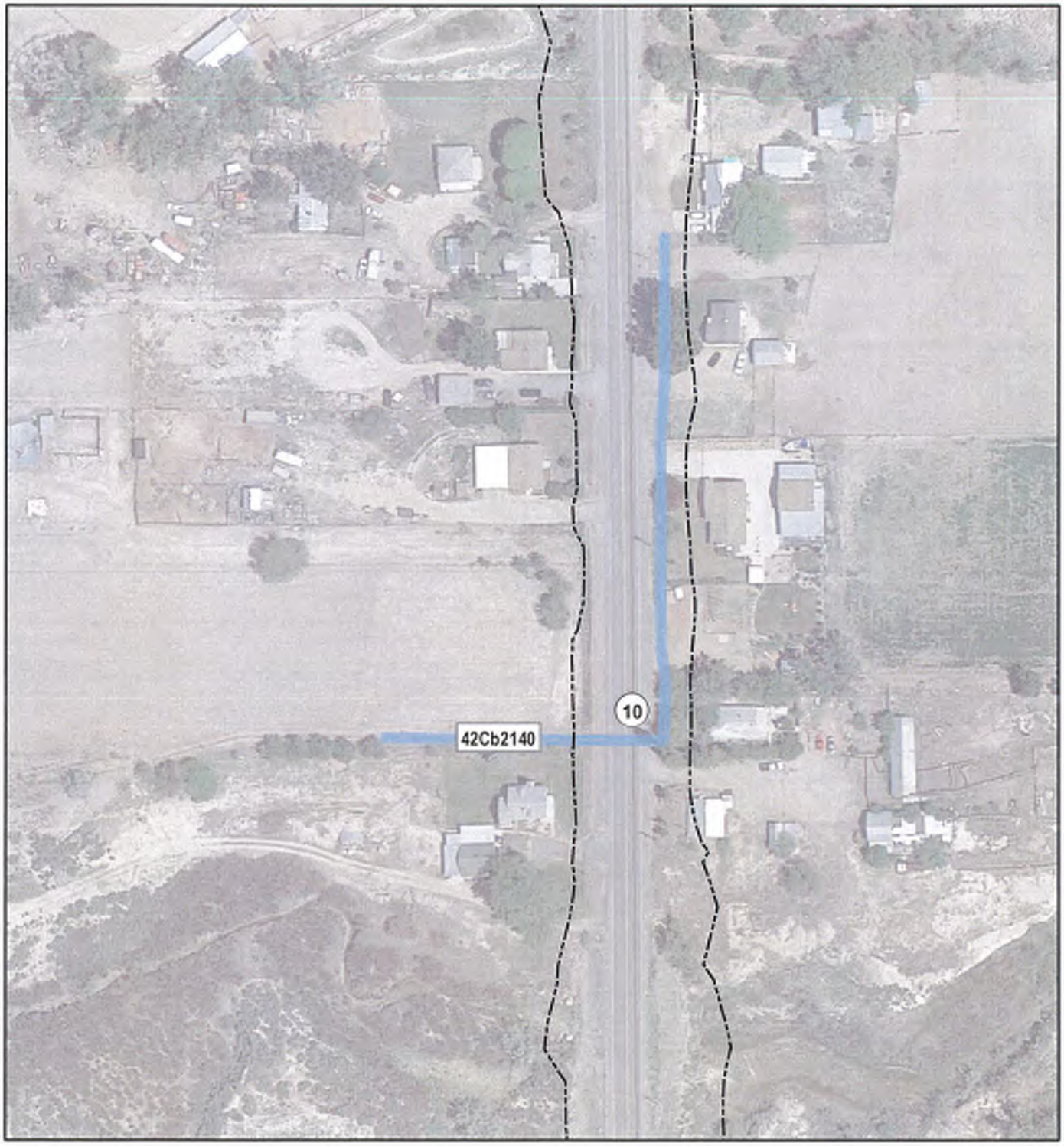
Figure 23

Archaeological Sites

- Eligible
- Not Eligible
- Cut and Fill Line

0 50 100 150 200
Scale in Feet

N



SR-10; South Price to Ridge Road
Project No.: F-0010(75)66
PIN: 13664

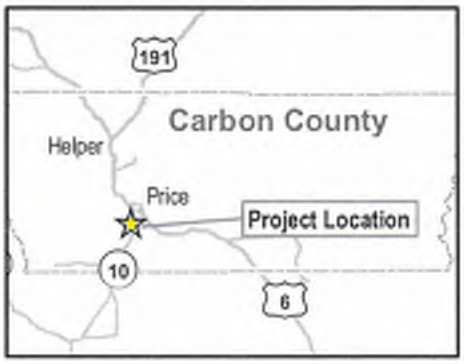
Figure 24

Archaeological Sites

- Eligible
- Not Eligible
- Cut and Fill Line

0 50 100 150 200
Scale in Feet

N



SR-10; South Price to Ridge Road
Project No.: F-0010(75)66
PIN: 13664

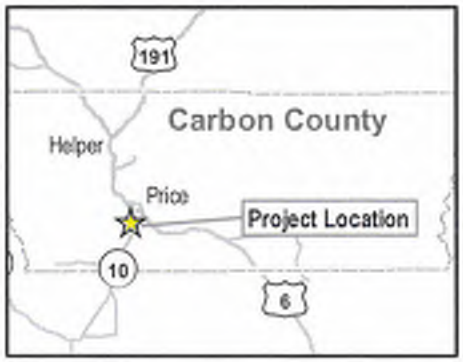
Figure 25

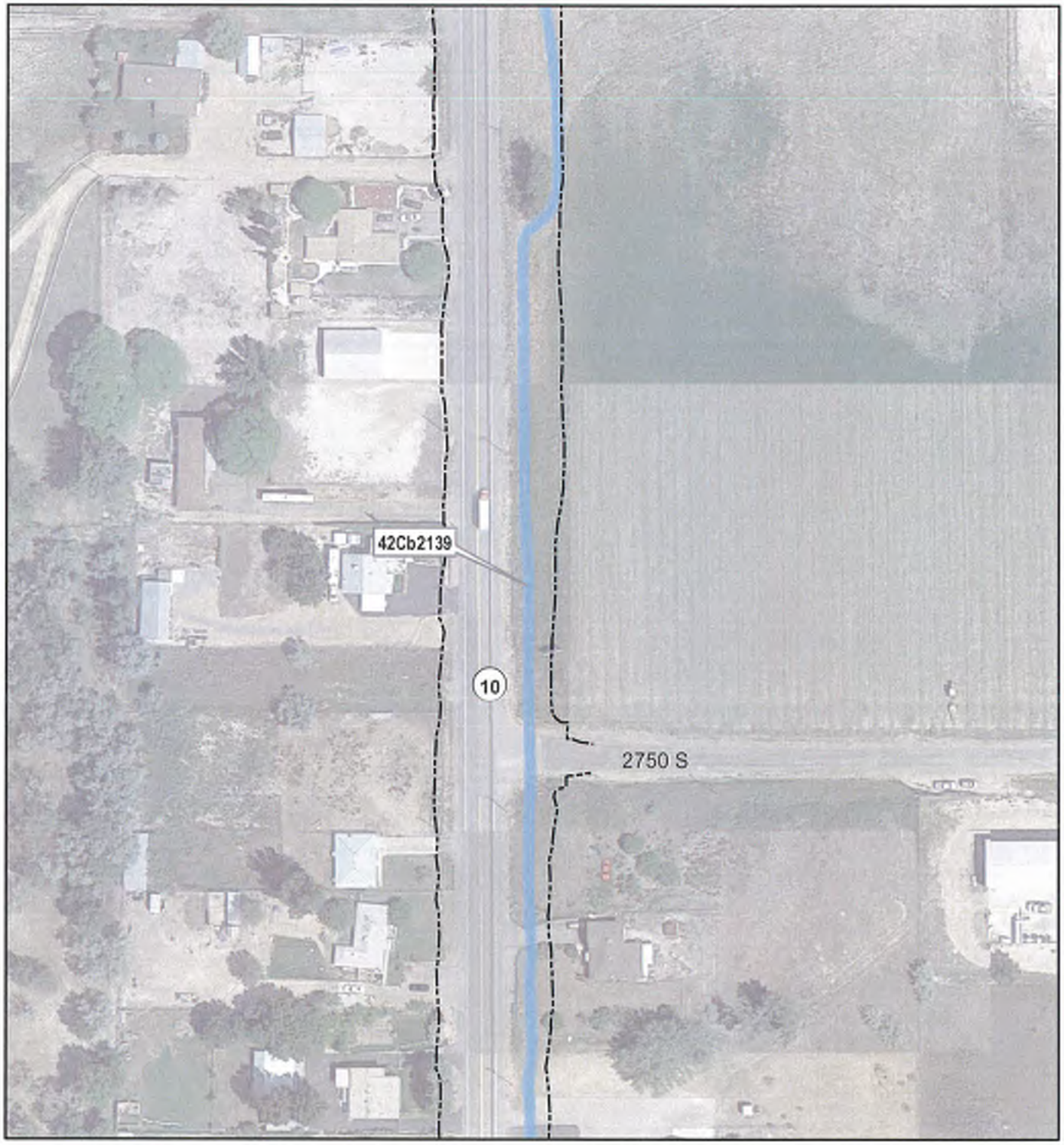
Archaeological Sites

- Eligible
- Not Eligible
- Cut and Fill Line

0 50 100 150 200
Scale in Feet

N





SR-10; South Price to Ridge Road
Project No.: F-0010(75)66
PIN: 13664

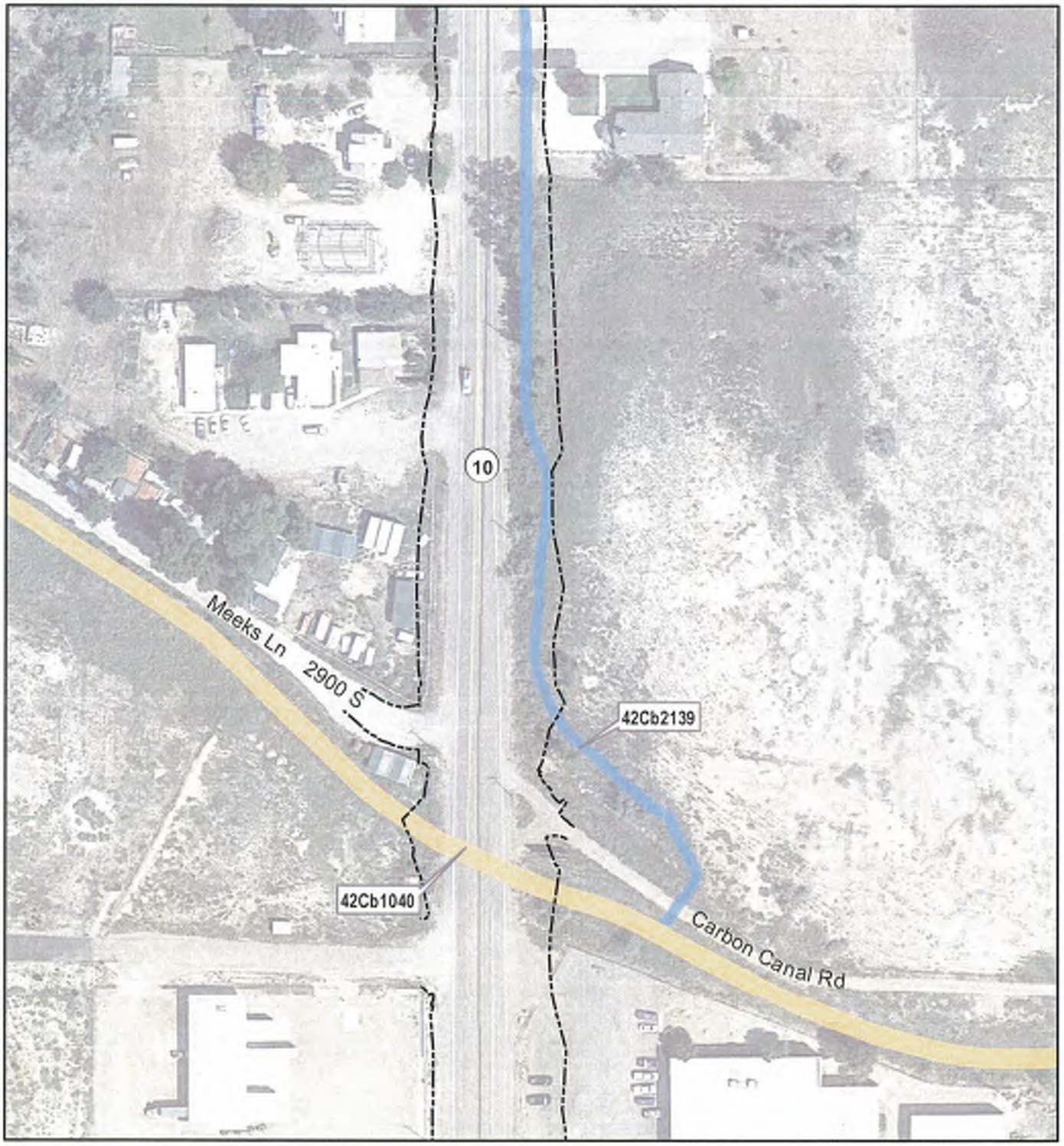
Figure 26

Archaeological Sites

- Eligible
- Not Eligible
- Cut and Fill Line

0 50 100 150 200
Scale in Feet

N



SR-10; South Price to Ridge Road
Project No.: F-0010(75)66
PIN: 13664

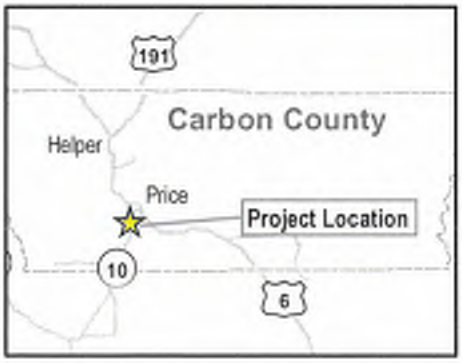
Figure 27

Archaeological Sites

- Eligible
- Not Eligible
- Cut and Fill Line

0 50 100 150 200
Scale in Feet

N



SR-10; South Price to Ridge Road
Project No.: F-0010(75)66
PIN: 13664

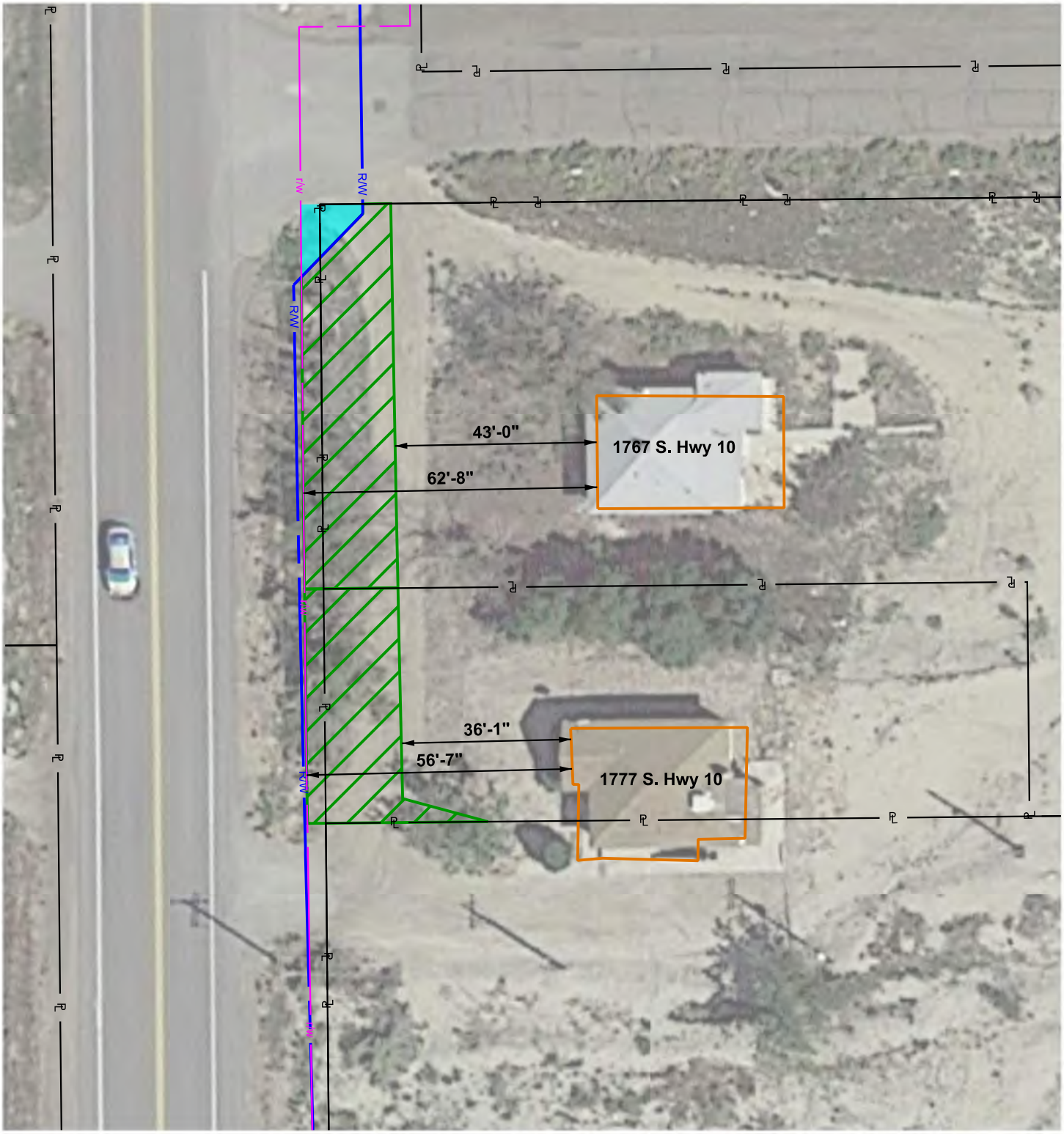
Figure 28

Archaeological Sites

- Eligible
- Not Eligible
- Cut and Fill Line

0 50 100 150 200
Scale in Feet

N



SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

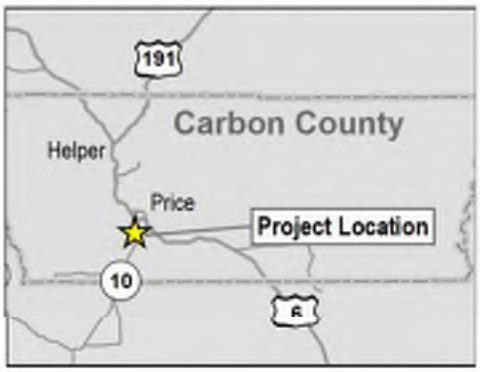
Figure 1

1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line



SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

Figure 2

1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
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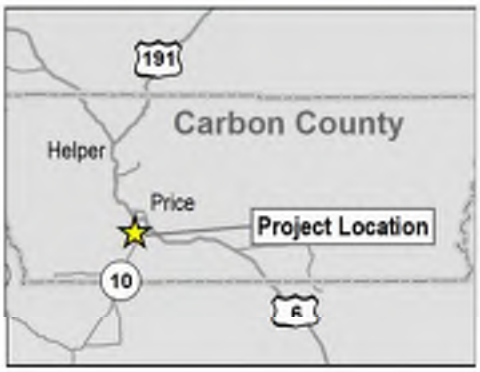
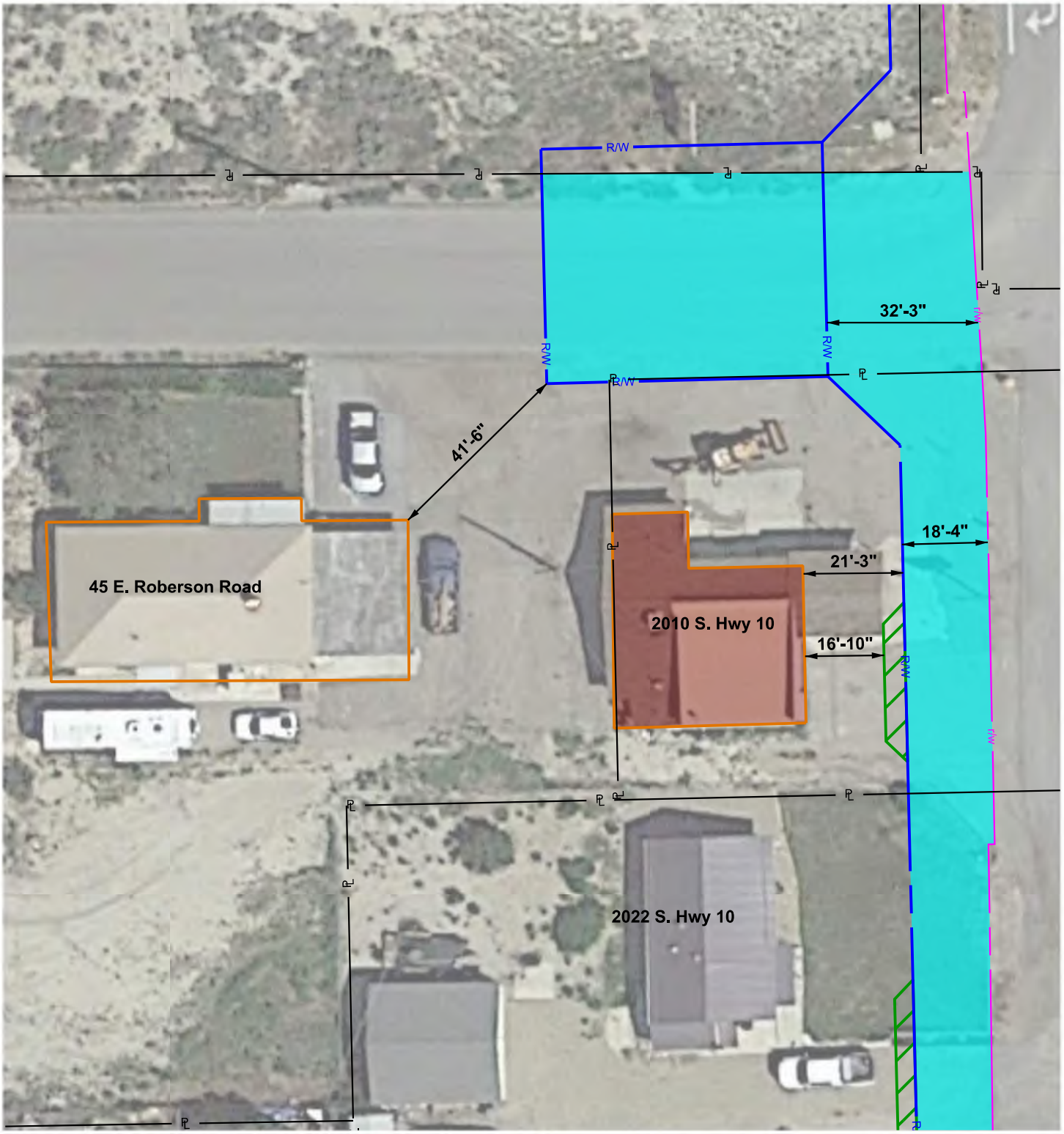
N

0 10 20 30 40 50
Scale In Feet

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

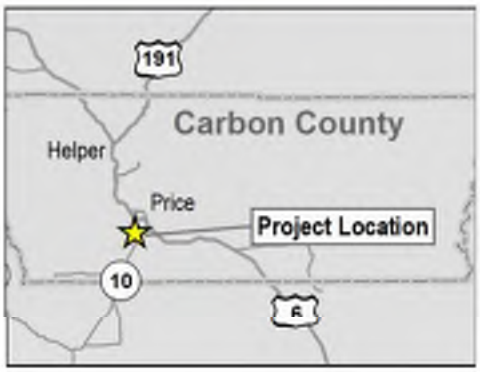
Figure 3

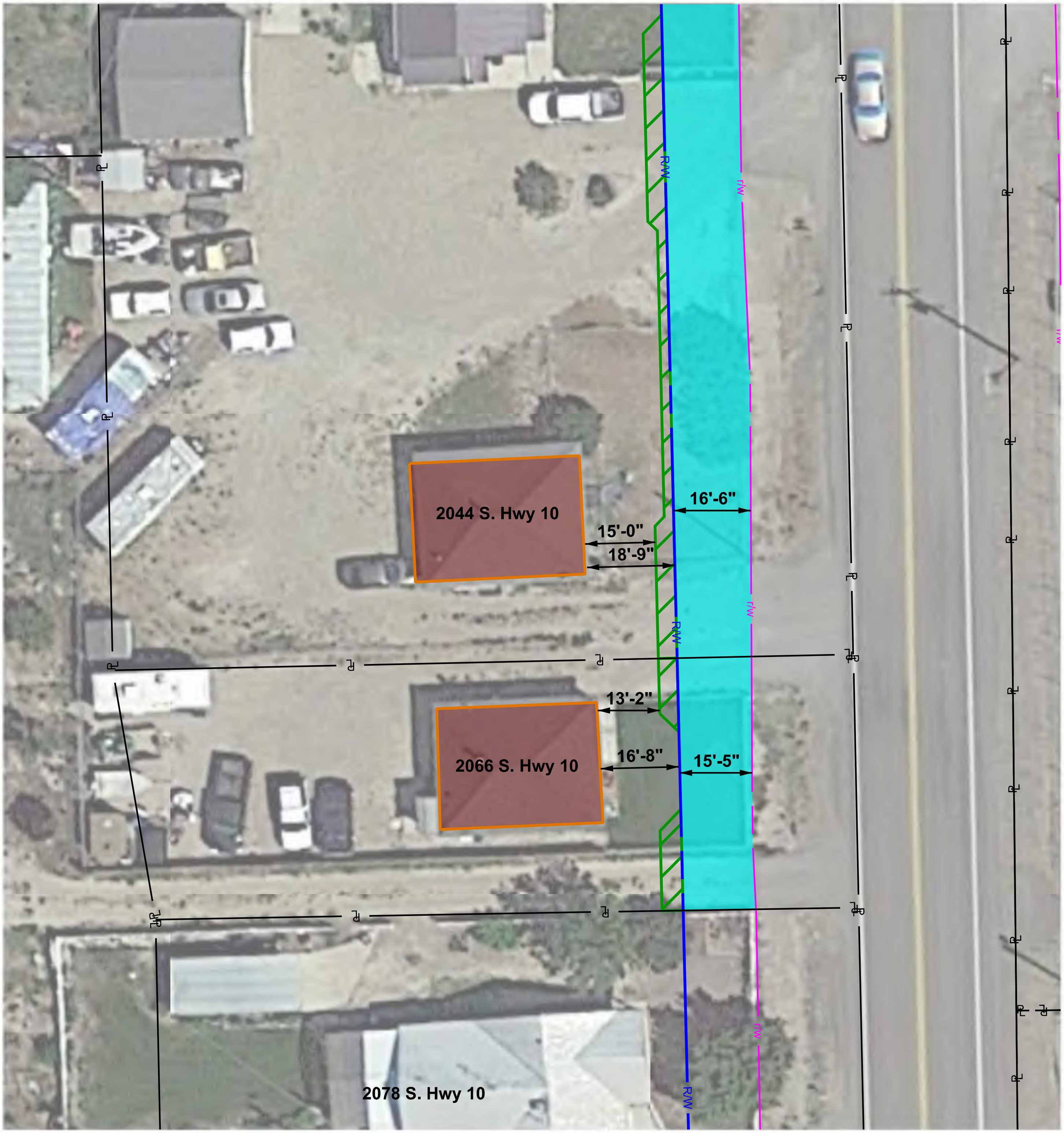
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

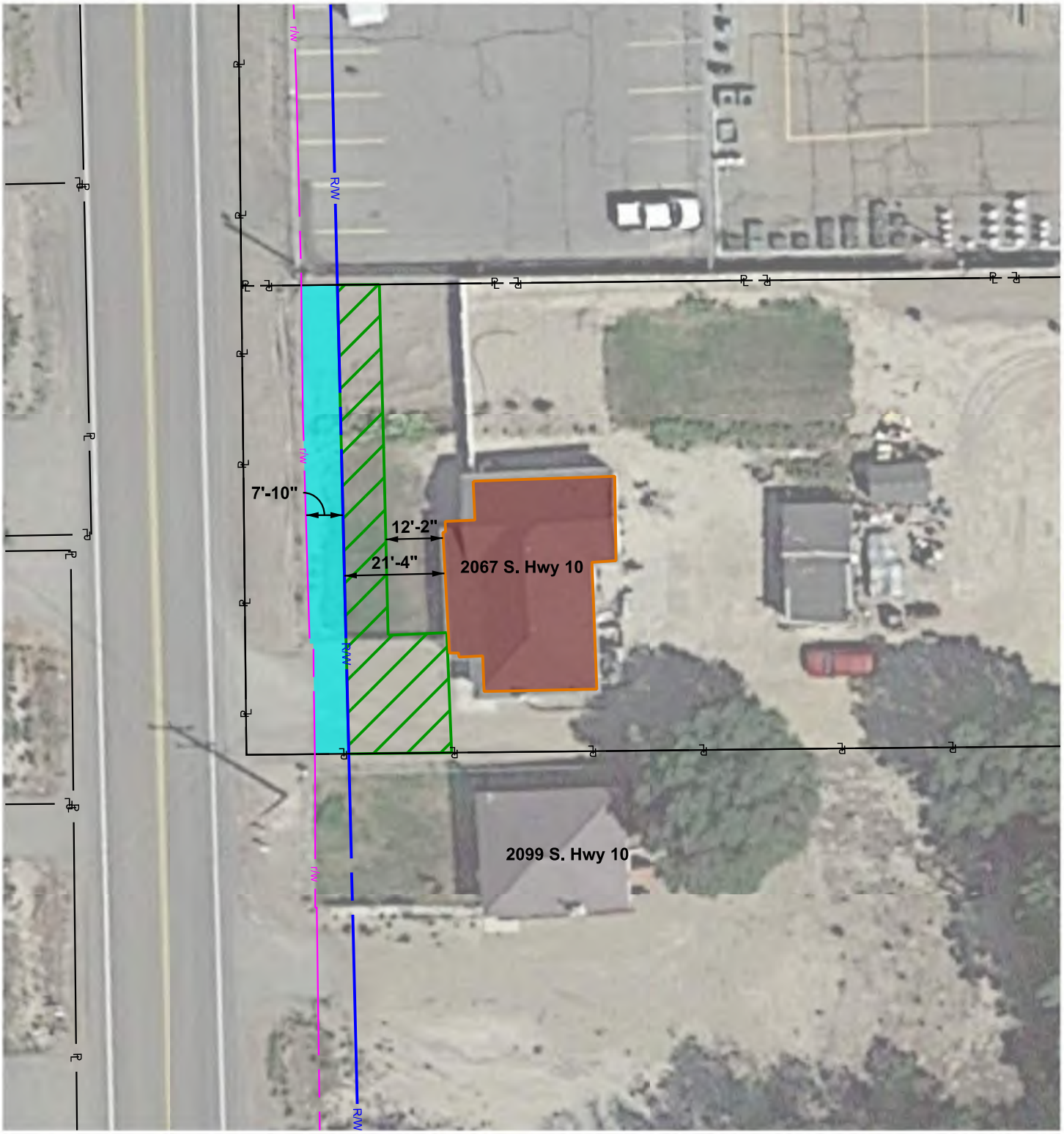
Figure 4

1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

N

0 10 20 30 40 50
Scale In Feet

- Partial Acquisition
- Temporary Construction Easement
- Relocation/Full Acquisition
- Eligible Historic Building
- Easement Line
- Proposed Right-of-Way Line
- Existing Right-of-Way Line
- Property Line



SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

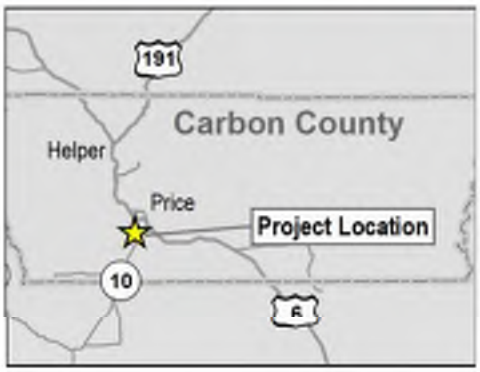
Figure 5

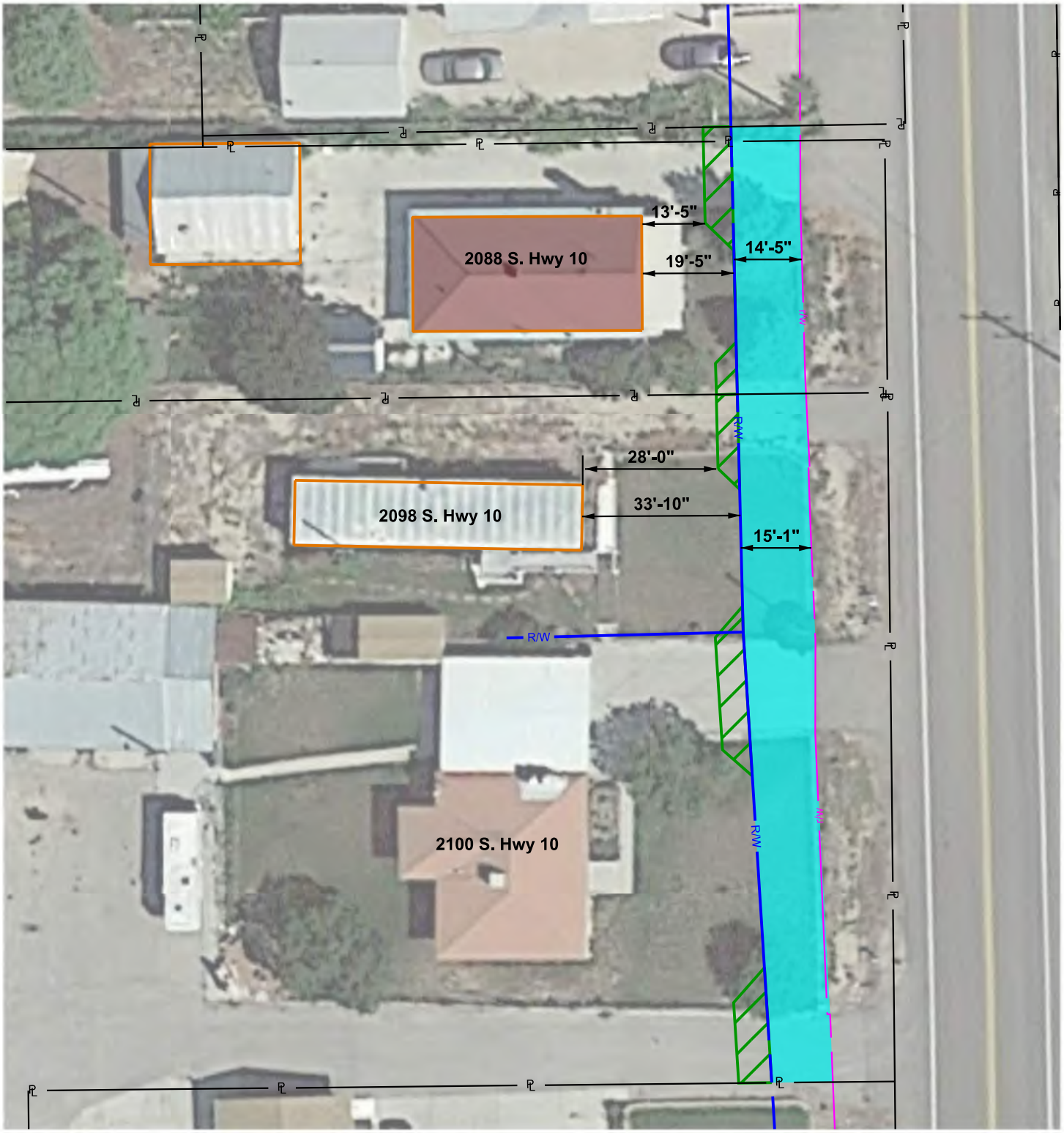
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

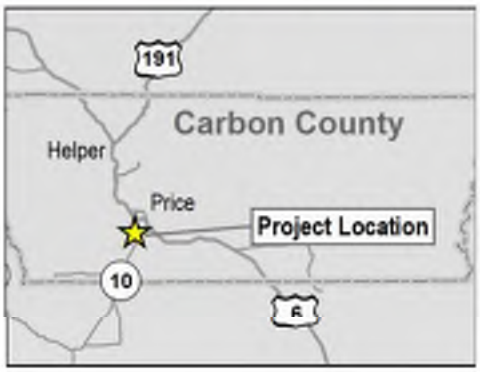
Figure 6

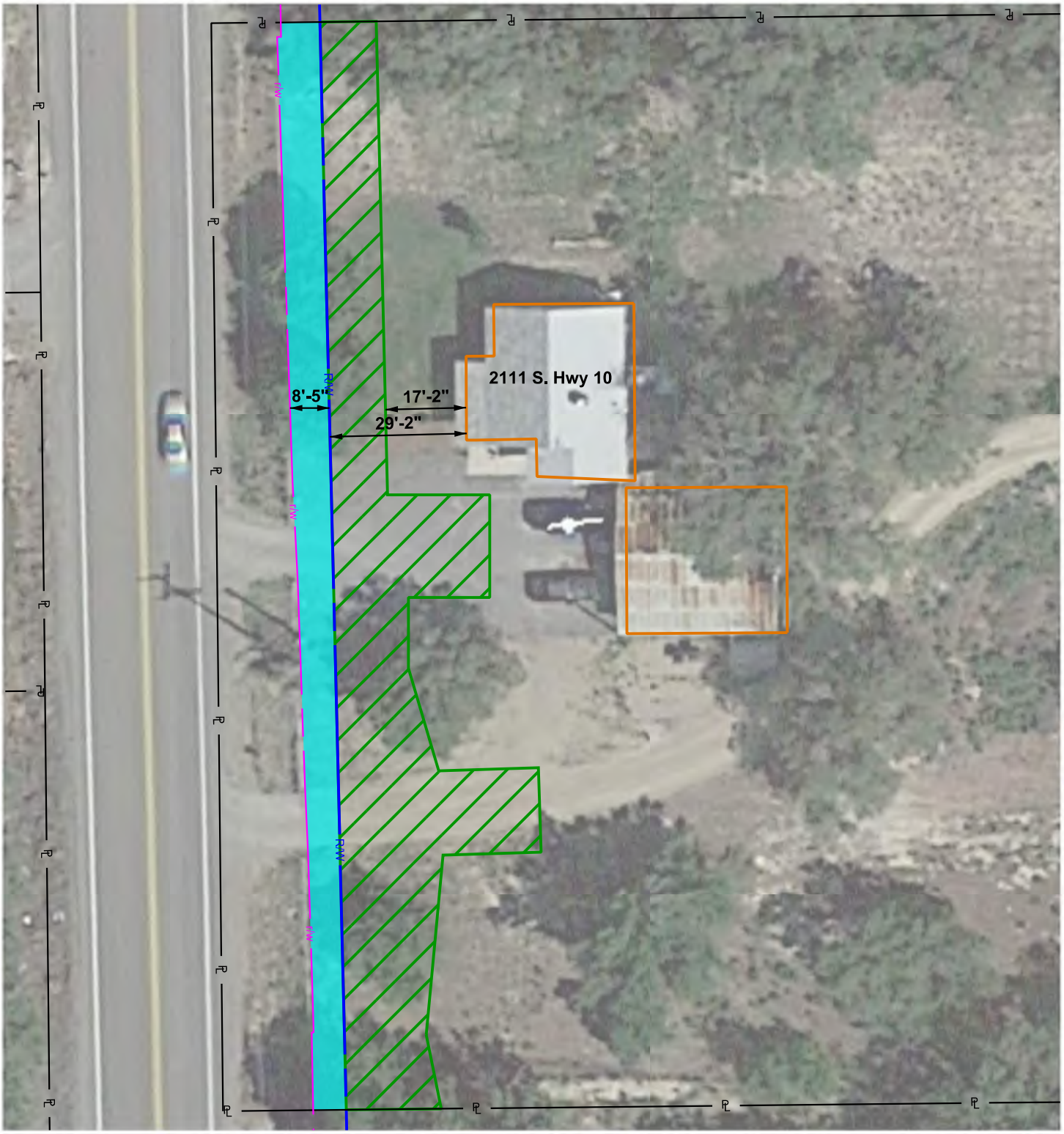
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

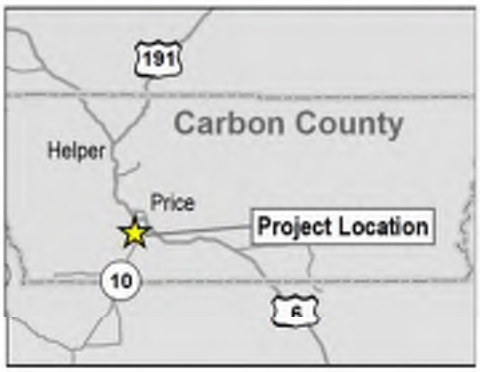
Figure 7

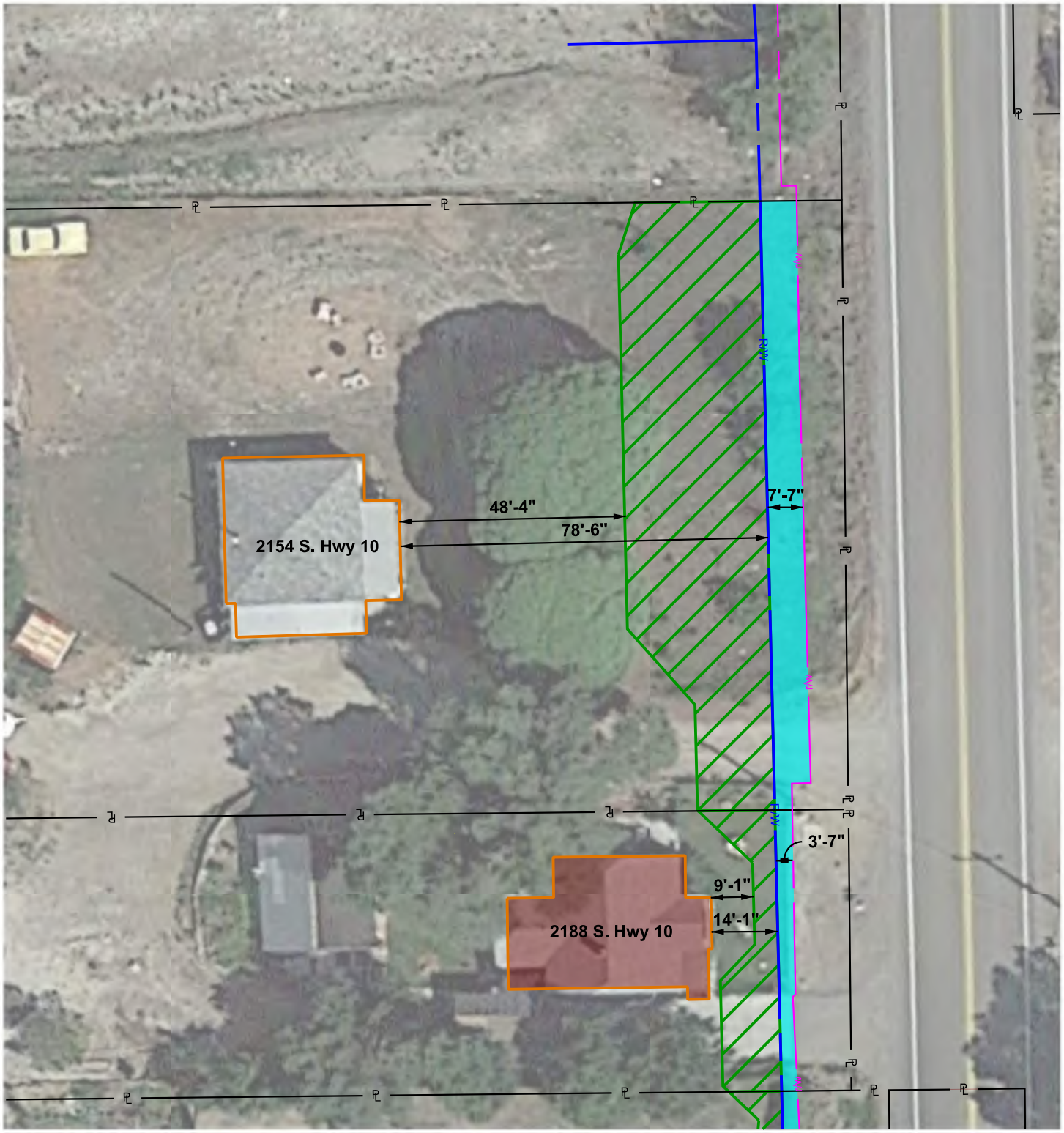
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

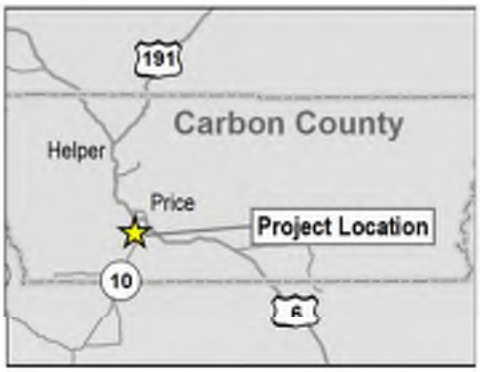
Figure 8

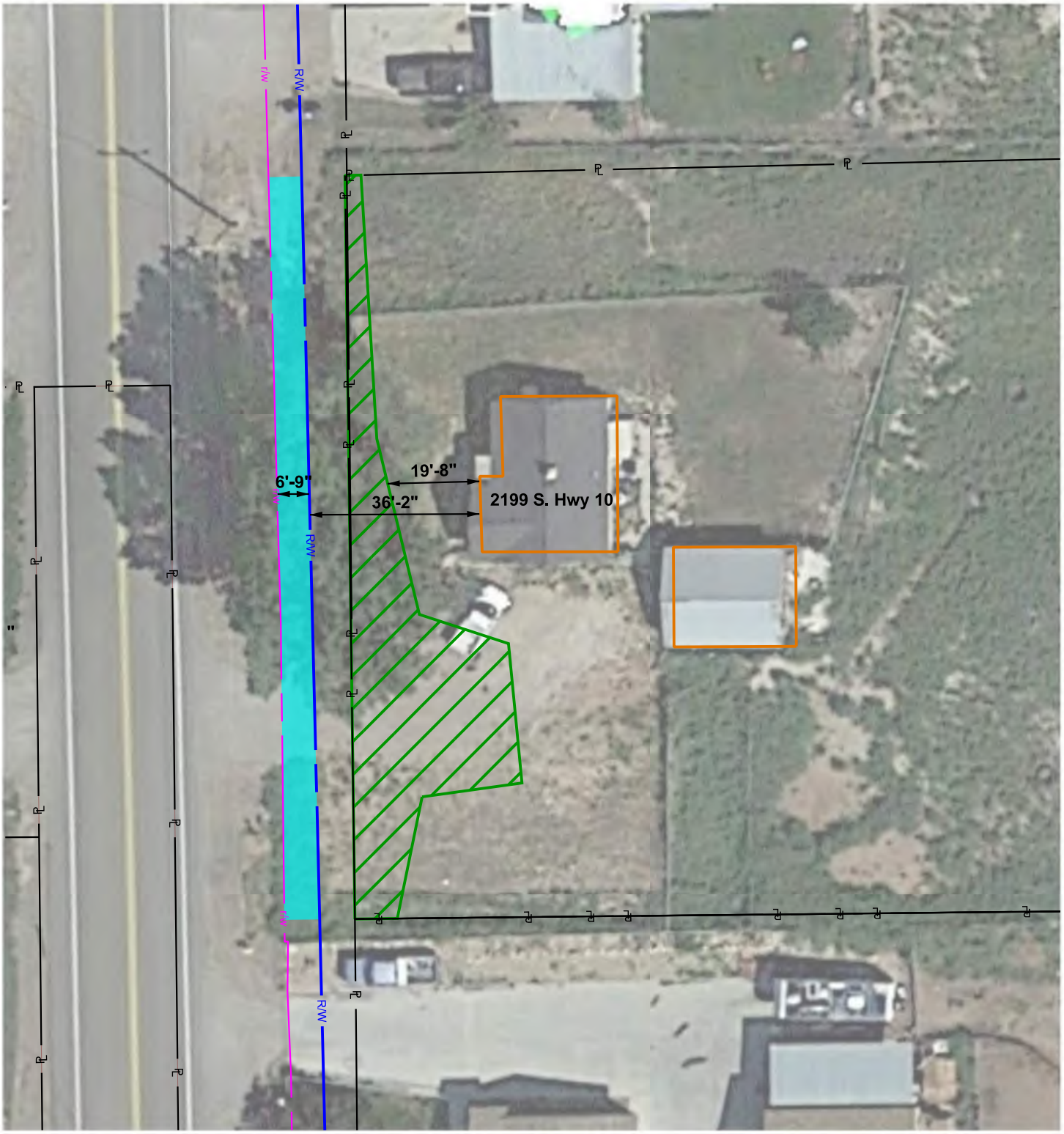
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

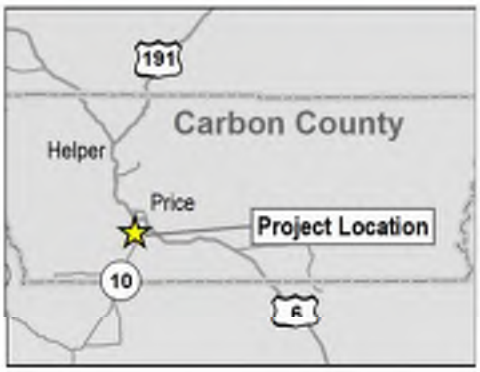
Figure 9

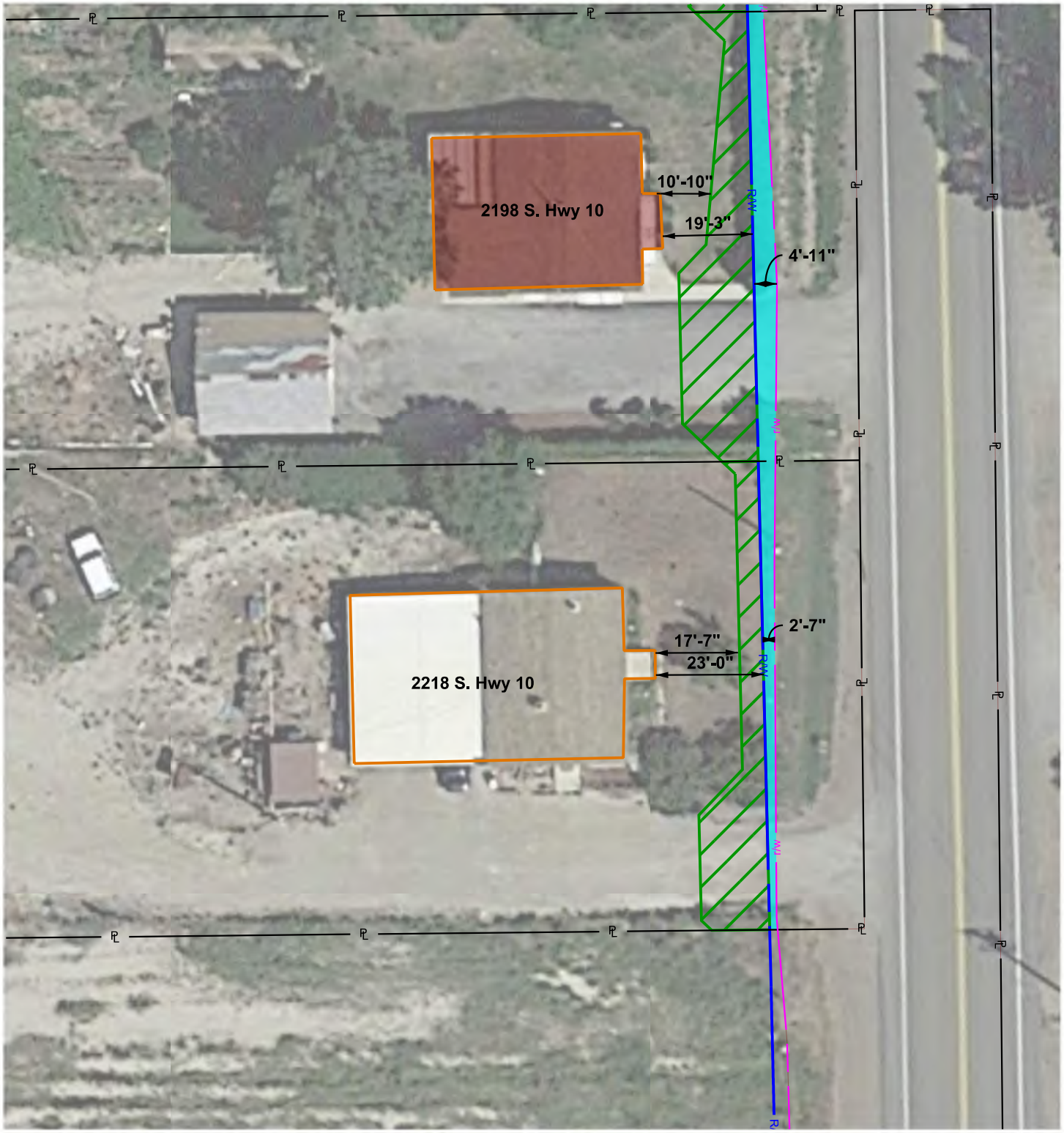
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line

N

0 10 20 30 40 50
Scale In Feet





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

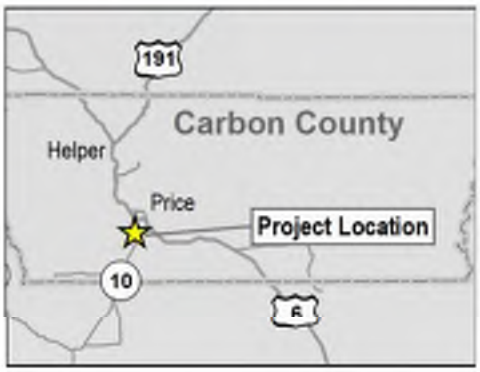
Figure 10

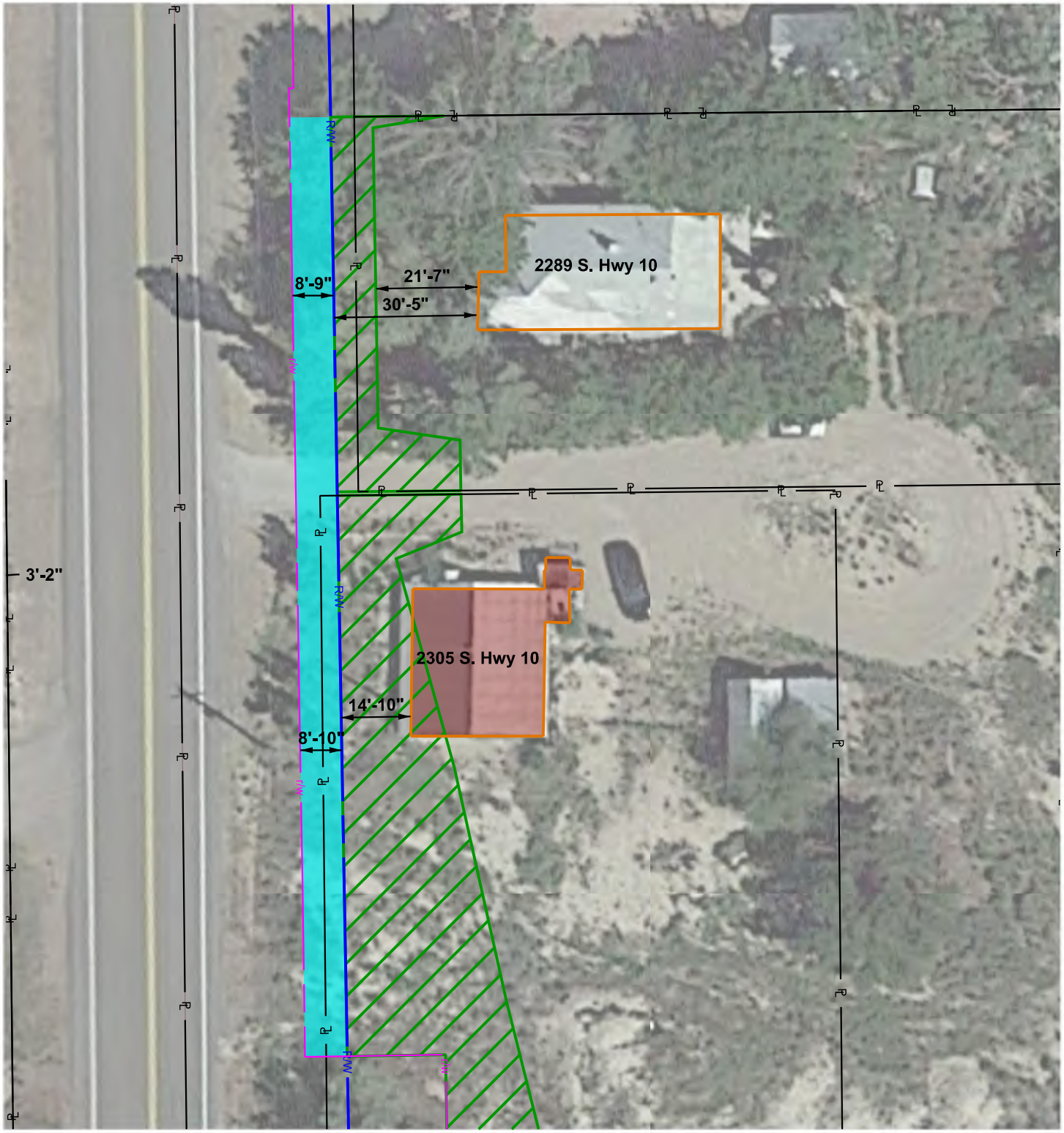
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

N

0 10 20 30 40 50
Scale In Feet

- Partial Acquisition
- Temporary Construction Easement
- Relocation/Full Acquisition
- Eligible Historic Building
- Easement Line
- Proposed Right-of-Way Line
- Existing Right-of-Way Line
- Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

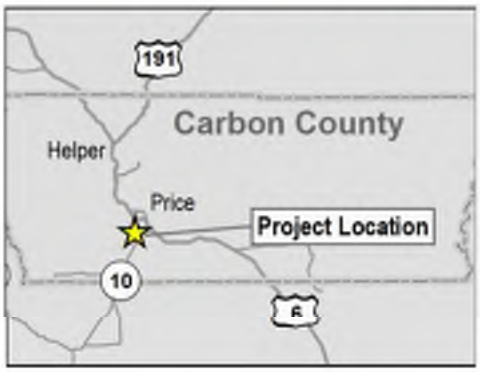
Figure 11

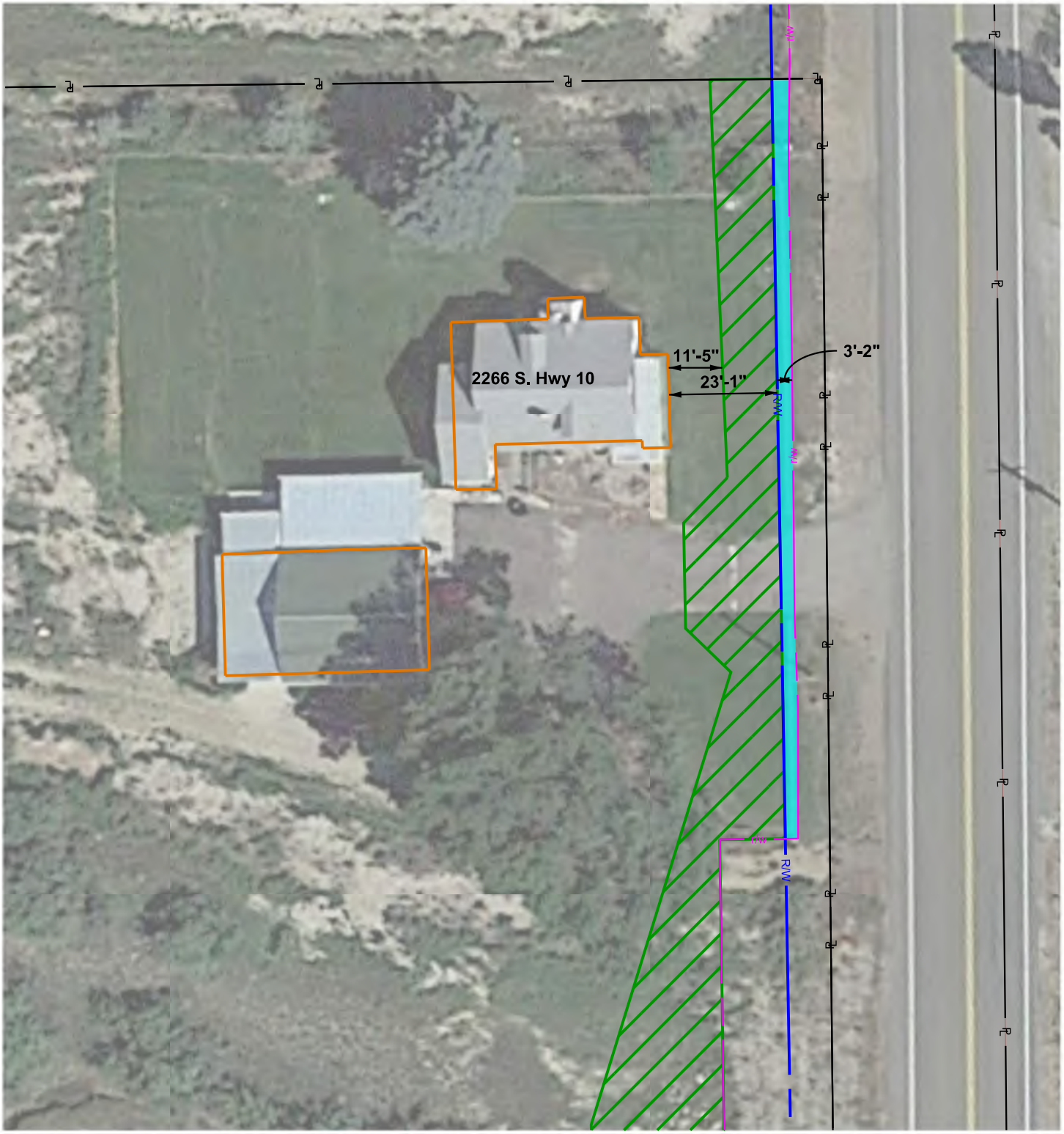
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

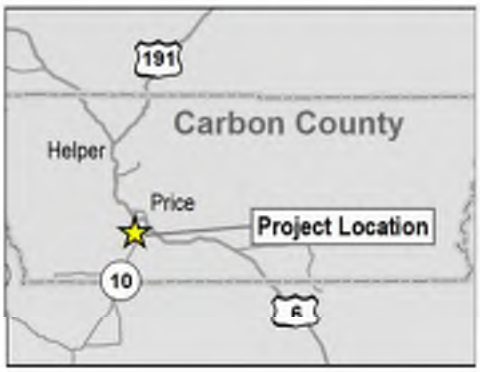
Figure 12

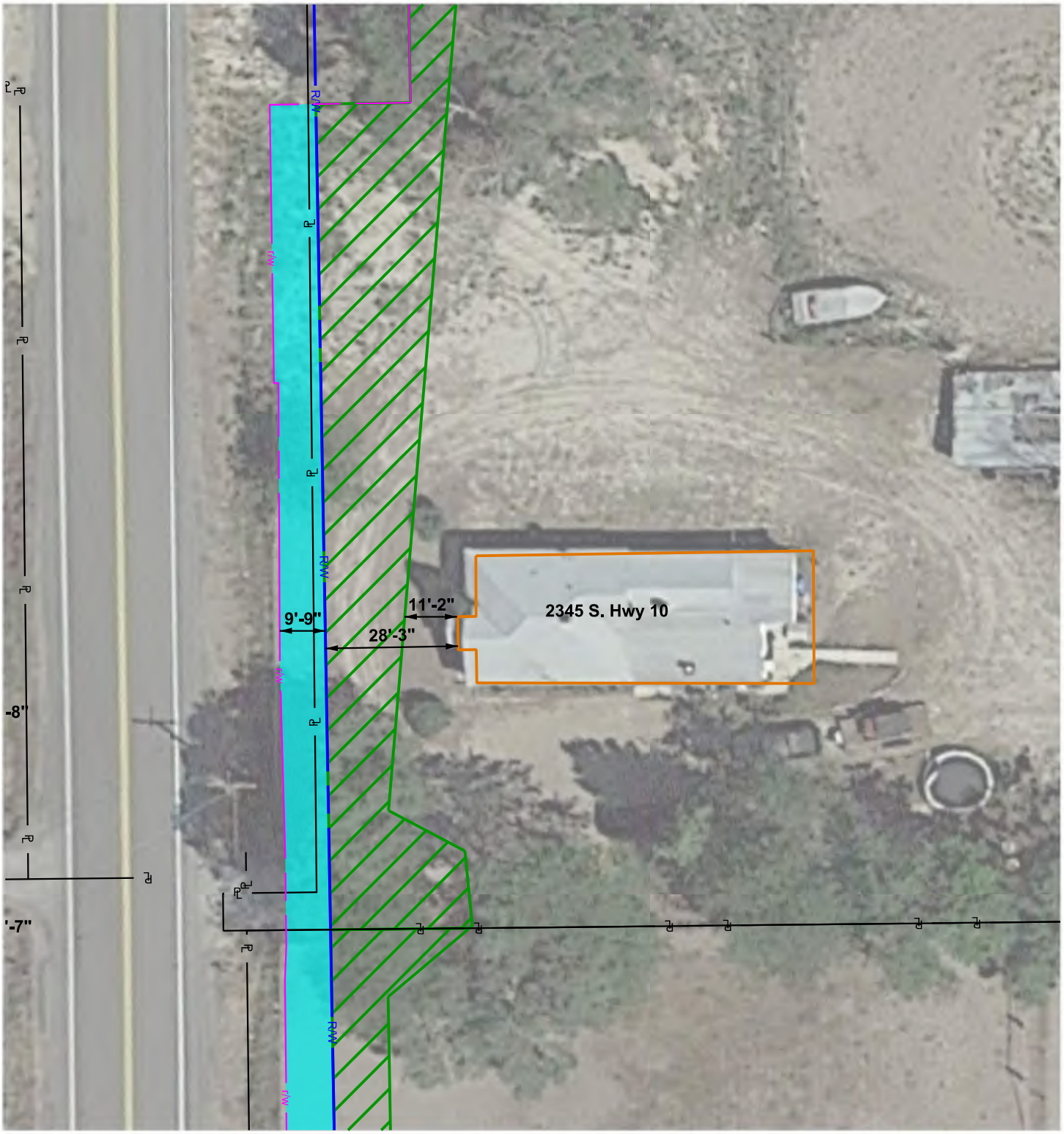
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

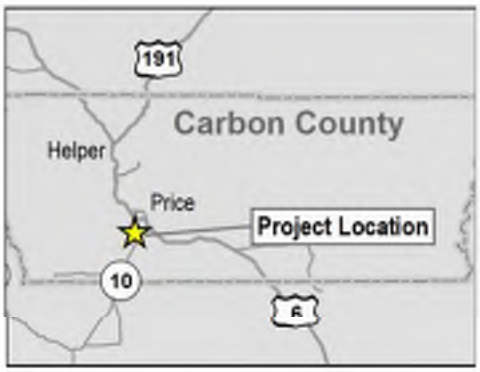
Figure 13

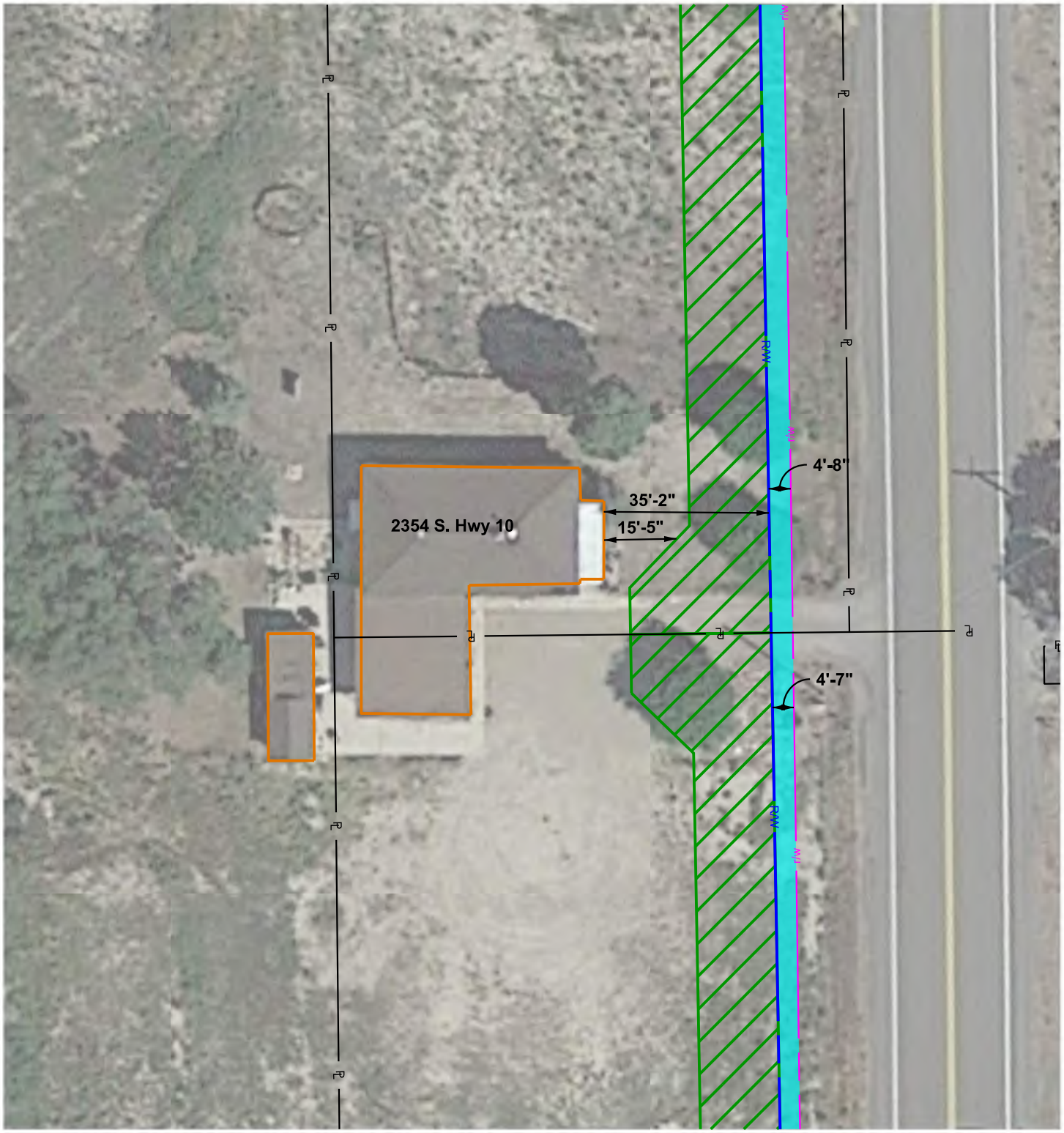
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

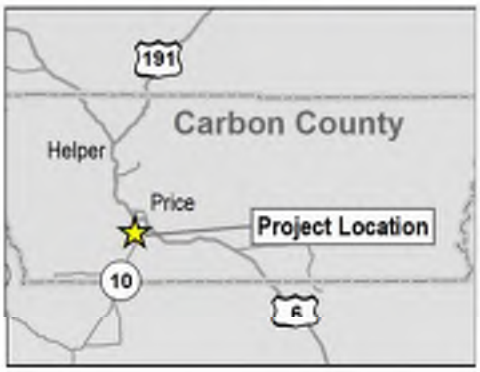
Figure 14

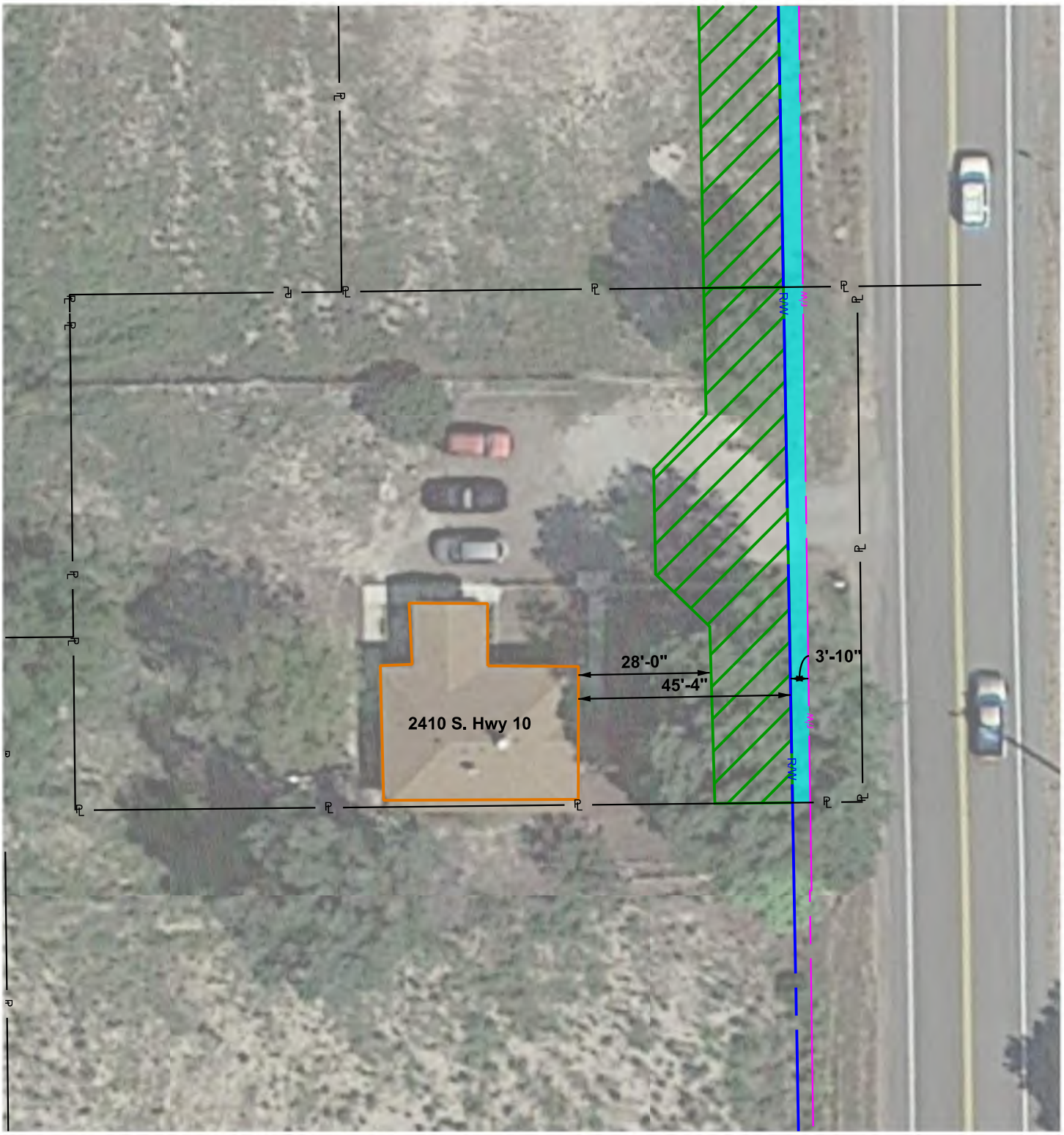
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

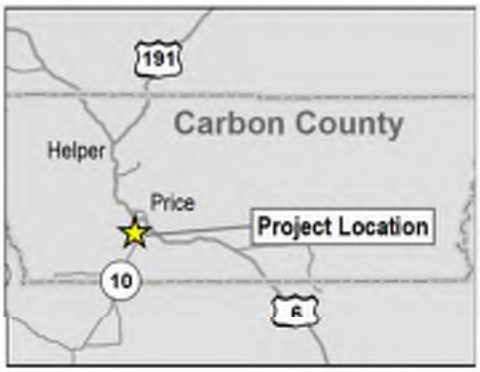
Figure 15

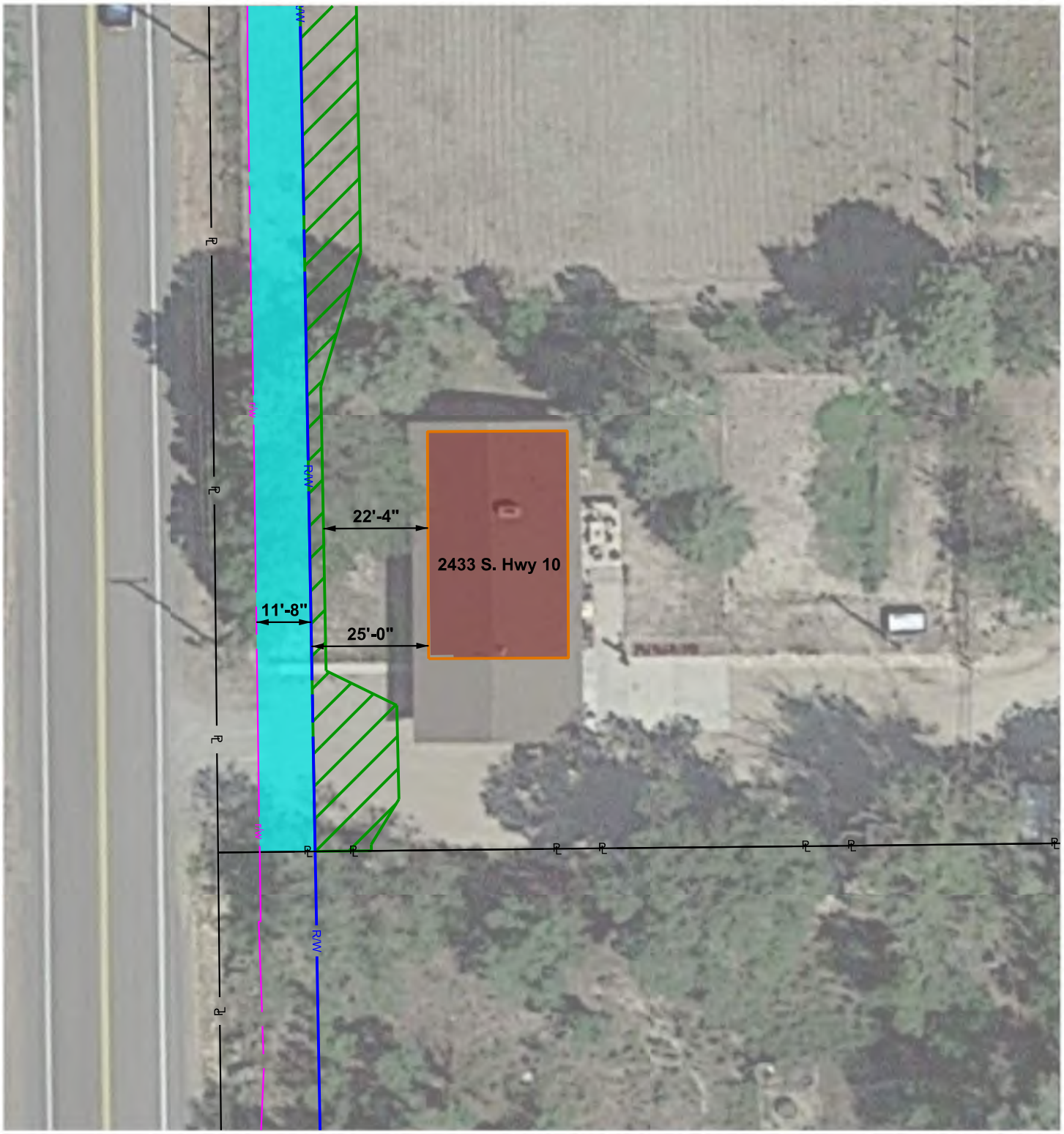
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

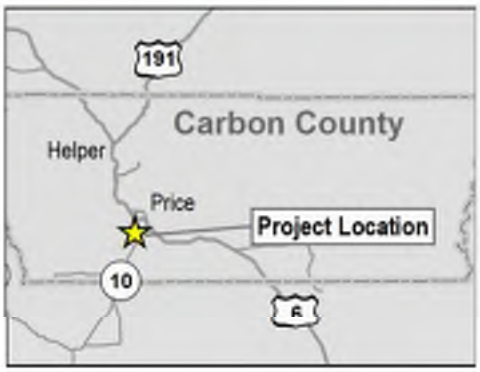
Figure 16

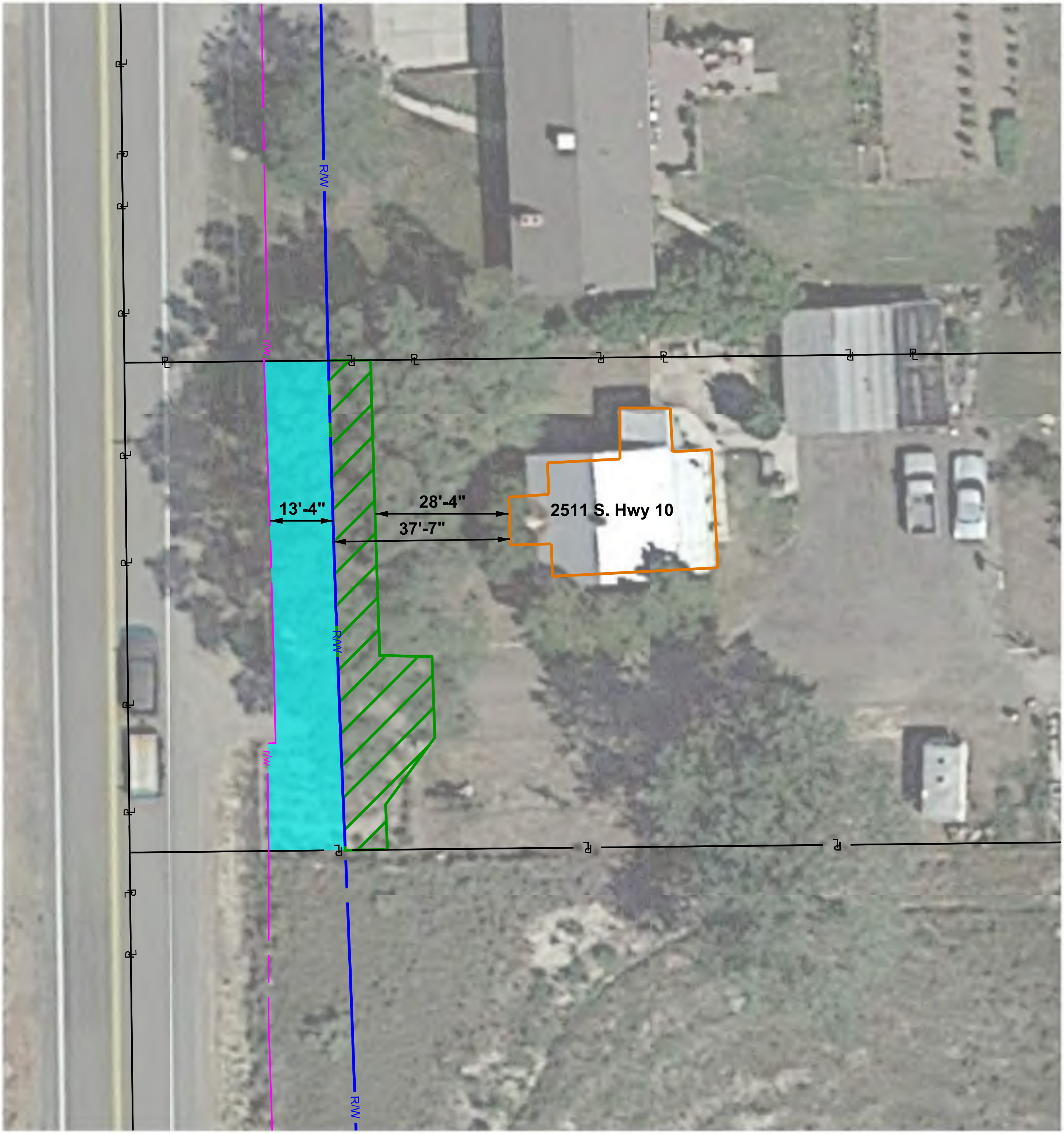
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line

N

0 10 20 30 40 50
Scale In Feet





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

Figure 17

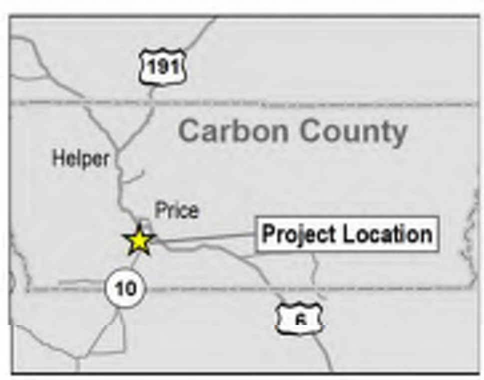
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

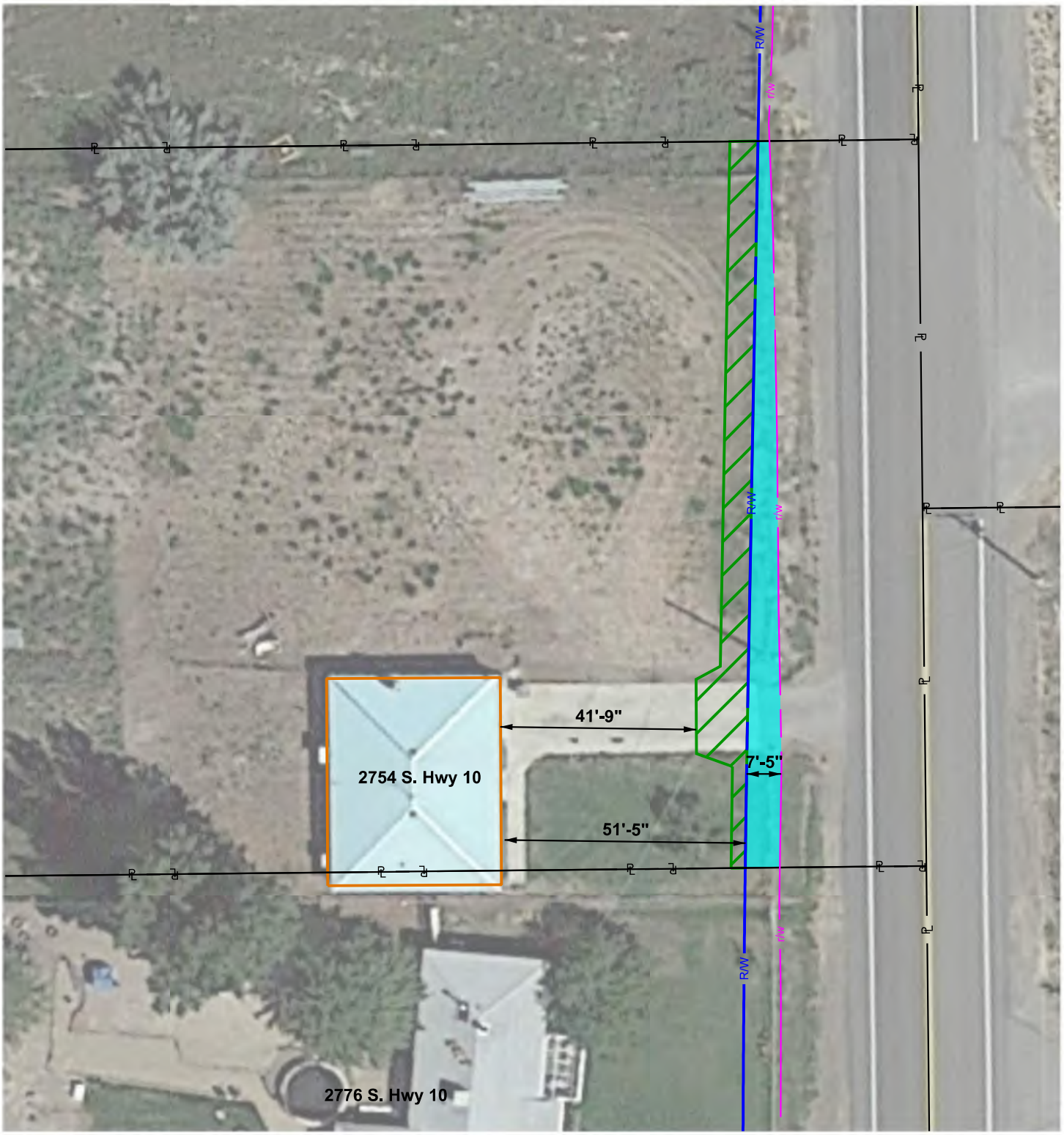
N

0 10 20 30 40 50

Scale In Feet

- Partial Acquisition
- Temporary Construction Easement
- Relocation/Full Acquisition
- Eligible Historic Building
- Easement Line
- Proposed Right-of-Way Line
- Existing Right-of-Way Line
- Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

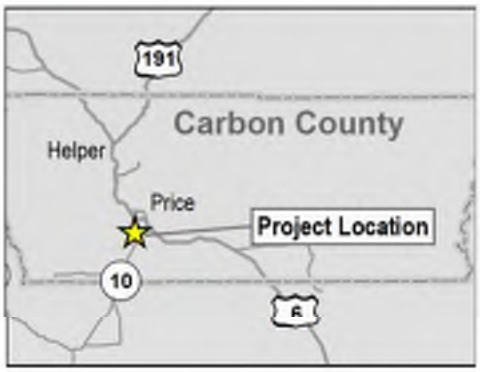
Figure 18

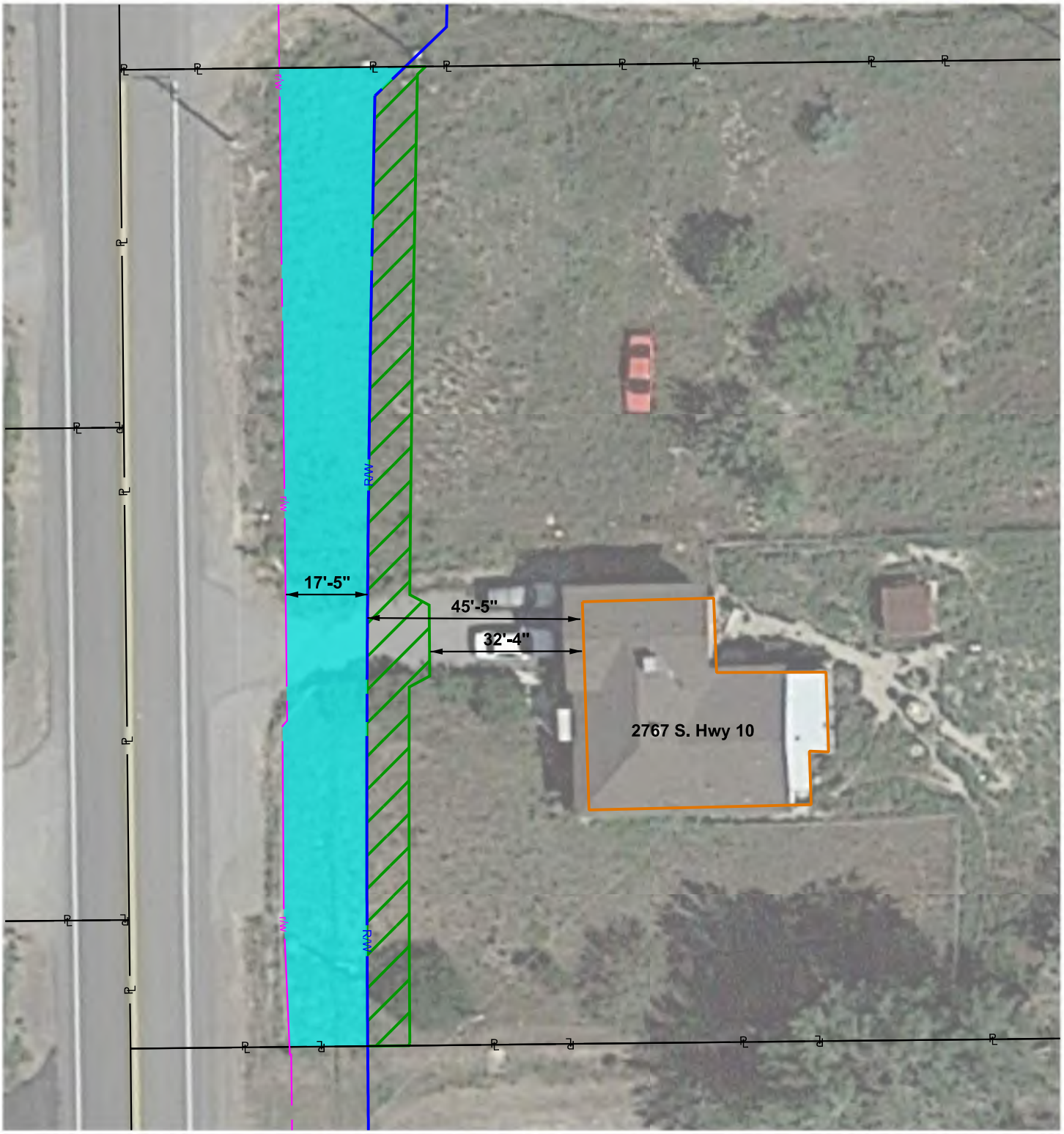
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

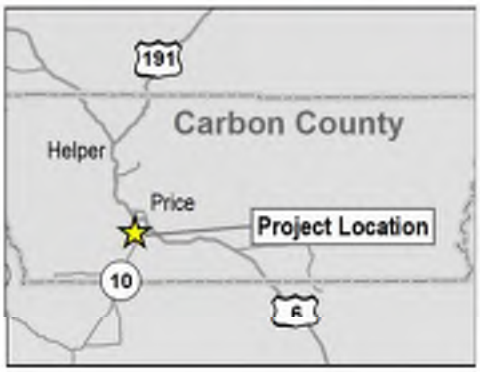
Figure 19

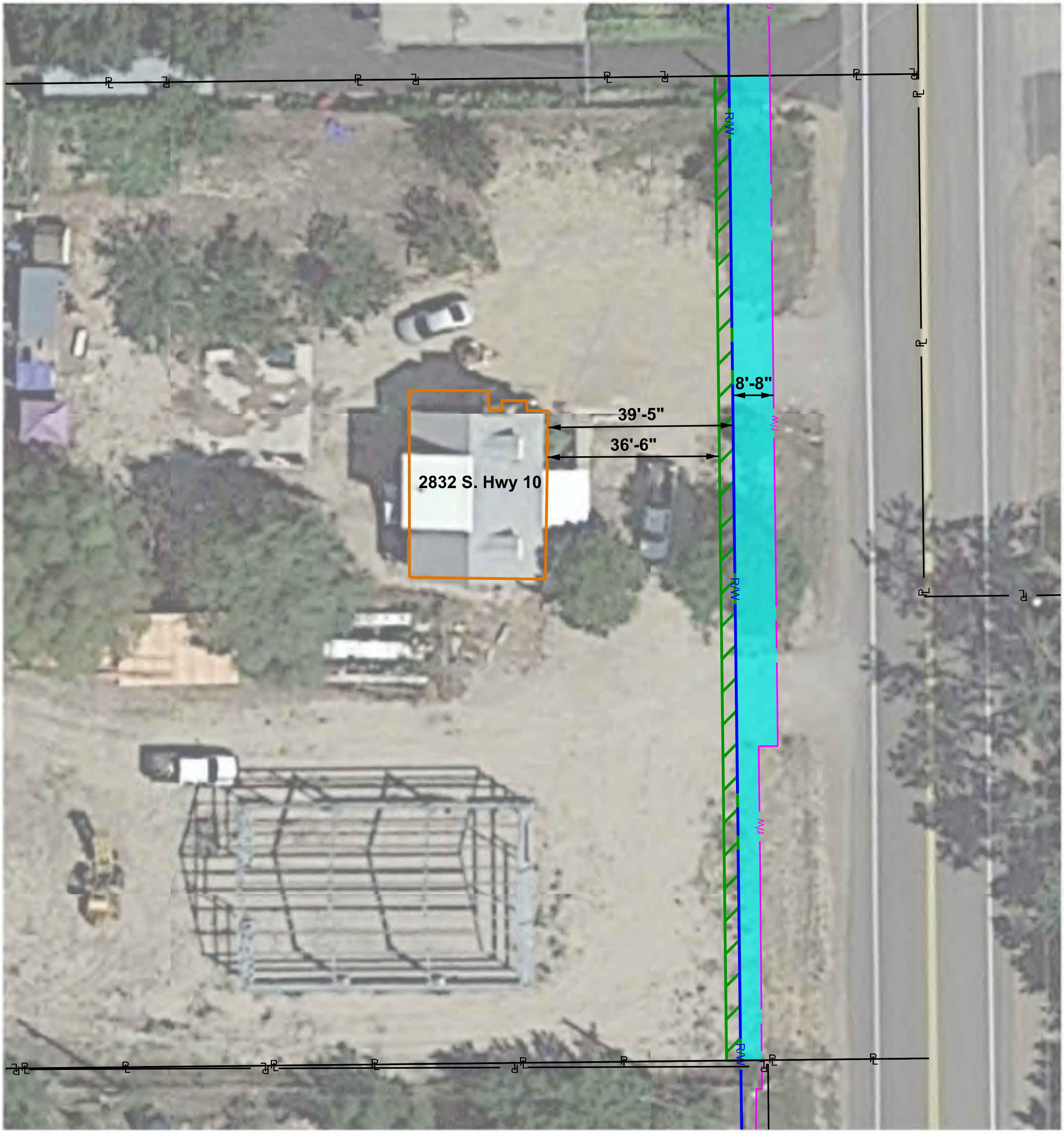
1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

0 10 20 30 40 50
Scale In Feet

N

Partial Acquisition
Temporary Construction Easement
Relocation/Full Acquisition
Eligible Historic Building
Easement Line
Proposed Right-of-Way Line
Existing Right-of-Way Line
Property Line





SR-10; 3200 S. to 1150 S., Price
Project No.: F-0010(75)66
PIN: 13664

Figure 20

1. *The existing corridor is defined by a prescriptive right-of-way. Evidence of the prescriptive right-of-way includes roadway improvements, fences, ditches, and utilities. These were surveyed by UDOT and define the existing right-of-way line.*
2. *Fee title extends to the center of the roadway, as indicated by property boundaries based on deed descriptions.*

N

0 10 20 30 40 50
Scale In Feet

- Partial Acquisition
- Temporary Construction Easement
- Relocation/Full Acquisition
- Eligible Historic Building
- Easement Line
- Proposed Right-of-Way Line
- Existing Right-of-Way Line
- Property Line

Preserving America's Heritage

October 24, 2016

Ms. Liz Robinson
Cultural Resources Manager
Department of Transportation
Utah Division
4501 South 2700 West
P.O. Box 148450
Salt Lake City, UT 84114

Ref: *Proposed SR-10 Improvements from US-6 to Ridge Road*
Carbon County, Utah
UDOT Project No. F-0010(75)66

Dear Ms. Robinson:

The Advisory Council on Historic Preservation (ACHP) has received your notification and supporting documentation regarding the adverse effects of the referenced undertaking on a property or properties listed or eligible for listing in the National Register of Historic Places. Based upon the information provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of our regulations, "Protection of Historic Properties" (36 CFR Part 800), does not apply to this undertaking. Accordingly, we do not believe that our participation in the consultation to resolve adverse effects is needed. However, if we receive a request for participation from the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO), affected Indian tribe, a consulting party, or other party, we may reconsider this decision. Additionally, should circumstances change, and it is determined that our participation is needed to conclude the consultation process, please notify us.

Pursuant to 36 CFR §800.6(b)(1)(iv), you will need to file the final Memorandum of Agreement (MOA), developed in consultation with the Utah State Historic Preservation Office (SHPO), and any other consulting parties, and related documentation with the ACHP at the conclusion of the consultation process. The filing of the MOA, and supporting documentation with the ACHP is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with the notification of adverse effect. If you have any questions or require further assistance, please contact MaryAnn Naber at 202-517- 0218 or via e-mail at mnaber@achp.gov.

Sincerely,

LaShavio Johnson

LaShavio Johnson
Historic Preservation Technician
Office of Federal Agency Programs

Appendix B
Public Notice of Adverse Effect and Public Meeting Materials

Contents:

Newspaper Advertisement
Individual Property Owner Postcard
Public Meeting Display Boards

RICK SHERMAN - SUN ADVOCATE

A big show of support for Boys and Girls Club

(Continued from page 1A)
check for $500 delivered by Representative Jason Chaffetz. An auction of items donated by area businesses and individuals netted another $4,000.

About 25 kids who regularly attend the club enthusiastically participated by preparing decorations and table settings, greeting guests, helping with the auction and cleaning up.

Tony Basso donated the use of the venue, while the Osmosis Steak House donated the food: spaghetti dinner for an estimated 750 people who came out to support the Boys and Girls Club of Carbon County.

Utah gas price declines slightly

Average retail gasoline prices in Utah have fallen 1.4 cents per gallon in the past week, averaging $2.36/g Sunday, according to GasBuddy's daily survey of 1,171 gas outlets in Utah. This compares with the national average that has increased 0.5 cents per gallon in the last week to $2.21/g, according to gasoline price website GasBuddy.com.

"If there's one thing to be excited about for November it's that gas prices in the last five of them have not risen nationally. Better yet, over the same timeframe, gas prices nationally have averaged a modest twelve cent decline from start to finish. And while there may be more excitement as America heads to the polls this week, it's important to dispel the myth: presidential elections do not affect gas prices," said Patrick DeHaan, senior petroleum analyst for GasBuddy.com.

"Whomever is our next Commander-in-Chief, we could see a change to previous energy policy which could have a negligible impact on gasoline prices, but more focus will be on OPEC's coming decision to follow through on cutting oil output. Skepticism that OPEC won't agree to a cut in production continues to prevail, with West Texas Intermediate crude oil closing last week at $44.07 per barrel, the lowest since September 20," DeHaan added.

USUE Bread 'n' Soup night Monday, 5-6:45 p.m.

USU Eastern continues its annual Bread and Soup Night Monday, November 14. A tradition since 1997, Bread and Soup Night brings students, faculty, staff and community members together to share a simple meal in an effort to raise funds for the Carbon County Food Bank. Bread 'N Soup Night will also be held on November 14 and 21.

In 2015, the profits from Bread 'N Soup Night sent $5,000 to the food bank, extending the college's total donation over the last 17 years to just over $48,000. "We are keeping our eye on that total," noted Terry Johnson, USU Eastern's SUN Center Director, adding that "the entire planning committee has high hopes of hitting the $50,000 mark. That would be an exciting milestone."

Eastern's Dining Service, under the direction of Gillan Bishop, prepares three soups, including one vegetarian option. Bishop says that all the favorites are back on the menu for 2016.

Bread 'N Soup Night takes place between 5:00 and 6:45 p.m. in the Multi-Purpose room of the Jennifer Leavitt Student Center.

Prices are $6.00 for adults and students 18 and older, and $5.00 for students 5 – 17. Children under five are admitted free with a paying adult. For the price of admission, each person receives two tickets good toward one bowl of soup apiece. Children under five each receive one ticket. Additional tickets may be purchased for $2.00 per bowl.

American Legion Auxiliary Gift Shop for Veterans

For over 60 years the American Legion Auxiliary Gift Shop has been held at the VA Hospital. We serve any veteran registered in the VA system that is in need of assistance for Christmas. They are allowed to choose gifts for themselves and their immediate family.
Auxiliary volunteers assist the veterans in shopping, we wrap the gifts and they can either take them or we will mail them. There is no charge for the gifts, wrapping or mailing. All of the items in the Gift Shop are donated or purchased by the Auxiliary.

You can help the ALA with Christmas gifts for Veterans.

We are in need of: men's and women's socks, men's underwear all sizes, sweat pants all sizes. New items only.

Bring your donations to the American Legion Post 3, 27 North 100 West, Price, Utah before November 28th.

Tuesday - Thursday 3:30-7:30 p.m. or call
Unit 3 President Lenda 435-820-0688

Castle Valley COMMUNITY THEATRE
PRESENTS
Nunsense
is presented by special arrangement with SAMUEL FRENCH, INC.
A Musical Comedy – Book, Music, and Lyrics by Dan Goggin
November 4–5,7,11–12,14
Matinees November 5 & 12 at 2pm
7:30 pm SHOW TIME
$7 PER PERSON
MONT HARMON THEATER

Serving Carbon County since 1891
Sun Advocate

SR-10
IMPROVED
3200 South to 1150 South

OVERVIEW

The Utah Department of Transportation (UDOT) is currently preparing an environmental document and designing improvements on SR-10 from 1150 South to 3200 South. The improvements to the roadway include providing a center turn lane, left and right turn lanes, wider shoulders, curb, gutter, sidewalk, and new driveways. The design phase has been extended through 2017 with construction now anticipated to begin as early as Fall 2017.

PUBLIC MEETING

Community input remains critical to the success of the SR-10 project. The project team will hold a public open house to present planned improvements and gather public feedback on the proposed design. We encourage all interested parties to attend to learn more about the project and the proposed construction.

SR-10 Public Open House
Thursday, November 17, 2016
5 p.m. to 7 p.m.
Jennifer Leavitt Student Center - USU Eastern - 451 East 400 North - Price

No formal presentations will be given. Please arrive any time during the two hour block to view project materials and speak with team members. The open house will be accessible according to the requirements of the Americans with Disabilities Act (ADA). If you have any special language, audio or visual needs please contact us at least 72 hours prior to the meeting so that accommodations can be provided.

HISTORIC PROPERTIES

In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and 36 CFR 800UDOT, herewith advises all interested persons or groups that the proposed project will have an adverse effect (greater than de minimis use under Section 4(f)) on nine historic buildings eligible for the National Register of Historic Places. Details regarding these impacts will be available at the public open house.

Any person or group desiring to submit comments regarding the Adverse Effect to the buildings may do so in writing at the public meeting or by mail. Letters should be directed to Elizabeth Giraud, UDOT Architectural Historian, 4501 S. 2700 W., Box 148450, Salt Lake City, Utah 84114-8450. The public comment period is thirty days, beginning on November 17, 2016. Letters must be postmarked prior to the end of the public comment period or by December 16, 2016.

HOTLINE 801-859-3770 **EMAIL** sr10@utah.gov UDOT

SR-10 IMPROVED

3200 South to 1150 South

OVERVIEW

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HOTLINE 801-859-3770 **EMAIL** sr10@utah.gov

UDOT Keeping Utah Moving

STAY INFORMED

Additional project information can be found on the project website (**udot.utah.gov/go/sr10**), including maps and responses to frequently asked questions.

You can also stay up-to-date on the project by signing up for email updates. Simply send an email to **sr10@utah.gov** with "Updates" as the subject. The project team will send updates as the project design moves forward and weekly during construction.

If you have additional questions or concerns, please contact our Public Involvement Team (contact information on front).

HISTORIC PROPERTIES

The proposed project will have an adverse effect on nine historic buildings eligible for the National Register of Historic Places. Details regarding these impacts will be available at the public open house.

SR-10
IMPROVED

1245 E Brickyard Rd. #400
Salt Lake City, UT 84106

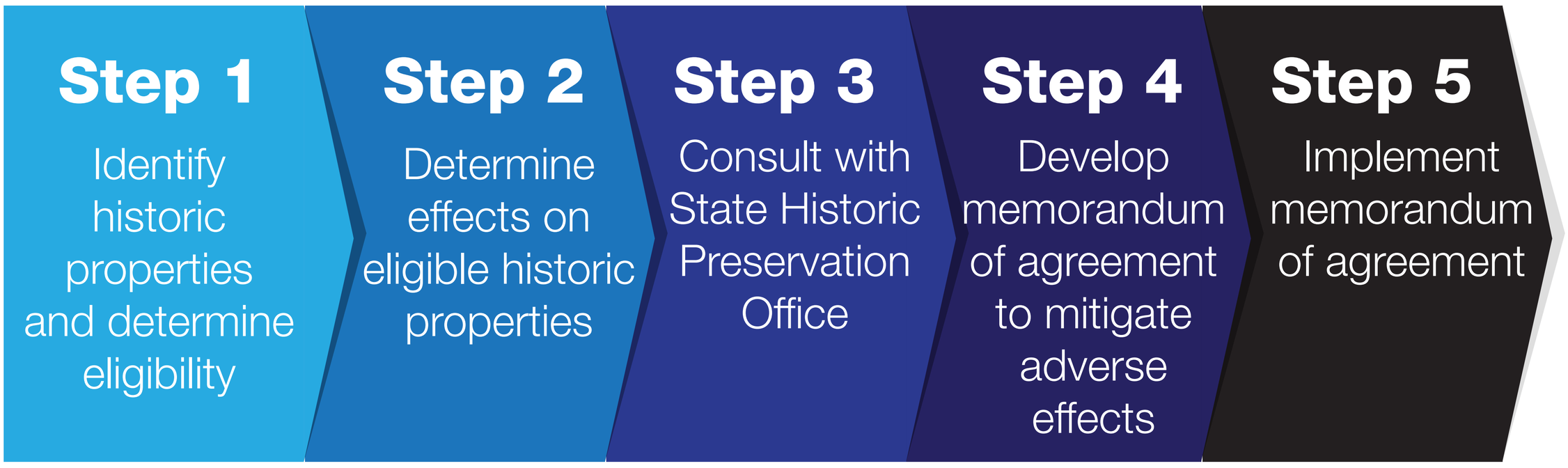
Historic Resources

Section 106

National Historic Preservation Act

Requires UDOT to:

- Consider how the project may affect historic properties eligible for listing on the National Register of Historic Places
- Avoid, minimize or resolve *adverse effects* (e.g., full property acquisition or building removal) on eligible properties



Section 4(f)

Department of Transportation Act of 1966

- Eligible historic buildings are protected under Section 4(f)
- Adverse effects under Section 106 are considered a greater than *de minimis* use and cannot be approved unless:
  - There is no feasible and prudent avoidance alternative; and
  - The action includes all possible planning to minimize harm

  or

  - The use will have a *de minimis* (i.e., negligible) impact on the property
- 9 eligible buildings would result in greater than *de minimis* use

Potential Full Acquisitions

Legend

Potential Full Acquisition:

- Eligible Historic Property (adverse effect / greater than *de minimis* use)
- Non-Historic Property

Proposed Right-of-Way Line