

# Delta

## US Highway 50 & State Highway 92

### Access Study

US 50: R.P. 63.94 (Starr Nelson Road) to R.P. 70.919 (SH 92)

SH 92: R.P. 0.000 (US 50) to R.P. 6.956 (2200 Road/Austin Road)



March 2016





**DELTA  
U.S. HIGHWAY 50 AND  
STATE HIGHWAY 92  
ACCESS STUDY**

**US 50: R.P. 63.586 (Starr Nelson Road) to R.P. 70.919 (SH 92)  
SH 92: R.P. 0.000 (US 50) to R.P. 6.938 (2200 Road/Austin Road)**

**March 2016**

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# EXECUTIVE SUMMARY

## Background and Purpose

The City of Delta is built primarily around two state highway routes: United States Highway 50 (US 50) and Colorado State Highway 92 (SH 92). US 50 is an important regional and local transportation route for Delta County, the Gunnison River Valley, and the State of Colorado. Beginning in Grand Junction, US 50 provides a continuous east-west route through Colorado to the Kansas border. SH 92 provides an east-west connection between several communities within Delta County, serving local and commuter traffic within the Delta to Hotchkiss area.

The City of Delta, Delta County, and the Colorado Department of Transportation (CDOT) recognize that good mobility and safe access along US 50 and SH 92 are essential to the ongoing vitality of the City and the region. The City of Delta is proactively planning for growth in the area as evidenced in their Comprehensive Plan Update from 2008, which includes a Major Street Plan. Similarly, Delta County has a Master Plan and Master Road Plan identifying key goals for growth and transportation. Additionally, in the Gunnison Valley Transportation Planning Region (TPR) 2035 Regional Transportation Plan (2035 RTP), the SH 92 corridor is identified as a high priority corridor with safety as the primary investment and the US 50 corridor is identified as medium priority corridor with system quality as the primary investment. Three of the major goals for the highways in the 2035 RTP that can be furthered through implementation of access management techniques are:

1. Increase travel reliability and improve mobility
2. Reduce fatalities, injuries and property damage crash rate.
3. Preserve and enhance the existing transportation system

In support of the goals and recommendations from the City's and County's previous planning efforts and the goals from the 2035 RTP and to address anticipated growth in the area, the City, County and CDOT have partnered to develop an Access Plan for US 50 between Starr Nelson Road (RP 63.586) and SH 92 (RP 70.919), and for SH 92 between US 50 (RP 0.00) and Austin Road/2200 Road (RP 6.938).

## Project Goals

This study effort coordinates anticipated development and growth in the area with the roadway network. In consultation with the project partners, the following project goals were established:

- Provide effective and efficient through travel for traffic on US 50 and SH 92.
- Provide safe, effective, and efficient access to and from US 50 and SH 92 for businesses, residents, and guests.
- Maintain compatibility with existing and proposed off-system connections that provide local circulation to support the transportation system.
- Provide a plan that is adoptable by all entities and can be implemented in phases.
- Support the economic viability of the project area.
- Maintain compatibility with previous local planning efforts.
- Support development of alternative modes.

## Study Area

The limits of the study area span approximately 7 miles of US 50 and 7 miles of SH 92. The majority of the US 50 segment falls within the City's jurisdiction, while the majority of the SH 92 segment falls within the County's jurisdiction. In general, land use within the city limits is suburban in nature with residential, commercial, and some industrial uses, whereas land use in the county is typically rural in nature with mostly agricultural and residential uses. The City's future land use plan along US 50 in North Delta and along SH 92 west of SH 65 anticipates mostly highway commercial uses with some residential uses surrounding the commercial areas. The City's Master Street Plan and County's Master Road Plan have been developed to support these anticipated uses. Physical characteristics of the area include the Gunnison River, the Union Pacific Railroad (UPRR) and multiple irrigation ditches. Of particular note, the UPRR parallels SH 92, sharing a right-of-way line with the highway for the majority of the project limits to the Gunnison River crossing, presenting significant access challenges.

There are currently 143 access points on US 50 and 111 access points on SH 92 within the study area. There are also 5 access points that access the US 50 frontage road near MP 66. A majority of access points are full movement. The access points are classified as follows:

### US 50

- 6 signalized public road intersections
- 18 unsignalized public road intersections
- 14 unsignalized private road intersection
- 57 business access points
- 34 residential access points
- 14 field access points

### SH 92

- 4 signalized public road intersections
- 21 unsignalized public road intersections
- 2 unsignalized private road intersection
- 34 business access points
- 17 residential access points
- 33 field access points

## Coordination and Public Involvement

The study is a joint partnership between the City of Delta, Delta County, and CDOT Region 3. Input from corridor stakeholders, including property owners, tenants, ditch companies, and the general public, was a critical element of the project. Multiple techniques were used to engage stakeholders including: two advertised public open houses; one-on-one meetings/phone calls with interested stakeholders; a neighborhood meeting for a unique segment of US 50; public presentations with City Council and Board of County Commissioners (BOCC); and project information posted on the City's and County's websites. Exhibits presenting access management principles, the study process, and the recommended Access Plan were displayed at open houses and on the City's and County's websites. Representatives from the City, County, CDOT, and consultant team were available for questions at public outreach events.

## Development of the Plan

In preparation for this study, the existing physical and operational characteristics of US 50 and SH 92 were established. The project team also developed a compatibility index to evaluate how the plan met the objectives identified at the beginning of the project. Next, future physical and operational characteristics were projected for a 20-year planning period based on anticipated development in the area. Using this information, a draft Access Plan was developed and evaluated. The Access Plan considered access points in logical groupings, State Highway Access Code guidance, and alternative local routes. Based on input from the project team,

agency representatives, and the public, the draft plan was refined and evaluated using criteria identified in the compatibility index. Overall, the Access Plan rates favorably and is compatible with project goals. Plan adoption by the three entities is recommended.

## Access Plan

Figures 2A-2S found in Section 7 of this report, graphically illustrate the recommended Access Plan. Technical Appendix G contains the specific recommendations for each individual access point. In general, the Access Plan limits full movement access to major intersections. In addition, highway access is reduced to one location per ownership and where feasible, shared between adjacent properties. Where reasonable access can be provided to an alternate route/cross street, access points are relocated to the local street system. On US 50 and on SH 92 west of SH 65, access for parcels between major intersections is limited. To maximize local circulation options, minor public road intersections are identified long-term as  $\frac{3}{4}$  movement where providing the left-turn movement improves operations and/or circulation and where there is adequate space to develop left turn auxiliary lanes. Traffic control measures, including installation of raised medians, may be used to achieve proposed conditions. On SH 92 east of SH 65, limited access points were not considered due to highway characteristics. Out of direction travel was generally limited to a maximum distance of one mile ( $\frac{1}{2}$  mile each way). This was achieved by providing full movement intersections at necessary intervals.

Major intersections that are identified as full movement intersections with a traffic signal or the potential for warranting a traffic signal (or other traffic control measure) in the future are as follows:

### US 50

- Starr Nelson Road
- G50 Road
- Access #142
- Falcon Road/Frontage Road
- 1250 Road
- 1325 Road
- 1375 Lane
- Minor Arterial at Access #47/48
- Access #60/63
- 1525 Road
- H38 Road/1565 Road
- G96 Lane
- Confluence Drive
- US 50/SH 92

### SH 92

- US 50/SH 92
- Henry Street
- Heinz Street
- Stafford Lane
- 1725 Road
- 1800 Road
- Access #318
- SH 65
- 2000 Road
- Access #320/284
- 2100 Road
- I30 Lane
- 2200 Road/Austin Road

In support of the recommended access modifications, development of several alternative local routes is also recommended. These alternative routes provide additional local connections and internal circulation opportunities that will benefit operations on US 50 and SH 92 by reducing local dependence on the highway, providing alternatives for restricted left-turn movements, and reducing demand at intersections that are already experiencing high demand. Adoption of these routes into the City's Master Street Plan and the County's Master Road Plan is recommended. In addition, incorporating pedestrian and bicycle crossings at all major intersections is recommended.

## Implementation

The improvements recommended in the Access Study represent a long-range plan that will be implemented over time as traffic and safety needs arise and as funding becomes available. Construction of the recommended improvements may be completed using public and/or private funding. The following cases, or any combination, will trigger construction:

1. A property redevelops or changes use, resulting in an increase in traffic to and from the site of 20% or more. In this case, limited improvements at the specific access point may be required by CDOT. As part of the City's development review process, additional improvements may also be necessary to address traffic-related impacts created by the development. Improvements will be compatible with the Access Plan. (Private Funding).
2. The City and/or County obtain funding to complete improvements to a segment of the US 50 or SH 92 corridor or a local route. (Public Funding)
3. State and/or Federal Funds are obtained to complete improvements to a segment of the US 50 or SH 92 corridor. Typically, a project will be identified in the Statewide Transportation Improvement Program (STIP) to obtain funding. (Public Funding)
4. A safety or operational issue develops that can be mitigated through the implementation of access management techniques consistent with the Access Plan. Depending on the extent and type of safety or operational issue, improvements may address a segment of the US 50 or SH 92 corridor or a local route, or may be limited to an isolated location or access point. Public funding from any combination of agencies may be obtained to construct improvements. (Public Funding)



## 1.0 INTRODUCTION

### 1.1 Project Background

The City of Delta is built primarily around two state highway routes: United States Highway 50 (US 50) and Colorado State Highway 92 (SH 92). US 50 is an important regional and local transportation route for Delta County, the Gunnison River Valley, and the State of Colorado. Beginning in Grand Junction, US 50 provides a continuous east-west route through Colorado to the Kansas border. For Delta County, US 50 provides key connections to the neighboring communities of Grand Junction and Montrose. SH 92 provides an east-west connection between several communities within Delta County, serving local and commuter traffic within the Delta to Hotchkiss area. Both highways provide critical access for both the City's and County's agricultural and tourism economies.

The City of Delta, Delta County, and the Colorado Department of Transportation (CDOT) recognize that good mobility and safe access along US 50 and SH 92 are essential to the ongoing vitality of the City and the region. The City of Delta is proactively planning for growth in the area as evidenced in their Comprehensive Plan Update from 2008, which includes a Major Street Plan. Similarly, Delta County has a Master Plan and Master Road Plan identifying key goals for growth and transportation. The two entities have partnered to develop a Growth Management Agreement to address growth in areas surrounding the City of Delta. Figures illustrating the street plans and Growth Management Area can be found in Technical Appendix H. Delta County Economic Development (DCED) is also actively working on an Economic Recovery and Prosperity Plan for Delta County. A feasibility study for the Delta County Gateway Project in the City of Delta is currently underway. The types of uses identified in the project will depend heavily on good mobility and access.

Additionally, the Gunnison Valley Transportation Planning Region (TPR) has identified goals for US 50 between Grand Junction and Montrose and for SH 92 between Delta and Hotchkiss. In the 2035 Regional Transportation Plan (2035 RTP), the SH 92 corridor is identified as a high priority corridor with safety as the primary investment. The US 50 corridor is identified as medium priority corridor with system quality as the primary investment. Three of the major goals for the highways in the 2035 RTP are:

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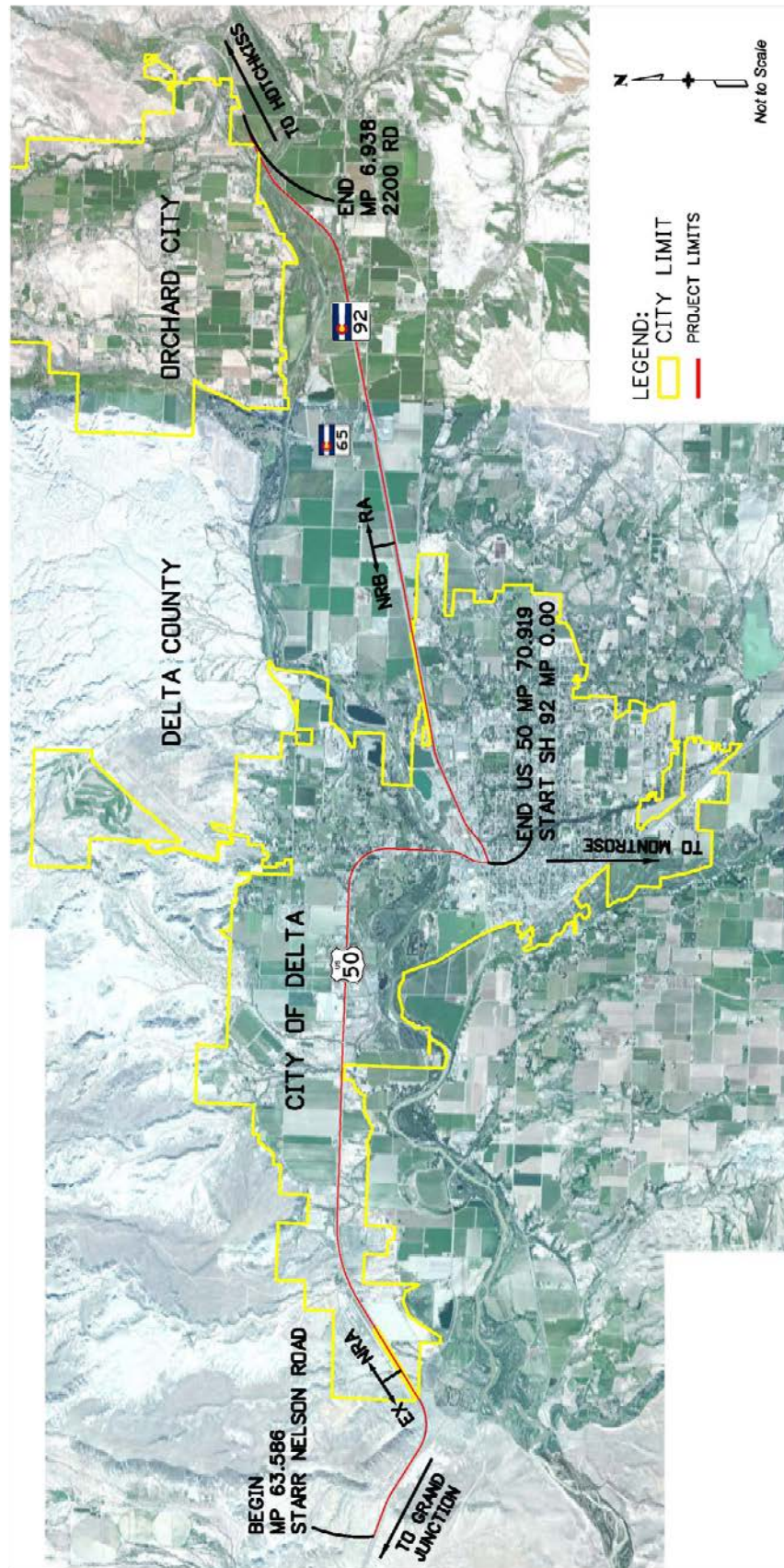


Figure 1. Vicinity Map

The purpose of this study effort is to coordinate development and growth anticipated in the area with the transportation needs for the local community and the traveling public. The goals for the project are as follows:

- Provide effective and efficient through travel for traffic on US 50 and SH 92.
- Provide safe, effective, and efficient access to and from US 50 and SH 92 for businesses, residents, and guests.
- Maintain compatibility with existing and proposed off-system connections that provide local circulation to support the transportation system.
- Provide a plan that is adoptable by all entities and can be implemented in phases.
- Support the economic viability of the project area.
- Maintain compatibility with previous local planning efforts.
- Support development of alternative modes.

This report summarizes the study process, analyses, findings, and recommendations for access modifications within the US 50 and SH 92 corridors.

## **1.2 Project Coordination**

The project area falls within the boundaries of both the City of Delta and Delta County. The majority of the US 50 segment falls within the City's jurisdiction, while a majority of the SH 92 segment falls within the County's jurisdiction. Operations and maintenance of US 50 and SH 92 are managed by CDOT – Region 3. The study is a joint partnership between the City of Delta, Delta County, and CDOT.

The primary project team for development of the Access Plan consisted of representatives from City Public Works and Community Development, County Engineering, and CDOT – Region 3, Traffic and Safety Departments. Input from other departments within the City, County, and CDOT was collected by project team staff representatives and at a staff preview Open House held on September 30, 2015. Coordination with local elected officials and project stakeholders, including property owners, tenants and the general public is described in the next section.

## **1.3 Public Involvement**

Input from corridor stakeholders, including property owners, tenants, ditch companies, and the general public, was a critical element of the project. Multiple techniques were used to engage stakeholders including: advertised public open houses; one-on-one meetings/phone calls with interested stakeholders; neighborhood meetings; public presentations with Delta City Council, and Delta County Board of County Commissioners (BOCC); press releases and project information posted on the City's and County's websites.

Two advertised project-specific public open houses were held at the Bill Heddles Recreation Center to present and discuss the recommended Draft Access Plan for US 50 and SH 92, review access management principles and techniques, and gather public input on the draft plans. The first meeting was held on September 30, 2015 and the second meeting was held on January 13, 2016. Corridor property owners, local government representatives, and other interested individuals who contacted the project prior to the Open Houses were invited to the Open House by first class mail and e-mail, when provided. Two hundred seventy-four (274)

post cards were mailed for the September, 2015 Open House, and two hundred ninety-seven (297) post cards and thirty-three (33) e-mails were sent for the January, 2016 Open House. In addition, to inform the general public of the Open Houses, an invitation was included on the City's and County's websites and social media pages, a legal public notice was posted in two issues of the Delta County Independent, the City's and County's legal notice paper, and press releases were issued by CDOT. Exhibits presenting access management principles, the study process, and the recommended draft Access Plan were displayed at all Public Open Houses. The same exhibits were also available for review on the City's and County's websites. Representatives from the City, CDOT, and consultant team were available for questions and discussion at all Open Houses. Twenty (20) people signed in at the September, 2015 Open House and thirty (30) people signed-in at the January, 2016 Open House.

Project team members also participated in a neighborhood meeting for the segment of US 50 between 1525 Road and 1550 Road. The meeting was noticed by postcard via first class mail. It was held the evening of November 4, 2015 at Bill Heddles Recreation Center. Two property owners attended and one property owner solicited information about the plan via telephone prior to the meeting.

Following the September, 2015 Public Open House, the project team held a series of one-on-one meetings with corridor property owners. Face-to-face meetings were held at Delta City Hall on October 22 and November 4, 2015. Follow-up meetings were also held on January 6 and February 11, 2016. One-on-one meetings were advertised through a public release and at the September Open House. In addition, approximately 30 people were contacted directly. Fifteen (15) interested parties participated, including property owners, business owners, public agency representatives, emergency services, and local ditch companies. City, County, CDOT, and consultant team representatives participated in these meetings. In addition, the project was discussed with several interested parties via telephone at various times during access plan development.

Public comments were accepted at all public outreach events and via e-mail throughout the project. Open House sign-in sheets and comment sheets, as well as a list of one-on-one meeting participants can be found in Technical Appendix A.

The team updated and engaged the City Council and the BOCC on project progress and development on multiple occasions. All of these meetings were open to the public. Presentations were made at the following meetings:

City Council: August 18 and December 1, 2015

County BOCC: August 17 and December 7, 2015

Final presentations to both City Council and BOCC are anticipated for plan adoption at separate regularly scheduled City Council and BOCC meetings on March 15 and March 21, 2015, respectively.

## 2.0 ACCESS MANAGEMENT – BENEFITS, PRINCIPLES & TECHNIQUES

As defined by the *Access Management Manual, TRB, Second Edition 2014*, “Access management is the coordinated planning, regulation, and design of access between roadways and land development. It involves the systematic control of the location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway.” Access management along Colorado State Highways is generally administered by CDOT on a case by case basis, as prescribed by the *State of Colorado State Highway Access Code, latest edition*. Per Section 2.12 of the Access Code, CDOT or a local authority may develop an Access Control Plan for a segment of highway that defines access locations, level of access and traffic control for future conditions. Developing an Access Control Plan provides CDOT and the local authorities with the opportunity to develop a single transportation plan that considers multiple access points along a segment of highway as a network rather than as individual access points. Corridor specific issues such as intersection spacing, traffic movements, circulation, land use, topography, alternative access opportunities, and other local planning documents may be considered in developing an Access Control Plan. The Plan does not define capacity improvements, off-network improvements, or funding sources for access improvements, although local governments often consider off-network improvements for their communities in conjunction with an Access Control Plan. The Plan is a long-range planning document that identifies access conditions that will be implemented as highway and land-use characteristics change. Access Control Plans for State Highways are adopted by CDOT and the local authorities.

### 2.1 Access Management Benefits

Access management provides the means to balance good mobility along the highway with local access needs of businesses and residents. Implementation of access management principles and techniques on State and local transportation networks can provide the following long-term benefits for highway users, communities, and businesses:

- Safety
  - Fewer decision points and potential for conflicts for motorists, cyclists, and pedestrians results in a reduced number of accidents.
  - Safe access to businesses is provided.
- Increased ability to accommodate traffic demands
  - Limiting full movement access within a corridor favors through movements and strategically identifies locations for vehicles to enter and exit the corridor.
  - Reduces congestion, thereby discouraging thru traffic from seeking alternative local routes to avoid congestion.
  - Improved operations on the highway also provides increased opportunities to reduce delay on the local street system.
- Preserves property values and the economic viability of abutting development
  - A more efficient roadway system captures a broader market area.
  - A more predictable and consistent development environment is created.
  - Well-defined driveways with suitable spacing make it easier for customers to enter and exit businesses safely, thereby encouraging customers to patronize corridor businesses.

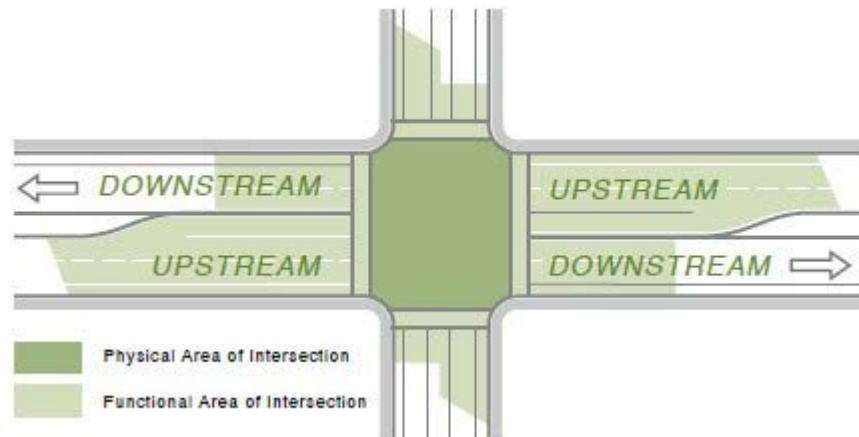
- Encourages use and development of local streets
  - Alternative local routes allow traffic to access local amenities conveniently without using the highway, thereby providing both convenient local access and circulation and reduced volumes on the highway.
- Enhanced Corridor Appearance
  - Businesses are easily located
  - Well-defined access points with suitable spacing provides more opportunities for streetscaping/landscaping.

## 2.2 Guiding Principles

Access management centers around limiting and consolidating access along major roadways and focusing access for development on a supporting local street network and circulation system. The following guiding principles to access management were applied in the development of the Access Plan for US 50 and SH 92:

- Limit the number of direct access points to major roadways
- Locate signals and intersections to favor through movements
- Minimize the number of locations where vehicles merge, split, or cross
- Remove turning vehicles from through traffic lanes
- Provide a supporting local street network and circulation system

In addition, functional intersection area was considered in evaluating the spacing between major intersections. *American Association of State Highway and Transportation Officials (AASHTO) A Policy on Geometric Design of Highways and Streets, 2011* and *Access Management Manual, TRB, Second Edition 2014* indicate that separation of access points should not be less than the functional area of the intersection. The functional intersection area extends upstream and downstream from the physical intersection as shown below.



Source: Federal Highway Administration (FHWA) *Access Management in the Vicinity of Intersections Technical Summary*

The upstream distance is a combination of the storage length, deceleration and taper length, and the perception-reaction distance required for the speed of the segment. The downstream distance is measured as stopping sight distance, which allows drivers to pass through an intersection before considering potential conflicts at the next intersection. The functional intersection area depends on the speed of the segment and the number of projected turning vehicles.

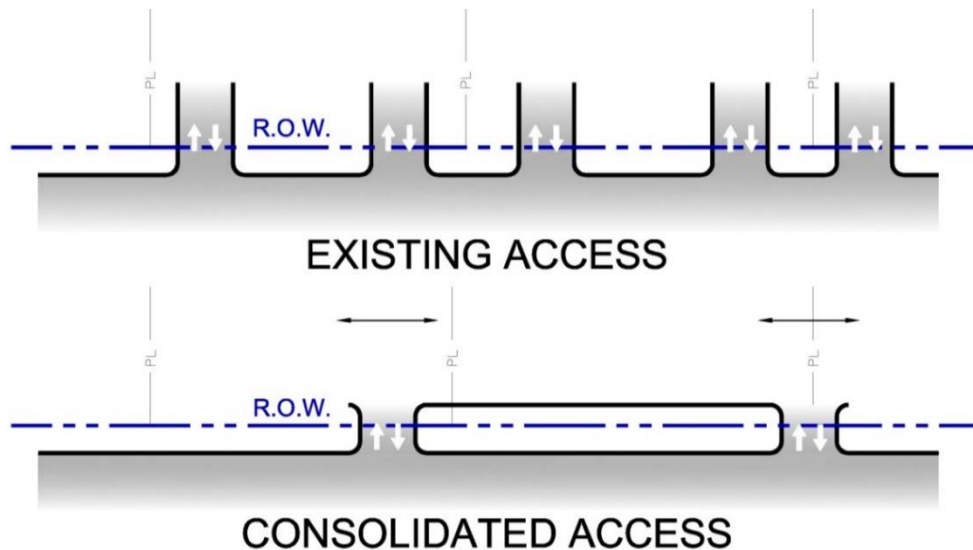


## 2.3 Techniques

Several access management techniques, illustrated below, may be used to achieve the principles outlined above and to realize the benefits of access management along US 50 and SH 92.

**Principle: Limit the number of direct access points to major roadways**

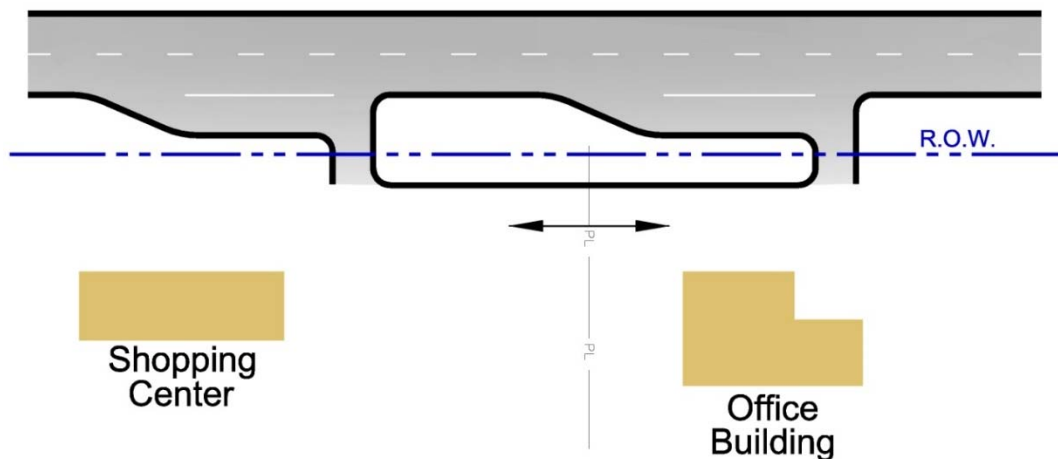
**Technique: Consolidate Access**



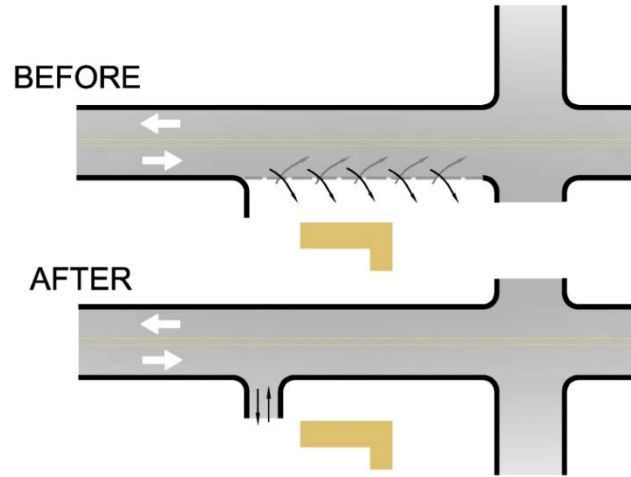
Consolidate access points by:

- Reducing the number of access points that serve a single property
- Providing joint access for multiple properties at or near a property line

**Technique: Connect Adjacent Properties**

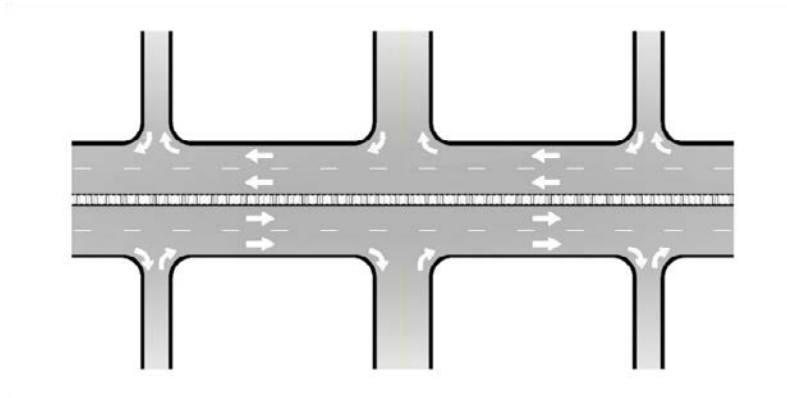


Connect adjacent properties to provide circulation between properties and increase access opportunities for multiple properties.

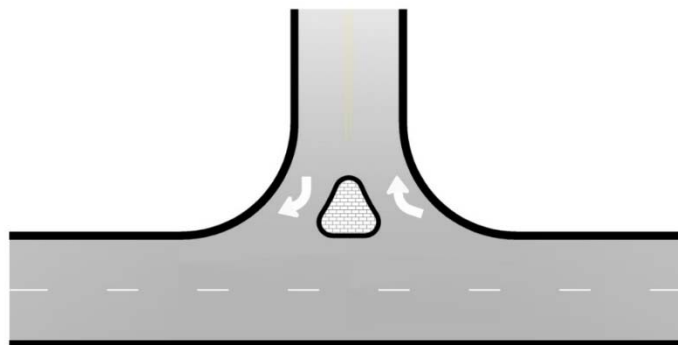
**Technique: Define Driveways**

*Define driveways to provide clear identification of entrance and exit locations.*

**Principle: Minimize the number of locations where vehicles merge, split, or cross**

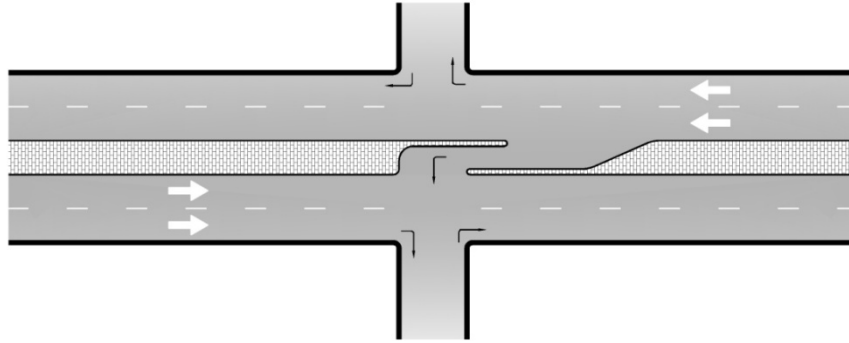
**Technique: Install Medians and Islands**

*Right-in/right-out with raised median eliminates left turn movements between major intersections throughout a corridor.*



*Right-in/right-out with channelizing island eliminates left turn movements at specific locations.*

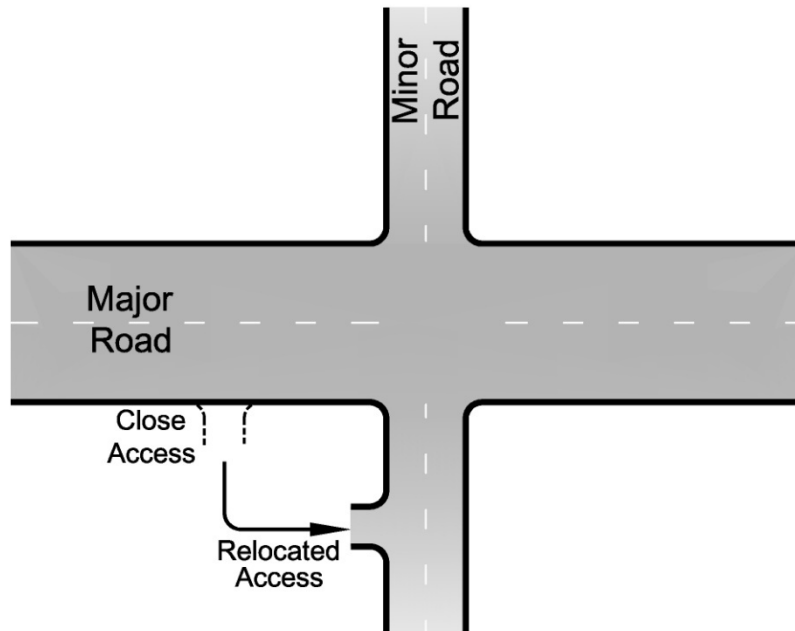




*Directional median opening or a  $\frac{3}{4}$  movement limits left turn movements to one direction at strategic locations where increased access is beneficial for safety or operational reasons.*

**Principle: Provide a supporting local street network and circulation system**

**Technique: Provide Cross Street Access**



*Relocate access to a side street to:*

- *Reduce the number of direct access points to the major roadway.*
- *Provide safe and easy access to a minor roadway intersection with the major roadway.*
- *Provide opportunities to use an alternate local route, thereby avoiding use of the major roadway completely.*

## 3.0 EXISTING CONDITIONS

### 3.1 Land Use Characteristics

The study area encompasses almost 7 miles of US 50 and 7 miles of SH 92 in Delta, Colorado. The majority of US 50, approximately 5.5 miles, falls within the Delta city limits. Approximately 2 miles of SH 92 is located within city limits. The remaining segments of highways fall under Delta County jurisdiction. However, the City and County entered into a Growth Management Agreement in 2007 to jointly plan for land use in designated areas surrounding US 50 and SH 92. The Growth Management Area extends along SH 92 to approximately 2000 Road. A map of the Growth Management Area can be found in Technical Appendix H.

In general, land use within the city limits is suburban in nature with residential, commercial, and some industrial uses, whereas land use in the county is typically rural in nature. The east-west segment of US 50 at the north end of Delta is sparsely developed at this time and is comprised of mostly agricultural uses with some residential, commercial and industrial uses interspersed. The City's future land use plan through this segment includes highway commercial adjacent to US 50 with residential uses surrounding it. The north-south segment of US 50 is mostly residential, transitioning to commercial as the highway approaches SH 92. Future plans for the area anticipate highway commercial uses adjacent to US 50 for the entire segment. Along SH 92, land uses are heavily commercial and industrial from US 50 to Stafford Lane, which is consistent with the City's future land use plan. East of Stafford Lane, land uses are mostly agricultural and residential and parcel sizes are generally much larger. The City's future land use plan anticipates commercial uses on SH 92 east to SH 65.

Physical characteristics of the area include the Gunnison River, the Union Pacific Railroad (UPRR) and multiple irrigation ditches including the Hartland Ditch and Bonafide Ditch. The Gunnison River crosses US 50 near MP 70.6 and continues east on the north side of SH 92. Near MP 6.4, the river turns south and crosses SH 92. The river is separated from SH 92 by a substantial distance and does not generally impact access to the highways except near the crossing locations.

The UPRR also crosses US 50 at grade near MP 70.85, approximately 300' north of the SH 92 intersection. The crossing is protected by lights and gates. Traffic on both US 50 and SH 92 is delayed when trains cross US 50. The railroad also parallels SH 92, sharing a right-of-way line with the highway for the majority of the project limits to the Gunnison River crossing. The proximity of the railroad to the highway presents significant access challenges. Grade separated railroad crossings would require significant reconstruction and result in significant property impacts and are therefore unlikely. Future railroad crossings are expected to be at-grade and protected with active warning and interconnected signals. In addition, the number and location of crossings requires concurrence from the UPRR, and for public crossings, from the Colorado Public Utility Commission (PUC).

The Hartland Ditch is located in North Delta. The ditch parallels US 50 on the south side and crosses to the north side between 1525 Rd and 1550 Rd. The ditch is separated from US 50 for a substantial distance for the majority of the segment and does not generally impact access to the highway. The Bonafide Ditch follows SH 92 for the majority of the project limits and crosses the highway in several locations. There are several access points that provide maintenance access to the ditch along SH 92.

### 3.2 Roadway Characteristics

The posted speed limit on US 50 ranges from 65 mph as you enter the city limits from the west to 30 mph as you approach the core commercial area in the city. Similarly, SH 92 ranges from 35 mph near the US 50 intersection to 65 mph past SH 65. Recently, CDOT adjusted speed limits on US 50 in North Delta based on statutory speed limits set for the highway segment. In addition, CDOT is currently conducting a speed study along SH 92 within the project limits to review posted speed limits in the corridor. Speed limits within the study area summarized in Table 1 and Table 2 on the following page reflect the speed limits currently posted and used to evaluate access configurations.

**TABLE 1. US 50 SPEED LIMITS**

Approximate Reference Point	Approximate Location	Eastbound Speed Limits (mph)	Westbound Speed Limits (mph)
63.9 - 69.1	Starr Nelson Road to Wide Acres Park	65	65
69.1 - 69.5	Wide Acres Park to location between 1525 & 1550 Rd	50	50
69.5 - 69.9	Location between 1525 & 1550 Rd to north of H38 Rd	40	40
69.9 - 70.6	North of H38 Rd to Gunnison River	40	30
70.6 - 70.9	Gunnison River to SH 92	30	30

**TABLE 2. SH 92 SPEED LIMITS**

Approximate Reference Point	Approximate Location	Eastbound Speed Limits (mph)	Westbound Speed Limits (mph)
0.0 – 0.4	US 50 to east of Henry St.	35	35
0.4 – 1.3	East of Henry St. to east of Stafford Lane	45	45
1.3 – 4.1	East of Stafford Lane to east of SH 65	55	55
4.1 – 6.7	East of SH 65 to west of Austin Rd	65	65
6.7 - 7	West of Austin Rd to Austin Rd	60	65

The horizontal alignment of US 50 between 1250 Road to 1525 Road and between H25 Road and the Gunnison River is generally straight. A ninety degree curve between 1525 Road and H25 Road marks a change in the US 50 alignment from an east-west segment in North Delta to a north-south segment. In addition, segments of US 50 entering and exiting the study area are comprised of gradual curves consistent with the design speeds of the segments. In North Delta, there are several hills and gullies that make off highway circulation on either side of the highway challenging.

The SH 92 alignment is generally straight between Stafford Lane and H75 Road. The segments of SH 92 entering the study area and exiting the study area are comprised of gradual curves consistent with the design speeds of the segments. However, the alignment of SH 92 is generally at an angle with the local street system creating many slightly skewed intersections. The highway profile along US 50 and SH 92 is generally gradual.

The following four main cross-sections exist on US 50 through the study limits:

MP 63.586 to MP 67.28:

- 4-lane rural section with shoulders and a depressed median

MP 67.28 to MP 69.11:

- 4-lane rural section with shoulders and a two-way left-turn lane

MP 69.11 to MP 70.49:

- 4-lane urban section with curb and gutter and sidewalk and a two-way left-turn lane

MP 70.49 to MP 70.92:

- 4-lane urban section with curb and gutter and sidewalk and a raised median

The following cross-sections exist on SH 92 through the study limits:

MP 0.00 to MP 1.21

- 4-lane section with a mixture of raised median and two-way left turn lane. There is a shoulder on the north side. Segments of curb and gutter and sidewalk are scattered through this segment on the south side.

MP 1.21 to MP 3.90

- 4-lane rural section with shoulder and a depressed median

MP 3.90 to MP 6.96

- 2-lane undivided rural section with shoulders. Auxiliary lanes provided at 2200 Road/Austin Road.

The following access points have configurations that may create operational or safety challenges:

- H38 Road and 1575 Road (close proximity of access points to intersection with US 50)
- H50 Road/SH 92 (skewed)
- H75 Road/SH 92 (skewed)

### 3.3 Right-of-Way

The right-of-way (ROW) width within the study area varies throughout. On US 50, the ROW width varies between approximately 100' and over 300'. The widest segment is at the westernmost project limits between Starr Nelson Road and G50 Road. The narrowest segments are the area surrounding SH 92 and the segment where the highway curves ninety degrees from an east-west alignment to a north-south alignment. The ROW along SH 92 varies between approximately 80' and 180'. In the segment where the UPRR parallels the highway, approximately Henry Street to H75 Road, the northern ROW line is consistently 35' from the center of track. The southern ROW line varies throughout with the greatest ROW width surrounding SH 65.

CDOT acquired access rights by placing an access control line (A-line) along the highway ROW for a short segment of US 50 on the northeast side of the highway where the highway curves ninety degrees. An A-line limits highway access to locations of defined A-line openings. The A-line is located on the northeast side of the highway (along the westbound lanes) approximately between MP 69.75 (H50 Rd) and MP 70.4 (Access #120). All existing access points through this segment either have A-line openings or the A-line breaks for the intersection.

### 3.4 Access Category

Section Three of the *State of Colorado State Highway Access Code, latest edition*, establishes a system of eight highway categories for the purpose of defining the level of access for a highway segment based on the intended function of that segment. The Colorado Transportation Commission assigns a category to each state highway segment throughout Colorado. US 50 is categorized as Expressway (E-X) from the beginning of the access study to 500 feet east of G50 Road (RP 63.586 to RP 65.042). East of these limits to SH 92 (RP 65.042 to RP 70.919), US 50 is categorized as Non-Rural Principal Highway (NR-A). SH 92 from US 50 to 1850 Road (RP 0.00 to RP 2.891) is categorized as Non-Rural Arterial (NR-B). SH 92 east of these limits within the study area (RP 2.891 to RP 6.938) is classified as Regional Highway (R-A). Access category limits are shown on Figure 1.

According to Section 3.7, the major access control characteristics for a highway segment under Category E-X are as follows:

- Through traffic movements take precedence over direct access needs
- Capacity for high speeds and relatively high traffic volumes
- “Direct access service to abutting land is subordinate to providing service to through traffic movements.”
- “No access to private property may be permitted unless reasonable access cannot be obtained from the general street system.”
- One mile spacing for full movement intersections

According to Sections 3.8 and 3.10 of the Access Code, the major access control characteristics of a highway segment under Category R-A and NR-A, respectively, are very similar. These major characteristics are listed below:

- Through traffic movements take precedence over direct access needs;
- Capacity for medium to high speed and medium to high traffic volumes;
- “One access shall be granted per parcel of land if reasonable access cannot be obtained from the local street or road system;”
- One-half mile spacing for full movement intersections or minimum 35% efficiency for signal progression.

According to Section 3.11 of the Access Code, the major access control characteristics of a highway segment under Category NR-B are as follows:

- Provides service to through traffic movements while allowing more direct access to occur
- Capacity for moderate speeds and moderate to high traffic volumes
- “One access shall be granted to each parcel, if it does not create safety or operational problems.”
- Accesses will provide, as a minimum, right turns only.
- One-half mile spacing for full movement intersections or minimum 30% efficiency for signal progression
- Three-quarter movements may be permitted if operations at adjacent full movement intersections are improved and design standards are met.

### 3.5 Existing Access Inventory

There are currently 143 access points on US 50 and 111 access points on SH 92 within the study area. There are also 5 access points that access the US 50 frontage road near MP 66. A majority of access points are full movement. Due to a recent highway improvement project, almost two-thirds of the US 50 access points have access permits on file with CDOT. The remaining access points on US 50 and the majority of access points on SH 92 were developed prior to adoption of the *State Highway Access Code* and do not have access permits filed with CDOT. On US 50, nearly 40% of the access points provide direct business access, approximately 25% provide public/private road access, and almost 25% provide residential access. On SH 92, approximately 30% of the access points provide business access and fall mainly within the City limits. In the County, the majority of access points are either residential or field accesses, 15% and 30%, respectively. The remaining 25% of access points on SH 92 provide public/private road access.

For the purposes of identifying the location of access points for this plan, all access points are defined by the approximate Department reference point along US 50 based on CDOT Highway Segment Description Milepost for SH 92, RP 70.919. For SH 92, all access points are based on CDOT Highway Segment Description Milepost for US 50, RP 0.000. All access points are located at the approximate centerline of the access (+/- 50 feet). A complete inventory of existing access points is provided in Technical Appendix B.

The following provides a description of the accesses by type:

Public Road Signalized (PRS) – Full movement, signal-controlled intersection providing direct access to a publicly owned roadway. PRS accesses include highway to highway connections, county roads, and city streets. The PRS access points in the study area include:

#### US 50

- H 38 Road/1565 Road
- Confluence Dr.
- SH 92/1<sup>st</sup> Street

#### SH 92

- US 50
- Stafford Lane/1675 Road

Public Road Unsignalized (PRU) – Full movement, stop-controlled intersection providing direct access to a publicly owned roadway. The PRU access points in the study area include:

#### US 50

- Starr Nelson Road
- G50 Road
- Frontage Road
- Alkali Basin Road
- 1250 Road
- 1325 Road
- 1400 Road/City Wastewater Treatment Plant
- 1525 Road
- 1550 Road
- H50 Road
- 1560 Road
- H25 Road

#### SH 92

- Alley
- Meeker Street,
- Grand Avenue
- Crawford Avenue
- Henry Street
- Tuscher Street
- Heinz Street
- Circle Drive
- 1725 Road
- Industrial Blvd
- 1800 Road
- 1900 Road
- SH 65

- 1565 Road
- G96 Lane
- G86 Lane
- Ute Street
- H50 Road
- 2075 Road
- H75 Road
- 2100 Road
- 2200 Road/Austin Road

Private Road Unsignalized (PVRU) – Full movement, stop-controlled intersection providing direct access to a private property. These roadways are maintained privately. There are 14 PVRU access points on US 50 and 2 PVRU access points on SH 92.

Business Access (BA) – Full or partial movement highway access points serving businesses within the study area. These types of access points are typically used multiple times daily by a variety of traffic types. There are a total of 57 and 34 BA access points on US 50 and SH 92, respectively. A large majority of these access points are within City limits.

Residential Access (R) – Full or partial movement private highway access points used on a regular basis by limited traffic. These types of access points include single-family private driveways. There are 34 R points on US 50 and 17 R points on SH 92.

Field Access (FA) – Full or partial movement access points that provide direct access from the highway to agricultural land. These types of access points are typically not well-defined and are used infrequently. There are 14 FA points on US 50 and 33 FA points on SH 92.

According to these classifications, the access points are distributed as follows:

- | <u>US 50</u>                                | <u>SH 92</u>                                |
|---|---|
| • 6 signalized public road intersections    | • 4 signalized public road intersections    |
| • 18 unsignalized public road intersections | • 21 unsignalized public road intersections |
| • 14 unsignalized private road intersection | • 2 unsignalized private road intersection  |
| • 57 business access points                 | • 34 business access points                 |
| • 34 residential access points              | • 17 residential access points              |
| • 14 field access points                    | • 33 field access points                    |

### 3.6 Crash History

CDOT conducted a Safety Assessment for the study area in April, 2015 based on crash data for the period of July 1, 2009 to June 30, 2014. On US 50 there were 107 accidents reported within this period; 69 accidents (64%) were access-related. Of the reported crashes, 19 had at least one injury and one resulted in a fatality. On SH 92 there were 153 accidents reported within this period; 88 accidents (58%) were access-related. Of the reported crashes, 45 had at least one injury and two resulted in fatalities. Accident patterns were identified at the following intersections:

- H38 Road/ US 50
- US 50/ SH 92
- Grand Street/ SH 92
- Crawford Avenue/ SH 92
- Circle Drive/ SH 92
- Stafford Lane/ SH 92
- SH 65/ SH 92
- 2200 Road/ SH 92

The majority of the intersections had a pattern of rear-end accidents. Circle Drive and 2200 Road had patterns of broadside accidents, and Stafford Lane had a pattern of approach turn accidents. Other intersections that experienced five (5) or more accidents within the period, but did not have a pattern identified include:

- Confluence Dr (formerly Gunnison River Dr)/ US 50
- Ute St/Shopping Center Access / US 50
- Meeker St/ SH 92
- Industrial Blvd/ SH 92

Overall, implementing access management techniques will reduce the number of conflict points in the study area, thereby increasing the potential to reduce crashes between road-users. Detailed accident summary reports are included in Technical Appendix C.



## 4.0 EXISTING TRAFFIC CONDITIONS

### 4.1 Existing Traffic Volumes

Existing traffic volumes were collected throughout the study area. Traffic data collected included peak hour intersection turning movement counts at nineteen (19) locations on US 50 and eighteen (18) locations on SH 92. Twenty-four hour (24-hr) counts were also collected at seven (7) locations. The locations of all traffic counts were approved by staff from the City of Delta, Delta County, and CDOT prior to collection of the data.

Peak hour intersection turning movement counts were collected at all public intersections within the study area and at several private accesses. The turning movement counts were collected between 7:00 and 9:00 A.M. and between 4:00 and 6:00 P.M. on Tuesday, September 30, 2014. Based on the data, the system-wide morning peak hour occurred from 7:45 to 8:45 A.M. and the afternoon peak hour occurred from 4:30 to 5:30 P.M. The existing AM and PM peak hour turning movements for US 50 and SH 92 are summarized in figures in Technical Appendix D.

The 24-hr counts were collected for three consecutive days (Tuesday, September 30 thru Thursday, October 2, 2014) at seven (7) locations. Table 3 lists the 24-hr count locations along with the observed daily traffic volumes. Technical Appendix D contains the detailed traffic count data.

**TABLE 3. 24-HR TRAFFIC COUNT LOCATIONS & OBSERVED DAILY VOLUMES**

<b>US 50</b>	<b>24-Hr Total (vpd)</b>	<b>SH 92</b>	<b>24-Hr Total (vpd)</b>
West of Starr Nelson Road	10,000	East of US 50	15,900
South of H38 Road / 1565 Road	12,300	East of Stafford Lane / 1675 Rd	13,350
North of SH 92	19,100	East of SH-65	5,700
		East of Austin Road / 2200 Road	4,950

vpd – vehicles per day

24-hr total listed is the average of the three days of traffic counts

The ADT volumes along US 50 range from about 10,000 vehicles per day (vpd) on the west end of the corridor to 19,100 north of SH 92. Daily SH 92 volumes range from 15,900 vpd east of US 50 to approximately 5,000 vpd east of Austin Road. Traffic on US 50 is generally split 50/50 directionally throughout the day. The average traffic split on SH 92 is 45/55 (EB/WB) in the morning peak and 60/40 (EB/WB) in the afternoon peak.

#### Seasonal Variation in Traffic Volume

CDOT maintains an Automatic Traffic Recorder (ATR) on SH 92 just east of 2200 Road. Average Daily Traffic (ADT) data dating back to year 1991 was reviewed to determine whether traffic volumes vary significantly by time of year.

The results indicated that traffic volumes are above the yearly average from May to October, with the highest volumes of the year typically occurring in August. The traffic counts for the US 50 and SH 92 ACP were conducted the last day of September and first two days of October, months which also typically experience volumes which are well above the yearly average. The ATR data indicates that daily traffic volumes in September / October are typically around the 85<sup>th</sup> percentile of daily volumes experienced over the course of the year. In other words, 85

percent of the time ADTs along the highway are less than the volume that was counted for the study. No adjustment to the counted volumes was therefore necessary to represent a peak seasonal traffic condition.

## 4.2 Existing Traffic Operations

Level-of-service (LOS) analyses were conducted at all intersections within the study area where turning movement counts were collected. Existing intersection geometry and the traffic signal timing plans active during the analysis period were used for the analyses.

LOS is a measure of the quality of traffic flow and is defined by a letter grade ranging from A (uninterrupted flow) to F (heavily congested conditions). LOS D is generally considered acceptable (though not always attainable) for peak period conditions in urban areas. Table 4 provides LOS thresholds for signalized and unsignalized intersections.

**TABLE 4. LEVEL OF SERVICE CRITERIA**

Level of Service (LOS)	Average Delay		Traffic Characteristics
	Signalized Intersection (seconds/vehicle)	Unsignalized Intersection (seconds/vehicle)	
A	≤ 10	0 – 10	Free Flow / Insignificant Delays
B	> 10 – 20	> 10 - 15	Stable Flow / Minimal Delays
C	> 20 – 35	>15 - 25	Stable Flow / Acceptable Delays
D	> 35 – 55	>25 - 35	Approaching Unstable / Tolerable Delays
E	> 55 – 80	> 35 - 50	Unstable Flow / Significant Delays
F	> 80	> 50	Forced Flow / Excessive Delays

Source: *Highway Capacity Manual, 2010*

Synchro, which is based on the analysis methodologies in the Highway Capacity Manual, 2010 version (HCM 2010), was used to analyze the study area intersections. As shown in Table 5, all movements at all of the intersections analyzed were LOS D or better during current peak hour conditions, with a few minor exceptions. One unsignalized location along US Hwy 50 (Ute Street) and two unsignalized locations along US Hwy 92 (Meeker Street and Crawford Avenue) experience LOS F conditions for the minor street approach movements.

**TABLE 5. EXISTING INTERSECTION LOS**

<b>Highway 50 Intersection</b>	<b>A.M. Peak Hour</b>	<b>P.M. Peak Hour</b>	<b>Highway 92 Intersection</b>	<b>A.M. Peak Hour</b>	<b>P.M. Peak Hour</b>
Starr Nelson Road	A	A	Meeker Street	C	F
G50 Road	A	B	Grand Avenue	B	C
1200 Road	A	A	Crawford Avenue	C	F
1250 Road	A	A	Henry Street	C	C
1400 Road	B	B	Tusher Street	B	B
Wild Acres Park	B	B	Heinz Street	B	B
1525 Road	B	B	Circle Drive	B	D
1550 Road	B	B	Safeway	A	A
H50 Road	A	B	Stafford Lane	B	B
1560 Road	A	B	1725 Road	B	B
H38 Road	A	A	Industrial Boulevard	A	B
H25 Road	C	C	1800 Road	B	B
1565 Road	B	B	1900 Road	B	A
G96 Lane	A	B	SH 65	A	A
Riverwood Lane	B	B	H50 Road	B	B
G86 Lane	B	B	2075 Road	B	B
Gunnison River Drive	A	A	H75 Road	B	B
Ute St	C	F	2200 Road	B	B
SH 92	C	C			

The analysis also measured the average travel time from one end of the study area to the other. Table 6 lists the travel times and associated average speeds for year 2015.

**TABLE 6. CORRIDOR TRAVEL TIMES AND ASSOCIATED AVERAGE SPEEDS**

Condition	AM Peak Hour		PM Peak Hour	
	EB / SB	WB / NB	EB / SB	WB / NB
Year 2015	17m 15s (52 mph)	18m 10s (50 mph)	17m 50s (51 mph)	17m 45s (51 mph)

## 5.0 FUTURE TRAFFIC CONDITIONS

### 5.1 Background Traffic Growth

The year 2035 background thru traffic volumes on US 50 and SH 92 were forecasted using the “20 Year Factor” from CDOT traffic data for US 50 and SH 92. Table 7 shows the 20 Year Factors.

**TABLE 7. 20 YEAR FACTORS FOR US 50 AND SH 92**

Roadway	Section			20 Year Factor
	Begin	End	Mile Posts	
US 50	west of Starr Nelson Rd	G50 Rd	59.33 to 64.95	1.32
	G50 Rd	1525 Rd	64.95 to 69.40	1.27
	1525 Rd	H 38 Rd / 1565 Rd	69.40 to 69.99	1.29
	H 38 Rd / 1565 Rd	SH 92	69.99 to 70.92	1.21
SH 92	US 50	1800 Rd	0.00 to 2.51	1.26
	1800 Rd	SH 65	2.51 to 3.81	1.30
	SH 65	2200 Rd	3.81 to 6.96	1.33

### 5.2 Planned Development

Stolfus worked with the City of Delta (City) and Delta County (County) to identify future development traffic that should be added to the year 2035 background traffic volumes. The City and County identified areas that were likely to develop in the next 20 years. Technical Appendix D contains a map that shows the areas that the City and County anticipate will develop over the next 20 years.

Based on the total amount of “developable land” in these areas, the City and County agreed that they anticipate that 20% of the developable land north and south of US 50 will develop in the next 20 years, and that the remaining 80% will be developed after year 2035. The City and County anticipate that the parcels in the vicinity of SH 92 identified for future development will develop fully (i.e. 100%) by year 2035.

Stolfus then used the ITE Trip Generation Manual to estimate the number of trips to/from the anticipated future development. The number of these trips that would travel on US 50 or SH 92 was then estimated based on the location of the development in relation to existing and future development and the current distribution of trips on US 50 and SH 92. Technical Appendix D contains the ITE trip generation calculations and trip distribution calculations.

### 5.3 Transportation System Improvements

There are no planned capacity improvements on US 50 or SH 92 in the study area. However, based on the forecasted year 2035 traffic volumes at the intersection of US 50 and SH 92, a 2nd southbound left-turn lane (from eastbound US 50 to eastbound SH 92) will be needed to prevent excessive delays and very long queues. It is common practice to consider constructing dual left-turn lanes when the left-turn volume reaches 300 vehicles per hour (vph). The southbound left-turn volume in 2035 is estimated to be approximately 484 vph. Analysis conducted for this study did not assume a 2nd left-turn lane is constructed prior to 2035.

Also, based on the anticipated development discussed in the previous section, the City's Major Street Plan shows numerous planned local roads that intersect US 50, all of which were included in the year 2035 traffic analysis. In addition, it is anticipated that SH 65 will extend south of SH 92 and connect to US 50 south of Delta. This extension, and rerouting of traffic volumes was included in the year 2035 traffic analysis.

### 5.4 Future Traffic Operations

The analysis procedures used for the year 2015 conditions were also used for the year 2035 conditions. The "NO ACP" and "WITH ACP" conditions were analyzed for year 2035. Table 8 contains a comparison of corridor travel times, and a LOS comparison of the two scenarios is provided in Table 9.

As summarized in Table 8, corridor travel times are expected to be approximately 1 to 2 minutes less (and speeds 4 to 5 mph higher on average) for the WITH ACP condition.

**TABLE 8. CORRIDOR TRAVEL TIMES AND ASSOCIATED AVERAGE SPEEDS**

Condition	AM Peak Hour		PM Peak Hour	
	EB / SB	WB / NB	EB / SB	WB / NB
Year 2015	17m 15s (52 mph)	18m 10s (50 mph)	17m 50s (51 mph)	17m 45s (51 mph)
Year 2035 NO ACP	21m 50s (42 mph)	22m 30s (40 mph)	22m 45s (40 mph)	23m 5s (39 mph)
Year 2035 WITH ACP	19m 25s (47 mph)	20m 0s (45 mph)	20m 50s (44 mph)	21m 0s (43 mph)

The LOS comparison in Table 9 reveals that the WITH ACP condition has intersection levels-of-service that are generally comparable or better than the NO ACP condition.

**TABLE 9. FUTURE INTERSECTION LOS (NO ACP / WITH ACP)**

<b>Highway 50 Intersection</b>	<b>A.M. Peak Hour</b>	<b>P.M. Peak Hour</b>	<b>Highway 50 Intersection</b>	<b>A.M. Peak Hour</b>	<b>P.M. Peak Hour</b>
Starr Nelson Road	B / B	B / B	Gunnison River Drive	B* / B*	C* / C*
G50 Road	C / C	D / D	Ute St	F / B	F / C
1200 Road	B / B	B / B	SH 92	C* / D*	E* / E*
1250 Road	B / B	B / B	<b>Highway 92 Intersection</b>	<b>A.M. Peak Hour</b>	<b>P.M. Peak Hour</b>
1300 Road	B / B	B / B	Meeker Street	C / B	F / C
1325 Road	A / A	A / A	Grand Avenue	B / B	F / C
1355 Lane	E / B	F / B	Crawford Avenue	B* / B	B* / C
1375 Lane	E / E	F / F	Henry Street	B* / B*	C* / C*
1400 Road	D / B	F / B	Tusher Street	B / B	C / B
1425 Road	E / E	F / F	Heinz Street	D / D	F / F
1450 Road	D / B	F / B	Circle Drive	C / C	F / F
1475 Road	E / E	F / F	Safeway	A / A	A / B
1500 Road	D / B	F / B	Stafford Lane	B* / B*	C* / C*
1525 Road	B* / B*	B* / B*	1725 Road	B / B	B / B
1550 Road	F / B	F / B	Industrial Boulevard	A / A	B / B
H50 Road	B / B	B / B	1800 Road	B / B	B / B
1560 Road	B / B	B / B	1900 Road	B / B	B / B
H38 Road	A* / B*	B* / B*	SH 65	C* / C*	C* / C*
H25 Road	B / B	C / B	2000 Road	C / C	D / D
1565 Road	B / B	C / B	2075 Road	C / C	C / C
G96 Lane	E / F	F / F	2100 Road	C / C	D / D
Riverwood Lane	C / B	D / C	I-30 Lane	B / B	C / C
G86 Lane	B / B	C / C	2200 Road	B / B	C / C

\*Signalized intersection

Tables 8 and 9 show that the overall system performance, as measured by corridor travel times and intersection LOS, is better “WITH ACP” than “NO ACP”. In conclusion, analyses indicate that implementation of the ACP will improve operations throughout the corridor when compared to not exercising access control. Many of the movements from unsignalized side streets will be restricted, leading to less delay and reduced opportunity for aggressive driving behaviors that lead to increased crash rates. Additionally, implementing the ACP results in less delay and improved travel speeds along the highway in the long-term.



## **6.0 ACCESS PLAN DEVELOPMENT AND EVALUATION**

Using the traffic volume forecasts, input from the City, County, and CDOT, input from the public outreach program, and guidance from the State Highway Access Code, an Access Plan was developed for the project. This Plan considers access points in logical groupings, as well as circulation opportunities via the existing and potential future local street system.

### **6.1 Process**

The Access Plan was developed using a 4-step process:

#### **6.1.1 Step One – Methodology & Compatibility Index**

A traffic methodology and access plan methodology were established at the beginning of the project to define the purpose, approach, and assumptions used to develop the Plan. In addition, a compatibility index was developed to provide a logical means for determining whether the Access Plan meets the established project goals. The index identified a set of evaluation criteria that correspond with each project objective, as listed in Section 1.1. A simple rating system that identifies the plan as favorable, neutral or unfavorable with respect to each criterion was defined. Each of the three ratings under each criterion was then defined to assist in the evaluation. The traffic methodology memo can be found in Technical Appendix D and the access plan methodology memo and compatibility index can be found in Technical Appendix E.

#### **6.1.2 Step Two – Development of the Access Plan**

The existing inventory of access points was reviewed with existing parcel and ownership information. This review determined which parcels adjacent to US 50 and SH 92 lacked access to the highway, which parcels had multiple accesses to consider for consolidation, and which parcels had access or potential access to an existing or proposed local road. Access solutions were developed by applying access management principles and techniques discussed in Section 2. Major full movement intersections were located based on traffic projections, City and County planning documents, and anticipated growth patterns. Access for each parcel in between major intersections was either limited (right-in/right-out or  $\frac{3}{4}$  movement) or provided via a local road. In cases where multiple access points served a single ownership, access was reduced to one per ownership. Shared access between parcels was developed, wherever feasible.

#### **6.1.3 Step Three – Refine the Access Plan**

A draft access plan was presented to an internal review team consisting of City, County, and CDOT representatives. Based on comments received from the team, the draft plan was refined and presented at the first Public Open House. Public comment was reviewed and the Plan was modified at several points throughout the project, as appropriate. Improvements considered cost prohibitive, with unmanageable physical constraints, with significant traffic operational deficiencies, inconsistent with overall community expectations, or not appearing to provide a reasonable level of access, were revised. In some cases, access conditions were defined to allow phased implementation of long-term solutions.

### 6.1.4 Step Four – Evaluation

Following the public outreach process, the refined Access Plan was evaluated using the compatibility index described in Step One to determine whether project objectives were met.

## 6.2 Evaluation Results

The results of the evaluation by objective are listed in Table 10. Overall, the Access Plan rates favorably and is compatible with project goals. Plan adoption by the three entities is recommended. Details of the Plan evaluation can be found in Technical Appendix E. A graphical representation of the Access Plan is located in Section 7.

**TABLE 10 COMPATIBILITY EVALUATION SUMMARY**

Project Goal	Evaluation Criteria	Rating
Provide effective and efficient through travel for traffic on US 50 and SH 92.	Corridor Travel Time	Favorable
	Functional Intersection Area	Neutral
	Number of Access Points	Favorable
Provide safe, effective, and efficient access to and from US 50 and SH 92 for businesses, residents and guests.	Intersection Sight Distance	Favorable
	Intersection Level of Service (LOS)	Favorable
	Conformance with State Highway Access Code Auxiliary Lane Requirements	Neutral
	Out of Direction Travel Distance	Unfavorable
	Intersection Crash Risk	Favorable
Maintain compatibility with existing and proposed off-system connections that provide local circulation to support the transportation system.	Local Route Connectivity	Favorable
	Serviceability of Local Routes to Developments and Properties within the Study Area	Favorable
Provide a plan that is adoptable by all entities and can be implemented in phases	Public Support	Neutral
	Phasing Opportunities	Neutral
	Physical Constraints	Neutral
	Funding Opportunities	Neutral
Support the economic viability of the project area	Business Market Area	Favorable
Maintain compatibility with previous local planning efforts	Compatibility with Local Planning	Favorable
Support development of alternative modes	Pedestrian/Bicycle Access	Favorable

## 7.0 PLAN RECOMMENDATIONS

This section presents details of the recommended Access Plan for US 50 and SH 92. The Plan has been developed with considerable participation from the City of Delta, Delta County, CDOT, and the public. After evaluating both existing and future conditions, the Plan defines how each access will function in the future. In general, the Access Plan limits full movement access to major intersections. Functional intersection area was considered in evaluating the spacing between major intersections. While it is ideal to provide the full functional intersection area between full movement intersections, other site specific considerations were considered in determining intersection spacing. At a minimum, the physical length needed to accommodate storage length, deceleration and taper length is provided between intersections unless otherwise noted.

In addition, highway access is reduced to one location per ownership and where feasible, shared between adjacent properties. Where reasonable access can be provided to an alternate route/cross street, access points are relocated to the local street system. On US 50 and on SH 92 between US 50 and SH 65, access for parcels between major intersections is limited. To maximize local circulation options, minor public road intersections are identified long-term as  $\frac{3}{4}$  movement where providing the left-turn movement improves operations and/or circulation and where there is adequate space to develop left turn auxiliary lanes. On SH 92 east of SH 65, limited access points were not considered due to the highway characteristics. This segment is a two-lane undivided section and there are no plans to expand the section within the study's planning period. Access points between major intersections are identified as conditional full movement intersections that will remain unsignalized. If signals are warranted at these access points or if safety or operational issues develop in the future, limiting access may need to be reconsidered.

For the majority of the study limits, out of direction travel was generally limited to a maximum distance of one mile ( $\frac{1}{2}$  mile each way). For the westernmost segment of US 50 categorized as Expressway, out of direction travel was generally limited to a maximum distance of two miles (1 mile each way). Out-of-direction travel was limited by providing full movement intersections at necessary intervals. Accommodation for u-turns at major intersections is recommended to provide alternatives for restricted left-turn movements. In addition, the City's Master Street Plan, in conjunction with proposed alternate routes from this study, will provide key alternatives for restricted left-turn movements.

The UPRR presents significant challenges to accessing the north side of SH 92. No additional access points that require an at-grade crossing of the UPRR on the north side of SH 92 are proposed except where multiple access points are consolidated into one new location. Given the close proximity of the railroad crossings to SH 92 and lack of storage distance, public road intersections will require active warning at the crossing and a traffic signal at the intersection to allow for interconnection and preemption of the crossing signal. All railroad crossings are subject to approval of the UPRR. All public railroad crossings are also subject to the approval of the PUC.

Traffic control measures that may be used to achieve proposed conditions include raised or depressed medians, driveway channelizing islands at limited access points, directional median openings at  $\frac{3}{4}$  movement access points, and signage and striping. To avoid turn movement violations and potential enforcement issues, eventual installation of a raised or depressed median or other positive traffic control measure is recommended. Based on the existing cross-

section with a two-way-left turn lane on US 50 and SH 92, installation of a raised median can likely be achieved with minor widening.

The narratives in this section are intended to serve as a summary of the key features of the Access Plan. The figures are intended to provide a graphical representation of the Access Plan. A detailed explanation of each access in the study area, by reference point, is presented in the Draft Access Control Plan Table, Exhibit A of the Draft Intergovernmental Agreement (IGA). Reference these exhibits for specific access configurations and conditions.

Recognizing that this plan is a long-term planning document and not a detailed engineering design, reference point designations are intended to be approximate. As more detailed information is available, these designations may be modified (generally within 0.05 miles of the specified reference point designation). The Draft IGA and Draft Access Control Plan Tables are located in Technical Appendix F and Technical Appendix G, respectively.

## **7.1 Access Plan**

Key features of the Access Plan are summarized by major intersection on the following pages and illustrated in Figures 2A-2S. Auxiliary lanes shall be provided at access points as prescribed by the State Highway Access Code. Full movement intersections with potential for future signalization or other traffic control have been identified as part of the Access Plan; however, the type of traffic control is not specified. Traffic control will be evaluated on a case-by-case basis as future conditions warrant. Potential traffic control may include stop signs, traffic signals, roundabouts, interchanges, or other traffic control recognized by the MUTCD. Traffic signals may be implemented at intersections if and when warranted per current MUTCD standards and when funding is available.

### **US 50**

#### ***Starr Nelson Road to G50 Road (Figure 2A & 2B)***

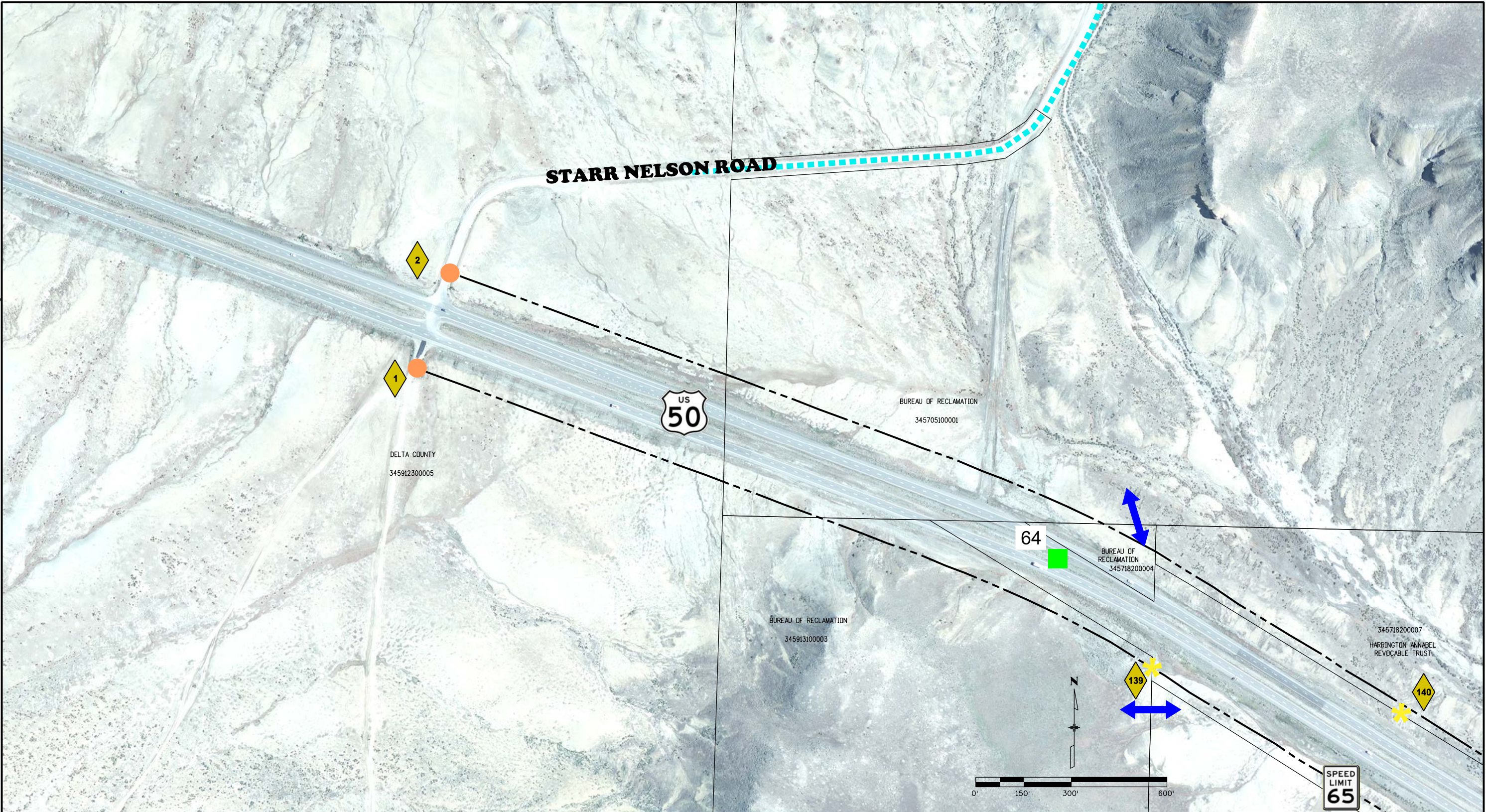
A four-legged full movement intersection with potential for signalization, if warranted, will remain at Starr Nelson Road and G50 Road. A fourth leg may be provided at G50 Road with redevelopment and shall be aligned with G50 Road. Right-in/right-out access points are provided for properties between Starr Nelson Road and G50 Road to ensure that all properties are provided access to the public street system. Cross-access for properties with proposed shared access on US 50 is required as properties redevelop.

#### ***G50 Road to Falcon Road/Frontage Road (Figure 2C & 2D)***

A four-legged full movement intersection with potential for signalization, if warranted, will be provided at G50 Road and Falcon Road/Frontage Road. In order to develop storage distance at the frontage road mainline entrance at Access #8, additional ROW will likely be required to realign the frontage road. The majority of access points on the frontage road (Accesses #8.1-8.4) may remain full movement. Access #8.5 should be relocated to the east to Access #8.6 upon redevelopment. Access #7 should be closed at the earliest opportunity and all access to US 50 in the area shall be provided via the frontage road access (Access #8). A full movement intersection with potential for signalization, if warranted, is provided on the south side of US 50 at Access #142 to meet project goals for out of direction travel. Based on the airport use on the north side of US 50, an access point was not provided on the north side opposite of Access #142. All other access points in this segment shall be closed upon redevelopment.



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**LEGEND:**

- ## Access Point
- Full Movement
- Frontage Road Full Movement
- Milepost

- 3/4 Movement Left-In
- Right-In, Right-Out
- Close Existing Access Point
- Existing Signalized Intersection

- Cross Access for Shared Access Point
- Parcel Line
- Alternate Route (Conceptual)
- Delta City Boundary
- Orchard City Boundary

- Highway Right of Way
- Access Control Line
- "C" Conditional
- "R" Residential Access
- "F" Field Access
- "D" Ditch

- Principal Arterial
- Proposed Principal Arterial
- Proposed Minor Arterial
- Proposed Collector
- Collector
- Proposed Alley
- Proposed Local Street



**US 50 & SH 92 ACCESS EXHIBIT  
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**FIGURE 2A PAGE 29**

**RP 63.586 TO RP 64.2**

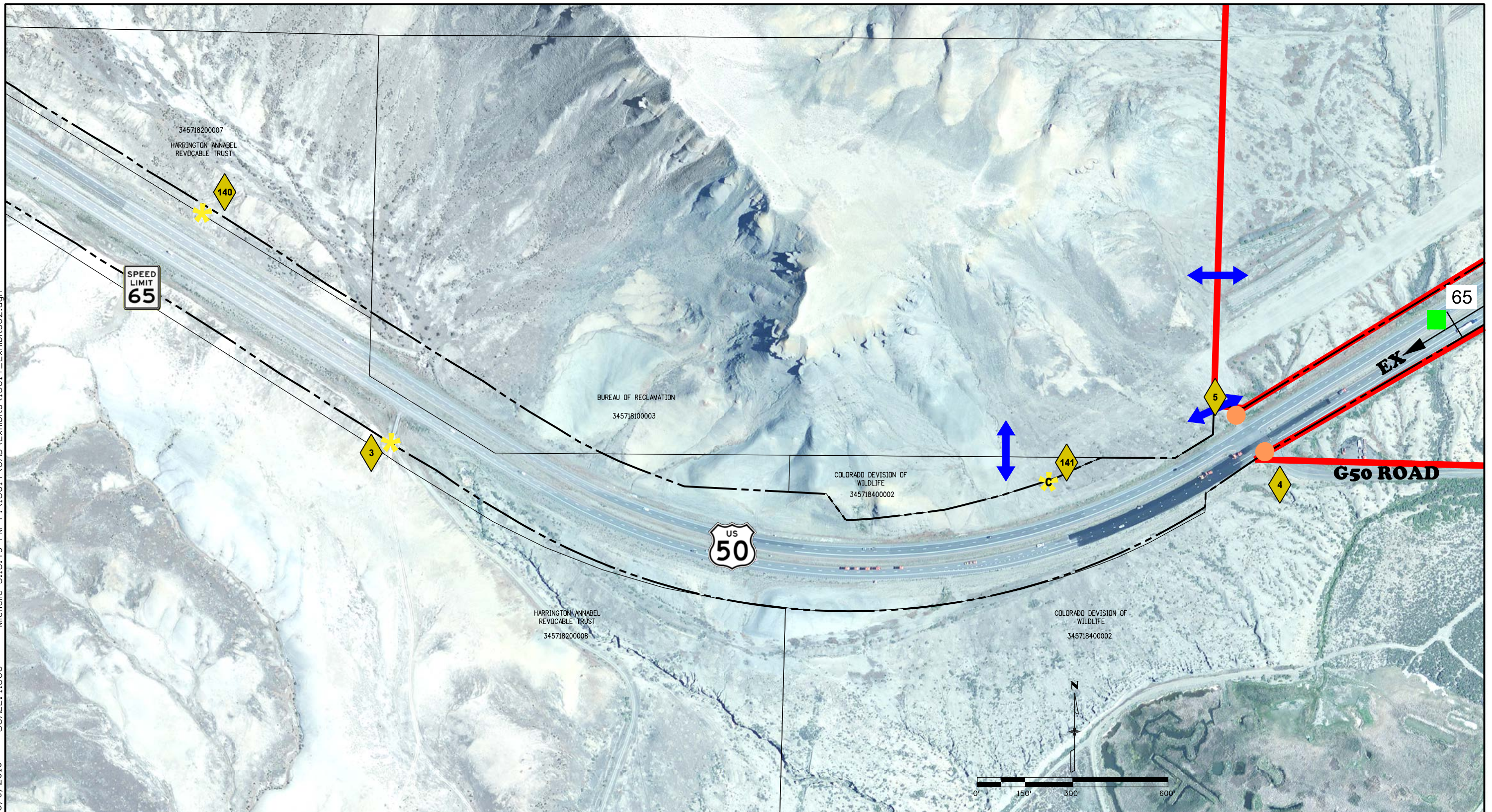








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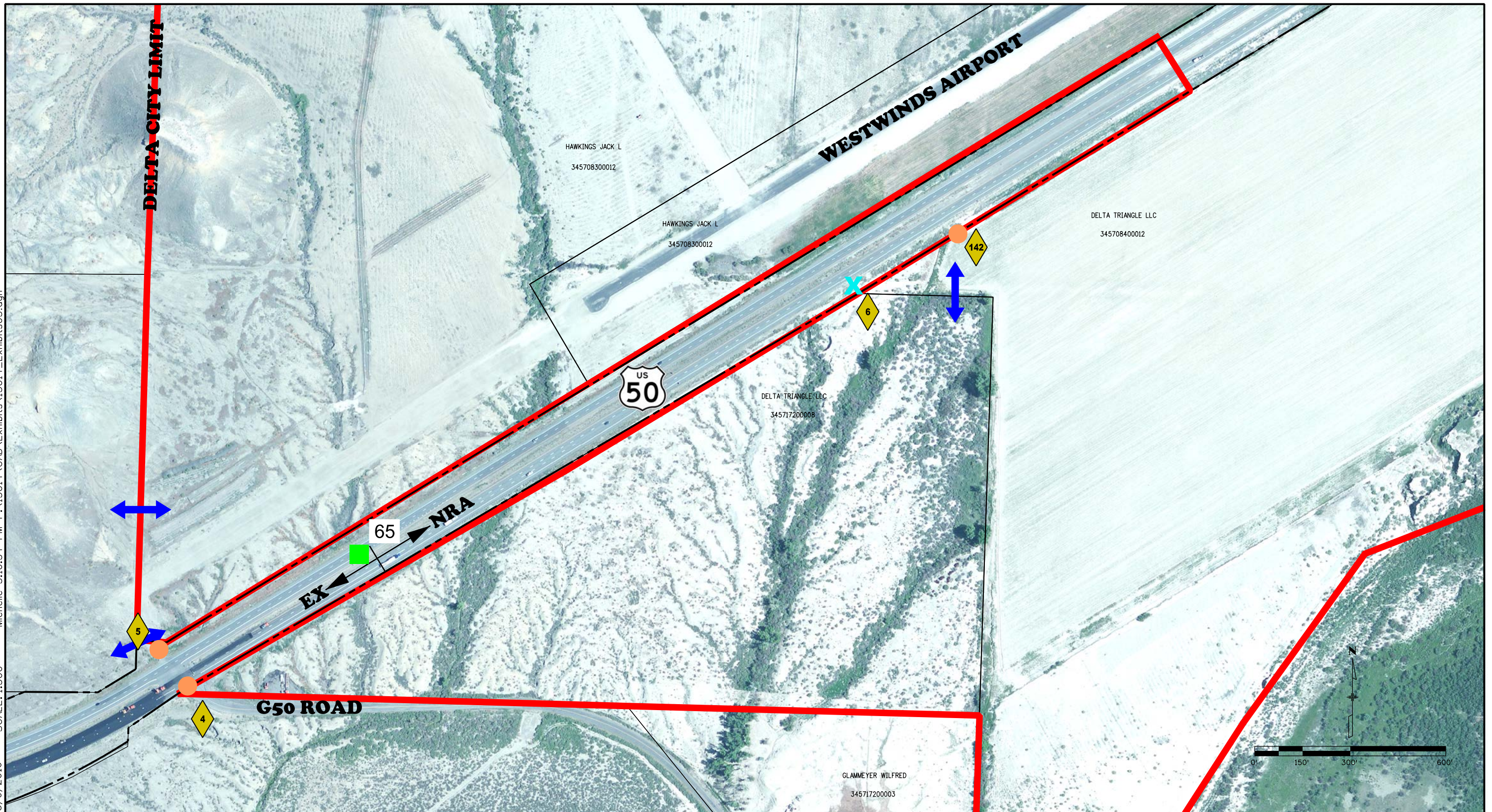
<b>LEGEND:</b> ## Access Point Full Movement Frontage Road Full Movement Milepost	3/4 Movement Left-In Right-In, Right-Out Close Existing Access Point Existing Signalized Intersection	Cross Access for Shared Access Point Parcel Line Alternate Route (Conceptual) Delta City Boundary Orchard City Boundary	Highway Right of Way Access Control Line "C" Conditional "R" Residential Access "F" Field Access "D" Ditch	Principal Arterial Proposed Principal Arterial Proposed Minor Arterial Proposed Collector Collector Proposed Alley Proposed Local Street	CDOT COLORADO Department of Transportation City of DELTA	<b>US 50 &amp; SH 92 ACCESS EXHIBIT</b> <b>2 OF 19</b> <b>FIGURE 2B</b> <b>RP 64.2 TO RP 65.0</b> Stolfus
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**LEGEND:**

- ## Access Point
- Full Movement
- Frontage Road Full Movement
- Milepost

- 3/4 Movement Left-In
- Right-In, Right-Out
- Close Existing Access Point
- Existing Signalized Intersection

- Cross Access for Shared Access Point
- Parcel Line
- Alternate Route (Conceptual)
- Delta City Boundary
- Orchard City Boundary

- Highway Right of Way
- Access Control Line
- "C" Conditional
- "R" Residential Access
- "F" Field Access
- "D" Ditch

- Principal Arterial
- Proposed Principal Arterial
- Proposed Minor Arterial
- Proposed Collector
- Collector
- Proposed Alley
- Proposed Local Street



**US 50 & SH 92 ACCESS EXHIBIT**  
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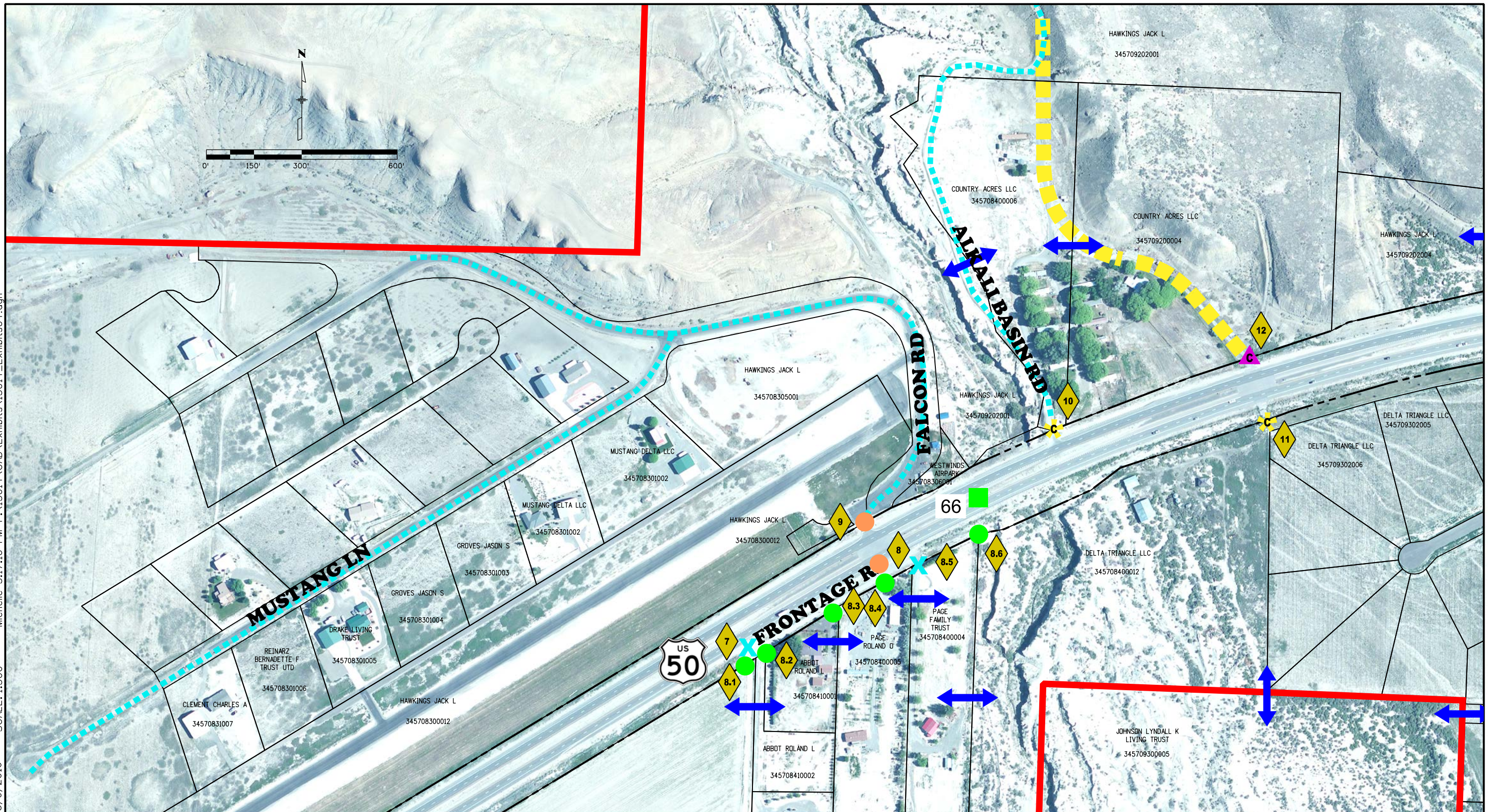
**FIGURE 2C** **PAGE 31**  
**RP 64.9 TO RP 65.6**







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**LEGEND:**

- ## Access Point
- Full Movement
- Frontage Road Full Movement
- Milepost

- 3/4 Movement Left-In
- Right-In, Right-Out
- Close Existing Access Point
- Existing Signalized Intersection

- Cross Access for Shared Access Point
- Parcel Line
- Alternate Route (Conceptual)
- Delta City Boundary
- Orchard City Boundary

- Highway Right of Way
- Access Control Line
- "C" Conditional
- "R" Residential Access
- "F" Field Access
- "D" Ditch

- Principal Arterial
- Proposed Principal Arterial
- Proposed Minor Arterial
- Proposed Collector
- Collector
- Proposed Alley
- Proposed Local Street



**US 50 & SH 92 ACCESS EXHIBIT  
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**FIGURE 2D PAGE 32**

**RP 65.6 TO RP 66.3**

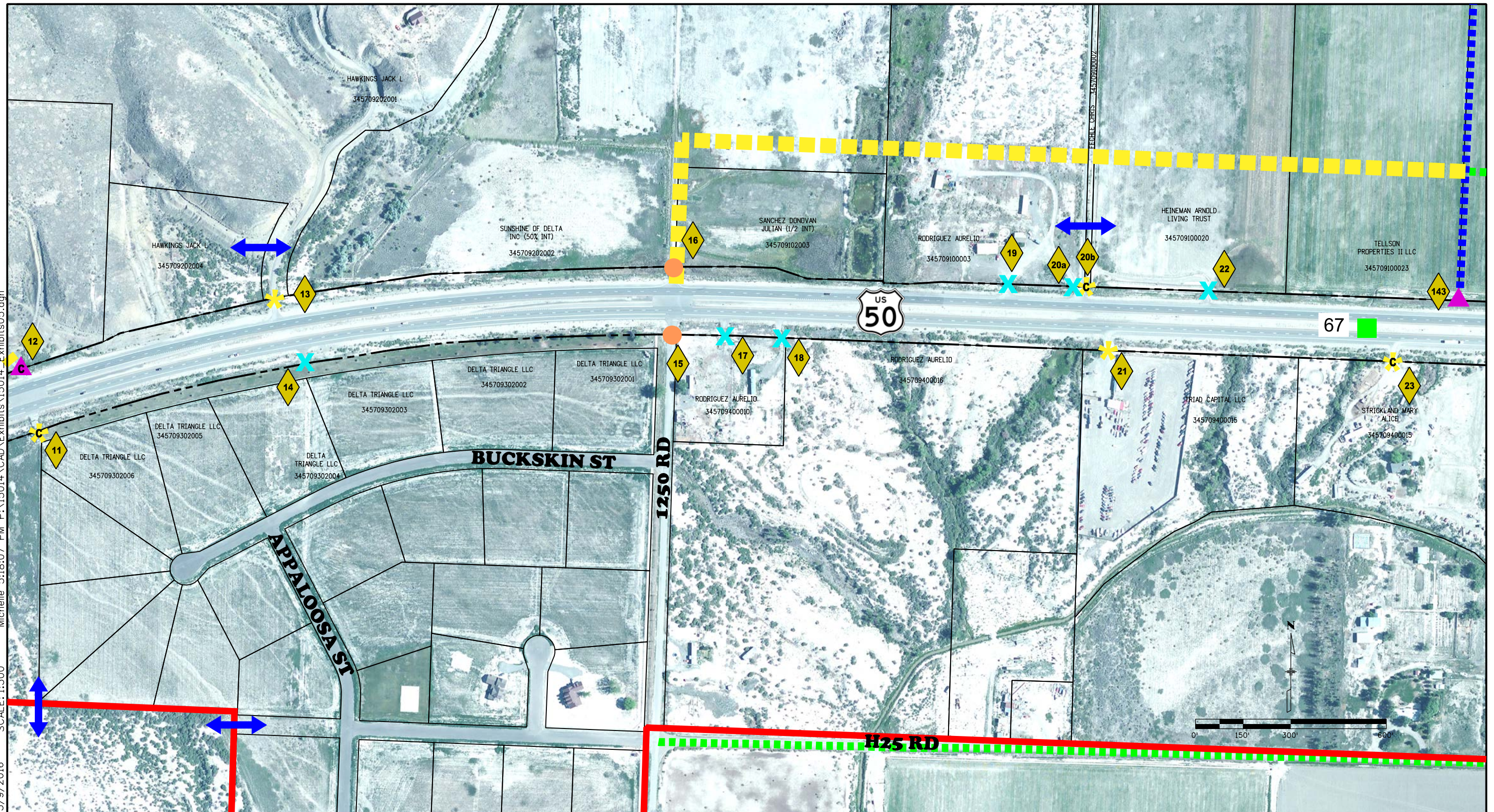








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**LEGEND:**

- ## Access Point
- Full Movement
- Frontage Road Full Movement
- Milepost
- 3/4 Movement Left-In
- Right-In, Right-Out
- Close Existing Access Point
- Existing Signalized Intersection
- Cross Access for Shared Access Point
- Parcel Line
- Alternate Route (Conceptual)
- Delta City Boundary
- Orchard City Boundary
- Highway Right of Way
- Access Control Line
- "C" Conditional
- "R" Residential Access
- "F" Field Access
- "D" Ditch
- Principal Arterial
- Proposed Principal Arterial
- Proposed Minor Arterial
- Proposed Collector
- Collector
- Proposed Alley
- Proposed Local Street

**US 50 & SH 92 ACCESS EXHIBIT**  
**5 OF 19**

**FIGURE 2E** **PAGE 33**

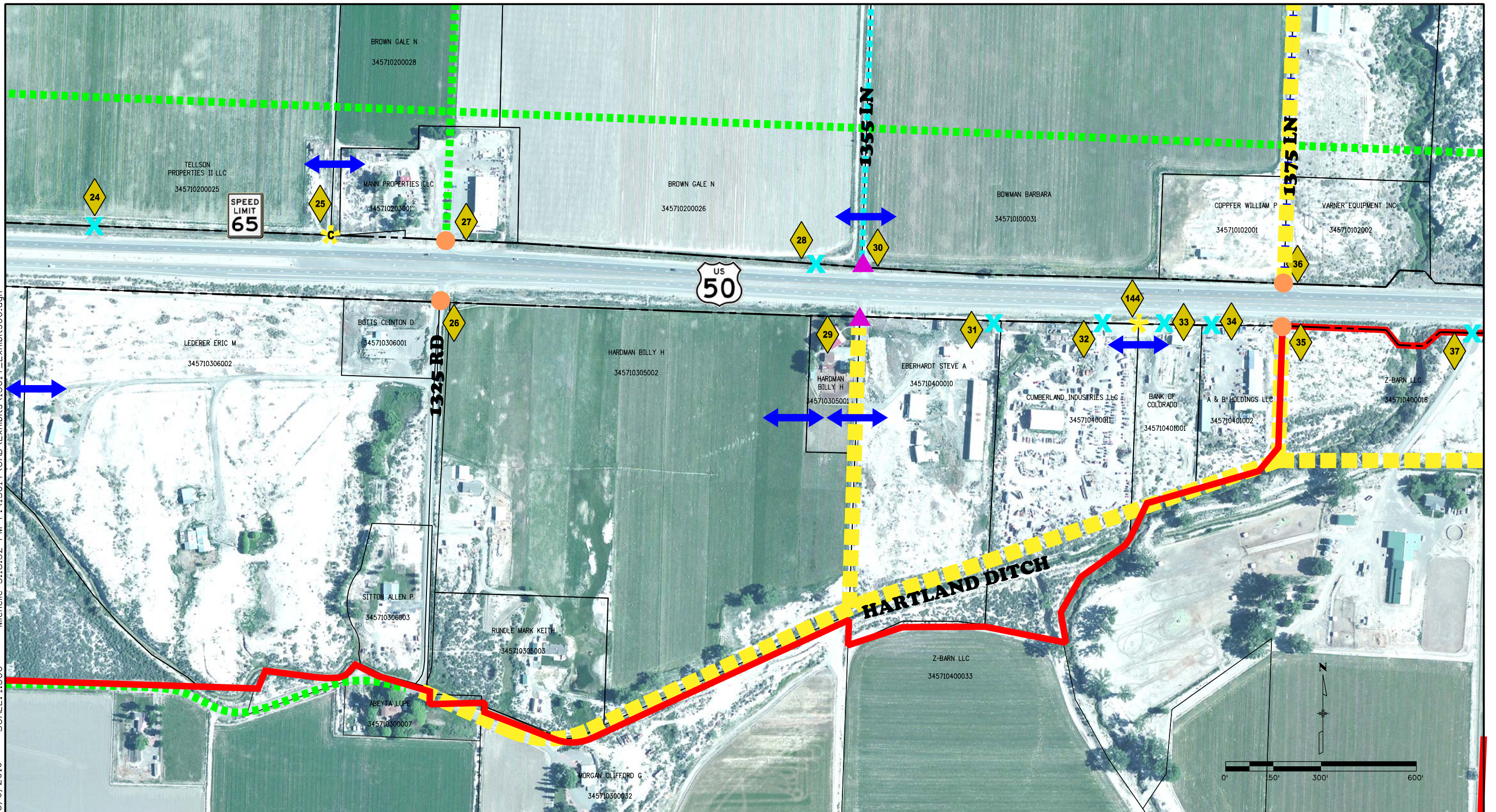
**RP 66.2 TO RP 67.1**







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<b>LEGEND:</b>	Access Point	3/4 Movement Left-In	Cross Access for Shared Access Point	Highway Right of Way	Principal Arterial
Full Movement	Right-In, Right-Out	Close Existing Access Point	Parcel Line	Access Control Line	Proposed Principal Arterial
Frontage Road Full Movement	Existing Signalized Intersection	Alternate Route (Conceptual)	"C" Conditional	"R" Residential Access	Proposed Minor Arterial
Milepost		Delta City Boundary	"F" Field Access	"D" Ditch	Proposed Collector
		Orchard City Boundary		Collector	Proposed Alley
				Proposed Local Street	

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**City of DELTA**

**US 50 & SH 92 ACCESS EXHIBIT**  
**6 OF 19**

**FIGURE 2F** **PAGE 34**

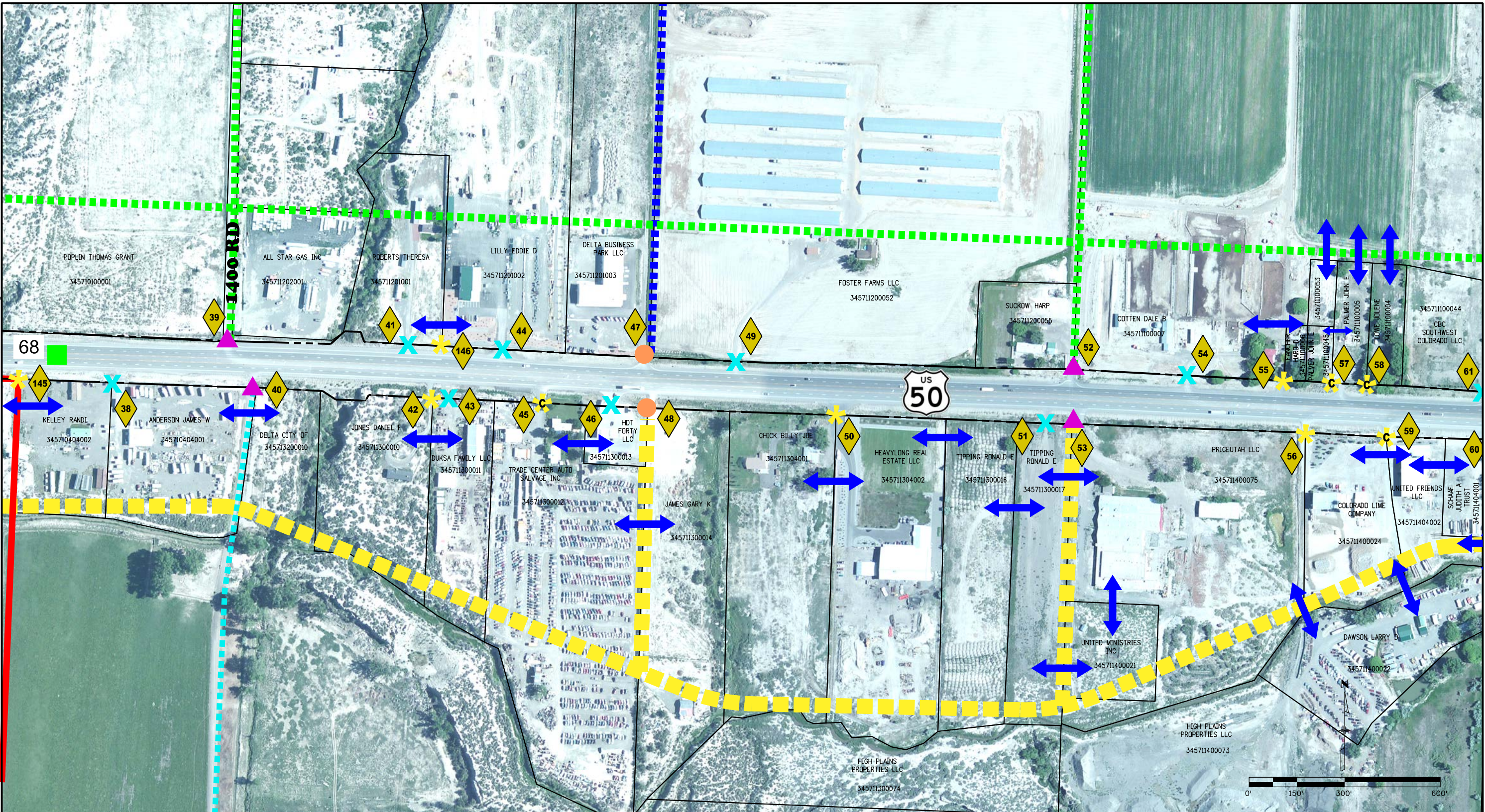
**RP 67.1 TO RP 67.95**







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**LEGEND:**

- ## Access Point
- Full Movement
- Frontage Road Full Movement
- Milepost

- 3/4 Movement Left-In
- Right-In, Right-Out
- Close Existing Access Point
- Existing Signalized Intersection

- Cross Access for Shared Access Point
- Parcel Line
- Alternate Route (Conceptual)
- Delta City Boundary
- Orchard City Boundary

- Highway Right of Way
- Access Control Line
- "C" Conditional
- "R" Residential Access
- "F" Field Access
- "D" Ditch

- Principal Arterial
- Proposed Principal Arterial
- Proposed Minor Arterial
- Proposed Collector
- Collector
- Proposed Alley
- Proposed Local Street



**US 50 & SH 92 ACCESS EXHIBIT  
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**FIGURE 2G PAGE 35**

**RP 67.96 TO RP 68.85**

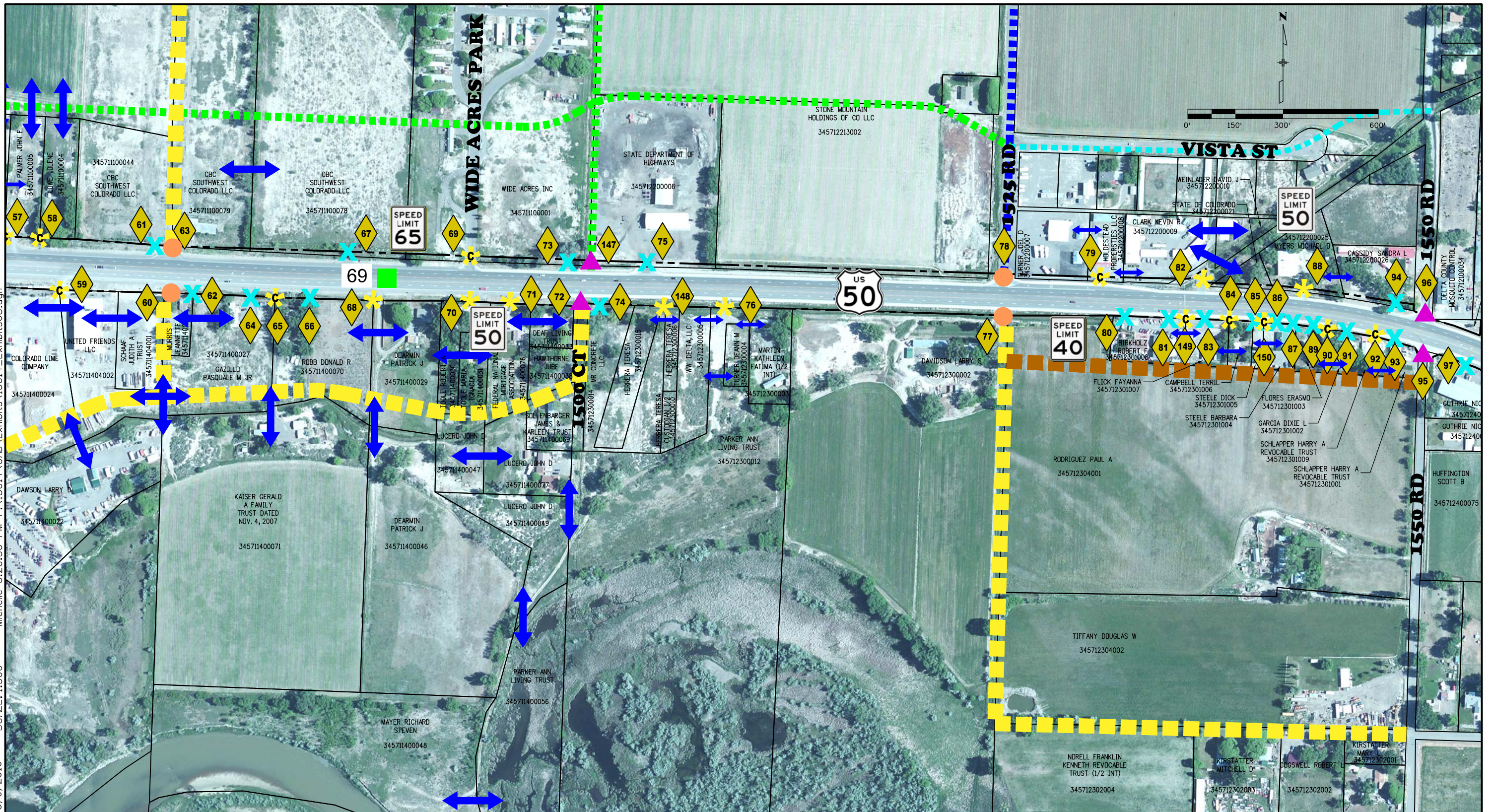








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**LEGEND:**

- ## Access Point
- Full Movement
- Frontage Road Full Movement
- Milepost

- 3/4 Movement Left-In
- Right-In, Right-Out
- Close Existing Access Point
- Existing Signalized Intersection

- Cross Access for Shared Access Point
- Parcel Line
- Alternate Route (Conceptual)
- Delta City Boundary
- Orchard City Boundary

- Highway Right of Way
- Access Control Line
- "C" Conditional
- "R" Residential Access
- "F" Field Access
- "D" Ditch

- Principal Arterial
- Proposed Principal Arterial
- Proposed Minor Arterial
- Proposed Collector
- Collector
- Proposed Alley
- Proposed Local Street



**US 50 & SH 92 ACCESS EXHIBIT  
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**FIGURE 2H PAGE 36**

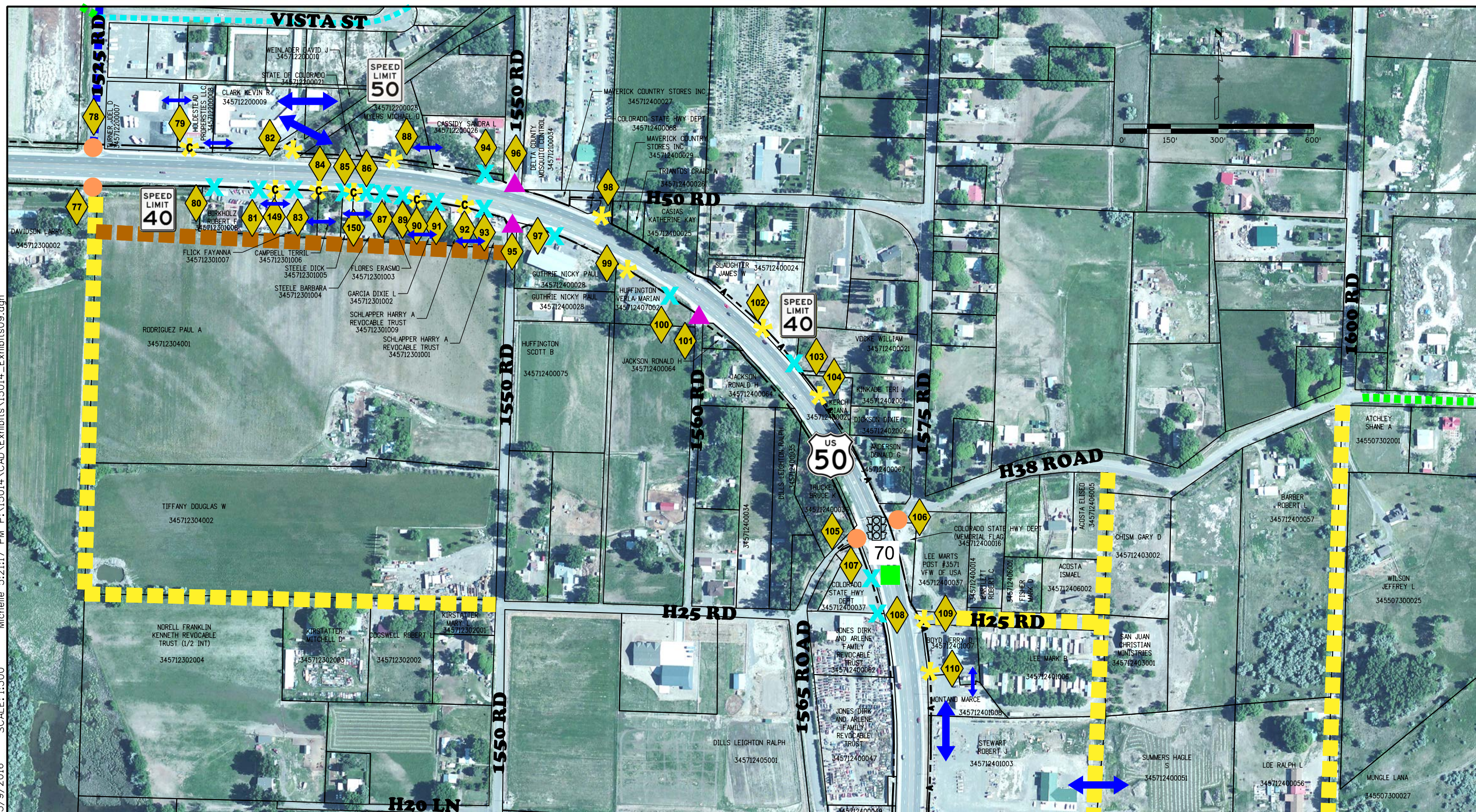
**RP 68.75 TO RP 69.63**











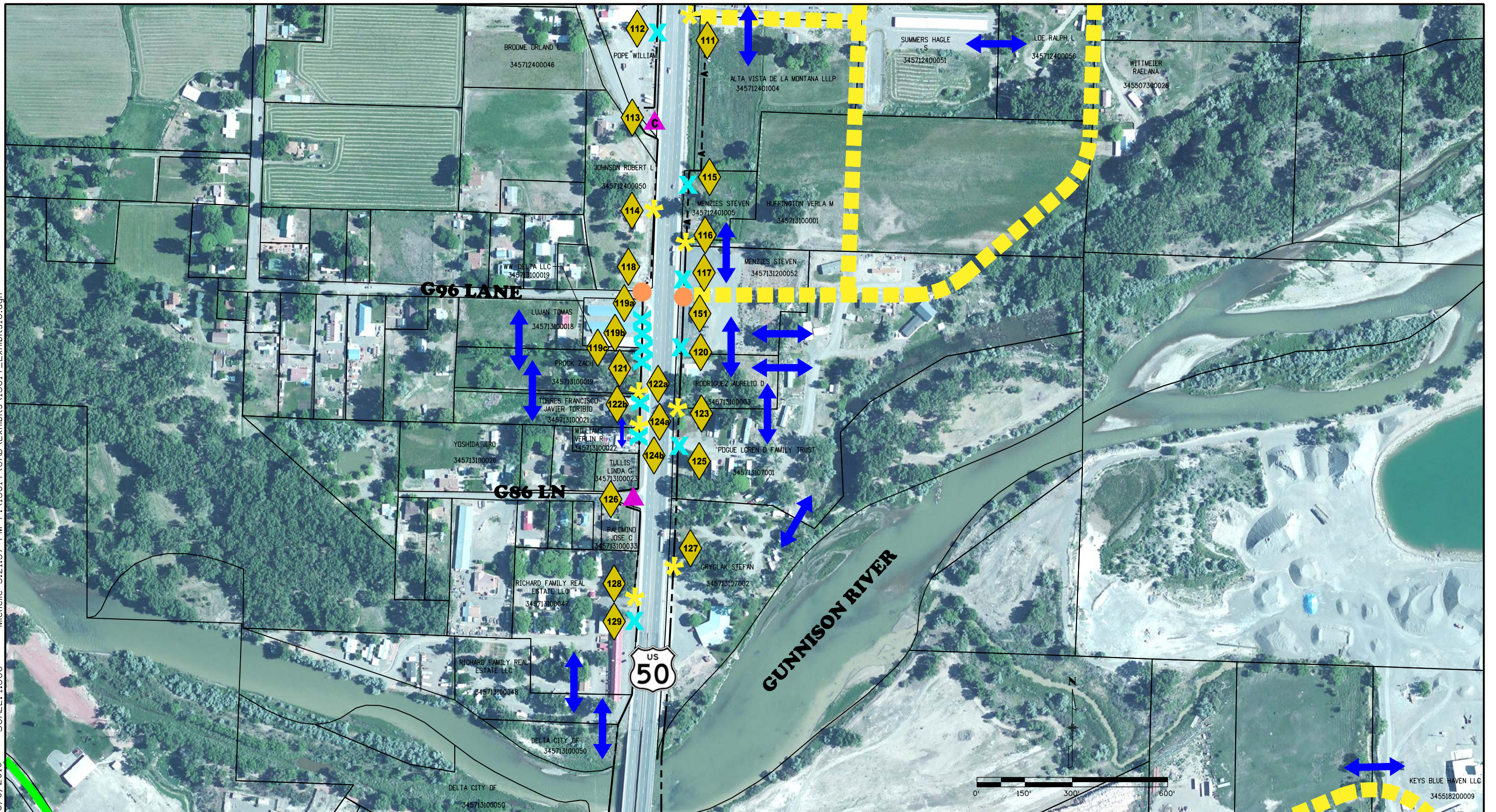
**RP 69.3 TO RP 70.1**







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**LEGEND:**

- ## Access Point
- Full Movement
- Frontage Road Full Movement
- Milepost
- 3/4 Movement Left-In
- Right-In, Right-Out
- Close Existing Access Point
- Existing Signalized Intersection
- Cross Access for Shared Access Point
- Parcel Line
- Alternate Route (Conceptual)
- Delta City Boundary
- Orchard City Boundary

**Highway Right of Way**

- Access Control Line
- Conditional "C"
- Residential Access "R"
- Field Access "F"
- Ditch "D"

**Principal Arterial**

- Proposed Principal Arterial
- Proposed Minor Arterial
- Proposed Collector
- Collector
- Proposed Alley
- Proposed Local Street

**US 50 & SH 92 ACCESS EXHIBIT**  
**10 OF 19**

**FIGURE 2J** **PAGE 38**

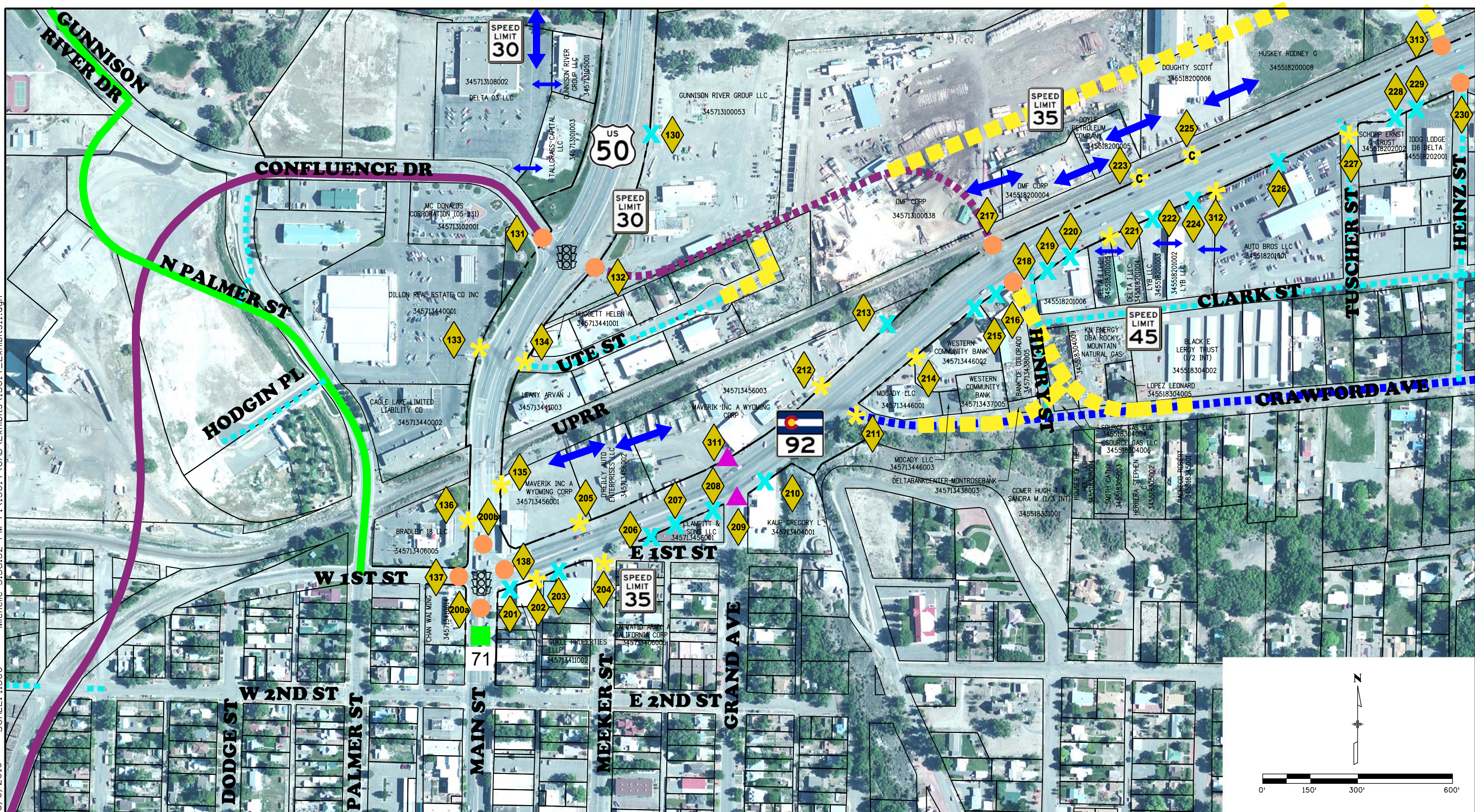
**RP 70.1 TO RP 70.6**







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**LEGEND:**

- ## Access Point
- Full Movement
- Frontage Road Full Movement
- Milepost

- 3/4 Movement Left-In
- Right-In, Right-Out
- Close Existing Access Point
- Existing Signalized Intersection

- Cross Access for Shared Access Point
- Parcel Line
- Alternate Route (Conceptual)
- Delta City Boundary
- Orchard City Boundary

- Highway Right of Way
- Access Control Line
- "C" Conditional
- "R" Residential Access
- "F" Field Access
- "D" Ditch

- Principal Arterial
- Proposed Principal Arterial
- Proposed Minor Arterial
- Proposed Collector
- Collector
- Proposed Alley
- Proposed Local Street



**US 50 & SH 92 ACCESS EXHIBIT  
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**FIGURE 2K** **PAGE 39**  
**RP 70.6 TO RP 70.919**  
**RP 0.0 TO RP 0.66**

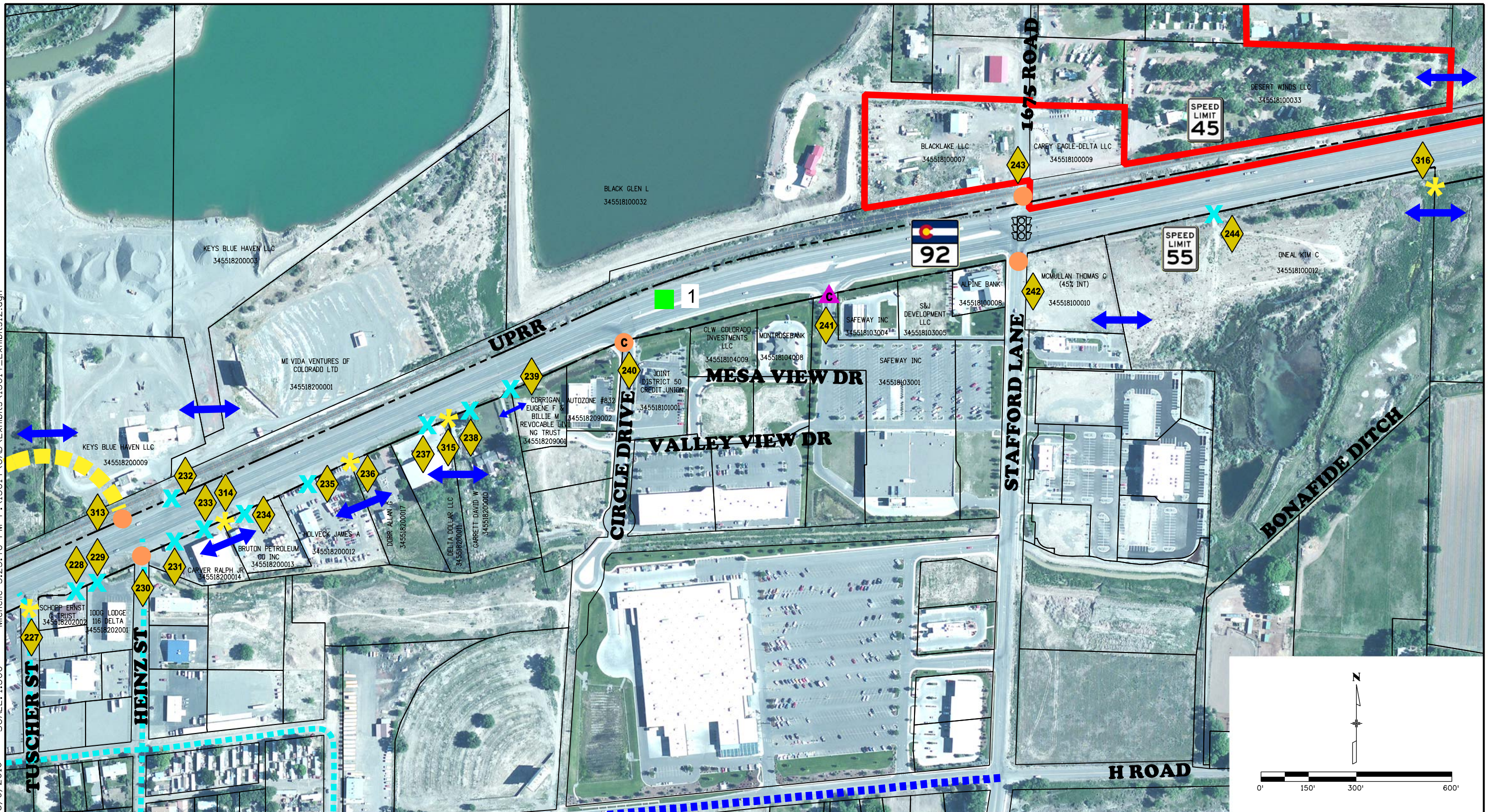








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**LEGEND:**

## Access Point	3/4 Movement Left-In	↔ Cross Access for Shared Access Point	—A— Access Control Line
Full Movement	* Right-In, Right-Out	Parcel Line	"C" Conditional
Frontage Road Full Movement	X Close Existing Access Point	Alternate Route (Conceptual)	"R" Residential Access
Milepost	Existing Signalized Intersection	Delta City Boundary	"F" Field Access
		Orchard City Boundary	"D" Ditch

Highway Right of Way

Principal Arterial

Proposed Principal Arterial

Proposed Minor Arterial

Proposed Collector

Collector

Proposed Alley

Proposed Local Street

**US 50 & SH 92 ACCESS EXHIBIT**

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**FIGURE 2L**

**PAGE 40**

**RP 0.58 TO RP 1.48**







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**LEGEND:**  
## Access Point  
Full Movement  
Frontage Road Full Movement  
Milepost  
3/4 Movement Left-In  
Right-In, Right-Out  
Close Existing Access Point  
Existing Signalized Intersection  
Cross Access for Shared Access Point  
Parcel Line  
Alternate Route (Conceptual)  
Delta City Boundary  
Orchard City Boundary  
Highway Right of Way  
Access Control Line  
"C" Conditional  
"R" Residential Access  
"F" Field Access  
"D" Ditch  
Principal Arterial  
Proposed Principal Arterial  
Proposed Minor Arterial  
Proposed Collector  
Collector  
Proposed Alley  
Proposed Local Street

US 50 & SH 92 ACCESS EXHIBIT  
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FIGURE 2M  
RP 1.48 TO RP 2.3

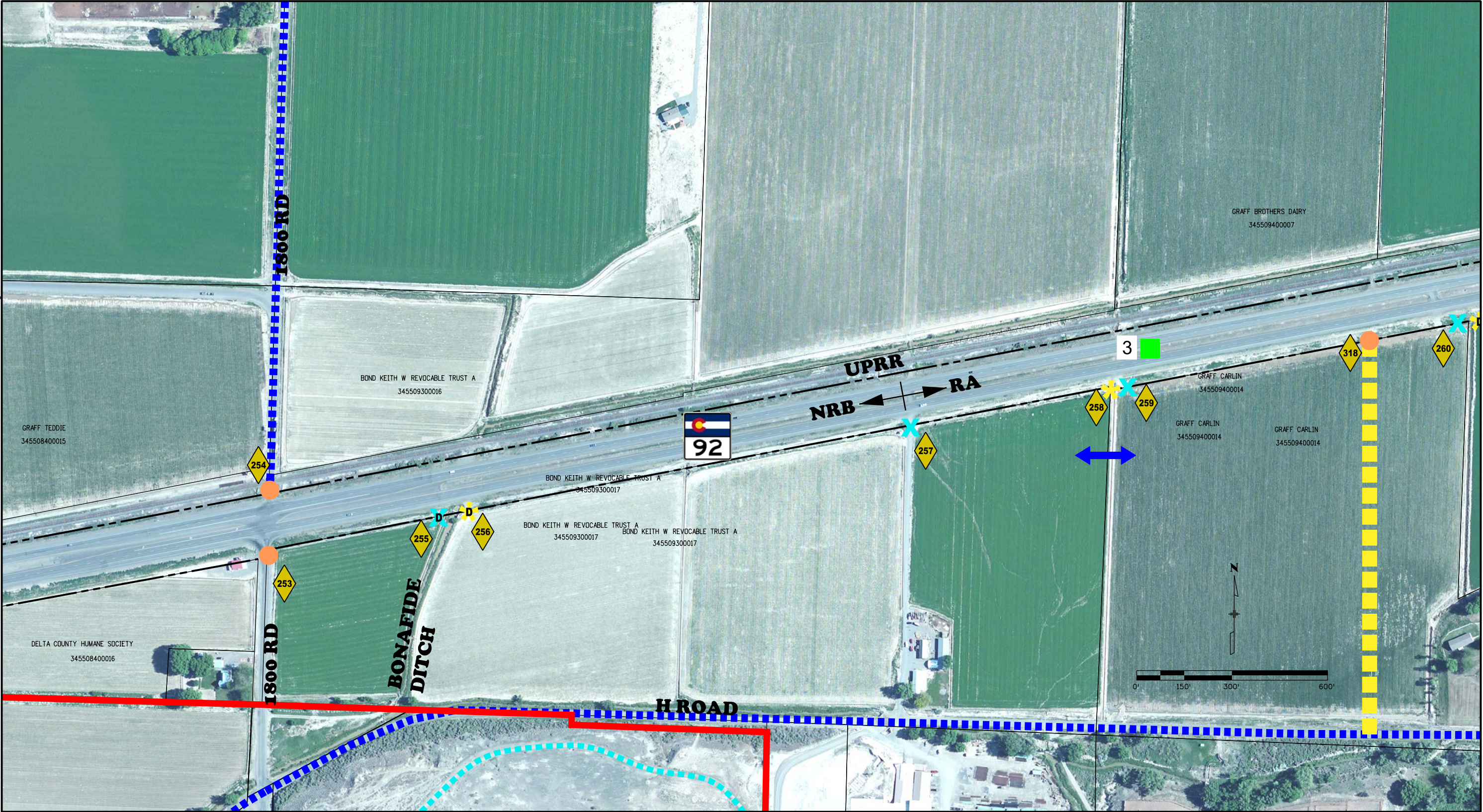
PAGE 41







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**LEGEND:**

- ## Access Point
- Full Movement
- Frontage Road Full Movement
- Milepost

- 3/4 Movement Left-In
- Right-In, Right-Out
- Close Existing Access Point
- Existing Signalized Intersection

- Cross Access for Shared Access Point
- Parcel Line
- Alternate Route (Conceptual)
- Delta City Boundary
- Orchard City Boundary

- Highway Right of Way
- Access Control Line
- "C" Conditional
- "R" Residential Access
- "F" Field Access
- "D" Ditch

- Principal Arterial
- Proposed Principal Arterial
- Proposed Minor Arterial
- Proposed Collector
- Collector
- Proposed Alley
- Proposed Local Street



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Transportation



**US 50 & SH 92 ACCESS EXHIBIT  
14 OF 19**

**FIGURE 2N PAGE 42**

**RP 2.3 TO RP 3.23**

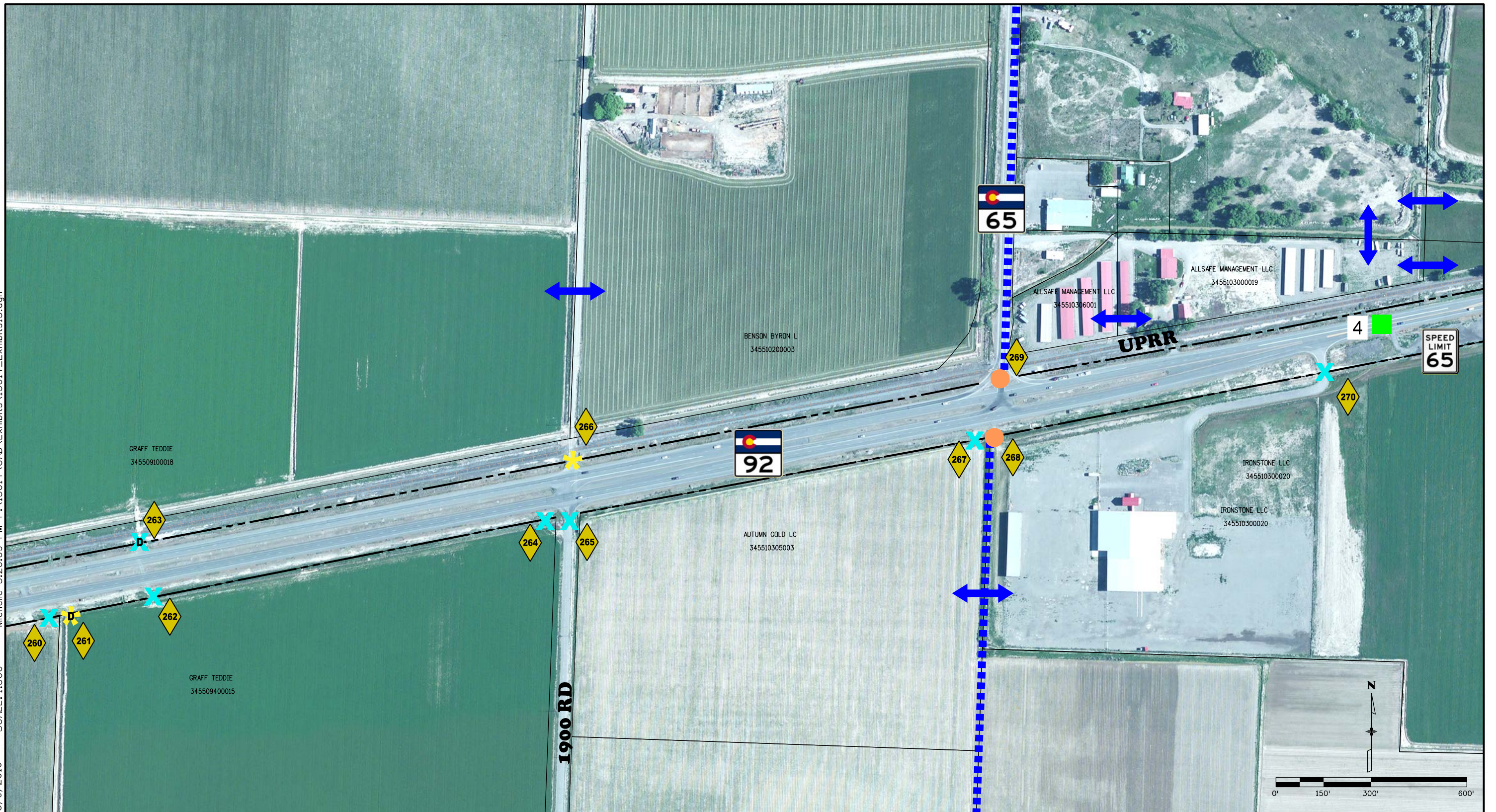








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<b>LEGEND:</b>					
## Access Point	3/4 Movement Left-In	↔ Cross Access for Shared Access Point	—A— Access Control Line	Principal Arterial	
Full Movement	Right-In, Right-Out	Parcel Line	"C" Conditional	Proposed Principal Arterial	
Frontage Road Full Movement	Close Existing Access Point	Alternate Route (Conceptual)	"R" Residential Access	Proposed Minor Arterial	
Milepost	Existing Signalized Intersection	Delta City Boundary	"F" Field Access	Proposed Collector	
		Orchard City Boundary	"D" Ditch	Collector	
				Proposed Alley	
				Proposed Local Street	



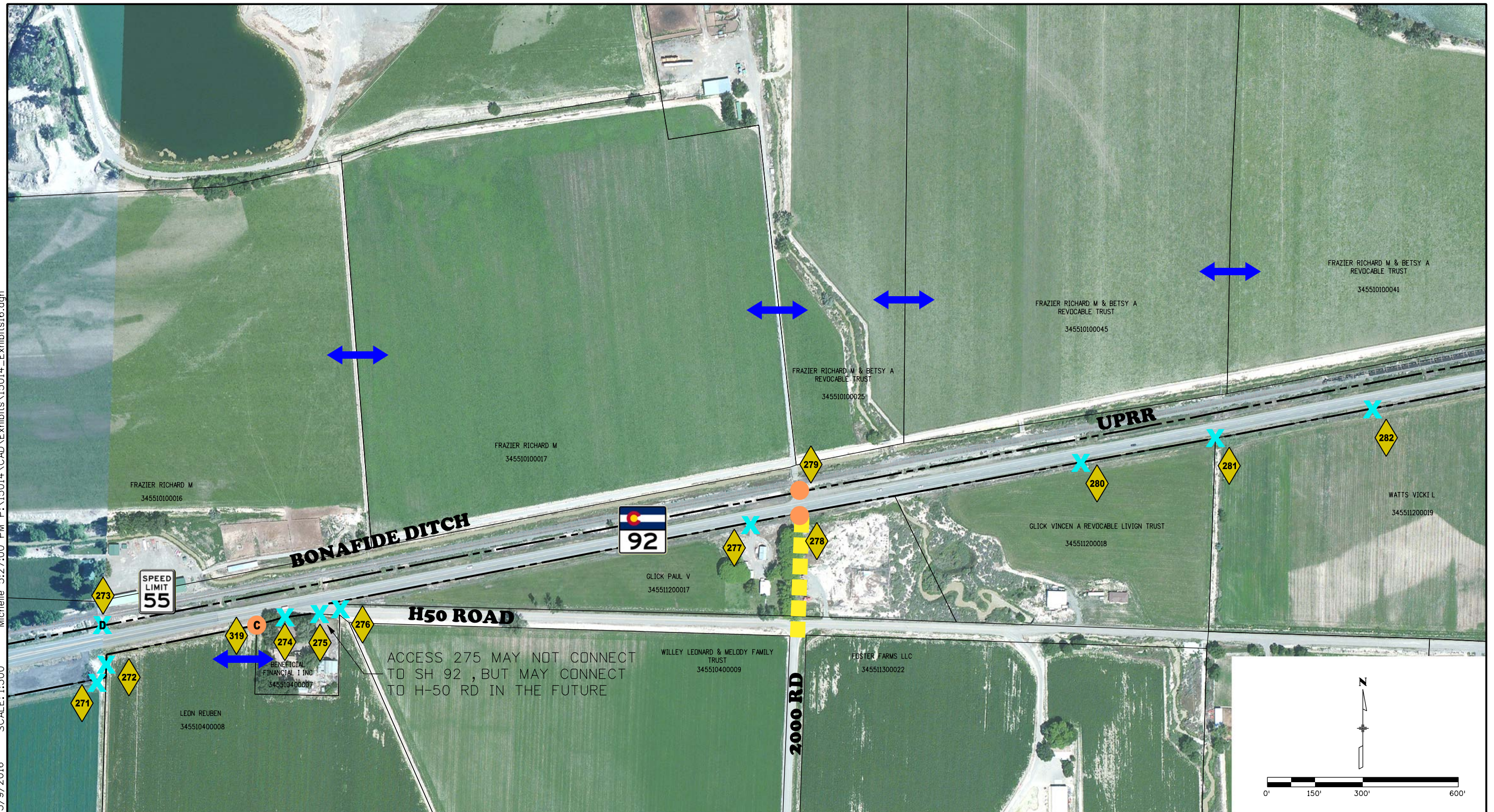
**US 50 & SH 92 ACCESS EXHIBIT**  
**15 OF 19**  
**FIGURE 20**  
**PAGE 43**  
**RP 3.22 TO RP 4.0**







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<b>LEGEND:</b>	Access Point	3/4 Movement Left-In	Cross Access for Shared Access Point	Highway Right of Way	Principal Arterial
Full Movement	Right-In, Right-Out	Parcel Line	Access Control Line	Proposed Principal Arterial	
Frontage Road Full Movement	Close Existing Access Point	Alternate Route (Conceptual)	"C" Conditional	Proposed Minor Arterial	
Milepost	Existing Signalized Intersection	Delta City Boundary	"R" Residential Access	Proposed Collector	
		Orchard City Boundary	"F" Field Access	Collector	
			"D" Ditch	Proposed Alley	
				Proposed Local Street	

**US 50 & SH 92 ACCESS EXHIBIT**  
**16 OF 19**

**FIGURE 2P** **PAGE 44**

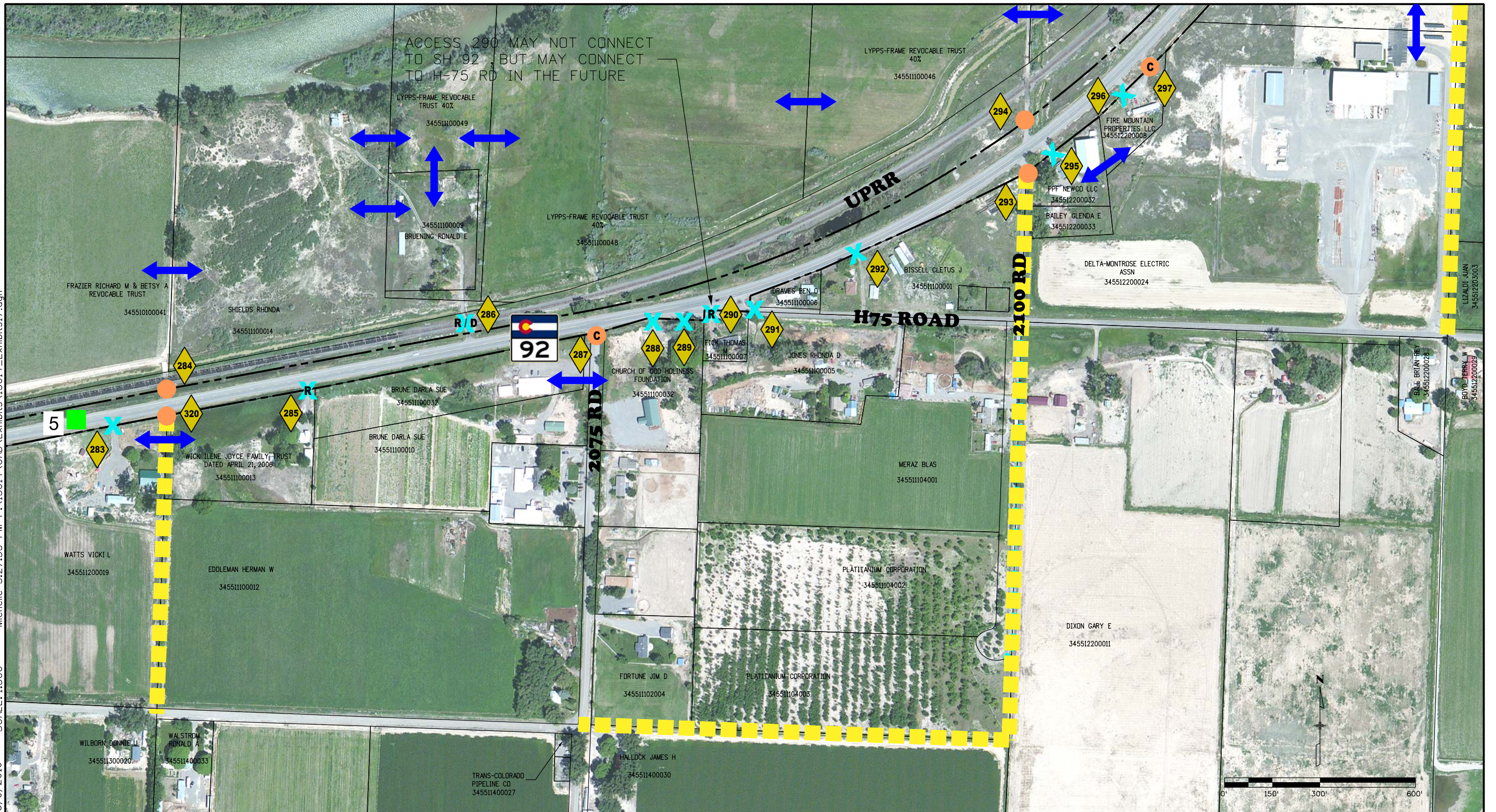
**RP 4.0 TO RP 4.9**







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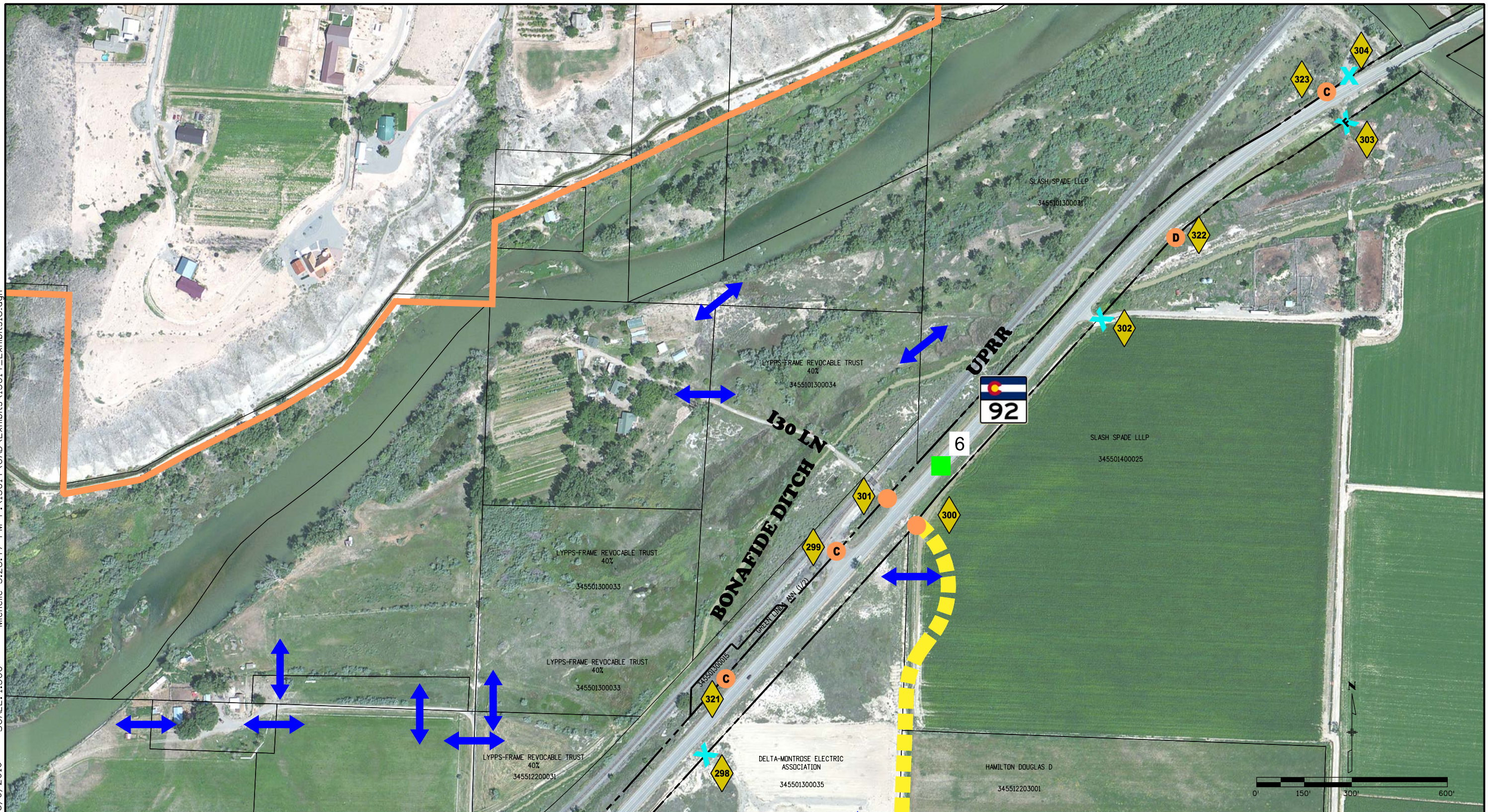
<b>LEGEND:</b> ## Access Point Full Movement Frontage Road Full Movement Milepost	3/4 Movement Left-In Right-In, Right-Out Close Existing Access Point Existing Signalized Intersection	Cross Access for Shared Access Point Parcel Line Alternate Route (Conceptual) Delta City Boundary Orchard City Boundary	Highway Right of Way Access Control Line "C" Conditional "R" Residential Access "F" Field Access "D" Ditch	Principal Arterial Proposed Principal Arterial Proposed Minor Arterial Proposed Collector Collector Proposed Alley Proposed Local Street	 COLORADO Department of Transportation 	<b>US 50 &amp; SH 92 ACCESS EXHIBIT</b> <b>17 OF 19</b> <b>FIGURE 2Q</b> <b>RP 4.9 TO RP 5.7</b>	<b>PAGE 45</b> 
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<b>LEGEND:</b>					
## Access Point	3/4 Movement Left-In	↔ Cross Access for Shared Access Point	—A— Access Control Line	Principal Arterial	
Full Movement	Right-In, Right-Out	Parcel Line	"C" Conditional	Proposed Principal Arterial	
Frontage Road Full Movement	Close Existing Access Point	Alternate Route (Conceptual)	"R" Residential Access	Proposed Minor Arterial	
Milepost	Existing Signalized Intersection	Delta City Boundary	"F" Field Access	Proposed Collector	
		Orchard City Boundary	"D" Ditch	Collector	
				Proposed Alley	
				Proposed Local Street	



**US 50 & SH 92 ACCESS EXHIBIT**  
**18 OF 19**  
**FIGURE 2R**  
**RP 5.8 TO RP 6.4**

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<b>LEGEND:</b> ## Access Point Full Movement Frontage Road Full Movement Milepost	3/4 Movement Left-In Right-In, Right-Out Close Existing Access Point Existing Signalized Intersection	Cross Access for Shared Access Point Parcel Line Alternate Route (Conceptual) Delta City Boundary Orchard City Boundary	Highway Right of Way Access Control Line "C" Conditional "R" Residential Access "F" Field Access "D" Ditch	Principal Arterial Proposed Principal Arterial Proposed Minor Arterial Proposed Collector Collector Proposed Alley Proposed Local Street	COLORADO Department of Transportation City of DELTA	<b>US 50 &amp; SH 92 ACCESS EXHIBIT</b> <b>19 OF 19</b> <b>FIGURE 2S</b> <b>PAGE 47</b> <b>RP 6.4 TO RP 6.938</b> 
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**Falcon Road/Frontage Road to 1250 Road (Figure 2D & 2E)**

A four-legged full movement intersection with potential for signalization, if warranted, will be provided at Falcon Road/Frontage Road and 1250 Road. It is recommended that the City extend the planned parallel collector road on the north side of US 50 to 1250 Road in their Master Street Plan. A  $\frac{3}{4}$  movement at Access #12 is conditional upon a public connection at that location, i.e. realignment of Alkali Basin Road. If the access remains private, a right-in/right-out will be provided. In addition, Access #10 will remain right-in/right-out until Alkali Basin is realigned, at which time the access will close. Access and circulation will be enhanced for the north side if opportunities arise to cross the existing drainage and connect Alkali Basin Road with Falcon Road.

Access #11 is conditional and will close when access from the Delta Triangle parcel to H25 Road is available. Access for other parcels in this segment shall be reduced to one location per ownership, shared where feasible and shall be limited or relocated to alternative routes/cross streets. Cross-access for properties with proposed shared access on both sides of US 50 is required as properties redevelop.

**1250 Road to 1525 Road (Figure 2E – 2H)**

Four-legged full movement intersections with potential for signalization, if warranted, are provided at approximate  $\frac{1}{2}$  mile intervals at the following existing or proposed roadways:

- 1250 Road
- 1325 Road
- 1375 Lane
- Proposed Minor Arterial at Access #47/48
- Proposed Roadway at Access #60/63
- 1525 Road

In addition,  $\frac{3}{4}$  movement intersections are provided for public road connections at approximate  $\frac{1}{4}$  mile intervals for the following existing or proposed roadways<sup>1</sup>:

- Proposed Minor Arterial at Access #143
- 1355 Lane/Access #29
- 1400 Road
- Proposed Local Road at Access #40
- Proposed Collector at Access #52/53
- Proposed Collector at #147
- 1500 Ct

Locations of full movement intersections and  $\frac{3}{4}$  movement public road access points are consistent with the City's Master Street Plan. Additional roadway connections are recommended with the Access Plan to improve circulation as properties redevelop. In particular, a parallel east-west connection is identified on the south side of US 50 to provide for circulation between full movement intersections. The plan shows the alignment following the Hartland Ditch, but the exact alignment may vary depending on land use, topography, and other design elements.

Access for other parcels in this segment shall be reduced to one location per ownership, shared where feasible and shall be limited or relocated to alternative routes/cross streets. Several access points are identified as conditional. These access points will close when alternative

<sup>1</sup> The project team determined that one quarter mile spacing for the listed  $\frac{3}{4}$  movement intersections was appropriate for anticipated future land use and associated operational conditions.

access to the proposed local road system is available. In particular, several access points on the north side of US 50 will close once the parallel east-west collector route north of US 50 is available. Cross-access for properties with proposed shared access on both sides of US 50 is required as properties redevelop.

#### **1525 Road to H38/1565 Road (Figure 2I)**

A four-legged full movement intersection with potential for signalization, if warranted, will be provided at 1525 Road. A full movement signalized intersection will remain at H38 Road/1565 Road. The configuration of 1575 Road and H38 Road near the US 50 intersection may create conflicts and delay in the future. It is recommended that the City investigate long-term options for the 1575 Road/H38 Road intersection, which could include access management, realignment, or alternative intersection configurations.

A  $\frac{3}{4}$  movement is provided for public road connections at 1550 Road and 1560 Road. Access for other parcels in this segment shall be reduced to one location per ownership, shared where feasible and shall be limited or relocated to alternative routes/cross streets. Several access points are identified as conditional. These access points will close when alternative access to the proposed local road system is available. Cross-access for properties with proposed shared access on both sides of US 50 is required as properties redevelop.

There are several small parcels on the south side of US 50 between 1525 Road and 1550 Road with a number of closely spaced access points. These access points shall be limited to right-in/right-out. As redevelopment occurs through this segment, right-in/right-out access will be shared between properties and cross-access agreements will be required. In addition, it is recommended that the City add a back access alley circulator route to the City's Master Street Plan to provide access to the full movement and  $\frac{3}{4}$  movement intersections at 1525 Road and 1550 Road for these properties in the long-term. When the back access alley is available, access points to US 50 designated as conditional will close.

Access points shown to remain on the north side of US 50 between H50 Road and H38 Road are consistent with A-line opening locations.

#### **H38/1565 Road to the Gunnison River Crossing (Figure 2I & 2J)**

A full movement signalized intersection will remain at H38/1565 Road. A four-legged full movement intersection with potential for signalization, if warranted, is provided at G96 Lane. Potential alternative local circulation routes are recommended on the east side of US 50 as redevelopment occurs, providing alternatives for properties with restricted access to US 50. If alternative routes are not available, left turn movements will be served by u-turn movements at full movement intersections.

A  $\frac{3}{4}$  movement is provided for public road connections at 1565 Road and G86 Lane. The  $\frac{3}{4}$  movement at 1565 Road is conditional and may be further restricted if additional storage is required at G96 Lane or safety issues develop. Access for other parcels in this segment shall be reduced to one location per ownership, shared where feasible and shall be limited or relocated to alternative routes/cross streets. Cross-access for properties with proposed shared access on both sides of US 50 is required as properties redevelop.

Access points shown to remain on the east side of US 50 along the existing A-line are consistent with locations of A-line openings or breaks. On the west side of US 50 between G96 Lane and G86 Lane, there are several access points that cross the highway ROW, but do not have driveways that cross the curb and gutter. For the purpose of this plan, it is recognized that



all access points that cross the ROW will be closed upon redevelopment with the exception of those access points specifically identified in the plan.

***Gunnison River crossing to SH 92 (Figure 2K)***

Full movement signalized intersections will be maintained at Confluence Drive and SH 92. Access for other parcels in this segment shall be reduced to one location per ownership, shared where feasible and shall be limited or relocated to alternative routes/cross streets. Cross-access for properties with proposed shared access on both sides of US 50 is required as properties redevelop. In particular, Ute Street and the access to City Market will be restricted to right-in/right-out with redevelopment or if safety or operational issues develop. Long-term, the storage required for left turn movements between Confluence Drive and SH 92 is projected to exceed the space available between the intersections. Existing and proposed circulation routes to Confluence Drive provide alternatives for these access points when left turn movements are restricted.

**SH 92*****US 50 to Henry Street (Figure 2K)***

A full movement signalized intersection will remain at US 50. A four-legged full movement intersection with potential for signalization, if warranted, will be provided at Henry Street. Several alternatives were considered for the location of the next traffic signal east of US 50. Henry Street was selected as the preferred location for the following reasons:

- Intersection spacing for operations and signal timing on US 50 and the side streets
- Increased access options on US 50 – the spacing between US 50 and Henry Street provides opportunities to provide an additional  $\frac{3}{4}$  movement access point at Grand Avenue between signals.
- Compatibility with the City's Master Street Plan on the north side of SH 92, including the opportunity to provide a secondary option to connect US 50 and SH 92.
- Improved access opportunities for properties on the north side of SH 92 across the railroad upon redevelopment
- Compatibility with existing railroad crossing location

It is recommended that the Henry Street intersection be realigned perpendicular to the highway directly across from Access #217. In addition, it is recommended that Henry Street be realigned to provide continuous movement to Crawford Avenue. The west side of Crawford Avenue would tee into the realigned Henry Street/Crawford Avenue alignment.

A  $\frac{3}{4}$  movement is provided for Grand Avenue and Access #311. Access for other roadways in this segment shall be restricted to right-in/right-out when operational or safety issues develop. Access for other parcels in this segment shall be reduced to one location per ownership, shared where feasible and shall be limited or relocated to alternative routes/cross streets. Cross-access for properties with proposed shared access on both sides of SH 92 is required as properties redevelop.

***Henry Street to Heinz Street (Figure 2K)***

A four-legged full movement intersection with potential for signalization, if warranted, will be provided at Henry Street and Heinz Street. Access for other roadways in this segment shall be restricted to right-in/right-out when operational or safety issues develop. Access for other parcels in this segment shall be reduced to one location per ownership, shared where feasible and shall be limited or relocated to alternative routes/cross streets. Cross-access for properties with proposed shared access on both sides of SH 92 is required as properties redevelop.

Accesses #223 and #225 are conditional and will close when alternative access to either #217 or #313. The UPRR would likely prefer and, if possible, may require eliminating railroad crossings at Accesses #223 and #225 prior to making Access #217 and/or Access #313 public.

**Heinz Street to Stafford Lane/1675 Road (Figure 2L)**

A four-legged full movement intersection with potential for signalization, if warranted, will be provided at Heinz Street and a full movement signalized intersection will remain at Stafford Street/1675 Road. A conditional unsignalized full movement intersection is provided at Circle Drive. If safety or operational issues develop at this location, Circle Drive will be restricted further. As discussed in Section 3.6, the Safety Assessment conducted by CDOT for this study identified a broadside accident pattern at this location. In the five-year study period, there were three broadside accidents involving northbound vehicles failing to yield right-of-way before crossing SH 92 and colliding with eastbound SH 92 vehicles. It is recommended that the intersection be monitored and if the crash pattern persists, the City and CDOT should consider restricting left-out movements from Circle Drive.

A conditional  $\frac{3}{4}$  movement is identified at Access #241 to the Safeway. If safety or operational issues develop at this location or at adjacent full movement intersections, Access # 241 may be restricted to right-in/right-out. Access for other parcels in this segment shall be reduced to one location per ownership, shared where feasible and shall be limited or relocated to alternative routes/cross streets. Cross-access for properties with proposed shared access on both sides of SH 92 is required as properties redevelop.

**Stafford Lane/1675 Road to 1800 Road (Figure 2L – 2N)**

A full movement signalized intersection will remain at Stafford Lane/1675 Road. A four-legged full movement intersection with the potential for signalization, if warranted is provided at 1800 Road. This is consistent with the City's Master Street Plan and County's Master Road Plan for 1800 Road. A four-legged full movement intersection with potential for signalization, if warranted, is also provided at a realigned 1725 Road (Access #245 and #317) to meet project goals for out of direction travel. Realignment of 1725 Road is recommended upon redevelopment to intersect SH 92 perpendicularly since the existing angle of 1725 Road is awkward for turning movements and sight distance. In order to create a single four-legged intersection with the realigned 1725 Road, Access #248 should be closed in favor of a new access at Access #245 directly across from Access #317 upon redevelopment.

A conditional unsignalized full movement intersection is provided at Industrial Boulevard. If safety or operational issues develop at this location, Industrial Boulevard will be restricted further. Access for other parcels in this segment shall be reduced to one location per ownership, shared where feasible and shall be limited or relocated to alternative routes/cross streets. Cross-access for properties with proposed shared access on both sides of SH 92 is required as properties redevelop. Access points marked with an "F" will not be closed unless the land use changes. If the access point remains a "field" access, it will remain.

**1800 Road to SH 65 (Figure 2N & 2O)**

A four-legged full movement intersection with potential for signalization, if warranted, will be provided at 1800 Road and SH 65. This is consistent with the City's Master Street Plan and County's Master Road Plan for 1800 Road and SH 65. The County is working toward an alignment that will connect SH 92 at the junction of SH 65 to US 50 near the Delta-Montrose Technical College. Upon the development of the south leg of SH 65, the 1900 Road access to US 50 (Access #265) will be closed. 1900 Road is expected to remain open, but direct access to the highway will be eliminated due to the proximity of the intersection to SH 65.



A full movement intersection with potential for signalization, if warranted, is also provided on the south side of SH 92 at Access #318 to meet project goals for out of direction travel. An access point is not provided on the north side opposite of Access #318 due to the railroad. Properties on the north side of the railroad have access via the existing County Road system.

Access for other parcels in this segment shall be reduced to one location per ownership, shared where feasible and shall be limited or relocated to alternative routes/cross streets. Cross-access for properties with proposed shared access on both sides of SH 92 is required as properties redevelop. Access closures marked with a "D" are conditional upon ditch maintenance needs. These access points will remain until alternate access is available to maintain the Bonafide Ditch. Right-in/right-out access points marked with a "D" are conditional upon the continued use of the ditch. These access points will be closed if the Bonafide Ditch is no longer in use or no longer requires maintenance at this location.

#### **SH 65 to 2000 Road (Figure 2O & 2P)**

A four-legged full movement intersection with potential for signalization, if warranted, will be provided at SH 65 and 2000 Road. The non-standard skew of H50 Road with SH 92 creates awkward conditions for turning movements and sight distance. The plan calls for eliminating the H50 Road intersection and replacing it by extending 2000 Road to intersect SH 92 directly across from the existing railroad crossing at Access #279. 2000 Road should be designed to intersect SH 92 perpendicularly. When the 2000 Road realignment is complete, the H50 Road access point at Access #276 will be closed. H50 Road is expected to remain open and direct private access to H50 Road may be provided, but direct access between H50 Road and SH 92 will be eliminated due to the skew of the intersection. If safety or operational issues develop at H50 Road prior to the development of the 2000 Road extension, the County and CDOT may want to consider an interim condition that would improve the skew of H50 Road.

Access for other parcels in this segment shall be reduced to one location per ownership, shared where feasible and relocated to alternative routes/cross streets where feasible. Cross-access for properties with proposed shared access on both sides of SH 92 is required as properties redevelop. Full movement intersections marked with a "C" for conditional will remain unsignalized and may require restrictions if safety or operational issues develop in the future. Access closures marked with a "D" are conditional upon ditch maintenance needs. These access points will remain until alternate access is available to maintain the Bonafide Ditch.

#### **2000 Road to 2100 Road (Figure 2P & 2Q)**

A four-legged full movement intersection with potential for signalization, if warranted, will be provided at 2000 Road and 2100 Road. Similar to H50 Road, the non-standard skew of H75 Road with SH 92 creates awkward conditions for turning movements and sight distance. The plan calls for eliminating the H75 Road intersection and replacing it by extending 2100 Road to intersect SH 92 directly across from the existing railroad crossing at Access #294. 2100 Road should be designed to intersect SH 92 perpendicularly. When the 2100 Road realignment is complete, the H75 Road access point at Access #291 will be closed. H75 Road is expected to remain open and direct private access to H75 Road may be provided, but direct access between H75 Road and SH 92 will be eliminated due to the skew of the intersection. If safety or operational issues develop at H75 Road prior to the development of the 2100 Road extension, the County and CDOT may want to consider an interim condition that would improve the skew of H75 Road.

A full movement intersection with potential for signalization, if warranted, is also provided at Access #320 and #284 to meet project goals for out of direction travel. Access for other parcels

in this segment shall be reduced to one location per ownership, shared where feasible and relocated to alternative routes/cross streets where feasible. Cross-access for properties with proposed shared access on both sides of SH 92 is required as properties redevelop. Full movement intersections marked with a “C” for conditional will remain unsignalized and may require restrictions if safety or operational issues develop in the future. Access closures marked with a “D” are conditional upon ditch maintenance needs. These access points will remain until alternate access is available to maintain the Bonafide Ditch. Access points marked with an “R” will not be closed unless the land use changes from one single family home to multiple homes or another land use type. If the access point remains a residential access for one single family home, it will remain.

### **2100 Road to 2200 Road/Austin Road (Figure 2Q – 2S)**

A four-legged full movement intersection with potential for signalization, if warranted, will be provided at 2100 Road and 2200 Road/Austin Road. A full movement intersection with potential for signalization, if warranted, is also provided at Access #300 and #301 to meet project goals for out of direction travel. New intersections should be perpendicular to SH 92.

Access for other parcels in this segment shall be reduced to one location per ownership, shared where feasible and relocated to alternative routes/cross streets where feasible. Cross-access for properties with proposed shared access on both sides of SH 92 is required as properties redevelop. Full movement intersections marked with a “C” for conditional will remain unsignalized and may require restrictions if safety or operational issues develop in the future. Access #322 marked with a “D” is conditional upon ditch maintenance needs. Access #322 will be developed when Access #302 is closed if maintenance access for the Bonafide Ditch is still required at this location. Access points marked with an “F” will not be closed unless the land use changes. If the access point remains a “field” access, it will remain.

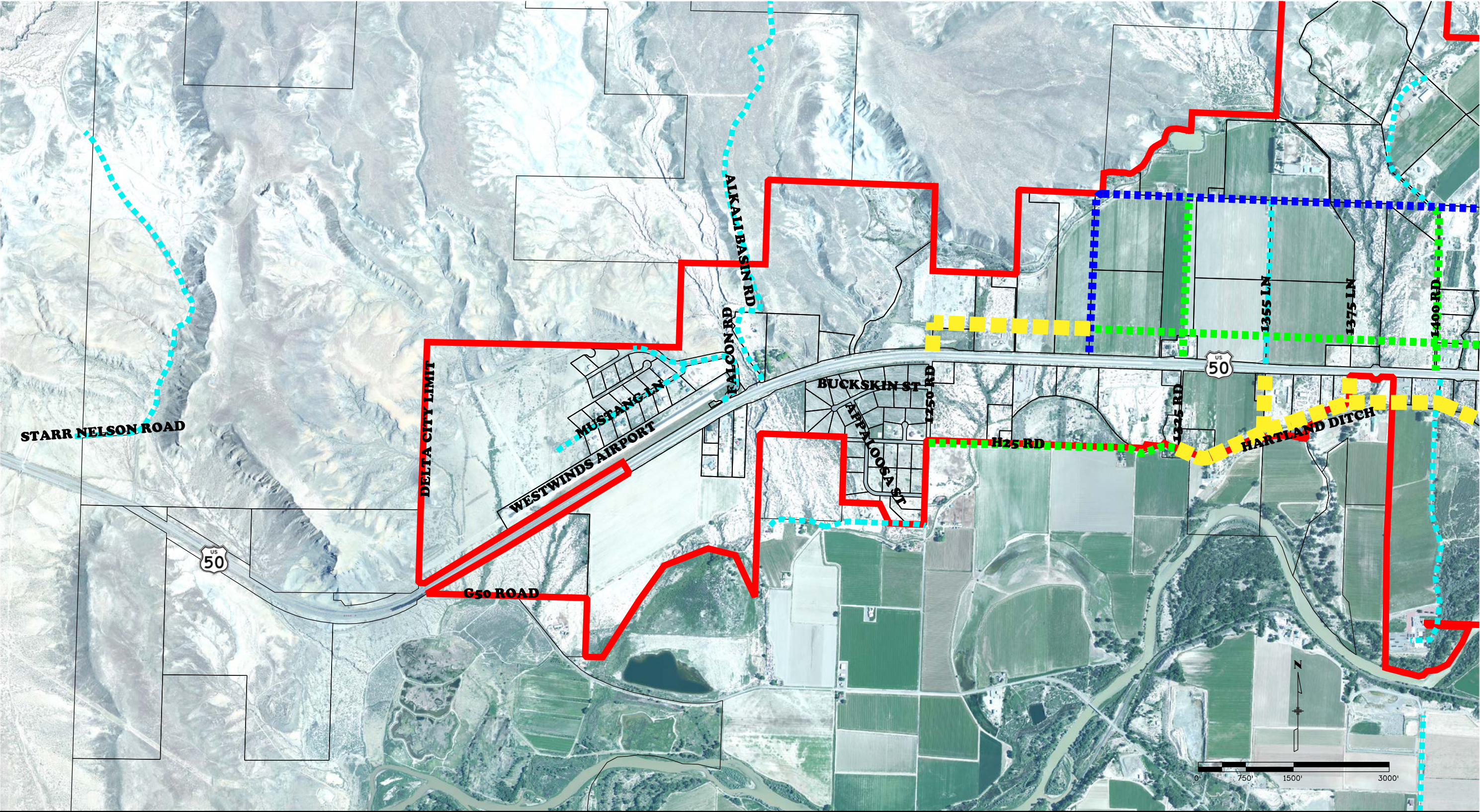
## **7.2 Other Recommended Improvements**

In support of the recommended access modifications, development of several alternative local routes is also recommended. These alternative routes provide additional local connections and internal circulation opportunities that will benefit operations on US 50 and SH 92 by reducing local dependence on the highway, providing alternatives that support restricted turning movements on the highways, and reducing demand at intersections that are already experiencing high demand. The proposed street network illustrated in Figures 3A-3C accomplishes these goals. The routes illustrated in the plan are conceptual in nature and will require detailed engineering to establish exact alignments at the time of implementation. It should be noted that some access improvements require development of alternative routes prior to implementation.

The City and County have already recognized many of these routes and connections in their Master Street Plan and Master Road Plan, respectively. The following additional connections have been identified:

- Realignment of Alkali Basin Road
- Extension of parallel east-west collector north of US 50 to Access #16
- Extension of 1355 Lane on south side of US 50
- 1375 Lane (both sides of US 50)
- Parallel east-west roadway south of US 50 between 1325 Road and 1500 Ct
- Extension of north-south roadway on south side of US 50 at Access #48
- Extension of north-south roadway on south side of US 50 at Access #53





**LEGEND:**

- Parcel Line
- Delta City Boundary
- Orchard City Boundary

- Principal Arterial
- Proposed Principal Arterial
- Proposed Minor Arterial
- Proposed Collector

- Collector
- Proposed Alley
- Proposed Local Street
- Alternate Route (Conceptual)

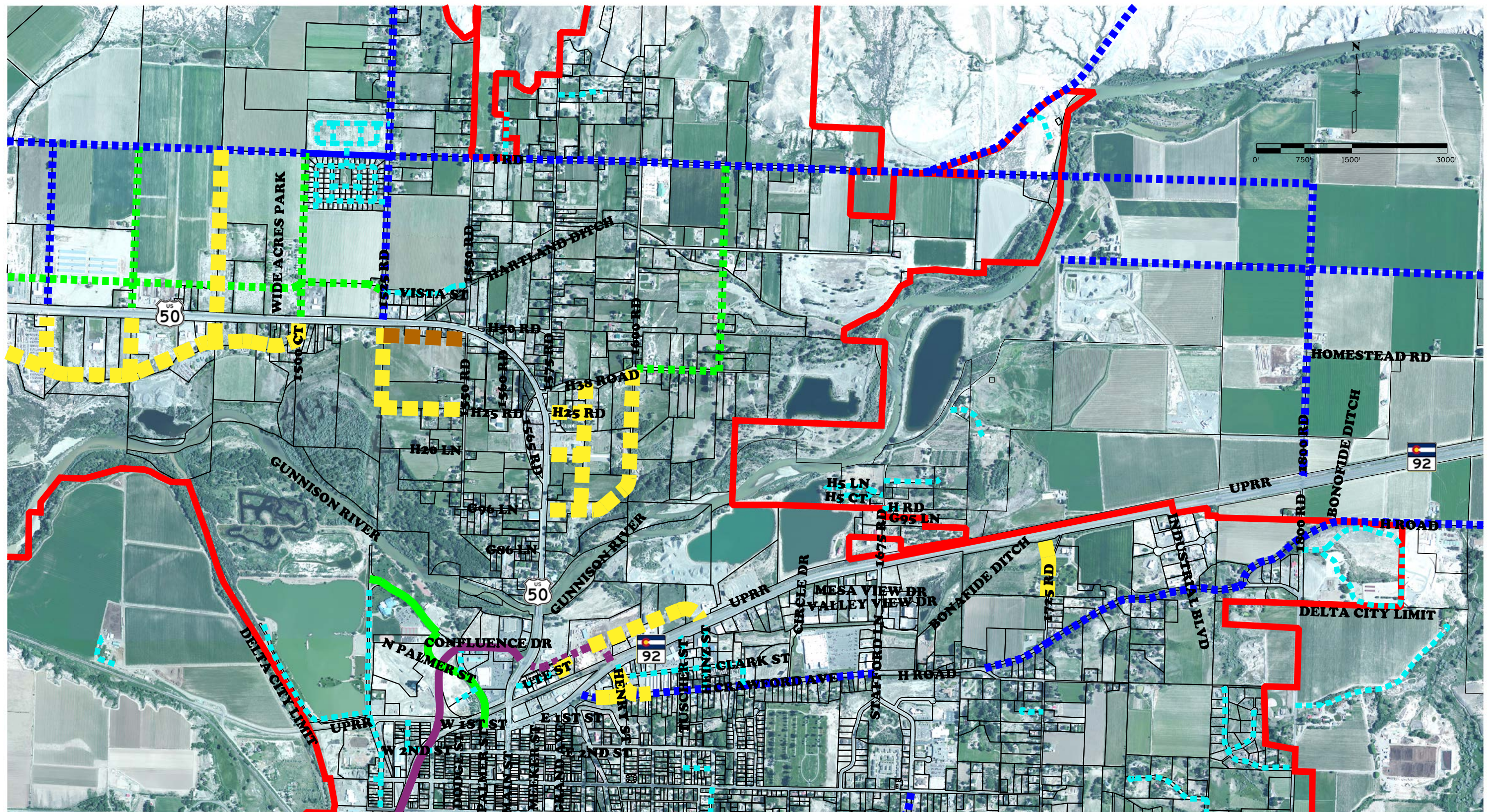


**US 50 & SH 92  
ALTERNATE ROUTES  
EXHIBIT 1 OF 3**









**LEGEND:**

- Parcel Line
- Delta City Boundary
- Orchard City Boundary

- Principal Arterial
- Proposed Principal Arterial
- Proposed Minor Arterial
- Proposed Collector

- Proposed Alley
- Proposed Local Street
- Alternate Route (Conceptual)



**US 50 & SH 92  
ALTERNATE ROUTES  
EXHIBIT 2 OF 3**

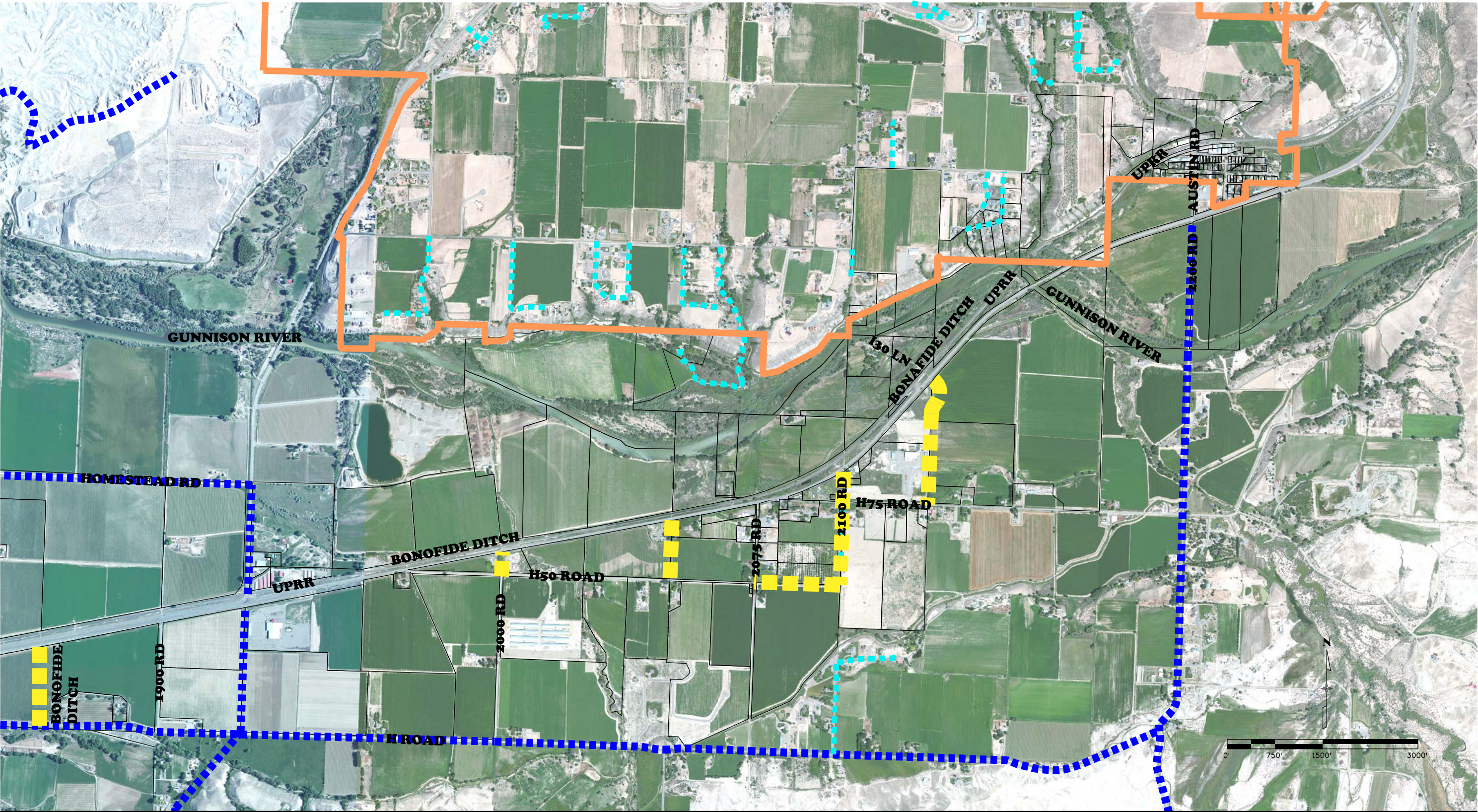
**FIGURE 3B**

**PAGE 55**









**LEGEND:**

- Parcel Line
- Delta City Boundary
- Orchard City Boundary

- |                             |                              |
|-----------------------------|------------------------------|
| Principal Arterial          | Collector                    |
| Proposed Principal Arterial | Proposed Alley               |
| Proposed Minor Arterial     | Proposed Local Street        |
| Proposed Collector          | Alternate Route (Conceptual) |



**US 50 & SH 92  
ALTERNATE ROUTES  
EXHIBIT 3 OF 3**







- North-south roadway on both sides of US 50 at Access #60 and 63
- Extension of 1500 Ct on the south side of US 50
- Extension of 1525 Road on south side of US 50
- Alley connection between 1525 Road and 1550 Road
- Extension of H25 Road to 1525 Road
- Extension of H25 Road to the east
- North-south connections between H38 Road and the Gunnison River
- East-west connection on east side of US 50 at Access #111
- Extension of G96 Lane on east side of US 50
- Extension of Confluence Drive east to Heinz Street
- Connection of Ute Street to proposed Confluence Drive Extension
- Reconfiguration of Henry Street and Crawford Avenue
- Realignment of 1725 Road
- North-south connection between SH 92 and H Road at Access #318
- Extension of 2000 Road
- North-south connection between SH 92 and H50 Road at Access #320
- Extension of 2100 Road
- Extension of H50 Road to 2100 Road
- North-south connection between SH 92 and H75 Road at Access #300

The adoption of these additional road connections into the City's Master Street Plan and the County's Master Road Plan is recommended. It is anticipated that the majority of these routes would be accomplished in phases when redevelopment occurs.

In support of alternate modes, the Plan also considered pedestrian/bicycle access. While the City and County have not identified specific plans for pedestrian/bicycle improvements within the study area, the City's Comprehensive Master Plan identifies improved pedestrian and bicycle improvements within Policy 1 of their Transportation Section. The Access Plan supports this policy with the accommodation of pedestrian and bicycle crossings at full movement intersections with potential for signalization throughout the corridors. As intersections are improved and sidewalk is added throughout the corridors, pedestrian crossings should be implemented.

Given the lack of existing transit operations and limited plans for transit in the area, transit was not largely considered in the development of the Plan. The Access Plan does not preclude development of local transit service in the future.

## 8.0 IMPLEMENTATION

The improvements recommended in the Access Study represent a long-range plan to implement over time as traffic and safety needs arise and as funding becomes available. Construction of the improvements recommended may be completed using public and/or private funding. The following cases will trigger construction.

1. A property redevelops or changes use, resulting in an increase in traffic to and from the site of 20% or more. In this case, limited improvements at the specific access point may be required by CDOT. As part of the City's and County's development review process, additional transportation improvements may also be necessary to address specific traffic-related impacts created by the development. These improvements will be compatible with the Access Plan. In addition, upon redevelopment, the City and County will require property owners to provide legally defined cross-access easements for shared access points, as defined by the Access Plan. If a property does not redevelop, the property owner will not be required to construct access modifications. (Private Funding).
2. The City and/or County obtain funding to complete improvements to a segment of the US 50 corridor, a segment of the SH 92 corridor, or a local route. (Public Funding)
3. State and/or Federal Funding are obtained to complete improvements to a segment of the US 50 or SH 92 corridors. Typically, a project will be identified in the Statewide Transportation Improvement Program (STIP) to obtain funding. (Public Funding)
4. A safety or operational issue develops that can be mitigated through the implementation of access management techniques consistent with the Access Plan. Depending on the extent and type of safety or operational issue, improvements may address a segment of the US 50 corridor, a segment of the SH 92 corridor, or a local route, or may be limited to an isolated location or access point. Public funding from any combination of agencies may be obtained to construct improvements. (Public Funding)
5. Any combination of 1, 2, 3, or 4.

Under case 1, a property owner must follow the access permit process as defined by Section 2 of the *State of Colorado State Highway Access Code, latest edition*. CDOT will remain the issuing authority for US 50 and SH 92. In short, the process requires property owners to submit an application for an access permit. Once the access permit is issued, construction plans for permitted improvements must be developed and submitted to CDOT for review. A Notice to Proceed will be issued following acceptance of the Construction Documents by CDOT, thereby allowing the applicant to proceed with construction. As determined by the CDOT Permit Unit, access permits may allow for construction of interim conditions and define requirements for future conditions that match the Access Control Plan depending upon individual circumstances specific to each permit.

Under case 2, the City and/or County may obtain funds either through local government budgeting, application for grant monies, or other potential funding sources. Once funding is available, the City and/or County will work through the CDOT planning process to develop a highway improvement project. The project will follow the process and procedures for design, construction, and management detailed in CDOT's Local Agency Manual. If a City/County project is developed off of the State Highway System, for instance, completion of an alternate local route that does not intersect with US 50 or SH 92, CDOT will not be involved in the project.



The City and/or County will administer the project according to City and/or County standards and procedures.

Under case 3, a project receiving State and/or Federal funds must be identified in the STIP. In Colorado, six years of transportation projects and their funding sources must be identified in the STIP. The STIP is updated every four years through a continuing, comprehensive and cooperative process involving the CDOT, FHWA, Federal Transit Administration (FTA), Metropolitan Planning Organizations (MPOs), Transportation Planning Regions (TPRs), and City and County Governments. Projects within the study area in Delta and Delta County are established in the STIP by request of the Gunnison Valley TPR. The STIP was most recently updated and adopted in May, 2015, but may be amended as needed in accordance with the STIP Amendment Guidelines. Currently, the STIP includes a safety project on SH 92 just outside the project limits between Austin and Hotchkiss, but there are no projects identified in the project limits for SH 92 or US 50. The Gunnison Valley TPR 2035 Regional Transportation Plan, adopted in January 2008, identifies US 50 between Grand Junction and Montrose as a medium priority corridor, focusing on system quality. SH 92 between Delta and Hotchkiss is identified as a high priority corridor, focusing on safety. Strategies identified for SH 92 include some access management techniques indicating potential for future projects on SH 92 to be added to the STIP; however, State funding is extremely limited at this time and no other future projects have been identified. Similar to case 2, once funding is available, a project will follow CDOT's relevant process and procedures.

Under case 4, any agency may identify a safety or operational issue along the corridor through a crash pattern, complaints, observation or other manner. A single agency or partnership of agencies may obtain funding to implement access management techniques that are consistent with the Plan and specifically address the issue. Depending on who the lead agency is for the project, the project may be administered through the local agency process, as described in case 2, or through CDOT's process, as described in case 3.

Detailed engineering drawings of exact roadway alignments and access improvements will be required as project funding is identified. Details related to storm drainage, utilities, landscaping, environmental issues, pedestrian/bicycle facilities, roadway sections, and other topographic features will be considered during this design process. Environmental evaluations appropriate to the size, type, and funding of the project will be completed as part of the design phase.

To provide for continued commitment to the access modifications recommended by this study, the City, County and CDOT have executed an IGA to adopt this Access Plan as an Access Control Plan for the segment of US 50 between Starr Nelson Road (RP 63.586) and SH 92 (RP 70.919) and for the segment of SH 92 between US 50 (RP 0.000) and 2200 Road/Austin Road (RP 6.938). The Access Control Plan identifies access locations and levels of access by reference point for US 50 and SH 92, within the project limits. In recognition of the plan's long-range nature and the potential for conditions to change over time, a critical element of the IGA is the definition of a process for plan modifications. Exhibit B to the IGA defines this process, which basically requires mutual agreement of the IGA parties on modifications to the plan. For the US 50 and SH 92 corridor, the process for administration of the plan shall be as described in the *State of Colorado State Highway Access Code, latest edition*. The Draft IGA, the Access Control Plan Table that will serve as Exhibit A, and Exhibit B are presented in Technical Appendices F and G.

## 9.0 LIST OF ACRONYMS

AASHTO = American Association of State Highway and Transportation Officials

ACP = Access Control Plan

ADT = Average Daily Traffic Volume (vehicles/day)

BA = Business Access

BOCC = Delta County Board of County Commissioners

CDOT = Colorado Department of Transportation

E-X = Expressway

FA = Field Access

FHWA = Federal Highway Administration

FTA = Federal Transit Administration

HCM = Highway Capacity Manual

IGA = Intergovernmental Agreement

LOS = Level of Service

MP = Milepost

MPO = Metropolitan Planning Organization

mph = Miles Per Hour

MUTCD = Manual on Uniform Traffic Control Devices

NR-A = Non-Rural Principal Highway

NR-B = Non-Rural Arterial

PRS = Public Road Signalized

PRU = Public Road Unsignalized

PUC = Colorado Public Utility Commission

PVRU = Private Road Unsignalized

R = Residential Access

R-A = Regional Highway

RP = Reference Point

ROW = Right-of-Way

RTP = Regional Transportation Plan

SH = State Highway

STIP = Statewide Transportation Improvement Program

TPR = Transportation Planning Region

UPRR = Union Pacific Railroad



## 10.0 GLOSSARY

**¾ Movement Access** - An access that is configured to accommodate partial movements (i.e. left-turn in or out, right-turn in, and right-turn out)

**Access** – Any driveway or other point of entry and/or exit such as a street, road or highway that connects to the general street system

**Access Category** – means one of eight categories described in Section Three of the State Highway Access Code, and determines the degree to which access to a state highway is controlled

**Access Control Line (A-line)** – A line, usually located at the right-of-way boundary, indicating the legal limitation of access along a section of highway

**Access Plan, Access Control Plan** – A plan which designates access locations and levels of access for the purpose of bringing those portions of roadway included in the planning area into conformance with the highway functional classification to the extent feasible

**Access Management** – Systematic control of the location, spacing, design, and operation of driveways, median openings, and street connections to a roadway

**Access Permit** – Means by which access improvements are reviewed, approved and constructed in accordance with the State Highway Access Code

**A-line Opening** – A break in the A-line delineating the location and width of a potential access point, if permitted by CDOT.

**Average Daily Traffic Volume (ADT)** – The total 24-hour volume of vehicular traffic at a particular location measured in vehicles per day

**Driveway** – An access that is not a public street, road, or highway

**Full Movement Access** – An access without turn restrictions

**Functional Intersection Area** – Area upstream and downstream of an intersection where intersection operation and conflicts influence driver behavior, vehicle operations, or traffic conditions.

**Intergovernmental Agreement (IGA)** – A legally-binding agreement between two or more governmental agencies

**Issuing Authority** – The entity responsible for issuing access permits for a segment of state highway. The board of county commissioners, the governing body of a municipality, or the department of transportation may be the Issuing Authority.

**Level-of-Service (LOS)** – An indication of the quality of traffic flow as measured by vehicle delays or travel speeds. Level-of-service grades range from LOS A (ideal traffic flow) to LOS F (heavily congested conditions). LOS D is typically considered an acceptable traffic condition during peak demand periods in urbanized locations.

**Median** – That portion of a highway separating opposing traffic flows

Right-in, Right-out – An access that is configured to accommodate only right-turns in and right-turns out

Right-of-way (ROW) – The entire width between the boundary lines of every way publicly maintained when any part thereof is open to the use of the public for purposes of vehicular travel

State Highway Access Code – A manual containing the access regulations that apply to state highways within Colorado

Turning Movement Count – A tally of the number of vehicles turning left, right, or traveling through an intersection