

El Paso County Department of Public Service -  
Transportation Division &  
Pikes Peak Rural Transportation Authority



December 2009

## Meridian Road (North) Corridor Plan

US 24 to Hodgen Road

for

El Paso County Department of Public Service -  
Transportation Division &  
Pikes Peak Rural Transportation Authority



prepared by

**URS**

December 2009

*This conceptual report has been prepared based on certain key assumptions made by URS that substantially affect its conclusions and recommendations. These assumptions are reasonable and appropriate and are based on background information, design bases, and other data furnished to URS by El Paso County and/or third parties. URS has relied on this information, as furnished, and is neither responsible for nor has confirmed its accuracy.*

*This report is based on data, site conditions, and other information that is generally applicable as of October 2008, and the conclusions and recommendations herein are therefore applicable only to that time frame.*



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Acronyms & Abbreviations

AASHTO	American Association of State Highway and Transportation Officials	LUST	Leaking Underground Storage Tank
ac	acre	MDDP	Master Development Drainage Plan
ADT	Average Daily Traffic	mph	miles per hour
AMP	Access Management Plan	MTCP	Major Transportation Corridors Plan
ASTM	American Society for Testing and Materials	MTTF	Major Thoroughfare Task Force
BFPP	Black Forest Preservation Plan	MVEA	Mountain View Electric Association
BIOTICS	Biodiversity Tracking and Conservation System	NA	Not Applicable
BMP	Best Management Practices	NB	Northbound
BR	Bridge	NEPA	National Environmental Policy Act
BS	Black Squirrel	NFRAP	No Further Remedial Action Planned
CBC	Concrete Box Culvert	NRCS	Natural Resources Conservation Service
CBR	California Bearing Ratio	OPS	Colorado Department of Labor and Employment, Division of Oil and Public Safety
CDOT	Colorado Department of Transportation	PCA	Potential Conservation Area
CDOW	Colorado Division of Wildlife	PMJM	Preble’s Meadow Jumping Mouse
CDPHE	Colorado Department of Public Health and Environment	PPACG	Pikes Peak Area Council of Governments
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System	PPRTA	Pikes Peak Regional Transportation Authority
cfs	cubic feet per second	psi	Pounds per square inch
CMP	Corrugated Metal Pipe	Q	Flow
CNHP	Colorado Natural Heritage Program	R-B	Rural Highway
CORRACTS	Corrective Action Report	RCBC	Reinforced Concrete Box Culvert
CPP	Corridor Preservation Plan	RCP	Reinforced Concrete Pipe
CSP	Corrugated Steel Pipe	RCRA	Resource Conservation and Recovery Act
DBPS	Drainage Basin Planning Study	Rd	Road
DCM	Drainage Criteria Manual	REC	Recognized Environmental Conditions
DOT	El Paso County Department of Transportation	RI/RO	Right-in/Right-out
EB	Eastbound	ROW	Right-of-way
ECM	Engineering Criteria Manual	RT	Right
EDR	Environmental Data Resources	SAP	Small Area Plan
ERNS	Emergency Response Notification System	SB	Southbound
ESAL	Equivalent Single Axle Loads	sec/veh	seconds per vehicle
FDOT	Florida Department of Transportation	SH	State Highway
FEMA	Federal Emergency Management Agency	SHPO	State Historic Preservation Office
FIRM	Flood Insurance Rate Maps	SPILLS	State reported hazardous waste spills database
FPCP	Falcon/Peyton Comprehensive Plan	SQG	Small Quantity Generator
ft	feet/foot	Sta	Station
HBP	Hot Bituminous Pavement	T&E	Threatened and Endangered Species
HCK	Highway Capacity Manual	TIS	Traffic Impact Study
HMA	Hot Mix Asphalt	TSDF	Treatment, Storage, and Disposal Facility
HOV	High Occupancy Vehicle	USACE	United States Army Corps of Engineers
in	inch	USDA	United States Department of Agriculture
kV	kiloVolt	USFWS	United States Fish and Wildlife Service
LAT	Lateral	USGS	United States Geological Survey
LGQ	Large Quantity Generator	UST/AST	Underground Storage Tank / Advanced Secondary (Wastewater) Treatment
LOS	Level of Service	VCP	Voluntary Cleanup Program
LP	Low Point	v/c	volume to capacity ratio
LT	Left	vph	vehicles per hour
		WB	Westbound

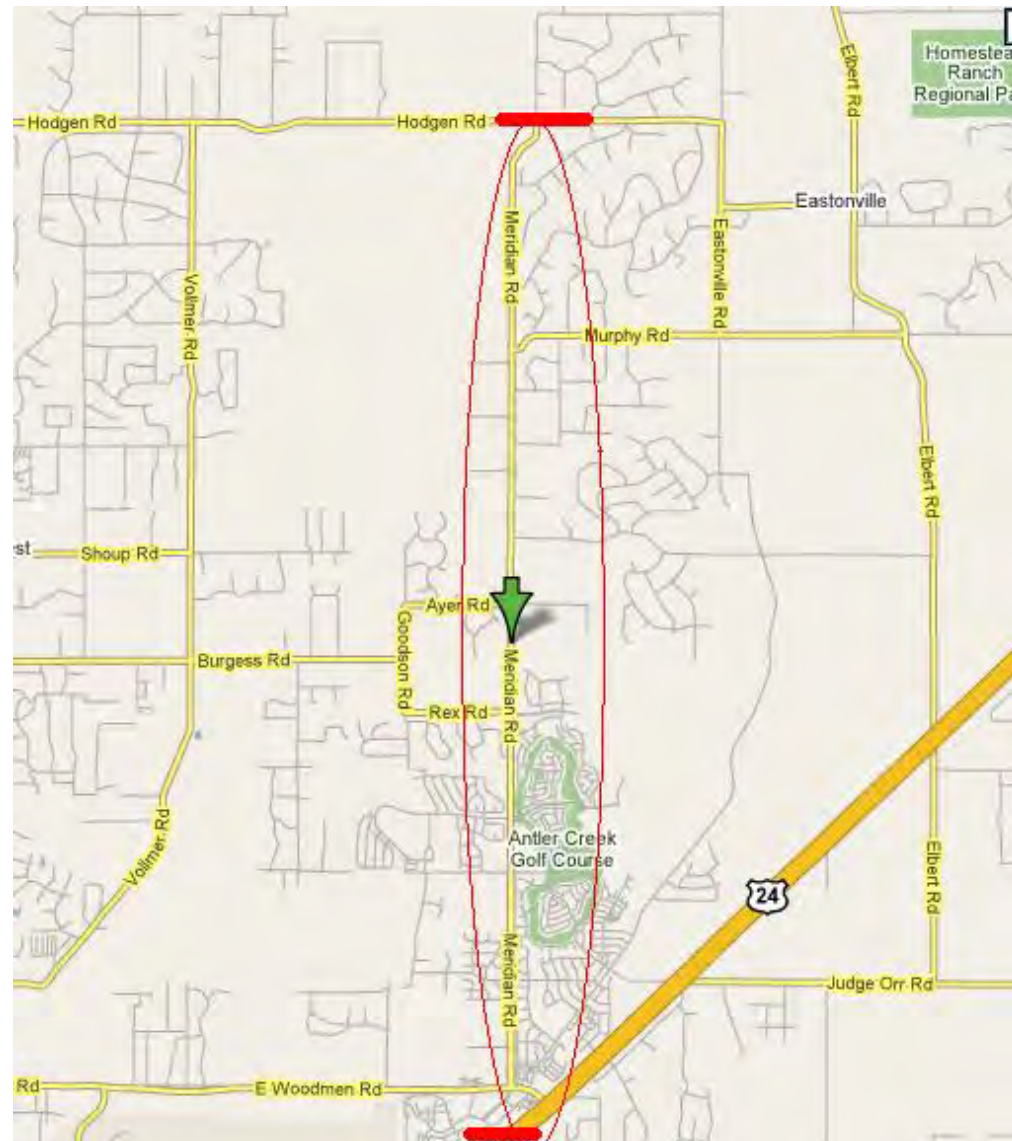
## 1.0 Introduction

### 1.1 Project Overview

The Meridian Road Corridor has emerged as a regional transportation priority as identified in the Pikes Peak Area Council of Governments' Regional Transportation Plan and the El Paso County Major Transportation Corridors Plan (MTCP). Figure 1 shows the study area for the Meridian Road (North) Improvements project. The primary purpose of this project phase is to verify MTCP requirements and identify capacity and safety improvements for Meridian Road within the MTCP functional classification requirements. This plan considers the ultimate long-term improvements and also recommends interim phases of improvements as warranted by technical findings of the studies and funding limitations. It is bounded by US 24 to the south and Hodgen Road to the north. A prioritized schedule shows the recommended implementation for construction improvements along the corridor.

The MTCP also includes specific recommendations regarding transportation modes for the corridor. It identifies Meridian Road (North) as a recommended bike route and a potential rapid transit corridor, and it includes a planned park and ride near the intersection of Meridian Road and US 24. This project does not provide rapid transit planning, but it does determine what is required to accommodate this type of facility in the future.

**Figure 1. Project Area**



#### 1.1.1. Project Goals and Objectives

The project will increase capacity and provide safety improvements for Meridian Road from Woodmen Road to Rex Road. The goal is to provide safety enhancement improvements from Rex Road to Hodgen Road for functional classification referenced in the MTCP. The corridor plan is to meet the following objectives:

- Provide safety and capacity improvements to accommodate anticipated growth.
- Provide improvements addressing intersection safety, operation, and sight distance.
- Address access throughout the corridor and identify related improvements.
- Consider commercial truck and transit bus route design features.
- Plan and preserve bike/trail route along the corridor.
- Re-design road to current engineering standards pursuant to minimum El Paso County standards including alignment, typical section, and grade.
- Address stormwater and associated water quality issues.
- Verify current assumptions regarding functional classification for the roadway and other uses within the corridor to best serve the community.
- Preserve recent Meridian Road improvements as much as possible.

### 1.2 Analysis & Implementation Plan Overview

The analysis process is the key to identifying the recommended road section and determining construction phasing based on need and available construction funding. The Engineering Criteria Manual (ECM) standards for the applicable MTCP road classifications establish the starting point of the analysis. Chapters 2 through 7 address factors that are integral to the development of the ultimate road design, including traffic projections; right-of-way and easement needs; crash history; drainage and environmental impacts; and geotechnical conditions. Additionally, the conceptual plan for the corridor is compared to applicable master plans to ensure compliance with long-term goals and recommendations already established by the County. Chapter 8 presents the conceptual roadway design, cost estimate, and construction implementation schedule.

### 1.3 Corridor Preservation Overview

The Corridor Preservation Plan (Chapter 9) identifies the right-of-way and easement needs required to construct the recommended road section. Existing right-of-way along the corridor varies from 60 ft to 210 ft. The recommended right-of-way requirements along Meridian Road are 210 ft (US 24 to Rex Road) and 180 ft (Rex Road to Hodgen Road). This section addresses permanent, temporary, trails, and utility easements.

### 1.4 Access Management Overview

The Access Management Plan (Chapter 10) documents existing access points along the Meridian Road corridor, identifies future access requirements, and compares both to current County standards. This section also shows recommended access changes along the corridor.



## 2.0 Master Plan Conformance

The Master Plan Conformance task is to ensure the Meridian Road Corridor conforms with the long-range goals described in applicable elements of the El Paso County Master Plan guidance documents. The *El Paso County Policy Plan* (1998) provides broad guidance to ensure consistency across the county, while the *El Paso County Master Plan* provides more locally specific and detailed guidance through the Small Area Plans (SAP) and Topical Elements components. The applicable elements of the Master Plan include the *Major Transportation Corridors Plan* (2004); *Black Forest Preservation Plan* (1987); *Black Forest Preservation Plan – Trails Addendum* (1999); *Falcon/Peyton Comprehensive Plan Update* (2008); and the *El Paso County Parks, Trails & Open Space Master Plan* (2005). The intent of these plans is to outline policies and goals for overall land use planning that includes an effective transportation system that serves a balance of providing access to land uses and mobility to the traveling public. These documents support each other in their recommendations to promote a variety of land use types and densities along the corridor ranging from mixed urban uses at the south end to rural residential development on the north end and to accommodate needed transportation improvements. The long-range goals related to transportation and traffic in the various planning documents are excerpted below. The applicable excerpts should serve as guidance that, when adhered to, ensure that the project meets previously established goals and policies of the County.

### 2.1 El Paso County Policy Plan

The El Paso County Policy Plan identifies policies and goals describing an effective transportation system that serves a balance of providing access to land uses and mobility to the traveling public. This plan was adopted in 1998 and is intended to be updated periodically. Meridian Road is currently a 2-lane and median-divided 4-lane collector that will be developed into a corridor with multiple functional classifications, requiring up to 200 ft of right-of-way. Key planning issues and the policies applicable to Meridian Road are summarized below.

#### **ISSUE 9.1 Plan for the mobility needs of the County**

**Goal 9.1** *Plan, develop and maintain a safe and efficient transportation system to meet the present and future mobility needs of people, goods, materials and services.*

- **Policy 9.1.1** Identify and preserve the functional integrity of the corridors necessary to meet the County's potential future surface transportation needs.
- **Policy 9.1.3** Achieve compatibility between transportation facilities and adjacent land areas through comprehensive planning.
- **Policy 9.1.4** Coordinate and integrate the planning and development of transportation modes including highways, public transit, bikeways, pedestrian facilities, equestrian trails, railroads, airports, ride-sharing, car-pooling and telecommunications networks with Pikes Peak Area Council of Governments (PPACG) and the County's municipalities and military installations.
- **Policy 9.1.5** Coordinate the County's transportation system with the transportation systems of neighboring counties.
- **Policy 9.1.6** Balance the need for regional mobility with demands for local access onto major transportation corridors.
- **Policy 9.1.7** Maximize the efficiency of the existing transportation system through efficient traffic management and operations techniques including signalization and additional turning lanes which help to regulate traffic flow and thereby increase capacity.

#### **ISSUE 9.2 Promote Land Use Efficiency**

**Goal 9.2.1** *Promote land use planning which maximizes transportation efficiency.*

- **Policy 9.2.1** Encourage the development of major activity centers with regional multi-modal access.
- **Policy 9.2.2** Require advance right-of-way preservation and/or dedication for transportation facilities as part of the land development process.
- **Policy 9.2.3** Strictly limit direct access onto major transportation corridors in order to preserve their functional capacity.
- **Policy 9.2.4** Plan, build and manage the capacity of the roadway system to accommodate maximum expected land use densities.
- **Policy 9.2.5** Evaluate land use patterns which place exceptionally large demands on the transportation systems and mitigate their impact.
- **Policy 9.2.6** Encourage carefully-planned mixed-use developments which integrate vehicular and pedestrian transportation modes and which maximize the effective use of transportation infrastructure and parking areas.

#### **ISSUE 9.3 Reduce Adverse Impacts to Air Quality and Traffic Congestion**

**Goal 9.3** *Reduce the adverse environmental impacts of existing and future transportation systems through a combination of careful planning and mitigation techniques.*

- **Policy 9.3.1** Place a high priority on maintaining the environmental condition when planning or building roads.
- **Policy 9.3.2** Place a high priority on those system improvements which will substantially reduce risks to public safety including but not limited to signalization and traffic controls.
- **Policy 9.3.3** Encourage the identification, designation and preservation and enhancement of scenic transportation routes and vistas.
- **Policy 9.3.4** Provide for noise attenuation and visual screening along major transportation corridors by incorporating techniques including setbacks, buffers, berms, and vegetation treatments.
- **Policy 9.3.5** Plan and provide for mitigation of secondary impacts of traffic congestion including the protection of air and water quality and drainage system enhancements.

#### **ISSUE 9.4 Address Funding Issues**

**Goal 9.4.1** *Implement the planned transportation system in a coordinated and cost-effective manner utilizing a fair, equitable and sufficient method of funding.*

- **Policy 9.4.1** Base funding for transportation improvements and maintenance as much as possible on a user-pay system while recognizing the unique needs of the transit-dependent along with the indirect costs and benefits of transportation projects.
- **Policy 9.4.2** Utilize transportation strategies designed to improve the efficiency of existing roadways prior to investing in system expansions or additions.
- **Policy 9.4.3** Adequately fund maintenance of existing and future transportation infrastructure to preserve the value of investments made.
- **Policy 9.4.4** Encourage user-pay approaches to funding transportation system improvements and maintenance.

- **Policy 9.4.5** Encourage processes by which development can contribute a reasonable and fair share toward necessary off-site transportation improvements.
- **Policy 9.4.6** Place a high priority on financing transportation improvements which significantly reduce health and safety risks.

#### **ISSUE 9.5 Support Alternative Modes**

**Goal 9.5.1** Promote the planning and development of transportation modes offering alternatives to single-occupant automobiles.

- **Policy 9.5.1** Encourage the development of convenient, reasonably economic public transit options to serve the mobility needs of all segments of the population to and from major regional destinations.
- **Policy 9.5.2** Encourage the development and maintenance of pedestrian and bicycle networks by identifying and setting aside corridors early in the planning process and by fully integrating these functions into land development plans.
- **Policy 9.5.3** Encourage the use of high occupancy vehicles (HOV), buses, vans, carpools and rapid rail.
- **Policy 9.5.5** Promote the development of park-and-ride areas to facilitate the use of alternative modes of transportation and coordinate the development of an intermodal system.
- **Policy 9.5.7** Encourage inter-regional cooperation for the planning and development of alternative modes of transportation.

#### **ISSUE 6.1 Effectively Manage Growth and Land Use Change**

**Goal 6.1.a** Encourage patterns of growth and development which complement the regions' unique natural environments and which reinforce community character.

**Goal 6.1.b** Support growth and development in the unincorporated County in a manner which reasonably limits long term public costs, provides for the development of supporting infrastructure, preserves environmental quality, provides economic opportunities, and otherwise enhance the quality of life.

- **Policy 6.1.5** Support the development of well-planned mixed use projects which promote all, or most, of the following objectives:
  - Maximize the economy and efficiency of land use.
  - Preserve open space or natural areas.
  - Integrate employment, housing, shopping, schools and other use.
  - Accommodate multi-modal transportation linkages.
  - Allow for variations in design and character.
- **Policy 6.1.9** Viable residential properties should be reasonably protected from the adverse impacts of major roadways and other potentially incompatible land uses.

#### **ISSUE 6.2 Protect and Enhance Neighborhoods**

**Goal 6.2** Protect and Enhance Existing and Developing Neighborhoods.

- **Policy 6.2.1** Fully consider the potential impact of proposed zone changes and development on the integrity of existing neighborhoods.
- **Policy 6.2.4** Encourage use of innovative techniques to mitigate negative impacts of proposed land uses that differ from zoning in established neighborhoods.

#### **ISSUE 6.3 Accommodate Sustainable Urban Density Development**

**Goal 6.3** Continue to support existing and carefully planned future urban density development in the unincorporated County, provided the requisite level of urban services is available or will be available in a timely fashion.

- **Policy 6.3.1** Protect and enhance the viability of established urban density developments in unincorporated areas.
- **Policy 6.3.4** Commercial, office, industrial, and residential development should be compatible with surrounding land uses in terms of scale, intensity and potential impacts.

#### **ISSUE 6.4 Develop Rural Residential Communities**

**Goal 6.4** Develop and maintain rural residential areas in a manner which protects their integrity, addresses the carrying capacity of the natural environment and provides for an adequate level of non-urban facilities and services.

- **Policy 6.4.1** Protect and sustain established viable rural residential areas where possible.
- **Policy 6.4.2** Continue to define and limit the boundaries of rural residential areas primarily through the Small Area Planning process.
- **Policy 6.4.6** Allow for the accommodation of necessary supporting commercial uses within or in proximity to rural residential areas in a manner that preserves the rural character of these areas.
- **Policy 6.4.7** Accommodate limited very low impact business and other employment uses in rural residential developments if these serve to reduce overall levels of traffic in these areas and do not otherwise detract from the desired rural residential character, provided the requisite level of services is or will be available in a timely fashion. These uses should primarily serve the needs of local residents.

## **2.2 The El Paso County Major Transportation Corridors Plan (MTCP)**

The El Paso County Major Transportation Corridors Plan (MTCP) provides the basis for establishing a meaningful county network, functional classification, and right-of-way requirements. The MTCP should be considered the starting point for corridor development in El Paso County as it identifies transportation needs, opportunities, and the best uses of limited resources for the next 25 years. The MTCP implementation policies include the following:

- Manage Traffic Congestion
- Improve Transportation Safety
- Increase Multi-Modal Transportation Opportunities
- Intermodal Transportation Planning
- Preserve New and Expanded Roadway Corridors for Future Needs
- Develop Funding, Prioritization and Implementation Plan

The MTCP shows Meridian Road corridor improvements to be completed from Woodmen Road to Rex Road by 2015 and from Rex Road to Hodgen Road by 2025. These dates are preliminary points for discussion of implementation phasing. This schedule will be re-examined to assess the appropriate timing of the phases as needs and resources evolve.

The MTCP identifies Meridian Road as an eventual 6-lane principal arterial from US 24 to Rex Road, a 4-lane principal arterial from Rex Road to Ayer Road, and a 2-lane minor arterial from Ayer Road to Hodgen Road. The MTCP also identifies Meridian Road as a potential El Paso County Rapid Transit Corridor from

US 24 to Hodgen Road and a recommended bike route from Woodmen Road to Hodgen Road. The MTCP also calls for the implementation of Intelligent Transportation Systems as feasible.

### 2.3 The Black Forest Preservation Plan (BFPP)

The BFPP is a Small Area Plan (SAP) adopted in 1987 that encompasses the segment of Meridian Road from Rex Road north. It examines critical issues affecting land use, the environment, and transportation. The plan anticipates growth pressures and methods to mitigate growth impacts with the goal of protecting valuable environmental and community values. It notes a general policy of protecting the Timbered Area of the Forest to the extent possible when considering development or transportation improvements.

The corridor is located in three of the ten BFPP planning units as shown below with the appropriate Land Use Scenario (shown South to North):

- **#9 Southeastern Mixed Use Area** – from Stapleton Drive to Latigo Boulevard. The recommended scenario is phased development ranging from a balanced mix of urban density uses in the south to large single family residential lots in the north. The scenario also emphasizes preservation of adequate right-of-way and protection of the integrity of the corridor.
- **#1 The Timbered Area** – from Latigo Boulevard to north of Murphy Road. The recommended scenario includes minimum five acre rural residential development and preservation of right-of-way for the eventual upgrade of Meridian Road.
- **#8 Meridian-Eastonville Corridor** – from north of Murphy Road to Hodgen Road. The recommended scenario is large lot residential development (maximum overall density of one residence per five acres) and protection of right-of-way along Meridian Road.

The following excerpts include goals, policies, and proposed actions that have been developed by the El Paso County and residents of the Black Forest Planning Area:

#### 1. Growth and Land Use

**Goal 1.A** *Preserve and enhance the sensitive natural environment and unique community character of the Black Forest Planning Area.*

- **Policy 1.3** Promote and plan a system of buffers around the Timbered Area, other planning units designated for low densities, and existing rural-residential subdivisions in which densities decrease between existing or planned development and these areas.

#### 6. Transportation

**Goal 6.A** *Provide an integrated transportation system which protects and compliments the environment and serves area and regional travel demands with safety, economy, efficiency and comfort.*

- **Policy 6.1** Design the transportation system so that disruption of sensitive environmental features, agricultural operations, and existing or platted residential areas is minimized.
- **Policy 6.3** Upgrade primary transportation corridors (e.g. Shoup, Black Forest, Vollmer) in low density residential areas to promote safety. Where possible these improvements should be made within existing rights-of-way.
- **Policy 6.4** Minimize direct access to the Timbered Area from any future expressway which may be constructed through the southern part of the planning area.

- **Policy 6.5** Reduce the need for single passenger vehicle trips by encouraging alternative modes of transportation, specifically ridesharing.
- **Policy 6.7** Protect the right-of-way along Meridian Road for future upgrading, but encourage any north-south expressway to locate east of the tree line.

While the BFPP has language and a number of policies that address major roadways, this document does not contain a future roadway elements.

### 2.4 Black Forest Preservation Plan - Trails Addendum

The Trails Addendum was adopted in 1999 as an addendum to the 1987 BFPP. It provides planning guidelines for a network of non-motorized, multi-use trails within the Black Forest Planning Area, including a trail crossing on the north end of the project area. The network will be linked to the Regional Trail System as outlined in the El Paso County Master Plan for Parks, Trails and Open Space, and the City of Colorado Springs Open Space Master Plan. To some degree, this document has been supplanted by the El Paso County Department of Parks and Leisure Services Master Plan. (See Section 2.6 below) The Trails Addendum provides, in part, guidelines to developers for establishing trails within new subdivisions. Goals and policies applicable to the Meridian Road corridor include the following:

#### A.4.2 Roads as Trails

**Goal A.4.2.A** *Integrate unpaved roads and trails adjacent to paved roads into the trail network.*

- **Policy 1.4.2.b** Support creation of a county-wide bicycle plan that identifies appropriate transportation corridors within Black Forest, then direct the DOT to add bike lanes on the identified roads as additional right-of-way is acquired, major road reconstruction is undertaken, and transportation enhancement funding permits.

### 2.5 Falcon/Peyton Comprehensive Plan (FPCP)

Like the BFPP, the Falcon/Peyton Comprehensive Plan (2008) is a SAP that addresses issues such as land use, the environment and transportation for an unincorporated area of the county and has been adopted as an amendment to the County Master Plan. The FPCP covers approximately 153 square miles extending from Meridian and Eastonville Roads on the west to McClelland Road on the east, and County Line Road on the north to S. Blaney Road on the south. The section of Meridian Road extending from US 24 to Latigo Boulevard is in the Falcon/Peyton Planning Area. The southern half of the corridor's surroundings is characterized as grasslands and the northern half is forestland. The FPCP includes a number of sub-areas with specific land use scenarios that include mixed use urban densities from US 24 north to the area of Rex Road and rural residential densities from that point northward.

The FPCP was recently revised and adopted in August 2008. The revision identifies potential commercial developments in four areas between Woodmen Road and Stapleton Drive, a segment of the corridor that has historically remained residential or agricultural. In addition to an existing approved development consisting of 578 dwelling units and 29.2 commercial acres, anticipated build-out adjacent to the Meridian Road corridor includes an estimated 230 acres of commercial development.

The FPCP – Section 3.5 includes several transportation-related policies:

- Recommend land use patterns that make efficient use of existing transportation infrastructure and limit the cost of future extensions and upgrades.



- Mitigate congestion by providing flexibility for areas of higher population densities while protecting lower density areas from the negative effects of traffic.
  - Prevent pedestrian hazards by identifying and prioritizing key pedestrian linkages and carefully integrating future urbanized areas with the existing network of traffic corridors.
  - Promote alternative modes of transportation in order to reduce peak traffic, increase safety, and promote health.
  - Enhance the future role of Meadow Lake Airport through the recommendation of compatible land uses.
  - Balance long term transportation infrastructure needs with current requirements.
  - Ensure the coordination of land use and transportation planning.
  - Implement transportation infrastructure financing options which fairly allocate the cost of improvements to the source of existing or new demand for services.
- Multimodal considerations should include future transit, park-n-ride facilities, and trails.

## 2.6 El Paso County Parks, Trails & Open Space Master Plan

The El Paso County Parks, Trails & Open Space Master Plan identifies goals, objectives, and planned projects to expand the existing parks and trails system and to protect important natural areas and open spaces. The following excerpt identifies one of the County's goals and the Meridian Road design will incorporate the development of safe and accessible trails crossings.

**Goal** *Create a continuous system of regional trails.*

The Trails Master Plan identifies the following trails and crossings in the project area:

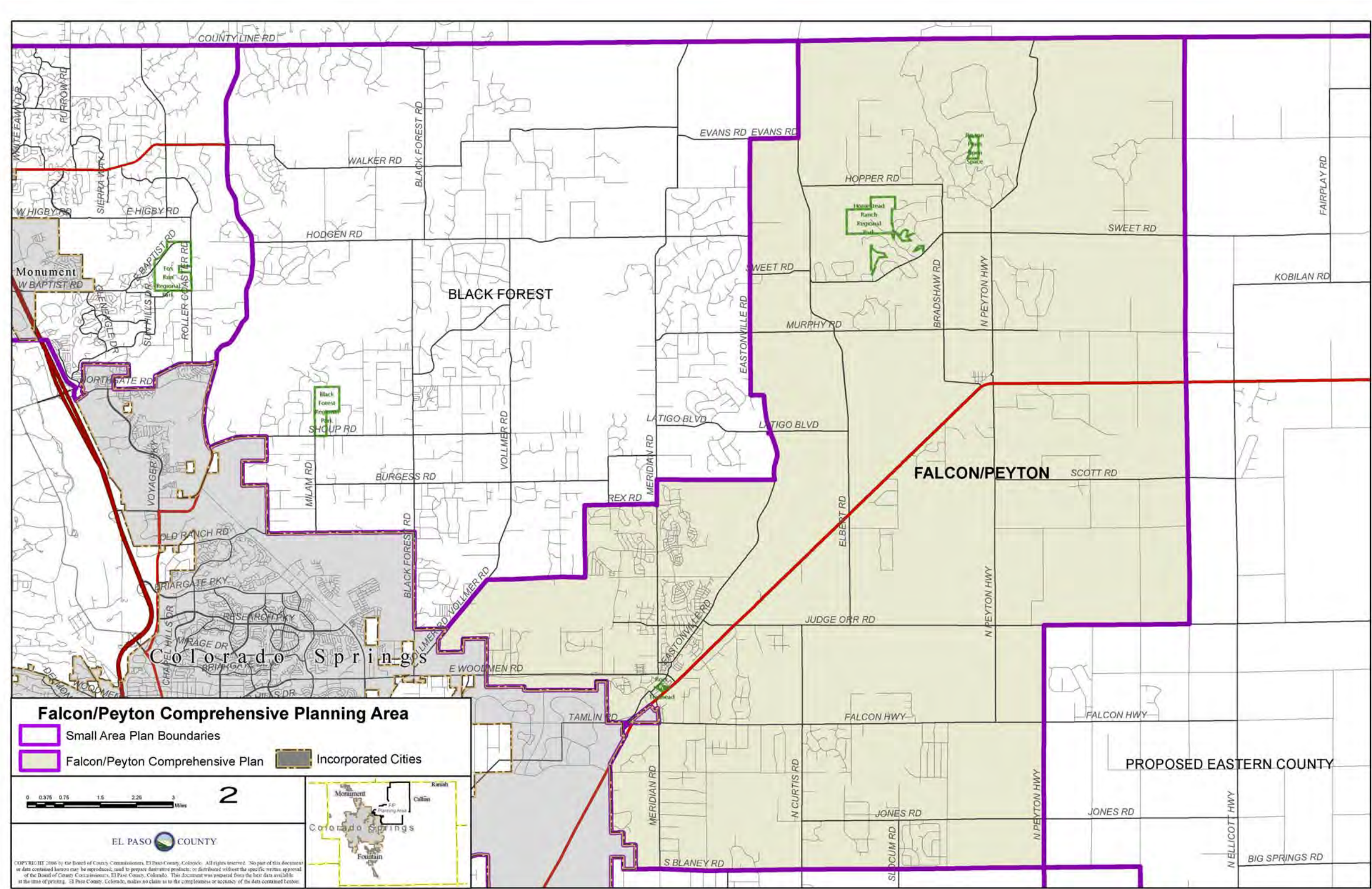
- The existing portion of the Palmer Divide Trail goes through Woodlake subdivision and crosses Meridian Road at Murphy Road,
- A proposed Tier 2 County Regional Trail will cross Meridian Road just north or south of Rex Road, and
- The existing Rock Island Trail trailhead in the area of Meridian Road and US 24. Rock Island Trail is the eastern segment of the America the Beautiful Trail, a series of trails that begins in Peyton and extends west through Colorado Springs to Cripple Creek.

## 2.7 Conclusion

The intent of the referenced plans will be factored into the Meridian Road (North) Improvements project design. The long-term forecast for this area is high population growth. A well designed transportation system to accommodate the accompanying increased traffic is critical as the corridor provides regional mobility for area residents. Design criteria for the three functional classifications in the corridor will be applied, and the following key points will also be kept at the forefront of planning and design phases:

- Access must conform to functional classification.
- Right-of-way preservation is key to maintaining the corridor vision.
- Planning and design must address maximum planned densities to accommodate the anticipated population growth.

Figure 2. Small Area Plan Boundaries





## 3.0 Traffic

This section summarizes the existing traffic volumes, traffic characteristics, roadway characteristics, signalization, levels of service, and deficiencies along the Meridian Road Corridor.

### 3.1 Traffic Analysis

The existing conditions analysis year for this plan is 2007 and is based on traffic counts obtained along the Meridian Road Corridor in September 2007.

#### 3.1.1. Existing Traffic Volumes

Twenty-four- hour machine classification traffic counts were conducted at the following locations:

- Meridian Road south of Hodgen Road
- Meridian Road south of Latigo Boulevard
- Meridian Road north of Rex Road
- Meridian Road between Stapleton Drive and Londonderry Drive
- Meridian Road between Woodmen Hills Drive and Stapleton Drive
- Meridian Road north of Woodmen Road

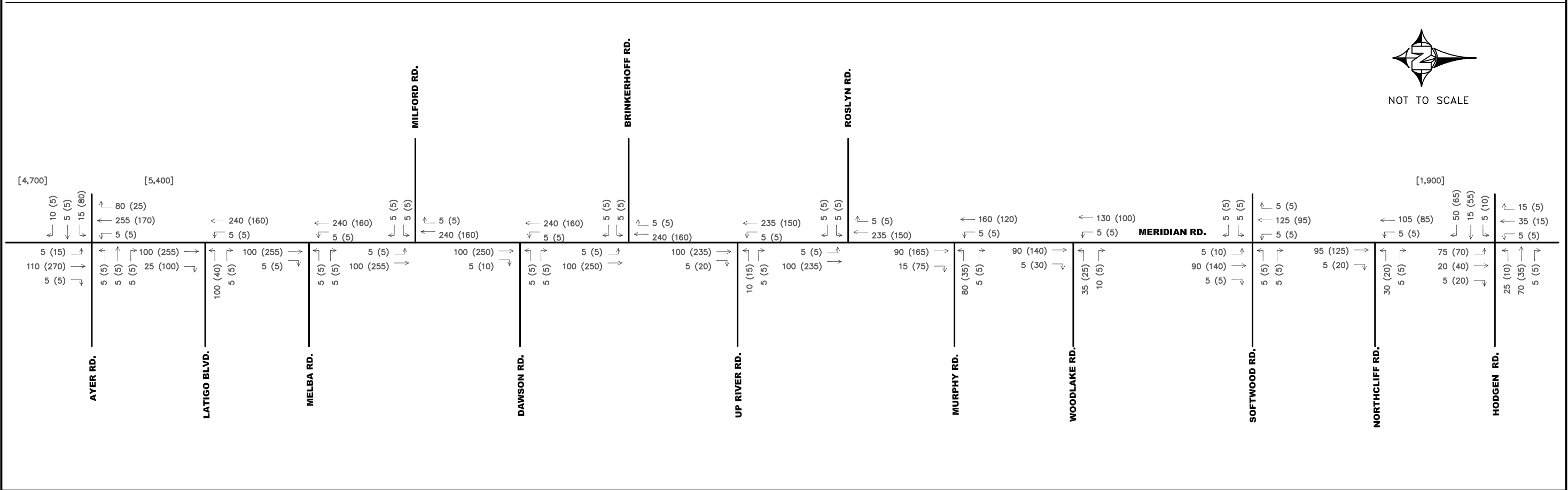
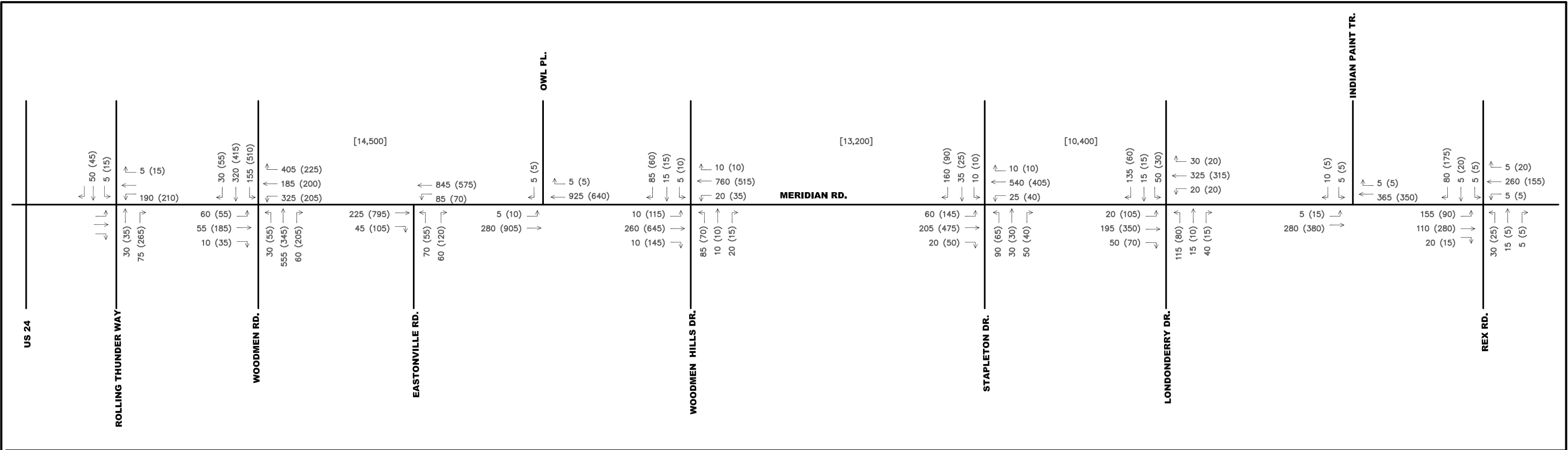
The existing average weekday traffic volumes along Meridian Road range from 1,900 vehicles/day south of Hodgen Road to 14,500 vehicles/day north of Woodmen Road.

Morning and evening peak period turning movement counts were conducted at the following intersections along Meridian Road:

- Rolling Thunder Way
- Woodmen Road
- Eastonville Road
- Owl Place
- Woodmen Hills Drive
- Stapleton Drive
- Londonderry Drive
- Indian Paint Trail
- Rex Road
- Ayer Road
- Latigo Boulevard
- Melba Road
- Milford Road
- Dawson Road
- Brinkerhoff road
- Up River Road
- Roslyn Road
- Murphy Road
- Woodlake Road
- Softwood Road
- Northcliff Road
- Hodgen Road

Figure 3 illustrates the existing average weekday traffic volumes and the a.m. and p.m. peak hour traffic volumes along Meridian Road. The average weekday traffic volumes were derived from data collected during the traffic count program and were rounded up to the nearest hundred. The peak hour traffic volumes were generated from the traffic count data and adjusted to balance traffic between intersections and rounded up to the nearest five.





NOT TO SCALE

# MERIDIAN ROAD (NORTH) EXISTING (2007) TRAFFIC VOLUMES US 24 TO HODGEN ROAD

LEGEND

### (###) = AM (PM) PEAK HOUR TRAFFIC VOLUMES

[#####] = DAILY WEEKDAY TRAFFIC VOLUMES

FIGURE 3

3.1.2. Existing Traffic Characteristics

The existing traffic characteristics for the corridor were estimated from the vehicle classification count data. These characteristics include the K-factor (percentage of the daily volume occurring during the peak hour), the D-factor (the directional distribution of the traffic) and the T-factor (the percentage of trucks in the peak hour). Table 1 summarizes the existing traffic characteristics.

As shown, the K-factors range from 0.082 to 0.091 in the a.m. peak hour and 0.091 to 0.106 in the p.m. peak hour. The D-factors range from 0.54 to 0.77 in the a.m. peak hour and 0.53 to 0.67 in the p.m. peak hour. The daily truck percentages range from 0.9 to 4.4%. The peak hour truck percentages range from 0.7 to 7.1% in the a.m. peak hour and 0.4 to 3.8% in the p.m. peak hour.

3.1.3. Existing Roadway Characteristics

As of the publication of this plan, Meridian Road does not connect to US 24 on the south end of the corridor. Meridian Road is currently a 4-lane principal arterial from just north of US 24 to just north of Stapleton Drive, a 2-lane principal arterial from just north of Stapleton Drive to Ayer Road and a 2-lane minor arterial from Ayer Road to Hodgen Road.

The posted speed limit on Meridian Road is 35 mph from US 24 to Woodmen Road and 55 mph from Woodmen Road to Hodgen Road. There are currently four signalized intersections along the corridor at Rolling Thunder Way, Woodmen Road, Woodmen Hills Drive and Stapleton Drive. All other intersections along the corridor are un-signalized.

The southern portion of the Meridian Road corridor, from US 24 to Rex Road, generally serves single-family medium to high density residential and commercial land uses. The northern portion of the corridor, from Rex Road to Hodgen Road, serves predominately single-family, low-density residential land uses.

3.1.4. Existing Traffic Operations

The existing levels of service for the intersections along Meridian Road were estimated using the peak hour traffic counts collected in the corridor and SYNCHRO 7 analysis software that is based on the procedures in the *Highway Capacity Manual (HCM 2000)*, Transportation Research Board, 2000. The following subsections summarize the results of these evaluations.

Table 1. Existing Traffic Characteristics

				AM PEAK HOUR				PM PEAK HOUR			
Location	Daily Volume	Daily Truck %	Direction	Peak Hour Volume	D-factor	K-factor	Truck %	Peak Hour Volume	D-factor	K-factor	Truck %
Between Woodmen Road and Eastonville Road	14,502	3.0	NB SB	282 918	0.77	0.083	3.8	935 514	0.65	0.100	2.0
Between Woodmen Hills Drive and Stapleton Drive	13,156	4.4	NB SB	303 776	0.72	0.082	7.1	718 520	0.58	0.094	3.8
Between Stapleton Drive and Londonderry Drive	10,403	3.6	NB SB	302 595	0.66	0.086	3.5	534 417	0.56	0.091	3.3
Between Rex Road and Ayer Road	4,748	0.9	NB SB	123 267	0.68	0.082	0.7	309 158	0.66	0.098	0.4
Between Ayer Road and Latigo Boulevard	5,389	2.3	NB SB	128 347	0.73	0.088	1.5	374 188	0.67	0.104	0.7
Between Northcliff Road and Hodgen Road	1,865	2.6	NB SB	92 77	0.54	0.091	1.8	104 93	0.53	0.106	1.0

D-factor = Directional distribution of traffic  
K-factor = Percentage of the daily volume occurring during the peak hour

3.1.4.1. Existing Signalized Intersection Operations

Intersection capacity analyses for the signalized intersections along the Meridian Road corridor were performed for both the a.m. and p.m. peak hours using the traffic volumes illustrated on Figure 3. Table 2 summarizes the results of these analyses.

Table 2. Existing Signalized Intersection Operations Summary

Intersection	AM Peak Hour			PM Peak Hour		
	V/C	Average Delay	LOS	V/C	Average Delay	LOS
Rolling Thunder Way	0.17	6.3	A	0.25	6.8	A
Woodmen Road	0.77	23.7	C	0.86	23.4	C
Woodmen Hills Drive	0.44	7.3	A	0.63	7.1	A
Stapleton Drive	0.69	13.9	B	0.57	9.0	A

V/C = Maximum Volume-to-Capacity Ratio of all movements  
LOS = Level of Service  
Average Delay = Expressed in terms of seconds/vehicle

As shown in the table, all of the existing signalized intersections along the corridor are currently operating at LOS C or better during the a.m. and p.m. peak hours.

3.1.4.2. Existing Un-Signalized Intersection Operations

Intersection capacity analyses were also performed for the un-signalized intersections along the corridor. These analyses were conducted for the a.m. and p.m. peak hours using the traffic volumes illustrated on Figure 3. The results of these analyses are summarized in Table 3.

Table 3. Existing Un-Signalized Intersection Operations Summary

Intersection	Movement	AM Peak Hour		PM Peak Hour	
		Average Delay	LOS	Average Delay	LOS
Eastonville Road	Westbound Left	17.5	C	23.2	C
	Westbound Right	9.3	A	13.2	B
	Southbound Left	8.1	A	10.8	B
Owl Place	Eastbound Right	12.1	B	10.6	B
	Northbound Left	10.3	B	9.1	A
Londonderry Drive	Eastbound Left/Through/Right	15.2	C	16.1	C
	Westbound Left	24.7	C	25.7	D
	Westbound Through	10.7	B	13.2	B
	Westbound Right	10.7	B	13.2	B
	Northbound Left	8.1	A	8.3	A
	Southbound Left	7.8	A	8.3	A
Indian Paint Trail	Eastbound Left/Right	11.9	B	13.3	B
	Northbound Left/Through	0.2	A	0.5	A
Rex Road	Eastbound Left/Through/Right	11.7	B	12.2	B
	Westbound Left/Through	23.6	C	26.2	D
	Westbound Right	8.9	A	9.9	A
	Northbound Left	8.3	A	7.8	A
	Southbound Left	7.5	A	7.9	A
Ayer Road	Eastbound Left/Through/Right	12.0	B	15.3	C
	Westbound Left/Through/Right	11.6	B	12.4	B
	Northbound Left/Through/Right	0.4	A	0.5	A
	Southbound Left/Through/Right	0.1	A	0.2	A
Latigo Boulevard	Westbound Left/Right	12.0	B	11.9	B
	Southbound Left/Through	0.2	A	0.3	A
Melba Road	Westbound Left/Right	9.9	A	10.7	B
	Southbound Left/Through	0.2	A	0.3	A



*Meridian Road (North) Corridor Plan – Traffic*

Intersection	Movement	AM Peak Hour		PM Peak Hour	
		Average Delay	LOS	Average Delay	LOS
Milford Road	Eastbound Left/ Right	10.3	B	10.4	B
	Northbound Left/Through	0.4	A	0.2	A
Dawson Road	Westbound Left/Right	9.9	A	10.7	B
	Southbound Left/Through	0.2	A	0.3	A
Brinkerhoff Road	Eastbound Left/ Right	10.3	B	10.4	B
	Northbound Left/Through	0.4	A	0.2	A
Up River Road	Westbound Left/Right	10.3	B	11.1	B
	Southbound Left/Through	0.2	A	0.3	A
Roslyn Road	Eastbound Left/ Right	10.3	B	10.2	B
	Northbound Left/Through	0.4	A	0.2	A
Murphy Road	Westbound Left/Right	10.8	B	10.9	B
	Southbound Left/Through	0.3	A	0.3	A
Woodlake Road	Westbound Left/Right	10.0	A	10.2	B
	Southbound Left/Through	0.3	A	0.4	A
Softwood Road	Eastbound Left/Through/Right	9.7	A	9.7	A
	Westbound Left/Through/Right	9.6	A	9.9	A
	Northbound Left	7.5	A	7.4	A
	Southbound Left/Through	0.3	A	0.4	A
Northcliff Road	Westbound Left/Right	9.9	A	9.9	A
	Southbound Left/Through	0.4	A	0.4	A
Hodgen Road	Eastbound Left/Through/Right	0.6	A	0.6	A
	Westbound Left/Through/Right	2.0	A	1.5	A
	Northbound Left/Through/Right	11.2	B	10.9	B
	Southbound Left/Through/Right	10.3	B	10.2	B

As seen in the table, movements at the un-signalized intersections along the corridor are operating at LOS D or better.

### 3.1.5. Existing Deficiencies

The intersections along the existing Meridian Road Corridor are generally operating at LOS C or better during both the a.m. and p.m. peak periods. All of the signalized intersections are operating at LOS C or better overall. All of the critical movements at the un-signalized intersections are operating at LOS C or better with the exception of the westbound left turns at Londonderry Drive and the westbound left/through movements at Rex Road. These three movements are operating at LOS D during the p.m. peak hour. The existing analysis results indicate that there are currently no traffic operational deficiencies along the Meridian Road corridor.

## 3.2 Design Year 2035 Traffic Volume Projections

The purpose of this section is to document the development of the design year 2035 Average Daily Traffic (ADT) volumes and peak hour intersection turning movement volumes. The traffic volume projections were estimated using data from existing traffic impact studies (TIS) along the corridor and the Pikes Peak Area Council of Governments (PPACG) regional model.

A review of the PPACG model included the model network, zonal data, and volume comparison between the model and traffic impact studies along the corridor. The zonal data from the PPACG model appears reasonable compared to the land uses proposed in existing TIS; however, the traffic volumes from the model were consistently lower than those estimated in existing TIS. The number of lanes coded in the PPACG model for Meridian Road was four from US 24 to Rex Road and two from Rex Road to Hodgen Road.

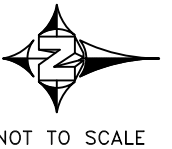
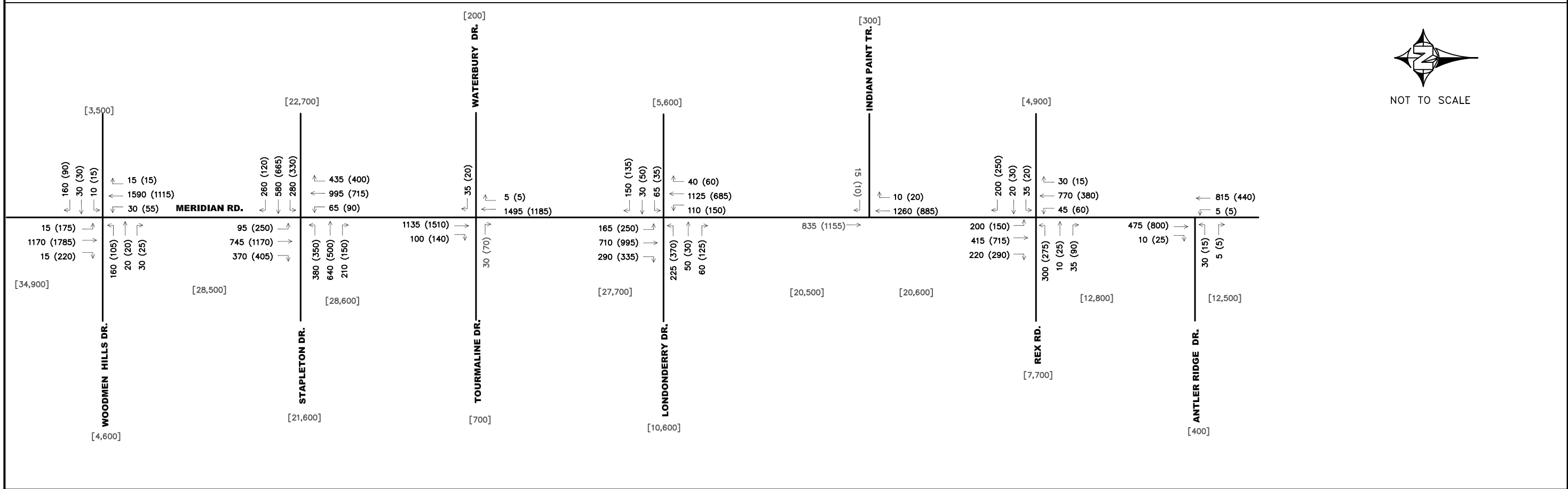
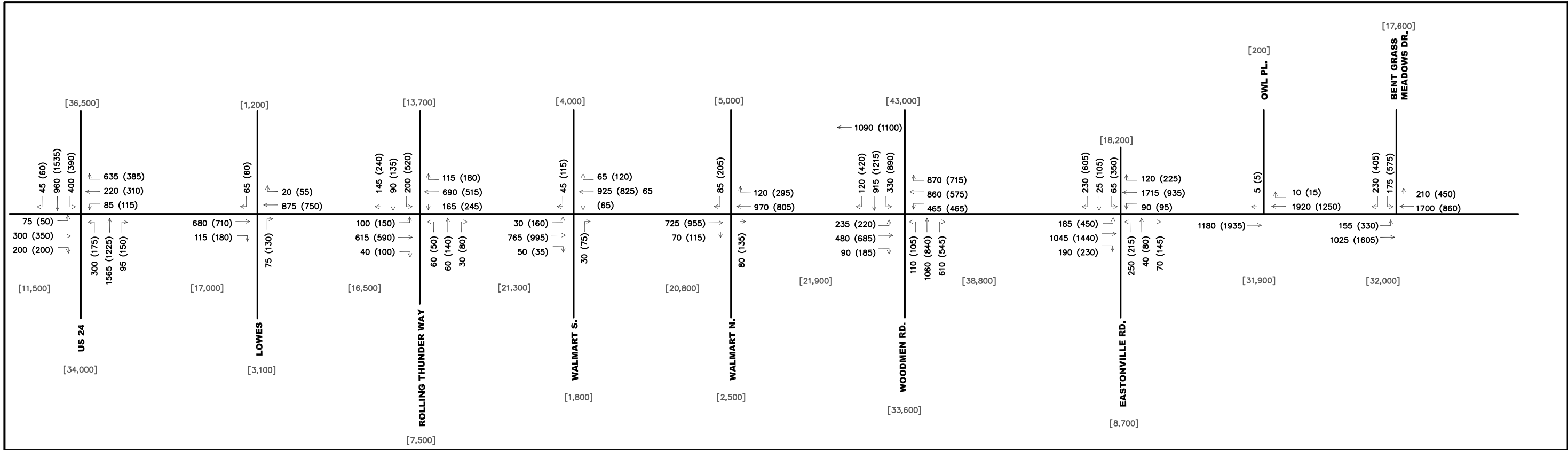
The 2030 El Paso County Major Transportation Corridors Plan (MTCP) recommendations for long-range improvements on Meridian Road includes six lanes from US 24 to Rex Road, four lanes from Rex Road to Ayer Road and two lanes from Ayer Road to Hodgen Road. A request was made to PPACG for a model run that included the lanes along Meridian Road that are recommended in the MTCP.

The traffic volume projections from the requested model run compared reasonably with the volume projections from existing TIS along the corridor. As a result, a combination of the revised model run and TIS traffic data were used to develop the design year 2035 ADT and peak hour intersection turning movement volumes. The design year 2035 traffic volumes are shown on Figures 4-1 and 4-2.

V/C = Maximum Volume-to-Capacity Ratio

LOS = Level of Service

Average Delay = Expressed in terms of seconds/vehicle



# **MERIDIAN ROAD (NORTH)** **DESIGN YEAR (2035) TRAFFIC VOLUMES** **US 24 TO ANTLER RIDGE DRIVE**

LEGEND

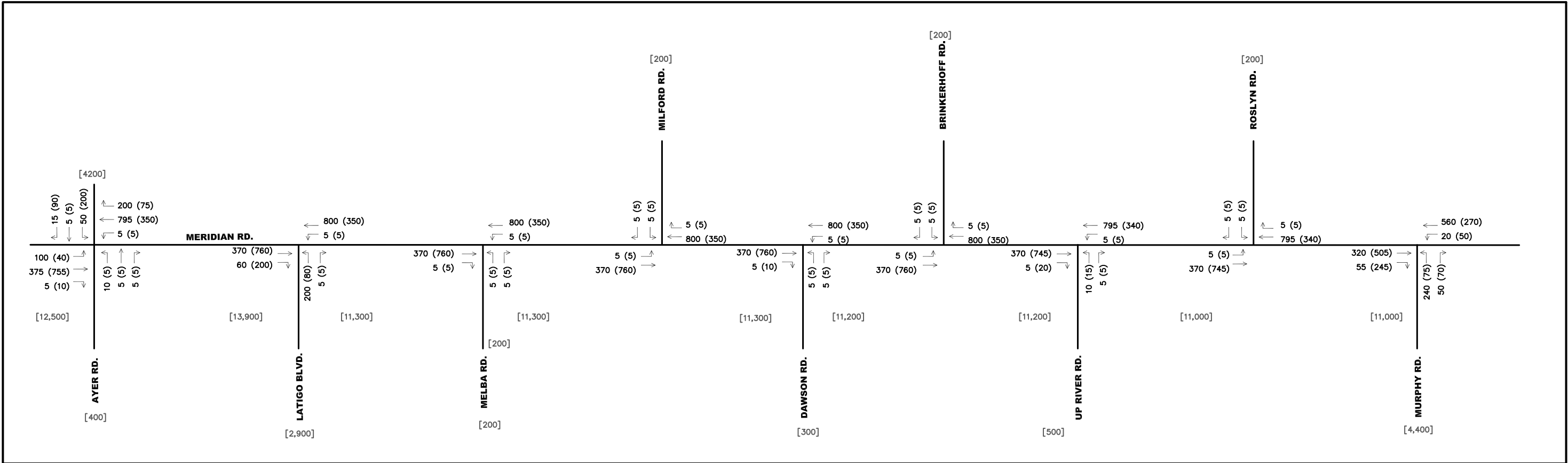
### (###) = AM (PM) PEAK HOUR TRAFFIC VOLUMES

[#####] = DAILY WEEKDAY TRAFFIC VOLUMES

[7,700] = EXISTING TEXT

300 = PROPOSED TEXT

**FIGURE 4-1**



NOT TO SCALE





### 3.2.1. Design Year 2035 Classification And Lane Requirements

The design year ADT volumes were compared to the maximum service volumes for LOS C from the Florida Department of Transportation's (FDOT) Generalized Level of Service Tables. These tables are based on nationally accepted techniques and were developed using the definitions and methodology of the Highway Capacity Manual 2000. Table 4 shows the maximum service volumes from the FDOT tables.

**Table 4. FDOT Generalized Level of Service Table**

# of Lanes	Divided/ Undivided	Level of Service				
		A	B	C	D	E
2	Undivided	**	1,900	11,200	15,400	16,300
4	Divided	**	4,100	26,000	32,700	34,500
6	Divided	**	6,500	40,300	49,200	51,800

\*\* - Level of Service A cannot be achieved using table input value defaults.

Comparing the LOS C service volume from Table 4 to the ADT volumes on Figures 4-1 and 4-2, the following mainline lanes along the Meridian Road Corridor are recommended as follows:

- US 24 to Woodmen Road → 4-lane, divided
- Woodmen Road to Londonderry Drive → 6-lane, divided
- Londonderry Drive to Dawson Road → 4-lane, divided
- Dawson Road to Hodgen Road → 2-lane, undivided

Upon comparing these lane requirements with MTCP recommendations, it was determined that the following roadway classifications and laneage are necessary for 2035 traffic operation:

- US 24 to Rex Road → 6-lane Principal Arterial (Urban)
- Rex Road to Latigo Boulevard → 4-lane Principal Arterial (Rural)
- Latigo Boulevard to Hodgen Road → 2-lane Minor Arterial (Rural)

Overall, the recommendation is to supersede the MTCP classification between Ayer Road and Latigo Boulevard from 2-lane Minor Arterial (Rural) to 4-lane Principal Arterial (Rural). The change in roadway classification will be determined in future updates to the Major Transportation Corridors Plan (MTCP). The ultimate roadway design is based on this modified roadway classification.

### 3.2.2. Design Year 2035 Traffic Operations

The design year 2035 LOS for the intersections along Meridian Road were estimated using the projected peak hour traffic volumes shown on Figures 4-1 and 4-2. The lane requirements shown in Section 3.2.1 and SYNCHRO 7 analysis software are based on the procedures in the HCM.

### 3.2.3. Design Year 2035 Signalized Intersection Operations

Intersection capacity analyses were performed for the design year signalized intersections along the Meridian Road corridor. These analyses were conducted for both the a.m. and p.m. peak hours. The results of these analyses are summarized in Table 5.

**Table 5. Design Year 2035 Signalized Intersection Operations Summary**

Intersection	AM Peak Hour			PM Peak Hour		
	V/C	Average Delay	LOS	V/C	Average Delay	LOS
US 24	1.07	46.0	D	0.92	31.8	C
Rolling Thunder Way <sup>1</sup>	0.56	15.5	B	0.77	22.4	C
Woodmen Road <sup>1</sup>	1.19	52.9	D	1.00	43.9	D
Eastonville Road	0.76	21.3	C	0.85	24.0	C
Bent Grass Meadows Drive	0.70	7.5	A	0.70	12.9	B
Woodmen Hills Drive <sup>1</sup>	0.95	13.1	B	0.83	11.5	B
Stapleton Drive <sup>1</sup>	0.76	26.9	C	0.82	28.9	C
Londonderry Drive	0.63	13.1	B	0.78	19.4	B
Rex Road	0.67	18.5	B	0.70	17.3	B
Ayer Road	0.53	4.4	A	0.79	11.6	B

V/C = Maximum Volume-to-Capacity Ratio

LOS = Level of Service

Average Delay = Expressed in terms of seconds/vehicle

<sup>1</sup> Existing signalized intersection

As shown in Table 5, all of the existing signalized intersections along the corridor will operate at LOS C or better during the 2035 a.m. and p.m. peak hours with the exception of the Woodmen Road intersection. This intersection is projected to operate at LOS D during both the a.m. and p.m. peak hours.

3.2.4. Design Year 2035 Un-Signalized Intersection Operations

Intersection capacity analyses were also performed for the design year un-signalized intersections along the corridor. These analyses were conducted for the a.m. and p.m. peak hours using the traffic volumes illustrated on Figure 4.1 and 4.2. The results of these analyses are summarized in Table 6.

Table 6. Design Year 2035 Un-Signalized Intersection Operations Summary

Intersection Critical Movement	AM Peak Hour		PM Peak Hour	
	Delay	LOS	Delay	LOS
<b>Commercial Access</b>				
Eastbound Right	10.5	B	10.4	B
Westbound Right	10.3	B	10.9	B
<b>North Walmart Access</b>				
Eastbound Right	9.2	A	10.0	B
Westbound Right	10.4	B	11.9	B
<b>Owl Place</b>				
Eastbound Right	14.3	B	11.5	B
<b>Tourmaline Drive/Waterbury Drive</b>				
Eastbound Right	12.8	B	11.4	B
Westbound Right	9.3	A	9.3	A
<b>Indian Paint Trail</b>				
Eastbound Right	11.6	B	10.4	B
<b>Antler Ridge Drive</b>				
Westbound Left/Right	19.3	C	20.7	C
Southbound Left/Through	0.2	A	0.4	A
<b>Latigo Boulevard</b>				
Westbound Left/Right	38.0	E	28.1	D
Southbound Left/Through	0.2	A	0.5	A
<b>Melba Road</b>				
Westbound Left/Right	17.6	C	18.9	C
Southbound Left/Through	0.1	A	0.2	A
<b>Milford Road</b>				
Eastbound Left/ Right	20.0	C	16.7	C
Northbound Left/Through	0.2	A	0.1	A
<b>Dawson Road</b>				
Westbound Left/Right	17.6	C	18.9	C
Southbound Left/Through	0.1	A	0.2	A
<b>Brinkerhoff Road</b>				
Eastbound Left/Right	20.0	C	16.7	C
Northbound Left/Through	0.2	A	0.1	A
<b>Up River Road</b>				
Westbound Left/Right	20.2	C	21.4	C
Southbound Left/Through	0.1	A	0.2	A

Intersection Critical Movement	AM Peak Hour		PM Peak Hour	
	Delay	LOS	Delay	LOS
<b>Roslyn Road</b>				
Eastbound Left/Right	19.9	C	16.3	C
Northbound Left/Through	0.2	A	0.1	A
<b>Murphy Road</b>				
Westbound Left/Right	86.2	F	21.6	C
Southbound Left	8.2	A	9.6	A
<b>Woodlake Road</b>				
Eastbound Left/Through/Right	18.7	C	16.6	C
Westbound Left/Through/Right	35.6	E	22.7	C
Northbound Left	8.5	A	8.1	A
Southbound Left	7.9	A	8.5	A
<b>Softwood Road</b>				
Eastbound Left/Through/Right	16.6	C	18.4	C
Westbound Left/Through/Right	18.5	C	19.5	C
Northbound Left	8.2	A	8.2	A
Southbound Left	7.8	A	8.1	A
<b>Northcliff Road</b>				
Westbound Left/Right	13.6	B	13.6	B
Southbound Left/Through	0.3	A	0.4	A
<b>Hodgen Road</b>				
Eastbound Left	7.6	A	7.5	A
Westbound Left	7.8	A	8.0	A
Northbound Left	40.7	E	25.5	D
Northbound Through/Right	12.3	B	14.0	B
Southbound Left/Through/Right	16.1	C	13.9	B

V/C = Maximum Volume-to-Capacity Ratio  
LOS = Level of Service  
Average Delay = Expressed in terms of seconds/vehicle

As shown in Table 6, all of the critical movements at the un-signalized intersections along the corridor are predicted to operate at LOS D or better during the design year with the following exceptions:

- Latigo Boulevard WB Movements (AM Peak) – LOS E
- Murphy Road WB Movements (AM Peak) – LOS F
- Woodlake Road WB Movements (AM Peak) – LOS E
- Hodgen Road NB Left Movements (AM Peak) – LOS E

The level of service for the movements listed above indicates a potential future need for auxiliary lanes and signalization in the future.

### 3.3 Intersections/Access

#### 3.3.1. Auxiliary Lane Requirements

Auxiliary lane requirements were determined for the intersections along the Meridian Road corridor. The State of Colorado State Highway Access Code and ECM were used for determining auxiliary lane requirements. The following category assignments were used in determining auxiliary lane requirements for Meridian Road:

- US 24 to Rex Road (45 mph) – Non-Rural Principal Highway (NR-A)
- Rex Road to Hodgen Road (65 mph) – Regional Highway (R-A)

For the category assignment NR-A with a posted speed limit of 45 mph, the following peak hour volume criteria require an auxiliary lane:

- Left Turn Deceleration; volume > 10 vph
- Right Turn Deceleration; volume > 25 vph
- Right Turn Acceleration; generally not required
- Left Turn Acceleration; generally not required

For the category assignment R-A with a posted speed limit of 65 mph, the following peak hour volume criteria require an auxiliary lane:

- Left Turn Deceleration; volume > 10 vph
- Right Turn Deceleration; volume > 25 vph
- Right Turn Acceleration; volume > 50 vph
- Left Turn Acceleration; generally not required

Based on the criteria, Table 7 summarizes the intersections that would require auxiliary turn lanes.

**Table 7. Auxiliary Turn Lane Requirements**

Intersection Movement	Lane Length Requirement <sup>1</sup>
<b>US 24</b>	
SB Left	550 ft (235 ft decel + 200 ft taper + 115 ft storage)
SB Right	435 ft (235 ft decel + 200 ft taper)
<b>Commercial Access</b>	
NB Right	435 ft (235 ft decel + 200 ft taper)
SB Right	435 ft (235 ft decel + 200 ft taper)
<b>Rolling Thunder Way</b>	
NB Left	585 ft (235 ft decel + 200 ft taper + 150 ft storage)
NB Right	435 ft (235 ft decel + 200 ft taper)
SB Left	680 ft (235 ft decel + 200 ft taper + 245 ft storage)
SB Right	435 ft (235 ft decel + 200 ft taper)
<b>South Walmart Access</b>	
NB Left	595 ft (235 ft decel + 200 ft taper + 160 ft storage)
NB Right	435 ft (235 ft decel + 200 ft taper)
SB Left	500 ft (235 ft decel + 200 ft taper + 65 ft storage)
SB Right	435 ft (235 ft decel + 200 ft taper)
<b>North Walmart Access</b>	
NB Right	435 ft (235 ft decel + 200 ft taper)
SB Right	435 ft (235 ft decel + 200 ft taper)
<b>Woodmen Road</b>	
NB Left	565 ft (235 ft decel + 200 ft taper + 130 ft storage) <sup>2</sup>
NB Right	435 ft (235 ft decel + 200 ft taper)
SB Left	670 ft (235 ft decel + 200 ft taper + 235 ft storage) <sup>2</sup>
SB Right	435 ft (235 ft decel + 200 ft taper)
<b>Eastonville Road</b>	
NB Left	660 ft (235 ft decel + 200 ft taper + 225 ft storage) <sup>2</sup>
NB Right	435 ft (235 ft decel + 200 ft taper)
SB Left	535 ft (235 ft decel + 200 ft taper + 100 ft storage)
SB Right	435 ft (235 ft decel + 200 ft taper)
<b>Bent Grass Meadows Drive</b>	
NB Left	600 ft (235 ft decel + 200 ft taper + 165 ft storage) <sup>2</sup>
SB Right	435 ft (235 ft decel + 200 ft taper)
<b>Woodmen Hills Drive</b>	
NB Left	610 ft (235 ft decel + 200 ft taper + 175 ft storage)
NB Right	435 ft (235 ft decel + 200 ft taper)
SB Left	510 ft (235 ft decel + 200 ft taper + 75 ft storage)
SB Right	435 ft (235 ft decel + 200 ft taper)



<b>Stapleton Drive</b>	
NB Left	575 ft (235 ft decel + 200 ft taper + 140 ft storage) <sup>2</sup>
NB Right	435 ft (235 ft decel + 200 ft taper)
SB Left	535 ft (235 ft decel + 200 ft taper + 100 ft storage) <sup>2</sup>
SB Right	435 ft (235 ft decel + 200 ft taper)
<b>Tourmaline Drive/Waterbury Drive</b>	
NB Right	435 ft (235 ft decel + 200 ft taper)
SB Right	435 ft (235 ft decel + 200 ft taper)
<b>Londonderry Drive</b>	
NB Left	560 ft (235 ft decel + 200 ft taper + 125 ft storage) <sup>2</sup>
NB Right	435 ft (235 ft decel + 200 ft taper)
SB Left	585 ft (235 ft decel + 200 ft taper + 150 ft storage)
SB Right	435 ft (235 ft decel + 200 ft taper)
<b>Rex Road</b>	
NB Left	635 ft (235 ft decel + 200 ft taper + 200 ft storage) <sup>3</sup>
NB Right	435 ft (235 ft decel + 200 ft taper)
SB Left	875 ft (500 ft decel + 300 ft taper + 75 ft storage)
SB Right	800 ft (500 ft decel + 300 ft taper)
<b>Antler Ridge Drive</b>	
NB Right	800 ft (500 ft decel + 300 ft taper)
<b>Ayer Road</b>	
NB Left	900 ft (500 ft decel + 300 ft taper + 100 ft storage)
NB Right	800 ft (500 ft decel + 300 ft taper)
SB Right	720 ft (420 ft decel + 300 ft taper)
<b>Murphy Road</b>	
NB Right	720 ft (420 ft decel + 300 ft taper)
SB Left	850 ft (500 ft decel + 300 ft taper + 50 ft storage)
<b>Woodlake Road</b>	
NB Left	900 ft (500 ft decel + 300 ft taper + 100 ft storage)
NB Right	800 ft (500 ft decel + 300 ft taper)
SB Left	825 ft (500 ft decel + 300 ft taper + 25 ft storage)
SB Right	800 ft (500 ft decel + 300 ft taper)
<b>Softwood Road</b>	
NB Left	925 ft (500 ft decel + 300 ft taper + 125 ft storage)
SB Right	800 ft (500 ft decel + 300 ft taper)
<b>Hodgen Road</b>	
NB Left	550 ft (300 ft taper + 250 ft storage) <sup>4</sup>

<sup>1</sup> Taper lengths based on ECM requirements  
<sup>2</sup> Storage requirement based on double left turn  
<sup>3</sup> Storage requirement based on double left turn indicated in TIS  
<sup>4</sup> Based on 45 mph design speed

3.3.2. Spacing

The ECM provides criteria for spacing of roads according to functional classification. The applicable criteria for Meridian Road classifications are as follows:

- Principal arterial: ½ mile between full movement intersections
- Minor arterial: ¼ mile between full movement intersections

There are 25 public roads that intersect Meridian Road. The eight road segments shown in Table 8 do not meet the ECM spacing criteria.

Table 8. Full Movement Intersection Spacing Deficiencies

Functional Classification	Adjacent Roads	Distance Apart	Variance with ECM Spacing Criteria ½ mile (2640 ft)
6-lane Principal Arterial	US 24 and Rolling Thunder Way	1925 ft	715 ft
	Rolling Thunder Way and Woodmen Road	2125 ft	515 ft
	Woodmen Road and Eastonville Road	1275 ft	1365 ft
	Indian Paint Trail and Rex Road	2100 ft	540 ft
4-lane Principal Arterial	Antler Ridge Drive and Ayer Road	2225 ft	415 ft
Functional Classification	Adjacent Roads	Distance Apart	Variance with ECM Spacing Criteria ¼ mile (1320 ft)
2-lane Rural Minor Arterial	Melba Road and Milford Road	1300 ft	20 ft
	Brinkerhoff Road and Up River Road	1225 ft	95 ft
	Roslyn Road and Murphy Road	625 ft	695 ft

### 3.4 Safety Issues

#### 3.4.1. Existing Condition

Meridian Road stretches from a rapidly growing urban area on the south end to a rural environment on the north end. US 24 is not currently connected to Meridian Road. Once connected, traffic will increase significantly as vehicles access the planned and existing commercial properties located between US 24 and Woodmen Road from both the north and south. Aside from the  $\frac{3}{4}$  movement intersection that enables a left turn into the southern Meridian Market View access, north- and southbound vehicles traveling to and from these commercial properties are limited to RI/RO accesses that are clearly defined by concrete islands. Signage and striping provides directional guidance to drivers approaching the Meridian Road and Woodmen Road intersection from either direction.

A median divides north- and southbound Meridian Road from US 24 to Stapleton Drive. North of Woodmen Road, the corridor is a divided 4-lane arterial with few private accesses. The area is considered urban as parcel sizes are typically less than 2  $\frac{1}{2}$  acres. Neighborhoods access Meridian Road via well-spaced local and collector roads. The south end of Meridian Road is relatively flat, thus providing good visibility of upcoming intersections and oncoming traffic to drivers. The four signalized intersections are warranted by the traffic volumes attributed to the higher density, urban end of the corridor.

The roadway tapers down to a 2-lane minor arterial south of Londonderry Drive. North of Rex Road, the frequency of private access points increases as the landscape becomes rural with larger residential parcels replacing dense, residential neighborhoods. All access points from Rex Road to Hodgen Road are full movement.

Wildlife unexpectedly crossing the road is a threat along the entire corridor. The north end of Meridian Road is rural, and the open land and forested areas provide an ideal environment for the various species that are prevalent in this region. North of Ayer Road, the corridor is lined with trees that may block a driver's view of wildlife adjacent to and heading for the roadway.

#### 3.4.2. Crash Data

An analysis of CDOT crash data shows that there were 158 crashes in the project area from 2001 through 2005. Fifty-eight percent of the crashes resulted in property damage only and 42% resulted in injuries. There were no fatalities during the five-year period. The data shows that 66% of the crashes occurred during daylight hours and 25% occurred at night on the unlit portions of the corridor. Sixty-five percent occurred on dry roads. Crashes during poor road conditions occurred along the entire corridor and did not trend toward any specific areas. Seventy-five percent happened with no inclement weather conditions present and 18% occurred under snow/sleet/hail conditions.

As shown in Figure 5, the highest concentration of crashes occurred at or near the Meridian Road intersections with Woodmen Road, US 24, and Woodmen Hills Drive. Seventeen of the 35 crashes at or near Woodmen Road were rear-end collisions with nine on the Woodmen leg and eight on the Meridian leg. Nine of the 15 crashes at the Woodmen Hills intersection were broadsides. The crashes located at the intersections with US 24 and Tamlin Road were included in the analysis even though Meridian Road alignment no longer intersects those roadways at those locations.

The most frequently occurring crash types were rear-end collisions (23%) and hitting a fixed object (22%). Fixed objects include fences, trees, signs, guardrails, light/utility poles, and other non-specified objects.

Other higher frequency crash types were broadsides (15%), vehicle overturning (12%), and vehicle hitting a wild animal (11%). Table 8 shows the more commonly occurring crash types and the proximity to an intersection.

Rear-end collisions commonly occur during periods of congestion. Broadside collisions may indicate a need for traffic control measures. Adverse weather conditions can contribute to the number of overturning accidents and fixed object collisions. Seven of the 19 overturning accidents along the corridor occurred during snow/sleet/hail with snowy, icy, or slushy road conditions. Elk, deer, antelope, fox, coyote and other species are prevalent in this area and may dart into traffic unpredictably at any time along the corridor.

Driver impairment (drugs or alcohol) and contributing factors (emotional, mental, or other distractions) were also analyzed. Alcohol impairment was noted in 3% of the crashes, no impairment was cited in 93%, and impairment was unknown or not observed in the remaining 4%. Sixty-six percent of the crashes had no apparent driver factors, while inexperienced and preoccupied drivers were cited in 14% and 12%, respectively.

Figure 5. Crashes by Nearest Cross Street

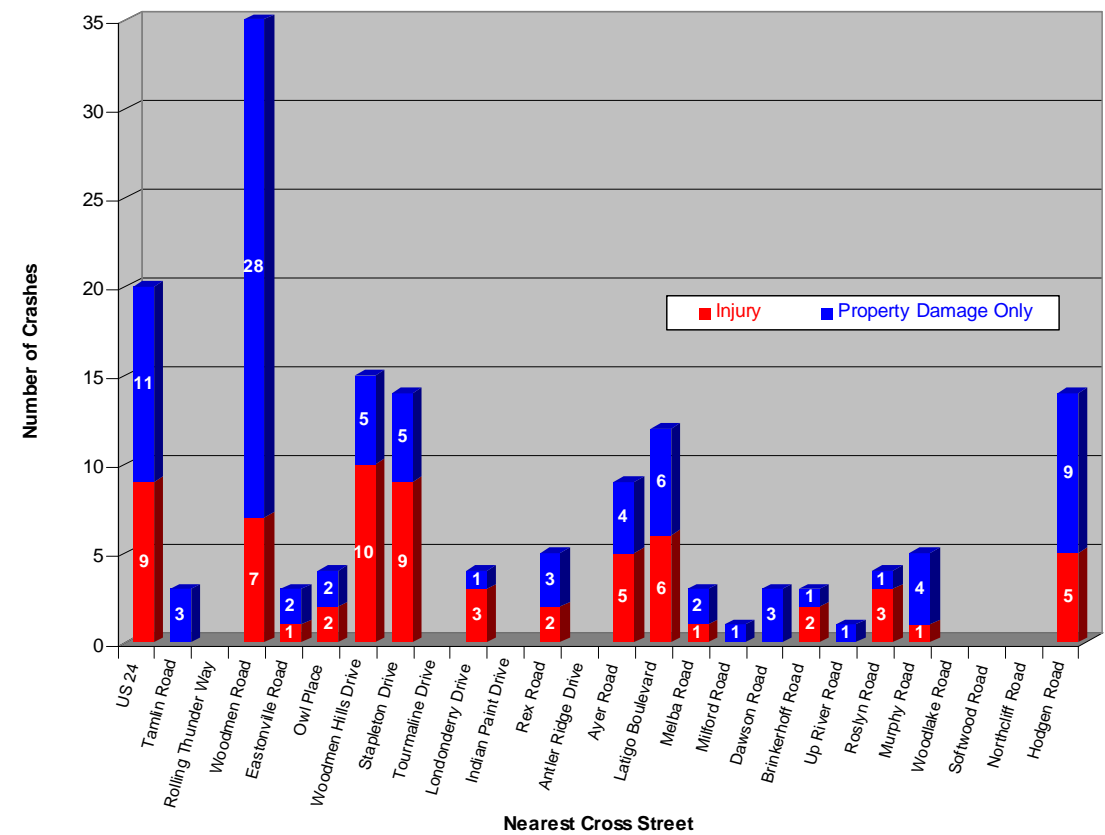


Table 9. Most Frequently Occurring Crash Types from 2001 – 2005

Crash Type	At or Near Intersection	Non-intersection	At Driveway Access	Total
Rear-end	27	10	-	37
Fixed object (fence, tree, sign, guard rail, light/utility pole, other)	5	30	-	35
Broadside	20	-	3	23
Overturning	2	17	-	19
Approach turn	7	-	1	8
Wild animal	-	8	-	8
Head-on	-	5	1	6
Overtaking turn	1	2	2	-
Total	62	72	7	136

Source: CDOT



4.0 Utilities

4.1 Existing Utilities

Several utility companies use the Meridian Road Corridor for existing underground utilities parallel to existing roadway right-of-way. Some utilities cross the Meridian Road Corridor at several locations. Table 10 lists each utility company and utility type currently located within the Meridian Road Corridor.

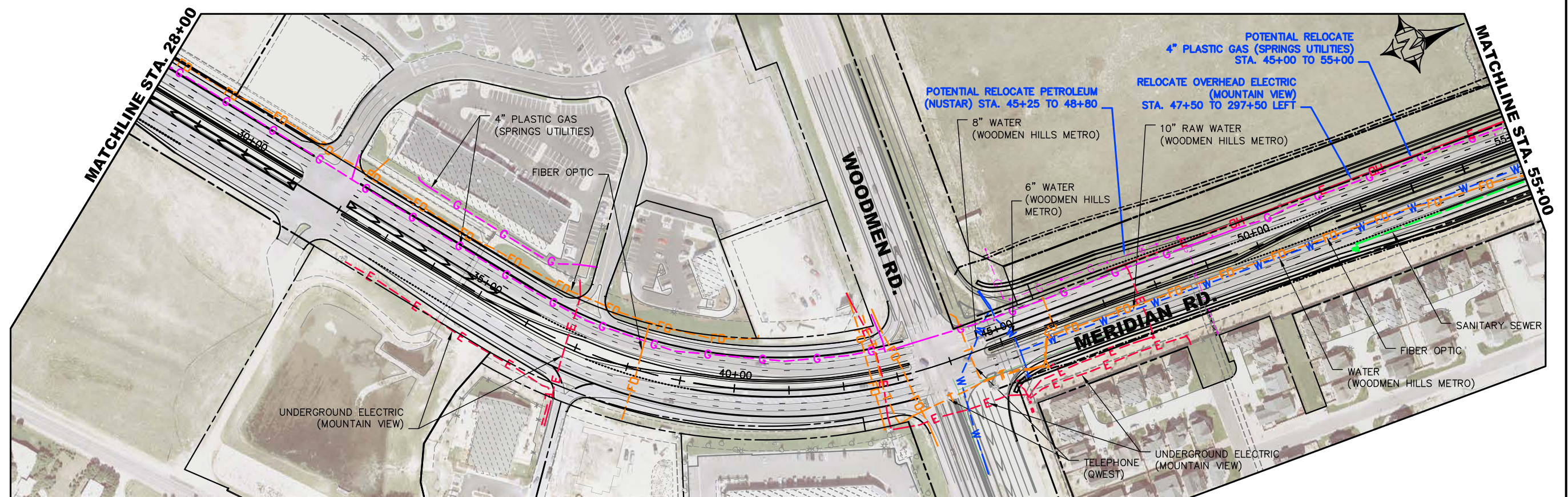
Table 10. Existing Utility Companies

Utility Company	Utility Type
Meridian Services Metropolitan District	Water and/or Sanitary
Woodmen Hills Metropolitan District	Water and/or Sanitary
Falcon Hills Metropolitan District	Water and/or Sanitary
Paint Brush Hills Metropolitan District	Water and/or Sanitary
Nustar (formerly Valero)	Petroleum
Black Hills (formerly Aquila)	Natural Gas
Mountain View Electric	Electric
Comcast	Television and/or Fiber Optics
Qwest	Telephone and/or Fiber Optics
Falcon Broadband Inc.	Fiber Optics
Springs Utilities	Gas

4.1.1. Potential Utility Conflicts

The proposed roadway improvements to Meridian Road will create potential conflicts with the existing utilities. Figures 6-1 through 6-10 show the proposed limits of the Meridian Road improvements, existing utilities, existing utility easement information (where available), and the preliminary alignments and easements. Table 11 summarizes the existing utilities along Meridian Road, grouped by roadway segment.

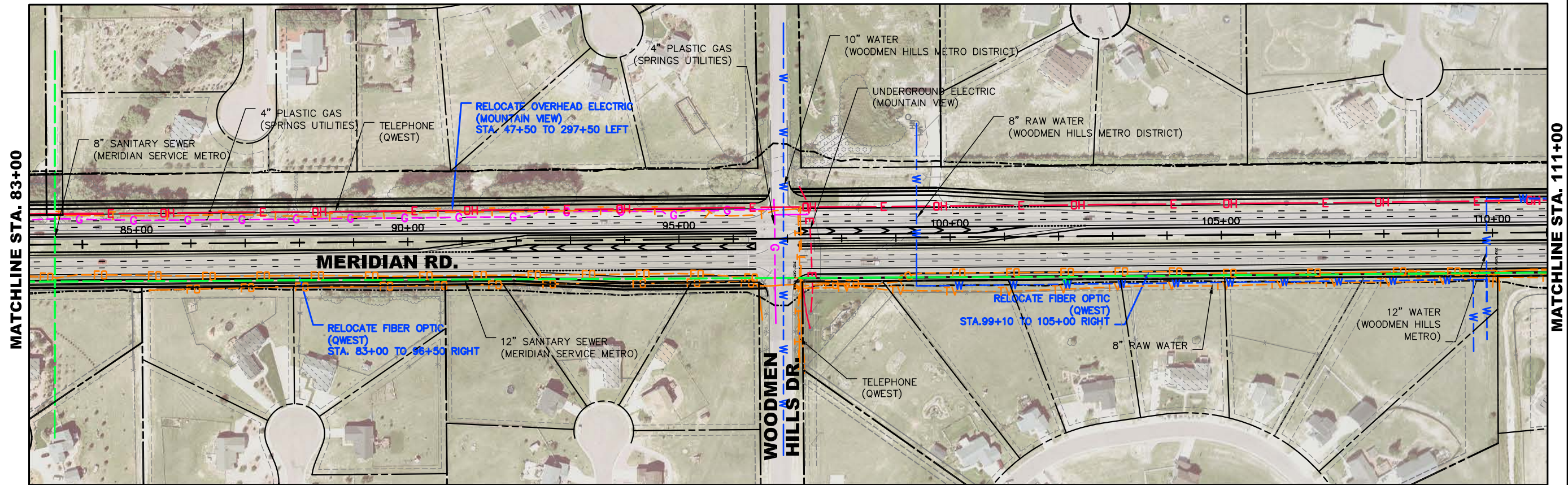
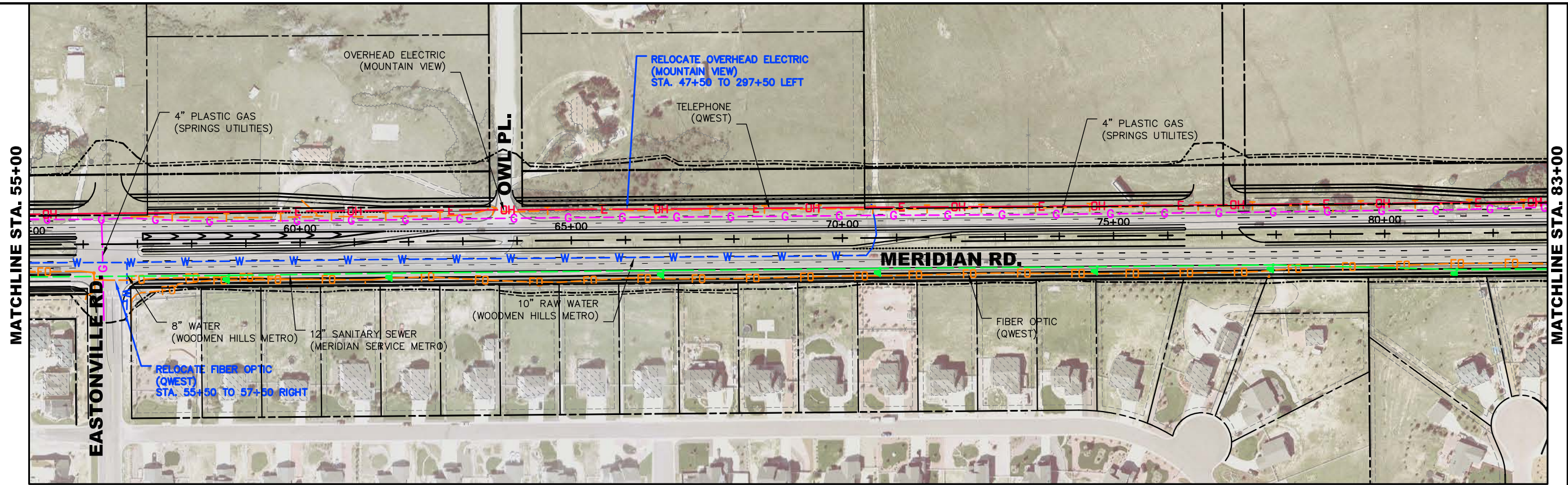




## MERIDIAN ROAD (NORTH) EXISTING UTILITIES

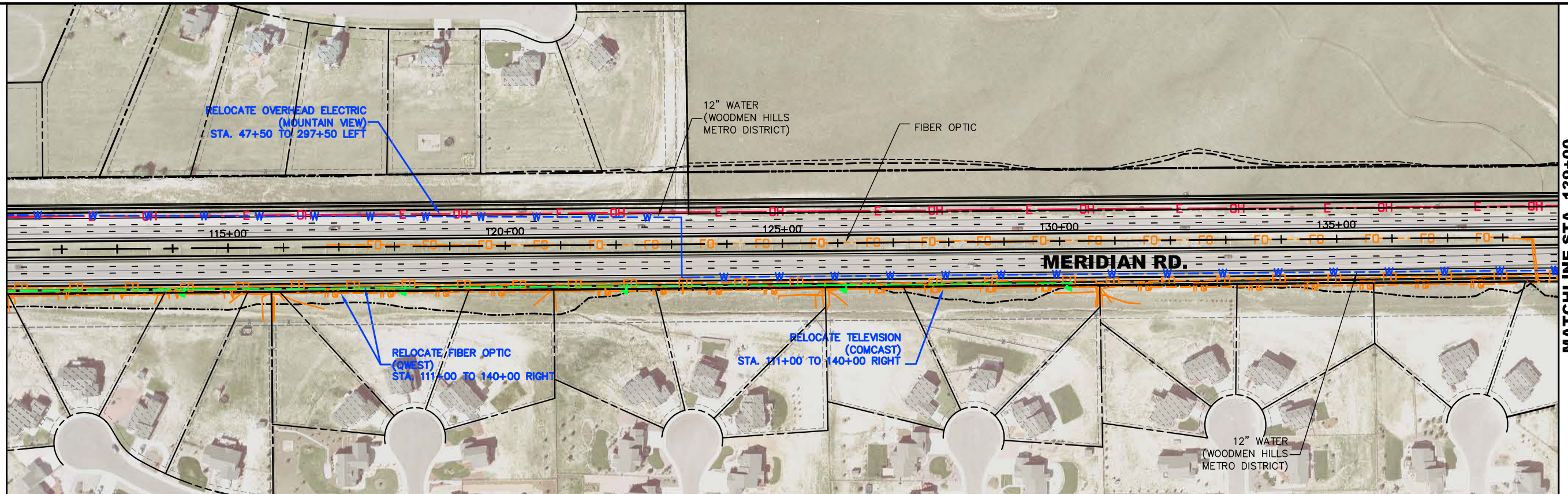
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---	G	BURIED GAS (LP)
---	E	BURIED ELECTRIC
---	OH	OVERHEAD ELECTRIC
---	T	BURIED TELEPHONE
---	FO	FIBER OPTIC COMMUNICATIONS
---	W	WATER
---	W	SANITARY SEWER LINE
---		LEGEND
---		TOP OF CUT
---		TOE OF FILL
---		PROPOSED R.O.W.
---		EXISTING R.O.W.
---		EXISTING EASEMENT
---		PROPOSED EASEMENT
---		PROPOSED RELOCATION





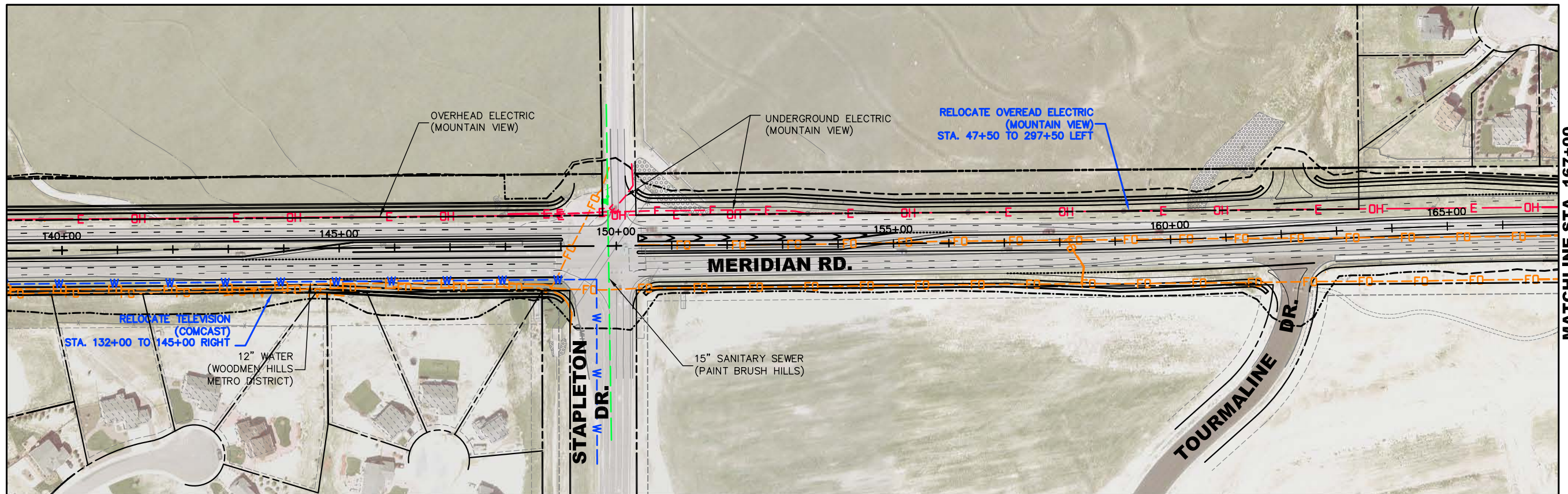


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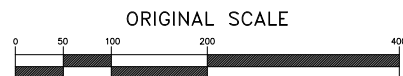


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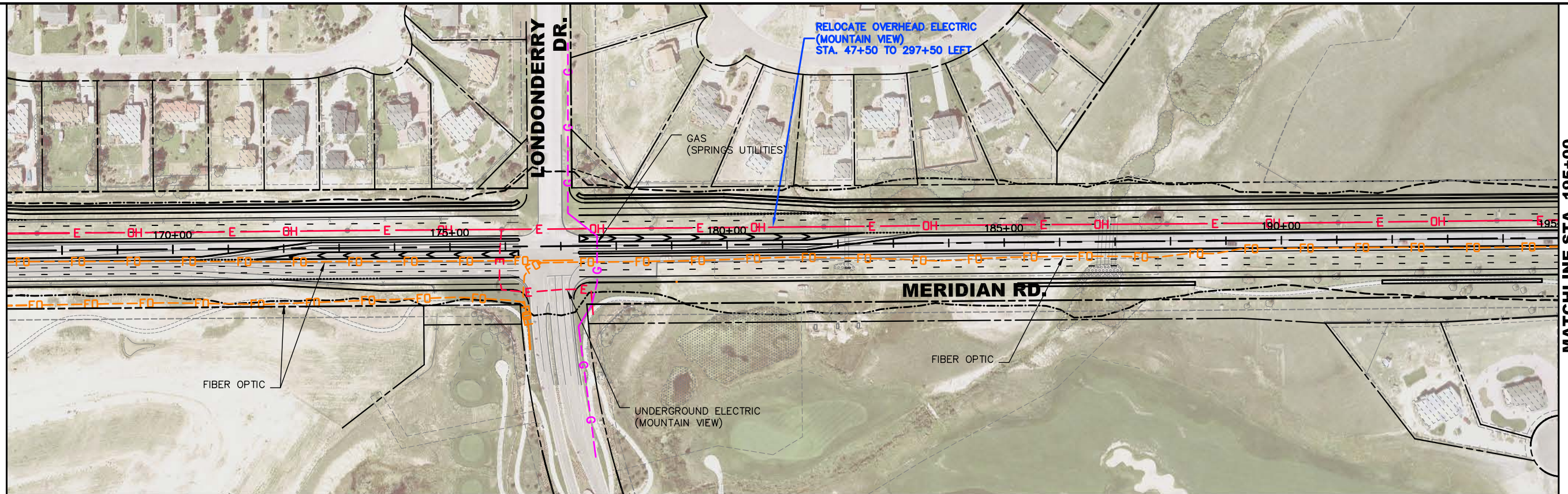
# MERIDIAN ROAD (NORTH) EXISTING UTILITIES

LEGEND		
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	G	BURIED GAS (LP)
	E	BURIED ELECTRIC
	OH	OVERHEAD ELECTRIC
	T	BURIED TELEPHONE
	FO	FIBER OPTIC COMMUNICATIONS
	W	WATER
		SANITARY SEWER LINE
		TOP OF CUT
		TOE OF FILL
		PROPOSED R.O.W.
		EXISTING R.O.W.
		EXISTING EASEMENT
		PROPOSED EASEMENT
		PROPOSED RELOCATION

FIGURE 6-3

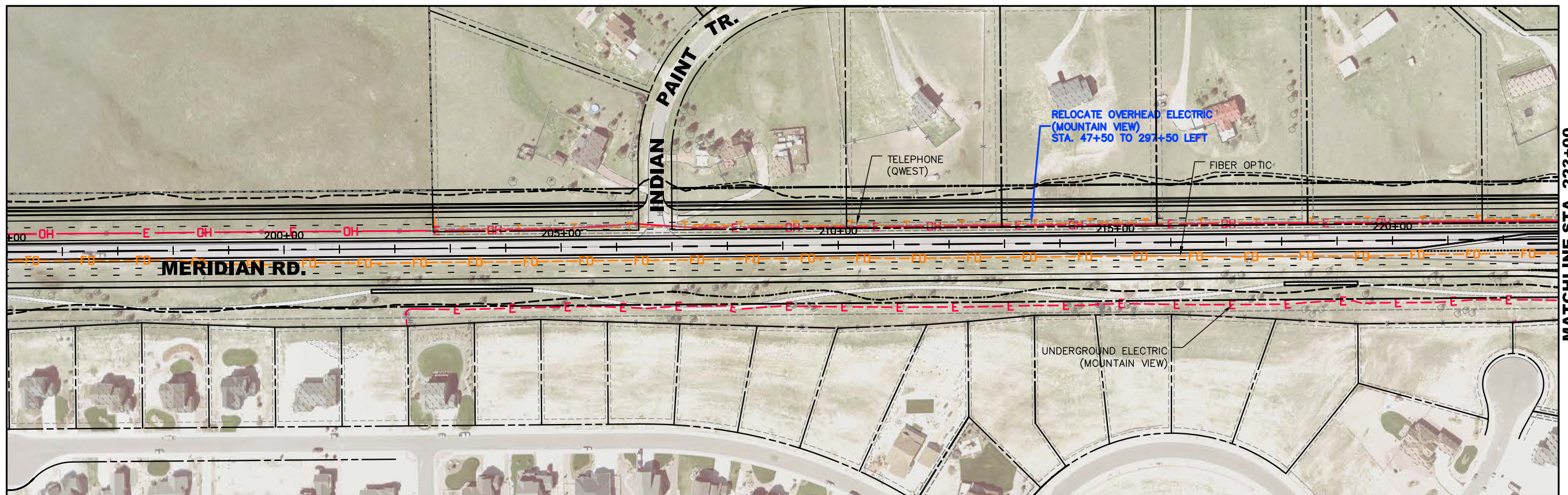


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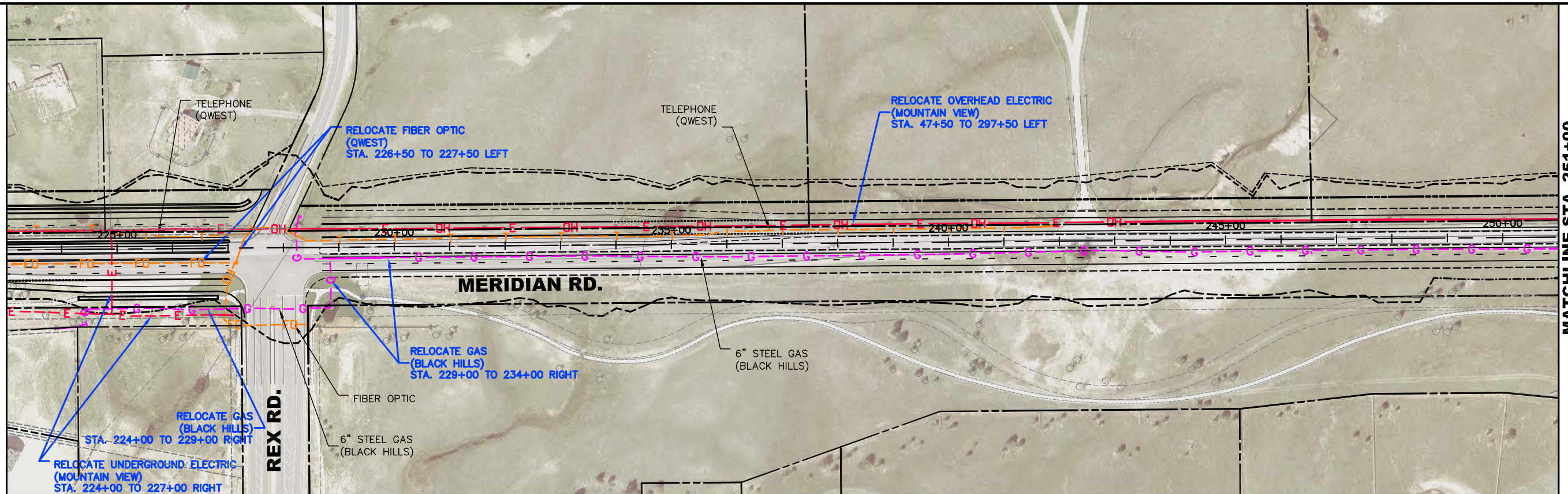
## MERIDIAN ROAD (NORTH) EXISTING UTILITIES

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— G —	BURIED GAS (LP)	— — — — —	TOE OF FILL
— E —	BURIED ELECTRIC	— — — — —	PROPOSED R.O.W.
— OH —	OVERHEAD ELECTRIC	— — — — —	EXISTING R.O.W.
— T —	BURIED TELEPHONE	— — — — —	EXISTING EASEMENT
— FO —	BURIED FIBER OPTIC COMMUNICATIONS	— — — — —	PROPOSED EASEMENT
— W —	WATER	— — — — —	PROPOSED RELOCATION
— S —	SANITARY SEWER LINE		

FIGURE 6-4

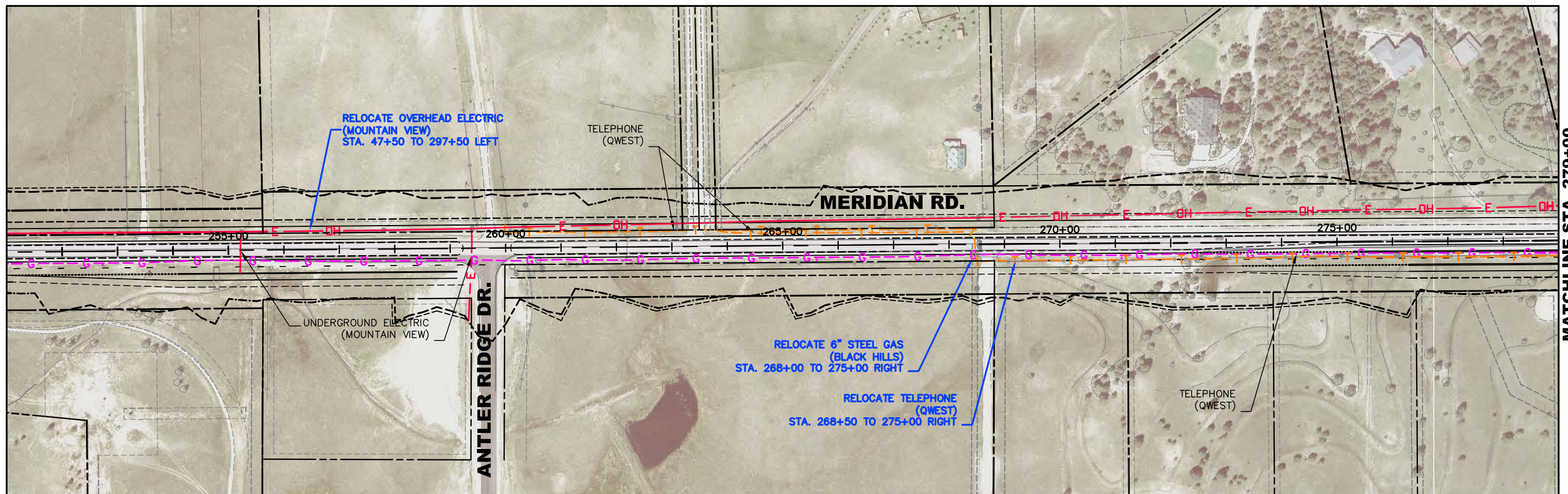


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MATCHLINE STA. 251+00



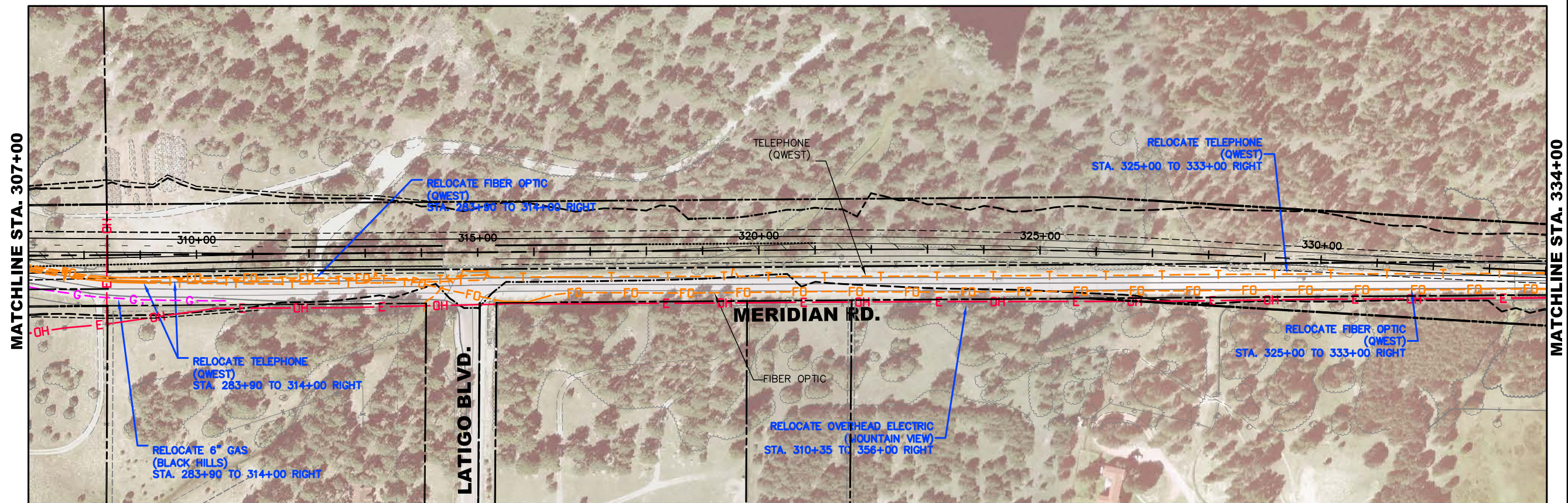
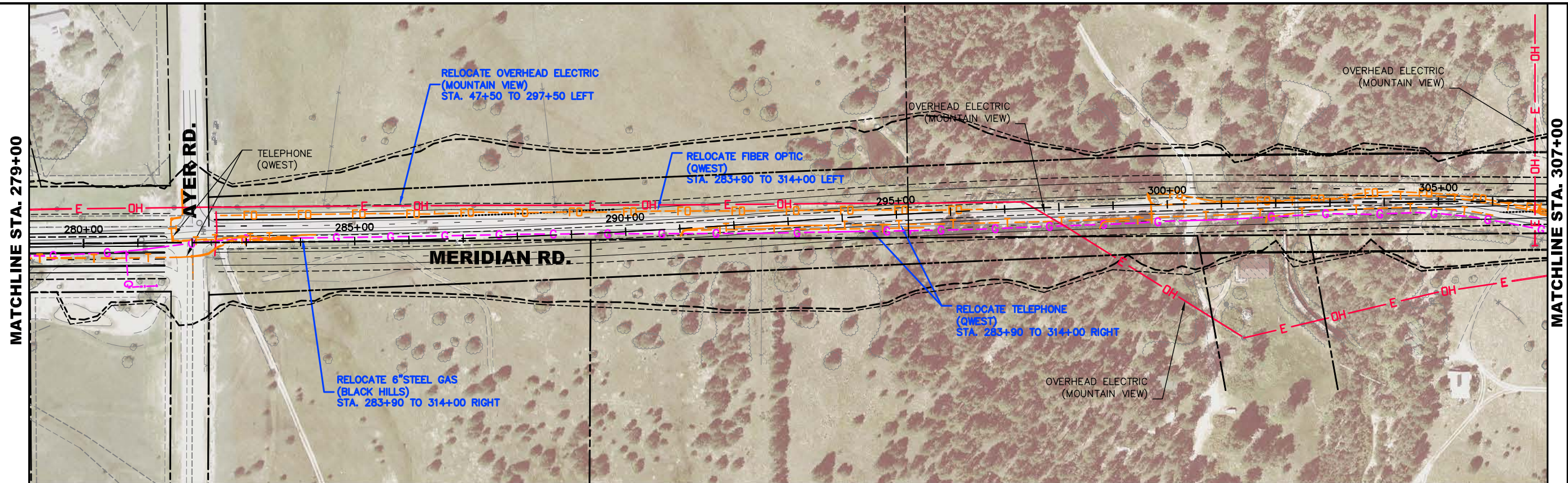
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## MERIDIAN ROAD (NORTH) EXISTING UTILITIES

LEGEND		
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	G	BURIED GAS (LP)
	E	BURIED ELECTRIC
	OH	OVERHEAD ELECTRIC
	T	BURIED TELEPHONE
	FO	FIBER OPTIC COMMUNICATIONS
	W	WATER
	W	SANITARY SEWER LINE
		TOP OF CUT
		TOE OF FILL
		PROPOSED R.O.W.
		EXISTING R.O.W.
		EXISTING EASEMENT
		PROPOSED EASEMENT
		PROPOSED RELOCATION



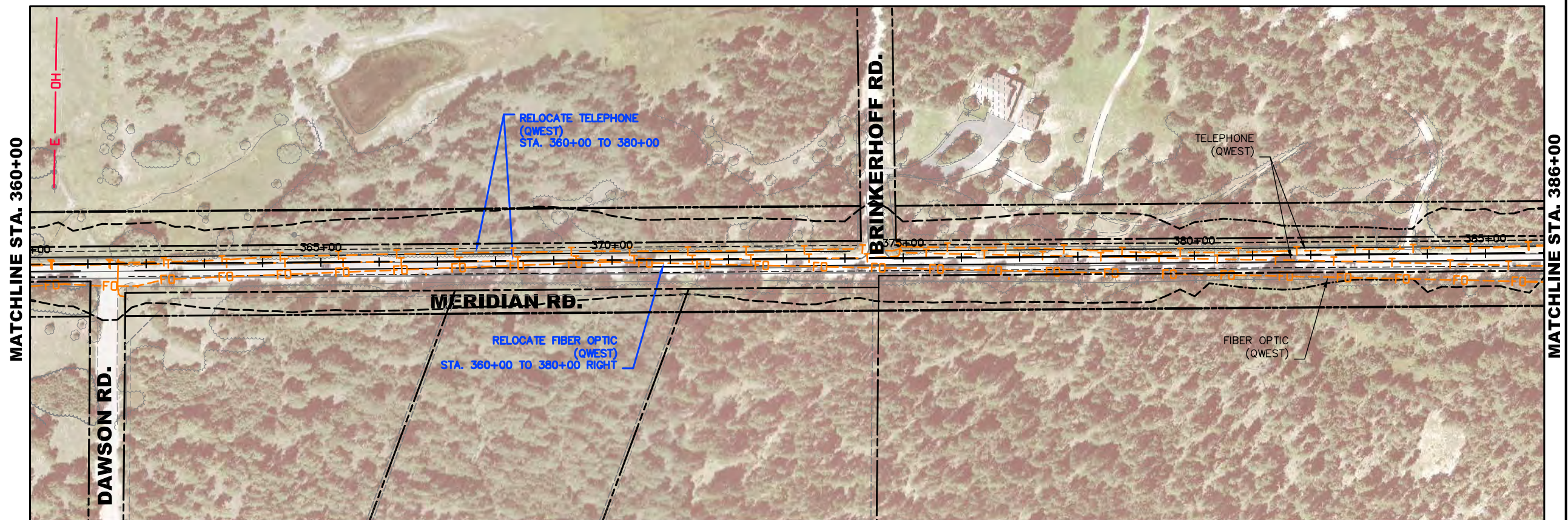
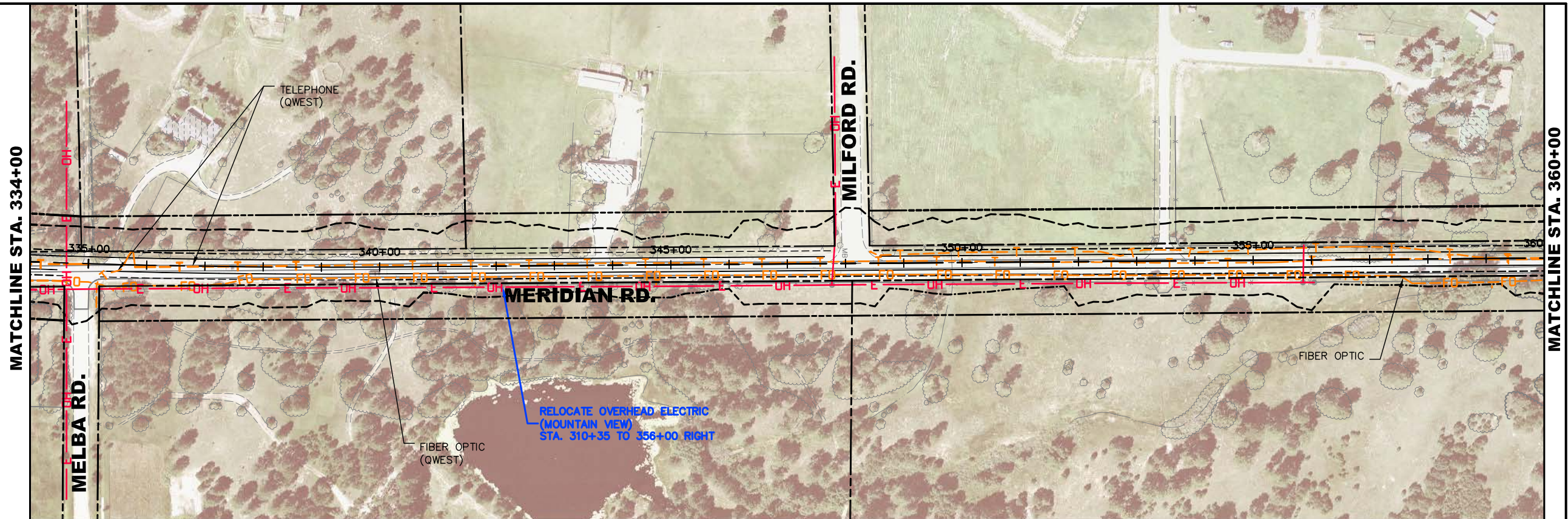


## MERIDIAN ROAD (NORTH) EXISTING UTILITIES

---	G	BURIED GAS LINE (HP)	---	---	TOP OF CUT
---	G	BURIED GAS (LP)	---	---	TOE OF FILL
---	E	BURIED ELECTRIC	---	---	PROPOSED R.O.W.
---	E	OVERHEAD ELECTRIC	---	---	EXISTING R.O.W.
---	T	BURIED TELEPHONE	---	---	EXISTING EASEMENT
---	FO	FIBER OPTIC COMMUNICATIONS	---	---	PROPOSED EASEMENT
---	W	WATER	---	---	PROPOSED RELOCATION
---	W	SANITARY SEWER LINE	---	---	

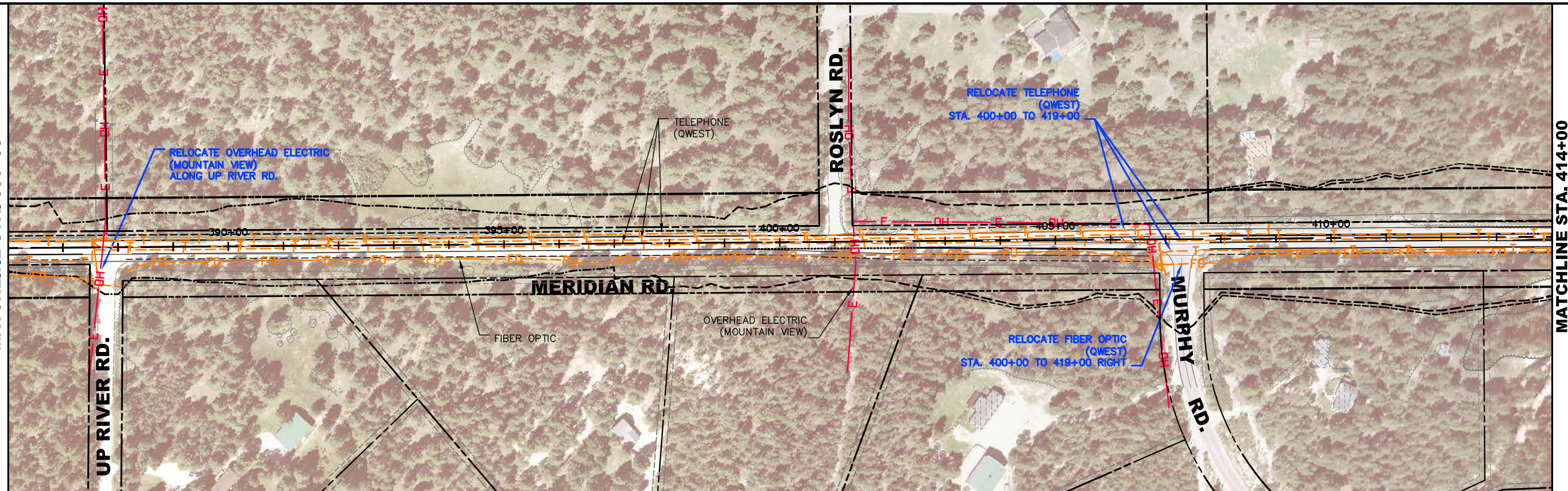
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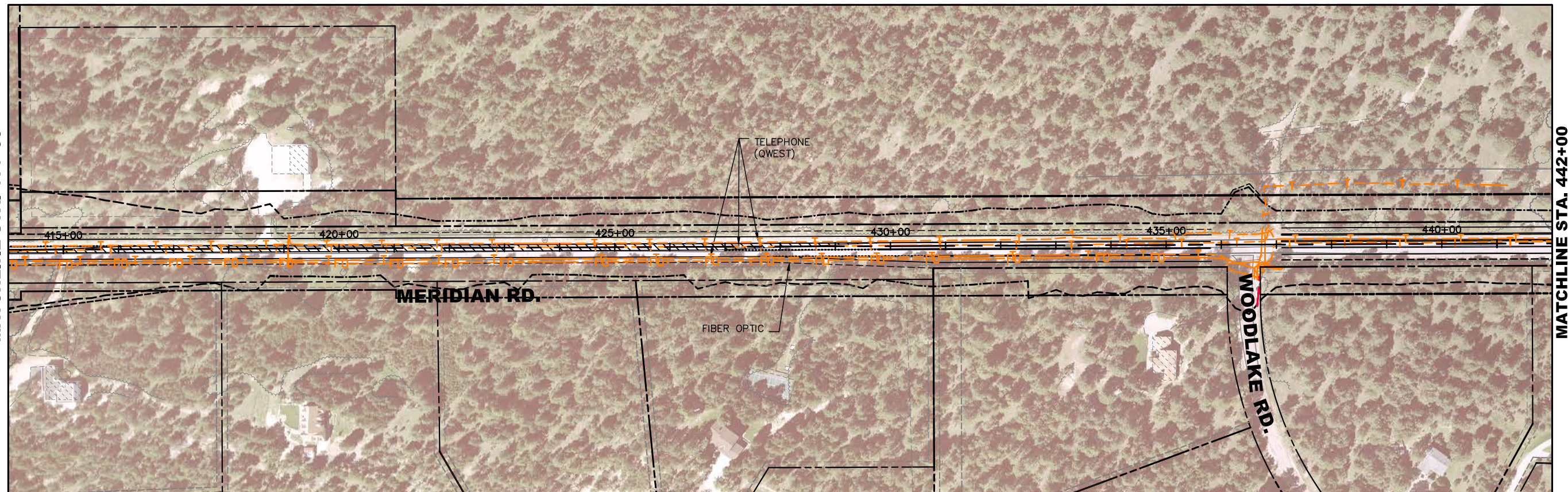


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## MERIDIAN ROAD (NORTH) EXISTING UTILITIES









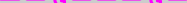






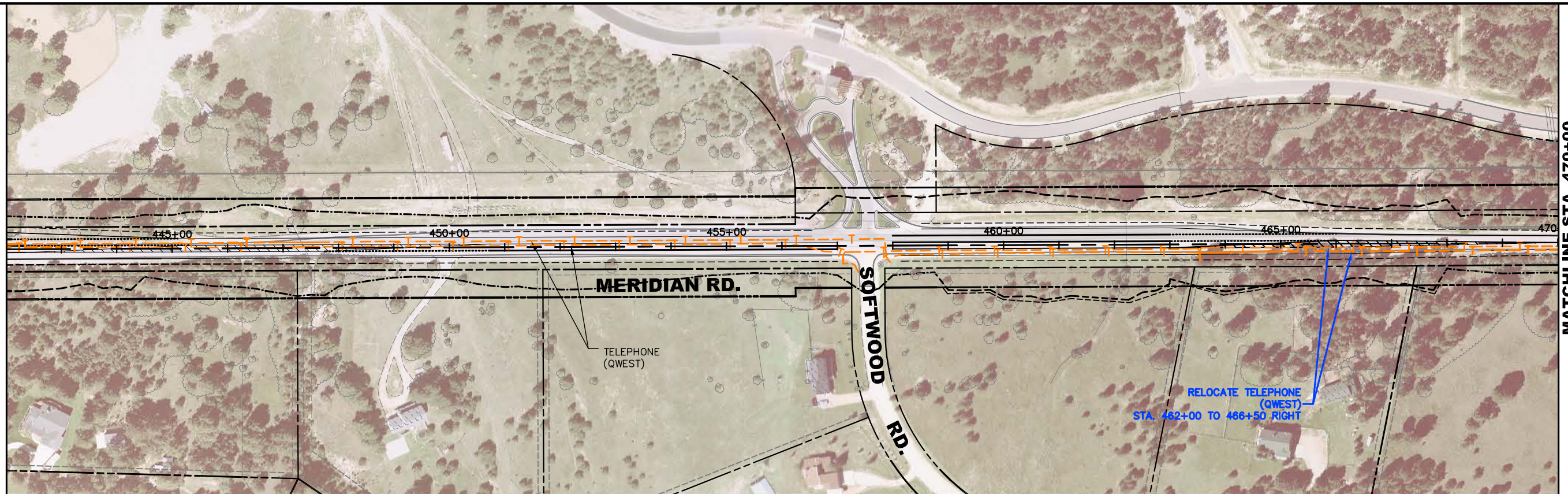
LEGEND			
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	BURIED GAS (LP)		TOE OF FILL
	BURIED ELECTRIC		PROPOSED R.O.W.
	OVERHEAD ELECTRIC		EXISTING R.O.W.
	BURIED TELEPHONE		EXISTING EASEMENT
	FIBER OPTIC COMMUNICATIONS		PROPOSED EASEMENT
	WATER		PROPOSED RELOCATION
	SANITARY SEWER LINE		

FIGURE 6-8

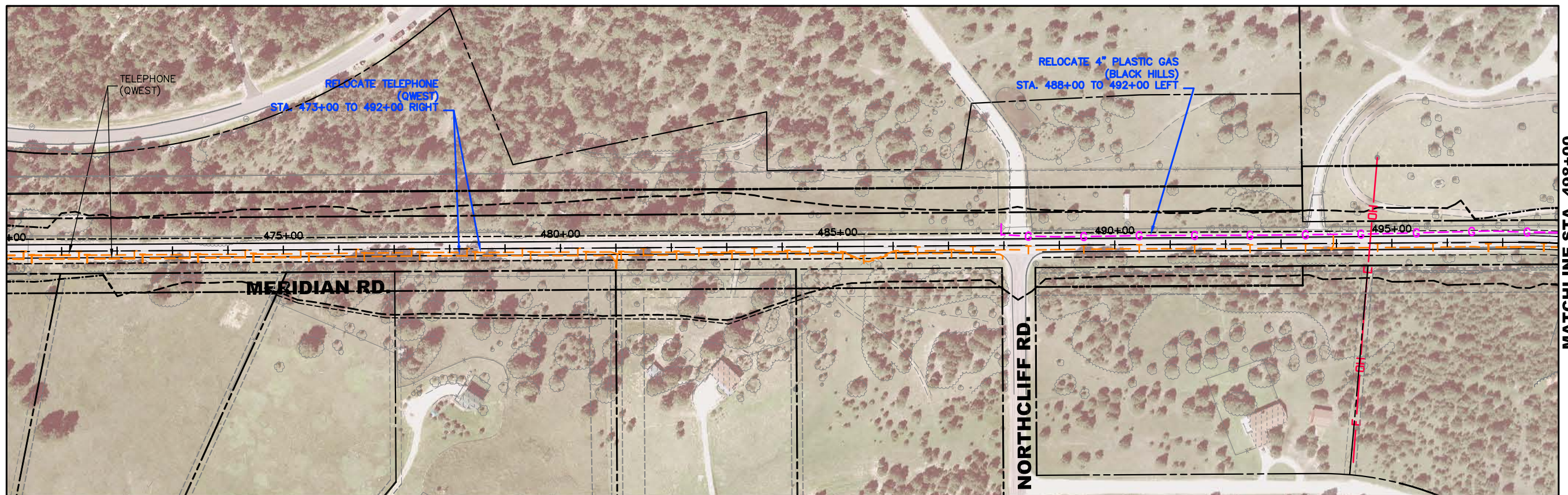


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## MERIDIAN ROAD (NORTH) EXISTING UTILITIES

LEGEND		
	G	BURIED GAS LINE (HP)
	G	BURIED GAS (LP)
	E	BURIED ELECTRIC
	OH	OVERHEAD ELECTRIC
	T	BURIED TELEPHONE
	FO	FIBER OPTIC COMMUNICATIONS
	W	WATER
	W	SANITARY SEWER LINE
		TOP OF CUT
		TOE OF FILL
		PROPOSED R.O.W.
		EXISTING R.O.W.
		EXISTING EASEMENT
		PROPOSED EASEMENT
		PROPOSED RELOCATION







Table 11. Existing Utilities

Meridian Road Segment	Utility					
	Gas	Electric	Water	Sanitary	Fiber	Other
South of US 24 to just north of Woodmen Road	A gas line is adjacent to Woodmen Road and crosses Meridian Road. A low pressure gas line also parallels Meridian Road.	An underground electric line is adjacent to Woodmen Road and crosses Meridian Road.	Two water lines cross Meridian near construction limits.  An 8 in line parallels down the center of Woodmen Road and crosses Meridian Road.	A sanitary sewer line is adjacent to Woodmen Road and crosses Meridian Road.	Three fiber optic lines parallel the south side of Woodmen Road and cross Meridian.	NuStar petroleum line is parallel to Meridian Road, on the west side to west on Woodmen Road.
Woodmen Road north to Woodmen Hills (including the Woodmen Road/Meridian Road intersection)	A parallel gas line runs from Owl Place to Woodmen Hills Drive, crosses Meridian and continues down the center of Woodmen Hills Drive in an easterly direction.  Along the westerly edge of the southbound lanes, a gas line runs from the intersection to Woodmen Hills Drive.	An underground electric line crosses Meridian Road north of the intersection of Woodmen Road, crosses Woodmen Road and continues along the eastern edge of Meridian Road.  An underground electric line crosses Meridian Road south of the intersection of Woodmen Road, and parallels Meridian Road along the eastern edge.  Just north of Woodmen Road, the underground electric splits and runs parallel for about 300 ft; one line serves an adjacent neighborhood, the other crosses Meridian Road.  Overhead electric runs parallel to Meridian along the westerly edge of the road.	Two water lines cross Meridian Road north of the intersection of Woodmen Road.  A water line parallels Meridian in the center until it crosses west at Owl Place.	A sanitary sewer line parallels Meridian starting about 500 ft north of the Woodmen /Meridian intersection and continues along the eastern edge of Meridian past Woodmen Hills Drive.	Two fiber optic lines cross Meridian Road south of the intersection of Woodmen Road and parallel Meridian Road along the eastern edge.  Fiber optic parallels the water line and continues to Woodmen Hills Drive and then crosses Meridian Road.  A second fiber optic line parallels the first line on the east until approximately 800 ft south of Woodmen Hills Drive.  A fiber optic line crosses Meridian Road north of the intersection of Woodmen Road.  .	A telephone line crosses Meridian Road north of the intersection of Woodmen Road, crosses Woodmen Road and continues along the eastern edge of Meridian Road.  A telephone line crosses Meridian Road south of the intersection of Woodmen Road and parallels Meridian Road along the eastern edge.  NuStar petroleum line crosses Meridian about 250 ft north of Woodmen Road.
Woodmen Hills Drive north to Stapleton Road	No gas in this section.	Overhead electric runs parallel to Meridian along the westerly edge of the road.  An underground electric line runs parallel to Meridian near the intersection of Stapleton Rd and Meridian.	A water line crosses Meridian Rd at Woodmen Hills Drive.  A water line crosses Meridian about 200 ft north of Woodmen Hills Drive and then runs parallel to Meridian for about 1000 ft north to Stapleton Rd and then heads east on Stapleton Road.	A sanitary sewer line parallels Meridian along the eastern edge to just south of Stapleton Road.  A sanitary sewer line crosses Meridian at Stapleton Road.	North of Woodmen Hills Drive, a fiber optic line parallels the north bound lanes of Meridian Road, stopping short of Stapleton Road.  A second fiber optic line runs in the median of Meridian Road about midway of this section.  A fiber optic line crosses Meridian Road just south of Stapleton Road.	North of Woodmen Hills Drive, a television line parallels the north bound lanes of Meridian Road, stopping short of Stapleton Road.  Two telephone lines cross Meridian Road north of Woodmen Hills Drive.

Meridian Road (North) Corridor Plan – Utilities

Meridian Road Segment	Utility					
	Gas	Electric	Water	Sanitary	Fiber	Other
<b>Stapleton Road north to Rex Road</b>	<p>A gas line trending east/west crosses Meridian Road north of Londonderry Drive.</p> <p>A gas line runs along the eastern edge of the road, crosses Rex Road, and turns west to connect to a gas line that runs down the center of Meridian Road for about 1,100 ft until veering to the eastern edge of Meridian Road to just south of Latigo Blvd.</p> <p>A gas line runs parallel to the eastern edge of Meridian from just south of Rex Road, crosses Rex Road then heads north on Meridian.</p>	<p>Overhead electric runs parallel to Meridian along the westerly edge of the road.</p> <p>South of Londonderry Drive, a section of underground electric crosses Meridian Road, then crosses Londonderry Drive on the east side of Meridian Road and turns north to parallel Londonderry Drive.</p> <p>Approximately 200 ft south of the intersection of Rex Road, an underground electric line crosses Meridian Road.</p>	<p>No water in this section.</p>	<p>No sewer in this section.</p>	<p>Two fiber optic lines run parallel to Meridian Road north of Stapleton Road: one runs down the middle of the roadway until Londonderry Drive where it shifts to the eastern edge of the roadway, where the shift occurs and spur feeds to the east (around Londonderry Drive); the second line crosses Meridian Road in an easterly direction at Londonderry Drive, and parallels Londonderry Drive along the south edge.</p> <p>Approximately 800 ft north of Stapleton Road, a fiber optic line crosses Meridian Road connecting the two lines.</p> <p>At the intersection of Rex Road, a fiber optic line crosses Meridian Road on the south side and then crosses Rex Road on the east side.</p>	<p>A telephone line runs along the western edge of Meridian from just south of Indian Paint Trail to just past Rex Road.</p>
<b>Rex Road north to Latigo Boulevard</b>	<p>Continuing north from Rex Road, a gas line runs in the middle of the roadway for about 1,100 ft before veering to the edge of the roadway, continuing north, crossing Antler Ridge Drive, another access point before jogging east and immediately north again before stopping at the intersection of Ayer Road.</p>	<p>There are three underground electrical crossings: one about 400 ft south of Antler Ridge Drive, one just south of Antler Ridge Drive (at the intersection), and one north of Ayer Road (north of the intersection).</p> <p>Overhead electric runs parallel to Meridian along the westerly edge of the road then crosses Meridian north of Ayer Road and runs parallel to Meridian along the easterly edge of the road.</p>	<p>No water in this section.</p>	<p>No sewer in this section.</p>	<p>A fiber optic line runs north of Ayer Road along the western edge of Meridian Road for about 1,500 ft.</p> <p>A fiber optic line crosses Meridian Road about 300 ft north of the last line and runs along the western edge of the roadway until just short of Latigo Boulevard.</p>	<p>A telephone line runs along the western edge of the roadway from Rex Road and terminates at the first major access point to the north, resuming again at the intersection of Antler Ridge Drive, paralleling Meridian Road on the western edge for about 850 ft before turning east and crossing Meridian Road and heading north again to the intersection of Ayer Road.</p> <p>A small section of telephone line exists on the southwest corner of the intersection of Ayer Road and Meridian Road.</p> <p>A telephone line runs parallel to the fiber optic and stops at the same location.</p>

Meridian Road (North) Corridor Plan – Utilities

Meridian Road Segment	Utility					
	Gas	Electric	Water	Sanitary	Fiber	Other
Latigo Boulevard north to Hodgen Road	A gas line runs along the western edge of Meridian Road from Northcliff Road to Hodgen Road, crossing Northcliff Road.	Overhead electric runs parallel to Meridian along the easterly edge of the road to just north of Milford Road.	No water in this section.	No sewer in this section.	At the intersection with Woodlake Road, two fiber optic lines cross Woodlake Road and then cross Meridian Road.	<p>North of Latigo Boulevard, a telephone line runs along the western edge of Meridian Road and ends near Melba Road.</p> <p>Three telephone lines in this section run mostly parallel to Meridian Road and cross in a few areas.</p> <p>Two telephone lines run along the western edge of Meridian Road near the intersection of Woodlake Road and continue north until Softwood Road, where both lines cross Meridian Road for service connections (one line crosses on either side of the Woodlake Road); after crossing, both lines continue north along the easterly edge of Meridian Road. One line terminates at Northcliff Road, the other crosses Northcliff Road and continues.</p>



4.2 Existing Utility Easements

During this study, each utility company was asked to provide available utility easement information in addition to the location information they were providing. Several of the utility companies provided verbal information about the existing easement widths and locations. All easement information received from the utility companies shall be verified by title searches during the design phase. Table 12 provides a summary of the easement information received to date.

Table 12. Existing Utility Easements

Utility Company	Easement Width	Easement Location
Public Utilities and Drainage Easement, Trail and Roadway Improvements	20' to 22'	North of Rolling Thunder Way to south entrance of WalMart on west side of Meridian Road
Public Utilities and Drainage Easement	20' to 30'	North side of south entrance into WalMart to Woodmen Road on west side of Meridian
Public Utilities and Drainage Easement	10'	Meridian Road Station 35+75 to Station 42+25 on east side
Public Utilities and Drainage Easement	20'	Meridian Road Station 42+25 to Woodmen Road on east side
Electric Easement (Mountain View)	20'	Along the north side of Woodmen Road
Electric Easement (Mountain View)	20'	Parallel to Meridian Road from Station 48+00 to 356+00
Nustar Gas line	20'	Perpendicular to Meridian Road Station 48+61
Electric Easement (Mountain View Electric)	20'	Woodmen Road Station 48+00 to Station 356+00
Public Utilities and Drainage Easement	20'	Meridian Road from north side of Woodmen Road to south side of Eastonville Road on east side
Public Utility Easement	10'	Meridian Road Station 57+19 to Meridian Road Station 70+42, west side
Public Utilities, Drainage and Trail Easement	20'	Meridian Road Station 79+69 to south side Woodmen Hills Drive on east side
Electric Easement (Mountain View)	20'	Along north side of Woodmen Hills Drive, Meridian Road station 97+32
Public Utilities, Drainage and Trail Easement	20'	Meridian Road from north side of Woodmen Hills Drive to Meridian Road Station 110+09, east side
Public Utilities, Drainage and Landscape Easement	60'	Meridian Road Station 110+09 to Meridian Road Station 148+65, east side
Electric Easement (Mountain View)	40' x 30'	Meridian Road Station 150+23 to Station 150+52 in existing roadway
Electric Easement (Mountain View)	14' x 37'	North side of Stapleton Road
Utility, Drainage and Roadway Improvements Easement	20'	Meridian Road from north side of Stapleton Road to south side of Tourmaline Drive, east side

Utility Company	Easement Width	Easement Location
Utility, Drainage and Roadway Improvements Easement	20'	Meridian Road from north side of Tourmaline Drive to south side of Londonderry Drive, east side
Utility, Drainage and Roadway Improvements Easement	20'	Meridian Road from north side of Londonderry Drive to south side of Rex Road, east side
Utility, Drainage and Roadway Improvements Easement	20'	Meridian Road from north side of Rex Road to Meridian Road Station 255+63, east side
Electric Easement (Mountain View)	40' x 20'	Meridian Road Station 229+31 in existing roadway
Electric Easement (Mountain View)	40' x 10'	Meridian Road Station 254+73 in existing roadway
Utility and Drainage Easement	20'	Meridian Road Station 255+63 to Station 268+62, west side
Utility and Drainage Easement	10'	Station 255+63 to south side of Antlers Ridge Drive, east side of Meridian Road
Electric Easement (Mountain View)	10'	Perpendicular to Meridian Road from Station 268+42 to Station 268+52
Utility and Drainage Easement	10'	Meridian Road Station 268+81 to south side of Ayers Road, east side
Electric Easement (Mountain View)	20'	Meridian Road Station 268+82 to Station 282+05, west side
Electric Easement (Mountain View)	20'	North side of Woodmen Road to Meridian Road Station 50+47 on east side
Public Utility and Drainage Easement	10'	North side of Eastonville Road to Station 77+68 on east side
Public Utility, Drainage and Roadway Improvements Easement	20'	Meridian Road Station 148+65 to Stapleton Drive on east side
Public Utility and Drainage Easement	10'	Meridian Road Station 83+64 to south side of Woodmen Hills Drive on west side
Electric Easement (Mountain View Electric)	20'	North side of Woodmen Hills Drive to Meridian Road Station 99+84 on west side
Public Utility and Drainage Easement	10'	Meridian Road Station 99+84 to Station 123+31 on west side
Public Utility and Drainage Easement	10'	Meridian Road Station 163+45 to Station 175+51 on west side
Public Utility and Drainage Easement	10'	Meridian Road Station 178+24 to 185+96 on west side
Public Utility Easement	10'	Meridian Road Station 202+70 to south side of Indian Point Trail on west side
Public Utility Easement	10'	North side of Indian Point Trail to south side of Rex Road on west side
Electric Easement (Mountain View Electric)	10'	Meridian Road Station 202+70 to Rex Road on west (1/2 in ROW)
Public Utility and Drainage Easement	20'	Meridian Road Station 268+82 to south side of Ayers Road on west side
Public Utility Easement	10'	Meridian Road Station 308+41 to south side of Latigo Boulevard on east side