

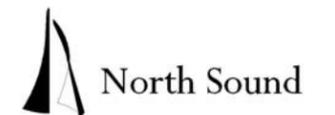
# South I-25 Corridor Study, NM 47/ Broadway Blvd to I-40



## Highway Improvement Plan Report

Phase IB Detailed Evaluation of Alternatives, CN A301100

October 2016





# SOUTH I-25 CORRIDOR STUDY

NM 47/Broadway Blvd to I-40

NMDOT Project: CN A301100

## Highway Improvement Plan Report

Phase IB Detailed Evaluation of Alternatives



Mark Fahey 10/6/16  
 Mark Fahey, P.E. Date  
 NMDOT CRD Project Development Engineer

Ken Murphy 10/6/16  
 Ken Murphy, P.E. Date  
 NMDOT District Three Engineer (Acting)

Priscilla Benavides 10/6/16  
 Priscilla Benavides, P.E. Date  
 NMDOT Central Region Design Manager

Elias Archuleta 10/6/16  
 Elias Archuleta, P.E. Date  
 NMDOT Chief Engineer

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## Executive Summary

### INTRODUCTION

The purpose of the South I-25 Corridor Study is to identify improvements needed to maintain and enhance the operational performance of South I-25 for the long-term planning horizon, which is currently 2040 for the Albuquerque metro area. The limits of the study include the I-25 facilities from the NM 47/Broadway Boulevard interchange to the south side of the I-40/I-25 interchange as shown in [Exhibit ES-1](#).

The results of this study will enable NMDOT and MRCOG to plan for long-term needs in the Metropolitan Transportation Plan (MTP) and to program near-term improvements in the Transportation Improvement Program (TIP) and Statewide Transportation Improvement Program (STIP). Because of the scale of the needs and the anticipated costs, phased implementation is anticipated. This may require amendments to the existing approved TIP/STIP and will depend on funding availability within the fiscally-constrained MTP.

While significant improvements have been implemented and are ongoing in the South I-25 corridor, several deficiencies remain involving aging infrastructure, geometric design issues, namely the S-curve, and traffic

operational and safety performance. Access to and from the interstate must be managed to appropriately accommodate existing and future development, and transportation systems management and operations (TSM&O) applications are needed to maximize the performance of the system. Further, improved bicycle and pedestrian crossings of the interstate and accommodations for public transportation improvements are also part of the South I-25 preferred improvement alternative.

The improvement approach for the South I-25 corridor was developed in two main segments south and north of Sunport Boulevard as follows:

- ◆ **South Segment** – NM 47/Broadway Boulevard interchange to the south side of the Sunport Boulevard interchange
- ◆ **North Segment** – from the south side of the Sunport Boulevard interchange to the south side of the I-40/I-25 interchange

One improvement alternative was evaluated for the south segment and three alternatives were evaluated for the north segment. Alternatives in the north segment included: B1, the Braided Ramps concept; B2, the Closest to Existing concept; and B3, the Collector-Distributor Roads concept.

Based on the engineering and environmental evaluations conducted, study team meeting discussions and considering stakeholder input, Alternatives B1 and B2 would perform similarly while the Alternative B3 concept was eliminated from further consideration because of property impacts and due to anticipated traffic performance concerns at the Gibson and Martin Luther King intersections. As such, the preferred alternative, as described herein, primarily combines features of both Alternative B1 and Alternative B2.

### PREFERRED ALTERNATIVE

A schematic lane diagram of the preferred alternative is provided as [Exhibit ES-2](#) and the conceptual design drawings are provided in [Appendix H](#).

For the south segment, south of the NM 47/Broadway interchange, I-25 will remain in its existing configuration of a four-lane freeway with two lanes in each travel direction. From the NM 47/Broadway interchange to the Rio Bravo interchange, a six-lane freeway will be provided. From the Rio Bravo interchange to the Sunport interchange, the existing six-lane freeway will be improved to an eight-lane freeway. Ramp-to-ramp auxiliary lanes are identified in both travel directions between NM 47/ Broadway and Mesa del Sol, and in the northbound direction only from Bobby Foster to Rio Bravo and from Rio Bravo to Sunport.

For the north segment, the existing six-lane freeway will be widened to an eight-lane freeway with auxiliary lanes incorporated including acceleration lanes, deceleration lanes and ramp-to-ramp auxiliary lanes. Braided ramps and two-lane exit ramps are also included. The interchange locations, configuration types and level of access provided are listed in [Table ES-1](#).

Locations of existing and proposed grade separations where access is not provided to I-25 include:

- ◆ South Segment
  - Avenue A (Mesa del Sol) – proposed overpass
- ◆ North Segment
  - Mountain Road – existing underpass
  - Indian School Road – existing overpass

Service roads parallel to I-25 are included in the north segment. These include frontage roads, which provide access to adjacent properties, and collector-distributor (C-D) roads, which are controlled-access roadways that facilitate movements on and off the mainline freeway. In the north segment, Oak Street and Locust Street are existing frontage roads between Coal Avenue and the north study limits. Collector-distributor roads are provided northbound between Sunport and Gibson and between Gibson and Cesar Chavez. Southbound, a C-D road is provided between Cesar Chavez and Gibson (see [Exhibit ES-2](#)). There are no service roads proposed in the south segment.

Multi-modal improvements include bicycle and pedestrian facilities as well as accommodations for public transit. Bicycle and pedestrian accommodations included in the preferred alternative consist of 10-foot sidewalks with 5-foot buffers along with bike lanes and multi-use trails within the interchange areas and at arroyo crossings where possible. Accommodations for public transportation improvements include the Albuquerque Rapid Transit (ART) crossing along Central Avenue; accommodating dedicated transit lanes in the proposed I-25/Mesa del Sol interchange; and improving overall traffic performance across all interstate crossings that would benefit transit vehicles operating in mixed flows.

The preferred alternative will also include TSM&O improvements consistent with the regional Intelligent Transportation System (ITS) Infrastructure Plan. In addition to existing ITS facilities, at a minimum, improved traveler information systems, communications improvements and additional traffic monitoring devices in support of NMDOT ITS and MRCOG Traffic Monitoring activities should be included.

**Exhibit ES-1, Map of Study Limits**



The preferred alternative will require additional right-of-way from private land owners and various public entities including the City of Albuquerque, the Albuquerque Metropolitan Area Flood Control Authority (AMAFCA), and Albuquerque Public Schools. Within the south segment, most of the new right-of-way needed for the improvements involves lands of the Mesa del Sol Planned Community development. The land needed for the Mesa del Sol interchange and for the east side of the Avenue A grade separation should be dedicated without cost to the pertinent highway jurisdictions because they directly serve the needs of the development.

**Table ES-1, Interchange Locations, Types and Level of Access Provided**

Arterial Cross Street	Interchange Type	Full or Partial Access	Northbound I-25 Ramps	Southbound I-25 Ramps
<b>South Segment</b>				
NM 47/Broadway Blvd	Existing Configuration	Full	1 lane exit 2 lane entrance	2 lane exit 1 lane entrance
Mesa del Sol Blvd	Compressed Diamond (DDI optional)	Full	2 lane exit 1 lane entrance	1 lane exit 1 lane entrance
Bobby Foster Rd	Compressed Diamond	Full	1 lane exit 1 lane entrance	1 lane exit 1 lane entrance
Rio Bravo Blvd	Offset Single Point	Full	1 lane exit 2 lane loop entrance E-N 1 lane entrance W-N	2 lane exit 1 lane entrance
<b>North Segment</b>				
Sunport Blvd	Tight Diamond	Full	1 lane exit 1 lane entrance	1 lane exit 2 lane entrance
Gibson Blvd	Tight Diamond	Full	1 lane exit, braided with C-D Road 1 lane entrance	1 lane exit, braided with C-D Road 1 lane entrance
Ave Cesar Chavez	Tight Diamond	Full	2 lane exit, braided with C-D Road 1 lane entrance	2 lane exit 1 lane entrance
Coal Ave	Tight Diamond Configuration	Partial	2 lane exit	No direct access
Lead Ave	Tight Diamond Configuration	Partial	1 lane entrance	1 lane exit
Central Ave	Tight Diamond Configuration	Partial	No direct access, advance U-turn N-S	1 lane entrance, braided
MLK Ave	Tight Diamond Configuration	Partial	2 lane entrance	2 lane exit
Lomas Blvd	Compressed Diamond Configuration	Partial	2 lane exit	1 lane exit located within I-40/I-25 interchange

**CONSTRUCTION SEQUENCING AND COST**

The proposed improvements will require a substantial capital investment and are expected to be implemented in phases. There are several approaches that could be utilized to phase and prioritize the identified improvements. However, in general, the south segment is a lower priority than the north segment, particularly once the Rio Bravo interchange reconstruction is completed. A construction sequencing plan for both the south and north segments is illustrated in Exhibit ES-3. This approach was developed based on a cost per phase ranging from \$10 to \$50 million to facilitate programming the identified improvements.

In addition to mainline widening to provide lane continuity, the south segment improvements also include new interchanges and a new grade separation (Mesa del Sol and Bobby Foster interchanges, and the Avenue A grade separation) but these are considered to be development-driven projects of primary interest to private entities and local governments including the City of Albuquerque and Bernalillo County. As such, these facilities should be locally and privately funded for the entire project development cycle from study/design through construction, including construction phase services. The opinion of probable construction costs, in 2016 dollars, for these development-driven projects in the south segment is \$75 million. The cost for the other identified south segment improvements is estimated to be \$20 million.

For the north segment, and the South I-25 corridor in general, the S-curve and associated facilities is considered to be the highest priority. Because of the complexities with reconstructing the S-curve, once construction begins it may be difficult to stop until the segment from the Avenida Cesar Chavez interchange to the MLK interchange is complete.

Table ES-2 presents a breakdown of conceptual probable costs for the south and north segments. The south segment is presented as an overall cost excluding the Rio Bravo interchange, which is already funded in the current TIP/STIP, and the development-based projects. The north segment costs are based on the phased approach presented in Exhibit ES-3.

**Table ES-2, Summary of Construction Cost Estimates**

South Segment Construction Costs (concept level)	Estimated Cost (2016 dollars)
Combined South Segment Costs excluding Rio Bravo interchange and development-driven projects	<b>\$20 million</b>
North Segment Projects by Recommended Sequencing (concept level)	Estimated Cost (2016 dollars)
Project 1- Mainline reconstruction-S-Curve	
Project 1A-NB mainline reconstruction to downtown area	\$23 million
Project 1B-Southbound (SB) mainline reconstruction	\$45 million
Project 1C-Complete NB mainline construction through downtown area	\$30 million
Project 2-Construct SB ramps and C-D roads	\$16 million
Project 3-Construct NB ramps and C-D roads	\$30 million
Project 4-Construct Gibson Boulevard interchange	\$25 million
Project 5-Improvements to Avenida Cesar Chavez	\$15 million
Project 6-Complete NB and SB mainline, Sta. 1980+00 to Sta. 2088+00	\$25 million
Project 7-Downtown frontage roads	
Project 7A-NB Downtown frontage roads (Oak Street)	\$11 million
Project 7B-SB Downtown frontage roads (Locust Street)	\$11 million
Project 8-Complete NB lane addition construction on north end	\$15 million
<b>Total Opinion of Probable Construction Cost for North Segment</b>	<b>\$246 million</b>

Exhibit ES-2, Schematic Lane Diagram of the Preferred Alternative

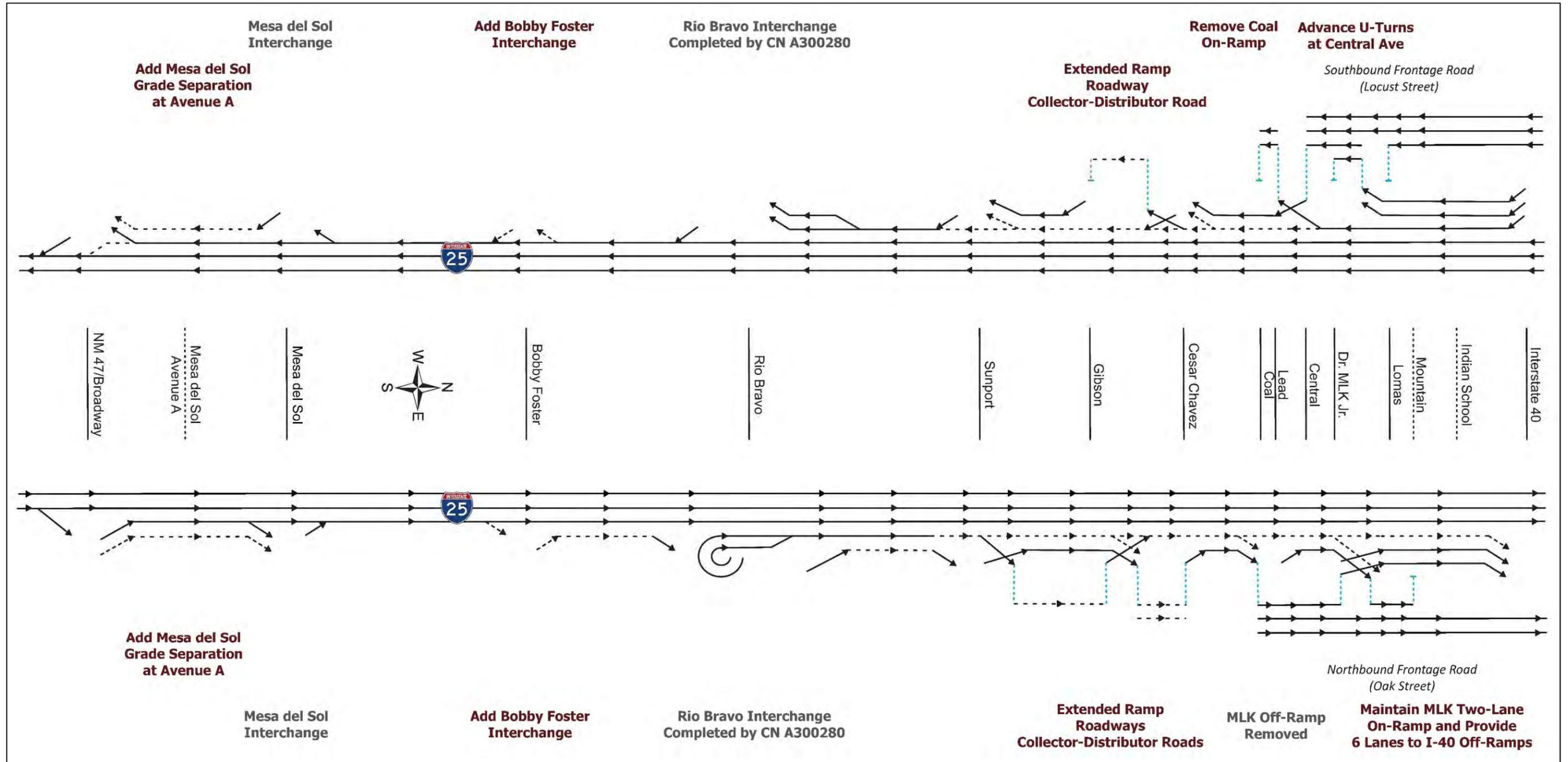
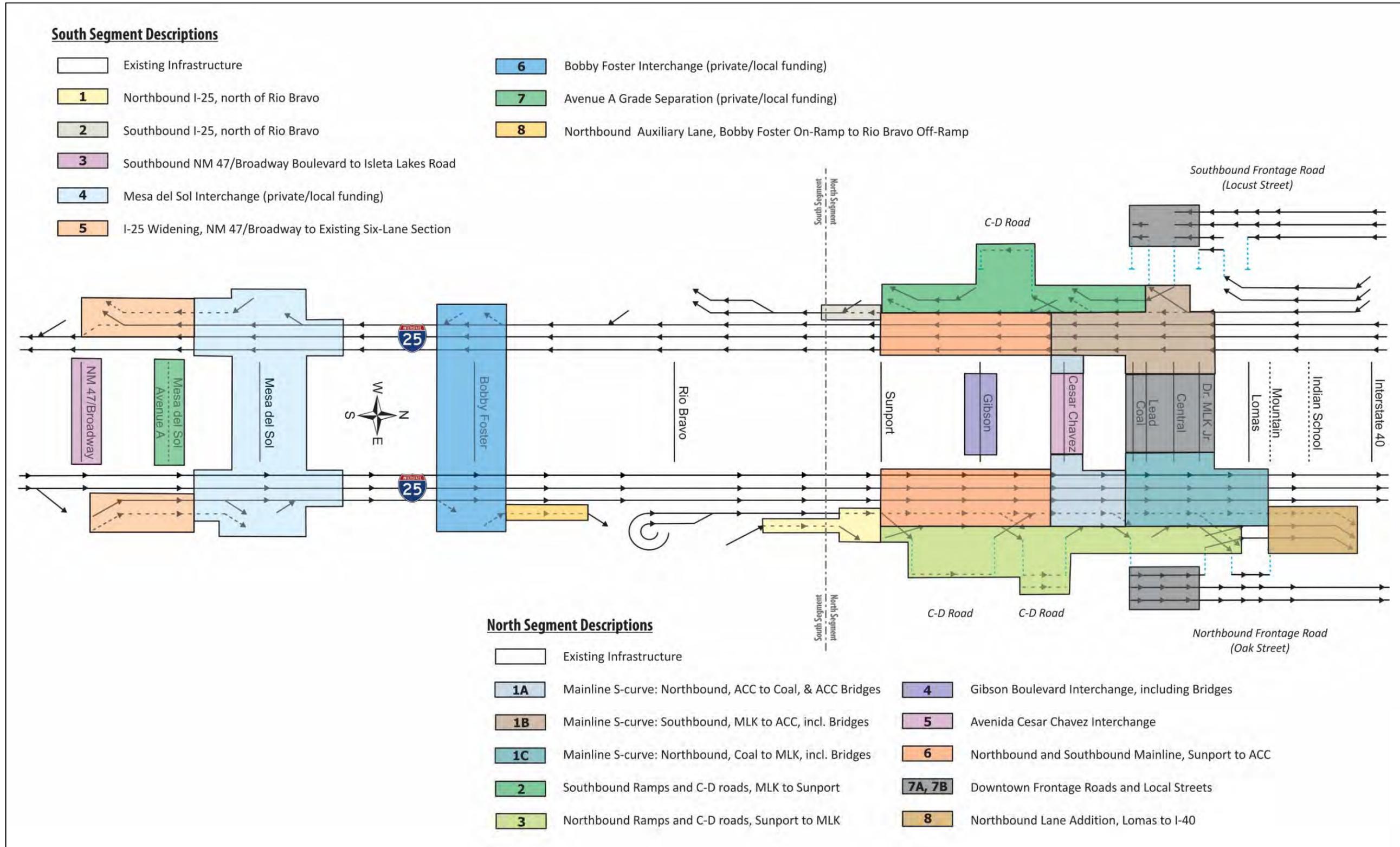




Exhibit ES-3, Construction Sequencing Plan for the Preferred Alternative



## Chapter 1, Introduction

### INTRODUCTION

The New Mexico Department of Transportation (NMDOT) completed this study to identify long-term transportation needs in the South I-25 corridor and to assess the impacts and potential fiscal requirements associated with the needs. The limits of the study are depicted in [Exhibit 1-1](#) and include the I-25 facilities from NM 47/Broadway Boulevard to I-40. The scope of the study includes Phase IA and Phase IB of the NMDOT *Location Study Procedures*. Phase IA of the study was completed on January 21, 2014. This report documents the Phase IB study.

The results of this study will provide information to plan and program improvements for the South I-25 Corridor with reasonable accuracy based on the best information available in 2016. Because of the scale of the needs, phased implementation is anticipated. Subsequent phases of project development will occur as funding for individual projects is programmed in the Transportation Improvement Program (TIP) and Statewide Transportation Improvement Program (STIP).

It is important to note that the full scale of improvements identified by this study are not currently included in the fiscally-constrained *Future's 2040 Metropolitan Transportation Plan (2040 MTP)* prepared by the Mid Region Council of Governments (MRCOG). As such, incorporation of the identified improvements in upcoming MTP and TIP/STIP cycles will require thorough consideration of funding constraints given the projects included in the current plan and program, and how the identified needs of this study could be submitted for programming consideration.

Because the focus of this study is on the interstate highway corridor, improvements are specifically identified for I-25 and its interchanges. While the adjacent surface street system must be considered in the evaluations performed, which did occur in the development of the design-year traffic forecasts for this study, improvements to surface streets beyond the interchange areas are not identified by this study.

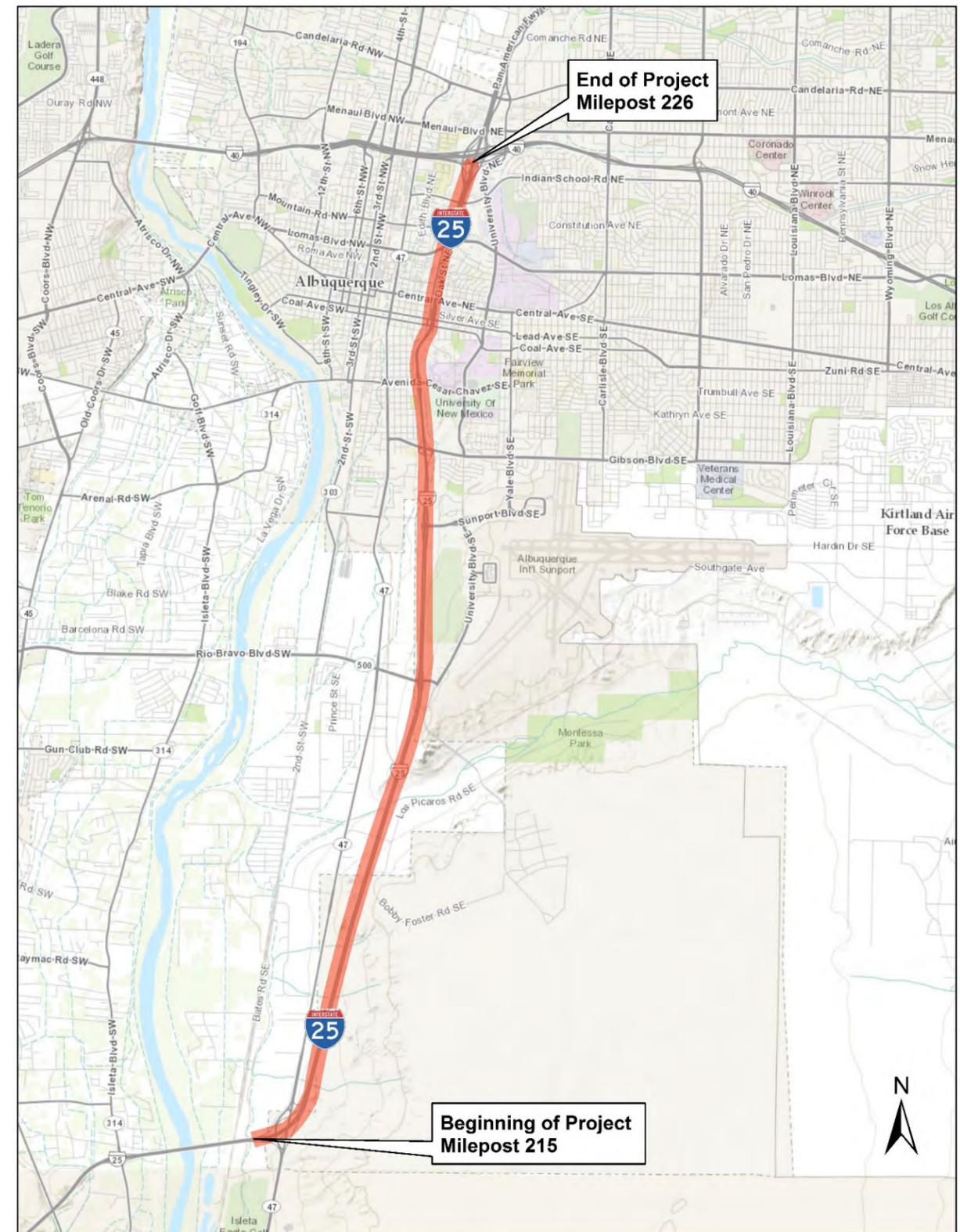
The previously completed Phase IA document described the existing conditions, identified operational and safety deficiencies within the corridor, established the purpose and need for the study, developed a range of alternatives to address the purpose and need, conducted a preliminary screening of the alternatives, and recommended alternatives for additional analysis. This Phase IB document describes the detailed analysis of the alternatives, recommends a preferred alternative, and presents a sequencing/implementation plan to aid the NMDOT and MRCOG with planning and programming improvements. Below is a summary of the project purpose and need as well as a description of how the Phase IB report is structured.

### PURPOSE AND NEED

The South I-25 corridor currently experiences recurring congestion during the morning and evening peak periods. As such, the highest priority for the corridor is to provide and maintain reasonable traffic flow on the mainline freeway. Substantial future growth is also expected, both regionally and within the corridor, which will increase congestion and potentially degrade safety conditions along South I-25. As such, access to and from the interstate must be managed to appropriately accommodate the existing and anticipated future development.

Analyses and field observations have identified existing geometric and operational deficiencies on I-25 mainline segments and at interchanges. Geometric and physical deficiencies include horizontal and vertical alignment issues, deficient ramp spacing, and aging bridge structures. Further, bicycle and pedestrian crossings of the interstate are not sufficient to address the needs of current users and improvements are needed to implement long-range bicycle plans adopted by the City of Albuquerque and MRCOG. Accommodations for public transportation improvements also need to be incorporated into the South I-25 improvement alternatives consistent with the needs of local bus service provided by ABQ Ride as well as new transit services associated with land development projects (e.g., Mesa del Sol).

**Exhibit 1-1, Map of Study Limits**



Therefore, improvements to the South I-25 corridor are needed to:

- ◆ Address physical deficiencies.
- ◆ Accommodate future increases in travel demand while maintaining or enhancing operational performance and safety.
- ◆ Support economic development.
- ◆ Enhance pedestrian, bicycle and public transportation accommodations.

The successful development of improvements to address these issues will also result in improved safety conditions for all travel modes using the corridor. The factors that contribute to the corridor needs are further described below.

### Physical Deficiencies

Improvements are needed in the corridor to address horizontal and vertical alignment issues, deficient ramp spacing, and aging bridge structures. The major physical deficiencies are as follows:

- ◆ **Horizontal and Vertical Curvature:** Exhibit 1-2 is an aerial view of a 50-mph S-curve in mainline I-25 between Avenida Cesar Chavez and Lead Avenue. The curves comprising this S-curve are the primary geometric deficiencies in the corridor. Additional deficiencies also exist within the corridor, such as ramps that are too steep and short and shoulders that are not wide enough. The design speed desired by the NMDOT for improvements to mainline I-25 is 70 mph.
- ◆ **Ramp Spacing:** From Sunport Boulevard to Lomas Boulevard, the close spacing between arterial streets and the resulting close spacing of exit and entrance ramps has created operational deficiencies and related safety concerns. Operational and safety concerns due to insufficient ramp spacing are especially prominent at:
  - Northbound: Sunport to Gibson, Gibson to Cesar Chavez, Cesar Chavez to Coal, Lead to Martin Luther King
  - Southbound: Central to Coal, Coal to Cesar Chavez, Cesar Chavez to Gibson, Gibson to Sunport
 Optimization of ramp locations and configurations will need to be incorporated into proposed improvements.
- ◆ **Aging Bridge Structures:** The majority of the bridges in the study corridor were constructed in the 1960's and 1970's and are reaching their expected design life. While the bridges in the corridor currently maintain a sufficient structural rating, their structural integrity will continue to diminish in the future. Additionally, several of the bridges are not wide enough to accommodate additional auxiliary lanes or wider shoulders. Further, several of the arterial street bridges have insufficient under-clearance to accommodate all travel modes at acceptable levels.

### Traffic Performance

According to the 2012 Traffic Flows Map prepared by the Mid Region Council of Governments (MRCOG), existing average weekday two-way traffic volumes (excluding frontage roads) are 71,678 vehicles per day south of Rio Bravo Boulevard and range from 106,808 to 118,721 vehicles per day from Sunport Boulevard to I-40. By 2040, these volumes are expected to increase to 132,152, 180,773, and 172,374 vehicles per day, respectively. Daily travel demand is expected to nearly double south of Sunport Boulevard primarily due to growth in Valencia County and the Mesa del Sol development. The 59-68% growth in daily traffic north of Sunport Boulevard is also significant. Given that the interstate currently either operates at capacity or at unacceptable levels during peak periods throughout most of the corridor, this additional travel demand would result in more congestion and an unacceptable level of service. See Chapter 4 for additional information on traffic performance.

Exhibit 1-2, Key Deficiency in the South I-25 Corridor – 50 MPH S-Curve



Traffic performance can be enhanced by Transportation System Management and Operations (TSM&O). Wavetronix devices, dynamic message signs and fiber optic communications are all forms of TSM&O applications currently provided to facilitate traffic and incident management within and adjacent to the South I-25 corridor. Improvements within the South I-25 corridor, particularly where new access points are added, need to include additional TSM&O applications consistent with the regional Intelligent Transportation Systems (ITS) Infrastructure Plan (Albuquerque Metropolitan Planning Area [AMPA] ITS Regional Architecture). At a minimum, this should include improved traveler information systems and additional traffic monitoring devices in support of NMDOT ITS and MRCOG Traffic Monitoring activities.

### Accommodating Economic Development

There are several ongoing and/or planned developments within or adjacent to the South I-25 corridor which will have economic benefits to the region and state but will also contribute to future traffic congestion on I-25 if appropriate access and associated improvements are not planned, programmed, and implemented. Improvements to I-25 will be needed to accommodate traffic growth associated with the Mesa del Sol Planned Community, Lobo Development's commercial endeavors, the UNM Hospital expansion/upgrade including the Lomas corridor commercial development, and other development activities. While economic development is a key element of the need for improvements within the South I-25 corridor, it is important to note that local governmental and private entities responsible for land development projects will be expected to participate in funding infrastructure improvements to I-25 needed as a result of this development (see [Chapter 7](#)).

The Mesa del Sol Planned Community is the largest planned development within the South I-25 corridor. The City of Albuquerque-approved master plan for Mesa del Sol calls for nearly 13,000 acres of mixed-use industrial, commercial and residential development, and traffic management is essential to fully realize an economic development of this scale. As such, new access along I-25 will be required to accommodate travel needs associated with the development. For the 2040 design-year, based on current growth assumptions, two new interchanges and a grade-separated crossing may potentially be needed in addition to the Rio Bravo interchange improvements that are currently under design. The new interchanges are at the future Mesa del Sol Boulevard and at the existing Bobby Foster Road grade separation. A new grade-separated crossing of I-25 would also benefit the transportation network between the NM 47/Broadway Boulevard interchange and the Mesa del Sol Boulevard interchange to provide an alternate route to access the Broadway Boulevard corridor from Mesa del Sol. Without new access onto and across the interstate, excessive congestion would be expected on the transportation network and the full economic development potential of Mesa del Sol and other planned and approved developments may not be reached due to insufficient infrastructure to support the growth in travel demand.

### Pedestrians and Bicycles

Pedestrian and bicycle accommodations are important for promoting use of alternative travel modes as well as to support public transit services. For the South I-25 corridor, this involves providing bicycle and pedestrian connectivity across I-25. Based on adopted long-range pedestrian and bicycle plans, this connectivity is expected to be accommodated along the surface streets that are grade-separated at I-25 and along Albuquerque Metropolitan Area Flood Control Authority (AMAFCA) drainage/arroyo crossings. Adopted plans include the *Bikeways & Trails Facilities Plan*, City of Albuquerque, May 2015, and the MRCOG 2040 MTP and associated Long Range Transportation Systems (LRTS) Proposed Bikeway Network map.

### Public Transportation

Within the Albuquerque metropolitan area (AMPA), recurring congestion along the river crossings has been a critical transportation deficiency for many years. As a means to address this issue, the Metropolitan Transportation Board (MTB) has adopted a goal of increasing transit's share of Albuquerque's peak-hour demand at river crossings and a

subset of *Congestion Management Plan* corridors to 20% by 2035. Since the study area includes three roads that cross the Rio Grande (Rio Bravo Boulevard, Avenida Cesar Chavez, and Central Avenue) and many of the river-crossing trips involve accessing the interstate, it is important for public transit to be accommodated within the current study. Specific needs include accommodating the Albuquerque Rapid Transit (ART) crossing along Central Avenue; providing dedicated transit lanes in the proposed I-25/Mesa del Sol interchange; accommodating ABQ Ride's conventional transit service across all interstate crossings; and improving overall traffic performance across all interstate crossings as this would benefit transit operating in mixed flows.

### PHASE IB DOCUMENT OVERVIEW

This document presents the detailed evaluation of alternatives, identification of the preferred alternative, and an implementation/sequencing plan. The report is composed of the following sections:

- ◆ Executive Summary
- ◆ Chapter 1, Introduction
- ◆ Chapter 2, Description of Alternatives
- ◆ Chapter 3, Traffic Forecasts
- ◆ Chapter 4, Traffic Performance
- ◆ Chapter 5, Public Involvement
- ◆ Chapter 6, Evaluation of Alternatives
- ◆ Chapter 7, Preferred Alternative and Sequencing Plan
- ◆ Appendices
- ◆ Attached CD of supplemental information

### Preliminary Interchange Access Management Plans

In addition to this Phase IB Highway Improvement Plan Report, preliminary *Interchange Access Management Plans* (IAMP) were prepared for the following interchanges:

- ◆ I-25/Mesa del Sol Boulevard
- ◆ I-25/Bobby Foster Road
- ◆ I-25/Gibson Boulevard
- ◆ I-25/Avenida Cesar Chavez

Each IAMP provides an overview of existing and future access conditions and land use along the arterial street within the vicinity of its proposed interchange with I-25. An IAMP is a planning-level document intended to document how access should be managed along the arterial cross street to serve adjacent land use while considering the traffic and safety conditions at the interchange. It also provides guidance for state and local jurisdictions when land use changes are being considered near I-25. These preliminary IAMP documents are included on the [attached CD](#).

## Chapter 2, Description of Alternatives

### INTRODUCTION

This chapter describes the alternatives that were advanced to the Phase IB evaluation. The number of lanes, location and type of access, interchange configurations, and multi-modal accommodations are specifically addressed. The proposed improvement approach for the South I-25 corridor is different south and north of Sunport Boulevard. As such, improvement (a.k.a., build) alternatives were developed for two segments as follows:

- ♦ South Segment – NM 47/Broadway Boulevard interchange to the south side of the Sunport Boulevard interchange
- ♦ North Segment – from the south side of the Sunport Boulevard interchange to the I-40/I-25 interchange

One build alternative for the south segment and three build alternatives for the north segment were advanced from the Phase IA study and developed and evaluated in Phase IB. Overview information is provided in this chapter and conceptual design information is provided in the attached appendices.

### CONCEPTUAL DESIGN DEVELOPMENT

The geometric design criteria used for the development of the alternatives are summarized in Table 2-1. Ramp spacing guidelines are provided in Exhibit 2-1. The criteria satisfy the requirements of the AASHTO “A Policy on Geometric Design of Highways and Streets” (a.k.a., AASHTO Green Book). Design guidelines for freeways from FHWA, the Institute of Transportation Engineers (ITE), and other states were also referenced.

Exhibit 2-1, Ramp Spacing Criteria

RANGE OF MINIMUM DIMENSIONS	EN-EN OR EX-EX		EN-EN		TURNING ROADWAYS		EN-EX (WEAVING)			
	FREEWAY	C-D ROAD OR FRWY. DIST.	FREEWAY	C-D ROAD OR FRWY. DIST.	SYSTEM INTERCHANGE	SERVICE INTERCHANGE	SYSTEM TO SERVICE INTERCHANGE		SERVICE TO SERVICE INTERCHANGE	
						FREEWAY	C-D ROAD OR FRWY. DIST.	FREEWAY	C-D ROAD OR FRWY. DIST.	
DESIRABLE	1500 (450)	1200 (350)	750 (225)	600 (175)	1200 (350)	1000 (300)	3000 (900)	2000 (600)	2000 (600)	1500 (450)
ADEQUATE	1200 (350)	1000 (300)	600 (175)	500 (150)	1000 (300)	800 (250)	2500 (750)	1800 (550)	1800 (550)	1200 (350)
ABSOLUTE MINIMUM	1000 (300)	800 (250)	500 (150)	400 (125)	800 (250)	700 (200)	2000 (600)	1500 (450)	1500 (450)	1000 (300)

\* DIMENSIONS IN FEET (METERS) BASED UPON OPERATION EXPERIENCE AND NEED FOR FLEXIBILITY  
 \*\* ALSO TO BE CHECKED IN ACCORDANCE WITH PROCEDURE OUTLINED IN THE HIGHWAY CAPACITY MANUAL, 2000 (LARGER OF THE VALUES TO BE USED)

Ramp Terminal Spacing  
Source: Jack E. Leisch

Table 2-1, Design Criteria for Conceptual Design

Description	Criteria	Comments / Reference
Design Speed (South of Rio Bravo)	80 mph	1. Existing curve at NM 47 does not meet 80 mph design speed 2. AASHTO page 2-54 to 2-58 3. Design speed 75 mph for existing I-25 crest vertical curve located south of Bobby Foster Rd
Design Speed (North of Rio Bravo)	70 mph	AASHTO page 2-54 to 2-58
Design Speed (Local Arterial)	35 - 50 mph	Varies by Roadway classification
Design Speed (Frontage Roads)	50 mph (35 mph min.)	
Design Speed (Directional Ramps)	60, 50, 35 mph	AASHTO Table 10-1, page 10-89
Design Speed (Loop Ramps)	25 mph min	ITE, Table 3-4, page 61
Design Vehicle	Semitrailer (WB-67)	AASHTO page 2-24
Stopping Sight Distance	910 ft (80 mph) 730 ft (70 mph)	AASHTO Table 3-1, page 3-4
Rate of Curvature for Crest Curves, Based on SSD	K = 384 (80 mph) K = 247 (70 mph)	AASHTO Table 3-34, page 3-155
Rate of Curvature for Sag Curves	K = 231 (80 mph) K = 181 (70 mph)	1. AASHTO Table 3-36, page 3-161 2. Comfort Criteria used if illuminated, per AASHTO Equation 3-51 (page 3-160)
Minimum Curve Radii	Varies by Roadway	AASHTO Table 3-8, page 3-44 and Table 3-9, page 3-45
Emax	6% (I-25) 6% (Ramps) 4% (Frontage Roads)	AASHTO page 3-30
Turn-lane cross slope rollover	4% (6% max)	AASHTO Table 9-20, page 9-121
Maximum Grade (I-25 and Frontage Roads)	4%	AASHTO Table 8-1, page 8-4
Maximum Grade - Uphill (Ramps)	5%	AASHTO page 10-93
Maximum Grade - Downhill (Ramps)	5%, 7% max	AASHTO page 10-93
Maximum Grade (Arterial Roadways)	6%	CABQ DPM Table 23.3.1
Minimum Grade	0.5%	AASHTO page 3-119
Vertical Clearance (Roadway)	16.5 ft (20.0 ft desirable for I-25)	1. AASHTO page 8-4 2. 16.5 ft Includes 6 inches for future overlay
Normal Cross Slope	2%	AASHTO Table 4-1, page 4-6
Fill Slopes	Varies by Fill Height	
Cut Slopes	Varies by Cut Depth	
Clear Zone	Varies	AASHTO RDG Table 3.1, page 3-3
Lane Width	12 ft (11 ft min. for arterials)	AASHTO page 4-7, 8-2
Minimum Shoulder Width (I-25)	14ft left / 12 ft right (South of Gibson) 12ft left / 12 ft right (North of Gibson)	AASHTO pages 4-10, 8-3, Includes 2 ft min. shy distance
Shoulder Width (Frontage Roads)	4ft left / 4 ft right	1. Inside shoulder of ramps may vary depending on stopping sight distance / curvature. 2. Includes shy distance
Shoulder Width (Directional Ramps, One Lane)	4ft left / 8 ft right	1. Inside shoulder of ramps may vary depending on stopping sight distance / curvature.
Shoulder Width (Directional Ramps, Two Lanes)	4ft left / 4 ft right <sup>3</sup>	2. Includes shy distance 3. 6 ft right shld req'd if CWB present on right
Bike Path Width	12 ft	12 ft paved with 2 ft unpaved shy distance to barriers and fences
On-Street Bike Lane	5 ft	5 ft plus gutter pan
Sidewalk Width	6 - 8 ft	Varies by roadway classification
Ramp Terminal Spacing		
EN-EN or EX-EX (I-25)	1,000 ft min	AASHTO Figure 10-68, page 10-106
EX-EN (I-25)	500 ft min	
Turning Roadways - Service Interchange	600 ft min	
EN-EX, Service to Service Weaving (I-25)	1,600 ft min	

References: AASHTO Green Book 2011, AASHTO Roadside Design Guide 2011, City of Albuquerque DPM, ITE Freeway & Interchange Geometric Design Handbook, State Highway Access Manual (SAMM), 2001

### Types of Diamond Interchanges

The service interchanges within the South I-25 corridor are primarily based on a diamond interchange configuration because it is the most common interchange type and right-of-way availability is limited within the corridor. The types of diamond interchanges are summarized as follows:

- ◆ Conventional Diamond: ramp terminal intersection spacing of 800 to 1,200 feet, centerline to centerline
- ◆ Compressed Diamond: ramp terminal intersection spacing of 400 to 800 feet, centerline to centerline
- ◆ Tight Diamond (TDI): ramp terminal intersection spacing of 200 to 400 feet, centerline to centerline
- ◆ Single Point Diamond (SPDI): single ramp terminal intersection in the center of the interchange
- ◆ Diverging Diamond (DDI): ramp terminal intersection crossover spacing from 300 to 1500 feet, center to center of crossover intersections, with 700 feet an operationally desirable minimum and 850 to 1,000 feet recommended (*source: Utah Department of Transportation, DDI Guideline, June 2014*)

The available ramp terminal spacing within the South I-25 corridor typically ranges from 250 to 600 feet.

### DESCRIPTION OF THE NO BUILD ALTERNATIVE

The No Build Alternative provides a baseline against which the build alternatives can be compared. The No Build Alternative reflects the number of lanes and ramp configurations that exist today and includes a few modifications that were recently completed or are currently in the project development process. These modifications include:

- ◆ Widening of mainline I-25 to three lanes per direction south of Rio Bravo Boulevard – *partially constructed in 2015, see text below this list.*
- ◆ Reconstruction of the I-25/Rio Bravo Boulevard interchange (CN A300280) – *construction expected to commence in spring 2017.*
- ◆ Sunport Boulevard extension to Broadway Boulevard (CN A300160) – *Bernalillo County is currently in the environmental clearance phase of project development for this proposed extension.*
- ◆ Elimination of the northbound Dr. Martin Luther King Jr (MLK) Avenue off-ramp including improvements to Oak Street between Central Avenue and MLK Avenue – *NMDOT is currently developing a project as part of the Highway Safety Improvement Program (HSIP) to remove this ramp.*

The third lane in each direction of I-25, including bridge widening, was recently constructed from approximately 1.4 miles north of the NM 47/Broadway interchange to 0.25 miles south of the Rio Bravo interchange (~2.6 miles) and will open to traffic once the Rio Bravo interchange improvements are completed. The No Build Alternative also includes the extension of this third lane to the ramps on the north side of the NM 47/Broadway interchange for lane continuity. In addition, there is a second phase to the I-25/Rio Bravo interchange reconstruction project to provide four lanes in each direction to the Sunport interchange. For the No Build condition, the fourth lane was assumed to be extended to the ramps on the south side of the Sunport interchange, which is the minimum length that would likely be added.

With the exception of these projects, the No Build Alternative does not alter access nor require the need for additional right-of-way. Continued maintenance of the system including pavement, bridge structures, drainage structures, pavement markings, traffic signals, and other basic roadway elements would occur. Improvements to the surface street system may also occur but would not alter how access is provided to and from I-25. A schematic lane diagram for the No Build Alternative is provided as [Exhibit 2-2](#). (Note, the remaining exhibits in this chapter follow the text and begin on [page 2-6](#).)

### BUILD ALTERNATIVE – SOUTH SEGMENT (Appendix A)

Plan view drawings and typical sections for the improvements proposed for the south segment of I-25 are provided in [Appendix A](#). Schematic lane diagrams for the build alternatives are provided in [Exhibit 2-3](#) to [Exhibit 2-5](#). The exhibits have the same lane configuration for the segment south of the Sunport interchange. It should be noted that many of the improvements identified for the south segment are attributed to new development and consequently should be funded by private or local governmental entities rather than by NMDOT (see [Chapter 7](#)). Discussions of the mainline improvements and each interchange follow.

#### Mainline Improvements

The Build Alternative for the south segment maintains the basic six-lane freeway included in the No Build Alternative north of the NM 47/Broadway Boulevard interchange to the Rio Bravo interchange, and widens I-25 to a basic eight-lane freeway north of the Rio Bravo interchange. The four-lane freeway, with two lanes in each direction, is proposed to remain within and south of the NM 47/Broadway interchange. Ramp-to-ramp auxiliary lanes are proposed as needed to provide acceptable traffic performance for the design year.

#### NM 47/Broadway Boulevard Interchange

The configuration of the NM 47/Broadway Boulevard interchange is proposed to remain as it exists. Proposed modifications include the following:

- ◆ Northbound On-Ramp
  - Convert to a two-lane on-ramp with the addition of a third lane on I-25 and an auxiliary lane between this ramp and the Mesa del Sol off-ramp.
- ◆ Southbound Off-Ramp
  - Drop the third mainline I-25 lane and the auxiliary lane from the Mesa del Sol on-ramp at a two-lane off-ramp to NM 47/Broadway Boulevard. Provide a recovery lane through the two-lane off-ramp to improve operations associated with the drop of the third mainline lane.
- ◆ NM 47/Broadway Boulevard
  - Widen northbound NM 47 to three lanes from south of the Isleta Lakes Road intersection to the diverge junction at the I-25 northbound on-ramp.
  - Widen southbound NM 47 from the bridge over I-25 to Isleta Lakes Road to improve lane continuity.

#### Grade Separation for Mesa del Sol Avenue A

The Mesa del Sol (MDS) Master Plan street network includes several facilities in close proximity to I-25. Avenue 4 is a proposed arterial street parallel to and east of I-25. Avenue A is an east-west local street that connects Avenue 4 to Broadway Boulevard approximately 2,000 feet north of the southbound off-ramp to NM 47/Broadway Boulevard. The Avenue A grade separation, which is part of the MDS master plan street network, was included in the south segment improvements because of the high 2040 forecast demand on the MDS connection to NM 47 at Isleta Lakes Road, which is not expected to be able to serve the forecast demand at acceptable levels of performance. The concept is drawn as a four-lane street with bicycle lanes.

The conceptual layout for the NM 47/Broadway Boulevard/Avenue A intersection will require further development primarily for access management. Along with the Avenue A grade separation, the intersection improvements are considered a local street network improvement. It should be noted that a similar grade separation for another MDS master planned local street, Avenue D (between Mesa del Sol Boulevard and Bobby Foster Road), was not included in the identified improvement plan for the south segment because it was not needed for the 2040 design year.

### Mesa del Sol Boulevard Interchange

The MDS Master Plan street network includes an interchange at Mesa del Sol Boulevard to provide primary access to their planned urban center. The design parameters for Mesa del Sol Boulevard and the diamond interchange configuration for the Mesa del Sol Boulevard interchange were taken from that developed by Parsons Brinckerhoff for a previous NMDOT project (CN 4074). Based on the extensive analysis that was completed, it was determined that Mesa del Sol Boulevard should be aligned under I-25 at the interchange. The ramp terminals were re-configured in this study to accommodate 2040 design year traffic and the spacing of the terminals is 480 feet.

The general alignment for Mesa del Sol Boulevard, a city arterial street, was determined in cooperation with the Mesa del Sol land development team and is fully contained within Mesa del Sol lands (see plan view in [Appendix A](#)). Refer to the *I-25/ Mesa del Sol Interchange Phase IB Detailed Evaluation of Alternatives Report* dated May 2007 along with other previous documents for further details (included on the [attached CD](#)).

### Bobby Foster Road Interchange

The Bobby Foster Road grade separation was upgraded to a full-access diamond interchange in the build alternative to accommodate future travel demand associated with new land development activities, including Mesa del Sol. The ramp terminal spacing within the interchange was set at approximately 550 feet. The northbound ramps were aligned close to I-25 to maximize the separation of the ramp terminal from the Bobby Foster/Los Picaros Road intersection, which is approximately 600 feet, and to minimize right-of-way acquisition. Bobby Foster Road at the interchange is shown as a four-lane, divided street with bicycle lanes.

As conceptually designed, the distance between ramp gores south to the Mesa del Sol interchange and north to the Rio Bravo interchange is over 5,000 feet. The only proposed ramp-to-ramp auxiliary lane is from the Bobby Foster northbound on-ramp to the Rio Bravo northbound off-ramp. Considering acceleration and deceleration lane lengths, the tapers between the other ramps varies from 2,000 to 3,500 feet so ramp spacing issues are not anticipated.

### Rio Bravo Interchange

The Rio Bravo interchange is being reconstructed under NMDOT CN A300280 and is expected to be under construction in 2017. An unconventional interchange referred to as the Offset Single Point is the configuration selected to improve the interchange. The design layout for the Offset Single Point is shown in [Appendix A](#).

## BUILD ALTERNATIVES – NORTH SEGMENT

Three build alternatives were advanced for detailed evaluation for the north segment. The alternatives vary the locations of on and off ramps, frontage/collector-distributor road use, and interchange configurations. Conceptual design information for the north segment alternatives are provided in [Appendix B](#) through [Appendix D](#). Conditions and/or improvements added to the No Build alternative that are consistent in all of the build alternatives include:

- ◆ Full access is maintained and no bridge modifications are proposed at the Sunport interchange.
- ◆ The S-curve is improved to a 70-mph design speed. A 65-mph design speed was considered and eliminated in Phase IA.
- ◆ The Martin Luther King northbound on-ramp and the Lomas off-ramp are kept in their existing braided configuration.
- ◆ The Martin Luther King southbound off-ramp is kept in its current configuration.
- ◆ Modifications to the I-25 bridges will be required at: Gibson, Cesar Chavez, Coal, Lead, Central, Martin Luther King, Lomas, and Mountain.

Schematic lane diagrams for the build alternatives are provided in [Exhibit 2-3](#) to [Exhibit 2-5](#). Key characteristics of the north segment alternatives are discussed next by alternative.

### Build Alternative B1 – Braided Ramps (Appendix B)

This alternative is referred to as the “Braided Ramps” alternative because it eliminates several weaving sections by braiding on and off ramps. That is, ramp-to-ramp weaving segments that currently exist are eliminated by grade-separating, or braiding, the on and off ramps that comprise the weave segment. It adds a fourth mainline lane in each direction and auxiliary lanes between closely spaced ramps, proposes new braided ramps, and eliminates ramps. Most of the interchange configurations are tight diamond interchanges (TDI) because of the constrained corridor width. Key features of this alternative include:

- ◆ Northbound I-25 Access Changes
  - Braids the Sunport on-ramp and the Gibson off-ramp.
  - Eliminates the east-to-north loop ramp from Gibson.
  - Braids the Gibson on-ramp and the Cesar Chavez off-ramp.
  - Eliminates the MLK off-ramp.
  - Maintains a two-lane ramp for the MLK on-ramp but only adds one lane to the freeway. The second ramp lane merges approximately 1,700 feet downstream.
- ◆ Southbound I-25 Access Changes
  - Eliminates the Coal on-ramp.
  - Braids the Cesar Chavez on-ramp and the Gibson off-ramp.
  - Eliminates the south-to-east loop ramp at Gibson.
  - Braids the Gibson on-ramp and the Sunport Boulevard off-ramp.
- ◆ Short weave segments remain northbound between the Cesar Chavez on-ramp and the Coal off-ramp (approx. 1500 feet) and between the Lead on-ramp and the Lomas off-ramp (approx. 1300 feet). A weave section also occurs southbound between the Central on-ramp and the Cesar Chavez off-ramp (approx. 2500 feet).
- ◆ The loop ramps at the Gibson interchange are eliminated, replaced by a TDI. The northbound ramp terminal is aligned closer to I-25 because of the cemetery on the north side of Gibson. The ramp terminals are spaced approximately 400 feet apart so advance left-turn storage is provided on Gibson in both directions. Free right-turn lanes are provided for the north-to-east and the west-to-north movements. The South Diversion channel culverts require widening to provide sidewalks on both sides of Gibson. The sidewalks through the interchange are 10-foot wide and are buffered from the curb. Gibson Boulevard is reduced to two lanes westbound to accommodate left-turn movement storage on the eastbound approach as well as to provide on-street bike lanes.
- ◆ A single point diamond interchange (SPDI) is provided at Cesar Chavez. Dual left-turn movements are provided on Cesar Chavez, and a dual-left is provided for the south-to-east movement. Free right-turn lanes are provided north-to-east and south-to-west. A dual lane signalized right-turn is provided for west-to-north. High Street is closed south of Cesar Chavez. The sidewalks through the interchange are 10-foot wide and are buffered from the curb.
- ◆ The Coal Avenue interchange is modified to eliminate the southbound on-ramp and includes an eastbound on-street bicycle lane. The sidewalks through the interchange are 10-foot wide and are buffered from the curb.
- ◆ The Lead Avenue interchange will be improved to provide a westbound on-street bicycle lane, 10-foot sidewalks buffered on the south side by a landscape strip and by a cycle track on the north side (see the typical section in [Appendix B](#)). The cycle track provides connectivity of the Silver Avenue Bike Boulevard across I-25.
- ◆ The Central Avenue interchange is consistent with the configuration proposed for the Albuquerque Rapid Transit (ART) project and does not include dedicated transit lanes through the interchange. Advance U-turns are provided on both sides of Central Avenue. The north-to-south U-turn serves Lead Avenue and other traffic destined for southbound I-25 that would have used the Coal on-ramp. The south-to-north U-turn will serve the proposed redevelopment of lands east of I-25 and north of Central Avenue that is ongoing. The sidewalks through the interchange are 10-foot wide and are buffered from the curb.



- ◆ The Martin Luther King interchange is reconstructed to improve the alignment of the lanes approaching and within the interchange, particularly eastbound. The median between Elm Street and Locust Street will be modified to improve the lane alignment and to provide upstream storage for the high-demand eastbound dual left-turn movement. Buffered 10-foot wide sidewalks and on-street bicycle lanes are provided.
- ◆ Relatively minor changes are proposed for the Lomas Boulevard interchange. The eastbound left-turn is converted to a dual lane movement using the pavement that exists. A signalized dual right-turn movement is provided west-to-north. A multi-use path is planned along the north side of Lomas and the east side of the northbound frontage road. Sidewalks within the interchange remain as exists today.

- ◆ turn is provided for west-to-north. High Street is closed south of Cesar Chavez. The sidewalks through the interchange are 10-feet wide and are buffered from the curb.
- ◆ The Coal Avenue interchange is improved to accommodate the southbound C-D road and includes an eastbound on-street bicycle lane. The sidewalks through the interchange are 10-feet wide and are buffered from the curb.
- ◆ The Lead Avenue interchange will be improved to provide a westbound on-street bicycle lane, 10-foot sidewalks buffered on the south side by a landscape strip and by a cycle track on the north side (see the typical section in [Appendix C](#)). The cycle track provides connectivity of the Silver Avenue Bike Boulevard across I-25.
- ◆ The Central Avenue interchange is modified to include dedicated bi-directional transit lanes through the interchange to facilitate the City’s ART project operations. Along with this, a single eastbound left-turn and one westbound through lane are provided. Advance U-turns are not included in this alternative, which results in shorter bridge spans. The sidewalks through the interchange are 10-feet wide and are buffered from the curb.
- ◆ The Martin Luther King interchange is reconstructed to improve the alignment of the lanes approaching and within the interchange, particularly eastbound. The median between Elm Street and Locust Street will be modified to improve the lane alignment and to provide upstream storage for the high-demand eastbound dual left-turn movement. Buffered 10-foot wide sidewalks and on-street bicycle lanes are provided.
- ◆ Relatively minor changes are proposed for the Lomas Boulevard interchange. The eastbound left-turn is converted to a dual lane movement using the pavement that exists. A signalized dual right-turn movement is provided west-to-north. A multi-use path is planned along the north side of Lomas and the east side of the northbound frontage road. Sidewalks within the interchange remain as exists today.

**Build Alternative B2 – Closest to Existing (Appendix C)**

This alternative provides the most direct access to the freeway and is therefore referred to as “Closest to Existing.” The only two ramps eliminated are the northbound MLK off-ramp and the southbound Coal on-ramp, although a collector-distributor (C-D) road is added southbound from Coal to Cesar Chavez for alternative access. A fourth mainline lane is added in each direction along with auxiliary lanes. As for the other alternatives, most of the interchange configurations are TDIs because of the constrained corridor width. Key features of this alternative include:

- ◆ Northbound I-25 Access Changes
  - Eliminates the east-to-north loop ramp from Gibson.
  - Braids the Gibson on-ramp and the Cesar Chavez off-ramp.
  - Eliminates the MLK off-ramp.
  - Maintains a two-lane ramp for the MLK on-ramp, which adds another northbound auxiliary lane resulting in six lanes continuing north to I-40.
- ◆ Southbound I-25 Access Changes
  - Eliminates the Coal on-ramp, but adds a C-D road to Cesar Chavez.
- ◆ Weave segments are provided northbound in this alternative as follows:
  - Sunport on-ramp to Gibson off-ramp, 1600 feet
  - Cesar Chavez on-ramp to Coal off-ramp, 1500 feet
  - Lead on-ramp to Lomas off-ramp, 1300 feet
- ◆ Weave segments are provided southbound in this alternative as follows:
  - Central on-ramp to Cesar Chavez off-ramp, 1800 feet
  - Cesar Chavez on-ramp to Gibson off-ramp, 1400 feet
  - Gibson on-ramp to Sunport off-ramp, 1600 feet
- ◆ The east-to-north loop ramp from Gibson is eliminated and the northbound ramp terminal is aligned close to I-25 because of the cemetery on the north side of Gibson. A free right-turn is provided only for the west-to-north movement. The south-to-east loop ramp is kept in its current location which results in a low-speed design. Dual westbound left-turn lanes are provided which widens the southbound on-ramp around the loop ramp. Both ramp terminals would be signal controlled, spaced 500 feet apart. The South Diversion channel culverts require widening to provide sidewalks on both sides of Gibson. The sidewalks through the interchange are 10-feet wide and are buffered from the curb. Gibson Boulevard is reduced to two lanes westbound to accommodate left-turn movement storage on the eastbound approach as well as to provide on-street bike lanes.
- ◆ A tight diamond interchange (TDI) is provided at Cesar Chavez with a ramp terminal spacing of 270 feet. Dual left-turn movements are provided on Cesar Chavez, and a dual-left is provided for the south-to-east movement. Free right-turn lanes are provided north-to-east and south-to-west. A dual lane signalized right-

**Build Alternative B3 – Collector-Distributor Roads (Appendix D)**

This alternative is referred to as the “Collector-Distributor Roads” concept. In addition to a fourth mainline lane in each direction and auxiliary lanes between closely spaced ramps, this alternative provides continuous collector-distributor (C-D) roads north of Gibson Boulevard. As part of the C-D road concept, the on and off-ramps between Cesar Chavez and Coal are reversed which locates the weave segments on the C-D road through the S-curve instead of on the mainline freeway. Reversed ramps function best on access-controlled C-D roads. Key features of this alternative include:

- ◆ Northbound I-25 Access Changes
  - Braids the Sunport on-ramp and the Gibson off-ramp.
  - Eliminates the east-to-north loop ramp from Gibson.
  - Eliminates the Cesar Chavez off-ramp and provides alternative access via a C-D road. Cesar Chavez traffic would use the Gibson off-ramp.
  - Reverses the Coal off-ramp and the Cesar Chavez on-ramp.
  - Eliminates the Lead on-ramp.
  - Eliminates the MLK off-ramp.
  - Maintains a two-lane ramp for the MLK on-ramp, which adds another northbound auxiliary lane resulting in six lanes continuing north to I-40.
  - An advance U-turn is provided at Central Avenue.
- ◆ Southbound I-25 Access Changes
  - Eliminates the braided Central on-ramp and Lead off-ramp and provides alternative access via a frontage road.
  - Reverses the Cesar Chavez off-ramp and the Coal on-ramp.



- Eliminates the Cesar Chavez on-ramp and provides alternative access via a C-D road. Cesar Chavez traffic would use the Gibson on-ramp.
- Eliminates the south-to-east loop ramp at Gibson.
- Advance U-turns are provided at Lead Avenue and Central Avenue.
- ◆ The northbound weave segment between the Gibson on-ramp and the Coal off-ramp is 2100 feet and the weave between the Cesar Chavez on-ramp and the Lomas off-ramp is 1600 feet.
- ◆ Because the alignment of I-25 is shifted to the west in the downtown area, space exists to provide a two-lane Cesar Chavez on-ramp and two auxiliary lanes to the two-lane Lomas off-ramp creating a six-lane section. A recovery lane is also provided through the Lomas off-ramp before reducing to four-lane prior to the MLK two-lane on-ramp.
- ◆ The weave segments southbound are 2,300 feet from the Coal on-ramp to the Gibson off-ramp and 2,200 feet from the Gibson on-ramp to the Sunport off-ramp.
- ◆ The Cesar Chavez to Coal C-D road weave segments between reversed ramps are 1,500 feet and 1,400 feet northbound and southbound, respectively.
- ◆ The loop ramps at the Gibson interchange are eliminated, replaced by a TDI. The northbound ramp terminal is aligned close to I-25 because of the cemetery on the north side of Gibson. Dual left-turn movements are provided westbound and a triple left-turn movement is provided southbound. The ramp terminals are spaced approximately 400 feet apart and advance left-turn storage is provided on Gibson in both directions. Gibson Boulevard is reduced to two lanes westbound to accommodate left-turn movement storage on the eastbound approach as well as to provide on-street bike lanes. All right-turn movements are signal controlled.
- ◆ A TDI is provided at Cesar Chavez with a ramp terminal spacing of 250 feet. Dual left-turn movements are provided on Cesar Chavez, and a dual-left is provided for the south-to-east movement. Free right-turn lanes are provided north-to-east and west-to-north. Two through lanes are provided on the northbound and southbound C-D roads through the intersection. High Street is closed south of Cesar Chavez. The sidewalks through the interchange are 10-foot wide and are buffered from the curb.
- ◆ The Coal Avenue interchange is improved to accommodate the southbound C-D road and includes an eastbound on-street bicycle lane. Additional north-south lanes are provided on Oak Street and Locust Street. The sidewalks through the interchange are 10-foot wide and are buffered from the curb. A cul-de-sac is proposed on Oak Street south of Coal Avenue.
- ◆ The Lead Avenue interchange will be improved to provide a westbound on-street bicycle lane, 10-foot sidewalks buffered on the south side by a landscape strip and by a cycle track on the north side (see the typical section in [Appendix D](#)). The cycle track provides connectivity of the Silver Avenue Bike Boulevard across I-25. An advance U-turn is provided for the south-to-north movement.
- ◆ The Central Avenue interchange is consistent with the configuration proposed for the City's ART project and does not include dedicated transit lanes through the interchange. Advance U-turns are provided on both sides of Central Avenue. The north-to-south U-turn serves Lead Avenue and other traffic destined for southbound I-25 that would have used the Coal on-ramp. The south-to-north U-turn will serve the proposed redevelopment of lands east of I-25 and north of Central Avenue that is ongoing. The sidewalks through the interchange are 10-foot wide and are buffered from the curb.
- ◆ The Martin Luther King interchange is reconstructed to improve the alignment of the lanes approaching and within the interchange, particularly eastbound. The median between Elm Street and Locust Street will be modified to improve the lane alignment and to provide upstream storage for the high-demand eastbound dual left-turn movement. An additional westbound lane is provided which drops east of Oak Street. Buffered 10-foot wide sidewalks and on-street bicycle lanes are provided.
- ◆ The modifications to the Lomas Boulevard interchange are as described for Build Alternatives B1 and B2.

## OTHER IMPROVEMENTS

Other types of improvements that are or will be considered to enhance the South I-25 transportation system are discussed next.

### Bicycle and Pedestrian

Bicycle and pedestrian accommodations were included in the development of the improvement alternatives consistent with the adopted 2040 Metropolitan Transportation Plan (MTP) as shown in [Exhibit 2-6](#). Bicycle and pedestrian improvements may be developed as independent projects or projects that will be implemented as part of interchange upgrades. Existing and/or proposed bicycle facilities crossing the South I-25 corridor include:

- ◆ Mesa del Sol Boulevard: bicycle lanes and multi-use trail
- ◆ Bobby Foster Road: bicycle lanes
- ◆ Tijeras Arroyo: multi-use trail
- ◆ Rio Bravo Boulevard: bicycle lanes/shoulder and multi-use trail
- ◆ Railroad underpass: multi-use trail
- ◆ Sunport Boulevard: bicycle lanes
- ◆ Gibson Boulevard: bicycle lanes and multi-use trail on east side only
- ◆ Avenida Cesar Chavez: bicycle lanes
- ◆ Lead and Coal Avenues: bicycle lanes
- ◆ Silver Avenue: bicycle boulevard on either side of I-25
- ◆ Martin Luther King Avenue: bicycle lanes
- ◆ Indian School Road: bicycle lanes

### Local Street System Improvements

Local street system improvements could include new streets, extensions of existing streets, or general improvements to adjacent routes. Only a few local street improvements have been identified and/or discussed for the South I-25 corridor as follows:

- ◆ A new grade separation across I-25 to NM 47/Broadway Boulevard south of Mesa del Sol Boulevard; included in the Mesa del Sol Master Plan (see [Appendix A](#))
- ◆ Sunport Boulevard extension to Broadway Boulevard; this is a current Bernalillo County project (see [Appendices B through D](#))

### Public Transportation

The New Mexico Rail Runner provides a *separated* public transportation system adjacent to the South I-25 corridor. Use of the South I-25 highway corridor for ABQ Ride public transit services is considered a basic service and no special accommodations are included in the proposed improvements other than along Central Avenue and Mesa del Sol Boulevard.

### Transportation Systems Management & Operations

As part of the management of the existing and future South I-25 infrastructure investments and to enhance freeway operations, safety and mobility, Transportation Systems Management & Operations (TSM&O) applications will be included that are consistent with the regional Intelligent Transportation Systems (ITS) Infrastructure Plan (Albuquerque Metropolitan Planning Area (AMPA) ITS Regional Architecture). In addition to existing ITS facilities, at a minimum, improved traveler information systems and additional traffic monitoring devices in support of NMDOT ITS and MRCOG Traffic Monitoring activities should be included.

Exhibit 2-2, Schematic Lane Diagram for the No Build Alternative

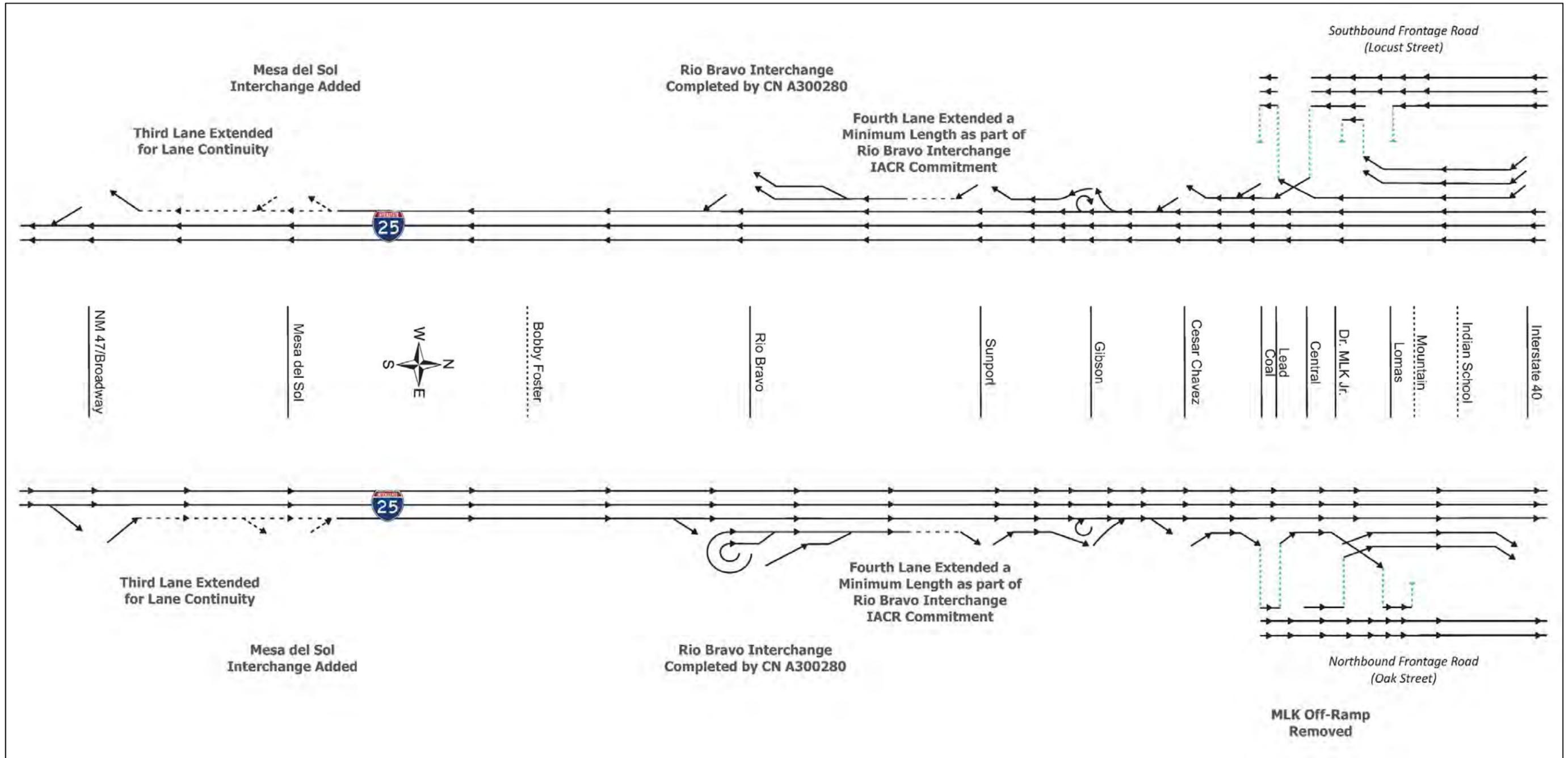


Exhibit 2-3, Schematic Lane Diagram for Build Alternative B1 Braided Ramps

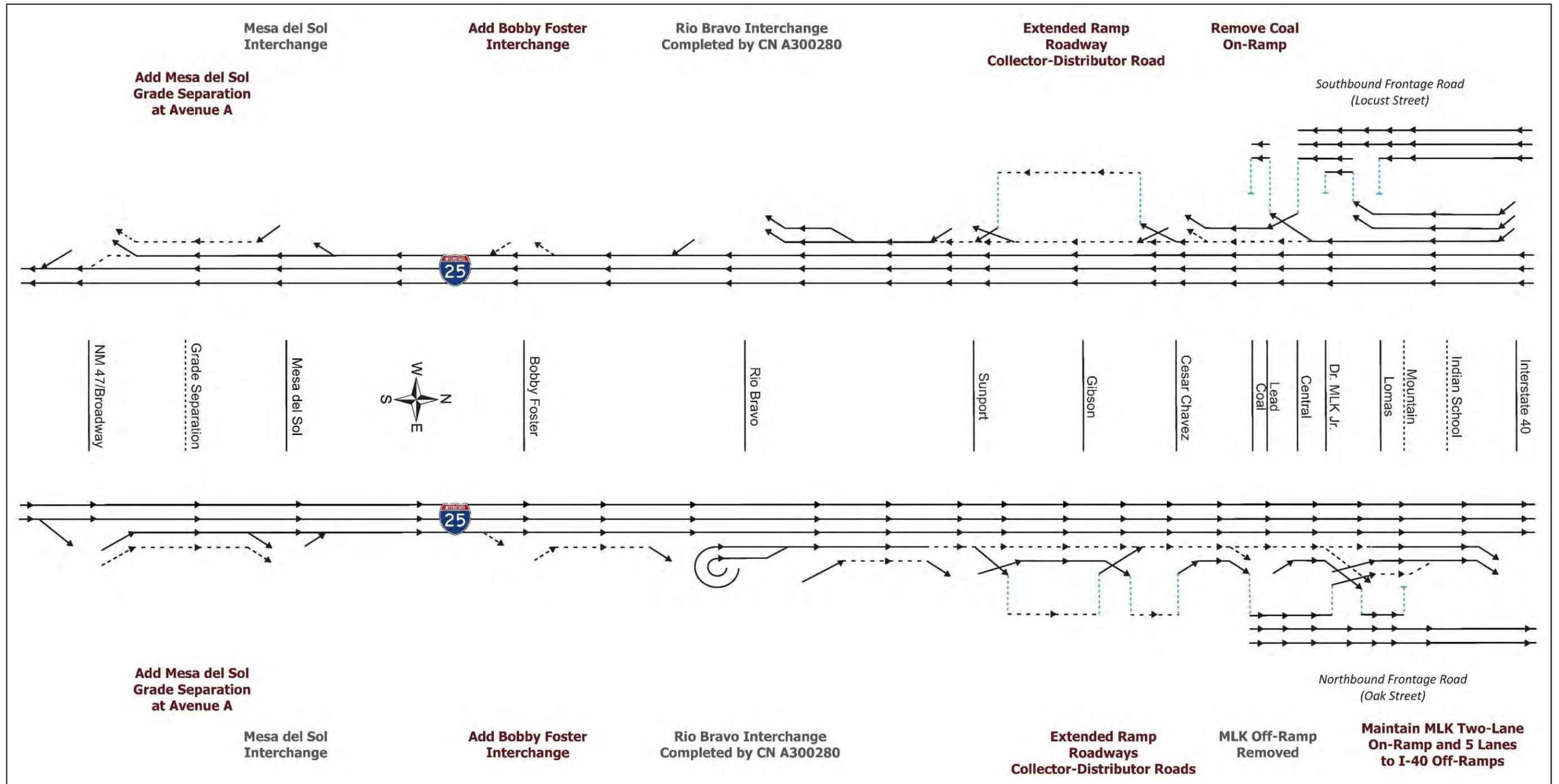


Exhibit 2-4, Schematic Lane Diagram for Build Alternative B2 Closest to Existing

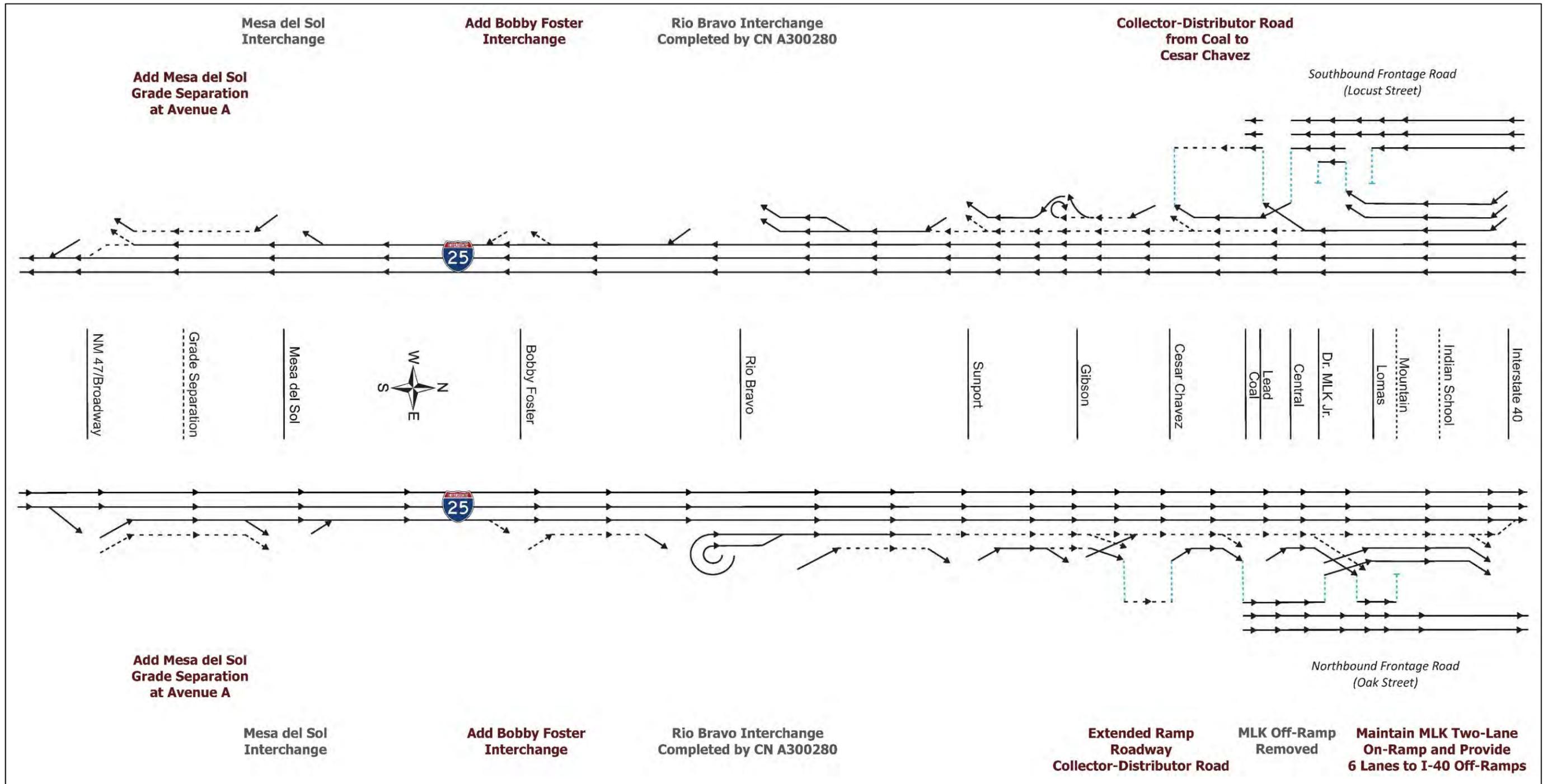


Exhibit 2-5, Schematic Lane Diagram for Build Alternative B3 Collector-Distributor Roads

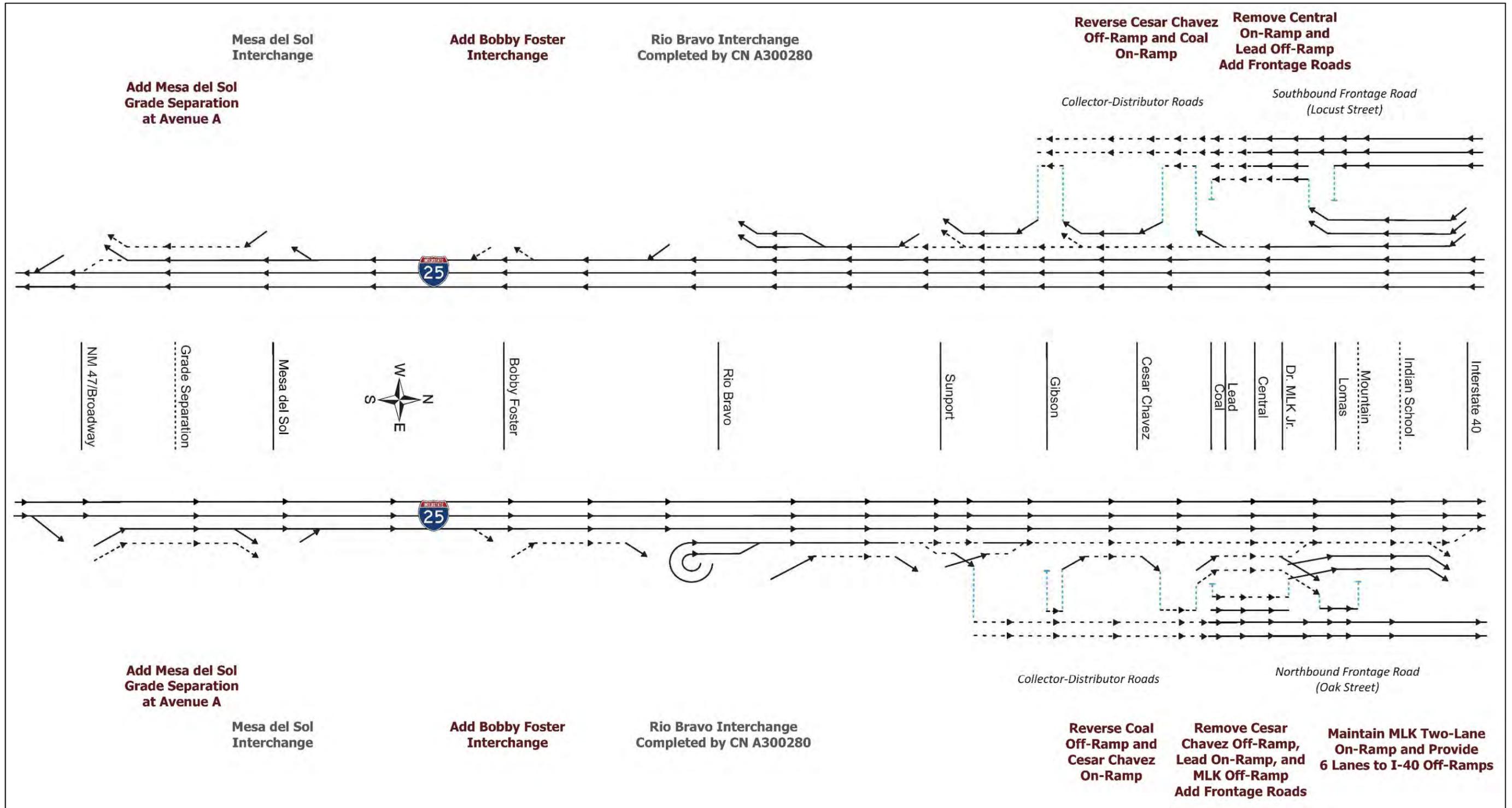
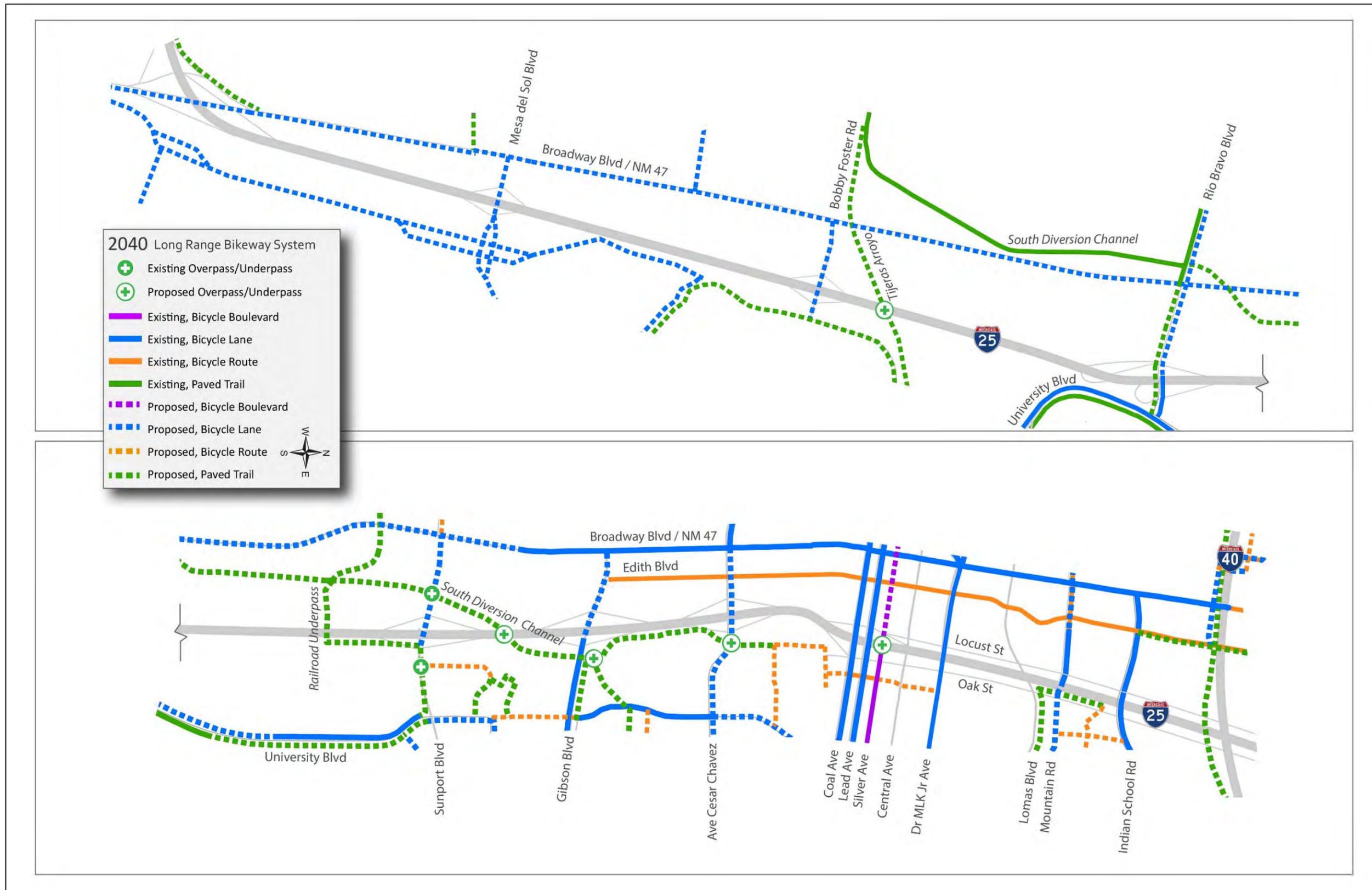


Exhibit 2-6, Illustration of the Planned 2040 Long-Range Bikeway System in the South I-25 Corridor



## Chapter 3, Traffic Forecasts

### INTRODUCTION

The travel demand assessment for the detailed evaluation of alternatives was performed using the Mid-Region Council of Governments (MRCOG) regional CUBE travel demand models developed for the *Futures 2040 Metropolitan Transportation Plan* (2040 MTP). The focus was on the AM and PM peak periods of the 2040 model year. The travel demand assessment was performed by Parsons Brinckerhoff in cooperation with MRCOG. An overview of the process used to develop the peak-hour design-year traffic forecasts for the year 2040 horizon follows.

### FORECAST DEVELOPMENT

Travel demand modeling was performed by MRCOG for a base MTP network without improvements in the study corridor (i.e., No Build) and for three build alternatives which incorporate different approaches to improving the corridor. MRCOG also provided the Year 2012 model representing the base year condition.

The data provided by MRCOG were post-processed and smoothed forecasts for roadway segments and intersections were generated within the project study area. The traffic forecasts developed are summarized in [Exhibit 3-1](#) through [Exhibit 3-4](#). Existing condition AM and PM peak-hour traffic volumes are provided for reference in [Appendix E](#). The computer files developed for the traffic forecasting process are included on the [attached CD](#).

The following post-processing procedures were used:

- ♦ A spreadsheet was developed for the AM peak hour and the PM peak hour for the northbound and southbound I-25 segments and ramps and for the intersections included in the study area. Based on existing traffic counts and GIS shapefiles of model results provided by MRCOG, the input data included:
  - existing volumes and raw 2012 model volumes
  - raw Futures 2040 MTP No Build volumes
  - raw Futures 2040 MTP Build volumes (for each alternative)
- ♦ Differences, or deltas, between the above scenarios were calculated and manual adjustments were made using professional judgment considering the existing volume, the base year error between the existing volumes and the raw 2012 model volumes, future land use conditions, and overall system capacity.
- ♦ Because the forecasts involve a controlled-access freeway and limited access surface streets, the traffic volumes were balanced system-wide so there were no losses or gains between interchange exit and entrance ramps along the freeway and along the surface streets between the ramp terminals within the interchanges where no access will be provided.
- ♦ The 2040 No Build alternative forecasts were estimated by adding the delta between the 2040 No Build and the 2012 base year models and the manual adjustments to existing traffic volumes. Adjustments to the traffic forecast estimates were made during the intersection FRATAR process, which is how intersection turning movements are estimated.
- ♦ The 2040 Build alternative forecasts were estimated by adding the delta between the 2040 Build alternative and the 2040 No Build models and the manual adjustments to the finalized 2040 No Build volumes. Adjustments to the final forecasts were made during the intersection FRATAR process and the volumes were balanced system-wide as for the No Build alternative.
- ♦ Screen lines on both sides of I-25 were reviewed to verify that the demand across the screen lines was reasonable. Screen line analysis compares the raw model volumes with the final post-processed volumes. The screen lines consist of several streets that can be used to access an area such as the Mesa del Sol development.

### Key Assumptions

The travel demand assessment of design-year conditions was performed using the MRCOG regional travel demand model which includes all streets and highways comprising the major roadway network in the Albuquerque metro area. While the resulting peak-hour traffic forecasts presented in this chapter are specific to the South I-25 corridor, the forecasting process considered the adjacent street network including a cursory review of the peak-hour differences between the base MTP No Build network and the build networks. In addition, the same socio-economic (i.e., population and employment) inputs from the 2040 MTP were used for all travel demand model runs. Following are notable considerations regarding the development of the design-year traffic forecasts:

- ♦ No Build Network
  - Includes six basic lanes from the NM 47/Broadway interchange to approximately Lomas Boulevard with auxiliary lanes between interchanges.
  - Includes the Mesa del Sol Boulevard interchange, a new connection to NM 47 at Isleta Lakes Road, the improved Rio Bravo Boulevard interchange, and the Sunport Boulevard extension to Broadway.
  - The northbound Martin Luther King off-ramp is eliminated.
  - Central Avenue includes the lane reductions associated with the Albuquerque Rapid Transit (ART) project.
- ♦ Build Alternative Networks
  - Includes six basic lanes from the NM 47/Broadway interchange to Rio Bravo Boulevard. The south segment from NM 47/Broadway to Sunport Boulevard is the same for the three build alternatives.
  - Includes eight basic lanes from Rio Bravo Boulevard to approximately Lomas Boulevard with auxiliary lanes between interchanges.
  - Includes the Mesa del Sol Boulevard interchange, a new connection to NM 47 at Isleta Lakes Road, the improved Rio Bravo Boulevard interchange, the Sunport Boulevard extension to Broadway, an interchange at Bobby Foster Road, and a grade separation between NM 47/Broadway and Mesa del Sol's Avenue 4 (note: the crossing street is Avenue A in Mesa del Sol's master plan).
  - Incorporates braided ramps, collector-distributor (CD) roads, and interchange improvements. The basic configurations of the alternatives are illustrated on [Exhibit 3-1](#) through [Exhibit 3-4](#).
  - Because Build Alternative B1 and Build Alternative B2 are similar, the forecasts for Build Alternative 2 are the same as for Build Alternative 1 except between Avenida Cesar Chavez and Central Avenue.
- ♦ Mesa del Sol Planned Community - The Mesa del Sol (MDS) planned community is a key source of traffic growth affecting the transportation network in south-central Albuquerque. Growth of MDS is expected to hasten after 2025. Key statistics for the 2040 MTP include:
  - Total Population – 80,695 people at 90% of build-out
  - Total Employment – 10,395 jobs at 20% of build-out
  - East of I-25 AM Peak-Hour Trips – 4,200 entering MDS, 10,600 trips exiting MDS
  - East of I-25 PM Peak-Hour Trips – 10,600 trips entering MDS, 7,000 trips exiting MDS

With this level of growth, the roadway network is more than fully utilized in 2040 including all connections to and across I-25 and all north-south routes from the south study limits to Sunport Boulevard. While substantial growth should be expected as a result of the MDS planned community, the timing, balance and magnitude of this growth is difficult to accurately predict even with the best available tools. Infrastructure improvements should be planned to accommodate a high level of growth while recognizing the speculative nature of forecasting traffic associated with MDS at this time.



Exhibit 3-1, Design-Year Peak Hour Traffic Forecasts for the 2040 No Build Alternative

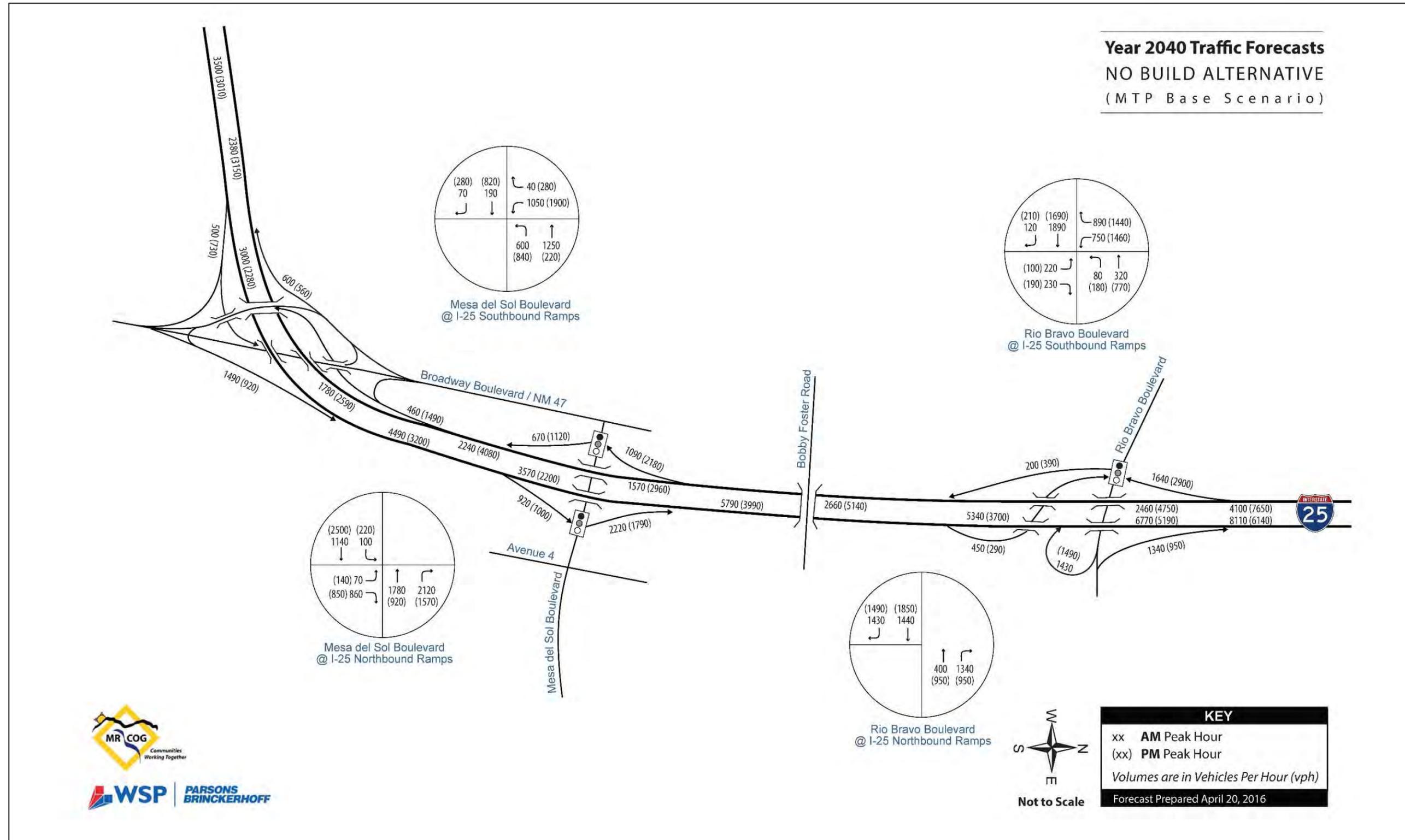


Exhibit 3-1, Design-Year Peak Hour Traffic Forecasts for the 2040 No Build Alternative (continued)

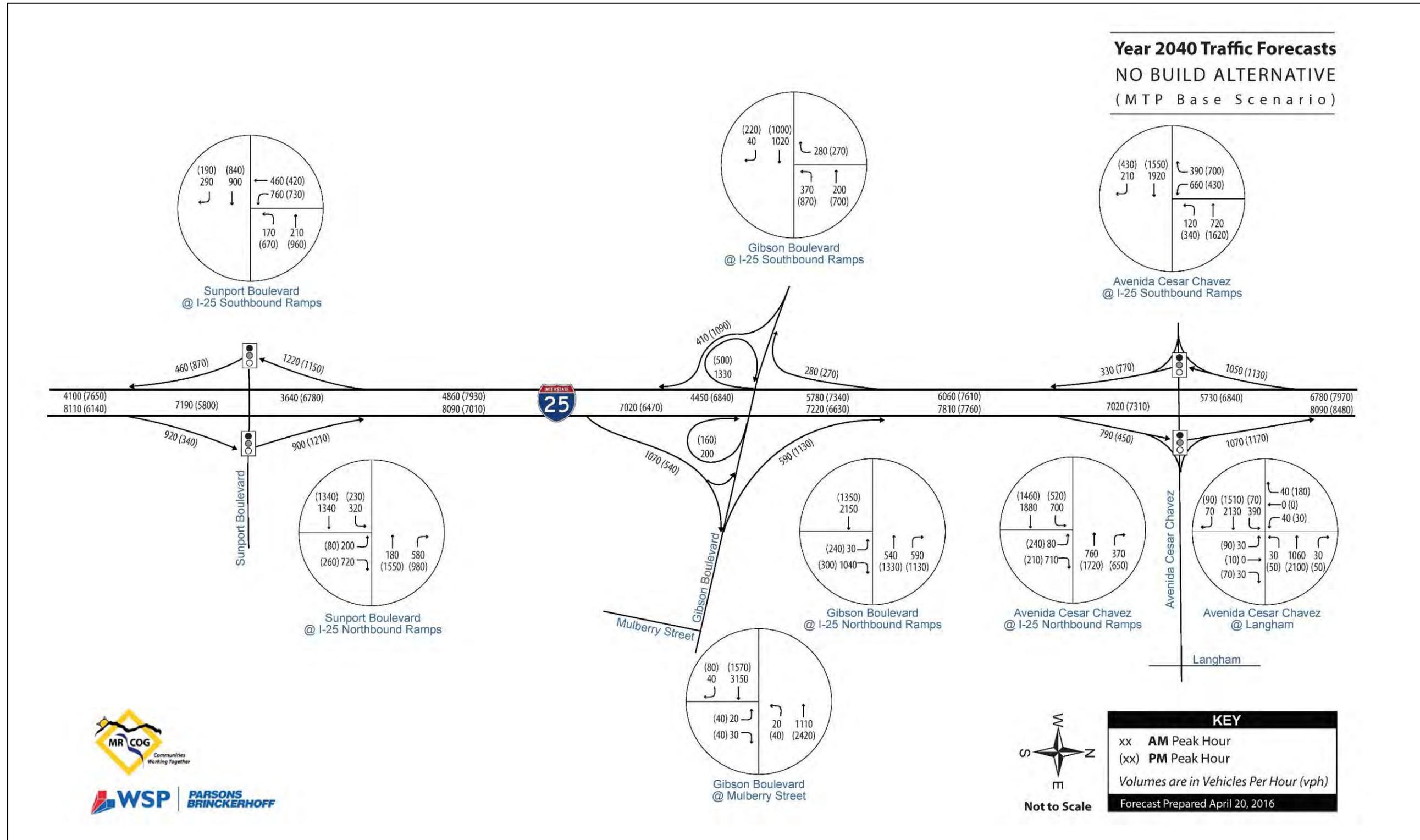


Exhibit 3-1, Design-Year Peak Hour Traffic Forecasts for the 2040 No Build Alternative (continued)

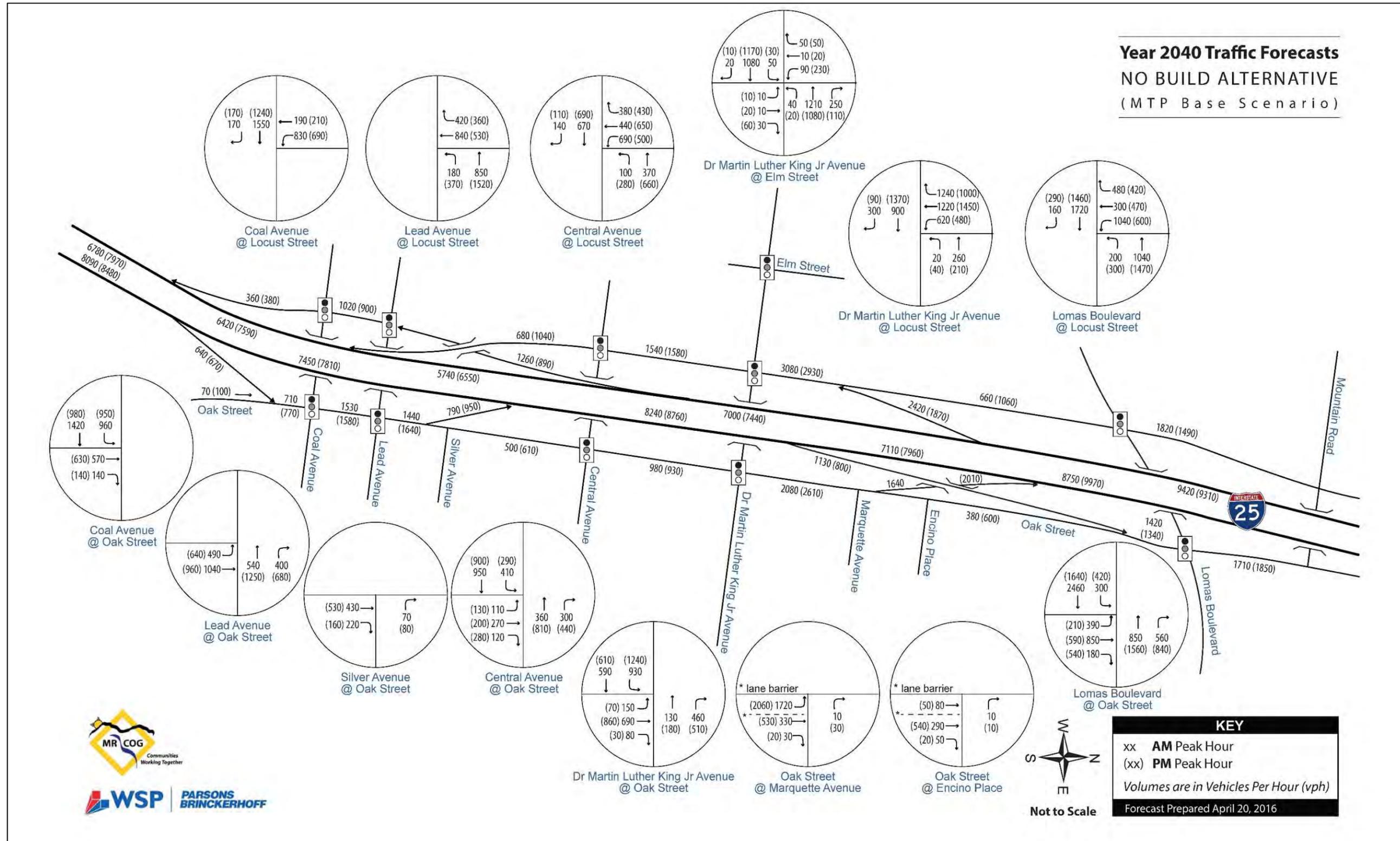




Exhibit 3-2, Design-Year Peak Hour Traffic Forecasts for 2040 Build Alternative B1

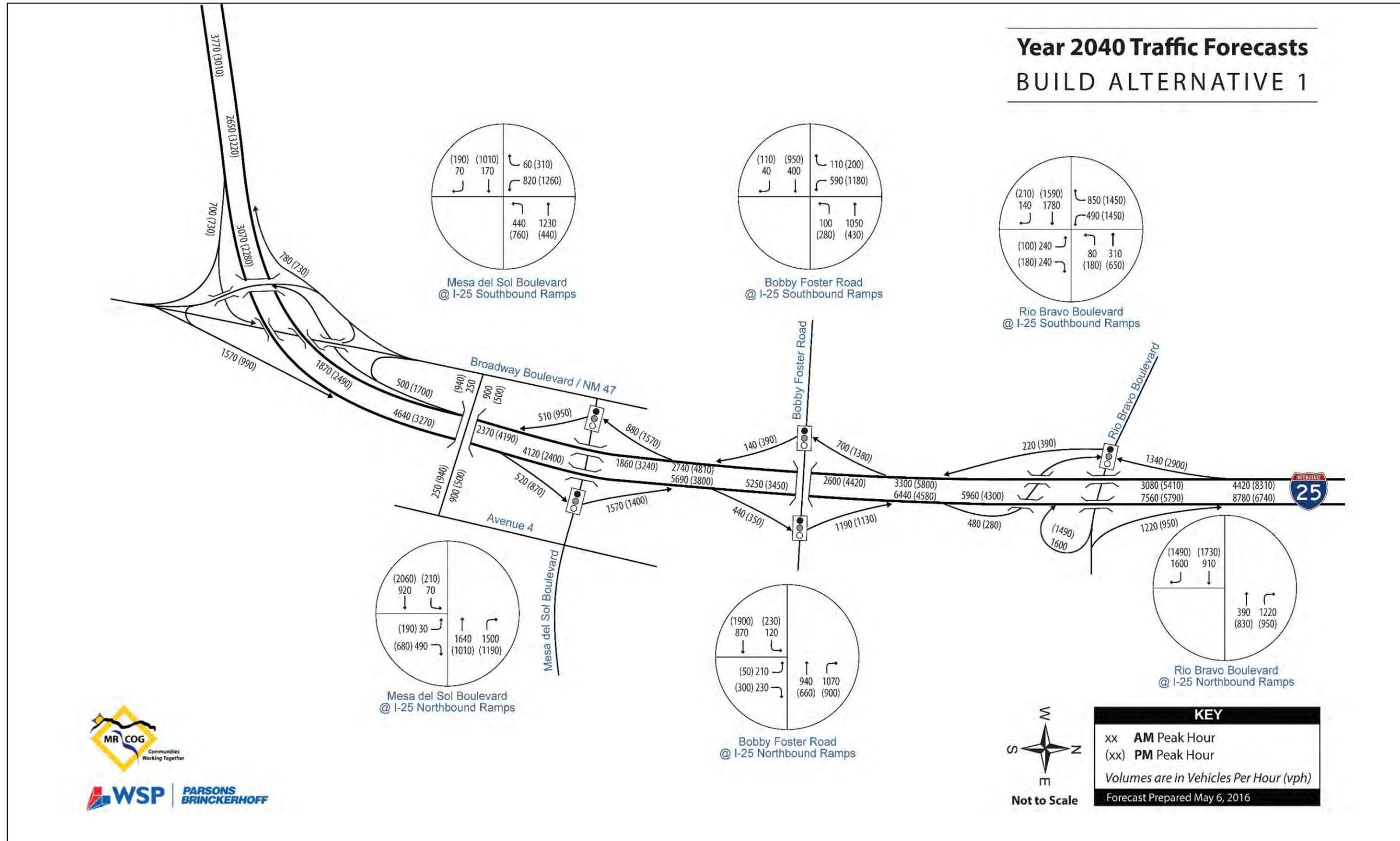
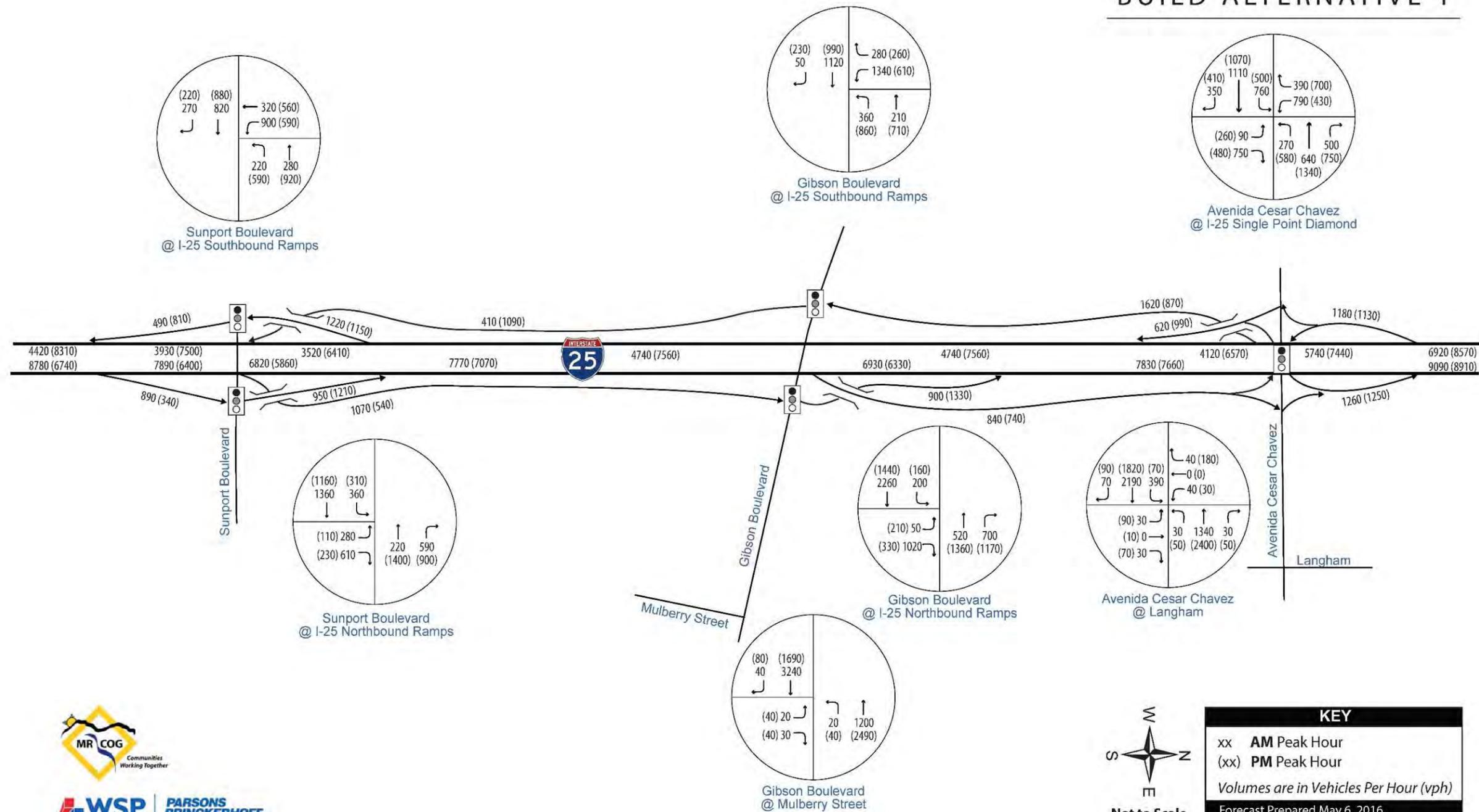




Exhibit 3-2, Design-Year Peak Hour Traffic Forecasts for 2040 Build Alternative B1 (continued)

### Year 2040 Traffic Forecasts BUILD ALTERNATIVE 1



KEY	
xx	AM Peak Hour
(xx)	PM Peak Hour
Volumes are in Vehicles Per Hour (vph)	
Forecast Prepared May 6, 2016	

Exhibit 3-2, Design-Year Peak Hour Traffic Forecasts for 2040 Build Alternative B1 (continued)

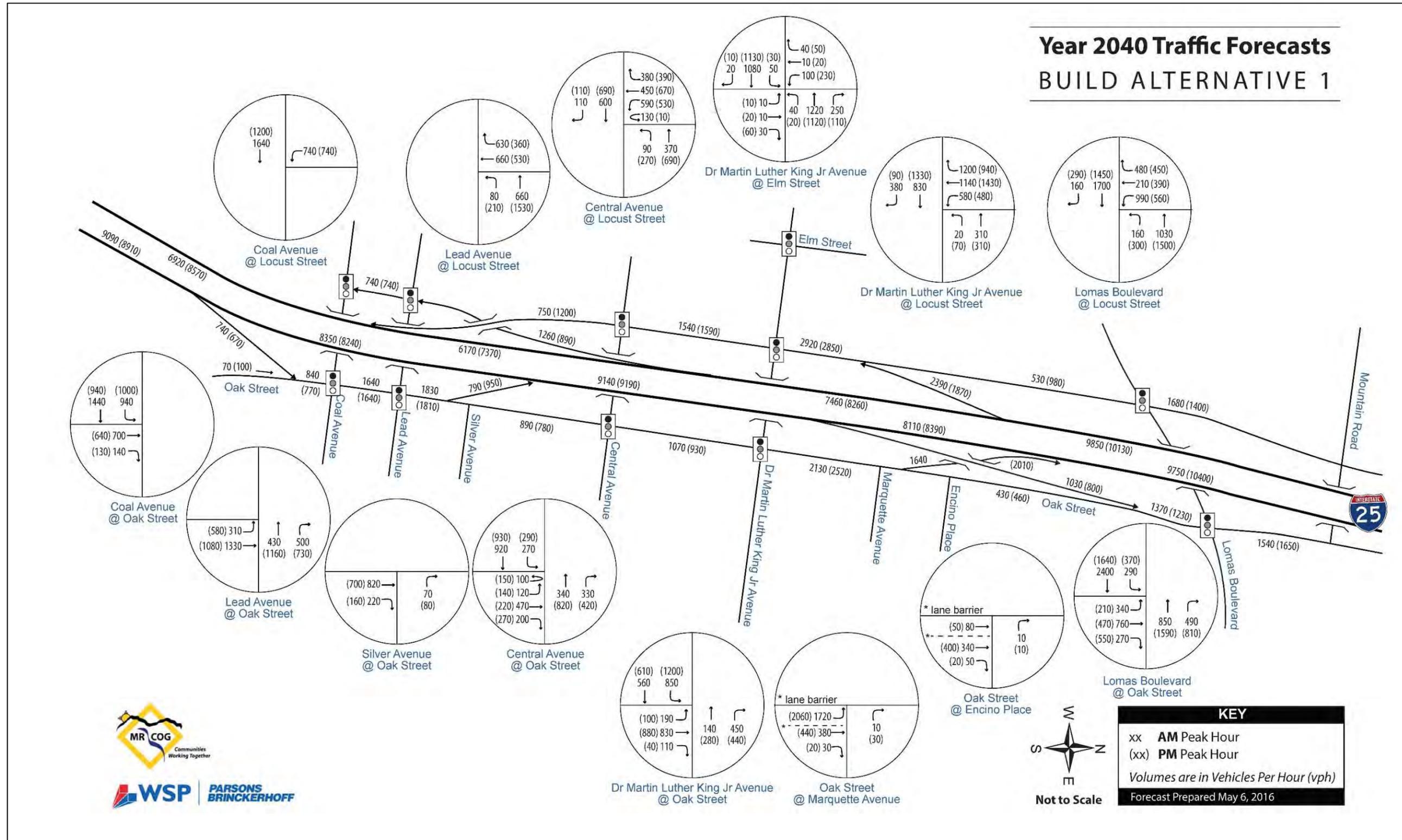




Exhibit 3-3, Design-Year Peak Hour Traffic Forecasts for 2040 Build Alternative B2

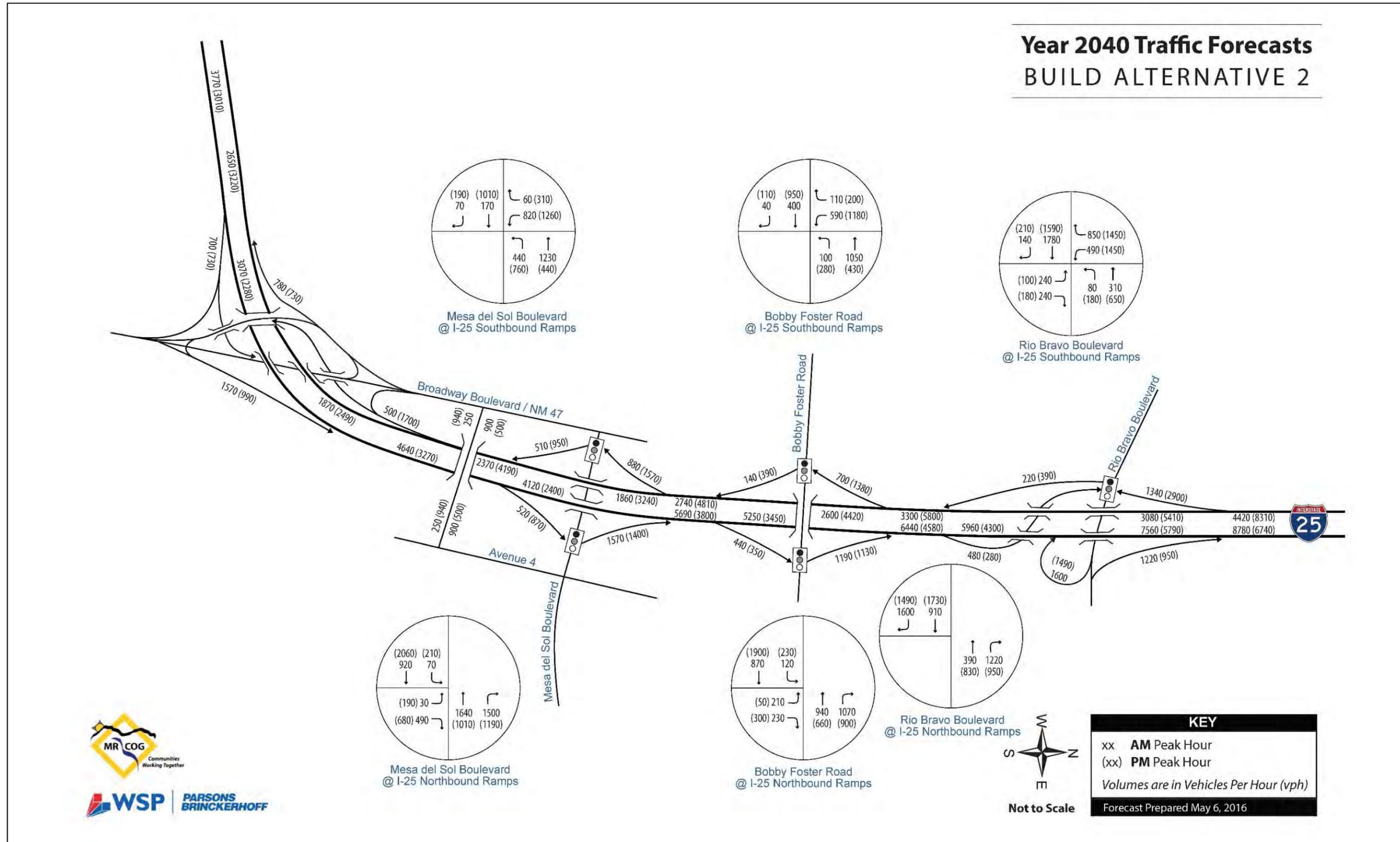
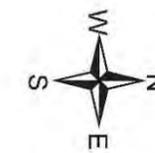
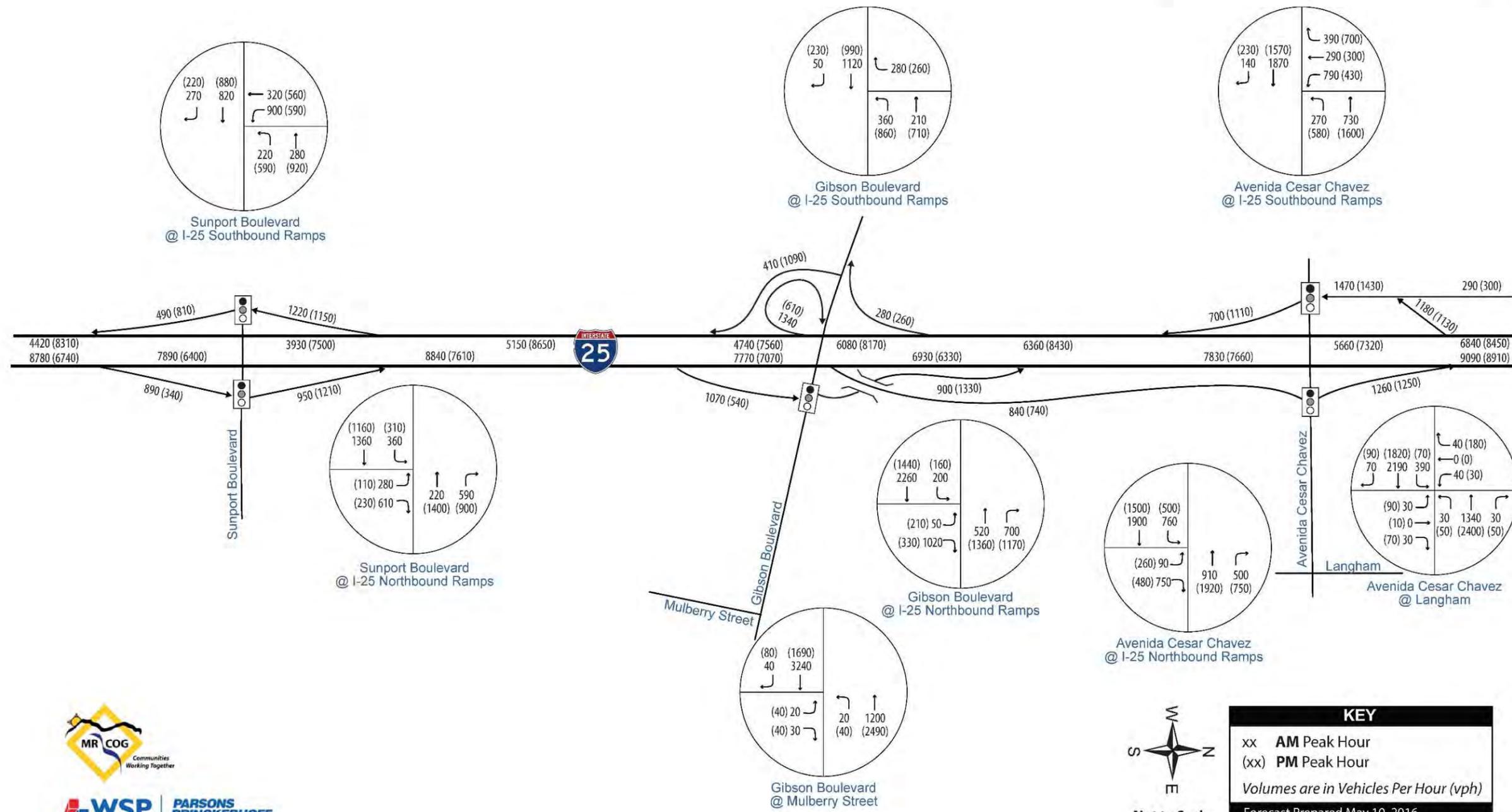




Exhibit 3-3, Design-Year Peak Hour Traffic Forecasts for 2040 Build Alternative B2 (continued)

### Year 2040 Traffic Forecasts BUILD ALTERNATIVE 2



Not to Scale

**KEY**

xx AM Peak Hour  
 (xx) PM Peak Hour  
 Volumes are in Vehicles Per Hour (vph)  
 Forecast Prepared May 10, 2016



Exhibit 3-3, Design-Year Peak Hour Traffic Forecasts for 2040 Build Alternative B2 (continued)

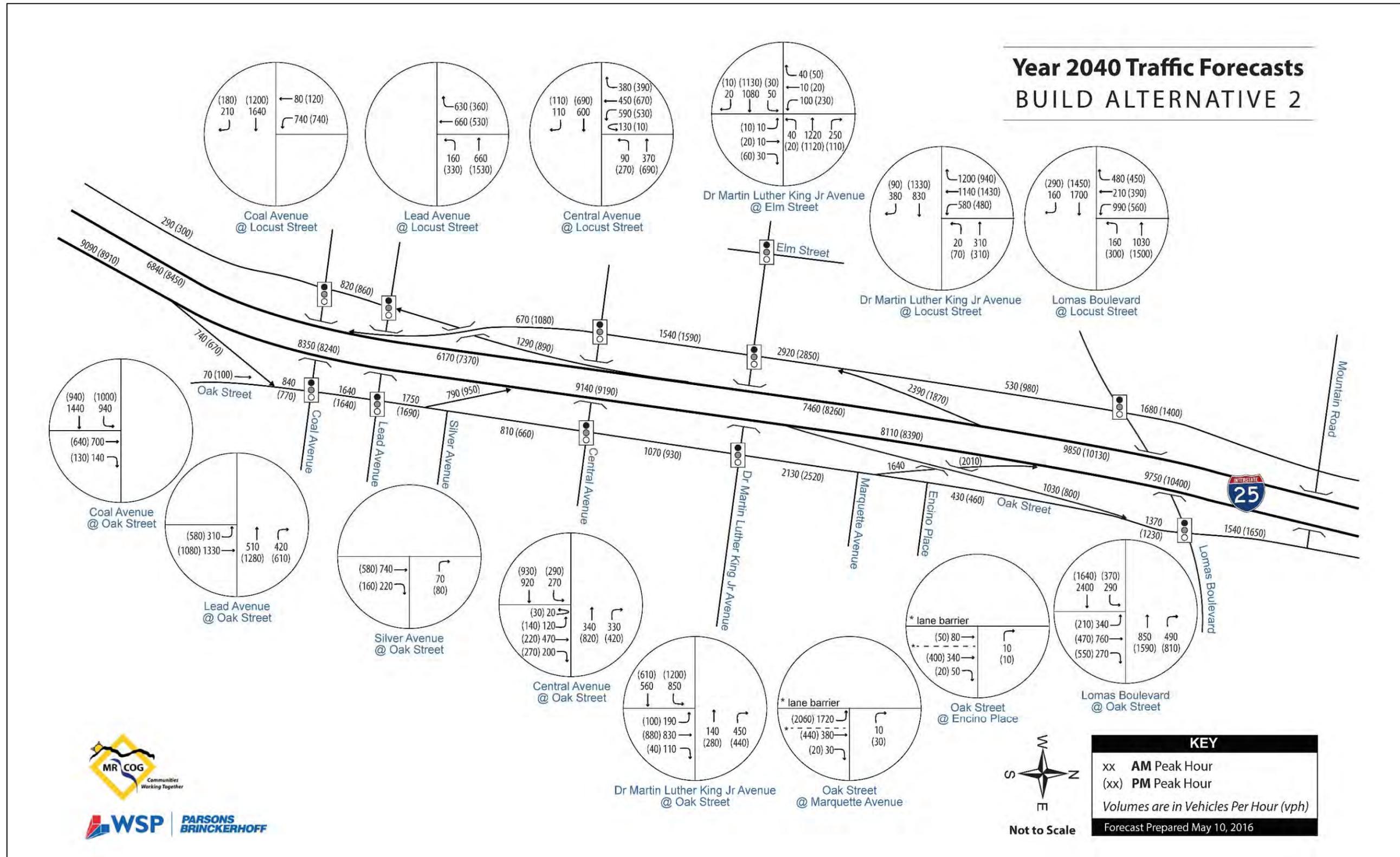


Exhibit 3-4, Design-Year Peak Hour Traffic Forecasts for 2040 Build Alternative B3

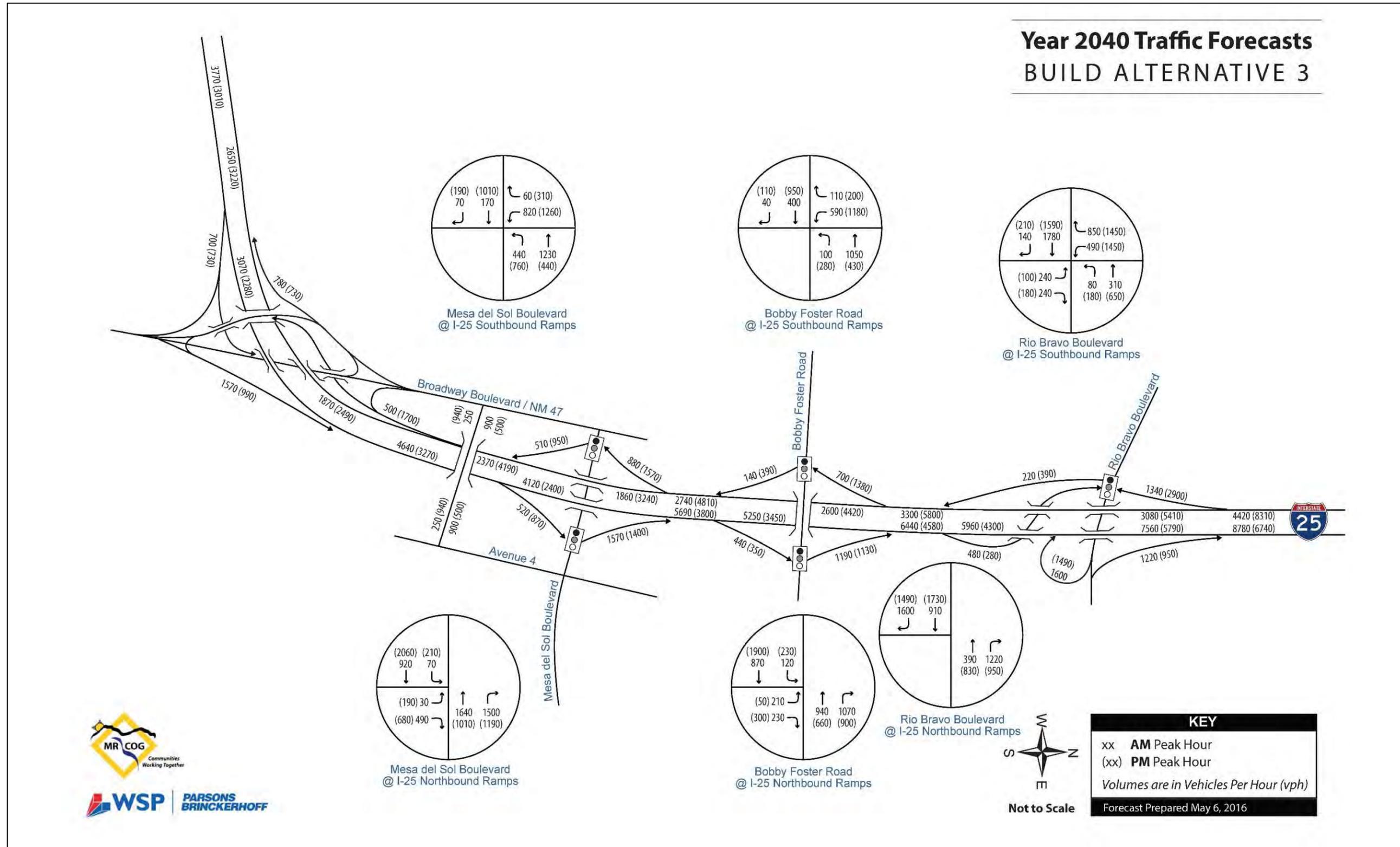


Exhibit 3-4, Design-Year Peak Hour Traffic Forecasts for 2040 Build Alternative B3 (continued)

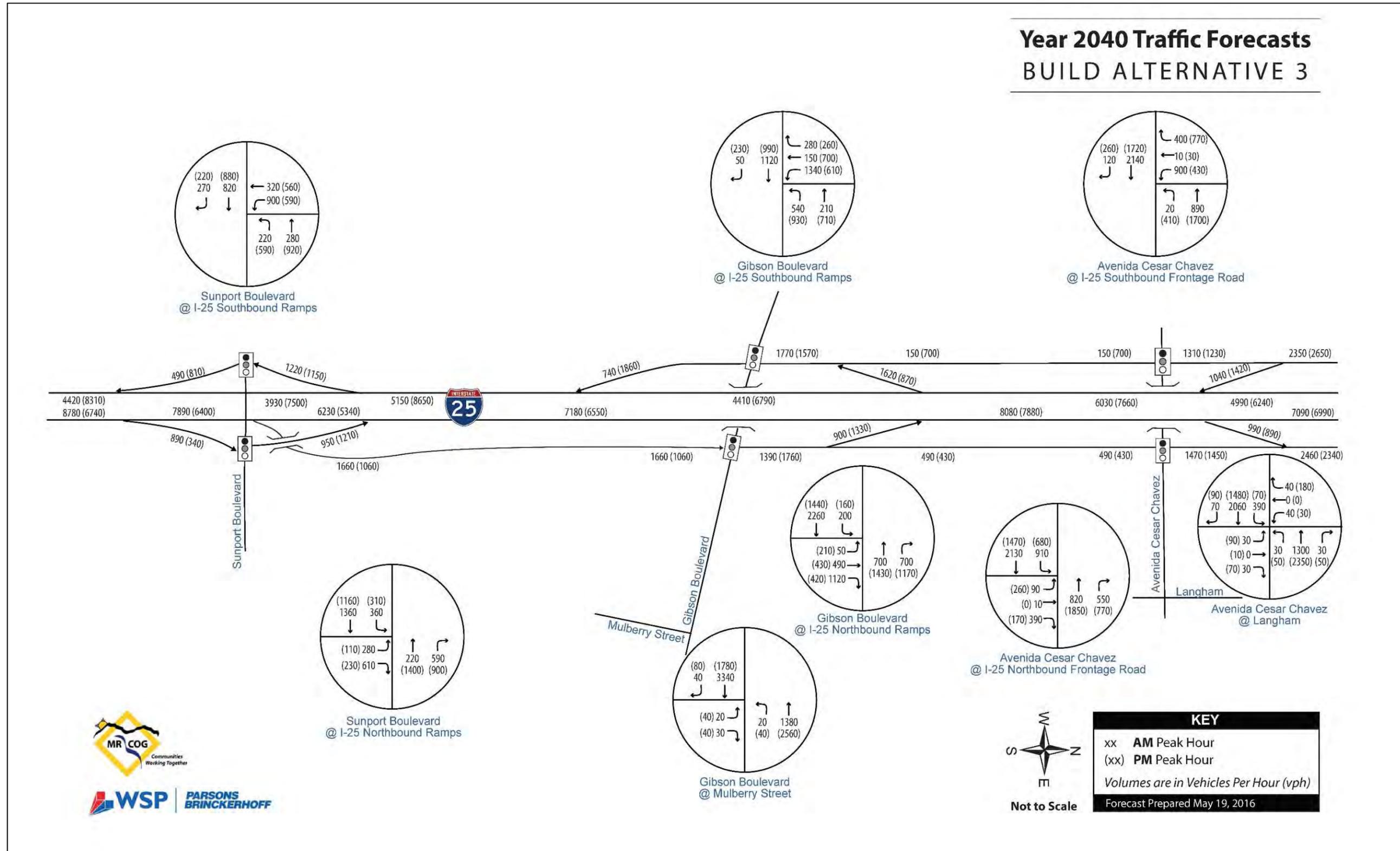
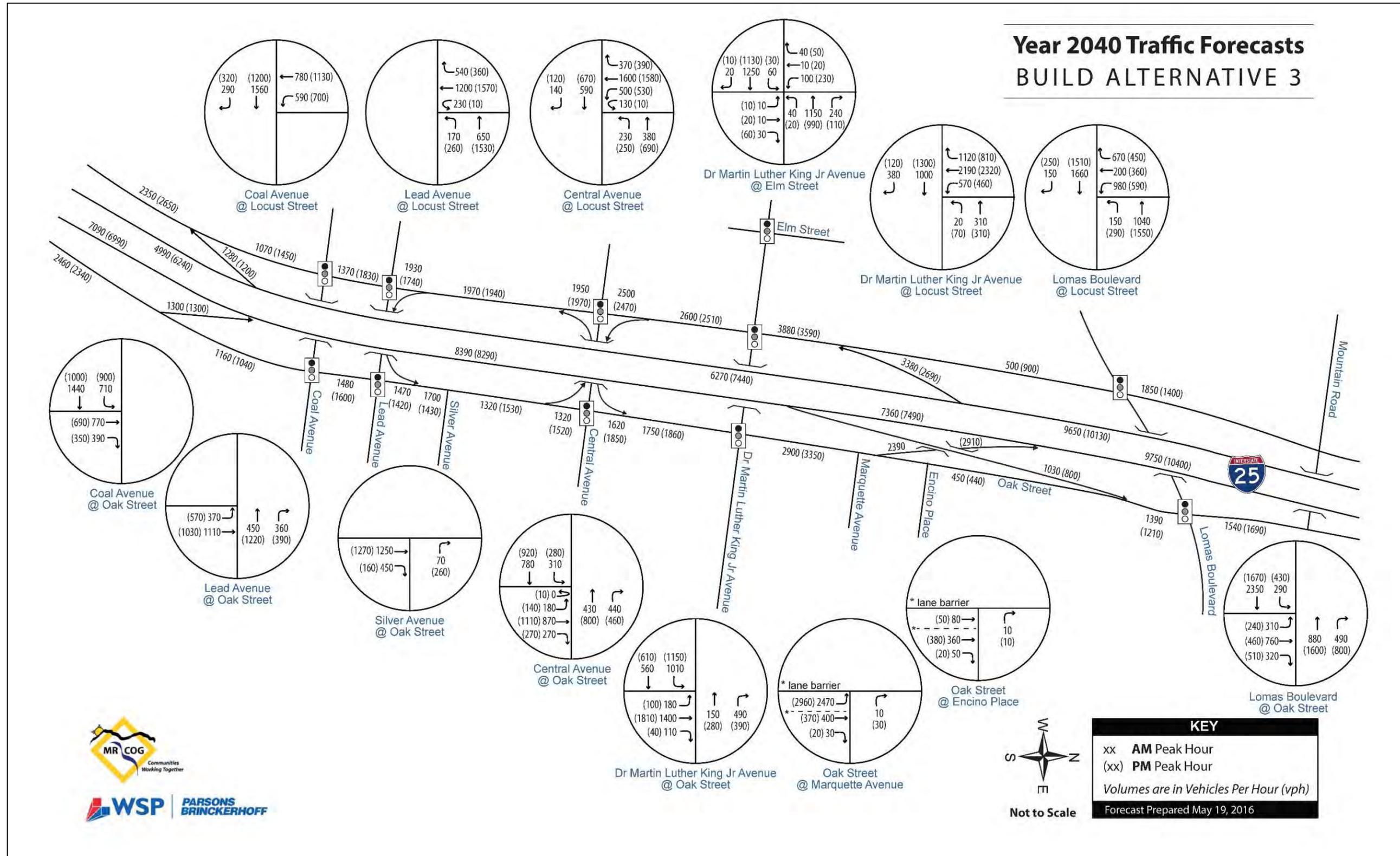


Exhibit 3-4, Design-Year Peak Hour Traffic Forecasts for 2040 Build Alternative B3 (continued)



## Chapter 4, Traffic Performance

### INTRODUCTION

The traffic performance of design-year conditions was evaluated using the Highway Capacity Software (HCS2010) and Synchro, version 9. The HCS2010 Freeway Facilities module was used to analyze basic freeway segments, ramp junctions and weave sections as a continuous system. Synchro was used to evaluate the ramp terminal intersections, intersections along the I-25 frontage roads and any nearby adjacent intersections.

These analytic/deterministic analysis tools were used along with engineering judgment to assess the alternatives considered in this study. In addition to assessing traffic performance, and perhaps more importantly, the results from these analysis tools provide relative comparisons of the alternatives.

The analyses were completed for the design-year (2040) AM and PM peak hours based on the traffic forecasts shown in Chapter 3. Detailed summary tables for each alternative are included in [Appendix F](#), and complete compilations of the traffic analysis output reports for each alternative are included on the [project CD](#).

### TRAFFIC OPERATIONAL PERFORMANCE CRITERIA

The accepted measure of traffic operational performance is Level of Service (LOS), which is a term used to qualitatively describe roadway and intersection traffic operations based on a defined performance measure. Level of service is expressed as letters A to F, with LOS A representing the best operating conditions and LOS F the worst. For facilities in an urban area the size of Albuquerque, LOS D or better traffic operations represents a desirable performance goal for highway segments and for intersections controlled by traffic signals. In addition, each movement at a signalized intersection should provide LOS E or better performance.

The LOS criteria for freeway segments, ramp junctions and weaving segments are summarized in [Table 4-1](#) and are characterized in terms of vehicle density in passenger cars per mile per lane (pcpmpl). [Table 4-2](#) summarizes the level of service criteria for signalized and unsignalized intersections, which is expressed in terms of control delay in seconds per vehicle (sec/veh). For all types of facilities, a volume-to-capacity (V/C) ratio greater than 1.0 signifies LOS F whether or not other performance measures (i.e., density, delay) are estimated to be within acceptable thresholds.

**Table 4-1, LOS Thresholds for Freeway Facilities**

LOS	Description	Density (pcpmpl)		
		Basic Freeway Segments	Ramp Junctions	Weaving Segments
A	Free flow operation	≤ 11	≤ 10	≤ 10
B	Lane changing noticeable	> 11 – 18	> 10 – 20	> 10 – 20
C	Speeds begin to decline	> 18 – 26	> 20 – 28	> 20 – 28
D	Turbulence becomes intrusive	> 26 – 35	> 28 – 35	> 28 – 35
E	Turbulence felt by all drivers	> 35 – 45	> 35	> 35
F	Queues form	> 45; V/C > 1.0	Demand > Capacity	Demand > Capacity

**Table 4-2, LOS Thresholds for Intersections**

LOS	Description	Control Delay (sec/veh)	
		Unsignalized	Signalized
A	Most vehicles do not stop	≤ 10	≤ 10
B	Some vehicles stop	> 10 and < 15	> 10 and < 20
C	Many vehicles stop	> 15 and < 25	> 20 and < 35
D	Significant number of vehicles stop	> 25 and < 35	> 35 and < 55
E	Limit of acceptable delay	> 35 and < 50	> 55 and < 80
F	Unacceptable delay	> 50	> 80

Note: Any movement with a V/C ratio greater than 1.0 is LOS F.

### ALTERNATIVES EVALUATED

The traffic evaluations were performed for the alternatives described in [Chapter 2](#). The lane configurations documented in the Phase IA report were initially used and required lane additions and/or configuration changes were identified to refine the alternatives to enhance performance.

### FREEWAY PERFORMANCE

Analyzing an urban freeway system using the HCS is appropriate for planning-level evaluations as long as severe congestion is not expected. The Facilities module of the HCS2010 software package is capable of evaluating local oversaturated conditions but not system-wide oversaturated flow conditions. Micro-simulation is the preferred method of evaluating congestion, however developing micro-simulation models was not a part of the scope of this study. As indicated below, severe congestion is expected for the No Build alternative under design-year conditions. Because the purpose of this study was to identify improvements to accommodate 2040 traffic and only minor congestion is anticipated for the improvement alternatives, the HCS Facilities module provides sufficient traffic performance results for this study.

#### Freeway Facilities Analysis Inputs

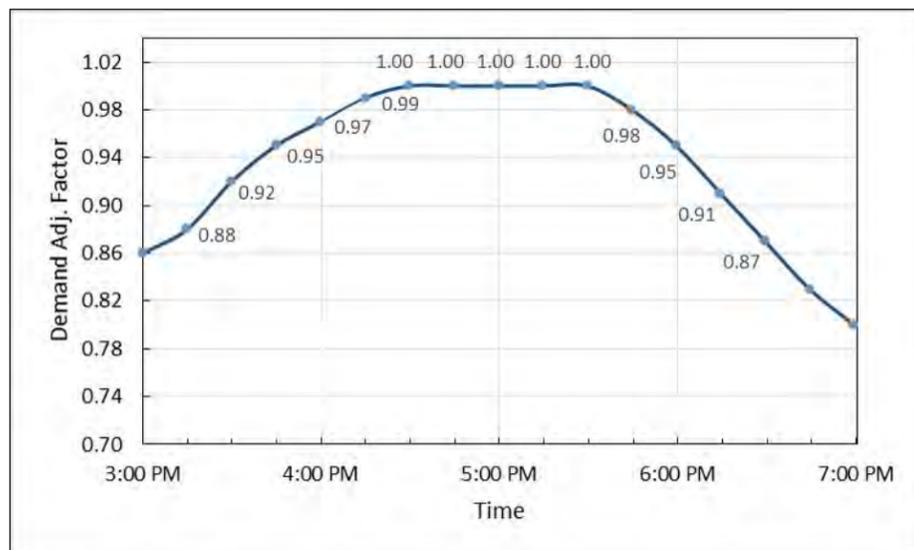
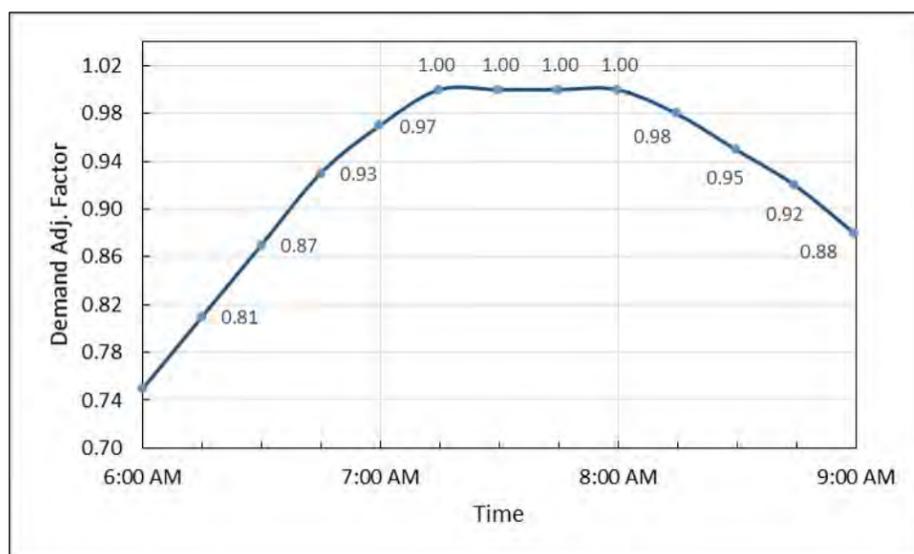
The analyses of I-25 basic freeway segments, ramp junctions and weave sections were performed using the latest version of the Highway Capacity Software (HCS 2010), which facilitates the application of the methodologies contained in the *2010 Highway Capacity Manual* (HCM). Key input parameters used for the Freeway Facilities module include:

- ♦ Jam Density - The jam density was set as the default value of 190 pc/mi/ln in HCM 2010.
- ♦ Free Flow Speed for Mainline I-25 - 75 mph south of Rio Bravo, 70 mph north of Rio Bravo.
- ♦ Free Flow Speed for Ramps - The free flow speed for ramps was assumed to be 50 mph except for loop ramps, which was set to be 30 mph.
- ♦ Truck % - The mainline truck percentage was assumed to be similar to existing data between 2% and 5%. The maximum truck percentage was 5%, which is consistent with the default value in HCM 2010 for urban freeways and because of the diluted impact of significantly increased passenger vehicles in the future.



- ♦ RV % - The RV Percentage was assumed to be zero/negligible per the assumptions for an urban freeway in HCM 2010 and because larger vehicles were covered by the truck percentage.
- ♦ Capacity Adjustment Factor – A capacity adjustment factor of 1.0 was used.
- ♦ Demand Adjustment Factor - To cover the hour before and the after the peak hours, twelve 15-minute time intervals were used to evaluate the peak travel periods. The demand adjustment factors used for this study are shown in Exhibit 4-1.
- ♦ Terrain Types - The terrain type for the corridor study was assumed to be level except for the segments between the Mesa del Sol interchange and the Rio Bravo interchange, which was set to be rolling.
- ♦ Ramp to Ramp Proportion – For weave sections, the ramp-to-ramp proportion was set at five percent (5%), which is the default value in HCS 2010.

Exhibit 4-1, Demand Adjustment Factors for the AM and PM Peak Periods



### Freeway Facilities Analysis Results

While the South I-25 corridor was separated into south and north sections based on the proposed improvement alternatives as described in Chapter 2, the freeway analyses were performed for the entire length of the study corridor. Traffic performance summaries for the alternatives evaluated are provided in Exhibit 4-2 through Exhibit 4-5. These exhibits show the number of lanes and the estimated levels of service by facility type. Tabular summaries of the freeway performance indicators are provided in Appendix F. The summary tables show existing freeway performance by applicable analysis type (i.e., basic freeway, ramp junction or weave section) depending on the freeway configuration and spacing between ramps. Key findings are summarized below.

#### No Build Alternative

The No Build alternative has three basic lanes in both travel directions with some auxiliary lanes which does not provide the capacity needed to accommodate design-year travel demand. As shown in Exhibit 4-2, severe congestion is expected from the Sunport Boulevard interchange to the Martin Luther King Jr. (MLK) Avenue ramps. The mainline freeway breaks down and queues form which leads to ramp junction failures throughout this segment. Key issues by direction include:

##### Northbound

- ♦ Mainline capacity is expected to be sufficient from the Broadway interchange to the Sunport interchange.
- ♦ Mainline capacity is expected to be inadequate from the Sunport off-ramp to the MLK on-ramp.
- ♦ The five-lane section north of the MLK on-ramp is expected to operate at acceptable levels because the traffic demand would not get there through the upstream congestion.
- ♦ Weaving sections and ramp junctions are expected to be deficient primarily because the mainline freeway is deficient.
- ♦ The Gibson east-to-north loop on-ramp has insufficient acceleration lane length.
- ♦ An auxiliary lane is needed between the Gibson west-to-north on-ramp and the Avenida Cesar Chavez off-ramp.
- ♦ Weaving segment capacity could be enhanced by providing two-lane off-ramps or by braiding ramps.

##### Southbound

- ♦ The six-lane section north of the MLK off-ramp is expected to operate at acceptable levels.
- ♦ Mainline capacity is expected to be inadequate from the Lead Avenue off-ramp to the Sunport Boulevard off-ramp.
- ♦ Mainline capacity is expected to be sufficient from the Sunport interchange to the Broadway interchange. The upstream congestion contributes to the acceptable performance south of Sunport.
- ♦ Weaving sections and ramp junctions are expected to be deficient primarily because the mainline freeway is deficient.
- ♦ The Coal Avenue on-ramp is a merge condition within a weave segment which is difficult to analyze. The on-ramp is also within the S-curve. This is not a desirable configuration.
- ♦ An auxiliary lane is needed between the Avenida Cesar Chavez on-ramp and the Gibson off-ramps.
- ♦ Weaving segment capacity could be enhanced by providing two-lane off-ramps, by braiding ramps, or by eliminating ramps.

Exhibit 4-2, Traffic Performance Summary for the 2040 No Build Alternative

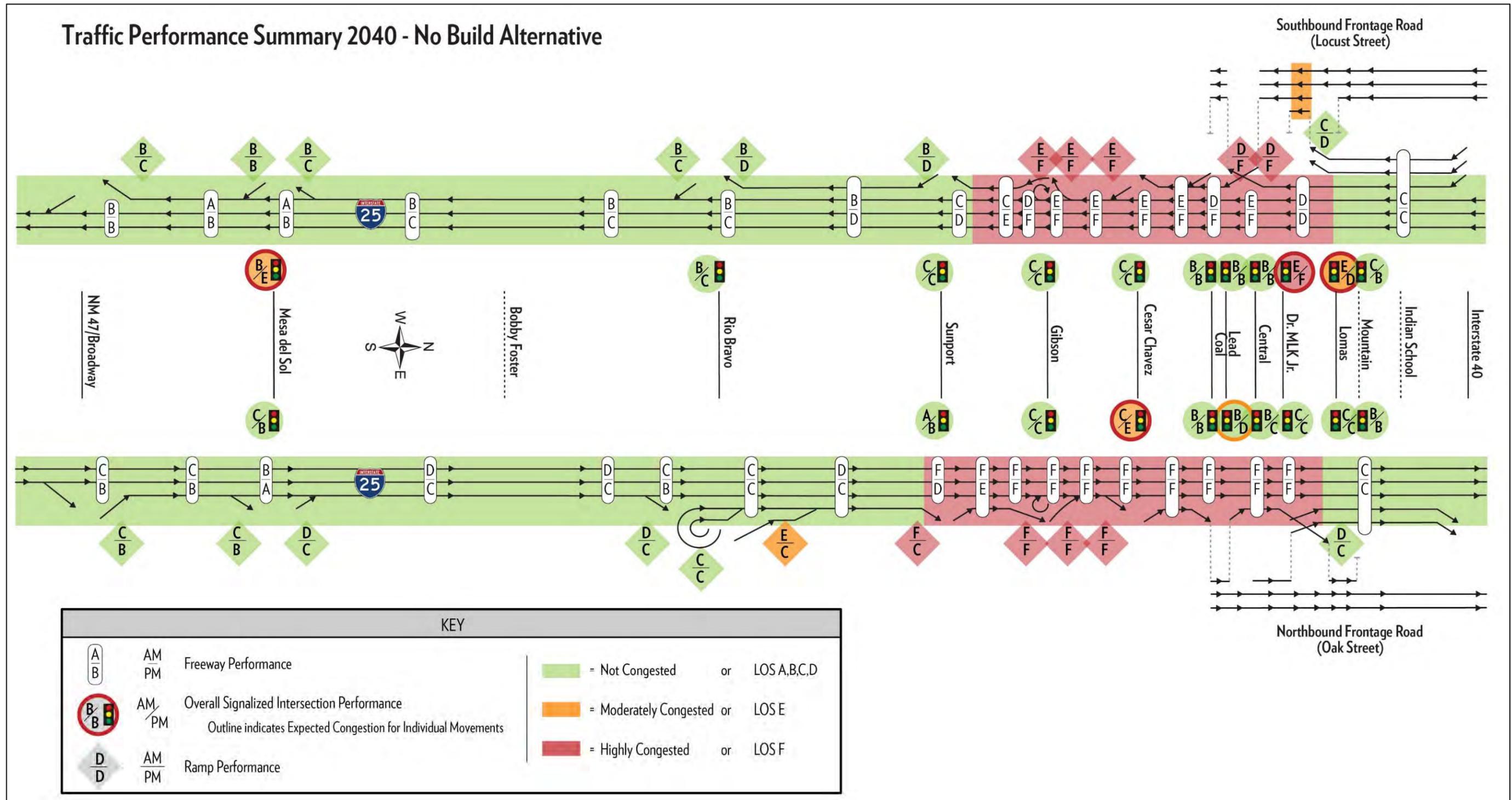


Exhibit 4-3, Traffic Performance Summary for 2040 Build Alternative B1

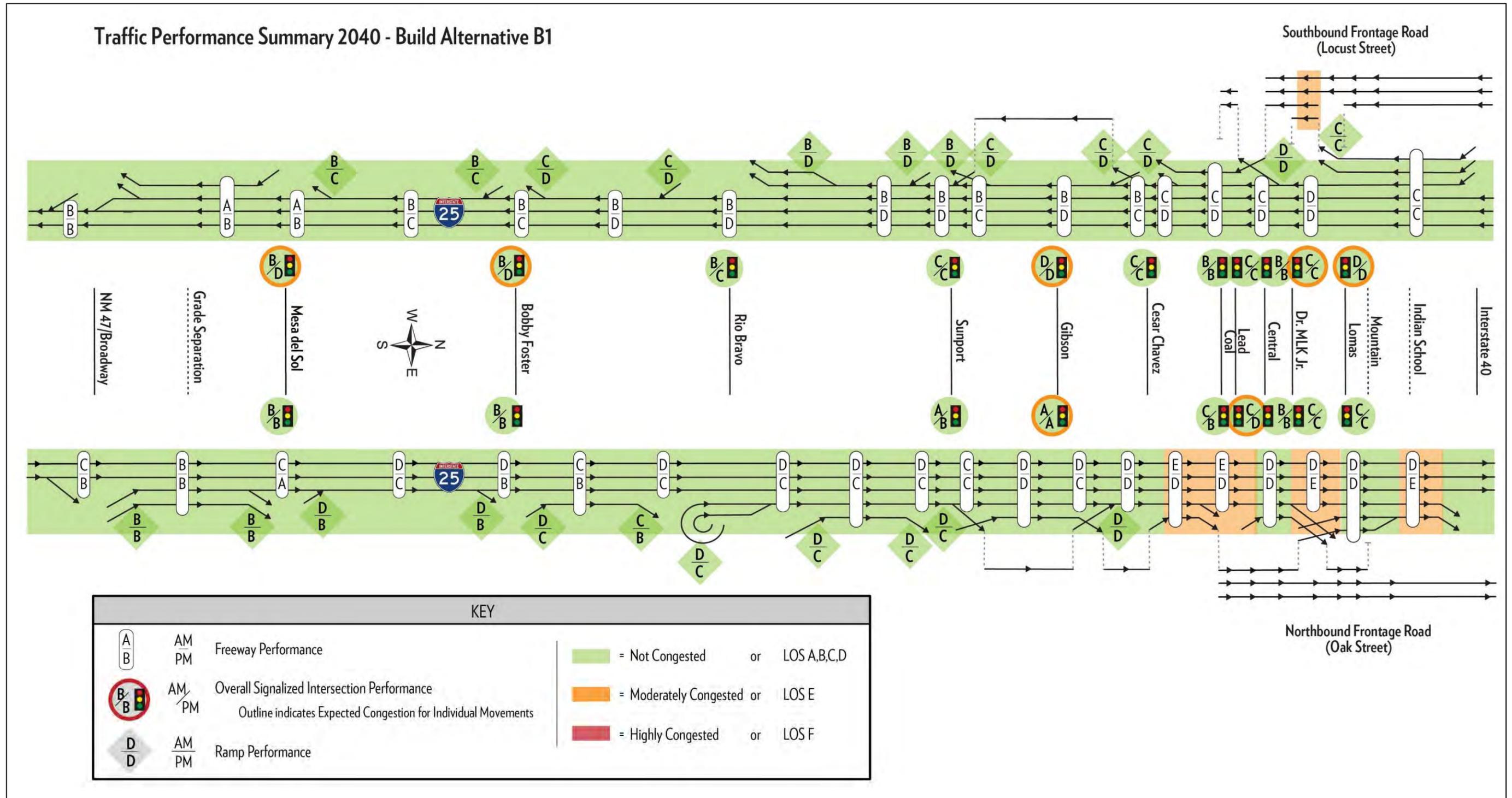


Exhibit 4-4, Traffic Performance Summary for 2040 Build Alternative B2

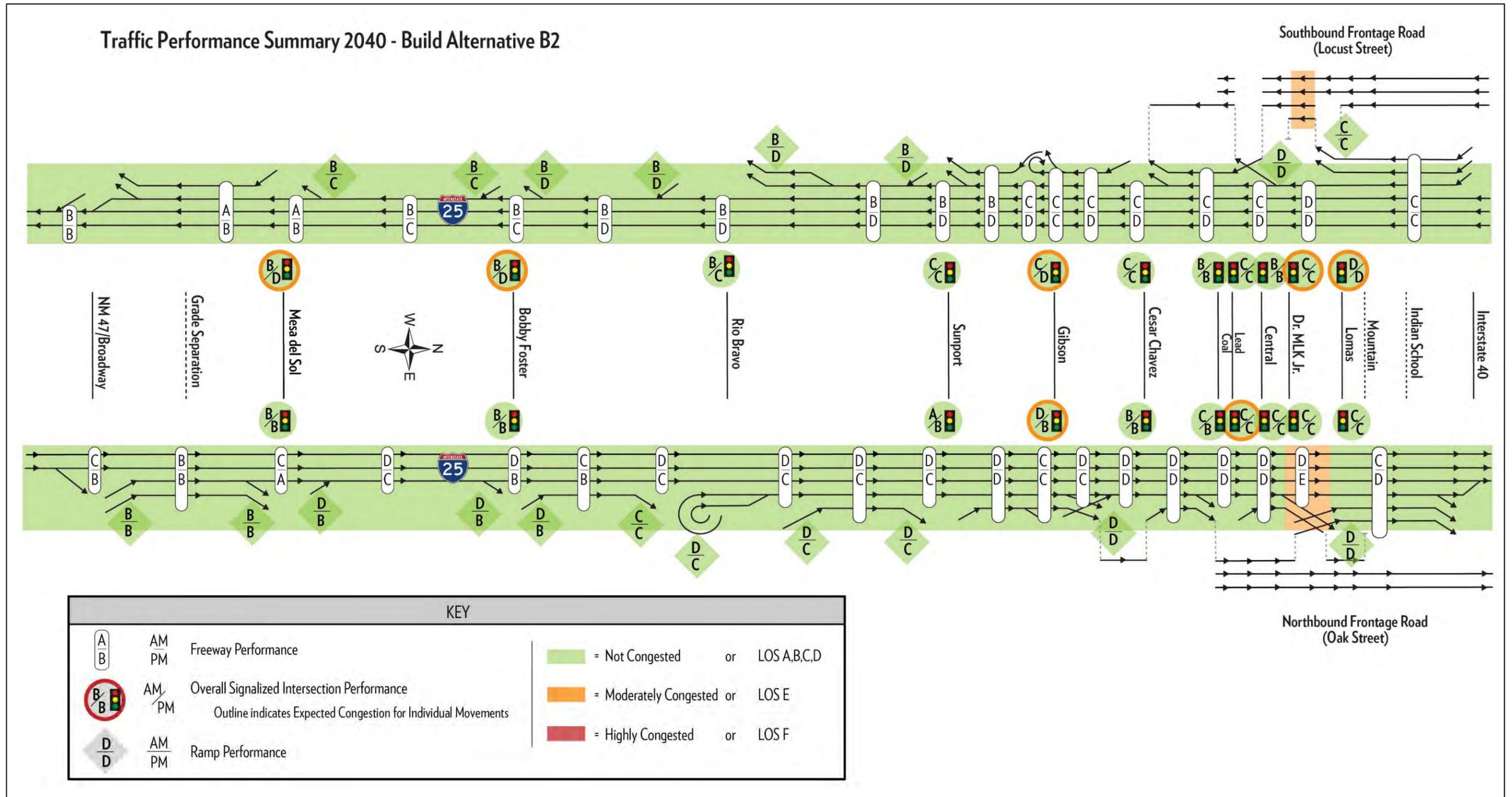
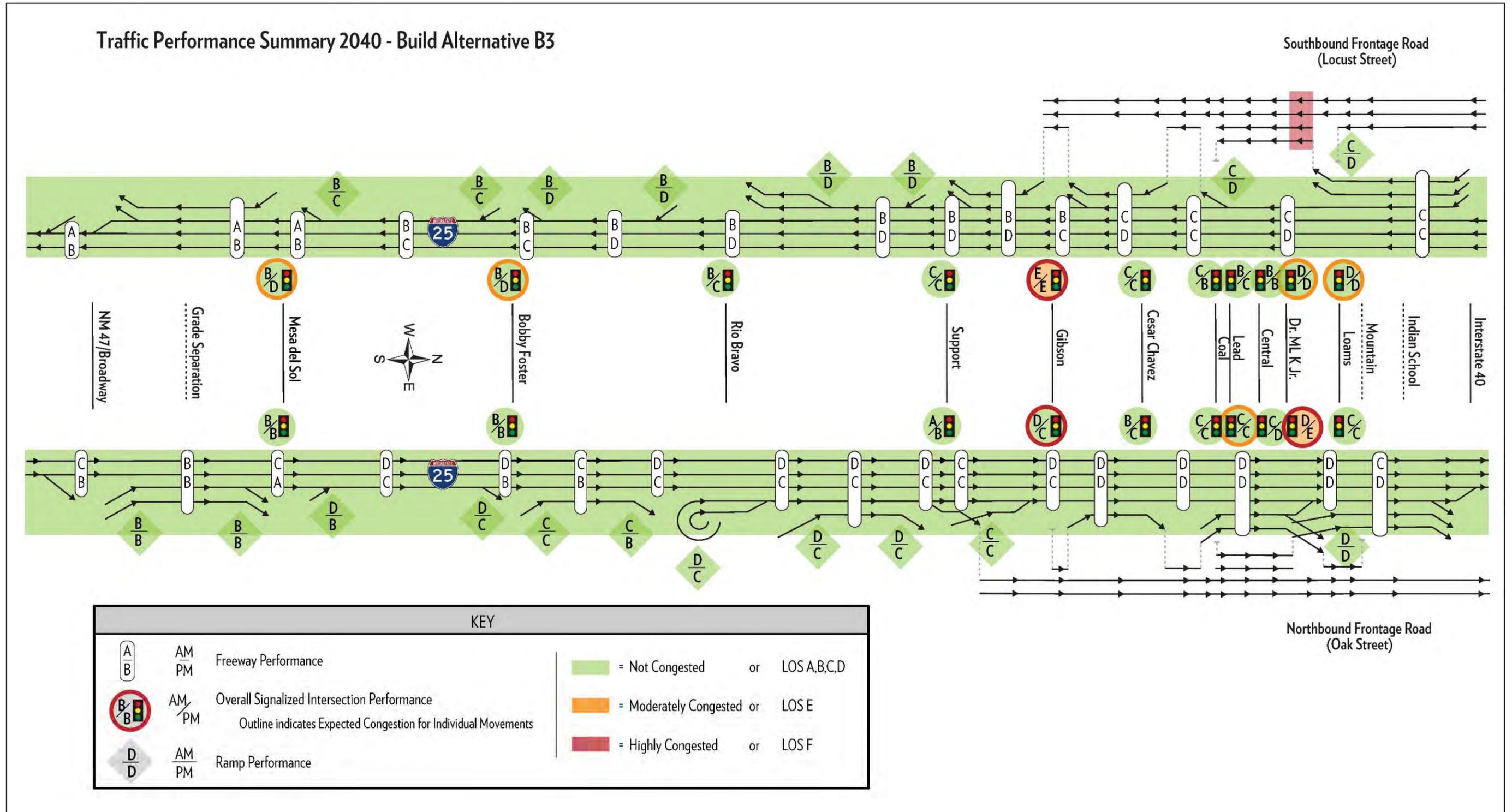


Exhibit 4-5, Traffic Performance Summary for 2040 Build Alternative B3



### Build Alternative B1 – Braided Ramps

Build Alternative B1 has four basic lanes in both travel directions north of the Rio Bravo Boulevard interchange with auxiliary lanes and braided ramps to enhance the capacity of the freeway. The additional capacity will result in higher travel demand on the freeway compared to No Build. As shown in [Exhibit 4-3](#), minor congestion is only expected northbound from the Avenida Cesar Chavez on-ramp to I-40. Key aspects of Build Alternative B1 are listed below.

#### Northbound

- ◆ Improvements made to refine the Phase IA layout to enhance the expected performance include:
  - Broadway to Mesa del Sol – added an auxiliary lane and provide a two-lane off-ramp to Mesa del Sol
  - Bobby Foster to Rio Bravo – added an auxiliary lane
  - Rio Bravo to Sunport – added an auxiliary lane
  - Cesar Chavez to Coal – provide a two-lane off-ramp to Coal
  - Lead to Lomas – provide a two-lane off-ramp to Lomas
- ◆ AM Peak – LOS E is expected for the weave segment between Cesar Chavez and Coal and the four-lane segment from the Coal off-ramp to the Lead on-ramp. Estimated speeds are greater than 50 mph and the demand-to-capacity ratios are less than 0.90 (near the LOS D/E threshold).
- ◆ PM Peak – LOS E is expected for the four-lane segment from the Lomas off-ramp to the MLK on-ramp and for the five-lane segment approaching the I-40 off-ramps. Estimated speeds are 60 mph and the demand-to-capacity ratios are less than 0.90 (near the LOS D/E threshold).

#### Southbound

- ◆ Improvements made to refine the Phase IA layout to enhance the expected performance include:
  - Central to Cesar Chavez – provide a two-lane off-ramp to Cesar Chavez
  - Cesar Chavez to Gibson – braid the Cesar Chavez on-ramp and the Gibson off-ramp
  - Gibson to Sunport – braid the Gibson on-ramp and the Sunport off-ramp
  - Mesa del Sol to Broadway – provide a two-lane off-ramp to Broadway
- ◆ AM Peak – No issues are expected.
- ◆ PM Peak – No issues are expected.

### Build Alternative B2 – Closest to Existing

Build Alternative B2 has four basic lanes in both travel directions north of the Rio Bravo Boulevard interchange with auxiliary lanes and only one new braided ramp pair northbound (Gibson/Cesar Chavez) to enhance the capacity of the freeway. A sixth lane is added northbound from the MLK on-ramp to the I-40 off-ramps. The additional capacity will result in higher travel demand on the freeway compared to No Build. As shown in [Exhibit 4-4](#), minor congestion is only expected northbound from the Lomas off-ramp to the MLK on-ramp. Key aspects of Build Alternative B2 are summarized below.

#### Northbound

- ◆ Improvements made to refine the Phase IA layout to enhance the expected performance include:
  - Broadway to Mesa del Sol – added an auxiliary lane and provide a two-lane off-ramp to Mesa del Sol
  - Bobby Foster to Rio Bravo – added an auxiliary lane
  - Rio Bravo to Sunport – added an auxiliary lane
  - Sunport to Gibson and Cesar Chavez – provide a two-lane off-ramp to Cesar Chavez
  - Cesar Chavez to Coal – provide a two-lane off-ramp to Coal
  - Lead to Lomas – provide a two-lane off-ramp to Lomas

- ◆ AM Peak – No issues are expected. The additional capacity provided downstream to the I-40 off-ramps provides slightly more capacity to change the LOS E segments in Build Alternative B1, which were close to the LOS D/E threshold, to LOS D in Build Alternative B2.
- ◆ PM Peak – LOS E is expected for the four-lane segment from the Lomas off-ramp to the MLK on-ramp. The estimated speed is 60 mph and the demand-to-capacity ratio is less than 0.90 (near the LOS D/E threshold).

#### Southbound

- ◆ Improvements made to refine the Phase IA layout to enhance the expected performance include:
  - Central to Cesar Chavez – provide a two-lane off-ramp to Cesar Chavez
  - Gibson to Sunport – provide a two-lane off-ramp to Sunport
  - Mesa del Sol to Broadway – provide a two-lane off-ramp to Broadway
- ◆ AM Peak – No issues are expected.
- ◆ PM Peak – No issues are expected on the mainline freeway, however, the following observation is made:
  - Providing two Gibson off-ramps (as exists today) helps the weave between the Cesar Chavez on-ramp and the Gibson off-ramps but the south-to-east loop ramp has a 25-mph design speed with a 150-foot radius. A higher design speed is desirable when exiting a freeway designed for 70 mph; right-of-way constraints do not allow for a larger radius loop ramp at this location.

### Build Alternative B3 – Collector-Distributor (C-D) Roads

Build Alternative B3 has four basic lanes in both travel directions north of the Rio Bravo Boulevard interchange with auxiliary lanes and only one new braided ramp pair northbound (Sunport/Gibson) to enhance the capacity of the freeway. Several ramps are eliminated, some are reversed in order and continuous C-D roads and frontage roads are provided north of Gibson Boulevard in both travel directions. The additional capacity will result in higher travel demand on the freeway compared to No Build. As shown in [Exhibit 4-5](#), acceptable freeway operations are expected throughout the study limits. Key aspects of Build Alternative B3 are summarized below.

#### Northbound

- ◆ Improvements made to refine the Phase IA layout to enhance the expected performance include:
  - Broadway to Mesa del Sol – added an auxiliary lane and provide a two-lane off-ramp to Mesa del Sol
  - Bobby Foster to Rio Bravo – added an auxiliary lane
  - Rio Bravo to Sunport – added an auxiliary lane
  - Gibson on-ramp and Cesar Chavez on-ramp – provide a two-lane exit from the C-D road
  - Cesar Chavez to Lomas – provide a two-lane on-ramp from Cesar Chavez, a two-lane off-ramp to Lomas, two auxiliary lanes connecting the ramps, and a recovery lane through the Lomas exit
- ◆ AM Peak – No issues are expected.
- ◆ PM Peak – No issues are expected.

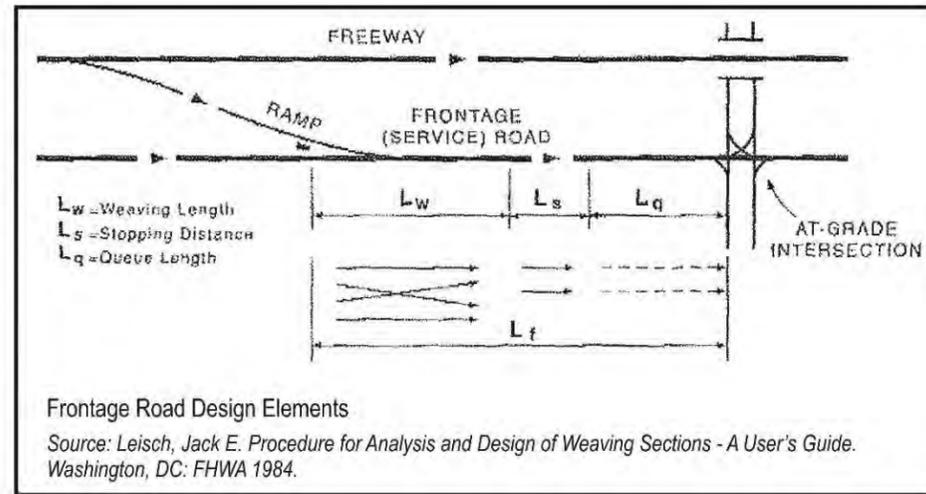
#### Southbound

- ◆ Improvements made to refine the Phase IA layout to enhance the expected performance include:
  - Coal to Gibson – provide a two-lane off-ramp to Gibson
  - Gibson to Sunport – provide a two-lane off-ramp to Sunport
  - Mesa del Sol to Broadway – provide a two-lane off-ramp to Broadway
- ◆ AM Peak – No issues are expected.
- ◆ PM Peak – No issues are expected.

C-D ROAD SLIP RAMP DESIGN

The design of slip ramps to and from one-way C-D and frontage (service) roads is an important consideration effecting the operation of the freeway system. Exhibit 4-6 illustrates the design elements associated with slip ramp merge/weave with a parallel service road on the approach to an at-grade intersection. The merge/weave area shown in Exhibit 4-6 typically operates in free-flow operation with speeds from 40 mph to 55 mph. During high-demand periods when longer queues may form, speeds may be slower and merging and weaving maneuvers can be difficult.

Exhibit 4-6, Slip Ramp/Frontage Road Design Elements



There are also desirable separation lengths on the departure from an intersection to a downstream slip ramp. These configurations are influenced by the intersection lane configuration such as how dual left-turn lanes would be utilized to access a downstream single-lane slip ramp. Table 4-3 provides a summary of the slip ramp design conditions for the conceptual layouts for the build alternatives. Table 4-3 is a planning-level evaluation based on tables contained in the ITE Freeway and Interchange Geometric Design Handbook intended to identify expected issues rather than absolute design lengths.

Key considerations of the build alternatives are:

- ♦ Accessing the northbound Lead on-ramp in Build Alternatives B1 and B2 will only be possible from one northbound through lane or the exclusive westbound right-turn lane because the separation of the ramp from the intersection is short. This could result in long queues forming on Lead Avenue and on Oak Street to access this on-ramp.
- ♦ Accessing the northbound MLK on-ramp in all build alternatives will be from two lanes except for the westbound right-turn lane. The slip ramp separation from the intersection should operate adequately as designed, however the high demand in Build Alternative B3 is expected to form long queues on northbound Oak Street. The eastbound dual left-turn on MLK experiences long queues today and this is expected to continue under improved conditions as well.
- ♦ The two-lane southbound MLK off-ramp along with the two-lane Locust Street will be the highest demand slip ramp merge/weave area in the South I-25 corridor. Based on forecast demand, this area will be an issue in all build alternatives but will be especially critical in Build Alternative B3. It may be necessary to install queue detection to flush the queues on Locust Street to keep them from encroaching onto southbound I-25.

Table 4-3, Slip Ramp Design Summary for the Build Alternatives

Ramp to Cross Road Intersection	Critical Volume (vph)	Number of Lanes on Intersection Approach	Length Required to Intersection (feet)	Concept Design Length Provided (feet)	Analysis
<b>Build Alternative B1</b>					
Northbound Lomas Off-Ramp to Lomas Blvd	1,370	4-6	1,100	1,030	Good
Southbound MLK Off-Ramp to MLK Ave	2,920	4-5	2,000	1,140	Notable Deficiency
<b>Build Alternative B2</b>					
Northbound Lomas Off-Ramp to Lomas Blvd	1,370	4-6	1,100	1,030	Good
Southbound MLK Off-Ramp to MLK Ave	2,920	4-5	2,000	1,140	Notable Deficiency
Southbound ACC Off-Ramp to ACC	1,470	4	900	1,000	Good
<b>Build Alternative B3</b>					
Northbound Lomas Off-Ramp to Lomas Blvd	1,390	4-6	1,100	1,030	Good
Southbound MLK Off-Ramp to MLK Ave	3,880	4-6	2,400	1,130	Notable Deficiency
Southbound Gibson Off-Ramp to Gibson Blvd	1,770	4-5	1,100	1,080	Good
Cross Road Intersection to Ramp	Critical Volume (vph)	Number of Lanes on Intersection Departure	Length Required to Ramp (feet)	Concept Design Length Provided (feet)	Analysis
<b>Build Alternative B1</b>					
Northbound Lead Ave to Lead On-Ramp	1,830	3	500	250	Short
Northbound MLK Ave to MLK On-Ramp	2,520	3	750	680	Short
<b>Build Alternative B2</b>					
Northbound Lead Ave to Lead On-Ramp	1,750	4	450	280	Short
Northbound MLK Ave to MLK On-Ramp	2,520	3	750	680	Short
<b>Build Alternative B3</b>					
Northbound Gibson Blvd to Gibson On-Ramp	1,760	3	450	1,020	Very Good
Northbound MLK Ave to MLK On-Ramp	3,350	3	900	680	Short

Geometric improvements were considered to increase the separation between the physical gore of the slip off-ramp to MLK Avenue but the profile grade of Locust Street and the upstream I-25 bridge over Lomas Boulevard are key factors. It is expected that an approximate additional 100-feet could be achieved but the extensive costs would not be reasonable for a small improvement.

- ♦ In Build Alternative B2, while the separation between the southbound Cesar Chavez off-ramp and the Cesar Chavez intersection is reasonable, the merge on the C-D road at the off-ramp is expected to be turbulent due to high demand destined to the west and to the east and queuing on the intersection approach. This condition will be aggravated during special events at the Sports District.
- ♦ In Build Alternative B3, while the separation between the southbound Gibson off-ramp and the Gibson intersection is reasonable, the merge on the C-D road at the Gibson off-ramp is expected to be turbulent due to high demand and associated queuing on the intersection approach.

## RAMP METERING EVALUATION

Ramp metering is the deployment of a traffic signal(s) on a ramp to control the rate vehicles enter a controlled access highway. Ramp meters may be programmed to release vehicles one at a time or in a small (usually two-vehicle) platoon to mitigate the impacts that vehicles entering the freeway have on mainline freeway traffic flow. A ramp meter may be coordinated with other ramp meters to smooth traffic flow at a point or along a stretch of freeway. Additionally, ramp meters may be programmed to optimize freeway flow and/or reduce congestion and its effects (collisions, delay, emissions, and fuel consumption). However, it should be noted that motorists may elect to bypass metered ramps in lieu of other ramps upstream or downstream of those that are metered. The potential for diversion is an issue that should be considered and expected on some level before deploying ramp meters. Ramp metering at any level requires resources to deploy, operate and maintain the metered locations as well as a commitment to enforcement. Without these resources, ramp metering would fail.

A ramp metering analysis was performed to determine if ramp meter deployment would be appropriate within the South I-25 corridor based on improved design-year conditions. The metering analysis was only considered for Build Alternative B1 and Build Alternative B2. Ramp metering was not considered for Build Alternative B3 because ramp elimination and the provision of parallel C-D and frontage roads was the freeway management strategy incorporated into the B3 alternative.

### Criteria

The Arizona Department of Transportation (ADOT) Transportation Technology Group *Ramp Metering Design Guide*, November 2013, was used as a reference for the ramp metering evaluation. The criteria applied for the ramp metering evaluation are as follows:

- ♦ Primary warranting criteria:
  - During a typical 15-minute period, the combining flow rate of the entrance ramp and the rightmost freeway lane is greater than 2,050 vehicles per hour (vph) and during the same period the entrance ramp flow rate is greater than 400 vph.
  - During a typical 15-minute period, the speed of the freeway general purpose lanes (not including HOV, auxiliary, and entrance ramp lanes) is less than 50 mph due to recurring congestion adjacent to or within 2 miles downstream of the entrance ramp.
- ♦ Supplemental criteria:
  - Ramp metering is not used on freeway-to freeway ramps.
  - Ramp metering is not typically used where an entrance ramp lane continues as an added freeway for at least one mile, within which there are no conditions that would require traffic to change lanes, such as exit ramps and entrance ramps.
  - Adequate acceleration distance should be provided from the meter to the painted gore.
  - Adequate queue storage distance should be provided from the meter to the cross road.

Ramp metering may be considered when all of the above criteria are satisfied. In addition, these criteria do not consider other factors that may affect the suitability of ramp meter installation, including:

- ♦ Is it safe to deploy ramp metering at this location?
- ♦ Is the roadway geometry adequate for ramp metering?
- ♦ Is a power source reasonably obtainable?
- ♦ Is there appropriate access for maintenance?
- ♦ Would ramp metering mitigate crashes?
- ♦ Is it desired to distribute traffic demand to other entrance ramps?

## Findings

Key parameters used for this ramp metering evaluation include:

- ♦ The geometry data required for analysis were taken from the conceptual design drawings for each alternative.
- ♦ The design-hour traffic volumes were the 2040 traffic forecasts prepared for this study (see [Chapter 3](#)).
- ♦ Estimated freeway speeds were based on the results of the HCS 2010 freeway facility analysis.
- ♦ Two mainline free-flow speeds were considered, 70 mph and 75 mph. The corresponding acceleration distances are 900 feet and 1000 feet, respectively, per the ADOT *Ramp Metering Design Guide* (these distances consider a reduction in freeway speeds that occurs during high-demand periods).
- ♦ The ramp queue storage distance is based on an equation provided in the ADOT guide. The minimum queue length is 400 feet per ADOT's criteria.

The results of the ramp metering evaluation are shown in [Table 4-4](#) and [Table 4-5](#). Ramp metering is not recommended for either Build Alternative B1 or B2 because the estimated freeway speeds are expected to be higher than 50 mph. While some of the weaving sections may experience travel speeds at or below 50 mph during high-demand periods, if ramp metering were applied where adequate space would allow, it may result in traffic diversion that could overload other adjacent or downstream weaving segments. Based on this analysis, there is limited applicability of ramp metering in the South I-25 corridor due to the short spacing of arterial streets and the inability to provide sufficient queue storage and acceleration distance at multiple locations within the South I-25 corridor.

## INTERSECTION ANALYSIS

The signalized intersections within the project limits were evaluated using Synchro based on the design-year AM and PM peak-hour turning movement forecasts. Synchro is a macroscopic model that estimates traffic performance best when congestion is not severe (i.e., v/c ratios < 1.2). Per [Table 4-2](#), the intersection levels of service were determined based on capacity using control delay and/or demand using the volume-to-capacity (V/C) ratio. The analyses results are summarized in [Table 4-6](#) and [Table 4-7](#), which are located at the end of this chapter. The Synchro output reports are provided on the [attached CD](#). Key assumptions used in the Synchro analyses include:

- ♦ The ideal saturation flow rate was 1900 vehicles per hour per lane.
- ♦ The base peak-hour factor (PHF) was 0.90.
- ♦ Adjustments to lane utilization factors were made for multi-lane movements where imbalanced use of the available lanes was anticipated due to downstream destinations.
- ♦ The cycle length ranged from 70 to 120 seconds depending on location.
- ♦ Phase timing was optimized and lead/lag left-turn phase optimization was allowed.
- ♦ Truck percentages were consistent with existing conditions.

The expected conditions at each of the interchanges are summarized below.

### I-25/NM 47/Broadway Boulevard Interchange

The existing configuration of the I-25/NM 47/Broadway interchange is not recommended to be changed although spot improvements should be considered. The intersections within the interchange are free-flow or stop-controlled and were not included in the design-year intersection analysis. The following improvements were identified as near-term improvements in the Phase IA report to provide a capacity increase while improving driver expectation:

Table 4-4, Ramp Metering Evaluation Summary for Build Alternative B1

South I-25 On-Ramps	Freeway Right-Lane and Entrance Ramp Flow Rate (vph)	Criteria 1: Flow Rate > minimum (Met = Yes)	HCS 2010 Simulated Freeway Speed (mph)	Criteria 2: Freeway Speed < 50 mph within 2 Miles (Met = Yes)	Criteria 3: Not a Freeway to Freeway Ramp (Met = Yes)	Criteria 4: No Lane Addition > 1 Mile, and with No Lane Changes (Met = Yes)	Criteria 5: Adequate Acceleration Distance (Met = Yes)	Criteria 6: Adequate Queue Storage Distance (Met = Yes)	Findings Based on ADOT Criteria
<b>NORTHBOUND</b>		<b>AM Peak</b>							
Broadway On-Ramp	3105	Yes	66	No	Yes	Yes	Yes	No	Not recommended due to acceptable freeway speed and queue storage
Mesa del Sol On-Ramp	2943	Yes	63	No	Yes	Yes	Yes	No	Not recommended due to acceptable freeway speed and queue storage
Bobby Foster On-Ramp	2940	Yes	65	No	Yes	Yes	Yes	Yes	Not recommended due to acceptable freeway speed
Rio Bravo Loop On-Ramp	3587	Yes	65	No	Yes	Yes	Yes	No	Not recommended due to acceptable freeway speed and queue storage
Rio Bravo W-N On-Ramp	3110	Yes	62	No	Yes	Yes	Yes	Yes	Not recommended due to acceptable freeway speed
Sunport On-Ramp	2655	Yes	51	No	Yes	Yes	Yes	Yes	Not recommended due to acceptable freeway speed ( <i>marginal</i> )
Gibson On-Ramp	2633	Yes	61	No	Yes	Yes	Yes	Yes	Not recommended due to acceptable freeway speed
Avenida Cesar Chavez On-Ramp	3218	Yes	53	No	Yes	Yes	No	No	Not recommended due to excessive ramp length required
Lead On-Ramp	2878	Yes	54	No	Yes	Yes	No	No	Not recommended due to excessive ramp length required
Dr. Martin Luther King Jr. On-Ramp	3668	Yes	59	No	Yes	Yes	Yes	No	Not recommended due to excessive ramp length required and acceptable freeway speed
<b>SOUTHBOUND</b>		<b>PM Peak</b>							
Central On-Ramp	3043	Yes	54	No	Yes	Yes	Yes	Yes	Not recommended due to acceptable freeway speed
Avenida Cesar Chavez On-Ramp	2633	Yes	61	No	Yes	Yes	Yes	Yes	Not recommended due to acceptable freeway speed
Gibson On-Ramp	2693	Yes	62	No	Yes	Yes	Yes	Yes	Not recommended due to acceptable freeway speed
Sunport On-Ramp	2685	Yes	61	No	Yes	Yes	Yes	Yes	Not recommended due to acceptable freeway speed
Rio Bravo On-Ramp	2193	Yes	65	No	Yes	Yes	Yes	Yes	Not recommended due to acceptable freeway speed
Bobby Foster On-Ramp	1863	No	68	No	Yes	Yes	Yes	Yes	Not recommended due to flow rate and acceptable freeway speed
Mesa del Sol On-Ramp	2030	No	65	No	Yes	Yes	Yes	Yes	Not recommended due to flow rate and acceptable freeway speed

Table 4-5, Ramp Metering Evaluation Summary for Build Alternative B2

South I-25 On-Ramps	Freeway Right-Lane and Entrance Ramp Flow Rate (vph)	Criteria 1: Flow Rate > minimum (Met = Yes)	HCS 2010 Simulated Freeway Speed (mph)	Criteria 2: Freeway Speed < 50 mph within 2 Miles (Met = Yes)	Criteria 3: Not a Freeway to Freeway Ramp (Met = Yes)	Criteria 4: No Lane Addition > 1 Mile, and with No Lane Changes (Met = Yes)	Criteria 5: Adequate Acceleration Distance (Met = Yes)	Criteria 6: Adequate Queue Storage Distance (Met = Yes)	Findings Based on ADOT Criteria
<b>NORTHBOUND</b>		<b>AM Peak</b>							
Broadway On-Ramp	3105	Yes	67	No	Yes	Yes	Yes	No	Not recommended due to acceptable freeway speed and queue storage
Mesa del Sol On-Ramp	2943	Yes	63	No	Yes	Yes	Yes	No	Not recommended due to acceptable freeway speed and queue storage
Bobby Foster On-Ramp	2940	Yes	65	No	Yes	Yes	Yes	Yes	Not recommended due to acceptable freeway speed
Rio Bravo Loop On-Ramp	3587	Yes	65	No	Yes	Yes	Yes	No	Not recommended due to acceptable freeway speed and queue storage
Rio Bravo W-N On-Ramp	3110	Yes	62	No	Yes	Yes	Yes	Yes	Not recommended due to acceptable freeway speed
Sunport On-Ramp	2923	Yes	54	No	Yes	Yes	No	No	Not recommended due to excessive ramp length required
Gibson On-Ramp	2633	Yes	61	No	Yes	Yes	Yes	Yes	Not recommended due to acceptable freeway speed
Avenida Cesar Chavez On-Ramp	3218	Yes	53	No	Yes	Yes	No	No	Not recommended due to excessive ramp length required
Lead On-Ramp	2878	Yes	54	No	Yes	Yes	No	No	Not recommended due to excessive ramp length required
Dr. Martin Luther King Jr. On-Ramp	3668	Yes	60	No	Yes	Yes	Yes	No	Not recommended due to excessive ramp length required and acceptable freeway speed
<b>SOUTHBOUND</b>		<b>PM Peak</b>							
Central On-Ramp	2923	Yes	55	No	Yes	Yes	Yes	Yes	Not recommended due to acceptable freeway speed
Avenida Cesar Chavez On-Ramp	2940	Yes	53	No	Yes	Yes	Yes	Yes	Not recommended due to acceptable freeway speed
Gibson On-Ramp	2980	Yes	55	No	Yes	Yes	Yes	Yes	Not recommended due to acceptable freeway speed
Sunport On-Ramp	2685	Yes	61	No	Yes	Yes	Yes	Yes	Not recommended due to acceptable freeway speed
Rio Bravo On-Ramp	2193	Yes	65	No	Yes	Yes	Yes	Yes	Not recommended due to acceptable freeway speed
Bobby Foster On-Ramp	1863	No	68	No	Yes	Yes	Yes	Yes	Not recommended due to flow rate and acceptable freeway speed
Mesa del Sol On-Ramp	2030	No	65	No	Yes	Yes	Yes	Yes	Not recommended due to flow rate and acceptable freeway speed



- ♦ Widen southbound NM 47 to provide three lanes from the bridge over I-25 to the Isleta Lakes intersection. The third lane would drop to the left-turn lane at the intersection.
- ♦ Connect the I-25-to-NM 47 southbound ramp to the right-turn lane on the approach to the Isleta Lakes intersection via an auxiliary lane.
- ♦ Provide a deceleration lane for the NM 47-southbound to I-25-northbound left-turn movement.
- ♦ Widen the northbound on-ramp to two-lanes from the diverge from NM 47 to the merge with I-25.
- ♦ Widen the southbound off-ramp to two-lanes and add a deceleration lane for the I-25-southbound to NM 47-northbound right-turn movement. The two-lane off-ramp roadway transitions to one lane before its intersection with southbound NM 47.
- ♦ These improvements should be considered when TIP project CN A301600 is developed to replace one of the NM 47 bridges within the interchange.

### I-25/Mesa del Sol Interchange

A compressed diamond interchange layout was used for the analysis of the Mesa del Sol interchange consistent with the preferred alternative documented in the environmental assessment that was approved in November 2008. The same lane configurations were used for the No Build and the Build alternatives. The ramp terminals are 480 feet apart, and side-by-side left-turn lanes are provided between the terminals. Because this is a new interchange, a Diverging Diamond Interchange (DDI) configuration was considered but was not developed. The physical characteristics of the location may not meet the desired parameters for a DDI because of closely-spaced intersections on both sides which limits the spacing between the DDI ramp terminals (see page 2-2). A DDI could be considered as an alternative when the project to implement this interchange is conducted.

This is expected to be a high-demand interchange, particularly to and from the north. The southbound ramps terminal is the critical intersection as several movements are expected to operate at capacity during the PM peak period. The lane configuration is considered to be maximized in the analysis for the southbound ramps intersection so no further improvements are identified herein. Improved performance is expected for the Build alternative compared to the No Build because the supporting transportation network includes an interchange at Bobby Foster Road and a grade separation for Mesa del Sol Avenue A which disperses the Mesa del Sol traffic better than for the No Build condition.

Key characteristics of the Mesa del Sol interchange include:

- ♦ Notable lane configurations: upstream storage for the westbound dual left-turn lanes, free westbound dual right-turn lanes, triple left-turn lanes southbound, and northbound signalized dual right-turns
- ♦ V/C ratio > 1.0 movements: none, but several movements are expected to operate at capacity at the southbound ramps terminal including the eastbound through, westbound dual lefts and the southbound triple lefts
- ♦ Queue encroachments: should expect slow-moving platoons for the westbound-to-northbound right-turn movement, and the southbound triple-left may cause grid-lock within the ramp terminals depending on how the movement is accommodated at the downstream terminal for the northbound ramps
- ♦ Closely-spaced adjacent intersections: Avenue 4 to the east which will be a major signalized intersection within the Mesa del Sol Urban Center where substantial commercial development is anticipated
- ♦ Multi-modal accommodations: transit lanes in the median, on-street bicycle lanes in both directions, buffered 10-foot sidewalks on both sides; pedestrian and bicycle crossings of the westbound right-turn lanes will be a design challenge (an unconventional approach would be to route the pedestrians down the middle from Avenue 4 to the southbound ramps terminal or to Broadway Boulevard as is the practice for DDIs)

### I-25/Bobby Foster Road Interchange

A compressed diamond interchange layout was used for the Bobby Foster Road interchange. Back-to-back left-turn lanes were used to reduce the width of the bridge over I-25. The ramp terminals are approximately 550 feet apart with the northbound ramps aligned close to I-25 to maximize the separation to the Bobby Foster Road intersection to the east. The ramp terminal separation should be refined based on left-turn storage needs when this interchange project is developed for implementation. Acceptable traffic performance is expected for the AM and PM peak travel periods. The interchange operations will need to be coordinated with the Bobby Foster Road intersection to the east to ensure that eastbound traffic does not queue west into the interchange.

Key characteristics of the Bobby Foster interchange include:

- ♦ Notable lane configurations: back-to-back dual left-turn lanes between the ramp terminals, free westbound single-lane right-turn, dual left-turn lanes southbound
- ♦ V/C ratio > 1.0 movements: none, but several movements are expected to operate near capacity at the southbound ramps terminal including the eastbound through, westbound dual lefts and the southbound dual lefts
- ♦ Queue encroachments: the westbound dual left may spill into the westbound through lanes, long queues are expected for the southbound dual-left
- ♦ Closely-spaced adjacent intersections: Bobby Foster Road to the east
- ♦ Multi-modal accommodations: on-street bicycle lanes in both directions, 10-foot sidewalks on both sides

### I-25/Rio Bravo Boulevard Interchange

The design-year improvements for the Rio Bravo interchange were developed under NMDOT project CN A300280. The Offset Single Point interchange combines the northbound and southbound ramps at one intersection west of I-25 and provides additional capacity via a channelized E-N loop on-ramp in the southeast quadrant of the interchange. Acceptable performance (i.e., overall LOS C or better operations) is expected for the peak travel periods. Key observations of the expected interchange performance include:

- ♦ The channelized configuration that allows simultaneous operation of the eastbound movement to the loop ramp and the southbound left-turn movement is expected to provide a high level of performance. The southbound left-turn is the only movement that is anticipated to be near capacity at a V/C ratio of 0.97. The relatively low demand northbound movements will experience delays in the LOS E range. At the east ramp terminal, the east-to-north movement and west-to-north movement are free flow and should not experience intersection delay thereby reducing the overall delay within this interchange layout.
- ♦ The two approach lanes to the loop ramp will be separated from the approach lanes to University Boulevard so queuing from University Boulevard will not block access to the loop ramp. Extensive queues are expected for the east-to-south right-turn movement when Mesa del Sol is substantially built out.
- ♦ Three westbound lanes from University Boulevard to the I-25 northbound on-ramp are expected to function well with two lanes continuing west on Rio Bravo and two lanes to the on-ramp. The middle lane will function as a shared through/right-turn lane.
- ♦ The two northbound on-ramps configuration separates the high east-to-north demand from the anticipated high west-to-north demand which benefits traffic operations along northbound I-25 and reduces conflicts associated with the northbound on-ramp movements.
- ♦ The interchange has provisions for pedestrian and bicycle travel, primarily along the south side.

The Offset Single Point is an unconventional interchange layout and is expected to provide a high level of traffic performance.



### I-25/Sunport Boulevard Interchange

The existing diamond interchange configuration was used for the evaluation of the ramp terminals at the Sunport interchange including the programmed extension of Sunport Boulevard to Broadway Boulevard. The ramp terminals are 350 feet apart making it a TDI. Acceptable traffic operations are expected at the interchange ramp terminals under design-year conditions for all alternatives.

Key characteristics of the Sunport interchange include:

- ◆ Notable lane configurations: side-by-side dual left-turn lanes between the ramp terminals, signalized westbound dual right-turn movement, dual left-turn lanes and dual right-turn lanes southbound, free northbound right-turn
- ◆ V/C ratio > 1.0 movements: none
- ◆ Queue encroachments: the westbound dual left may encroach on the northbound ramps terminal - upstream storage could be provided if the need is demonstrated in the future; upstream storage for the eastbound left-turn may be needed
- ◆ Closely-spaced adjacent intersections: none
- ◆ Multi-modal accommodations: on-street bicycle lanes in both directions, the existing bridge width does not accommodate sidewalks on either side so pedestrian travel is not accommodated (note that pedestrian facilities are not provided to the east or to the west of the interchange)

### I-25/Gibson Boulevard Interchange

The existing partial cloverleaf configuration at the Gibson interchange representing the No Build alternative includes an undesirable weave segment between the loop ramps on eastbound Gibson Boulevard and is not pedestrian or bicycle friendly. The ramp terminal intersections would operate acceptably with signal control because of the several free-flow right-turn movements. However, the proposed improvements to northbound and southbound I-25 require the elimination of one or both of the loop ramps and reconfiguration of the Gibson interchange to better accommodate all travel modes.

In Build Alternatives B1 and B2, the traffic demand passing through the Gibson interchange is the same. In Build Alternative B3, the Gibson interchange must also serve the Avenida Cesar Chavez northbound off-ramp and southbound on-ramp traffic via a collector-distributor roadway system.

Based on the evaluations discussed below, the interchange configuration for Build Alternative B1 is the preferred improvement strategy. It provides the best balance considering the high-demand movements at the interchange.

#### Build Alternative B1 - Gibson

Build Alternative B1 is a TDI with signalized ramp terminal spacing of 400 feet. Acceptable traffic performance is expected however the interchange will operate at capacity during peak periods. Based on the analysis, the free northbound right-turn movement with a lane add on eastbound Gibson is more important than three eastbound through lanes at the northbound ramps terminal because more time can be allocated to the eastbound through movement. Three eastbound lanes would require a signalized northbound dual right-turn which would reduce the signal time available for the eastbound through movement and would not operate at acceptable levels.

Key characteristics of this alternative include:

- ◆ Notable lane configurations: upstream storage for the westbound dual left-turn lanes, free westbound right-turn lane, free northbound right-turn lane, eastbound has one left-turn lane and two through lanes at the northbound ramps terminal, southbound dual left-turn lanes, southbound right-turn lane is signalized because westbound Gibson Boulevard only has two lanes continuing west

- ◆ V/C ratio > 1.0 movements: none, however the combined eastbound through movement and southbound left-turn movement approaching the northbound ramps intersection is expected to operate at capacity because of signal timing coordination (starvation); the westbound left-turn would also operate at capacity
- ◆ Queue encroachments: eastbound through expected to queue because of high-demand southbound left-turn movement in the AM peak, the westbound left-turn may also queue during the PM peak
- ◆ Closely-spaced adjacent intersections: Mulberry Street to the east
- ◆ Multi-modal accommodations: on-street bicycle lanes in both directions, buffered 10-foot sidewalks on both sides; pedestrian and bicycle crossings of the free-flow westbound and northbound right-turn lanes will be a design challenge; also the bridge on Gibson Boulevard over the South Diversion channel requires widening to provide sidewalks

#### Build Alternative B2 - Gibson

Build Alternative B2 is a diamond interchange with a south-to-east loop ramp and has signalized ramp terminal spacing of 500 feet. Acceptable traffic performance is expected however the interchange will operate at capacity during peak periods. The random arrivals of eastbound traffic from the loop ramp would not rely on signal coordination however turbulence would be expected on the eastbound approach to the northbound ramps intersection because of lane changes. Key characteristics of this alternative include:

- ◆ Notable lane configurations: upstream storage for the westbound dual left-turn lanes, free westbound right-turn lane, signalized dual northbound right-turn lanes, the south-to-east loop ramp adds a third eastbound lane, southbound right-turn lane is signalized because westbound Gibson Boulevard only has two lanes continuing west
- ◆ V/C ratio > 1.0 movements: none, however the eastbound through movement approaching the northbound ramps intersection is expected to operate at capacity in part because the high loop ramp volume may overload the outside eastbound through lane; the westbound left-turn would also operate at capacity
- ◆ Queue encroachments: eastbound through expected to queue back from the northbound ramps terminal, the westbound left-turn may also queue during the PM peak
- ◆ Closely-spaced adjacent intersections: Mulberry Street to the east
- ◆ Multi-modal accommodations: on-street bicycle lanes in both directions, buffered 10-foot sidewalks on both sides; pedestrian and bicycle crossings of the free-flow westbound right-turn lane and the loop ramp will be a design challenge; also the bridge on Gibson Boulevard over the South Diversion channel requires widening to provide sidewalks

#### Build Alternative B3 - Gibson

Build Alternative B3 is a TDI with ramp terminal spacing of 400 feet. Capacity deficiencies are expected for this alternative at both ramp terminals. This alternative eliminates the high-demand free right-turn movements and replaces them with signalized dual right-turn movements. During the AM peak, this results in capacity issues at the northbound ramps terminal involving the northbound right-turn and the eastbound through movements. The eastbound through deficiency causes upstream issues at the southbound ramps terminal, and the westbound left-turn movement is also expected to be over capacity. During the PM peak, the primary deficiency is with the westbound left-turn movement.

Key characteristics of this alternative include:

- ◆ Notable lane configurations: upstream storage for the westbound dual left-turn lanes and eastbound left-turn lane, signalized dual right-turn lanes northbound and westbound, southbound triple left-turn lanes, southbound right-turn lane is signalized because westbound Gibson Boulevard only has two lanes continuing west



- ♦ V/C ratio > 1.0 movements: eastbound through and westbound left-turn at southbound ramps terminal, eastbound through and northbound right at northbound ramps terminal
- ♦ Queue encroachments: eastbound through movements, westbound left-turn
- ♦ Closely-spaced adjacent intersections: Mulberry Street to the east
- ♦ Multi-modal accommodations: on-street bicycle lanes in both directions, buffered 10-foot sidewalks on both sides; the bridge on Gibson Boulevard over the South Diversion channel requires widening to provide sidewalks; on-street bicycle lane crossing of the westbound lane drop to the dual right-turn movement presents a design challenge

### I-25/Avenida Cesar Chavez Interchange

The No Build alternative is an outdated interchange that has several deficiencies and would not accommodate design-year traffic at acceptable levels of performance. Additional lanes are required along with improved geometry and better pedestrian and bicycle accommodations. Considering existing traffic and because economic development resulting in traffic growth is anticipated east of the interchange, most movements at this interchange have moderate to high traffic volumes during one or both peak periods. The combination of high through and left-turn volumes in both directions of Cesar Chavez along with moderate to high volumes on the ramp approaches presents challenges in providing acceptable traffic performance. In addition, the right-of-way conditions at this interchange are constrained which limits the alternatives advanced to this detailed evaluation to a single point diamond interchange (SPDI) or a tight diamond interchange (TDI). As such, with limited flexibility, the traffic performance at this interchange should be expected to be near or at capacity in the improved condition.

Based on the evaluations discussed below as well as in the engineering evaluation later in this report, the TDI configuration is the preferred improvement strategy. While the SPDI is expected to perform well, the bridge design requirements and the resulting vertical clearance issues render the SPDI infeasible for this location (i.e., considering reasonable budget constraints).

#### Build Alternative B1 – Cesar Chavez

Build Alternative B1 is a SPDI configuration. The SPDI is expected to perform well from a traffic operations perspective during both peak-hours. Pedestrian and bicycle crossings can be accommodated but may not be as straightforward as a conventional diamond layout. A potential issue of the SPDI is with the bridge clearance on the east side because of the deep girders associated with long spans and the upgrade of Cesar Chavez east of the interchange.

Key characteristics of this alternative include:

- ♦ Notable lane configurations: free right-turn movements northbound and southbound, signalized dual right-turn westbound
- ♦ V/C ratio > 1.0 movements: none
- ♦ Queue encroachments: none
- ♦ Closely-spaced adjacent intersections: Edith Boulevard to the west, Langham to the east
- ♦ Multi-modal accommodations: on-street bicycle lanes in both directions, buffered 10-foot sidewalks on both sides; pedestrian and bicycle design challenges include crossings of the lane drops to right-turn movements and crossings of the free right-turn movements

#### Build Alternative B2 – Cesar Chavez

Build Alternative B2 is a TDI with signalized ramp terminal spacing of 270 feet. The evaluation was performed using a three-phase signal timing approach with each intersection having its own controller, the way the City of Albuquerque would operate the interchange. Acceptable performance is expected during both peak periods. Some reduction in capacity should be expected because of the tight diamond configuration and signal timing inefficiencies, but no movements were shown to have adjusted V/C ratios over 1.0.

Key characteristics of this alternative include:

- ♦ Notable lane configurations: upstream storage for the eastbound and westbound dual left-turn lanes, free right-turn movements northbound and southbound, signalized dual right-turn westbound
- ♦ V/C ratio > 1.0 movements: none
- ♦ Queue encroachments: none, however the eastbound and westbound dual left-turn movements may queue into the upstream storage lanes
- ♦ Closely-spaced adjacent intersections: Edith Boulevard to the west, Langham to the east
- ♦ Multi-modal accommodations: on-street bicycle lanes in both directions, buffered 10-foot sidewalks on both sides; pedestrian and bicycle design challenges include crossings of the lane drops to right-turn movements and crossings of the free right-turn movements

#### Build Alternative B3 – Cesar Chavez

Build Alternative B3 is a TDI with signalized ramp terminal spacing of 250 feet. The evaluation was performed using a three-phase signal timing approach with each intersection having its own controller. Acceptable performance is expected during both peak periods. Some reduction in capacity should be expected because of the tight diamond configuration and signal timing inefficiencies, but no movements were shown to have adjusted V/C ratios over 1.0.

Key characteristics of this alternative include:

- ♦ Notable lane configurations: upstream storage for the eastbound and westbound dual left-turn lanes, free right-turn movements northbound, southbound and westbound
- ♦ V/C ratio > 1.0 movements: none
- ♦ Queue encroachments: none, however the eastbound and westbound dual left-turn movements may queue into the upstream storage lanes
- ♦ Closely-spaced adjacent intersections: Edith Boulevard to the west, Langham to the east
- ♦ Multi-modal accommodations: on-street bicycle lanes in both directions, buffered 10-foot sidewalks on both sides; pedestrian and bicycle design challenges include crossings of the lane drops to right-turn movements and crossings of the free right-turn movements

### Lead and Coal Avenues

The Oak Street and Locust Street intersections with the Lead Avenue and Coal Avenue one-way pair system are approximately 340 feet apart thereby creating a TDI-type configuration along each one-way street. These streets are also in close proximity north/south along Oak and Locust so the four intersections should be operated as a coordinated system. The evaluation of each alternative was completed this way and the coordinated signal system also included Central Avenue and Dr. MLK Avenue.

One difference for Build Alternative B3 is a cul-de-sac is included on Oak Street south of Coal Avenue. This is needed for access management. Traffic would redistribute to Mulberry Street or Cedar Street.



The performance of the Lead and Coal Avenues intersections is expected to be acceptable overall. Notable performance conditions with the build alternatives include:

- ♦ Build Alternative B1 – no issues expected during the AM peak; at the Lead/Oak intersection for the PM peak, the northbound left-turn and through are expected to operate at capacity and the westbound right-turn is expected to operate near capacity
- ♦ Build Alternative B2 - no issues expected during the AM peak; at the Lead/Oak intersection for the PM peak, the northbound left-turn and through are expected to operate at capacity
- ♦ Build Alternative B3 – no issues expected during the AM peak; at the Lead/Oak intersection for the PM peak, the northbound left-turn is expected to operate at capacity; the south-to-north advance U-turn would reduce volumes that use Coal Avenue in the B1 and B2 alternatives providing a direct access to Presbyterian Hospital via Silver Avenue; the cycle length was increased from 100 seconds to 120 seconds to accommodate the higher traffic demands in Build Alt B3

Based on the evaluations, the Lead Avenue and Coal Avenue intersections are expected to perform similarly in all alternatives. The required lane configurations can be designed adequately to meet the needs of the selected corridor improvements, thus there is no preferred alternative. The advance south-to-north U-turn at Lead Avenue is only applicable if the northbound Lead on-ramp is eliminated.

Key characteristics of the Coal Avenue interchange include:

- ♦ Notable lane configurations: dual eastbound left-turns with one being a shared left/through lane
- ♦ V/C ratio > 1.0 movements: none
- ♦ Queue encroachments: eastbound under I-25 may queue through the Locust intersection
- ♦ Closely-spaced adjacent intersections: none
- ♦ Multi-modal accommodations: on-street bicycle lane eastbound, buffered 10-foot sidewalks on both sides

Key characteristics of the Lead Avenue interchange include:

- ♦ Notable lane configurations: four northbound approach lanes, dual northbound left-turn lanes with one being a shared left/through lane
- ♦ V/C ratio > 1.0 movements: none, but the northbound approach lanes are expected to operate at capacity
- ♦ Queue encroachments: northbound may queue into the downstream Coal intersection, long queues are expected for the westbound right-turn, westbound under I-25 may queue through the Oak intersection
- ♦ Closely-spaced adjacent intersections: none
- ♦ Multi-modal accommodations: on-street bicycle lane westbound, buffered 10-foot sidewalk on south side and 10-foot sidewalk on north side; separate cycle track accommodation on north side for the Silver Avenue Bicycle Boulevard connection under I-25

### Central Avenue

Central Avenue is the designated high-capacity transit corridor across I-25. The Albuquerque Rapid Transit (ART) project is currently being implemented but does not currently include improvements through the I-25 interchange. The current ART configuration was incorporated into Build Alternatives B1 and B3 while Build Alternative B2 was conceptually designed to include directional bus lanes through the interchange. In addition, east of I-25, Presbyterian Hospital is modifying its site plan and the north side of Central Avenue is being redeveloped. These land development activities are being coordinated with the ART project which will modify how access is provided along

Central Avenue and will enhance the need for multi-modal connections through the I-25 interchange on Central Avenue.

The Central interchange is a TDI-type configuration with an intersection spacing of 320 feet. The following summarizes the design-year traffic performance at the Central interchange:

- ♦ Build Alternative B1 - no issues expected for both peak periods
- ♦ Build Alternative B2 – no issues expected for the AM peak; for the PM peak the interchange is expected to be deficient as the single-lane eastbound left-turn movement is well over capacity and the westbound through lane is expected to be at capacity; better performance is expected with dual eastbound left-turn lanes which would require a bi-directional transit lane through the interchange
- ♦ Build Alternative B3 – acceptable performance is expected for the AM peak and the PM peak, although the interchange is expected to operate near or at capacity in the PM peak

Based on the evaluation of the build alternatives for the Central Avenue interchange, the following observations are made for the preferred alternative:

1. If the Coal Avenue southbound on-ramp is eliminated and a C-D Road is not provided to connect Coal to Cesar Chavez, include an advance U-turn for the north-to-south movement for access to the southbound Central on-ramp.
2. Include the advance U-turn for the south-to-north movement in the preferred alternative in all cases.
3. Dual eastbound left-turn lanes are needed. If dedicated bus lanes are desired through the interchange, consider a bi-directional bus lane instead of directional bus lanes.
4. The number of lanes on Oak Street and Locust Street are key to ensure acceptable performance. As such, provide four northbound lanes on Oak Street and five southbound lanes on Locust Street.

Other key characteristics of the Central Avenue interchange include:

- ♦ Closely-spaced adjacent intersections: Mulberry Street to the east
- ♦ Multi-modal accommodations: on-street bicycle lanes are not provided, buffered 10-foot sidewalks on both sides are desired

### Dr. Martin Luther King Jr Avenue

The Dr. Martin Luther King Jr (MLK) Avenue interchange is a TDI-type configuration with an intersection spacing of approximately 360 feet. The northbound on-ramp from MLK Avenue is highly utilized with relatively high traffic coming from three directions. The combined traffic from the I-25 southbound off-ramp and Locust Street from Lomas Boulevard results in substantial peak traffic flows on the southbound approach to MLK Avenue. Accommodating the high traffic demands in a confined space presents a challenge that should be expected to result in some level of congestion at the MLK interchange.

The traffic performance at the MLK interchange is similar for Build Alternatives B1 and B2. Overall acceptable levels of performance are expected during both peak periods. However, the eastbound movements at Locust Street and Oak Street and the southbound movements at Locust Street are expected to operate near or at capacity.

For Build Alternative B3, capacity deficiencies are expected on all approaches to the Oak Street intersection and eastbound and southbound at the Locust Street intersection during both peak periods. The added demand that is expected to pass through the MLK interchange with the elimination of the northbound Lead on-ramp and the southbound Lead off-ramp exceeds the capacity that can be provided.

While some redistribution of traffic may occur to avoid congestion at this interchange, it is important to note that several lane reductions on the roadway system serving the downtown area have or will occur which affects access to and from the Albuquerque freeway system. Lane reductions have been implemented on MLK Avenue, Central Avenue, and Lead and Coal Avenues. As such, the need for multi-modal accommodations across I-25 to reduce dependence on passenger vehicle use is pronounced.

Based on the evaluations, Build Alternative B3 is not considered a viable alternative when considering the traffic performance issues that are expected at the MLK interchange. While the elimination of ramps is favorable for freeway operations, concentrating traffic at the MLK interchange is expected to result in substantial operational deficiencies at the intersections as well as potentially on the southbound off-ramp and extending onto the southbound freeway lanes. Therefore, the Build Alternative B1 or B2 configurations should be considered for the preferred alternative but should also be maximized to the extent possible while also safely accommodating pedestrians and bicyclists.

Key characteristics of the MLK interchange include:

- ♦ Notable lane configurations: one eastbound lane continuing east to UNM impacts functionality of providing southbound dual left-turn lanes, upstream storage for eastbound left-turn lane needed with an improved alignment over the existing condition, southbound approach lanes should be limited to five lanes
- ♦ V/C ratio > 1.0 movements: several movements are expected to operate near or at capacity as discussed above
- ♦ Queue encroachments: eastbound queues through Elm Street intersection, southbound queues back to slip ramp junction and possibly beyond (need queue detection on off-ramp)
- ♦ Closely-spaced adjacent intersections: Elm Street to the west
- ♦ Multi-modal accommodations: on-street bicycle lanes in both directions, buffered 10-foot sidewalks on both sides

### Lomas Boulevard

The existing Lomas Boulevard interchange configuration was used for all alternatives evaluated. The intersection lane configurations remain the same except for eastbound dual left-turn lanes and westbound dual right-turn lanes at the Oak Street intersection. The frontage road intersection separation is approximately 600 feet. The Lomas interchange will operate near or at capacity under design-year conditions with several LOS E movements at the Locust Street intersection during the PM peak. The existing bridge piers do not allow dual left-turn lanes for the westbound movement.

A potential issue is with the bridge clearance on the east side if I-25 is widened to provide six lanes to I-40. The existing clearance is 14 feet, 10 inches. Other key characteristics of the Lomas Boulevard interchange include:

- ♦ Notable lane configurations: side-by-side left-turn lanes between intersections separated by bridge piers, dual eastbound left-turn lanes and a single westbound left-turn lane, signalized westbound dual right-turn movement
- ♦ V/C ratio > 1.0 movements: none, but several movements are expected to operate at capacity at the Locust intersection including the eastbound through, westbound left-turn and the southbound movements
- ♦ Queue encroachments: the eastbound through movement may extend into the Woodward intersection, long queues should be expected for the southbound left-turn movement and the single lane westbound left-turn movement
- ♦ Closely-spaced adjacent intersections: Woodward Place to the west
- ♦ Multi-modal accommodations: sidewalks on both sides of Lomas Boulevard, no on-street bicycle lanes

### Mountain Road

Modifications to the Mountain Road frontage road intersections are not proposed. A potential issue is with the bridge clearance on the east side if I-25 is widened to provide six lanes to I-40. The existing clearance is 14 feet, 10 inches. If improvements are made in the vicinity of Mountain Road, they will be the responsibility of nearby development projects or the City of Albuquerque. A sidewalk or multi-use path is needed along the northbound frontage road to connect Lomas Boulevard to Mountain Road. Albuquerque High School students would benefit from this improvement.

### VEHICLE QUEUING ESTIMATES

Vehicle queues were estimated based on a modified Poisson distribution method that considers traffic volumes along with signal timing parameters. The queuing analysis spreadsheets and summary tables are provided on the [attached CD](#). Synchro queuing estimates and starvation and spillback results were also considered when assessing the performance of the alternatives.

**Table 4-6, Signalized Intersection Operations Summary – 2040 Conditions AM Peak Hour**

Major Street/Minor Street Intersection	Cycle Length (sec)	Eastbound		Westbound		Northbound		Southbound		Intersection		Max V/C	Deficient Movements V/C Ratio > 1.0
		Delay (veh/sec)	LOS										
<b>AM PEAK HOUR</b>													
<b>Mesa del Sol Blvd @ I-25 SB Ramps</b>													
No Build Alternative	100	36	D	9	A	-	-	35	D	20	B	0.77	-
All Build Alternatives	90	26	C	10	B	-	-	32	C	19	B	0.75	-
<b>Mesa del Sol Blvd @ I-25 NB Ramps</b>													
No Build Alternative	100	16	B	19	B	48	D	-	-	23	C	0.95	-
All Build Alternatives	90	6	A	12	B	37	D	-	-	13	B	0.76	-
<b>Bobby Foster Rd @ I-25 SB Ramps</b>													
No Build Alternative	-	-	-	-	-	-	-	-	-	-	-	-	-
All Build Alternatives	80	15	B	8	A	-	-	30	C	16	B	0.73	-
<b>Bobby Foster Rd @ I-25 NB Ramps</b>													
No Build Alternative	-	-	-	-	-	-	-	-	-	-	-	-	-
All Build Alternatives	80	7	A	9	A	36	D	-	-	12	B	0.73	-
<b>Sunport Ext/Sunport Blvd @ I-25 SB Ramps</b>													
No Build Alternative	80	26	C	29	C	-	-	16	B	22	C	0.80	-
All Build Alternatives	80	44	D	30	C	-	-	22	C	32	C	0.99	-
<b>Sunport Blvd @ I-25 NB Ramps</b>													
No Build Alternative	80	5	A	6	A	10	A	-	-	7	A	0.72	-
All Build Alternatives	80	5	A	7	A	13	B	-	-	8	A	0.76	-
<b>Gibson Blvd @ I-25 SB Ramps</b>													
No Build Alternative	100	35	C	7	A	-	-	27	C	27	C	0.81	-
Build Alternative 1	110	48	D	65	E	-	-	45	D	49	D	0.98	-
Build Alternative 2	110	31	C	25	C	-	-	62	E	34	C	0.86	-
Build Alternative 3	110	88	F	81	F	-	-	35	D	61	E	0.88	EBT, WBL
<b>Gibson Blvd @ I-25 NB Ramps</b>													
No Build Alternative	100	22	C	33	C	6	A	-	-	22	C	0.86	-
Build Alternative 1	110	13	B	3	A	5	A	-	-	9	A	0.90	-
Build Alternative 2	110	35	D	13	B	63	E	-	-	36	D	0.97	-
Build Alternative 3	110	58	E	34	C	55	E	-	-	51	D	1.05	EBT, NBR
<b>Avenida Cesar Chavez @ I-25 SPDI</b>													
Build Alternative 1	110	39	D	32	C	5	A	37	D	32	C	0.93	-

**Table 4-6, Signalized Intersection Operations Summary – 2040 Conditions AM Peak Hour (continued)**

Major Street/Minor Street Intersection	Cycle Length (sec)	Eastbound		Westbound		Northbound		Southbound		Intersection		Max V/C	Deficient Movements V/C Ratio > 1.0
		Delay (veh/sec)	LOS										
<b>AM PEAK HOUR</b>													
<b>Avenida Cesar Chavez @ I-25 SB Ramps</b>													
No Build Alternative	100	35	C	7	A	-	-	27	C	27	C	0.81	-
Build Alternative 2	100	33	C	28	C	-	-	30	C	31	C	0.88	-
Build Alternative 3	100	22	C	38	D	-	-	43	D	31	C	0.92	-
<b>Avenida Cesar Chavez @ I-25 NB Ramps</b>													
No Build Alternative	100	22	C	33	C	6	A	-	-	22	C	0.86	-
Build Alternative 2	100	17	B	7	A	7	A	-	-	12	B	0.82	-
Build Alternative 3	100	16	B	8	A	10	A	-	-	13	B	0.85	-
<b>Avenida Cesar Chavez @ Langham</b>													
No Build Alternative	-	-	-	-	-	-	-	-	-	-	-	-	-
Build Alternative 1	110	6	A	23	C	46	D	44	D	13	B	0.77	-
Build Alternative 2	100	7	A	15	B	52	D	46	D	11	B	0.83	-
Build Alternative 3	100	6	A	15	B	52	D	46	D	11	B	0.82	-
<b>Coal Ave @ Coal On-Ramp/Locust St</b>													
No Build Alternative	70	-	-	18	B	-	-	16	B	17	B	0.85	-
Build Alternative 1	100	-	-	15	B	-	-	23	C	17	B	0.83	-
Build Alternative 2	100	-	-	16	B	-	-	23	C	19	B	0.83	-
Build Alternative 3	120	-	-	24	C	-	-	40	D	31	C	0.86	-
<b>Coal Ave @ Oak St</b>													
No Build Alternative	70	18	B	-	-	27	C	-	-	20	B	0.85	-
Build Alternative 1	100	15	B	-	-	46	D	-	-	23	C	0.86	-
Build Alternative 2	100	13	B	-	-	46	D	-	-	22	C	0.86	-
Build Alternative 3	120	12	B	-	-	45	D	-	-	24	C	0.76	-
<b>Lead Ave @ Lead Off-Ramp/Locust St</b>													
No Build Alternative	70	-	-	11	B	-	-	22	C	17	B	0.75	-
Build Alternative 1	100	-	-	11	B	-	-	28	C	22	C	0.76	-
Build Alternative 2	100	-	-	11	B	-	-	28	C	21	C	0.76	-
Build Alternative 3	120	-	-	29	C	-	-	15	B	19	B	0.78	-
<b>Lead Ave @ Oak St</b>													
No Build Alternative	70	17	B	-	-	21	C	-	-	20	B	0.78	-
Build Alternative 1	100	19	B	-	-	31	C	-	-	27	C	0.82	-
Build Alternative 2	100	18	B	-	-	27	C	-	-	24	C	0.79	-
Build Alternative 3	120	16	B	-	-	31	C	-	-	26	C	0.75	-

Table 4-6, Signalized Intersection Operations Summary – 2040 Conditions AM Peak Hour (continued)

Major Street/Minor Street Intersection	Cycle Length (sec)	Eastbound		Westbound		Northbound		Southbound		Intersection		Max V/C	Deficient Movements V/C Ratio > 1.0
		Delay (veh/sec)	LOS										
<b>AM PEAK HOUR</b>													
<b>Central Ave @ Central On-Ramp/Locust St</b>													
No Build Alternative	100	19	B	10	A	-	-	14	B	15	B	0.81	-
Build Alternative 1	100	19	B	8	A	-	-	19	B	17	B	0.76	-
Build Alternative 2	100	17	B	5	A	-	-	22	C	18	B	0.84	-
Build Alternative 3	120	30	C	29	C	-	-	15	B	20	B	0.93	-
<b>Central Ave @ Oak St</b>													
No Build Alternative	100	5	A	30	C	34	C	-	-	17	B	0.63	-
Build Alternative 1	100	4	A	18	B	18	B	-	-	12	B	0.71	-
Build Alternative 2	100	21	C	32	C	17	B	-	-	23	C	0.90	-
Build Alternative 3	120	12	B	30	C	33	C	-	-	25	C	0.89	-
<b>MLK Ave @ Elm St</b>													
No Build Alternative	100	7	A	10	B	20	C	34	C	10	B	0.60	-
Build Alternative 1	100	7	A	3	A	20	B	37	D	7	A	0.61	-
Build Alternative 2	100	7	A	3	A	20	B	37	D	7	A	0.61	-
Build Alternative 3	120	8	A	4	A	24	C	48	D	8	A	0.65	-
<b>MLK Ave @ Locust St</b>													
No Build Alternative	100	82	F	15	B	-	-	53	D	58	E	1.09	EBT, SBT
Build Alternative 1	100	38	D	18	B	-	-	23	C	27	C	0.87	-
Build Alternative 2	100	38	D	16	B	-	-	23	C	26	C	0.87	-
Build Alternative 3	120	43	D	28	C	-	-	35	D	37	D	1.00	EBR
<b>MLK Ave @ Oak St</b>													
No Build Alternative	100	14	B	35	D	30	C	-	-	23	C	0.85	-
Build Alternative 1	100	12	B	31	C	33	C	-	-	23	C	0.89	-
Build Alternative 2	100	15	B	32	C	37	D	-	-	26	C	0.89	-
Build Alternative 3	120	23	C	64	E	60	E	-	-	46	D	1.04	WBR, NBT
<b>West Frontage Rd &amp; Lomas Blvd @ Locust St</b>													
No Build Alternative	120	77	E	26	C	-	-	55	D	56	E	1.02	WBL
Build Alternative 1	120	58	E	20	C	-	-	47	D	45	D	0.97	-
Build Alternative 2	120	51	D	21	C	-	-	47	D	42	D	0.95	-
Build Alternative 3	120	47	D	19	B	-	-	50	D	41	D	0.94	-
<b>East Frontage Rd &amp; Lomas Blvd @ Oak St</b>													
No Build Alternative	120	18	B	27	C	41	D	-	-	26	C	0.90	-
Build Alternative 1	120	14	B	24	C	42	D	-	-	23	C	0.85	-
Build Alternative 2	120	14	B	24	C	42	D	-	-	24	C	0.85	-
Build Alternative 3	120	13	B	25	C	42	D	-	-	24	C	0.84	-

**Table 4-7, Signalized Intersection Operations Summary – 2040 Conditions PM Peak Hour**

Major Street/Minor Street Intersection	Cycle Length (sec)	Eastbound		Westbound		Northbound		Southbound		Intersection		Max V/C	Deficient Movements V/C Ratio > 1.0
		Delay (veh/sec)	LOS										
<b>PM PEAK HOUR</b>													
<b>Mesa del Sol Blvd @ I-25 SB Ramps</b>													
No Build Alternative	120	80	E	68	E	-	-	72	E	73	E	1.07	EBT, WBL, SBL
All Build Alternatives	110	54	D	41	D	-	-	48	D	48	D	0.99	-
<b>Mesa del Sol Blvd @ I-25 NB Ramps</b>													
No Build Alternative	120	8	A	12	B	50	D	-	-	17	B	0.94	-
All Build Alternatives	110	4	A	13	B	41	D	-	-	14	B	0.85	-
<b>Bobby Foster Rd @ I-25 SB Ramps</b>													
No Build Alternative	-	-	-	-	-	-	-	-	-	-	-	-	-
All Build Alternatives	100	42	D	30	C	-	-	42	D	39	D	0.95	-
<b>Bobby Foster Rd @ I-25 NB Ramps</b>													
No Build Alternative	-	-	-	-	-	-	-	-	-	-	-	-	-
All Build Alternatives	100	17	B	8	A	51	D	-	-	17	B	0.89	-
<b>Sunport Ext/Sunport Blvd @ I-25 SB Ramps</b>													
No Build Alternative	100	31	C	19	B	-	-	34	C	27	C	0.91	-
All Build Alternatives	100	36	D	26	C	-	-	31	C	30	C	0.98	-
<b>Sunport Blvd @ I-25 NB Ramps</b>													
No Build Alternative	100	12	B	15	B	12	B	-	-	14	B	0.81	-
All Build Alternatives	100	11	B	18	B	18	B	-	-	16	B	0.90	-
<b>Gibson Blvd @ I-25 SB Ramps</b>													
No Build Alternative	100	35	C	7	A	-	-	27	C	27	C	0.81	-
Build Alternative 1	110	39	D	32	C	-	-	51	D	39	D	0.94	-
Build Alternative 2	110	39	D	29	C	-	-	61	E	36	D	0.96	-
Build Alternative 3	110	55	E	56	E	-	-	54	D	55	E	1.08	WBL
<b>Gibson Blvd @ I-25 NB Ramps</b>													
No Build Alternative	100	22	C	33	C	6	A	-	-	22	C	0.86	-
Build Alternative 1	110	6	A	9	A	21	C	-	-	9	A	0.82	-
Build Alternative 2	110	11	B	16	B	52	D	-	-	18	B	0.91	-
Build Alternative 3	110	10	A	26	C	42	D	-	-	24	C	0.91	-
<b>Avenida Cesar Chavez @ I-25 SPDI</b>													
Build Alternative 1	110	39	D	31	C	26	C	20	C	31	C	0.91	-

Table 4-7, Signalized Intersection Operations Summary – 2040 Conditions PM Peak Hour (continued)

Major Street/Minor Street Intersection	Cycle Length (sec)	Eastbound		Westbound		Northbound		Southbound		Intersection		Max V/C	Deficient Movements V/C Ratio > 1.0
		Delay (veh/sec)	LOS										
<b>PM PEAK HOUR</b>													
<b>Avenida Cesar Chavez @ I-25 SB Ramps</b>													
No Build Alternative	120	25	C	15	B	-	-	22	C	20	C	0.91	-
Build Alternative 2	100	28	C	13	B	-	-	26	C	21	C	0.84	-
Build Alternative 3	100	29	C	21	C	-	-	42	D	29	C	0.91	-
<b>Avenida Cesar Chavez @ I-25 NB Ramps</b>													
No Build Alternative	120	36	D	69	E	71	E	-	-	56	E	1.15	EBL, WBT, NBL
Build Alternative 2	100	23	C	13	B	22	C	-	-	18	B	0.88	-
Build Alternative 3	100	29	C	11	B	35	C	-	-	20	C	0.89	-
<b>Avenida Cesar Chavez @ Langham</b>													
No Build Alternative	-	-	-	-	-	-	-	-	-	-	-	-	-
Build Alternative 1	110	7	A	14	B	68	E	60	E	15	B	0.79	-
Build Alternative 2	100	2	A	19	B	53	D	47	D	14	B	0.81	-
Build Alternative 3	100	2	A	17	B	53	D	47	D	14	B	0.79	-
<b>Coal Ave @ Coal On-Ramp/Locust St</b>													
No Build Alternative	90	-	-	14	B	-	-	21	C	17	B	0.78	-
Build Alternative 1	100	-	-	12	B	-	-	19	B	15	B	0.81	-
Build Alternative 2	100	-	-	15	B	-	-	23	C	18	B	0.80	-
Build Alternative 3	120	-	-	29	C	-	-	10	A	18	B	0.83	-
<b>Coal Ave @ Oak St</b>													
No Build Alternative	90	9	A	-	-	41	D	-	-	18	B	0.80	-
Build Alternative 1	100	7	A	-	-	41	D	-	-	17	B	0.78	-
Build Alternative 2	100	9	A	-	-	41	D	-	-	18	B	0.78	-
Build Alternative 3	120	9	A	-	-	43	D	-	-	21	C	0.76	-
<b>Lead Ave @ Lead Off-Ramp/Locust St</b>													
No Build Alternative	90	-	-	8	A	-	-	41	D	19	B	0.82	-
Build Alternative 1	100	-	-	11	B	-	-	43	D	22	C	0.81	-
Build Alternative 2	100	-	-	10	A	-	-	43	D	21	C	0.81	-
Build Alternative 3	120	-	-	27	C	-	-	22	C	24	C	0.91	-
<b>Lead Ave @ Oak St</b>													
No Build Alternative	90	34	C	-	-	50	D	-	-	41	D	0.99	-
Build Alternative 1	100	22	C	-	-	55	D	-	-	38	D	0.90	-
Build Alternative 2	100	22	C	-	-	41	D	-	-	31	C	0.81	-
Build Alternative 3	120	22	C	-	-	36	D	-	-	29	C	0.76	-

Table 4-7, Signalized Intersection Operations Summary – 2040 Conditions PM Peak Hour (continued)

Major Street/Minor Street Intersection	Cycle Length (sec)	Eastbound		Westbound		Northbound		Southbound		Intersection		Max V/C	Deficient Movements V/C Ratio > 1.0
		Delay (veh/sec)	LOS										
<b>PM PEAK HOUR</b>													
<b>Central Ave @ Central On-Ramp/ Locust St</b>													
No Build Alternative	110	24	C	9	A	-	-	9	A	13	B	0.83	-
Build Alternative 1	100	20	B	13	B	-	-	16	B	16	B	0.87	-
Build Alternative 2	100	20	B	16	B	-	-	16	B	17	B	0.87	-
Build Alternative 3	120	29	C	15	B	-	-	15	B	18	B	0.94	-
<b>Central Ave @ Oak St</b>													
No Build Alternative	110	8	A	27	C	40	D	-	-	22	C	0.77	-
Build Alternative 1	100	7	A	16	B	18	B	-	-	13	B	0.72	-
Build Alternative 2	100	27	C	44	D	18	B	-	-	32	C	0.99	-
Build Alternative 3	120	24	C	38	D	52	D	-	-	39	D	0.95	-
<b>MLK Ave @ Elm St</b>													
No Build Alternative	110	17	B	17	B	15	B	58	E	21	C	0.84	-
Build Alternative 1	100	14	B	15	B	12	B	47	D	18	B	0.83	-
Build Alternative 2	100	14	B	15	B	12	B	47	D	18	B	0.83	-
Build Alternative 3	120	15	B	12	B	14	B	55	E	18	B	0.86	-
<b>MLK Ave @ Locust St</b>													
No Build Alternative	110	114	F	23	C	-	-	79	E	87	F	1.19	EBT, SBT
Build Alternative 1	100	41	D	24	C	-	-	32	C	34	C	0.96	-
Build Alternative 2	100	41	D	24	C	-	-	32	C	34	C	0.96	-
Build Alternative 3	120	40	D	15	B	-	-	36	D	35	D	0.99	-
<b>MLK Ave @ Oak St</b>													
No Build Alternative	110	17	B	54	D	50	D	-	-	33	C	0.85	-
Build Alternative 1	100	18	B	35	C	42	D	-	-	28	C	0.89	-
Build Alternative 2	100	18	B	35	C	42	D	-	-	28	C	0.89	-
Build Alternative 3	120	54	D	68	E	74	E	-	-	65	E	1.10	EBL, WBR, NBT
<b>West Frontage Rd &amp; Lomas Blvd @ Locust St</b>													
No Build Alternative	120	38	D	19	B	-	-	65	E	39	D	1.04	WBL
Build Alternative 1	120	39	D	15	B	-	-	58	E	36	D	0.94	-
Build Alternative 2	120	39	D	15	B	-	-	58	E	36	D	0.94	-
Build Alternative 3	120	38	D	16	B	-	-	58	E	36	D	0.95	-
<b>East Frontage Rd &amp; Lomas Blvd @ Oak St</b>													
No Build Alternative	120	13	B	35	C	40	D	-	-	28	C	0.93	-
Build Alternative 1	120	10	B	29	C	42	D	-	-	25	C	0.87	-
Build Alternative 2	120	10	B	29	C	42	D	-	-	25	C	0.87	-
Build Alternative 3	120	14	B	29	C	44	D	-	-	27	C	0.95	-

## Chapter 5, Public Involvement and Agency Coordination

### INTRODUCTION

This chapter summarizes the public involvement and agency coordination efforts performed during the South I-25 Corridor Study. These efforts are intended to build upon public outreach efforts conducted during the Phase IA study and earlier projects within the corridor. Public outreach efforts were guided by the Public Involvement Plan memo developed for this study in 2013 as well as the Public Involvement Plan completed for a previous study of the area in 2008. These documents are included on the [attached CD](#). A summary of the Phase IA outreach efforts is provided below, followed by the outreach efforts for Phase IB.

### PHASE IA PUBLIC INVOLVEMENT

In Phase IA, public involvement efforts targeted specific stakeholder groups and individual meetings were held with stakeholder groups. Letters were sent out to stakeholder groups and neighborhood associations notifying them of the study and inviting them to schedule a meeting with the project team to discuss the project and related issues. Meetings were held with all stakeholder groups and neighborhood associations that requested additional information. This list includes:

- ♦ Albuquerque Public Schools
- ♦ Lobo Development
- ♦ Lobo Athletics/The Pit
- ♦ City of Albuquerque Planning
- ♦ UNM Hospital
- ♦ Presbyterian Hospital
- ♦ Lovelace Hospital
- ♦ Albuquerque Ambulance
- ♦ Citizens Information Committee of Martineztown
- ♦ South Valley Coalition of Neighborhood Associations
- ♦ San Jose Neighborhood Association

The Phase IA report includes a complete list of issues and concerns expressed by stakeholders.

### PHASE IB PUBLIC INVOLVEMENT

As part of the public outreach for Phase IB, the study team continued meeting with public stakeholders who had identified concerns during Phase IA or who had requested follow-up meetings. In addition to these stakeholder meetings, a public information meeting was held to provide an update on the status and findings of the study and to solicit comment from the general public. All stakeholders were notified of the public meeting and encouraged to attend. The combination of targeted stakeholder group meetings and a general public meeting ensured that a broad audience of interested stakeholders were aware of and had opportunities to comment on the study.

Public stakeholder meetings were held in Phase IB as follows:

- ♦ San Jose Neighborhood Association, August 10, 2016
- ♦ South Valley Coalition of Neighborhood Associations, August 11, 2016
- ♦ Citizens Information Committee of Martineztown, August 16, 2016
- ♦ General Public Meeting, August 25, 2016
- ♦ Titan Development, September 2, 2016
- ♦ South Broadway Neighborhood Association, September 15, 2016

### Specific Stakeholder Issues and Concerns

Below is a summary of key issues and concerns expressed by public stakeholders during the Phase IB outreach efforts. Common concerns for neighborhood associations and the general public included traffic congestion at the Cesar Chavez interchange during special events, the current configuration of the Gibson interchange, safety conditions at the S-curve, and any potential acquisitions of residential properties. Meeting summaries are available on the [attached CD](#).

#### San Jose Neighborhood Association

- ♦ Northbound I-25 to westbound Gibson is too difficult to navigate.
- ♦ The cemetery on the east side of Gibson is difficult to access.
- ♦ The Cesar Chavez interchange backs up onto the mainline during Lobo events.
- ♦ Concern over the possibility of having to relocate residents.
- ♦ Support for extending a collector/distributor road down to the Gibson Interchange.
- ♦ The priority area should be the S-curve.

#### South Valley Coalition of Neighborhood Associations

- ♦ To the maximum extent possible all traffic lights should be synchronized. Not just in this study area but throughout the city. Synchronizing lights should be part of any basic planning study for new development.
- ♦ Concern that people will only be able to access the downtown area via Coal and Lead Avenues if the Martin Luther King off-ramp is removed.
- ♦ Concern with alternatives that would require property acquisitions.
- ♦ Support for frontage roads as a way to provide relief when the interstate is congested.
- ♦ Concern with the status of the Sunport Extension project and possible repercussions to the current study if Sunport does not advance.
- ♦ Cesar Chavez needs long lanes to safely queue special events traffic.
- ♦ The design of the Mesa del Sol Interchange should also consider the Valle del Sol development.

#### Citizens Information Committee of Martineztown

- ♦ Concern that the large amount of development currently taking place in and around the neighborhood is appropriately considered: Titan development (Presbyterian Hospital), UNM Hospital expansion, Malouf property, Innovate Albuquerque, Sandia Foundation, Embassy Suites, Tricore, Lovelace, etc.
- ♦ There should be a “spine road” that connects Woodward Place to Elm Street through the Kindred Hospital parking lot, which would provide better direct access between Lomas Boulevard and Elm Street.
- ♦ Presbyterian would likely be concerned with the increased traffic on Martin Luther King Avenue from Build Alternative 3.
- ♦ Lovelace Hospital should have a westbound right-turn lane.
- ♦ Traffic in the neighborhood will be compounded by people avoiding Central Avenue due to the ART project.
- ♦ The study should identify additional improvements the COA will need to make to the road system surrounding the interstate. Build Alternative 3 would require the most related improvements for COA.
- ♦ Build Alternative 3 would not facilitate bicycle and pedestrian access to downtown via Martin Luther King Avenue.
- ♦ Consider a new funding model for projects where COA can participate in funding in addition to federal funds.



**General Public Meeting**

- ♦ The project needs to carefully consider landscaping and sidewalks.
- ♦ Multi-modal travel (bicycle and pedestrian facilities) needs to be a priority.
- ♦ The off-ramp at Cesar Chavez is dangerous during special events such as Lobo basketball games.
- ♦ The loops in the current Gibson Interchange are dangerous, especially for bicyclists and pedestrians, and sidewalks are needed across the South Diversion Channel east of I-25.
- ♦ Traffic signals at the Gibson Intersections would create additional traffic backups.
- ♦ The fire station at the northeast portion of the Gibson Interchange should have good access to the street. A traffic light at this location was suggested.
- ♦ Traffic lights along Martin Luther King Avenue need to be synchronized.
- ♦ The possibility of the Sunport Extension project being stopped should be considered in the study.
- ♦ Rather than re-align the S-curve, a lower speed limit should be posted and enforced.
- ♦ The S-curve is a safety concern and should be addressed.
- ♦ Taking adjacent properties to fix the S-curve is not acceptable. The properties to the west are part of the South Broadway Neighborhood Association and should be protected. The properties to the east are Albuquerque Public Schools buildings and they should also be protected.
- ♦ The South Broadway Neighborhood Association should receive its own meeting since they are potentially impacted by the S-curve project.
- ♦ The meeting should be translated into Spanish and meeting advertisements should appear in Spanish.
- ♦ At least two participants were supportive of Alternative B1; however, consistent opposition was expressed for Alternative B3.

**Titan Development**

- ♦ Titan Development representatives provided the following information about their development plans along with a site plan showing the areas.
  - 300 multi-family units with an estimated 450 residents
  - 120 unit hotel with pedestrian bridge over to hospital
  - 50,000+ square feet of retail and restaurants
  - On-street parking throughout the development
  - Heavy emphasis on live-work-play and the pedestrian experience.
  - Public Arts design will be installed to improve the pedestrian experience under I-25.
- ♦ Their biggest concern is the sidewalks under I-25 at Central: they would prefer 10 feet wide or larger.
- ♦ They fully support the removal of the northbound MLK off-ramp.

**South Broadway Neighborhood Association**

- ♦ Opposition to alternatives that would take homes and require residents to be relocated.
- ♦ Substantial concerns with the unsafe condition of the current S curve.
- ♦ Vibration is a major concern for some residents near the interstate.
- ♦ Noise walls should be constructed as soon as possible.
- ♦ Drainage will need to be studied closely. Any change in interstate elevation could affect drainage and some houses near the interstate are already being flooded during rain events.
- ♦ Pedestrian and bicycle facilities need to be included in all construction projects.

**PHASE IB AGENCY COORDINATION**

Agency coordination activities were conducted with the City of Albuquerque (COA), Bernalillo County, and Albuquerque Metropolitan Area Flood Control Authority (AMAFCA). In addition, notifications of outreach efforts were provided to the Pueblo of Isleta and Albuquerque Public Schools. In general, agency stakeholders were concerned with how the proposed improvements could affect adjacent agency facilities and making sure current agency projects were appropriately considered in the study. Agency coordination meetings were held as follows:

- ♦ COA Department of Municipal Development and Parks and Recreation Department, July 20, 2016
- ♦ Bernalillo County Public Works Department, August 4, 2016
- ♦ AMAFCA, September 1, 2016
- ♦ Briefing to AMAFCA Board, September 22, 2016

**City of Albuquerque**

- ♦ Recent developments have postponed the Sunport project. If Sunport does not advance the South I-25 Study may need to be updated.
- ♦ The stretch of Gibson Boulevard from Mulberry Street east should be discussed with the Mid-Region Council of Governments.
- ♦ The COA project on Martin Luther King Avenue is currently under construction and should be accounted for in the study.
- ♦ The study should be consistent with applicable bicycle plans. The COA will discuss the study with the Greater Albuquerque Recreational Trails Committee and the Greater Albuquerque Bicycle Advisory Committee.
- ♦ Sidewalk plans in the study need to comply with Albuquerque’s Proposed Guidelines for Accessible Rights-of-way (PROWAG) plan.
- ♦ Traffic analysis should account for construction of Albuquerque Rapid Transit (ART).
- ♦ COA would like more time to review and comment on proposed access changes within the study area.

**Bernalillo County**

- ♦ Concerned that the additional access to Broadway Boulevard provided by Mesa del Sol Boulevard and the proposed Avenue A grade separation may result in traffic congestion on county roadways between the river and I-25.
- ♦ Questions about how traffic was modeled since there is no high-capacity road connecting 2<sup>nd</sup> Street south of Desert Road.
- ♦ Bernalillo County has limited ability to add capacity to roads that access the interstate. Currently there are no plans to improve the county roadway network in this area.
- ♦ The Valle del Oro Wildlife Refuge should be considered in the study.
- ♦ The South Diversion Bike Trail crossing under the interstate and all connections to the trail should be addressed in the study.
- ♦ The term “frontage road” should not be used in reference to the Sunport area because access to the road will not be allowed.



#### Albuquerque Metropolitan Area Flood Control Authority

- ♦ The pertinent drainage management plans include the Far Southeast Valley Watershed map and the Broadway Watershed map.
- ♦ Between Rio Bravo and Sunport there is a lot of sediment transport towards I-25.
- ♦ A Tijeras Arroyo Sediment Retention Facility will be implemented north of the proposed Bobby Foster interchange. A map of the planned facility was provided (see [Chapter 6](#)). Temporary access from Bobby Foster Road west of I-25 may be requested to facilitate construction of the sediment retention facility.
- ♦ The proposed Valle del Sol development east of I-25 will make some improvements to the Tijeras Arroyo. This development has changed to mostly commercial uses.
- ♦ An underground jet fuel utility line crosses through the Bobby Foster interchange from the northwest to the southeast. Construction on top of the utility is expected to require additional regulatory agency coordination.
- ♦ The west berm of the South Diversion Channel has been designated a levee by FEMA. If retaining walls are needed as part of the South I-25 improvements, weep holes for seepage would be needed.
- ♦ A 10-minute briefing focused on potential impacts to AMAFCA facilities was made to the AMAFCA Board to inform them of the improvement proposals that have been identified for the South I-25 corridor.

#### Other Agency/Stakeholder Coordination

The following summarizes coordination efforts with other key stakeholders that occurred during Phase IB.

##### **Albuquerque Public Schools**

Coordination with Albuquerque Public Schools (APS) in Phase IB was limited to an invitation to the general public meeting because of the level of coordination that was performed during Phase IA. By email and a telephone call, APS expressed interest in continued notifications regarding the South I-25 improvements and also asked the project team to consider realigning the S-curve more to the west to reduce impacts on APS property. It is noted that APS will be a key stakeholder in subsequent project development efforts to improve the S-curve.

##### **Tribal Coordination**

Throughout both Phase IA and Phase IB, tribal outreach focused mainly on Isleta Pueblo because their reservation is adjacent to the southern end of the study area and they are directly affected by the study. Isleta Pueblo was notified of the study via mail on June 7, 2013 and again via email on June 26, 2013. Tribal representatives were also updated on the study during regularly scheduled monthly coordination meetings with NMDOT District 3. Additionally, tribal representatives were provided a copy of the Phase IA report on January 28, 2014; invited to the public meeting via email on August 18, 2016; and, provided a copy of the draft Phase IB report on September 12, 2016. Further outreach to Isleta Pueblo and additional tribes should be undertaken as individual projects are developed within the corridor.

## Chapter 6, Evaluation of Alternatives

### INTRODUCTION

This chapter summarizes the engineering and environmental evaluations of the improvement alternatives developed by this study. The evaluation is specific to each alternative but also compares the alternatives to highlight key differences. The engineering component of the Phase IB detailed analysis was performed at a conceptual level but with enough engineering effort to determine the extents and costs associated with required improvements to support subsequent planning and programming activities for the project. The potential business, community and environmental impacts were evaluated to identify critical issues and factors, and to determine if there are major differences between alternatives with regard to their effect on the human and natural environment.

### SOUTH SEGMENT ENGINEERING EVALUATION

The engineering evaluation for the south segment is straightforward because there is only one improvement alternative. The south segment evaluation considers:

- ◆ Key Design Features
- ◆ Estimated Costs (2016 dollars)
- ◆ Right-of-Way Requirements
- ◆ Drainage

#### Key Design Features

The conceptual engineering drawings and typical sections for the south segment are provided in [Appendix A](#). The improvements include widening the existing pavement, extending drainage structures and making improvements associated with future TSM&O/ITS requirements. Considering recent and ongoing improvements, remaining widening will be needed for approximately 40% of the south segment's six-mile length. Constructability issues are not expected for the south segment. Because most of this work will be at the edge of the existing pavement, there is no need for specific construction sequencing. Traffic control for these improvements is expected to be limited to standard lane closures and crossovers associated with interstate widening projects.

However, I-25 will be reconstructed at the location of the Mesa del Sol interchange to provide a diamond interchange in an underpass configuration. The interstate is proposed to be raised approximately 16 feet to minimize excavation for Mesa del Sol Boulevard coming down from the mesa to the east and to match grade at Broadway Boulevard with grades west of the interstate less than five percent (5%). Two-span bridges are proposed over both northbound and southbound I-25.

Two-lane off-ramps are proposed for the northbound off-ramp to Mesa del Sol Boulevard and the southbound off-ramp to NM 47/Broadway Boulevard to enhance the weave section performance along mainline I-25. The ramp roadways at the Mesa del Sol and Bobby Foster interchanges are conceptually designed using a 60-mph controlling curve at the mainline merge and diverge junctions and a 50-mph design for the remainder of the ramp roadways.

A notable utility passing under and through the Bobby Foster interchange is a jet fuel line. Coordination with the proper authorities will be required to upgrade the Bobby Foster grade separation to a full-access interchange.

#### Estimated Construction Costs

A conceptual design construction cost estimate for the south segment is summarized in [Table 6-1](#) and in [Appendix G](#). The cost estimate is based on 2016 dollars. The cost was developed considering the recent reconstruction project with new lanes added per the proposed improvement plan and mainline reconstruction for the remainder of the segment.

Note that the development-driven interchange and grade separation projects are accounted for separately. These are projects that will be required when planned land developments are implemented to a stage that affects the function of the interstate and/or new interstate access is desired. Private entity and local governmental participation in project funding is expected to be needed for the development-driven interchange and grade-separation improvements.

**Table 6-1, Opinion of Probable Construction Costs for the South Segment**

ITEM DESCRIPTION	ESTIMATE IN 2016 DOLLARS
ROADWAY	\$2,300,000
DRAINAGE	\$500,000
BRIDGE	\$1,500,000
RETAINING WALLS	\$400,000
PERMANENT SIGNING & LIGHTING	\$4,000,000
SIGNALIZATION	\$0
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE	\$174,000
BICYCLE & PEDESTRIAN FACILITIES	\$174,000
ACCOMMODATION FOR FUTURE ITS	\$305,000
<b>SUBTOTAL</b>	<b>\$9,353,000</b>
CONSTRUCTION ENGINEERING	\$1,914,000
<b>SUBTOTAL</b>	<b>\$11,267,000</b>
CONTINGENCY (35%)	\$3,943,450
<b>BASELINE COST</b>	<b>\$15,210,450</b>
STUDY & DESIGN (10%)	\$1,521,045
CONSTRUCTION MANAGEMENT (10%)	\$1,521,045
<b>SUBTOTAL</b>	<b>\$18,252,540</b>
NM GROSS RECEIPTS TAX (7.3125%)	\$1,334,717
<b>TOTAL COST</b>	<b>\$19,587,257</b>
<b>USE FOR SOUTH SEGMENT TOTAL</b>	<b>\$19,700,000</b>
<b>INTERCHANGE PROJECTS (SOUTH SEGMENT)</b>	<b>\$118,900,000</b>
<i>Construction of Avenue A</i> <sup>1</sup>	\$15,000,000
<i>Mesa del Sol Blvd. Interchange</i> <sup>1</sup>	\$35,000,000
<i>Bobby Foster Road Interchange</i> <sup>2</sup>	\$20,000,000
<i>Rio Bravo Blvd. Interchange</i> <sup>3</sup>	\$48,900,000
NM Gross Receipts Tax (7.3125%)	\$8,700,000
<b>TOTAL ADDITIONAL COST FOR INTERCHANGES</b>	<b>\$127,600,000</b>
<b>ESTIMATED RIGHT-OF-WAY COST</b> (see Table 6-2)	<b>\$1,900,000</b>

1) Possible funding through developer/City project, not included in segment total

2) Possible funding through developer/County project, not included in segment total

3) Current NMDOT project, not included in segment total

**Right-of-Way Requirements**

Most of the new right-of-way needed for the improvements in the south segment of South I-25 involves lands of the Mesa del Sol Planned Community development (see Appendix A). The land needed for the Mesa del Sol interchange and for the east side of the Avenue A grade separation should be dedicated without cost to the pertinent highway jurisdictions because they directly serve their needs. Private property will be needed for the Avenue A grade separation from Broadway to I-25. Private property will also be needed on the east side of I-25 for the Bobby Foster interchange. The NMDOT and Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) own the other lands needed for the Bobby Foster interchange.

A summary of the right-of-way (ROW) analysis is provided in Table 6-2. The ROW cost estimates are approximations and should not be used as absolute values because of the complexities associated with ROW acquisition.

**Table 6-2, South Segment Right-of-Way Assessment**

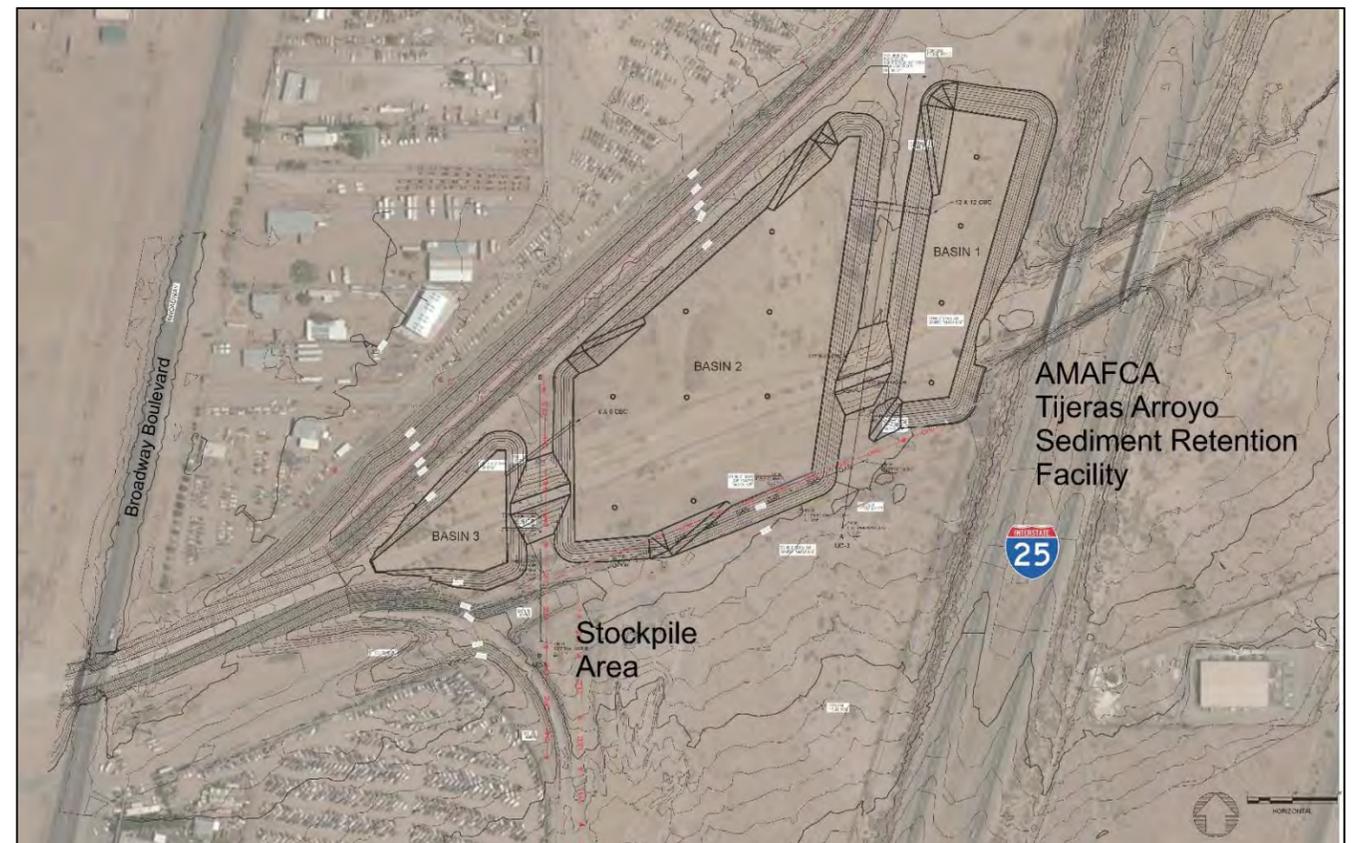
Item Description	Area / Cost
<b>Private Property to be Dedicated</b>	
Right-of-Way (Area In Sq. Ft.)	1,293,042
Right-of-Way (Area In Acres)	29.68
<i>Estimated Cost Subtotal</i>	<i>\$0</i>
<b>Private Property to be Acquired</b>	
Right-of-Way (Area In Sq. Ft.)	140,362
Right-of-Way (Area In Acres)	3.22
Approx. # of Building Impacts	None
<i>Estimated Cost Subtotal</i>	<i>\$1,403,700</i>
<b>AMAFCA Property</b>	
License Agreements (Area In Sq. Ft.)	90,937
License Agreements (Area In Acres)	2.09
<i>Estimated Cost Subtotal (@ \$5/S.F.)</i>	<i>\$454,700</i>
<b>Total Estimated Right-of-Way Cost</b>	<b>\$1,858,400</b>
<b>USE FOR SOUTH SEGMENT ROW COSTS</b>	<b>\$1,900,000</b>

**Drainage**

Drainage improvements will include extending culverts for the widened I-25 section, relocation and reconstruction of inlets with modified connections to existing outfall locations using manholes or junction boxes, and possible additional facilities per the drainage master plans for this area of Albuquerque. Coordination will be required with the City of Albuquerque, County of Bernalillo and AMAFCA.

North of Bobby Foster Road, AMAFCA has plans to construct a sediment retention facility along the Tijeras Arroyo just west of I-25 (see Exhibit 6-1). Based on this layout, the future Bobby Foster interchange is not expected to be impacted by this facility. In addition, the projects to develop the future interchanges and the Avenue A grade separation will need to accommodate the drainage facilities in the Far Southeast Valley Watershed drainage plan.

**Exhibit 6-1, AMAFCA Tijeras Arroyo Sediment Retention Facility**



**NORTH SEGMENT ENGINEERING EVALUATION**

The engineering evaluation of the north segment involves three build alternatives, B1, B2 and B3, and an optional S-curve alignment for Alternative B3. The conceptual engineering drawings are provided in [Appendices B, C and D](#), respectively. The primary evaluation factors used to compare and contrast the alternatives include the following:

- ♦ Key Design Considerations
- ♦ Multi-Modal Accommodations
- ♦ Freeway Traffic Performance
- ♦ Intersection Traffic Performance
- ♦ Constructability under Traffic
- ♦ Ability to Construct in Phases
- ♦ Access Modifications from Existing
- ♦ Interchange Spacing & Traveler Guidance
- ♦ Estimated Costs (2016 dollars)
- ♦ Right-of-Way Requirements

**Key Design Considerations**

The build alternatives were developed based on the design criteria stated in [Chapter 2](#) and the design elements of each alternative equally satisfies current design standards for the most part. The following summarizes key design considerations for the north segment improvement alternatives to emphasize challenges that will need to be addressed.

**Bridge Clearance**

[Table 6-3](#) summarizes existing bridge clearances within the north segment of the South I-25 corridor. As shown in the table, all of the existing bridge clearances are less than the minimum requirement of 16 feet, 6 inches for an arterial street crossing of an interstate highway. This is important because the profile grade of the streets is generally higher and increasing on the east side of I-25. As such, when the I-25 bridges are widened and realigned they may reduce the clearance on the east side because the surface street elevation is increasing.

**Table 6-3, Existing Bridge Clearances**

Street Crossing	Existing Clearance
Mountain Road	14 feet, 10 inches
Lomas Boulevard	14 feet, 10 inches
Martin Luther King Avenue	14 feet, 6 inches
Central Avenue	16 feet, 1 inch
Lead Avenue	16 feet, 0 inches
Coal Avenue	15 feet, 7 inches
Avenida Cesar Chavez	15 feet, 11 inches
Gibson Boulevard	16 feet, 4 inches

Critical issues are expected as follows:

- ♦ Widening northbound I-25 at Lomas Boulevard in Alternatives B2 and B3 would reduce the clearance to 13 feet, 6 inches if the new girders match existing.
- ♦ Widening northbound I-25 at Mountain Road in Alternatives B2 and B3 would reduce the clearance to 14 feet, 3 inches if the new girders match existing.
- ♦ Maintaining the profile grade of I-25 at the MLK Avenue bridges in all alternatives.
- ♦ Single Point Diamond Interchange at Cesar Chavez in Alternative B1 due to long-span, deep girders.

The conceptual designs for all alternatives incorporated two-span and three-span bridges to keep superstructure depths in check, as applicable. Also, vertical cast-in-place walls for abutments would facilitate shorter bridge spans.

**Alternative B3 S-curve Option**

As background, the Phase IA initial evaluation of alternatives considered 65-mph and 70-mph designs for the S-curve with the 65-mph design speed eliminated from further consideration. The preferred approach for the realignment was to impact the Albuquerque Public Schools (APS) site on the east side rather than properties on the west side. This approach was used to develop the Alternative B3 conceptual design.

This Phase IB evaluation considered constructability as a key measure of effectiveness and it became known that realigning the S-curve to the east would be difficult and expensive to build because the southbound lanes cross over into the existing northbound lanes in two locations. In addition, stakeholder input from APS requested that an alignment that reduces impacts on their site be considered.

Accordingly, the Alternative B3 S-curve Option alignment was developed to vet the issues associated with realignment to the west. The conceptual design of this option is provided in [Appendix D](#), combined with the original Alternative B3 design drawings. While the optional alignment has substantial impacts on properties on the west side of I-25, the southbound lanes would not cross over at any location which would improve the constructability and costs of improving the S-curve in Alternative B3. Further discussion of Alternative B3 and the optional alignment is provided in the remaining sections of this chapter.

**Northbound Lomas Off-Ramp Braided Ramp Bridge**

The northbound off-ramp to Lomas Boulevard is currently a one-lane ramp braided with the Martin Luther King on-ramp. The clear width of the Lomas off-ramp bridge is 29 feet, 6 inches. All of build alternatives propose a two-lane off-ramp to Lomas Boulevard to improve upstream weave section performance. To avoid reconstructing the Lomas off-ramp bridge, the resulting two-lane ramp roadway would have two 11-foot lanes with 3-foot, 9 inch shoulders on each side. Because this is a relatively short segment of reduced section, this is the preferred approach to providing a two-lane off-ramp to Lomas Boulevard.

**Drainage**

Drainage improvements within the north segment are similar for each of the build alternatives. These include extending culverts for the widened I-25 section, relocation and reconstruction of inlets with modified connections to existing outfall locations using manholes or junction boxes, and possible additional facilities. There are no real cost differentiators for drainage between the alternatives. During preliminary and final design, a drainage report will be required along with coordination with the City of Albuquerque, County of Bernalillo and Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA).

Improvements involving the AMAFCA South Diversion Channel that should be considered as part of the build alternatives include:

- ♦ A multi-use trail crossing of I-25 is planned between Sunport and Gibson (local government responsibility).
- ♦ Sidewalk improvements are needed on both sides of Gibson Boulevard involving a potential culvert extension on the north side and modifications to channel access and a culvert extension on the south side.
- ♦ Freeway widening and ramp improvements are proposed from Gibson to Cesar Chavez which parallels the South Diversion Channel. Sufficient space is required by AMAFCA for a service road and the berm on the west side of the channel has been designated by FEMA as a levee. If retaining walls are needed next to the levee, weep holes will be needed.
- ♦ Sidewalk improvements are needed on both sides of Avenida Cesar Chavez involving culvert extensions.

Further coordination with AMAFCA will be required as improvement projects are advanced.

### Multi-Modal Accommodations

The multi-modal accommodations would be similar for all of the north segment build alternatives including pedestrian, bicycle and transit facilities. Alternative B2 does include a dedicated transit lane for ART through the Central Avenue interchange. All build alternatives offer a substantial improvement over the No Build Alternative, but this evaluation measure does not differentiate the alternatives.

### Freeway Traffic Performance

The findings of the detailed evaluation of design-year freeway traffic performance provided in Chapter 4 indicates that Alternative B3 would provide the best performance in both directions of travel. Comparing Alternatives B1 and B2 to each other, B2 would provide better performance in the northbound direction because of the additional lane from the MLK on-ramp to the I-40 off-ramps, and B1 would provide better performance in the southbound direction because the ramp spacing is better in the vicinity of the Gibson interchange and less turbulence would be expected.

### Signalized Intersection Performance

The findings of the detailed evaluation of design-year signalized intersection performance provided in Chapter 4 indicates that Alternative B1 and B2 are expected to provide similar levels of service while Alternative B3 is expected to have capacity deficiencies at the Gibson and Martin Luther King interchanges. Alternative B3 would serve higher demand at these interchanges because of the reduced access to and from I-25 and would subsequently have more intersection operational issues. The constrained right-of-way within the South I-25 corridor makes it difficult to address all of the intersection capacity needs to accommodate design-year traffic volumes.

### Constructability under Traffic

The conceptual design of the build alternatives for the north segment kept constructability in mind. Changes to the vertical alignment of the mainline freeway at the interchange bridges including the elevation differential between the northbound and southbound lanes were minimized. Two-span and three-span bridges were used to keep the superstructure depths close to existing. The one exception is the bridge for the Single Point Diamond interchange at Cesar Chavez in Alternative B1 which would require long-span, deep steel girders. With that exception, Alternatives B1 and B2 are expected to be similar for this evaluation measure.

Both options for Alternative B3 may have a considerable construction advantage over Alternative B1 or B2 because of the continuous frontage/collector-distributor (C-D) (service) roads proposed on both sides of the interstate through the north end of the corridor. The continuous service roads provide a possible detour for the mainline traffic, eliminating the need for phased mainline construction through downtown with the numerous traffic shifts required. The Alternative B3 Option would provide the highest constructability because the southbound lanes do not cross over into the existing northbound lanes and it has the continuous service roads on both sides of the freeway.

### Ability to Construct in Phases

A preliminary assessment of construction sequencing was performed to determine if there are differences in the ability to construct each of the alternatives in phases. Alternatives B1 and B2 are expected to be similar for construction sequencing. Alternative B3 would have an advantage because of the longer, continuous service roads. The service roads would help break out smaller projects because traffic can be temporarily detoured to the service roads.

Overall within the north segment, once the S-curve and downtown area reconstruction starts it will need to keep going until it is completed to Martin Luther King (MLK). The additional lane northbound from MLK on-ramp to I-40 off-ramps is an independent project, and the improvements at the Sunport and Gibson interchanges could also be phased somewhat independently. A more detailed discussion of the construction sequencing for the north segment alternatives follows.

### All Alternatives

The anticipated sequence of construction for all of the north segment alternatives would begin with construction of the new frontage road and ramp system in both the northbound (NB) and southbound (SB) directions adjacent to the downtown area, extending from Coal Avenue to MLK Avenue. Temporary connections to I-25 would be required. Completion of the frontage road and ramp system would provide local traffic detours and access. The frontage roads/ramps/local roads could be broken into numerous projects depending upon available funding. Standard traffic control for intersection/ramp/local street construction would be used with no requirements for changes to mainline traffic.

### Alternative B1 and B2

The sequencing of construction differs for Alternatives B1 and B2 from Alternative B3 (both options). Once the frontage roads and ramps in the downtown area are completed, the reconstruction of mainline I-25 could begin with the reconstruction of the Avenida Cesar Chavez (ACC) interchange and ramps. The ACC interchange bridge would be reconstructed to facilitate the realignment of the S-curve. Following the construction of the ACC interchange and ramps, mainline reconstruction and realignment could be completed in phases.

For Alternatives B1 and B2, mainline reconstruction could begin at the Sunport interchange. Northbound traffic would be shifted via a median crossover to a two-way detour on the SB lanes south of Sunport interchange. Construction would include widening and construction of the new NB lanes on the mainline from Sunport to the new Coal off-ramp (approx. 2 miles). At the completion of this phase, the realignment of I-25 would require shifting southbound mainline traffic to the existing and new NB lanes from the north end of project to Sunport Boulevard.

The second phase of mainline I-25 reconstruction/realignment would be to construct the SB mainline and bridges from MLK through Sunport (approx. 2.7 miles). For Alternative B2, this phase would include construction of the southbound collector-distributor (C-D) road from Coal Avenue to ACC. Construction of the southbound lanes may be broken into two projects at the ACC interchange if necessary for funding purposes.

The final phase of the mainline reconstruction would be to construct the NB mainline and bridges from the Coal off-ramp through Lomas. This would require shifting the NB lanes to the new SB lanes south of Coal Avenue to MLK to construct the NB mainline and bridges. Construction in the downtown area would be complete after this phase.

The recommended improvements to the remainder of the north segment of the I-25 corridor include modifications to the Sunport interchange ramps and improvements to the Gibson interchange. These projects could follow the improvements to NB I-25 through the downtown area. The recommended sequence of construction for Alternative B1 is to construct the new Sunport interchange before Gibson as it includes bridges over the future on-ramps from Gibson Boulevard. For Alternative B2, the Gibson and Sunport interchanges could be constructed in any order.

The two remaining projects for completing the improvements for the I-25 mainline include completing construction on both the north and south ends of the corridor. The first project would be to widen both NB and SB lanes from south of Sunport to the completed improvements at Sunport (*note: this widening may have already occurred as a commitment of the I-25/Rio Bravo Boulevard interchange IACR*). The second project, for Alternative B2 only, would be to complete the widening of the NB lanes at the north end of the project, from the MLK bridge to the I-40 off-ramps.

### Alternative B3 (both options)

The continuous service roads proposed on both sides of the interstate through the north end of the corridor in both options for Alternative B3 provide a construction advantage over Alternative B1 or B2. The service roads provide a possible detour for the mainline traffic, eliminating the need for phased mainline construction through downtown with the numerous traffic shifts required.

Construction of Alternative B3 would begin with the improvements to the frontage roads and ramps in the downtown area as described previously. This would then be followed with the construction of the ACC interchange and C-D roads between ACC and Coal Avenue.

Mainline and local traffic could be diverted to the parallel service roads at ACC in the northbound direction and at MLK in the southbound direction. With traffic detoured to the service roads, the mainline realignment and reconstruction between ACC and the north end of the corridor could be completed as one project.

Once the mainline is completed through the downtown area, the Sunport and Gibson interchange projects can be completed. The service roads between Gibson and ACC should be constructed with the Gibson Interchange. They could then be used for detours during the construction of the mainline between Gibson and ACC. The northbound C-D road between Sunport and Gibson (and the Sunport on-ramp) could also be built with the Gibson Interchange. This road would then serve as a detour during the construction of the northbound mainline between Sunport and Gibson. The construction of the southbound I-25 widening could be completed using standard lane closures for widening during the construction of the northbound mainline.

### Access Modifications from Existing

Exhibit 6-2 illustrates the access changes in the north segment by build alternative. As its name implies, Alternative B2, Closest to Existing, would result in the least change. Alternative B1 is slightly different than Alternative B2, but Alternative B3 would introduce the most change. Alternative B3 converts direct freeway access at several locations to access via a collector-distributor road system that would be a continuation of the Oak Street and Locust Street frontage roads north of Coal Avenue. The elimination of one ramp in each direction in Alternatives B1 and B2 is expected to be more acceptable to road users and property owners adjacent to the South I-25 corridor than the multiple access changes proposed in Alternative B3.

### Interchange Spacing and Traveler Guidance

Based on a cursory review of each build alternative for the north segment, an effective guide signing plan could be developed for each alternative. Considerations include:

- ♦ Alternative B1 – access and guide signing similar to existing, the system would have two successive off-ramps at one location northbound and two locations southbound
- ♦ Alternative B2 – access and guide signing similar to existing, the system would have two successive off-ramps at one location northbound and two locations southbound, several two-lane off-ramps with option lanes are provided in this alternative
- ♦ Alternative B3 – access is consolidated in both directions, the northbound off-ramp to Coal Avenue would serve four cross streets, the southbound off-ramp to MLK Avenue would serve four cross streets

### Comparison of Estimated Costs

A comparison of estimated project costs based on major construction items is provided in Table 6-4. Additional cost information is provided in Appendix G. Pertinent findings of the cost estimates include:

- ♦ Alternative B1 has the highest estimated construction cost because of the additional bridges and retaining walls associated with the braided ramps and the Single Point interchange bridge.
- ♦ Alternative B2 is expected to be the lowest cost alternative by a wide margin.
- ♦ Alternative B3 has comparable costs to Alternative B1, particularly when considering the additional ROW costs associated with Alternative B3.
- ♦ The Alternative B3 Option has a lower expected cost because the mainline alignment is easier to construct. The improved southbound lanes do not cross over the existing median barrier into the northbound lanes whereas in Alternative B3 the improved southbound lanes cross into the northbound lanes in two locations making construction detours more difficult and costly.

Exhibit 6-2, Access Changes in North Segment by Alternative



**Table 6-4, Opinion of Probable Construction Costs for the North Segment**

ITEM DESCRIPTION	BUILD ALT B1	BUILD ALT B2	BUILD ALT B3	BUILD ALT B3 OPTION
ROADWAY	\$18,644,000	\$18,496,000	\$21,615,000	\$21,143,000
DRAINAGE	\$11,250,000	\$10,800,000	\$10,750,000	\$10,400,000
BRIDGE	\$48,609,000	\$34,179,000	\$44,439,000	\$43,327,000
RETAINING WALLS	\$24,000,000	\$16,868,000	\$22,624,000	\$22,257,000
PERMANENT SIGNING & LIGHTING	\$8,600,000	\$8,300,000	\$8,325,000	\$8,150,000
SIGNALIZATION	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE	\$2,272,000	\$1,822,860	\$2,205,000	\$2,156,000
BICYCLE & PEDESTRIAN BRIDGES / FACILITIES	\$2,272,000	\$1,822,860	\$2,205,000	\$2,156,000
ACCOMMODATION FOR FUTURE ITS	\$2,272,000	\$1,822,860	\$2,205,000	\$2,156,000
<b>SUBTOTAL</b>	<b>\$120,419,000</b>	<b>\$96,611,580</b>	<b>\$116,868,000</b>	<b>\$114,245,000</b>
CONSTRUCTION ENGINEERING	\$24,992,660	\$20,051,460	\$24,255,660	\$23,710,940
<b>SUBTOTAL</b>	<b>\$145,411,660</b>	<b>\$116,663,040</b>	<b>\$141,123,660</b>	<b>\$137,955,940</b>
CONTINGENCY (35%)	\$50,894,081	\$40,832,064	\$49,393,281	\$48,284,579
INTERCHANGE PROJECTS (SOUTH SEGMENT)*	-	-	-	-
<b>BASELINE COST</b>	<b>\$196,305,741</b>	<b>\$157,495,104</b>	<b>\$190,516,941</b>	<b>\$186,240,519</b>
STUDY & DESIGN (10%)	\$19,630,574	\$15,749,510	\$19,051,694	\$18,624,052
CONSTRUCTION MANAGEMENT (10%)	\$19,630,574	\$15,749,510	\$19,051,694	\$18,624,052
<b>SUBTOTAL</b>	<b>\$235,566,889</b>	<b>\$188,994,125</b>	<b>\$228,620,329</b>	<b>\$223,488,623</b>
NM GROSS RECEIPTS TAX (7.3125%)	\$17,225,829	\$13,820,195	\$16,717,862	\$16,342,606
<b>TOTAL COST</b>	<b>\$252,792,718</b>	<b>\$202,814,320</b>	<b>\$245,338,191</b>	<b>\$239,831,228</b>
<b>USE FOR NORTH SEGMENT TOTALS</b>	<b>\$253,000,000</b>	<b>\$203,000,000</b>	<b>\$246,000,000</b>	<b>\$240,000,000</b>
<b>ESTIMATED RIGHT-OF-WAY COST (see Table 6-5)</b>	<b>\$2,300,000</b>	<b>\$3,200,000</b>	<b>\$12,300,000</b>	<b>\$9,500,000</b>

- Alternative B3 is expected to have site circulation and billboard impacts in the southwest quadrant of the Gibson interchange. With the S-curve aligned to the east, impacts are expected on both sides of I-25 including substantial impacts on the APS property, impacts to residences along High Street, and impacts on billboards. Site circulation modifications would be required for APS including reconstruction of Hazeldine Avenue (see Appendix D).
- The Alternative B3 Option, with the S-curve aligned to the west to avoid major impacts on APS property and to improve constructability, has substantial impacts on homes and businesses on the west side of I-25. The impacts may involve environmental justice issues as discussed in the Environmental Evaluation later in this chapter. Two billboards would also be impacted.

**Table 6-5, North Segment Right-of-Way Assessment**

ITEM DESCRIPTION	BUILD ALT B1	BUILD ALT B2	BUILD ALT B3	BUILD ALT B3 OPTION
<b>CITY OF ALBUQUERQUE PROPERTY</b>				
RIGHT-OF WAY (AREA IN SQ. FT.)	54,235	4,177	64,612	67,444
RIGHT-OF WAY (AREA IN ACRES)	1.25	0.10	1.48	1.55
<b>ESTIMATED COST SUBTOTAL</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>PRIVATE &amp; APS PROPERTY</b>				
RIGHT-OF WAY (AREA IN SQ. FT.)	90,554	124,547	368,532	303,731
RIGHT-OF WAY (AREA IN ACRES)	2.08	2.86	8.46	6.97
POTENTIAL NUMBER OF BUILDING IMPACTS	0	1-3	5-11	15
<b>ESTIMATED COST SUBTOTAL</b>	<b>\$1,855,700</b>	<b>\$2,820,000</b>	<b>\$11,964,200</b>	<b>\$9,137,700</b>
<b>AMAFCA PROPERTY</b>				
LICENSE AGREEMENTS (AREA IN SQ. FT.)	74,769	68,774	61,115	58,283
LICENSE AGREEMENTS (AREA IN ACRES)	1.72	1.58	1.40	1.34
<b>ESTIMATED COST SUBTOTAL (@ \$5/S.F.)</b>	<b>\$373,900</b>	<b>\$343,900</b>	<b>\$305,600</b>	<b>\$291,500</b>
<b>TOTAL ESTIMATED RIGHT-OF-WAY COST</b>	<b>\$2,229,600</b>	<b>\$3,163,900</b>	<b>\$12,269,800</b>	<b>\$9,429,200</b>
<b>USE FOR NORTH SEGMENT ROW COSTS</b>	<b>\$2,300,000</b>	<b>\$3,200,000</b>	<b>\$12,300,000</b>	<b>\$9,500,000</b>

**Right-of-Way Requirements**

A comparative summary of the right-of-way (ROW) analysis for the north segment alternatives is provided in Table 6-5. The ROW cost estimates are approximations intended for relative comparisons and should not be used as absolute values because of the complexities associated with ROW acquisition. Refer to the plan view drawings in Appendix B through D for the ROW impacts. Key ROW impacts include:

- Alternative B1 impacts the City’s Dennis Chavez park to braid the Cesar Chavez on-ramp and the Gibson off-ramp. Impacts to existing structures and billboards are not expected for Alternative B1.
- Alternative B2 has notable ROW impacts in the southwest quadrant of the Gibson interchange involving San Jose cemetery property and potential impacts to an existing building and a billboard. Within the S-curve involving the Albuquerque Public Schools (APS) maintenance buildings, site circulation would potentially be impacted and potential impacts to structures could occur. These impacts would need to be investigated further to determine their extent. Also, a new building is currently being constructed on the north side of the APS property adjacent to I-25 where proximity impacts are expected.

## ENVIRONMENTAL EVALUATION

Existing environmental conditions were documented in the Phase IA report. These investigations determined that environmental justice, historic properties and 4(f) properties, and traffic noise were the environmental conditions of most concern. As such, each of these topics is discussed below relative to how the different alternatives would impact them. This information is then synthesized into an overall qualitative ranking of the build alternatives relative to their potential environmental impacts. Given the current conceptual level of design, any potential impacts discussed below are speculative. A thorough evaluation of environmental impacts will be conducted in the future as part of the National Environmental Policy Act (NEPA). The No Build alternative will also be considered in the NEPA documentation and is generally considered to have minimal environmental impacts.

### Environmental Justice

The executive order on environmental justice directs federal agencies to take necessary and appropriate steps to identify disproportionately high and adverse effects of federal projects on the health and/or environment of minority and low income populations (referred to collectively as special-status populations). Special-status populations are present in the study area as the percentage of people and families with incomes below the poverty level is high throughout the corridor and the southern half of the study area also has a high percentage of minority races and Hispanic ethnicity. As such, this analysis reviews impacts to community services and disadvantaged neighborhoods in the study area. Of particular interest is the South Broadway Neighborhood, which is located in the project area adjacent to the S-curve and has the greatest potential to be impacted by the study alternatives. A technical memorandum describing the demographic characteristics of the study corridor is provided in the attached project CD.

**Alternative B1, Braided Ramps:** A small amount of the Dennis Chavez Park adjacent to the interstate would be acquired. Although the park is an important community facility, the function of the park would not be impacted and the acreage required is a small percentage of the overall park (0.75 acres out of a 7.64-acre park or 9.8%). Additional right-of-way needs, interstate improvements, and access changes would not impact private residents or community facilities.

**Alternative B2, Closest to Existing:** This alternative has similar environmental justice impacts to Alternative B1. A sliver of right-of-way (0.1 acres) that would not affect access to or the function of Dennis Chavez Park would be required. Alternative B2 would also require a small amount of right-of-way from the San Jose Cemetery (0.19 acres). The impacted portion of the cemetery does not contain graves and access to the cemetery would not be affected. This alternative would also impact the Albuquerque Public Schools (APS) property on the east side of the interstate north of Cesar Chavez Avenue. A corner of the APS property and possibly one of the existing garage buildings would be impacted although no effect to APS services is anticipated.

**Alternative B3, Collector-Distributor Roads:** This alternative would also require a small amount of the San Jose Cemetery (approximately 160 sq. ft.) and Dennis Chavez Park (0.51 acres) but would not affect the function of or access to either property. Narrow strips of right-of-way ranging from 438 to 1,573 sq ft (based on conceptual design) would be needed from the residents adjoining the north side of Cesar Chavez Avenue between High Street and Walter Street.

This alternative has two options for addressing the S-curve, one that would offset the interstate to the east and one that would offset the interstate to the west. The east option would require a portion of eight residences along High Street, five of which may require relocation of the residents. This option would also impact the garages located on the APS property on the east side of the interstate. The garages would need to be demolished and relocated. The west offset option would have greater impacts to residents in the neighborhood with 11 relocations required along High street, two along Santa Fe Avenue, one on Hazeldine, and one business along Elm Street.

The Alternative B3 option to offset the interstate to the west would have the greatest impacts to the South Broadway Neighborhood and Alternative B3 in general would have greater impacts to special-status populations in the study area than would Alternative B1 or B2.

### Historic Properties and 4(f)

The National Historic Preservation Act requires agencies to consider the impacts of federal undertakings on historic resources. Similar legislation, Section 4(f) of the Department of Transportation Act, states that the USDOT may not approve the use of land from a significant historic site, publicly owned park, recreation area, or wildlife refuge unless there is no prudent and feasible alternative. Section 4(f) defines a significant historic site as a property eligible for listing on the National Register of Historic Places (NRHP). Many of the buildings along the study area are historic, although additional investigation would be needed to make recommendations as to whether or not the properties are eligible to the NRHP. A technical memorandum identifying historic properties of concern is presented in the attached project CD. Several parks are also located adjacent to the study area. A description of the impacts to historic properties and 4(f) properties in the study area is provided below.

**Alternative B1, Braided Ramps:** This alternative would not directly impact historic properties. However, the interstate would move closer to historic properties in the area of the S-curve and, if the properties are eligible to the NRHP, a potential impact to the setting of the historic properties could occur. If the buildings are determined to be eligible to the NRHP then they are also considered 4(f) properties. Any potential impacts to these properties would also need to be evaluated for a potential “use” under Section 4(f). Another potential 4(f) property use would be the right-of-way required from the Dennis Chavez Park (0.75 acres).

**Alternative B2, Closest to Existing:** The impacts to historic buildings and 4(f) properties are similar for this alternative as with Alternative B1, although less right-of-way (0.1 acres) would be required from Dennis Chavez Park. Additionally, the design for the Gibson interchange would require a small amount of right-of-way from the San Jose Cemetery (0.19 acres). While this portion of the cemetery does not contain graves and access would not change, the off-ramp would move closer to the cemetery and could cause concern with those who manage or visit the property.

**Alternative B3, Collector-Distributor Roads:** As with Alternative B2 above, this alternative would also require a small amount of the San Jose Cemetery (160 sq ft). Additionally, the east offset option would impact historic buildings on the APS property and possibly impact historic buildings along High Street on the west side of the interstate in the historic South Broadway Neighborhood. The west offset option would impact several buildings along the west side of the interstate in the South Broadway Neighborhood. Concerning 4(f) properties other than historic buildings, this alternative would require a small amount of land (0.51 acres) from the Dennis Chavez Park.

Overall, the B3 option would have the greatest impacts to historic and 4(f) properties with the option to offset the interstate to the west having the greatest impacts. Impacts from alternatives B1 and B2 are similar with Alternative B2 having a marginally larger impact.

### Noise

NMDOT noise policy (IDD 2011-02) defines a traffic noise impact as “when the design year predicted traffic related noise levels approach within one (1) dBA of or exceed FHWA’s Noise Abatement Criteria (NAC), or when the design year predicted noise levels exceed the existing noise levels by 10 dBA (Leq).” [Table 6-6](#) presents the FHWA NAC.

FHWA’s Traffic Noise Model (TNM) version 2.5 software was used to conduct a screening analysis to compare the potential noise impacts among the three alternatives. Based on the NMDOT policy, noise impacts would occur at 66 dBA for Activity Types B and C and at 71 dBA for Activity Type E. As such, the limits of these noise levels and the corresponding activity types were mapped for each alternative. While the analysis showed potential impacts throughout the study area, there was no discernable difference among the three build alternatives. [Exhibit 6-3](#) shows a map of the potential noise impacts in the study area.

**Table 6-6, FHWA Noise Abatement Criteria (NAC)**

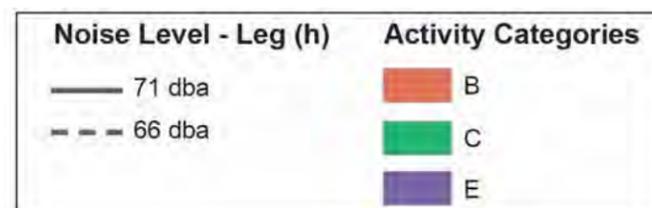
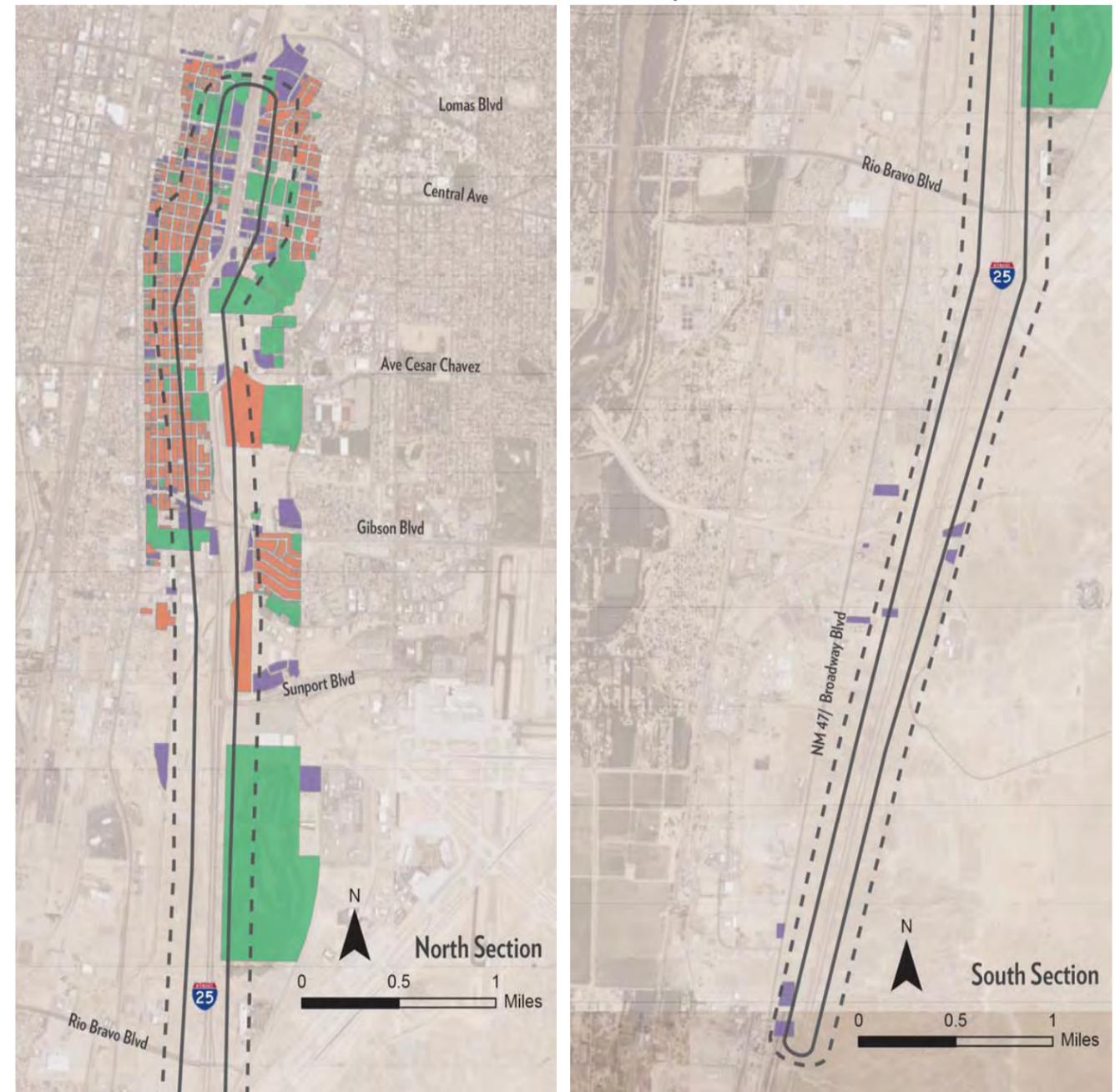
Activity Category	Activity Criteria(1)	Evaluation Location	Activity Description
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67	Exterior	Residential
C	67	Exterior	Active sport areas, amphitheatres, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, and television studios.
E	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F
F	-	-	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	-	-	Undeveloped lands that are not permitted.

(1) Activity criteria is for the hourly equivalent noise level (Leq)

**Conclusion of Environmental Review**

Alternatives B1 and B2 are similar with regard to potential environmental impacts. Based on the analysis above, Alternative B1 would have a marginally smaller environmental impact than would Alternative B2. However, concerning environmental justice, historic properties, and 4(f) properties, Alternative B3 would have the greatest impact, especially the western offset option of Alternative B3. This screening analysis was developed in order to compare the various alternatives and is not intended to satisfy NEPA requirements. Additional investigations will be conducted to satisfy NEPA as individual projects are advanced into the design phase.

**Exhibit 6-3, Traffic Noise Impacts**



**PUBLIC INVOLVEMENT AND STAKEHOLDER SUPPORT**

As described in Chapter 5, a public outreach effort was undertaken involving a combination of a public meeting, agency meetings, neighborhood association meetings, and stakeholder group meetings. Common themes that emerged from these meetings include the need to address congestion at the Cesar Chavez and Gibson interchanges, the need to address the deficiencies at the S-curve, and a strong opposition to acquiring private property. While a clear consensus on a preferred option was not expressed by the public and stakeholders, there was general opposition to Alternative B3 based on the impacts it would have to the APS property or the South Broadway Neighborhood.

**EVALUATION MATRIX**

Exhibit 6-4 is an illustrative overview of the detailed evaluation of alternatives presented in this report. Elements of the project need, including traffic performance, accommodating economic development, and multi-modal improvements, are included in the evaluation matrix along with additional factors such as constructability, estimated cost, stakeholder input, and other criteria. Physical deficiencies was one element of the project need not included in the evaluation matrix as all of the build alternatives sufficiently address this issue. Brief descriptions of the measures of effectiveness are provided below. The matrix indicates that Alternative B1 and Alternative B2 perform similarly and that the Alternative B3 concept should be eliminated from further consideration. As such, the preferred alternative should likely combine features of B1 and B2.

- ♦ Key Design Considerations – How does each alternative address anticipated design challenges.
- ♦ Multi-Modal Accommodations – Can an alternative accommodate pedestrians, bicyclists and transit reasonably.
- ♦ Freeway Traffic Performance – How will the mainline freeway perform under 2040 design-year traffic conditions.
- ♦ Signalized Intersection Performance – Will the interchange ramp terminals provide reasonable capacity throughout the north segment system based on expected peak-hour performance.
- ♦ Accommodate Growth & Economic Development – Will an alternative provide the transportation accessibility and mobility to sustain economic development and serve additional development in the South I-25 corridor.
- ♦ Constructability under Traffic – Expected difficulty in constructing the proposed improvements.
- ♦ Ability to Construct in Phases – Does the alternative facilitate programming projects in manageable-sized projects.
- ♦ Access Modifications from Existing – How different is direct access to and from the freeway from existing conditions and will the access plan meet driver expectation.
- ♦ Interchange Spacing & Traveler Guidance – Is reasonable ramp spacing provided based on the street system and can appropriate guide signing be provided.
- ♦ Estimated Costs (2016 dollars) – Based on the opinion of probable construction costs in Table 6-4.
- ♦ Right-of-Way/Property Impacts – The types of impacts and the magnitude of anticipated costs associated with property acquisitions to implement an alternative.
- ♦ Environmental Factors – Are there potential adverse environmental impacts associated with the implementation of an alternative.
- ♦ Stakeholder Support – Based on input received through the stakeholder and public involvement process.

**Exhibit 6-4, Illustrative Overview Evaluation Matrix**

Measure of Effectiveness	Build Alt B1: Braided Ramps	Build Alt B2: Closest to Existing	Build Alt B3: Collector- Distributor Roads	No Build
Key Design Considerations				
Multi-Modal Accommodations				
Freeway Traffic Performance				
Signalized Intersection Performance				
Accommodate Growth & Economic Dev.				
Constructability under Traffic				
Ability to Construct in Phases				
Access Modifications from Existing				
Interchange Spacing & Traveler Guidance				
Estimated Costs				
Right-of-Way/Property Impacts				
Environmental Factors				
Stakeholder Support				
<b>Overall Ranking</b>				
Ranking =			Worst	
			Best	

## Chapter 7, Preferred Alternative and Sequencing Plan

### INTRODUCTION

The purpose of the South I-25 Corridor Study is to identify improvements needed to maintain and enhance the operational performance of South I-25 for the long-term planning horizon, which is currently 2040 for the Albuquerque metro area. The limits of the study include the I-25 facilities from the NM 47/Broadway Boulevard interchange to the south side of the I-40/I-25 interchange.

Because the focus of this study is on the interstate highway corridor, improvements are specifically identified for I-25 and its interchanges. While the adjacent surface street system is a critical component of the transportation system in south-central Albuquerque, improvements to surface streets beyond the interchange areas are not identified by this study.

The preferred improvement strategy, the next steps for project development, and a construction sequencing plan are described in this chapter. This information will enable NMDOT and MRCOG to plan for long-term needs in the Metropolitan Transportation Plan (MTP) and to program near-term improvements in the Transportation Improvement Program (TIP) and Statewide Transportation Improvement Program (STIP). Because of the scale of the needs and the anticipated costs, phased implementation is anticipated.

### PREFERRED ALTERNATIVE

While significant improvements have been implemented and are ongoing in the South I-25 corridor, several deficiencies remain involving aging infrastructure, geometric design issues, namely the S-curve, and traffic operational and safety performance. Access to and from the interstate must be managed to appropriately accommodate existing and future development, and transportation systems management and operations (TSM&O) applications are needed to maximize the performance of the system. Further, improved bicycle and pedestrian crossings of the interstate and accommodations for public transportation improvements are also part of the South I-25 preferred improvement alternative.

The improvement approach for the South I-25 corridor was developed in two main segments south and north of Sunport Boulevard as follows:

- ♦ South Segment – NM 47/Broadway Boulevard interchange to the south side of the Sunport Boulevard interchange
- ♦ North Segment – from the south side of the Sunport Boulevard interchange to the south side of the I-40/I-25 interchange

One build alternative was evaluated for the south segment and three build alternatives were evaluated for the north segment. Alternatives in the north segment included: B1, the Braided Ramps concept; B2, the Closest to Existing concept; and B3, the Collector-Distributor Roads concept. Based on the engineering and environmental evaluations conducted, study team meeting discussions and considering stakeholder input, Alternatives B1 and B2 would perform similarly while the Alternative B3 concept was eliminated from further consideration because of property impacts and traffic performance concerns at the Gibson and Martin Luther King intersections. As such, the preferred alternative combines features of both Alternative B1 and Alternative B2.

The major aspects of the preferred alternative are described below, and conceptual design information is provided in [Appendix H](#).

### Mainline Lanes

A schematic lane diagram of the preferred alternative is provided in [Exhibit 7-1](#). South of the NM 47/Broadway interchange, I-25 is an existing four-lane freeway with two lanes in each travel direction and this section will remain a four-lane freeway. From the NM 47/Broadway interchange to the Rio Bravo interchange, a six-lane freeway will be provided. From the Rio Bravo interchange to the Sunport interchange, the existing six-lane freeway will be improved to an eight-lane freeway. Ramp-to-ramp auxiliary lanes are identified in both travel directions between NM 47/Broadway and Mesa del Sol, and in the northbound direction only from Bobby Foster to Rio Bravo and from Rio Bravo to Sunport. For the north segment, the existing six-lane freeway will be widened to an eight-lane freeway with auxiliary lanes incorporated including acceleration lanes, deceleration lanes and ramp-to-ramp auxiliary lanes.

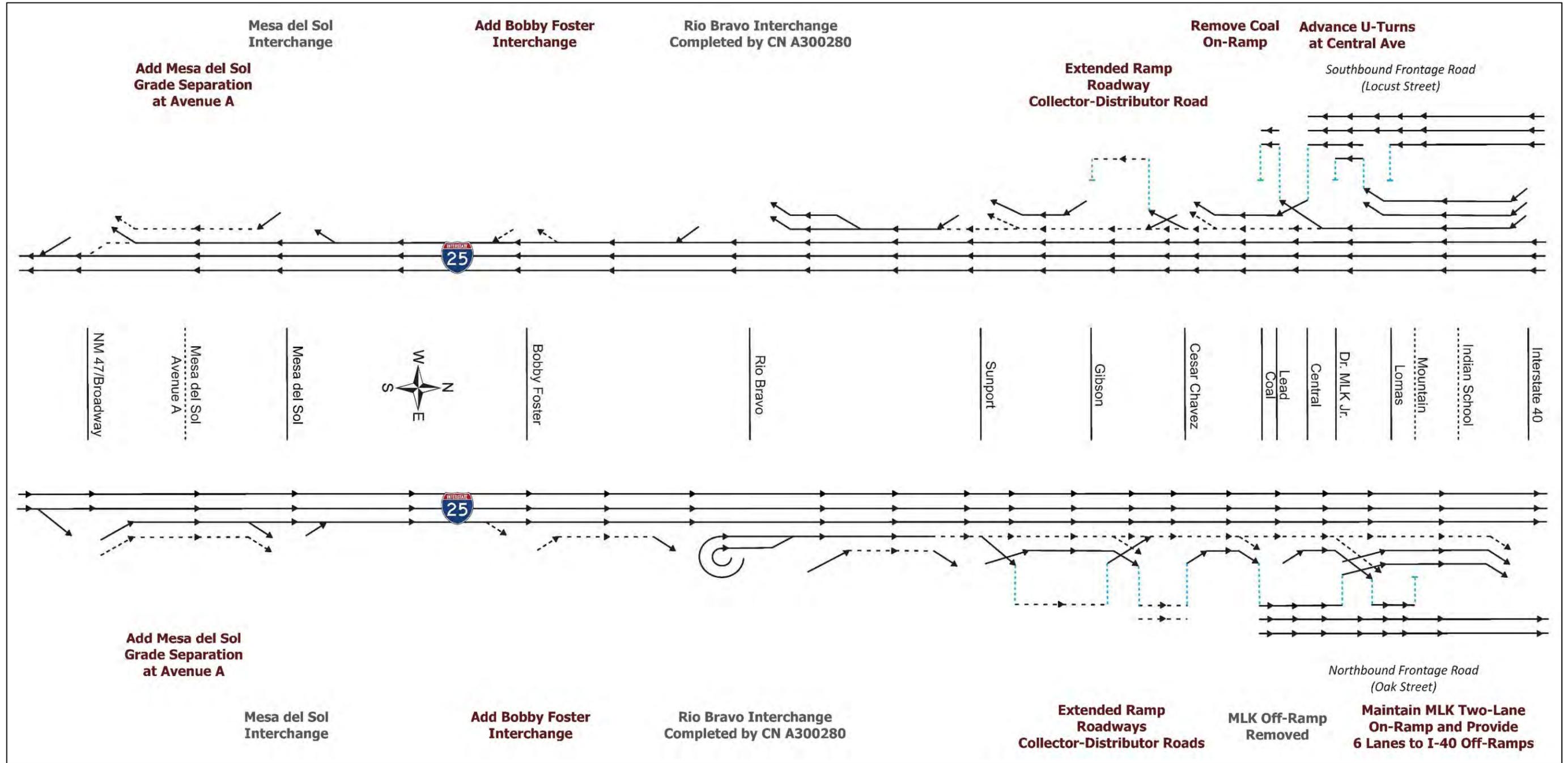
### Interchanges and Access Configurations

The interchange locations, configuration types and level of access provided are listed in [Table 7-1](#). Refer to [Chapter 2](#) for a description of diamond interchange types and [Appendix H](#) for plan view drawings.

**Table 7-1, Interchange Locations, Types and Level of Access Provided**

Arterial Cross Street	Interchange Type	Full or Partial Access	Northbound I-25 Ramps	Southbound I-25 Ramps
<b>South Segment</b>				
NM 47/Broadway Blvd	Existing Configuration	Full	1 lane exit 2 lane entrance	2 lane exit 1 lane entrance
Mesa del Sol Blvd	Compressed Diamond (DDI optional)	Full	2 lane exit 1 lane entrance	1 lane exit 1 lane entrance
Bobby Foster Rd	Compressed Diamond	Full	1 lane exit 1 lane entrance	1 lane exit 1 lane entrance
Rio Bravo Blvd	Offset Single Point	Full	1 lane exit 2 lane loop entrance E-N 1 lane entrance W-N	2 lane exit 1 lane entrance
<b>North Segment</b>				
Sunport Blvd	Tight Diamond	Full	1 lane exit 1 lane entrance	1 lane exit 2 lane entrance
Gibson Blvd	Tight Diamond	Full	1 lane exit, braided with C-D Road 1 lane entrance	1 lane exit, braided with C-D Road 1 lane entrance
Ave Cesar Chavez	Tight Diamond	Full	2 lane exit, braided with C-D Road 1 lane entrance	2 lane exit 1 lane entrance
Coal Ave	Tight Diamond Configuration	Partial	2 lane exit	No direct access
Lead Ave	Tight Diamond Configuration	Partial	1 lane entrance	1 lane exit
Central Ave	Tight Diamond Configuration	Partial	No direct access, advance U-turn N-S	1 lane entrance, braided
MLK Ave	Tight Diamond Configuration	Partial	2 lane entrance	2 lane exit
Lomas Blvd	Compressed Diamond Configuration	Partial	2 lane exit	1 lane exit located within I-40/I-25 interchange

Exhibit 7-1, Schematic Lane Diagram of the Preferred Alternative



Preliminary *Interchange Access Management Plans* (IAMP) were prepared for the following interchanges to provide additional guidance on existing and future access conditions and land use along the arterial street within the vicinity of its proposed interchange with I-25:

- ♦ I-25/Mesa del Sol Boulevard
- ♦ I-25/Bobby Foster Road
- ♦ I-25/Gibson Boulevard
- ♦ I-25/Avenida Cesar Chavez

An IAMP is a planning-level document intended to document how access should be managed along the arterial cross street to serve adjacent land use while considering the traffic and safety conditions at the interchange. It also provides guidance for state and local jurisdictions when land use changes are being considered near I-25. These preliminary IAMP documents are included on the [attached CD](#).

### Grade Separations

Locations of existing and proposed grade separations where access is not provided to I-25 include:

- ♦ South Segment
  - Avenue A – proposed overpass
- ♦ North Segment
  - Mountain Road – existing underpass
  - Indian School Road – existing overpass

### Service Roads

Service roads include frontage roads, which provide access to adjacent properties, and collector-distributor (C-D) roads, which are controlled-access roadways that facilitate movements on and off the mainline freeway. There are no service roads proposed in the south segment. In the north segment, Oak Street and Locust Street are existing frontage roads between Coal Avenue and the north study limits. Locust Street is discontinuous between Central Avenue and Lead Avenue. As shown in [Exhibit 7-1](#), C-D roads are provided northbound between Sunport and Gibson and between Gibson and Cesar Chavez. Southbound, a C-D road is provided between Cesar Chavez and Gibson.

The preferred alternative includes a cul-de-sac on Oak Street south of Coal Avenue to eliminate local access to an interstate ramp roadway. Traffic would redistribute to Mulberry Street or Cedar Street.

### Bicycle and Pedestrian

Bicycle and pedestrian accommodations are included in the preferred alternative, which may be developed as independent projects or projects implemented as part of interchange upgrades. Within the interchange areas, 10-foot sidewalks with 5-foot buffers were included where possible.

Existing and/or proposed bicycle facilities crossing the South I-25 corridor include:

- ♦ Mesa del Sol Boulevard: bicycle lanes and multi-use trail
- ♦ Bobby Foster Road: bicycle lanes
- ♦ Tijeras Arroyo: multi-use trail
- ♦ Rio Bravo Boulevard: bicycle lanes/shoulder and multi-use trail
- ♦ Railroad underpass: multi-use trail
- ♦ Sunport Boulevard: bicycle lanes/shoulder
- ♦ Gibson Boulevard: bicycle lanes and a multi-use trail on east side only
- ♦ Avenida Cesar Chavez: bicycle lanes

- ♦ Lead and Coal Avenues: bicycle lanes
- ♦ Silver Avenue: bicycle boulevard on either side of I-25, cycle track or other dedicated bicycle facility along the north side of Lead Avenue to cross I-25
- ♦ Martin Luther King Avenue: bicycle lanes
- ♦ Indian School Road: bicycle lanes

### Public Transportation

Accommodations for public transportation improvements include the Albuquerque Rapid Transit (ART) crossing along Central Avenue; providing dedicated transit lanes in the proposed I-25/Mesa del Sol interchange; accommodating ABQ Ride’s conventional transit service across all interstate crossings; and improving overall traffic performance across all interstate crossings that would benefit transit operating in mixed flows. In addition, the New Mexico Rail Runner provides a *separated* public transportation system adjacent to the South I-25 corridor.

### TSM&O

As part of the management of the existing and future South I-25 infrastructure investments and to enhance freeway operations, safety and mobility, TSM&O applications will be included that are consistent with the regional ITS Infrastructure Plan. In addition to existing ITS facilities, at a minimum, improved traveler information systems, communications improvements and additional traffic monitoring devices in support of NMDOT ITS and MRCOG Traffic Monitoring activities should be included.

### Right-of-Way Impacts

A summary of the right-of-way assessment for the preferred alternative is provided in [Table 7-2](#). Within the south segment, most of the new right-of-way needed for the improvements involves lands of the Mesa del Sol Planned Community development. The land needed for the Mesa del Sol interchange and for the east side of the Avenue A grade separation should be dedicated without cost to the pertinent highway jurisdictions because they directly serve the needs of the development. Private property will be needed for the Avenue A grade separation from Broadway to I-25. Private property will also be needed on the east side of I-25 for the Bobby Foster interchange. The NMDOT and Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) own the other lands needed for the Bobby Foster interchange.

For the north segment, design refinements were used to reduce the right-of-way impacts associated with the proposed improvements while satisfying acceptable design criteria (e.g., retaining walls, 11-foot lanes on arterials, alignment shifts). The following right-of-way impacts should be expected for the north segment:

- ♦ Private property impacts are primarily slivers of frontage or undeveloped lands. Impacts to existing structures are not expected.
- ♦ Albuquerque Public Schools property is impacted but should not result in building impacts or site circulation impacts.
- ♦ AMAFCA property east of I-25 is utilized adjacent to the South Diversion Channel for the Cesar Chavez northbound off-ramp, and for sidewalk improvements on Cesar Chavez crossing the South Diversion Channel.
- ♦ City of Albuquerque property is needed adjacent to the Gibson southbound off-ramp and C-D Road on the west side of I-25 between Cesar Chavez and Gibson including impacts to Dennis Chavez park.

### Estimates of Probable Costs

An estimate of probable costs for the south and north segments is provided in [Table 7-3](#) and additional detail is included in [Appendix I](#). The cost estimate is based on 2016 dollars. For the south segment, the cost was developed

considering the recent reconstruction project with new lanes added per the proposed improvement plan and mainline reconstruction for the remainder of the segment. Note that the development-driven interchange and grade separation projects are accounted for separately for the south segment. These are projects that will be required when planned land developments are implemented to a stage that affects the function of the interstate and/or new interstate access is desired. Private entity and local governmental participation in project funding is expected to be needed for the development-driven interchange and grade-separation improvements.

The estimated cost for the north segment is based on a single construction project. As indicated later in this chapter in the construction sequencing discussion, phased-implementation would result in higher costs to implement the preferred alternative improvements.

**Table 7-2, Right-of-Way Assessment for the Preferred Alternative**

Item Description	South Segment Area / Cost	North Segment Area / Cost
<b>Private Property to be Dedicated</b>		
Right-of-Way (Area In Sq. Ft.)	1,293,042	0
Right-of-Way (Area In Acres)	29.68	0
<i>Estimated Cost Subtotal</i>	<i>\$0</i>	<i>\$0</i>
<b>Private Property to be Acquired</b>		
Right-of-Way (Area In Sq. Ft.)	140,362	55,047
Right-of-Way (Area In Acres)	3.22	1.26
Approx. # of Building Impacts	None	None
<i>Estimated Cost Subtotal</i>	<i>\$1,403,700</i>	<i>\$1,101,000</i>
<b>Albuquerque Public Schools Property</b>		
Right-of-Way (Area In Sq. Ft.)	0	4,726
Right-of-Way (Area In Acres)	0	0.11
<i>Estimated Cost Subtotal</i>	<i>\$0</i>	<i>\$165,500</i>
<b>City of Albuquerque Property</b>		
License Agreements (Area In Sq. Ft.)	0	54,235
License Agreements (Area In Acres)	0	1.25
<i>Estimated Cost Subtotal</i>	<i>\$0</i>	<i>\$0</i>
<b>AMAFCA Property</b>		
License Agreements (Area In Sq. Ft.)	90,937	64,866
License Agreements (Area In Acres)	2.09	1.49
<i>Estimated Cost Subtotal (@ \$5/S.F.)</i>	<i>\$454,700</i>	<i>\$324,400</i>
<b>Total Estimated Right-of-Way Cost</b>	<b>\$1,858,400</b>	<b>\$1,590,900</b>
<b>USE FOR RIGHT-OF-WAY COST ESTIMATE</b>	<b>\$1,900,000</b>	<b>\$1,600,000</b>

**Table 7-3, Opinion of Probable Construction Costs for the Preferred Alternative (2016 dollars)**

Item Description	South Segment	North Segment
ROADWAY	\$2,300,000	\$19,145,000
DRAINAGE	\$500,000	\$10,900,000
BRIDGE	\$1,500,000	\$33,837,000
RETAINING WALLS	\$400,000	\$28,273,000
PERMANENT SIGNING & LIGHTING	\$4,000,000	\$8,425,000
SIGNALIZATION	\$0	\$2,500,000
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE	\$174,000	\$2,062,000
BICYCLE & PEDESTRIAN FACILITIES	\$174,000	\$2,062,000
ACCOMMODATION FOR FUTURE ITS	\$305,000	\$2,062,000
<b>SUBTOTAL</b>	<b>\$9,353,000</b>	<b>\$109,266,000</b>
CONSTRUCTION ENGINEERING	\$1,914,000	\$22,677,600
<b>SUBTOTAL</b>	<b>\$11,267,000</b>	<b>\$131,943,600</b>
CONTINGENCY (35%)	\$3,943,450	\$46,180,260
<b>BASELINE COST</b>	<b>\$15,210,450</b>	<b>\$178,123,860</b>
STUDY & DESIGN (10%)	\$1,521,045	\$17,812,386
CONSTRUCTION MANAGEMENT (10%)	\$1,521,045	\$17,812,386
<b>SUBTOTAL</b>	<b>\$18,252,540</b>	<b>\$213,748,632</b>
NM GROSS RECEIPTS TAX (7.3125%)	\$1,334,717	\$15,630,339
<b>TOTAL COST</b>	<b>\$19,587,257</b>	<b>\$229,500,000</b>
<b>USE FOR SEGMENT TOTALS</b>	<b>\$19,700,000</b>	<b>\$230,000,000</b>
<b>INTERCHANGE PROJECTS (SOUTH SEGMENT)</b>		
<i>Construction of Avenue A <sup>1</sup></i>	\$15,000,000	
<i>Mesa del Sol Blvd. Interchange <sup>1</sup></i>	\$35,000,000	
<i>Bobby Foster Road Interchange <sup>2</sup></i>	\$20,000,000	
<i>Rio Bravo Blvd. Interchange <sup>3</sup></i>	\$48,900,000	
NM Gross Receipts Tax (7.3125%)	\$8,700,000	
<b>TOTAL ADDITIONAL COST FOR INTERCHANGES</b>	<b>\$127,600,000</b>	
<b>ESTIMATED RIGHT-OF-WAY COST (see Table 7-2)</b>	<b>\$1,900,000</b>	<b>\$1,600,000</b>

1) Possible funding through developer/City project, not included in segment total  
 2) Possible funding through developer/County project, not included in segment total  
 3) Current NMDOT project, not included in segment total

## NEXT STEPS FOR PROJECT DEVELOPMENT

Based on the findings of this Highway Improvement Plan effort, NMDOT and MRCOG should begin to plan and program projects to improve the South I-25 freeway and interchanges. This may require amendments to the existing approved TIP/STIP and will depend on funding availability within the fiscally-constrained *Futures 2040 Metropolitan Transportation Plan*. Part of the planning and programming deliberations should include acknowledgement of the anticipated funding sources for the development-driven improvements in the south segment including the role of private entities, the City of Albuquerque and Bernalillo County as well as what the NMDOT participation would entail. Also, activities to plan and program multi-use trail crossings that are independent of freeway and interchange improvement projects should be undertaken by local governments in cooperation with NMDOT, AMAFCA and MRCOG.

### Supplemental Phase IB Efforts

While this document establishes the overall improvement approach for the South I-25 corridor at a conceptual level, as specific projects are programmed and subsequently developed, a supplemental Phase IB report should be developed to refine design elements such as intersection or ramp geometry. A supplemental Phase IB report may also be required to address a change in the design year associated with the MRCOG metropolitan transportation plan update cycle.

### Federal Policy Requirements

Two Federal policies for transportation improvement projects must be addressed as part of the project development process to obtain approval for final design, right-of-way acquisition, and construction. The first involves National Environmental Policy Act (NEPA) procedures, which are required for all federally-funded projects. The second is the FHWA/NMDOT policy for the preparation of an Interstate Access Change Request (IACR) report, which is required when access to an interstate highway is modified or new access is proposed. The two processes can be performed concurrently, however final approval of the IACR is contingent on approval of the NEPA and planning processes.

Because of the capital investment required by the proposed improvements, phased implementation is anticipated. Each phase will be defined with logical termini and independent utility consistent with NEPA requirements. The level of NEPA documentation for individual phases or projects will depend on the proposed action for which environmental clearance is requested. A categorical exclusion (CE) may be sufficient for right-of-way acquisition as well as an interchange reconstruction project. An environmental assessment (EA) may be required if environmentally sensitive impacts are possible. If it is determined that significant environmental impacts would occur, then an environmental impact statement (EIS) may be needed.

Individual environmental documents are anticipated for improvements within the south segment. However, because of the complexities in the north segment, an environmental document may be required for proposed improvements from Sunport Boulevard through Lomas Boulevard regardless of how individual projects are defined within this portion of the corridor.

A similar approach is probable for the IACR. For the south segment interchanges, an IACR for each interchange may be sufficient that addresses traffic performance at the first adjacent interchange on either side of the subject interchange. However, because of the close interchange/access spacing in the north segment, an IACR may be required from the Sunport interchange to I-40. The north segment IACR may also need to address phased implementation depending on the duration of construction.

## PROPOSED SEQUENCE OF CONSTRUCTION

As indicated previously, the proposed improvements will require a substantial capital investment and are expected to be implemented in phases over time. There are several approaches that could be utilized to phase and prioritize the identified improvements. In general, the south segment is a lower priority than the north segment particularly once the Rio Bravo interchange reconstruction is completed. Because of the complexities with reconstructing the S-curve, once construction begins it may be difficult to stop until the segment from the Avenida Cesar Chavez interchange to the MLK interchange is complete. The S-curve and associated facilities are considered the highest priority in the South I-25 corridor.

A construction sequencing plan is described below and is illustrated in [Exhibit 7-2](#) (on [page 7-8](#)). This approach was developed based on a cost per phase ranging from \$10 to \$50 million to facilitate programming the identified improvements. The costs include design and construction based on 2016 dollars. Breakdowns of the conceptual opinion of probable costs by construction phase are provided in [Appendix J](#). Right-of-way costs are not included.

### South Segment

The improvements to I-25 south of Sunport Boulevard of primary interest to the NMDOT will generally include widening the existing pavement and bridges, extending drainage structures, and making improvements associated with future TSM&O/ITS requirements. Because most of this work will be at the edge of the existing pavement, there is no need for specific construction sequencing. Traffic control for these improvements will be limited to standard lane closures associated with widening projects. This work could be divided into multiple construction contracts, based on available funding and does not include specific interchange projects. The opinion of probable construction costs for the NMDOT portion of the south segment of I-25, in 2016 dollars, is \$20 million.

The south segment improvements also include new interchanges and a new grade separation but these are considered to be development-driven projects of primary interest to private entities and local governments including the City of Albuquerque and Bernalillo County. As such, the Mesa del Sol and Bobby Foster interchanges and the Avenue A grade separation should be locally and privately funded for the entire project development cycle from study/design through construction, including construction phase services. Excluding the Rio Bravo interchange, the opinion of probable construction costs for the development-driven projects in the south segment, in 2016 dollars, is \$75 million.

A suggested prioritization for the south segment is as follows:

1. **Northbound I-25, north of Rio Bravo:** Initial project to get a fourth lane to Sunport off-ramp. After improvements are made in the north segment, extend four lanes through Sunport and add an auxiliary lane between Rio Bravo and Sunport off-ramp.
2. **Southbound I-25, north of Rio Bravo:** Initial project to get a fourth lane from the Sunport on-ramp to the Rio Bravo off-ramp. Extend four lanes through Sunport when improvements are made in the north segment.
3. **Southbound NM 47/Broadway to Isleta Lakes Road:** This was identified as a near-term improvement and could be implemented any time (Phase IA estimate was \$410k). Northbound from Isleta Lakes Road to I-25 may not be needed until the Mesa del Sol interchange is constructed and could be included in #5 below.
4. **Mesa del Sol Interchange:** The City of Albuquerque established requirements through their land development planning process that dictate when the Mesa del Sol (MDS) interchange should be implemented, and traffic at the Rio Bravo interchange will be monitored to aid this decision. The MDS interchange includes reconstruction of I-25 including changing the profile grade by 16 feet. The reconstruction of I-25 included in the interchange project would not span the segment from NM 47/Broadway to the existing six-lane section, which could result in two scenarios:
  - a) The MDS interchange is constructed and NMDOT completes a short segment of mainline widening, including auxiliary lanes between NM 47/Broadway and the MDS interchange south side ramps.



- b) The MDS interchange is not a priority because of slower than expected growth and NMDOT identifies the need to widen from NM 47/Broadway to the existing six-lane section for improved lane continuity and performance of the NM 47/Broadway interchange.
- 5. **I-25 Widening, NM 47/Broadway to Existing Six-Lane Section:** The recently widened six-lane freeway section will open once the Rio Bravo interchange is reconstructed. From scenario b) above, if the MDS interchange is not needed and traffic growth from Valencia County increases substantially, NMDOT may decide to extend the six-lane freeway from the NM 47/Broadway north-side ramps to the existing widened pavement section rather than wait for the MDS interchange project to reconstruct their segment of I-25.
- 6. **Bobby Foster interchange:** This could be developed whenever private and local funding sources are committed.
- 7. **Avenue A Grade Separation:** This is dependent on the Mesa del Sol development.
- 8. **Northbound Auxiliary Lane, Bobby Foster On-Ramp to Rio Bravo Off-Ramp:** This is considered a long-term improvement and the need for it should be verified after substantial development has occurred. This is a low priority and likely depends on how much growth occurs in Mesa del Sol.

- Construct temporary ramp connections.
- May be broken into numerous projects depending upon available funding, primarily bridges as individual projects.
- Estimated cost is \$45 million.

**Project 1C-Complete NB mainline construction through downtown area**

- Construct new NB mainline and bridges from the Coal off-ramp, Sta. 2115+00, to Lomas Boulevard.
- Includes NB (east side) bridges at Coal, Lead, Central, and MLK.
- Construct temporary ramp connections.
- Estimated cost is \$30 million.

**Project 2-Construct SB ramps and C-D roads**

- Construct permanent ramps from MLK to Sunport Boulevard and the C-D road from ACC to Gibson.
- Includes new Gibson braided off-ramp at ACC.
- Temporary connections to I-25 and Gibson Boulevard off-ramp will be required.
- Locust Street improvements not included.
- Estimated construction cost is \$16 million.

**Project 3-Construct NB ramps and C-D roads**

- Construct ramps from Sunport Boulevard to MLK and the C-D roads from Sunport to Gibson and Gibson to ACC.
- Temporary connections to I-25 and Gibson Boulevard will be required.
- Oak Street improvements not included.
- Estimated construction cost is \$30 million.

**Project 4-Construct Gibson Boulevard interchange**

- Construct new Gibson Boulevard interchange and permanent ramp connections.
- Estimated cost is \$25 million.

**Project 5-Improvements to Avenida Cesar Chavez**

- Construct ACC interchange improvements and permanent ramp connections.
- Estimated construction cost is \$15 million.

**Project 6-Complete NB and SB mainline, Sta. 1980+00 to Sta. 2088+00**

- Complete widening of NB and SB mainline from Sta. 1980+00 to Sta. 2088+00.
- Construct permanent ramp connections.
- Estimated cost is \$25 million.

**Project 7-Downtown frontage roads**

**Project 7A-NB Downtown frontage roads (Oak Street)**

- Construct NB frontage road from Coal Avenue to MLK Avenue.
- Includes improvements to the arterial street intersections.
- May be broken into numerous projects depending upon available funding.
- Estimated cost of full re-construction of the NB frontage roads/ramps/local streets is \$11 million.

Approximate Station Locations
BOP – Sta. 1650+00
Avenue A – Sta. 1700+00
Mesa del Sol Blvd – Sta. 1740+00
Bobby Foster Rd – Sta. 1830+00
Rio Bravo Blvd – Sta. 1920+00
Sunport Blvd – Sta. 2010+00
Gibson Blvd – Sta. 2050+00
Ave Cesar Chavez – Sta. 2090+00
South of Coal Ave – Sta. 2115+00
Lead/Coal Avenues – Sta. 2125+00
Central Ave – Sta. 2140+00
MLK Ave – Sta. 2150+00
Lomas Blvd – Sta. 2170+00
Mountain Rd – Sta. 2180+00
I-40 NB Off Ramps – Sta. 2200+00
EOP – Sta. 2210+00

**North Segment**

The S-curve and associated facilities is considered the highest priority in the South I-25 corridor. However, there is a second phase to the I-25/Rio Bravo interchange reconstruction project to provide four lanes in each direction through the Sunport interchange (this falls within both the south and north segments). The fourth lane could terminate at the Sunport south-side ramps or tie into the existing auxiliary lane on the north side of the Sunport interchange.

Improvements beyond that to satisfy the requirements of the Rio Bravo interchange IACR commitment may be lost due to reconfiguration such as braiding the northbound Gibson off-ramp and Sunport on-ramp. Overall, investments further north at the S-curve and downtown areas are a higher priority so the fourth lane associated with the Rio Bravo interchange improvements should terminate at the Sunport south-side ramps.

A suggested construction sequencing plan for the north segment is described below. While not specifically included in the sequencing plan, right-of-way acquisition will be needed and should be included in programmed funding amounts according to specific project needs. Table 7-4 provides a summary of the north segment sequencing plan.

**Project 1- Mainline Reconstruction, S-Curve**

**Project 1A-Northbound (NB) mainline reconstruction to downtown area**

- Construct new Avenida Cesar Chavez (ACC) NB and SB bridges.
- Shift NB via a median crossover to a two-way detour on the SB lanes at Sta. 2088+00, just south of ACC.
- Widen and construct new NB lanes on the mainline from Sta. 2088+00 to the new Coal off-ramp at Sta. 2115+00 (approx. 0.5 miles).
- Construct temporary ramp connections.
- May be broken into several projects depending upon available funding.
- Estimated cost is \$23 million.

**Project 1B-Southbound (SB) mainline reconstruction**

- Widen and construct new SB lanes and SB bridges on the mainline from MLK, Sta. 2159+00, to south of ACC at Sta. 2088+00 (approx. 1.3 miles).
- Widening can occur off-line from MLK to Coal on the west-side of I-25.
- Shift SB traffic via a median crossover to a two-way detour on the NB lanes at Lead/Coal, Sta. 2125+00.
- Includes Central/Lead braided SB ramps, and closure of Coal SB on-ramp.
- Includes SB (west side) bridges at Coal, Lead, Central, and MLK.

**Project 7B-SB Downtown frontage roads (Locust Street)**

- Construct SB frontage road from MLK Avenue to Coal Avenue.
- Includes improvements to the arterial street intersections.
- May be broken into numerous projects depending upon available funding.
- Estimated cost of full re-construction of the SB frontage roads/ramps/local streets is \$11 million.

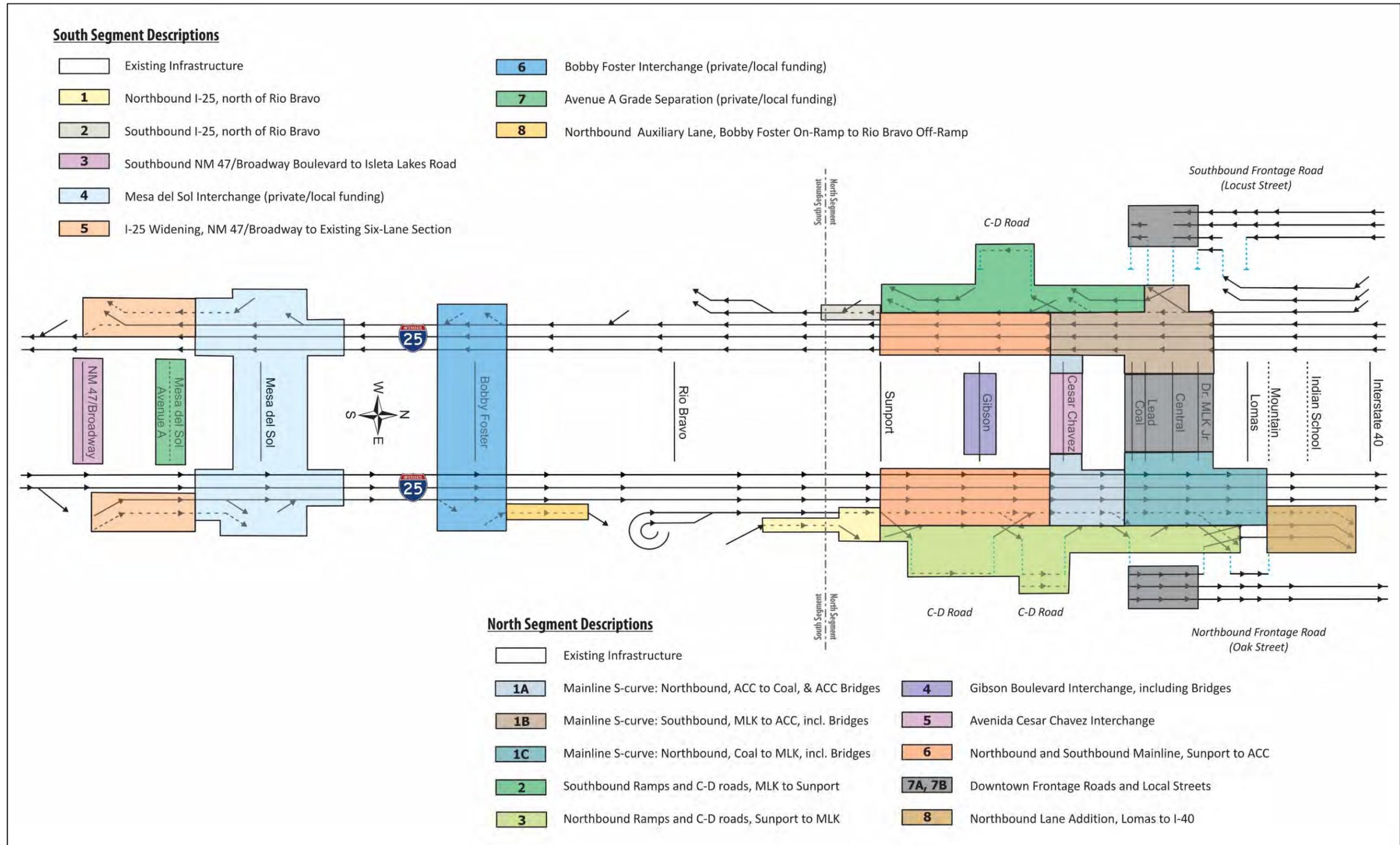
**Project 8-Complete NB lane addition construction on north end**

- Complete widening of NB I-25 from Lomas Boulevard, approx. Sta. 2173+00, to EOP Sta. 2214+50, to provide a sixth lane within this section.
- Estimated cost is \$15 million.

**Table 7-4, Summary of Construction Phasing Cost Estimates for the North Segment**

Projects by Recommended Sequencing (concept level)	Estimated Cost (2016 dollars)
Project 1- Mainline reconstruction-S-Curve	
Project 1A-NB mainline reconstruction to downtown area	\$23 million
Project 1B-Southbound (SB) mainline reconstruction	\$45 million
Project 1C-Complete NB mainline construction through downtown area	\$30 million
Project 2-Construct SB ramps and C-D roads	\$16 million
Project 3-Construct NB ramps and C-D roads	\$30 million
Project 4-Construct Gibson Boulevard interchange	\$25 million
Project 5-Improvements to Avenida Cesar Chavez	\$15 million
Project 6-Complete NB and SB mainline, Sta. 1980+00 to Sta. 2088+00	\$25 million
Project 7-Downtown frontage roads	
Project 7A-NB Downtown frontage roads (Oak Street)	\$11 million
Project 7B-SB Downtown frontage roads (Locust Street)	\$11 million
Project 8-Complete NB lane addition construction on north end	\$15 million
<b>Total Opinion of Probable Construction Cost for North Segment</b>	<b>\$246 million</b>

Exhibit 7-2, Construction Sequencing Plan for the Preferred Alternative





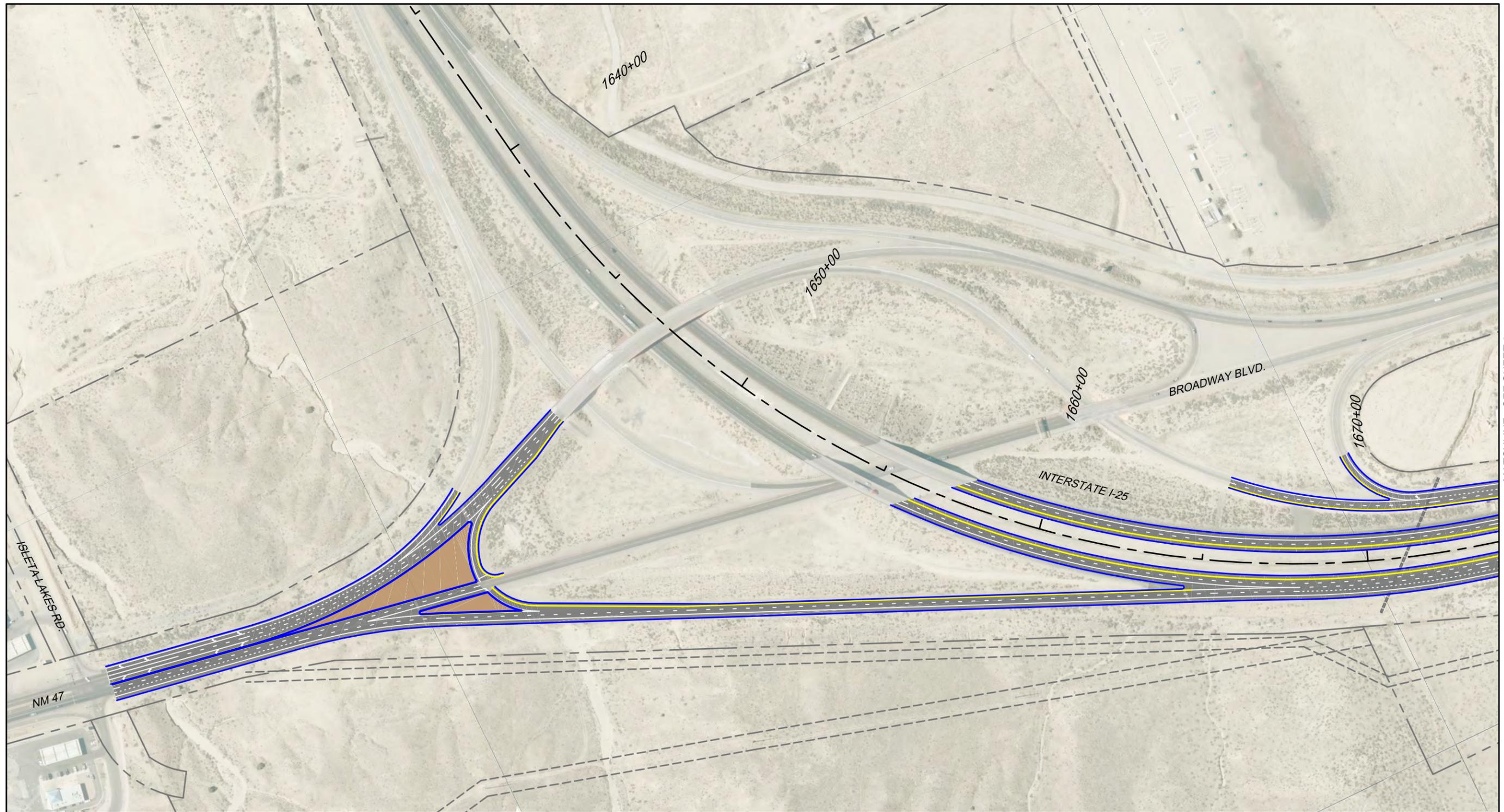
## APPENDICES

- Appendix A**    **Conceptual Design Plans for the South Segment Build Alternative**
- Appendix B**    **Conceptual Design Plans for Build Alternative B1**
- Appendix C**    **Conceptual Design Plans for Build Alternative B2**
- Appendix D**    **Conceptual Design Plans for Build Alternative B3**
- Appendix E**    **Existing Condition Traffic Volumes**
- Appendix F**    **Freeway Facilities Analysis Summary Tables**
- Appendix G**    **Conceptual Opinion of Probable Costs for the Build Alternatives**
- Appendix H**    **Conceptual Design Plans for the Preferred Alternative**
- Appendix I**    **Conceptual Opinion of Probable Costs for the Preferred Alternative**
- Appendix J**    **Conceptual Opinion of Probable Costs for Construction Sequencing**

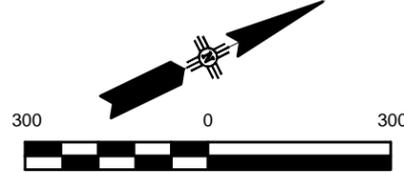
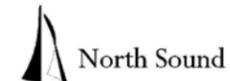


## Appendix A

### Conceptual Design Plans for the South Segment Build Alternative



MATCHLINE - SEE SHEET 2



SCALE: 1"=300'  
**CONCEPTUAL  
 NOT FOR CONSTRUCTION**

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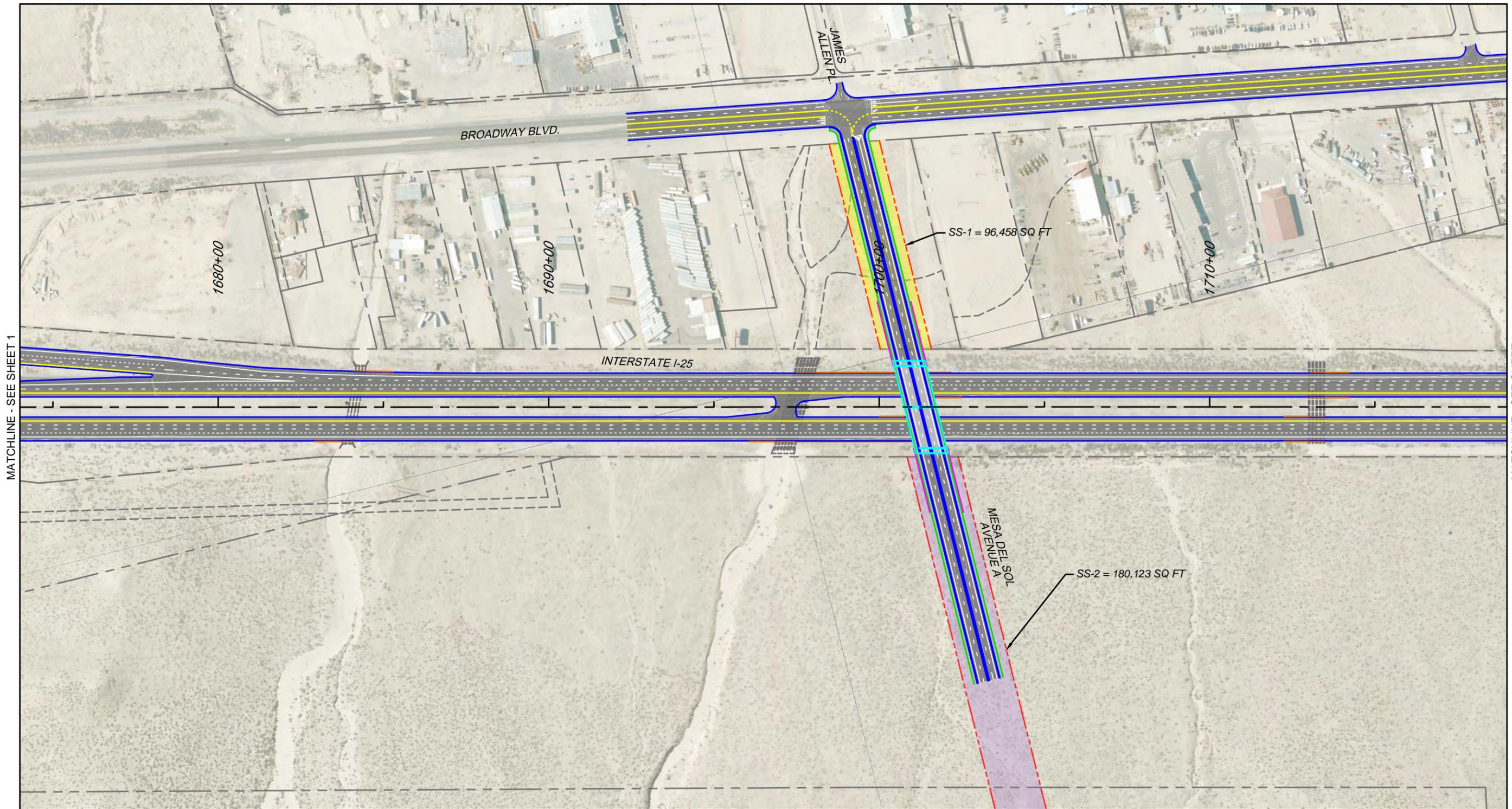
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	LANDSCAPE AREA		AMAFCA
	RETAINING WALL		CITY OF ALBUQUERQUE
	CONCRETE WALL BARRIER		MESA DEL SOL
	SIDEWALK/PEDESTRIAN PATH		NMDOT
	PAVEMENT EDGE / CURB		LIMITS OF REQUIRED R/W
	PARCEL LINES / R.O.W.		

**KEY MAP**



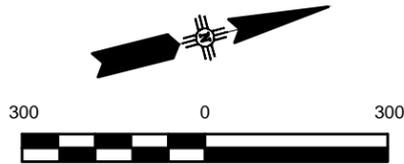
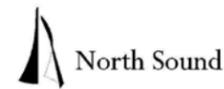
**SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS**

**INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 SOUTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS  
 BUILD ALTERNATIVE**



MATCHLINE - SEE SHEET 1

MATCHLINE - SEE SHEET 3



SCALE: 1"=300'

CONCEPTUAL  
NOT FOR CONSTRUCTION

**LEGEND**

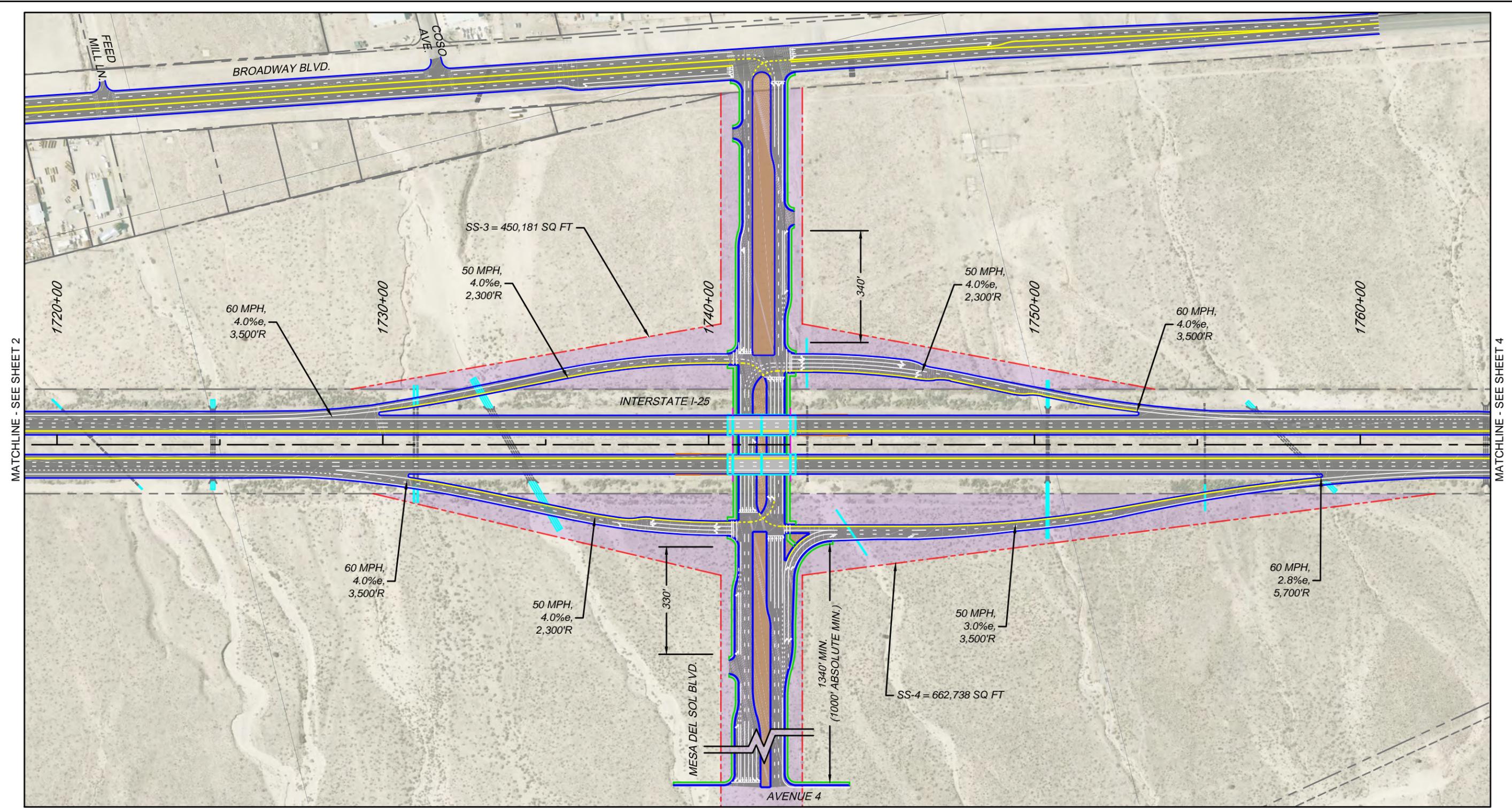
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	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
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**KEY MAP**



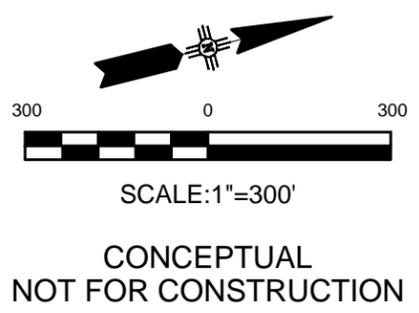
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INTERSTATE 25  
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SOUTH SEGMENT - PLAN LAYOUT  
AND RIGHT OF WAY IMPACTS  
BUILD ALTERNATIVE

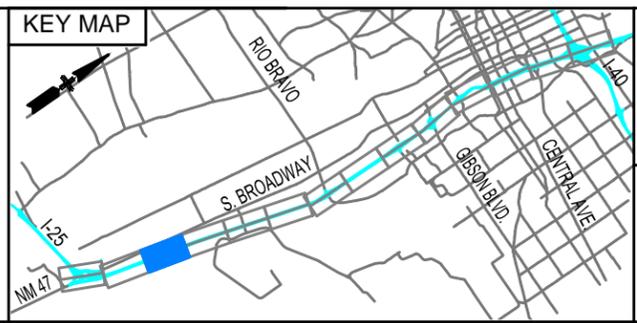


MATCHLINE - SEE SHEET 2

MATCHLINE - SEE SHEET 4



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	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
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	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		

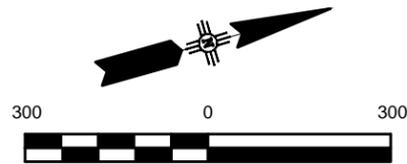
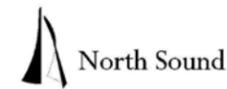
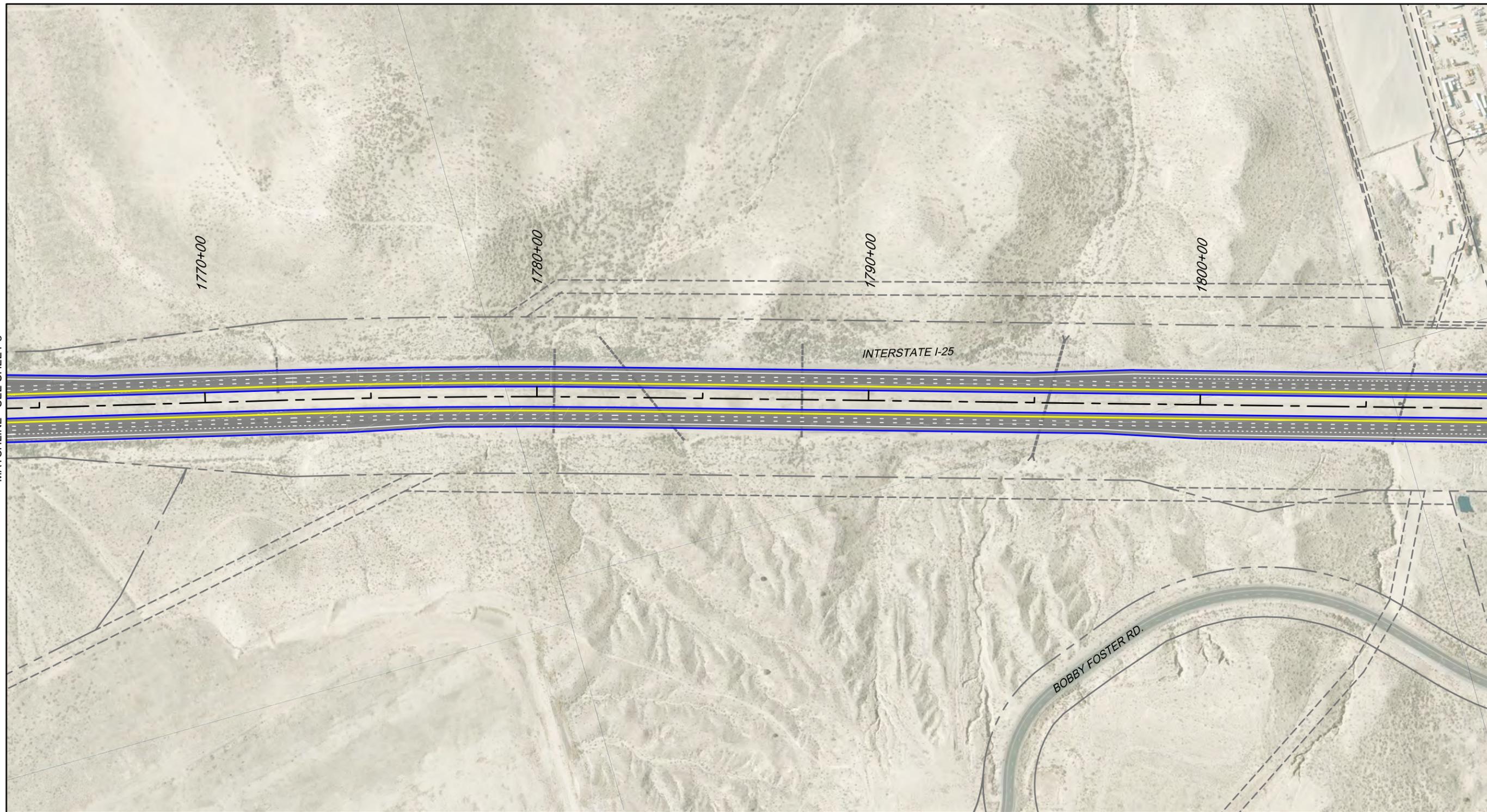


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INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
SOUTH SEGMENT - PLAN LAYOUT  
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BUILD ALTERNATIVE

MATCHLINE - SEE SHEET 3

MATCHLINE - SEE SHEET 5



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CONCEPTUAL  
NOT FOR CONSTRUCTION

LEGEND

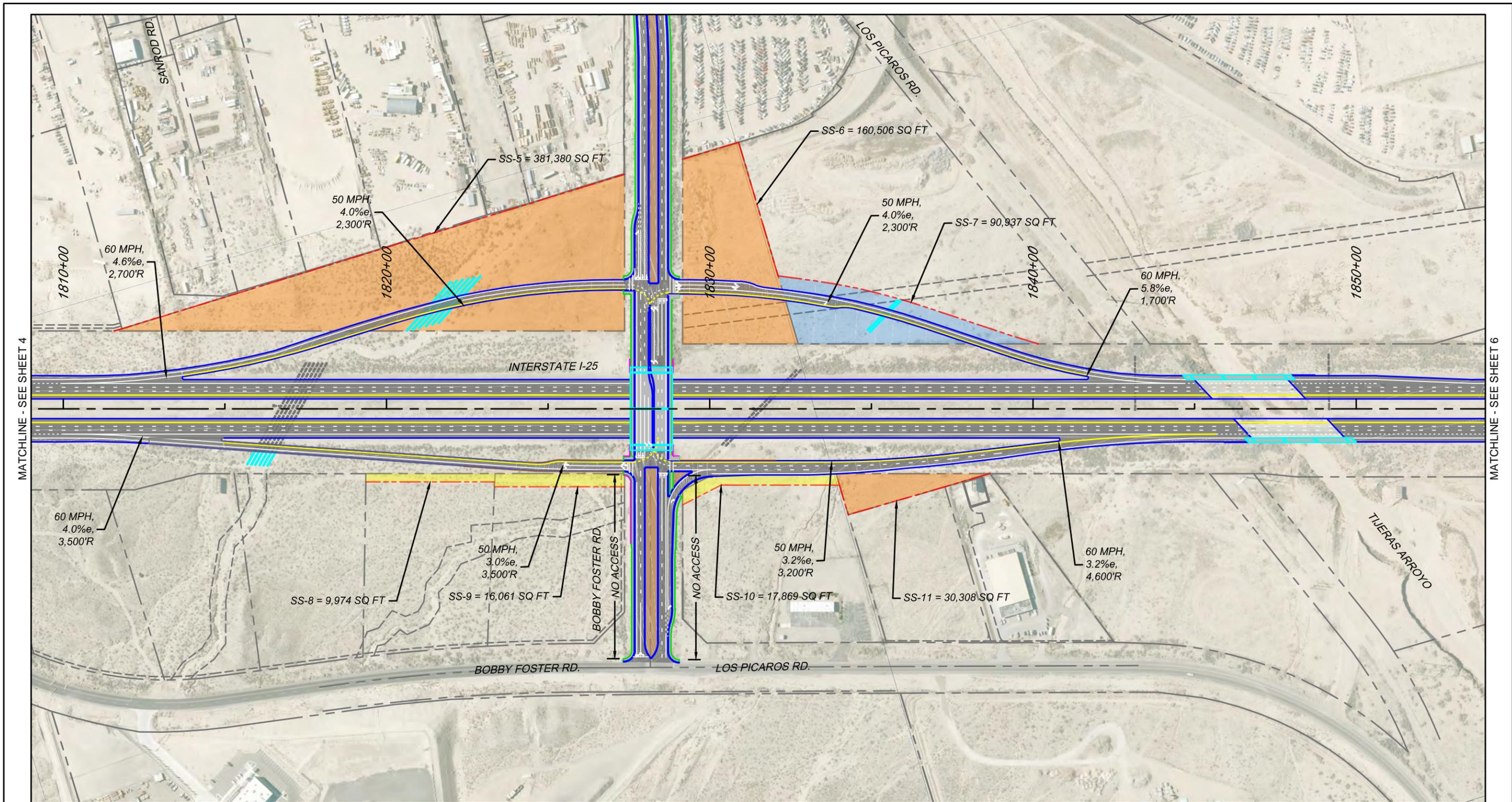
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	CONCRETE WALL BARRIER		MESA DEL SOL
	SIDEWALK/PEDESTRIAN PATH		NMDOT
	PAVEMENT EDGE / CURB		LIMITS OF REQUIRED R/W
	PARCEL LINES / R.O.W.		

KEY MAP



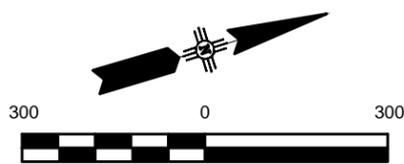
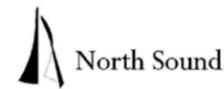
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MATCHLINE - SEE SHEET 4

MATCHLINE - SEE SHEET 6



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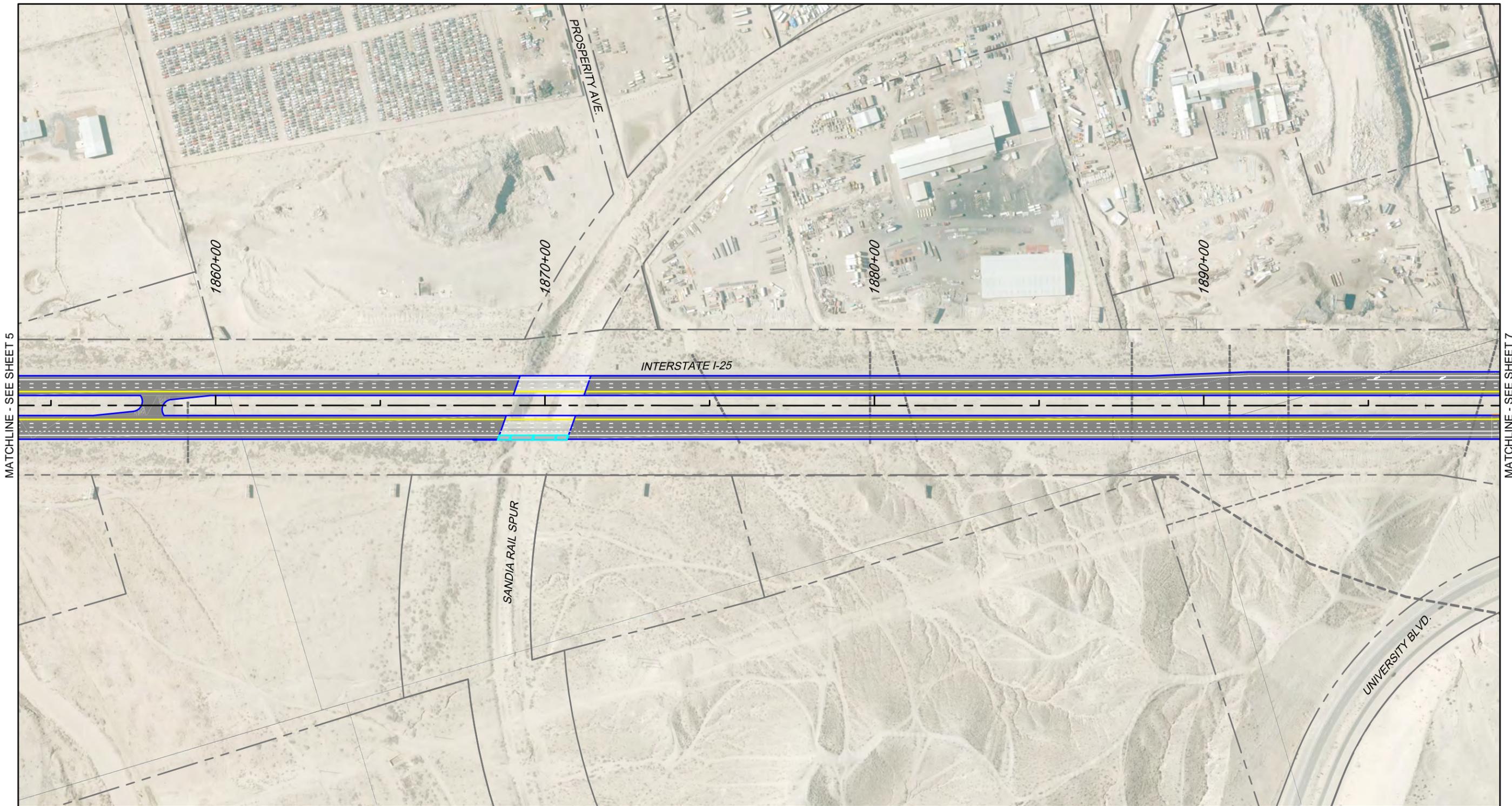
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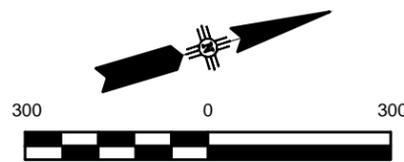
**SOUTH I-25  
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 NM 47/BROADWAY BLVD. TO I-40  
 SOUTH SEGMENT - PLAN LAYOUT  
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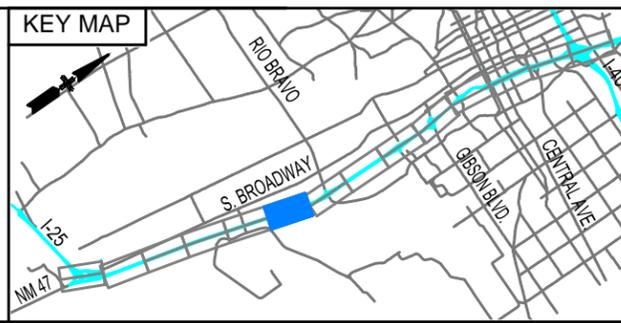
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MATCHLINE - SEE SHEET 7



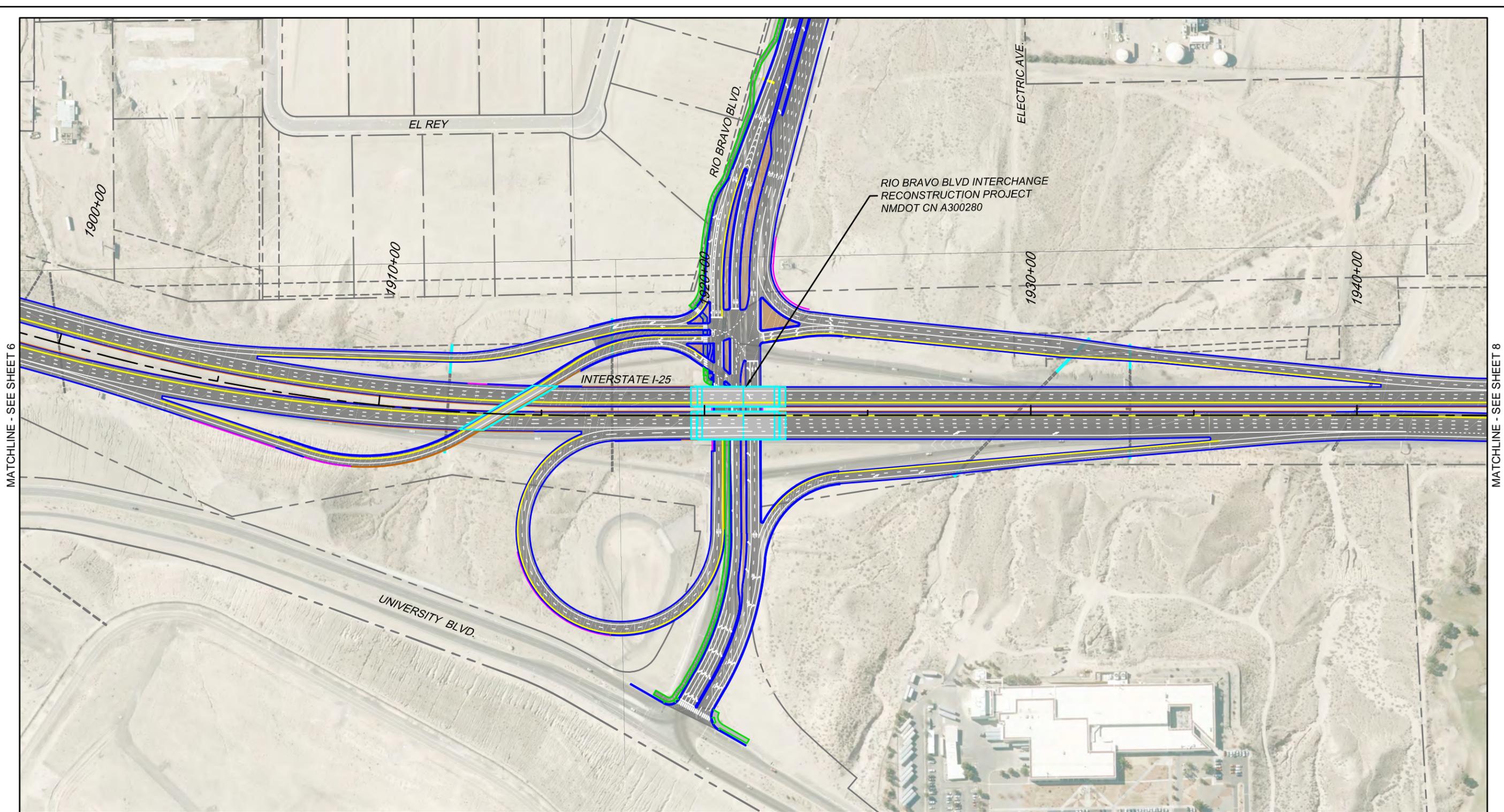
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	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
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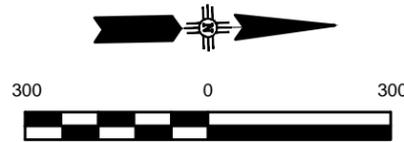
**SOUTH I-25  
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**INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 SOUTH SEGMENT - PLAN LAYOUT  
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MATCHLINE - SEE SHEET 6

MATCHLINE - SEE SHEET 8



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 NOT FOR CONSTRUCTION**

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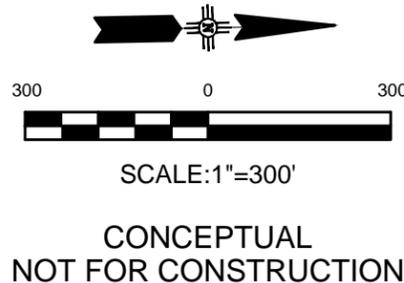
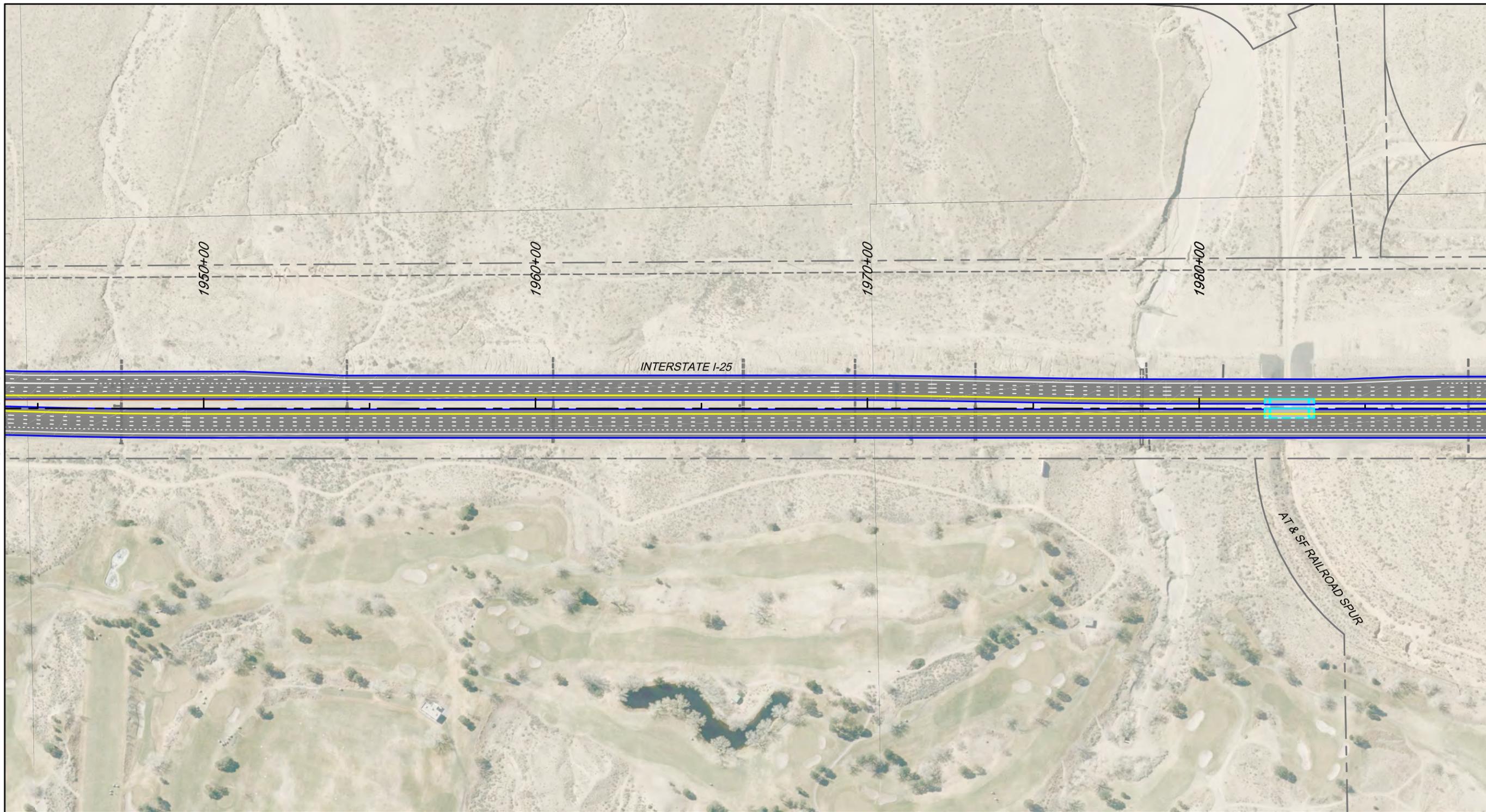
**SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
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**INTERSTATE 25  
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 SOUTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS  
 BUILD ALTERNATIVE**

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MATCHLINE - SEE SHEET 9



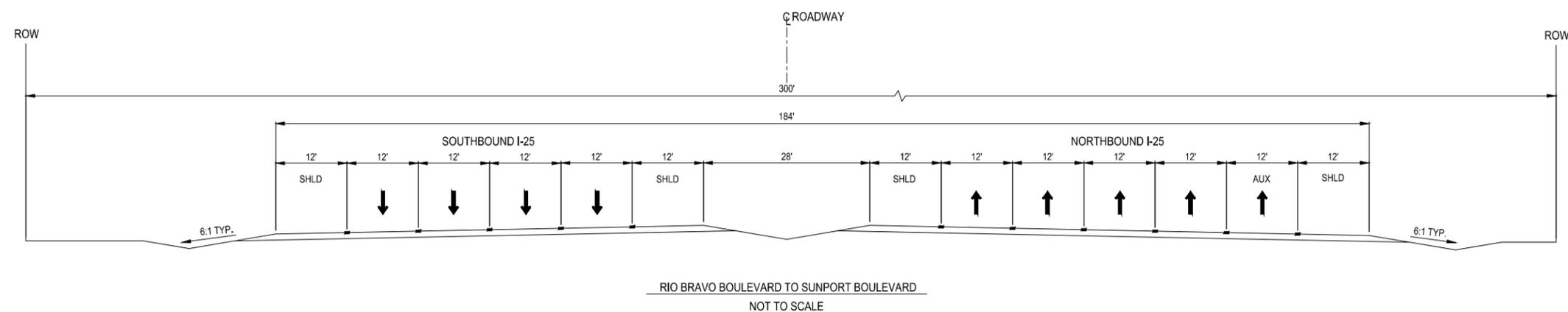
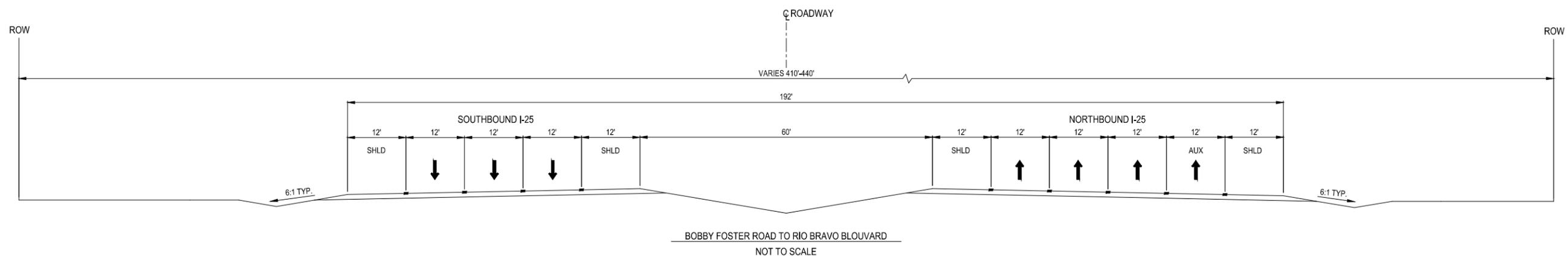
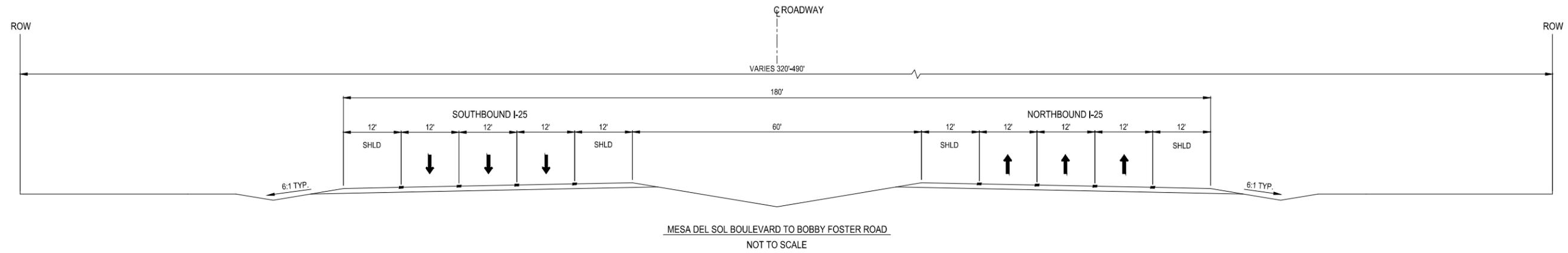
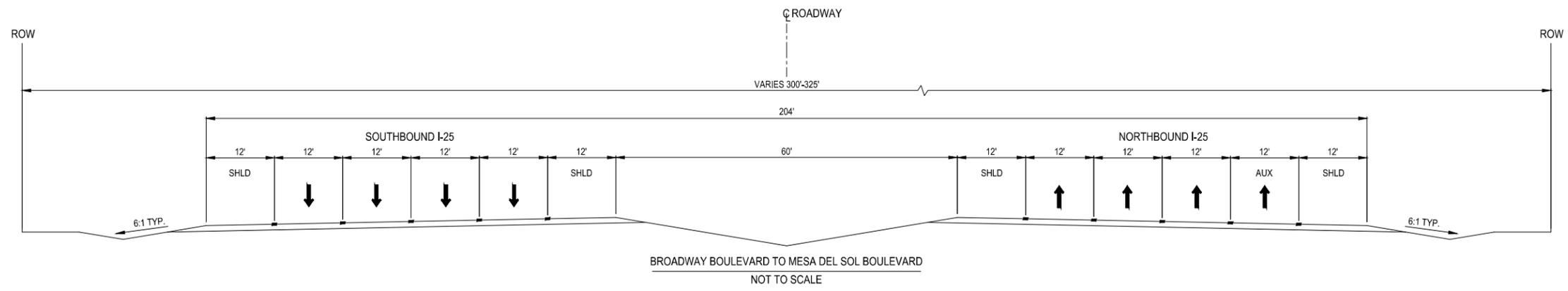
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	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
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SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

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INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 SOUTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS  
 BUILD ALTERNATIVE



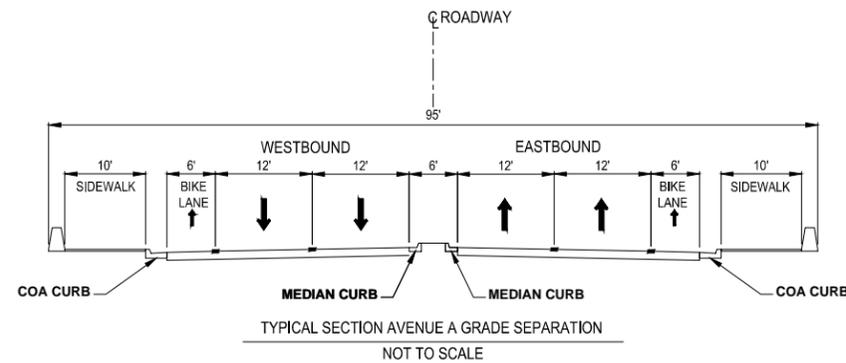
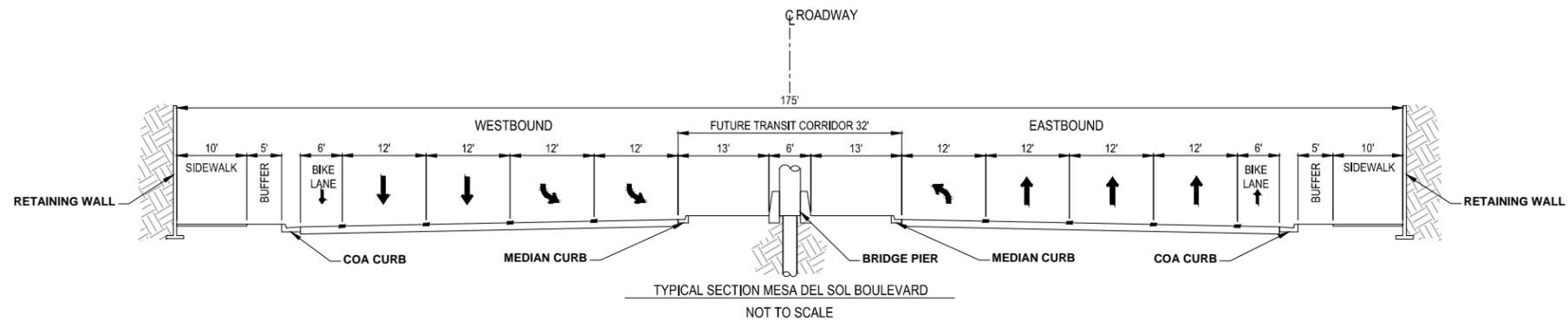
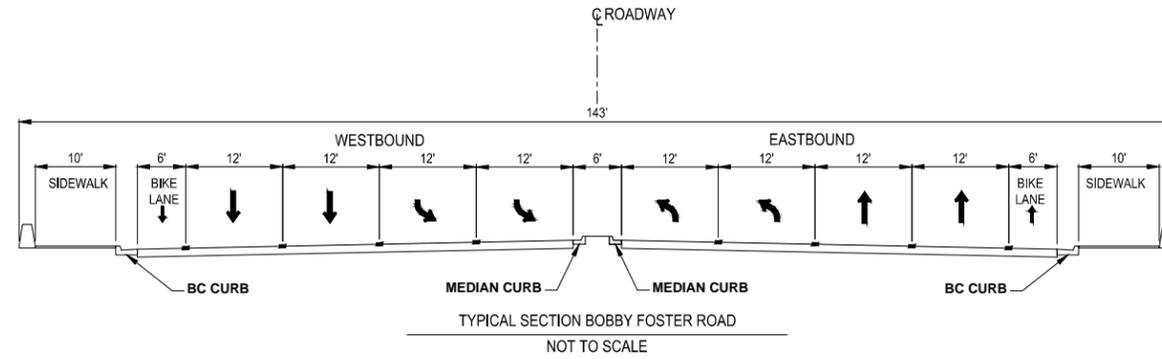
SOUTH I-25  
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INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 TYPICAL SECTION-BUILD ALTERNATIVE  
 SOUTH SEGMENT MAINLINE

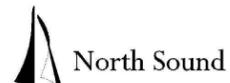


CONCEPTUAL  
 NOT FOR CONSTRUCTION



SOUTH I-25  
FREeway OPERATIONS STUDY  
PHASE IB  
ALTERNATIVE ANALYSIS

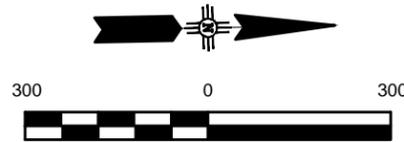
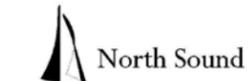
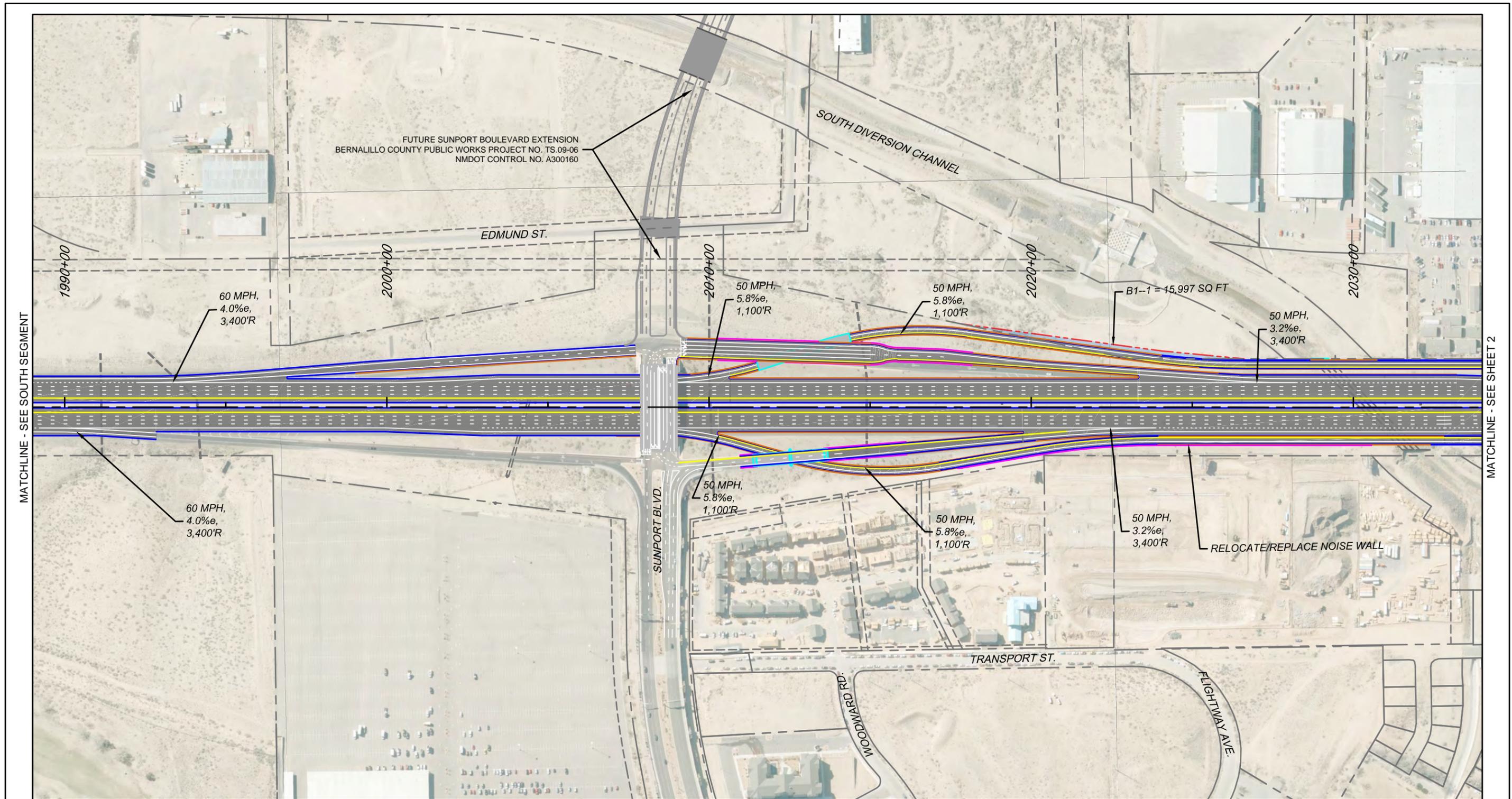
INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
TYPICAL SECTION-BUILD ALTERNATIVE  
SOUTH SEGMENT SURFACE STREETS



CONCEPTUAL  
NOT FOR CONSTRUCTION



**Appendix B**  
**Conceptual Design Plans for Build Alternative B1**



SCALE: 1"=300'

CONCEPTUAL  
NOT FOR CONSTRUCTION

**LEGEND**

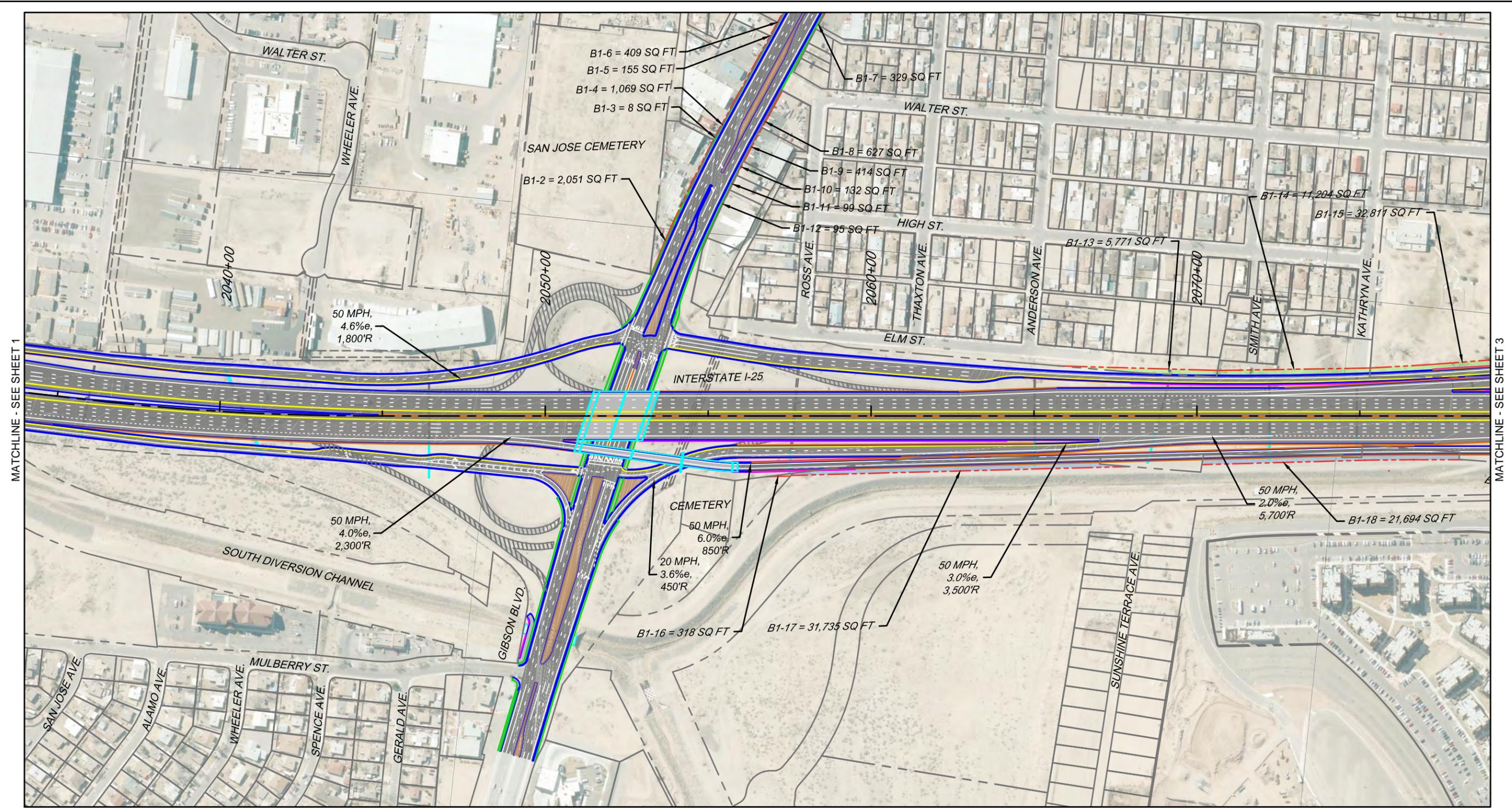
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	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		

**REQUIRED R/W - EXISTING OWNERSHIP**



SOUTH I-25  
FREEWAY OPERATIONS STUDY  
PHASE IB  
ALTERNATIVE ANALYSIS

INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
NORTH SEGMENT - PLAN LAYOUT  
AND RIGHT OF WAY IMPACTS  
ALTERNATIVE B1



MATCHLINE - SEE SHEET 1

MATCHLINE - SEE SHEET 3

North Sound

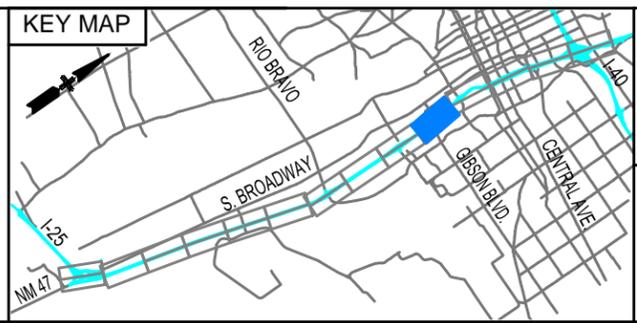
**WSP** | **PARSONS BRINCKERHOFF**

**New Mexico** DEPARTMENT OF **TRANSPORTATION**

SCALE: 1"=300'

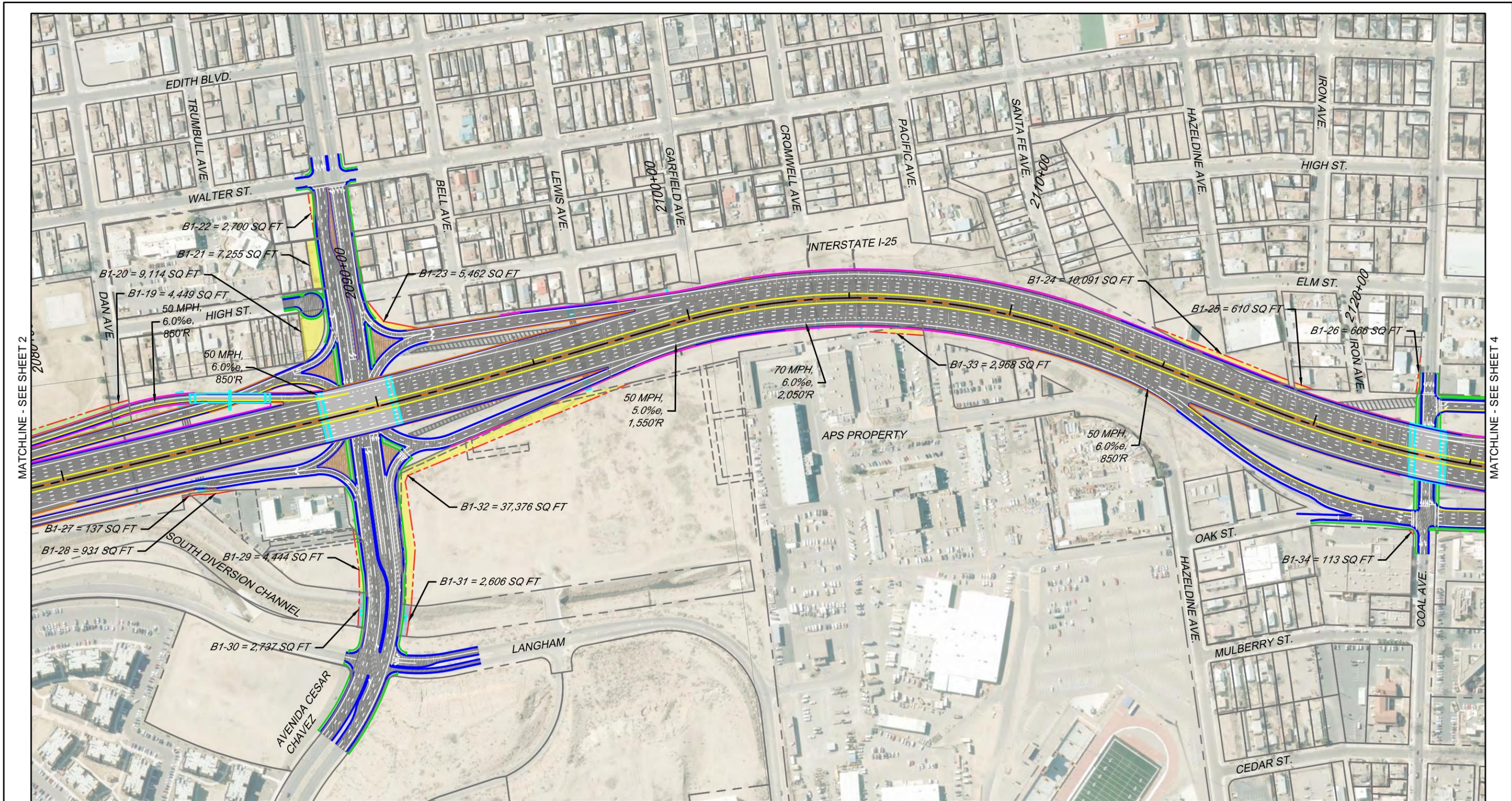
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NOT FOR CONSTRUCTION**

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	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		



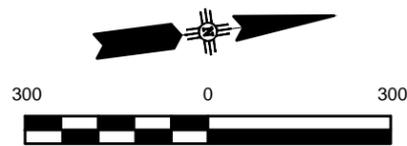
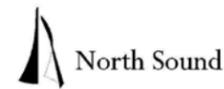
**SOUTH I-25  
FREEWAY OPERATIONS STUDY  
PHASE IB  
ALTERNATIVE ANALYSIS**

**INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
NORTH SEGMENT - PLAN LAYOUT  
AND RIGHT OF WAY IMPACTS  
ALTERNATIVE B1**



MATCHLINE - SEE SHEET 2

MATCHLINE - SEE SHEET 4



SCALE: 1"=300'  
**CONCEPTUAL  
 NOT FOR CONSTRUCTION**

**LEGEND**

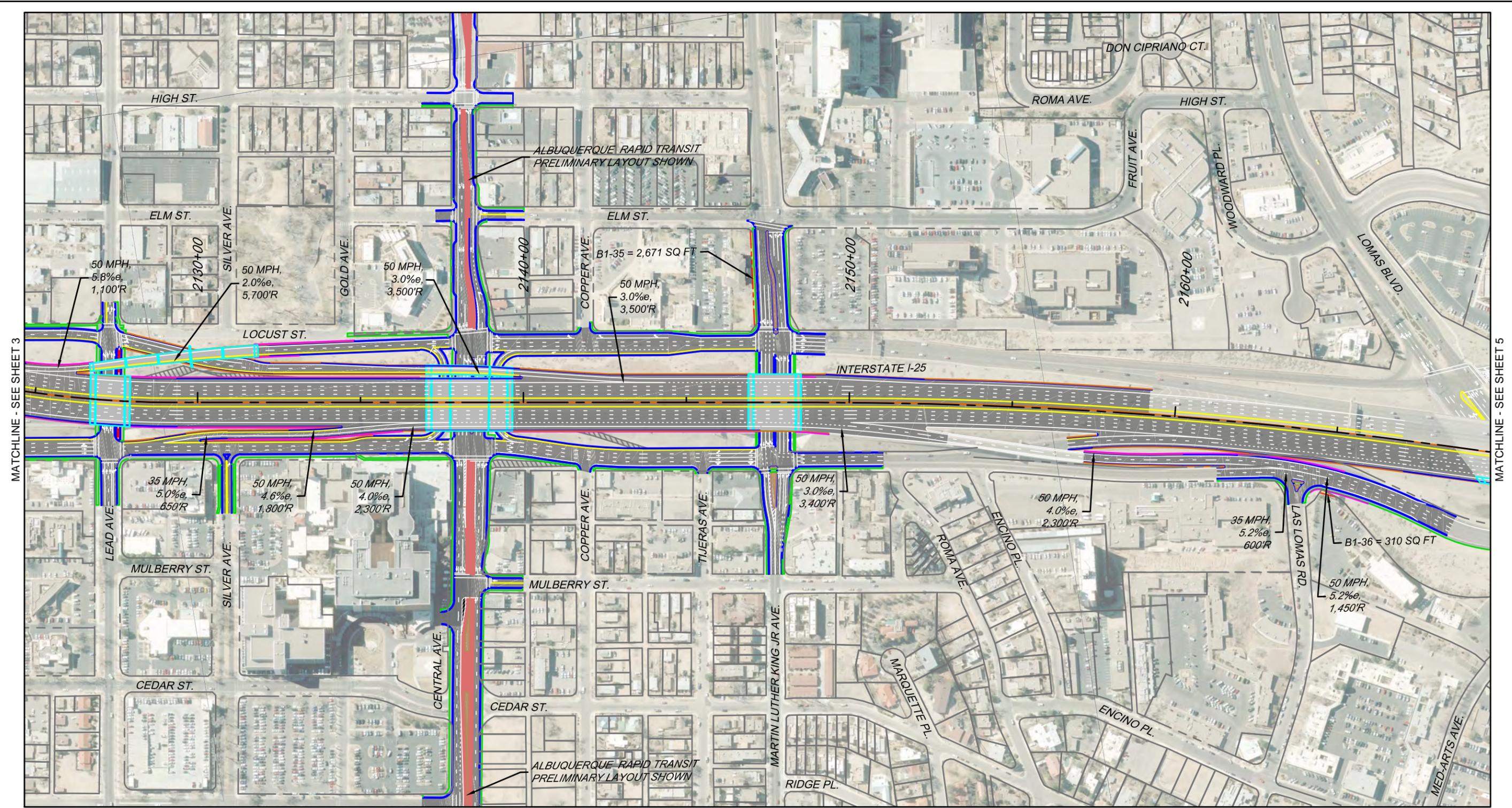
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	BRIDGE STRUCTURE		AMAFA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		

**KEY MAP**



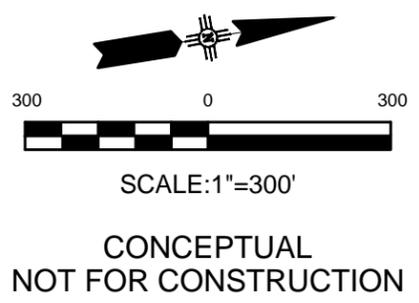
**SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS**

**INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 NORTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS  
 ALTERNATIVE B1**

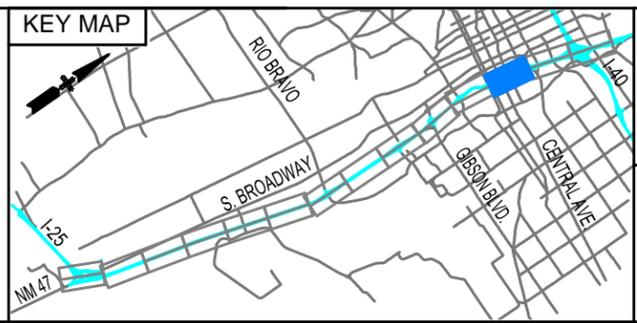


MATCHLINE - SEE SHEET 3

MATCHLINE - SEE SHEET 5



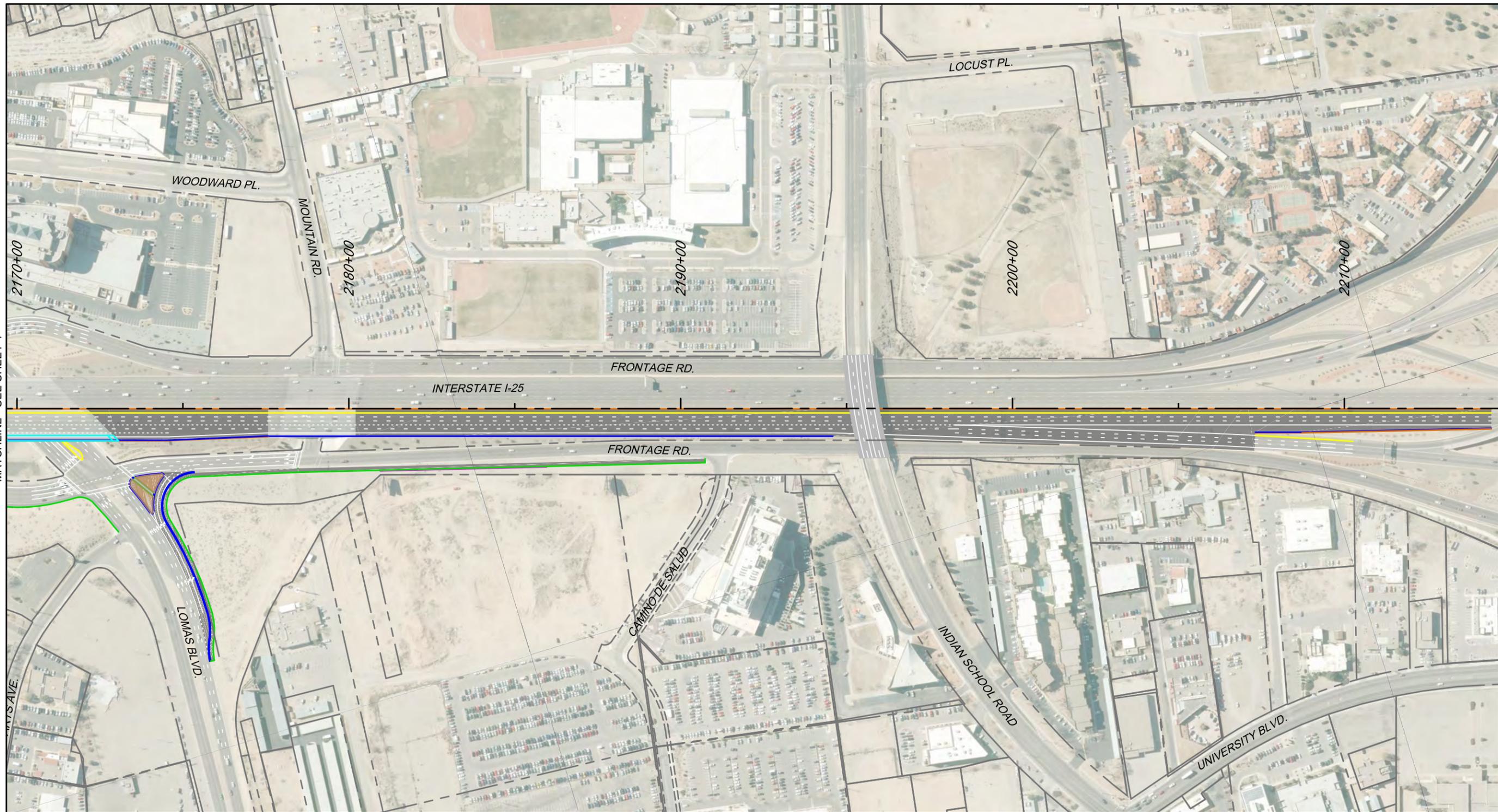
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	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED RW
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		



SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

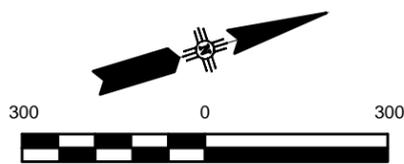
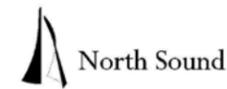
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INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 NORTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS  
 ALTERNATIVE B1



MATCHLINE - SEE SHEET 4

MATCHLINE - SEE SHEET 6



SCALE: 1"=300'

CONCEPTUAL  
NOT FOR CONSTRUCTION

**LEGEND**

	ASPHALT PAVEMENT		OTHER / PRIVATE
	BRIDGE STRUCTURE		AMAFA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		

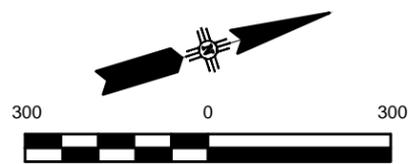
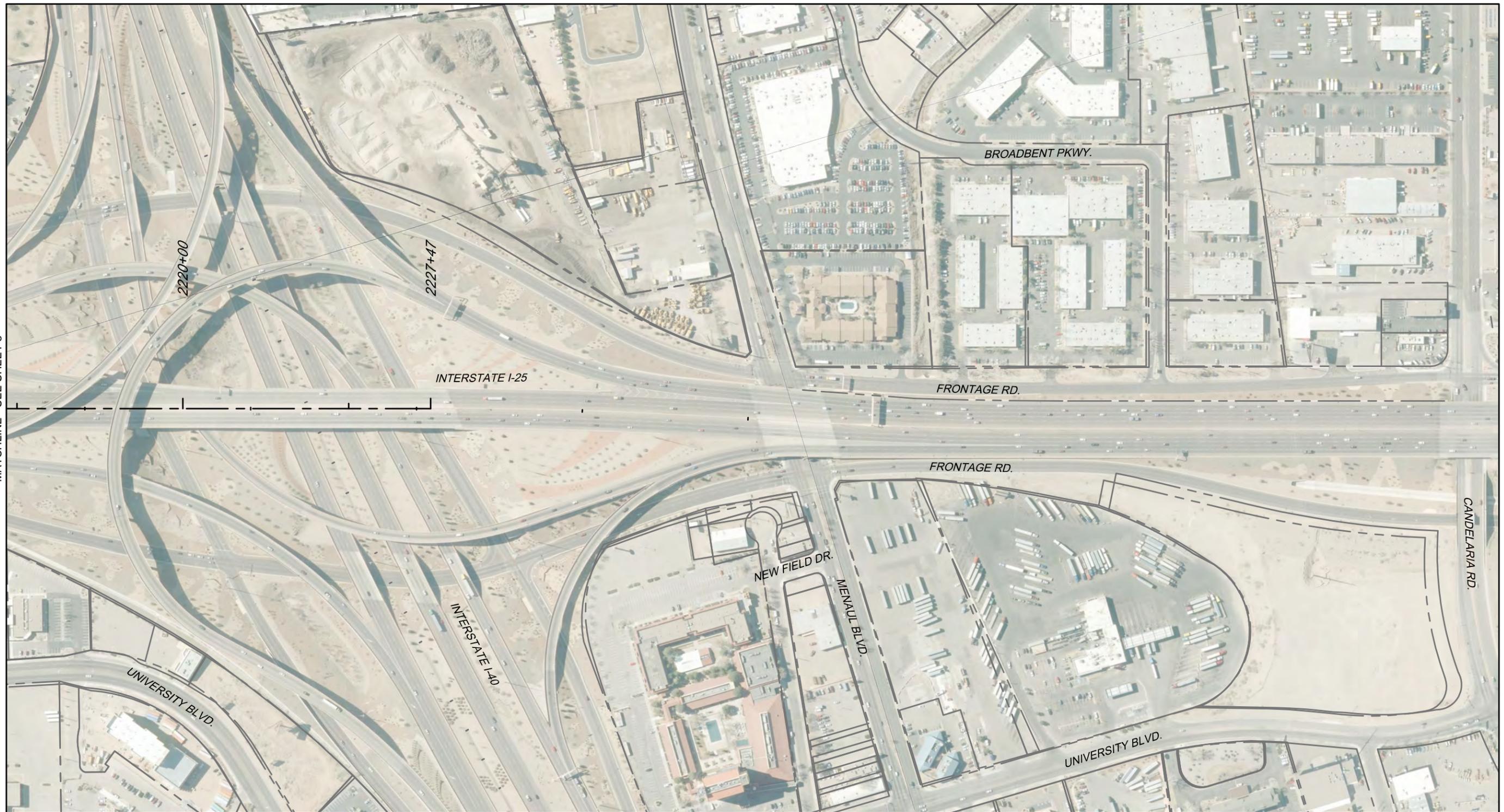
**KEY MAP**



SOUTH I-25  
FREEWAY OPERATIONS STUDY  
PHASE IB  
ALTERNATIVE ANALYSIS

INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
NORTH SEGMENT - PLAN LAYOUT  
AND RIGHT OF WAY IMPACTS  
ALTERNATIVE B1

MATCHLINE - SEE SHEET 5



SCALE: 1"=300'  
**CONCEPTUAL  
 NOT FOR CONSTRUCTION**

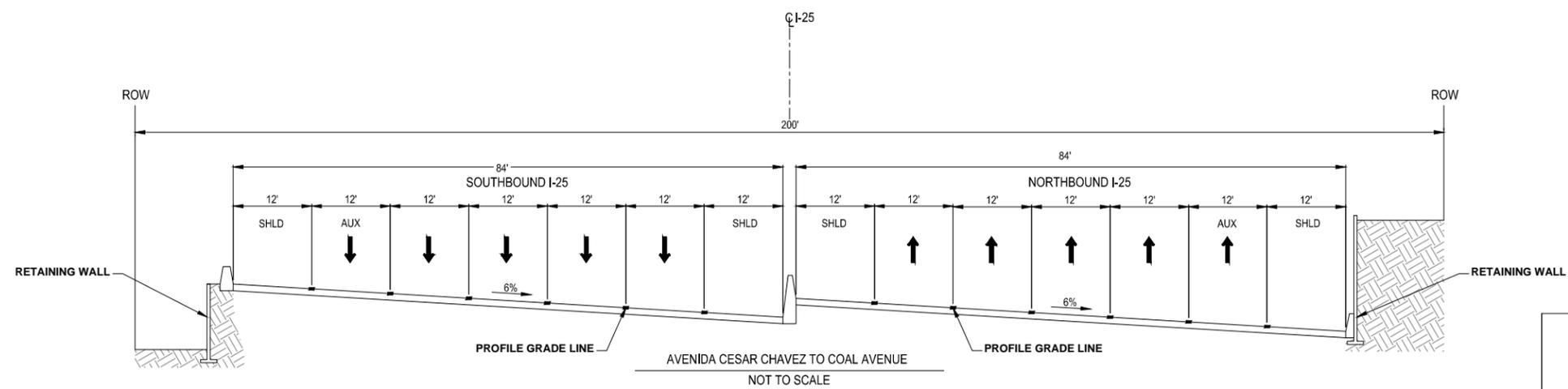
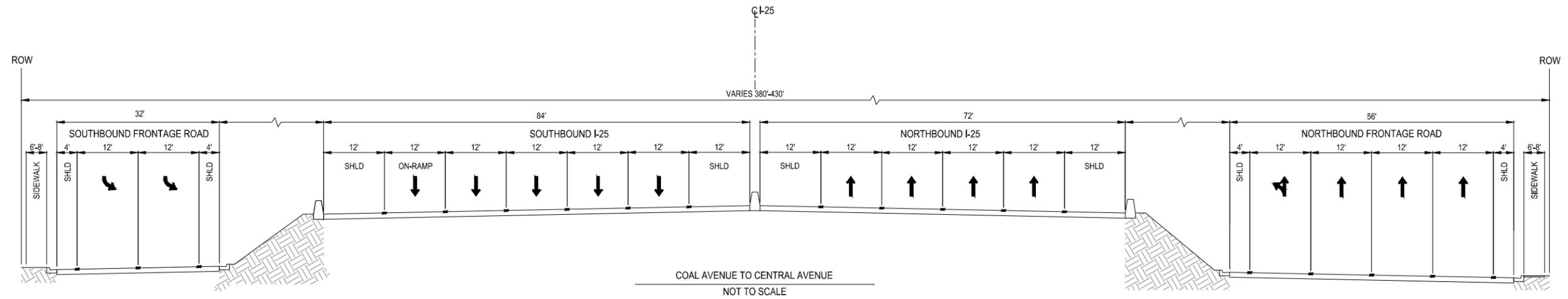
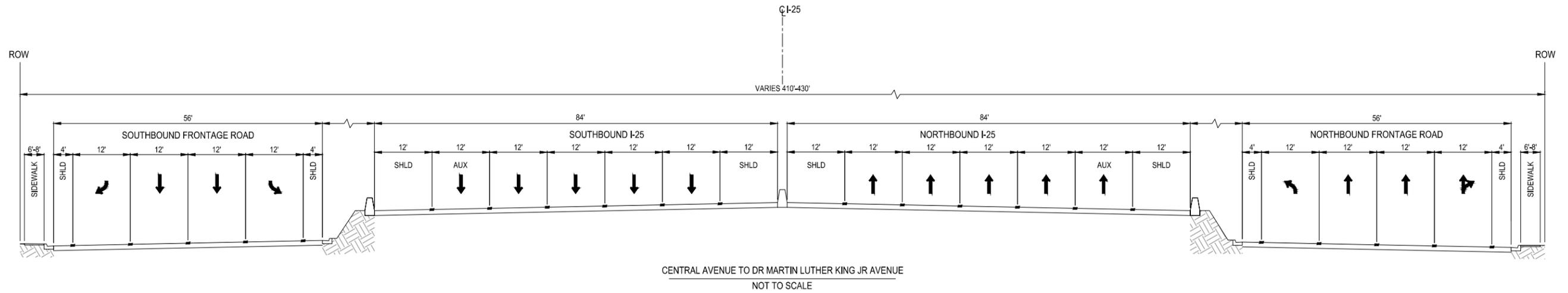
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	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		



**SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS**

**INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 NORTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS  
 ALTERNATIVE B1**

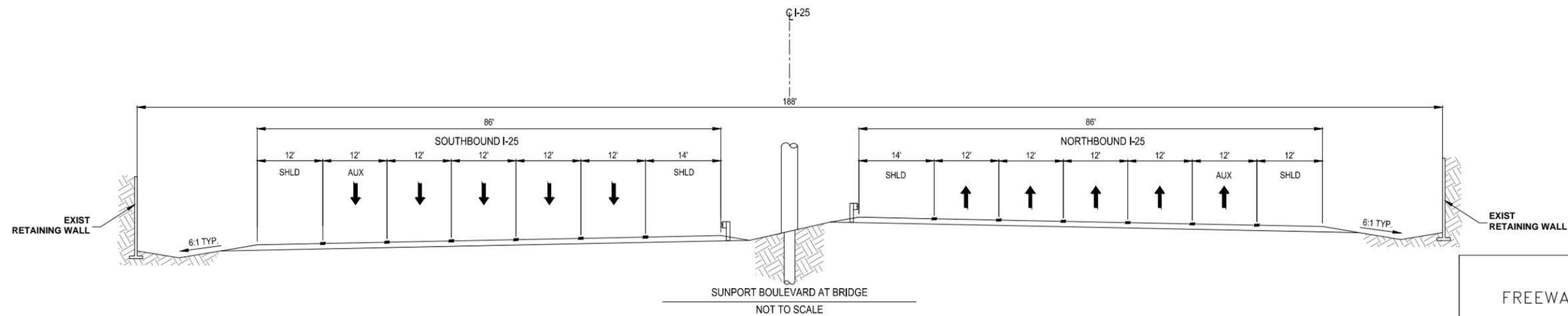
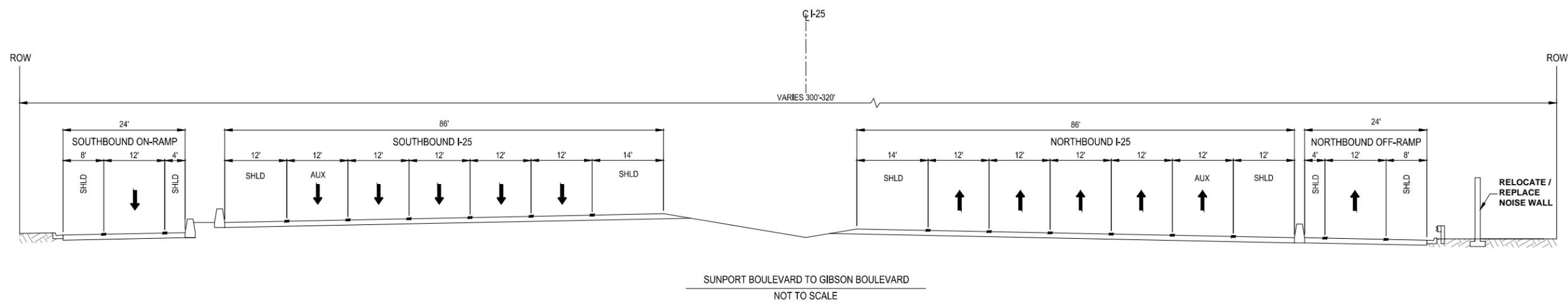
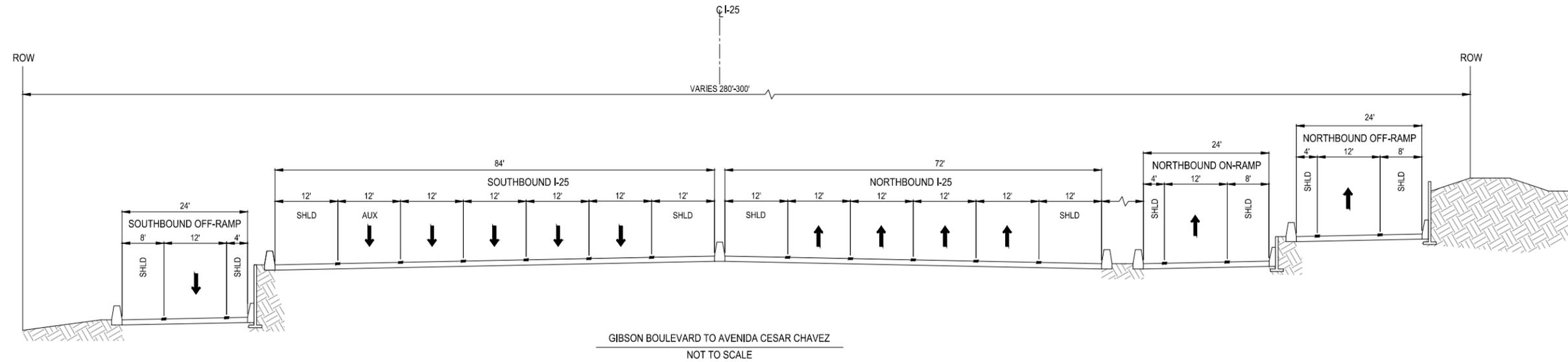




SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE I-B  
 ALTERNATIVE ANALYSIS

INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 TYPICAL SECTION-ALTERNATIVE B1  
 MAINLINE

CONCEPTUAL  
 NOT FOR CONSTRUCTION

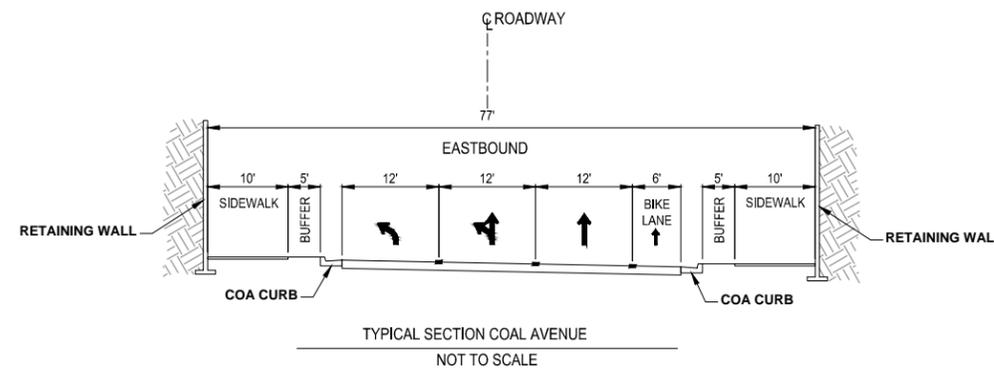
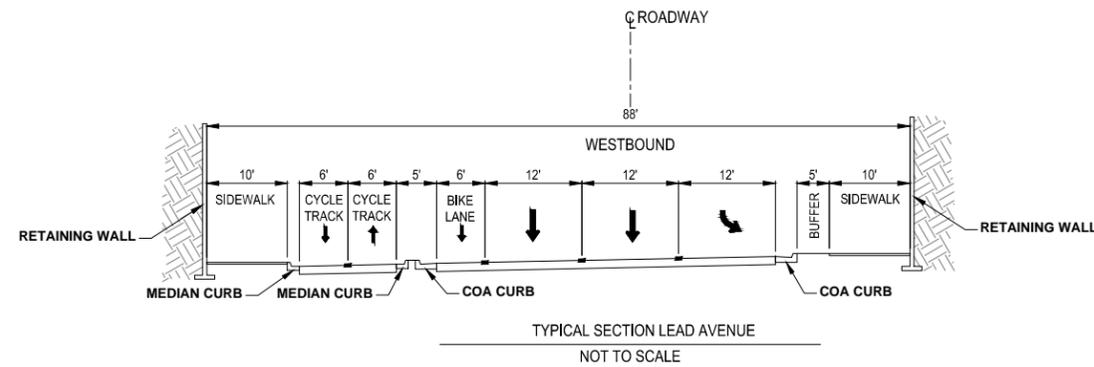
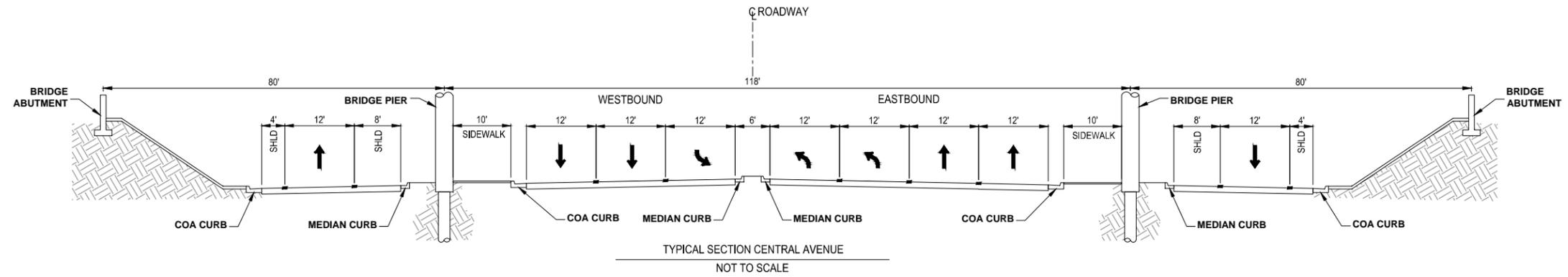
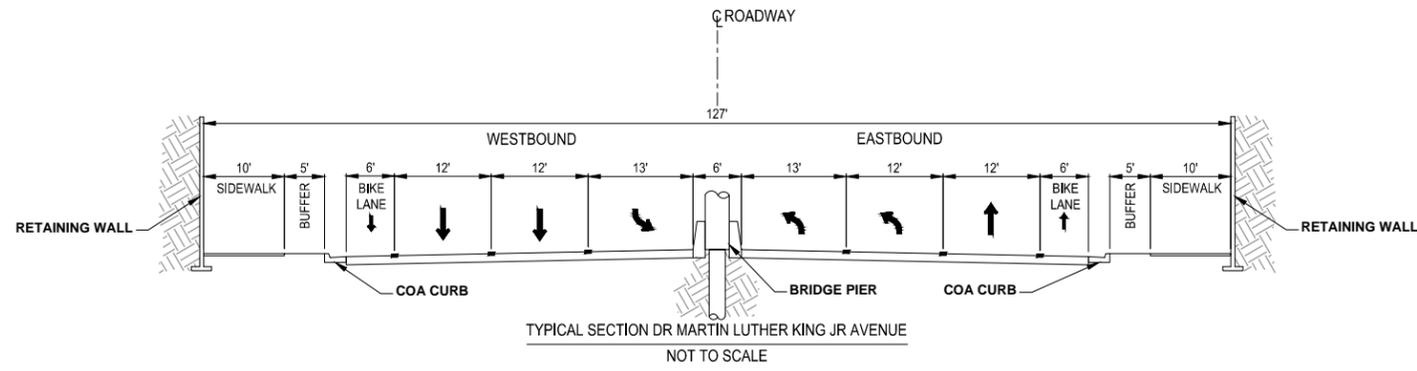


SOUTH I-25  
FREeway OPERATIONS STUDY  
PHASE IB  
ALTERNATIVE ANALYSIS

INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
TYPICAL SECTION-ALTERNATIVE B1  
MAINLINE

CONCEPTUAL  
NOT FOR CONSTRUCTION

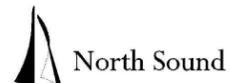


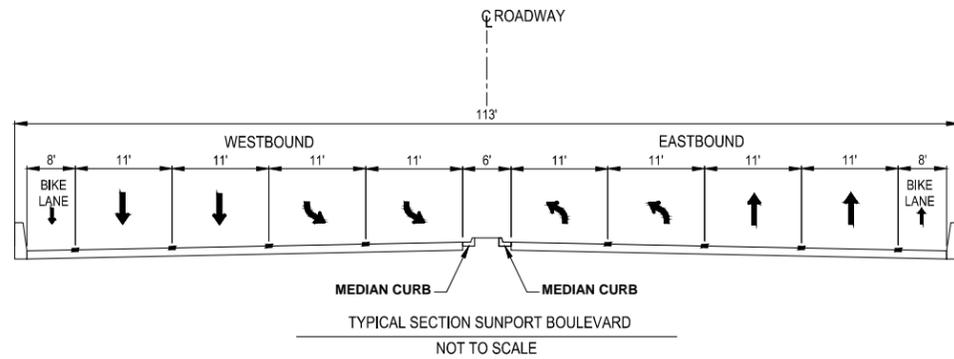
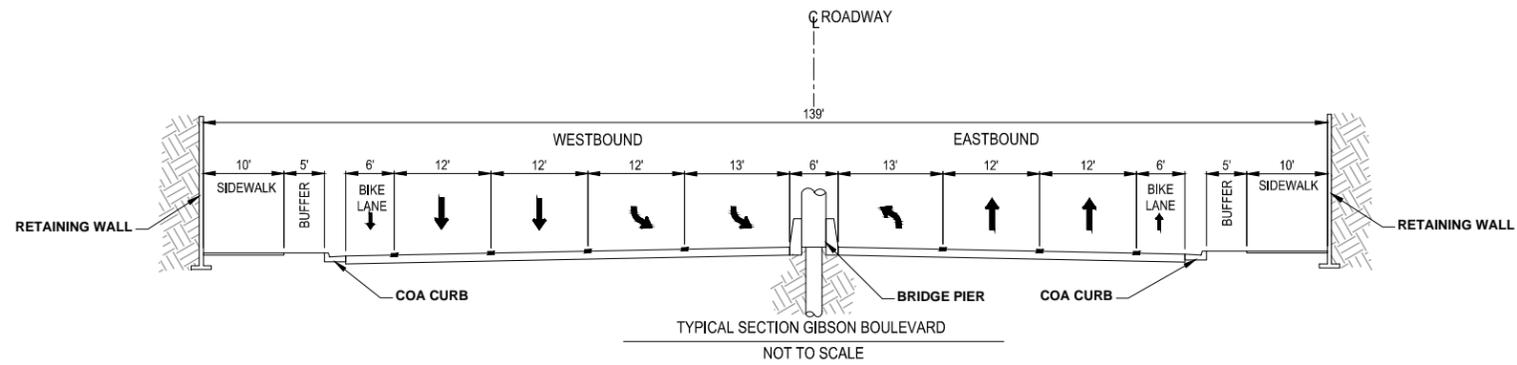
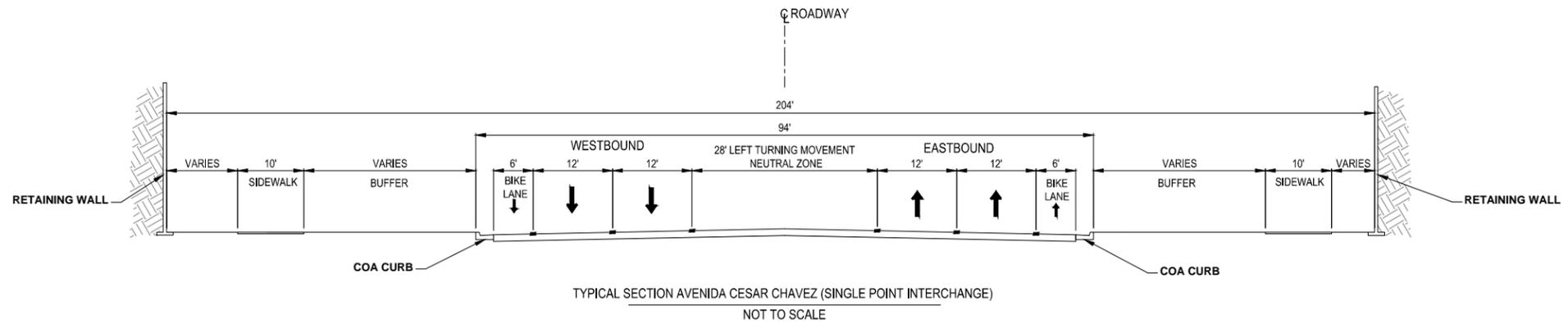


SOUTH I-25  
FREeway OPERATIONS STUDY  
PHASE IB  
ALTERNATIVE ANALYSIS

INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
TYPICAL SECTION-ALTERNATIVE B1  
SURFACE STREETS

CONCEPTUAL  
NOT FOR CONSTRUCTION





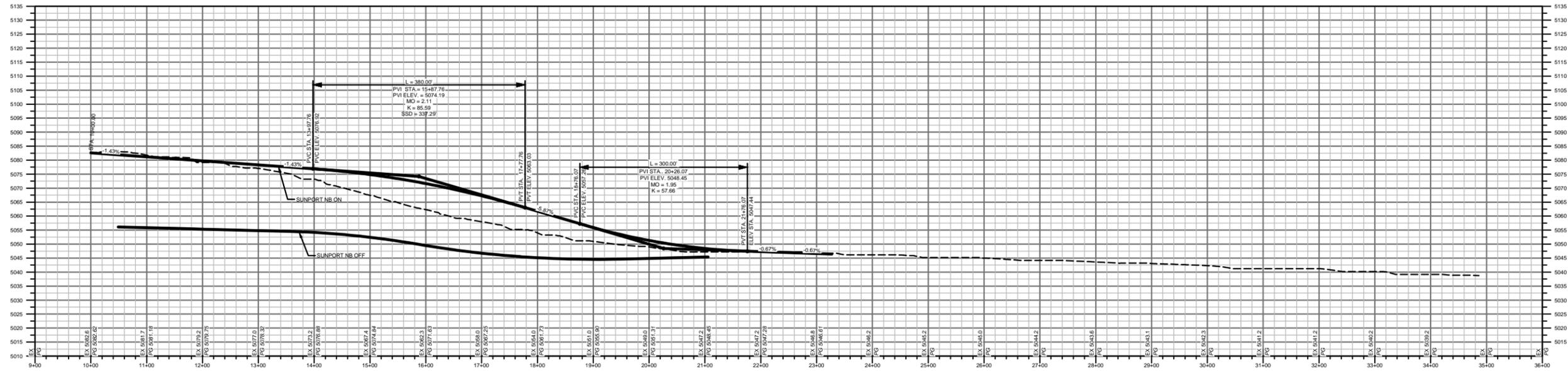
SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 TYPICAL SECTION-ALTERNATIVE B1  
 SURFACE STREETS

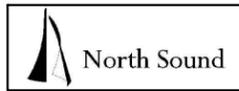
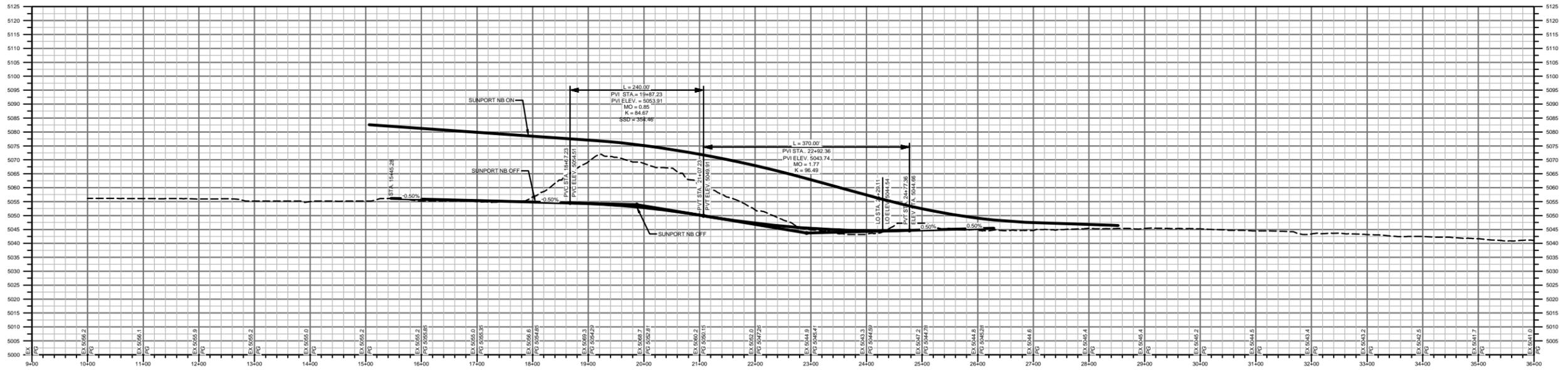
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 NOT FOR CONSTRUCTION



### B1 SUNPORT NB ON



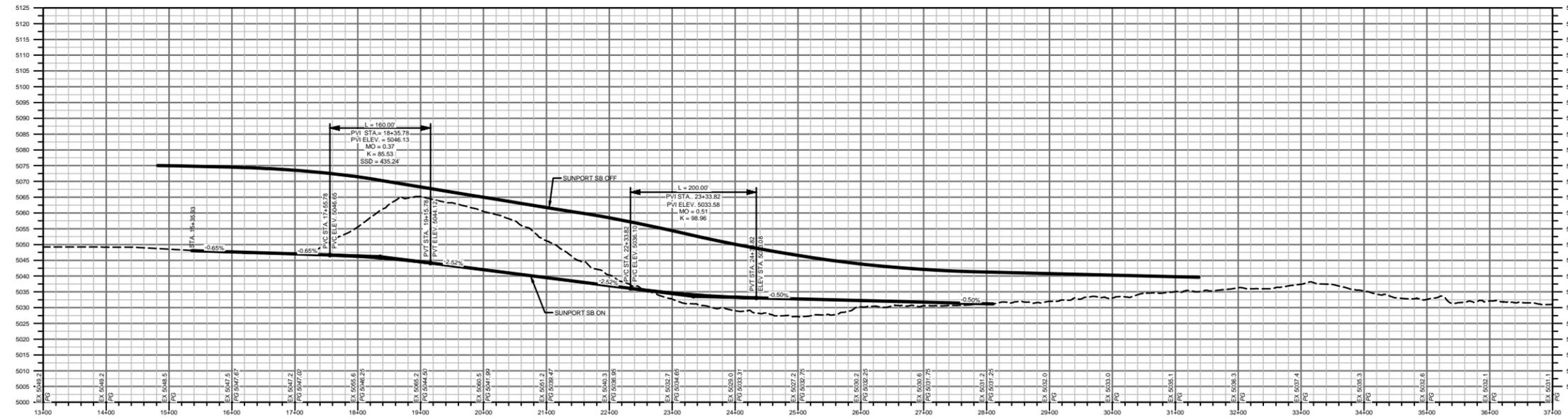
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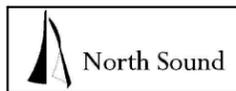
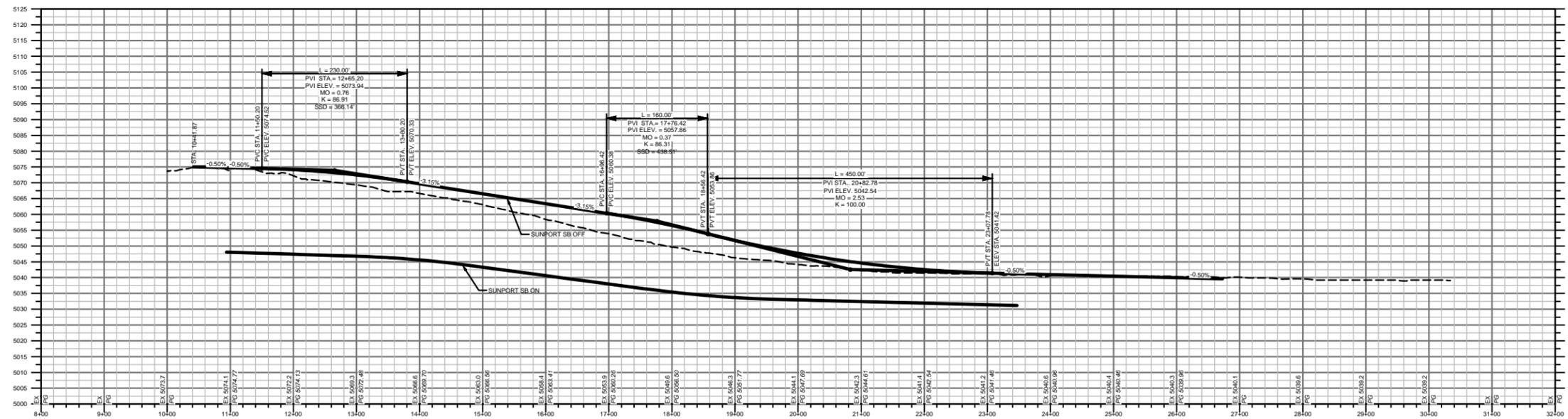
SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 ROADWAY PROFILES ALTERNATIVE B1

### B1 SUNPORT SB ON



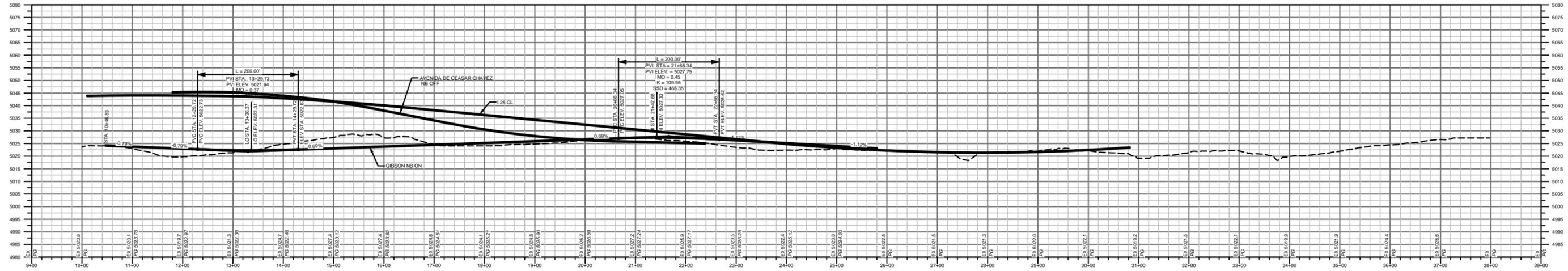
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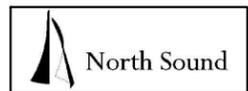
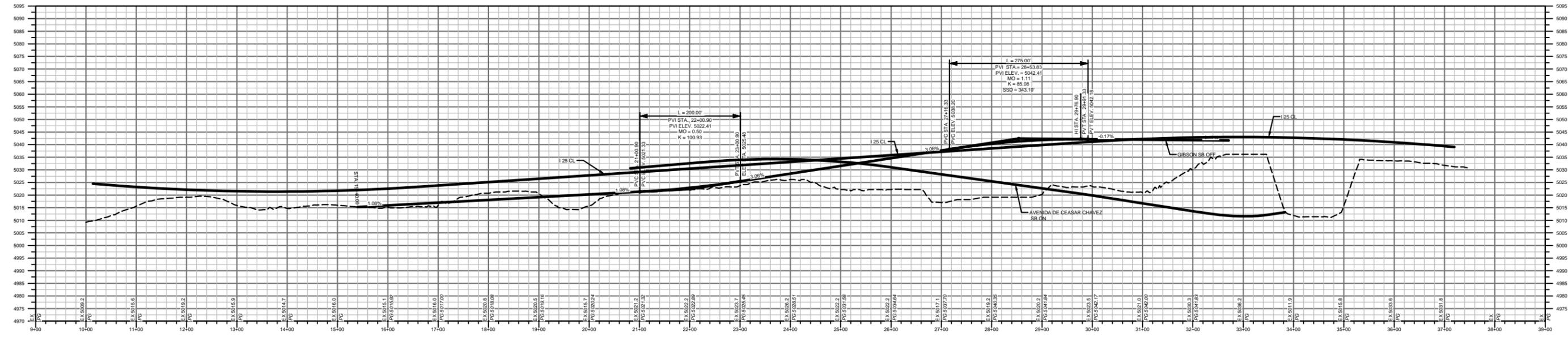
SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 ROADWAY PROFILES ALTERNATIVE B1

### B1 GIBSON NB ON



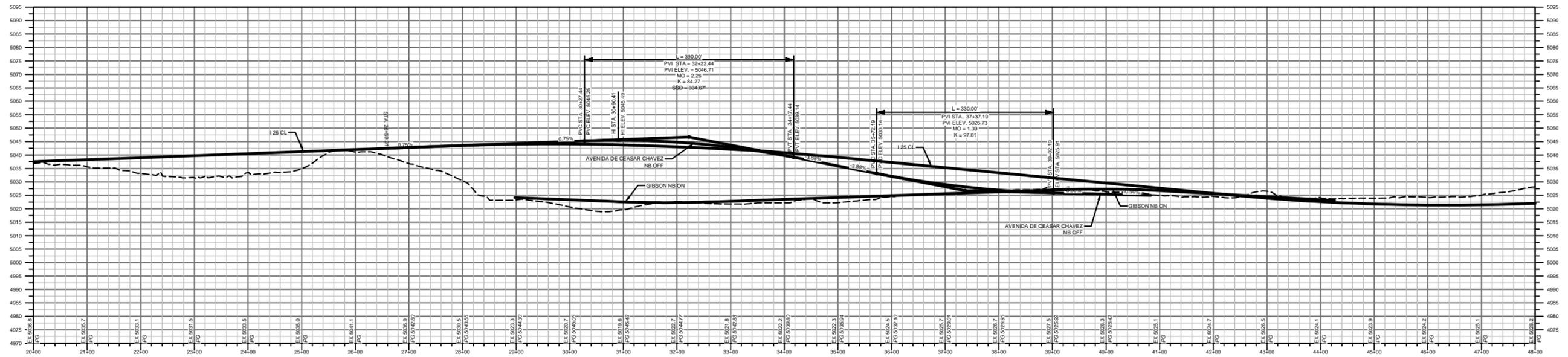
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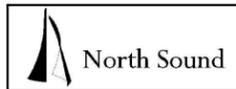
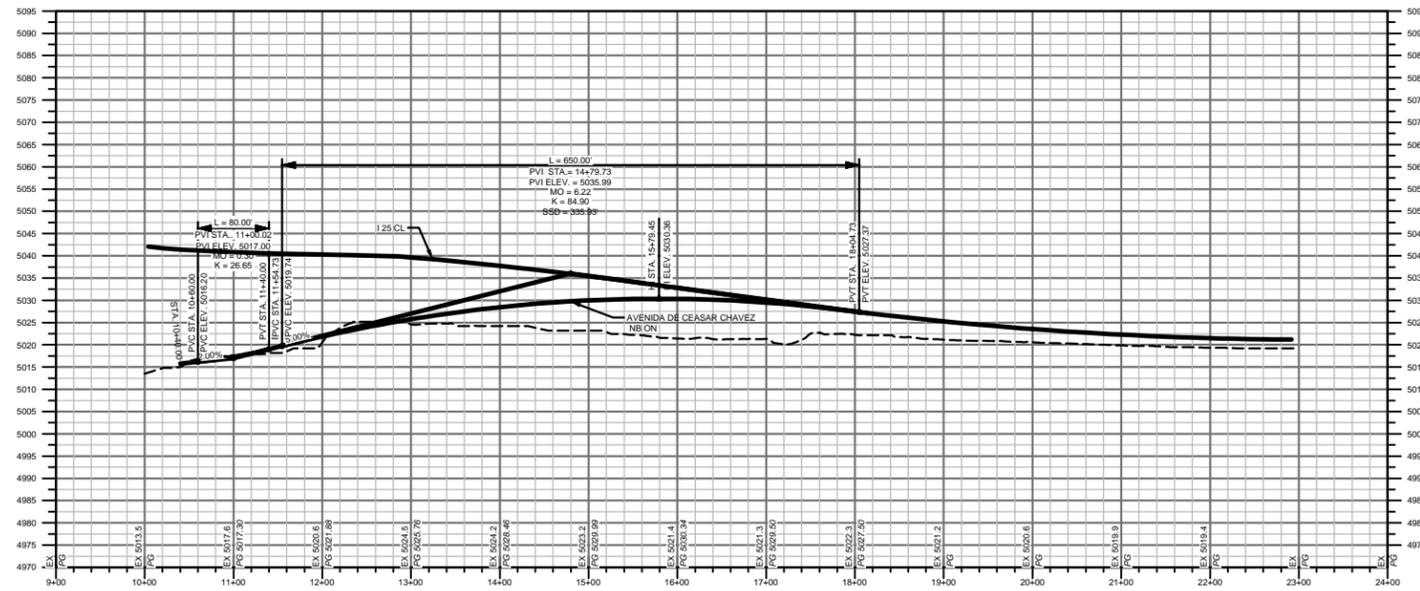
SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 ROADWAY PROFILES ALTERNATIVE B1

### B1 ACC NB OFF



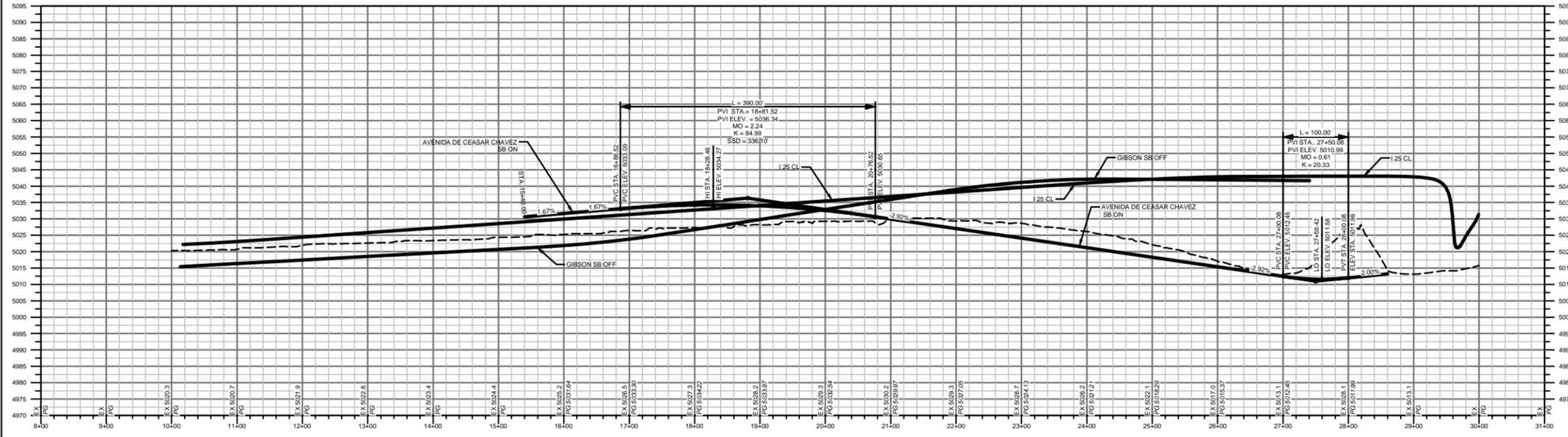
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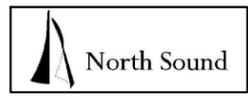
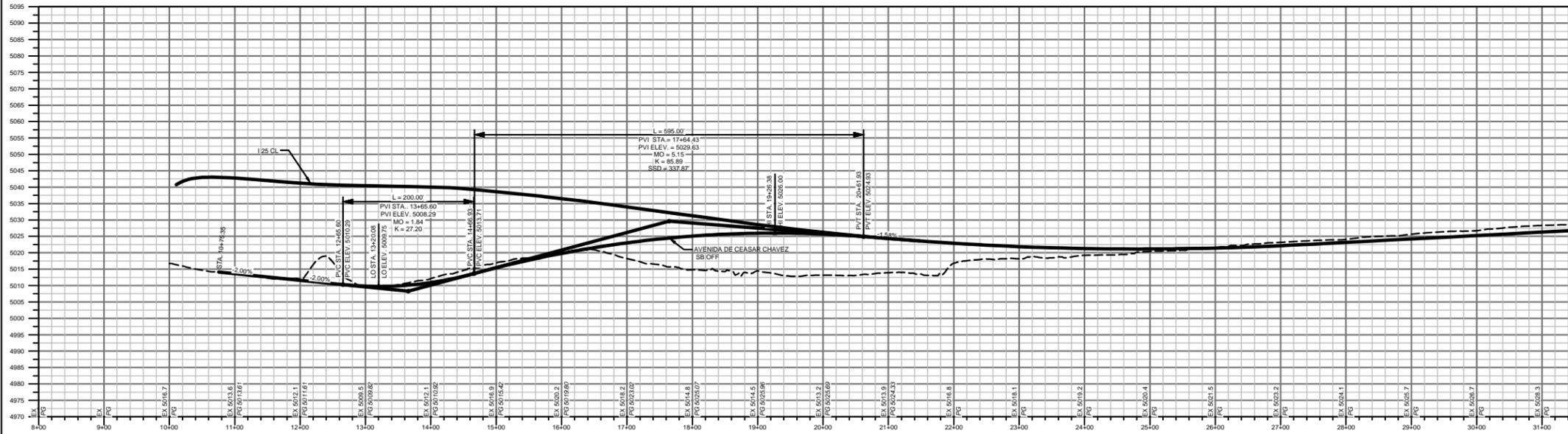
SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE I-B  
 ALTERNATIVE ANALYSIS

INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 ROADWAY PROFILES ALTERNATIVE B1

### B1 ACC SB ON



### B1 ACC SB OFF

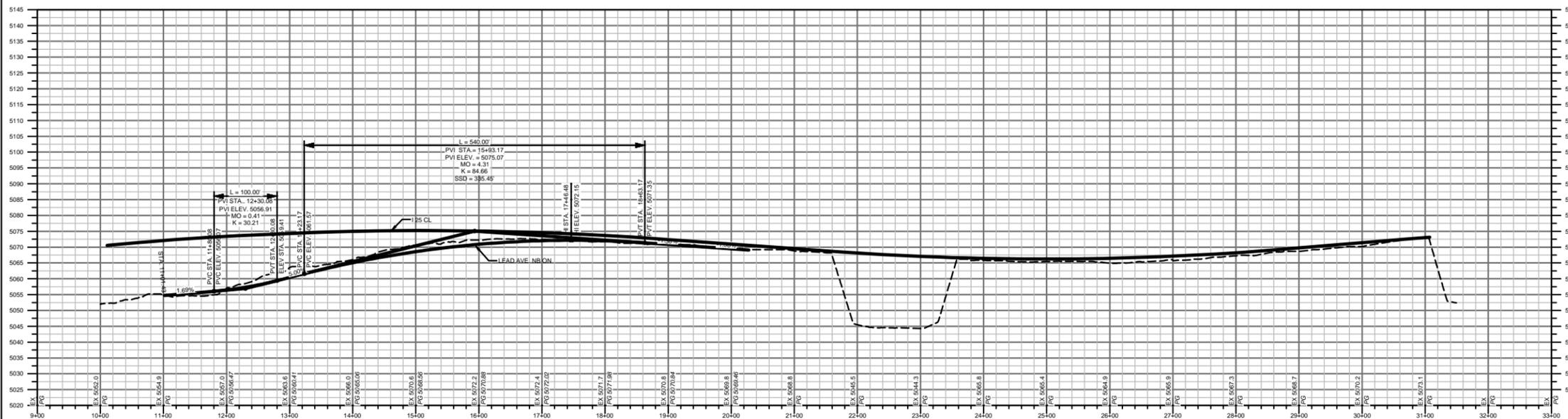


SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

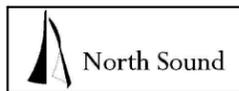
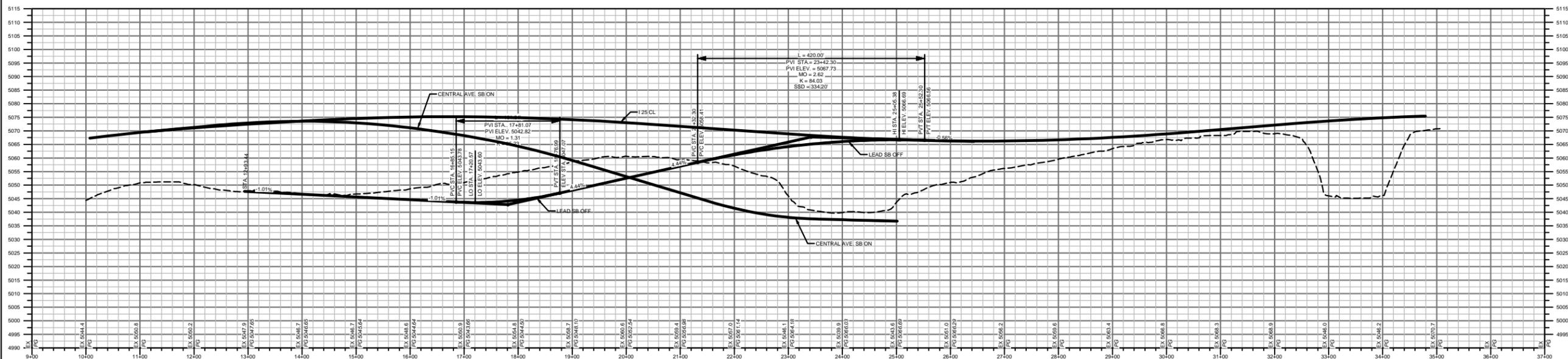
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INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 ROADWAY PROFILES ALTERNATIVE B1

### B1 LEAD NB ON



### B1 LEAD SB OFF

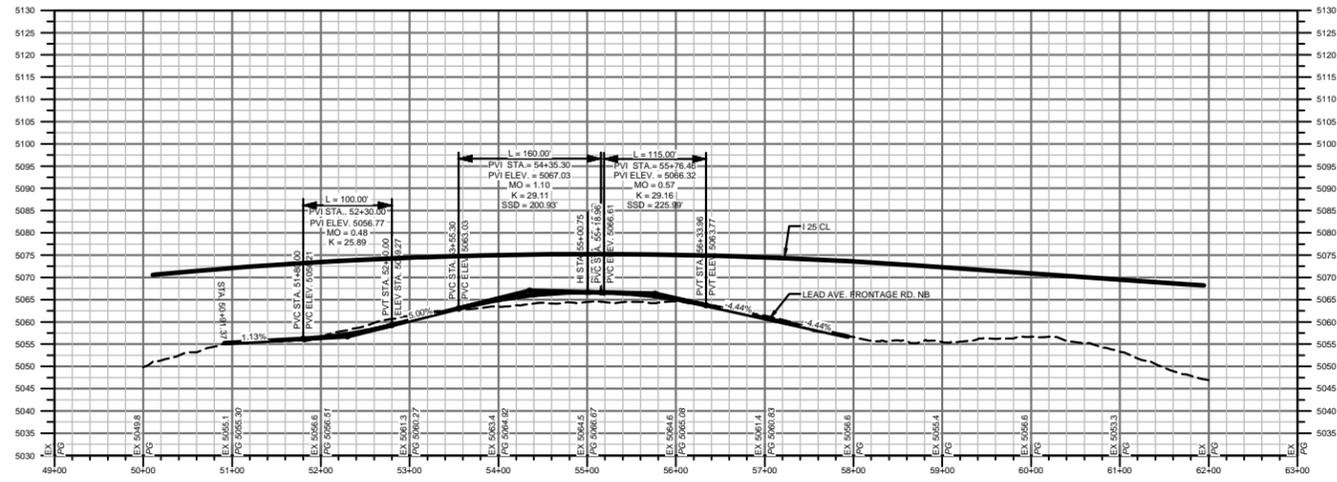


SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE I-B  
 ALTERNATIVE ANALYSIS

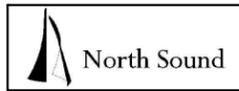
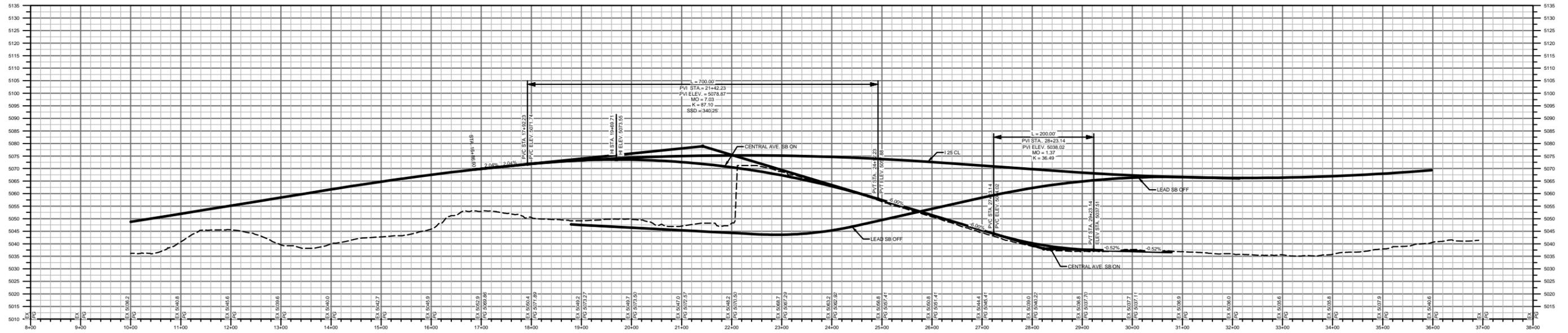
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INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 ROADWAY PROFILES ALTERNATIVE B1

### B1 LEAD FRONTAGE RD



### B1 CENTRAL SB ON



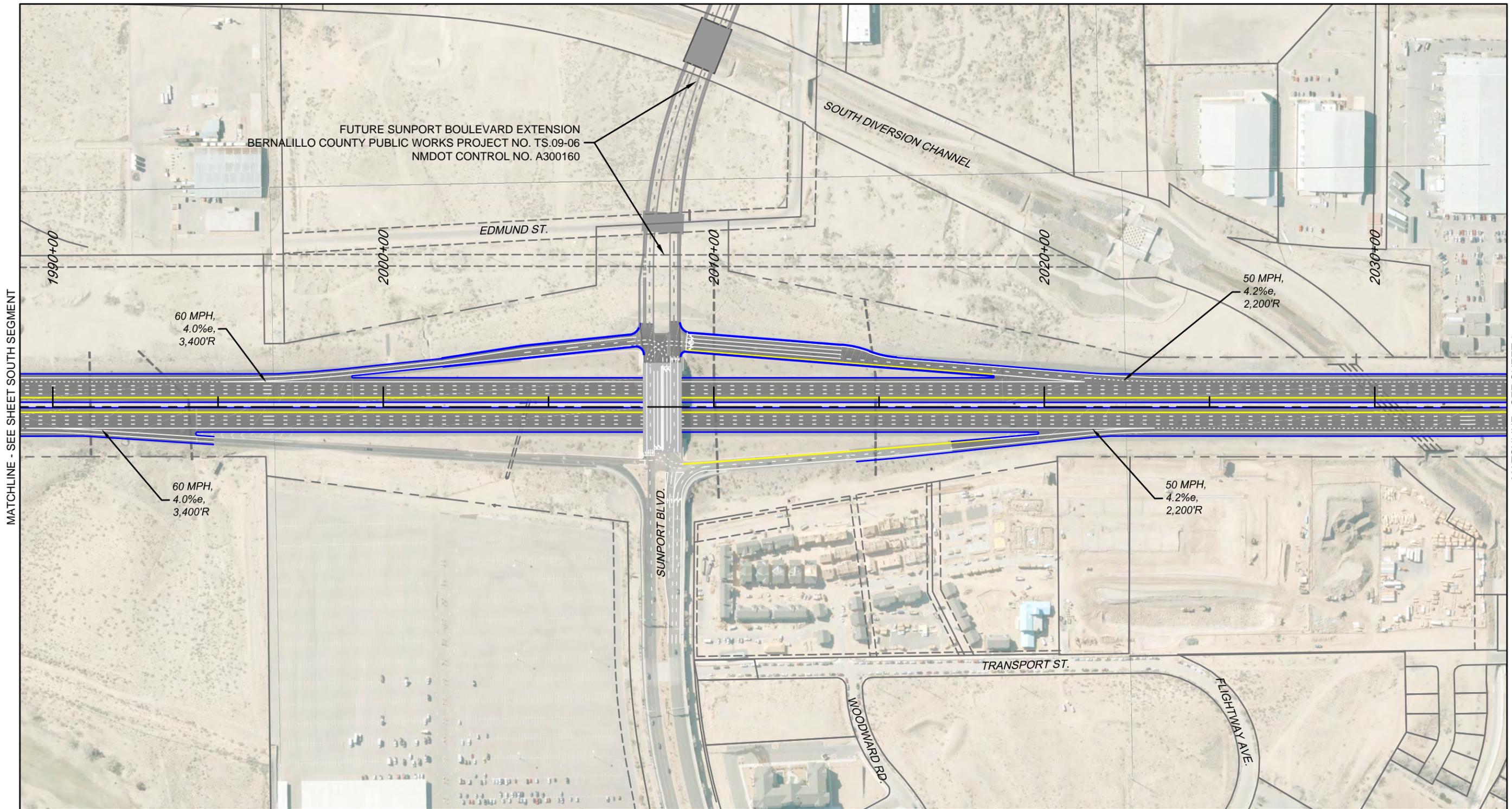
SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

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INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 ROADWAY PROFILES ALTERNATIVE B1



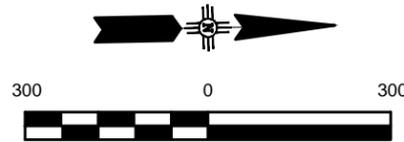
**Appendix C**  
**Conceptual Design Plans for Build Alternative B2**



North Sound

WSP | PARSONS BRINCKERHOFF

New Mexico DEPARTMENT OF TRANSPORTATION



SCALE: 1"=300'

CONCEPTUAL NOT FOR CONSTRUCTION

LEGEND

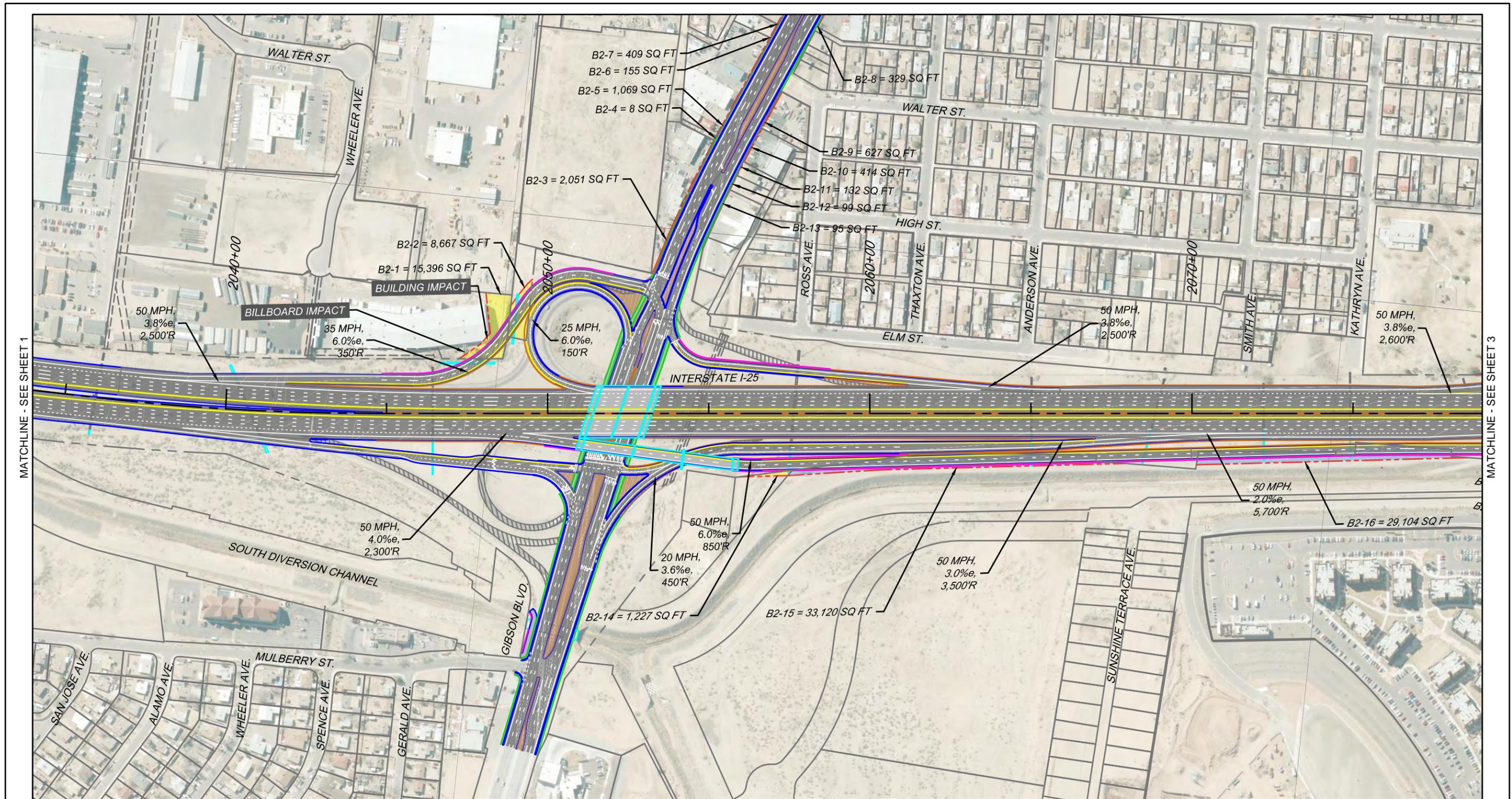
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	BRIDGE STRUCTURE		OTHER / PRIVATE
	LANDSCAPE AREA		AMAFCA
	RETAINING WALL		CITY OF ALBUQUERQUE
	CONCRETE WALL BARRIER		MESA DEL SOL
	SIDEWALK/PEDESTRIAN PATH		NMDOT
	PAVEMENT EDGE / CURB		LIMITS OF REQUIRED R/W
	PARCEL LINES / R.O.W.		

KEY MAP



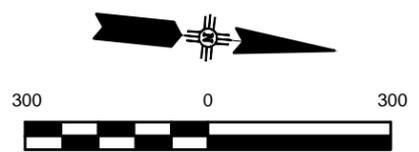
SOUTH I-25  
FREEWAY OPERATIONS STUDY  
PHASE IB  
ALTERNATIVE ANALYSIS

INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
NORTH SEGMENT - PLAN LAYOUT  
AND RIGHT OF WAY IMPACTS  
ALTERNATIVE B2



MATCHLINE - SEE SHEET 1

MATCHLINE - SEE SHEET 3



SCALE: 1"=300'  
**CONCEPTUAL  
 NOT FOR CONSTRUCTION**

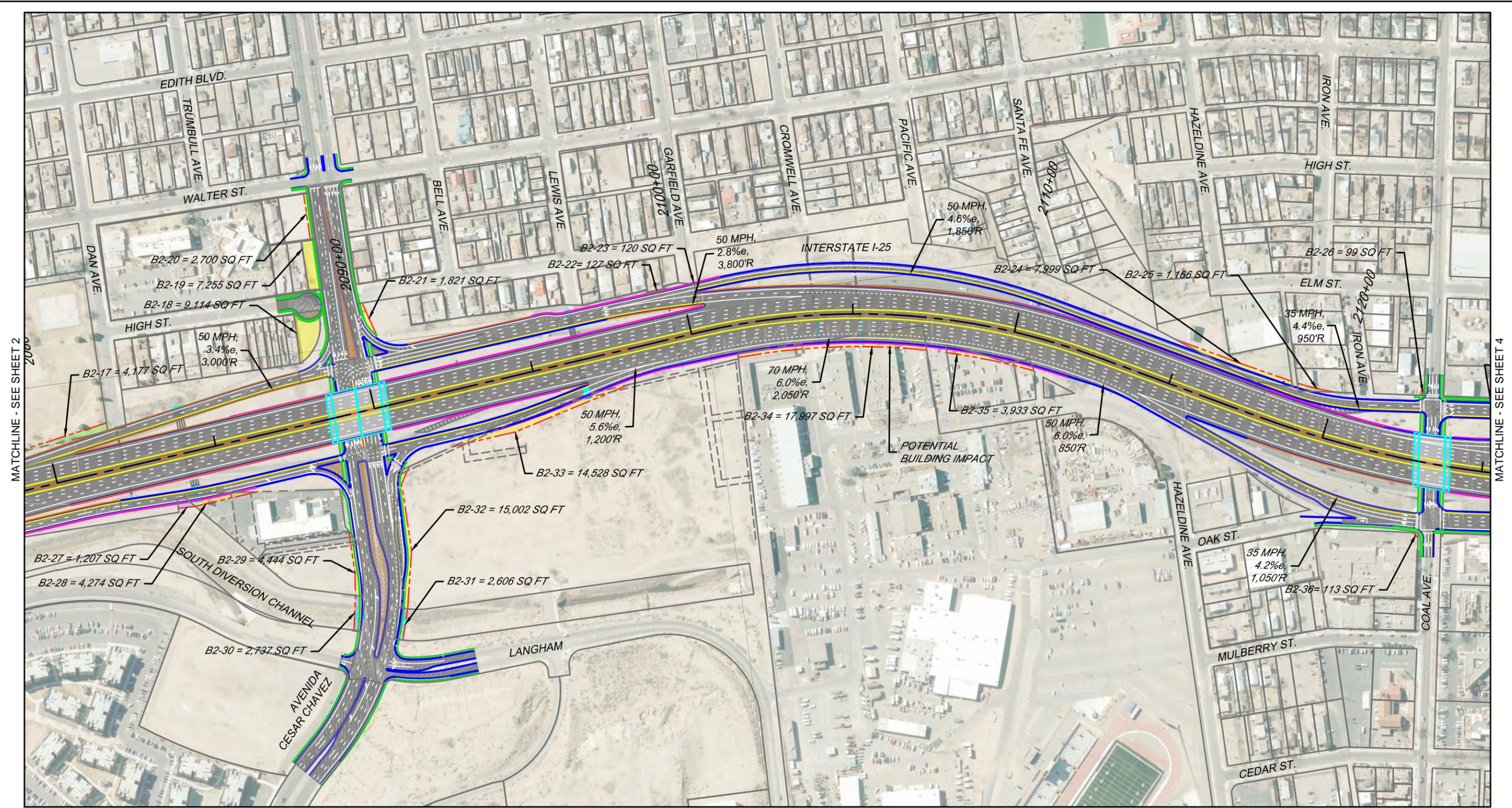
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	ASPHALT PAVEMENT		OTHER / PRIVATE
	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		



**SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS**

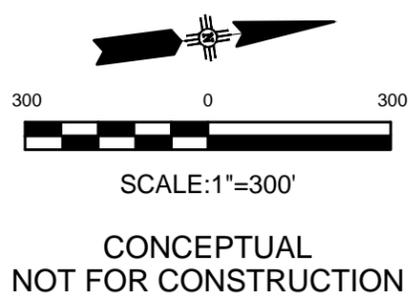
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**INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 NORTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS  
 ALTERNATIVE B2**



MATCHLINE - SEE SHEET 2

MATCHLINE - SEE SHEET 4



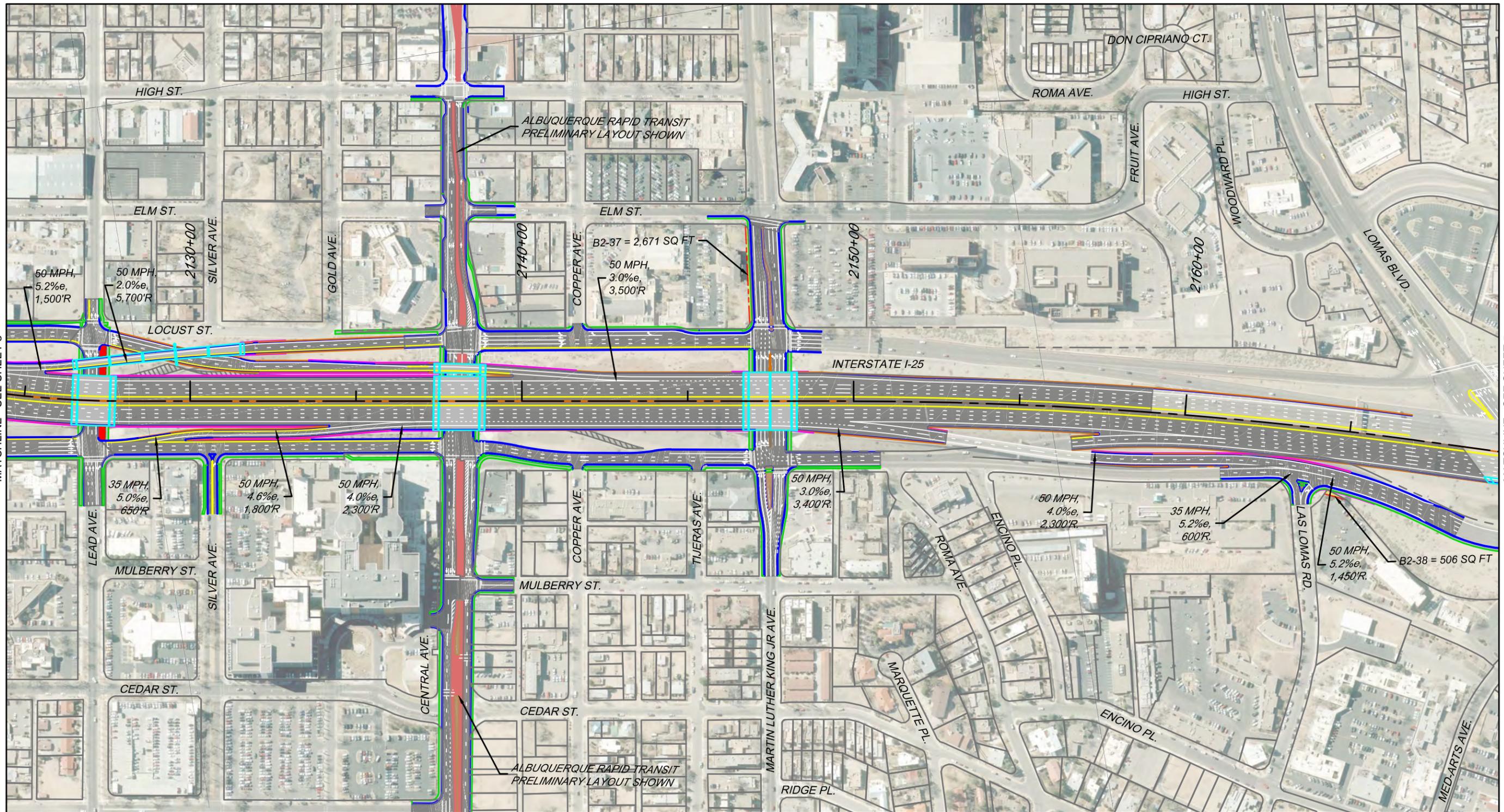
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	ASPHALT PAVEMENT		OTHER / PRIVATE
	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED RW
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		



SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

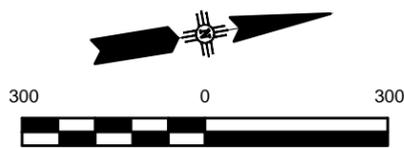
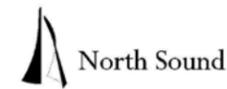
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INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 NORTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS  
 ALTERNATIVE B2



MATCHLINE - SEE SHEET 3

MATCHLINE - SEE SHEET 5



SCALE: 1"=300'  
 CONCEPTUAL  
 NOT FOR CONSTRUCTION

LEGEND

	ASPHALT PAVEMENT		OTHER / PRIVATE
	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		

KEY MAP



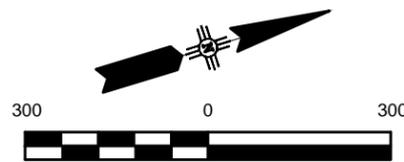
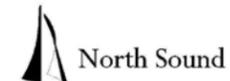
SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 NORTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS  
 ALTERNATIVE B2



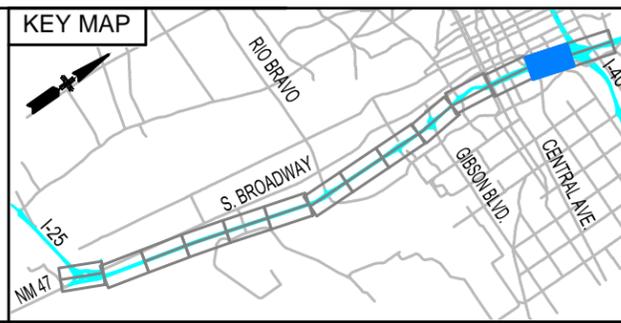
MATCHLINE - SEE SHEET 4

MATCHLINE - SEE SHEET 6



SCALE: 1"=300'  
**CONCEPTUAL  
 NOT FOR CONSTRUCTION**

LEGEND		REQUIRED R/W - EXISTING OWNERSHIP	
	ASPHALT PAVEMENT		OTHER / PRIVATE
	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		

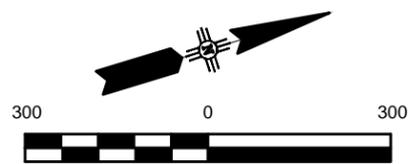
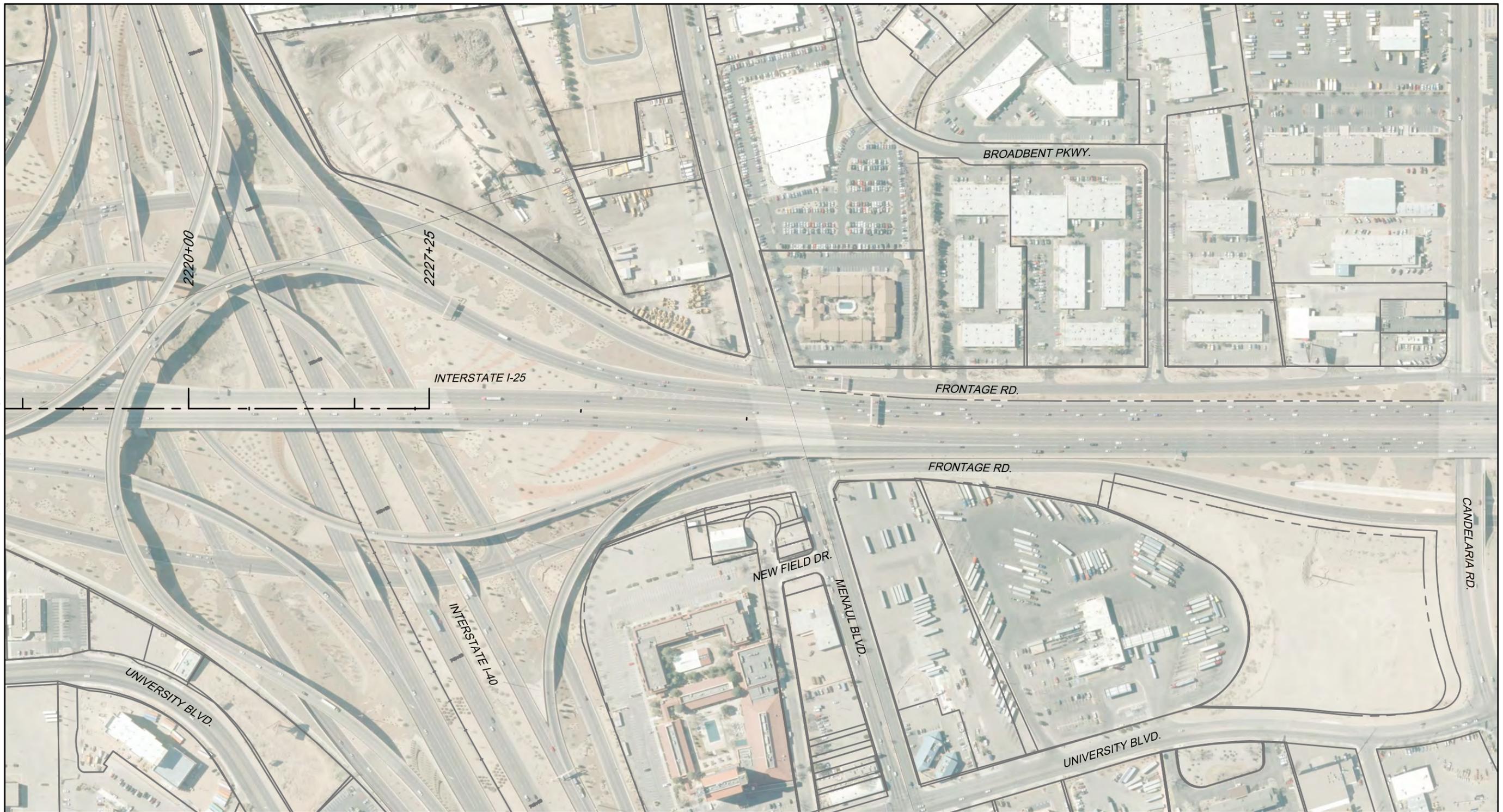


**SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS**

---

**INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 NORTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS  
 ALTERNATIVE B2**

MATCHLINE - SEE SHEET 5



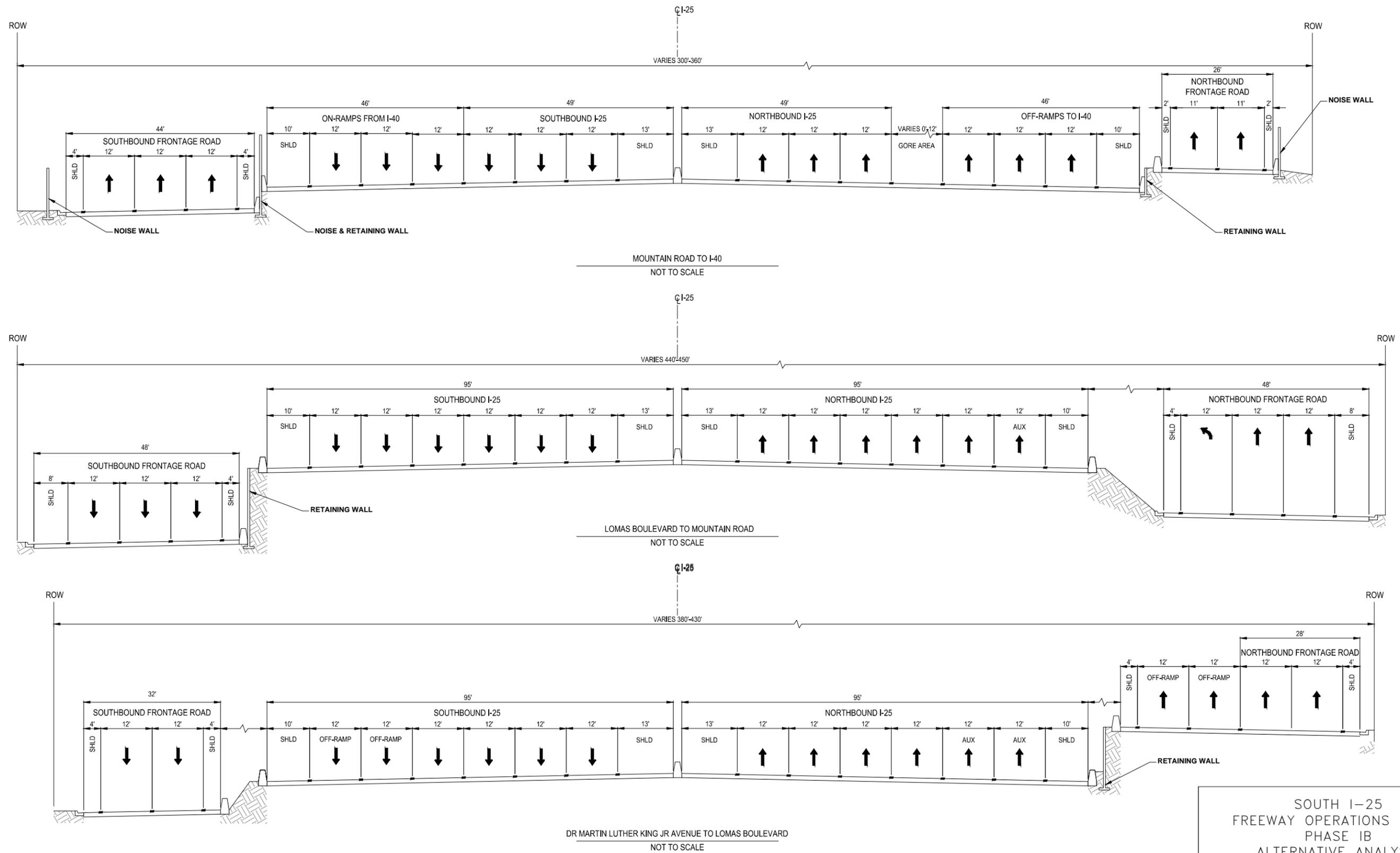
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 NOT FOR CONSTRUCTION

LEGEND		REQUIRED R/W - EXISTING OWNERSHIP	
	ASPHALT PAVEMENT		OTHER / PRIVATE
	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		



**SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS**

**INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 NORTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS  
 ALTERNATIVE B2**

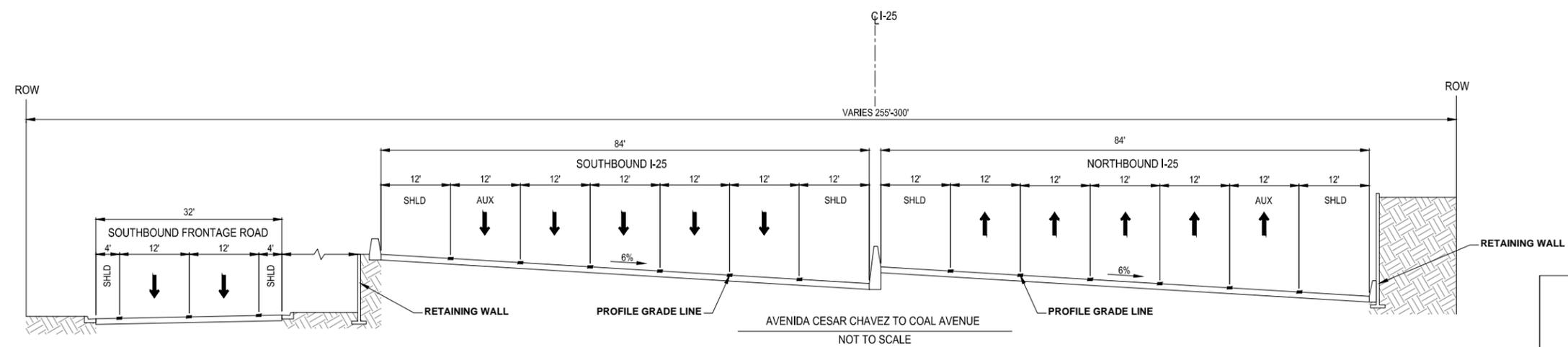
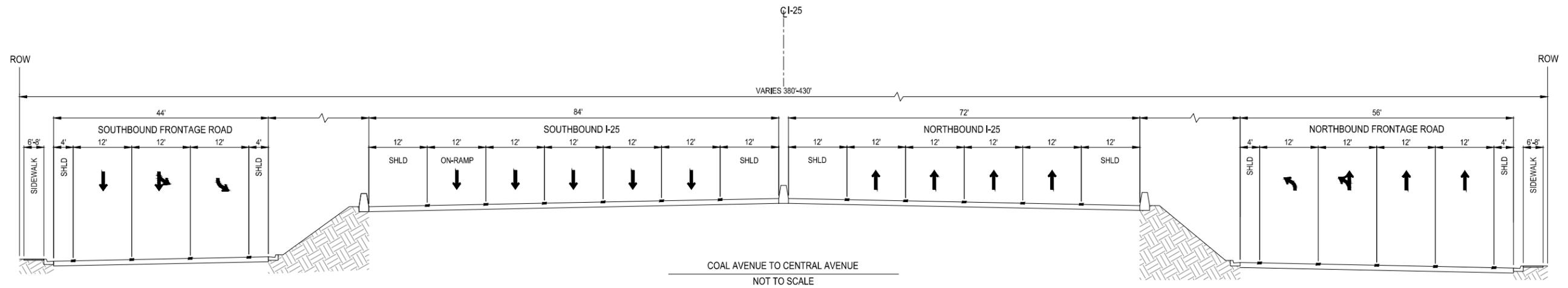
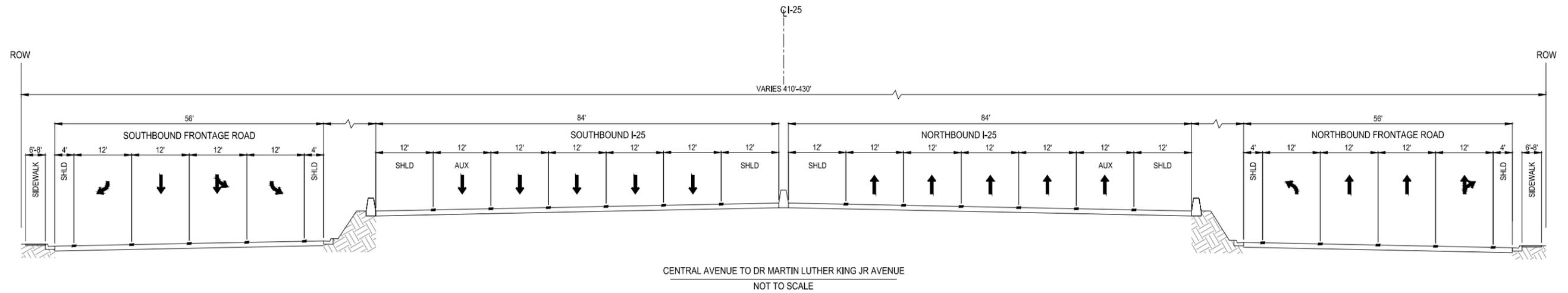


SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 TYPICAL SECTION-ALTERNATIVE B2  
 MAINLINE

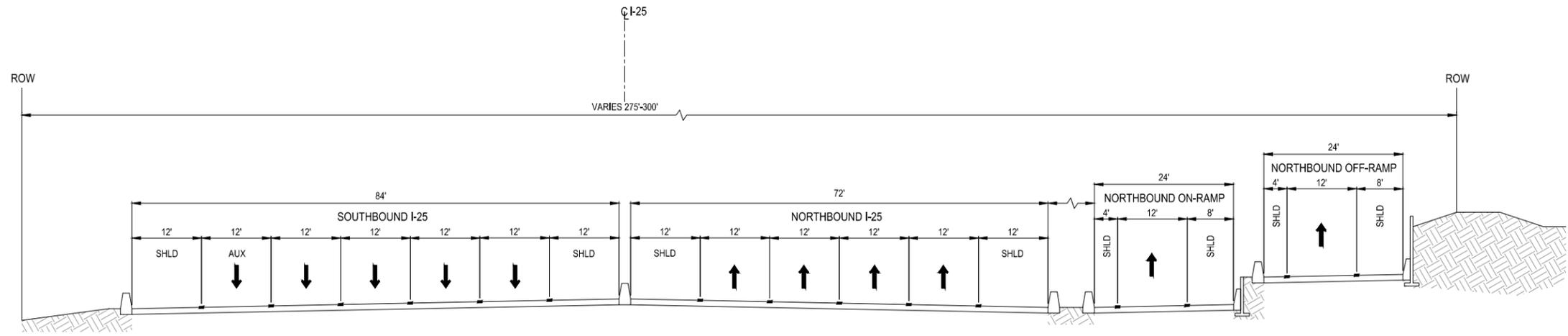
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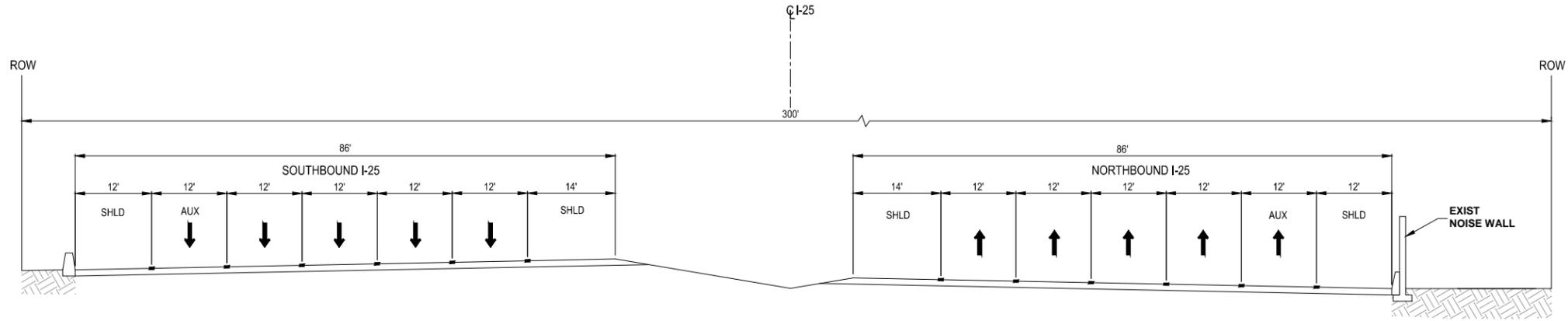


SOUTH I-25  
FREEWAY OPERATIONS STUDY  
PHASE I-B  
ALTERNATIVE ANALYSIS

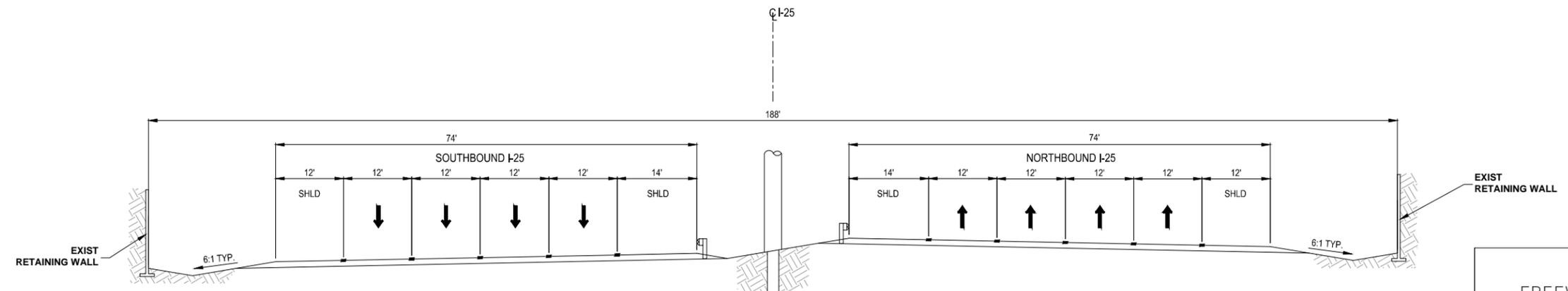
INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
TYPICAL SECTION-ALTERNATIVE B2  
MAINLINE



GIBSON BOULEVARD TO AVENIDA CESAR CHAVEZ  
NOT TO SCALE



SUNPORT BOULEVARD TO GIBSON BOULEVARD  
NOT TO SCALE

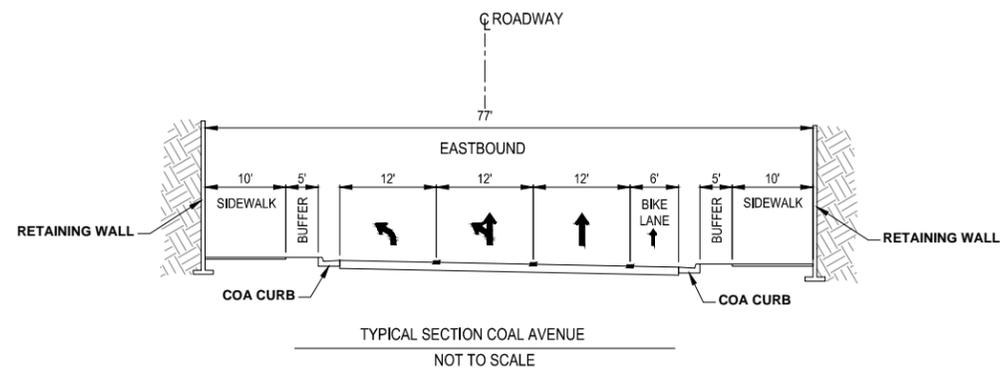
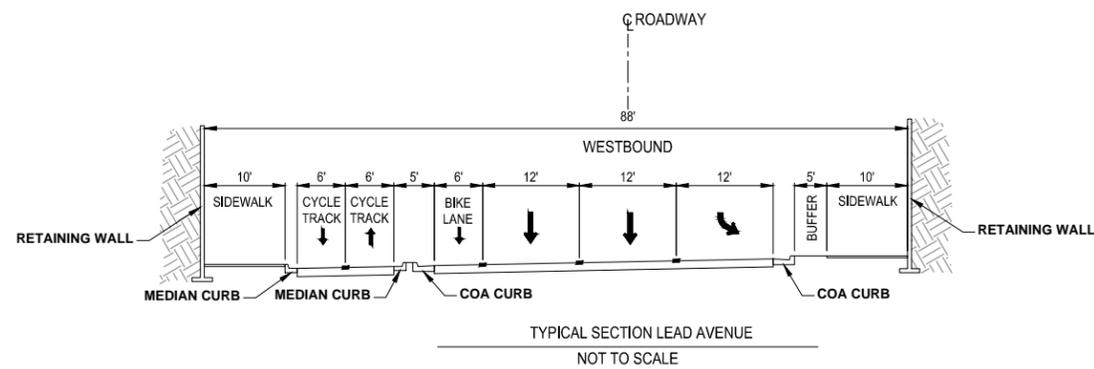
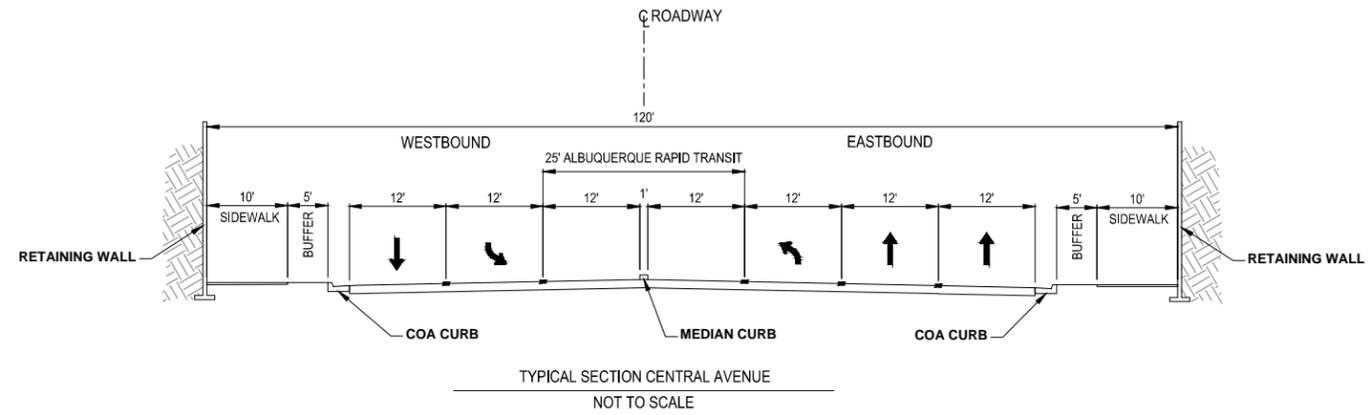
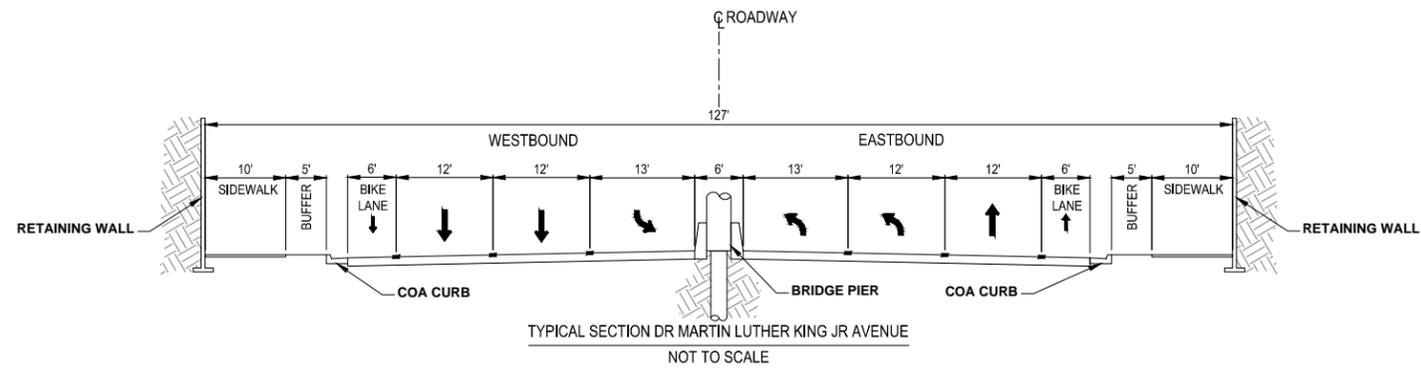


SUNPORT BOULEVARD AT BRIDGE  
NOT TO SCALE

SOUTH I-25  
FREeway OPERATIONS STUDY  
PHASE IB  
ALTERNATIVE ANALYSIS

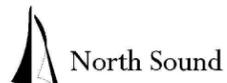
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INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
TYPICAL SECTION-ALTERNATIVE B2  
MAINLINE

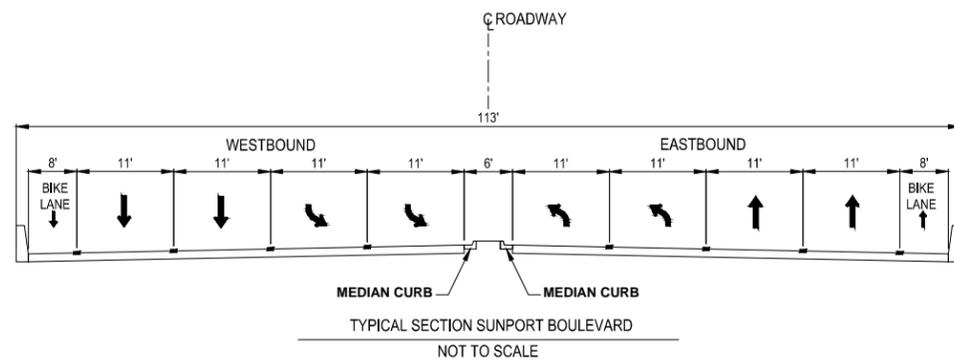
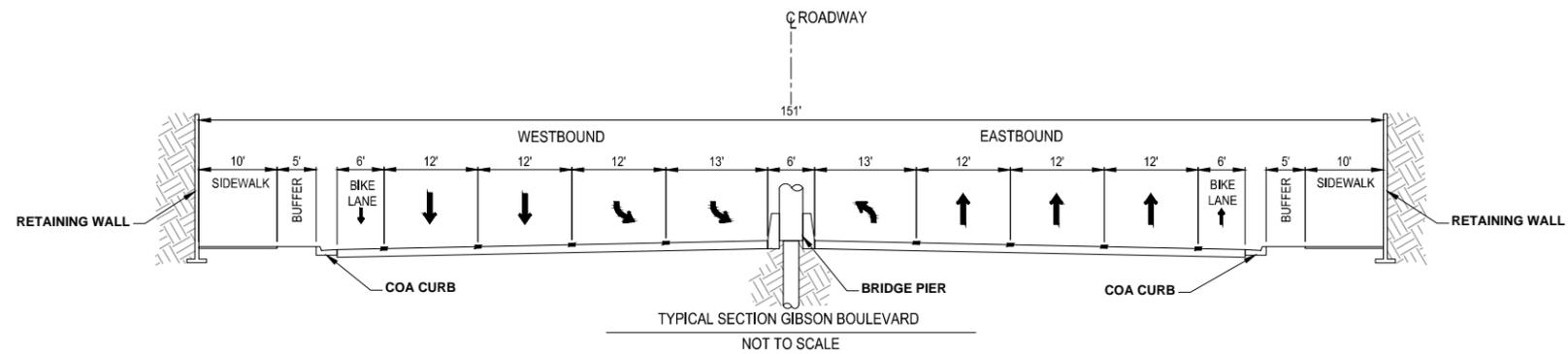
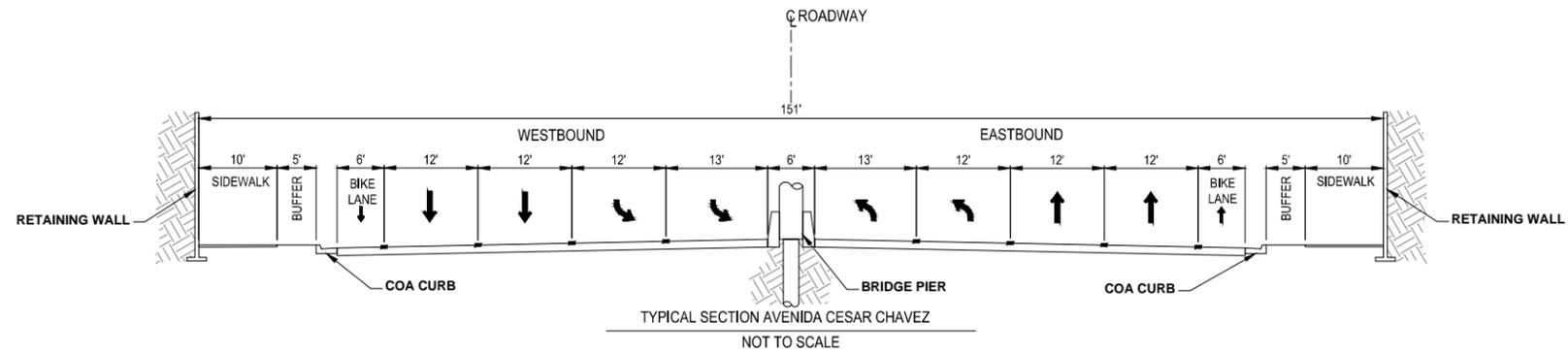


SOUTH I-25  
FREEWAY OPERATIONS STUDY  
PHASE IB  
ALTERNATIVE ANALYSIS

INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
TYPICAL SECTION-ALTERNATIVE B2  
SURFACE STREETS



CONCEPTUAL  
NOT FOR CONSTRUCTION



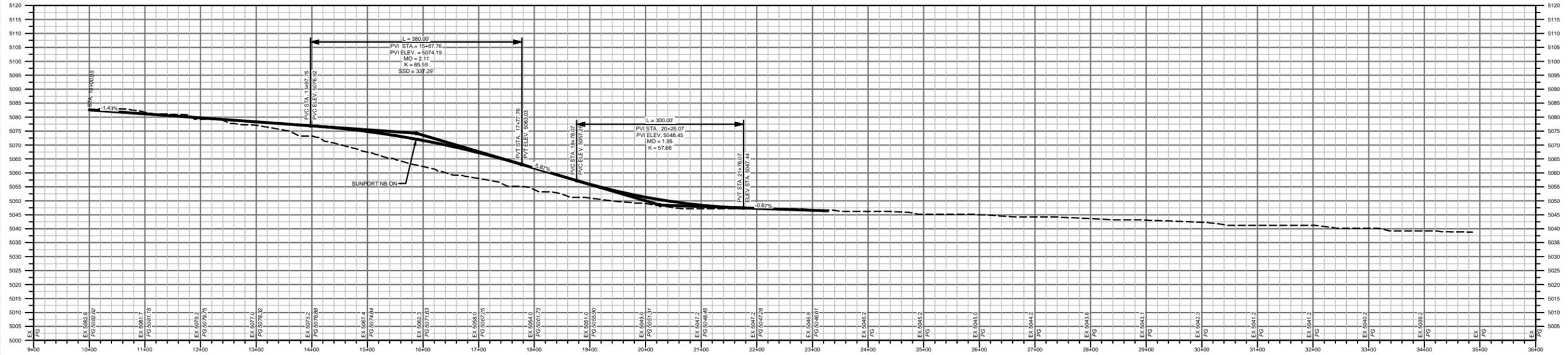
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FREeway OPERATIONS STUDY  
PHASE IB  
ALTERNATIVE ANALYSIS

INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
TYPICAL SECTION-ALTERNATIVE B2  
SURFACE STREETS

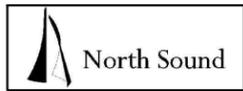
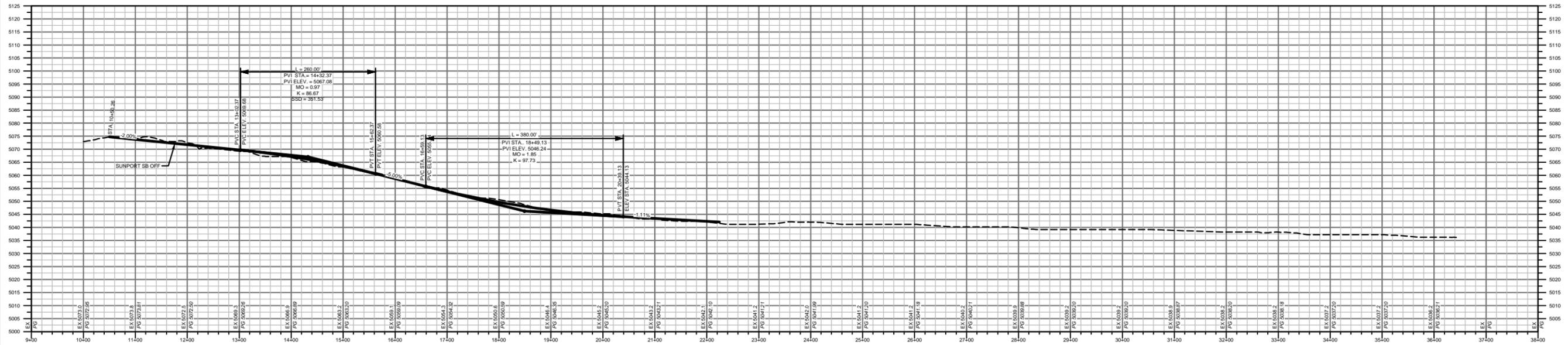
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### B2 SUNPORT NB ON



### B2 SUNPORT SB OFF

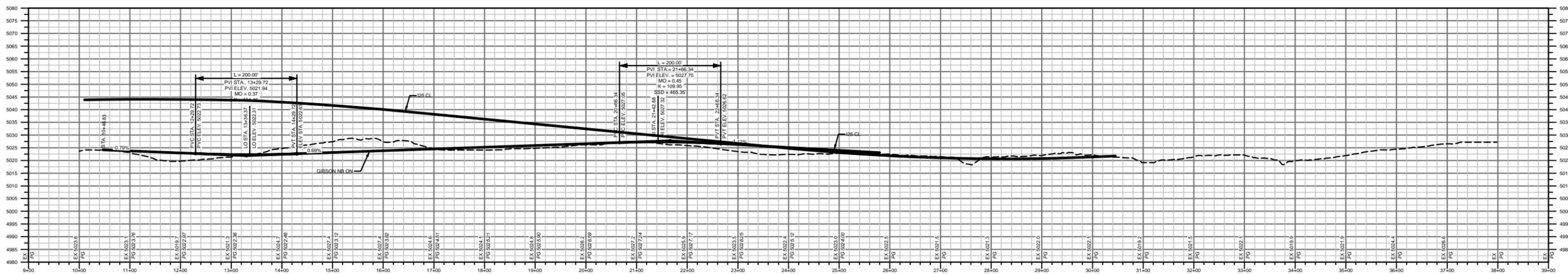


SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

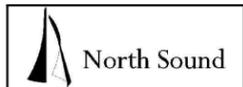
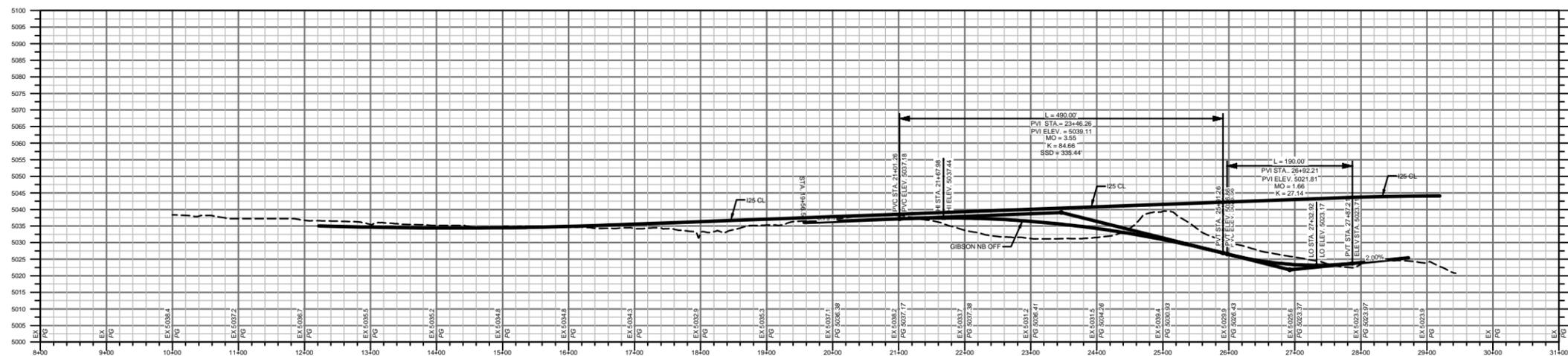
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INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 ROADWAY PROFILES ALTERNATIVE B2

### B2 GIBSON NB ON



### B2 GIBSON NB OFF

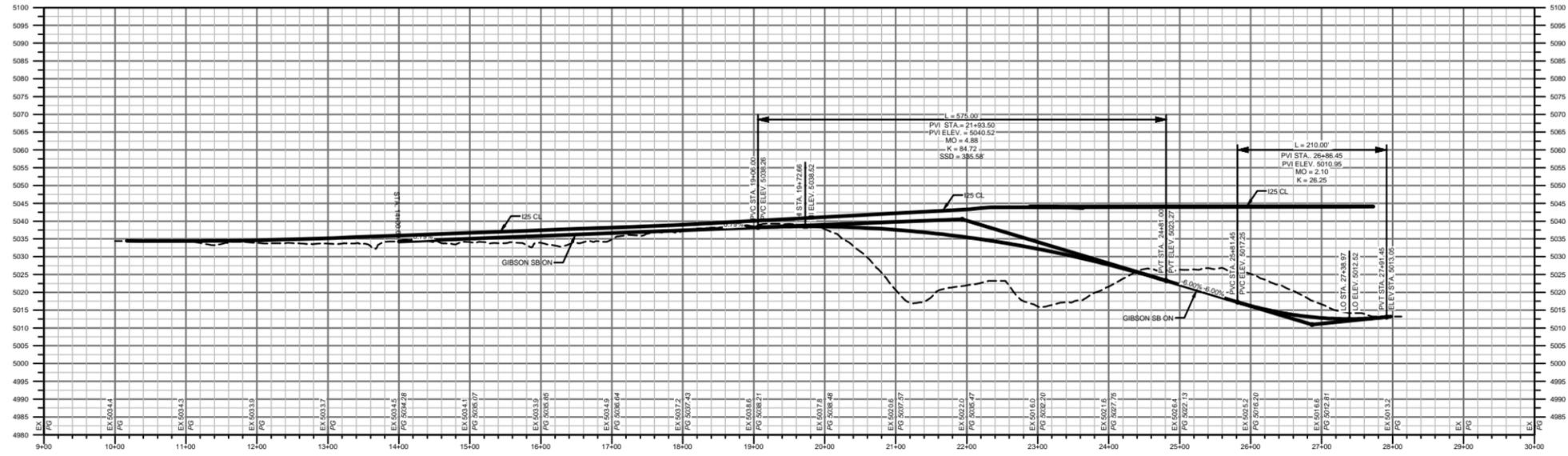


SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

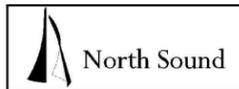
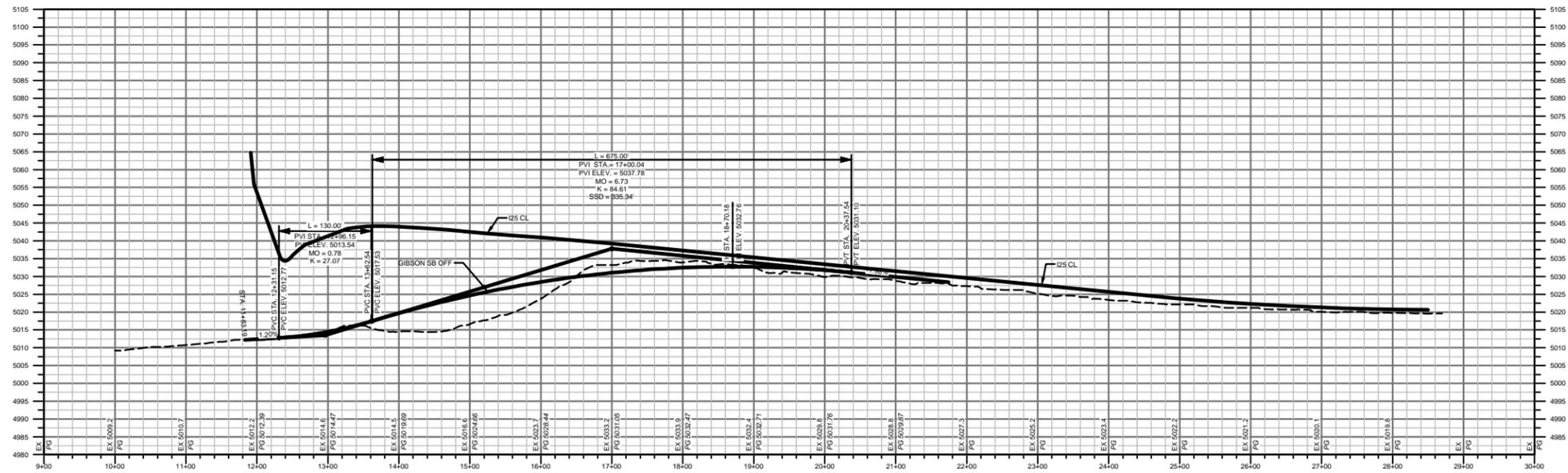
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INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 ROADWAY PROFILES ALTERNATIVE B2

### B2 GIBSON SB ON



### B2 GIBSON SB OFF

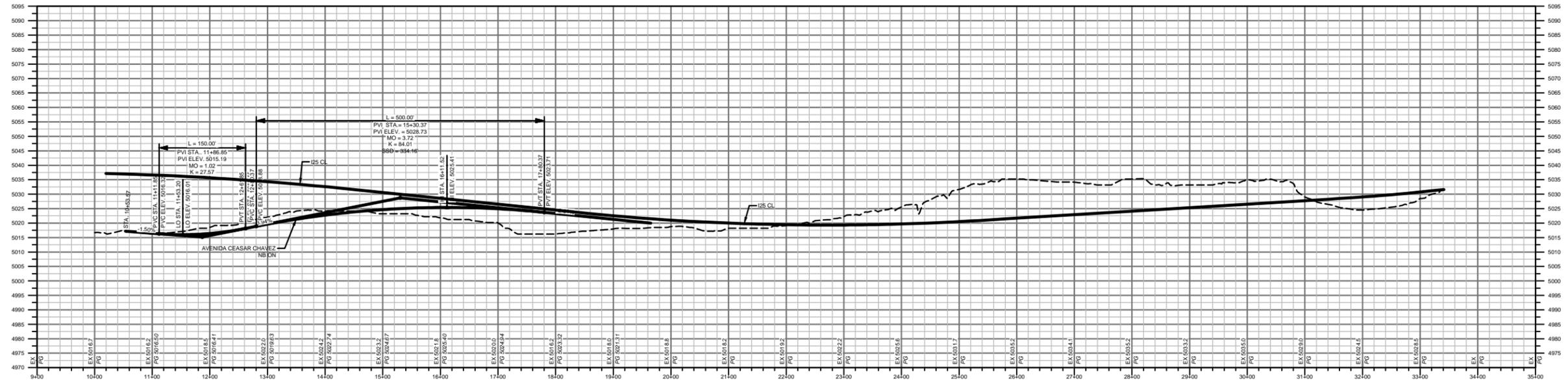


SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

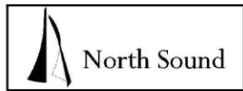
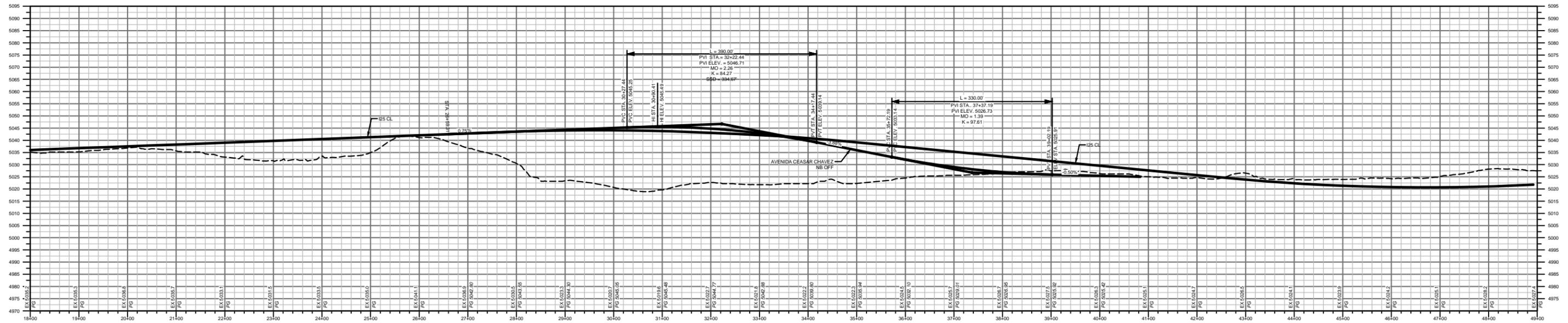
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INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 ROADWAY PROFILES ALTERNATIVE B2

### B2 ACC NB ON



### B2 ACC NB OFF

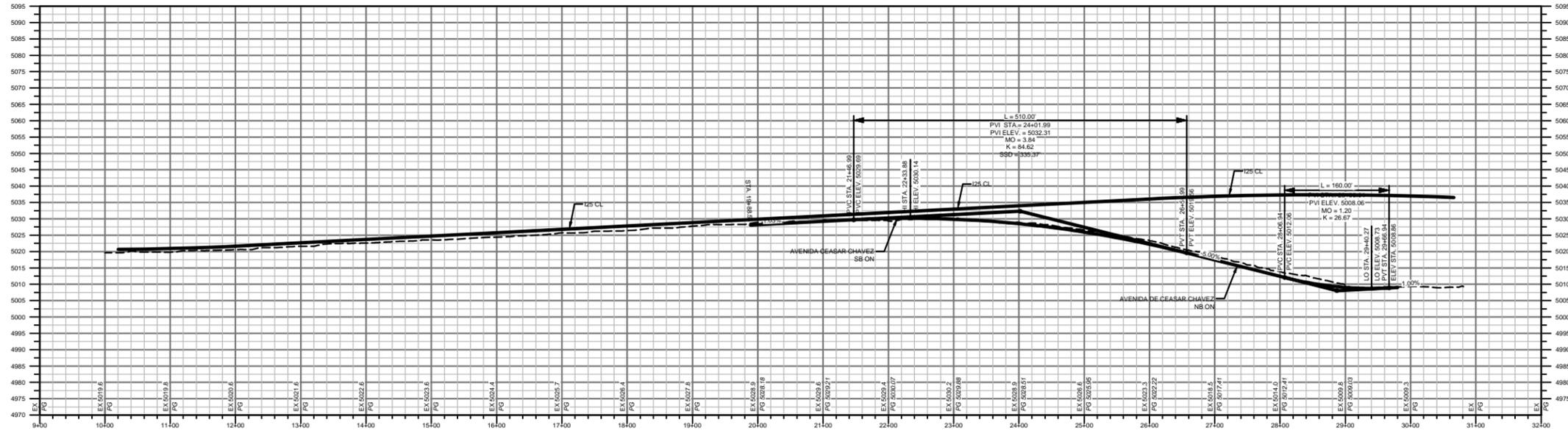


SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

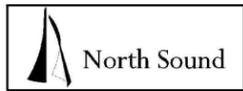
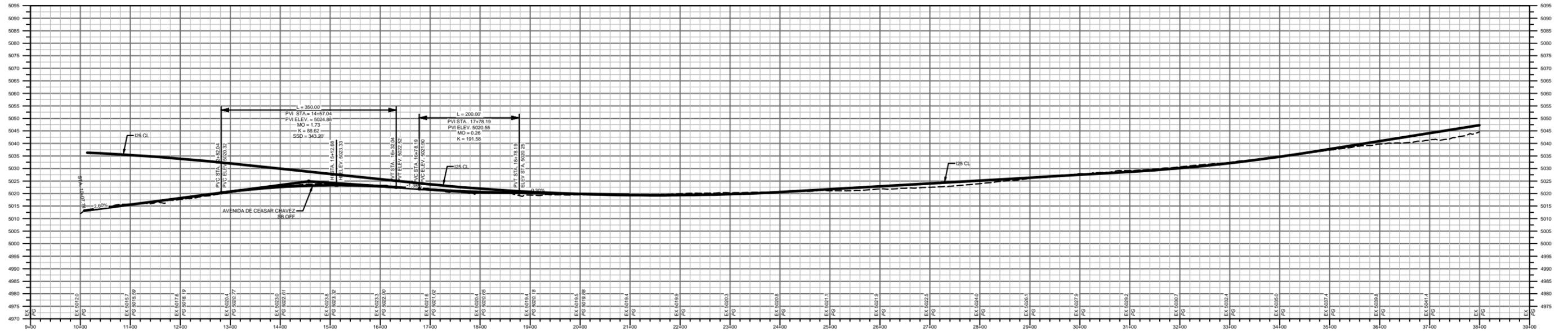
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INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 ROADWAY PROFILES ALTERNATIVE B2

### B2 ACC SB ON



### B2 ACC SB OFF

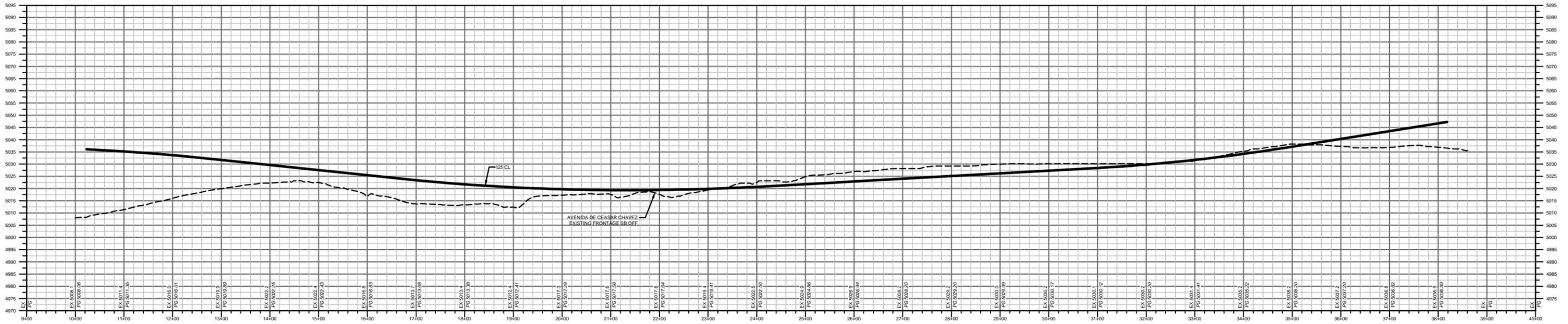


SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

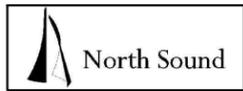
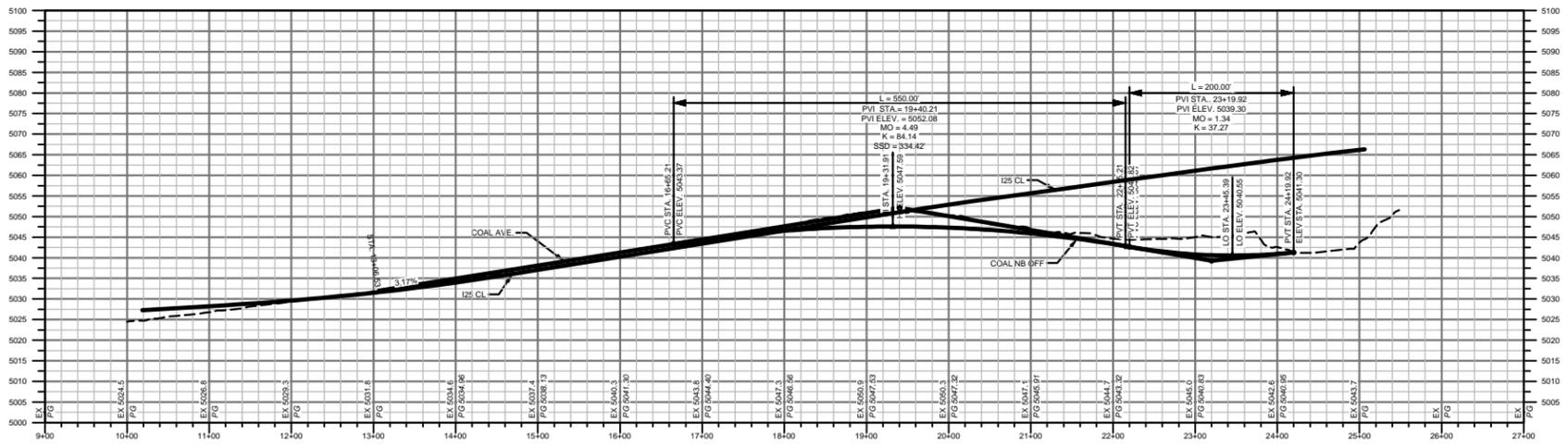
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INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 ROADWAY PROFILES ALTERNATIVE B2

### B2 ACC SB FRONTAGE



### B2 COAL NB OFF

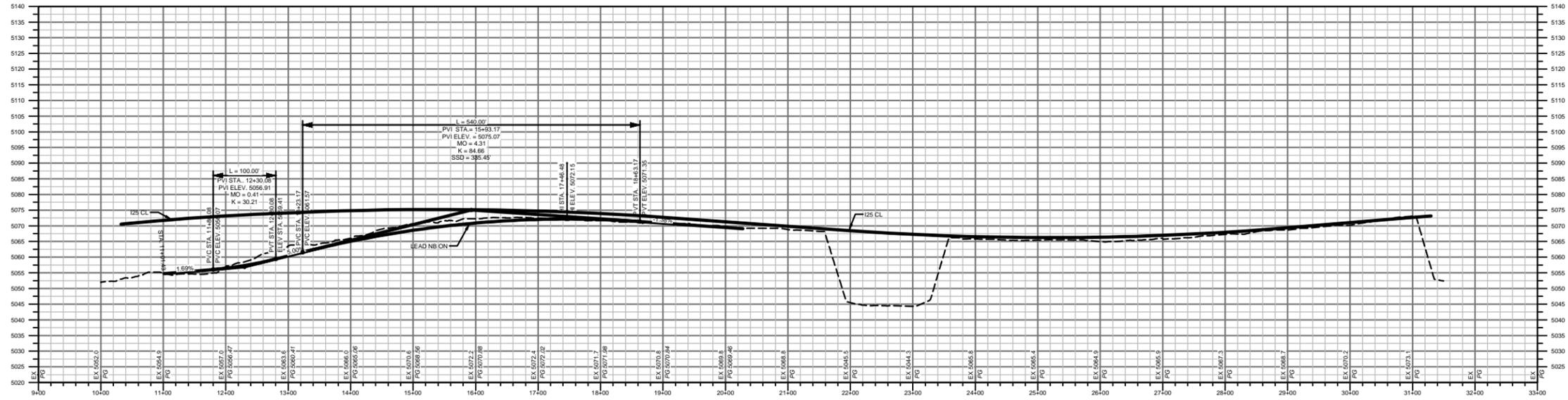


SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

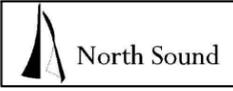
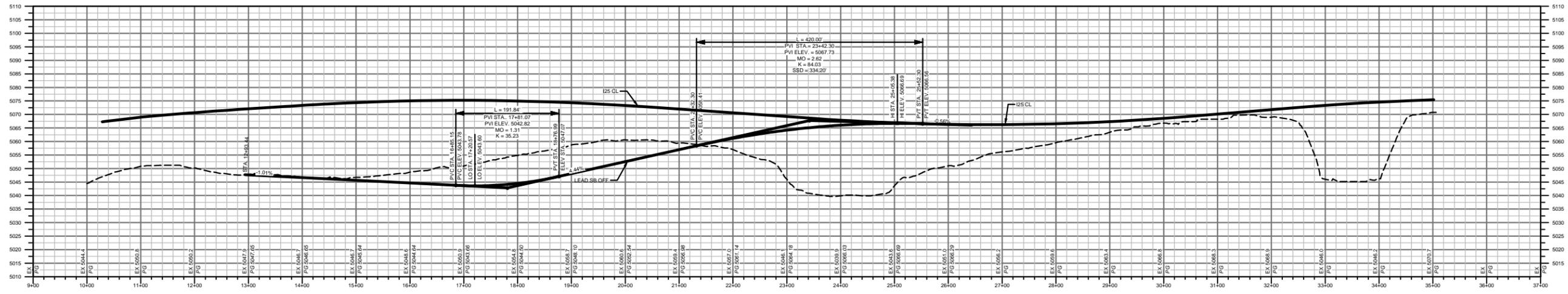
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INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 ROADWAY PROFILES ALTERNATIVE B2

### B2 LEAD NB ON



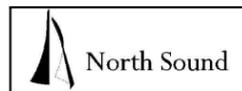
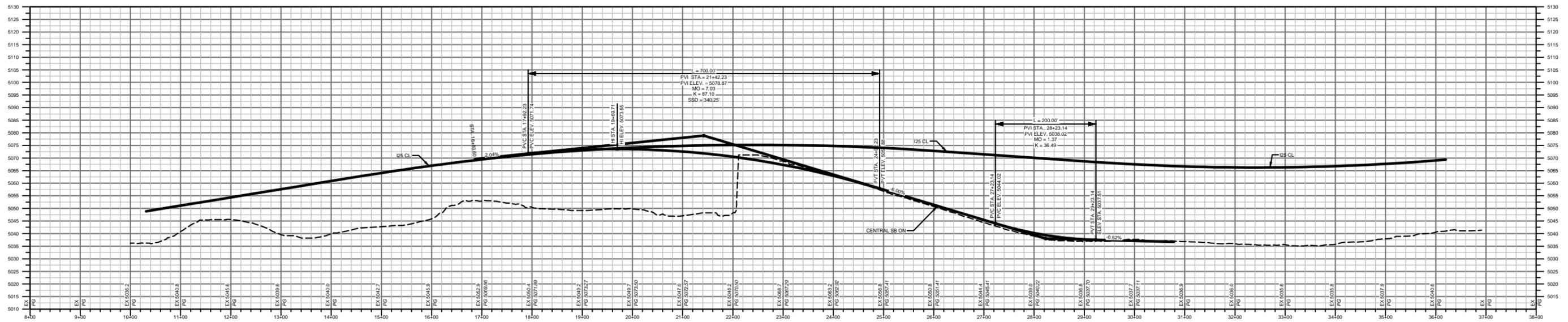
### B2 LEAD SB OFF



SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 ROADWAY PROFILES ALTERNATIVE B2

### B2 CENTRAL SB ON



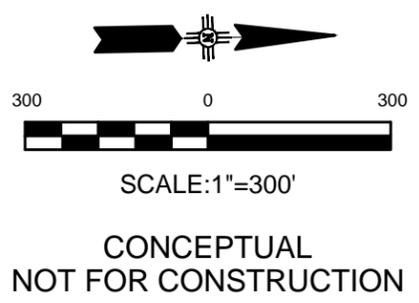
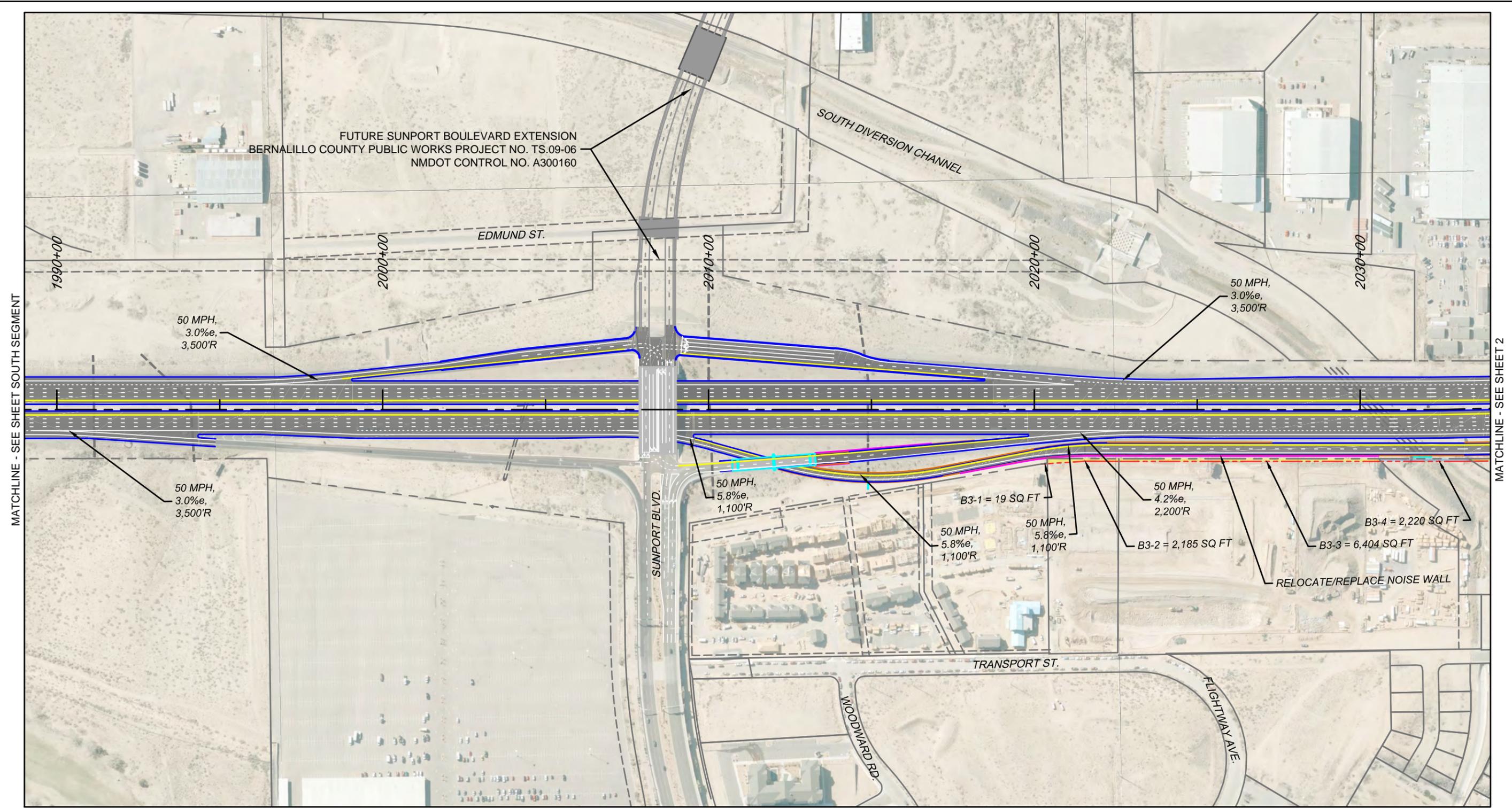
SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

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INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 ROADWAY PROFILES ALTERNATIVE B2



**Appendix D**  
**Conceptual Design Plans for Build Alternative B3**

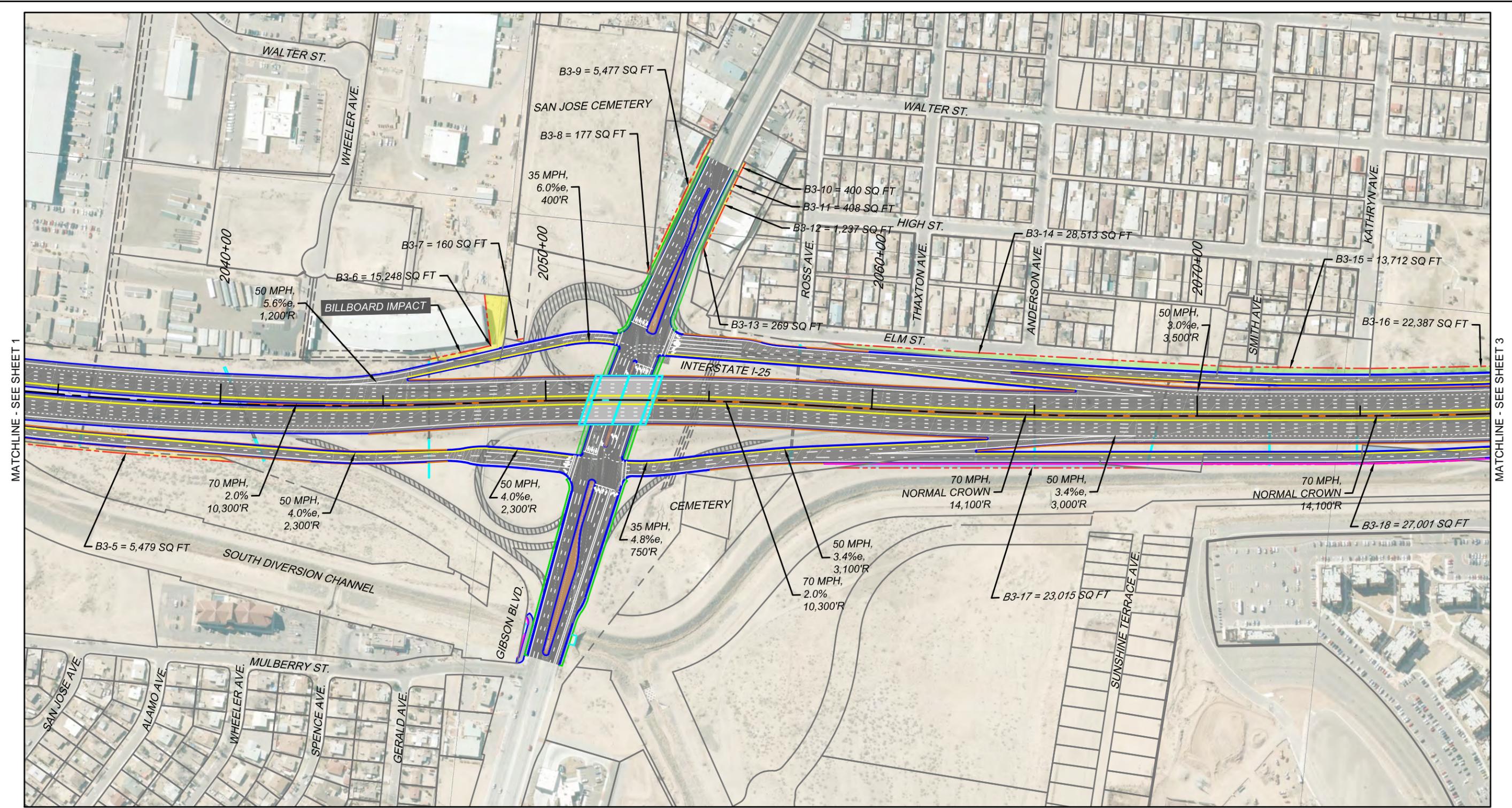


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	ASPHALT PAVEMENT		OTHER / PRIVATE
	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		



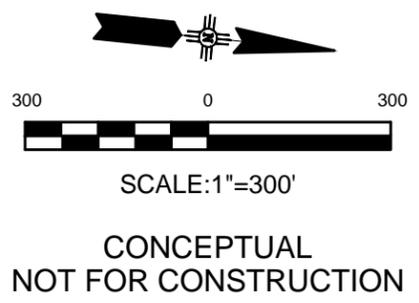
SOUTH I-25  
FREEWAY OPERATIONS STUDY  
PHASE IB  
ALTERNATIVE ANALYSIS

INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
NORTH SEGMENT - PLAN LAYOUT  
AND RIGHT OF WAY IMPACTS  
ALTERNATIVE B3



MATCHLINE - SEE SHEET 1

MATCHLINE - SEE SHEET 3



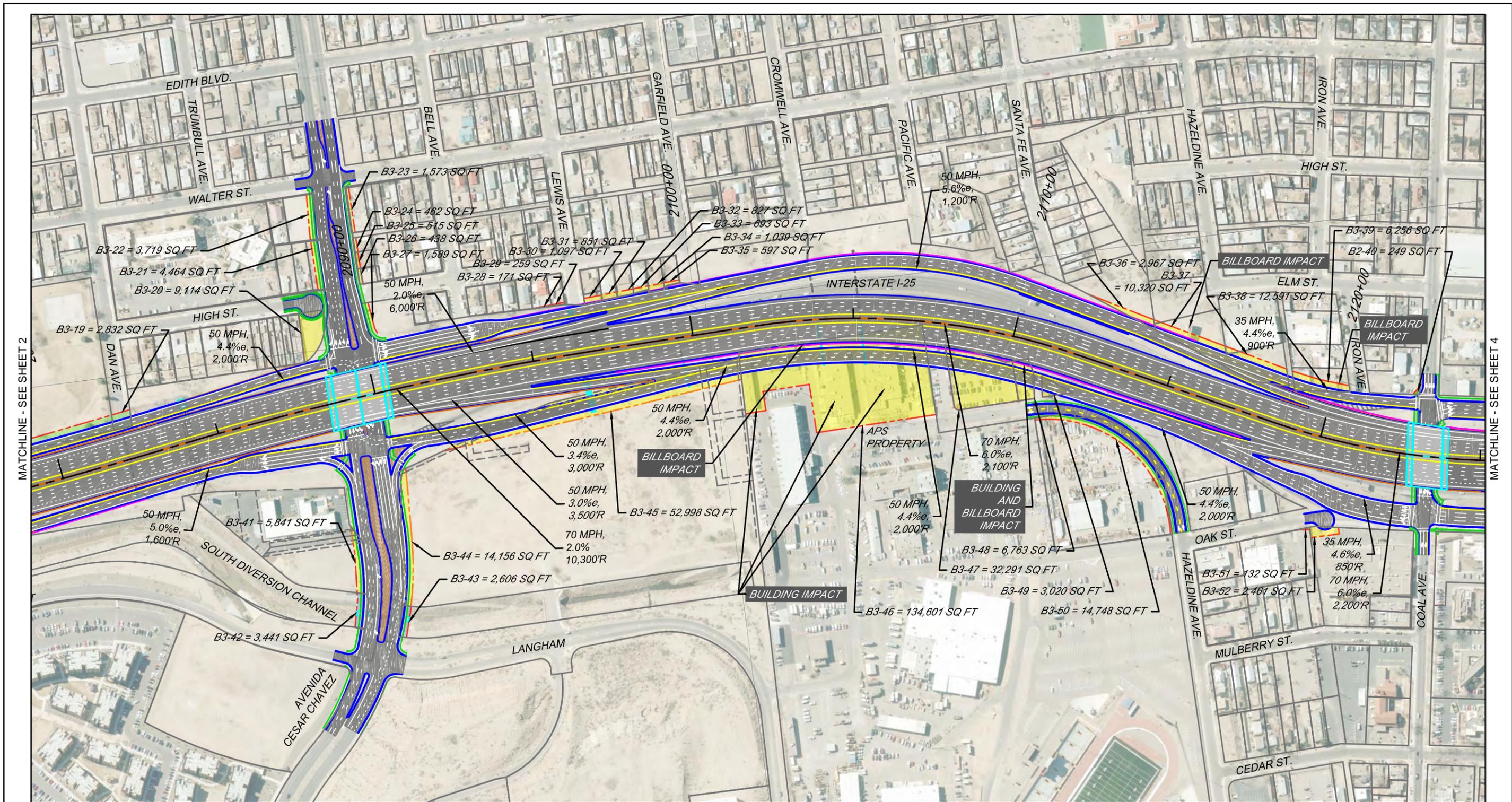
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	ASPHALT PAVEMENT		OTHER / PRIVATE
	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		



**SOUTH I-25**  
**FREEWAY OPERATIONS STUDY**  
**PHASE IB**  
**ALTERNATIVE ANALYSIS**

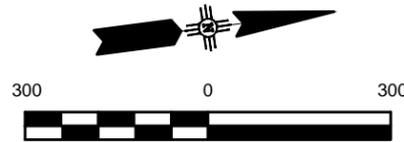
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**INTERSTATE 25**  
**NM 47/BROADWAY BLVD. TO I-40**  
**NORTH SEGMENT - PLAN LAYOUT**  
**AND RIGHT OF WAY IMPACTS**  
**ALTERNATIVE B3**



MATCHLINE - SEE SHEET 2

MATCHLINE - SEE SHEET 4



SCALE: 1"=300'  
**CONCEPTUAL  
 NOT FOR CONSTRUCTION**

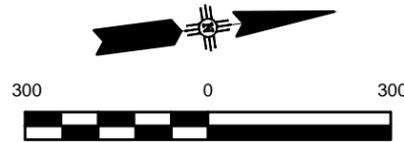
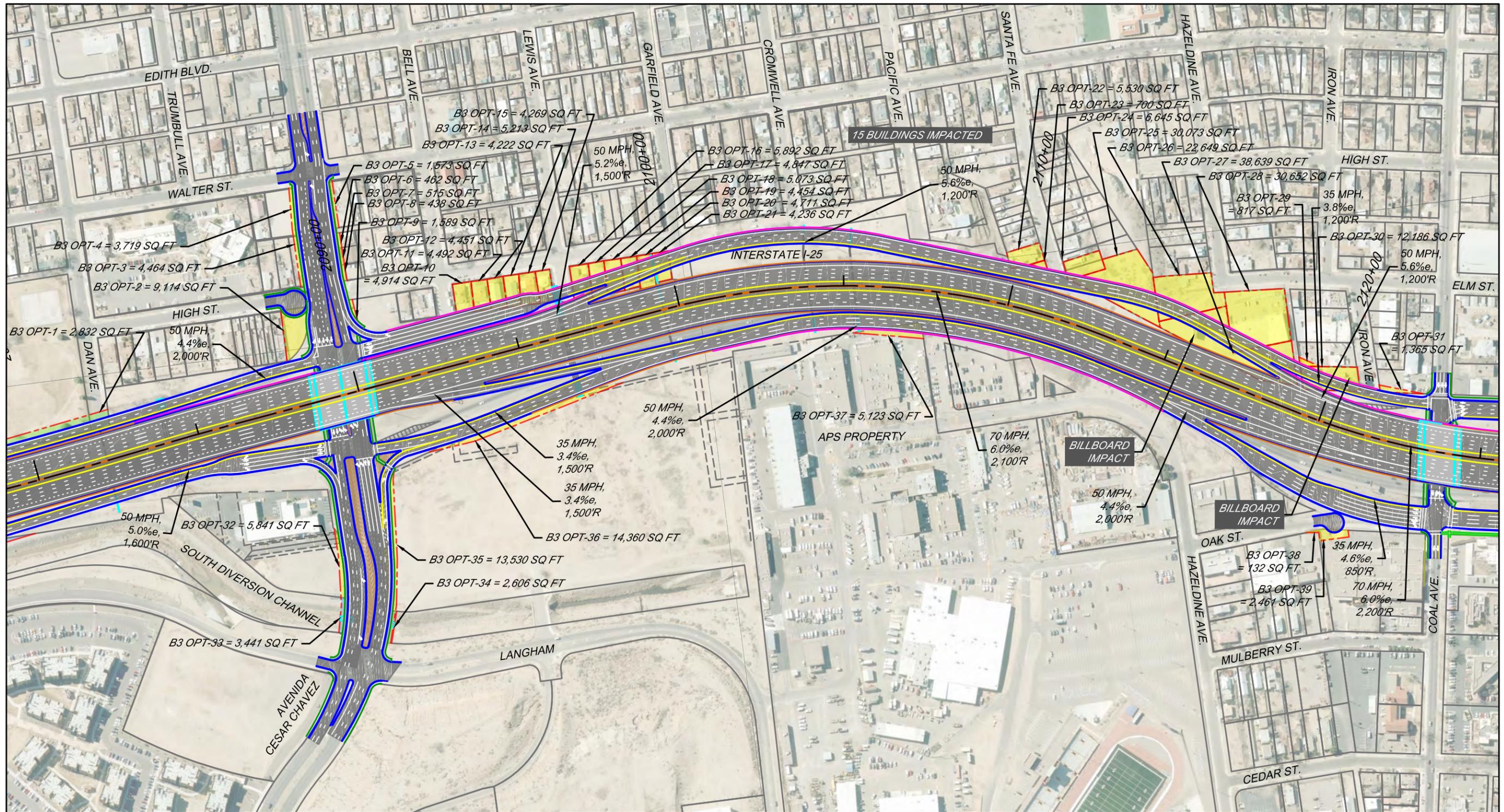
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	ASPHALT PAVEMENT		OTHER / PRIVATE
	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED RW
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		



**SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS**

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**INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 NORTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS  
 ALTERNATIVE B3**



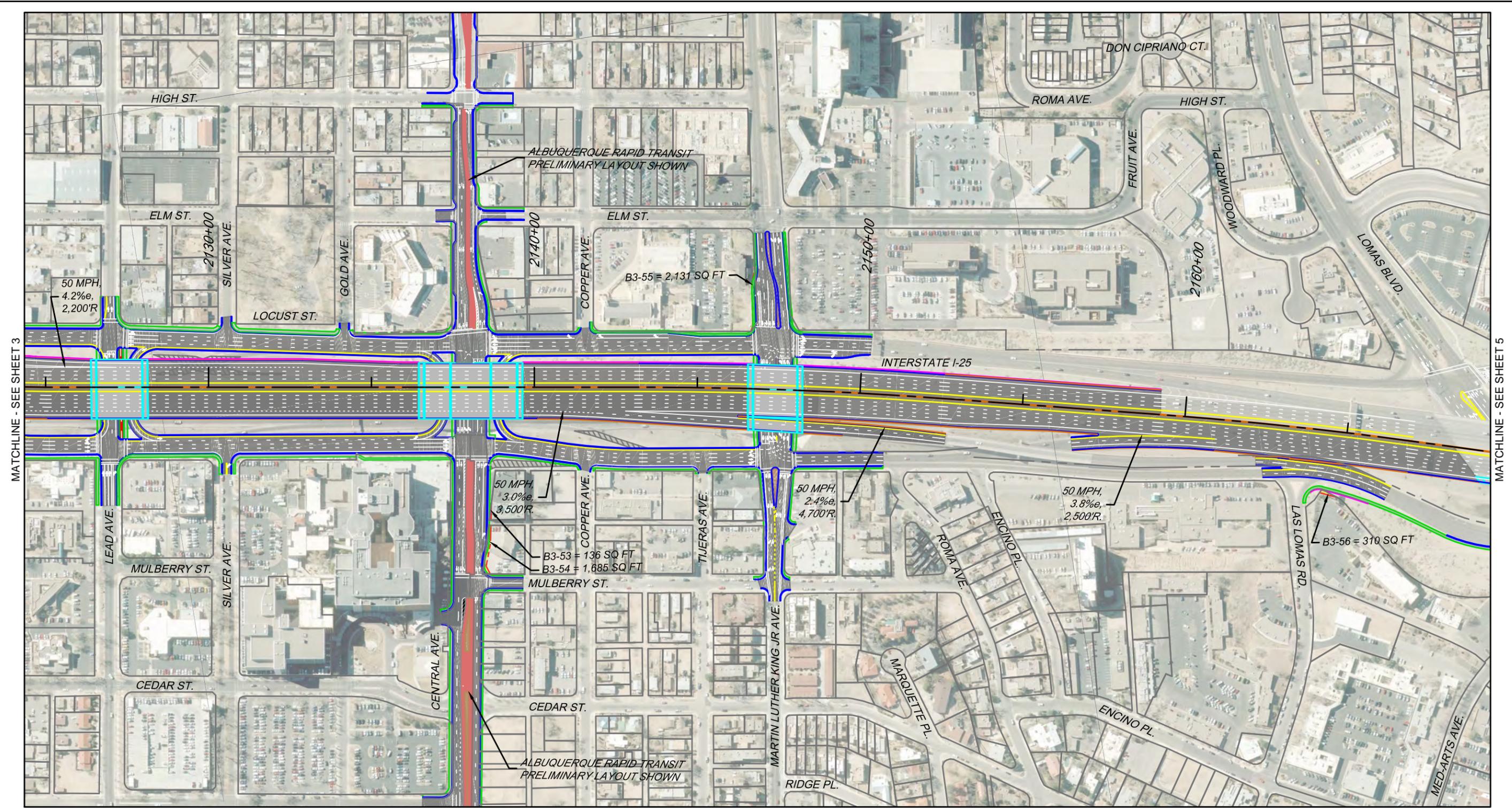
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 CONCEPTUAL  
 NOT FOR CONSTRUCTION

LEGEND		REQUIRED RW - EXISTING OWNERSHIP	
	ASPHALT PAVEMENT		OTHER / PRIVATE
	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED RW
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		



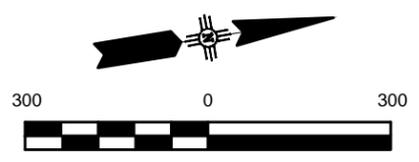
SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 NORTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS  
 ALTERNATIVE B3 OPTION



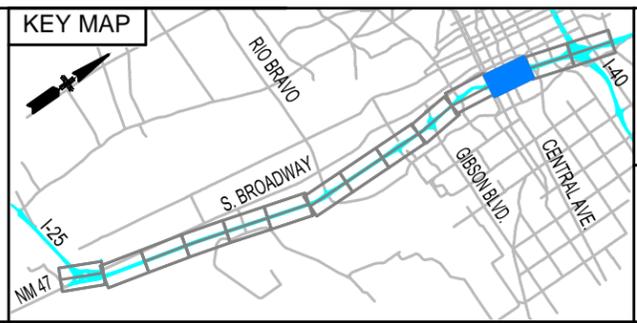
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MATCHLINE - SEE SHEET 5



SCALE: 1"=300'  
**CONCEPTUAL  
 NOT FOR CONSTRUCTION**

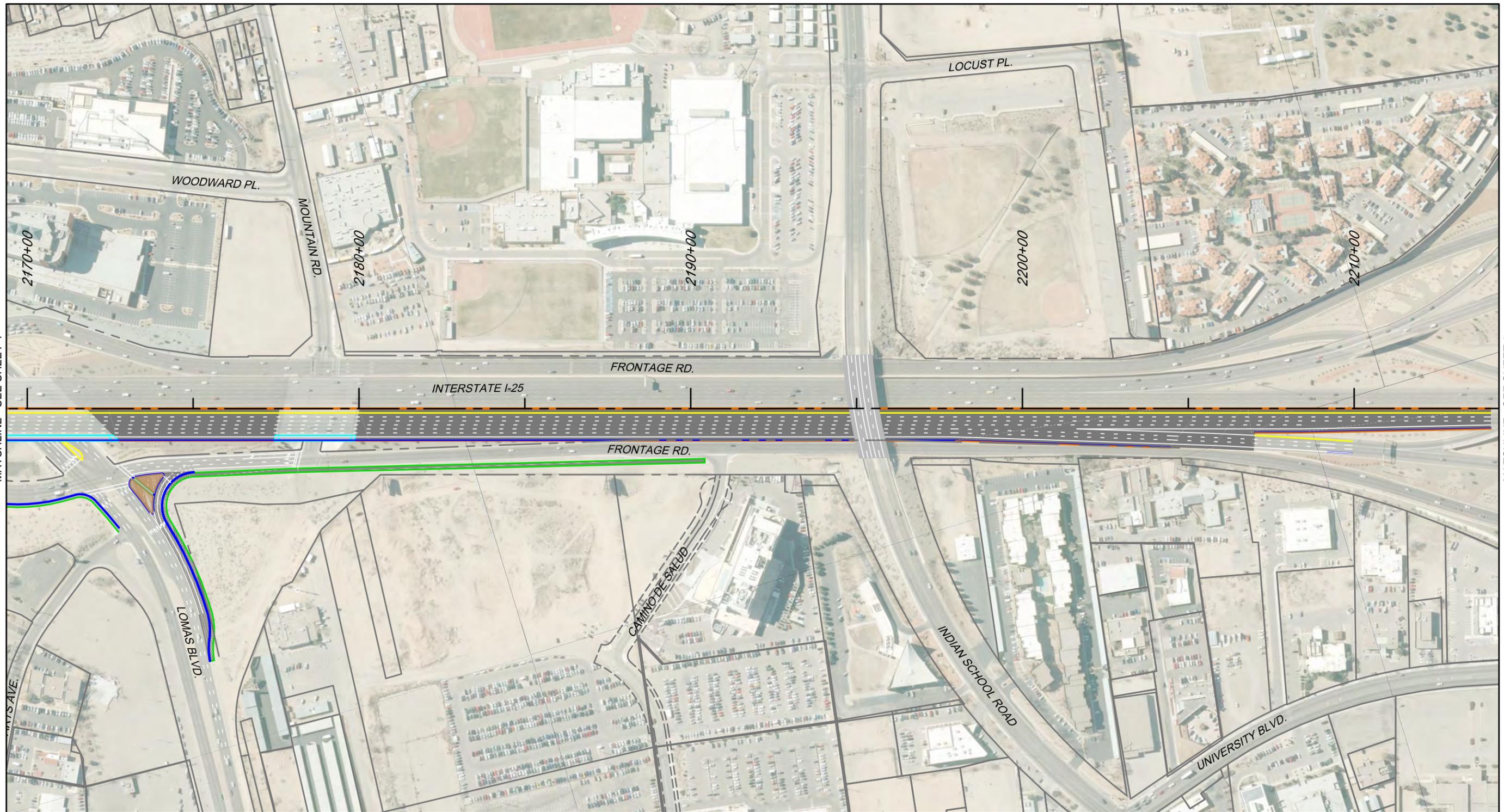
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	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED RW
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		



**SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS**

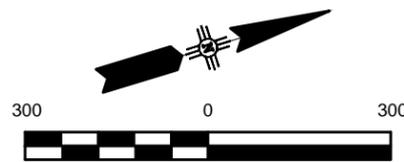
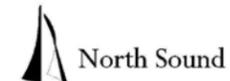
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**INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 NORTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS  
 ALTERNATIVE B3**



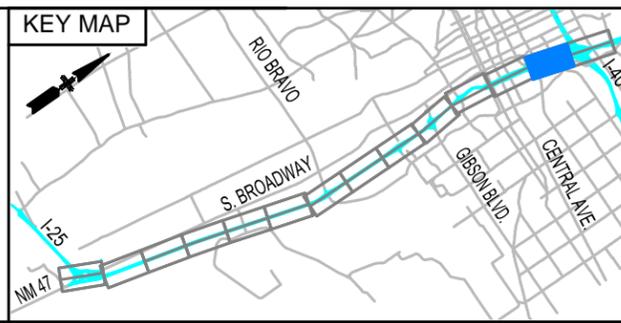
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MATCHLINE - SEE SHEET 6



SCALE: 1"=300'  
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 NOT FOR CONSTRUCTION**

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	BRIDGE STRUCTURE		AMAFA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED RW
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		

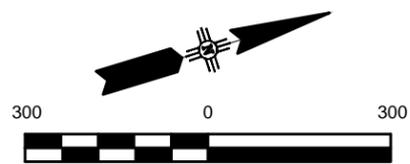
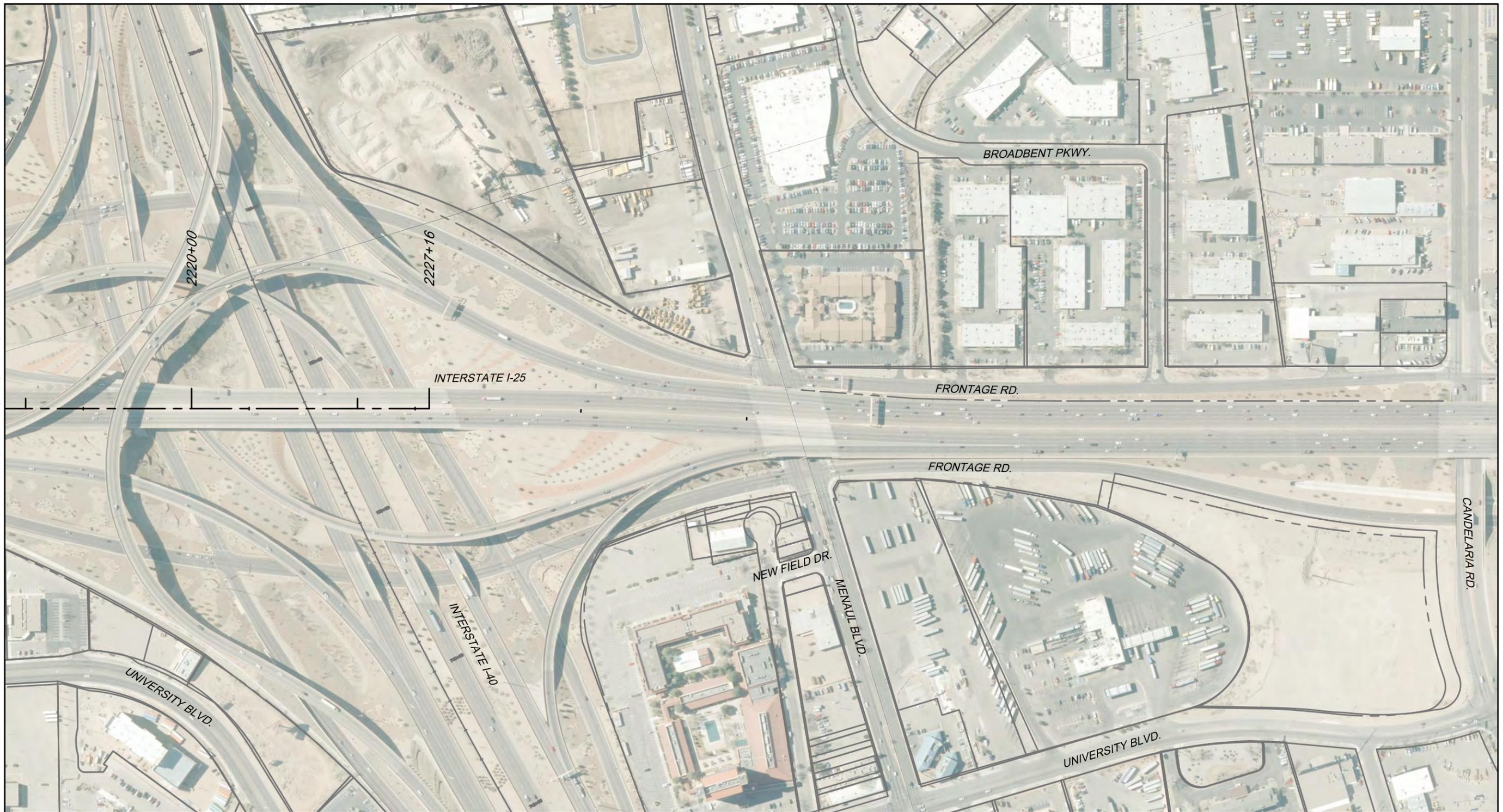


SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

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INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 NORTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS  
 ALTERNATIVE B3

MATCHLINE - SEE SHEET 5



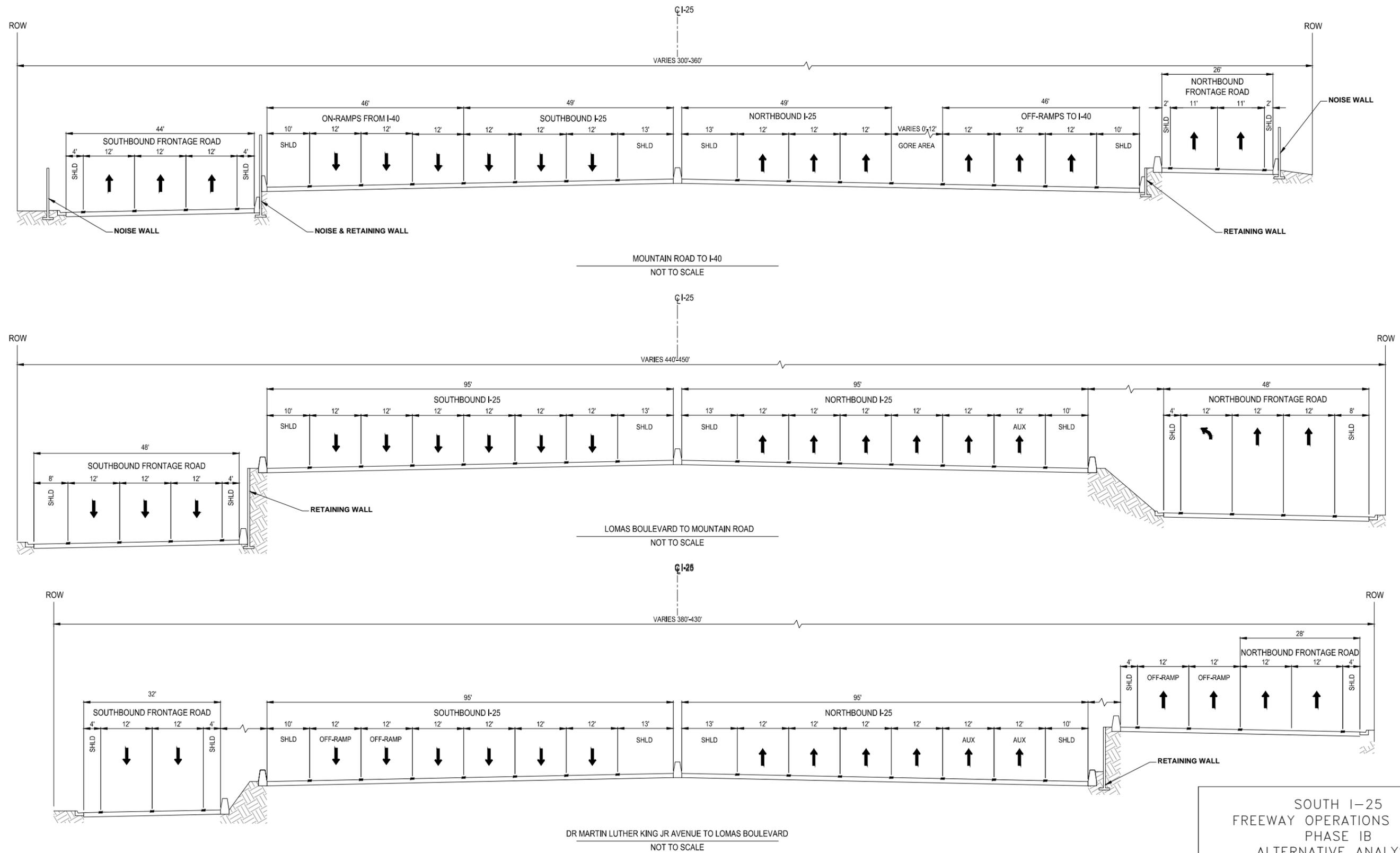
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 NOT FOR CONSTRUCTION

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	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		



SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 NORTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS  
 ALTERNATIVE B3

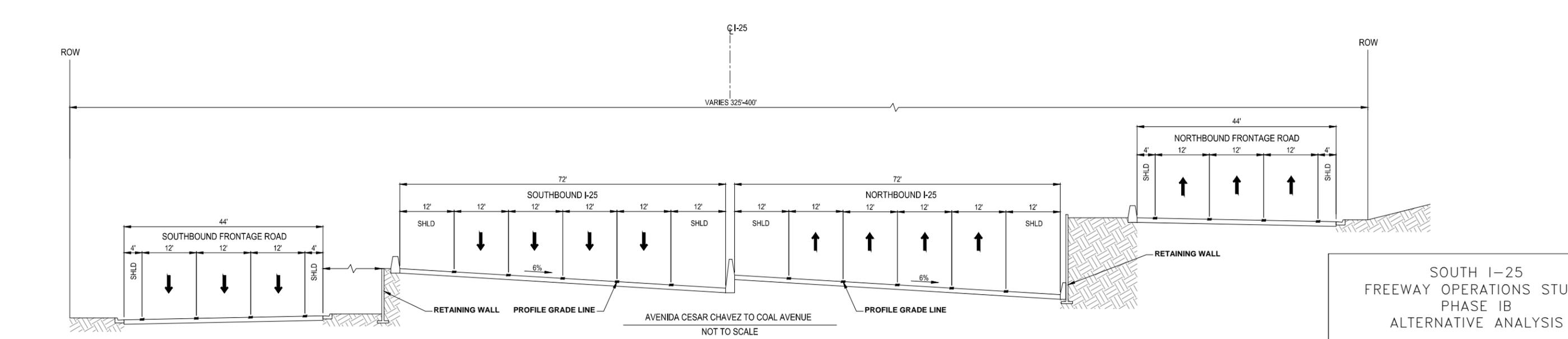
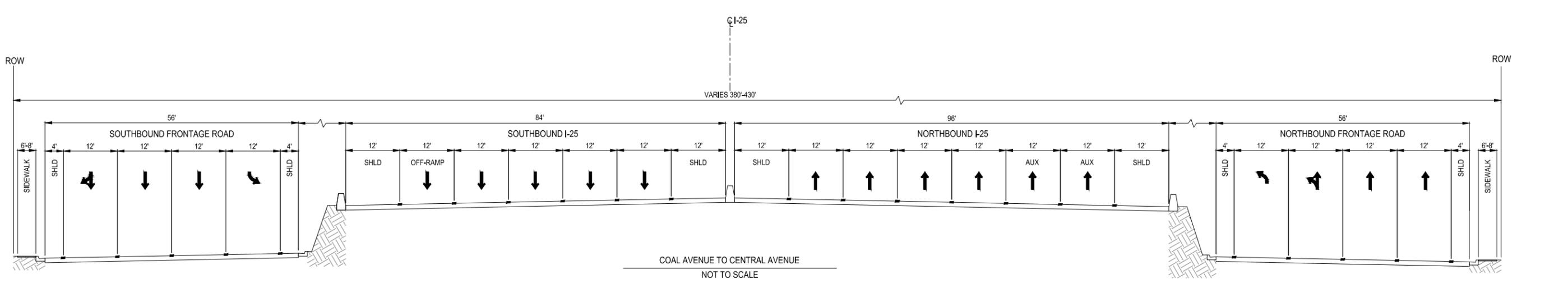
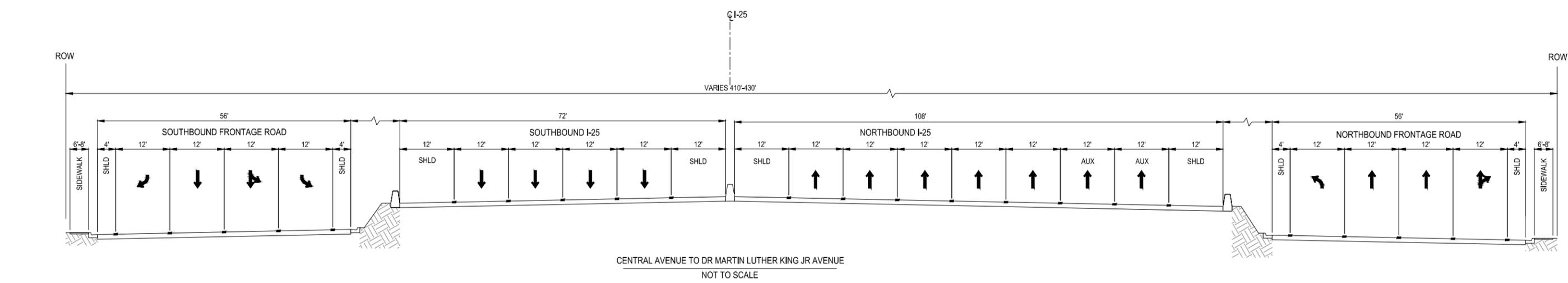


SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 TYPICAL SECTION-ALTERNATIVE B3  
 MAINLINE

CONCEPTUAL  
 NOT FOR CONSTRUCTION

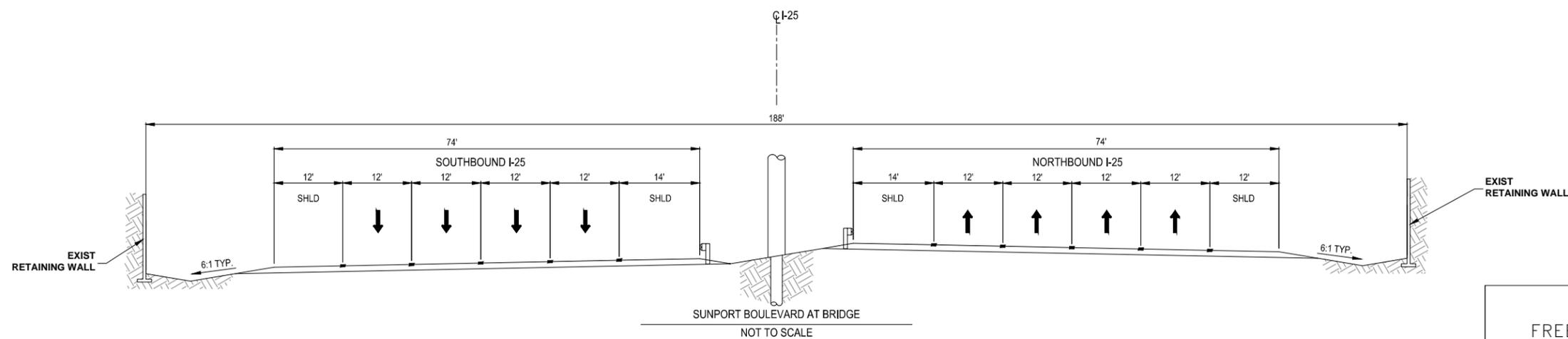
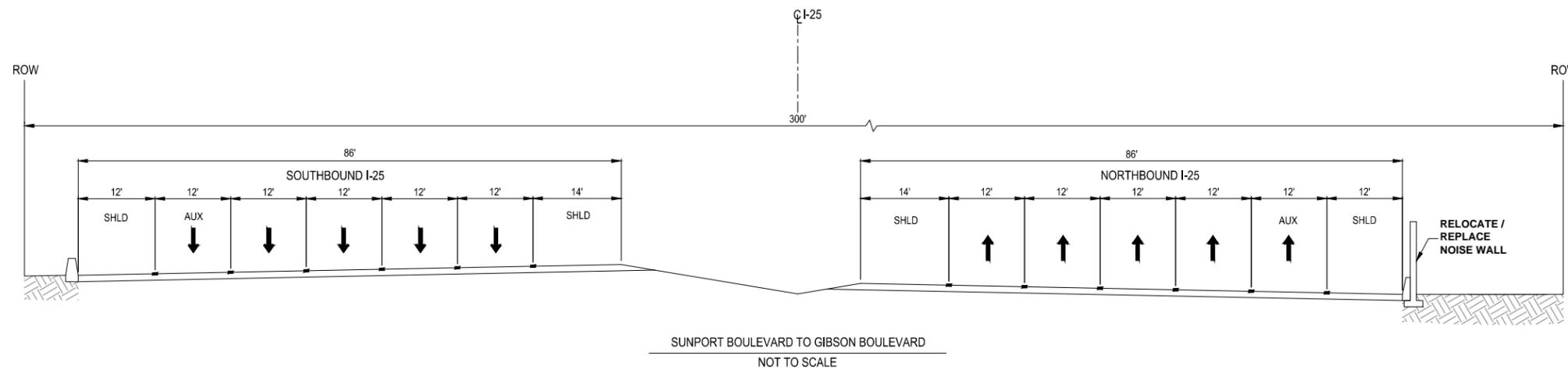
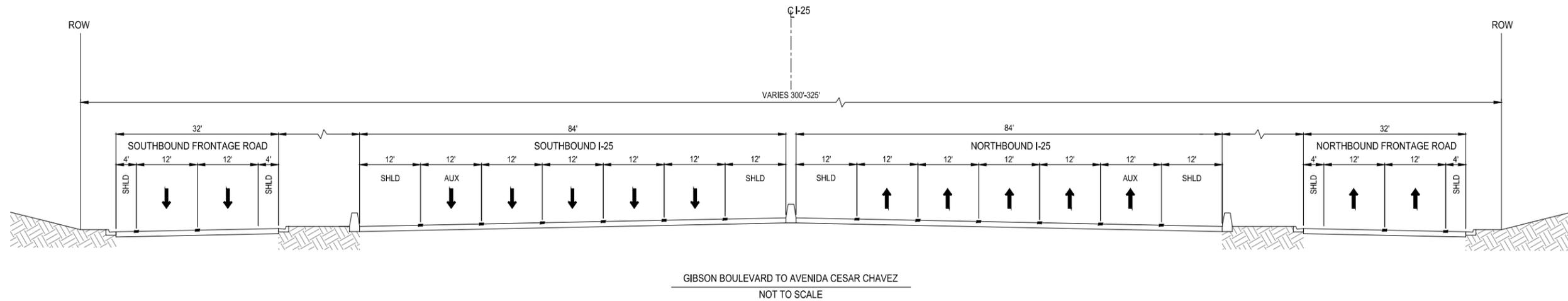




SOUTH I-25  
FREEWAY OPERATIONS STUDY  
PHASE I-B  
ALTERNATIVE ANALYSIS

INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
TYPICAL SECTION-ALTERNATIVE B3  
MAINLINE

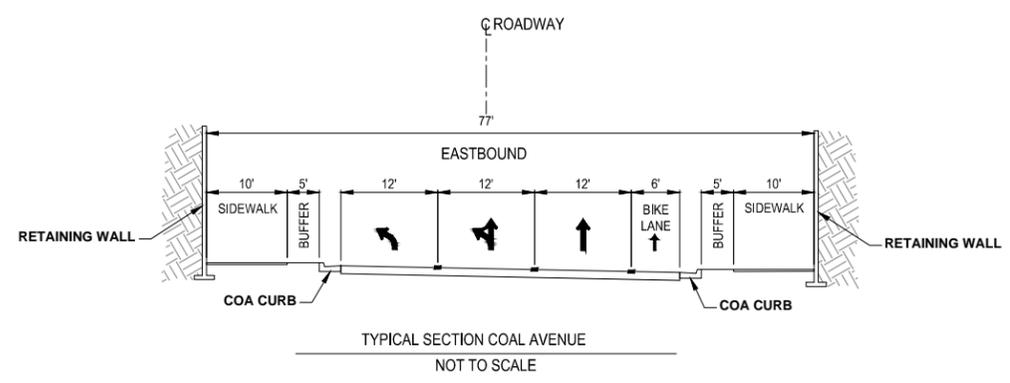
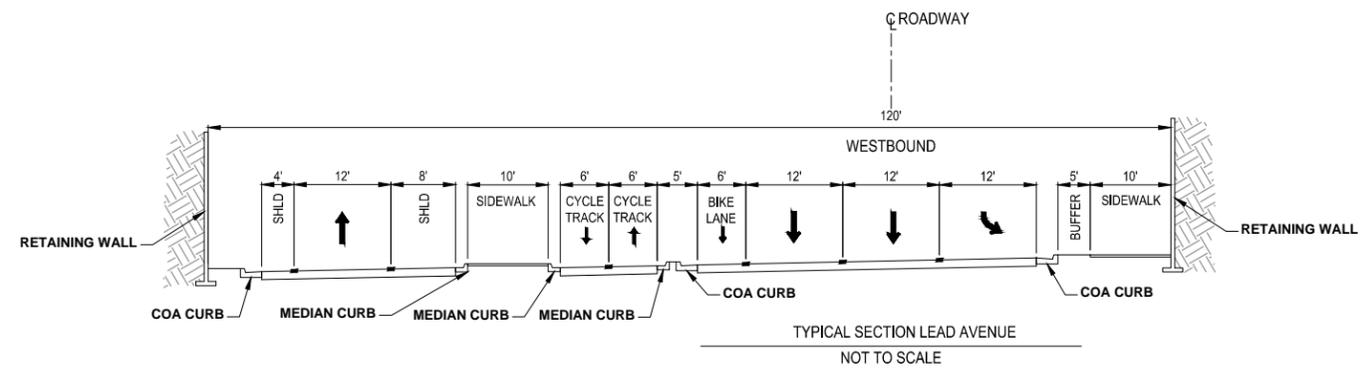
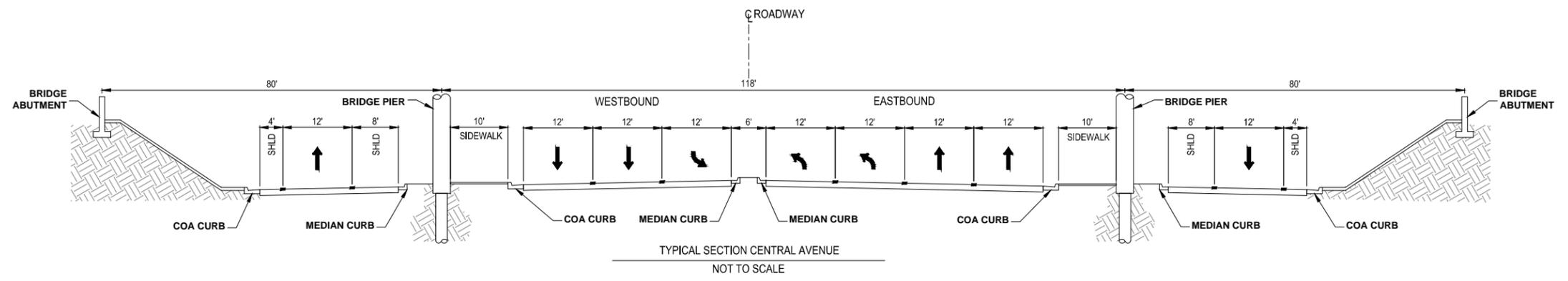
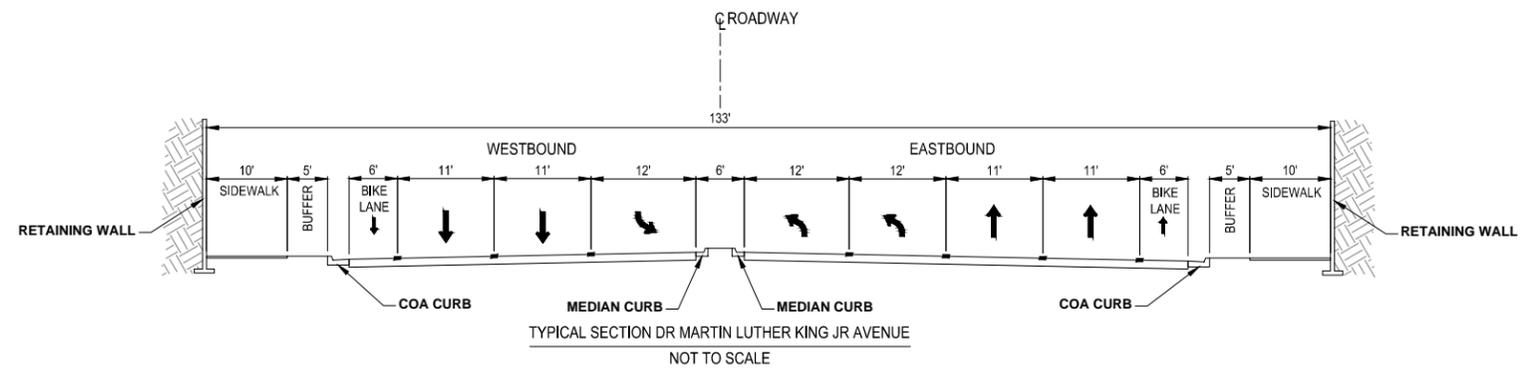
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NOT FOR CONSTRUCTION



SOUTH I-25  
FREEWAY OPERATIONS STUDY  
PHASE IB  
ALTERNATIVE ANALYSIS

INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
TYPICAL SECTION-ALTERNATIVE B3  
MAINLINE

CONCEPTUAL  
NOT FOR CONSTRUCTION

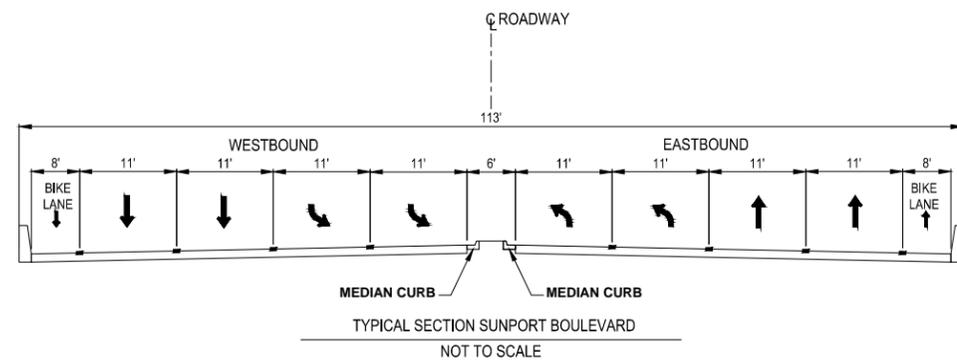
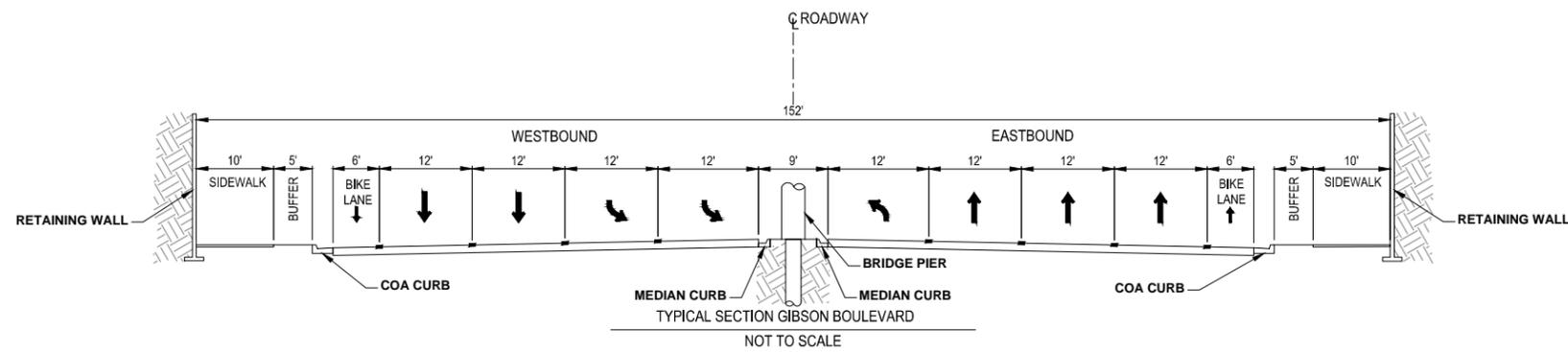
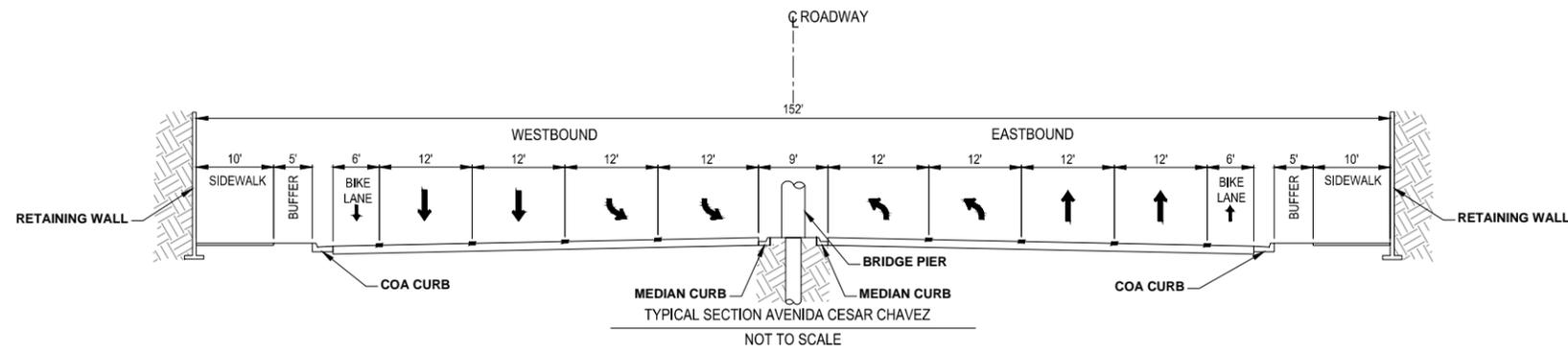


SOUTH I-25  
FREEWAY OPERATIONS STUDY  
PHASE IB  
ALTERNATIVE ANALYSIS

INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
TYPICAL SECTION-ALTERNATIVE B3  
SURFACE STREETS

CONCEPTUAL  
NOT FOR CONSTRUCTION



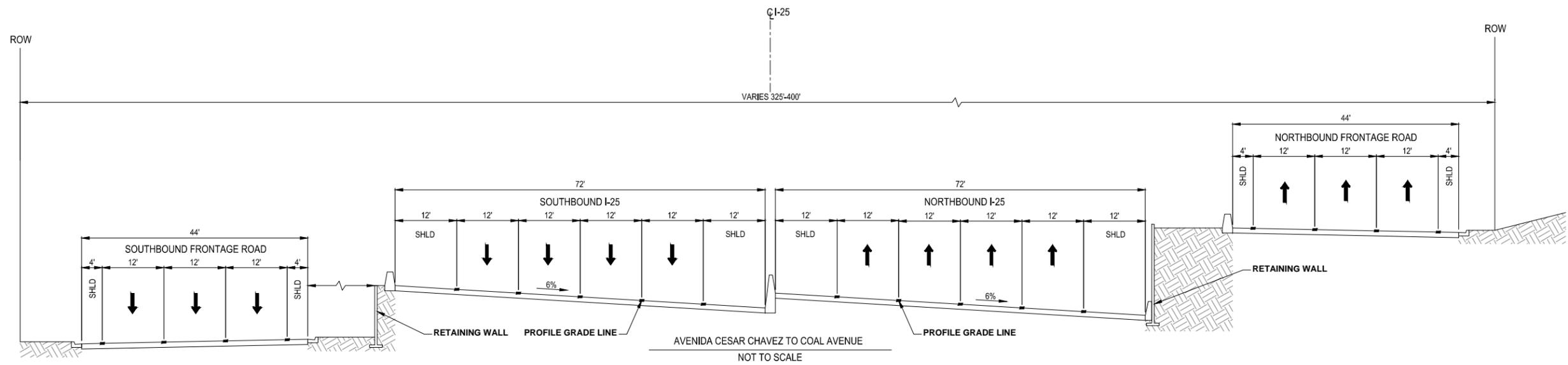


SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 TYPICAL SECTION-ALTERNATIVE B3  
 SURFACE STREETS

CONCEPTUAL  
 NOT FOR CONSTRUCTION



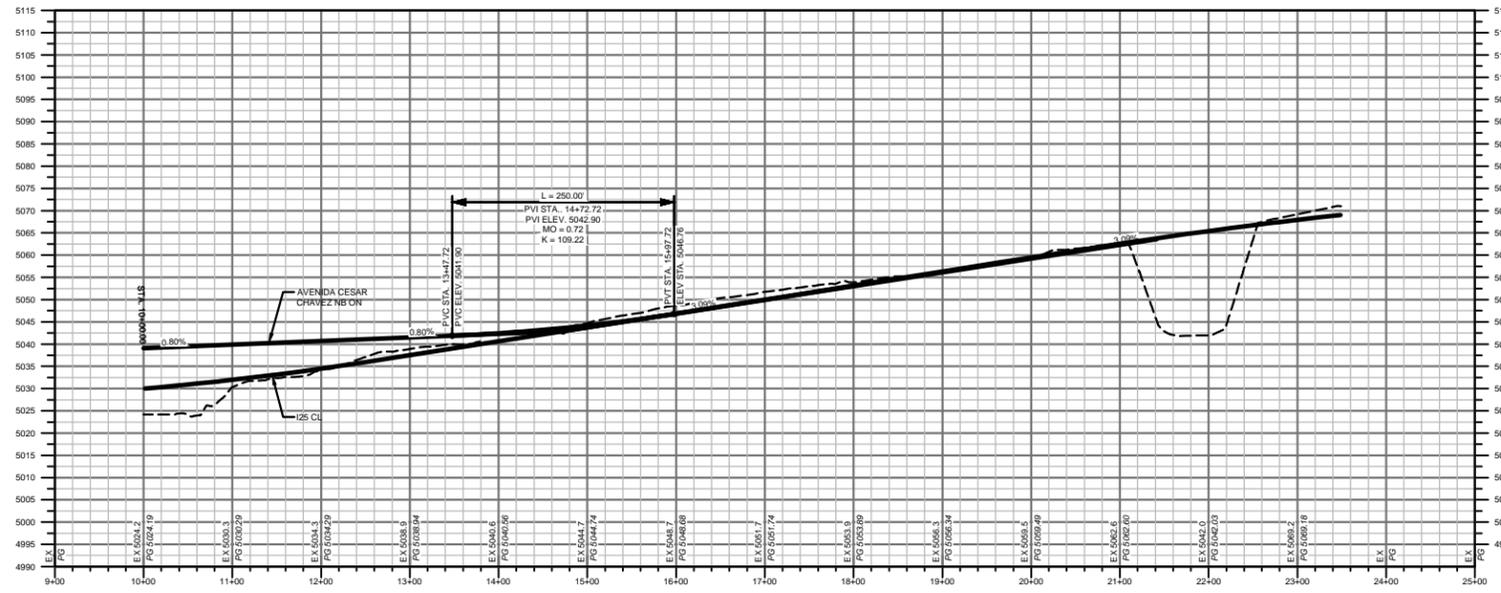


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 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

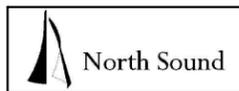
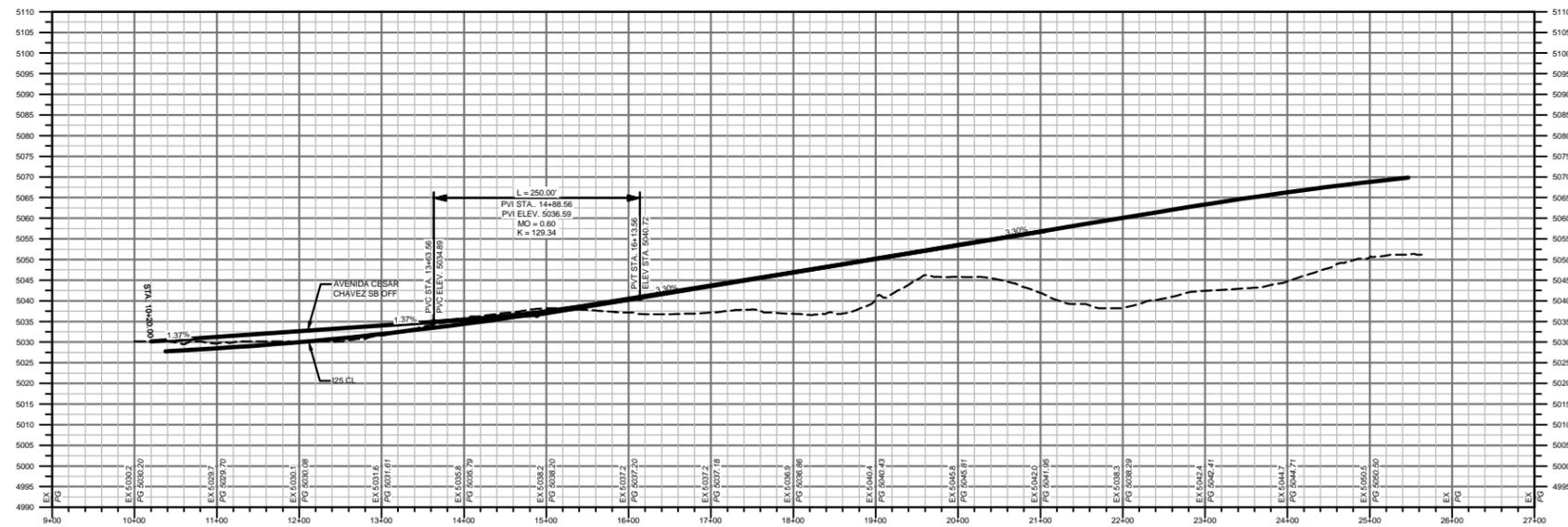
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 NM 47/BROADWAY BLVD. TO I-40  
 TYPICAL SECTION-ALT B3 OPTION  
 MAINLINE

CONCEPTUAL  
 NOT FOR CONSTRUCTION

### B3 ACC NB ON



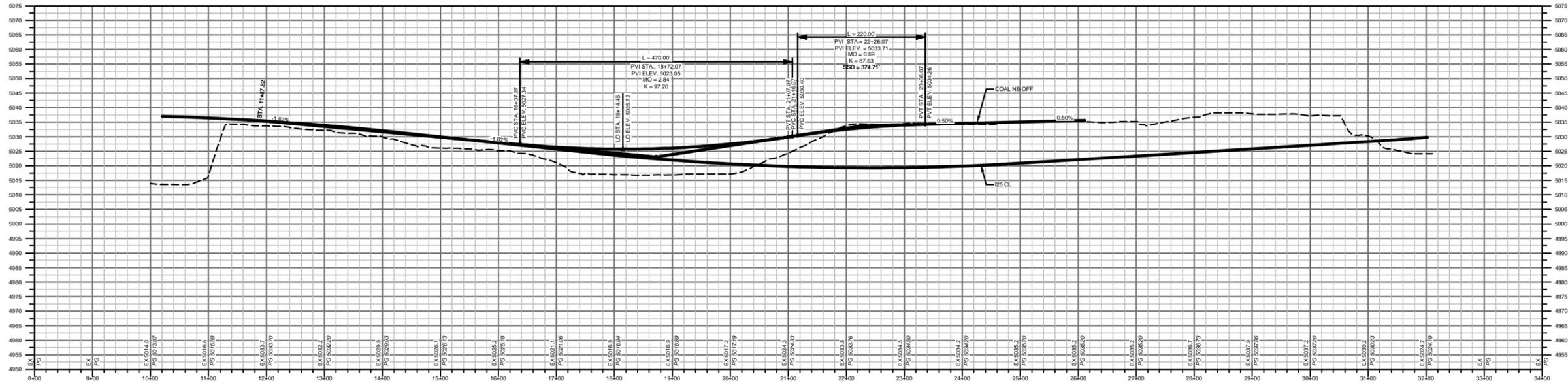
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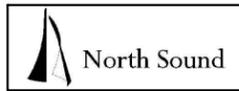
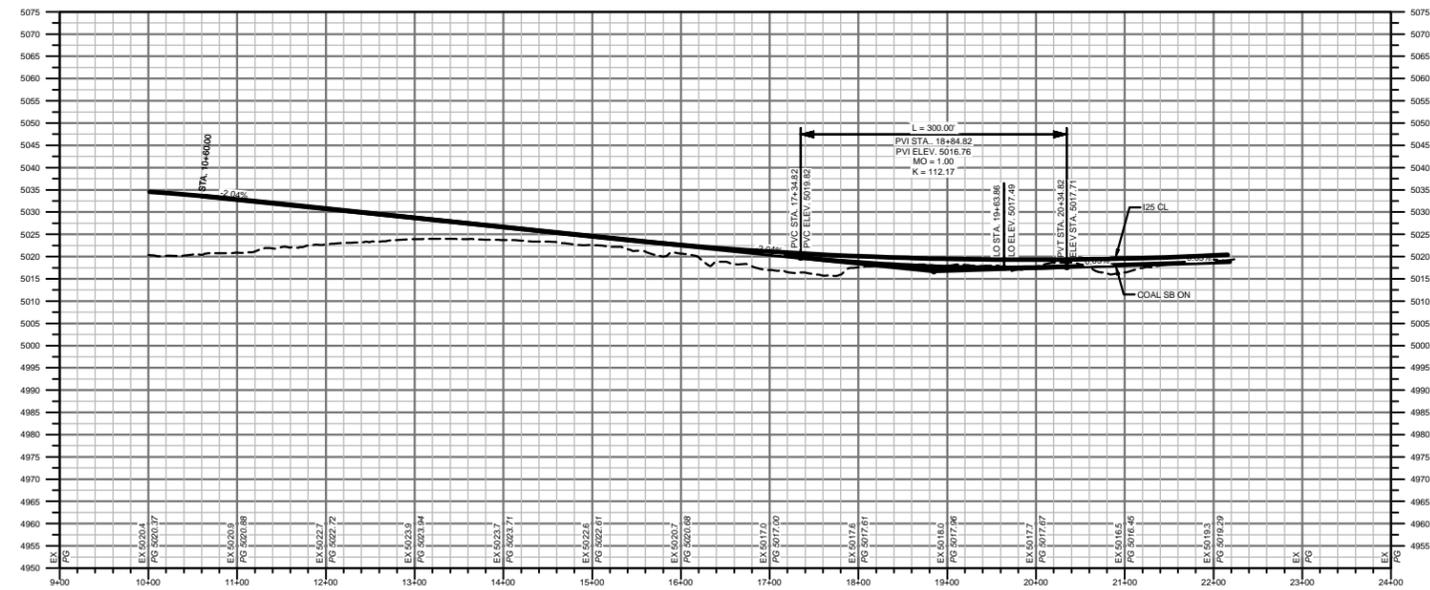
SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 ROADWAY PROFILES ALTERNATIVE B3

### B3 COAL NB OFF



### B3 COAL SB ON



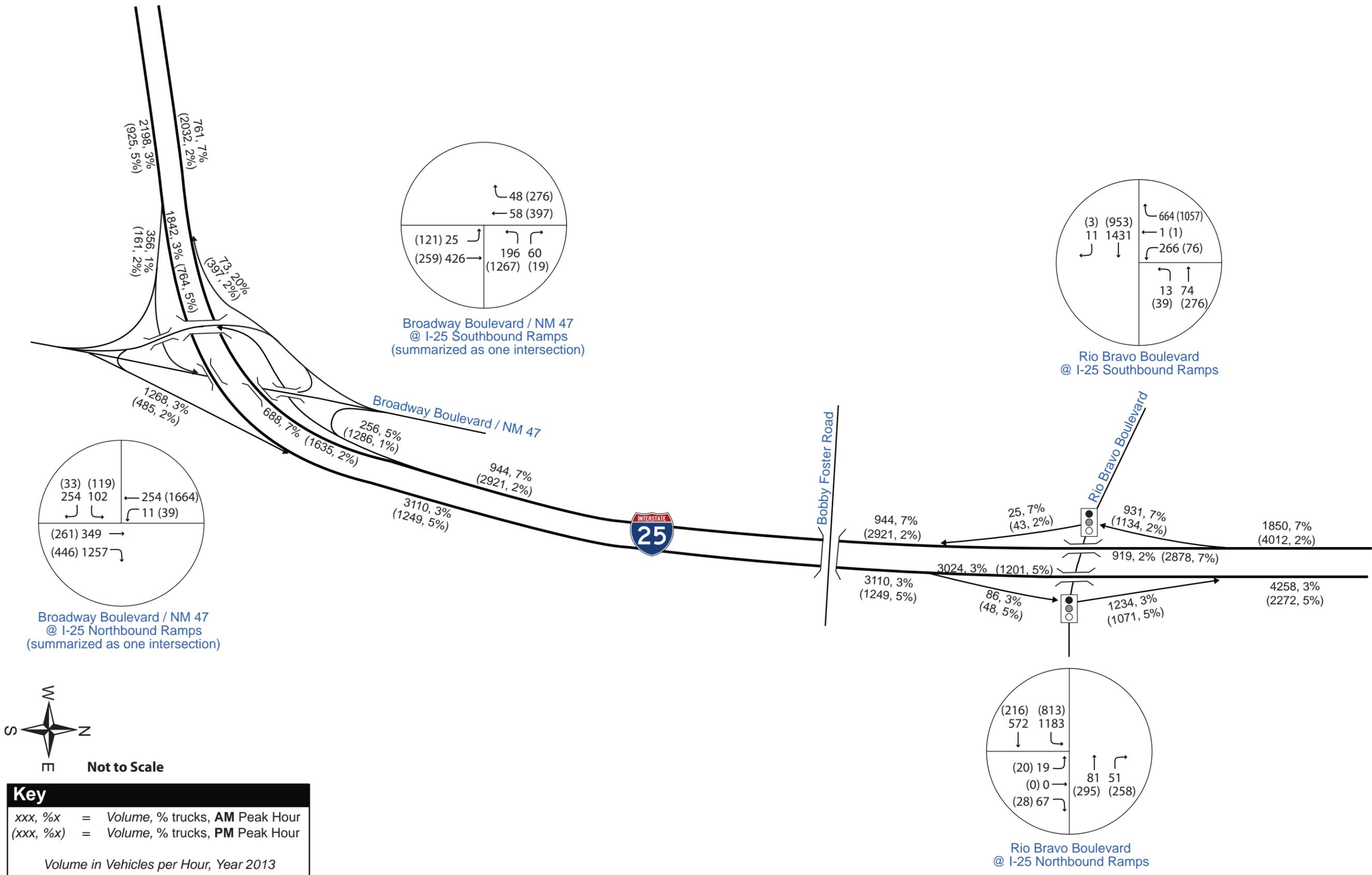
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 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 ALTERNATIVE ANALYSIS

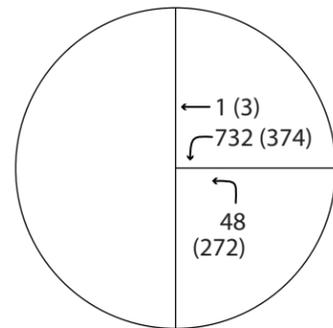
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 NM 47/BROADWAY BLVD. TO I-40  
 ROADWAY PROFILES ALTERNATIVE B3



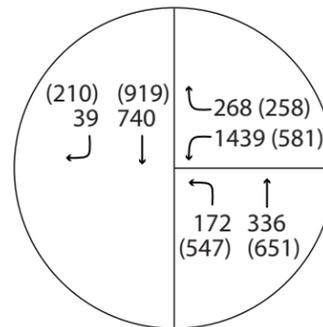
## Appendix E

### Existing Condition Traffic Volumes

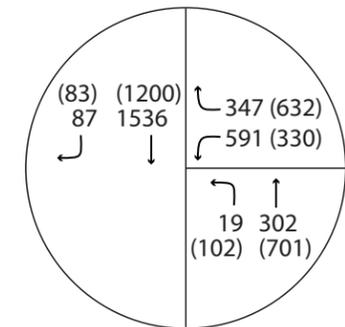




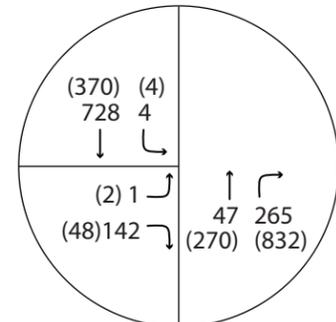
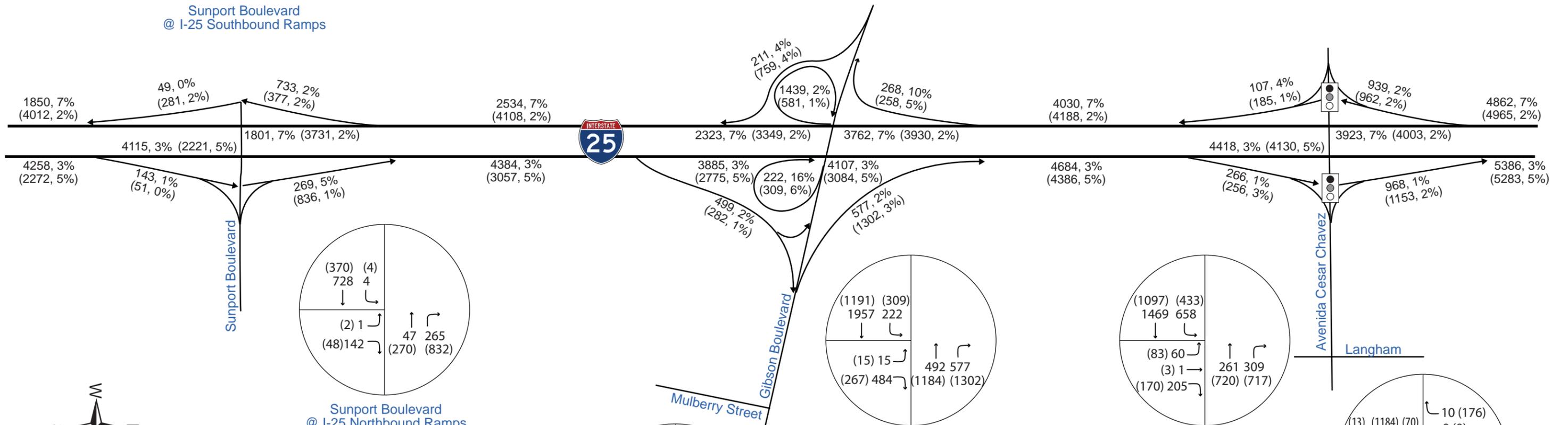
Sunport Boulevard  
@ I-25 Southbound Ramps



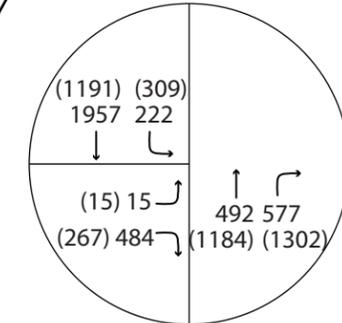
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@ I-25 Southbound Ramps  
(summarized as one intersection)



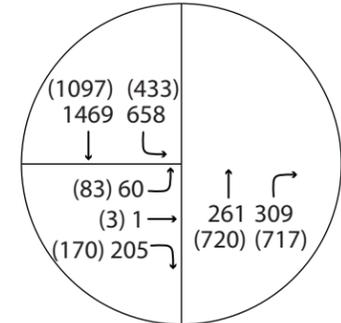
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@ I-25 Southbound Ramps



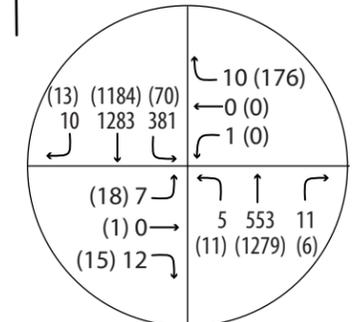
Sunport Boulevard  
@ I-25 Northbound Ramps



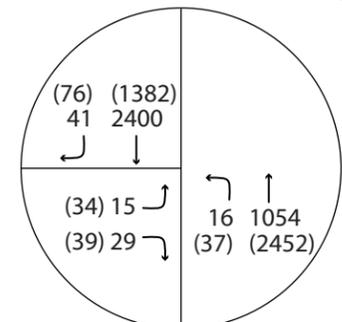
Gibson Boulevard  
@ I-25 Northbound Ramps  
(summarized as one intersection)



Avenida Cesar Chavez  
@ I-25 Northbound Ramps



Avenida Cesar Chavez  
@ Langham

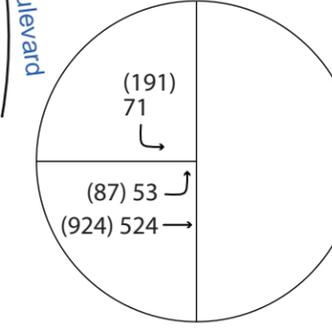
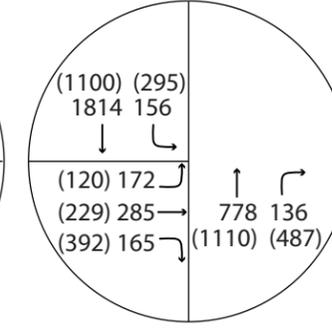
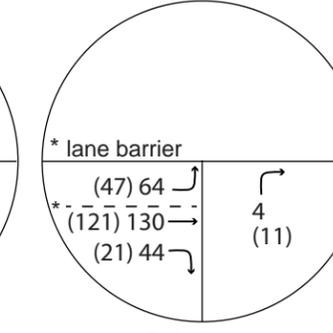
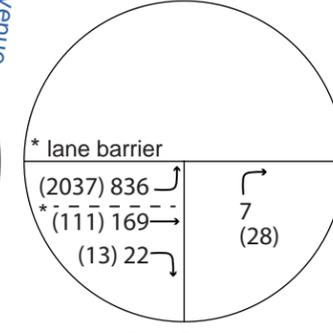
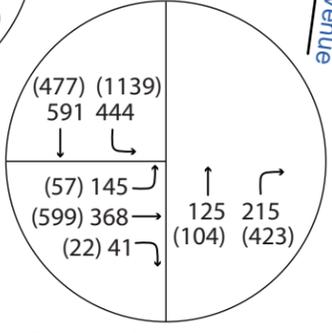
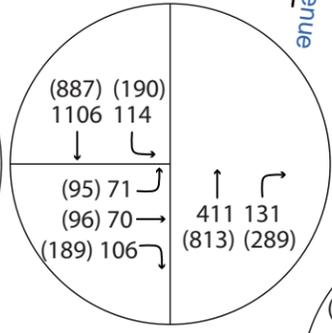
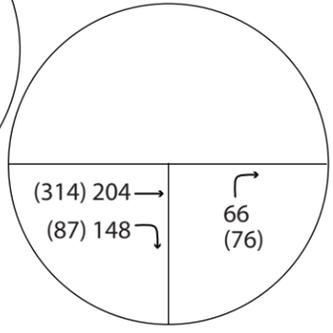
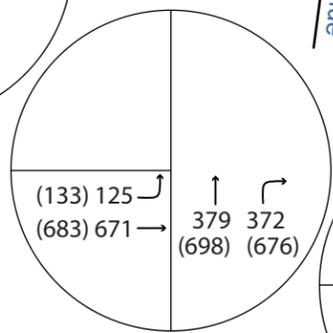
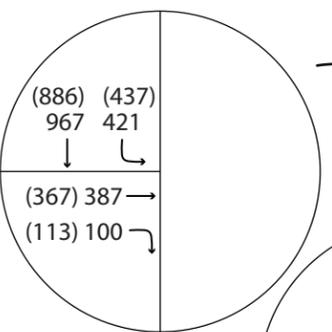
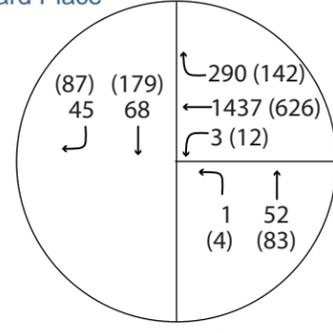
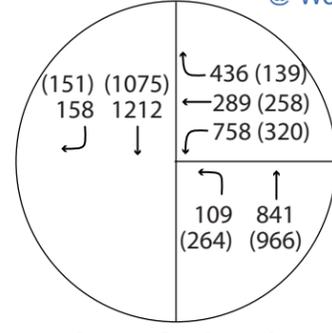
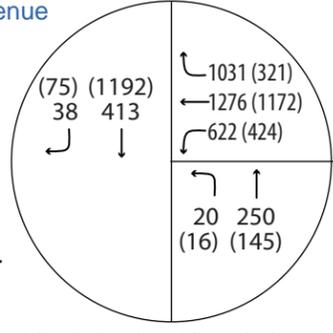
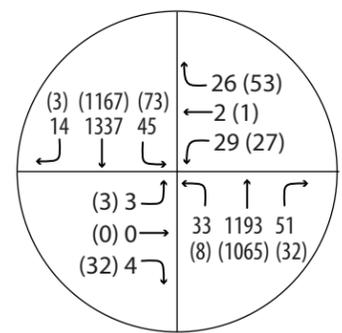
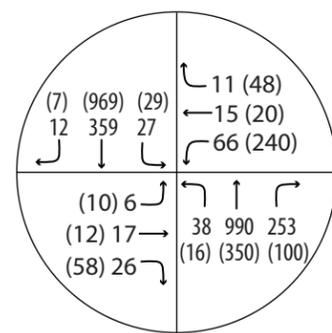
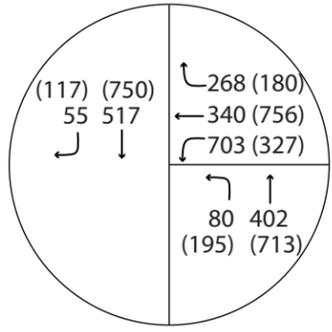
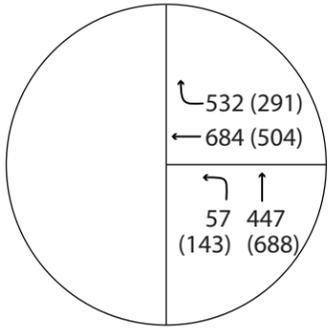
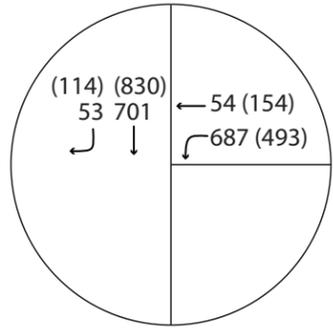
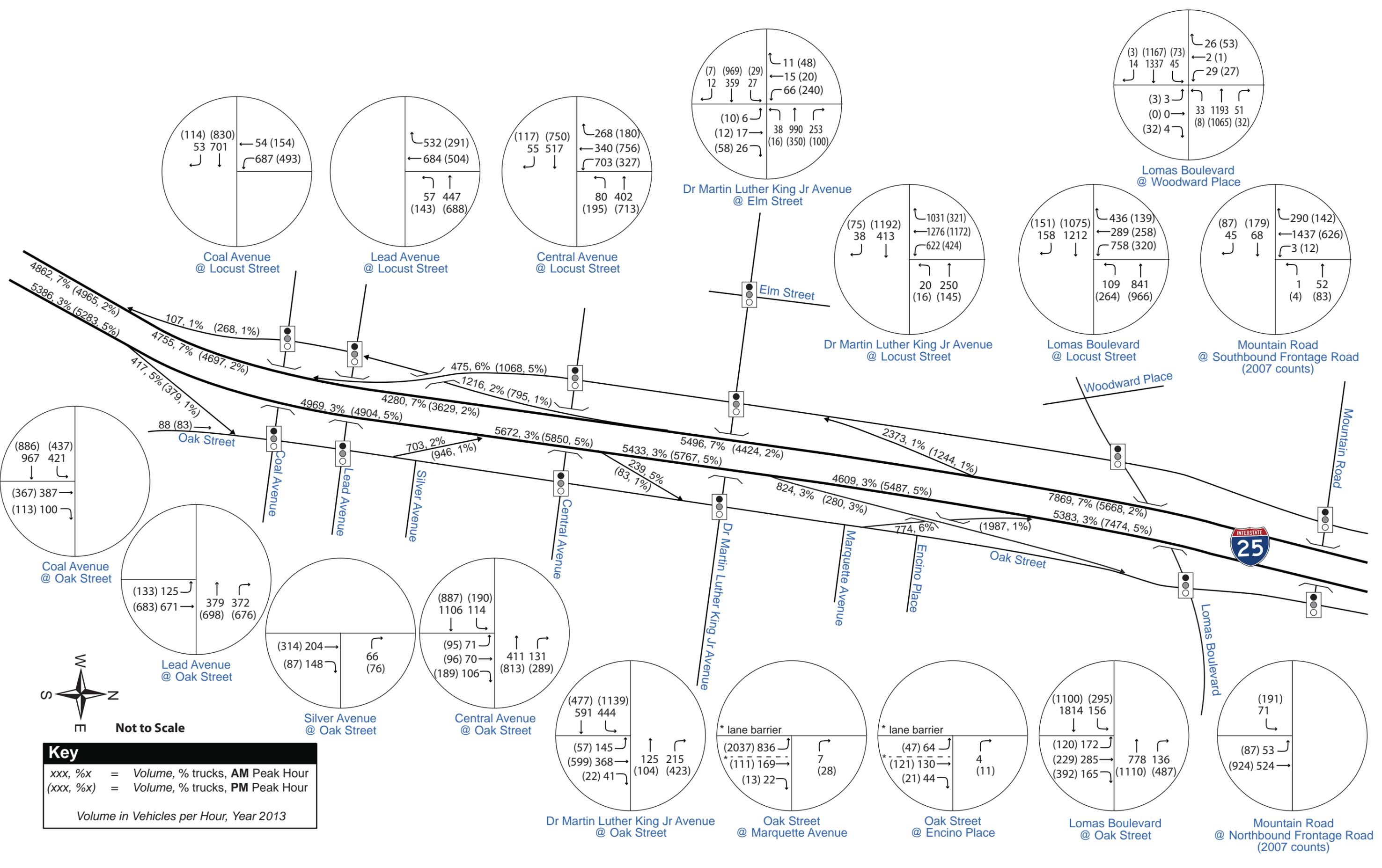


Gibson Boulevard  
@ Mulberry Street



Not to Scale

Key	
xxx, %x	= Volume, % trucks, AM Peak Hour
(xxx, %x)	= Volume, % trucks, PM Peak Hour
Volume in Vehicles per Hour, Year 2013	



**Not to Scale**



**Appendix F**  
**Freeway Facilities Analysis Summary Tables**

**FREEWAY FACILITIES RESULTS SUMMARY - South I-25 2040 No Build**

2040 MTP No Build from Broadway to I-40 Northbound I-25 - AM Peak Hour			No Build Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue (ft)	Density (pcpmpl)	Speed (mph)	LOS
Broadway Off-Ramp	Broadway On-Ramp	Basic Segment	2	0.63	0	21	72	C
	Broadway On-Ramp	On Ramp	3	0.63	0	24	64	C
Broadway On-Ramp	MesaDelSol Off-Ramp	Basic Segment	3	0.63	0	21	72	C
	MesaDelSol Off-Ramp	Off Ramp	3	0.63	0	24	64	C
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic Segment	3	0.50	0	16	75	B
	MesaDelSol On-Ramp	On Ramp	3	0.82	0	31	61	D
MesaDelSol On-Ramp	Rio Bravo Off-Ramp	Basic Segment	3	0.84	0	31	64	D
	Rio Bravo Off-Ramp	Off Ramp	3	0.84	0	30	66	D
Rio Bravo Off-Ramp	Rio Bravo Loop On	Basic Segment	3	0.75	0	26	69	C
	Rio Bravo Loop On	On Ramp	4	0.72	0	25	67	C
Rio Bravo Loop On	Rio Bravo W-N On	Basic Segment	4	0.72	0	24	70	C
	Rio Bravo W-N On	On Ramp	4	0.88	0	35	57	E
Rio Bravo W-N On	Sunport Off-Ramp	Basic Segment	4	0.88	0	34	60	D
	Sunport Off-Ramp	Off Ramp	4	0.88	1500	846	2	F
Sunport Off-Ramp	Sunport On-Ramp	Basic Segment	3	1.03	2570	67	29	F
Sunport On-Ramp	Gibson Off-Ramp	Weaving	4	0.97	2740	88	19	F
Gibson Off-Ramp	Gibson Loop On-Ramp	Basic Segment	3	1.06	1150	62	32	F
	Gibson Loop On-Ramp	On Ramp	3	1.09	1090	58	35	F
	Gibson W-N On-Ramp	On Ramp	3	1.18	0	48	47	F
Gibson W-N On-Ramp	ACC Off-Ramp	Ramp Overlap	3	1.18	0	48	47	F
	ACC Off-Ramp	Off Ramp	3	1.18	0	44	51	F
ACC Off-Ramp	ACC On-Ramp	Basic Segment	3	1.06	0	38	54	F
ACC On-Ramp	Coal Off-Ramp	Weaving	4	1.01	0	55	36	F
Coal Off-Ramp	Lead On-Ramp	Basic Segment	3	1.12	0	43	51	F
Lead On-Ramp	Lomas Off-Ramp	Weaving	4	1.05	0	55	35	F
Lomas Off-Ramp	MLK On-Ramp	Basic Segment	3	1.02	0	37	57	F
	MLK On-Ramp	On Ramp	5	0.76	0	28	58	D
MLK On-Ramp	I-40 Off-Ramp	Basic Segment	5	0.76	0	25	64	C

2040 MTP No Build from Broadway to I-40 Northbound I-25 - PM Peak Hour			No Build Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue (ft)	Density (pcpmpl)	Speed (mph)	LOS
Broadway Off-Ramp	Broadway On-Ramp	Basic Segment	2	0.49	0	16	75	B
	Broadway On-Ramp	On Ramp	3	0.45	0	16	66	B
Broadway On-Ramp	MesaDelSol Off-Ramp	Basic Segment	3	0.45	0	15	75	B
	MesaDelSol Off-Ramp	Off Ramp	3	0.45	0	17	64	B
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic Segment	3	0.31	0	10	75	A
	MesaDelSol On-Ramp	On Ramp	3	0.57	0	20	67	C
MesaDelSol On-Ramp	Rio Bravo Off-Ramp	Basic Segment	3	0.59	0	19	73	C
	Rio Bravo Off-Ramp	Off Ramp	3	0.59	0	21	67	C
Rio Bravo Off-Ramp	Rio Bravo Loop On	Basic Segment	3	0.52	0	17	74	B
	Rio Bravo Loop On	On Ramp	4	0.55	0	20	68	C
Rio Bravo Loop On	Rio Bravo W-N On	Basic Segment	4	0.55	0	18	73	C
	Rio Bravo W-N On	On Ramp	4	0.67	0	26	60	C
Rio Bravo W-N On	Sunport Off-Ramp	Basic Segment	4	0.67	0	24	65	C
	Sunport Off-Ramp	Off Ramp	4	0.67	0	25	62	C
Sunport Off-Ramp	Sunport On-Ramp	Basic Segment	3	0.84	0	33	60	D
Sunport On-Ramp	Gibson Off-Ramp	Weaving	4	0.85	0	41	46	E
Gibson Off-Ramp	Gibson Loop On-Ramp	Basic Segment	3	0.98	1150	435	5	F
	Gibson Loop On-Ramp	On Ramp	3	1.00	1090	2816	1	F
	Gibson W-N On-Ramp	On Ramp	3	1.17	220	62	36	F
Gibson W-N On-Ramp	ACC Off-Ramp	Ramp Overlap	3	1.17	1280	3796	0	F
	ACC Off-Ramp	Off Ramp	3	1.17	0	137	7	F
ACC Off-Ramp	ACC On-Ramp	Basic Segment	3	1.11	1270	160	6	F
ACC On-Ramp	Coal Off-Ramp	Weaving	4	1.07	0	46	36	F
Coal Off-Ramp	Lead On-Ramp	Basic Segment	3	1.18	0	20	54	F
Lead On-Ramp	Lomas Off-Ramp	Weaving	4	1.10	0	44	37	F
Lomas Off-Ramp	MLK On-Ramp	Basic Segment	3	1.15	0	20	63	F
	MLK On-Ramp	On Ramp	5	0.86	0	20	59	C
MLK On-Ramp	I-40 Off-Ramp	Basic Segment	5	0.86	0	18	65	C

**FREEWAY FACILITIES RESULTS SUMMARY - South I-25 2040 No Build**

2040 MTP No Build from I-40 to Broadway Southbound I-25 - AM Peak Hour			No Build Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue	Density (pcpmpl)	Speed (mph)	LOS
I-40 On-Ramp	MLK Off-Ramp	Basic	6	0.68	0	25	64	C
	MLK Off-Ramp	Basic	6	0.68	0	25	63	C
MLK Off-Ramp	Lead Off-Ramp	Basic	4	0.77	0	29	63	D
	Lead Off-Ramp	Basic	4	0.80	0	34	54	D
Lead Off-Ramp	Central On-Ramp	Basic	3	0.88	0	37	54	E
	Central On-Ramp	Basic	4	0.74	0	33	50	D
Coal On-Ramp	ACC Off-Ramp	Weaving	4	0.86	0	46	38	E
ACC Off-Ramp	ACC On-Ramp	Basic	3	0.88	0	37	54	E
	ACC On-Ramp	OnRamp	3	0.93	0	43	49	E
ACC On-Ramp	Gibson Off-Ramp	RampOverlap	3	0.93	0	43	49	E
	Gibson Off-Ramp	OffRamp	3	0.93	0	40	52	E
	Gibson Loop Off-Ramp	OffRamp	3	0.89	0	40	50	E
Gibson Loop Off-Ramp	Gibson On-Ramp	Basic	3	0.69	0	29	54	D
Gibson On-Ramp	Sunport Off-Ramp	Weaving	4	0.68	0	26	49	C
Sunport Off-Ramp	Sunport On-Ramp	Basic	3	0.54	0	20	65	C
	Sunport On-Ramp	Basic	4	0.46	0	18	60	B
Sunport On-Ramp	Rio Bravo Off-Ramp	Basic	4	0.46	0	17	65	B
	Rio Bravo Off-Ramp	Basic	4	0.46	0	17	62	B
Rio Bravo Off-Ramp	Rio Bravo On-Ramp	Basic	3	0.37	0	13	65	B
	Rio Bravo On-Ramp	OnRamp	3	0.43	0	15	70	B
Rio Bravo On-Ramp	MesaDelSol Off-Ramp	Basic	3	0.43	0	14	75	B
	MesaDelSol Off-Ramp	OffRamp	3	0.39	0	14	67	B
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.23	0	8	75	A
	MesaDelSol On-Ramp	OnRamp	3	0.33	0	12	69	B
MesaDelSol On-Ramp	Broadway Off-Ramp	Basic	3	0.33	0	11	75	A
	Broadway Off-Ramp	Basic	3	0.33	0	12	69	B
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.40	0	13	75	B

2040 MTP No Build from I-40 to Broadway Southbound I-25 - PM Peak Hour			No Build Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue	Density (pcpmpl)	Speed (mph)	LOS
I-40 On-Ramp	MLK Off-Ramp	Basic	6	0.67	0	24	65	C
	MLK Off-Ramp	Basic	6	0.67	0	25	63	D
MLK Off-Ramp	Lead Off-Ramp	Basic	4	0.80	0	30	62	D
	Lead Off-Ramp	Basic	4	0.83	1500	934	2	F
Lead Off-Ramp	Central On-Ramp	Basic	3	0.98	1590	69	27	F
	Central On-Ramp	Basic	4	0.85	800	84	19	F
Coal On-Ramp	ACC Off-Ramp	Weaving	4	0.99	2430	84	21	F
ACC Off-Ramp	ACC On-Ramp	Basic	3	1.03	1200	62	32	F
	ACC On-Ramp	OnRamp	3	1.14	0	47	48	F
ACC On-Ramp	Gibson Off-Ramp	RampOverlap	3	1.14	0	47	48	F
	Gibson Off-Ramp	OffRamp	3	1.14	0	44	52	F
	Gibson Loop Off-Ramp	OffRamp	3	1.10	0	42	52	F
Gibson Loop Off-Ramp	Gibson On-Ramp	Basic	3	1.03	0	38	54	F
Gibson On-Ramp	Sunport Off-Ramp	Weaving	4	0.95	0	44	43	E
Sunport Off-Ramp	Sunport On-Ramp	Basic	3	0.97	0	35	59	D
	Sunport On-Ramp	Basic	4	0.82	0	31	56	D
Sunport On-Ramp	Rio Bravo Off-Ramp	Basic	4	0.82	0	28	63	D
	Rio Bravo Off-Ramp	Basic	4	0.82	0	31	57	D
Rio Bravo Off-Ramp	Rio Bravo On-Ramp	Basic	3	0.68	0	23	65	C
	Rio Bravo On-Ramp	OnRamp	3	0.74	0	24	68	C
Rio Bravo On-Ramp	MesaDelSol Off-Ramp	Basic	3	0.74	0	23	71	C
	MesaDelSol Off-Ramp	OffRamp	3	0.72	0	26	61	C
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.42	0	12	74	B
	MesaDelSol On-Ramp	OnRamp	3	0.57	0	19	67	B
MesaDelSol On-Ramp	Broadway Off-Ramp	Basic	3	0.57	0	18	74	B
	Broadway Off-Ramp	Basic	3	0.57	0	21	62	C
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.55	0	16	75	B

**FREEWAY FACILITIES RESULTS SUMMARY - Northbound I-25 2040 Build Alternative 1**

Phase IA/Base 2040 MTP Build Alternative 1 from Broadway to I-40 Northbound I-25 - AM Peak Hour			Phase IA/Base Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue (ft)	Density (pcpmpl)	Speed (mph)	LOS
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.65	0	22	72	C
Broadway On-Ramp	MesaDelSol Off-Ramp	Weaving	4	0.82	0	18	64	B
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.58	0	19	73	C
	MesaDelSol On-Ramp	OnRamp	3	0.80	0	30	63	D
MesaDelSol On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.83	0	31	64	D
	BobbyFoster Off-Ramp	OffRamp	3	0.83	0	29	70	D
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.76	0	27	67	D
	BobbyFoster On-Ramp	OnRamp	3	0.93	0	37	60	E
BobbyFoster On-Ramp	Rio Bravo Off-Ramp	Basic	3	0.93	0	39	58	E
	Rio Bravo Off-Ramp	OffRamp	3	0.93	0	32	69	D
Rio Bravo Off-Ramp	Rio Bravo Loop On	Basic	3	0.84	0	32	64	D
	Rio Bravo Loop On	Basic	4	0.80	0	30	65	D
Rio Bravo Loop On	Rio Bravo W-N On	Basic	4	0.80	0	29	66	D
	Rio Bravo W-N On	OnRamp	4	0.93	0	36	61	E
Rio Bravo W-N On	Sunport Off-Ramp	Basic	4	0.93	0	39	58	E
	Sunport Off-Ramp	OffRamp	4	0.93	0	34	66	D
	Gibson Off-Ramp	OffRamp	4	0.83	0	30	66	D
Gibson Off-Ramp	Sunport On-Ramp	Basic	4	0.72	0	26	67	C
Sunport On-Ramp	ACC Off-Ramp	Weaving	5	0.72	0	31	51	D
ACC Off-Ramp	Gibson On-Ramp	Basic	4	0.73	0	27	66	D
	Gibson On-Ramp	OnRamp	4	0.83	0	32	61	D
ACC On-Ramp	Coal Off-Ramp	Weaving	5	0.86	0	38	48	E
Coal Off-Ramp	Lead On-Ramp	Basic	4	0.88	0	35	60	E
Lead On-Ramp	Lomas Off-Ramp	Weaving	5	0.86	0	38	49	E
Lomas Off-Ramp	MLK On-Ramp	Basic	4	0.86	0	34	62	D
	MLK On-Ramp	Basic	6	0.69	0	28	60	D
MLK On-Ramp	I-40 Off-Ramp	Basic	5	0.83	0	32	63	D

Improved 2040 MTP Build Alternative 1 from Broadway to I-40 Northbound I-25 - AM Peak Hour			Improved Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue (ft)	Density (pcpmpl)	Speed (mph)	LOS
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.65	0	22	72	C
Broadway On-Ramp	MesaDelSol Off-Ramp	Basic	4	0.49	0	18	67	B
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.58	0	19	73	C
	MesaDelSol On-Ramp	OnRamp	3	0.80	0	30	63	D
MesaDelSol On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.83	0	31	64	D
	BobbyFoster Off-Ramp	OffRamp	3	0.83	0	29	70	D
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.76	0	27	67	D
	BobbyFoster On-Ramp	Basic	4	0.70	0	26	65	D
BobbyFoster On-Ramp	Rio Bravo Off-Ramp	Basic	4	0.70	0	24	70	C
	Rio Bravo Off-Ramp	Basic	4	0.70	0	23	72	C
Rio Bravo Off-Ramp	Rio Bravo Loop On	Basic	3	0.84	0	32	64	D
	Rio Bravo Loop On	Basic	4	0.80	0	30	65	D
Rio Bravo Loop On	Rio Bravo W-N On	Basic	4	0.80	0	29	66	D
	Rio Bravo W-N On	Basic	5	0.74	0	29	62	D
Rio Bravo W-N On	Sunport Off-Ramp	Basic	5	0.74	0	27	66	D
	Sunport Off-Ramp	Basic	5	0.74	0	26	68	D
	Gibson Off-Ramp	OffRamp	4	0.83	0	30	66	D
Gibson Off-Ramp	Sunport On-Ramp	Basic	4	0.72	0	26	67	C
Sunport On-Ramp	ACC Off-Ramp	Weaving	5	0.72	0	31	51	D
ACC Off-Ramp	Gibson On-Ramp	Basic	4	0.73	0	27	66	D
	Gibson On-Ramp	OnRamp	4	0.83	0	32	61	D
ACC On-Ramp	Coal Off-Ramp	Weaving	5	0.81	0	35	53	E
Coal Off-Ramp	Lead On-Ramp	Basic	4	0.88	0	35	60	E
Lead On-Ramp	Lomas Off-Ramp	Weaving	5	0.82	0	34	55	D
Lomas Off-Ramp	MLK On-Ramp	Basic	4	0.86	0	34	62	D
	MLK On-Ramp	Basic	6	0.69	0	28	60	D
MLK On-Ramp	I-40 Off-Ramp	Basic	5	0.83	0	32	63	D

**FREEWAY FACILITIES RESULTS SUMMARY - Northbound I-25 2040 Build Alternative 1**

Phase IA/Base 2040 MTP Build Alternative 1 from Broadway to I-40 Northbound I-25 - PM Peak Hour			Phase IA/Base Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue	Density (pcpmpl)	Speed (mph)	LOS
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.49	0	16	75	B
Broadway On-Ramp	MesaDelSol Off-Ramp	Weaving	4	0.75	0	14	62	B
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.34	0	11	75	A
	MesaDelSol On-Ramp	OnRamp	3	0.54	0	19	68	B
MesaDelSol On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.56	0	18	74	C
	BobbyFoster Off-Ramp	OffRamp	3	0.56	0	19	70	B
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.51	0	16	75	B
	BobbyFoster On-Ramp	OnRamp	3	0.68	0	24	67	C
BobbyFoster On-Ramp	Rio Bravo Off-Ramp	Basic	3	0.68	0	23	71	C
	Rio Bravo Off-Ramp	OffRamp	3	0.68	0	23	70	C
Rio Bravo Off-Ramp	Rio Bravo Loop On	Basic	3	0.61	0	20	73	C
	Rio Bravo Loop On	Basic	4	0.62	0	22	67	C
Rio Bravo Loop On	Rio Bravo W-N On	Basic	4	0.62	0	20	72	C
	Rio Bravo W-N On	OnRamp	4	0.72	0	27	64	C
Rio Bravo W-N On	Sunport Off-Ramp	Basic	4	0.72	0	26	67	C
	Sunport Off-Ramp	OffRamp	4	0.72	0	25	68	C
	Gibson Off-Ramp	OffRamp	4	0.68	0	24	68	C
Gibson Off-Ramp	Sunport On-Ramp	Basic	4	0.63	0	22	69	C
Sunport On-Ramp	ACC Off-Ramp	Weaving	5	0.77	0	28	51	D
ACC Off-Ramp	Gibson On-Ramp	Basic	4	0.68	0	24	68	C
	Gibson On-Ramp	OnRamp	4	0.82	0	32	61	D
ACC On-Ramp	Coal Off-Ramp	Weaving	5	0.84	0	37	49	E
Coal Off-Ramp	Lead On-Ramp	Basic	4	0.88	0	35	61	D
Lead On-Ramp	Lomas Off-Ramp	Weaving	5	0.86	0	38	50	E
Lomas Off-Ramp	MLK On-Ramp	Basic	4	0.89	0	36	60	E
	MLK On-Ramp	Basic	6	0.74	0	30	59	D
MLK On-Ramp	I-40 Off-Ramp	Basic	5	0.88	0	35	60	E

Improved 2040 MTP Build Alternative 1 from Broadway to I-40 Northbound I-25 - PM Peak Hour			Improved Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue	Density (pcpmpl)	Speed (mph)	LOS
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.49	0	16	75	B
Broadway On-Ramp	MesaDelSol Off-Ramp	Weaving	4	0.51	0	13	66	B
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.34	0	11	75	A
	MesaDelSol On-Ramp	OnRamp	3	0.54	0	19	68	B
MesaDelSol On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.56	0	18	74	C
	BobbyFoster Off-Ramp	OffRamp	3	0.56	0	19	70	B
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.51	0	16	75	B
	BobbyFoster On-Ramp	Basic	4	0.51	0	18	67	C
BobbyFoster On-Ramp	Rio Bravo Off-Ramp	Basic	4	0.51	0	16	75	B
	Rio Bravo Off-Ramp	Basic	4	0.51	0	17	74	B
Rio Bravo Off-Ramp	Rio Bravo Loop On	Basic	3	0.61	0	20	73	C
	Rio Bravo Loop On	Basic	4	0.62	0	22	67	C
Rio Bravo Loop On	Rio Bravo W-N On	Basic	4	0.62	0	20	72	C
	Rio Bravo W-N On	Basic	5	0.57	0	22	64	C
Rio Bravo W-N On	Sunport Off-Ramp	Basic	5	0.57	0	20	70	C
	Sunport Off-Ramp	Basic	5	0.57	0	20	70	C
	Gibson Off-Ramp	OffRamp	4	0.68	0	24	68	C
Gibson Off-Ramp	Sunport On-Ramp	Basic	4	0.63	0	22	69	C
Sunport On-Ramp	ACC Off-Ramp	Weaving	5	0.77	0	28	51	D
ACC Off-Ramp	Gibson On-Ramp	Basic	4	0.68	0	24	68	C
	Gibson On-Ramp	OnRamp	4	0.82	0	32	61	D
ACC On-Ramp	Coal Off-Ramp	Weaving	5	0.80	0	34	53	D
Coal Off-Ramp	Lead On-Ramp	Basic	4	0.88	0	35	61	D
Lead On-Ramp	Lomas Off-Ramp	Weaving	5	0.82	0	35	54	D
Lomas Off-Ramp	MLK On-Ramp	Basic	4	0.89	0	36	60	E
	MLK On-Ramp	Basic	6	0.74	0	30	59	D
MLK On-Ramp	I-40 Off-Ramp	Basic	5	0.88	0	35	60	E

**FREEWAY FACILITIES RESULTS SUMMARY - Southbound I-25 2040 Build Alternative 1**

Phase IA/Base 2040 MTP Build Alternative 1 from Broadway to I-40 Southbound I-25 - AM Peak Hour			Phase IA/Base Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue (ft)	Density (pcpmpl)	Speed (mph)	LOS
I-40 On-Ramp	MLK Off-Ramp	Basic	6	0.70	0	25	67	C
	MLK Off-Ramp	Basic	6	0.70	0	25	68	C
MLK Off-Ramp	Lead Off-Ramp	Basic	4	0.80	0	30	64	D
	Lead Off-Ramp	OffRamp	4	0.80	0	29	66	D
Lead Off-Ramp	Central On-Ramp	Basic	4	0.66	0	23	68	C
Central On-Ramp	ACC Off-Ramp	Weaving	5	0.78	0	28	51	D
	Gibson Off-Ramp	OffRamp	4	0.62	0	23	65	C
Gibson Off-Ramp	ACC On-Ramp	Basic	4	0.45	0	16	69	B
	ACC On-Ramp	OnRamp	4	0.51	0	19	65	B
ACC On-Ramp	Sunport Off-Ramp	Basic	4	0.51	0	18	70	B
	Sunport Off-Ramp	OffRamp	4	0.51	0	19	66	B
Sunport Off-Ramp	Gibson On-Ramp	Basic	4	0.38	0	13	70	B
	Gibson On-Ramp	OnRamp	4	0.43	0	16	65	B
Gibson On-Ramp	Sunport On-Ramp	Basic	4	0.43	0	15	69	B
	Sunport On-Ramp	OnRamp	4	0.48	0	18	65	B
Sunport On-Ramp	Rio Bravo Off-Ramp	Basic	4	0.48	0	17	69	B
	Rio Bravo Off-Ramp	Basic	4	0.48	0	17	67	B
Rio Bravo Off-Ramp	Rio Bravo On-Ramp	Basic	3	0.45	0	14	75	B
	Rio Bravo On-Ramp	OnRamp	3	0.53	0	18	69	B
Rio Bravo On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.53	0	17	74	B
	BobbyFoster Off-Ramp	OffRamp	3	0.53	0	18	69	B
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.42	0	14	75	B
	BobbyFoster On-Ramp	OnRamp	3	0.44	0	15	70	B
BobbyFoster On-Ramp	MesaDelSol Off-Ramp	Basic	3	0.44	0	14	75	B
	MesaDelSol Off-Ramp	OffRamp	3	0.40	0	14	68	B
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.28	0	9	75	A
MesaDelSol On-Ramp	Broadway Off-Ramp	Weaving	4	0.41	0	10	65	A
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.42	0	13	75	B

Improved 2040 MTP Build Alternative 1 from Broadway to I-40 Southbound I-25 - AM Peak Hour			Improved Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue (ft)	Density (pcpmpl)	Speed (mph)	LOS
I-40 On-Ramp	MLK Off-Ramp	Basic	6	0.70	0	25	67	C
	MLK Off-Ramp	Basic	6	0.70	0	25	68	C
MLK Off-Ramp	Lead Off-Ramp	Basic	4	0.80	0	30	64	D
	Lead Off-Ramp	OffRamp	4	0.80	0	29	66	D
Lead Off-Ramp	Central On-Ramp	Basic	4	0.66	0	23	68	C
Central On-Ramp	ACC Off-Ramp	Weaving	5	0.62	0	25	58	C
	Gibson Off-Ramp	OffRamp	4	0.62	0	23	65	C
Gibson Off-Ramp	ACC On-Ramp	Basic	4	0.45	0	16	69	B
	ACC On-Ramp	OnRamp	4	0.51	0	19	65	B
ACC On-Ramp	Sunport Off-Ramp	Basic	4	0.51	0	18	70	B
	Sunport Off-Ramp	OffRamp	4	0.51	0	19	66	B
Sunport Off-Ramp	Gibson On-Ramp	Basic	4	0.38	0	13	70	B
	Gibson On-Ramp	OnRamp	4	0.43	0	16	65	B
Gibson On-Ramp	Sunport On-Ramp	Basic	4	0.43	0	15	69	B
	Sunport On-Ramp	OnRamp	4	0.48	0	18	65	B
Sunport On-Ramp	Rio Bravo Off-Ramp	Basic	4	0.48	0	17	69	B
	Rio Bravo Off-Ramp	Basic	4	0.48	0	17	67	B
Rio Bravo Off-Ramp	Rio Bravo On-Ramp	Basic	3	0.45	0	14	75	B
	Rio Bravo On-Ramp	OnRamp	3	0.53	0	18	69	B
Rio Bravo On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.53	0	17	74	B
	BobbyFoster Off-Ramp	OffRamp	3	0.53	0	18	69	B
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.42	0	14	75	B
	BobbyFoster On-Ramp	OnRamp	3	0.44	0	15	70	B
BobbyFoster On-Ramp	MesaDelSol Off-Ramp	Basic	3	0.44	0	14	75	B
	MesaDelSol Off-Ramp	OffRamp	3	0.40	0	14	68	B
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.28	0	9	75	A
MesaDelSol On-Ramp	Broadway Off-Ramp	Weaving	4	0.28	0	9	68	A
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.42	0	13	75	B

**FREEWAY FACILITIES RESULTS SUMMARY - Southbound I-25 2040 Build Alternative 1**

Phase IA/Base 2040 MTP Build Alternative 1 from Broadway to I-40 Southbound I-25 - PM Peak Hour			Phase IA/Base Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue	Density (pcpmpl)	Speed (mph)	LOS
I-40 On-Ramp	MLK Off-Ramp	Basic	6	0.71	0	26	67	C
	MLK Off-Ramp	Basic	6	0.71	0	26	67	C
MLK Off-Ramp	Lead Off-Ramp	Basic	4	0.87	0	34	61	D
	Lead Off-Ramp	OffRamp	4	0.87	0	33	64	D
Lead Off-Ramp	Central On-Ramp	Basic	4	0.78	0	29	65	D
Central On-Ramp	ACC Off-Ramp	Weaving	5	0.94	0	41	47	E
	Gibson Off-Ramp	OffRamp	4	0.78	0	29	65	D
Gibson Off-Ramp	ACC On-Ramp	Basic	4	0.69	0	25	68	C
	ACC On-Ramp	OnRamp	4	0.80	0	31	61	D
ACC On-Ramp	Sunport Off-Ramp	Basic	4	0.80	0	30	64	D
	Sunport Off-Ramp	OffRamp	4	0.80	0	30	64	D
Sunport Off-Ramp	Gibson On-Ramp	Basic	4	0.67	0	24	68	C
	Gibson On-Ramp	OnRamp	4	0.79	0	31	62	D
Gibson On-Ramp	Sunport On-Ramp	Basic	4	0.79	0	30	64	D
	Sunport On-Ramp	OnRamp	4	0.88	0	34	61	D
Sunport On-Ramp	Rio Bravo Off-Ramp	Basic	4	0.88	0	35	61	D
	Rio Bravo Off-Ramp	Basic	4	0.88	0	35	61	D
Rio Bravo Off-Ramp	Rio Bravo On-Ramp	Basic	3	0.76	0	27	67	D
	Rio Bravo On-Ramp	OnRamp	3	0.84	0	32	64	D
Rio Bravo On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.84	0	32	63	D
	BobbyFoster Off-Ramp	OffRamp	3	0.84	0	31	64	D
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.64	0	22	72	C
	BobbyFoster On-Ramp	OnRamp	3	0.70	0	25	67	C
BobbyFoster On-Ramp	MesaDelSol Off-Ramp	Basic	3	0.70	0	24	70	C
	MesaDelSol Off-Ramp	OffRamp	3	0.68	0	26	63	C
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.46	0	15	74	B
MesaDelSol On-Ramp	Broadway Off-Ramp	Weaving	4	1.07	0	25	58	F
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.53	0	16	75	B

Improved 2040 MTP Build Alternative 1 from Broadway to I-40 Southbound I-25 - PM Peak Hour			Improved Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue	Density (pcpmpl)	Speed (mph)	LOS
I-40 On-Ramp	MLK Off-Ramp	Basic	6	0.71	0	25	67	C
	MLK Off-Ramp	Basic	6	0.71	0	25	69	C
MLK Off-Ramp	Lead Off-Ramp	Basic	4	0.87	0	34	61	D
	Lead Off-Ramp	OffRamp	4	0.87	0	31	66	D
Lead Off-Ramp	Central On-Ramp	Basic	4	0.78	0	29	65	D
Central On-Ramp	ACC Off-Ramp	Weaving	5	0.76	0	32	54	D
	Gibson Off-Ramp	OffRamp	4	0.78	0	28	67	D
Gibson Off-Ramp	ACC On-Ramp	Basic	4	0.69	0	25	68	C
	ACC On-Ramp	OnRamp	4	0.80	0	31	61	D
ACC On-Ramp	Sunport Off-Ramp	Basic	4	0.80	0	30	64	D
	Sunport Off-Ramp	OffRamp	4	0.80	0	29	66	D
Sunport Off-Ramp	Gibson On-Ramp	Basic	4	0.67	0	24	68	C
	Gibson On-Ramp	OnRamp	4	0.79	0	31	62	D
Gibson On-Ramp	Sunport On-Ramp	Basic	4	0.79	0	30	64	D
	Sunport On-Ramp	OnRamp	4	0.88	0	34	61	D
Sunport On-Ramp	Rio Bravo Off-Ramp	Basic	4	0.88	0	35	61	D
	Rio Bravo Off-Ramp	Basic	4	0.88	0	33	63	D
Rio Bravo Off-Ramp	Rio Bravo On-Ramp	Basic	3	0.76	0	27	67	D
	Rio Bravo On-Ramp	OnRamp	3	0.84	0	31	65	D
Rio Bravo On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.84	0	32	64	D
	BobbyFoster Off-Ramp	OffRamp	3	0.84	0	30	68	D
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.64	0	22	72	C
	BobbyFoster On-Ramp	OnRamp	3	0.70	0	25	68	C
BobbyFoster On-Ramp	MesaDelSol Off-Ramp	Basic	3	0.70	0	24	70	C
	MesaDelSol Off-Ramp	OffRamp	3	0.68	0	24	67	C
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.46	0	15	75	B
MesaDelSol On-Ramp	Broadway Off-Ramp	Weaving	4	0.74	0	17	65	B
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.53	0	17	74	B

**FREEWAY FACILITIES RESULTS SUMMARY - Northbound I-25 2040 Build Alternative 2**

Phase IA/Base 2040 MTP Build Alternative 2 from Broadway to I-40 Northbound I-25 - AM Peak Hour			Phase IA/Base Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue (ft)	Density (pcpmpl)	Speed (mph)	LOS
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.65	0	22	72	C
Broadway On-Ramp	MesaDelSol Off-Ramp	Weaving	4	0.82	0	18	64	B
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.58	0	19	73	C
	MesaDelSol On-Ramp	OnRamp	3	0.80	0	30	63	D
MesaDelSol On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.83	0	31	64	D
	BobbyFoster Off-Ramp	OffRamp	3	0.83	0	29	70	D
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.76	0	27	67	D
	BobbyFoster On-Ramp	OnRamp	3	0.93	0	37	60	E
BobbyFoster On-Ramp	Rio Bravo Off-Ramp	Basic	3	0.93	0	39	58	E
	Rio Bravo Off-Ramp	OffRamp	3	0.93	0	32	69	D
Rio Bravo Off-Ramp	Rio Bravo Loop On	Basic	3	0.84	0	32	64	D
	Rio Bravo Loop On	Basic	4	0.80	0	30	65	D
Rio Bravo Loop On	Rio Bravo W-N On	Basic	4	0.80	0	29	66	D
	Rio Bravo W-N On	OnRamp	4	0.93	0	36	61	E
Rio Bravo W-N On	Sunport Off-Ramp	Basic	4	0.93	0	39	58	E
	Sunport Off-Ramp	OffRamp	4	0.93	0	34	66	D
Sunport Off-Ramp	Sunport On-Ramp	Basic	4	0.83	0	32	63	D
Sunport On-Ramp	Gibson Off-Ramp	Weaving	5	0.83	0	37	48	E
	ACC Off-Ramp	Basic	5	0.66	0	23	69	C
ACC Off-Ramp	Gibson On-Ramp	Basic	4	0.73	0	27	66	D
	Gibson On-Ramp	OnRamp	4	0.83	0	32	61	D
Gibson On-Ramp	ACC On-Ramp	Basic	4	0.83	0	32	63	D
ACC On-Ramp	Coal Off-Ramp	Weaving	5	0.86	0	38	48	E
Coal Off-Ramp	Lead On-Ramp	Basic	4	0.88	0	35	60	D
Lead On-Ramp	Lomas Off-Ramp	Weaving	5	0.86	0	38	49	E
Lomas Off-Ramp	MLK On-Ramp	Basic	4	0.86	0	34	62	D
	MLK On-Ramp	Basic	6	0.69	0	28	60	C
MLK On-Ramp	I-40 Off-Ramp	Basic	6	0.69	0	24	68	C

Improved 2040 MTP Build Alternative 2 from Broadway to I-40 Northbound I-25 - AM Peak Hour			Improved Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue (ft)	Density (pcpmpl)	Speed (mph)	LOS
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.65	0	22	72	C
Broadway On-Ramp	MesaDelSol Off-Ramp	Basic	4	0.49	0	18	67	B
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.58	0	19	73	C
	MesaDelSol On-Ramp	OnRamp	3	0.80	0	30	63	D
MesaDelSol On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.83	0	31	64	D
	BobbyFoster Off-Ramp	OffRamp	3	0.83	0	29	70	D
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.76	0	27	67	D
	BobbyFoster On-Ramp	Basic	4	0.70	0	26	65	D
BobbyFoster On-Ramp	Rio Bravo Off-Ramp	Basic	4	0.70	0	24	70	C
	Rio Bravo Off-Ramp	Basic	4	0.70	0	23	72	C
Rio Bravo Off-Ramp	Rio Bravo Loop On	Basic	3	0.84	0	32	64	D
	Rio Bravo Loop On	Basic	4	0.80	0	30	65	D
Rio Bravo Loop On	Rio Bravo W-N On	Basic	4	0.80	0	29	66	D
	Rio Bravo W-N On	Basic	5	0.74	0	29	62	D
Rio Bravo W-N On	Sunport Off-Ramp	Basic	5	0.74	0	27	66	D
	Sunport Off-Ramp	Basic	5	0.74	0	26	68	D
Sunport Off-Ramp	Sunport On-Ramp	Basic	4	0.83	0	32	63	D
Sunport On-Ramp	Gibson Off-Ramp	Weaving	5	0.79	0	33	55	D
	ACC Off-Ramp	Basic	5	0.66	0	23	69	C
ACC Off-Ramp	Gibson On-Ramp	Basic	4	0.73	0	27	66	D
	Gibson On-Ramp	OnRamp	4	0.83	0	32	61	D
ACC On-Ramp	Coal Off-Ramp	Weaving	5	0.81	0	35	53	D
Coal Off-Ramp	Lead On-Ramp	Basic	4	0.88	0	35	60	D
Lead On-Ramp	Lomas Off-Ramp	Weaving	5	0.82	0	34	55	D
Lomas Off-Ramp	MLK On-Ramp	Basic	4	0.86	0	34	62	D
	MLK On-Ramp	Basic	6	0.69	0	28	60	D
MLK On-Ramp	I-40 Off-Ramp	Basic	6	0.69	0	24	68	C

**FREEWAY FACILITIES RESULTS SUMMARY - Northbound I-25 2040 Build Alternative 2**

Phase IA/Base 2040 MTP Build Alternative 2 from Broadway to I-40 Northbound I-25 - PM Peak Hour			Phase IA/Base Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue	Density (pcpmpl)	Speed (mph)	LOS
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.49	0	16	75	B
Broadway On-Ramp	MesaDelSol Off-Ramp	Weaving	4	0.75	0	14	62	B
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.34	0	11	75	A
	MesaDelSol On-Ramp	OnRamp	3	0.54	0	19	68	B
MesaDelSol On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.56	0	18	74	C
	BobbyFoster Off-Ramp	OffRamp	3	0.56	0	19	70	B
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.51	0	16	75	B
	BobbyFoster On-Ramp	OnRamp	3	0.68	0	24	67	C
BobbyFoster On-Ramp	Rio Bravo Off-Ramp	Basic	3	0.68	0	23	71	C
	Rio Bravo Off-Ramp	OffRamp	3	0.68	0	23	70	C
Rio Bravo Off-Ramp	Rio Bravo Loop On	Basic	3	0.61	0	20	73	C
	Rio Bravo Loop On	Basic	4	0.62	0	22	67	C
Rio Bravo Loop On	Rio Bravo W-N On	Basic	4	0.62	0	20	72	C
	Rio Bravo W-N On	OnRamp	4	0.72	0	27	64	C
Rio Bravo W-N On	Sunport Off-Ramp	Basic	4	0.72	0	26	67	C
	Sunport Off-Ramp	OffRamp	4	0.72	0	25	68	C
Sunport Off-Ramp	Sunport On-Ramp	Basic	4	0.68	0	24	68	C
Sunport On-Ramp	Gibson Off-Ramp	Weaving	5	0.72	0	30	51	D
	ACC Off-Ramp	Basic	5	0.60	0	21	69	C
ACC Off-Ramp	Gibson On-Ramp	Basic	4	0.68	0	24	68	C
	Gibson On-Ramp	OnRamp	4	0.82	0	32	61	D
Gibson On-Ramp	ACC On-Ramp	Basic	4	0.82	0	31	63	D
ACC On-Ramp	Coal Off-Ramp	Weaving	5	0.85	0	37	49	E
Coal Off-Ramp	Lead On-Ramp	Basic	4	0.88	0	35	61	D
Lead On-Ramp	Lomas Off-Ramp	Weaving	5	0.86	0	38	50	E
Lomas Off-Ramp	MLK On-Ramp	Basic	4	0.89	0	36	60	E
	MLK On-Ramp	Basic	6	0.74	0	30	59	D
MLK On-Ramp	I-40 Off-Ramp	Basic	6	0.74	0	27	66	D

Improved 2040 MTP Build Alternative 2 from Broadway to I-40 Northbound I-25 - PM Peak Hour			Improved Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue	Density (pcpmpl)	Speed (mph)	LOS
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.49	0	16	75	B
Broadway On-Ramp	MesaDelSol Off-Ramp	Weaving	4	0.51	0	13	66	B
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.34	0	11	75	A
	MesaDelSol On-Ramp	OnRamp	3	0.56	0	19	68	B
MesaDelSol On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.56	0	18	74	C
	BobbyFoster Off-Ramp	OffRamp	3	0.56	0	19	70	B
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.51	0	16	75	B
	BobbyFoster On-Ramp	Basic	4	0.51	0	18	67	B
BobbyFoster On-Ramp	Rio Bravo Off-Ramp	Basic	4	0.51	0	16	75	B
	Rio Bravo Off-Ramp	Basic	4	0.51	0	17	74	C
Rio Bravo Off-Ramp	Rio Bravo Loop On	Basic	3	0.61	0	20	73	C
	Rio Bravo Loop On	Basic	4	0.62	0	22	67	C
Rio Bravo Loop On	Rio Bravo W-N On	Basic	4	0.62	0	20	72	C
	Rio Bravo W-N On	Basic	5	0.57	0	22	64	C
Rio Bravo W-N On	Sunport Off-Ramp	Basic	5	0.57	0	20	70	C
	Sunport Off-Ramp	Basic	5	0.57	0	20	70	C
Sunport Off-Ramp	Sunport On-Ramp	Basic	4	0.68	0	24	68	C
Sunport On-Ramp	Gibson Off-Ramp	Weaving	5	0.68	0	29	54	D
	ACC Off-Ramp	Basic	5	0.60	0	21	69	C
ACC Off-Ramp	Gibson On-Ramp	Basic	4	0.68	0	24	68	C
	Gibson On-Ramp	OnRamp	4	0.82	0	32	61	D
ACC On-Ramp	Coal Off-Ramp	Weaving	5	0.80	0	34	53	D
Coal Off-Ramp	Lead On-Ramp	Basic	4	0.88	0	35	61	D
Lead On-Ramp	Lomas Off-Ramp	Weaving	5	0.82	0	35	54	D
Lomas Off-Ramp	MLK On-Ramp	Basic	4	0.89	0	36	60	E
	MLK On-Ramp	Basic	6	0.74	0	30	59	D
MLK On-Ramp	I-40 Off-Ramp	Basic	6	0.74	0	27	66	D

**FREEWAY FACILITIES RESULTS SUMMARY - Southbound I-25 2040 Build Alternative 2**

Phase IA/Base 2040 MTP Build Alternative 2 from Broadway to I-40 Southbound I-25 - AM Peak Hour			Phase IA/Base Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue (ft)	Density (pc/pmpl)	Speed (mph)	LOS
I-40 On-Ramp	MLK Off-Ramp	Basic	6	0.70	0	25	67	C
	MLK Off-Ramp	Basic	6	0.70	0	25	68	C
MLK Off-Ramp	Lead Off-Ramp	Basic	4	0.80	0	30	64	D
	Lead Off-Ramp	OffRamp	4	0.80	0	29	66	D
Lead Off-Ramp	Central On-Ramp	Basic	4	0.66	0	23	68	C
Central On-Ramp	ACC Off-Ramp	Weaving	5	0.75	0	28	51	C
ACC Off-Ramp	ACC On-Ramp	Basic	4	0.61	0	21	69	C
ACC On-Ramp	Gibson Off-Ramp	Weaving	5	0.59	0	23	57	C
	Gibson Loop Off-Ramp	Basic	5	0.52	0	20	63	C
Gibson Loop Off-Ramp	Gibson On-Ramp	Basic	4	0.52	0	19	67	C
Gibson On-Ramp	Sunport Off-Ramp	Weaving	5	0.68	0	20	54	B
Sunport Off-Ramp	Sunport On-Ramp	Basic	4	0.43	0	15	70	B
	Sunport On-Ramp	OnRamp	4	0.48	0	18	65	B
Sunport On-Ramp	Rio Bravo Off-Ramp	Basic	4	0.48	0	17	70	B
	Rio Bravo Off-Ramp	Basic	4	0.48	0	17	67	B
Rio Bravo Off-Ramp	Rio Bravo On-Ramp	Basic	3	0.45	0	14	75	B
	Rio Bravo On-Ramp	OnRamp	3	0.53	0	18	69	B
Rio Bravo On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.53	0	17	74	B
	BobbyFoster Off-Ramp	OffRamp	3	0.53	0	18	69	B
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.42	0	14	75	B
	BobbyFoster On-Ramp	OnRamp	3	0.44	0	15	70	B
BobbyFoster On-Ramp	MesaDelSol Off-Ramp	Basic	3	0.44	0	14	75	B
	MesaDelSol Off-Ramp	OffRamp	3	0.40	0	14	68	B
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.28	0	9	75	A
MesaDelSol On-Ramp	Broadway Off-Ramp	Weaving	4	0.41	0	10	65	A
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.42	0	13	75	B

Improved 2040 MTP Build Alternative 2 from Broadway to I-40 Southbound I-25 - AM Peak Hour			Improved Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue (ft)	Density (pc/pmpl)	Speed (mph)	LOS
I-40 On-Ramp	MLK Off-Ramp	Basic	6	0.70	0	25	67	C
	MLK Off-Ramp	Basic	6	0.70	0	25	68	C
MLK Off-Ramp	Lead Off-Ramp	Basic	4	0.80	0	30	64	D
	Lead Off-Ramp	OffRamp	4	0.80	0	29	66	D
Lead Off-Ramp	Central On-Ramp	Basic	4	0.66	0	23	68	C
Central On-Ramp	ACC Off-Ramp	Weaving	5	0.63	0	24	58	C
ACC Off-Ramp	ACC On-Ramp	Basic	4	0.61	0	21	69	C
ACC On-Ramp	Gibson Off-Ramp	Weaving	5	0.59	0	23	57	C
	Gibson Loop Off-Ramp	Basic	5	0.52	0	20	63	C
Gibson Loop Off-Ramp	Gibson On-Ramp	Basic	4	0.52	0	18	68	C
Gibson On-Ramp	Sunport Off-Ramp	Weaving	5	0.48	0	18	61	B
Sunport Off-Ramp	Sunport On-Ramp	Basic	4	0.43	0	15	70	B
	Sunport On-Ramp	OnRamp	4	0.48	0	18	65	B
Sunport On-Ramp	Rio Bravo Off-Ramp	Basic	4	0.48	0	17	70	B
	Rio Bravo Off-Ramp	Basic	4	0.48	0	17	67	B
Rio Bravo Off-Ramp	Rio Bravo On-Ramp	Basic	3	0.45	0	14	75	B
	Rio Bravo On-Ramp	OnRamp	3	0.53	0	18	69	B
Rio Bravo On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.53	0	17	74	B
	BobbyFoster Off-Ramp	OffRamp	3	0.53	0	18	69	B
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.42	0	14	75	B
	BobbyFoster On-Ramp	OnRamp	3	0.44	0	15	70	B
BobbyFoster On-Ramp	MesaDelSol Off-Ramp	Basic	3	0.44	0	14	75	B
	MesaDelSol Off-Ramp	OffRamp	3	0.40	0	14	68	B
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.28	0	9	75	A
MesaDelSol On-Ramp	Broadway Off-Ramp	Weaving	4	0.28	0	9	68	A
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.42	0	13	75	B

**FREEWAY FACILITIES RESULTS SUMMARY - Southbound I-25 2040 Build Alternative 2**

Phase IA/Base 2040 MTP Build Alternative 2 from Broadway to I-40 Southbound I-25 - PM Peak Hour			Phase IA/Base Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue	Density (pcpmpl)	Speed (mph)	LOS
I-40 On-Ramp	MLK Off-Ramp	Basic	6	0.71	0	26	67	C
	MLK Off-Ramp	Basic	6	0.71	0	26	67	C
MLK Off-Ramp	Lead Off-Ramp	Basic	4	0.87	0	34	61	D
	Lead Off-Ramp	OffRamp	4	0.87	0	33	64	D
Lead Off-Ramp	Central On-Ramp	Basic	4	0.78	0	29	65	D
Central On-Ramp	ACC Off-Ramp	Weaving	5	0.89	0	40	47	E
ACC Off-Ramp	ACC On-Ramp	Basic	4	0.77	0	29	65	D
ACC On-Ramp	Gibson Off-Ramp	Weaving	5	0.77	0	37	52	E
	Gibson Loop Off-Ramp	Basic	5	0.69	0	25	67	C
Gibson Loop Off-Ramp	Gibson On-Ramp	Basic	4	0.80	0	30	64	D
Gibson On-Ramp	Sunport Off-Ramp	Weaving	5	0.91	0	40	47	E
Sunport Off-Ramp	Sunport On-Ramp	Basic	4	0.79	0	29	64	D
	Sunport On-Ramp	OnRamp	4	0.88	0	34	61	D
Sunport On-Ramp	Rio Bravo Off-Ramp	Basic	4	0.88	0	35	61	D
	Rio Bravo Off-Ramp	Basic	4	0.88	0	35	61	D
Rio Bravo Off-Ramp	Rio Bravo On-Ramp	Basic	3	0.76	0	27	68	D
	Rio Bravo On-Ramp	OnRamp	3	0.84	0	31	64	D
Rio Bravo On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.84	0	32	64	D
	BobbyFoster Off-Ramp	OffRamp	3	0.84	0	31	64	D
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.64	0	22	72	C
	BobbyFoster On-Ramp	OnRamp	3	0.70	0	25	67	C
BobbyFoster On-Ramp	MesaDelSol Off-Ramp	Basic	3	0.70	0	24	70	C
	MesaDelSol Off-Ramp	OffRamp	3	0.68	0	26	63	C
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.46	0	15	74	B
MesaDelSol On-Ramp	Broadway Off-Ramp	Weaving	4	1.08	0	25	58	F
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.53	0	16	75	B

Improved 2040 MTP Build Alternative 2 from Broadway to I-40 Southbound I-25 - PM Peak Hour			Improved Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue	Density (pcpmpl)	Speed (mph)	LOS
I-40 On-Ramp	MLK Off-Ramp	Basic	6	0.71	0	25	67	C
	MLK Off-Ramp	Basic	6	0.71	0	25	69	C
MLK Off-Ramp	Lead Off-Ramp	Basic	4	0.87	0	34	61	D
	Lead Off-Ramp	OffRamp	4	0.87	0	31	66	D
Lead Off-Ramp	Central On-Ramp	Basic	4	0.78	0	29	65	D
Central On-Ramp	ACC Off-Ramp	Weaving	5	0.76	0	31	55	D
ACC Off-Ramp	ACC On-Ramp	Basic	4	0.77	0	29	65	D
ACC On-Ramp	Gibson Off-Ramp	Weaving	5	0.77	0	32	53	D
	Gibson Loop Off-Ramp	Basic	5	0.69	0	25	65	C
Gibson Loop Off-Ramp	Gibson On-Ramp	Basic	4	0.80	0	30	64	D
Gibson On-Ramp	Sunport Off-Ramp	Weaving	5	0.76	0	32	55	D
Sunport Off-Ramp	Sunport On-Ramp	Basic	4	0.79	0	29	64	D
	Sunport On-Ramp	OnRamp	4	0.88	0	34	61	D
Sunport On-Ramp	Rio Bravo Off-Ramp	Basic	4	0.88	0	35	61	D
	Rio Bravo Off-Ramp	Basic	4	0.88	0	33	63	D
Rio Bravo Off-Ramp	Rio Bravo On-Ramp	Basic	3	0.76	0	27	67	D
	Rio Bravo On-Ramp	OnRamp	3	0.84	0	31	65	D
Rio Bravo On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.84	0	32	64	D
	BobbyFoster Off-Ramp	OffRamp	3	0.84	0	30	68	D
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.64	0	21	72	C
	BobbyFoster On-Ramp	OnRamp	3	0.70	0	25	68	C
BobbyFoster On-Ramp	MesaDelSol Off-Ramp	Basic	3	0.70	0	24	70	C
	MesaDelSol Off-Ramp	OffRamp	3	0.68	0	24	67	C
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.46	0	15	75	B
MesaDelSol On-Ramp	Broadway Off-Ramp	Weaving	4	0.74	0	16	65	B
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.53	0	17	74	B

**FREEWAY FACILITIES RESULTS SUMMARY - Northbound I-25 2040 Build Alternative 3**

Phase IA/Base 2040 MTP Build Alternative 3 from Broadway to I-40 Northbound I-25 - AM Peak Hour			Phase IA/Base Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue (ft)	Density (pcpmp/ft)	Speed (mph)	LOS
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.65	0	22	72	C
Broadway On-Ramp	MesaDelSol Off-Ramp	Weaving	4	0.82	0	18	64	C
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.58	0	19	73	C
	MesaDelSol On-Ramp	OnRamp	3	0.80	0	30	63	D
MesaDelSol On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.83	0	31	64	D
	BobbyFoster Off-Ramp	OffRamp	3	0.83	0	29	70	D
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.76	0	27	67	D
	BobbyFoster On-Ramp	OnRamp	3	0.93	0	37	60	E
BobbyFoster On-Ramp	Rio Bravo Off-Ramp	Basic	3	0.93	0	39	58	E
	Rio Bravo Off-Ramp	OffRamp	3	0.93	0	32	69	D
Rio Bravo Off-Ramp	Rio Bravo Loop On	Basic	3	0.84	0	32	64	D
	Rio Bravo Loop On	Basic	4	0.80	0	30	65	D
Rio Bravo Loop On	Rio Bravo W-N On	Basic	4	0.80	0	29	66	D
	Rio Bravo W-N On	OnRamp	4	0.93	0	36	61	E
Rio Bravo W-N On	Sunport Off-Ramp	Basic	4	0.93	0	39	58	E
	Sunport Off-Ramp	OffRamp	4	0.93	0	34	66	D
	Gibson Off-Ramp	OffRamp	4	0.83	0	31	65	D
Gibson Off-Ramp	Sunport On-Ramp	Basic	4	0.66	0	23	68	C
	Sunport On-Ramp	OnRamp	4	0.76	0	29	62	D
Sunport On-Ramp	Gibson On-Ramp	Basic	4	0.76	0	28	66	D
Gibson On-Ramp	Coal Off-Ramp	Weaving	5	0.76	0	33	50	D
Coal Off-Ramp	ACC On-Ramp	Basic	4	0.75	0	27	66	D
ACC On-Ramp	Lomas Off-Ramp	Weaving	5	0.93	0	36	48	E
Lomas Off-Ramp	MLK On-Ramp	Basic	4	0.78	0	29	65	D
	MLK On-Ramp	Basic	6	0.69	0	28	59	D
MLK On-Ramp	I-40 Off-Ramp	Basic	6	0.69	0	24	68	C

Improved 2040 MTP Build Alternative 3 from Broadway to I-40 Northbound I-25 - AM Peak Hour			Improved Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue (ft)	Density (pcpmp/ft)	Speed (mph)	LOS
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.65	0	22	72	C
Broadway On-Ramp	MesaDelSol Off-Ramp	Basic	4	0.49	0	18	66	B
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.58	0	19	73	C
	MesaDelSol On-Ramp	OnRamp	3	0.80	0	30	63	D
MesaDelSol On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.83	0	31	64	D
	BobbyFoster Off-Ramp	OffRamp	3	0.83	0	29	70	D
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.76	0	27	67	D
	BobbyFoster On-Ramp	Basic	4	0.70	0	26	65	C
BobbyFoster On-Ramp	Rio Bravo Off-Ramp	Basic	4	0.70	0	24	70	C
	Rio Bravo Off-Ramp	Basic	4	0.70	0	23	72	C
Rio Bravo Off-Ramp	Rio Bravo Loop On	Basic	3	0.84	0	32	64	D
	Rio Bravo Loop On	Basic	4	0.80	0	30	65	D
Rio Bravo Loop On	Rio Bravo W-N On	Basic	4	0.80	0	29	66	D
	Rio Bravo W-N On	Basic	5	0.74	0	29	62	D
Rio Bravo W-N On	Sunport Off-Ramp	Basic	5	0.74	0	27	66	D
	Sunport Off-Ramp	Basic	5	0.74	0	26	68	D
	Gibson Off-Ramp	OffRamp	4	0.83	0	31	65	D
Gibson Off-Ramp	Sunport On-Ramp	Basic	4	0.66	0	23	68	C
	Sunport On-Ramp	Basic	5	0.61	0	22	65	C
Sunport On-Ramp	Gibson On-Ramp	Basic	4	0.76	0	28	66	D
Gibson On-Ramp	Coal Off-Ramp	Weaving	5	0.76	0	33	50	D
Coal Off-Ramp	ACC On-Ramp	Basic	4	0.75	0	27	66	D
ACC On-Ramp	Lomas Off-Ramp	Weaving	5	0.74	0	32	54	D
Lomas Off-Ramp	MLK On-Ramp	Basic	4	0.78	0	29	65	D
	MLK On-Ramp	Basic	6	0.69	0	28	59	D
MLK On-Ramp	I-40 Off-Ramp	Basic	6	0.69	0	24	68	C

**FREEWAY FACILITIES RESULTS SUMMARY - Northbound I-25 2040 Build Alternative 3**

Phase IA/Base 2040 MTP Build Alternative 3 from Broadway to I-40 Northbound I-25 - PM Peak Hour			Phase IA/Base Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue	Density (pcpmpl)	Speed (mph)	LOS
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.49	0	16	75	B
Broadway On-Ramp	MesaDelSol Off-Ramp	Weaving	4	0.75	0	14	62	B
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.34	0	11	75	A
	MesaDelSol On-Ramp	OnRamp	3	0.54	0	19	68	B
MesaDelSol On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.56	0	18	74	C
	BobbyFoster Off-Ramp	OffRamp	3	0.56	0	19	70	B
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.51	0	16	75	B
	BobbyFoster On-Ramp	OnRamp	3	0.68	0	24	67	C
BobbyFoster On-Ramp	Rio Bravo Off-Ramp	Basic	3	0.68	0	23	71	C
	Rio Bravo Off-Ramp	OffRamp	3	0.68	0	23	70	C
Rio Bravo Off-Ramp	Rio Bravo Loop On	Basic	3	0.61	0	20	73	C
	Rio Bravo Loop On	Basic	4	0.62	0	22	67	C
Rio Bravo Loop On	Rio Bravo W-N On	Basic	4	0.62	0	20	72	C
	Rio Bravo W-N On	OnRamp	4	0.72	0	27	64	C
Rio Bravo W-N On	Sunport Off-Ramp	Basic	4	0.72	0	26	67	C
	Sunport Off-Ramp	OffRamp	4	0.72	0	25	68	C
	Gibson Off-Ramp	OffRamp	4	0.68	0	25	67	C
Gibson Off-Ramp	Sunport On-Ramp	Basic	4	0.57	0	20	70	C
	Sunport On-Ramp	OnRamp	4	0.70	0	26	64	C
Sunport On-Rmap	Gibson On-Ramp	Basic	4	0.70	0	25	67	C
Gibson On-Ramp	Coal Off-Ramp	Weaving	5	0.88	0	33	49	D
Coal Off-Ramp	ACC On-Ramp	Basic	4	0.75	0	27	66	D
ACC On-Ramp	Lomas Off-Ramp	Weaving	5	0.83	0	35	49	D
Lomas Off-Ramp	MLK On-Ramp	Basic	4	0.80	0	30	64	D
	MLK On-Ramp	Basic	6	0.74	0	31	57	D
MLK On-Ramp	I-40 Off-Ramp	Basic	6	0.74	0	27	66	D

Improved 2040 MTP Build Alternative 3 from Broadway to I-40 Northbound I-25 - PM Peak Hour			Improved Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue	Density (pcpmpl)	Speed (mph)	LOS
Broadway Off-Ramp	Broadway On-Ramp	Basic	2	0.49	0	16	75	B
Broadway On-Ramp	MesaDelSol Off-Ramp	Weaving	4	0.51	0	13	66	B
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.34	0	11	75	A
	MesaDelSol On-Ramp	OnRamp	3	0.54	0	19	68	B
MesaDelSol On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.57	0	19	74	C
	BobbyFoster Off-Ramp	OffRamp	3	0.57	0	20	70	C
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.51	0	17	74	B
	BobbyFoster On-Ramp	Basic	4	0.51	0	18	67	C
BobbyFoster On-Ramp	Rio Bravo Off-Ramp	Basic	4	0.51	0	17	74	B
	Rio Bravo Off-Ramp	Basic	4	0.51	0	17	74	B
Rio Bravo Off-Ramp	Rio Bravo Loop On	Basic	3	0.61	0	20	73	C
	Rio Bravo Loop On	Basic	4	0.62	0	22	67	C
Rio Bravo Loop On	Rio Bravo W-N On	Basic	4	0.62	0	21	72	C
	Rio Bravo W-N On	Basic	5	0.58	0	22	64	C
Rio Bravo W-N On	Sunport Off-Ramp	Basic	5	0.58	0	20	70	C
	Sunport Off-Ramp	Basic	5	0.58	0	20	70	C
	Gibson Off-Ramp	OffRamp	4	0.68	0	25	67	C
Gibson Off-Ramp	Sunport On-Ramp	Basic	4	0.57	0	20	70	C
	Sunport On-Ramp	Basic	5	0.56	0	21	65	C
Sunport On-Rmap	Gibson On-Ramp	Basic	4	0.70	0	25	67	C
Gibson On-Ramp	Coal Off-Ramp	Weaving	5	0.88	0	33	49	D
Coal Off-Ramp	ACC On-Ramp	Basic	4	0.75	0	27	66	D
ACC On-Ramp	Lomas Off-Ramp	Weaving	5	0.74	0	32	54	D
Lomas Off-Ramp	MLK On-Ramp	Basic	4	0.80	0	30	64	D
	MLK On-Ramp	Basic	6	0.74	0	31	57	D
MLK On-Ramp	I-40 Off-Ramp	Basic	6	0.74	0	27	66	D

**FREEWAY FACILITIES RESULTS SUMMARY - Southbound I-25 2040 Build Alternative 3**

Phase IA/Base 2040 MTP Build Alternative 3 from Broadway to I-40 Southbound I-25 - AM Peak Hour			Phase IA/Base Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue (ft)	Density (pcpmp)	Speed (mph)	LOS
I-40 On-Ramp	MLK Off-Ramp	Basic	6	0.69	0	24	68	C
	MLK Off-Ramp	Basic	6	0.69	0	26	63	D
MLK Off-Ramp	ACC Off-Ramp	Basic	4	0.67	0	24	68	C
	ACC Off-Ramp	OffRamp	4	0.67	0	25	64	C
ACC Off-Ramp	Coal On-Ramp	Basic	4	0.54	0	19	70	C
Coal On-Ramp	Gibson Off-Ramp	Weaving	5	1.08	0	32	47	F
Gibson Off-Ramp	Gibson On-Ramp	Basic	4	0.48	0	15	70	B
Gibson On-Ramp	Sunport Off-Ramp	Weaving	5	0.80	0	28	51	D
Suport Off-Ramp	Sunport On-Ramp	Basic	4	0.43	0	14	70	B
	Sunport On-Ramp	OnRamp	4	0.48	0	17	65	B
Sunport On-Ramp	Rio Bravo Off-Ramp	Basic	4	0.48	0	16	70	B
	Rio Bravo Off-Ramp	Basic	4	0.48	0	17	65	B
Rio Bravo Off-Ramp	Rio Bravo On-Ramp	Basic	3	0.45	0	14	75	B
	Rio Bravo On-Ramp	OnRamp	3	0.53	0	17	69	B
Rio Bravo On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.53	0	16	75	B
	BobbyFoster Off-Ramp	OffRamp	3	0.53	0	18	66	B
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.42	0	13	75	B
	BobbyFoster On-Ramp	OnRamp	3	0.44	0	14	69	B
BobbyFoster On-Ramp	MesaDelSol Off-Ramp	Basic	3	0.44	0	13	75	B
	MesaDelSol Off-Ramp	OffRamp	3	0.40	0	14	64	B
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.28	0	8	74	A
MesaDelSol On-Ramp	Broadway Off-Ramp	Weaving	4	0.41	0	13	64	B
Broadway Off-Ramp	Broadway On-Ramp	Basic	3	0.28	0	9	75	A

Improved 2040 MTP Build Alternative 3 from Broadway to I-40 Southbound I-25 - AM Peak Hour			Improved Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue (ft)	Density (pcpmp)	Speed (mph)	LOS
I-40 On-Ramp	MLK Off-Ramp	Basic	6	0.69	0	24	68	C
	MLK Off-Ramp	Basic	6	0.69	0	25	65	C
MLK Off-Ramp	ACC Off-Ramp	Basic	4	0.67	0	24	68	C
	ACC Off-Ramp	OffRamp	4	0.67	0	25	66	C
ACC Off-Ramp	Coal On-Ramp	Basic	4	0.54	0	19	70	C
Coal On-Ramp	Gibson Off-Ramp	Weaving	5	0.74	0	22	58	C
Gibson Off-Ramp	Gibson On-Ramp	Basic	4	0.48	0	17	70	B
Gibson On-Ramp	Sunport Off-Ramp	Weaving	5	0.55	0	18	60	B
Suport Off-Ramp	Sunport On-Ramp	Basic	4	0.43	0	15	70	B
	Sunport On-Ramp	OnRamp	4	0.48	0	18	66	B
Sunport On-Ramp	Rio Bravo Off-Ramp	Basic	4	0.48	0	17	70	B
	Rio Bravo Off-Ramp	Basic	4	0.48	0	17	67	B
Rio Bravo Off-Ramp	Rio Bravo On-Ramp	Basic	3	0.45	0	14	75	B
	Rio Bravo On-Ramp	OnRamp	3	0.53	0	18	69	B
Rio Bravo On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.53	0	17	74	B
	BobbyFoster Off-Ramp	OffRamp	3	0.53	0	18	69	B
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.42	0	14	75	B
	BobbyFoster On-Ramp	OnRamp	3	0.44	0	15	70	B
BobbyFoster On-Ramp	MesaDelSol Off-Ramp	Basic	3	0.44	0	14	75	B
	MesaDelSol Off-Ramp	OffRamp	3	0.40	0	14	68	B
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.28	0	9	75	A
MesaDelSol On-Ramp	Broadway Off-Ramp	Weaving	4	0.28	0	9	68	A
Broadway Off-Ramp	Broadway On-Ramp	Basic	3	0.28	0	9	75	A

**FREEWAY FACILITIES RESULTS SUMMARY - Southbound I-25 2040 Build Alternative 3**

Phase IA/Base 2040 MTP Build Alternative 3 from Broadway to I-40 Southbound I-25 - PM Peak Hour			Phase IA/Base Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue	Density (pcpmpl)	Speed (mph)	LOS
I-40 On-Ramp	MLK Off-Ramp	Basic	6	0.71	0	26	67	C
	MLK Off-Ramp	Basic	6	0.71	0	26	65	D
MLK Off-Ramp	ACC Off-Ramp	Basic	4	0.78	0	29	65	D
	ACC Off-Ramp	OffRamp	4	0.78	0	30	64	D
ACC Off-Ramp	Coal On-Ramp	Basic	4	0.66	245	25	64	C
Coal On-Ramp	Gibson Off-Ramp	Weaving	5	0.91	3210	77	19	F
Gibson Off-Ramp	Gibson On-Ramp	Basic	4	0.72	1760	91	18	F
Gibson On-Ramp	Sunport Off-Ramp	Weaving	5	1.20	0	43	43	F
Suport Off-Ramp	Sunport On-Ramp	Basic	4	0.79	0	23	68	C
	Sunport On-Ramp	OnRamp	4	0.88	0	29	62	D
Sunport On-Ramp	Rio Bravo Off-Ramp	Basic	4	0.88	0	27	66	D
	Rio Bravo Off-Ramp	Basic	4	0.88	0	30	60	D
Rio Bravo Off-Ramp	Rio Bravo On-Ramp	Basic	3	0.76	0	22	72	C
	Rio Bravo On-Ramp	OnRamp	3	0.84	0	26	67	C
Rio Bravo On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.84	0	25	69	C
	BobbyFoster Off-Ramp	OffRamp	3	0.84	0	27	64	C
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.64	0	18	74	B
	BobbyFoster On-Ramp	OnRamp	3	0.70	0	21	68	C
BobbyFoster On-Ramp	MesaDelSol Off-Ramp	Basic	3	0.70	0	20	73	C
	MesaDelSol Off-Ramp	OffRamp	3	0.68	0	23	63	C
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.46	0	13	74	B
MesaDelSol On-Ramp	Broadway Off-Ramp	Weaving	4	1.07	0	22	59	F
Broadway Off-Ramp	Broadway On-Ramp	Basic	3	0.35	0	10	75	A

Improved 2040 MTP Build Alternative 3 from Broadway to I-40 Southbound I-25 - PM Peak Hour			Improved Results					
From	To	Analysis Type	No. of Lanes	max d/c Ratio	Queue	Density (pcpmpl)	Speed (mph)	LOS
I-40 On-Ramp	MLK Off-Ramp	Basic	6	0.71	0	25	67	C
	MLK Off-Ramp	Basic	6	0.71	0	26	67	D
MLK Off-Ramp	ACC Off-Ramp	Basic	4	0.78	0	29	65	D
	ACC Off-Ramp	OffRamp	4	0.78	0	28	66	D
ACC Off-Ramp	Coal On-Ramp	Basic	4	0.66	0	23	68	C
Coal On-Ramp	Gibson Off-Ramp	Weaving	5	0.68	0	29	54	D
Gibson Off-Ramp	Gibson On-Ramp	Basic	4	0.72	0	26	67	C
Gibson On-Ramp	Sunport Off-Ramp	Weaving	5	0.82	0	35	51	D
Suport Off-Ramp	Sunport On-Ramp	Basic	4	0.79	0	29	64	D
	Sunport On-Ramp	OnRamp	4	0.88	0	34	62	D
Sunport On-Ramp	Rio Bravo Off-Ramp	Basic	4	0.88	0	35	61	D
	Rio Bravo Off-Ramp	Basic	4	0.88	0	33	63	D
Rio Bravo Off-Ramp	Rio Bravo On-Ramp	Basic	3	0.76	0	27	67	D
	Rio Bravo On-Ramp	OnRamp	3	0.84	0	31	65	D
Rio Bravo On-Ramp	BobbyFoster Off-Ramp	Basic	3	0.84	0	32	64	D
	BobbyFoster Off-Ramp	OffRamp	3	0.84	0	30	68	D
BobbyFoster Off-Ramp	BobbyFoster On-Ramp	Basic	3	0.64	0	21	72	C
	BobbyFoster On-Ramp	OnRamp	3	0.70	0	25	68	C
BobbyFoster On-Ramp	MesaDelSol Off-Ramp	Basic	3	0.70	0	24	70	C
	MesaDelSol Off-Ramp	OffRamp	3	0.68	0	24	67	C
MesaDelSol Off-Ramp	MesaDelSol On-Ramp	Basic	3	0.46	0	15	75	B
MesaDelSol On-Ramp	Broadway Off-Ramp	Weaving	4	0.74	0	16	65	B
Broadway Off-Ramp	Broadway On-Ramp	Basic	3	0.35	0	11	75	B



## Appendix G

### Conceptual Opinion of Probable Costs for the Build Alternatives

I-25 SOUTH CORRIDOR STUDY NM 47 / BROADWAY BLVD. INTERCHANGE TO I-40 / I-25 INTERCHANGE				
CONCEPTUAL DESIGN OPINION OF PROBABLE COSTS SOUTH SEGMENT - PROJECT B00				
NMDOT PROJECT: CN A301100 5-Oct-16				
TYPE OF CONSTRUCTION	ESTIMATED COST	GRT (7.3125%)	TOTAL COST	USE
<b>CONSTRUCTION</b>				
ROADWAY	\$2,300,000	\$168,188	\$2,468,188	\$2,500,000
DRAINAGE	\$500,000	\$36,563	\$536,563	\$500,000
BRIDGE STRUCTURES	\$1,500,000	\$109,688	\$1,609,688	\$1,600,000
RETAINING WALLS	\$400,000	\$29,250	\$429,250	\$400,000
PERMANENT SIGNING, STRIPING AND LIGHTING	\$4,000,000	\$292,500	\$4,292,500	\$4,300,000
SIGNALIZATION	\$0	\$0	\$0	\$0
SUBTOTAL	<b>\$8,700,000</b>	<b>\$636,188</b>	<b>\$9,336,188</b>	<b>\$9,400,000</b>
<b>ALLOWANCES</b>				
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE (2%)	\$174,000	\$12,724	\$186,724	\$200,000
BICYCLE & PEDESTRIAN BRIDGES / FACILITIES (2%)	\$174,000	\$12,724	\$186,724	\$200,000
ACCOMMODATION FOR FUTURE ITS (3.5%)	\$305,000	\$22,303	\$327,303	\$300,000
SUBTOTAL	<b>\$653,000</b>	<b>\$47,751</b>	<b>\$700,751</b>	<b>\$700,000</b>
<b>CONSTRUCTION ENGINEERING</b>				
STAKING, SWPPP, ENVIRONMENTAL, QC (7%)	\$609,000	\$44,533	\$653,533	\$700,000
MOBILIZATION (10% OF CONSTRUCTION ITEMS)	\$870,000	\$63,619	\$933,619	\$900,000
TRAFFIC CONTROL (5% OF CONSTRUCTION ITEMS)	\$435,000	\$31,809	\$466,809	\$500,000
SUBTOTAL	<b>\$1,914,000</b>	<b>\$139,961</b>	<b>\$2,053,961</b>	<b>\$2,100,000</b>
CONTINGENCY / MISCELLANEOUS ITEMS (35%)	\$3,943,450	\$288,365	\$4,231,815	\$4,300,000
<b>CONSTRUCTION TOTAL</b>	<b>\$15,210,450</b>	<b>\$1,112,264</b>	<b>\$16,322,714</b>	<b>\$16,400,000</b>
STUDY & DESIGN (10%)	\$1,521,045	\$111,226	\$1,632,271	\$1,600,000
CONSTRUCTION MANAGEMENT (10% OF CONST. ITEMS)	\$1,521,045	\$111,226	\$1,632,271	\$1,600,000
SUBTOTAL	<b>\$3,042,090</b>	<b>\$222,453</b>	<b>\$3,264,543</b>	<b>\$3,300,000</b>
<b>TOTAL</b>	<b>\$18,252,540</b>	<b>\$1,334,717</b>	<b>\$19,587,257</b>	<b>\$19,700,000</b>
<b>PROJECT TOTAL USE</b>				<b>\$20,000,000</b>
<i>ESTIMATED IN 2016 DOLLARS</i>				
<b>INTERCHANGE PROJECTS</b>				
Construction of Avenue A <sup>1</sup>	\$15,000,000	\$1,096,875	\$16,096,875	\$16,100,000
Mesa del Sol Blvd. Interchange <sup>1</sup>	\$35,000,000	\$2,559,375	\$37,559,375	\$37,600,000
Bobby Foster Road Interchange <sup>2</sup>	\$20,000,000	\$1,462,500	\$21,462,500	\$21,500,000
Rio Bravo Blvd. Interchange <sup>3</sup>	\$48,900,000	\$3,575,813	\$52,475,813	\$52,500,000
SUBTOTAL	<b>\$118,900,000</b>	<b>\$8,694,563</b>	<b>\$127,594,563</b>	<b>\$127,700,000</b>

<sup>1</sup> Possible funding through developer/City project, not included in Construction Total  
<sup>2</sup> Possible funding through developer/County project, not included in Construction Total  
<sup>3</sup> Current NMDOT project, not included in Construction Total

I-25 SOUTH CORRIDOR STUDY NM 47 / BROADWAY BLVD. INTERCHANGE TO I-40 / I-25 INTERCHANGE				
CONCEPTUAL DESIGN OPINION OF PROBABLE COSTS NORTH SEGMENT-PROJECT B01 (BUILD ALT B1)				
NMDOT PROJECT: A301100 23-Aug-16				
TYPE OF CONSTRUCTION	ESTIMATED COST	GRT (7.3125%)	TOTAL COST	USE
<b>CONSTRUCTION</b>				
ROADWAY	\$18,644,000	\$1,363,343	\$20,007,343	\$20,000,000
DRAINAGE	\$11,250,000	\$822,656	\$12,072,656	\$12,100,000
BRIDGE STRUCTURES	\$48,609,000	\$3,554,533	\$52,163,533	\$52,200,000
RETAINING/NOISE WALLS	\$24,000,000	\$1,755,000	\$25,755,000	\$25,800,000
PERMANENT SIGNING, STRIPING AND LIGHTING	\$8,600,000	\$628,875	\$9,228,875	\$9,200,000
SIGNALIZATION	\$2,500,000	\$182,813	\$2,682,813	\$2,700,000
SUBTOTAL	<b>\$113,603,000</b>	<b>\$8,307,219</b>	<b>\$121,910,219</b>	<b>\$122,000,000</b>
<b>ALLOWANCES</b>				
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE (2%)	\$2,272,000	\$166,144	\$2,438,204	\$2,400,000
BICYCLE & PEDESTRIAN BRIDGES / FACILITIES (2%)	\$2,272,000	\$166,140	\$2,438,140	\$2,400,000
ACCOMMODATION FOR FUTURE ITS (2%)	\$2,272,000	\$166,140	\$2,438,140	\$2,400,000
SUBTOTAL	<b>\$6,816,000</b>	<b>\$498,424</b>	<b>\$7,314,484</b>	<b>\$7,200,000</b>
<b>CONSTRUCTION ENGINEERING</b>				
STAKING, SWPPP, ENVIRONMENTAL, QC (7%)	\$7,952,210	\$581,505	\$8,533,715	\$8,500,000
MOBILIZATION (10% OF CONSTRUCTION ITEMS)	\$11,360,300	\$830,722	\$12,191,022	\$12,200,000
TRAFFIC CONTROL (5% OF CONSTRUCTION ITEMS)	\$5,680,150	\$415,361	\$6,095,511	\$6,100,000
SUBTOTAL	<b>\$24,992,660</b>	<b>\$1,827,588</b>	<b>\$26,820,248</b>	<b>\$26,900,000</b>
CONTINGENCY / MISCELLANEOUS ITEMS (35%)	\$50,894,081	\$3,721,630	\$54,615,711	\$54,700,000
<b>CONSTRUCTION TOTAL</b>	<b>\$196,305,741</b>	<b>\$14,354,862</b>	<b>\$210,660,663</b>	<b>\$210,700,000</b>
STUDY & DESIGN (10%)	\$19,630,574	\$1,435,486	\$21,066,060	\$21,100,000
CONSTRUCTION MANAGEMENT (10% OF CONST. ITEMS)	\$19,630,574	\$1,435,486	\$21,066,060	\$21,100,000
SUBTOTAL	<b>\$39,261,148</b>	<b>\$2,870,971</b>	<b>\$42,132,120</b>	<b>\$42,200,000</b>
<b>TOTAL</b>	<b>\$235,566,889</b>	<b>\$17,225,833</b>	<b>\$252,792,782</b>	<b>\$252,900,000</b>
<b>PROJECT TOTAL USE</b>				<b>\$253,000,000</b>
<i>ESTIMATED IN 2016 DOLLARS</i>				

I-25 SOUTH CORRIDOR STUDY NM 47 / BROADWAY BLVD. INTERCHANGE TO I-40 / I-25 INTERCHANGE				
CONCEPTUAL DESIGN OPINION OF PROBABLE COSTS NORTH SEGMENT-PROJECT B02 (BUILD ALT B2)				
NMDOT PROJECT: CN A301100 23-Aug-16				
TYPE OF CONSTRUCTION	ESTIMATED COST	GRT (7.3125%)	TOTAL COST	USE
<b>CONSTRUCTION</b>				
ROADWAY	\$18,496,000	\$1,352,520	\$19,848,520	\$19,800,000
DRAINAGE	\$10,800,000	\$789,750	\$11,589,750	\$11,600,000
BRIDGE STRUCTURES	\$34,179,000	\$2,499,339	\$36,678,339	\$36,700,000
RETAINING/NOISE WALLS	\$16,868,000	\$1,233,473	\$18,101,473	\$18,100,000
PERMANENT SIGNING, STRIPING AND LIGHTING	\$8,300,000	\$606,938	\$8,906,938	\$8,900,000
SIGNALIZATION	\$2,500,000	\$182,813	\$2,682,813	\$2,700,000
SUBTOTAL	<b>\$91,143,000</b>	<b>\$6,664,832</b>	<b>\$97,807,832</b>	<b>\$97,800,000</b>
<b>ALLOWANCES</b>				
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE (2%)	\$1,822,860	\$133,297	\$1,956,157	\$2,000,000
BICYCLE & PEDESTRIAN BRIDGES / FACILITIES (2%)	\$1,822,860	\$133,297	\$1,956,157	\$2,000,000
ACCOMMODATION FOR FUTURE ITS (2%)	\$1,822,860	\$133,297	\$1,956,157	\$2,000,000
SUBTOTAL	<b>\$5,468,580</b>	<b>\$399,890</b>	<b>\$5,868,470</b>	<b>\$5,900,000</b>
<b>CONSTRUCTION ENGINEERING</b>				
STAKING, SWPPP, ENVIRONMENTAL, QC (7%)	\$6,380,010	\$466,538	\$6,846,548	\$6,800,000
MOBILIZATION (10% OF CONSTRUCTION ITEMS)	\$9,114,300	\$666,483	\$9,780,783	\$9,800,000
TRAFFIC CONTROL (5% OF CONSTRUCTION ITEMS)	\$4,557,150	\$333,242	\$4,890,392	\$4,900,000
SUBTOTAL	<b>\$20,051,460</b>	<b>\$1,466,263</b>	<b>\$21,517,723</b>	<b>\$21,600,000</b>
CONTINGENCY / MISCELLANEOUS ITEMS (35%)	\$40,832,064	\$2,985,845	\$43,817,909	\$43,900,000
<b>CONSTRUCTION TOTAL</b>	<b>\$157,495,104</b>	<b>\$11,516,829</b>	<b>\$169,011,933</b>	<b>\$169,200,000</b>
STUDY & DESIGN (10%)	\$15,749,510	\$1,151,683	\$16,901,193	\$16,900,000
CONSTRUCTION MANAGEMENT (10% OF CONST. ITEMS)	\$15,749,510	\$1,151,683	\$16,901,193	\$16,900,000
SUBTOTAL	<b>\$31,499,021</b>	<b>\$2,303,366</b>	<b>\$33,802,387</b>	<b>\$33,900,000</b>
<b>TOTAL</b>	<b>\$188,994,125</b>	<b>\$13,820,195</b>	<b>\$202,814,320</b>	<b>\$203,100,000</b>
<b>PROJECT TOTAL USE</b>	<i>ESTIMATED IN 2016 DOLLARS</i>		<b>\$203,000,000</b>	

I-25 SOUTH CORRIDOR STUDY NM 47 / BROADWAY BLVD. INTERCHANGE TO I-40 / I-25 INTERCHANGE				
CONCEPTUAL DESIGN OPINION OF PROBABLE COSTS NORTH SEGMENT-PROJECT B03 (BUILD ALT B3)				
NMDOT PROJECT: CN A301100 21-Aug-16				
TYPE OF CONSTRUCTION	ESTIMATED COST	GRT (7.3125%)	TOTAL COST	USE
<b>CONSTRUCTION</b>				
ROADWAY	\$21,615,000	\$1,580,597	\$23,195,597	\$23,200,000
DRAINAGE	\$10,750,000	\$786,094	\$11,536,094	\$11,500,000
BRIDGE STRUCTURES	\$44,439,000	\$3,249,602	\$47,688,602	\$47,700,000
RETAINING/NOISE WALLS	\$22,624,000	\$1,654,380	\$24,278,380	\$24,300,000
PERMANENT SIGNING, STRIPING AND LIGHTING	\$8,325,000	\$608,766	\$8,933,766	\$8,900,000
SIGNALIZATION	\$2,500,000	\$182,813	\$2,682,813	\$2,700,000
SUBTOTAL	<b>\$110,253,000</b>	<b>\$8,062,251</b>	<b>\$118,315,251</b>	<b>\$118,400,000</b>
<b>ALLOWANCES</b>				
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE (2%)	\$2,205,000	\$161,245	\$2,366,305	\$2,400,000
BICYCLE & PEDESTRIAN BRIDGES / FACILITIES (2%)	\$2,205,000	\$161,241	\$2,366,241	\$2,400,000
ACCOMMODATION FOR FUTURE ITS (2%)	\$2,205,000	\$161,241	\$2,366,241	\$2,400,000
SUBTOTAL	<b>\$6,615,000</b>	<b>\$483,726</b>	<b>\$7,098,786</b>	<b>\$7,200,000</b>
<b>CONSTRUCTION ENGINEERING</b>				
STAKING, SWPPP, ENVIRONMENTAL, QC (7%)	\$7,717,710	\$564,358	\$8,282,068	\$8,300,000
MOBILIZATION (10% OF CONSTRUCTION ITEMS)	\$11,025,300	\$806,225	\$11,831,525	\$11,800,000
TRAFFIC CONTROL (5% OF CONSTRUCTION ITEMS)	\$5,512,650	\$403,113	\$5,915,763	\$5,900,000
SUBTOTAL	<b>\$24,255,660</b>	<b>\$1,773,695</b>	<b>\$26,029,355</b>	<b>\$26,100,000</b>
CONTINGENCY / MISCELLANEOUS ITEMS (35%)	\$49,393,281	\$3,611,884	\$53,005,165	\$53,100,000
<b>CONSTRUCTION TOTAL</b>	<b>\$190,516,941</b>	<b>\$13,931,556</b>	<b>\$204,448,557</b>	<b>\$204,500,000</b>
STUDY & DESIGN (10%)	\$19,051,694	\$1,393,155	\$20,444,849	\$20,400,000
CONSTRUCTION MANAGEMENT (10% OF CONST. ITEMS)	\$19,051,694	\$1,393,155	\$20,444,849	\$20,400,000
SUBTOTAL	<b>\$38,103,388</b>	<b>\$2,786,310</b>	<b>\$40,889,698</b>	<b>\$40,900,000</b>
<b>TOTAL</b>	<b>\$228,620,329</b>	<b>\$16,717,866</b>	<b>\$245,338,255</b>	<b>\$245,400,000</b>
<b>PROJECT TOTAL USE</b>	<i>ESTIMATED IN 2016 DOLLARS</i>		<b>\$246,000,000</b>	

I-25 SOUTH CORRIDOR STUDY				
NM 47 / BROADWAY BLVD. INTERCHANGE TO I-40 / I-25 INTERCHANGE				
CONCEPTUAL DESIGN OPINION OF PROBABLE COST				
NORTH SEGMENT-PROJECT B03 shifted west (BUILD ALT B3 OPTION)				
NMDOT PROJECT: CN A301100				
23-Aug-16				
TYPE OF CONSTRUCTION	ESTIMATED COST	GRT (7.3125%)	TOTAL COST	USE
<b>CONSTRUCTION</b>				
ROADWAY	\$21,143,000	\$1,546,082	\$22,689,082	\$22,700,000
DRAINAGE	\$10,400,000	\$760,500	\$11,160,500	\$11,200,000
BRIDGE STRUCTURES	\$43,327,000	\$3,168,287	\$46,495,287	\$46,500,000
RETAINING/NOISE WALLS	\$22,257,000	\$1,627,543	\$23,884,543	\$23,900,000
PERMANENT SIGNING, STRIPING AND LIGHTING	\$8,150,000	\$595,969	\$8,745,969	\$8,700,000
SIGNALIZATION	\$2,500,000	\$182,813	\$2,682,813	\$2,700,000
<b>SUBTOTAL</b>	<b>\$107,777,000</b>	<b>\$7,881,193</b>	<b>\$115,658,193</b>	<b>\$115,700,000</b>
<b>ALLOWANCES</b>				
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE (2%)	\$2,156,000	\$157,624	\$2,313,624	\$2,300,000
BICYCLE & PEDESTRIAN BRIDGES / FACILITIES (2%)	\$2,156,000	\$157,658	\$2,313,658	\$2,300,000
ACCOMMODATION FOR FUTURE ITS (2%)	\$2,156,000	\$157,658	\$2,313,658	\$2,300,000
<b>SUBTOTAL</b>	<b>\$6,468,000</b>	<b>\$472,939</b>	<b>\$6,940,479</b>	<b>\$6,900,000</b>
<b>CONSTRUCTION ENGINEERING</b>				
STAKING, SWPPP, ENVIRONMENTAL, QC (7%)	\$7,544,390	\$551,684	\$8,096,074	\$8,100,000
MOBILIZATION (10% OF CONSTRUCTION ITEMS)	\$10,777,700	\$788,119	\$11,565,819	\$11,600,000
TRAFFIC CONTROL (5% OF CONSTRUCTION ITEMS)	\$5,388,850	\$394,060	\$5,782,910	\$5,800,000
<b>SUBTOTAL</b>	<b>\$23,710,940</b>	<b>\$1,733,862</b>	<b>\$25,444,802</b>	<b>\$25,500,000</b>
<b>CONTINGENCY / MISCELLANEOUS ITEMS (35%)</b>	<b>\$48,284,579</b>	<b>\$3,530,810</b>	<b>\$51,815,389</b>	<b>\$51,900,000</b>
<b>CONSTRUCTION TOTAL</b>	<b>\$186,240,519</b>	<b>\$13,618,804</b>	<b>\$199,859,323</b>	<b>\$199,900,000</b>
<b>STUDY &amp; DESIGN (10%)</b>	<b>\$18,624,052</b>	<b>\$1,361,884</b>	<b>\$19,985,936</b>	<b>\$20,000,000</b>
<b>CONSTRUCTION MANAGEMENT (10% OF CONST. ITEMS)</b>	<b>\$18,624,052</b>	<b>\$1,361,884</b>	<b>\$19,985,936</b>	<b>\$20,000,000</b>
<b>SUBTOTAL</b>	<b>\$37,248,104</b>	<b>\$2,723,768</b>	<b>\$39,971,871</b>	<b>\$40,000,000</b>
<b>TOTAL</b>	<b>\$223,488,623</b>	<b>\$16,342,572</b>	<b>\$239,831,195</b>	<b>\$239,900,000</b>
<b>PROJECT TOTAL USE</b>	<i>ESTIMATED IN 2016 DOLLARS</i>			<b>\$240,000,000</b>

I-25 SOUTH CORRIDOR STUDY					
PHASE IB - CONCEPTUAL DESIGN OPINION OF PROBABLE COSTS					
COST ITEM	SOUTH SEGMENT	NORTH SEGMENT			
	(~ 6.3 MILES)	(~4.3 MILES)			
		ALTERNATIVE B1	ALTERNATIVE B2	ALTERNATIVE B3	ALTERNATIVE B3 Option
ROADWAY	\$2,300,000	\$18,644,000	\$18,496,000	\$21,615,000	\$21,143,000
DRAINAGE	\$500,000	\$11,250,000	\$10,800,000	\$10,750,000	\$10,400,000
BRIDGE	\$1,500,000	\$48,609,000	\$34,179,000	\$44,439,000	\$43,327,000
RETAINING WALLS	\$400,000	\$24,000,000	\$16,868,000	\$22,624,000	\$22,257,000
PERMANENT SIGNING & LIGHTING	\$4,000,000	\$8,600,000	\$8,300,000	\$8,325,000	\$8,150,000
SIGNALIZATION	\$0	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE	\$174,000	\$2,272,000	\$1,822,860	\$2,205,000	\$2,156,000
BICYCLE & PEDESTRIAN BRIDGES / FACILITIES	\$174,000	\$2,272,000	\$1,822,860	\$2,205,000	\$2,156,000
ACCOMMODATION FOR FUTURE ITS	\$305,000	\$2,272,000	\$1,822,860	\$2,205,000	\$2,156,000
<b>SUBTOTAL</b>	<b>\$9,353,000</b>	<b>\$120,419,000</b>	<b>\$96,611,580</b>	<b>\$116,868,000</b>	<b>\$114,245,000</b>
CONSTRUCTION ENGINEERING	\$1,914,000	\$24,992,660	\$20,051,460	\$24,255,660	\$23,710,940
<b>SUBTOTAL</b>	<b>\$11,267,000</b>	<b>\$145,411,660</b>	<b>\$116,663,040</b>	<b>\$141,123,660</b>	<b>\$137,955,940</b>
CONTINGENCY (35%)	\$3,943,450	\$50,894,081	\$40,832,064	\$49,393,281	\$48,284,579
INTERCHANGE PROJECTS (SOUTH SEGMENT)*	\$118,900,000	-	-	-	-
<b>BASELINE COST</b>	<b>\$15,210,450</b>	<b>\$196,305,741</b>	<b>\$157,495,104</b>	<b>\$190,516,941</b>	<b>\$186,240,519</b>
STUDY & DESIGN (10%)	\$1,521,045	\$19,630,574	\$15,749,510	\$19,051,694	\$18,624,052
CONSTRUCTION MANAGEMENT (10%)	\$1,521,045	\$19,630,574	\$15,749,510	\$19,051,694	\$18,624,052
<b>SUBTOTAL</b>	<b>\$18,252,540</b>	<b>\$235,566,889</b>	<b>\$188,994,125</b>	<b>\$228,620,329</b>	<b>\$223,488,623</b>
NM GROSS RECEIPTS TAX (7.3125%)	\$1,334,717	\$17,225,829	\$13,820,195	\$16,717,862	\$16,342,606
<b>TOTAL COST</b>	<b>\$19,587,257</b>	<b>\$252,792,718</b>	<b>\$202,814,320</b>	<b>\$245,338,191</b>	<b>\$239,831,228</b>
<b>USE</b>	<b>\$20,000,000</b>	<b>\$253,000,000</b>	<b>\$203,000,000</b>	<b>\$246,000,000</b>	<b>\$240,000,000</b>
<b>AVERAGE</b>	<b>\$235,500,000</b>				
<b>ESTIMATED CORRIDOR COST (USING AVERAGE)</b>	<b>\$255,500,000 excluding interchanges in South Segment</b>				

NOTES: 1. COSTS ARE BASED ON CURRENT UNIT BID PRICES (2016)

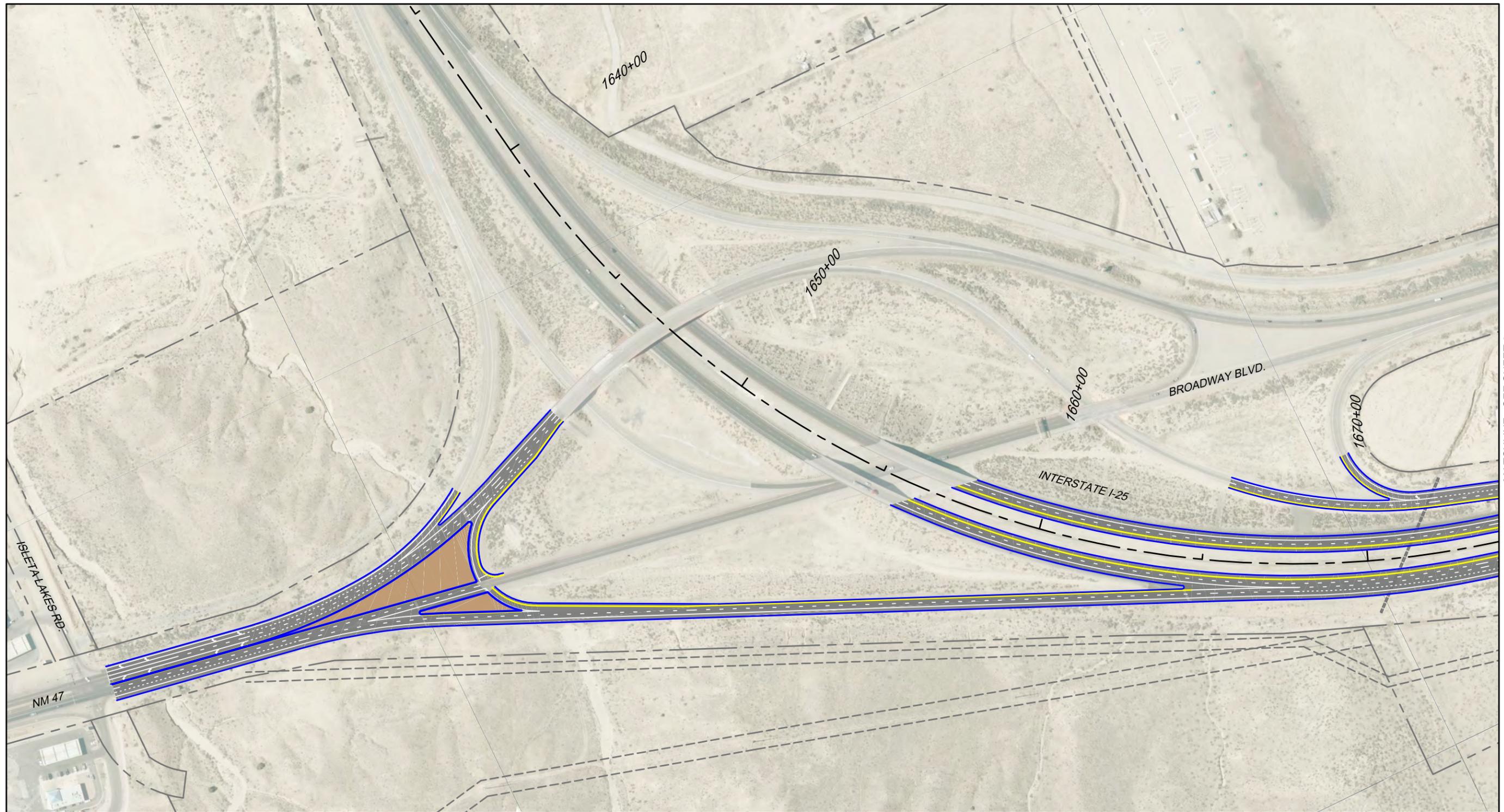
\* Information only, these project are not included in the construction total, but are estimated as follows (\$127,700,000 with NMGR):

Rio Bravo Blvd. Interchange, current NMDOT project	\$52,500,000
Mesa del Sol Blvd. Interchange, possible City/private project	\$37,600,000
Bobby Foster Road Interchange, possible County/private project	\$21,500,000
Mesa del Sol Avenue A overpass, possible City/private project	\$16,100,000

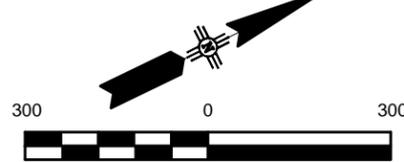
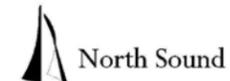


## Appendix H

### Conceptual Design Plans for the Preferred Alternative



MATCHLINE - SEE SHEET 2



SCALE: 1"=300'  
**CONCEPTUAL  
 NOT FOR CONSTRUCTION**

**LEGEND**

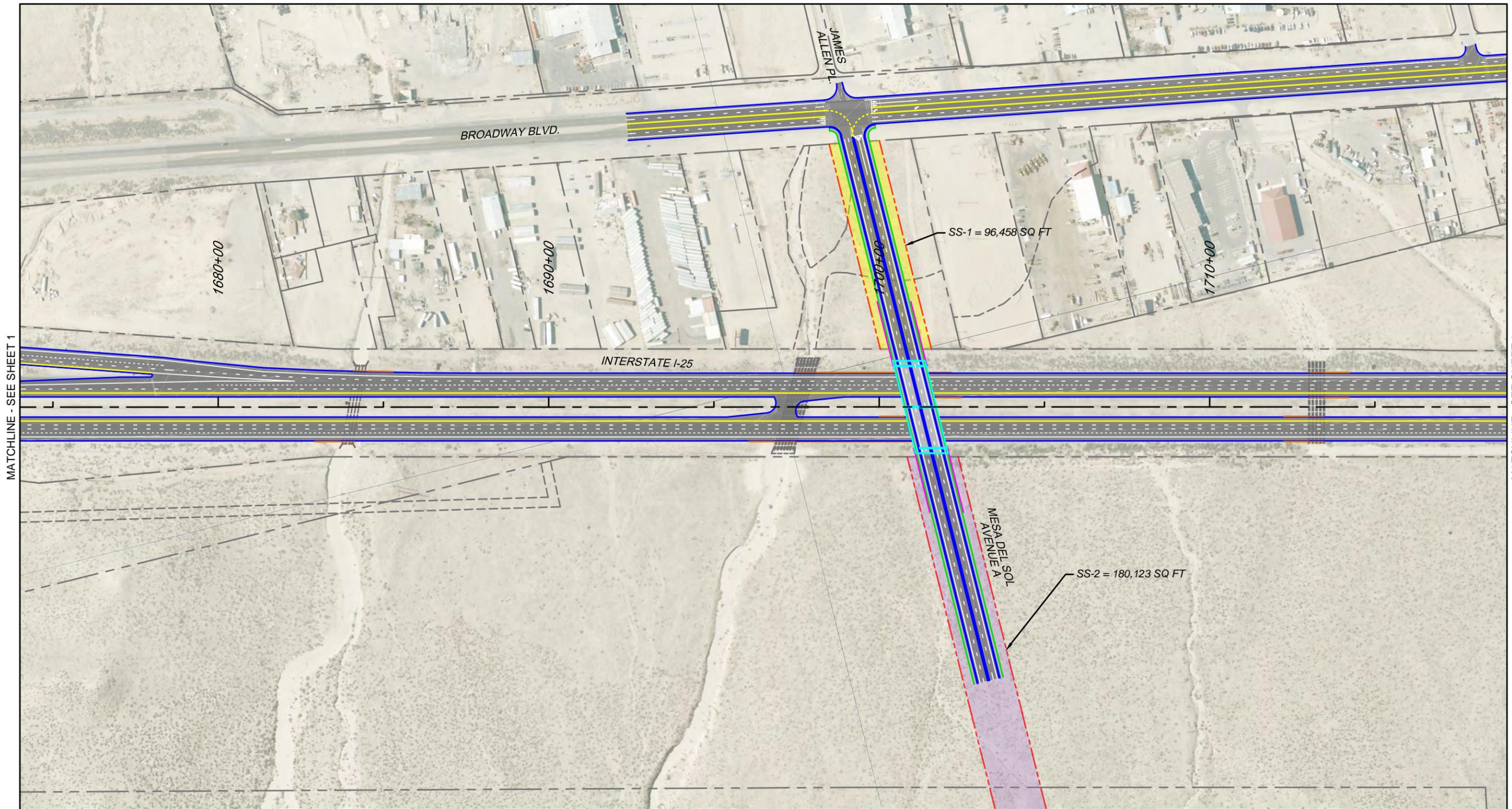
	ASPHALT PAVEMENT		OTHER / PRIVATE
	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		

**KEY MAP**



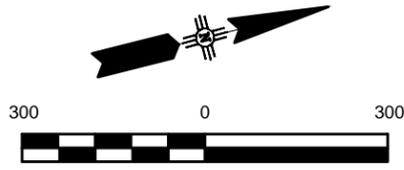
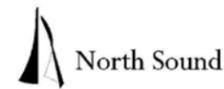
**SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 PREFERRED ALTERNATIVE**

**INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 SOUTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS**



MATCHLINE - SEE SHEET 1

MATCHLINE - SEE SHEET 3



SCALE: 1"=300'  
**CONCEPTUAL  
 NOT FOR CONSTRUCTION**

**LEGEND**

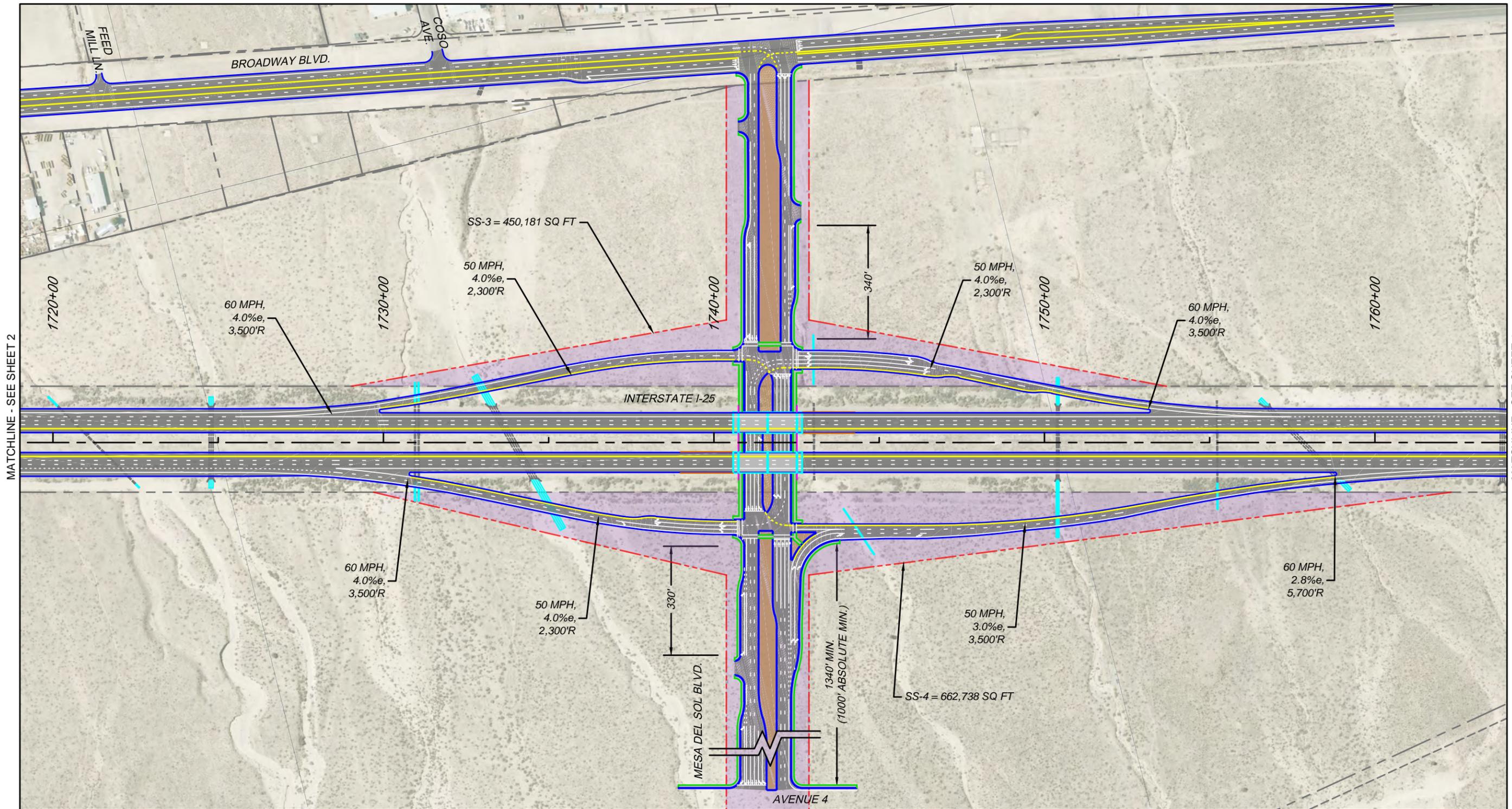
	ASPHALT PAVEMENT		OTHER / PRIVATE
	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		

**KEY MAP**



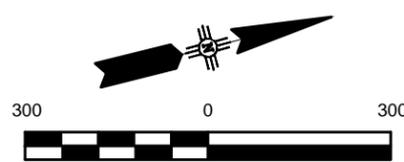
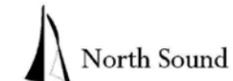
**SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 PREFERRED ALTERNATIVE**

**INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 SOUTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS**



MATCHLINE - SEE SHEET 2

MATCHLINE - SEE SHEET 4



SCALE: 1"=300'  
 CONCEPTUAL  
 NOT FOR CONSTRUCTION

LEGEND

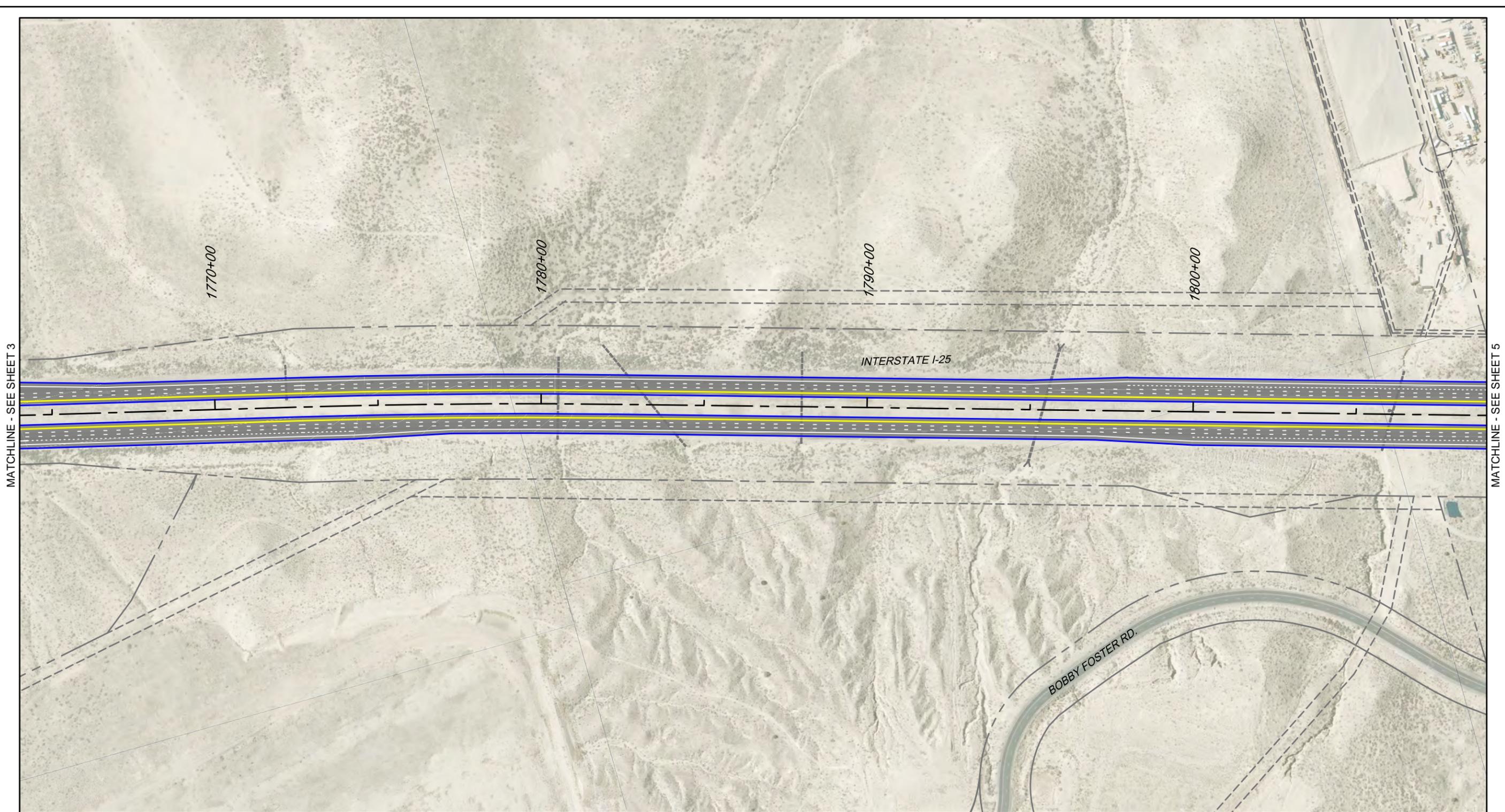
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	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		

REQUIRED R/W - EXISTING OWNERSHIP



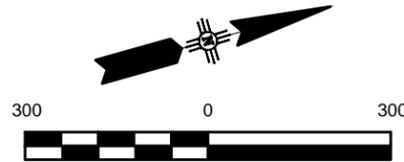
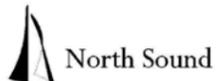
SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 PREFERRED ALTERNATIVE

INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 SOUTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS



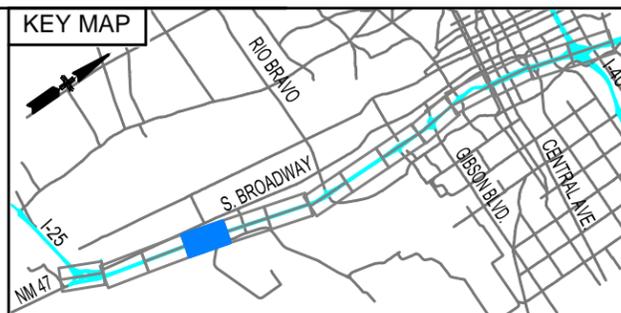
MATCHLINE - SEE SHEET 3

MATCHLINE - SEE SHEET 5



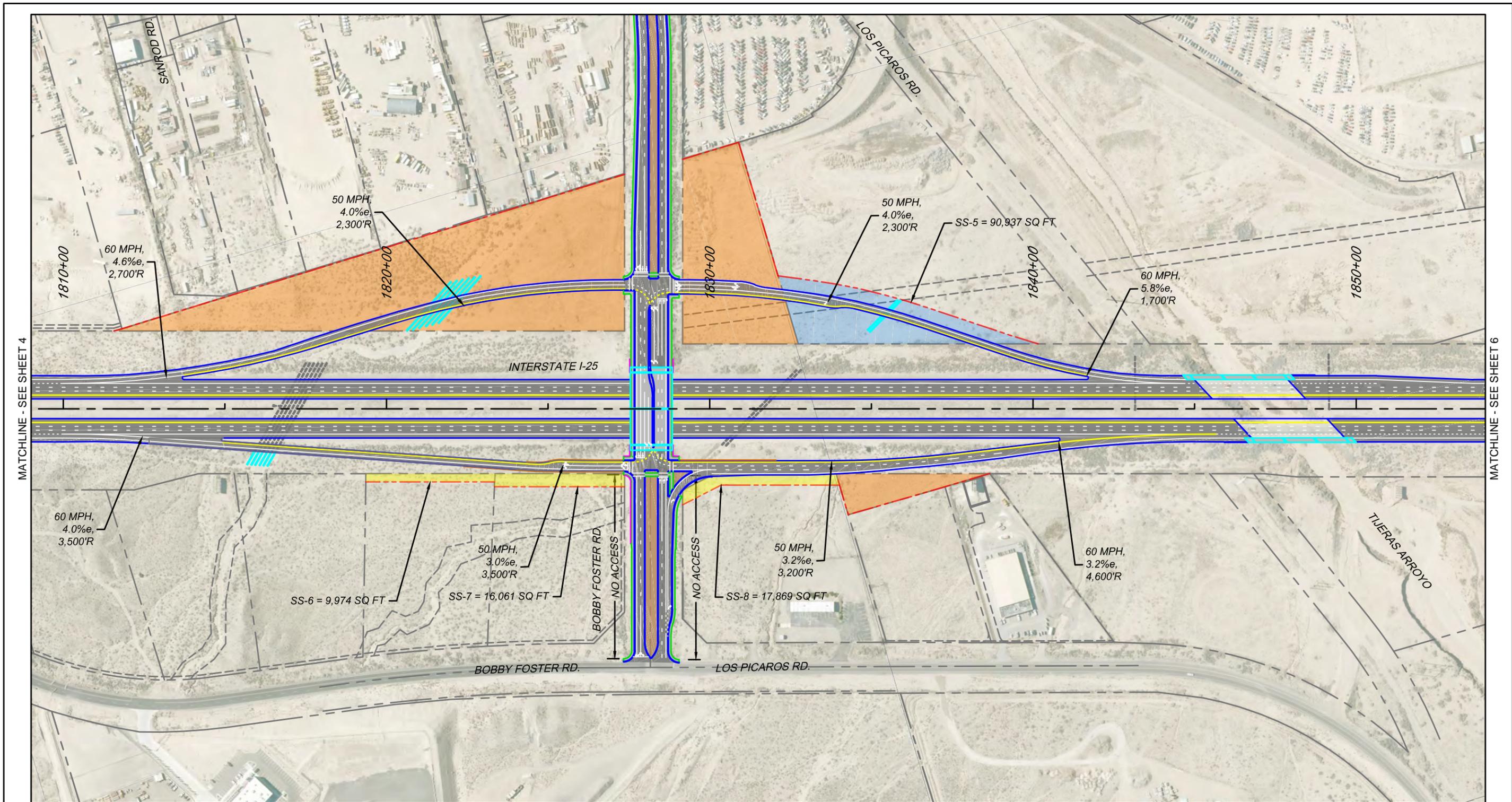
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**CONCEPTUAL  
 NOT FOR CONSTRUCTION**

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	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		



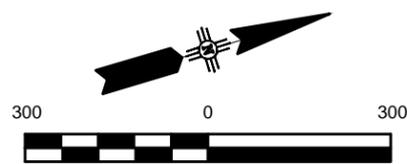
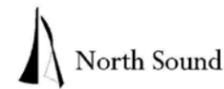
**SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 PREFERRED ALTERNATIVE**

**INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 SOUTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS**



MATCHLINE - SEE SHEET 4

MATCHLINE - SEE SHEET 6



SCALE: 1"=300'

CONCEPTUAL  
NOT FOR CONSTRUCTION

LEGEND

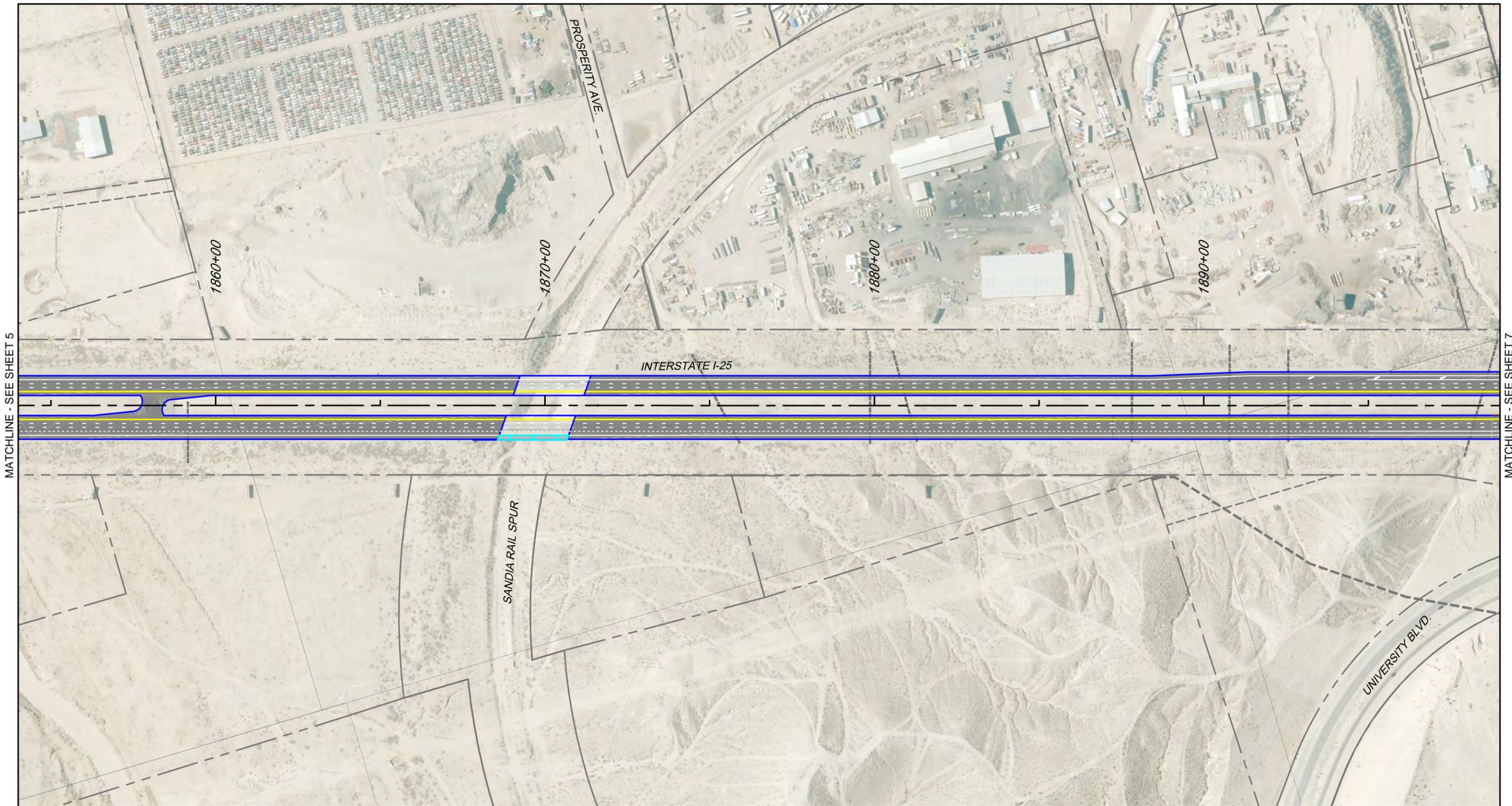
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	BRIDGE STRUCTURE		AMAFC
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		

KEY MAP



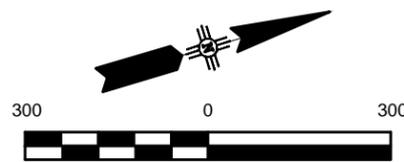
SOUTH I-25  
FREEWAY OPERATIONS STUDY  
PHASE IB  
PREFERRED ALTERNATIVE

INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
SOUTH SEGMENT - PLAN LAYOUT  
AND RIGHT OF WAY IMPACTS



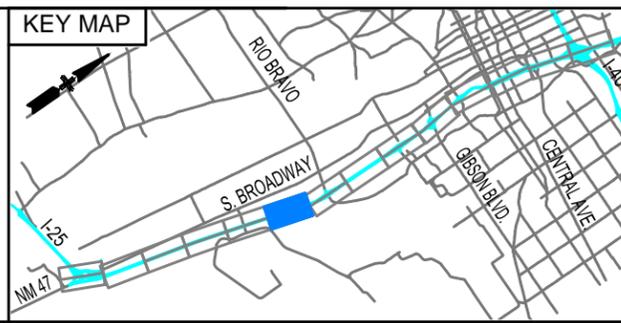
MATCHLINE - SEE SHEET 5

MATCHLINE - SEE SHEET 7



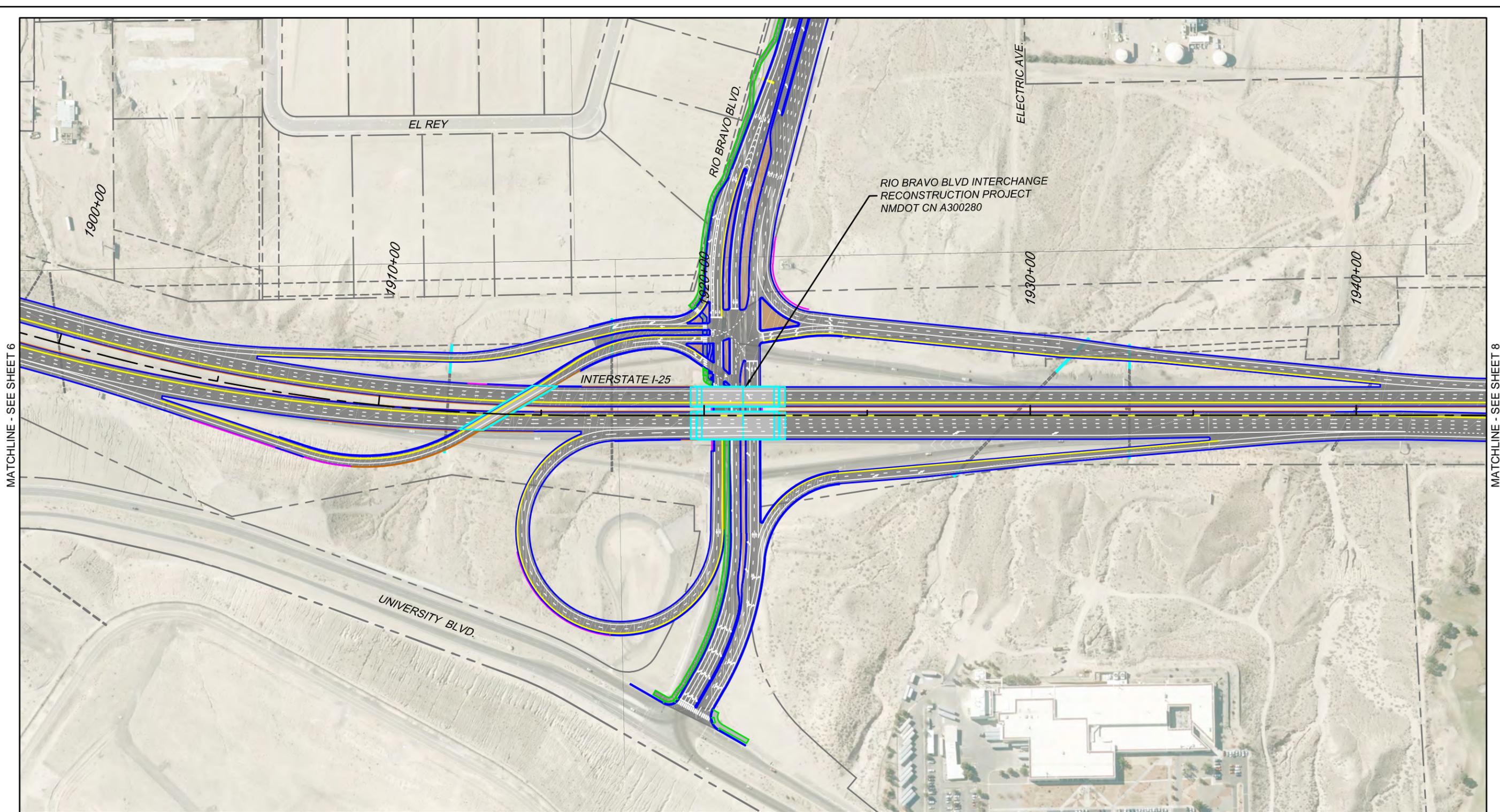
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 NOT FOR CONSTRUCTION**

LEGEND		REQUIRED R/W - EXISTING OWNERSHIP	
	ASPHALT PAVEMENT		OTHER / PRIVATE
	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		



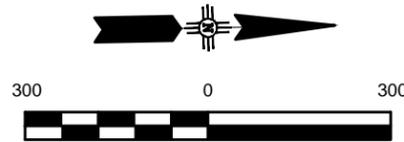
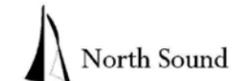
**SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 PREFERRED ALTERNATIVE**

**INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 SOUTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS**



MATCHLINE - SEE SHEET 6

MATCHLINE - SEE SHEET 8



SCALE: 1"=300'  
**CONCEPTUAL  
 NOT FOR CONSTRUCTION**

**LEGEND**

	ASPHALT PAVEMENT		OTHER / PRIVATE
	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		

**KEY MAP**

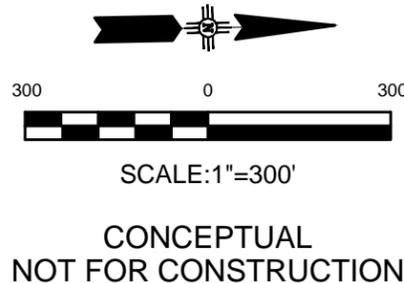
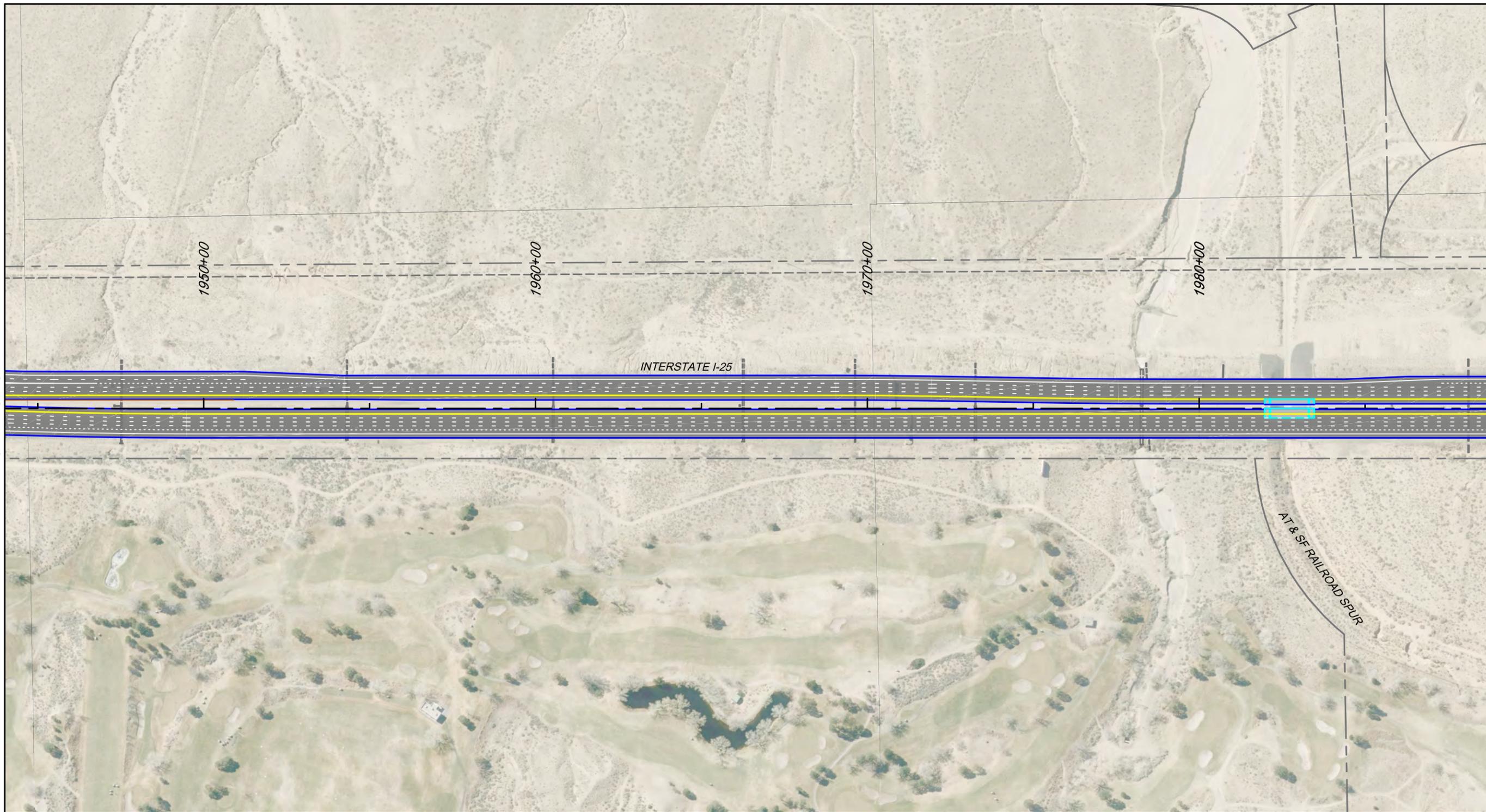


**SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 PREFERRED ALTERNATIVE**

**INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 SOUTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS**

MATCHLINE - SEE SHEET 7

MATCHLINE - SEE SHEET 9

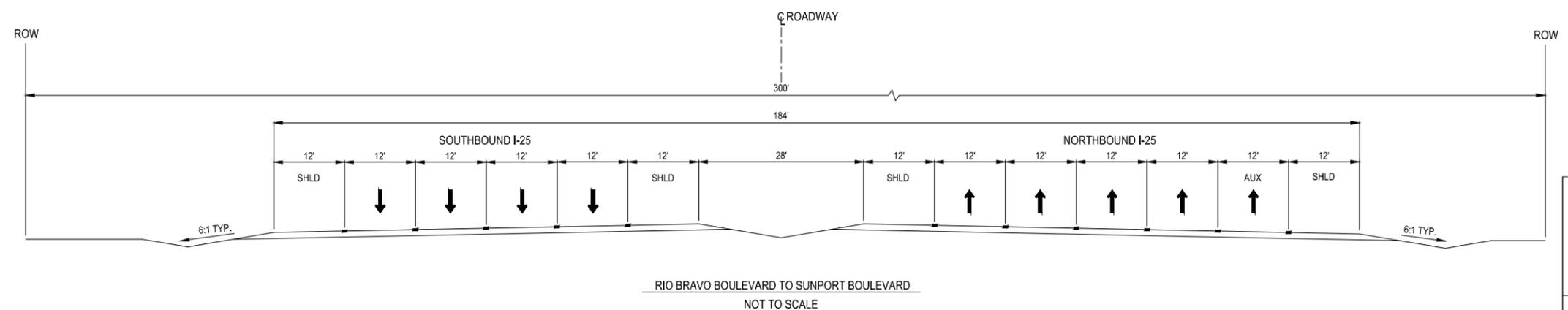
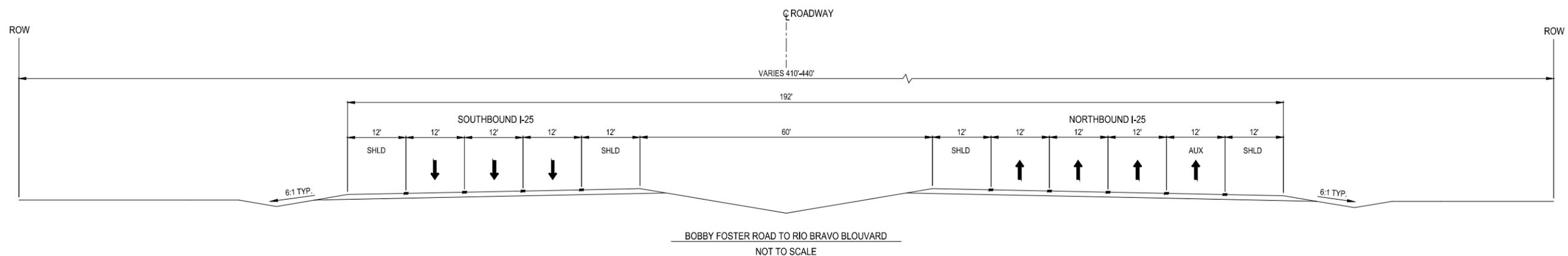
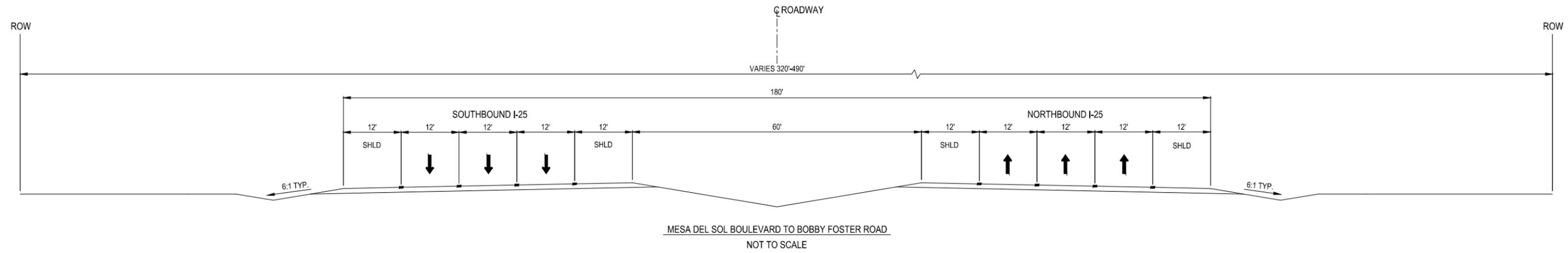
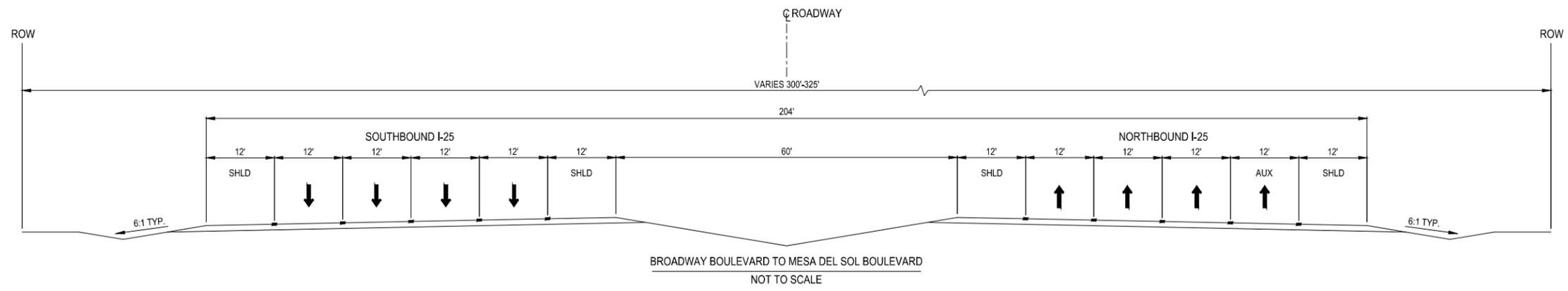


LEGEND		REQUIRED R/W - EXISTING OWNERSHIP	
	ASPHALT PAVEMENT		OTHER / PRIVATE
	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		



SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 PREFERRED ALTERNATIVE

INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 SOUTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS



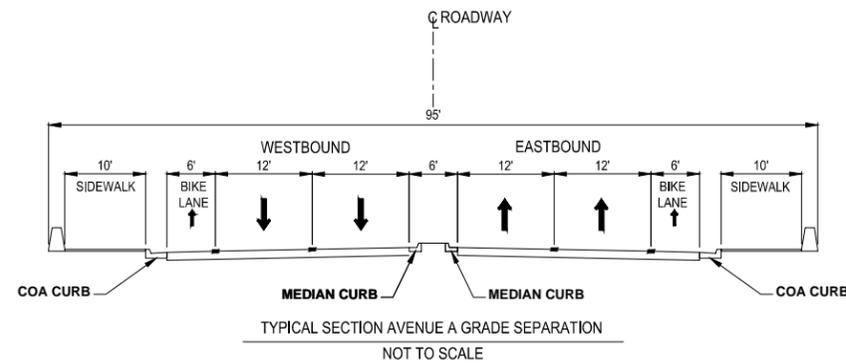
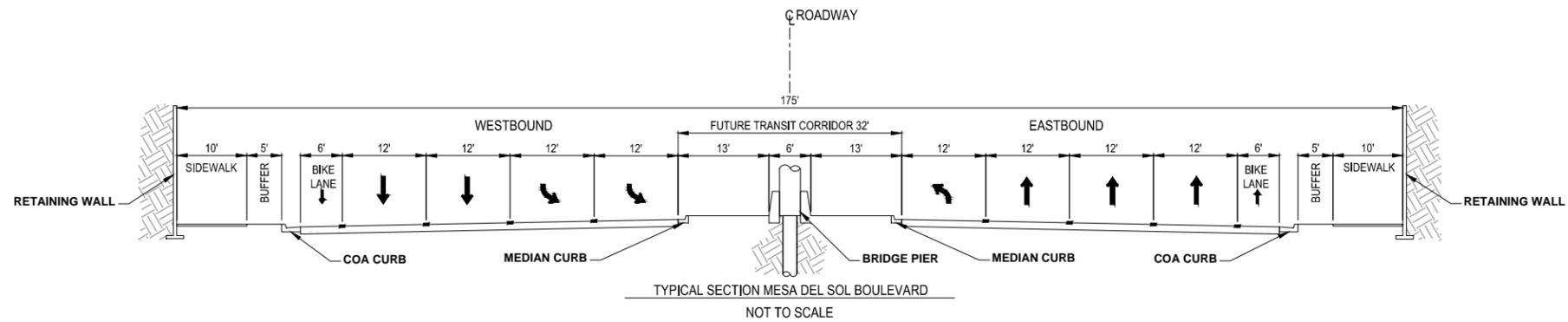
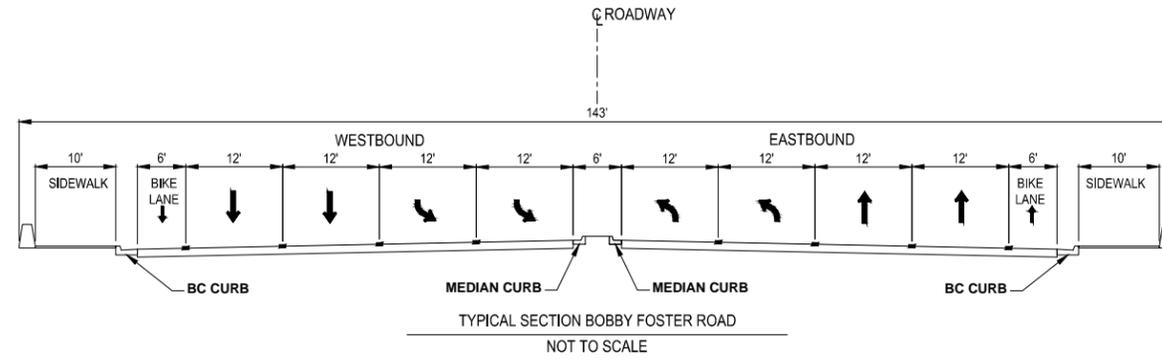
SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 PREFERRED ALTERNATIVE

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INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 SOUTH SEGMENT - TYPICAL SECTIONS  
 MAINLINE

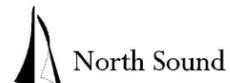


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 NOT FOR CONSTRUCTION

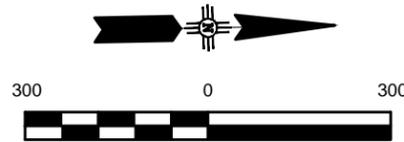
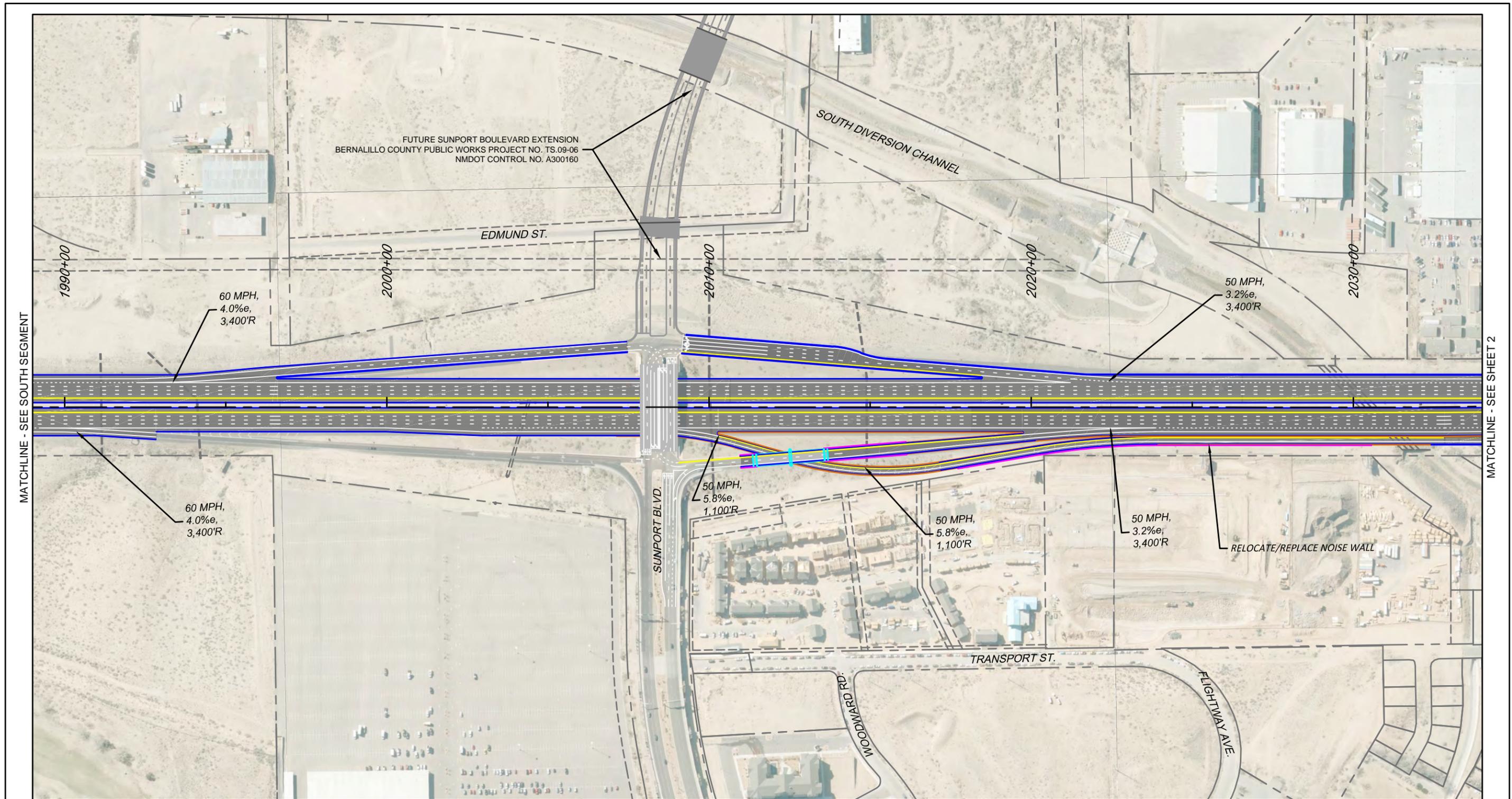


SOUTH I-25  
FREEWAY OPERATIONS STUDY  
PHASE IB  
PREFERRED ALTERNATIVE

INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
SOUTH SEGMENT - TYPICAL SECTIONS  
SURFACE STREETS



CONCEPTUAL  
NOT FOR CONSTRUCTION



SCALE: 1"=300'

CONCEPTUAL  
NOT FOR CONSTRUCTION

**LEGEND**

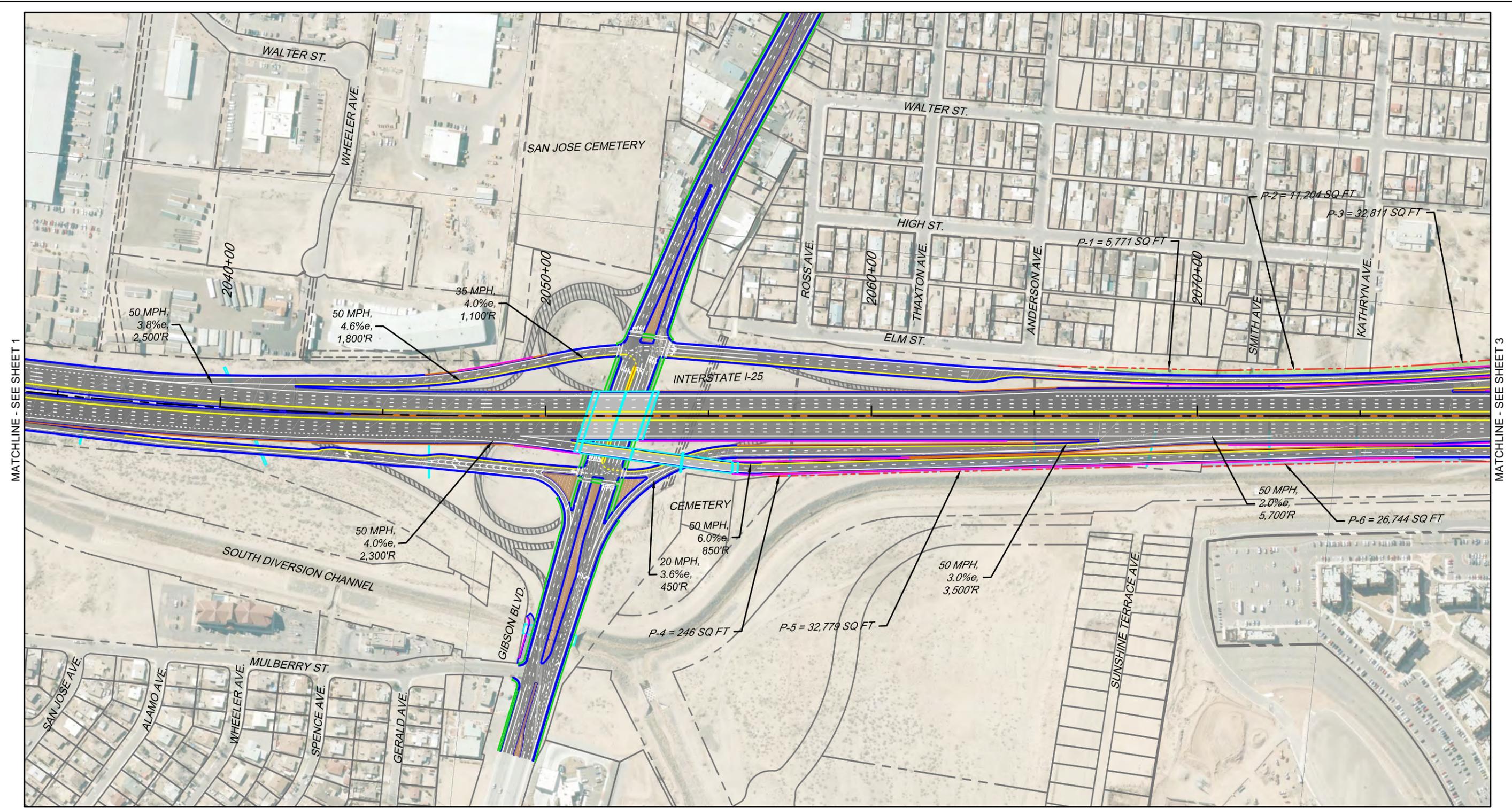
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	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		

**KEY MAP**



SOUTH I-25  
FREEWAY OPERATIONS STUDY  
PHASE IB  
PREFERRED ALTERNATIVE

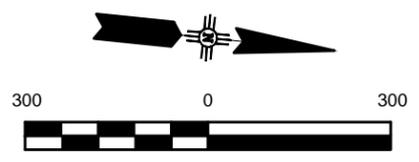
INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
NORTH SEGMENT - PLAN LAYOUT  
AND RIGHT OF WAY IMPACTS



North Sound

**WSP** | **PARSONS BRINCKERHOFF**

**NEW MEXICO** DEPARTMENT OF **TRANSPORTATION**



SCALE: 1"=300'  
**CONCEPTUAL  
 NOT FOR CONSTRUCTION**

**LEGEND**

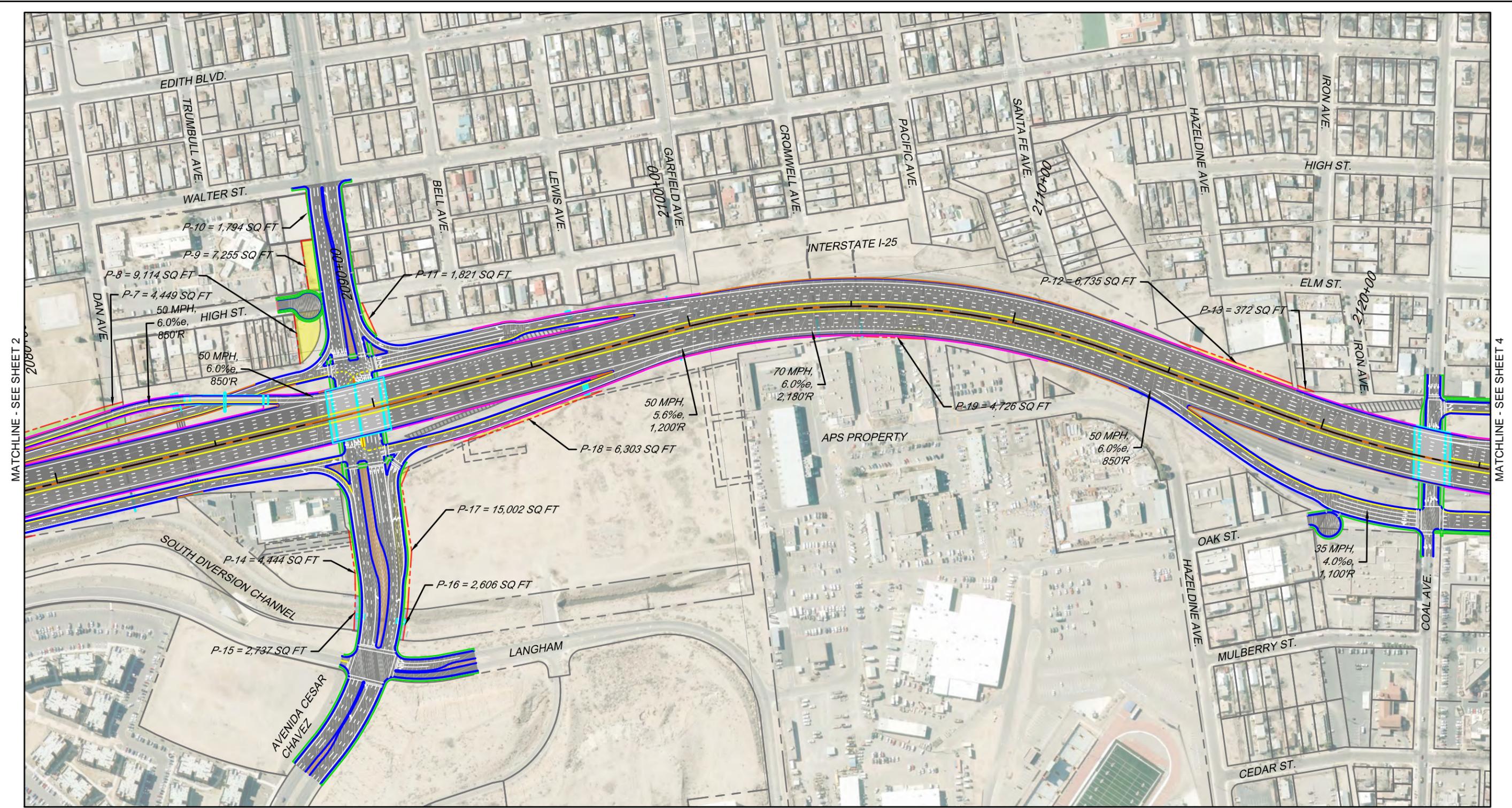
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	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		

**KEY MAP**



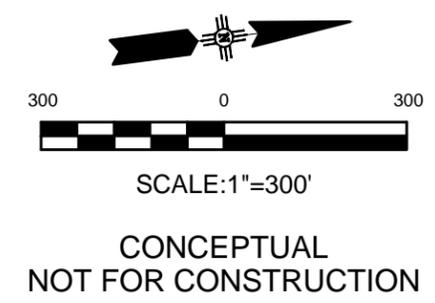
**SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 PREFERRED ALTERNATIVE**

**INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 NORTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS**

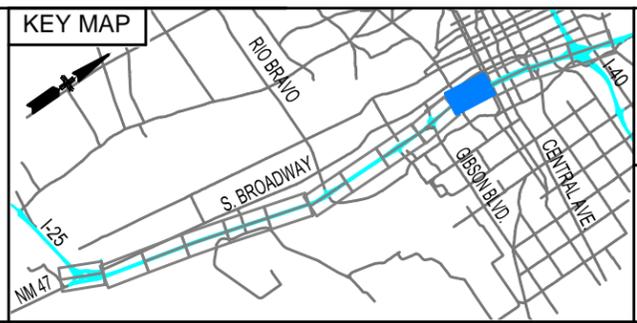


MATCHLINE - SEE SHEET 2

MATCHLINE - SEE SHEET 4



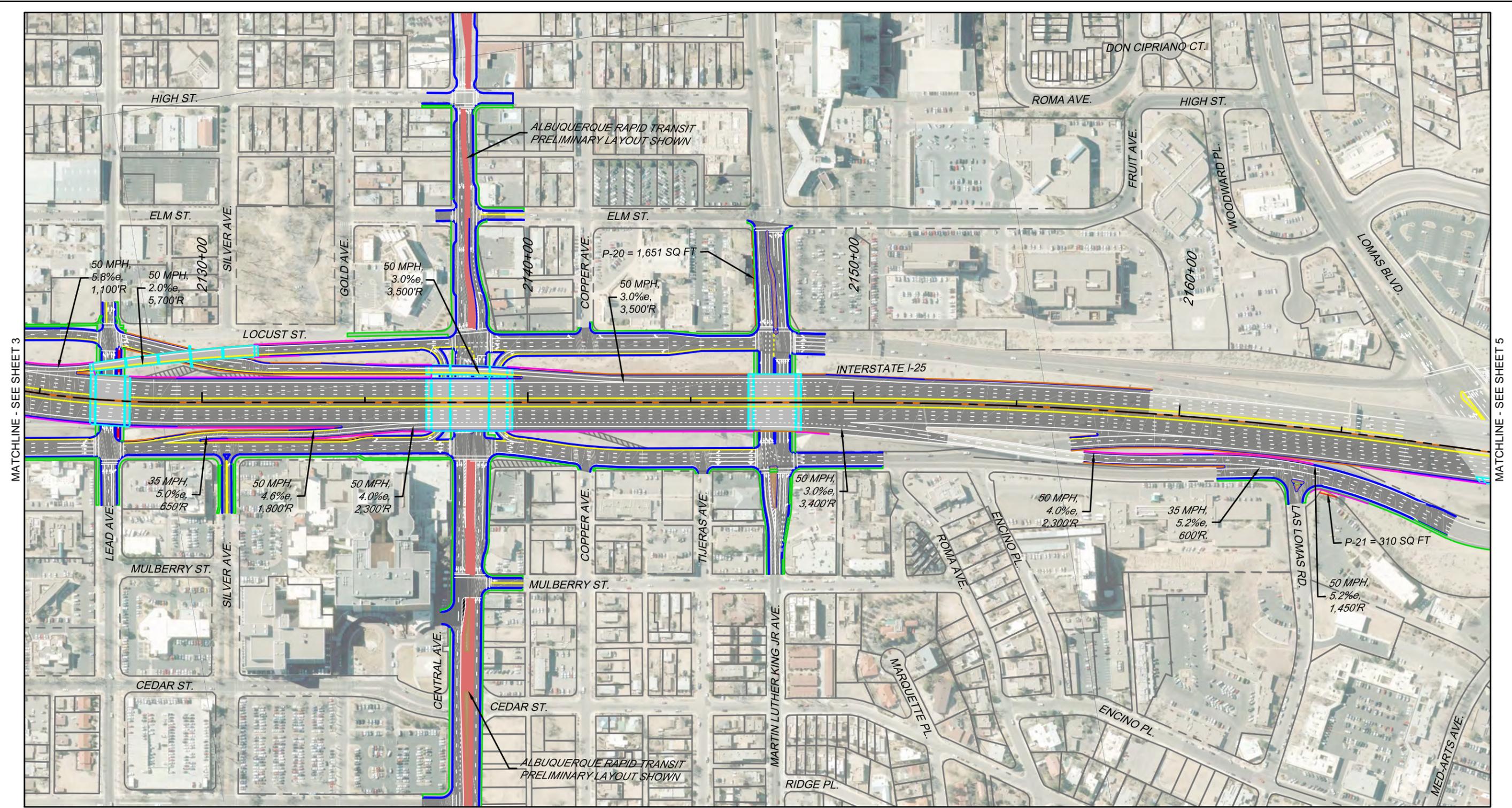
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	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED RW
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		



SOUTH I-25  
FREEWAY OPERATIONS STUDY  
PHASE IB  
PREFERRED ALTERNATIVE

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INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
NORTH SEGMENT - PLAN LAYOUT  
AND RIGHT OF WAY IMPACTS



North Sound

WSP | PARSONS BRINCKERHOFF

NEW MEXICO DEPARTMENT OF TRANSPORTATION



SCALE: 1"=300'

CONCEPTUAL  
NOT FOR CONSTRUCTION

LEGEND

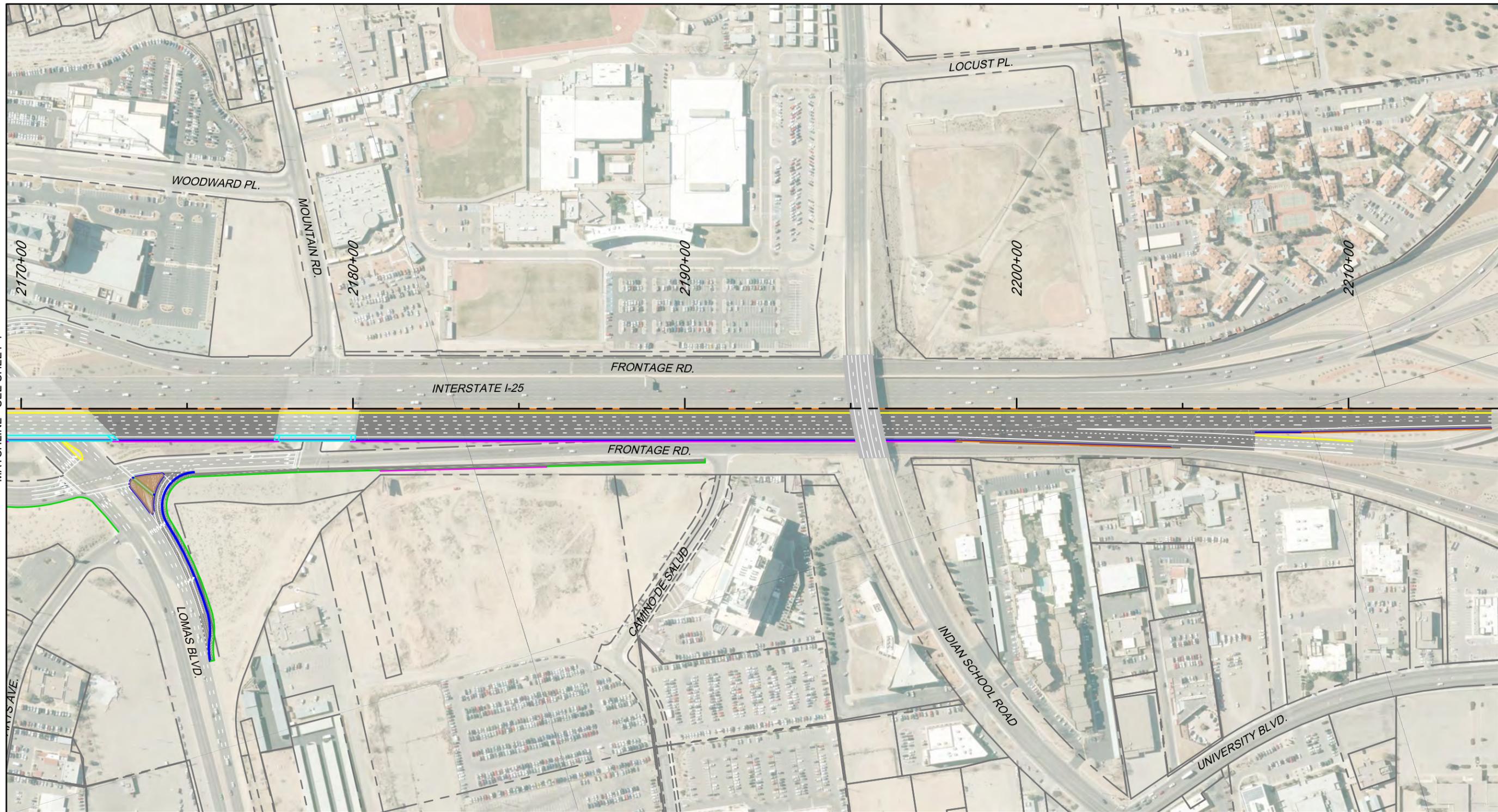
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	BRIDGE STRUCTURE		OTHER / PRIVATE
	LANDSCAPE AREA		AMAFCA
	RETAINING WALL		CITY OF ALBUQUERQUE
	CONCRETE WALL BARRIER		MESA DEL SOL
	SIDEWALK/PEDESTRIAN PATH		NMDOT
	PAVEMENT EDGE / CURB		LIMITS OF REQUIRED RW
	PARCEL LINES / R.O.W.		

KEY MAP



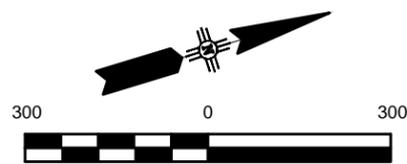
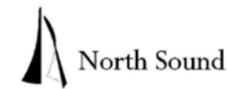
SOUTH I-25  
FREEWAY OPERATIONS STUDY  
PHASE IB  
PREFERRED ALTERNATIVE

INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
NORTH SEGMENT - PLAN LAYOUT  
AND RIGHT OF WAY IMPACTS



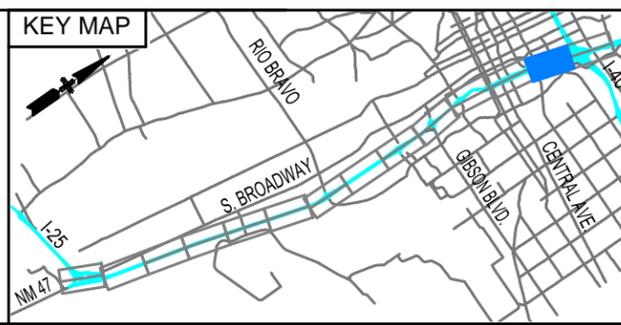
MATCHLINE - SEE SHEET 4

MATCHLINE - SEE SHEET 6



SCALE: 1"=300'  
**CONCEPTUAL  
 NOT FOR CONSTRUCTION**

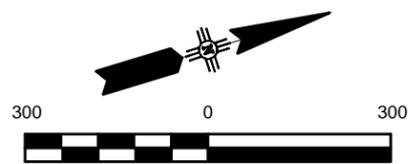
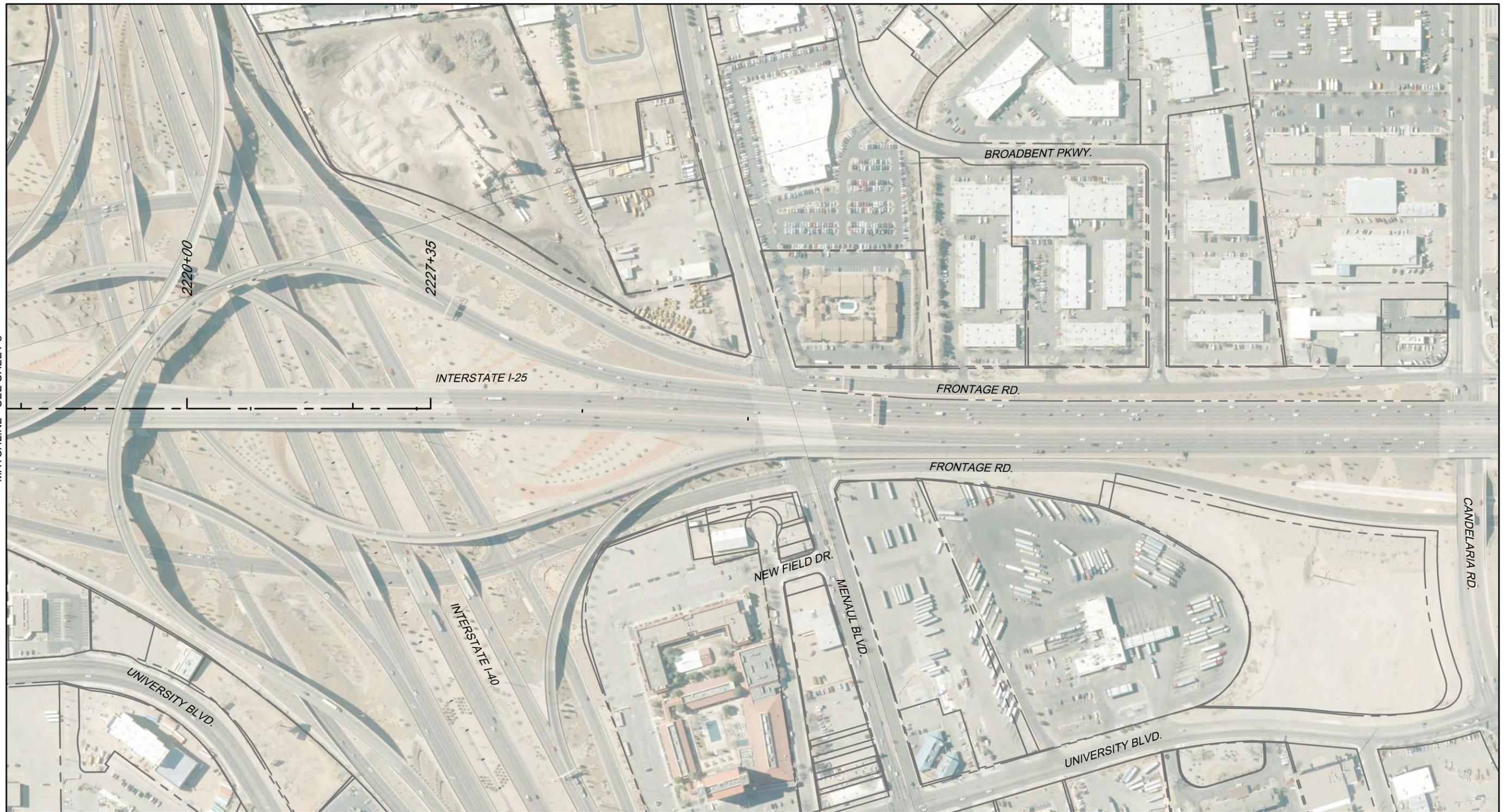
LEGEND		REQUIRED RW - EXISTING OWNERSHIP	
	ASPHALT PAVEMENT		OTHER / PRIVATE
	BRIDGE STRUCTURE		AMAFA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED RW
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		



**SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 PREFERRED ALTERNATIVE**

**INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 NORTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS**

MATCHLINE - SEE SHEET 5



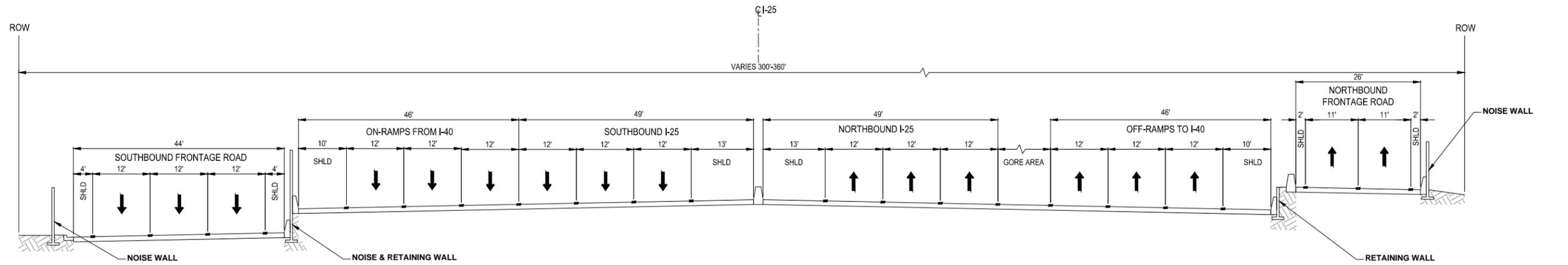
SCALE: 1"=300'  
**CONCEPTUAL  
 NOT FOR CONSTRUCTION**

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	ASPHALT PAVEMENT		OTHER / PRIVATE
	BRIDGE STRUCTURE		AMAFCA
	LANDSCAPE AREA		CITY OF ALBUQUERQUE
	RETAINING WALL		MESA DEL SOL
	CONCRETE WALL BARRIER		NMDOT
	SIDEWALK/PEDESTRIAN PATH		LIMITS OF REQUIRED R/W
	PAVEMENT EDGE / CURB		
	PARCEL LINES / R.O.W.		

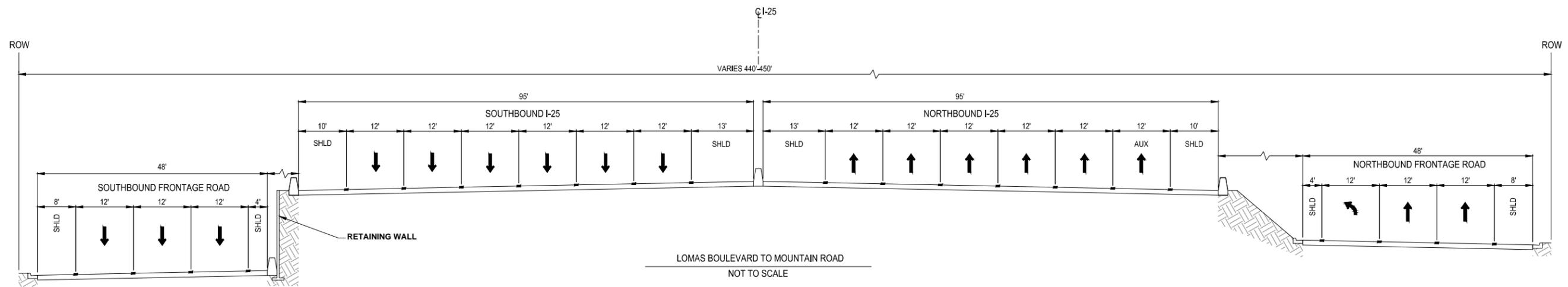


**SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 PREFERRED ALTERNATIVE**

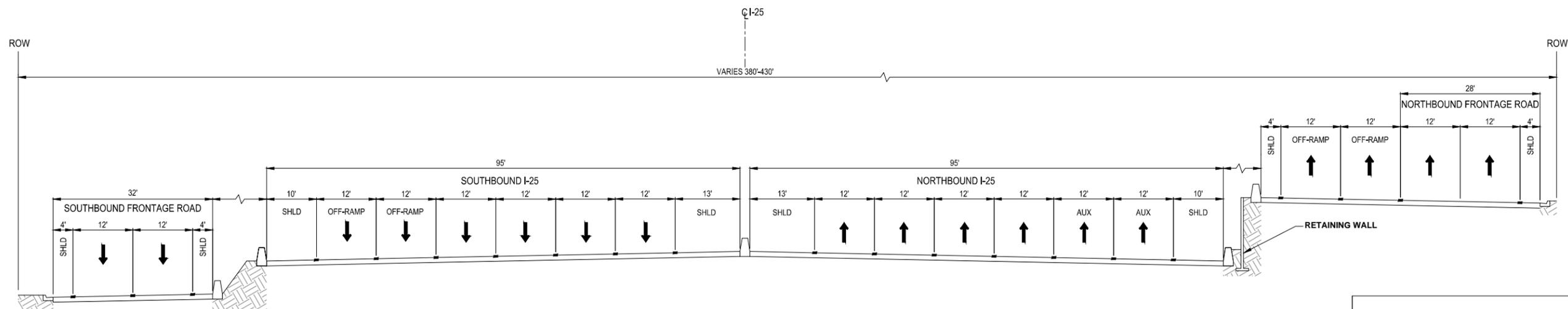
**INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 NORTH SEGMENT - PLAN LAYOUT  
 AND RIGHT OF WAY IMPACTS**



MOUNTAIN ROAD TO I-40  
NOT TO SCALE



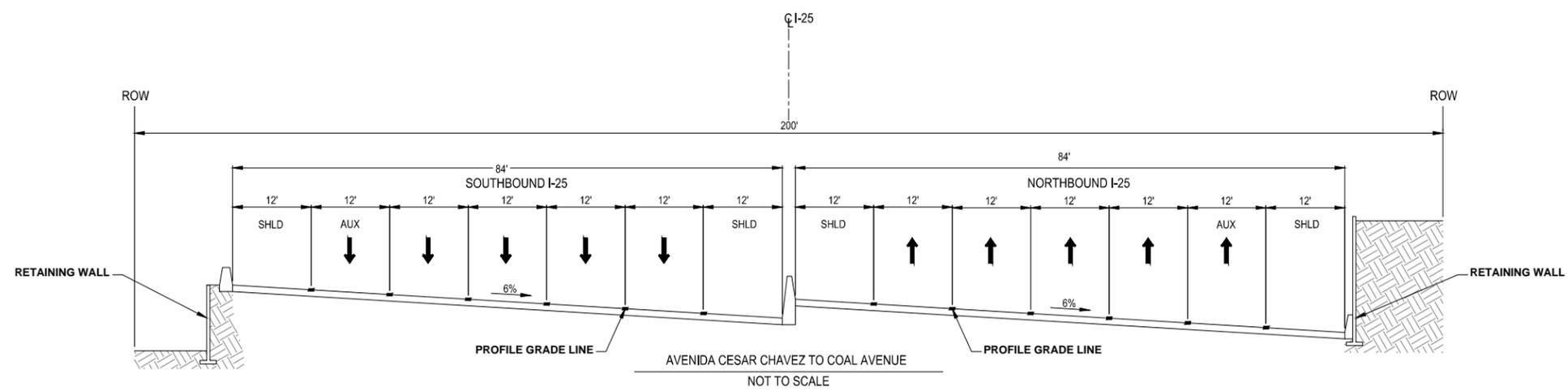
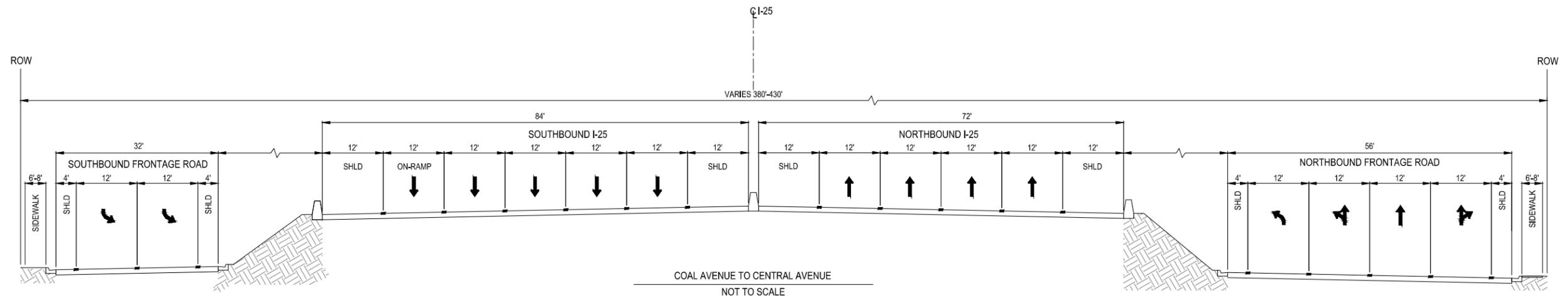
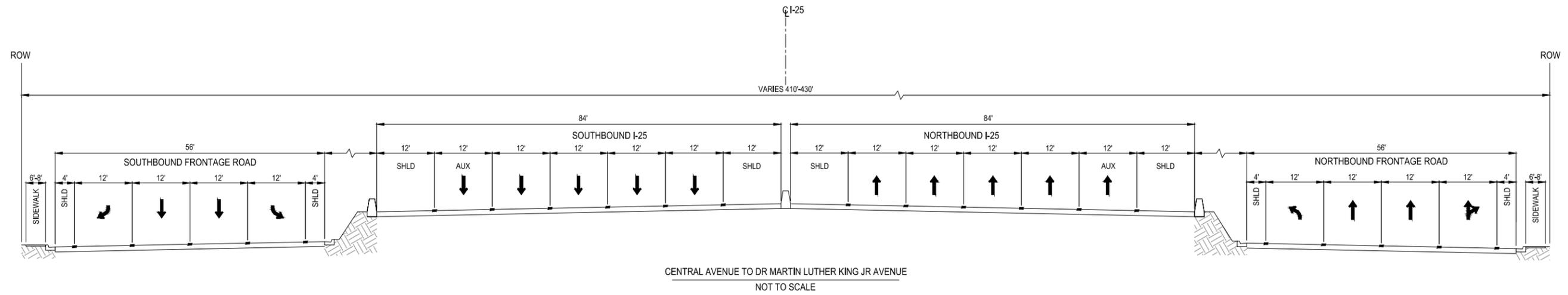
LOMAS BOULEVARD TO MOUNTAIN ROAD  
NOT TO SCALE



DR MARTIN LUTHER KING JR AVENUE TO LOMAS BOULEVARD  
NOT TO SCALE

SOUTH I-25  
FREEWAY OPERATIONS STUDY  
PHASE IB  
PREFERRED ALTERNATIVE

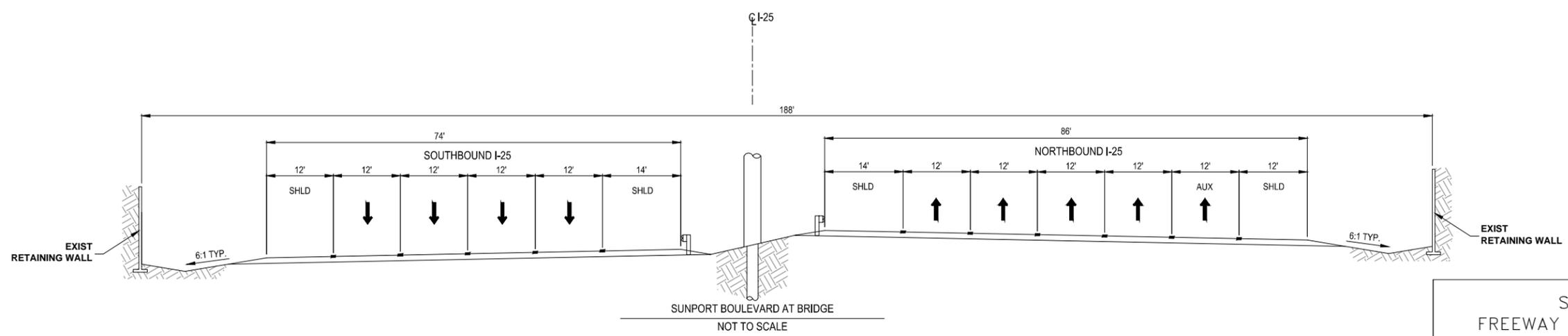
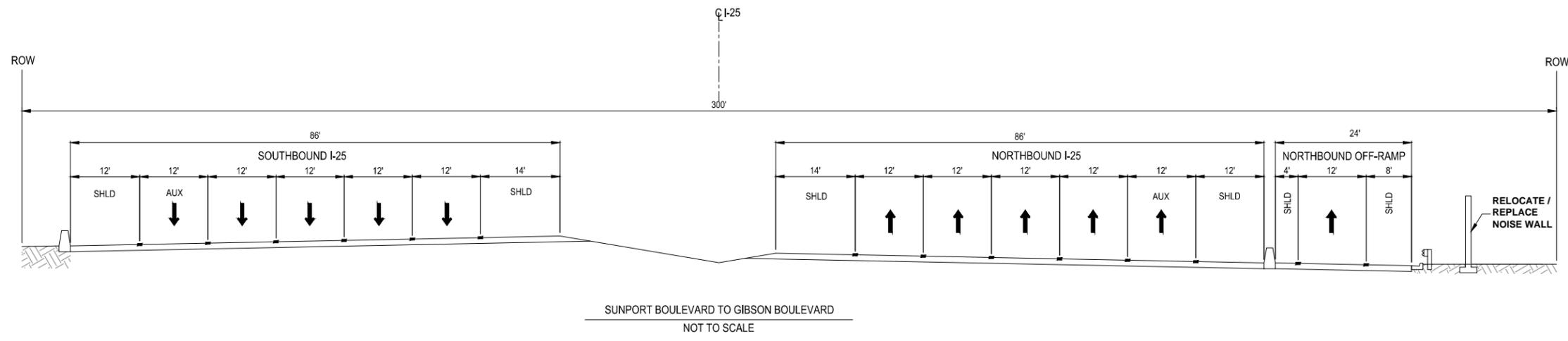
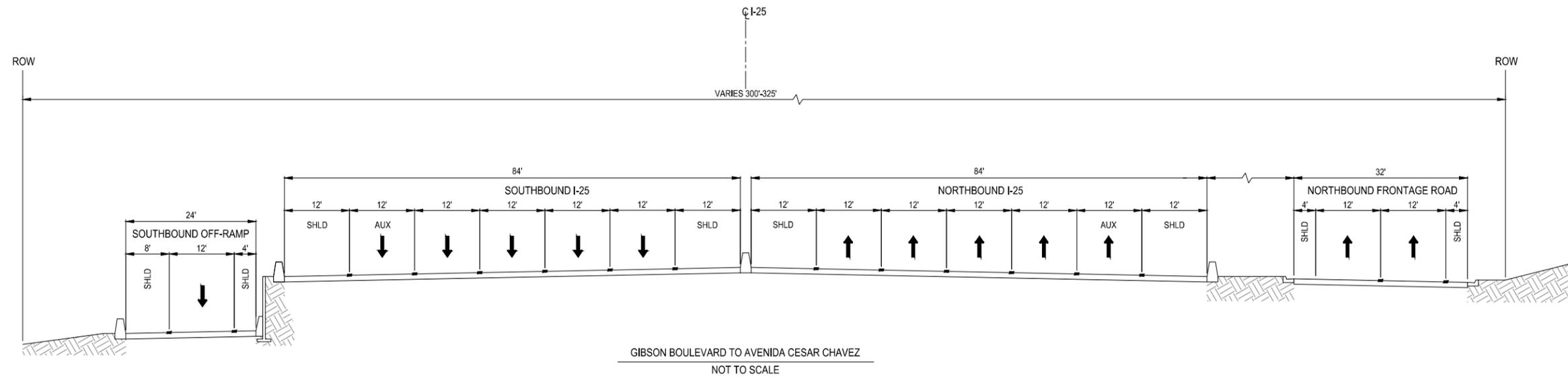
INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
NORTH SEGMENT - TYPICAL SECTIONS  
MAINLINE



SOUTH I-25  
FREeway OPERATIONS STUDY  
PHASE IB  
PREFERRED ALTERNATIVE

INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
NORTH SEGMENT - TYPICAL SECTIONS  
MAINLINE

CONCEPTUAL  
NOT FOR CONSTRUCTION

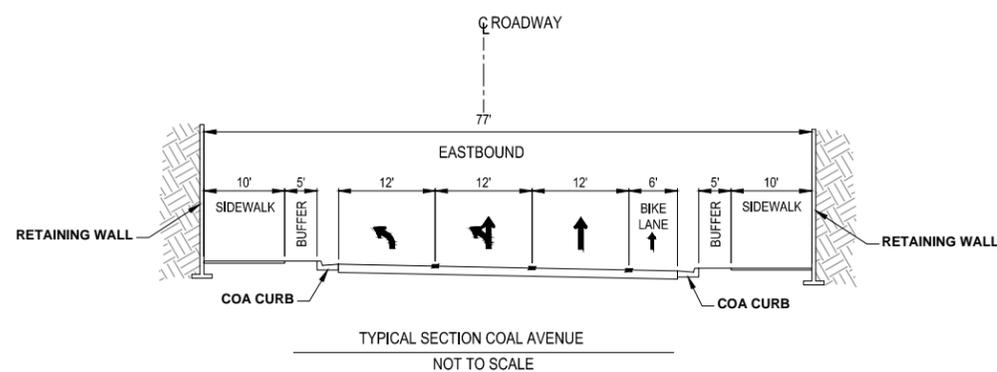
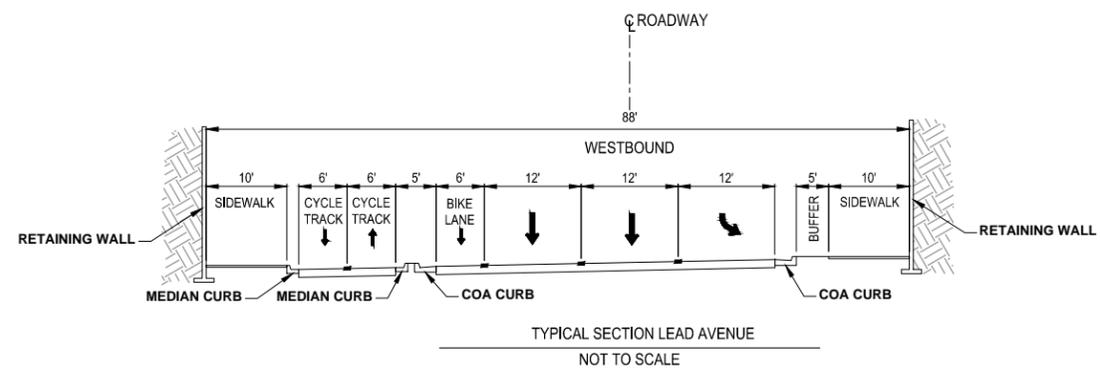
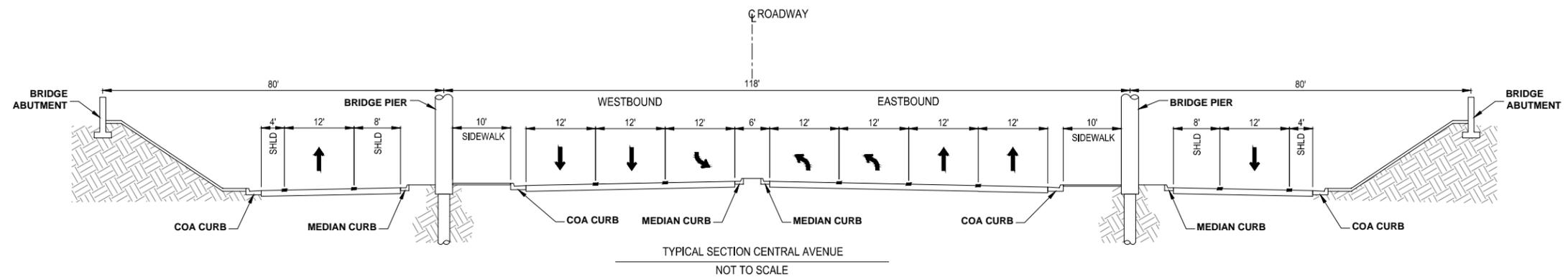
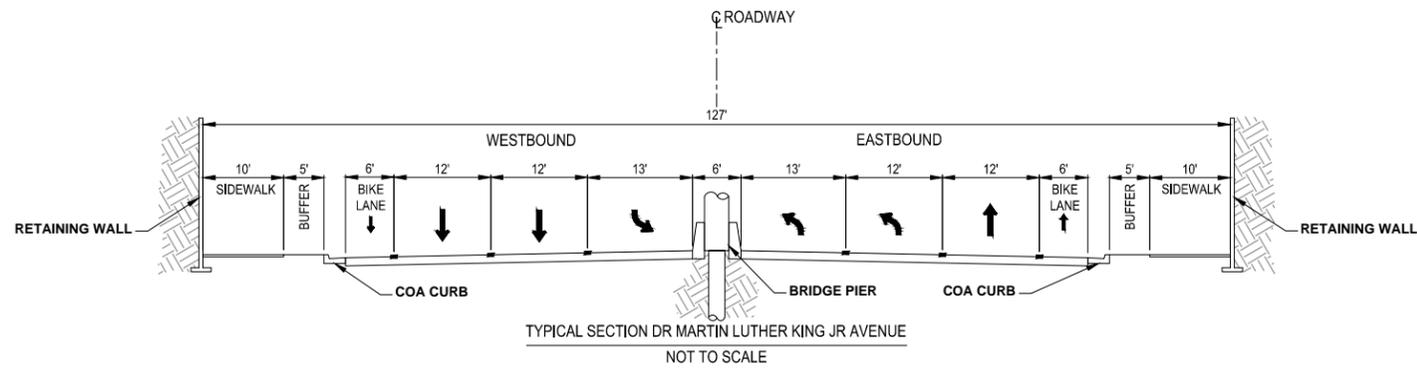


SOUTH I-25  
FREEWAY OPERATIONS STUDY  
PHASE IB  
PREFERRED ALTERNATIVE

INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
NORTH SEGMENT - TYPICAL SECTIONS  
MAINLINE

CONCEPTUAL  
NOT FOR CONSTRUCTION

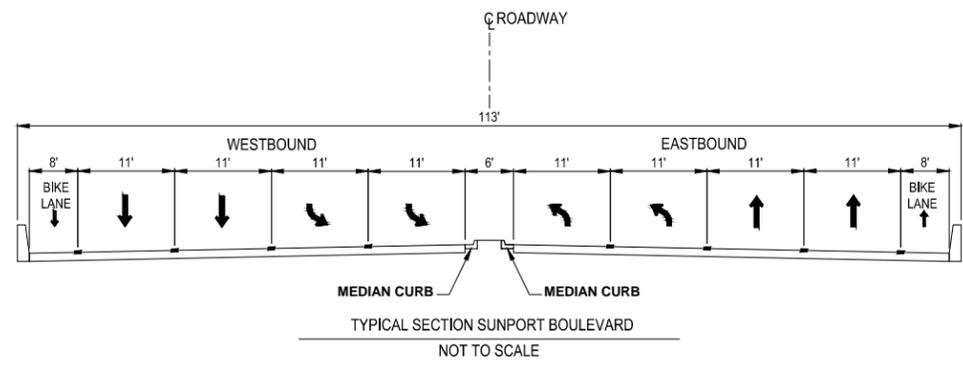
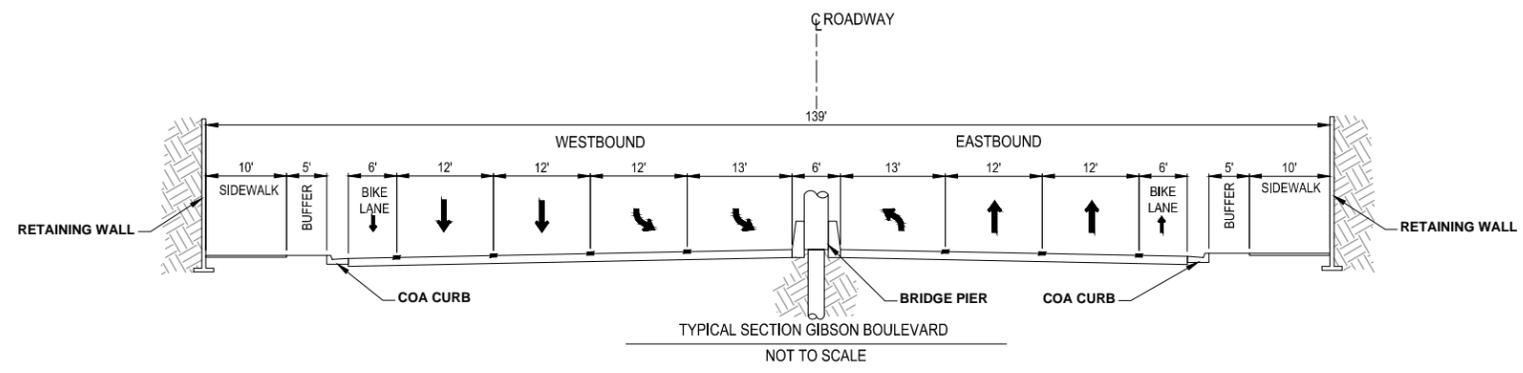
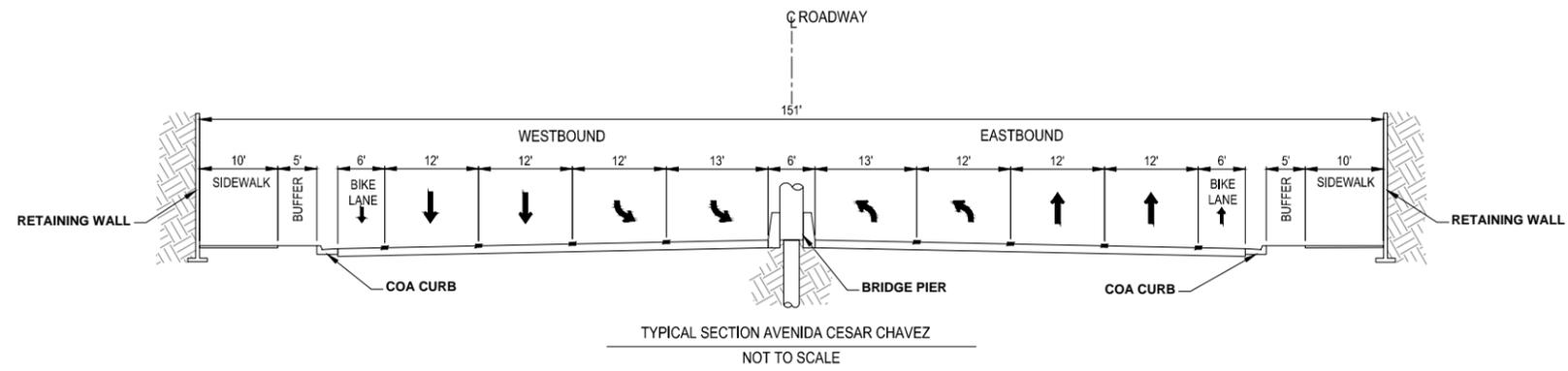




SOUTH I-25  
FREEWAY OPERATIONS STUDY  
PHASE IB  
PREFERRED ALTERNATIVE

INTERSTATE 25  
NM 47/BROADWAY BLVD. TO I-40  
NORTH SEGMENT - TYPICAL SECTIONS  
SURFACE STREETS

CONCEPTUAL  
NOT FOR CONSTRUCTION



SOUTH I-25  
 FREEWAY OPERATIONS STUDY  
 PHASE IB  
 PREFERRED ALTERNATIVE

INTERSTATE 25  
 NM 47/BROADWAY BLVD. TO I-40  
 NORTH SEGMENT - TYPICAL SECTIONS  
 SURFACE STREETS

CONCEPTUAL  
 NOT FOR CONSTRUCTION





## Appendix I

### Conceptual Opinion of Probable Costs for the Preferred Alternative



I-25 SOUTH CORRIDOR STUDY NM 47 / BROADWAY BLVD. INTERCHANGE TO I-40 / I-25 INTERCHANGE				
CONCEPTUAL DESIGN OPINION OF PROBABLE COSTS SOUTH SEGMENT - PREFERRED ALTERNATIVE				
NMDOT PROJECT: CN A301100 5-Oct-16				
TYPE OF CONSTRUCTION	ESTIMATED COST	GRT (7.3125%)	TOTAL COST	USE
<b>CONSTRUCTION</b>				
ROADWAY	\$2,300,000	\$168,188	\$2,468,188	\$2,500,000
DRAINAGE	\$500,000	\$36,563	\$536,563	\$500,000
BRIDGE STRUCTURES	\$1,500,000	\$109,688	\$1,609,688	\$1,600,000
RETAINING WALLS	\$400,000	\$29,250	\$429,250	\$400,000
PERMANENT SIGNING, STRIPING AND LIGHTING	\$4,000,000	\$292,500	\$4,292,500	\$4,300,000
SIGNALIZATION	\$0	\$0	\$0	\$0
SUBTOTAL	<b>\$8,700,000</b>	<b>\$636,188</b>	<b>\$9,336,188</b>	<b>\$9,400,000</b>
<b>ALLOWANCES</b>				
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE (2%)	\$174,000	\$12,724	\$186,724	\$200,000
BICYCLE & PEDESTRIAN BRIDGES / FACILITIES (2%)	\$174,000	\$12,724	\$186,724	\$200,000
ACCOMMODATION FOR FUTURE ITS (3.5%)	\$305,000	\$22,303	\$327,303	\$300,000
SUBTOTAL	<b>\$653,000</b>	<b>\$47,751</b>	<b>\$700,751</b>	<b>\$700,000</b>
<b>CONSTRUCTION ENGINEERING</b>				
STAKING, SWPPP, ENVIRONMENTAL, QC (7%)	\$609,000	\$44,533	\$653,533	\$700,000
MOBILIZATION (10% OF CONSTRUCTION ITEMS)	\$870,000	\$63,619	\$933,619	\$900,000
TRAFFIC CONTROL (5% OF CONSTRUCTION ITEMS)	\$435,000	\$31,809	\$466,809	\$500,000
SUBTOTAL	<b>\$1,914,000</b>	<b>\$139,961</b>	<b>\$2,053,961</b>	<b>\$2,100,000</b>
CONTINGENCY / MISCELLANEOUS ITEMS (35%)	\$3,943,450	\$288,365	\$4,231,815	\$4,300,000
<b>CONSTRUCTION TOTAL</b>	<b>\$15,210,450</b>	<b>\$1,112,264</b>	<b>\$16,322,714</b>	<b>\$16,400,000</b>
STUDY & DESIGN (10%)	\$1,521,045	\$111,226	\$1,632,271	\$1,600,000
CONSTRUCTION MANAGEMENT (10% OF CONST. ITEMS)	\$1,521,045	\$111,226	\$1,632,271	\$1,600,000
SUBTOTAL	<b>\$3,042,090</b>	<b>\$222,453</b>	<b>\$3,264,543</b>	<b>\$3,300,000</b>
<b>TOTAL</b>	<b>\$18,252,540</b>	<b>\$1,334,717</b>	<b>\$19,587,257</b>	<b>\$19,700,000</b>
<b>PROJECT TOTAL USE ESTIMATED IN 2016 DOLLARS</b>				<b>\$20,000,000</b>
<b>INTERCHANGE PROJECTS</b>				
Construction of Avenue A <sup>1</sup>	\$15,000,000	\$1,096,875	\$16,096,875	\$16,100,000
Mesa del Sol Blvd. Interchange <sup>1</sup>	\$35,000,000	\$2,559,375	\$37,559,375	\$37,600,000
Bobby Foster Road Interchange <sup>2</sup>	\$20,000,000	\$1,462,500	\$21,462,500	\$21,500,000
Rio Bravo Blvd. Interchange <sup>3</sup>	\$48,900,000	\$3,575,813	\$52,475,813	\$52,500,000
SUBTOTAL	<b>\$118,900,000</b>	<b>\$8,694,563</b>	<b>\$127,594,563</b>	<b>\$127,700,000</b>

<sup>1</sup> Possible funding through developer/City project, not included in Construction Total

<sup>2</sup> Possible funding through developer/County project, not included in Construction Total

<sup>3</sup> Current NMDOT project, not included in Construction Total

I-25 SOUTH CORRIDOR STUDY NM 47 / BROADWAY BLVD. INTERCHANGE TO I-40 / I-25 INTERCHANGE				
CONCEPTUAL DESIGN OPINION OF PROBABLE COSTS NORTH SEGMENT - PREFERRED ALTERNATIVE				
NMDOT PROJECT: A301100 5-Oct-16				
TYPE OF CONSTRUCTION	ESTIMATED COST	GRT (7.3125%)	TOTAL COST	USE
<b>CONSTRUCTION</b>				
ROADWAY	\$19,145,000	\$1,399,978	\$20,544,978	\$20,500,000
DRAINAGE	\$10,900,000	\$797,063	\$11,697,063	\$11,700,000
BRIDGE STRUCTURES	\$33,837,000	\$2,474,331	\$36,311,331	\$36,300,000
RETAINING/NOISE WALLS, CWB	\$28,273,000	\$2,067,463	\$30,340,463	\$30,300,000
PERMANENT SIGNING, STRIPING AND LIGHTING	\$8,425,000	\$616,078	\$9,041,078	\$9,000,000
SIGNALIZATION	\$2,500,000	\$182,813	\$2,682,813	\$2,700,000
SUBTOTAL	<b>\$103,080,000</b>	<b>\$7,537,725</b>	<b>\$110,617,725</b>	<b>\$110,700,000</b>
<b>ALLOWANCES</b>				
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE (2%)	\$2,062,000	\$150,755	\$2,212,755	\$2,200,000
BICYCLE & PEDESTRIAN BRIDGES / FACILITIES (2%)	\$2,062,000	\$150,784	\$2,212,784	\$2,200,000
ACCOMMODATION FOR FUTURE ITS (2%)	\$2,062,000	\$150,784	\$2,212,784	\$2,200,000
SUBTOTAL	<b>\$6,186,000</b>	<b>\$452,322</b>	<b>\$6,637,922</b>	<b>\$6,600,000</b>
<b>CONSTRUCTION ENGINEERING</b>				
STAKING, SWPPP, ENVIRONMENTAL, QC (7%)	\$7,215,600	\$527,641	\$7,743,241	\$7,700,000
MOBILIZATION (10% OF CONSTRUCTION ITEMS)	\$10,308,000	\$753,773	\$11,061,773	\$11,100,000
TRAFFIC CONTROL (5% OF CONSTRUCTION ITEMS)	\$5,154,000	\$376,886	\$5,530,886	\$5,500,000
SUBTOTAL	<b>\$22,677,600</b>	<b>\$1,658,300</b>	<b>\$24,335,900</b>	<b>\$24,400,000</b>
CONTINGENCY / MISCELLANEOUS ITEMS (35%)	\$46,180,260	\$3,376,932	\$49,557,192	\$49,600,000
<b>CONSTRUCTION TOTAL</b>	<b>\$178,123,860</b>	<b>\$13,025,278</b>	<b>\$191,148,738</b>	<b>\$191,200,000</b>
STUDY & DESIGN (10%)	\$17,812,386	\$1,302,531	\$19,114,917	\$19,100,000
CONSTRUCTION MANAGEMENT (10% OF CONST. ITEMS)	\$17,812,386	\$1,302,531	\$19,114,917	\$19,100,000
SUBTOTAL	<b>\$35,624,772</b>	<b>\$2,605,061</b>	<b>\$38,229,833</b>	<b>\$38,300,000</b>
<b>TOTAL</b>	<b>\$213,748,632</b>	<b>\$15,630,339</b>	<b>\$229,378,971</b>	<b>\$229,500,000</b>
<b>PROJECT TOTAL USE ESTIMATED IN 2016 DOLLARS</b>				<b>\$230,000,000</b>



## Appendix J

### Conceptual Opinion of Probable Costs for Construction Sequencing

I-25 SOUTH CORRIDOR STUDY NM 47 / BROADWAY BLVD. INTERCHANGE TO I-40 / I-25 INTERCHANGE				
CONCEPTUAL DESIGN OPINION OF PROBABLE COSTS NORTH SEGMENT-PREFERRED ALTERNATIVE PROJECT 1A-NB MAINLINE RECONSTRUCTION TO DOWNTOWN AREA				
NMDOT PROJECT: A301100 5-Oct-16				
TYPE OF CONSTRUCTION	ESTIMATED COST	GRT (7.3125%)	TOTAL COST	USE
<b>CONSTRUCTION</b>				
ROADWAY	\$1,038,000	\$75,904	\$1,113,904	\$1,100,000
DRAINAGE	\$338,000	\$24,716	\$362,716	\$400,000
BRIDGE STRUCTURES	\$5,126,000	\$374,839	\$5,500,839	\$5,500,000
RETAINING/NOISE WALLS, CWB	\$3,373,000	\$246,651	\$3,619,651	\$3,600,000
PERMANENT SIGNING, STRIPING AND LIGHTING	\$338,000	\$24,716	\$362,716	\$400,000
SIGNALIZATION	\$0	\$0	\$0	\$0
SUBTOTAL	<b>\$10,213,000</b>	<b>\$746,826</b>	<b>\$10,959,826</b>	<b>\$11,000,000</b>
<b>ALLOWANCES</b>				
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE (2%)	\$204,000	\$14,937	\$219,197	\$200,000
BICYCLE & PEDESTRIAN BRIDGES / FACILITIES (2%)	\$204,000	\$14,918	\$218,918	\$200,000
ACCOMMODATION FOR FUTURE ITS (2%)	\$204,000	\$14,918	\$218,918	\$200,000
SUBTOTAL	<b>\$612,000</b>	<b>\$44,772</b>	<b>\$657,032</b>	<b>\$600,000</b>
<b>CONSTRUCTION ENGINEERING</b>				
STAKING, SWPPP, ENVIRONMENTAL, QC (7%)	\$714,910	\$52,278	\$767,188	\$800,000
MOBILIZATION (10% OF CONSTRUCTION ITEMS)	\$1,021,300	\$74,683	\$1,095,983	\$1,100,000
TRAFFIC CONTROL (5% OF CONSTRUCTION ITEMS)	\$510,650	\$37,341	\$547,991	\$500,000
SUBTOTAL	<b>\$2,246,860</b>	<b>\$164,302</b>	<b>\$2,411,162</b>	<b>\$2,500,000</b>
<b>CONTINGENCY / MISCELLANEOUS ITEMS (35%)</b>				
	\$4,575,151	\$334,558	\$4,909,709	\$5,000,000
<b>CONSTRUCTION TOTAL</b>	<b>\$17,647,011</b>	<b>\$1,290,457</b>	<b>\$18,937,728</b>	<b>\$19,000,000</b>
<b>STUDY &amp; DESIGN (10%)</b>	\$1,764,701	\$129,044	\$1,893,745	\$1,900,000
<b>CONSTRUCTION MANAGEMENT (10% OF CONST. ITEMS)</b>	\$1,764,701	\$129,044	\$1,893,745	\$1,900,000
SUBTOTAL	<b>\$3,529,402</b>	<b>\$258,088</b>	<b>\$3,787,490</b>	<b>\$3,800,000</b>
<b>TOTAL</b>	<b>\$21,176,413</b>	<b>\$1,548,544</b>	<b>\$22,725,217</b>	<b>\$22,800,000</b>
<b>PROJECT TOTAL USE</b>		<i>ESTIMATED IN 2016 DOLLARS</i>	<b>\$23,000,000</b>	

I-25 SOUTH CORRIDOR STUDY NM 47 / BROADWAY BLVD. INTERCHANGE TO I-40 / I-25 INTERCHANGE				
CONCEPTUAL DESIGN OPINION OF PROBABLE COSTS NORTH SEGMENT-PREFERRED ALTERNATIVE PROJECT 1B-CONSTRUCT SB MAINLINE THROUGH DOWNTOWN AREA				
NMDOT PROJECT: A301100 5-Oct-16				
TYPE OF CONSTRUCTION	ESTIMATED COST	GRT (7.3125%)	TOTAL COST	USE
<b>CONSTRUCTION</b>				
ROADWAY	\$2,967,000	\$216,962	\$3,183,962	\$3,200,000
DRAINAGE	\$1,332,000	\$97,403	\$1,429,403	\$1,400,000
BRIDGE STRUCTURES	\$9,530,000	\$696,881	\$10,226,881	\$10,200,000
RETAINING/NOISE WALLS, CWB	\$4,826,000	\$352,901	\$5,178,901	\$5,200,000
PERMANENT SIGNING, STRIPING AND LIGHTING	\$1,182,000	\$86,434	\$1,268,434	\$1,300,000
SIGNALIZATION	\$0	\$0	\$0	\$0
SUBTOTAL	<b>\$19,837,000</b>	<b>\$1,450,581</b>	<b>\$21,287,581</b>	<b>\$21,300,000</b>
<b>ALLOWANCES</b>				
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE (2%)	\$397,000	\$29,012	\$426,012	\$400,000
BICYCLE & PEDESTRIAN BRIDGES / FACILITIES (2%)	\$397,000	\$29,031	\$426,031	\$400,000
ACCOMMODATION FOR FUTURE ITS (2%)	\$397,000	\$29,031	\$426,031	\$400,000
SUBTOTAL	<b>\$1,191,000</b>	<b>\$87,073</b>	<b>\$1,277,813</b>	<b>\$1,200,000</b>
<b>CONSTRUCTION ENGINEERING</b>				
STAKING, SWPPP, ENVIRONMENTAL, QC (7%)	\$1,388,590	\$101,541	\$1,490,131	\$1,500,000
MOBILIZATION (10% OF CONSTRUCTION ITEMS)	\$1,983,700	\$145,058	\$2,128,758	\$2,100,000
TRAFFIC CONTROL (5% OF CONSTRUCTION ITEMS)	\$991,850	\$72,529	\$1,064,379	\$1,100,000
SUBTOTAL	<b>\$4,364,140</b>	<b>\$319,128</b>	<b>\$4,683,268</b>	<b>\$4,700,000</b>
<b>CONTINGENCY / MISCELLANEOUS ITEMS (35%)</b>				
	\$8,887,249	\$649,880	\$9,537,129	\$9,600,000
<b>CONSTRUCTION TOTAL</b>	<b>\$34,279,389</b>	<b>\$2,506,661</b>	<b>\$36,785,790</b>	<b>\$36,800,000</b>
<b>STUDY &amp; DESIGN (10%)</b>	\$3,427,939	\$250,668	\$3,678,607	\$3,700,000
<b>CONSTRUCTION MANAGEMENT (10% OF CONST. ITEMS)</b>	\$3,427,939	\$250,668	\$3,678,607	\$3,700,000
SUBTOTAL	<b>\$6,855,878</b>	<b>\$501,336</b>	<b>\$7,357,214</b>	<b>\$7,400,000</b>
<b>TOTAL</b>	<b>\$41,135,267</b>	<b>\$3,007,997</b>	<b>\$44,143,004</b>	<b>\$44,200,000</b>
<b>PROJECT TOTAL USE</b>		<i>ESTIMATED IN 2016 DOLLARS</i>	<b>\$45,000,000</b>	

I-25 SOUTH CORRIDOR STUDY NM 47 / BROADWAY BLVD. INTERCHANGE TO I-40 / I-25 INTERCHANGE				
CONCEPTUAL DESIGN OPINION OF PROBABLE COSTS NORTH SEGMENT-PREFERRED ALTERNATIVE PROJECT 1C-COMPLETE NB MAINLINE CONSTRUCTION THROUGH DOWNTOWN AREA				
NMDOT PROJECT: A301100 5-Oct-16				
TYPE OF CONSTRUCTION	ESTIMATED COST	GRT (7.3125%)	TOTAL COST	USE
<b>CONSTRUCTION</b>				
ROADWAY	\$1,508,000	\$110,273	\$1,618,273	\$1,600,000
DRAINAGE	\$413,000	\$30,201	\$443,201	\$400,000
BRIDGE STRUCTURES	\$6,850,000	\$500,906	\$7,350,906	\$7,400,000
RETAINING/NOISE WALLS, CWB	\$3,942,000	\$288,259	\$4,230,259	\$4,200,000
PERMANENT SIGNING, STRIPING AND LIGHTING	\$413,000	\$30,201	\$443,201	\$400,000
SIGNALIZATION	\$0	\$0	\$0	\$0
SUBTOTAL	<b>\$13,126,000</b>	<b>\$959,839</b>	<b>\$14,085,839</b>	<b>\$14,100,000</b>
<b>ALLOWANCES</b>				
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE (2%)	\$263,000	\$19,197	\$281,717	\$300,000
BICYCLE & PEDESTRIAN BRIDGES / FACILITIES (2%)	\$263,000	\$19,232	\$282,232	\$300,000
ACCOMMODATION FOR FUTURE ITS (2%)	\$263,000	\$19,232	\$282,232	\$300,000
SUBTOTAL	<b>\$789,000</b>	<b>\$57,661</b>	<b>\$846,181</b>	<b>\$900,000</b>
<b>CONSTRUCTION ENGINEERING</b>				
STAKING, SWPPP, ENVIRONMENTAL, QC (7%)	\$918,820	\$67,189	\$986,009	\$1,000,000
MOBILIZATION (10% OF CONSTRUCTION ITEMS)	\$1,312,600	\$95,984	\$1,408,584	\$1,400,000
TRAFFIC CONTROL (5% OF CONSTRUCTION ITEMS)	\$656,300	\$47,992	\$704,292	\$700,000
SUBTOTAL	<b>\$2,887,720</b>	<b>\$211,165</b>	<b>\$3,098,885</b>	<b>\$3,100,000</b>
CONTINGENCY / MISCELLANEOUS ITEMS (35%)	\$5,880,952	\$430,045	\$6,310,997	\$6,400,000
<b>CONSTRUCTION TOTAL</b>	<b>\$22,683,672</b>	<b>\$1,658,708</b>	<b>\$24,341,900</b>	<b>\$24,400,000</b>
STUDY & DESIGN (10%)	\$2,268,367	\$165,874	\$2,434,242	\$2,400,000
CONSTRUCTION MANAGEMENT (10% OF CONST. ITEMS)	\$2,268,367	\$165,874	\$2,434,242	\$2,400,000
SUBTOTAL	<b>\$4,536,734</b>	<b>\$331,749</b>	<b>\$4,868,483</b>	<b>\$4,900,000</b>
<b>TOTAL</b>	<b>\$27,220,406</b>	<b>\$1,990,457</b>	<b>\$29,210,384</b>	<b>\$29,300,000</b>
<b>PROJECT TOTAL USE</b>	<i>ESTIMATED IN 2016 DOLLARS</i>		<b>\$30,000,000</b>	

I-25 SOUTH CORRIDOR STUDY NM 47 / BROADWAY BLVD. INTERCHANGE TO I-40 / I-25 INTERCHANGE				
CONCEPTUAL DESIGN OPINION OF PROBABLE COSTS NORTH SEGMENT-PREFERRED ALTERNATIVE PROJECT 2-CONSTRUCT SB RAMPS AND C-D ROADS				
NMDOT PROJECT: A301100 5-Oct-16				
TYPE OF CONSTRUCTION	ESTIMATED COST	GRT (7.3125%)	TOTAL COST	USE
<b>CONSTRUCTION</b>				
ROADWAY	\$1,296,000	\$94,770	\$1,390,770	\$1,400,000
DRAINAGE	\$1,500,000	\$109,688	\$1,609,688	\$1,600,000
BRIDGE STRUCTURES	\$1,072,000	\$78,390	\$1,150,390	\$1,200,000
RETAINING/NOISE WALLS, CWB	\$2,036,000	\$148,883	\$2,184,883	\$2,200,000
PERMANENT SIGNING, STRIPING AND LIGHTING	\$1,000,000	\$73,125	\$1,073,125	\$1,100,000
SIGNALIZATION	\$0	\$0	\$0	\$0
SUBTOTAL	<b>\$6,904,000</b>	<b>\$504,855</b>	<b>\$7,408,855</b>	<b>\$7,500,000</b>
<b>ALLOWANCES</b>				
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE (2%)	\$138,000	\$10,097	\$148,177	\$100,000
BICYCLE & PEDESTRIAN BRIDGES / FACILITIES (2%)	\$138,000	\$10,091	\$148,091	\$100,000
ACCOMMODATION FOR FUTURE ITS (2%)	\$138,000	\$10,091	\$148,091	\$100,000
SUBTOTAL	<b>\$414,000</b>	<b>\$30,280</b>	<b>\$444,360</b>	<b>\$300,000</b>
<b>CONSTRUCTION ENGINEERING</b>				
STAKING, SWPPP, ENVIRONMENTAL, QC (7%)	\$483,280	\$35,340	\$518,620	\$500,000
MOBILIZATION (10% OF CONSTRUCTION ITEMS)	\$690,400	\$50,486	\$740,886	\$700,000
TRAFFIC CONTROL (5% OF CONSTRUCTION ITEMS)	\$345,200	\$25,243	\$370,443	\$400,000
SUBTOTAL	<b>\$1,518,880</b>	<b>\$111,068</b>	<b>\$1,629,948</b>	<b>\$1,700,000</b>
CONTINGENCY / MISCELLANEOUS ITEMS (35%)	\$3,092,908	\$226,169	\$3,319,077	\$3,400,000
<b>CONSTRUCTION TOTAL</b>	<b>\$11,929,788</b>	<b>\$872,372</b>	<b>\$12,802,240</b>	<b>\$12,900,000</b>
STUDY & DESIGN (10%)	\$1,192,979	\$87,237	\$1,280,215	\$1,300,000
CONSTRUCTION MANAGEMENT (10% OF CONST. ITEMS)	\$1,192,979	\$87,237	\$1,280,215	\$1,300,000
SUBTOTAL	<b>\$2,385,958</b>	<b>\$174,473</b>	<b>\$2,560,431</b>	<b>\$2,600,000</b>
<b>TOTAL</b>	<b>\$14,315,746</b>	<b>\$1,046,845</b>	<b>\$15,362,670</b>	<b>\$15,500,000</b>
<b>PROJECT TOTAL USE</b>	<i>ESTIMATED IN 2016 DOLLARS</i>		<b>\$16,000,000</b>	



I-25 SOUTH CORRIDOR STUDY NM 47 / BROADWAY BLVD. INTERCHANGE TO I-40 / I-25 INTERCHANGE				
CONCEPTUAL DESIGN OPINION OF PROBABLE COSTS NORTH SEGMENT-PREFERRED ALTERNATIVE PROJECT 3-CONSTRUCT NB RAMPS AND C-D ROADS				
NMDOT PROJECT: A301100 5-Oct-16				
TYPE OF CONSTRUCTION	ESTIMATED COST	GRT (7.3125%)	TOTAL COST	USE
<b>CONSTRUCTION</b>				
ROADWAY	\$2,304,000	\$168,480	\$2,472,480	\$2,500,000
DRAINAGE	\$2,400,000	\$175,500	\$2,575,500	\$2,600,000
BRIDGE STRUCTURES	\$3,864,000	\$282,555	\$4,146,555	\$4,100,000
RETAINING/NOISE WALLS, CWB	\$2,957,000	\$216,231	\$3,173,231	\$3,200,000
PERMANENT SIGNING, STRIPING AND LIGHTING	\$1,600,000	\$117,000	\$1,717,000	\$1,700,000
SIGNALIZATION	\$0	\$0	\$0	\$0
SUBTOTAL	<b>\$13,125,000</b>	<b>\$959,766</b>	<b>\$14,084,766</b>	<b>\$14,100,000</b>
<b>ALLOWANCES</b>				
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE (2%)	\$263,000	\$19,195	\$281,695	\$300,000
BICYCLE & PEDESTRIAN BRIDGES / FACILITIES (2%)	\$263,000	\$19,232	\$282,232	\$300,000
ACCOMMODATION FOR FUTURE ITS (2%)	\$263,000	\$19,232	\$282,232	\$300,000
SUBTOTAL	<b>\$789,000</b>	<b>\$57,659</b>	<b>\$846,159</b>	<b>\$900,000</b>
<b>CONSTRUCTION ENGINEERING</b>				
STAKING, SWPPP, ENVIRONMENTAL, QC (7%)	\$918,750	\$67,184	\$985,934	\$1,000,000
MOBILIZATION (10% OF CONSTRUCTION ITEMS)	\$1,312,500	\$95,977	\$1,408,477	\$1,400,000
TRAFFIC CONTROL (5% OF CONSTRUCTION ITEMS)	\$656,250	\$47,988	\$704,238	\$700,000
SUBTOTAL	<b>\$2,887,500</b>	<b>\$211,148</b>	<b>\$3,098,648</b>	<b>\$3,100,000</b>
CONTINGENCY / MISCELLANEOUS ITEMS (35%)	\$5,880,525	\$430,013	\$6,310,538	\$6,400,000
<b>CONSTRUCTION TOTAL</b>	<b>\$22,682,025</b>	<b>\$1,658,587</b>	<b>\$24,340,112</b>	<b>\$24,400,000</b>
STUDY & DESIGN (10%)	\$2,268,203	\$165,862	\$2,434,065	\$2,400,000
CONSTRUCTION MANAGEMENT (10% OF CONST. ITEMS)	\$2,268,203	\$165,862	\$2,434,065	\$2,400,000
SUBTOTAL	<b>\$4,536,405</b>	<b>\$331,725</b>	<b>\$4,868,130</b>	<b>\$4,900,000</b>
<b>TOTAL</b>	<b>\$27,218,430</b>	<b>\$1,990,311</b>	<b>\$29,208,241</b>	<b>\$29,300,000</b>
<b>PROJECT TOTAL USE</b>	<i>ESTIMATED IN 2016 DOLLARS</i>		<b>\$30,000,000</b>	

I-25 SOUTH CORRIDOR STUDY NM 47 / BROADWAY BLVD. INTERCHANGE TO I-40 / I-25 INTERCHANGE				
CONCEPTUAL DESIGN OPINION OF PROBABLE COSTS NORTH SEGMENT-PREFERRED ALTERNATIVE PROJECT 4-CONSTRUCT GIBSON INTERCHANGE				
NMDOT PROJECT: A301100 5-Oct-16				
TYPE OF CONSTRUCTION	ESTIMATED COST	GRT (7.3125%)	TOTAL COST	USE
<b>CONSTRUCTION</b>				
ROADWAY	\$1,280,000	\$93,600	\$1,373,600	\$1,400,000
DRAINAGE	\$600,000	\$43,875	\$643,875	\$600,000
BRIDGE STRUCTURES	\$5,117,000	\$374,181	\$5,491,181	\$5,500,000
RETAINING/NOISE WALLS, CWB	\$3,370,000	\$246,431	\$3,616,431	\$3,600,000
PERMANENT SIGNING, STRIPING AND LIGHTING	\$225,000	\$16,453	\$241,453	\$200,000
SIGNALIZATION	\$500,000	\$36,563	\$536,563	\$500,000
SUBTOTAL	<b>\$11,092,000</b>	<b>\$811,103</b>	<b>\$11,903,103</b>	<b>\$12,000,000</b>
<b>ALLOWANCES</b>				
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE (2%)	\$222,000	\$16,222	\$238,062	\$200,000
BICYCLE & PEDESTRIAN BRIDGES / FACILITIES (2%)	\$222,000	\$16,234	\$238,234	\$200,000
ACCOMMODATION FOR FUTURE ITS (2%)	\$222,000	\$16,234	\$238,234	\$200,000
SUBTOTAL	<b>\$666,000</b>	<b>\$48,690</b>	<b>\$714,530</b>	<b>\$600,000</b>
<b>CONSTRUCTION ENGINEERING</b>				
STAKING, SWPPP, ENVIRONMENTAL, QC (7%)	\$776,440	\$56,777	\$833,217	\$800,000
MOBILIZATION (10% OF CONSTRUCTION ITEMS)	\$1,109,200	\$81,110	\$1,190,310	\$1,200,000
TRAFFIC CONTROL (5% OF CONSTRUCTION ITEMS)	\$554,600	\$40,555	\$595,155	\$600,000
SUBTOTAL	<b>\$2,440,240</b>	<b>\$178,443</b>	<b>\$2,618,683</b>	<b>\$2,700,000</b>
CONTINGENCY / MISCELLANEOUS ITEMS (35%)	\$4,969,384	\$363,386	\$5,332,770	\$5,400,000
<b>CONSTRUCTION TOTAL</b>	<b>\$19,167,624</b>	<b>\$1,401,621</b>	<b>\$20,569,085</b>	<b>\$20,600,000</b>
STUDY & DESIGN (10%)	\$1,916,762	\$140,163	\$2,056,926	\$2,100,000
CONSTRUCTION MANAGEMENT (10% OF CONST. ITEMS)	\$1,916,762	\$140,163	\$2,056,926	\$2,100,000
SUBTOTAL	<b>\$3,833,525</b>	<b>\$280,327</b>	<b>\$4,113,851</b>	<b>\$4,200,000</b>
<b>TOTAL</b>	<b>\$23,001,149</b>	<b>\$1,681,947</b>	<b>\$24,682,936</b>	<b>\$24,800,000</b>
<b>PROJECT TOTAL USE</b>	<i>ESTIMATED IN 2016 DOLLARS</i>		<b>\$25,000,000</b>	



I-25 SOUTH CORRIDOR STUDY NM 47 / BROADWAY BLVD. INTERCHANGE TO I-40 / I-25 INTERCHANGE				
CONCEPTUAL DESIGN OPINION OF PROBABLE COSTS NORTH SEGMENT-PREFERRED ALTERNATIVE PROJECT 5-IMPROVEMENTS TO AVENIDA CESAR CHAVEZ				
NMDOT PROJECT: A301100 5-Oct-16				
TYPE OF CONSTRUCTION	ESTIMATED COST	GRT (7.3125%)	TOTAL COST	USE
<b>CONSTRUCTION</b>				
ROADWAY	\$3,992,000	\$291,915	\$4,283,915	\$4,300,000
DRAINAGE	\$400,000	\$29,250	\$429,250	\$400,000
BRIDGE STRUCTURES	\$0	\$0	\$0	\$0
RETAINING/NOISE WALLS, CWB	\$1,682,000	\$122,996	\$1,804,996	\$1,800,000
PERMANENT SIGNING, STRIPING AND LIGHTING	\$150,000	\$10,969	\$160,969	\$200,000
SIGNALIZATION	\$500,000	\$36,563	\$536,563	\$500,000
SUBTOTAL	<b>\$6,724,000</b>	<b>\$491,693</b>	<b>\$7,215,693</b>	<b>\$7,300,000</b>
<b>ALLOWANCES</b>				
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE (2%)	\$134,000	\$9,834	\$144,314	\$100,000
BICYCLE & PEDESTRIAN BRIDGES / FACILITIES (2%)	\$134,000	\$9,799	\$143,799	\$100,000
ACCOMMODATION FOR FUTURE ITS (2%)	\$134,000	\$9,799	\$143,799	\$100,000
SUBTOTAL	<b>\$402,000</b>	<b>\$29,431</b>	<b>\$431,911</b>	<b>\$300,000</b>
<b>CONSTRUCTION ENGINEERING</b>				
STAKING, SWPPP, ENVIRONMENTAL, QC (7%)	\$470,680	\$34,418	\$505,098	\$500,000
MOBILIZATION (10% OF CONSTRUCTION ITEMS)	\$672,400	\$49,169	\$721,569	\$700,000
TRAFFIC CONTROL (5% OF CONSTRUCTION ITEMS)	\$336,200	\$24,585	\$360,785	\$400,000
SUBTOTAL	<b>\$1,479,280</b>	<b>\$108,172</b>	<b>\$1,587,452</b>	<b>\$1,600,000</b>
<b>CONTINGENCY / MISCELLANEOUS ITEMS (35%)</b>				
	\$3,011,848	\$220,241	\$3,232,089	\$3,300,000
<b>CONSTRUCTION TOTAL</b>	<b>\$11,617,128</b>	<b>\$849,538</b>	<b>\$12,467,146</b>	<b>\$12,500,000</b>
<b>STUDY &amp; DESIGN (10%)</b>	\$1,161,713	\$84,950	\$1,246,663	\$1,200,000
<b>CONSTRUCTION MANAGEMENT (10% OF CONST. ITEMS)</b>	\$1,161,713	\$84,950	\$1,246,663	\$1,200,000
SUBTOTAL	<b>\$2,323,426</b>	<b>\$169,900</b>	<b>\$2,493,326</b>	<b>\$2,500,000</b>
<b>TOTAL</b>	<b>\$13,940,554</b>	<b>\$1,019,438</b>	<b>\$14,960,472</b>	<b>\$15,000,000</b>
<b>PROJECT TOTAL USE</b>		<i>ESTIMATED IN 2016 DOLLARS</i>	<b>\$15,000,000</b>	

I-25 SOUTH CORRIDOR STUDY NM 47 / BROADWAY BLVD. INTERCHANGE TO I-40 / I-25 INTERCHANGE				
CONCEPTUAL DESIGN OPINION OF PROBABLE COSTS PROJECT 6-COMPLETE MAINLINE STA. 1980+00 TO STA. 2088+00 NORTH SEGMENT-PREFERRED ALTERNATIVE				
NMDOT PROJECT: A301100 5-Oct-16				
TYPE OF CONSTRUCTION	ESTIMATED COST	GRT (7.3125%)	TOTAL COST	USE
<b>CONSTRUCTION</b>				
ROADWAY	\$4,842,000	\$354,071	\$5,196,071	\$5,200,000
DRAINAGE	\$1,650,000	\$120,656	\$1,770,656	\$1,800,000
BRIDGE STRUCTURES	\$759,000	\$55,502	\$814,502	\$800,000
RETAINING/NOISE WALLS, CWB	\$1,964,000	\$143,618	\$2,107,618	\$2,100,000
PERMANENT SIGNING, STRIPING AND LIGHTING	\$1,650,000	\$120,656	\$1,770,656	\$1,800,000
SIGNALIZATION	\$0	\$0	\$0	\$0
SUBTOTAL	<b>\$10,865,000</b>	<b>\$794,503</b>	<b>\$11,659,503</b>	<b>\$11,700,000</b>
<b>ALLOWANCES</b>				
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE (2%)	\$217,000	\$15,890	\$233,190	\$200,000
BICYCLE & PEDESTRIAN BRIDGES / FACILITIES (2%)	\$217,000	\$15,868	\$232,868	\$200,000
ACCOMMODATION FOR FUTURE ITS (2%)	\$217,000	\$15,868	\$232,868	\$200,000
SUBTOTAL	<b>\$651,000</b>	<b>\$47,626</b>	<b>\$698,926</b>	<b>\$600,000</b>
<b>CONSTRUCTION ENGINEERING</b>				
STAKING, SWPPP, ENVIRONMENTAL, QC (7%)	\$760,550	\$55,615	\$816,165	\$800,000
MOBILIZATION (10% OF CONSTRUCTION ITEMS)	\$1,086,500	\$79,450	\$1,165,950	\$1,200,000
TRAFFIC CONTROL (5% OF CONSTRUCTION ITEMS)	\$543,250	\$39,725	\$582,975	\$600,000
SUBTOTAL	<b>\$2,390,300</b>	<b>\$174,791</b>	<b>\$2,565,091</b>	<b>\$2,600,000</b>
<b>CONTINGENCY / MISCELLANEOUS ITEMS (35%)</b>				
	\$4,867,205	\$355,914	\$5,223,119	\$5,300,000
<b>CONSTRUCTION TOTAL</b>	<b>\$18,773,505</b>	<b>\$1,372,834</b>	<b>\$20,146,639</b>	<b>\$20,200,000</b>
<b>STUDY &amp; DESIGN (10%)</b>	\$1,877,351	\$137,281	\$2,014,632	\$2,000,000
<b>CONSTRUCTION MANAGEMENT (10% OF CONST. ITEMS)</b>	\$1,877,351	\$137,281	\$2,014,632	\$2,000,000
SUBTOTAL	<b>\$3,754,701</b>	<b>\$274,563</b>	<b>\$4,029,264</b>	<b>\$4,100,000</b>
<b>TOTAL</b>	<b>\$22,528,206</b>	<b>\$1,647,397</b>	<b>\$24,175,903</b>	<b>\$24,300,000</b>
<b>PROJECT TOTAL USE</b>		<i>ESTIMATED IN 2016 DOLLARS</i>	<b>\$25,000,000</b>	

I-25 SOUTH CORRIDOR STUDY NM 47 / BROADWAY BLVD. INTERCHANGE TO I-40 / I-25 INTERCHANGE				
CONCEPTUAL DESIGN OPINION OF PROBABLE COSTS NORTH SEGMENT-PREFERRED ALTERNATIVE PROJECT 7A-NB DOWNTOWN FRONTAGE ROADS				
NMDOT PROJECT: A301100 5-Oct-16				
TYPE OF CONSTRUCTION	ESTIMATED COST	GRT (7.3125%)	TOTAL COST	USE
<b>CONSTRUCTION</b>				
ROADWAY	\$1,048,000	\$76,635	\$1,124,635	\$1,100,000
DRAINAGE	\$850,000	\$62,156	\$912,156	\$900,000
BRIDGE STRUCTURES	\$0	\$0	\$0	\$0
RETAINING/NOISE WALLS, CWB	\$1,682,000	\$122,996	\$1,804,996	\$1,800,000
PERMANENT SIGNING, STRIPING AND LIGHTING	\$450,000	\$32,906	\$482,906	\$500,000
SIGNALIZATION	\$750,000	\$54,844	\$804,844	\$800,000
SUBTOTAL	<b>\$4,780,000</b>	<b>\$349,538</b>	<b>\$5,129,538</b>	<b>\$5,200,000</b>
<b>ALLOWANCES</b>				
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE (2%)	\$96,000	\$6,991	\$102,991	\$100,000
BICYCLE & PEDESTRIAN BRIDGES / FACILITIES (2%)	\$96,000	\$7,020	\$103,020	\$100,000
ACCOMMODATION FOR FUTURE ITS (2%)	\$96,000	\$7,020	\$103,020	\$100,000
SUBTOTAL	<b>\$288,000</b>	<b>\$21,031</b>	<b>\$308,631</b>	<b>\$300,000</b>
<b>CONSTRUCTION ENGINEERING</b>				
STAKING, SWPPP, ENVIRONMENTAL, QC (7%)	\$334,600	\$24,468	\$359,068	\$400,000
MOBILIZATION (10% OF CONSTRUCTION ITEMS)	\$478,000	\$34,954	\$512,954	\$500,000
TRAFFIC CONTROL (5% OF CONSTRUCTION ITEMS)	\$239,000	\$17,477	\$256,477	\$300,000
SUBTOTAL	<b>\$1,051,600</b>	<b>\$76,898</b>	<b>\$1,128,498</b>	<b>\$1,200,000</b>
CONTINGENCY / MISCELLANEOUS ITEMS (35%)	\$2,141,860	\$156,624	\$2,298,484	\$2,300,000
<b>CONSTRUCTION TOTAL</b>	<b>\$8,261,460</b>	<b>\$604,090</b>	<b>\$8,865,150</b>	<b>\$8,900,000</b>
STUDY & DESIGN (10%)	\$826,146	\$60,412	\$886,558	\$900,000
CONSTRUCTION MANAGEMENT (10% OF CONST. ITEMS)	\$826,146	\$60,412	\$886,558	\$900,000
SUBTOTAL	<b>\$1,652,292</b>	<b>\$120,824</b>	<b>\$1,773,116</b>	<b>\$1,800,000</b>
<b>TOTAL</b>	<b>\$9,913,752</b>	<b>\$724,914</b>	<b>\$10,638,266</b>	<b>\$10,700,000</b>
<b>PROJECT TOTAL USE</b>	<i>ESTIMATED IN 2016 DOLLARS</i>		<b>\$11,000,000</b>	

I-25 SOUTH CORRIDOR STUDY NM 47 / BROADWAY BLVD. INTERCHANGE TO I-40 / I-25 INTERCHANGE				
CONCEPTUAL DESIGN OPINION OF PROBABLE COSTS NORTH SEGMENT-PREFERRED ALTERNATIVE PROJECT 7B-SB DOWNTOWN FRONTAGE ROADS				
NMDOT PROJECT: A301100 5-Oct-16				
TYPE OF CONSTRUCTION	ESTIMATED COST	GRT (7.3125%)	TOTAL COST	USE
<b>CONSTRUCTION</b>				
ROADWAY	\$832,000	\$60,840	\$892,840	\$900,000
DRAINAGE	\$850,000	\$62,156	\$912,156	\$900,000
BRIDGE STRUCTURES	\$0	\$0	\$0	\$0
RETAINING/NOISE WALLS, CWB	\$1,682,000	\$122,996	\$1,804,996	\$1,800,000
PERMANENT SIGNING, STRIPING AND LIGHTING	\$450,000	\$32,906	\$482,906	\$500,000
SIGNALIZATION	\$750,000	\$54,844	\$804,844	\$800,000
SUBTOTAL	<b>\$4,564,000</b>	<b>\$333,743</b>	<b>\$4,897,743</b>	<b>\$4,900,000</b>
<b>ALLOWANCES</b>				
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE (2%)	\$91,000	\$6,675	\$97,675	\$100,000
BICYCLE & PEDESTRIAN BRIDGES / FACILITIES (2%)	\$91,000	\$6,654	\$97,654	\$100,000
ACCOMMODATION FOR FUTURE ITS (2%)	\$91,000	\$6,654	\$97,654	\$100,000
SUBTOTAL	<b>\$273,000</b>	<b>\$19,984</b>	<b>\$293,264</b>	<b>\$300,000</b>
<b>CONSTRUCTION ENGINEERING</b>				
STAKING, SWPPP, ENVIRONMENTAL, QC (7%)	\$319,480	\$23,362	\$342,842	\$300,000
MOBILIZATION (10% OF CONSTRUCTION ITEMS)	\$456,400	\$33,374	\$489,774	\$500,000
TRAFFIC CONTROL (5% OF CONSTRUCTION ITEMS)	\$228,200	\$16,687	\$244,887	\$200,000
SUBTOTAL	<b>\$1,004,080</b>	<b>\$73,423</b>	<b>\$1,077,503</b>	<b>\$1,100,000</b>
CONTINGENCY / MISCELLANEOUS ITEMS (35%)	\$2,044,378	\$149,495	\$2,193,873	\$2,200,000
<b>CONSTRUCTION TOTAL</b>	<b>\$7,885,458</b>	<b>\$576,645</b>	<b>\$8,462,383</b>	<b>\$8,500,000</b>
STUDY & DESIGN (10%)	\$788,546	\$57,662	\$846,208	\$800,000
CONSTRUCTION MANAGEMENT (10% OF CONST. ITEMS)	\$788,546	\$57,662	\$846,208	\$800,000
SUBTOTAL	<b>\$1,577,092</b>	<b>\$115,325</b>	<b>\$1,692,416</b>	<b>\$1,700,000</b>
<b>TOTAL</b>	<b>\$9,462,550</b>	<b>\$691,969</b>	<b>\$10,154,799</b>	<b>\$10,200,000</b>
<b>PROJECT TOTAL USE</b>	<i>ESTIMATED IN 2016 DOLLARS</i>		<b>\$11,000,000</b>	

I-25 SOUTH CORRIDOR STUDY NM 47 / BROADWAY BLVD. INTERCHANGE TO I-40 / I-25 INTERCHANGE				
CONCEPTUAL DESIGN OPINION OF PROBABLE COSTS NORTH SEGMENT-PREFERRED ALTERNATIVE PROJECT 8-COMplete NB MAINLINE CONSTRUCTION				
NMDOT PROJECT: A301100 5-Oct-16				
TYPE OF CONSTRUCTION	ESTIMATED COST	GRT (7.3125%)	TOTAL COST	USE
<b>CONSTRUCTION</b>				
ROADWAY	\$1,279,000	\$93,527	\$1,372,527	\$1,400,000
DRAINAGE	\$832,000	\$60,840	\$892,840	\$900,000
BRIDGE STRUCTURES	\$1,520,000	\$111,150	\$1,631,150	\$1,600,000
RETAINING/NOISE WALLS, CWB	\$2,215,000	\$161,972	\$2,376,972	\$2,400,000
PERMANENT SIGNING, STRIPING AND LIGHTING	\$832,000	\$60,840	\$892,840	\$900,000
SIGNALIZATION	\$0	\$0	\$0	\$0
SUBTOTAL	<b>\$6,678,000</b>	<b>\$488,329</b>	<b>\$7,166,329</b>	<b>\$7,200,000</b>
<b>ALLOWANCES</b>				
UTILITY CONSTRUCTION / RELOCATION ALLOWANCE (2%)	\$134,000	\$9,767	\$143,327	\$100,000
BICYCLE & PEDESTRIAN BRIDGES / FACILITIES (2%)	\$134,000	\$9,799	\$143,799	\$100,000
ACCOMMODATION FOR FUTURE ITS (2%)	\$134,000	\$9,799	\$143,799	\$100,000
SUBTOTAL	<b>\$402,000</b>	<b>\$29,364</b>	<b>\$430,924</b>	<b>\$300,000</b>
<b>CONSTRUCTION ENGINEERING</b>				
STAKING, SWPPP, ENVIRONMENTAL, QC (7%)	\$467,460	\$34,183	\$501,643	\$500,000
MOBILIZATION (10% OF CONSTRUCTION ITEMS)	\$667,800	\$48,833	\$716,633	\$700,000
TRAFFIC CONTROL (5% OF CONSTRUCTION ITEMS)	\$333,900	\$24,416	\$358,316	\$400,000
SUBTOTAL	<b>\$1,469,160</b>	<b>\$107,432</b>	<b>\$1,576,592</b>	<b>\$1,600,000</b>
<b>CONTINGENCY / MISCELLANEOUS ITEMS (35%)</b>	<b>\$2,992,206</b>	<b>\$218,805</b>	<b>\$3,211,011</b>	<b>\$3,300,000</b>
<b>CONSTRUCTION TOTAL</b>	<b>\$11,541,366</b>	<b>\$843,930</b>	<b>\$12,384,856</b>	<b>\$12,400,000</b>
<b>STUDY &amp; DESIGN (10%)</b>	<b>\$1,154,137</b>	<b>\$84,396</b>	<b>\$1,238,533</b>	<b>\$1,200,000</b>
<b>CONSTRUCTION MANAGEMENT (10% OF CONST. ITEMS)</b>	<b>\$1,154,137</b>	<b>\$84,396</b>	<b>\$1,238,533</b>	<b>\$1,200,000</b>
SUBTOTAL	<b>\$2,308,273</b>	<b>\$168,792</b>	<b>\$2,477,066</b>	<b>\$2,500,000</b>
<b>TOTAL</b>	<b>\$13,849,639</b>	<b>\$1,012,723</b>	<b>\$14,861,922</b>	<b>\$14,900,000</b>
<b>PROJECT TOTAL USE</b>	<i>ESTIMATED IN 2016 DOLLARS</i>			<b>\$15,000,000</b>

SOUTH

INTERSTATE

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submitted by:



6100 Uptown Boulevard, Suite 700  
Albuquerque NM 87110  
505.881.5357  
505.881.7602 fax  
[www.pbworld.com](http://www.pbworld.com)