ATTACHMENT A

Project Vicinity and Location Maps

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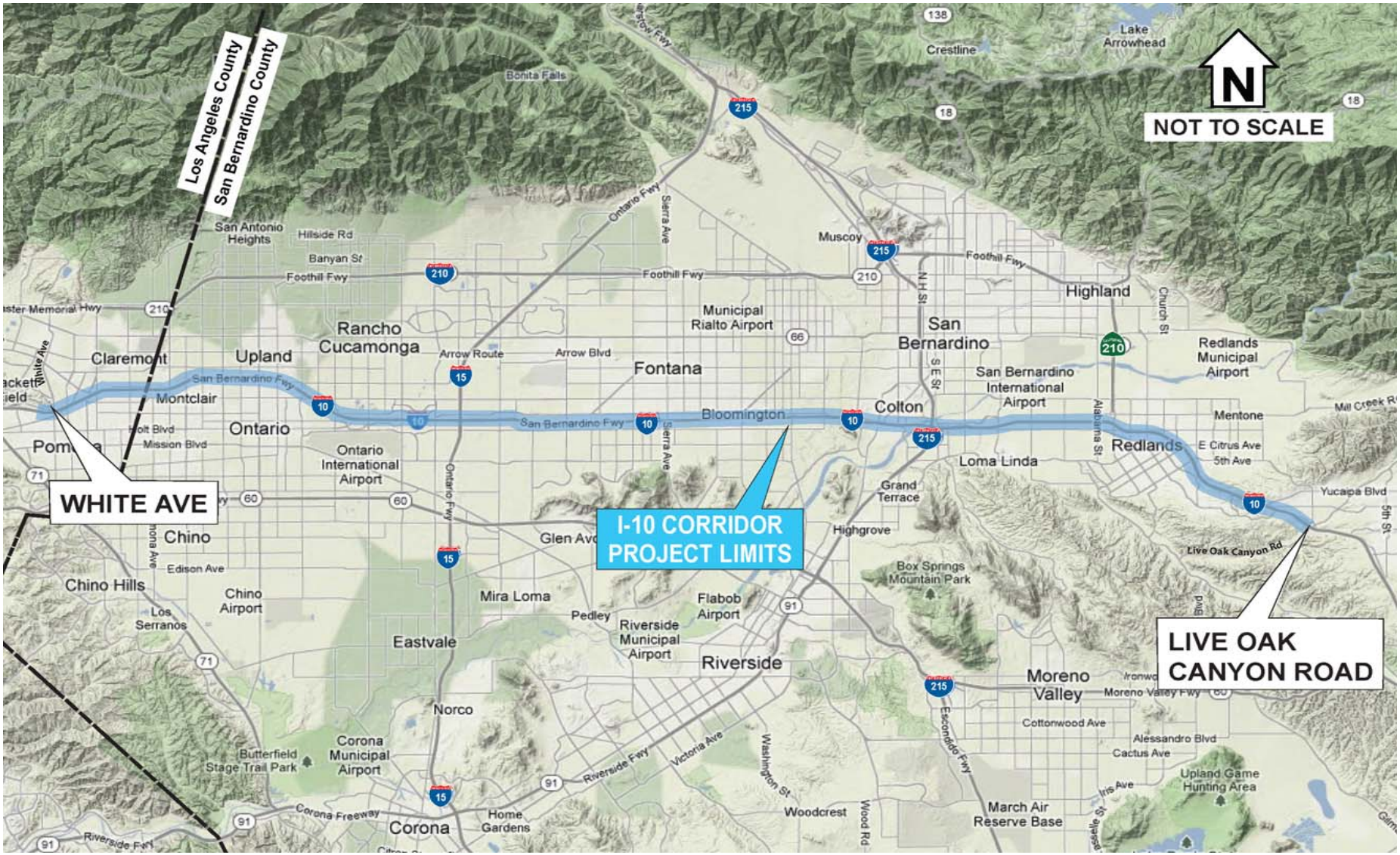

Project Location Map

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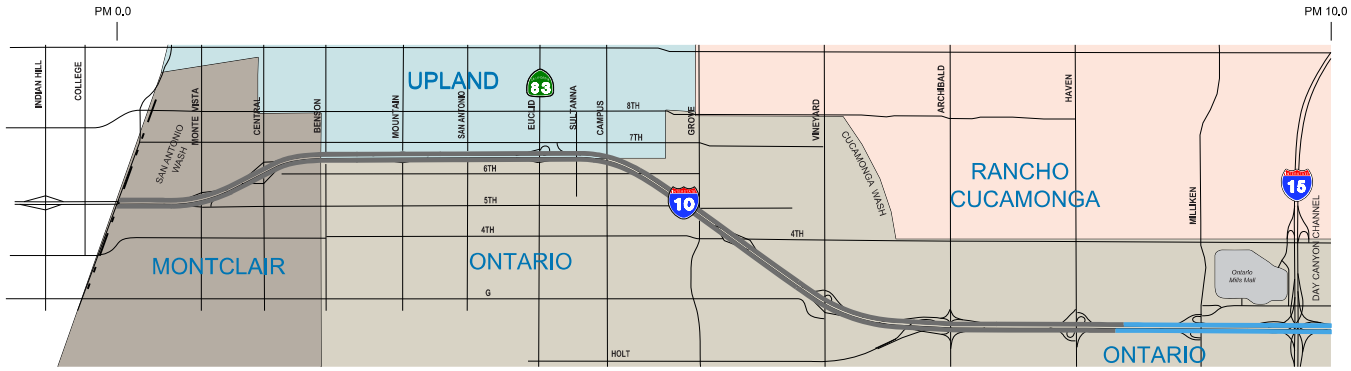
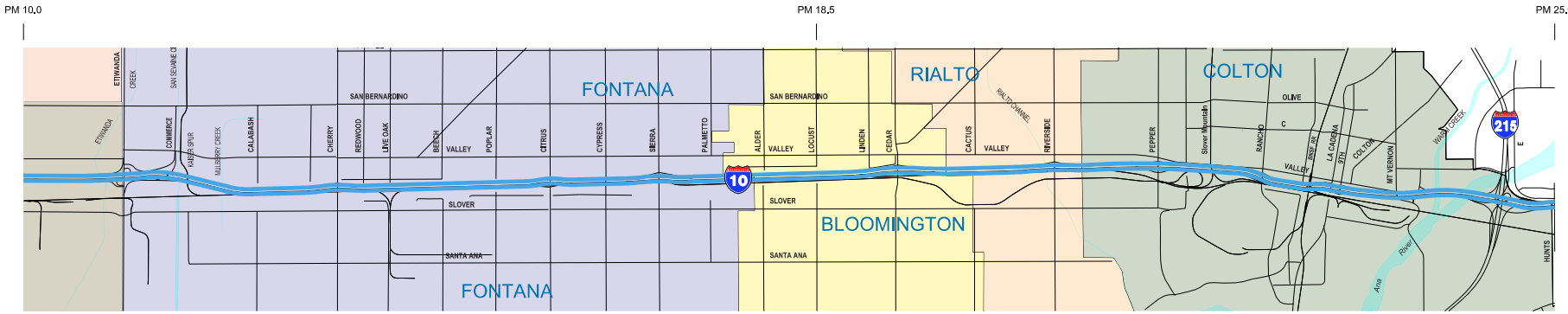
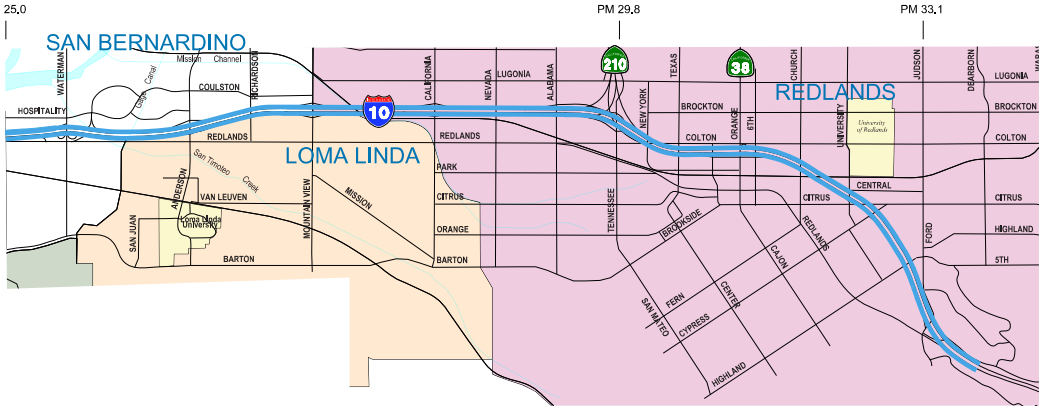
Governments
SANBAG
Working Together

Caltrans







LEGEND

EXISTING ONE HOV LANE EACH DIRECTION

PROPOSED ONE HOV LANE EACH DIRECTION

ALTERNATIVE 2 - HOV

PROPOSED IMPROVEMENTS

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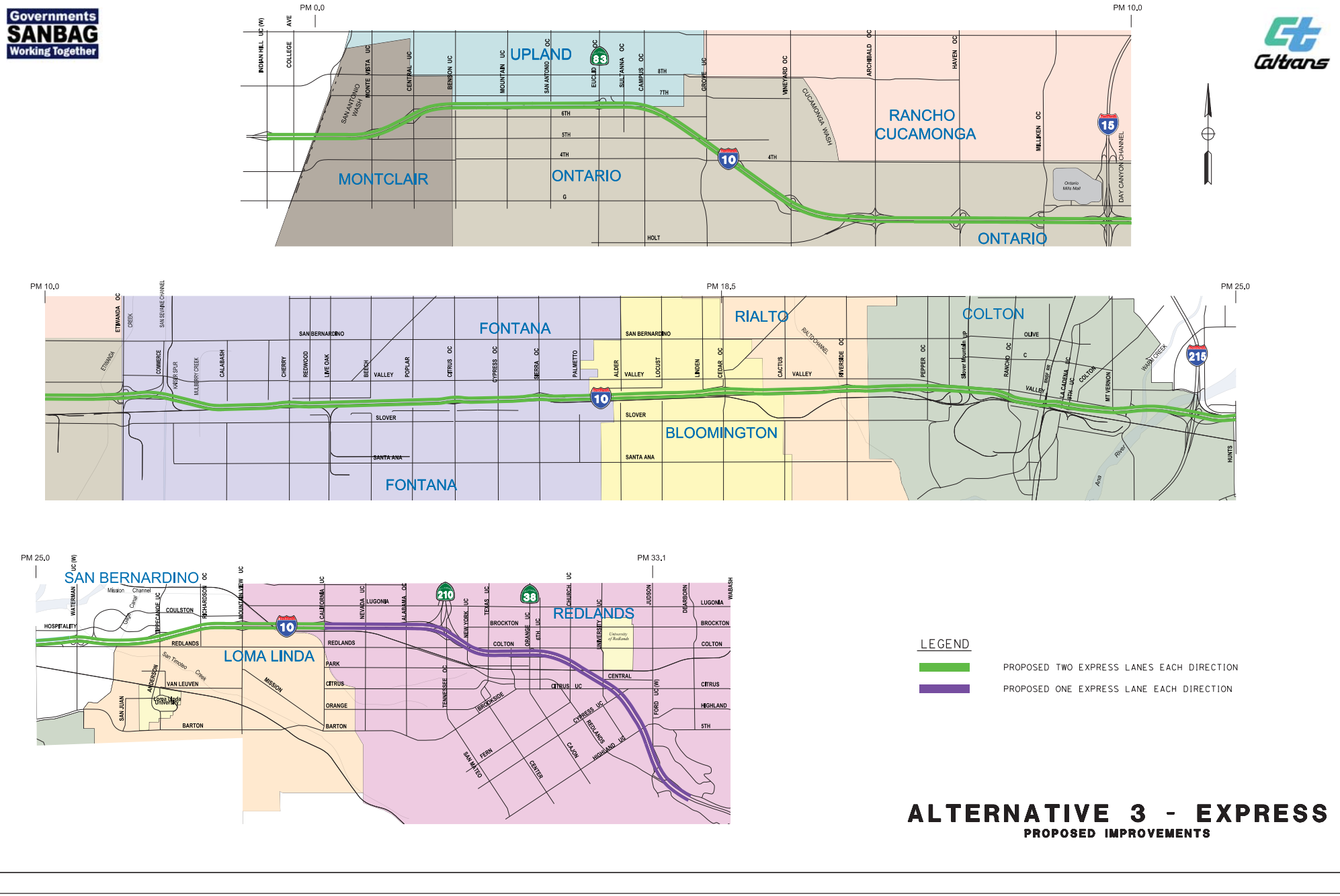

ALTERNATIVE 3 - EXPRESS

PROPOSED IMPROVEMENTS

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ATTACHMENT B

Traffic Volume Diagrams

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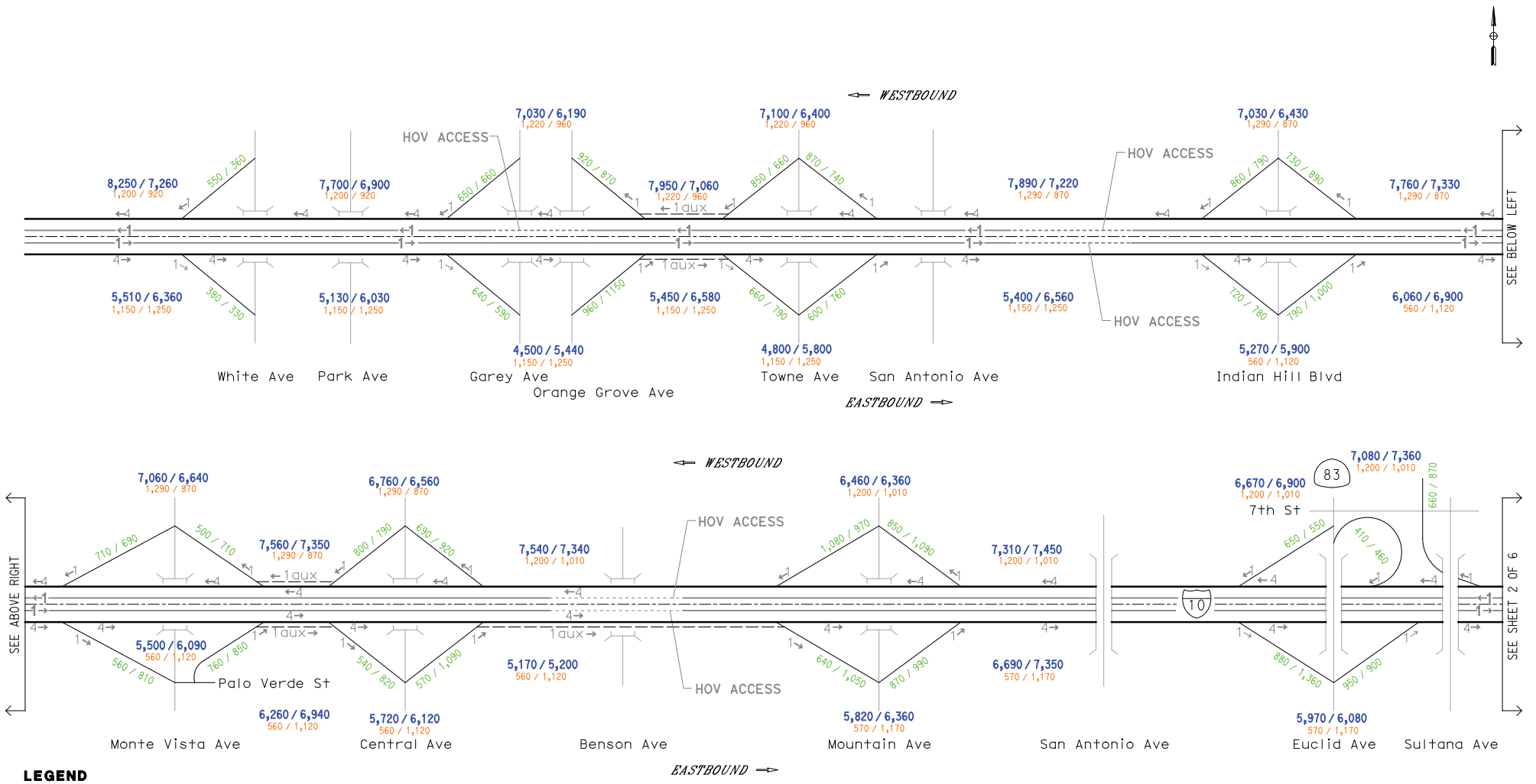


LEGEND

AM / PM - GENERAL PURPOSE(GP) PEAK HOUR TRAFFIC VOLUMES
AM / PM - RAMP PEAK HOUR TRAFFIC VOLUMES
AM / PM - HIGH OCCUPANCY VEHICLE(HOV) PEAK HOUR TRAFFIC VOLUMES
←1 - # OF GP, RAMP OR HOV LANES
← 1aux - # OF AUXILIARY LANES

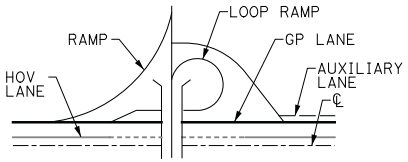
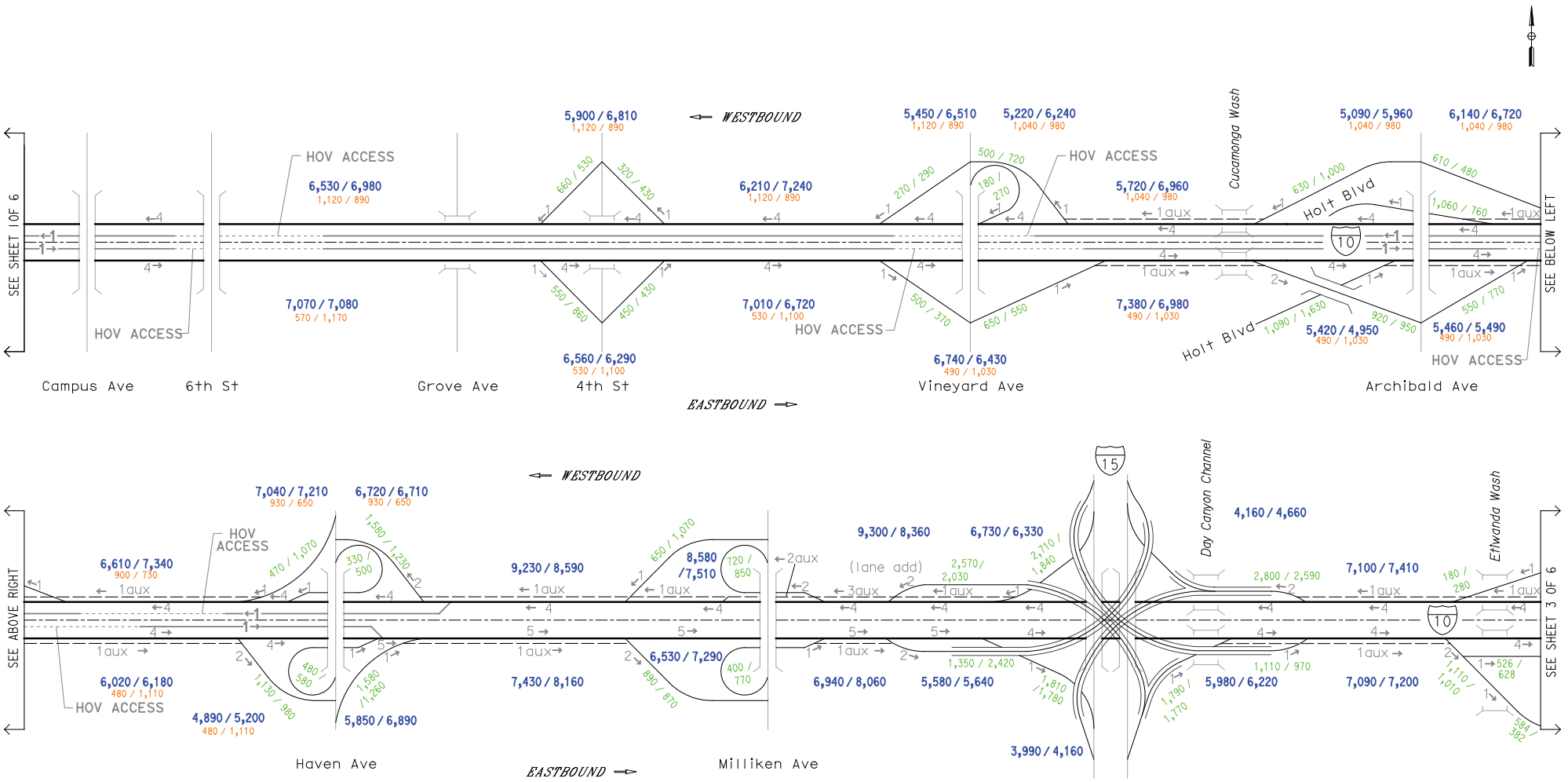


FIGURE 2.3.1
I-10 CORRIDOR STUDY PA/ED
EXISTING (YEAR 2012) CONDITIONS
FREEWAY TRAFFIC VOLUMES AND LANE CONFIGURATION
SHEET 1 OF 6



LEGEND

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AM / PM - HIGH OCCUPANY VEHICLE(HOV) PEAK HOUR TRAFFIC VOLUMES
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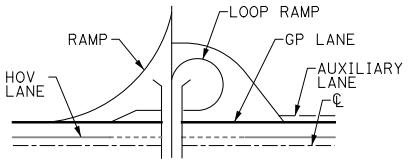
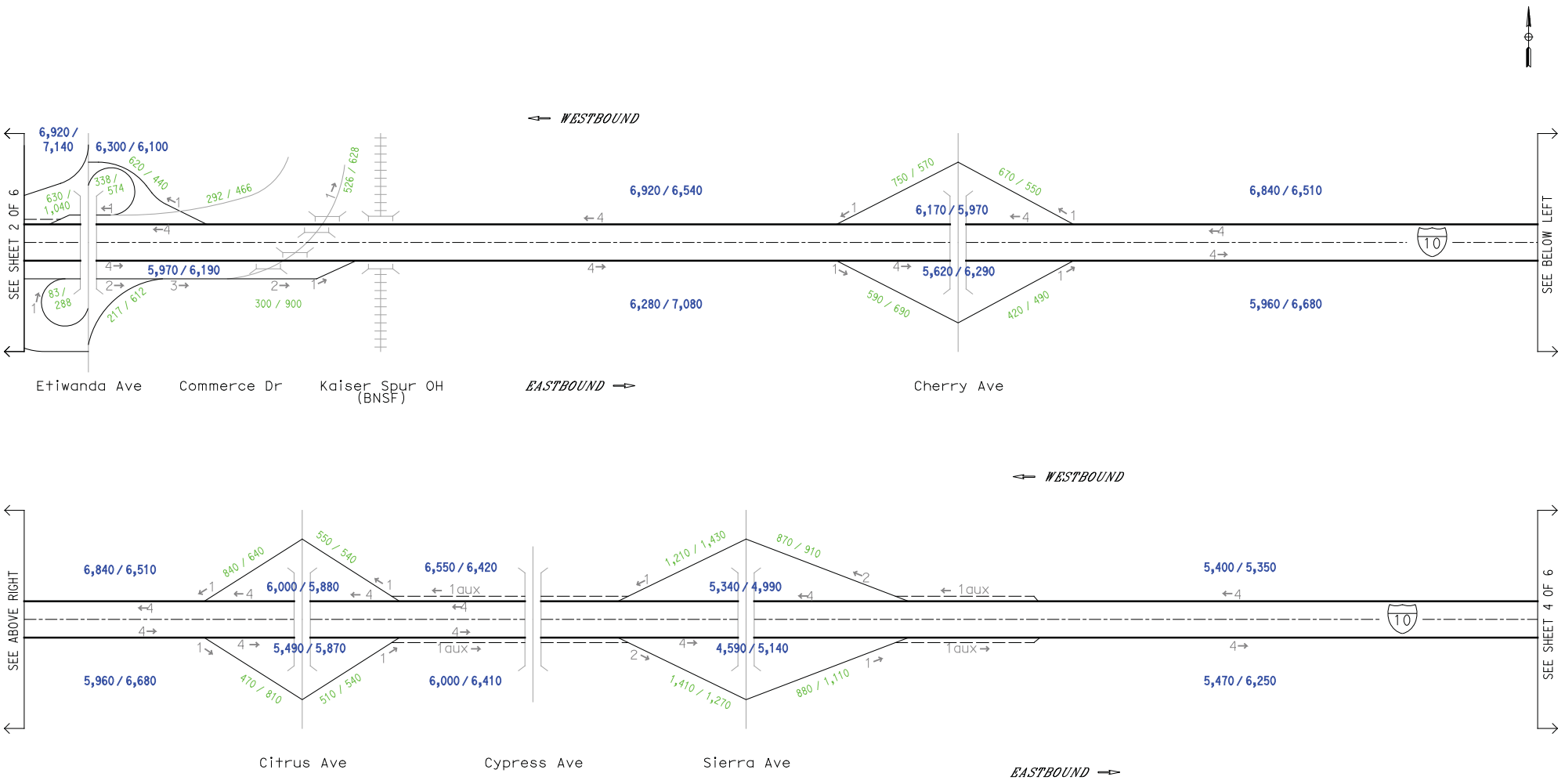


FIGURE 2.3.1
I-10 CORRIDOR STUDY PA/ED
EXISTING (YEAR 2012) CONDITIONS
FREEWAY TRAFFIC VOLUMES AND LANE CONFIGURATION
SHEET 2 OF 6



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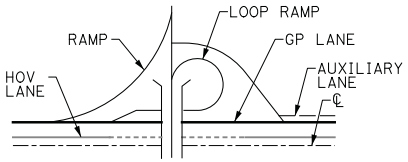
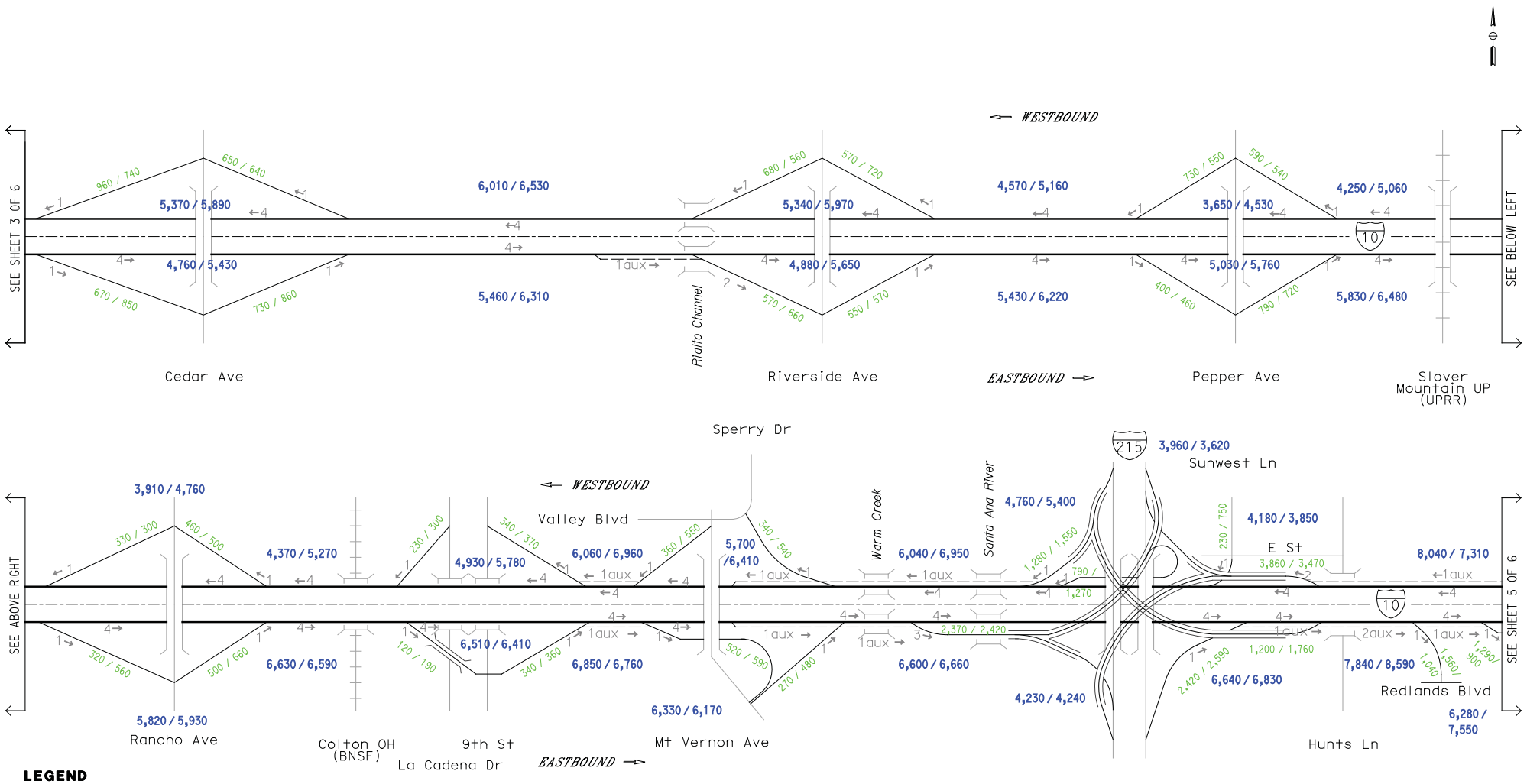


FIGURE 2.3.1
I-10 CORRIDOR STUDY PA/ED
EXISTING (YEAR 2012) CONDITIONS
FREEWAY TRAFFIC VOLUMES AND LANE CONFIGURATION
SHEET 3 OF 6



LEGEND

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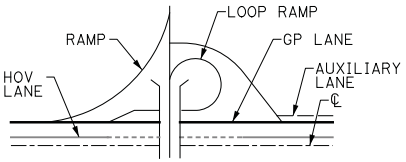


FIGURE 2.3.1
I-10 CORRIDOR STUDY PA/ED
EXISTING (YEAR 2012) CONDITIONS
FREEWAY TRAFFIC VOLUMES AND LANE CONFIGURATION
SHEET 4 OF 6

August 2014

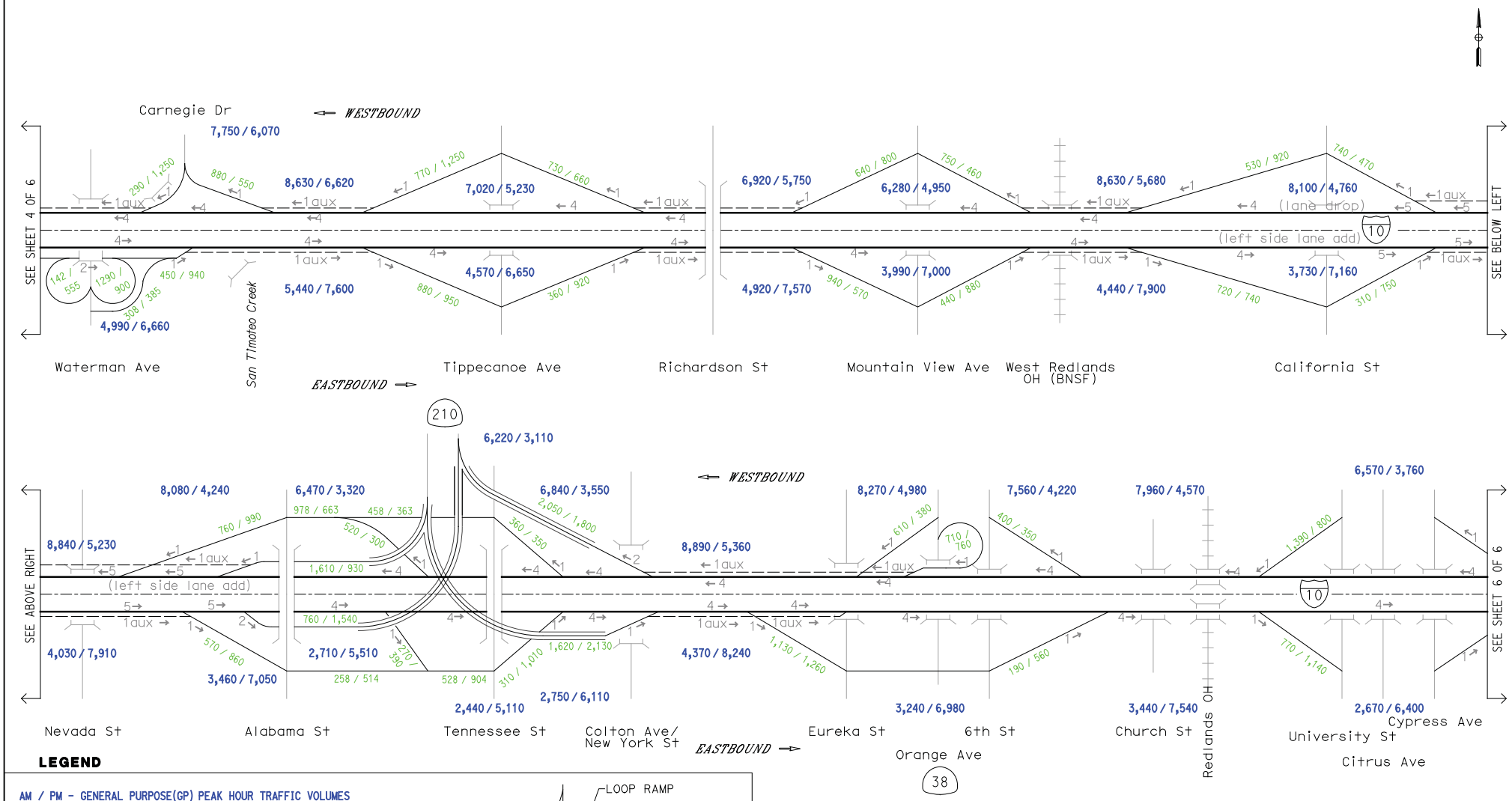
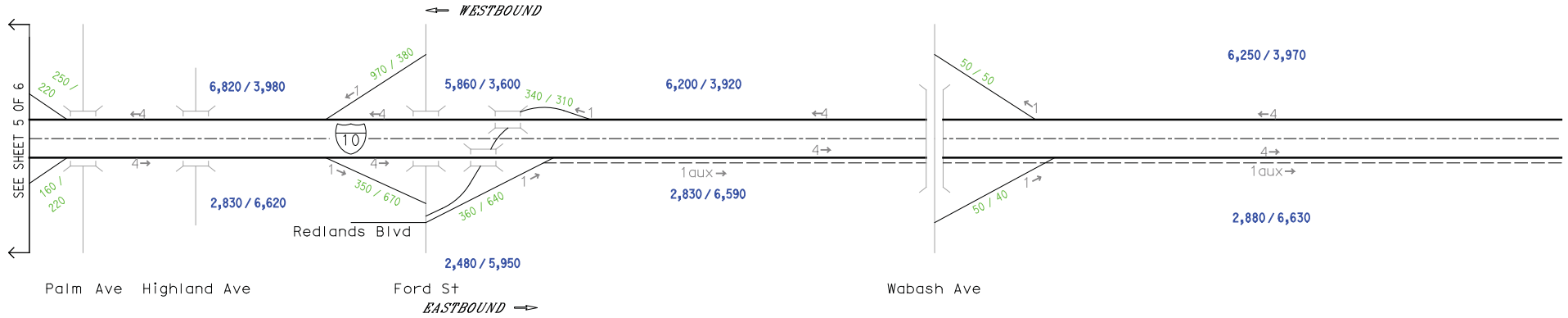


FIGURE 2.3.1
I-10 CORRIDOR STUDY PA/ED
EXISTING (YEAR 2012) CONDITIONS
FREEWAY TRAFFIC VOLUMES AND LANE CONFIGURATION
SHEET 5 OF 6



LEGEND

AM / PM - GENERAL PURPOSE(GP) PEAK HOUR TRAFFIC VOLUMES
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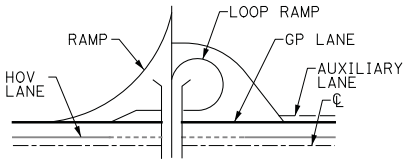


FIGURE 2.3.1
I-10 CORRIDOR STUDY PA/ED
EXISTING (YEAR 2012) CONDITIONS
FREEWAY TRAFFIC VOLUMES AND LANE CONFIGURATION
SHEET 6 OF 6

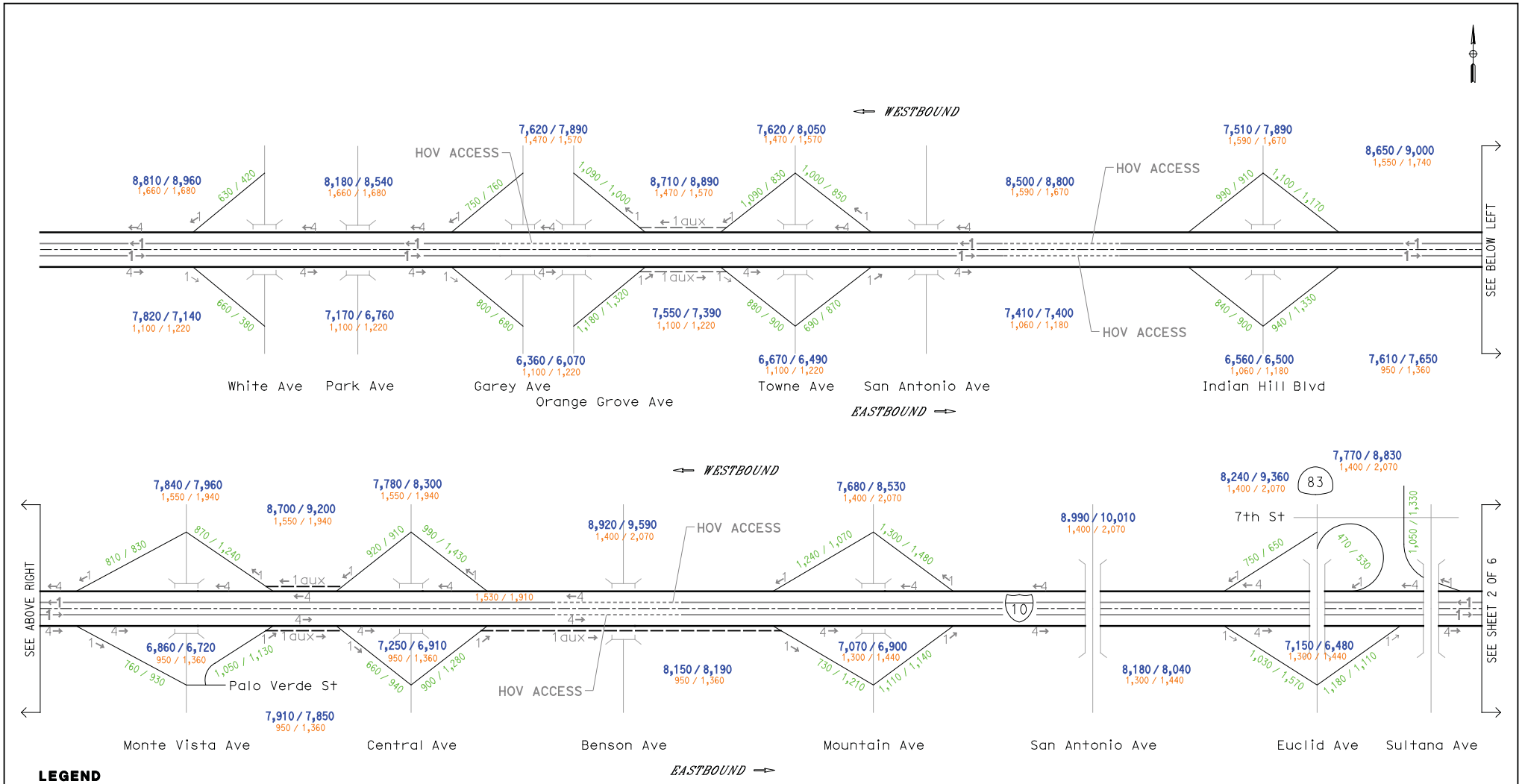
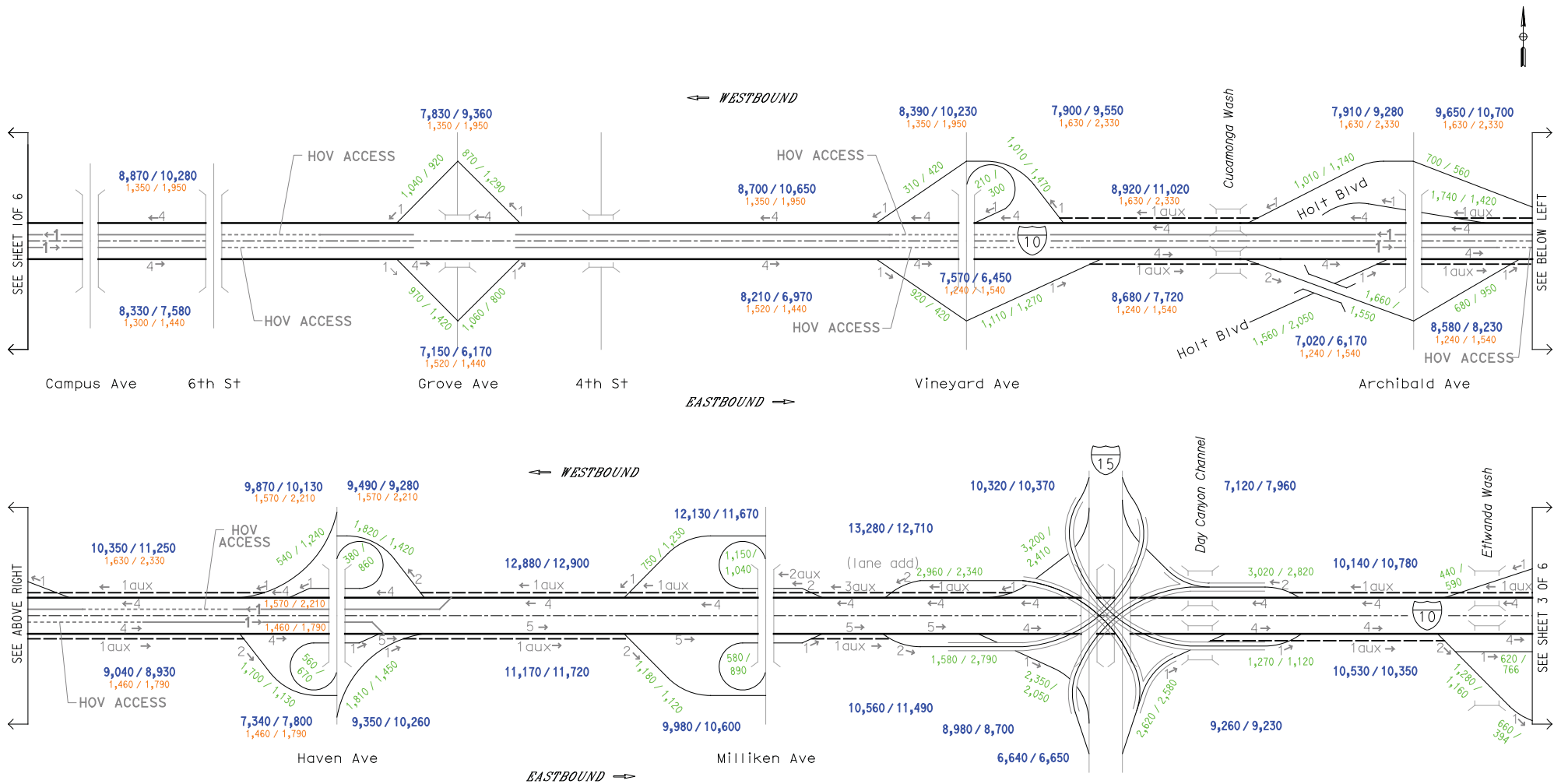


FIGURE 2.4.2
I-10 CORRIDOR STUDY PA/ED
ALTERNATIVE 1-NO BUILD (YEAR 2045) CONDITIONS
FREEWAY TRAFFIC VOLUMES AND LANE CONFIGURATION
SHEET 1 OF 6



LEGEND

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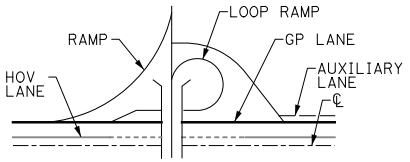
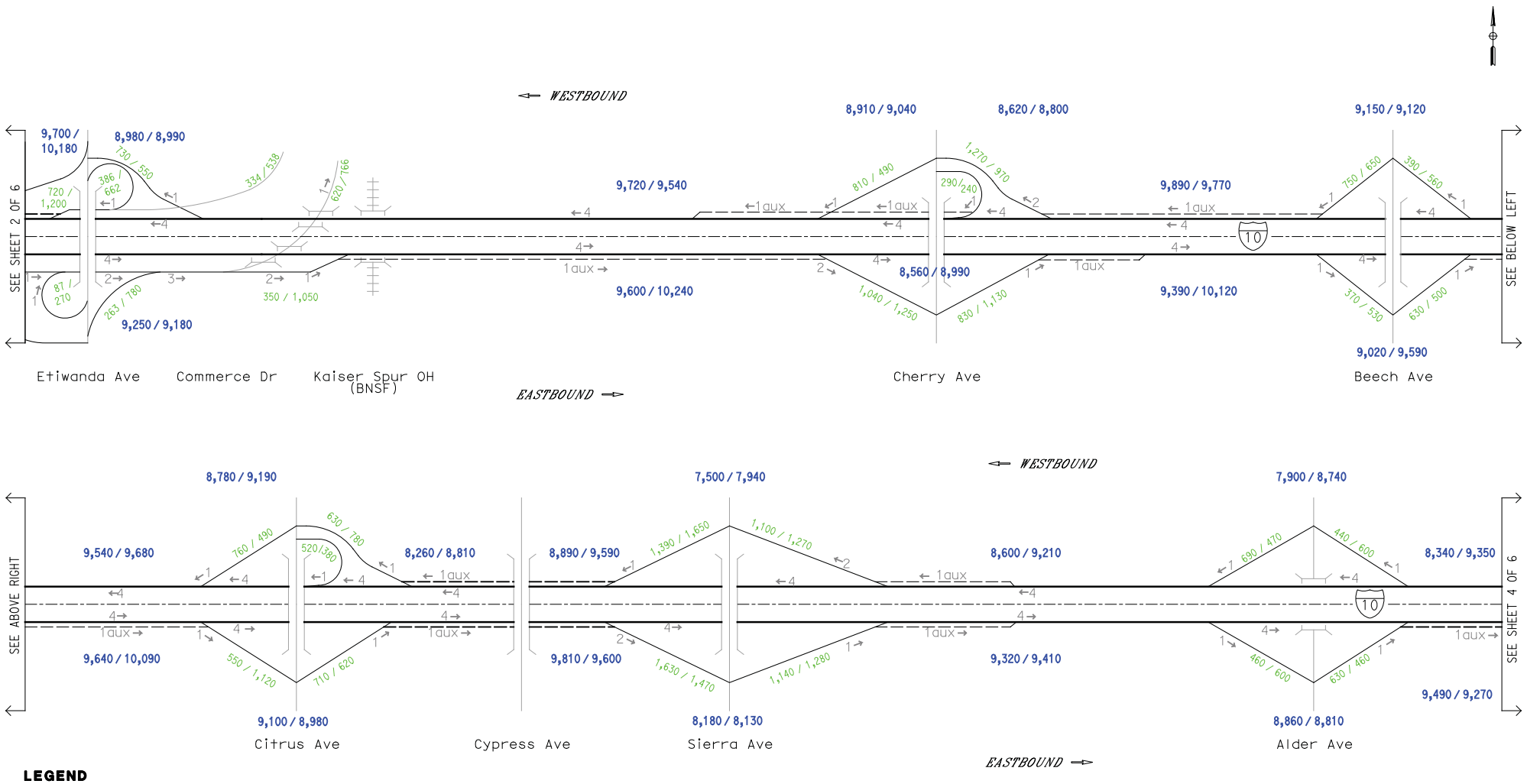


FIGURE 2.4.2
I-10 CORRIDOR STUDY PA/ED
ALTERNATIVE 1-NO BUILD (YEAR 2045) CONDITIONS
FREEWAY TRAFFIC VOLUMES AND LANE CONFIGURATION
SHEET 2 OF 6



LEGEND

AM / PM - GENERAL PURPOSE(GP) PEAK HOUR TRAFFIC VOLUMES
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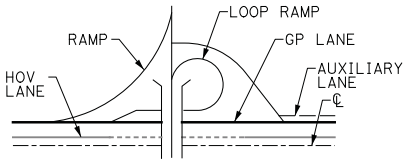
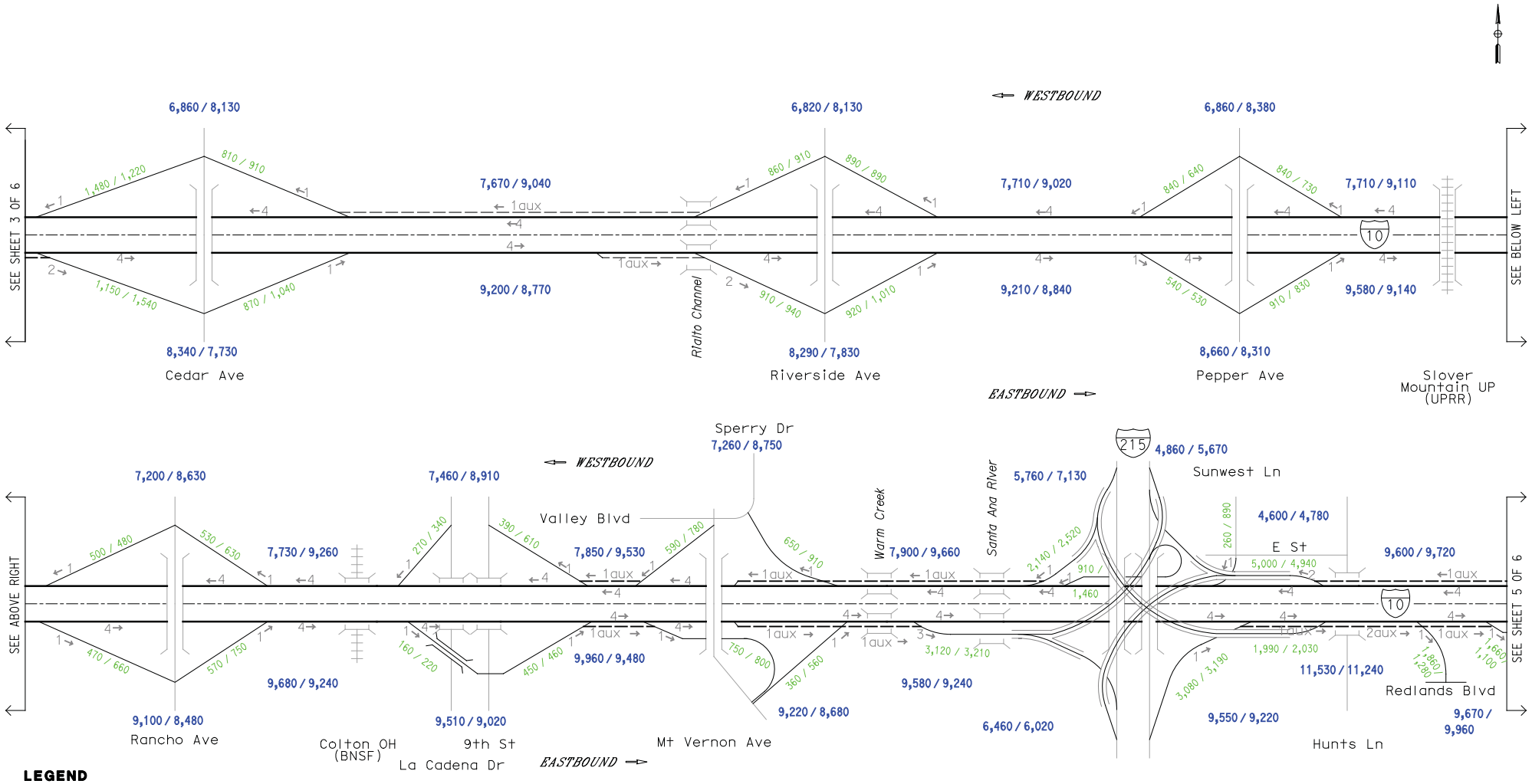


FIGURE 2.4.2
I-10 CORRIDOR STUDY PA/ED
ALTERNATIVE 1-NO BUILD (YEAR 2045) CONDITIONS
FREEWAY TRAFFIC VOLUMES AND LANE CONFIGURATION
SHEET 3 OF 6



LEGEND

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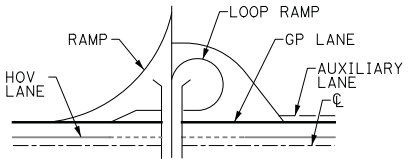
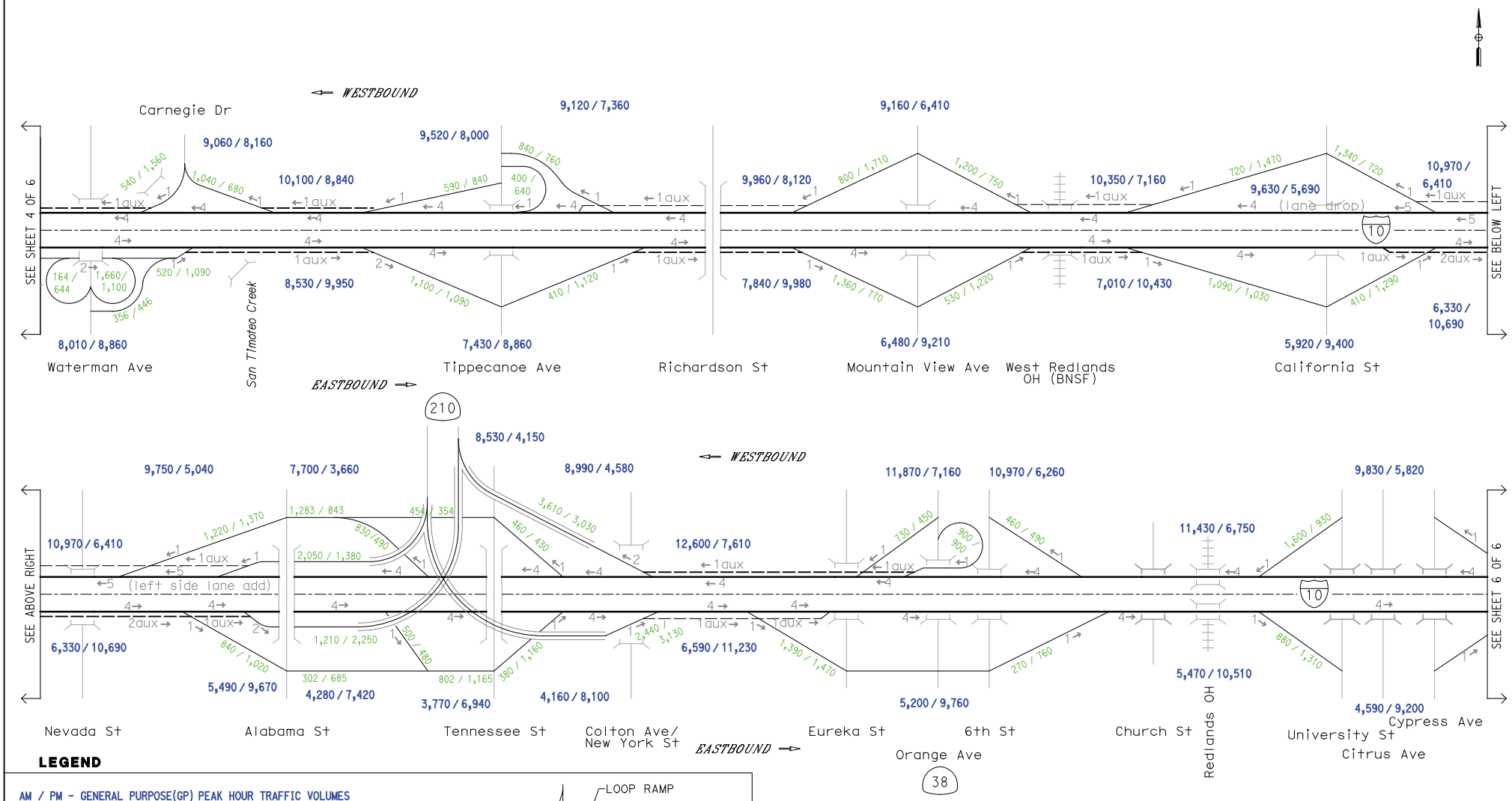


FIGURE 2.4.2
I-10 CORRIDOR STUDY PA/ED
ALTERNATIVE 1-NO BUILD (YEAR 2045) CONDITIONS
FREEWAY TRAFFIC VOLUMES AND LANE CONFIGURATION
SHEET 4 OF 6



LEGEND

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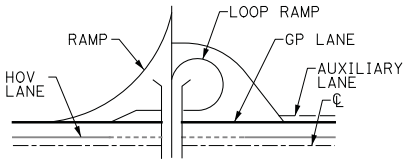
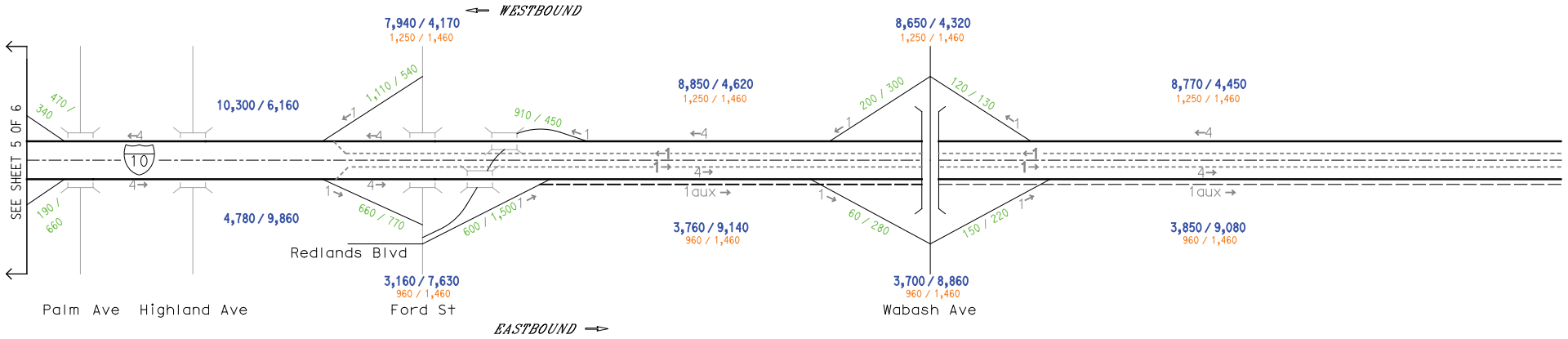


FIGURE 2.4.2
I-10 CORRIDOR STUDY PA/ED
ALTERNATIVE 1-NO BUILD (YEAR 2045) CONDITIONS
FREEWAY TRAFFIC VOLUMES AND LANE CONFIGURATION
SHEET 5 OF 6



LEGEND

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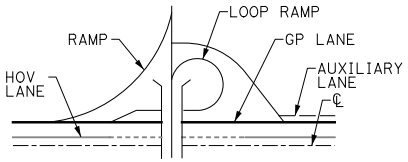
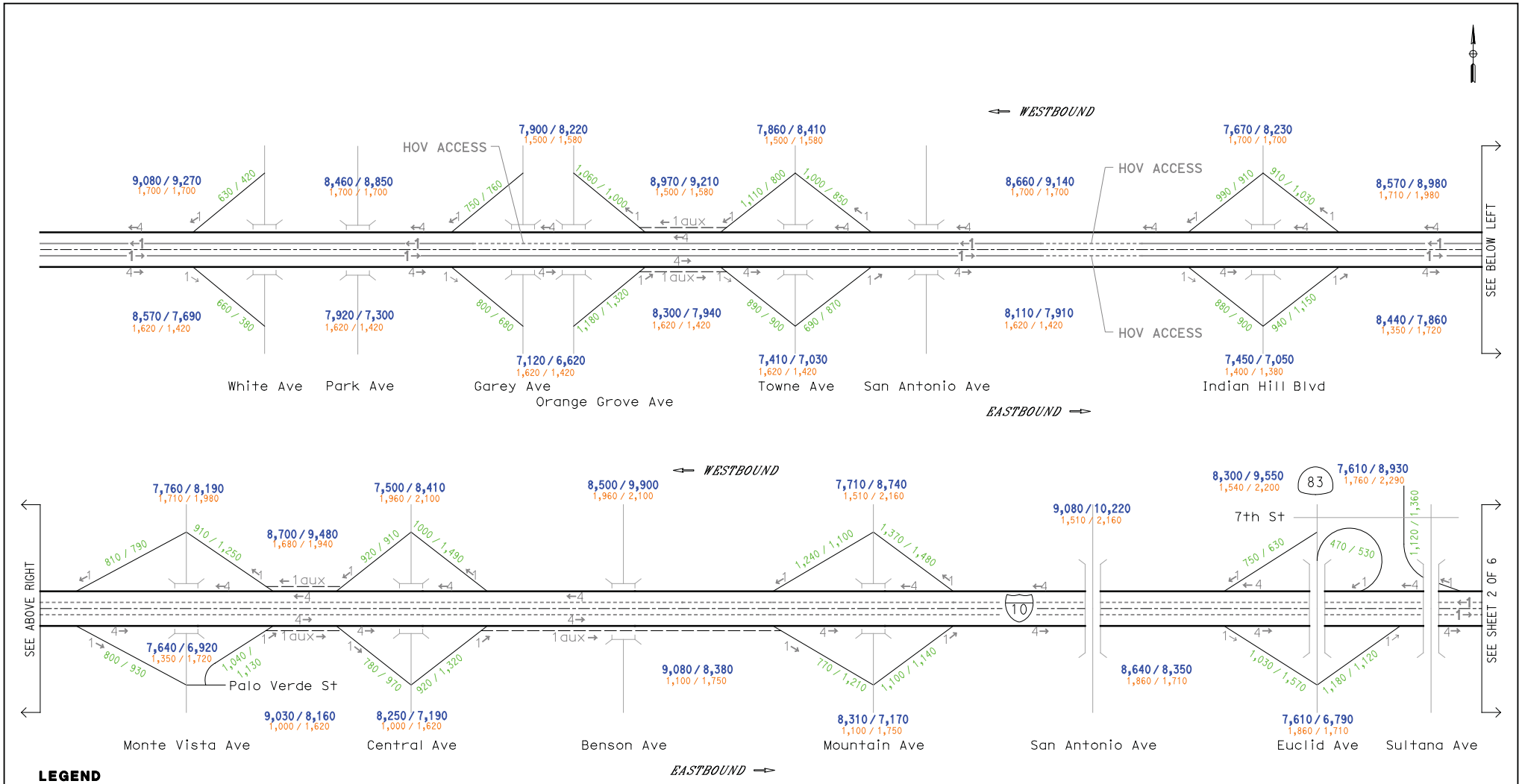


FIGURE 2.4.2
I-10 CORRIDOR STUDY PA/ED
ALTERNATIVE 1-NO BUILD (YEAR 2045) CONDITIONS
FREEWAY TRAFFIC VOLUMES AND LANE CONFIGURATION
SHEET 6 OF 6



LEGEND

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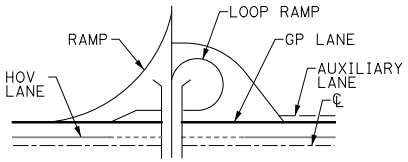
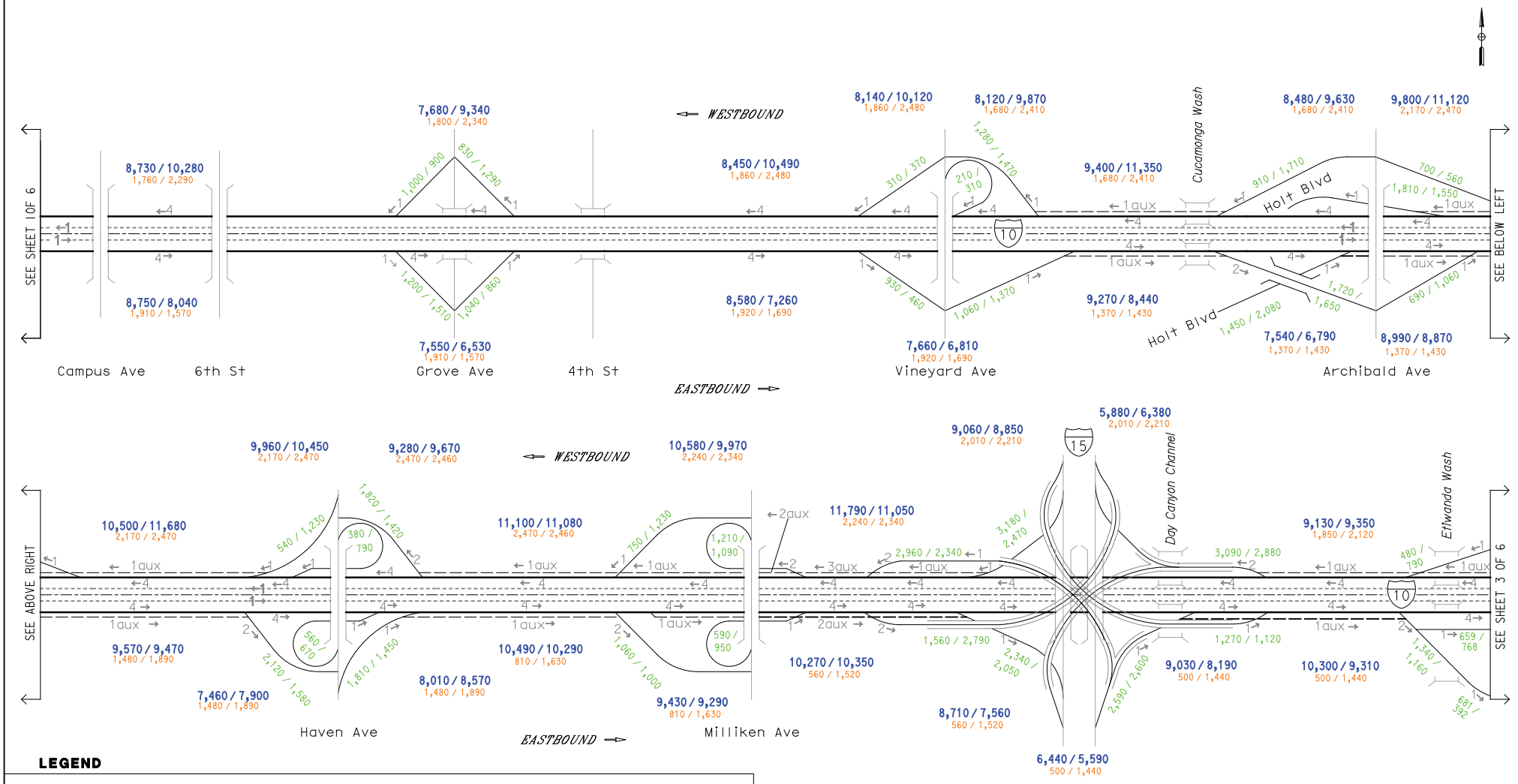


FIGURE 2.5.2
I-10 CORRIDOR STUDY PA/ED
ALTERNATIVE 2-HOV (YEAR 2045) CONDITIONS
FREEWAY TRAFFIC VOLUMES AND LANE CONFIGURATION
SHEET 1 OF 6



LEGEND

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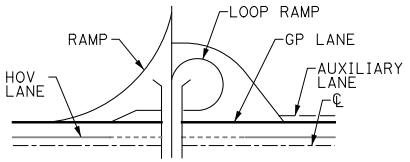
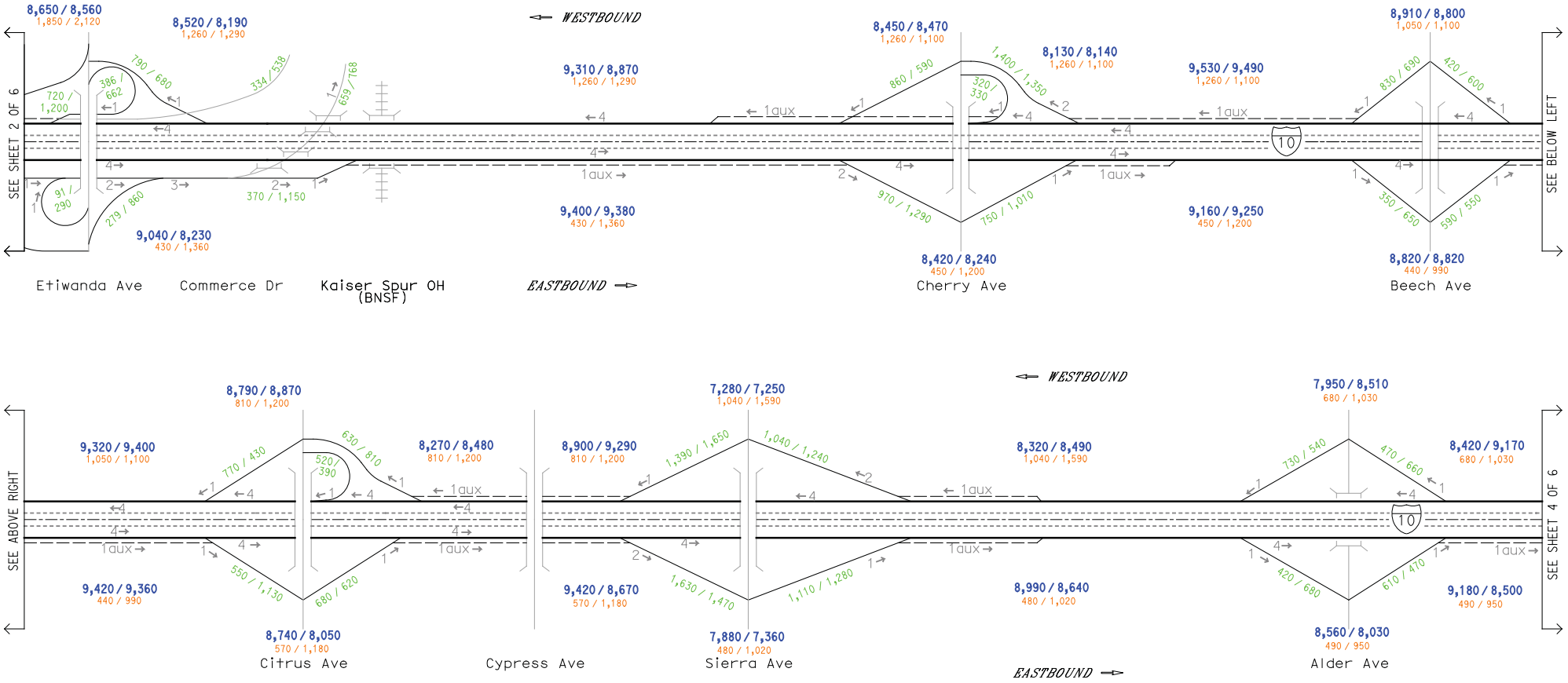


FIGURE 2.5.2
I-10 CORRIDOR STUDY PA/ED
ALTERNATIVE 2-HOV (YEAR 2045) CONDITIONS
FREEWAY TRAFFIC VOLUMES AND LANE CONFIGURATION
SHEET 2 OF 6

August 2014



LEGEND

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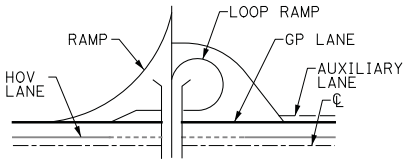
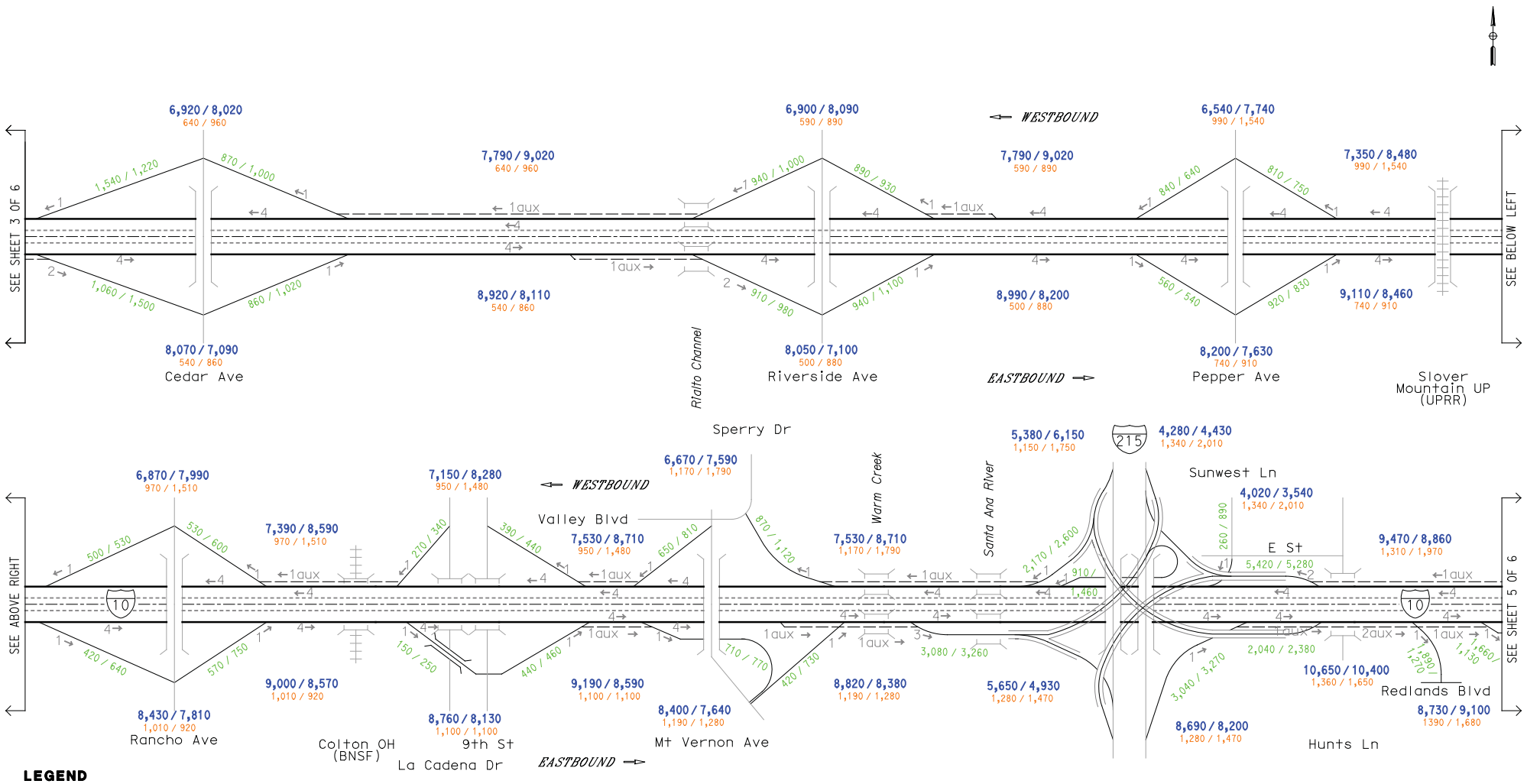


FIGURE 2.5.2
I-10 CORRIDOR STUDY PA/ED
ALTERNATIVE 2-HOV (YEAR 2045) CONDITIONS
FREEWAY TRAFFIC VOLUMES AND LANE CONFIGURATION
SHEET 3 OF 6

August 2014



LEGEND

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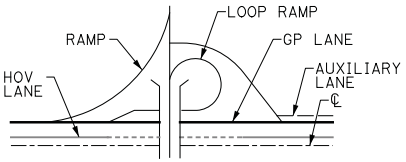
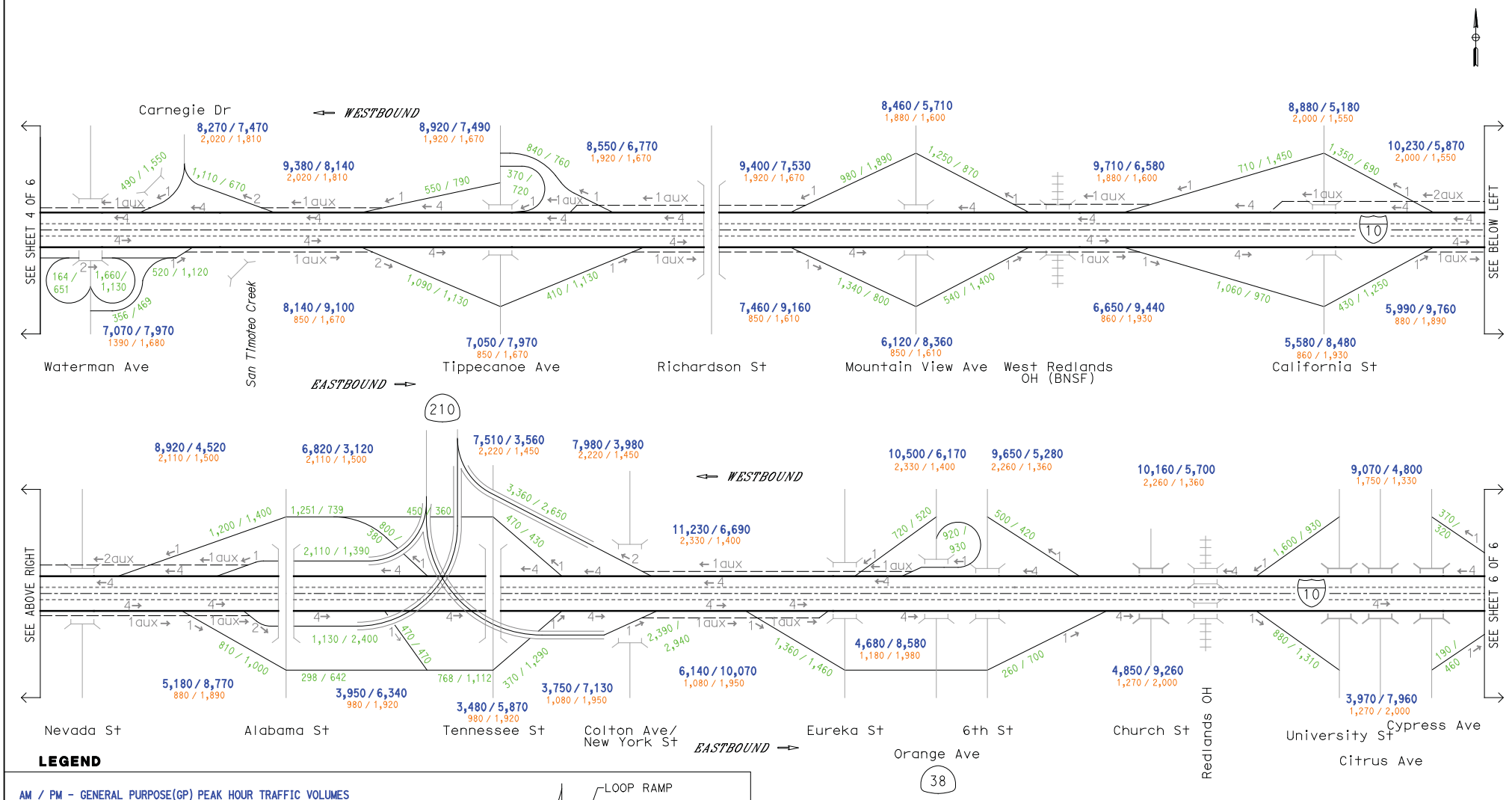


FIGURE 2.5.2
I-10 CORRIDOR STUDY PA/ED
ALTERNATIVE 2-HOV (YEAR 2045) CONDITIONS
FREEWAY TRAFFIC VOLUMES AND LANE CONFIGURATION
SHEET 4 OF 6

August 2014



LEGEND

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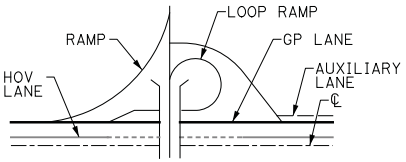
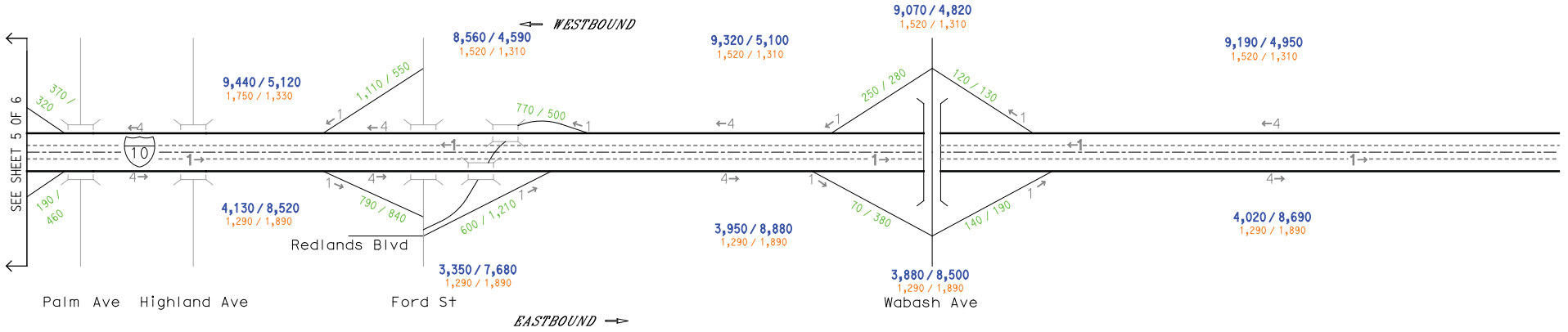


FIGURE 2.5.2
I-10 CORRIDOR STUDY PA/ED
ALTERNATIVE 2-HOV (YEAR 2045) CONDITIONS
FREEWAY TRAFFIC VOLUMES AND LANE CONFIGURATION
SHEET 5 OF 6



LEGEND

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←1 - # OF GP, RAMP OR HOV LANES
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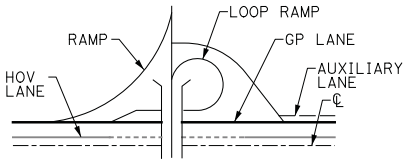


FIGURE 2.5.2
I-10 CORRIDOR STUDY PA/ED
ALTERNATIVE 2-HOV (YEAR 2045) CONDITIONS
FREEWAY TRAFFIC VOLUMES AND LANE CONFIGURATION
SHEET 6 OF 6

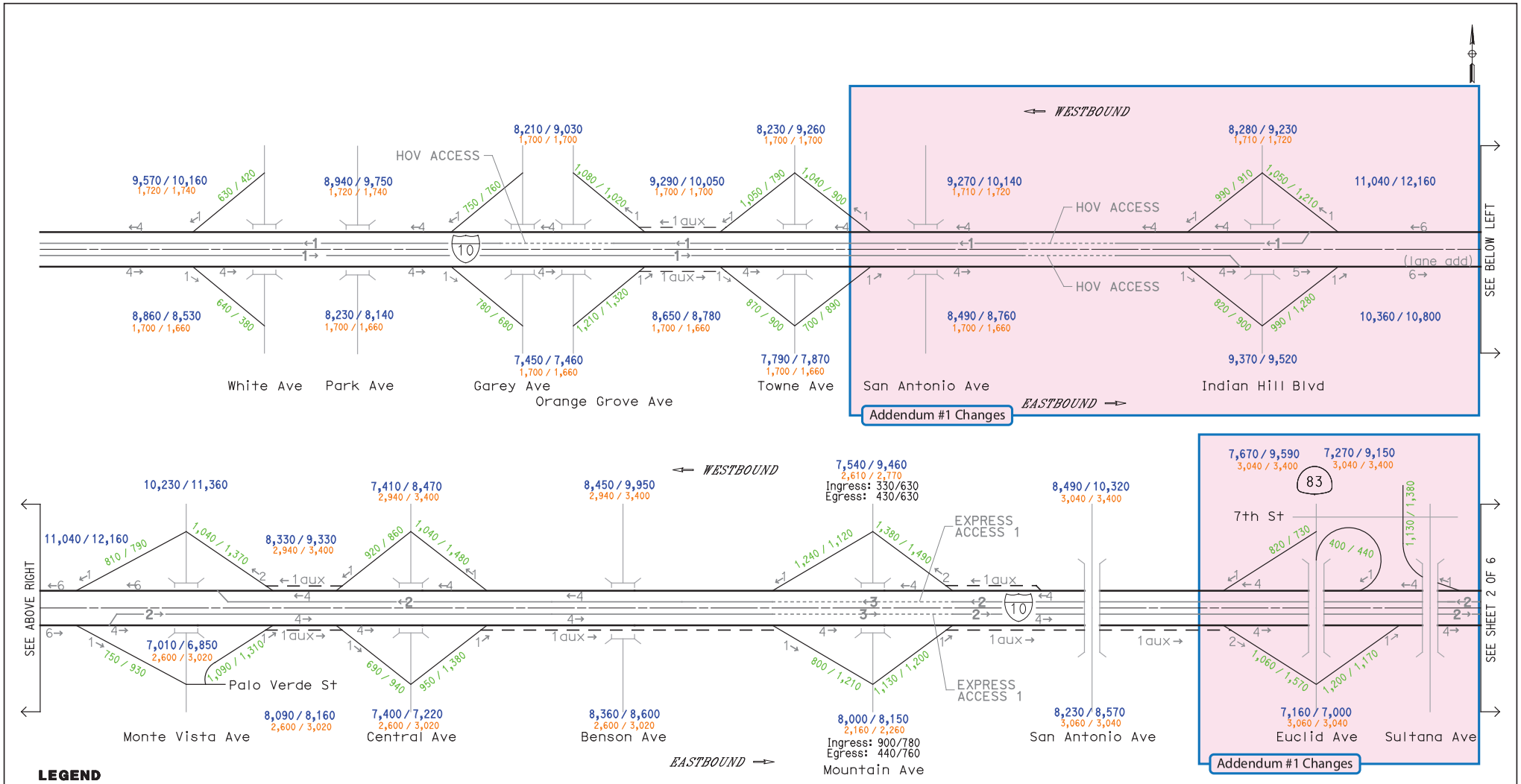
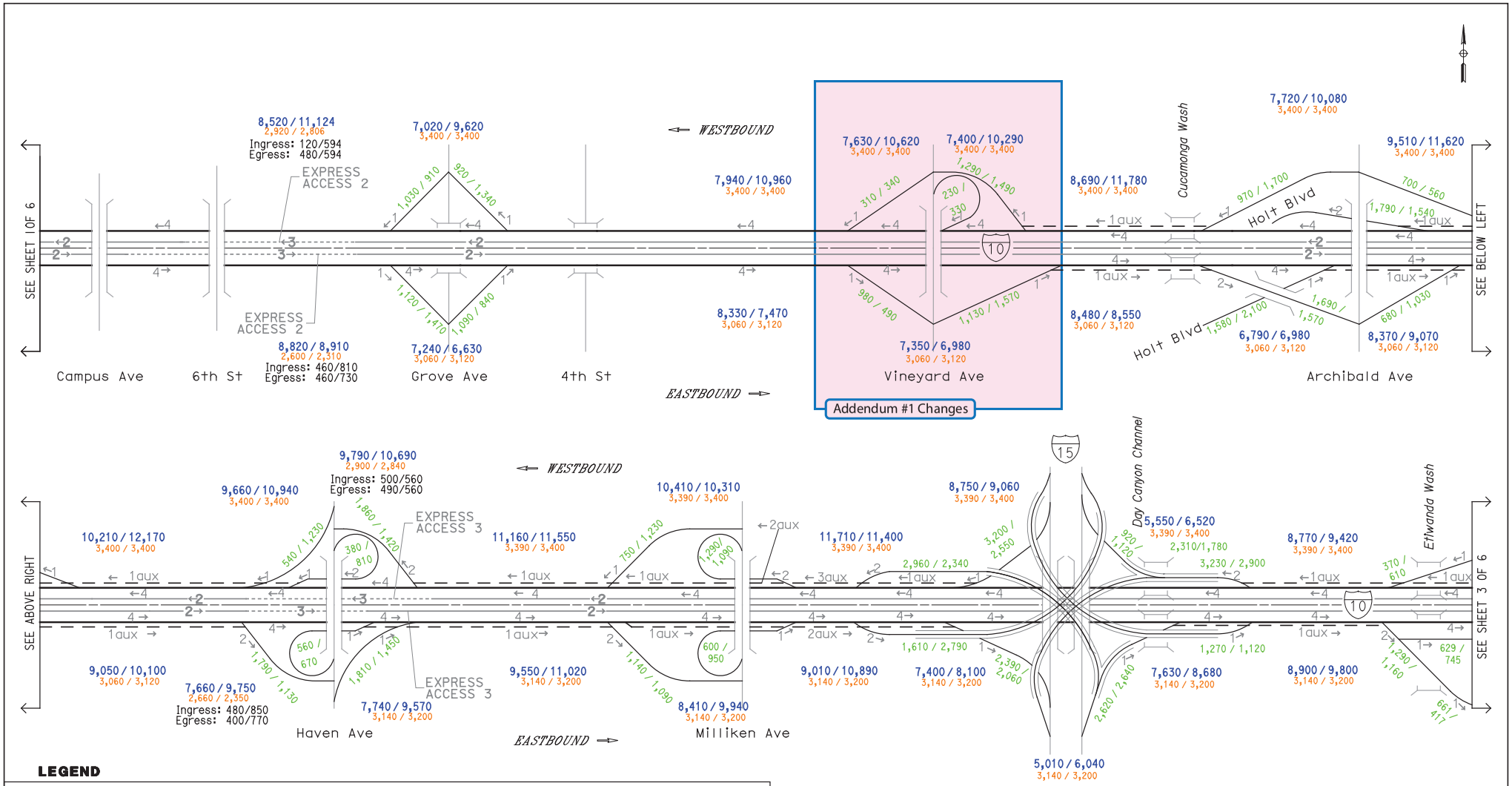


FIGURE 2.6.2
I-10 CORRIDOR STUDY PA/ED
ALTERNATIVE 3 - EXPRESS (YEAR 2045)
FREEWAY TRAFFIC VOLUMES
AND LANE CONFIGURATION

SHEET 1 OF 6



LEGEND

AM / PM - GENERAL PURPOSE(GP) PEAK HOUR TRAFFIC VOLUMES
(GP PEAK HOUR TRAFFIC VOLUMES INCLUDE INGRESS AND EGRESS VOLUMES AT INTERMEDIATE ACCESS LOCATIONS FOR THE EXPRESS LANES)

AM / PM - RAMP PEAK HOUR TRAFFIC VOLUMES

AM/PM - HIGH OCCUPANCY VEHICLES(HOV) OR EXPRESS LANES PEAK HOUR TRAFFIC VOLUMES

←1 - # OF GP, RAMP OR EXPRESS/HOV LANES

← 1aux - # OF AUXILIARY LANES

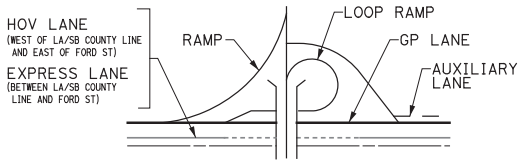
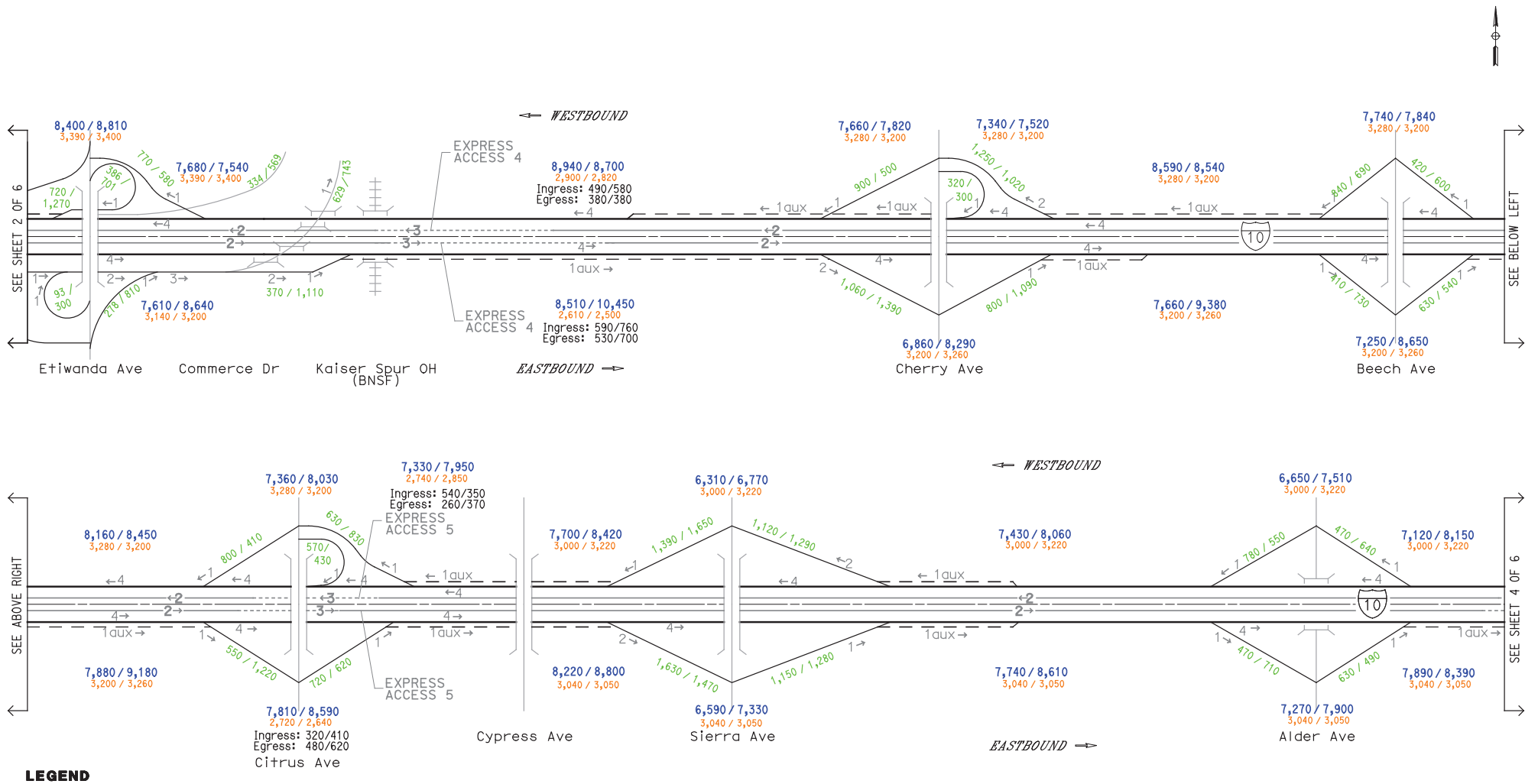


FIGURE 2.6.2
I-10 CORRIDOR STUDY PA/ED
ALTERNATIVE 3 - EXPRESS (YEAR 2045)
FREEWAY TRAFFIC VOLUMES
AND LANE CONFIGURATION

SHEET 2 OF 6



LEGEND

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(GP PEAK HOUR TRAFFIC VOLUMES INCLUDE INGRESS AND EGRESS VOLUMES AT INTERMEDIATE ACCESS LOCATIONS FOR THE EXPRESS LANES)

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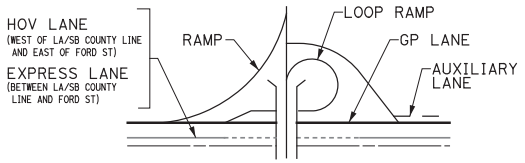
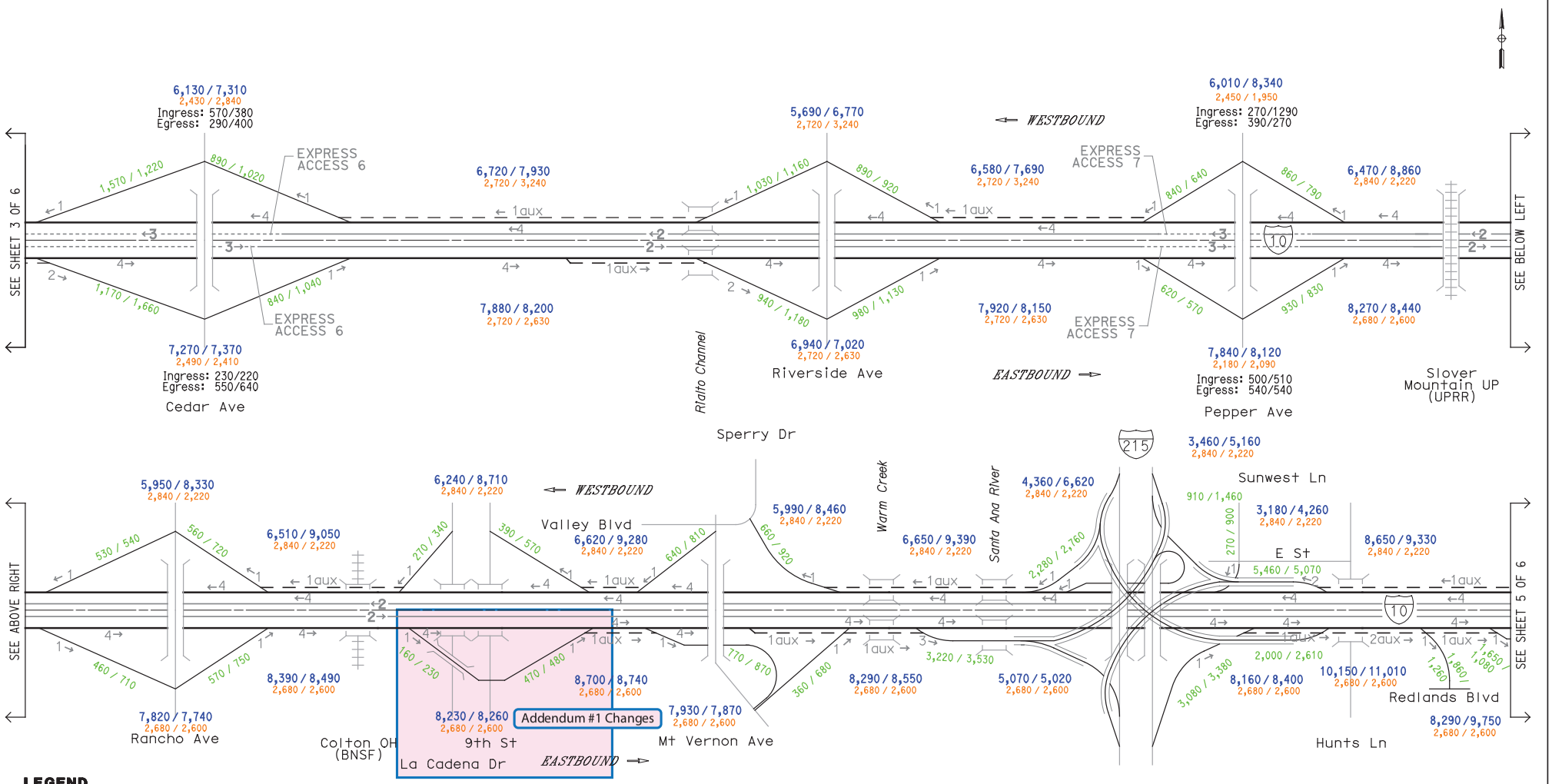


FIGURE 2.6.2
I-10 CORRIDOR STUDY PA/ED
ALTERNATIVE 3 - EXPRESS (YEAR 2045)
FREEWAY TRAFFIC VOLUMES
AND LANE CONFIGURATION

SHEET 3 OF 6



LEGEND

AM / PM - GENERAL PURPOSE(GP) PEAK HOUR TRAFFIC VOLUMES
(GP PEAK HOUR TRAFFIC VOLUMES INCLUDE INGRESS AND EGRESS VOLUMES AT INTERMEDIATE ACCESS LOCATIONS FOR THE EXPRESS LANES)

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←1 - # OF GP, RAMP OR EXPRESS/HOV LANES

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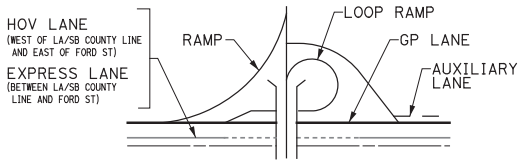
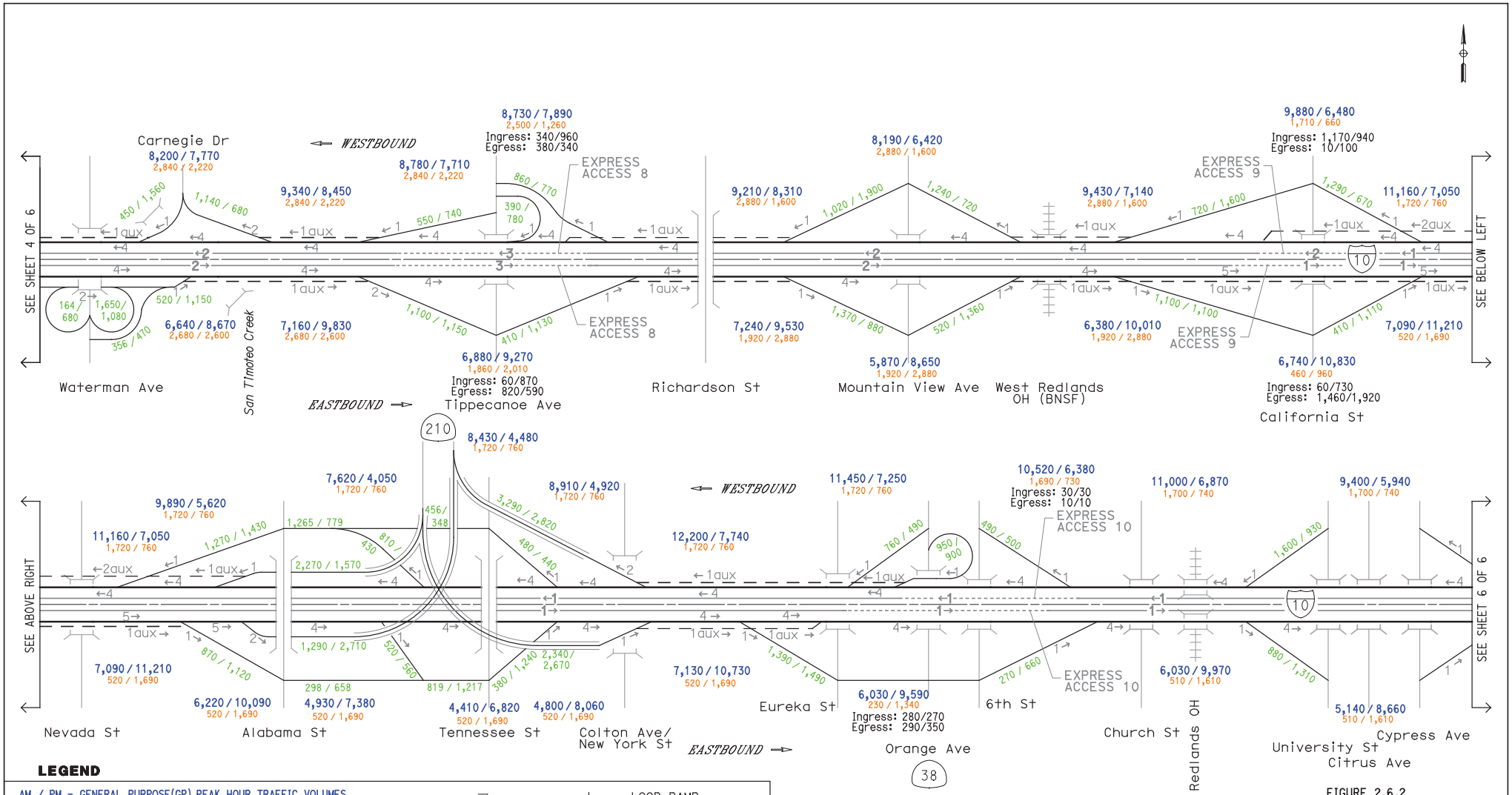


FIGURE 2.6.2
I-10 CORRIDOR STUDY PA/ED
ALTERNATIVE 3 - EXPRESS (YEAR 2045)
FREEWAY TRAFFIC VOLUMES
AND LANE CONFIGURATION

SHEET 4 OF 6



LEGEND

AM / PM - GENERAL PURPOSE(GP) PEAK HOUR TRAFFIC VOLUMES
(GP PEAK HOUR TRAFFIC VOLUMES INCLUDE INGRESS AND EGRESS VOLUMES AT INTERMEDIATE ACCESS LOCATIONS FOR THE EXPRESS LANES)

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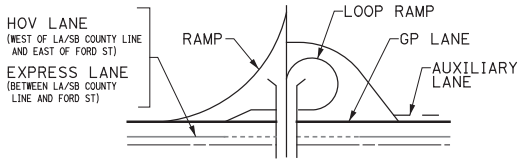
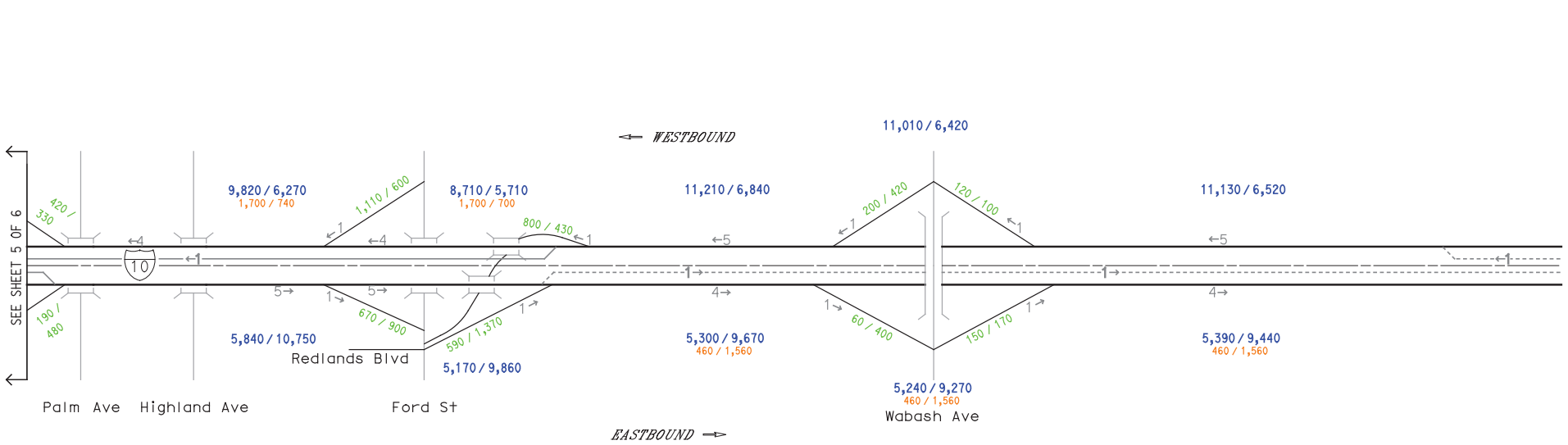


FIGURE 2.6.2
I-10 CORRIDOR STUDY PA/ED
ALTERNATIVE 3 - EXPRESS (YEAR 2045)
FREEWAY TRAFFIC VOLUMES
AND LANE CONFIGURATION

SHEET 5 OF 6



LEGEND

AM / PM - GENERAL PURPOSE(GP) PEAK HOUR TRAFFIC VOLUMES
(GP PEAK HOUR TRAFFIC VOLUMES INCLUDE INGRESS AND EGRESS VOLUMES AT INTERMEDIATE ACCESS LOCATIONS FOR THE EXPRESS LANES)

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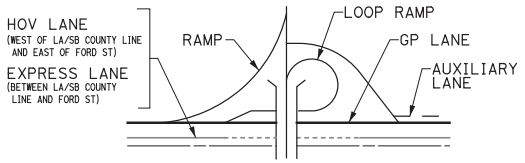

FIGURE 2.6.2
I-10 CORRIDOR STUDY PA/ED
ALTERNATIVE 3 - EXPRESS (YEAR 2045)
FREEWAY TRAFFIC VOLUMES
AND LANE CONFIGURATION

SHEET 6 OF 6

Addendum #1 February 2016

ATTACHMENT C

Project Category Determination

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Governments SANBAG Working Together

San Bernardino Associated Governments

1170 W. 3rd Street, 2nd Fl, San Bernardino, CA 92410
Phone: (909) 884-8276 Fax: (909) 885-4407
Web: www.sanbag.ca.gov

TRANSPORTATION MEASURE I

•San Bernardino County Transportation Commission •San Bernardino County Transportation Authority
•San Bernardino County Congestion Management Agency •Service Authority for Freeway Emergencies

October 6, 2015

Jesus Paez, Project Director
Caltrans District 8
464 West Fourth Street
San Bernardino, Ca 92401-1400

Subject: **I-10 Corridor Project, EA 0C2500**
08-SBd-10 PM 0.0/R37.0, 07-LA-10 PM 44.9/48.3

Reference: **Project Development Category Determination**

Dear Jesus:

The San Bernardino Associated Governments (SANBAG), as lead agency, requests approval of the Project Development Category Determination for the I-10 Corridor Project. According to Caltrans' Project Development Procedures Manual, Chapter 8, Section 5, Project Development Categories, the I-10 Corridor Project is a Project Development Category 3 project based on the following reasons:

- The I-10 freeway is an existing access controlled facility.
- Revised Freeway Agreements are required for changes in access control and maintenance.
- New right of way is required.
- Route adoption is not required.

Should you have any question or need further information, please contact me at ccostello@sanbag.ca.gov or by phone at 909.884.8276.

Sincerely,

Project Development Category Determination Approval

Submitted by: _____
Chad Costello
Project Manager, SANBAG

Approved by: _____
Christy Connors
Deputy District Director
Design

Cc: Project Team
file

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ATTACHMENT D

Conceptual Layouts
(Separately Bound)

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ATTACHMENT E

Structure Advance Planning Studies
(Separately Bound)

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ATTACHMENT F

Preliminary Feasibility Study of I-10/I-15 Express Lane Direct Connector Ramps

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PARSONS

2201 Dupont Drive, Suite 200, Irvine, CA 92612 TEL: (949) 333-4500 FAX: (949) 263-1225 www.parsons.com

MEMORANDUM

Date: October 6, 2015

To: Chad Costello, SANBAG

From: David Speirs/Patti Tiberi, Parsons

Re: **I-10 Corridor Project, EA 0C2500**

Subject: **Preliminary Feasibility Study of Interstate 10 (I-10) and Interstate 15 (I-15) Express Lane Direct Connector Ramps**

1. INTRODUCTION

The San Bernardino Associated Governments (SANBAG), in partnership with the California Department of Transportation (Caltrans), completed a Preliminary Feasibility Study considering the potential implementation of tolled Express Lane direct connector ramps at the Interstate 10 (I-10) and Interstate 15 (I-15) system interchange in San Bernardino County. The proposed I-10 and I-15 Express Lane direct connectors, accommodated by adding new connector ramp facilities linking proposed Express Lanes along both mainlines, would provide additional mobility options for motorists traveling through the system interchange. The Express Lanes and the direct connectors would require single occupant vehicles (SOV) to pay a toll to use the facility while High Occupancy Vehicles (HOV) meeting the occupancy requirement would use the facility free of charge. As part of this preliminary study, Express Lane direct connectors between the proposed I-10 and I-15 Express Lanes were evaluated for feasibility considering the anticipated traffic demands, costs, benefits and financial viability. The I-10/I-15 Express Lane direct connectors, if implemented, would provide Express Lane system continuity between two of the County's major freeways and would enhance traffic operations on both I-10 and I-15 freeways at this system interchange.

The purpose of this memorandum is to summarize the preliminary study and evaluation of the I-10/I-15 Express Lane direct connectors which includes the following steps:

- Examine traffic demands in each direction and traffic forecasts for Express Lane volumes and corresponding revenues
- Develop a conceptual layout plan to analyze physical constraints and verify geometric feasibility of implementing Express Lane direct connector ramps
- Estimate the construction costs
- Determine the financial viability
- Evaluate the I-10 and I-15 freeway operations without the direct connectors
- Provide summary of related conclusions/ recommendations

The preliminary analysis is based on information developed for the I-10 and I-15 Corridor Projects which are currently in the environmental phase, including the I-10 Traffic Forecasts (Iteris, January 2014), the I-10 Traffic Study Report (Parsons, August 2014), I-15 Corridor Project Study Report-Project Development Support (Parsons Brinckerhoff, September 2014), and Level Two Traffic and Revenue Study Report (CDM Smith, September 2014).

2. PROJECT BACKGROUND

I-10 Corridor Project

The I-10 Corridor Project (EA 08-0C2500) proposes to add freeway lanes along the 33-mile segment of I-10 from the Los Angles/San Bernardino (LA/SB) County Line to Ford Street in Redlands. The project is currently in the Project Approval/Environmental Document (PA/ED) phase with three alternatives being evaluated. Alternative 1 is a No Build alternative. Alternative 2, which is carried from the Project Study Report/Project Development Support (PSR/PDS) completed in 2006, would extend the existing HOV lane (one lane each direction) from its current terminus at Haven Avenue to Ford Street, a distance of 25 miles. Alternative 3, which was conceptualized in 2011 following SANBAG's preliminary toll feasibility studies, provides two tolled Express Lanes in each direction from the LA/SB County Line to California Street and one Express Lane in each direction from California Street to Ford Street, a distance of 33 miles.

The I-10 Express Lanes would be buffer-separated from the general purpose lanes via striping, and would provide 10 at-grade ingress/egress (I/E) access points in each direction. The access points are typically spaced at 3 to 4 mile intervals and have been located to provide access to both the system and local interchanges, while meeting the required weaving distances to the downstream/upstream ramps, in accordance with the Caltrans Traffic Operations Policy Direction (TOPD) 11-02. A TOPD typical access point geometric plan is depicted in Figure 1 below. In the vicinity of the I-10/I-15 system interchange, the proposed EB/WB Haven Avenue access points are located approximately 1.8 miles west of I-15 and the proposed EB/WB Etiwanda Avenue access points are located approximately 2.2 miles east of I-15. These access points are designed as combined I/E access points with a weave lane to facilitate the weaving between the No. 2 Express Lane and the No. 1 general purpose lane traffic. (For reference, the proposed access points at Haven Avenue are graphically shown on the attached conceptual design plan for the Express Lane direct connectors, Exhibit A).

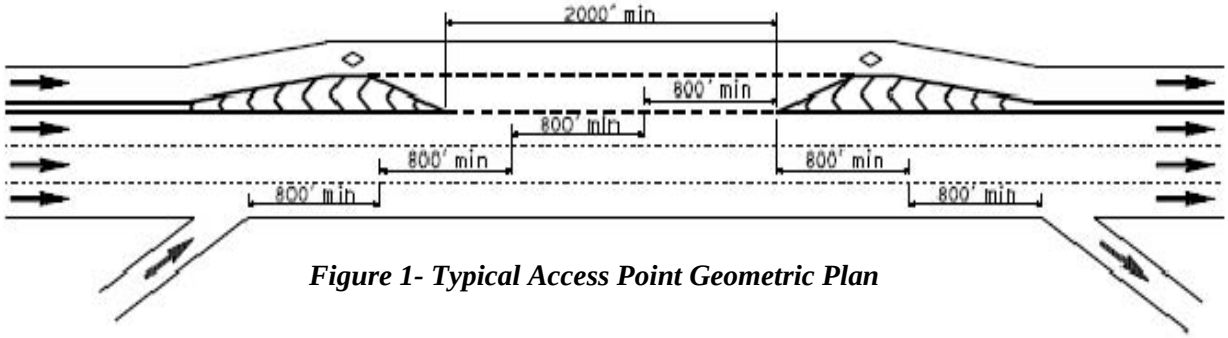


Figure 1- Typical Access Point Geometric Plan

Source: TOPD 11-02, dated March 23, 2011
Note: For I-10 Corridor Project, the 2,000' access opening is provided at all access points. Due to geometric constraints at several locations, the proposed ingress or egress weaving distance is slightly lower than 800' per lane. These locations have been discussed in detail with Caltrans and documented in the project's Decision Document A-2.

I-15 Corridor Project

The I-15 Corridor Project (EA 08-0R800) proposes to add Express Lanes in each direction along I-15 from Cantu Galleano Ranch Road to State Route 210, approximately 13 miles. The project is currently in the PA/ED phase which began in 2014 and is evaluating a No Build Alternative (Alternative 1) and one build alternative. Build Alternative 2 proposes to add two Express Lanes in each direction from Cantu Galleano Ranch Road to SR-210 and one Express Lane in each direction from SR-210 to Duncan Canyon Road. A future phase will extend the two Express Lanes northerly in each direction to the US-395.

Similar to the I-10, the I-15 Express Lanes are buffer-separated from the general purpose lanes via striping, with five at-grade I/E access points provided in each direction typically spaced at 3 to 4 mile intervals. In the vicinity of the I-10/I-15 system interchange, the proposed NB/SB Jurupa Street access points are located approximately 1.4 miles south of I-10 and the NB/SB Arrow Highway access points are located approximately 2.2 miles north of I-10. These access points are designed as combined I/E access points with a weave lane, generally in accordance with the TOPD 11-02 requirements as depicted in Figure 1.

3. TRAFFIC DEMAND AND POTENTIAL REVENUE GENERATION BY THE EXPRESS LANE DIRECT CONNECTORS

There are potentially four Express Lane direct connectors to serve the Express Lane demand through the I-10/I-15 system interchange (a connector in each of the 4 quadrants). As listed below, each of the potential Express Lane direct connector would serve two reciprocal movements with one lane in each direction as follows:

- E10-N15 and S15-W10 movements (Northwest Quadrant)
- E10-S15 and N15-W10 movements (Southwest Quadrant)
- W10-N15 and S15-E10 movements (Northeast Quadrant)
- W10-S15 and N15-E10 movements (Southeast Quadrant)

To determine the feasibility of each of the potential Express Lane direct connectors, the projected traffic demand and the potential for toll revenue generation were considered, as discussed in the following sections.

Traffic Demands and Potential Revenue Generation for the Express Lane Direct Connectors

The traffic volumes for the existing general purpose connector ramps at the I-10/I-15 system interchange were analyzed to consider the overall utilization and potential capacity requirements for each directional movement. Table 1 presents year 2045 traffic volume projections on the existing I-10/I-15 freeway-to-freeway connectors which were forecasted by Iteris in January 2014 in support of the I-10 Corridor Project Traffic Study Report (Parsons, August 2014). As shown in the table, the traffic volumes forecasted for the four movements in the NW and SW quadrants are projected to approach or exceed the capacity of the connectors. Because of high volumes on these existing connectors, it is estimated that some of the traffic currently using the general purpose lane connectors may favor utilizing the potential NW and SW Express Lane direct connectors if provided. In the NE and SE quadrants, the traffic demands for the four movements are projected to be below the existing capacity and therefore, are not projected to provide a significant utilization or benefit of the Express Lane direct connectors in these quadrants.

Table 1: I-10/I-15 Connector Volumes

Quadrant	Existing Connectors	No. of Lanes	Capacity (vph)	Alternative 3 (Express Lanes) 2045 Peak Hour Volume	
				a.m.	p.m.
NW	E10-N15 Conn	2	3,000	1,610	**2,790**
	S15-W10 Conn	2*	3,000*	**3,200**	2,550
SW	E10-S15 Conn	1	1,500	**2,390**	**2,060**
	N15-W10 Conn	2*	3,000*	**2,960**	2,340
NE	W10-N15 Conn	1	1,500	920	1,120
	S15-E10 Conn	2*	3,000*	1,270	1,120
SE	W10-S15 Conn	2*	3,000*	1,270	1,120
	N15-E10 Conn	2*	3,000*	2,620	2,640

**2-lane connector transitions to 1 lane near the freeway entry, reducing the capacity from 3,000 to 1,500 vphpl*
Boldface represents traffic demand reaching or exceeding the capacity.

Based upon the existing and forecast connector ramp volumes, the design team concluded that Express Lane direct connectors in the NW and SW quadrants may attract sufficient traffic volumes to warrant further investigation.

Accordingly, a separate Traffic and Revenue (T&R) Study was performed by CDM Smith (September 2014) for the I-10/I-15 Corridors. The study developed Express Lane traffic volume forecasts for both mainlines and the potential direct connector ramps using a complex traffic model that considered numerous regional factors including the typical commuter 'value of time', a detailed review of socio-economic growth forecasts, future development potential, and a review of future congestion patterns along both corridors. The model was used to estimate the anticipated toll rates necessary to regulate traffic volumes and maintain free flow speeds in the Express Lanes. The model also provided data regarding traffic demand and level of congestion within the adjacent general purpose lanes. Finally, the model was used to estimate the potential increase in projected annual revenues that would result with the inclusion of the Express Lane Direct Connectors.

The T&R study results indicate that the Express Lane direct connectors in the NW and SW quadrants are estimated to increase the toll revenues on I-10 and I-15 by approximately 11 percent in year 2030 and 8 percent in year 2046. Applying these percentages to the projected Express Lane revenues for the I-10 and I-15 Corridor would yield approximately $3.1 million (annual revenue) in 2030 and $9.1 million (annual revenue) in 2046.

4. GEOMETRIC FEASIBILITY OF THE EXPRESS LANE DIRECT CONNECTORS

In addition to development of traffic demand and the revenue forecasts, conceptual layout plans were developed to assess the geometric feasibility of Express Lane direct connector ramps in the NW and SW quadrants.

The existing I-10/I-15 interchange is a 4-level system interchange with connections in all directions via 4 connector ramps at-grade and 4 connector ramps on fly-over structures. Existing connector ramps have 5-foot left and 5 to 8-foot right shoulders and have curve radii ranging between 750 and 1,050 feet. Four connector ramps on structures have stopping sight distance (SSD) ranging between 35 and 40 mph.

In the vicinity of the I-10/I-15 system interchange, I-10 is an eight-lane divided freeway with four general purpose lanes in each direction. The existing I-10 cross section in this area is generally standard with 12-foot lanes and 10-foot left and right shoulders. There is a buffer-separated HOV facility on I-10 with one 11-foot HOV lane in each direction from the LA/SB County that terminates at Haven Avenue, approximately 1.8 miles west of I-15. The I-15 is an eight-lane divided freeway in the vicinity of the system interchange, consisting of four general purpose lanes in each direction with a 46-foot wide median which can accommodate two additional lanes in each direction. The existing I-15 cross section is generally standard with 12-foot lanes and 10-foot left and right shoulders. For the I-10 and I-15 Corridor Projects, minor reductions in the lane and shoulder widths are anticipated at the I-10/I-15 interchange, being previously reviewed and discussed in Caltrans geometric workshop meetings to confirm feasibility, in order to retain the existing I-10/I-15 grade separated structure.

The conceptual design of the Express Lane direct connectors has been coordinated with both the I-10 and I-15 Corridor Projects. Exhibit A attached to this memorandum provides a graphical presentation of the proposed Express Lane direct connectors in the NW and SW quadrants of the I-10/I-15 system interchange which are designed to join two Express Lanes in each direction on I-10 and I-15. The Express Lane direct connectors are proposed on elevated structures and connect to, or depart from, the I-10 and I-15 Express Lanes within the median as a third lane as shown in Exhibit A. The Express Lane direct connectors are planned to include curved horizontal alignments, with a curve radius of

approximately 960 feet and 1200 feet for the NW and SW Express Lane direct connector respectively, meeting the Caltrans minimum curve radius standard of 850 feet for the 50 mph connector design speed.

Each of the Express Lane direct connectors are proposed to include one 12-foot lane with left and right shoulders in each direction separated by a median barrier. The standard shoulder widths on connector ramps are 5 feet left and 10 feet right. However, due to the curved alignment, increasing the left shoulder width to 8 or 10 feet and reducing the right shoulder width to 8 feet is necessary in certain directions to provide the maximum stopping sight distance to the median barrier and outside bridge railing, while maintaining the maximum structure width limit of approximately 58 to 62 feet for a single-column bridge. Two-column structures were not proposed and do not appear to be feasible due to the limited space for column placement and the additional widening required on I-10 and I-15 to accommodate the wider two-column bents.

The basic configuration of the Express Lane direct connector ramps including the general alignment, lane and shoulder widths, stopping sight distance, and structure elements has been discussed with Caltrans at several I-10 and I-15 geometric workshops in 2013 and 2014, as well as with FHWA staff in January and July 2014. Preliminary review of the Express Lane direct connector structures has been performed to verify geometric feasibility, column placement and constructability of the proposed Express Lane direct connector alignments. Pursuant to discussions with FHWA during these meetings, there was general consensus that Express Lane direct connectors in the NW and SW quadrants are geometrically feasible, not precluded by the I-10 and I-15 Projects for future implementation, and warrant further consideration.

5. COST ESTIMATE AND FUNDING FOR THE EXPRESS LANE DIRECT CONNECTORS

After analyzing the preliminary concept plans for the potential Express Lane direct connectors in the NW and SW quadrants, the preliminary cost was estimated and is attached here as Exhibit B. The rough order of magnitude cost estimate is $517 million (this includes $50 million in right of way costs).

As depicted in the conceptual layout plan and reflected in the preliminary cost estimate, the Express Lane direct connectors in the NW and SW quadrants would require substantial construction impacts and have significant right of way impacts. Currently, there is no funding available for implementing these Express Lane direct connectors as part of the I-10 or the I-15 Corridor Projects. Although the Express Lane direct connectors in the NW and SW quadrants are projected to generate some additional toll revenues that may be used to help secure project funding, the projected revenue stream is not sufficient to fund the additional cost of $517 million. As a result, the direct connectors are currently not financially viable.

As such, it was suggested that the Express Lane direct connectors should be considered as a separate stand-alone project in the future. Implementation of the Express Lane direct connectors as a future project would depend upon project funding and programming by Caltrans and SANBAG. The financial analysis has identified funding to allow the Express Lane direct connectors to be constructed and opened in approximately 2034.

6. FREEWAY OPERATIONS WITHOUT DIRECT CONNECTORS

Due to the lack of funding at this time, the I-10/I-15 Express Lane direct connectors are not anticipated to be implemented in the near term. However, since both the I-10 and I-15 Express Lane projects are anticipated to be implemented without the express lane direct connectors, traffic modeling and analysis was completed to assess traffic operating conditions for both freeways without the Express Lane direct connectors.

I-10 and I-15 Freeway Operation Results

The project team developed traffic models to forecast future traffic conditions on both the I-10 and I-15 corridors (future conditions for two Alternatives each: "no build" and "Express Lanes - without express lane direct connectors"). The traffic modeling results for both corridors include the following:

I-10 Freeway:

- Average Peak Hour Speeds – General Purpose (GP) lanes: See Table 2
- Average Travel Time Savings – General Purpose lanes: See Table 3
- Reduction in Peak hour traffic demand – General Purpose lanes: See Table 4

I-15 Freeway:

- Average Peak Hour Speeds – General Purpose lanes: See Table 5
- Average Travel Time Savings – General Purpose lanes: See Table 6
- Reduction in Peak hour traffic demand – General Purpose lanes: See Table 7

As shown in Table 2, for year 2024, the average peak hour speeds for the I-10 GP lanes in each direction in the vicinity of the I-10/I-15 system interchange increase by 15 – 21 miles per hour if the Express Lanes are implemented.

Table 2 – I-10 Freeway – Year 2024 Alternative 1 and Alternative 3
Average Peak Hour Speed

I-10 Between Haven Avenue and Cherry Avenue		2024 Average Peak Hour Speed (mph)		
		Alternative 1 (No Build)	Alternative 3 (Express Lanes)	
		GP	GP	Express
Eastbound	a.m.	***43***	***58***	65
	p.m.	***18***	***37***	65
Westbound	a.m.	***24***	***40***	65
	p.m.	***27***	***48***	65

Source: Results from Traffic and Revenue Study, CDM-Smith

As shown in Table 3, for year 2024, the average travel times for the I-10 GP lanes for the 5 mile segment from Haven Avenue to Cherry Avenue in the vicinity of the I-10/I-15 system interchange are reduced by up to 7 minutes if the Express Lanes are implemented.

Table 3 – I-10 Freeway – Year 2024 Alternative 1 and Alternative 3
Average Peak Hour Travel Time

I-10 Between Haven Avenue and Cherry Avenue		2024 Average Peak Hour Travel Time (minutes)		
		Alternative 1 (No Build)	Alternative 3 (Express Lanes)	
		GP	GP	Express
Eastbound	a.m.	***5.9***	***4.4***	3.9
	p.m.	***13.9***	***6.9***	3.9
Westbound	a.m.	***9.4***	***5.7***	3.5
	p.m.	***8.3***	***4.7***	3.5

Source: Results from Traffic and Revenue Study, CDM-Smith

Table 4 shown below, illustrates the reduction in traffic volume in the general purpose lanes along the I-10 freeway for the Express Lanes Alternative, in the vicinity of the system interchange, as compared to the forecast demand for the "No Build" Alternative at 2045 levels. As shown in the table, there is significant benefit and reduction in volumes for the general purpose lanes when the Express lanes are implemented.

Table 4 – I-10 Freeway – Horizon Year 2045 -- No Build and Alternative 3
Reduction in Mainline (General Purpose Lanes) Volumes

I-10 Segment	A.M. Peak Hour Volumes			P.M. Peak Hour Volumes		
	2045 No Build	2045 Alternative 3 (Express Lanes)	Reduction in GP lane Volume (Alt 3 versus "No Build")	2045 No Build	2045 Alternative 3 (Express Lanes)	Reduction in GP lane Volume (Alt 3 versus "No Build")
	Volume	Volume	Volume	Volume	Volume	Volume
EB Mainline						
Milliken – I-15	10,560	9,010	***1,550***	11,490	10,890	***600***
I-15 – Etiwanda	10,530	8,900	***1,630***	10,350	9,800	***550***
WB Mainline						
Milliken – I-15	13,280	11,710	***1,570***	12,710	11,400	***1,310***
I-15 – Etiwanda	10,140	8,770	***1,370***	10,780	9,420	***1,360***

Source: Traffic Study Report for I-10 Corridor Project, Parsons, August 2014

- no HOV lane in this segment under 2045 No Build condition.

Table 5 shows, for year 2030, the average peak hour speeds for the I-15 GP lanes in each direction in the vicinity of the system interchange increase by 10 – 21 miles per hour if the Express Lanes are implemented.

Table 5 – I-15 Freeway – Year 2030 Alternative 1 and Alternative 2
Average Peak Hour Speed

I-15 Between Cantu-Galleano Ranch Road and Arrow Highway		2030 Average Peak Hour Speed (mph)		
		Alternative 1 (No Build)	Alternative 2 (Express Lanes)	
		GP	GP	Express
Northbound	a.m.	***16***	***37***	65
	p.m.	***11***	***22***	65
Southbound	a.m.	***18***	***28***	65
	p.m.	***19***	***31***	65

Source: Results from Traffic and Revenue Study, CDM-Smith

As shown in Table 6, for year 2030, the average peak hour travel times for the I-15 GP lanes for the segment from Cantu Galleano Ranch Road to Arrow Highway in the vicinity of the I-10/I-15 system interchange are reduced by up to approximately 20 minutes if the Express Lanes are implemented.

Table 6 – I-15 Freeway – Year 2030 Alternative 1 and Alternative 2
Average Peak Hour Travel Time

I-15 Between Cantu-Galleano Ranch Road and Arrow Highway		2030 Average Peak Hour Travel Time (minutes)		
		Alternative 1 (No Build)	Alternative 2 (Express Lanes)	
		GP	GP	Express
Northbound	a.m.	***24.2***	***10.8***	6.1
	p.m.	***37.2***	***17.8***	6.1
Southbound	a.m.	***22.1***	***13.8***	6.0
	p.m.	***20.1***	***12.6***	6.0

Source: Results from Traffic and Revenue Study, CDM-Smith

Table 7 shown below, illustrates the reduction in traffic volume in the general purpose lanes along the I-15 freeway for the Express Lanes Alternative as compared to the forecast demand for the "No Build" Alternative at 2045 levels. Similar to the I-10 Corridor and as shown in the table, there is significant benefit to the general purpose lanes and a reduction in GP volumes when the Express lanes are provided.

Table 7 – I-15 Freeway – Year 2045 - No Build and Build Express
Reduction in Mainline (General Purpose Lanes) Volumes

I-15 Segment	A.M. Peak Hour Volumes			P.M. Peak Hour Volumes		
	2045 No Build	2045 Build Express Lanes	Reduction in GP lane Volume (Build versus No Build)	2045 No Build	2045 Build Express Lanes	Reduction in GP lane Volume (Build versus No Build)
	Volume	Volume	Volume	Volume	Volume	Volume
NB Mainline						
E. 4th – I-10	10,880	9,800	***1,080***	9,960	9,940	***20***
I-10 – Jurupa	10,610	9,640	***970***	10,080	9,400	***680***
SB Mainline						
E. 4th – I-10	11,730	11,390	***340***	11,890	11,120	***770***
I-10 – Jurupa	11,590	10,640	***950***	9,650	8,950	***700***

Source: I-15 Corridor Project, Project Study Report-Project Development Support, PB, August 2014

- no additional capacity in this segment under 2045 No Build condition.

I-10 Corridor Traffic Simulation Modeling Results:

Since the I-10 Corridor Project is further advanced through the PA/ED phase, additional traffic simulation modeling was conducted for the I-10 freeway Express Lanes alternative using a VISSIM Microsimulation program to assess the traffic operations at the proposed ingress/egress locations along I-10. The results of this analysis are summarized the VISSIM Report by CDM Smith (May, 2015).

The VISSIM modeling focused on analyzing operations of the Express Lanes, especially at project transition areas at the end of the project and the intermediate access areas where traffic enters or exits the local interchanges. In the vicinity of the I-10/I-15 system interchange, the highest traffic volumes are located just west of the I-15 including the local interchange traffic from Haven Avenue and Milliken Avenue. Of particular interest are the forecast traffic conditions at the eastbound (EB) Ingress/Egress weaving zone within this area for traffic leaving I-10 to access I-15.

Selected results from the VISSIM simulation model regarding this location are included below:

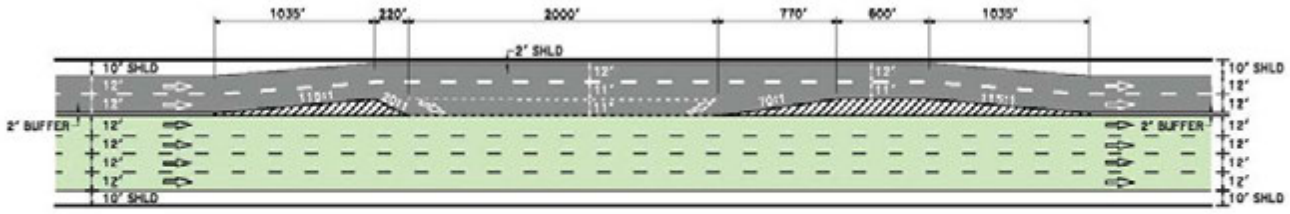
- Weaving activities on EB I-10 (general purpose lanes) between the Haven Avenue and I-15 are anticipated to operate similarly under the Express Lane and No Build alternatives.
- For the Express Lane Alternative on I-10, the proposed Haven Avenue Express Lane EB access opening would begin 1,200 feet west of Haven Avenue overcrossing structure. The proposed

express lane access point would provide 1,700 feet of *additional* weaving distance – as compared to the existing Ingress/Egress location for the existing HOV lane.

- The VISSIM Microsimulation model shows that in the open year (2024) evening peak hour, there would be congestion in the eastbound general purpose lanes between Milliken Avenue and I-15 caused by a high demand of traffic exiting I-10 to access I-15 and by the need for traffic entering I-10 from Milliken Avenue to weave across this traffic. The congestion in the GP lanes is not a result of the merge and diverge maneuvers into and out of the Express Lanes. Exhibit 9 in the VISSIM report shows that the "head" of the congestion is at the I-15 interchange; the congestion extends back through the Haven Avenue intermediate access area as far upstream as the Archibald and Vineyard interchanges.

- Consideration was given to provide a longer intermediate access area (EB I/E at Haven Avenue), however the results indicate that this would not reduce congestion in the GP lanes near the Haven Avenue access area. The cause of that congestion is a downstream condition that will not be affected by a longer access area. Within the access area, traffic speeds in the GP lanes are roughly the same as speeds in the GP lanes both upstream and downstream of the access area, indicating that the intermediate access area is not the cause of the congestion.

- The model findings also show that in almost all cases, the weaving lane is operating at 45 mph or better. Where the speeds in the weaving lane is below 45 mph, they are between the free flow speeds in the Express Lanes and the much slower speeds in the GP lanes. This indicates that the weaving lane in the intermediate access areas are sufficiently long to enable traffic entering and exiting the Express Lanes to use the weaving lane to change speeds and diverge from and merge into the different streams without overcrowding the weaving lane. Since the weaving lane is not overcrowded, it is sufficiently long to function as intended. If the weaving lane were insufficiently long, speeds would be similar to speeds in the GP lanes because traffic would be queued waiting to exit the weave lane into the GP lanes. See the figure below that depicts a typical ingress/egress access area including the weave lane:



TYPICAL COMBINED INGRESS/EGRESS WEAVE LANE

- The model findings also indicate that, in the eastbound direction, the weave lane at the access area at Haven Avenue showed slower-than-free flow speeds due to the need for traffic to match the speeds in the general purpose lanes. The eastbound congestion in the general purpose lanes is caused by extremely high demand to exit the freeway at I-15, and the weaving movement caused by traffic entering I-10 at Milliken Avenue. There is congestion existing today in this area, and the growth in demand will result in additional delay by 2025. However, the model results indicate that the Express Lanes do not degrade or exacerbate the current mainline weaving condition beyond what would be anticipated under the No Build condition but instead helps reduce GP lane volumes and therefore is expected to improve operations in the vicinity of the system interchange.

7. CONCLUSIONS AND RECOMMENDATIONS

Based upon the information summarized above, the following conclusions and recommendations were derived:

- Due to the lack of available funds, the I-10/I-15 Express Lane direct connectors are not considered feasible for implementation at this time.
- The I-10/I-15 Express Lane direct connectors in the NW and SW quadrants are geometrically feasible.
- If implemented, the Express Lane direct connectors in the NW and SW quadrants of the I-10/I-15 system interchange are projected to attract sufficient traffic to provide a mobility benefit for the Express Lane corridors in the future.
- Implementation of the Express Lane direct connectors is estimated to cost $517 million including $50 million in right of way costs.
- The conceptual design of the Express Lane direct connectors has been coordinated with the I-10 and I-15 Corridor Projects to ensure that the I-10 and I-15 Express Lanes design would not preclude future implementation of the Express Lane direct connectors.
- The traffic modeling results indicate that the Express Lanes do not degrade or exacerbate the current mainline weaving condition beyond what would be anticipated under the No Build condition but instead helps reduce GP lane volumes and thereby is expected to improve operations in the vicinity of the system interchange.
- Also, as noted in the VISSIM results, the congestion in the adjacent general purpose lanes is not caused by the access points.
- Based upon the traffic demand and modeling results, Express Lane access points will provide access to/from the express lanes effectively without degrading the free flow speeds in the express lanes.
- The Express Lane direct connectors are suggested to be considered as a separate future project after construction of the I-10 and I-15 Express Lanes as additional system-wide improvements when additional funds become available. The financial analysis has identified funding to allow the Express Lane direct connectors to be constructed and opened in approximately 2034.

8. ATTACHMENTS

- Exhibit A –Express Lane Direct Connectors Conceptual Layout, June 2013
- Exhibit B – Express Lane Direct Connector Preliminary Cost Estimate, June 2013

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ATTACHMENT G

Life Cycle Cost Analysis Forms

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Appendix 1 LCCA Forms

Table A1-1 shows the LCCA form for the mainline inside lane and shoulder widening analysis.

Table A1-1 Mainline Inside Lane and Shoulder Widening LCCA Form

Option 1A: 40-year JPCP				
0.95' JPCP/0.25' HMA/0.60'AS*				
	Pavement Design Life:	40 Years	**PW Agency Cost**	**PW Agency and User Cost**
		Initial Construction Costs:	$ 33,570,366.26	
		Future Maintenance & Rehabilitation Costs:	$1,512,173.74	
		Total Agency Costs:		$35,082,540.00
		User Costs:		$ 2,698,830.00
		Total Life Cycle Costs:		**$ 37,781,370.00**
Option 2A: 40-year CRCP				
0.85' CRCP/ 0.25' HMA/0.60'AS*				
	Pavement Design Life:	40 Years		
		Initial Construction Costs:	$ 33,937,236.71	
		Future Maintenance & Rehabilitation Costs:	$263,913.29	
		Total Agency Costs:		$34,201,150.00
		User Costs:		$ —
		Total Life Cycle Costs:		**$ 34,201,150.00**

*The initial construction cost used in the LCCA analysis reflects both structural section with and without AS layer. AS layer is not included west of Rancho Avenue based on preliminary R value>40. AS layer is included east of Rancho Avenue based on preliminary R value of 15.

Table A1-2 shows the LCCA form for the outside travelway.

Table A1-2: Outside Travelway LCCA Form

Option 1B: 40-year JPCP				
1.20-1.30'JPCP*/0.25' HMA/0.70'AS*				
	Pavement Design Life:	40 Years	**PW Agency Cost**	**PW Agency and User Cost**
	Initial Construction Costs:		$ 49,602,093.97	
	Future Maintenance & Rehabilitation Costs:		$1,248,046.03	
	Total Agency Costs:			$50,850,140.00
	User Costs:			$ 3,934,070.00
	Total Life Cycle Costs:			**$ 54,784,210.00**
Option 2B: 40-year CRCP				
1.05-1.10' CRCP*/ 0.25' HMA/0.70'AS*				
	Pavement Design Life:	40 Years		
	Initial Construction Costs:		$ 48,948,039.51	
	Future Maintenance & Rehabilitation Costs:		$187,370.49	
	Total Agency Costs:			$49,135,410.00
	User Costs:			$ —
	Total Life Cycle Costs:			**$ 49,135,410.00**

* The initial construction cost used in the LCCA analysis reflects structural sections with various concrete depths depending on the TI.
** The initial construction cost used in the LCCA analysis reflects both structural section with and without AS layer. AS layer is not included west of Rancho Avenue based on preliminary R value>40. AS layer is included east of Rancho Avenue based on preliminary R value of 15.

Table A1-3 shows the LCCA form for the outside shoulder.

Table A1-3: Outside Shoulder LCCA Form

Option 1C: 40-year JPCP				
0.80' JPCP/0.55'-1.40' AB*				
	Pavement Design Life:	40 Years	**PW Agency Cost**	**PW Agency and User Cost**
	Initial Construction Costs:		$ 10,290,357.64	
	Future Maintenance & Rehabilitation Costs:		$552,522.36	
	Total Agency Costs:			$10,842,880.00
	User Costs:			$ 1,425,620.00
	Total Life Cycle Costs:			**$ 12,268,500.00**
Option 2C: 20-year HMA w/ RHMA				
0.2' RHMA-G/ 0.30'-0.40' HMA/ 0.85'-1.60' AB*				
	Pavement Design Life:	20 Years		
	Initial Construction Costs:		$8,820,853.11	
	Future Maintenance & Rehabilitation Costs:		$12,670,936.89	
	Total Agency Costs:			$21,491,790.00
	User Costs:			$37,850,230.00
	Total Life Cycle Costs:			**$59,342,020.00**

* The shoulder thickness is adjusted to match the total pavement depth of the adjoining lane, which includes an AS layer east of Rancho Avenue.

Table A1-4 shows the LCCA form for the ramp analysis.

Table A1-4: Ramp LCCA Form

Option 1D: 20-year HMA w/ RHMA		
0.2' RHMA-G/ 0.55' HMA/ 1.7' AB		
Pavement Design Life: 20 Years	**PW Agency Cost**	**PW Agency and User Cost**
Initial Construction Costs:	$ 191,060.67	
Future Maintenance & Rehabilitation Costs:	$233,059.33	
Total Agency Costs:		$424,120.00
User Costs:		$ 1,705,060.00
Total Life Cycle Costs:		**$ 2,129,180.00**
Option 2D: 40-year HMA w/ RHMA		
0.2' RHMA-G/ 1.65' HMA/ 0.5' AB		
Pavement Design Life: 40 Years		
Initial Construction Costs:	$ 349,261.98	
Future Maintenance & Rehabilitation Costs:	$146,908.02	
Total Agency Costs:		$496,170.00
User Costs:		$ 441,010.00
Total Life Cycle Costs:		**$ 937,180.00**
Option 3D: 40-year JPCP		
1.05' JPCP/ 0.25' HMA / 0.7' AS		
Pavement Design Life: 40 Years		
Initial Construction Costs:	$300,400.58	
Future Maintenance & Rehabilitation Costs:	$17,039.42	
Total Agency Costs:		$317,440.00
User Costs:		$178,720.00
Total Life Cycle Costs:		**$496,160.00**

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ATTACHMENT H

Design Standards Risk Assessment Tables
(Separately Bound)

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ATTACHMENT I

Express Lane Access Points and CHP Locations Diagram

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 08	LA,SBd	10	44.9/49.3 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER — No. — CIVIL — STATE OF CALIFORNIA

PARSONS 2201 DUPONT DRIVE SUITE 200 IRVINE, CA 92612	SAN BERNARDINO ASSOCIATED GOVERNMENTS 1170 W. 3RD STREET SAN BERNARDINO, CA 92410

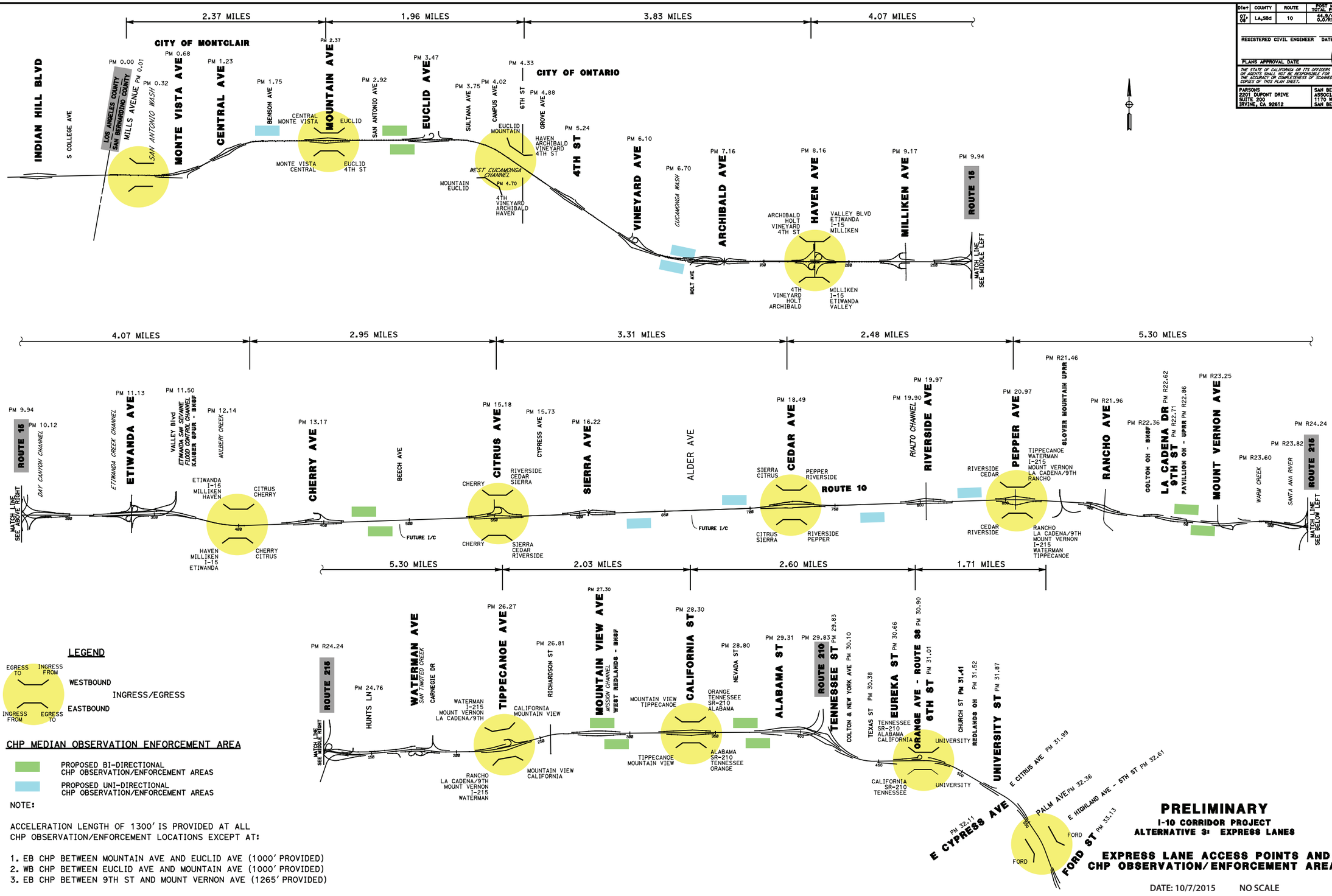
REVISED BY | DATE REVISED

CALCULATED/DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR | DAVID MYERS, P.E.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

BORDER LAST REVISED 4/11/2008



LEGEND

EGRESS TO / INGRESS FROM — WESTBOUND

INGRESS/EGRESS

INGRESS FROM / EGRESS TO — EASTBOUND

CHP MEDIAN OBSERVATION ENFORCEMENT AREA

- PROPOSED BI-DIRECTIONAL CHP OBSERVATION/ENFORCEMENT AREAS
- PROPOSED UNI-DIRECTIONAL CHP OBSERVATION/ENFORCEMENT AREAS

NOTE:

ACCELERATION LENGTH OF 1300' IS PROVIDED AT ALL CHP OBSERVATION/ENFORCEMENT LOCATIONS EXCEPT AT:

1. EB CHP BETWEEN MOUNTAIN AVE AND EUCLID AVE (1000' PROVIDED)
2. WB CHP BETWEEN EUCLID AVE AND MOUNTAIN AVE (1000' PROVIDED)
3. EB CHP BETWEEN 9TH ST AND MOUNT VERNON AVE (1265' PROVIDED)

PRELIMINARY

I-10 CORRIDOR PROJECT

ALTERNATIVE 3: EXPRESS LANES

EXPRESS LANE ACCESS POINTS AND CHP OBSERVATION/ENFORCEMENT AREAS

DATE: 10/7/2015 NO SCALE

CU 08224	EA 0C2500

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ATTACHMENT J

Project Cost Estimates

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I-10 CORRIDOR PROJECT COST ESTIMATE

EA 0C2500, PN 0800000040

Type of Estimate : Project Report
Program Code : 075.600/HB5
Project Limits : 08-SBd-10-PM 4.7/R37.0
Description: Extend one HOV lane in each direction from Haven Avenue to Ford Street
Scope : **Haven Avenue to Ford Street**
Alternative : **HOV (Alternative 2)**
Date : February 2016

		Current Cost		Escalated Cost*
ROADWAY ITEMS	$	392,002,000.00	$	461,541,000.00
STRUCTURE ITEMS	$	53,713,000.00	$	63,241,000.00
SUBTOTAL CONSTRUCTION COST	$	445,715,000.00	$	524,782,000.00
RIGHT OF WAY	$	13,493,000.00	$	16,865,000.00
TOTAL CAPITAL OUTLAY COST	$	459,208,000.00	$	541,647,000.00
PA/ED SUPPORT	$	27,888,000.00	$	27,888,000.00
PS&E SUPPORT	$	26,748,000.00	$	28,864,000.00
RIGHT OF WAY SUPPORT	$	683,000.00	$	740,000.00
CONSTRUCTION SUPPORT	$	44,573,000.00	$	50,811,000.00
TOTAL CAPITAL OUTLAY SUPPORT COST	$	99,892,000.00	$	108,303,000.00
LANDSCAPE MAINTENANCE (EEP)	$	3,803,000.00	$	4,622,000.00
CONSTRUCTION MANAGEMENT (EEP)	$	3,803,000.00	$	4,622,000.00
TOTAL EEP COST	$	7,606,000.00	$	9,244,000.00
TOTAL PROJECT COST	$	566,706,000.00	$	659,194,000.00

If Project has been programmed enter Programmed Amount** $ 539,817,000

	month	year
Date (Month/Year) of Estimate	2	/ 2016
Estimated Date (Month/Year) of Construction Start	12	/ 2019
Number of Months of Escalation*	0	
Number of Years of Escalation*	0.00	
Number of Working Days	906	
Number of Plant Establishment Days	910	

Estimated Project Schedule

PA/ED Approval	Month-Year	9 / 2017
PS&E Completion	Month-Year	9 / 2020
Advertise & Award	Month-Year	5 / 2021
Begin Construction	Month-Year	6 / 2021

Approved by: Chad Costello — 2/19/2016 — (909) 884-8276

Project Manager, SANBAG — **Date** — **Phone**

EEP = Establish Existing Plants
*Support cost is escalated to 2020/2021. Construction cost is escalated to 2022/2023. Escalation is based on SANBAG 10-year plan rates.
**Additional funding is being sought to support the project.

I. ROADWAY ITEMS

Section			Cost
1	Earthwork	$	22,942,000
2	Structural Section	$	82,413,000
3	Drainage	$	13,568,000
4	Specialty Items	$	56,007,000
5	Environmental	$	19,495,000
6	Traffic Items	$	76,635,000
7	Detours	$	-
8	Minor Items	$	13,553,000
9	Roadway Mobilization	$	28,462,000
10	Supplemental Work	$	14,231,000
11	State Furnished	$	13,565,000
12	Contingencies	$	51,131,000
13	Overhead	$	-
	TOTAL ROADWAY ITEMS	**$**	**392,002,000**

Estimate Prepared By :	Daniel Wagner, Parsons	2/19/2016	619-515-5102
	Name and Title	Date	Phone
Estimate Reviewed By :	Patti Tiberi, Parsons	2/19/2016	949-333-4541
	Name and Title	Date	Phone

SECTION 1 EARTHWORK

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY	846,000	x	12.00	=	$	10,152,000
190107	Roadway Excavation (Type Y-1) ADL	CY	127,000	x	15.00	=	$	1,905,000
190105	Roadway Excavation (Type Z-2) ADL	CY		x		=	$	-
194001	Ditch Excavation	CY		x		=	$	-
198010	Imported Borrow	CY		x		=	$	-
190185	Shoulder Backing	TON		x		=	$	-
192037	Structure Excavation (Retaining Wall)	CY	146,000	x	36.00	=	$	5,256,000
193013	Structure Backfill (Retaining Wall)	CY	162,000	x	26.00	=	$	4,212,000
193031	Pervious Backfill Material (Retaining Wall)	CY		x		=	$	-
160102	Clearing & Grubbing	LS	1	x	1,016,600	=	$	1,016,600
170101	Develop Water Supply	LS	1	x	400,000	=	$	400,000

TOTAL EARTHWORK SECTION ITEMS $ 22,942,000

Section 2 STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price ($)			Cost
XXXXXX	Rehabilitate Existing Pavement	SY	451,500	x	27.50	=	$	12,416,000
401050	Jointed Plain Concrete Pavement	CY	351,800	x	143.00	=	$	50,307,000
404092	Seal Pavement Joint	LF	247,300	x	5.00	=	$	1,237,000
404093	Seal Isolation Joint	LF		x		=	$	-
413117	Seal Concrete Pavement Joint (Silicone)	LF		x		=	$	-
280000	Lean Concrete Base	CY		x	95.00	=	$	-
400050	Continuously Reinforced Concrete Pavement	CY	0	x	170.00	=	$	-
390129	Hot Mix Asphalt (Type A)	TON	158,800	x	81.00	=	$	12,863,000
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON	0	x	95.00	=	$	-
393003	Geosynthetic Pavement Interlayer	SQYD		x		=	$	-
260203	Class 2 Aggregate Base	CY	52,100	x	27.00	=	$	1,407,000
290201	Asphalt Treated Permeable Base	CY	4,700	x	125.00	=	$	588,000
250401	Class 4 Aggregate Subbase	CY	87,800	x	20.00	=	$	1,756,000
374002	Asphaltic Emulsion (Fog Seal Coat) Roadway Shldrs	TON	30	x	665.00	=	$	20,000
397005	Tack Coat	TON		x		=	$	-
377501	Slurry Seal	TON		x		=	$	-
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		=	$	-
370001	Sand Cover	TON		x		=	$	-
731530	Minor Concrete (Textured Paving)	SQFT	83,700	x	8.60	=	$	720,000
731502	Minor Concrete (Misc. Const) Curb, Sidewalk	CY	960	x	466.00	=	$	447,000
394076	Place Hot Mix Asphalt Dike (Type E)	LF	118,000	x	2.50	=	$	295,000
150771	Remove Asphalt Concrete Dike	LF		x		=	$	-
420201	Grind Existing Concrete Pavement	SQYD		x		=	$	-
150860	Remove Base and Surfacing	CY		x		=	$	-
390095	Replace Asphalt Concrete Surfacing	CY		x		=	$	-
394090	Place Hot Mix Asphalt (Misc. Area)	SQFT	188,000	x	1.90	=	$	357,000
153103	Cold Plane Asphalt Concrete Pavement	SQYD		x		=	$	-
413112A	Repair Spalled Joints (Polyester Grout)	SQYD		x		=	$	-
420201	Groove Existing Concrete Pavement	SQYD		x		=	$	-
390136	Minor Hot Mix Asphalt	TON		x		=	$	-
XXXXXX	Hot Mix Asphalt Type A-Bond Breaker	TON		x	81.00	=	$	-
XXXXXX	Open Graded Wearing Course	TON		x	121.00	=	$	-

TOTAL STRUCTURAL SECTION ITEMS $ 82,413,000

SECTION 3 DRAINAGE

Item code		Unit	Quantity					Amount
510090	Structural Concrete Box Culvert	CY	3,400	x	900.00	=	$	3,060,000
XXXXXX	Project Drainage	LS	1	x	10,507,500	=	$	10,508,000

TOTAL DRAINAGE ITEMS	13,567,500

SECTION 4 SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price ($)			Cost
070012	Progress Schedule (Critical Path Method)	LS	1	x	60,000	=	$	60,000
518002	Sound Wall (Masonry Block)	SQFT	305,800	x	14.00	=	$	4,282,000
510059	Structure Concrete, RW (Sound Wall)	CY	2,580	x	504.00	=	$	1,301,000
153253	Remove Sound Wall	LF	1,600	x	17.00	=	$	28,000
190110	Lead Compliance Plan	LS	1	x	40,000	=	$	40,000
1532XX	Remove Barrier (*Insert Type)*	LF		x		=	$	-
150662	Remove Metal Beam Guard Railing	LF		x		=	$	-
150668	Remove Flared End Sections	EA		x		=	$	-
800360	Chain Link Fence (Type CL-6)	LF	10,590	x	18.00	=	$	191,000
802501	4' Chain Link Gate (Type CL-6)	EA	11	x	760.00	=	$	9,000
832001	Metal Beam Guard Railing	LF	21,760	x	21.00	=	$	457,000
839301	Single Thrie Beam Barrier	LF		x		=	$	-
839310	Double Thrie Beam Barrier	LF		x		=	$	-
839521	Cable Railing	LF		x		=	$	-
839566	Terminal System (Type CAT)	EA		x		=	$	-
839585	Alternative Flared Terminal System	EA		x		=	$	-
839584	Alternative In-line Terminal System	EA		x		=	$	-
49XXXX	CIDH Concrete Piling *(Insert Diameter)*	LF		x		=	$	-
839604	Crash Cushion *(REACT 9CBB)*	EA	78	x	48,000.00	=	$	3,744,000
839724	Concrete Barrier (Type 736SV)	LF	5,090	x	95.00	=	$	484,000
839736	Concrete Barrier (Type 742A)	LF	33,070	x	90.00	=	$	2,977,000
839706	Concrete Barrier (Type 60G)	LF	123,000	x	95.00	=	$	11,685,000
839704	Concrete Barrier (Type 60D)	LF	42,200	x	48.00	=	$	2,026,000
520103	Bar Reinf. Steel (Ret. Wall)	LB	3,001,000	x	0.86	=	$	2,581,000
510408	Class 1 Concrete (Retaining Wall)	CY		x		=	$	-
510133	Class 2 Concrete (Retaining Wall)	CY		x		=	$	-
510060	Structural Concrete (Retaining Wall)	CY	67,560	x	309.00	=	$	20,877,000
513553	Retaining Wall (Masonry Wall)	CY		x		=	$	-
511035A	Architectural Treatment (Walls)	SQFT	213,300	x	13.00	=	$	2,773,000
511035B	Architectural Treatment (Overcrossing Bridges)	LS	1	x	1,175,000	=	$	1,175,000
511047	Apply Anti-Graffiti Coating	SQFT	1,046,000	x	0.91	=	$	952,000
5136XX	Reinforced Concrete Crib Wall *(Insert Type)*	SQFT		x		=	$	-
83954X	Transition Railing *(Insert Type)*	EA		x		=	$	-
597601	Prepare and Stain Concrete	SQFT		x		=	$	-
839561	Rail Tensioning Assembly	EA		x		=	$	-
839581	End Anchor Assembly (*TYPE SFT*)	EA	103	x	570.00	=	$	59,000
601001	Railroad Track	LF	1,460	x	209.00	=	$	306,000

TOTAL SPECIALTY ITEMS	**$**	**56,007,000**

Section 5 ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Amount
XXXXXX	Biological Mitigation	LS	1	x	751,000	=	$	751,000
071325	Temporary Fence (Type ESA)	LS	1	x	40,000	=	$	40,000
XXXXXX	Hazardous Material Remediation	LS	1	x	220,000	=	$	220,000

$ 1,011,000

5B - LANDSCAPE AND IRRIGATION

Subtotal Landscape and Irrigation $ 11,012,000

5C - NPDES

Item code		Unit	Quantity		Unit Price ($)			Amount
XXXXXX	Temporary BMPs	LS	1	x	7,472,000	=	$	7,472,000
074019	Prepare SWPPP	LS		x		=	$	-
074017	Prepare WPCP	LS		x		=	$	-
074016	Construction Site Management	LS		x		=	$	-
074039	Temporary Erosion Control Hydraulic Mulch	SQYD		x		=	$	-
074037	Move In/ Move Out (Temporary Erosion Control)	EA		x		=	$	-
074028	Temporary Fiber Roll	LF		x		=	$	-
074032	Temporary Concrete Washout Facility	EA		x		=	$	-
074033	Temporary Construction Entrance	EA		x		=	$	-
074035	Temporary Check Dam	LF		x		=	$	-
074038	Temp. Drainage Inlet Protection	EA		x		=	$	-
074041	Street Sweeping	LS		x		=	$	-
203021	Fiber Rolls	LF		x		=	$	-
203025	Compost (Incorporate)	SQYD		x		=	$	-
203030	Erosion Control (Polymer Stabilized Fiber Matrix)	ACRE		x		=	$	-
203034	Rolled Erosion Control Product (Netting)	SF		x		=	$	-

Subtotal NPDES (Without Supplemental Work) $ 7,472,000

TOTAL ENVIRONMENTAL $ 19,495,000

Section 6 TRAFFIC ITEMS

6A - Traffic Electrical

Item code		Unit	Quantity		Unit Price ($)			Cost
860460	Lighting & Sign Illumination	LS		x		=	$	-
860403	Highway Lighting	LS	1	x	210,000	=	$	210,000
861502	Modify Signal	LS		x			$	-
861504	Modify Lighting & Sign Illumination	LS	1	x	7,275,000	=	$	7,275,000
860201	Signals & Lighting	LS	1	x	0	=	$	-
861501	Modify Signals & Lighting	LS	1	x	1,000,000	=	$	1,000,000
860532A	CMS/AVMS System	LS	1	x	2,250,000	=	$	2,250,000
860812	Microwave Vehicle Detection System	LS		x		=	$	-
860990	Closed Circuit Television System	LS	1	x	840,000	=	$	840,000
861100	Ramp Metering System	LS	1	x	3,900,000	=	$	3,900,000
560208	Furnish Sign Structure (Tubular)	LB		x		=	$	-
560209	Install Sign Structure (Tubular)	LB		x		=	$	-
561016	60" CIDHC Pile (Sign Foundation)	LF	5,524	x	903.00	=	$	4,989,000
860810	Inductive Loop Detectors	EA		x		=	$	-
860925	Traffic Monitoring Stations (Count)	LS		x		=	$	-
860889	Modify Traffic Monitoring Station	LS	1	x	1,350,000	=	$	1,350,000
150757	Remove Sign Structure	EA	140	x	2,850.00	=	$	399,000
560218	Furnish Sign Structure (Truss)	LB	5,771,500	x	3.80	=	$	21,932,000
560219	Install Sign Structure (Truss)	LB	5,771,500	x	0.24	=	$	1,386,000
151581	Reconstruct Sign Structure	EA		x		=	$	-
152641	Modify Sign Structure	EA		x		=	$	-
560203	Furnish Sign Structure (Bridge Mounted)	LB	137,500	x	4.80	=	$	660,000
560204	Install Sign Structural (Bridge Mounted)	LB	137,500	x	1.90	=	$	262,000
860090	Maintain Existing Traffic Management System Elements During Construction	LS	1	x	2,541,000	=	$	2,541,000
86XXXX	Communications System	LS	1	x	9,401,700	=	$	9,402,000
XXXXXX	Toll Equipment and Maintenance	LS	1	x	0	=	$	-

Subtotal Traffic Electrical $ 58,396,000

6B - Traffic Signing and Striping

Item code		Unit	Quantity		Unit Price ($)			Cost
566011	Roadside Sign (One Post)	EA	260	x	271.00	=	$	71,000
566012	Roadside Sign (Two Post)	EA	120	x	775.00	=	$	93,000
560244	Furnish Laminated Panel Sign (1"-Type A)	SQFT	51,500	x	21.00	=	$	1,082,000
150710	Remove Traffic Stripe	LF		x		=	$	-
150701	Remove Yellow Painted Traffic Stripe	LF		x		=	$	-
150713	Remove Pavement Marking	SQFT		x		=	$	-
150742	Remove Roadside Sign	EA	340	x	114.00	=	$	39,000
150714	Remove Thermoplastic Traffic Stripe	LF		x		=	$	-
152390	Remove Thermoplastic Pavement Marking	SQFT		x		=	$	-
820107	Delineator (Class 1)	EA		x		=	$	-
840501	Permanent Pavement Delineation	LF	1,886,000	x	0.72	=	$	1,358,000
120090	Construction Area Signs	LS		x		=	$	-

Subtotal Traffic Signing and Striping $ 2,643,000

6C - Stage Construction and Traffic Handling

Item code		Unit	Quantity		Unit Price ($)			Cost
120199	Traffic Plastic Drum	EA	2,550	x	53.00	=	$	136,000
12016X	Channelizer	EA	0	x		=	$	-
120120	Type III Barricade	EA	0	x		=	$	-
129100	Temporary Crash Cushion Module	EA	5,360	x	181.00	=	$	971,000
120100	Traffic Control System	LS	1	x	7,605,000	=	$	7,605,000
839603A	Crash Cushion (ADIEM)	EA	0	x		=	$	-
129000	Temporary Railing (Type K)	LF	564,000	x	10.00	=	$	5,640,000
120143	Temporary Pavement Delineation	LF	0	x		=	$	-
120159	Temporary Traffic Stripe (Paint)	LF	2,775,000	x	0.34	=	$	944,000
XXXXXX	Flagging	LS	1	x	300,000	=	$	300,000

Subtotal Stage Construction and Traffic Handling $ 15,596,000

TOTAL TRAFFIC ITEMS $ 76,635,000

Section 7 DETOURS*

Item code		Unit	Quantity		Unit Price ($)		Cost
190101	Roadway Excavation	CY		x		= $	-
198050	Embankment	CY		x		= $	-
198010	Imported Borrow	CY		x		= $	-
390132	Hot Mix Asphalt (Type A)	TON		x		= $	-
260203	Class 2 Aggregate Base	CY		x		= $	-
250201	Class 2 Aggregate Subbase	CY		x		= $	-
250401	Class 4 Aggregate Subbase	CY		x		= $	-
07XXXX	Temporary Drainage	LS		x		= $	-
129000	Temporary Railing (Type K)	LF		x		= $	-
1286XX	Temporary Signals	EA		x		= $	-
120143	Temporary Pavement Delineation	LF		x		= $	-
071321	Temporary Fence (Type CL-6)	LF		x		= $	-

* Includes constructing, maintaining, and removal

TOTAL DETOURS $ -

SUBTOTAL SECTIONS 1-7 $ 271,059,500

Section 8 MINOR ITEMS (Use Appropriate percentage between 5%-10%)

Total of Section 1-7	271,058,500	x	5%	= $	13,553,000	

TOTAL MINOR ITEMS $ 13,553,000

Section 9 ROADWAY MOBILIZATION

Item code								
999990	Total Section 1-8	$	284,612,500	x	10%	= $	28,462,000	

TOTAL MOBILIZATION $ 28,462,000

Section 10 SUPPLEMENTAL WORK

0

Total Section 1-8 =	$	284,612,500		5%	= $	14,230,625	

TOTAL SUPPLEMENTAL WORK $ 14,231,000

Section 11 STATE FURNISHED MATERIALS

Item code		Unit	Quantity		Unit Price ($)			Cost
066105	RE Office	LS	1	x	387,000	=	$	387,000
066572	Sign Panels	LS		x		=	$	-
066576A	Overhead Sign Panels	LS		x		=	$	-
066063	Public Information	LS	1	x	2,386,000	=	$	2,386,000
066XXX	Traveler Information Strategies	LS	1	x	255,000	=	$	255,000
066062A	COZEEP Expenses	LS	1	x	2,914,000	=	$	2,914,000
066065	Freeway Service Patrol	LS	1	x	3,104,000	=	$	3,104,000
066067	Rideshare Promotion	LS	1	x	549,000	=	$	549,000
066XXX	Alternate Route Strategies	LS	1	x	2,470,000	=	$	2,470,000
066XXX	Construction Strategies	LS		x		=	$	-
066838	Reflective Numbers	LS		x		=	$	-
066803	Padlocks	LS		x		=	$	-
066887	Signal Lamps	LS		x		=	$	-
066577A	Advanced Variable Message Sign (AVMS)	LS	1	x	840,000	=	$	840,000
066840	Traffic Signal Controller Assembly	LS	1	x	100,000	=	$	100,000
066843A	Ramp Metering Controller Assembly	LS	1	x	560,000	=	$	560,000

TOTAL STATE FURNISHED $ 13,565,000

Section 12 CONTINGENCY

Use appropriate percentage based on the level of estimate. Anything other than the suggested contingency in the PDPM needs to be justified. (Project Feasibility 30%-50%, PSR 25%, DPR 20%, PR 15%, Preliminary Engineer Estimate 10%, Engineer Estimate 5%).

Total Section 1-11	$	340,870,500	x	15%	=	$	51,131,000

TOTAL CONTINGENCY $ 51,131,000

Section 13 OVERHEAD

Item code		Unit	Quantity		Unit Price ($)			Cost
070018	Time Related Overhead (TRO)	WD	906	X	0	=	$	-

TOTAL OVERHEAD $ -

II. STRUCTURES ITEMS

PM	BRIDGE CONSTRUCTION	STRUCTURE NAME	TOTAL COST (15%	
8.16	NO CHANGE	HAVEN AVENUE OC	$	-
8.16	NO CHANGE	HAVEN AVENUE OC	$	-
9.17	TIE BACK-WALL	MILLIKEN AVENUE OC	$	185,000
9.87	NO CHANGE	E10-N15 CONNECTOR OC	$	-
9.91	NO CHANGE	N15-W10 CONNECTOR OC	$	-
9.92	NO CHANGE	W10-S15 CONNECTOR OC	$	-
9.93	NO CHANGE	ROUTE 15/10 SEPARATION	$	-
9.94	NO CHANGE	ROUTE 15/10 SEPARATION	$	-
9.96	NO CHANGE	S15-E10 CONNECTOR OC	$	-
9.98	NO CHANGE	W10-S15 CONNECTOR OC	$	-
10.12	WIDEN	DAY CANYON CHANNEL (N)	$	897,000
10.12	NO CHANGE	W10-S15 CONNECTOR	$	-
10.13	NO CHANGE	W10-N15 CONNECTOR	$	-
10.99	WIDEN	ETIWANDA WASH	$	961,000
11.13	NO CHANGE	ETIWANDA AVENUE OC	$	-
11.35	NO CHANGE	VALLEY BLVD ON-RAMP SEPARATION	$	-
11.50	WIDEN	VALLEY BLVD OFF-RAMP UC (L)	$	1,381,000
11.50	WIDEN	VALLEY BLVD OFF-RAMP UC (R)	$	1,878,000
11.64	WIDEN	TIWANDA-SN SEVN FLOOD CNTL CH L/	$	1,612,000
11.64	REPLACE	KAISER SPUR OH	$	347,000
11.74	WIDEN	SAN SEVAINE CREEK	$	275,000
11.82	ABANDON	MULBERRY CREEK	$	208,000
11.82	ABANDON	CHERRY AVENUE OC	$	-
12.14	ABANDON	CITRUS AVENUE OC	$	-
13.17	NO CHANGE	CYPRESS AVENUE OC	$	-
15.18	NO CHANGE	SIERRA AVENUE OC	$	-
15.73	NO CHANGE	CEDAR AVENUE OC	$	389,000
16.22	NO CHANGE	RIALTO CHANNEL	$	-
R018.49	TIE BACK WALL	RIVERSIDE AVENUE OC	$	-
19.90	NO CHANGE	PEPPER AVENUE OC	$	-
19.97	NO CHANGE	SLOVER MOUNTAIN UP	$	-
20.97	NO CHANGE	RANCHO AVENUE OC	$	197,000
R21.46	NO CHANGE	COLTON OH	$	2,621,000
R21.96	TIE BACK WALL	COLTON OH	$	1,505,000
R22.36	WIDEN	LA CADENA DRIVE UC	$	479,000
R22.38	WIDEN	LA CADENA DR UC (EB OFF)	$	1,300,000
R22.62	WIDEN	NINTH STREET UC	$	302,000
R22.62	REPLACE	PAVILLION S OH OFF-RAMP	$	-
R22.71	WIDEN	PAVILLION SPUR OH	$	770,000
R22.82	NO CHANGE	MOUNT VERNON AVENUE OC	$	221,000
R22.86	/IDEN OR ABANDO	WARM CREEK	$	2,295,000

PM	BRIDGE CONSTRUCTION	STRUCTURE NAME	TOTAL COST (15% contingency)	
R23.80	NO CHANGE	SANTA ANA RIVER (EB-10 TO N/S	$	-
R23.82	WIDEN	SANTA ANA RIVER (R)	$	2,418,000
R23.82	WIDEN	SANTA ANA RIVER (L)	$	2,955,000
R24.19	NO CHANGE	E10-N215 CONNECTOR OC	$	-
R24.23	NO CHANGE	INTERSTATE 215/10 SEPARATION	$	-
R24.25	NO CHANGE	INTERSTATE 215/10 SEPARATION	$	-
R24.27	NO CHANGE	W10-N215 CONNECTOR OC	$	-
R24.30	NO CHANGE	W10-S215 CONNECTOR	$	-
R24.57	NO CHANGE	W10-N&S215 CONN / E ST-W10 ON	$	-
R24.76	NO CHANGE	HUNTS LANE UC	$	-
R25.26	WIDEN	WATERMAN AVENUE UC	$	2,479,000
R25.46	WIDEN	SAN TIMOTEO CREEK (W10 ON-RAMP)	$	466,000
R25.54	WIDEN	SAN TIMOTEO CREEK	$	672,000
R26.27	WIDEN	TIPPECANOE AVENUE UC	$	961,000
R26.81	REPLACE	RICHARDSON STREET OC	$	4,180,000
R27.3	WIDEN	MOUNTIAN VIEW AVENUE UC	$	798,000
R27.64	WIDEN	WEST REDLANDS OH	$	3,680,000
R28.3	WIDEN	CALIFORNIA STREET UC	$	1,343,000
R28.8	WIDEN	NEVADA STREET UC	$	1,765,000
R29.31	NO CHANGE	ALABAMA STREET OC	$	-
R29.53	NO CHANGE	W10-ALABAMA UC (E210-W10 CONN)	$	-
R29.7	NO CHANGE	E10-W210 CONNECTOR OC	$	-
R29.7	NO CHANGE	E10-W210 CONNECTOR OC	$	-
R29.76	NO CHANGE	E210-E10 CONNECTOR OC	$	-
R29.82	REPLACE	TENNESSEE STREET OC	$	8,489,000
R30.38	WIDEN	TEXAS STREET UC	$	775,000
R30.66	MODIFY	EUREKA STREET UC	$	971,000
R30.88	NO CHANGE	INTERSTATE 10/STATE ROUTE 38	$	-
R31.01	MODIFY	SIXTH STREET UC	$	197,000
R31.41	MODIFY	CHURCH STREET UC	$	180,000
R31.52	MODIFY	REDLANDS OH	$	18,000
R31.87	MODIFY	UNIVERSITY STREET UC	$	18,000
R31.99	MODIFY	CITRUS AVENUE UC	$	224,000
R32.11	MODIFY	CYPRESS AVENUE UC	$	191,000
R32.36	MODIFY	PALM AVENUE UC	$	18,000
R32.61	MODIFY	HIGHLAND AVENUE UC	$	120,000
R33.13	WIDEN	FORD STREET UC	$	1,118,000
R33.29	WIDEN	REDLANDS BLVD OFF RAMP UC	$	1,854,000

TOTAL COST OF BRIDGES	$53,713,000.00

TOTAL COST OF STRUCTURES[1] **$53,713,000.00**

Estimate Prepared By: Kevin Michalski, Parsons (Name, Organization) 2/19/2016 (Date)

[1]Structure's Estimate includes Overhead and Mobilization.

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I-10 CORRIDOR PROJECT COST ESTIMATE

EA 0C2500, PN 0800000040

Type of Estimate : Project Report
Program Code : 075.600/HB5
Project Limits : 08-LA-10-PM 44.9/48.3, 07-SBd-10-PM 0.0/R37.0
Description: Provide 2 Express Lanes each dir from County Line to California & 1 Express Lane each dir from California to Ford
Scope: **Entire Corridor: LA/SBd County Line to Ford Street**
Alternative : **Express Lanes (Alternative 3)**
Date: February 2016

	Current Cost	Escalated Cost*
ROADWAY ITEMS	$ 1,036,347,000.00	$ 1,206,569,000.00
STRUCTURE ITEMS	$ 138,219,000.00	$ 160,850,000.00
SUBTOTAL CONSTRUCTION COST	$ 1,174,566,000.00	$ 1,367,419,000.00
RIGHT OF WAY	$ 86,767,000.00	$ 108,458,000.00
TOTAL CAPITAL OUTLAY COST	$ 1,261,333,000.00	$ 1,475,877,000.00
PA/ED SUPPORT	$ 27,326,000.00	$ 27,326,000.00
PS&E SUPPORT	$ 70,479,000.00	$ 76,053,000.00
RIGHT OF WAY SUPPORT	$ 4,343,000.00	$ 4,705,000.00
CONSTRUCTION SUPPORT	$ 117,459,000.00	$ 132,473,000.00
TOTAL CAPITAL OUTLAY SUPPORT COST	$ 219,607,000.00	$ 240,557,000.00
LANDSCAPE MAINTENANCE (EEP)	$ 5,119,000.00	$ 6,161,000.00
CONSTRUCTION MANAGEMENT (EEP)	$ 5,119,000.00	$ 6,161,000.00
TOTAL EEP COST	$ 10,238,000.00	$ 12,322,000.00
TOTAL PROJECT COST	**$ 1,491,178,000.00**	**$ 1,728,756,000.00**
TOTAL PROJECT COST w/o Monte Vista IC	**$ 1,459,441,000.00**	**$ 1,692,056,000.00**

If Project has been programmed, enter Programmed Amount** $ 1,889,816,000

	month	year
Date (Month/Year) of Estimate	2	/ 2016
Estimated Date (Month/Year) of Construction Start	12	/ 2019
Number of Months of Escalation*	0	
Number of Years of Escalation*	0.00	
Number of Working Days		1245
Number of Plant Establishment Days		1300

Estimated Project Schedule

PA/ED Approval	Month-Year	9 / 2017
Issue D-B RFP	Month-Year	7 / 2017
D-B NTP	Month-Year	2 / 2018
Begin Construction	Month-Year	4 / 2019

Approved by: Chad Costello — 2/19/2016 — (909) 884-8276

Project Manager, SANBAG — **Date** — **Phone**

EEP = Establish Existing Planting

*Support cost is escalated to 2020/2021. Construction cost is escalated to 2022/2023. Escalation is based on SANBAG 10-year plan rates.

**The programmed cost, $31.7M for Monte Vista IC in SANBAG's Measure I 2010-2040 Interchange Program will provide a separate financial contribution to the I-10 Corridor Project.

I. ROADWAY ITEMS

Section			Cost
1	Earthwork	$	58,948,000
2	Structural Section	$	157,688,000
3	Drainage	$	59,948,000
4	Specialty Items	$	206,337,000
5	Environmental	$	54,641,000
6	Traffic Items	$	183,280,000
7	Detours	$	1,706,000
8	Minor Items	$	36,127,000
9	Roadway Mobilization	$	75,868,000
10	Supplemental Work	$	37,934,000
11	State Furnished	$	28,694,000
12	Contingencies	$	135,176,000
13	Overhead	$	-
	TOTAL ROADWAY ITEMS	**$**	**1,036,347,000**

Estimate Prepared By :	Daniel Wagner, Parsons	2/19/2016	619-515-5102
	Name and Title	Date	Phone
Estimate Reviewed By :	Patti Tiberi, Parsons	2/19/2016	949-333-4541
	Name and Title	Date	Phone

SECTION 1 EARTHWORK

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY	1,726,000	x	12.00	=	$	20,712,000
190107	Roadway Excavation (Type Y-1) ADL	CY	304,000	x	15.00	=	$	4,560,000
190105	Roadway Excavation (Type Z-2) ADL	CY		x		=	$	-
194001	Ditch Excavation	CY		x		=	$	-
198010	Imported Borrow	CY		x	7.00	=	$	-
190185	Shoulder Backing	TON		x		=	$	-
192037	Structure Excavation (Retaining Wall)	CY	480,000	x	36.00	=	$	17,280,000
193013	Structure Backfill (Retaining Wall)	CY	532,000	x	26.00	=	$	13,832,000
193031	Pervious Backfill Material (Retaining Wall)	CY		x		=	$	-
160102	Clearing & Grubbing	LS	1	x	1,960,000	=	$	1,960,000
170101	Develop Water Supply	LS	1	x	604,100	=	$	604,000

TOTAL EARTHWORK SECTION ITEMS $ 58,948,000

Section 2 STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price ($)			Cost
XXXXXX	Rehabilitate Existing Pavement	SY	700,000	x	27.50	=	$	19,250,000
401050	Jointed Plain Concrete Pavement	CY	683,600	x	143.00	=	$	97,755,000
404092	Seal Pavement Joint	LF	342,400	x	5.00	=	$	1,712,000
404093	Seal Isolation Joint	LF		x		=	$	-
413117	Seal Concrete Pavement Joint (Silicone)	LF		x		=	$	-
280000	Lean Concrete Base	CY		x	95.00	=	$	-
400050	Continuously Reinforced Concrete Pavement	CY	0	x	170.00	=	$	-
390132	Hot Mix Asphalt (Type A)	TON	327,600	x	81.00	=	$	26,536,000
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON	0	x	95.00	=	$	-
393003	Geosynthetic Pavement Interlayer	SQYD		x		=	$	-
260203	Class 2 Aggregate Base	CY	113,300	x	27.00	=	$	3,059,000
290201	Asphalt Treated Permeable Base	CY	5,000	x	125.00	=	$	625,000
250401	Class 4 Aggregate Subbase	CY	207,800	x	20.00	=	$	4,156,000
374002	Asphaltic Emulsion (Fog Seal Coat) Roadway Shldrs	TON	38	x	665.00	=	$	25,000
397005	Tack Coat	TON		x		=	$	-
377501	Slurry Seal	TON		x		=	$	-
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		=	$	-
370001	Sand Cover	TON		x		=	$	-
731530	Minor Concrete (Textured Paving)	SQFT	146,000	x	8.60	=	$	1,256,000
731502	Minor Concrete (Misc. Const) Curb, Sidewalk	CY	4,890	x	466.00	=	$	2,279,000
394076	Place Hot Mix Asphalt Dike (Type E)	LF	148,200	x	2.50	=	$	371,000
150771	Remove Asphalt Concrete Dike	LF		x		=	$	-
420201	Grind Existing Concrete Pavement	SQYD		x		=	$	-
150860	Remove Base and Surfacing	CY		x		=	$	-
390095	Replace Asphalt Concrete Surfacing	CY		x		=	$	-
394090	Place Hot Mix Asphalt (Misc. Area)	SQFT	349,500	x	1.90	=	$	664,000
153103	Cold Plane Asphalt Concrete Pavement	SQYD		x		=	$	-
413112A	Repair Spalled Joints (Polyester Grout)	SQYD		x		=	$	-
420201	Groove Existing Concrete Pavement	SQYD		x		=	$	-
390136	Minor Hot Mix Asphalt	TON		x		=	$	-
XXXXXX	Hot Mix Asphalt Type A-Bond Breaker	TON		x	81.00	=	$	-
XXXXXX	Open Graded Wearing Course	TON		x	121.00	=	$	-

TOTAL STRUCTURAL SECTION ITEMS $ 157,688,000

SECTION 3 DRAINAGE

Item code		Unit	Quantity					Amount
510502	Minor Concrete (Minor Structure)	CY	0	x	0.00	=	$	-
510090	Structural Concrete Box Culvert (I-10, Montclair	CY	6,120	x	950.00	=	$	5,814,000
721420	Concrete (Ditch Lining)	CY	0	x	0.00	=	$	-
721430	Concrete (Channel Lining) (I-10, Montclair)	CY	43,550	x	456.00	=	$	19,859,000
750001	Miscellaneous Iron and Steel	LB	0	x	0.00	=	$	-
XXXXXX	Project Drainage	LS	1	x	31,275,000	=	$	31,275,000
XXXXXX	Additional Drainage (Colton, J Street)	LS	1	x	1,000,000	=	$	1,000,000
XXXXXX	Modify Drainage at Mt. Vernon Pump Plant	LS	1	x	500,000	=	$	500,000
XXXXXX	Modify Weir Structure at Colton Crossing	LS	1	x	1,500,000	=	$	1,500,000
					TOTAL DRAINAGE ITEMS			59,948,000

SECTION 4 SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price ($)			Cost
070012	Progress Schedule (Critical Path Method)	LS	1	x	60,000	=	$	60,000
518002	Sound Wall (Masonry Block)	SQFT	643,000	x	14.00	=	$	9,002,000
510059	Structure Concrete, RW (Sound Wall)	CY	3,850	x	504.00	=	$	1,940,000
153253	Remove Sound Wall	LF	2,950	x	17.00	=	$	50,000
190110	Lead Compliance Plan	LS	1	x	40,000	=	$	40,000
1532XX	Remove Barrier (*Insert Type)*	LF		x		=	$	-
150662	Remove Metal Beam Guard Railing	LF		x		=	$	-
150668	Remove Flared End Sections	EA		x		=	$	-
800360	Chain Link Fence (Type CL-6)	LF	24,000	x	18.00	=	$	432,000
802501	4' Chain Link Gate (Type CL-6)	EA	24	x	760.00	=	$	18,000
832001	Metal Beam Guard Railing	LF	29,200	x	21.00	=	$	613,000
839301	Single Thrie Beam Barrier	LF		x		=	$	-
839310	Double Thrie Beam Barrier	LF		x		=	$	-
839521	Cable Railing	LF		x		=	$	-
839566	Terminal System (Type CAT)	EA		x		=	$	-
839585	Alternative Flared Terminal System	EA		x		=	$	-
839584	Alternative In-line Terminal System	EA		x		=	$	-
49XXXX	CIDH Concrete Piling *(Insert Diameter)*	LF		x		=	$	-
839604	Crash Cushion *(REACT 9CBB)*	EA	104	x	48,000.00	=	$	4,992,000
839724	Concrete Barrier (Type 736SV)	LF	10,000	x	95.00	=	$	950,000
839736	Concrete Barrier (Type 742A)	LF	111,500	x	90.00	=	$	10,035,000
839706	Concrete Barrier (Type 60G)	LF	196,400	x	95.00	=	$	18,658,000
839704	Concrete Barrier (Type 60D)	LF	64,600	x	48.00	=	$	3,101,000
520103	Bar Reinf. Steel (Ret. Wall)	LB	14,700,000	x	0.86	=	$	12,642,000
510408	Class 1 Concrete (Retaining Wall)	CY		x		=	$	-
510133	Class 2 Concrete (Retaining Wall)	CY		x		=	$	-
510060	Structural Concrete (Retaining Wall)	CY	222,900	x	309.00	=	$	68,876,000
513553	Retaining Wall (Masonry Wall)	CY		x		=	$	-
511035A	Architectural Treatment (Walls)	SQFT	804,800	x	13.00	=	$	10,462,000
511035B	Architectural Treatment (Overcrossing Bridges)	LS	1	x	3,074,000	=	$	3,074,000
511047	Apply Anti-Graffiti Coating	SQFT	3,119,000	x	0.91	=	$	2,838,000
XXXXXX	Trench Section Retaining Walls	SQFT	361,300	x	161.00	=	$	58,169,000
83954X	Transition Railing *(Insert Type)*	EA		x		=	$	-
597601	Prepare and Stain Concrete	SQFT		x		=	$	-
839561	Rail Tensioning Assembly	EA		x		=	$	-
839581	End Anchor Assembly (*TYPE SFT*)	EA	140	x	570.00	=	$	80,000
601001	Railroad Track	LF	1,460	x	209.00	=	$	305,000
					TOTAL SPECIALTY ITEMS		**$**	**206,337,000**

Section 5 ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Amount
XXXXXX	Biological Mitigation	LS	1	x	1,953,000	=	$	1,953,000
071325	Temporary Fence (Type ESA)	LS	1	x	95,000	=	$	95,000
XXXXXX	Hazardous Material Remediation	LS	1	x	3,200,000	=	$	3,200,000

$ 5,248,000

5B - LANDSCAPE AND IRRIGATION

Subtotal Landscape and Irrigation $ 29,670,000

5C - NPDES

Item code		Unit	Quantity		Unit Price ($)			Amount
XXXXXX	Temporary BMPs	LS	1		19,723,000	=	$	19,723,000
074019	Prepare SWPPP	LS		x		=	$	-
074017	Prepare WPCP	LS		x		=	$	-
074016	Construction Site Management	LS		x		=	$	-
074039	Temporary Erosion Control Hydraulic Mulch	SQYD		x		=	$	-
074037	Move In/ Move Out (Temporary Erosion Control)	EA		x		=	$	-
074028	Temporary Fiber Roll	LF		x		=	$	-
074032	Temporary Concrete Washout Facility	EA		x		=	$	-
074033	Temporary Construction Entrance	EA		x		=	$	-
074035	Temporary Check Dam	LF		x		=	$	-
074038	Temp. Drainage Inlet Protection	EA		x		=	$	-
074041	Street Sweeping	LS		x		=	$	-
203021	Fiber Rolls	LF		x		=	$	-
203025	Compost (Incorporate)	SQYD		x		=	$	-
203030	Erosion Control (Polymer Stabilized Fiber Matrix)	ACRE		x		=	$	-
203034	Rolled Erosion Control Product (Netting)	SF		x		=	$	-

Subtotal NPDES (Without Supplemental Work) $ 19,723,000

TOTAL ENVIRONMENTAL $ 54,641,000

Section 6 TRAFFIC ITEMS

6A - Traffic Electrical

Item code		Unit	Quantity		Unit Price ($)			Cost
860460	Lighting & Sign Illumination	LS		x		=	$	-
860403	Highway Lighting (median)	LS	1	x	3,660,000	=	$	3,660,000
861502	Modify Signal	LS		x			$	-
861504	Modify Lighting & Sign Illumination	LS	1	x	9,300,000	=	$	9,300,000
860201	Signals & Lighting	LS	1	x	150,000	=	$	150,000
861501	Modify Signals & Lighting	LS	1	x	3,050,000	=	$	3,050,000
860532A	CMS/AVMS System	LS	1	x	5,400,000	=	$	5,400,000
860812	Microwave Vehicle Detection System	LS		x		=	$	-
860990	Closed Circuit Television System	LS	1	x	1,380,000	=	$	1,380,000
861100	Ramp Metering System	LS	1	x	6,700,000	=	$	6,700,000
560208	Furnish Sign Structure (Tubular)	LB		x		=	$	-
560209	Install Sign Structure (Tubular)	LB		x		=	$	-
561016	60" CIDHC Pile (Sign Foundation)	LF	8,730	x	903.00	=	$	7,883,000
860810	Inductive Loop Detectors	EA		x		=	$	-
860925	Traffic Monitoring Stations (Count)	LS		x		=	$	-
860889	Modify Traffic Monitoring Station	LS	1	x	1,850,000	=	$	1,850,000
150757	Remove Sign Structure	EA	210	x	2,850.00	=	$	599,000
560218	Furnish Sign Structure (Truss)	LB	9,143,500	x	3.80	=	$	34,745,000
560219	Install Sign Structure (Truss)	LB	9,143,500	x	0.24	=	$	2,194,000
151581	Reconstruct Sign Structure	EA		x		=	$	-
152641	Modify Sign Structure	EA		x		=	$	-
560203	Furnish Sign Structure (Bridge Mounted)	LB	203,500	x	4.80	=	$	977,000
560204	Install Sign Structural (Bridge Mounted)	LB	203,500	x	1.90	=	$	387,000
860090	Maintain Existing Traffic Management System Elements During Construction	LS	1	x	3,418,000	=	$	3,418,000
86XXXX	Communications System	LS	1	x	12,195,200	=	$	12,195,000
120165	Channelizers (Surface Mounted)	EA	26,300	x	40.00	=	$	1,052,000
XXXXXX	Toll Equipment and System Integration	LS	1	x	61,180,600	=	$	61,181,000

Subtotal Traffic Electrical $ 156,121,000

6B - Traffic Signing and Striping

Item code		Unit	Quantity		Unit Price ($)			Cost
566011	Roadside Sign (One Post)	EA	370	x	271.00	=	$	100,000
566012	Roadside Sign (Two Post)	EA	172	x	775.00	=	$	133,000
560244	Furnish Laminated Panel Sign (1"-Type A)	SQFT	73,600	x	21.00	=	$	1,546,000
150710	Remove Traffic Stripe	LF		x		=	$	-
150701	Remove Yellow Painted Traffic Stripe	LF		x		=	$	-
150713	Remove Pavement Marking	SQFT		x		=	$	-
150742	Remove Roadside Sign	EA	480	x	114.00	=	$	55,000
150714	Remove Thermoplastic Traffic Stripe	LF		x		=	$	-
152390	Remove Thermoplastic Pavement Marking	SQFT		x		=	$	-
820107	Delineator (Class 1)	EA		x		=	$	-
840501	Permanent Pavement Delineation	LF	3,411,000	x	0.72	=	$	2,456,000
120090	Construction Area Signs	LS	1	x	743,600	=	$	744,000

Subtotal Traffic Signing and Striping $ 5,034,000

6C - Stage Construction and Traffic Handling

Item code		Unit	Quantity		Unit Price ($)			Cost
120199	Traffic Plastic Drum	EA	3,430	x	53.00	=	$	182,000
12016X	Channelizer	EA		x		=	$	-
120120	Type III Barricade	EA		x		=	$	-
129100	Temporary Crash Cushion Module	EA	8,070	x	181.00	=	$	1,461,000
120100	Traffic Control System	LS	1	x	10,101,000	=	$	10,101,000
839603A	Crash Cushion (ADIEM)	EA		x		=	$	-
129000	Temporary Railing (Type K)	LF	758,000	x	10.00	=	$	7,580,000
120143	Temporary Pavement Delineation	LF		x		=	$	-
120159	Temporary Traffic Stripe (Paint)	LF	2,062,000	x	0.34	=	$	701,000
XXXXXX	Flagging	LS	1	x	2,100,000	=	$	2,100,000

Subtotal Stage Construction and Traffic Handling $ 22,125,000

TOTAL TRAFFIC ITEMS $ 183,280,000

Section 7 DETOURS*

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY	800	x	12.00	=	$	10,000
198050	Embankment	CY	0	x	0.00	=	$	-
198010	Imported Borrow	CY	7,400	x	7.00	=	$	52,000
390132	Hot Mix Asphalt (Type A)	TON	2,100	x	73.00	=	$	153,000
260203	Class 2 Aggregate Base	CY	650	x	27.00	=	$	18,000
250201	Class 2 Aggregate Subbase	CY	0	x	0.00	=	$	-
250401	Class 4 Aggregate Subbase	CY	0	x	0.00	=	$	-
07XXXX	Temporary Drainage	LS	0	x	0.00	=	$	-
129000	Temporary Railing (Type K)	LF	18,000	x	10.00	=	$	180,000
1286XX	Temporary Signals	EA	0	x	0.00	=	$	-
120143	Temporary Pavement Delineation	LF	19,050	x	0.50	=	$	10,000
071321	Temporary Fence (Type CL-6)	LF	2,200	x	15.00	=	$	33,000
129510	Temporary Retaining Wall (Monte Vista IC)	SQFT	25,000	x	50.00	=	$	1,250,000

* Includes constructing, maintaining, and removal of detour for Monte Vista UC replacement

TOTAL DETOURS	**$**	**1,706,000**

SUBTOTAL SECTIONS 1-7	$	722,548,000

Section 8 MINOR ITEMS (Use Appropriate percentage between 5%-10%)

Total of Section 1-7	722,548,000	x	5%	=	$	36,127,000	

TOTAL MINOR ITEMS	**$**	**36,127,000**

Section 9 ROADWAY MOBILIZATION

Item code								
999990	Total Section 1-8	$	758,675,000	x	10%	=	$	75,868,000

TOTAL MOBILIZATION	**$**	**75,868,000**

Section 10 SUPPLEMENTAL WORK

Total Section 1-8 =	$	758,675,000		5%	=	$	37,934,000

TOTAL SUPPLEMENTAL WORK	**$**	**37,934,000**

Section 11 STATE FURNISHED MATERIALS

Item code		Unit	Quantity		Unit Price ($)			Cost	
066105	RE Office	LS	1	x	577,000	=	$	577,000	
066572	Sign Panels	LS		x		=	$	-	
066576A	Overhead Sign Panels	LS		x		=	$	-	
066063	Public Information	LS	1	x	3,942,000	=	$	3,942,000	
066XXX	Traveler Information Strategies	LS	1	x	465,000	=	$	465,000	
066062A	COZEEP Expenses	LS	1	x	4,160,000	=	$	4,160,000	
066065	Freeway Service Patrol	LS	1	x	6,650,000	=	$	6,650,000	
066067	Rideshare Promotion	LS	1	x	800,000	=	$	800,000	
066XXX	Alternate Route Strategies	LS	1	x	10,080,000	=	$	10,080,000	
066XXX	Construction Strategies	LS		x		=	$	-	
066838	Reflective Numbers	LS		x		=		$0	
066803	Padlocks	LS		x		=		$0	
066887	Signal Lamps	LS		x		=		$0	
066577A	Advanced Variable Message Sign (AVMS)	LS	1	x	1,080,000	=	$	1,080,000	
066840	Traffic Signal Controller Assembly	LS	1	x	290,000	=	$	290,000	
066843A	Ramp Metering Controller Assembly	LS	1	x	650,000	=	$	650,000	
								TOTAL STATE FURNISHED	**$ 28,694,000**

Section 12 CONTINGENCY

Total Section 1-11	$	901,171,000	x	15%	=	$	135,175,650

TOTAL CONTINGENCY	**$ 135,176,000**

Section 13 OVERHEAD

Item code		Unit	Quantity		Unit Price ($)			Cost
070018	Time Related Overhead (TRO)	WD	1,245	X	0	=	$	-

assume D-B, hence no TRO

TOTAL OVERHEAD	**$ -**

II. STRUCTURES ITEMS

PM	BRIDGE CONSTRUCTION	STRUCTURE NAME	TOTAL COST (15% contingency)	PM	BRIDGE CONSTRUCTION	STRUCTURE NAME	TOTAL COST (15% contingency)
47.74	NO CHANGE	INDIAN HILL BLVD UC	$ -	20.97	NO CHANGE	PEPPER AVENUE OC	$ -
0.01	WIDEN	MILLS AVENUE UC	$ 386,000	R21.46	REPLACE	SLOVER MOUNTAIN UP	$ 6,867,000
0.32	WIDEN	SAN ANTONIO WASH	$ 1,127,000	R21.96	TIE BACK WALL	RANCHO AVENUE OC	$ 197,000
0.68	REPLACE	MONTE VISTA AVENUE UC	$ 5,758,000	R22.36	WIDEN	COLTON OH Rt	$ 4,156,000
1.23	WIDEN	CENTRAL AVENUE UC	$ 1,120,000	R22.38	WIDEN	COLTON OH Lt	$ 2,700,000
1.75	WIDEN	BENSON AVENUE UC	$ 1,033,000	R22.62	WIDEN	LA CADENA DRIVE UC	$ 1,422,000
2.37	WIDEN	MOUNTAIN AVENUE UC	$ 1,681,000	R22.62	REPLACE	LA CADENA DR UC (EB OFF)	$ 1,247,000
2.92	REPLACE	SAN ANTONIO AVENUE OC	$ 4,675,000	R22.71	WIDEN	NINTH STREET UC	$ 1,075,000
3.47	REPLACE	SR 83/I-10 SEPARATION	$ 9,435,000	R22.82	Maintain	PAVILLION S OH OFF-RAMP	$ -
3.75	REPLACE	SULTANA AVENUE OC	$ 2,897,000	R22.86	WIDEN OR	PAVILLION SPUR OH	$ 770,000
4.02	REPLACE	CAMPUS AVENUE OC	$ 3,204,000	R23.25	TIE BACK WALL	MOUNT VERNON AVENUE OC	$ 220,000
4.33	REPLACE	SIXTH STREET OC	$ 6,517,000	R23.60	WIDEN	WARM CREEK	$ 5,532,000
4.70	WIDEN	WEST CUCAMONGA CHANNEL	$ 677,000	R23.80	NO CHANGE	SANTA ANA RIVER (EB-10 TO N/S	$ -
4.88	WIDEN	GROVE AVENUE UC	$ 754,000	R23.82	WIDEN	SANTA ANA RIVER (L/R)	$ 10,346,000
5.24	WIDEN	FOURTH STREET UC	$ 1,308,000	R24.19	NO CHANGE	E10-N215 CONNECTOR OC	$ -
6.10	REPLACE	VINEYARD AVENUE OC	$ 7,165,000	R24.23	NO CHANGE	INTERSTATE 215/10 SEPARATION	$ -
6.70	WIDEN	CUCAMONGA WASH	$ 1,769,000	R24.25	NO CHANGE	INTERSTATE 215/10 SEPARATION	$ -
6.80	WIDEN	HOLT BLVD OFF-RAMP UC	$ 869,000	R24.27	NO CHANGE	W10-N215 CONNECTOR OC	$ -
6.80	WIDEN	HOLT BLVD OFF-RAMP UC	$ 744,000	R24.30	NO CHANGE	W10-S215 CONNECTOR	$ -
6.90	NO CHANGE	E10-ARCHIBALD AVENUE / E HOLT	$ -	R24.57	NO CHANGE	W10-N&S215 CONN / E ST-W10 ON	$ -
7.16	NO CHANGE	ARCHIBALD AVENUE OC	$ -	0.00	0	0	$ -
8.16	TIE-BACK WALL	HAVEN AVENUE OC	$ 195,000	24.76	WIDEN	HUNTS LANE UC	$ 1,035,000
8.16	TIE BACK-WALL	HAVEN AVENUE OC	$ 195,000	25.26	WIDEN	WATERMAN AVENUE UC	$ 2,507,000
9.17	TIE BACK-WALL	MILLIKEN AVENUE OC	$ 195,000	25.46	WIDEN	SAN TIMOTEO CREEK (W10 ON-RAMP)	$ 263,000
9.87	NO CHANGE	E10-N15 CONNECTOR OC	$ -	25.54	WIDEN	SAN TIMOTEO CREEK	$ 895,000
9.91	NO CHANGE	N15-W10 CONNECTOR OC	$ -	26.27	WIDEN	TIPPECANOE AVENUE UC	$ 1,570,000
9.92	NO CHANGE	W10-S15 CONNECTOR OC	$ -	26.81	REPLACE	RICHARDSON STREET OC	$ 4,180,000
9.93	NO CHANGE	ROUTE 15/10 SEPARATION	$ -	27.30	WIDEN	MOUNTIAN VIEW AVENUE UC	$ 2,039,000
9.94	NO CHANGE	ROUTE 15/10 SEPARATION	$ -	27.64	WIDEN	WEST REDLANDS OH	$ 5,829,000
9.96	NO CHANGE	S15-E10 CONNECTOR OC	$ -	28.30	WIDEN	CALIFORNIA STREET UC	$ 2,722,000
9.98	NO CHANGE	W10-S15 CONNECTOR OC	$ -	28.80	WIDEN	NEVADA STREET UC	$ 1,868,000
10.12	WIDEN	DAY CANYON CHANNEL	$ 1,016,000	29.31	NO CHANGE	ALABAMA STREET OC	$ -
10.12	NO CHANGE	W10-S15 CONNECTOR	$ -	29.53	NO CHANGE	W10-ALABAMA UC (E210-W10 CONN)	$ -
10.13	NO CHANGE	W10-N15 CONNECTOR	$ -	29.70	NO CHANGE	E10-W210 CONNECTOR OC	$ -
10.99	WIDEN	ETIWANDA WASH	$ 1,226,000	29.70	NO CHANGE	E10-W210 CONNECTOR OC	$ -
11.13	NO CHANGE	ETIWANDA AVENUE OC	$ -	29.76	NO CHANGE	E210-E10 CONNECTOR OC	$ -
11.35	NO CHANGE	VALLEY BLVD ON-RAMP SEPARATION	$ -	29.82	REPLACE	TENNESSEE STREET OC	$ 8,489,000
11.50	WIDEN	VALLEY BLVD OFF-RAMP UC (L)	$ 2,108,000	30.38	WIDEN	TEXAS STREET UC	$ 636,000
11.50	WIDEN	VALLEY BLVD OFF-RAMP UC (R)	$ 2,645,000	30.66	MODIFY	EUREKA STREET UC	$ 971,000
11.64	WIDEN	ETIWANDA-SN SEVN FLOOD CNTL CH (L/R)	$ 3,758,000	30.88	NO CHANGE	INTERSTATE 10/STATE ROUTE 38	$ -
11.64	REPLACE	ETIWANDA-SN SEVN FLOOD CNTL CH	$ 1,732,000	31.01	MODIFY	SIXTH STREET UC	$ 197,000
11.74	WIDEN	KAISER SPUR OH	$ 1,868,000	31.41	MODIFY	CHURCH STREET UC	$ 180,000
11.82	ABANDON	SAN SEVIANE CREEK	$ 275,000	31.52	MODIFY	REDLANDS OH	$ 18,000
12.14	ABANDON	MULBERRY CREEK	$ 206,000	31.87	MODIFY	UNIVERSITY STREET UC	$ 18,000
13.17	NO CHANGE	CHERRY AVENUE OC	$ -	31.99	MODIFY	CITRUS AVENUE UC	$ 224,000
15.18	NO CHANGE	CITRUS AVENUE OC	$ -	32.11	MODIFY	CYPRESS AVENUE UC	$ 191,000
15.73	NO CHANGE	CYPRESS AVENUE OC	$ -	32.36	MODIFY	PALM AVENUE UC	$ 18,000
16.22	sidewalk imp	SIERRA AVENUE OC	$ 180,000	32.61	MODIFY	HIGHLAND AVENUE UC	$ 197,000
18.49	TIE BACK WALL	CEDAR AVENUE OC	$ 389,000	33.13	WIDEN	FORD STREET UC	$ 981,000
19.90	NO CHANGE	RIALTO CHANNEL	$ -	33.29	WIDEN	REDLANDS BLVD OFF RAMP UC	$ 1,552,000
19.97	NO CHANGE	RIVERSIDE AVENUE OC	$ -				

TOTAL COST OF BRIDGES	$138,219,000

TOTAL COST OF STRUCTURES[1] **$138,219,000.00**

Estimate Prepared By: Kevin Michalski, Parsons (Name, Organization) 2/19/2016 (Date)

[1]Structure's Estimate includes Overhead and Mobilization.

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I-10 CORRIDOR PROJECT COST ESTIMATE

EA 0C2500, PN 0800000040

Type of Estimate : Project Report
Program Code : 075.600/HB5
Project Limits : 08-LA-10-PM 44.9/48.3, 07-SBd-10-PM 0.0/R37.0
Description: Provide 2 Express Lanes each dir from County Line to California & 1 Express Lane each dir from California to Ford
Scope : **Contract 1: LA/SBd County Line to I-15**
Alternative : **Express Lanes (Alternative 3)**
Date: February 2016

	Current Cost	Escalated Cost*
ROADWAY ITEMS	$ 376,647,000.00	$ 429,839,000.00
STRUCTURE ITEMS	$ 52,212,000.00	$ 59,586,000.00
SUBTOTAL CONSTRUCTION COST	$ 428,859,000.00	$ 489,425,000.00
RIGHT OF WAY	$ 41,325,000.00	$ 51,656,000.00
TOTAL CAPITAL OUTLAY COST	$ 470,184,000.00	$ 541,081,000.00
PA/ED SUPPORT	$ 8,358,000.00	$ 8,358,000.00
PS&E SUPPORT	$ 25,734,000.00	$ 27,769,000.00
RIGHT OF WAY SUPPORT	$ 2,068,000.00	$ 2,240,000.00
CONSTRUCTION SUPPORT	$ 42,886,000.00	$ 47,464,000.00
TOTAL CAPITAL OUTLAY SUPPORT COST	$ 79,046,000.00	$ 85,831,000.00
LANDSCAPE MAINTENANCE (EEP)	$ 1,568,000.00	$ 1,846,000.00
CONSTRUCTION MANAGEMENT (EEP)	$ 1,568,000.00	$ 1,846,000.00
TOTAL EEP COST	$ 3,136,000.00	$ 3,692,000.00
TOTAL PROJECT COST	$ 552,366,000.00	$ 630,604,000.00
TOTAL PROJECT COST w/o Monte Vista IC	$ 520,629,000.00	$ 593,875,000.00

If Project has been programmed, enter Programmed Amount** $ 643,174,000

	month	year
Date (Month/Year) of Estimate	1	/ 2016
Estimated Date (Month/Year) of Construction Start	12	/ 2019
Number of Months of Escalation*	0	
Number of Years of Escalation*	0.00	
Number of Working Days	720	
Number of Plant Establishment Days	1300	

Estimated Project Schedule

PA/ED Approval	Month-Year	9 / 2017
Issue D-B RFP	Month-Year	7 / 2017
D-B NTP	Month-Year	2 / 2018
Begin Construction	Month-Year	4 / 2019

Approved by: Chad Costello — 2/19/2016 — (909) 884-8276

Project Manager, SANBAG — **Date** — **Phone**

EEP = Establish Existing Planting

*Support cost is escalated to 2020/2021. Construction cost is escalated to 2022/2023. Escalation is based on SANBAG 10-year plan rates.

**The programmed cost, $31.7M for Monte Vista IC in SANBAG's Measure I 2010-2040 Interchange Program will provide a separate financial contribution to the I-10 Corridor Project.

I. ROADWAY ITEMS

Section				Cost
1	**Earthwork**		$	17,666,000
2	**Structural Section**		$	47,946,000
3	**Drainage**		$	11,310,000
4	**Specialty Items**		$	104,193,000
5	**Environmental**		$	16,769,000
6	**Traffic Items**		$	64,376,000
7	**Detours**		$	1,706,000
8	**Minor Items**		$	13,198,000
9	**Roadway Mobilization**		$	27,716,000
10	**Supplemental Work**		$	13,858,000
11	**State Furnished**		$	8,781,000
12	**Contingencies**		$	49,128,000
13	**Overhead**		$	-
	TOTAL ROADWAY ITEMS		**$**	**376,647,000**

Estimate Prepared By :	Daniel Wagner, Parsons	1/5/2016	619-515-5102
	Name and Title	Date	Phone
Estimate Reviewed By :	Patti Tiberi, Parsons	1/5/2016	949-333-4541
	Name and Title	Date	Phone

SECTION 1 EARTHWORK

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY	654,200	x	12.00	=	$	7,851,000
190107	Roadway Excavation (Type Y-1) ADL	CY	115,400	x	15.00	=	$	1,731,000
190105	Roadway Excavation (Type Z-2) ADL	CY		x		=	$	-
194001	Ditch Excavation	CY		x		=	$	-
198010	Imported Borrow	CY		x	7.00	=	$	-
190185	Shoulder Backing	TON		x		=	$	-
192037	Structure Excavation (Retaining Wall)	CY	112,600	x	36.00	=	$	4,053,600
193013	Structure Backfill (Retaining Wall)	CY	124,700	x	26.00	=	$	3,242,200
193031	Pervious Backfill Material (Retaining Wall)	CY		x		=	$	-
160102	Clearing & Grubbing	LS	1	x	643,000.00	=	$	643,000
170101	Develop Water Supply	LS	1	x	144,500.00	=	$	144,500

TOTAL EARTHWORK SECTION ITEMS	**$**	**17,666,000**

Section 2 STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price ($)			Cost
XXXXXX	Rehabilitate Existing Pavement	SY	282,000	x	27.50	=	$	7,755,000
401050	Jointed Plain Concrete Pavement	CY	196,100	x	143.00	=	$	28,042,000
404092	Seal Pavement Joint	LF	115,400	x	5.00	=	$	577,000
404093	Seal Isolation Joint	LF		x		=	$	-
413117	Seal Concrete Pavement Joint (Silicone)	LF		x		=	$	-
280000	Lean Concrete Base	CY		x	95.00	=	$	-
400050	Continuously Reinforced Concrete Pavement	CY	0	x	170.00	=	$	-
390132	Hot Mix Asphalt (Type A)	TON	99,000	x	81.00	=	$	8,019,000
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON	0	x	95.00	=	$	-
393003	Geosynthetic Pavement Interlayer	SQYD		x		=	$	-
260203	Class 2 Aggregate Base	CY	40,800	x	27.00	=	$	1,102,000
290201	Asphalt Treated Permeable Base	CY	5,000	x	125.00	=	$	625,000
250401	Class 4 Aggregate Subbase	CY	0	x	20.00	=	$	-
374002	Asphaltic Emulsion (Fog Seal Coat) Roadway Shldrs	TON	18	x	665.00	=	$	12,000
397005	Tack Coat	TON		x		=	$	-
377501	Slurry Seal	TON		x		=	$	-
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		=	$	-
370001	Sand Cover	TON		x		=	$	-
731530	Minor Concrete (Textured Paving)	SQFT	32,000	x	8.60	=	$	275,000
731502	Minor Concrete (Misc. Const) Curb, Sidewalk	CY	2,600	x	466.00	=	$	1,212,000
394076	Place Hot Mix Asphalt Dike (Type E)	LF	57,200	x	2.50	=	$	143,000
150771	Remove Asphalt Concrete Dike	LF		x		=	$	-
420201	Grind Existing Concrete Pavement	SQYD		x		=	$	-
150860	Remove Base and Surfacing	CY		x		=	$	-
390095	Replace Asphalt Concrete Surfacing	CY		x		=	$	-
394090	Place Hot Mix Asphalt (Misc. Area)	SQFT	97,000	x	1.90	=	$	184,000
153103	Cold Plane Asphalt Concrete Pavement	SQYD		x		=	$	-
413112A	Repair Spalled Joints (Polyester Grout)	SQYD		x		=	$	-
420201	Groove Existing Concrete Pavement	SQYD		x		=	$	-
390136	Minor Hot Mix Asphalt	TON		x		=	$	-
XXXXXX	Hot Mix Asphalt Type A-Bond Breaker	TON		x	81.00	=	$	-
XXXXXX	Open Graded Wearing Course	TON		x	121.00	=	$	-

TOTAL STRUCTURAL SECTION ITEMS	**$**	**47,946,000**

SECTION 3 DRAINAGE

Item code		Unit	Quantity					Amount
510502	Minor Concrete (Minor Structure)	CY		x		=	$	-
510090	Structural Concrete Box Culvert (Montclair SD)	CY	1,320	x	950.00	=	$	1,254,000
721420	Concrete (Ditch Lining)	CY		x		=	$	-
721430	Concrete (Channel Lining) (Montclair SD)	CY	550	x	456.00	=	$	251,000
750001	Miscellaneous Iron and Steel	LB		x		=	$	-
XXXXXX	Project Drainage	LS	1	x	9,805,000.00	=	$	9,805,000
XXXXXX	Additional Drainage	LS		x		=	$	-
XXXXXX	Modify Drainage	LS		x		=	$	-

TOTAL DRAINAGE ITEMS	**$**	**11,310,000**

SECTION 4 SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price ($)			Cost
070012	Progress Schedule (Critical Path Method)	LS	1	x	15,000.00	=	$	15,000
518002	Sound Wall (Masonry Block)	SQFT	270,000	x	14.00	=	$	3,780,000
510059	Structure Concrete, RW (Sound Wall)	CY	410	x	504.00	=	$	207,000
153253	Remove Sound Wall	LF	1,350	x	17.00	=	$	23,000
190110	Lead Compliance Plan	LS	1	x	10,000.00	=	$	10,000
1532XX	Remove Barrier (*Insert Type)*	LF		x		=	$	-
150662	Remove Metal Beam Guard Railing	LF		x		=	$	-
150668	Remove Flared End Sections	EA		x		=	$	-
800360	Chain Link Fence (Type CL-6)	LF	10,000	x	18.00	=	$	180,000
802501	4' Chain Link Gate (Type CL-6)	EA	10	x	760.00	=	$	8,000
832001	Metal Beam Guard Railing	LF	9,350	x	21.00	=	$	196,000
839301	Single Thrie Beam Barrier	LF		x		=	$	-
839310	Double Thrie Beam Barrier	LF		x		=	$	-
839521	Cable Railing	LF		x		=	$	-
839566	Terminal System (Type CAT)	EA		x		=	$	-
839585	Alternative Flared Terminal System	EA		x		=	$	-
839584	Alternative In-line Terminal System	EA		x		=	$	-
49XXXX	CIDH Concrete Piling *(Insert Diameter)*	LF		x		=	$	-
839604	Crash Cushion *(REACT 9CBB)*	EA	32	x	48,000.00	=	$	1,536,000
839724	Concrete Barrier (Type 736SV)	LF	2,000	x	95.00	=	$	190,000
839736	Concrete Barrier (Type 742A)	LF	24,000	x	90.00	=	$	2,160,000
839706	Concrete Barrier (Type 60G)	LF	66,000	x	95.00	=	$	6,270,000
839704	Concrete Barrier (Type 60D)	LF	20,000	x	48.00	=	$	960,000
520103	Bar Reinf. Steel (Ret. Wall)	LB	7,234,000	x	0.86	=	$	6,221,000
510408	Class 1 Concrete (Retaining Wall)	CY		x		=	$	-
510133	Class 2 Concrete (Retaining Wall)	CY		x		=	$	-
510060	Structural Concrete (Retaining Wall)	CY	52,200	x	309.00	=	$	16,130,000
513553	Retaining Wall (Masonry Wall)	CY		x		=	$	-
511035A	Architectural Treatment (Walls)	SQFT	406,800	x	13.00	=	$	5,288,000
511035B	Architectural Treatment (Overcrossing Bridges	LS	1	x	1,633,000.00	=	$	1,633,000
511047	Apply Anti-Graffiti Coating	SQFT	1,309,000	x	0.91	=	$	1,191,000
XXXXXX	Trench Section Retaining Walls	SQFT	361,300	x	161.00	=	$	58,169,000
83954X	Transition Railing *(Insert Type)*	EA		x		=	$	-
597601	Prepare and Stain Concrete	SQFT		x		=	$	-
839561	Rail Tensioning Assembly	EA		x		=	$	-
839581	End Anchor Assembly (*TYPE SFT*)	EA	46	x	570.00	=	$	26,000
601001	Railroad Track	LF	0	x	209.00	=	$	-

TOTAL SPECIALTY ITEMS	**$**	**104,193,000**

Section 5 ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)	Unit Price ($)		Amount
XXXXXX	Biological Mitigation	LS	1	x	200,000.00	200,000.00	= $	200,000
071325	Temporary Fence (Type ESA)	LS	1	x	15,000.00	15,000.00	= $	15,000
XXXXXX	Hazardous Material Remediation	LS	1	x	500,000.00	500,000.00	= $	500,000

Subtotal Environmental $ 715,000

5B - LANDSCAPE AND IRRIGATION

Subtotal Landscape and Irrigation $ 10,080,000

5C - NPDES

Item code		Unit	Quantity		Unit Price ($)	Unit Price ($)		Amount
XXXXXX	Temporary BMPs	LS	1			5,973,500.00	= $	5,974,000
074019	Prepare SWPPP	LS		x	10,000.00		= $	-
074017	Prepare WPCP	LS		x			= $	-
074016	Construction Site Management	LS		x	300,000.00		= $	-
074039	Temporary Erosion Control Hydraulic Mulch	SQYD		x	0.50		= $	-
074037	Move In/ Move Out (Temporary Erosion Control)	EA		x	500.00		= $	-
074028	Temporary Fiber Roll	LF		x	2.50		= $	-
074032	Temporary Concrete Washout Facility	EA		x	1,700.00		= $	-
074033	Temporary Construction Entrance	EA		x	4,200.00		= $	-
074035	Temporary Check Dam	LF		x	3.30		= $	-
074038	Temp. Drainage Inlet Protection	EA		x	180.00		= $	-
074041	Street Sweeping	LS		x	500,000.00		= $	-
203021	Fiber Rolls	LF		x	2.25		= $	-
203025	Compost (Incorporate)	SQYD		x	4.50		= $	-
203030	Erosion Control (Polymer Stabilized Fiber Matrix)	ACRE		x	3,400.00		= $	-
203034	Rolled Erosion Control Product (Netting)	SF		x	1.20		= $	-

Subtotal NPDES (Without Supplemental Work) $ 5,974,000

TOTAL ENVIRONMENTAL $ 16,769,000

Section 6 TRAFFIC ITEMS

6A - Traffic Electrical

Item code		Unit	Quantity		Unit Price ($)			Cost
860460	Lighting & Sign Illumination	LS		x		=	$	-
860403	Highway Lighting (median)	LS	1	x	1,755,000.00	=	$	1,755,000
861502	Modify Signal	LS		x		=	$	-
861504	Modify Lighting & Sign Illumination	LS	1	x	3,375,000.00	=	$	3,375,000
860201	Signals & Lighting	LS	1	x	150,000.00	=	$	150,000
861501	Modify Signals & Lighting	LS	1	x	900,000.00	=	$	900,000
860532A	CMS/AVMS System	LS	1	x	900,000.00	=	$	900,000
860812	Microwave Vehicle Detection System	LS		x		=	$	-
860990	Closed Circuit Television System	LS	1	x	660,000.00	=	$	660,000
861100	Ramp Metering System	LS	1	x	2,300,000.00	=	$	2,300,000
560208	Furnish Sign Structure (Tubular)	LB		x		=	$	-
560209	Install Sign Structure (Tubular)	LB		x		=	$	-
561016	60" CIDHC Pile (Sign Foundation)	LF	3,190	x	903.00	=	$	2,881,000
860810	Inductive Loop Detectors	EA		x		=	$	-
860925	Traffic Monitoring Stations (Count)	LS		x		=	$	-
860889	Modify Traffic Monitoring Station	LS	1	x	650,000.00	=	$	650,000
150757	Remove Sign Structure	EA	83	x	2,850.00	=	$	237,000
560218	Furnish Sign Structure (Truss)	LB	3,330,000	x	3.80	=	$	12,654,000
560219	Install Sign Structure (Truss)	LB	3,330,000	x	0.24	=	$	799,000
151581	Reconstruct Sign Structure	EA		x		=	$	-
152641	Modify Sign Structure	EA		x		=	$	-
560203	Furnish Sign Structure (Bridge Mounted)	LB	82,500	x	4.80	=	$	396,000
560204	Install Sign Structural (Bridge Mounted)	LB	82,500	x	1.90	=	$	157,000
860090	Maintain Existing Traffic Management System Elements During Construction	LS	1	x	1,121,000.00	=	$	1,121,000
86XXXX	Communications System	LS	1	x	3,590,100.00	=	$	3,590,000
120165	Channelizers (Surface Mounted)	EA	8,700	x	40.00	=	$	348,000
XXXXXX	Toll Equipment and System Integration	LS	1	x	23,266,700.00	=	$	23,267,000

Subtotal Traffic Electrical $ 56,140,000

6B - Traffic Signing and Striping

Item code		Unit	Quantity		Unit Price ($)			Cost
566011	Roadside Sign (One Post)	EA	137	x	271.00	=	$	37,000
566012	Roadside Sign (Two Post)	EA	61	x	775.00	=	$	47,000
560244	Furnish Laminated Panel Sign (1"-Type A)	SQFT	26,740	x	21.00	=	$	562,000
150710	Remove Traffic Stripe	LF		x		=	$	-
150701	Remove Yellow Painted Traffic Stripe	LF		x		=	$	-
150713	Remove Pavement Marking	SQFT		x		=	$	-
150742	Remove Roadside Sign	EA	173	x	114.00	=	$	20,000
150714	Remove Thermoplastic Traffic Stripe	LF		x		=	$	-
152390	Remove Thermoplastic Pavement Marking	SQFT		x		=	$	-
820107	Delineator (Class 1)	EA		x		=	$	-
840501	Permanent Pavement Delineation	LF	1,141,000	x	0.72	=	$	822,000
120090	Construction Area Signs	LS	1	x	294,000.00	=	$	294,000

Subtotal Traffic Signing and Striping $ 1,782,000

6C - Stage Construction and Traffic Handling

Item code		Unit	Quantity		Unit Price ($)			Cost
120199	Traffic Plastic Drum	EA	1,150	x	53.00	=	$	61,000
12016X	Channelizer	EA		x		=	$	-
120120	Type III Barricade	EA		x		=	$	-
129100	Temporary Crash Cushion Module	EA	2,980	x	181.00	=	$	539,000
120100	Traffic Control System	LS	1	x	3,150,000.00	=	$	3,150,000
839603A	Crash Cushion (ADIEM)	EA		x		=	$	-
129000	Temporary Railing (Type K)	LF	242,300	x	10.00	=	$	2,423,000
120143	Temporary Pavement Delineation	LF		x		=	$	-
120159	Temporary Traffic Stripe (Paint)	LF	825,000	x	0.34	=	$	281,000
XXXXXX	Flagging	LS	0	x	0.00	=	$	-

Subtotal Stage Construction and Traffic Handling $ 6,454,000

TOTAL TRAFFIC ITEMS $ 64,376,000

Section 7 DETOURS*

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY	800	x	12.00	=	$	10,000
198050	Embankment	CY		x		=	$	-
198010	Imported Borrow	CY	7,400	x	7.00	=	$	52,000
390132	Hot Mix Asphalt (Type A)	TON	2,100	x	73.00	=	$	153,000
260203	Class 2 Aggregate Base	CY	650	x	27.00	=	$	18,000
250201	Class 2 Aggregate Subbase	CY		x		=	$	-
250401	Class 4 Aggregate Subbase	CY		x		=	$	-
07XXXX	Temporary Drainage	LS		x		=	$	-
129000	Temporary Railing (Type K)	LF	18,000	x	10.00	=	$	180,000
1286XX	Temporary Signals	EA		x		=	$	-
120143	Temporary Pavement Delineation	LF	19,050	x	0.50	=	$	10,000
071321	Temporary Fence (Type CL-6)	LF	2,200	x	15.00	=	$	33,000
129510	Temporary Retaining Wall (Monte Vista IC)	SQFT	25,000	x	50.00	=	$	1,250,000

* Includes constructing, maintaining, and removal detour for Monte Vista UC replacement

TOTAL DETOURS	**$**	**1,706,000**

Section 8 MINOR ITEMS (Use Appropriate percentage between 5%-10%)

Total of Section 1-7	263,966,000	x	5%	=	$	13,198,000	

TOTAL MINOR ITEMS	**$**	**13,198,000**

Section 9 ROADWAY MOBILIZATION

Item code								
999990	Total Section 1-8	$	277,164,000	x	10%	=	$	27,716,000

TOTAL MOBILIZATION	**$**	**27,716,000**

Section 10 SUPPLEMENTAL WORK

	Total Section 1-8 =	$	277,164,000		5%	=	$	13,858,000
066866	Operation of Existing Traffic Management System Elements During Construction	LS		x		=	$	-

TOTAL SUPPLEMENTAL WORK	**$**	**13,858,000**

Section 11 STATE FURNISHED MATERIALS

Item code		Unit	Quantity		Unit Price ($)			Cost
066105	RE Office	LS	1	x	240,000	=	$	240,000
066572	Sign Panels	LS		x		=	$	-
066576A	Overhead Sign Panels	LS		x		=	$	-
066063	Public Information	LS	1	x	1,207,000	=	$	1,207,000
066XXX	Traveler Information Strategies	LS	1	x	142,000	=	$	142,000
066062A	COZEEP Expenses	LS	1	x	1,274,000	=	$	1,274,000
066065	Freeway Service Patrol	LS	1	x	2,036,000	=	$	2,036,000
066067	Rideshare Promotion	LS	1	x	245,000	=	$	245,000
066XXX	Alternate Route Strategies	LS	1	x	3,087,000	=	$	3,087,000
066XXX	Construction Strategies	LS		x		=	$	-
066838	Reflective Numbers	LS		x		=	$	-
066803	Padlocks	LS		x		=	$	-
066887	Signal Lamps	LS		x		=	$	-
066577A	Advanced Variable Message Sign (AVMS) panel	LS	1	x	240,000	=	$	240,000
066840	Traffic Signal Controller Assembly	LS	1	x	80,000	=	$	80,000
066843A	Ramp Metering Controller Assembly	LS	1	x	230,000	=	$	230,000
						TOTAL STATE FURNISHED		**$ 8,781,000**

Section 12 CONTINGENCY

Total Section 1-11	$	327,519,000	x	15%	=	$ 49,128,000

TOTAL CONTINGENCY $ 49,128,000

Section 13 OVERHEAD

Item code		Unit	Quantity		Unit Price ($)			Cost
070018	Time Related Overhead (TRO)	WD	720	X	0	=	$	-

assume D-B, hence, no TRO

TOTAL OVERHEAD $ -

II. STRUCTURES ITEMS

PM	BRIDGE CONSTRUCTION	STRUCTURE NAME	BRIDGE NUMBER	TYPE MAIN	TYPE APPR	CITY	$/SF WIDEN	$/SF REPLACE	TIE BACK WALL ($)	AREA (SF)	RETROFIT, TEMP BRIDGE OR REMOVAL	TOTAL COST 15% contingencies
47.74	NO CHANGE	INDIAN HILL BLVD UC	530860	105	0	CLA	0	0	0	0	0	$ -
0.01	WIDEN	MILLS AVENUE UC	540453	105	0	MCL	564	0	0	761	0	$ 386,000
0.32	WIDEN	SAN ANTONIO WASH	540451	201	0	MCL	401	0	0	3,123	0	$ 1,127,000
0.68	REPLACE	MONTE VISTA AVENUE UC	540450	105	0	MCL	0	222	0	21,644	1,595,000	$ 5,758,000
1.23	WIDEN	CENTRAL AVENUE UC	541186	605	0	MCL	1,449	0	0	858	0	$ 1,120,000
1.75	WIDEN	BENSON AVENUE UC	540448	105	0	MCL	517	0	0	2,221	0	$ 1,033,000
2.37	WIDEN	MOUNTAIN AVENUE UC	541187	205	0	UPL	515	0	0	3,623	0	$ 1,681,000
2.92	REPLACE	SAN ANTONIO AVENUE OC	540446	605	0	UPL	0	297	0	16,601	262,000	$ 4,675,000
3.47	REPLACE	SR 83/I-10 SEPARATION	540445	605	0	UPL	0	296	0	33,357	596,000	$ 9,435,000
3.75	REPLACE	SULTANA AVENUE OC	540444	605	0	UPL	0	244	0	12,336	209,000	$ 2,897,000
4.02	REPLACE	CAMPUS AVENUE OC	540443	602	201	ONT	0	286	0	11,568	248,000	$ 3,204,000
4.33	REPLACE	SIXTH STREET OC	540442	605	0	ONT	0	345	0	20,009	343,000	$ 6,517,000
4.70	WIDEN	WEST CUCAMONGA CHANNEL	541117	119	0	ONT	321	0	0	2,340	0	$ 677,000
4.88	WIDEN	GROVE AVENUE UC	540441	105	0	ONT	364	0	0	2,300	0	$ 754,000
5.24	WIDEN	FOURTH STREET UC	540440	105	0	ONT	521	0	0	2,791	0	$ 1,308,000
6.10	REPLACE	VINEYARD AVENUE OC	54 0439	602	201	ONT	0	305	0	24,604	457,000	$ 7,165,000
6.70	WIDEN	CUCAMONGA WASH	54 0438R/L	204	0	ONT	434	0	0	4,523	0	$ 1,769,000
6.80	WIDEN	HOLT BLVD OFF-RAMP UC	54 0437L	205	0	ONT	285	0	0	3,386	0	$ 869,000
6.80	WIDEN	HOLT BLVD OFF-RAMP UC	54 0437R	105	0	ONT	492	0	0	1,681	0	$ 744,000
6.90	NO CHANGE	E10-ARCHIBALD AVENUE / E HOLT	54 1107	605	0	ONT	0	0	0	0	0	$ -
7.16	NO CHANGE	ARCHIBALD AVENUE OC	54 1166	205	0	ONT	0	0	0	0	0	$ -
8.16	TIE-BACK WALL	HAVEN AVENUE OC	54 0560R	605	0	ONT	0	0	216,750		0	$ 195,000
8.16	TIE BACK-WALL	HAVEN AVENUE OC	54 1201L	605	0	ONT	0	0	216,750		0	$ 195,000
9.17	TIE BACK-WALL	MILLIKEN AVENUE OC	54 0539	505	0	ONT	0	0	216,750		0	$ 195,000
9.87	NO CHANGE	E10-N15 CONNECTOR OC	54 0913G	605	205	ONT	0	0	0	0	0	$ -
9.91	NO CHANGE	N15-W10 CONNECTOR OC	54 0908G	205	605	ONT	0	0	0	0	0	$ -
9.92	NO CHANGE	W10-S15 CONNECTOR OC	54 1065F	605	0	ONT	0	0	0	0	0	$ -
9.93	NO CHANGE	ROUTE 15/10 SEPARATION	54 0909L	605	0	ONT	0	0	0	0	0	$ -
9.94	NO CHANGE	ROUTE 15/10 SEPARATION	54 0909R	605	0	ONT	0	0	0	0	0	$ -
9.96	NO CHANGE	S15-E10 CONNECTOR OC	54 0910F	605	205	ONT	0	0	0	0	0	$ -
9.98	NO CHANGE	W10-S15 CONNECTOR OC	54 0914F	605	0	ONT	0	0	0	0	0	$ -
10.12	WIDEN	DAY CANYON CHANNEL	54 0351	201	0	ONT	398	0	0	2,838		$ 508,000
							TOTAL COST OF BRIDGES				**$52,212,000.00**	

TOTAL COST OF STRUCTURES[1]	**$52,212,000.00**

Estimate Prepared By: Kevin Michalski, Parsons (Name, Organization) 1/5/2016 (Date)

[1]Structure's Estimate includes Overhead and Mobilization.

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I-10 CORRIDOR PROJECT COST ESTIMATE

EA 0C2500, PN 0800000040

Type of Estimate : Project Report
Program Code : 075.600/HB5
Project Limits : 08-LA-10-PM 44.9/48.3, 07-SBd-10-PM 0.0/R37.0
Description: Provide 2 Express Lanes each dir from County Line to California & 1 Express Lane each dir from California to Ford
Scope : **Contract 2: I-15 to Ford Street**
Alternative : **Express Lanes (Alternative 3)**
Date : February 2016

		Current Cost		Escalated Cost*
ROADWAY ITEMS	**$**	**659,698,000.00**	**$**	**776,730,000.00**
STRUCTURE ITEMS	**$**	**86,007,000.00**	**$**	**101,264,000.00**
SUBTOTAL CONSTRUCTION COST	**$**	**745,705,000.00**	**$**	**877,994,000.00**
RIGHT OF WAY	**$**	**45,442,000.00**	**$**	**56,802,000.00**
TOTAL CAPITAL OUTLAY COST	**$**	**791,147,000.00**	**$**	**934,796,000.00**
PA/ED SUPPORT	**$**	**18,968,000.00**	**$**	**18,968,000.00**
PS&E SUPPORT	**$**	**44,745,000.00**	**$**	**48,284,000.00**
RIGHT OF WAY SUPPORT	**$**	**2,275,000.00**	**$**	**2,465,000.00**
CONSTRUCTION SUPPORT	**$**	**74,573,000.00**	**$**	**85,009,000.00**
TOTAL CAPITAL OUTLAY SUPPORT COST	**$**	**140,561,000.00**	**$**	**154,726,000.00**
LANDSCAPE MAINTENANCE (EEP)	**$**	**3,551,000.00**	**$**	**4,315,000.00**
CONSTRUCTION MANAGEMENT (EEP)	**$**	**3,551,000.00**	**$**	**4,315,000.00**
TOTAL EEP COST	**$**	**7,102,000.00**	**$**	**8,630,000.00**
TOTAL PROJECT COST	**$**	**938,810,000.00**	**$**	**1,098,152,000.00**

If Project has been programmed, enter Programmed Amount** $ 1,246,642,000

	month	year
Date (Month/Year) of Estimate	1	/ 2016
Estimated Date (Month/Year) of Construction Start	12	/ 2019
Number of Months of Escalation*	0	
Number of Years of Escalation*	0.00	
Number of Working Days		1245
Number of Plant Establishment Days		1300

Estimated Project Schedule

PA/ED Approval	Month-Year	9 / 2017
Issue D-B RFP	Month-Year	7 / 2017
D-B NTP	Month-Year	2 / 2018
Begin Construction	Month-Year	4 / 2019

Approved by: Chad Costello — 2/19/2016 — (909) 884-8276

Project Manager, SANBAG — **Date** — **Phone**

EEP = Establish Existing Planting

*Support cost is escalated to 2020/2021. Construction cost is escalated to 2022/2023. Escalation is based on SANBAG 10-year plan rates.
**The programmed cost, $31.7M for Monte Vista IC in SANBAG's Measure I 2010-2040 Interchange Program will provide a separate financial contribution to the I-10 Corridor Project.

I. ROADWAY ITEMS

Section			Cost
1	Earthwork	$	41,284,000
2	Structural Section	$	109,743,000
3	Drainage	$	48,638,000
4	Specialty Items	$	102,143,000
5	Environmental	$	37,873,000
6	Traffic Items	$	118,900,000
7	Detours	$	-
8	Minor Items	$	22,929,000
9	Roadway Mobilization	$	48,151,000
10	Supplemental Work	$	24,076,000
11	State Furnished	$	19,913,000
12	Contingencies	$	86,048,000
13	Overhead	$	-
	TOTAL ROADWAY ITEMS	**$**	**659,698,000**

Estimate Prepared By :	Daniel Wagner, Parsons	1/5/2016	619-515-5102
	Name and Title	Date	Phone
Estimate Reviewed By :	Patti Tiberi, Parsons	1/5/2016	949-333-4541
	Name and Title	Date	Phone

SECTION 1 EARTHWORK

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY	1,071,800	x	12.00	=	$	12,862,000
190107	Roadway Excavation (Type Y-1) ADL	CY	188,600	x	15.00	=	$	2,829,000
190105	Roadway Excavation (Type Z-2) ADL	CY		x		=	$	-
194001	Ditch Excavation	CY		x		=	$	-
198010	Imported Borrow	CY		x	7.00	=	$	-
190185	Shoulder Backing	TON		x		=	$	-
192037	Structure Excavation (Retaining Wall)	CY	367,400	x	36.00	=	$	13,226,000
193013	Structure Backfill (Retaining Wall)	CY	407,300	x	26.00	=	$	10,590,000
193031	Pervious Backfill Material (Retaining Wall)	CY		x		=	$	-
160102	Clearing & Grubbing	LS	1	x	1,317,000	=	$	1,317,000
170101	Develop Water Supply	LS	1	x	459,600	=	$	460,000

TOTAL EARTHWORK SECTION ITEMS $ 41,284,000

Section 2 STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price ($)			Cost
XXXXXX	Rehabilitate Existing Pavement	SY	418,000	x	27.50	=	$	11,495,000
401050	Jointed Plain Concrete Pavement	CY	487,500	x	143.00	=	$	69,713,000
404092	Seal Pavement Joint	LF	227,000	x	5.00	=	$	1,135,000
404093	Seal Isolation Joint	LF		x		=	$	-
413117	Seal Concrete Pavement Joint (Silicone)	LF		x		=	$	-
280000	Lean Concrete Base	CY		x	95.00	=	$	-
400050	Continuously Reinforced Concrete Pavement	CY	0	x	170.00	=	$	-
390132	Hot Mix Asphalt (Type A)	TON	228,600	x	81.00	=	$	18,517,000
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON	0	x	95.00	=	$	-
393003	Geosynthetic Pavement Interlayer	SQYD		x		=	$	-
260203	Class 2 Aggregate Base	CY	72,500	x	27.00	=	$	1,958,000
290201	Asphalt Treated Permeable Base	CY	0	x	125.00	=	$	-
250401	Class 4 Aggregate Subbase	CY	207,800	x	20.00	=	$	4,156,000
374002	Asphaltic Emulsion (Fog Seal Coat) Roadway Shldrs	TON	21	x	665.00	=	$	14,000
397005	Tack Coat	TON		x		=	$	-
377501	Slurry Seal	TON		x		=	$	-
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		=	$	-
370001	Sand Cover	TON		x		=	$	-
731530	Minor Concrete (Textured Paving)	SQFT	114,000	x	8.60	=	$	980,000
731502	Minor Concrete (Misc. Const) Curb, Sidewalk	CY	2,290	x	466.00	=	$	1,067,000
394076	Place Hot Mix Asphalt Dike (Type E)	LF	91,000	x	2.50	=	$	228,000
150771	Remove Asphalt Concrete Dike	LF		x		=	$	-
420201	Grind Existing Concrete Pavement	SQYD		x		=	$	-
150860	Remove Base and Surfacing	CY		x		=	$	-
390095	Replace Asphalt Concrete Surfacing	CY		x		=	$	-
394090	Place Hot Mix Asphalt (Misc. Area)	SQFT	252,500	x	1.90	=	$	480,000
153103	Cold Plane Asphalt Concrete Pavement	SQYD		x		=	$	-
413112A	Repair Spalled Joints (Polyester Grout)	SQYD		x		=	$	-
420201	Groove Existing Concrete Pavement	SQYD		x		=	$	-
390136	Minor Hot Mix Asphalt	TON		x		=	$	-
XXXXXX	Hot Mix Asphalt Type A-Bond Breaker	TON		x	81.00	=	$	-
XXXXXX	Open Graded Wearing Course	TON		x	121.00	=	$	-

TOTAL STRUCTURAL SECTION ITEMS $ 109,743,000

SECTION 3 DRAINAGE

Item code		Unit	Quantity					Amount
510502	Minor Concrete (Minor Structure)	CY	0	x	0.00	=	$	-
510090	Structural Concrete Box Culvert (I-10, Montclair)	CY	4,800	x	950.00	=	$	4,560,000
721420	Concrete (Ditch Lining)	CY	0	x	0.00	=	$	-
721430	Concrete (Channel Lining) (I-10, Montclair)	CY	43,000	x	456.00	=	$	19,608,000
750001	Miscellaneous Iron and Steel	LB	0	x	0.00	=	$	-
XXXXXX	Project Drainage	LS	1	x	21,470,000	=	$	21,470,000
XXXXXX	Additional Drainage (Colton, J Street)	LS	1	x	1,000,000	=	$	1,000,000
XXXXXX	Modify Drainage at Mt. Vernon Pump Plant	LS	1	x	500,000	=	$	500,000
XXXXXX	Modify Weir Structure at Colton Crossing	LS	1	x	1,500,000	=	$	1,500,000
					TOTAL DRAINAGE ITEMS			**48,638,000**

SECTION 4 SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price ($)			Cost
070012	Progress Schedule (Critical Path Method)	LS	1	x	45,000	=	$	45,000
518002	Sound Wall (Masonry Block)	SQFT	373,000	x	14.00	=	$	5,222,000
510059	Structure Concrete, RW (Sound Wall)	CY	3,440	x	504.00	=	$	1,734,000
153253	Remove Sound Wall	LF	1,600	x	17.00	=	$	27,000
190110	Lead Compliance Plan	LS	1	x	30,000	=	$	30,000
1532XX	Remove Barrier (*Insert Type)*	LF		x		=	$	-
150662	Remove Metal Beam Guard Railing	LF		x		=	$	-
150668	Remove Flared End Sections	EA		x		=	$	-
800360	Chain Link Fence (Type CL-6)	LF	14,000	x	18.00	=	$	252,000
802501	4' Chain Link Gate (Type CL-6)	EA	14	x	760.00	=	$	11,000
832001	Metal Beam Guard Railing	LF	19,900	x	21.00	=	$	418,000
839301	Single Thrie Beam Barrier	LF		x		=	$	-
839310	Double Thrie Beam Barrier	LF		x		=	$	-
839521	Cable Railing	LF		x		=	$	-
839566	Terminal System (Type CAT)	EA		x		=	$	-
839585	Alternative Flared Terminal System	EA		x		=	$	-
839584	Alternative In-line Terminal System	EA		x		=	$	-
49XXXX	CIDH Concrete Piling *(Insert Diameter)*	LF		x		=	$	-
839604	Crash Cushion *(REACT 9CBB)*	EA	72	x	48,000.00	=	$	3,456,000
839724	Concrete Barrier (Type 736SV)	LF	8,000	x	95.00	=	$	760,000
839736	Concrete Barrier (Type 742A)	LF	87,500	x	90.00	=	$	7,875,000
839706	Concrete Barrier (Type 60G)	LF	130,400	x	95.00	=	$	12,388,000
839704	Concrete Barrier (Type 60D)	LF	44,600	x	48.00	=	$	2,141,000
520103	Bar Reinf. Steel (Ret. Wall)	LB	7,466,000	x	0.86	=	$	6,421,000
510408	Class 1 Concrete (Retaining Wall)	CY		x		=	$	-
510133	Class 2 Concrete (Retaining Wall)	CY		x		=	$	-
510060	Structural Concrete (Retaining Wall)	CY	170,700	x	309.00	=	$	52,746,000
513553	Retaining Wall (Masonry Wall)	CY		x		=	$	-
511035A	Architectural Treatment (Walls)	SQFT	398,000	x	13.00	=	$	5,174,000
511035B	Architectural Treatment (Overcrossing Bridges)	LS	1	x	1,441,000	=	$	1,441,000
511047	Apply Anti-Graffiti Coating	SQFT	1,810,000	x	0.91	=	$	1,647,000
XXXXXX	Trench Section Retaining Walls	SQFT	0	x	161.00	=	$	-
83954X	Transition Railing *(Insert Type)*	EA		x		=	$	-
597601	Prepare and Stain Concrete	SQFT		x		=	$	-
839561	Rail Tensioning Assembly	EA		x		=	$	-
839581	End Anchor Assembly (*TYPE SFT*)	EA	90	x	570.00	=	$	51,000
601001	Railroad Track	LF	1,456	x	209.00	=	$	304,000
					TOTAL SPECIALTY ITEMS			**$ 102,143,000**

Section 5 ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Amount
XXXXXX	Biological Mitigation	LS	1	x	1,753,000	=	$	1,753,000
071325	Temporary Fence (Type ESA)	LS	1	x	80,000	=	$	80,000
XXXXXX	Hazardous Material Remediation	LS	1	x	2,700,000	=	$	2,700,000

$ 4,533,000

5B - LANDSCAPE AND IRRIGATION

Subtotal Landscape and Irrigation $ 19,590,000

5C - NPDES

Item code		Unit	Quantity		Unit Price ($)			Amount
XXXXXX	Temporary BMPs	LS	1		13,749,500	=	$	13,750,000
074019	Prepare SWPPP	LS		x		=	$	-
074017	Prepare WPCP	LS		x		=	$	-
074016	Construction Site Management	LS		x		=	$	-
074039	Temporary Erosion Control Hydraulic Mulch	SQYD		x		=	$	-
074037	Move In/ Move Out (Temporary Erosion Control)	EA		x		=	$	-
074028	Temporary Fiber Roll	LF		x		=	$	-
074032	Temporary Concrete Washout Facility	EA		x		=	$	-
074033	Temporary Construction Entrance	EA		x		=	$	-
074035	Temporary Check Dam	LF		x		=	$	-
074038	Temp. Drainage Inlet Protection	EA		x		=	$	-
074041	Street Sweeping	LS		x		=	$	-
203021	Fiber Rolls	LF		x		=	$	-
203025	Compost (Incorporate)	SQYD		x		=	$	-
203030	Erosion Control (Polymer Stabilized Fiber Matrix)	ACRE		x		=	$	-
203034	Rolled Erosion Control Product (Netting)	SF		x		=	$	-

Subtotal NPDES (Without Supplemental Work) $ 13,750,000

TOTAL ENVIRONMENTAL $ 37,873,000

Section 6 TRAFFIC ITEMS

6A - Traffic Electrical

Item code		Unit	Quantity		Unit Price ($)			Cost
860460	Lighting & Sign Illumination	LS		x		=	$	-
860403	Highway Lighting (median)	LS	1	x	1,905,000	=	$	1,905,000
861502	Modify Signal	LS		x			$	-
861504	Modify Lighting & Sign Illumination	LS	1	x	5,925,000	=	$	5,925,000
860201	Signals & Lighting	LS	1	x	0	=	$	-
861501	Modify Signals & Lighting	LS	1	x	2,150,000	=	$	2,150,000
860532A	CMS/AVMS System	LS	1	x	4,500,000	=	$	4,500,000
860812	Microwave Vehicle Detection System	LS		x		=	$	-
860990	Closed Circuit Television System	LS	1	x	720,000	=	$	720,000
861100	Ramp Metering System	LS	1	x	4,400,000	=	$	4,400,000
560208	Furnish Sign Structure (Tubular)	LB		x		=	$	-
560209	Install Sign Structure (Tubular)	LB		x		=	$	-
561016	60" CIDHC Pile (Sign Foundation)	LF	5,540	x	903.00	=	$	5,003,000
860810	Inductive Loop Detectors	EA		x		=	$	-
860925	Traffic Monitoring Stations (Count)	LS		x		=	$	-
860889	Modify Traffic Monitoring Station	LS	1	x	1,200,000	=	$	1,200,000
150757	Remove Sign Structure	EA	126	x	2,850.00	=	$	359,000
560218	Furnish Sign Structure (Truss)	LB	5,813,500	x	3.80	=	$	22,092,000
560219	Install Sign Structure (Truss)	LB	5,813,500	x	0.24	=	$	1,395,000
151581	Reconstruct Sign Structure	EA		x		=	$	-
152641	Modify Sign Structure	EA		x		=	$	-
560203	Furnish Sign Structure (Bridge Mounted)	LB	121,000	x	4.80	=	$	581,000
560204	Install Sign Structural (Bridge Mounted)	LB	121,000	x	1.90	=	$	230,000
860090	Maintain Existing Traffic Management System Elements During Construction	LS	1	x	2,297,000	=	$	2,297,000
86XXXX	Communications System	LS	1	x	8,605,100	=	$	8,605,000
120165	Channelizers (Surface Mounted)	EA	17,600	x	40.00	=	$	704,000
XXXXXX	Toll Equipment and System Integration	LS	1	x	37,913,900	=	$	37,914,000

Subtotal Traffic Electrical $ 99,980,000

6B - Traffic Signing and Striping

Item code		Unit	Quantity		Unit Price ($)			Cost
566011	Roadside Sign (One Post)	EA	240	x	271.00	=	$	65,000
566012	Roadside Sign (Two Post)	EA	111	x	775.00	=	$	86,000
560244	Furnish Laminated Panel Sign (1"-Type A)	SQFT	46,860	x	21.00	=	$	984,000
150710	Remove Traffic Stripe	LF	0	x		=	$	-
150701	Remove Yellow Painted Traffic Stripe	LF	0	x		=	$	-
150713	Remove Pavement Marking	SQFT	0	x		=	$	-
150742	Remove Roadside Sign	EA	300	x	114.00	=	$	34,000
150714	Remove Thermoplastic Traffic Stripe	LF	0	x		=	$	-
152390	Remove Thermoplastic Pavement Marking	SQFT	0	x		=	$	-
820107	Delineator (Class 1)	EA	0	x		=	$	-
840501	Permanent Pavement Delineation	LF	2,271,000	x	0.72	=	$	1,635,000
120090	Construction Area Signs	LS	1	x	449,600	=	$	450,000

Subtotal Traffic Signing and Striping $ 3,254,000

6C - Stage Construction and Traffic Handling

Item code		Unit	Quantity		Unit Price ($)			Cost
120199	Traffic Plastic Drum	EA	2,280	x	53.00	=	$	121,000
12016X	Channelizer	EA		x		=	$	-
120120	Type III Barricade	EA		x		=	$	-
129100	Temporary Crash Cushion Module	EA	5,090	x	181.00	=	$	921,000
120100	Traffic Control System	LS	1	x	6,951,000	=	$	6,951,000
839603A	Crash Cushion (ADIEM)	EA		x		=	$	-
129000	Temporary Railing (Type K)	LF	515,200	x	10.00	=	$	5,152,000
120143	Temporary Pavement Delineation	LF		x		=	$	-
120159	Temporary Traffic Stripe (Paint)	LF	1,237,000	x	0.34	=	$	421,000
XXXXXX	Flagging	LS	1	x	2,100,000	=	$	2,100,000

Subtotal Stage Construction and Traffic Handling $ 15,666,000

TOTAL TRAFFIC ITEMS $ 118,900,000

Section 7 DETOURS*

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY	0	x	12.00	=	$	-
198050	Embankment	CY	0	x	0.00	=	$	-
198010	Imported Borrow	CY	0	x	7.00	=	$	-
390132	Hot Mix Asphalt (Type A)	TON	0	x	73.00	=	$	-
260203	Class 2 Aggregate Base	CY	0	x	24.00	=	$	-
250201	Class 2 Aggregate Subbase	CY	0	x	0.00	=	$	-
250401	Class 4 Aggregate Subbase	CY	0	x	0.00	=	$	-
07XXXX	Temporary Drainage	LS	0	x	0.00	=	$	-
129000	Temporary Railing (Type K)	LF	0	x	9.00	=	$	-
1286XX	Temporary Signals	EA	0	x	0.00	=	$	-
120143	Temporary Pavement Delineation	LF	0	x	0.50	=	$	-
071321	Temporary Fence (Type CL-6)	LF	0	x	324.00	=	$	-
129510	Temporary Retaining Wall (Monte Vista IC)	SQFT	0	x	70.00	=	$	-

* Includes constructing, maintaining, and removal

TOTAL DETOURS $ -

SUBTOTAL SECTIONS 1-7 $ 458,581,000

Section 8 MINOR ITEMS (Use Appropriate percentage between 5%-10%)

Total of Section 1-7	458,581,000	x	5%	=	$	22,929,000

TOTAL MINOR ITEMS $ 22,929,000

Section 9 ROADWAY MOBILIZATION

Item code								
999990	Total Section 1-8	$	481,510,000	x	10.0%	=	$	48,151,000

TOTAL MOBILIZATION $ 48,151,000

Section 10 SUPPLEMENTAL WORK

Total Section 1-8 =	$	481,510,000		5%	=	$	24,076,000

TOTAL SUPPLEMENTAL WORK $ 24,076,000

Section 11 STATE FURNISHED MATERIALS

Item code		Unit	Quantity		Unit Price ($)			Cost
066105	RE Office	LS	1	x	337,000	=	$	337,000
066572	Sign Panels	LS		x		=	$	-
066576A	Overhead Sign Panels	LS		x		=	$	-
066063	Public Information	LS	1	x	2,735,000	=	$	2,735,000
066XXX	Traveler Information Strategies	LS	1	x	323,000	=	$	323,000
066062A	COZEEP Expenses	LS	1	x	2,886,000	=	$	2,886,000
066065	Freeway Service Patrol	LS	1	x	4,614,000	=	$	4,614,000
066067	Rideshare Promotion	LS	1	x	555,000	=	$	555,000
066XXX	Alternate Route Strategies	LS	1	x	6,993,000	=	$	6,993,000
066XXX	Construction Strategies	LS		x		=		$0
066838	Reflective Numbers	LS		x		=		$0
066803	Padlocks	LS		x		=		$0
066887	Signal Lamps	LS		x		=		$0
066577A	Advanced Variable Message Sign (AVMS)	LS	1	x	840,000	=	$	840,000
066840	Traffic Signal Controller Assembly	LS	1	x	210,000	=	$	210,000
066843A	Ramp Metering Controller Assembly	LS	1	x	420,000	=	$	420,000

TOTAL STATE FURNISHED $ 19,913,000

Section 12 CONTINGENCY

Total Section 1-11	$	573,650,000	x	15%	=	$	86,047,500

TOTAL CONTINGENCY $ 86,048,000

Section 13 OVERHEAD

Item code		Unit	Quantity		Unit Price ($)			Cost
070018	Time Related Overhead (TRO)	WD	1,245	X	0	=	$	-

assume D-B, hence no TRO

TOTAL OVERHEAD $ -

II. STRUCTURES ITEMS

PM	BRIDGE CONSTRUCTION	STRUCTURE NAME	TOTAL COST (15%		PM	BRIDGE CONSTRUCTION	STRUCTURE NAME	TOTAL COST (15% contingency)
47.74	NO CHANGE	STRUCTURE NAME	MAIN	AP	CITY	WIDEN	REPLACE	
0.01	WIDEN	MILLS AVENUE UC	$ -		R21.46	REPLACE	SLOVER MOUNTAIN UP	$ 6,867,000
0.32	WIDEN	SAN ANTONIO WASH	$ -		R21.96	TIE BACK WALL	RANCHO AVENUE OC	$ 197,000
0.68	REPLACE	MONTE VISTA AVENUE UC	$ -		R22.36	WIDEN	COLTON OH Rt	$ 4,156,000
1.23	WIDEN	CENTRAL AVENUE UC	$ -		R22.38	WIDEN	COLTON OH Lt	$ 2,700,000
1.75	WIDEN	BENSON AVENUE UC	$ -		R22.62	WIDEN	LA CADENA DRIVE UC	$ 1,422,000
2.37	WIDEN	MOUNTAIN AVENUE UC	$ -		R22.62	REPLACE	LA CADENA DR UC (EB OFF)	$ 1,247,000
2.92	REPLACE	SAN ANTONIO AVENUE OC	$ -		R22.71	WIDEN	NINTH STREET UC	$ 1,075,000
3.47	REPLACE	SR 83/I-10 SEPARATION	$ -		R22.82	Maintain	PAVILLION S OH OFF-RAMP	$ -
3.75	REPLACE	SULTANA AVENUE OC	$ -		R22.86	WIDEN OR	PAVILLION SPUR OH	$ 770,000
4.02	REPLACE	CAMPUS AVENUE OC	$ -		R23.25	TIE BACK WALL	MOUNT VERNON AVENUE OC	$ 220,000
4.33	REPLACE	SIXTH STREET OC	$ -		R23.60	WIDEN	WARM CREEK	$ 5,532,000
4.70	WIDEN	WEST CUCAMONGA CHANNEL	$ -		R23.80	NO CHANGE	SANTA ANA RIVER (EB-10 TO N/S	$ -
4.88	WIDEN	GROVE AVENUE UC	$ -		R23.82	WIDEN	SANTA ANA RIVER (L/R)	$ 10,346,000
5.24	WIDEN	FOURTH STREET UC	$ -		R24.19	NO CHANGE	E10-N215 CONNECTOR OC	$ -
6.10	REPLACE	VINEYARD AVENUE OC	$ -		R24.23	NO CHANGE	INTERSTATE 215/10 SEPARATION	$ -
6.70	WIDEN	CUCAMONGA WASH	$ -		R24.25	NO CHANGE	INTERSTATE 215/10 SEPARATION	$ -
6.80	WIDEN	HOLT BLVD OFF-RAMP UC	$ -		R24.27	NO CHANGE	W10-N215 CONNECTOR OC	$ -
6.80	WIDEN	HOLT BLVD OFF-RAMP UC	$ -		R24.30	NO CHANGE	W10-S215 CONNECTOR	$ -
6.90	NO CHANGE	E10-ARCHIBALD AVENUE / E HOLT	$ -		R24.57	NO CHANGE	W10-N&S215 CONN / E ST-W10 ON	$ -
7.16	NO CHANGE	ARCHIBALD AVENUE OC	$ -		0.00	0	0	$ -
8.16	TIE-BACK WALL	HAVEN AVENUE OC	$ -		24.76	WIDEN	HUNTS LANE UC	$ 1,035,000
8.16	TIE BACK-WALL	HAVEN AVENUE OC	$ -		25.26	WIDEN	WATERMAN AVENUE UC	$ 2,507,000
9.17	TIE BACK-WALL	MILLIKEN AVENUE OC	$ -		25.46	WIDEN	SAN TIMOTEO CREEK (W10 ON-	$ 263,000
9.87	NO CHANGE	E10-N15 CONNECTOR OC	$ -		25.54	WIDEN	SAN TIMOTEO CREEK	$ 895,000
9.91	NO CHANGE	N15-W10 CONNECTOR OC	$ -		26.27	WIDEN	TIPPECANOE AVENUE UC	$ 1,570,000
9.92	NO CHANGE	W10-S15 CONNECTOR OC	$ -		26.81	REPLACE	RICHARDSON STREET OC	$ 4,180,000
9.93	NO CHANGE	ROUTE 15/10 SEPARATION	$ -		27.30	WIDEN	MOUNTIAN VIEW AVENUE UC	$ 2,039,000
9.94	NO CHANGE	ROUTE 15/10 SEPARATION	$ -		27.64	WIDEN	WEST REDLANDS OH	$ 5,829,000
9.96	NO CHANGE	S15-E10 CONNECTOR OC	$ -		28.30	WIDEN	CALIFORNIA STREET UC	$ 2,722,000
9.98	NO CHANGE	W10-S15 CONNECTOR OC	$ -		28.80	WIDEN	NEVADA STREET UC	$ 1,868,000
10.12	WIDEN	DAY CANYON CHANNEL	$ 508,000		29.31	NO CHANGE	ALABAMA STREET OC	$ -
10.12	NO CHANGE	W10-S15 CONNECTOR	$ -		29.53	NO CHANGE	W10-ALABAMA UC (E210-W10 CONN)	$ -
10.13	NO CHANGE	W10-N15 CONNECTOR	$ -		29.70	NO CHANGE	E10-W210 CONNECTOR OC	$ -
10.99	WIDEN	ETIWANDA WASH	$ 1,226,000		29.70	NO CHANGE	E10-W210 CONNECTOR OC	$ -
11.13	NO CHANGE	ETIWANDA AVENUE OC	$ -		29.76	NO CHANGE	E210-E10 CONNECTOR OC	$ -
11.35	NO CHANGE	VALLEY BLVD ON-RAMP SEPARATION	$ -		29.82	REPLACE	TENNESSEE STREET OC	$ 8,489,000
11.50	WIDEN	VALLEY BLVD OFF-RAMP UC (L)	$ 2,108,000		30.38	WIDEN	TEXAS STREET UC	$ 636,000
11.50	WIDEN	VALLEY BLVD OFF-RAMP UC (R)	$ 2,645,000		30.66	MODIFY	EUREKA STREET UC	$ 971,000
11.64	WIDEN	ETIWANDA-SN SEVN FLOOD CNTL CH (L/R)	$ 3,758,000		30.88	NO CHANGE	INTERSTATE 10/STATE ROUTE 38	$ -
11.64	REPLACE	ETIWANDA-SN SEVN FLOOD CNTL CH	$ 1,732,000		31.01	MODIFY	SIXTH STREET UC	$ 197,000
11.74	WIDEN	KAISER SPUR OH	$ 1,868,000		31.41	MODIFY	CHURCH STREET UC	$ 180,000
11.82	ABANDON	SAN SEVIANE CREEK	$ 275,000		31.52	MODIFY	REDLANDS OH	$ 18,000
12.14	ABANDON	MULBERRY CREEK	$ 206,000		31.87	MODIFY	UNIVERSITY STREET UC	$ 18,000
13.17	NO CHANGE	CHERRY AVENUE OC	$ -		31.99	MODIFY	CITRUS AVENUE UC	$ 224,000
15.18	NO CHANGE	CITRUS AVENUE OC	$ -		32.11	MODIFY	CYPRESS AVENUE UC	$ 191,000
15.73	NO CHANGE	CYPRESS AVENUE OC	$ -		32.36	MODIFY	PALM AVENUE UC	$ 18,000
16.22	sidewalk imp	SIERRA AVENUE OC	$ 180,000		32.61	MODIFY	HIGHLAND AVENUE UC	$ 197,000
18.49	TIE BACK WALL	CEDAR AVENUE OC	$ 389,000		33.13	WIDEN	FORD STREET UC	$ 981,000
19.90	NO CHANGE	RIALTO CHANNEL	$ -		33.29	WIDEN	REDLANDS BLVD OFF RAMP UC	$ 1,552,000
19.97	NO CHANGE	RIVERSIDE AVENUE OC	$ -					

TOTAL COST OF BRIDGES	$86,007,000

TOTAL COST OF STRUCTURES[1]	$86,007,000.00

Estimate Prepared By: Kevin Michalski, Parsons (Name, Organization) 2/19/2016 (Date)

[1]Structure's Estimate includes Overhead and Mobilization.

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ATTACHMENT K

Right of Way Data Sheet

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To: District Division Chief
Division of Right of Way and Land Surveys

Date: January 13, 2016

Co. LA and SBD Rte. 10
Expense Authorization EA0C2500
PN 0800000040

Attention: District Branch Chief
R/W Local Programs

Subject: **RIGHT OF WAY DATA SHEET - LOCAL PUBLIC AGENCIES**
HOV - ALTERNATIVE 2

Project Description:

Right of way necessary for the subject project will be the responsibility of SANBAG or their designated consultant.

The information in this data sheet was developed by Parsons and Paragon Partners Ltd.

I. *Right of Way Engineering*

Will Right of Way Engineering be required for this project?

- No ____
- Yes ✓

- Hard copy (base map) ✓
- Appraisal map ✓
- Acquisition Documents ✓
- Property Transfer Documents ✓
- R/W Record Map ✓
- Record of Survey ✓

II. *Engineering Surveys*

1. Is any surveying or photogrammetric mapping required?

   No ____ Yes ✓ (Complete the following.)

2. Datum Requirements

   Yes ✓ Project will adhere to the following criteria:
   - Horizontal - datum policy is NAD 83, CA-HPGN, EPOCH 1991.35 and English system of units and measures.
   - Vertical - datum policy is NAVD 88.
   - Units - metric is not required.

   No ____ Provide an explanation on additional page.

3. Will land survey monument perpetuation be scoped into the project, if required?

   Yes ✓

   No ____ Provide explanation on additional page.

III. ***Parcel Information (Land and Improvements)***

Are there any property rights required within the proposed project limits?

No ____ Yes ✓ (Complete the following.)

	Part Take	Full Take	Estimate $	25% Escalation $
A. Number of Vacant Land Parcels	2		$ 32,352	$ 40,440
B. Number of Single Family Residential Units	7		$ 117,858	$ 147,323
C. Number of Multifamily Residential Units			$	$
D. Number of Commercial/Industrial Parcels	5		$ 518,961	$ 648,701
E. Number of Farm/Agricultural Parcels			$	$
F. ~~Permanent and/or~~ Temporary Easements	103		$ 1,727,251	$ 2,159,064
G. Other Parcels (define in "Remarks" section)	5		$ 317,494	$ 396,868
Totals	122		$ 2,713,916	$ 3,392,395

Provide a general description of the right of way and excess lands required (zoning, use, improvements, critical, or sensitive parcels, etc.).

Property zoning was verified along with existing land use. Comparable sales data was gathered for each zoning category along the freeway corridor. Land value for each parcel included an assessment of the level of entitlement work completed as well as improvements. Since we anticipate the right of way acquisition portion of this project to extend to the December 2020, our cost estimate includes a 25% contingency based on a projected real estate appreciation rate of 4% to 4.5% each year, for a period of 5 consecutive years.

The cost analysis above is based on a per parcel basis. Parcels with multiple types of easements (ie. at grade easement, subsurface easement and/or a temporary construction easement) were counted only on a per parcel basis. Parcels that included only a Temporary Construction Easement are included under item F "Temporary Easements". Other Parcels category includes streets, railroad parcels and a flood control parcel whereby permanent rights will be acquired.

A specific breakdown regarding the easement type and valuation is included within a supporting cost analysis spreadsheet.

IV. ***Dedications***

Are there any property rights which have been acquired, or anticipate will be acquired, through the "dedication" process for the Project?

No ✓ Yes ____ (Complete the following.)

Number of dedicated parcels ____

Have the dedication parcel(s) been accepted by the municipality involved?

V. ***Excess Lands / Relinquishments***

Are there Caltrans property rights which may become excess lands or potential relinquishment areas?

No ✓ Yes ____ (Provide an explanation on additional page.)

VI. ***Relocation Information***

Are relocation displacements anticipated?

No ✓ Yes ____ (Complete the following.)

A. Number of Single Family Residential Units _____
Estimated RAP Payments $ _____

B. Number of Multifamily Residential Units _____
Estimated RAP Payments $ _____

C. Number of Business/Nonprofit _____
Estimated RAP Payments $ _____

D. Number of Farms _____
Estimated RAP Payments $ _____

E. Other (define in the "Remarks" section) _____
Estimated RAP Payments $ _____

Totals _____ $ _____

VII. ***Utility Relocation Information***

Do you anticipate any utility facilities or utility rights of way to be affected?

No ____ Yes ✓ (Complete the following.)

		Estimated Relocation Expense		
Facility	Owner	State Obligation	Local Obligation	Utility Owner Obligation
A.		$	$	$
B.		$	$	$
C.		$	$	$
D.		$	$	$
E.		$	$	$
F.		$	$	$
Totals		$ -0- *	$ 13,473,125**	$ 810,625**
Number of facilities		150		

This amount reflects the estimated total financial obligation by the State.
****Utility relocation reflects a 25% escalation rate over 2015 costs or 4.5% each year for 5-year duration.***

Any additional information concerning utility involvement on this project?

Details of the utility companies potentially involved, their location, and relocation expense obligations are available in the project files.

VIII. ***Rail Information***

Are railroad facilities or railroad rights of way affected?

No ____ Yes ✓ (Complete the following.)

Describe railroad facilities or railroad rights of way affected.

Owner's Name	Transverse Crossing	Longitudinal Encroachment
A. Union Pacific Railroad	4 locations	8 locations
B. BNSF Railway	5 locations	
C. San Bernardino Associated Governments	1 location	

Discuss types of agreements and rights required from the railroads. Are grade crossings that require services contracts, or grade separations that require construction and maintenance agreements involved?

Refer to the attached Railroad Information Sheet for specific details of the right of way facilities affected and the stationing locations.

IX. ***Clearance Information***

Are there improvements that require clearance?

No ✓ Yes ____ (Complete the following.)

A. Number of Structures to be Demolished _____
Estimated Cost of Demolition $ _____

X. ***Hazardous Materials/Waste***

Are there any site(s) and/or improvements(s) in the Project Limits that are known to contain

hazardous materials? None ____ Yes ✓ (Explain in the "Remarks" section.)

Are there any site(s) and/or improvement(s) in the Project Limits that are suspected to contain

hazardous waste? None ____ Yes ✓ (Explain in the "Remarks" section.)

XI. ***Project Scheduling - Schedule below is based on a Design-Bid Build project delivery method.***

	Proposed lead time	Completion date
* Preliminary Engineering, Surveys	36 (months)	June 2019
* R/W Engineering Submittals	36 (months)	December 2020
* R/W Appraisals/Acquisition	36 (months)	December 2020
Proposed Environmental Clearance		December 2017
Proposed R/W Certification		March 2021

XII. ***Proposed Funding***

	Local	State*	Federal	Other
Acquisition		100%		
Utilities		100%		
Relocation Assistance Program		100%		
R/W Support		100%		
Cost (Eng. Appraisals, etc.)		100%		

*Regional Improvement Program Funds (RIP)

XIII. ***Remarks***

Please refer to the attached Right of Way Cost Estimates Memorandum for specific information supporting the right of way costs calculation for this design alternative.

We anticipate several part-take parcels will have underground storage tanks that could be leaking. During the acquisition process the appraisals will be completed under the assumption that the property is clean and clean-up cost will the responsibility of the existing owner.

Project Sponsor Consultant
Prepared by:

Kent Jorgensen

Kent Jorgensen, Paragon Partners Ltd
BRE# 01174480

1-13-16

January 13, 2016

Date

Project Sponsor
Reviewed and Approved by:

Sonny Cochran

1.22.16

Date

Caltrans
Reviewed and approved based on information provided to date:

1/29/16

Caltrans District Branch Chief
Local Programs
Division of Right of Way

Date

1. Name of utility companies involved in project:

American Cablevision
AT&T
Atchison, Topeka And Santa Fe Railway
California-Nevada Pipeline
Chino Basin Municipal Water District
City of Colton
City of Fontana
City of Loma Linda
City of Rialto Sewer
City of Ontario
City of Riverside
City of San Bernardino
Cucamonga Valley Water District
Fontana Public Works Department
Fontana Water Company
Kinder Morgan
Level 3 Communications
Marigold Mutual Water Company
Metropolitan Water District
Riverside Highland Water Company
San Gabriel Valley Water Company
Santa Ana Watershed Project Authority
Southern California Edison Distribution
Southern California Edison Transmission
Southern California Gas Distribution
Southern Pacific Transportation Company/Union Pacific Railroad
Sprint
SUNESYS
Time Warner Cable
Union Carbide Company
Verizon
West San Bernardino Water District
West Valley Water District
Western Pacific Sanitation Company
Western Union Telegraph

2. Types of facilities and agreements required:

Owner:	Description Summary:	Locations:	Agreements Needed:
AT&T	Telephone lines	Almond Ave, Juniper Ave	Notice to Owner Utility Agreement
California-Nevada Pipeline	Gasoline pipeline, petroleum pipeline	Linden Ave, Hermosa Ave	Notice to Owner Utility Agreement
City of Colton	Sewer line, water line	3rd Street, 9th St, La Cadena Dr, 5th St, Pennsylvania Ave	Notice to Owner Utility Agreement City Encroachment Permits

Owner:	Description Summary:	Locations:	Agreements Needed:
City of Rialto Sewer	Sewer mains	Riverside Ave	Notice to Owner Utility Agreement City Encroachment Permits
City of Fontana	Sewer line	Catawba Ave	Notice to Owner Utility Agreement City Encroachment Permits
City of Loma Linda	Sewer line	Tippecanoe Ave	Notice to Owner Utility Agreement City Encroachment Permits
City of Ontario	Sewer line, water line	Milliken Ave	Notice to Owner Utility Agreement City Encroachment Permits
Cucamonga Valley Water District	Water line	I-10/I-15 Interchange	Notice to Owner Utility Agreement
Fontana Public Works Department	Sewer line, water line	Poplar Ave, Juniper Ave, Citrus Ave, Calabash Ave	Notice to Owner Utility Agreement City Encroachment Permits
Fontana Water Company	Water line	Beech Ave, Live Oak Ave, Elm Ave, Poplar Ave, Vine St, Oleander Ave, Elm Ave, Catawba Ave, Hemlock Ave, Juniper Ave, Citrus Ave	Notice to Owner Utility Agreement City Encroachment Permits

Owner:	Description Summary:	Locations:	Agreements Needed:
Level 3 Communications	Fiber Optic cable	Cedar Ave	Notice to Owner Utility Agreement
Marigold Mutual Water Company	Water main	Sierra Ave	Notice to Owner Utility Agreement City Encroachment Permits
Metropolitan Water District	Water mains	Catawba Ave, Banana Ave, Elm Ave, Calabash Ave	Notice to Owner Utility Agreement City Encroachment Permits
Riverside Highland Water Company	Water mains	3rd Street, I-10/I-215 Interchange	Notice to Owner Utility Agreement
Santa Ana Watershed Project Authority	Waste water line	Warm Creek	Notice to Owner Utility Agreement
Southern California Edison Transmission	220kN, 66kV power line	Etiwanda Ave, Mulberry Creek, Juniper Ave, Cherry Ave	Notice to Owner Utility Agreement Permit to Relocate (CPUC)
Southern California Edison Distribution	12kV power line, gasoline line	Milliken Ave, Cypress Ave, Almond Ave, Haven Ave	Notice to Owner Utility Agreement Permit to Relocate (CPUC)
Southern California Gas Distribution	2", 3", 4", 8", 14" medium pressure gas line, 12" high pressure gas line	Vine St, Juniper Ave, Oleander Ave, Hermosa Ave, Banana Ave, Cedar Ave, Sierra Ave, Hemlock Ave, Pepper Ave, Linden Ave	Notice to Owner Utility Agreement

Owner:	Description Summary:	Locations:	Agreements Needed:
Time Warner Cable	CATV, Fiber Optic cable	Redwood Ave, Milliken Ave, Richardson St, Cherry Ave, Juniper Ave	Notice to Owner Utility Agreement
Verizon	Fiber Optic cable	Riverside Ave	Notice to Owner Utility Agreement
Western Pacific Sanitation Company	Sewer main	Milliken Ave	Notice to Owner Utility Agreement
West Valley Water District	Water main	Linden Ave	Notice to Owner Utility Agreement

3. Is any facility a longitudinal encroachment in existing or proposed access controlled right of way? Explain.

Yes, eleven (11) facilities are longitudinal encroachments.

Disposition of longitudinal encroachments(s):

☐ Relocation Required.
No facility require relocation

☑ Exception to policy needed.

Owner:	**Conflict Number:**
Metropolitan Water District	3403
Riverside Highland Water Company	5402
Southern California Edison	4606, 5205, 6605, 6615
Unknown	2804, 3404, 5306, 5307, 5401

☐ Other. Explain.

4. Additional information concerning utility involvement on this project, i.e., long lead time materials, growing or species seasons, customer service seasons (no transmission tower relocations in summer).

   A lead time of 18 to 24 months from the date of SCE's approved relocation design is required for tubular steel poles fabrication for existing SCE towers replacement.

   A lead time of 18 months is required for existing wireless communication facilities removal.

   Transfer of the conductors from existing towers to new support structures is not anticipated to be staged during summer.

5. PMCS Input Information

   For total estimated cost of SANBAG's obligation for utility relocation on this project, see Right of Way Data Sheet Exhibit 17-EX-21.

Note: Total estimated cost includes any SANBAG obligation to relocate longitudinal encroachments in access controlled right of way and acquire any necessary utility easements.

Utility Involvements

U4-1	8	U5-7	10
-2	0	-8	36
-3	160	-9	150
-4	0		

Prepared By:

Hui Liu — 1/13/2016

Right of Way Utility Estimator — Date

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

RAILROAD INFORMATION SHEET

(Form #)

EXHIBIT

4-EX-6

1. Describe railroad facilities or right of way affected.

Alternative 2 (HOV) of the I-10 improvement project extends approximately 25 miles from Ontario to Redlands, and affects the right of way and existing highway-rail crossings belonging to the BNSF and UPRR. Typical for all of the affected railroad facilities, minimum horizontal and vertical clearances to the track must be maintained, including during construction; temporary and permanent easements must be obtained for work within railroad right of way; the railroads must review and approve the proposed designs; flagging will be required when working within railroad right of way; and any track or railroad signal work will be designed and constructed by the railroad. The locations of with affected railroad facilities are as follows:

Permanent easements and right of way impacts to the UPRR for the I-10 widening are located between stations 2192+00 and 2195+00.

Permanent and temporary construction easements are required within San Bernardino Associated Governments right of way for I-10 improvements above BNSF's track between stations 2460+00 and 2464+00.

Temporary construction easements required within UPRR right of way along the south side of the I-10 are identified between stations 1650+00 to 1683+00, 2028+00 to 2042+00, 2065+00 to 2073+00, 2165+00 to 2170+00, 2185+00 to 2186+00, 2189+00 to 2195+00, 2197+00 to 2202+00, and 2216+00 to 2226+00.

Temporary construction easements required within BNSF right of way for the I-10 widening are identified between stations 2665+00 and 2668+00.

Near station 1620+00 the existing I-10 overhead at the UPRR Kaiser spur track (DOT# 746969Y; CPUC #001B-528.35-AC) is proposed to be widened on the south side.

Near station 2134+00, the existing Slover Mountain UPRR underpass at the I-10 (DOT# 747037F, CPUC# 001BB-491.96-B) is proposed to be protected in place. Modifications to the configuration of an existing grade separation require coordination with the railroad and CPUC.

Near station 2184+00 the I-10 is proposed to be widened on the south side of the Colton OH (DOT# 026457U, CPUC# 002B-3.20-A), which bridges over the BNSF's mainline tracks and a connecting track. These are very active tracks. The railroad typically requires crash walls or heavy construction for new bridge supports within 25' of the centerline of nearest track.

Near station 2208+00 is the UPRR Pavilion Spur track OH crossing (DOT#746985H, CPUC#001-539.30-AC). The track has been removed and the structure will be protected in place. Due to proximity to the structure coordination may be required.

Near station 2462+00 the I-10 is proposed to be widened on both sides above the BNSF's West Redlands track (DOT# 027229K, CPUC# 002U-5.70-A).

Near station 2666+00, the existing I-10 overhead at the BNSF track (DOT#027249W, CPUC# 002U-9.50-A) appears inactive, as the track has been removed. Coordination with the BNSF, CPUC, and potentially San Bernardino Associated Governments (SANBAG) is needed.

In addition to railroad requirements, California Public Utilities Commission (CPUC) requirements must be met and their authorization to construct the improvements obtained prior to modification of any highway-rail crossing.

2. When branch lines or spurs are affected, would acquisition and/or payment of damages to businesses and/or industries served by the railroad facility be more cost effective than construction of a facility to perpetuate the rail service? Yes _____ No _X_ (If yes, explain)

3. Discuss types of agreements and right required from the railroads. Are grade crossings requiring service contracts or grade separations requiring construct and maintenance agreements involved?

   Following are the types of agreements that will be involved: preliminary engineering agreement primarily for design review, construction and maintenance agreements (includes right of way and easements, provisions for track and signal design and construction, contractor requirements, funding sources, etc.); and utility license agreements for utility relocations.

4. Remarks (non-operating railroad right of way involved?): None.

5. PMCS Input Information

	RR Involvements
	None
X	C&M Agreement
	Service Contract
X	Design
X	Construction
X	Lic/RE/Clauses

Prepared By:

Kathryn A. Grack, P.E. — September 30, 2015

Right of Way Railroad Coordinator — Date

To: District Division Chief
Division of Right of Way and Land Surveys

Attention: District Branch Chief
R/W Local Programs

Date: January 13, 2016

Co. LA, SBD Rte. 10
Expense Authorization EA0C2500
PN 0800000040

Subject: **RIGHT OF WAY DATA SHEET - LOCAL PUBLIC AGENCIES**
EXPRESS LANES – ALTERNATIVE 3

Project Description:

Right of way necessary for the subject project will be the responsibility of SANBAG or their designated consultant.

The information in this data sheet was developed by Parsons and Paragon Partners Ltd.

I. *Right of Way Engineering*

Will Right of Way Engineering be required for this project?

- No ____
- Yes ✓

  - Hard copy (base map) ✓
  - Appraisal map ✓
  - Acquisition Documents ✓
  - Property Transfer Documents ✓
  - R/W Record Map ✓
  - Record of Survey ✓

II. *Engineering Surveys*

1. Is any surveying or photogrammetric mapping required?

   No ____ Yes ✓ (Complete the following.)

2. Datum Requirements

   Yes ✓ Project will adhere to the following criteria:
   - Horizontal - datum policy is NAD 83, CA-HPGN, EPOCH 1991.35 and English system of units and measures.
   - Vertical - datum policy is NAVD 88.
   - Units - metric is not required.

   No ____ Provide an explanation on additional page.

3. Will land survey monument perpetuation be scoped into the project, if required?

   Yes ✓

   No ____ Provide explanation on additional page.

III. ***Parcel Information (Land and Improvements)***

Are there any property rights required within the proposed project limits?

No ____ Yes ✓ (Complete the following.)

	Part Take	*Full Take*	**Estimate $*	*25% Escalation $*
A. Number of Vacant Land Parcels	28	0	$ 3,701,776	$ 4,627,220
B. Number of Single Family Residential Units	98	12	$ 12,974,404	$ 16,218,005
C. Number of Multifamily Residential Units	5	4	$ 3,508,619	$ 4,385,774
D. Number of Commercial/Industrial Parcels	75	6	$ 14,905,263	$ 18,631,579
E. Number of Farm/Agricultural Parcels	1	0	$ 37,300	$ 46,625
F. ~~Permanent and/or~~ Temporary Easements	222		$ 3,872,331	$ 4,840,414
G. Other Parcels (define in "Remarks" section)	36	0	$ 3,035,813	$ 3,794,766
Totals	465	22	$ 42,035,506	$ 52,544,383

Provide a general description of the right of way and excess lands required (zoning, use, improvements, critical, or sensitive parcels, etc.).

Property zoning was verified along with existing land use. Comparable sales data was gathered for each zoning category along the freeway corridor. Land value for each parcel included an assessment of the level of entitlement work completed as well as improvements. The most sensitive parcels are a metal recycling business and two salvage yards due to the potential environmental clean-up requirements. Additionally, the full take-acquisition of a parcel will displace a large 4-wheel drive sales and service center located on both sides of Valley Blvd.

The cost analysis above is based on a per parcel basis. Parcels with multiple types of easements (ie. at grade easement, subsurface easement and/or a temporary construction easement) were counted only on a per parcel basis. Parcels that included only a Temporary Construction Easement are included under item F "Temporary Easements". Other Parcels category includes railroad parcel, city parcels and a flood control parcel whereby a permanent easement is being acquired.

Since the right of way acquisition will be completed under a Design Build process we anticipate right of way acquisition being completed by January 2020. Based on this assumption, the right of way cost estimate includes a 25% contingency based on a projected real estate appreciation rate of 4% to 4.5% each year, for a period of 5 to 6 consecutive years.

A specific breakdown regarding the easement type and valuation is included within a supporting cost analysis spreadsheet.

IV. ***Dedications***

Are there any property rights which have been acquired, or anticipate will be acquired, through the "dedication" process for the Project?

No ✓ Yes ____ (Complete the following.)

Number of dedicated parcels _____

Have the dedication parcel(s) been accepted by the municipality involved?

V. ***Excess Lands / Relinquishments***

Are there Caltrans property rights which may become excess lands or potential relinquishment areas?

No _____ Yes ✓ (Provide an explanation on additional page.)

Potential excess lands from full takes.

VI. ***Relocation Information***

Are relocation displacements anticipated?

No ____ Yes ✓ (Complete the following.)

A. Number of Single Family Residential Units	23	
Estimated RAP Payments		$ 828,000
B. Number of Multifamily Residential Units	19	
Estimated RAP Payments		$ 684,000
C. Number of Business/Nonprofit	12	
Estimated RAP Payments		$ 3,400,000
D. Number of Farms	0	
Estimated RAP Payments		$ 0
E. Other (define in the "Remarks" section)	0	
Estimated RAP Payments		$ 0
Totals	54	$ 4,912,000

VII. ***Utility Relocation Information***

Do you anticipate any utility facilities or utility rights of way to be affected?

No ____ Yes ✓ (Complete the following.)

		Estimated Relocation Expense		
Facility	Owner	State Obligation	Local Obligation	Utility Owner Obligation
A.		$	$	$
B.		$	$	$
C.		$	$	$
D.		$	$	$
E.		$	$	$
F.		$	$	$
Totals		$ -0- *	$ 49,774,375**	$ 7,023,125**
Number of facilities		188		

This amount reflects the estimated total financial obligation by the State.
****Utility relocation reflects a 25% escalation rate over 2015 costs or 4.5% each year for 5-year duration.***

Any additional information concerning utility involvement on this project?

Details of the utility companies potentially involved, their location, and relocation expense obligations are available in the project files.

VIII. ***Rail Information***

Are railroad facilities or railroad rights of way affected?

No ____ Yes ✓ (Complete the following.)

Describe railroad facilities or railroad rights of way affected.

Owner's Name	Transverse Crossing	Longitudinal Encroachment
A. UPRR	4 locations	11 locations
B. SANBAG	1 location	
C. BNSF	5 locations	

Discuss types of agreements and rights required from the railroads. Are grade crossings that require services contracts, or grade separations that require construction and maintenance agreements involved?

Refer to the attached Railroad Utility Information Sheet for additional details and description of impacts to railroad facilities affected and stationing locations.

IX. ***Clearance Information***

Are there improvements that require clearance?

No ____ Yes ✓ (Complete the following.)

A. Number of Structures to be Demolished 30
Estimated Cost of Demolition $ 565,000*

****The cost of demolition of structures was included in the right of way acquisition estimates.***

X. ***Hazardous Materials/Waste***

Are there any site(s) and/or improvements(s) in the Project Limits that are known to contain *hazardous materials*? None ____ Yes ✓ (Explain in the "Remarks" section.)

Are there any site(s) and/or improvement(s) in the Project Limits that are suspected to contain *hazardous waste*? None ____ Yes ✓ (Explain in the "Remarks" section.)

XI. ***Project Scheduling*** ***- Schedule below is based on a Design Build type of project***

	Proposed lead time	Completion date
* Preliminary Engineering, Surveys	30 (months)	January 2020
* R/W Engineering Submittals	30 (months)	January 2020
* R/W Appraisals/Acquisition	30 (months)	January 2020
Proposed Environmental Clearance		December 2017
Proposed R/W Certification		January 2020

XII. ***Proposed Funding***

	Local**	State	Federal*	Other
Acquisition	52%		48%	
Utilities	52%		48%	
Relocation Assistance Program	52%		48%	
R/W Support	52%		48%	
Cost (Eng. Appraisals, etc.)	52%		48%	

* Congestion Mitigation and Air Quality Improvement Program (CMAQ) (48%)
** Measure I Funds (52%)

XIII. ***Remarks***

Please refer to the attached Right of Way Cost Estimates Memorandum for specific information supporting the right of way costs calculation for this design alternative.

We anticipate several part-take parcels will have underground storage tanks that could be leaking. Additionally, we anticipate moderate environmental clean-up work will be necessary on the salvage yards slated for full-take acquisition. During the acquisition process the appraisals will be completed under the assumption that the property is clean and clean-up cost will the responsibility of the existing owner. For budgeting purposes, we have included $600,000 for clean-up work for the 2 salvage yards near Washington and Beech and the metal recycling business near Almond Avenue.

Project Sponsor Consultant
Prepared by:

Kent Jorgensen

Kent Jorgensen, Paragon Partners Ltd
BRE# 01174480

1-13-16

January 13, 2016
Date

Project Sponsor
Reviewed and Approved by:

Larry Cole

1.22.16

Date

Caltrans
Reviewed and approved based on information provided to date:

Caltrans District Branch Chief
Local Programs
Division of Right of Way

1/29/16

Date

1. Name of utility companies involved in project:

American Cablevision
AT&T
Atchison, Topeka And Santa Fe Railway
California-Nevada Pipeline
Chino Basin Municipal Water District
City of Chino Hills
City of Colton
City of Fontana
City of Loma Linda
City of Montclair
City of Ontario
City of Rialto Sewer
City of Riverside
City of San Bernardino
City of Upland
Comcast
Cucamonga Valley Water District
Fontana Public Works Department
Fontana Water Company
Kinder Morgan
Level 3 Communications
Marigold Mutual Water Company
Metropolitan Water District
Monte Vista Water District
Riverside Highland Water Company
San Antonio Water Company
San Gabriel Valley Water Company
Santa Ana Watershed Project Authority
Southern California Edison Distribution
Southern California Edison Transmission
Southern California Gas Distribution
Southern California Water
Southern Pacific Transportation Company/Union Pacific Railroad
Sprint
SUNESYS
Time Warner Cable
Union Carbide Company
Verizon
Water Facilities Authority
West San Bernardino Water District
West Valley Water District
Western Pacific Sanitation Company
Western Union Telegraph

2. Types of facilities and agreements required:

Owner:	Description Summary:	Locations:	Agreements Needed:
AT&T	Telephone lines	Almond Ave, Juniper Ave	Notice to Owner Utility Agreement
California-Nevada Pipeline	Gasoline pipeline, petroleum pipeline	Linden Ave, Hermosa Ave	Notice to Owner Utility Agreement
Chino Basin Municipal Water District	Waste water line	N Council Ave	Notice to Owner Utility Agreement

Owner:	Description Summary:	Locations:	Agreements Needed:
City of Colton	Sewer line, water line	3rd St, 9th St, La Cadena Dr, 5th Street, Pennsylvania Ave	Notice to Owner Utility Agreement City Encroachment Permits
City of Rialto Sewer	Sewer mains	Riverside Ave	Notice to Owner Utility Agreement City Encroachment Permits
City of Fontana	Sewer line	Catawba Ave	Notice to Owner Utility Agreement City Encroachment Permits
City of Loma Linda Water	Sewer line	Tippecanoe Ave	Notice to Owner Utility Agreement City Encroachment Permits
Comcast	CATV	6th St, Mills Ave, Deodar St	Notice to Owner Utility Agreement
City of Ontario	Sewer line, water line	Milliken Ave, 6th St, San Antonio Ave, Vineyard Ave, Haven Ave, Euclid Ave, Milliken Ave, N Council Ave, N Turner Ave	Notice to Owner Utility Agreement City Encroachment Permits
City of Upland	Sewer line, water line	Mountain Ave, San Antonio Ave, Euclid Ave, Campus Ave	Notice to Owner Utility Agreement City Encroachment Permits
Cucamonga Valley Water District	Water line	I-10/I-15 Interchange	Notice to Owner Utility Agreement
Fontana Public Works Department	Sewer line, water line	Poplar Ave, Juniper Ave, Citrus Ave, Calabash Ave	Notice to Owner Utility Agreement City Encroachment Permits

Owner:	Description Summary:	Locations:	Agreements Needed:
Fontana Water Company	Water line	Beech Ave, Live Oak Ave, Elm Ave, Poplar Ave, Vine St, Oleander Ave, Elm Ave, Catawba Ave, Hemlock Ave, Juniper Ave	Notice to Owner Utility Agreement City Encroachment Permits
Level 3 Communications	Fiber Optic cable	Cedar Ave	Notice to Owner Utility Agreement
Marigold Mutual Water Company	Water main	Sierra Ave	Notice to Owner Utility Agreement City Encroachment Permits
Monte Vista Water District	Water line	Palo Verde St	Notice to Owner Utility Agreement
Metropolitan Water District	Water mains	Palo Verde St, Catawba Ave, Council Ave, Banana Ave, Elm Ave, Calabash Ave	Notice to Owner Utility Agreement City Encroachment Permits
Riverside Highland Water Company	Water mains	3rd Street, I-10/I-215 Interchange	Notice to Owner Utility Agreement
Santa Ana Watershed Project Authority	Waste water line	Warm Creek	Notice to Owner Utility Agreement
San Antonio Water Company	Water main	N Council Ave, San Antonio Ave	Notice to Owner Utility Agreement
Southern California Edison Transmission	66kV, 220kV, power line	Sultana Ave, Palo Verde St, Cherry Ave, Mulberry Creek, Juniper Ave, 6th St, Etiwanda Ave	Notice to Owner Utility Agreement Permit to Relocate (CPUC)

Owner:	Description Summary:	Locations:	Agreements Needed:
Southern California Edison Distribution	2kV, 12kV power line, gasoline line	Monte Vista Ave, Palo Verde St, Mills Ave, Haven Ave, Deodar St, Almond Ave, N Turner Avenue, Vineyard Ave, Campus Ave, Milliken Ave, Cypress Ave, Euclid Ave	Notice to Owner Utility Agreement Permit to Relocate (CPUC)
Southern California Gas Distribution	2", 3", 4", 6", 8", 14" medium pressure gas line, 8.75", 12" high pressure gas line	Vine St, Juniper Ave, Oleander Ave, Pepper Ave, Hermosa Ave, Banana Ave, Euclid Ave, 6th St, Sierra Ave, Hemlock Ave, Campus Ave, Cedar Ave, Linden Ave, Sultana Ave	Notice to Owner Utility Agreement
Southern California Water	Water main	Palo Verde St	Notice to Owner Utility Agreement
Sprint	Wireless cell tower	Palo Verde St, MacArthur Park in Montclair	Notice to Owner Utility Agreement
Time Warner Cable	CATV, Fiber Optic cable	Redwood Ave, Milliken Ave, Richardson St, Cherry Ave, Juniper Ave	Notice to Owner Utility Agreement
Verizon	Telephone overhead lines, Fiber Optic cable	San Antonio Ave, 6th St, Deodar St, Riverside Ave, Vineyard Ave, Euclid Ave	Notice to Owner Utility Agreement, City Encroachment Permits
Western Pacific Sanitation Company	Sewer main	Milliken Ave	Notice to Owner Utility Agreement
West Valley Water District	Water main	Linden Ave	Notice to Owner Utility Agreement

3. Is any facility a longitudinal encroachment in existing or proposed access controlled right of way? Explain.

Yes, twenty-four (24) facilities are longitudinal encroachments.

Disposition of longitudinal encroachments(s):

☐ Relocation Required.

☑ Exception to policy needed.

Owner:	**Conflict Number:**
Chino Basin Municipal Water District	1313
Comcast	0703
City Of Upland	1026
Monte Vista Water District	0433
Metropolitan Water District	0414A, 0414B , 3403
Riverside Highland Water Company	5402
Southern California Edison	0702, 1401, 2101, 4606, 5205, 6605, 6615
Unknown	1903, 1908, 2804, 3404, 5306, 5307, 5401
Verizon	0701, 1402

☐ Other. Explain.

4. Additional information concerning utility involvement on this project, i.e., long lead time materials, growing or species seasons, customer service seasons (no transmission tower relocations in summer).

A lead time of 18 to 24 months from the date of SCE's approved relocation design is required for tubular steel poles fabrication for existing SCE towers replacement.

A lead time of 18 months is required for existing wireless communication facilities removal.

Transfer of the conductors from existing towers to new support structures is not anticipated to be staged during summer.

5. PMCS Input Information

For total estimated cost of SANBAG's obligation for utility relocation on this project, see Right of Way Data Sheet Exhibit 17-EX-21.

Note: Total estimated cost includes any SANBAG obligation to relocate longitudinal encroachments in access controlled right of way and acquire any necessary utility easements.

Utility Involvements

U4-1	10	U5-7	10
-2	0	-8	44
-3	200	-9	188
-4	0		

Prepared By:

Hui Liu — 1/13/2016
Right of Way Utility Estimator — Date

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

RAILROAD INFORMATION SHEET

(Form #)

EXHIBIT

4-EX-6

1. Describe railroad facilities or right of way affected.

Alternative 3 (Express Lanes) of the I-10 improvement project extends approximately 33 miles from Montclair to Redlands, and affects the right of way and existing highway-rail crossings belonging to the BNSF and UPRR. Typical for all of the affected railroad facilities, minimum horizontal and vertical clearances to the track must be maintained, including during construction; temporary and permanent easements must be obtained for work within railroad right of way; the railroads must review and approve the proposed designs; flagging will be required when working within railroad right of way; and any track or railroad signal work will be designed and constructed by the railroad. The locations of with affected railroad facilities are as follows:

Permanent easements and right of way impacts to the UPRR for the I-10 widening are located near or between the following stations: 1866+00 to 1869+00, 2003+00 to 2007+00, 2028+00 to 2040+00, 2126+00, 2133+00 to 2135+00, 2150+00, 2167+00 to 2179+00, and 2185+00 to 2222+00.

Permanent and temporary construction easements are required within San Bernardino Associated Governments right of way for I-10 improvements above BNSF's track between stations 2460+00 and 2464+00.

Temporary construction easements required within UPRR right of way along the south side of the I-10 are identified between stations 1809+00 to 1847+00, 1865+00 to 1870+00, 1939+00 to 1955+00, 1997+00 to 2048+00, 2060+00 to 2077+00, 2095+00 to 2103+00, 2123+00 to 2128+00, 2133+00 to 2135+00, 2137+00 to 2159+00, 2167+00 to 2181+00, and 2185+00 to 2224+00.

Temporary construction easements required within BNSF right of way for the I-10 widening are identified between stations 2183+00 to 2185+00, and 2665+00 to 2668+00.

Near station 2134+00, the existing Slover Mountain UPRR bridge over the I-10 (DOT# 747037F, CPUC# 001BB-491.96-B) is proposed to be reconstructed to the east to accommodate the highway widening. With the offset configuration, the existing railroad bridge will remain in service until the proposed bridge is completed and the track cut-overs have been made. The bridge relocation also shifts to the east the location of a rail over rail crossing on the south side of the I-10 and the crossing at Valley Boulevard (DOT# 747036Y, CPUC# 001BB-491.93-B) on the north side of I-10. The highway-rail crossings and the rail-rail crossing must be addressed with the railroad, roadway agencies, and CPUC.

Between stations 2161+00 and 2181+00 the slope along the southerly side of the I-10 will be filled to meet the existing MSE walls that are part of the UPRR's Colton Crossing structure. A two foot easement will be required along the wall. The proposed fill against the MSE wall is part of an understanding among the UPRR, Caltrans and SANBAG during construction of the Colton Crossing.

Near station 2179+00 an existing drainage weir structure partially within UPRR right of way will be reconstructed in approximately the same location. Note that for construction near existing tracks there are requirements to ensure that the track does not settle or experience damage resulting from construction activities. Access to this drainage weir structure will need to be

relocated within UPRR right of way, as the current access within Caltrans right of way will no longer be viable.

Near station 2184+00 the widening of the I-10 affects the Colton OH (DOT# 026457U, CPUC# 002B-3.20-A), which bridges over the BNSF's mainline tracks and a connecting track. These are very active tracks. The railroad typically requires crash walls or heavy construction for new bridge supports within 25' of the centerline of nearest track.

Near station 2208+00 are the remains of the UPRR Pavilion Spur track and crossing (DOT#746985H, CPUC#001-539.30-AC). The track has been removed. Further coordination is required with the UPRR and CPUC to determine if standard requirements must be met, or if other concerns, for example access control or closing the crossing, are a higher priority.

Near station 2462+00 the I-10 is proposed to be widened on both sides above the BNSF's West Redlands track (DOT# 027229K, CPUC# 002U-5.70-A).

Near station 2666+00, the existing I-10 overhead at the BNSF track (DOT#027249W, CPUC# 002U-9.50-A) appears inactive, as the track has been removed. Coordination with the BNSF, CPUC, and potentially San Bernardino Associated Governments (SANBAG) is needed.

In addition to railroad requirements, California Public Utilities Commission (CPUC) requirements must be met and their authorization to construct the improvements obtained prior to modification of any highway-rail crossing.

2. When branch lines or spurs are affected, would acquisition and/or payment of damages to businesses and/or industries served by the railroad facility be more cost effective than construction of a facility to perpetuate the rail service? Yes _____ No _X_ (If yes, explain)

3. Discuss types of agreements and right required from the railroads. Are grade crossings requiring service contracts or grade separations requiring construct and maintenance agreements involved?

   Following are the types of agreements that will be involved: preliminary engineering agreement primarily for design review, construction and maintenance agreements (includes right of way and easements, provisions for track and signal design and construction, contractor requirements, funding sources, etc.); and utility license agreements for utility relocations.

4. Remarks (non-operating railroad right of way involved?): None expected, but there is a possibility that the respective railroads could classify the Pavilion Spur and the Redlands OH as non-operating since the tracks have been removed.

5. PMCS Input Information

	RR Involvements
	None
X	C&M Agreement
	Service Contract
X	Design
X	Construction
X	Lic/RE/Clauses

Prepared By:

Kathryn A. Grack, P.E. — November 10, 2015

Right of Way Railroad Coordinator — Date

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ATTACHMENT L

Draft EIR/EIS Signature Page

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SCH# 2012101082
7–LA–10 PM 44.9/48.3
8–SBD–10 PM 0.0/R37.0
EA 0C2500 / PN 0800000040

Interstate 10 Corridor Project

DRAFT ENVIRONMENTAL IMPACT REPORT/ ENVIRONMENTAL IMPACT STATEMENT

Submitted Pursuant to: (State) Division 13, Public Resources Code
(Federal) 42 U.S.C. 4332(2)(C) and 49 U.S.C. 303

THE STATE OF CALIFORNIA
Department of Transportation

COOPERATING AGENCIES
U.S. Army Corps of Engineers
U.S. Environmental Protection Agency

RESPONSIBLE AGENCIES
San Bernardino Associated Governments
California Department of Fish and Wildlife
California Regional Water Quality Control Board
California Transportation Commission

4/15/16
Date of Approval

David Bricker
Deputy District Director, District 8
Division of Environmental Planning
California Department of Transportation
NEPA and CEQA Lead Agency

The following person may be contacted for additional information concerning this document:

Aaron Burton
Environmental Chief
California Department of Transportation

464 W. 4th Street
San Bernardino, CA 92401
909-884-8276

Abstract: The Interstate 10 (I-10) Corridor Project proposes to widen the corridor by extending the existing high-occupancy vehicle (HOV) lane in each direction of I-10 from the current HOV terminus near Haven Avenue in the city of Ontario to Ford Street in the city of Redlands; or providing two Express Lanes in each direction of I-10 from the Los Angeles/San Bernardino (LA/SB) county line to California Street (near State Route [SR] 210) in Redlands and one Express Lane in each direction from California Street to Ford Street in Redlands. The Express Lanes would be priced managed lanes in which vehicles not meeting the minimum occupancy requirement would pay a toll. West of Haven Avenue, a single new lane would be constructed and combined with the existing HOV lane to provide two Express Lanes in each direction; east of Haven Avenue, all Express Lanes would be constructed by the project. Potential benefits include maintaining or improving future traffic operations in the I-10 corridor and improving the efficient movement of people and goods. Effects from the proposed project include potential impacts to community character and cohesion, biological resources, aesthetics, air quality, cultural resources, geology, hazardous waste, noise, land use, hydrology and water quality, transportation/traffic, public services and utilities, and paleontological resources. Please send your comments to Aaron Burton at the above address by June 8, 2016.

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ATTACHMENT M

Storm Water Data Report Signature Page

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Dist-County-Route: 07-LA-I10/08-SBd-I 10

Post Mile Limits: 07-LA-I 10 PM 44.9/48.3, 08-SBd-I 10 PM 0.0/R37.0

Project Type: Lane Addition Project

Project ID (or EA): 0C2500

Program Identification:

Phase: ☐ PID ☒ PA/ED ☐ PS&E

Regional Water Quality Control Board(s): Los Angeles RWQCB and Santa Ana RWQCB

Is the Project required to consider Treatment BMPs? Yes ☒ No ☐

If yes, can Treatment BMPs be incorporated into the project? Yes ☒ No ☐

If No, a Technical Data Report must be submitted to the RWQCB at least 30 days prior to the projects RTL date. List RTL Date:

Total Disturbed Soil Area: Alt. 2 346 Acres, Alt 3. 661 Acres Risk Level: 2

Estimated: Construction Start Date: 2019 Construction Completion Date: 2024

Notification of Construction (NOC) Date to be submitted: 2019

Erosivity Waiver	Yes ☐	Date:	No ☒
Notification of ADL reuse (if Yes, provide date)	Yes ☒	Date: August 2014	No ☐
Separate Dewatering Permit (if yes, permit number)	Yes ☒	Permit # R8-2014-0025 or R4-2008-0032	No ☐

This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the date upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E.

9-1-2015

Surafael Teshale, Registered Project Engineer — Date

I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:

Raghuram Radhakrishnan, Project Manager — *Date*

Leonard Estrella, Designated Maintenance Representative — *Date*

Steve Magallanes, Designated Landscape Architect Representative — *Date*

[Stamp Required for PS&E only)

Patrick Hally, District/Regional Design SW Coordinator or Designee — *Date*

THE SWDR WAS APPROVED IN SEPTEMBER 2015. CALTRANS INDICATED THAT THE SWDR WILL BE SIGNED FOR THE FINAL PR.

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ATTACHMENT N

Decision Documents

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Governments
SANBAG
Working Together

Caltrans

I-10 CORRIDOR PROJECT (PA/ED)

EA 0C2500, PN 0800000040

DECISION DOCUMENT A-1

Topic: **High Occupancy Vehicle (HOV) Access Design and Locations**

Issues: The existing Interstate 10 (I-10) corridor consists of one HOV lane in each direction from the Los Angeles/San Bernardino (LA/SB) County Line to Haven Avenue. The HOV lanes are buffer-separated with intermediate ingress/egress access at selected locations.

Discussions: The current Caltrans District 8 policy is to provide continuous HOV access along the I-10 corridor within the project limits. The continuous access striping will be broken white stripes in accordance with the requirements of the California Manual of Uniform Traffic Control Devices. Traffic would be free to enter and exit the HOV lanes throughout its length.

Decision: Provide continuous HOV access for proposed extension of the HOV lanes in Alternative 2.

Reference: Geometrics Workshop No. 1 Minutes, Item 5.1.2
Geometrics Workshop No. 2 Minutes, Item 2.2.1
Email from RK (Caltrans), July 11, 2012

Signatures: This decision document has been reviewed and concurred by the following:

Submitted By:

4-17-13

Garry Cohoe Date
SANBAG, Director of Project Delivery

Prepared By:

4-1-13

Chris A. Johnson Date
Parsons, Design Manager

Concurred By:

6-13-13

Du Lu Date
Design Branch J, Chief

Concurred By:

6/17/13

Haissam Yahya Date
Traffic Operations, Office Chief

Approved By:

6/20/13

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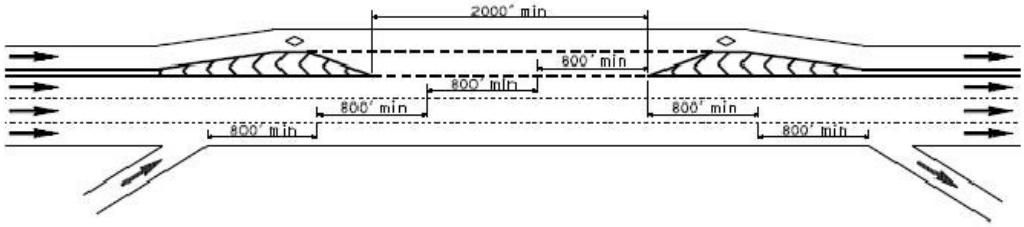
I-10 CORRIDOR PROJECT (PA/ED)

EA 0C2500, PN 0800000040

DECISION DOCUMENT A-2

Topic: **Ingress/Egress (I/E) Design**

Issues: The I/E design criteria in the Traffic Operations Policy Directive (TOPD) 11-02, March 2011, specifies a minimum of 2,000 feet for access opening and a minimum of 800 feet per each lane change between the access opening and the nearest freeway on-ramp or off-ramp. A revised TOPD (to be published in 2013) clarifies the location of measurements as shown in the schematic below.



Source: Advance copy of Revised TOPD provided by Caltrans, via email dated October 10, 2012

Note: Per TOPD criteria, the total distance required to accommodate I/E is the sum of the length for ingress from an on-ramp plus the length of egress to an off-ramp. The length for ingress is calculated from the number of approaching lanes plus one and the length for egress is calculated from the number of departing lanes minus one. On I-10, there are typically four lanes in each direction. Therefore, the typical length required for ingress is 4,000 feet (4 + 1 = 5 x 800 feet/lane) and the typical length required for egress is 2,400 feet (4 – 1 = 3 x 800 feet/lane). In summary, the typical total distance required between an on-ramp and off-ramp for I/E on I-10 is 6,400 feet.

The Express Lanes Alternative of the I-10 Corridor project proposes to provide Express Lanes from the Los Angeles/San Bernardino (LA/SB) County Line to Ford Street, approximately 33 miles. The Express Lanes would be buffer-separated from the mixed-flow lanes via striping with 10 at-grade I/E access points proposed in each direction. Each I/E access point would be designed as a combined ingress and egress with a weave lane (except at Orange Avenue I/E where a weave zone is proposed) in accordance with TOPD criteria above. However, at some I/E locations, the distance between the on-ramp and the downstream off-ramp is not sufficient to accommodate the total distance recommended for I/E and hence, variance from TOPD design criteria will be required.

Discussions: Ingress/egress design standards and implementation guidelines for the I-10 Corridor project have been discussed at several I-10 Geometric Workshops. In summary, the following guidelines have been agreed upon with District 8:

i. The ingress lane change should be measured from the convergence of the on-ramp edge of traveled way (ETW) to the end of the 2,000-foot access opening. The egress lane change should be measured from the end of the 2,000-foot access opening to the divergence of the off-ramp ETW.

ii. The length of access opening should be a minimum of 2,000 feet. The length of egress should accommodate 800 feet per lane change. The length of

ingress should accommodate 800 feet per lane change if possible, but should not be less than 500 feet per lane change.

iii. When the 2,000-foot access opening is located within the body of an interchange, the opening should be positioned between the off-ramp gore (23-foot point) and the on-ramp nose (6-foot point) to avoid potential conflicts with on- and off-ramp traffic. In situations where the distance between the off-ramp gore and the on-ramp nose is less than 2,000 feet apart, Caltrans preference is to hold the off-ramp station line as the beginning of the access opening, provide 2,000 feet for ingress/egress, and extend the end of the access opening to overlap with the on-ramp.

The I/E access points proposed for the I-10 corridor have been designed per the guidelines described above and have been reviewed by District 8. The locations of proposed I/E access points for I-10 are summarized in the table below, along with the proposed length of ingress, length of access opening, and length of egress in both the westbound and eastbound directions. All of the proposed I/E access openings meet TOPD criteria for an access opening length of 2,000 feet. In addition, all of the proposed egress lengths meet TOPD criteria of 800 feet per lane change. However, the proposed ingress lengths are less than TOPD criteria of 800 feet per lane change at 10 of the 20 locations. For the 10 locations which do not meet TOPD criteria, the District guideline of more than 500 feet per lane change is provided.

Proposed I-10 Ingress/Egress Design

No.	I/E Location	Westbound I/E			Eastbound I/E		
		Ingress (ft/lane)	Opening (ft)	Egress (ft/lane)	Ingress (ft/lane)	Opening (ft)	Egress (ft/lane)
1	Mountain	>800	2,000	>800	>800	2,000	>800
2	6th	720	2,000	800	740	2,000	800
3	Haven	642	2,000	800	675	2,000	>800
4	Etiwanda	655	2,000	>800	630	2,000	800
5	Citrus	692	2,000	>800	>800	2,000	>800
6	Cedar	>800	2,000	>800	>800	2,000	>800
7	Pepper	>800	2,000	800	800	2,000	800
8	Tippecanoe	666	2,000	>800	767	2,000	800
9	California	636	2,000	800	800	2,000	800
10	Orange	>800	2,000	>800	>800	2,000	>800

Decision: The proposed I/E access design is deemed to provide acceptable and safe design for the I-10 Corridor project. All of the proposed access points meet TOPD criteria for length of access opening and length of egress lane change. Slight reduction in ingress lane change distance is required at 10 locations due to limited distance between interchange ramps. Deviations from the TOPD criteria will be formally documented as a separate Memo to File.

Reference: Email regarding Updated TOPD Ingress/Egress Design Criteria, October 10, 2012
Geometrics Workshop No. 2 Minutes, Item 2.2.2
Geometrics Workshop No. 3 Minutes, Item 3.3.4
Geometrics Workshop No. 5 Minutes, Item 4.5.2
Geometrics Workshop No. 6 Minutes, Item 4.6.5
Geometrics Workshop No. 7 Minutes, Item 7.7.3
Geometrics Workshop No. 8 Minutes, Item 8.8.6
Ingress/Egress Study Plans, Sheets I/E-1 through I/E-23

Signatures: This decision document has been reviewed and concurred by the following:

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* APPROVAL IS CONDITIONED ON COMPLETION OF FORMAL SAFETY ANALYSIS PROCESS AND SCOPE ADJUSTMENTS; SEE TOPD-11-02.

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I-10 CORRIDOR PROJECT (PA/ED)

EA 0C2500, PN 0800000040

DECISION DOCUMENT A-3

Topic: **Interstate 10 (I-10) Freeway Cross Slope**

Issues: The existing I-10 freeway within the project limits consists of 4 general purpose (GP) lanes in each direction plus a median High Occupancy Vehicle (HOV) lane between the San Bernardino/Los Angeles (SB/LA) County Line and Haven Avenue and auxiliary lane(s) at selected locations. The existing pavement width in each direction of I-10 is typically between 76 and 81 feet, plus 12 to 24 feet of auxiliary lane width. In tangent sections, the pavement cross slope is typically 1.5 percent. On horizontal curves, the pavement cross slope is superelevated ranging from 2 to 6 percent.

The I-10 Corridor Project, Express Lanes Alternative proposes to add 1) one lane in each direction of I-10 from the LA/SB County Line to Haven Avenue, 2) two lanes in each direction from Haven Avenue to California Street, and 3) one lane in each direction from California Street to Ford Street. The proposed pavement width in each direction is typically between 85 and 95 feet, plus an additional weave lane at intermediate ingress/egress access points and auxiliary lane(s) at selected locations. Most of the I-10 widening will be to the outside of the freeway; however, in some segments where the existing median is wider than required, inside widening is also proposed.

With additional pavement width up to 36 feet in each direction, consideration needs to be given to increase the cross slope of the outermost lanes to expeditiously remove storm water runoff from pavement surface. Roadway drainage considerations and cross slopes are discussed in the Highway Design Manual (HDM), 6th Edition, May 7, 2012, Index 301.3 and Index 833.2.

Discussions: The design of freeway cross slope was discussed at Geometric Workshop No. 7 and No. 8. These discussions focused primarily on the traveled way cross slope in normal tangent sections. In summary, the following guidelines for mainline traveled way cross slopes in tangent sections have been agreed upon with Caltrans:

Cross Slope in Tangent Sections

1) Outside widening should be designed at 3 percent cross slope to expeditiously remove storm water runoff from the traveled way, consistent with the recommendations in HDM Index 833.2.

2) For inside widening, the cross slope should be designed to match the existing freeway cross slope which is typically 1.5 percent. Inside widening would be sloped upward from the existing pavement and would not result in an issue with water accumulation in the median.

3) For widening of undercrossing structures (including approach slabs), a straight cross slope in the same plane as existing bridge cross slope, typically 1.5 percent, should

be used for both inside and outside widening, consistent with the recommendations in HDM Index 208.2.

The proposed cross slope design of the I-10 Corridor Project will follow the guidelines above. The use of 1.5 percent cross slope for inside and undercrossing structure widening and 3 percent cross slope for outside widening is consistent with the mandatory cross slope design standard specified in HDM Index 301.3(2)(b) which permits the minimum cross slope of 1.5 percent and the maximum of 3 percent for widening project.

The design concept for freeway cross slope in superelevated sections of I-10 will follow similar principles and guidelines agreed upon with Caltrans for cross slope in tangent sections. In summary, the following guidelines for mainline traveled way cross slope in superelevated sections will be applied:

Cross Slope in Superelevated Sections

1) Outside widening will be designed with a 3 percent cross slope on the low side of superelevated sections where the superelevation rate is less than or equal to 3 percent. Where the superelevation rate is higher than 3 percent, outside widening will match existing cross slope.

2) Inside widening will be designed to match existing cross slope for both the low side and high side of superelevated sections.

3) For widening of undercrossing structures (including approach slabs), the cross slope for both inside and outside widening will be in same plane as existing bridge cross slope, consistent with the recommendations in HDM Index 208.2.

Decision: Drainage considerations need to be addressed in the proposed widening of I-10. In normal tangent sections and on the low side of superelevated sections with existing cross slope less than or equal to 3 percent, the outside widening of the I-10 mainline lanes will be designed at a 3 percent cross slope. Widening on the inside of I-10 and at undercrossing structures, in both tangent and superelevated sections will be constructed in the same plane as existing cross slope. The proposed cross slope design is consistent with all applicable HDM design standards and does not require design exceptions.

Reference: Geometrics Workshop No. 7 Minutes, Item 7.7.1
Geometrics Workshop No. 8 Minutes, Item 3.8.1

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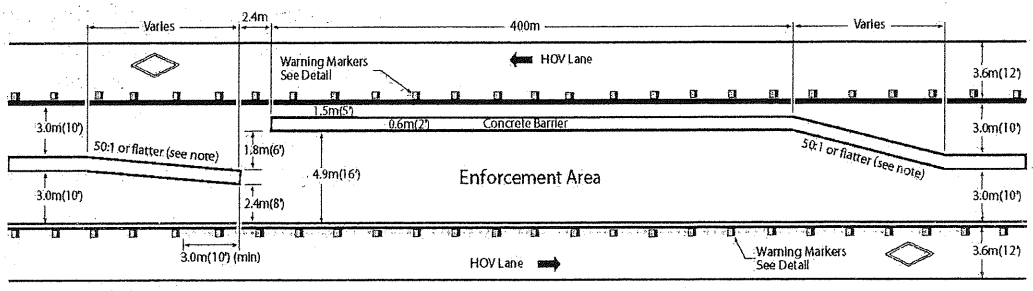
I-10 CORRIDOR PROJECT (PA/ED)

EA 0C2500, PN 0800000040

DECISION DOCUMENT A-4

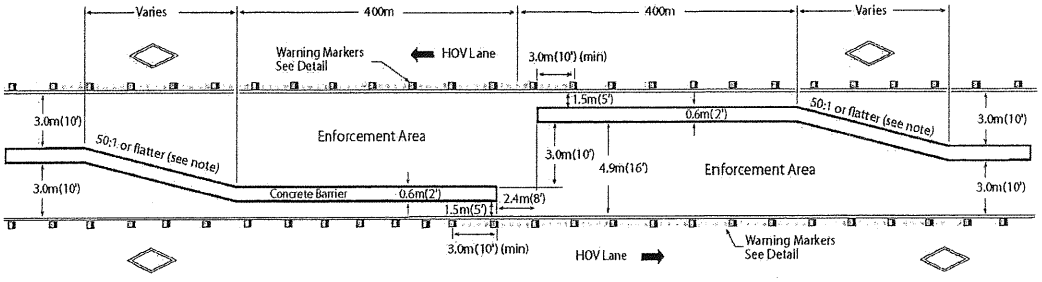
Topic: **Shoulder Width at Median California Highway Patrol (CHP) Enforcement Areas**

Issues: The design of median CHP enforcement areas presented in the 2003 High Occupancy Vehicle (HOV) Guidelines specifies redistributing components of the standard 22-foot median (two 10-foot median shoulders plus a 2-foot median barrier) to provide a 16-foot enforcement area in one direction, a 2-foot median barrier, and a 4-foot shoulder in the direction opposite to CHP enforcement. This arrangement is applicable to both directional and bi-directional CHP enforcement areas, as illustrated below:



Source: 2003 HOV Guidelines Figure 6.2 (with dimensions in English units added in parentheses)

Directional CHP Enforcement Area



Source: 2003 HOV Guidelines Figure 6.1(with dimensions in English units added in parentheses)

Bi-Directional CHP Enforcement Area

Notes:

1) *Both figures show 1.5 meters or 5 feet for the median shoulder in the direction opposite to enforcement, which results in a total median width of 23 feet. However, in the previous 1991 English version of the HOV Guidelines, a 4-foot dimension is specified for the median shoulder opposite to enforcement. For the I-10 Corridor Project, it is proposed to adjust the median shoulder width to 4 feet in order to fit within the standard 22-foot median.*
2) *The 2003 HOV Guidelines, Section 6.4, allows 4.2 meters or 14 feet as the minimum width for enforcement areas under restrictive conditions.*

The Express Lanes Alternative proposes to provide eight to ten median CHP enforcement areas in each direction along the I-10 project corridor. The design of each

median CHP enforcement area will follow the HOV Guidelines discussed above. However, this concept requires a design exception for the nonstandard 4-foot median shoulder width in the direction opposite to CHP enforcement.

Discussions: The proposed CHP enforcement areas will be used primarily as observation areas for carpool occupancy and toll violations, while enforcement stops are anticipated to be performed on the right shoulder of the freeway. The enforcement areas will generally be located relative to the toll reader locations and will be considered with respect to safety and visibility. Exact locations of CHP enforcement areas will be determined upon completion of the preliminary Concept of Operations Plan and coordination with the CHP.

The design of median CHP enforcement areas and the reduction of shoulder widths were discussed at several Geometric Workshops. In summary, the following guidelines for the CHP enforcement area design were agreed upon with Caltrans:

1) The CHP enforcement area will be provided where the freeway median width is standard (i.e. 22 feet wide).

2) The CHP enforcement areas will be accommodated by redistributing components of the 22-foot median width consistent with Figures 6.1 and 6.2 of the HOV Guidelines.

3) The median shoulder in the direction opposite to enforcement area will be reduced to 4 feet and documented as a design exception.

To avoid the design exception, a 10-foot median shoulder would need to be provided in the direction opposite to enforcement. However, such provision would require an additional 6 feet of pavement widening for approximately 2,000 feet at each directional enforcement area and 3,400 feet at each bi-directional enforcement area, which could result in a significant increase in right of way acquisition along the project corridor. In addition, provision of a 10-foot median shoulder would result in multiple lane shifts along the project corridor. Freeway lanes would be shifted to the outside upstream of each enforcement area and then shifted back to the inside downstream of each enforcement area. The use of the geometric design provided in the HOV Guidelines would avoid multiple lane shifts of all traffic lanes at the beginning and end of each enforcement area.

Decision: Each directional or bi-directional CHP enforcement area along the I-10 project corridor will be designed consistent with the design provided in the HOV Guidelines by redistributing components of the 22-foot median to provide a 16-foot enforcement area in one direction, a 2-foot center barrier, and a 4-foot median shoulder in the direction opposite to enforcement. A design exception will be required for the 4-foot shoulder width and will be formally documented in a Fact Sheet for exception from the Highway Design Manual (HDM), 6th Edition, May 7, 2012, Index 302.1.

Reference: Geometrics Workshop No. 1 Minutes, Item 6.0
Geometrics Workshop No. 4 Minutes, Item 4.4.6
Geometrics Workshop No. 6 Minutes, Item 6.6.3
Geometrics Workshop No. 7 Minutes, Item 4.7.3

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I-10 CORRIDOR PROJECT (PA/ED)

EA 0C2500, PN 0800000040

DECISION DOCUMENT A-5

Topic: **Buffer Width for Express Lanes Alternative**

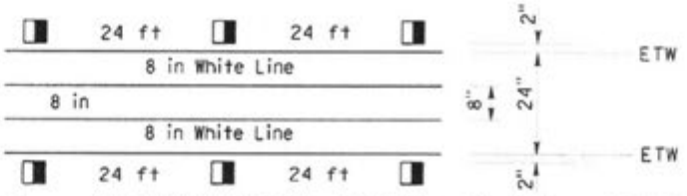
Issues: The Traffic Operations Policy Directive (TOPD) 11-02, dated October 2012, provides guidelines for planning and development of freeway managed lane projects. The TOPD states that the recommended buffer width separating Express Lanes from adjacent mixed-flow lanes is 4 feet. However, buffer width may be reduced as outlined in the priority listing in Section 3.10 of the 2003 High Occupancy Vehicle (HOV) Guidelines. The HOV Guidelines identify reduction of buffer width as one of the first cross sectional elements to be reduced, prior to reducing lane width. The HOV Guidelines state that buffer width may be reduced to 2 feet.

Due to right of way constraints, the use of a 2-foot buffer is necessary in several segments of Interstate 10 (I-10). To maintain consistency, a buffer width of 2 feet is proposed throughout the entire limits of the proposed Express Lanes.

Discussions: The buffer width was discussed at several Geometrics Workshops. In summary, Caltrans concurred with the use of a consistent 2-foot buffer throughout the I-10 corridor. The 2-foot buffer width is consistent with the TOPD and HOV Guidelines and does not violate any mandatory or advisory design standards established by the Highway Design Manual (HDM).

The project team also discussed the striping detail that would be used to create the 2-foot buffer. It was agreed that Striping Detail 44 provided in the 2012 California Manual of Uniform Traffic Control Devices (CAMUTCD) is the appropriate striping detail to delineate the 2-foot buffer. During Geometric Workshop No. 9, Caltrans provided clarification on implementation of Striping Detail 44 that 1) an 8-inch gap is preferred and 2) reflective markers should be offset 2 inches from white stripes. Therefore, the edge of traveled way will be located at the outer edge of each 8-inch white stripe and reflective markers will be located within adjacent lanes. This configuration of Striping Detail 44 (Modified), as shown below, is applicable where adjacent lanes are 12 feet and/or 11 feet.

DETAIL 44 (Modified) - Contiguous, Access Prohibited



Source: 2012 CAMUTCD, Striping Detail 44, modified with specificity for I-10 Express Lanes

Decision: A consistent 2-foot buffer and Striping Detail 44 (Modified) will be used throughout the proposed Express Lanes limits. The proposed buffer width of 2 feet and Striping Detail 44 (Modified) are consistent with all applicable design standards and guidelines.

Reference: Geometrics Workshop No. 7 Minutes, Item 4.7.1
Geometrics Workshop No. 8 Minutes, Item 4.8.1
Geometrics Workshop No. 9 Minutes, Item 3.9.1

Signatures: This decision document has been reviewed and concurred by the following:

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* APPROVAL CONDITIONED ON COMPLETION OF FORMAL SAFETY ANALYSIS PROCESS (SEE TOPD 11-02)

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I-10 CORRIDOR PROJECT (PA&ED)

EA 0C2500, PN 0800000040

DECISION DOCUMENT A-6

Topic: **Selection of Local Interchanges for Detailed Traffic Operations Analysis**

Issues: The Interstate 10 (I-10) Corridor Project is a mainline project with a primary purpose of improving traffic operations and mobility on the I-10 freeway. The project does not require local interchange improvements to meet the project purpose and need and, therefore, does not include traffic operations analysis for all interchanges. However, due to potential project related traffic impacts at arterial intersections, it is necessary to identify the interchanges that require full detailed traffic operations analysis.

Discussions: A preliminary analysis of the interchanges was performed to identify interchanges for which full detailed traffic operations analysis is needed. The preliminary analysis consisted, in part, of a comparison of traffic volumes forecast for Alternative 1 (No Build Alternative) and Alternative 3 (Express Lanes Alternative). Alternative 3 adds the most freeway capacity among the build alternatives and has the most extensive project limits. In comparison to Alternative 1 (No Build Alternative), Alternative 3 represents the "worst case" in determining the potential of the build alternatives for significant traffic impacts to the interchanges in the corridor.

There are 33 local interchanges within the limits of the I-10 Corridor Project. The 33 interchanges are listed below. Two of the interchanges are in Los Angeles County west of the Express Lane limits (#1 and #2) and one is east of the Express Lanes limits (#33).

1. Towne Avenue
2. Indian Hill Boulevard
3. Monte Vista Avenue
4. Central Avenue
5. Mountain Avenue
6. Euclid Avenue/7th Street
7. Grove Avenue/4th Street
8. Vineyard Avenue
9. Holt Boulevard/Archibald Avenue
10. Haven Avenue
11. Milliken Avenue
12. Etiwanda Avenue/Commerce Drive
13. Cherry Avenue
14. Beech Avenue (future)
15. Citrus Avenue
16. Sierra Avenue
17. Alder Avenue (future)
18. Cedar Avenue
19. Riverside Avenue
20. Pepper Avenue
21. Rancho Avenue

22. La Cadena Drive/9th Street
23. Mt Vernon Avenue
24. Waterman Avenue/Redlands Boulevard/Hospitality Lane
25. Tippecanoe Avenue
26. Mountain View Avenue
27. California Street
28. Alabama Street
29. Tennessee Street
30. Eureka Street/Orange Avenue/6th Street
31. University Street/Cypress Avenue
32. Ford Street
33. Wabash Avenue

The purpose of the I-10 traffic study is to identify those arterials that may have significant traffic impacts resulting from the proposed project. Arterials anticipated to be impacted by the proposed project would be along arterials at or nearby I-10 interchanges. Arterial impacts are determined through a comparative evaluation of arterial intersections with and without the proposed project.

Criteria

An impact criterion has been selected as the determinant of a significant impact. That criterion is an increase in an intersection's volume-to-capacity (V/C) ratio of 0.10 or more from the no-build condition to the build condition when the build condition provides an intersection level of service (LOS) F. (See "Proposed Traffic Operations Methodology for I-10 Corridor Project", May 2013.) The criterion is adapted from the deficiency standard presented in Policy 2.3.1 of the *San Bernardino County Congestion Management Plan 2007 Update* which uses 10 percent degradation as the threshold for determination of a deficiency.

Analysis

The following discussion describes the preliminary analysis undertaken to determine the potential for project related traffic impacts at arterial intersections and to thereby identify the interchanges that require full detailed traffic operations analysis. The preliminary analysis consists of the three steps described below.

Step 1

In Step 1, an interchange is identified for full detailed traffic operations analysis if Alternative 3 includes construction affecting an arterial at the interchange in any of the following ways:

- replacement of an arterial overcrossing or undercrossing;
- relocation of a ramp/arterial intersection; or
- widening of an arterial at an interchange.

If Alternative 3 widens ramps at the arterial terminus but does not affect arterial legs of the arterial/ramp intersection, the interchange is not identified for full detailed traffic operations analysis under Step 1. Additional ramp lanes would tend to improve operations; by themselves, they do not represent potential for a significant traffic impact.

If an interchange includes construction that would require a Modified Access Report (MAR), then the MAR requirement for analysis of adjacent interchanges applies. Step 1

identifies interchanges that are adjacent to interchanges requiring a MAR for full detailed traffic operations analysis to meet the MAR requirement.

Under Alternative 3, five interchanges include overcrossing or undercrossing replacement and substantial changes in arterial geometry. These five interchanges will be subject to full detailed traffic operations analysis. Those interchanges are listed below and shown in Table 1.

- Monte Vista Avenue
- Mountain Avenue
- Euclid Avenue
- Vineyard Avenue
- Tennessee Street

The Euclid Avenue interchange would require a Modified Access Report under Alternative 3. The adjacent interchange to the west at Mountain Avenue is consequently identified for full detailed traffic operations analysis. The adjacent interchange to the east, at the time the I-10 project is opened to traffic, will be the Grove Avenue interchange. The Grove Avenue interchange does not currently exist and is currently in the PA&ED phase of project development as a separate project. The Grove Ave interchange project assumes I-10 improvements. Environmental impacts of the Grove Ave interchange project will be addressed by the Grove Avenue interchange project, so a full detailed traffic analysis of Grove interchange is not needed to identify potential environmental impacts to traffic. The traffic study for the Grove Avenue interchange project will be used to meet the Euclid MAR requirement for traffic operations analysis of the Grove Avenue interchange.

Step 2

In Step 2, an interchange is removed from consideration for a full detailed traffic operations analysis if the interchange:

(1) does not currently exist and is expected to be designed assuming that proposed I-10 improvements are implemented;
(2) is scheduled in the RTP for improvements to be designed prior to opening of I-10 improvements and assuming that proposed I-10 improvements are implemented; or
(3) was recently reconstructed and designed assuming I-10 HOV improvements.

Three proposed new interchanges at Grove Avenue, Beech Avenue, and Alder Avenue will not be subject to full detailed traffic operations analysis based on Step 2. One interchange to be reconstructed at Alabama Street will not be subject to full detailed traffic operations analysis based on Step 2. Two recently reconstructed interchanges at Riverside Avenue and Tippecanoe Avenue will not be subject to full detailed traffic operations analysis based on Step 2.

The Grove Avenue interchange project is in the Regional Transportation Plan (RTP) for completion in 2018. The new Grove Avenue interchange will eliminate the I-10/4th Street interchange. The PA&ED phase of this project has recently begun and therefore it is assumed that the design of the Grove Avenue interchange would accommodate traffic served by an improved I-10 corridor. If determined necessary because of construction staging requirements, the I-10 Corridor Project may replace the Grove Avenue undercrossing. The I-10 Corridor Project would not include local street improvements; and therefore the Grove Avenue interchange was not included in Step 1.

The Beech Avenue interchange project is in the RTP for completion in 2023. Since the I-10 improvements are currently anticipated to be open to traffic in 2025, it is assumed that the design of the Beech Avenue interchange would accommodate traffic served by an improved I-10 corridor.

The Alder Avenue interchange project is in the RTP for completion in 2030. Since the I-10 improvements are currently anticipated to be open to traffic prior to 2030, it is assumed that the design of the Alder Avenue interchange would accommodate traffic served by an improved I-10 corridor.

The Alabama Street interchange reconstruction project is in the RTP for completion by 2020. Since the I-10 improvements are currently anticipated to be open to traffic in 2025, it is assumed that the design of the Alabama Street interchange would accommodate traffic served by an improved I-10 corridor.

The Riverside Avenue interchange was reconstructed and all roadway improvements were opened to traffic in 2012. The overcrossing bridge was widened to carry nine lanes of traffic including three northbound through lanes, two southbound through lanes, and dual side-by-side left turn lanes for freeway-bound traffic in both directions. An eastbound auxiliary lane was added to I-10 to accommodate a dual lane off-ramp and a westbound deceleration lane was added on the approach to the westbound off-ramp. The project assumed that HOV lanes would be added to the freeway by 2025.

The Tippecanoe Avenue interchange is currently being reconstructed. The reconstruction includes relocation of the westbound I-10 off-ramp to terminate on Tippecanoe Avenue opposite Harriman Place with a single lane exiting the freeway and four lanes at the Tippecanoe terminus. A two-lane loop ramp will be provided for northbound Tippecanoe traffic to enter I-10 westbound. The existing on-ramp to westbound I-10 will serve only southbound Tippecanoe Avenue and will be widened from two lanes to three lanes upstream of the ramp meter. The existing off-ramp from eastbound I-10 will be widened from a single lane freeway exit to a two-lane exit widening from the existing two lanes to four lanes at the Tippecanoe Avenue terminus. The project includes widening Tippecanoe Avenue north of the I-10 undercrossing bridge to Harriman Place to provide additional northbound turning lanes at the intersection of Tippecanoe Avenue with Harriman Place/westbound I-10 ramps. The lane designations on Tippecanoe Avenue beneath the undercrossing bridge will be changed from two through lanes and one left turn lane in each direction to two northbound through lanes, two southbound through lanes, and two southbound left turn lanes into the eastbound I-10 on-ramp. The project was advanced assuming that HOV lanes would be added to the freeway.

Step 3

The remaining 22 interchanges are evaluated in Step 3. Traffic service on arterials is primarily determined by traffic control at signalized and stop-controlled intersections. Significant traffic impacts of the proposed project on arterial roadways will be identified by evaluation of intersections along arterials in the vicinity of interchanges. The criterion by which a significant intersection impact is determined is a LOS F under the build condition with an increase of 0.10 or more in the intersection's volume-to-capacity (V/C) ratio, comparing the No Build Alternative to a build alternative. (See "Proposed Traffic Operations Methodology for I-10 Corridor Project" May 2013.)

Table 1 (attached) shows the maximum increase in volume entering an intersection in the vicinity of each interchange. The increase is determined by a comparison of 2035 SBTAM AM and PM peak hour traffic volumes forecast for Alternative 1 (No Build Alternative) and Alternative 3. Year 2035 volumes are used because interchange

volumes will not be post-processed to year 2045 unless an interchange is selected for full detailed traffic operations analysis. The year 2035 volumes are raw SBTAM output volumes. Because the change of an intersection's entering volume does not perfectly correspond to the change in V/C ratio, a conservative factor of 0.08 is used to ensure that intersections with the potential for a significant traffic impact (at the 0.10 level) are identified.

Those intersections with an increase of 50 peak hour vehicles or more should be considered for potential impacts according to the *San Bernardino Congestion Management Plan* (Appendix C pages C-2 and C-3). Table 1 identifies those interchanges with an intersection in their vicinity forecast to have such a volume increase. All of the intersections with 50 or more peak hour vehicles have been considered for potential impacts. Those with less than a 0.08 increase in entering volume as described above are found not to have the potential for significant impacts; the others are found to have the potential and their interchanges are recommended for full detailed traffic operations analysis.

Therefore, a Step 3 recommendation to conduct a full detailed traffic operations analysis at an interchange is based on the interchange having an:

1. intersection with more than 50 additional peak hour vehicles (No Build compared to Alternative 3); and
2. intersection with a peak hour volume increase factor of 0.08 (8%) or more (No Build compared to Alternative 3).

Based on these two criteria the 5 additional interchanges listed below and in Table 1 are recommended for a full detailed traffic operations analysis. The reasons for each recommendation are summarized in the table. Under Step 3 the interchanges recommended for full detailed traffic operations analysis are:

- Etiwanda Avenue/Commerce Drive`
- Pepper Avenue
- La Cadena Drive/9th Street
- Ford Street
- Wabash Avenue

Decision: A total of 10 interchanges are recommended for full detailed traffic operations analysis: 5 interchanges are recommended based on Step 1 and 5 interchanges are recommended based on Step 3 criterion. These interchanges are described above and shown in the highlighted rows of Table 1.

References: Table 1 – Recommendation for Full Detailed Traffic Operations Analysis
Proposed Traffic Operations Methodology for I-10 Corridor Project, May 2013

Signatures: This decision document has been reviewed and concurred by the following:

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Traffic Operations, Office Chief

Approved By:

for Christy Connors 7/21/14

Christy Connors Date
Deputy District Director, Design

Approved By:

7-22-14

Catalino Pining, III Date
Deputy District Director, Traffic Operations

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I-10 CORRIDOR PROJECT (PA/ED)

EA 0C2500, PN 0800000040

DECISION DOCUMENT A-7

Topic: **Existing Vertical Clearance at Undercrossing Structures**

Issues: The Caltrans Highway Design Manual (HDM), 6th Edition, May 7, 2012, Index 309.2(1)(c) specifies "Conventional Highways, Parkways, and Local Facilities, All projects - **15 feet shall be the minimum vertical clearance over the traveled way and 14 feet 6 inches shall be the minimum vertical clearance over the shoulders of all portions of the roadbed**."

Within the limits of the Interstate 10 (I-10) Express Lanes Alternative, there are six undercrossing (UC) structures with existing minimum vertical clearance less than the values indicated above. Existing minimum vertical clearances at these structures will not be altered by the proposed I-10 improvements. Design exceptions are needed for maintaining the existing nonstandard vertical clearances at these structures.

Discussions: The I-10 Express Lanes Alternative proposes to add one or two Express Lanes in each direction of I-10 for approximately 33 miles in San Bernardino County, starting at the Los Angeles/San Bernardino County Line. The project limits would extend approximately 2 miles west into Los Angeles County in order to construct pavement and striping transition between the existing cross sections in Los Angeles County and the proposed express lane cross sections in San Bernardino County.

Six undercrossing structures along the project corridor, including two undercrossing structures in Los Angeles County, currently have nonstandard vertical clearances over the cross streets below. Two structures are proposed to be maintained and thus, there would be no change to the existing vertical clearances. Four structures are proposed to be widened to accommodate the proposed Express Lanes. Shallower structures will be used for the widened portions of the structures to avoid reducing the existing minimum vertical clearances. The table below summarizes existing and proposed minimum vertical clearances at these six undercrossing structures:

Existing and Proposed Vertical Clearance at UC Structures

No.	Cty	PM	Structure	Bridge No.	Proposed Bridge Work	Minimum Vertical Clearance		
						Standard[1]	Existing[2]	Proposed[2]
1	LA	46.72	San Antonio UC	53-0859	maintain	15'/14'-6"	14'-4"[3]	14'-4"
2	LA	47.74	Indian Hill UC	53-0860	widen	15'/14'-6"	14'-7"[4]	14'-7"
3	SBd	0.00	Mills UC	54-0453	widen	15'/14'-6"	14'-8"	14'-8"
4	SBd	5.24	4th UC	54-0440	widen	15'/14'-6"	14'-6"	14'-6"
5	SBd	30.66	Eureka UC	54-0580	maintain	15'/14'-6"	14'-10"	14'-10"
6	SBd	33.13	Ford UC	54-0588	widen	15'/14'-6"	14'-7"[5]	14'-7"

[1] 15 feet over traveled way and 14 feet 6 inches over shoulders per HDM Index 309.2(3)
[2] All of the existing and proposed minimum vertical clearance points are located over the traveled way

[3] Existing sign at San Antonio Ave UC shows 14'-3" minimum vertical clearance
[4] Existing sign at Indian Hills Blvd UC shows 14'-5" minimum vertical clearance
[5] Existing sign at Ford St UC shows 14'-8" minimum vertical clearance

Note: The existing Vertical Clearances were provided by or obtained from: CT Headquarters Structure Maintenance and Investigations (SM&I), District 08 Truck Services, Bridge Inspection Records Information System (BIRIS) and Consultant -Parsons.

Existing vertical clearances at undercrossing structures were discussed at Geometrics Workshop No. 5 and No. 7. In summary, Caltrans agreed that existing nonstandard vertical clearance may be maintained at these undercrossing structures because of the following reasons:

1) Replacing the structures and raising the profile of the I-10 freeway to attain the standard vertical clearance would be unreasonably costly and would create significant traffic disruptions on I-10 and the surrounding street network during construction;

2) Lowering the local street profiles to attain the standard vertical clearance would expand the project construction limits beyond the intended scope of the I-10 Corridor Project and would significantly increase impacts to the local traffic and surrounding communities;

3) There are no reports of trucks hitting any of the structures in past two years; and

4) The existing vertical clearances will not be reduced by the I-10 Corridor Project. The proposed structure widening over Indian Hill Avenue, Mills Avenue, 4th Street, and Ford Street will be designed to avoid reducing existing vertical clearances, by using shallower structures for the widened bridge portions.

Decision: Existing nonstandard vertical clearances may be maintained at the aforementioned structures as long as existing clearances are not reduced by the I-10 Corridor Project. Design exceptions will be required for nonstandard vertical clearances and will be formally documented in a Fact Sheet. Exceptions for nonstandard minimum vertical clearance at San Antonio Avenue UC and Indian Hill Boulevard UC in Los Angeles County will be coordinated with Caltrans District 7 for concurrence and approval.

Reference: Email Regarding Review of "Structure Hit" Record
Geometrics Workshop No. 5 Minutes, Item 4.5.1
Geometrics Workshop No. 7 Minutes, Item 2.7.1

Signatures: This decision document has been reviewed and concurred by the following:

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I-10 CORRIDOR PROJECT (PA/ED)

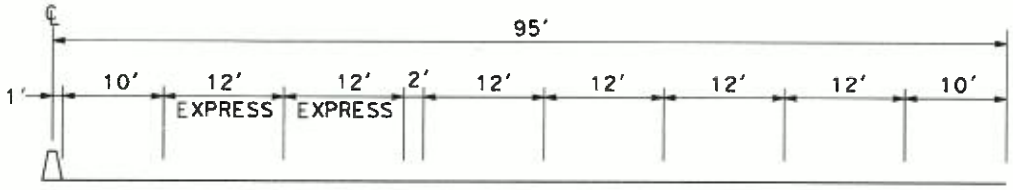
EA 0C2500, PN 0800000040

DECISION DOCUMENT A-8

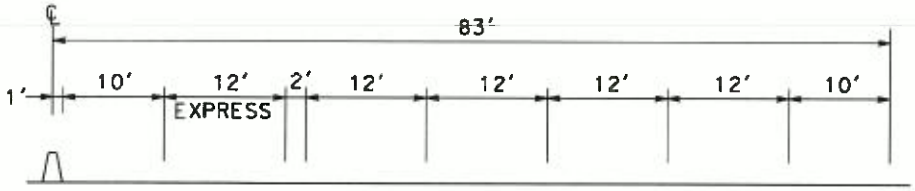
Topic: **Interstate 10 Freeway Cross Sections – Express Lanes**

Issues: The Interstate 10 (I-10) Express Lanes Alternative proposes to widen the I-10 freeway to provide two Express Lanes in each direction from the Los Angeles/San Bernardino (LA/SB) County Line to California Street and one Express Lane in each direction from California Street to Ford Street. Generally, combined ingress/egress (I/E) access points are provided along the corridor at approximately 3 to 4 mile intervals and include a weave lane (except at Orange Street I/E) to facilitate weaving between the Express Lanes and the general purpose lanes.

A full-standard cross section would typically necessitate 95 feet of pavement in each direction of I-10 to accommodate two Express Lanes and 83 feet for one Express Lane as illustrated below:



Standard Half-Width Section - Two Express Lanes



Standard Half-Width Section - One Express Lane

The design objective for the I-10 Corridor Project is to provide standard cross sections where feasible. However, at several locations along the project corridor, the standard widths of the Express Lanes, interior general purpose lanes, and/or shoulders cannot be accommodated due to localized, restrictive conditions.

Key constraints along the I-10 corridor are summarized below:

- Existing Bridges: There is a large number of overcrossing structures along the project corridor, several of which were recently replaced or improved by separate interchange or local street projects. To accommodate the proposed I-10 freeway widening, retaining walls will be constructed at overcrossing structures, where feasible. Where retaining walls are not feasible or sufficient pavement width could not be provided with retaining

walls, reduced cross sections will be necessary to avoid replacement of existing bridges.

- Restrictive Right of Way (R/W): The right of way is particularly narrow in the western segment of the project between the LA/SB County Line and Haven Avenue. The surrounding area is fully developed with commercial/business and residential land uses. Reduced cross sections will be necessary where significant R/W acquisition and community impacts would otherwise be required.

- UPRR: The Union Pacific Railroad (UPRR) is located along the south side of I-10 between Etiwanda Avenue and Mount Vernon Avenue. Where feasible, the centerline of I-10 will be shifted north to avoid impacting the UPRR property. However, realignment of I-10 is not always feasible due to existing bridge columns in the median and right of way constraints on the north side. In these locations, reduced cross sections will be required to minimize right of way acquisitions from the UPRR on the south side.

- I-10 Channel: The I-10 Channel runs along the north side of I-10 between San Sevaine Channel near Etiwanda Avenue and Rialto Channel near Riverside Avenue. Where necessary and feasible, portions of the I-10 Channel will be realigned northerly to accommodate the proposed I-10 freeway widening. In some locations where realignment of the channel would result in right of way impacts to properties north of the channel, reduced cross sections will be necessary to avoid or minimize impacts to the I-10 Channel.

- Existing Soundwalls: Six soundwalls were recently constructed in the eastern segment of I-10. These soundwalls are located along the existing edge of shoulder between Sixth Street and Highland Avenue in the City of Redlands. Reduced cross sections will be necessary to avoid reconstruction of these soundwalls which would result in significant right of way acquisition and community impacts.

Discussions: The proposed I-10 cross sections have been discussed at several Geometrics Workshops. The project team agrees that reductions in lane and shoulder widths will be necessary at some locations to minimize right of way and environmental impacts and avoid reconstruction of major roadway elements. In summary, Caltrans conceptually concurred with the following guidelines:

i. The width of two outside general purpose lanes should be designed as 12 feet throughout the corridor. The width of the Express lanes and the first two general purpose lanes may be reduced to 11 feet.

ii. The proposed lane widths should be reasonably consistent throughout each segment of the corridor, without excessive variations (narrowing or widening) within short distances.

iii. In segments with two auxiliary lanes, the width of the auxiliary lane adjacent to the general purpose lanes may be reduced to 11 feet.

iv. The buffer width between the Express Lanes and the general purpose lanes should be 2 feet per attached Decision Document A-5.

v. The standard right shoulder width of 10 feet should be provided throughout the corridor. In restrictive conditions (e.g. at Archibald Avenue OC, Milliken Avenue OC, and Mt. Vernon Avenue OC), the right shoulder width may be reduced below 10 feet, but no less than 8 feet.

vi. The standard left shoulder width of 10 feet may be reduced as described below:

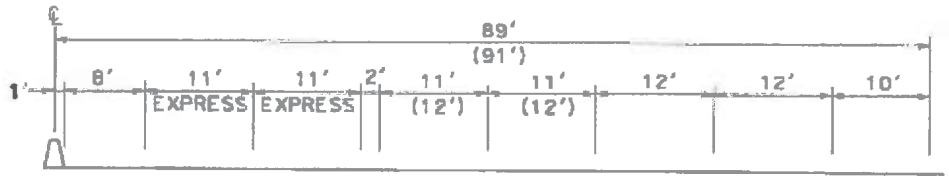
- Between the LA/SB County Line and Haven Avenue, with restrictive R/W, the existing left shoulder width of 8 feet may be reduced to 4 feet at some locations. However, the existing 8-foot left shoulder width should be maintained along the outside of horizontal curves to avoid reducing the existing stopping sight distance.

- Between Sixth Street and Highland Avenue in Redlands, Caltrans agrees that existing soundwalls should be maintained. Soundwalls are currently located approximately 76 feet from the centerline of I-10. For this segment, it is proposed to reduce the existing 17-foot left shoulder width to 4 feet to accommodate the addition of an 11-foot Express lane and a 2-foot buffer (see attached Decision Document B-1).

- The left shoulder width should not be less than 2 feet at the locations of bridge columns and overhead signs. Concrete barrier Type 60R may be used at bridge columns and overhead signs to provide a minimum of 2 feet for the left shoulder width.

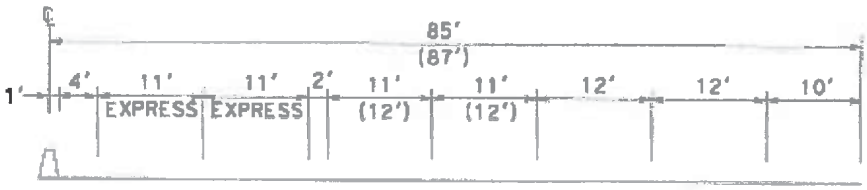
vii. Components of the two Express Lane cross sections may be reduced in the general order listed below:

- First, reduce the left shoulder width to 8 feet and reduce the width of the Express Lanes and the first two general purpose lanes to 11 feet. This will result in a reduced half-width cross section of 89 feet as shown below. A variation (shown in parentheses below) may be implemented where there is available space, to provide consistent 12-foot lanes for all four general purpose lanes, totaling to 91 feet.



Reduced Half-Width Section - Two Express Lanes – 8-Foot Shoulder

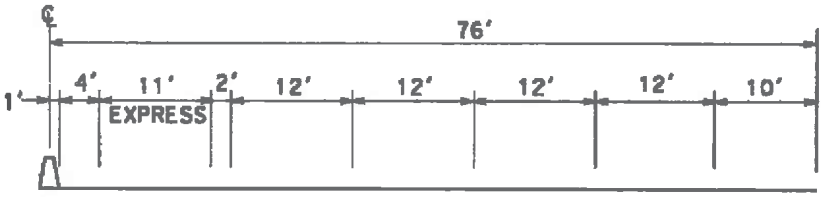
- Second, reduce the left shoulder width to 4 feet. This will result in a reduced half-width cross section of 85 feet as shown below. A variation with all 12-foot general purposes would total to a width of 87 feet as shown in parentheses.



Reduced Half-Width Section - Two Express Lanes – 4-Foot Shoulder

viii. Components of the single Express Lane cross sections may be adjusted by reducing the left shoulder width to 4 feet and the Express Lane width to 11 feet as shown below. The pavement width will be reduced from the standard 83 feet to a reduced half-width of 76 feet. Variations may be implemented to provide an 8 to 10-foot median shoulder in one direction to attain the required stopping sight distance on the outside of a horizontal

curve. In this situation, the width of the general purpose lanes in both directions will be reduced to 11 feet as needed, starting from the innermost lane (see attached Decision Document B-1).



Reduced Half-Width Section – One Express Lane

Implementation

The proposed I-10 cross sections for the Express Lanes Alternative have been designed based on guidelines described above and have been reviewed with Caltrans District 8 Design and Operations and Headquarters Project Delivery Coordinator during Geometric Workshops conducted between June 2012 and June 2013. Preliminary pavement widths for the I-10 Express Lanes based on current information are summarized in the following table for the westbound (WB) and eastbound (EB) directions. These widths represent a general cross section and vary at interchange ramps, ingress/egress weave zones, lane/shoulder transition areas, CHP enforcement areas, bridge columns, and other roadway elements. The widths also vary where additional shoulder width is needed to improve stopping sight distance.

Proposed cross sections in various freeway segments may change throughout the project development as the design is refined. Caltrans agrees that any change to the proposed cross sections, as long as it follows the general guideline established in this decision document and adheres to the minimum cross sectional width of 85 feet, would be considered consistent with the intent of this decision document.

Proposed I-10 Cross Sections

Post Mile	I-10 Location	WB Half-Width (feet) Aux	WB Exp +GP +Shld	WB I/E	EB I/E	EB Exp +GP +Shld	EB Aux	Key Constraints
0.00	LA/SB County Line		83			83		Restrictive R/W along Palo Verde St
			86			85		Restrictive R/W along Palo Verde St
0.68	Monte Vista UC		85			89		Restrictive R/W & ramp geometrics
		12	85			89, 85	12	Restrictive R/W
1.23	Central UC		85			85		Restrictive R/W & ramp geometrics
			89,			85, 89	12	Restrictive R/W
2.37	Mountain UC		85	11	11	85		Restrictive R/W
			91[1]			85, 91[1]	12	Restrictive R/W
3.47	Euclid OC		91[1]			91[1]		Restrictive R/W & ramp geometrics
			89, 85	11	11	89, 85		Restrictive R/W
5.24	4th UC		95			85		Restrictive R/W & ramp geometrics
			85			85		Restrictive R/W
6.10	Vineyard OC		85			85		Restrictive R/W

Post Mile	I-10 Location	WB Half-Width (feet) Aux	WB Exp +GP +Shld	WB I/E	EB I/E	EB Exp +GP +Shld	EB Aux	Key Constraints
		12	95			95	12	N/A - standard - standard
7.16	Archibald OC	12	90[2]			90[2]	12	Existing OC & ramp geometrics
		12	91, 87			91, 87	12	N/A - standard
8.16	Haven OC		87	11	11	87		Existing OC & ramp geometrics
		12	87			87	12	Restrictive R/W
9.17	Milliken OC	24	83[3]			87	12	Existing OC & ramp geometrics
		36	87			87	24	Existing OC at Milliken & I-15
9.93	I-15 OC		91			91		Existing OC & ramp/connector geom
		12	87			87	12	Restrictive R/W
11.13	Etiwanda OC		87			87		Existing OC & ramp geometrics
		12[4]	95	12	12	95	12	N/A - standard
13.17	Cherry OC		95			95		N/A - standard
		12[4]	95			95	12[4]	N/A - standard
15.18	Citrus OC		95	12	11	85		Existing OC & ramp geometrics
		12	95			89	12	UPRR, I-10 Channel & Cypress OC
16.22	Sierra OC		95			89		Existing OC & ramp geometrics
		12[4]	89			89	12[4]	UPRR & I-10 Channel
18.49	Cedar OC		95	12	12	95		N/A - standard
		12	95			95	12[4]	UPRR & I-10 Channel
19.97	Riverside OC		85			85		Existing OC & ramp geometrics
		12	89			95		UPRR & Restrictive R/W
20.97	Pepper OC		95	12	12	95		N/A - standard
			95, 89			95		UPRR & Restrictive R/W at Valley Blvd
21.96	Rancho OC		89			95		Existing OC
		12	95			95		N/A - standard
22.62	La Cadena/9th UC		95			95		N/A - standard
		12	89			95, 85	12	Restrictive R/W & ramp geometrics
23.25	Mt. Vernon OC		83[5]			82[5]		Existing OC & ramp geometrics
		12	95			89	12	I-215 branch diverge geometrics
24.23	I-215 OC		95			95		N/A - standard
		12	85			89, 85	24,12	Restrictive R/W & ramp geometrics
25.26	Waterman UC		85			85		Restrictive R/W & ramp geometrics
		12	85			85	12	Restrictive R/W
26.27	Tippecanoe UC		85	11	11	85		Restrictive R/W & ramp geometrics
		12	95			85, 95	12	N/A - standard
27.30	Mountain View UC		95			95		N/A - standard
		12	95			95	12	N/A - standard

Post Mile	I-10 Location	WB Half-Width (feet) Aux	Exp +GP +Shld	I/E	EB Half-Width (feet) I/E	Exp +GP +Shld	Aux	Key Constraints
28.30	California UC		95	0[5]	0[6]	95		N/A - standard
		24	83			83	24	N/A - standard
29.31	Alabama OC		83			83	12	N/A - standard
			83			83		N/A - standard
29.82	SR-210/Tennessee OC		85[8]			82[9]		E210-E10 Conn columns
		12	76[11]			82[10] 76[11]	12	New York/Colton UC
30.88	Eureka/Orange/6th UC		76[11]	0[7]	0[7]	76[11]	12[4]	Existing soundwalls
			76[11]			76[11]		Existing soundwalls
31.99	University/Cypress UC		76[11]			76[11]		Existing soundwalls
			76[11]			76[11]		Existing soundwalls
33.13	Ford UC		83			83		N/A - standard

Notes:

Exp = express lane; GP = general purpose lane; Aux = auxiliary lane, I/E = Ingress/Egress lane

(1) The proposed half-width cross section at and near Euclid Avenue is typically an 89-foot cross section. However, the left shoulder is increased to 10 feet to provide a 22-foot median at proposed CHP enforcement area, resulting in a 91-foot half-width cross section.

(2) An 8-foot right shoulder is proposed in each direction of I-10 at Archibald Avenue OC, see Geometrics Workshop No. 3 Meeting Minutes Item 6.3.1 and Geometrics Workshop No. 4 Meeting Minutes Item 4.4.12.

(3) Additional lane and shoulder width reduction is proposed on WB I-10 at Milliken Avenue OC, see Geometrics Workshop No. 9 Meeting Minutes Item 4.9.5.

(4) The auxiliary lane is proposed only for a portion of the freeway segment.

(5) Additional shoulder width reduction is proposed at Mount Vernon Avenue OC, see Geometrics Workshop No. 9 Meeting Minutes, Item 5.9.2. The cross sections are an interim condition until the Mt. Vernon Avenue interchange improvements are constructed as a separate, future project.

(6) There is no additional weave lane at the California I/E where there is a transition from 2 to 1 express lane.

(7) There is no additional weave lane at the Orange I/E.

(8) A 12-foot left shoulder is proposed in the westbound direction of I-10 through the 3000-foot radius curve at the SR-210/I-10 Interchange in order to provide the standard stopping sight distance for 65 mph speed. The standard width of 83 feet is increased to 85 feet.

(9) Through the I-10/SR-210/Tennessee Street Interchange, it is proposed to reduce the Express Lane width from 12 to 11 feet due to restriction by the E210-E10 Connector columns. The standard 83-foot cross section would be reduced to 82 feet.

(10) East of the I-10/SR-210/Tennessee Street Interchange, a 12-foot left shoulder is proposed in the eastbound direction through the 3000-foot radius curve in order to provide the standard stopping sight distance for 65 mph speed. The Express Lane, GP No. 1 and GP No. 2 are proposed to be reduced to 11 feet in order to maintain a maximum of 82 feet and avoid widening the New York Street/Colton Avenue UC.

(11) Cross section may be adjusted to provide a wider shoulder on the outside of a curve, see Geometrics Workshop No. 9 Meeting Minutes, Item 7.9.1 and Decision Document B-1.

Decision: The proposed I-10 Express Lanes cross sections provide an acceptable design that minimizes right of way and environmental impacts and preserves significant roadway elements along the project corridor. Design exceptions for deviations from the Caltrans Highway Design manual (HDM) will be required for reduced lane width (Index 301.1) and reduced shoulder width (Index 302.1). The proposed cross sections are preliminary and may be adjusted in the future through continued design refinements.

Reference:
Geometrics Workshop No. 1 Minutes, Items 4.0 & 7.0
Geometrics Workshop No. 2 Minutes, Item 3.2.1
Geometrics Workshop No. 3 Minutes, Item 5.3.2, 6.3.1
Geometrics Workshop No. 4 Minutes, Items 4.4.1 through 4.4.7 & 4.4.10 through 4.4.13
Geometrics Workshop No. 5 Minutes, Items 6.5.1 through 6.5.5
Geometrics Workshop No. 6 Minutes, Items 5.6.1 to 6.6.3
Geometrics Workshop No. 7 Minutes, Items 6.7.2, 7.7.1, and 8.7.1
Geometrics Workshop No. 8 Minutes, Item 8.8.2
Geometrics Workshop No. 9 Minutes, Items 4.9.5, 5.9.2, and 7.9.1
Decision Document A-5
Decision Document B-1
Preliminary Layout Plans, Express Lanes Alternative, LA-1, L-1 through L-23

Signatures: This decision document has been reviewed and concurred by the following:

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10/28/15

Christy Connors Date
Deputy District Director, Design

Approved By:

10-28-15

Catalino Pining Date
Deputy District Director
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Approved By:

10/28/15

Luis Betancourt Date
HQ Project ~~Development~~ Delivery Coordinator

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I-10 CORRIDOR PROJECT (PA/ED)

EA 0C2500, PN 0800000040

DECISION DOCUMENT A-9

Topic: **Additional Traffic Operations Analysis of Alternative 3**

Issues: The Interstate 10 (I-10) Corridor Project is a mainline capacity enhancement project with a primary purpose of improving traffic operations and mobility on the I-10 freeway. Three alternatives are being studied of which Alternative 1 is a no-build alternative, Alternative 2 is an HOV scenario that is still a possible preferred alternative, and Alternative 3 includes tolled Express Lanes between the Los Angeles/San Bernardino (LA/SB) County Line and Ford Street in the City of Redlands. Two separate approaches to traffic operations analysis are proposed to be completed for the project. The first approach (Traffic Study) provides the information on all three alternatives for incorporation into the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS). The second approach (VISSIM analysis) provides Caltrans with additional information related to operations in areas that are unique to the Express Lanes in Alternative 3: the transition areas and the intermediate access points.

The I-10 Corridor Project Approval/Environmental Document (PA/ED) process is an extended process with final environmental document approval expected in 2017. Due to the lengthy environmental process, concurrence on the traffic operations analysis approach with District 8 is desired prior to performing the detailed VISSIM operational analysis so all parties are comfortable with the assumptions and expectations moving forward.

Discussion: Dating back to the toll feasibility study conducted early in the project development process, District 8 Design, Forecasting, and Traffic Operations staff has had various questions regarding operations of the Express Lanes and adjacent general purpose lanes. In addition, Caltrans Headquarters and FHWA Design, Traffic Operations, and managed lanes staff has had questions with regard to traffic operations performance. The VISSIM operations analysis is anticipated to supplement the traditional EIR/EIS traffic study *Highway Capacity Manual* (HCM) analysis by providing detailed operating characteristics of express lane performance. As Express Lanes do not currently exist in District 8, it is important to coordinate with all interested parties to ensure that the operations analysis performed for the I-10 corridor provides answers to all questions Caltrans District 8, Headquarters and FHWA may have throughout the process. SANBAG is also interested in defining an express lane evaluation process as the PA/ED phase may be initiated in the near future on Interstate 15 (I-15) within San Bernardino County.

The VISSIM analysis, which will also be used by the design team to evaluate the operational characteristics of the proposed design and refine geometrics as appropriate, will be performed only for Alternative 3 and its findings will not be included in the Traffic Study or the Draft EIR/EIS. No VISSIM analysis is proposed for Alternatives 1 (No Build) and 2 (HOV Alternative). These alternatives do not include novel operational details that require use of a micro-simulation tool such as VISSIM. The existing HOV lanes retained in Alternative 1 (No Build) west of Haven Avenue have

limited access with which there is extensive experience. The HOV lanes proposed in Alternative 2 (HOV Alternative) are proposed to be continuous access, thereby making them operate in a manner very similar to general purpose lanes in terms of lane changes into and out of the HOV lanes.

Traffic Study

For the Traffic Study, all operations analysis will be based on HCM methods as identified in the *Traffic Operations Methodology for I-10 Corridor Project, May 2013* (Methodology). The transition areas and the intermediate access areas of the Express Lanes will be analyzed using the HCM freeway, weaving, and ramp junction (merge and diverge) methods as described in the Methodology. Morning and evening peak hour traffic operations analysis will be performed and documented for the following timeframes and alternatives:

- Existing
- Opening Year 2025 Alternative 1 - No Build
- Opening Year 2025 Alternative 2 - HOV
- Opening Year 2025 Alternative 3 - Express Lanes
- Horizon year 2045 Alternative 1 - No Build
- Horizon year 2045 Alternative 2 - HOV
- Horizon year 2045 Alternative 3 - Express Lanes

The traffic volumes used in the operations analysis will be the forecast demand traffic volumes developed from the San Bernardino Transportation Analysis Model (SBTAM), which is consistent with the Southern California Association of Governments (SCAG) travel forecasting model applied in preparation of the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and the regional air quality conformity determination. The results of the Traffic Study operations analysis will be input into the project's noise and air quality analysis. Use of forecast traffic volumes for the project that are consistent with the RTP/SCS forecasts is required for consistency in air quality conformity determinations.

The Traffic Study, as described above and in the Methodology, will be prepared consistent with the traditional approach used in evaluating similar projects. The Traffic Study will be the source document for operations analysis to be included in the Draft EIR/EIS.

VISSIM Analysis

Separately, a VISSIM operational traffic simulation model will be developed for Alternative 3 covering the morning and evening peak hours for opening year 2025. The purpose of this analysis is to provide Caltrans with a visual simulation and traffic metrics focused on the operations of two unique features of the Express Lanes:

1. Transition areas (between the beginnings/ends of the proposed Express Lanes and the existing lanes at the eastern and western project limits); and
2. Intermediate express lane access points (10 locations in each direction providing ingress to and egress from the Express Lanes).

The VISSIM analysis will model the entire I-10 corridor including general purpose lanes and ramp junctions, so operational information on potential bottleneck locations and local and system interchange ramp junctions will also be available. The VISSIM analysis will be summarized in a report.

This analysis will differ from the HCM analysis in the Traffic Study in that VISSIM will constrain the forecast demand volumes to operational volumes that can be served along the freeway. It should be noted that a VISSIM model has already been developed, calibrated and validated for the entire I-10 and I-15 corridor study areas using the same input base year traffic data as the Traffic Study. The model has been applied to evaluate operations as part of the Traffic & Revenue (T&R) study.

As discussed early in the project development process, the T&R study required the development of a market-driven socio-economic dataset (SED). That dataset is not constrained by the policy factors that are incorporated into the RTP/SCS demographic data; that dataset is the required basis of technical analysis presented into the EIR/EIS. As a result, the forecast system-wide travel demand volumes in the T&R study are based on an adjusted set of SED and are not identical to the forecast system-wide travel demand volumes in the Traffic Study.

Since there are two sets of demand volumes (one set based on the T&R market driven SED and the other based on the RTP/SCS policy driven SED) the forecast volumes that are the basis for the VISSIM modeling could be the forecast demand volumes used in the Traffic Study or the forecast demand volumes used in the T&R study. Based on its operational nature, the VISSIM model will constrain whichever set of forecast demand volumes is used to volumes that can be served by the facilities' practical capacity; consequently, the difference in operational output would likely be negligible.

While the differences may not be noticeable with respect to operational volumes in the simulation model, it is recommended that the Traffic Study forecast volumes be applied in the simulation analysis because Caltrans has reviewed and approved them *(I-10 Corridor Study – PA/ED HOV and Express Lanes Traffic Volumes Report, February 2013*). In addition, the Traffic Study forecast volumes generally provide slightly higher volumes than the T&R demand volumes thereby creating an operational "worst case" scenario. Use of the Traffic Study forecast volumes also provides a measure of consistency between the inputs to the Traffic Study and VISSIM operational analyses.

The VISSIM analysis will be focused on the unique operational aspects of the Alternative 3 Express Lanes. The focus will be on the Express Lane transition and intermediate access areas where there is substantial operational concern and limited field experience. Although the design includes express lane "weaving" lanes to improve operations in the intermediate access areas, the interactions between the Express Lanes, "weaving" lanes and general purpose lanes will be a key focus of the operational simulation analysis. Because the analysis will not be comprehensive across all alternatives, opening and design years, and the entire corridor, at this time we are not planning to include it in the Traffic Study or the Draft EIR/EIS. Rather, typical simulation model metrics such as average travel speed, delay, travel time, etc. for the express and general purpose lanes will be summarized and documented from the VISSIM analysis in a technical memorandum and presented to Caltrans. Visual avi files (video files) will be provided to present a visual display of performance at key corridor locations. As the analysis is prepared and completed, the VISSIM model and necessary input/output files will be provided to District 8 for their review and use. It is anticipated that the VISSIM analysis described in this memorandum will provide Caltrans with the additional detail to answer questions regarding traffic operations at key areas of interest associated with the Express Lanes.

Decision: Two analyses of Alternative 3 operations will be completed. A traditional Traffic Study analysis based on the HCM will be completed and include analysis of the existing condition and Alternatives 1, 2, and 3. These analyses will provide the traffic operations analysis for inclusion in the Draft EIR/EIS. A separate VISSIM analysis of opening year

will be completed for Alternative 3 focusing not only on the unique aspects of the Express Lane transition and intermediate access areas but also providing information on the general purpose lanes, potential bottlenecks, and ramp junctions.

Signatures: This decision document has been reviewed and concurred by the following:

Submitted By:

6-2014

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SANBAG, Director of Project Delivery

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6/10/14

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Concurred By:

Haissam Yahya Date
Traffic Operations, Office Chief

Approved By:

7-2-14

Catalino Pining, III Date
Deputy District Director
Traffic Operations

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I-10 CORRIDOR PROJECT (PA/ED)

EA 0C2500, PN 0800000040

DECISION DOCUMENT A-10

Topic: **Ramp Metering**

Issues: Caltrans policy for ramp metering is provided by Deputy Directive (DD) memo DD-35-R1, dated January 6, 2011. This directive states that provisions for ramp metering shall be included in any project that proposes additional capacity, modification of an existing interchange, or construction of a new interchange, within the freeway corridors identified in the Ramp Metering Development Plan (RMDP), regardless of funding source. In addition, Caltrans District 8 has additional criteria to consider ramp metering on all on-ramps for capacity improvement projects, including freeway-to-freeway connectors and on-ramps on or leading to collector-distributor (C-D) roads.

The majority of the interchange on-ramps along the Interstate 10 (I-10) project corridor are currently metered. In both build alternatives under consideration, existing ramp meters impacted by the proposed project improvements will be replaced. In addition, a new ramp meter will be added at all interchanges that are currently unmetered except for the following locations:

- Three (3) local interchange on-ramps that are on or connect to a C-D road and
- Ten (10) freeway-to-freeway connectors that merge onto I-10

Discussions: Ramp metering was discussed with Caltrans Design, Traffic Operations, and Ramp Metering units at several I-10 Geometric Workshops and Project Development Team (PDT) meetings. In summary, the following course of action has been discussed and agreed upon with Caltrans:

- Ramp metering will be provided at all on-ramps between the Los Angeles/San Bernardino County Line and Ford Street, except as noted herein.

- Ramp metering will not be required at three (3) I-10 on-ramps that are on or connected to a C-D road because these ramps are currently metered in another location for the same movements. The Etiwanda Avenue EB C-D road on-ramp is not metered but both on-ramps that connect to this C-D road are metered. The Waterman Avenue EB loop on-ramp and EB slip on-ramp are not metered; however, they are connected to a C-D road that is currently metered prior to merging with EB I-10.

- Ramp metering will not be required at ten (10) freeway-to-freeway connectors (I-10/I-15, I-10/I-215, and I-10/SR-210 system interchanges) as part of the I-10 Corridor Project. All of the connectors, except for the single-lane N215-W10 Connector, are geometrically metered in which the 2-lane ramp transitions to a single lane prior to the convergence with the I-10 freeway or within 200 to 300 feet after the convergence with I-10. The lane transition in the merge area currently regulates the volume of traffic entering the I-10 freeway.

Decision: Ramp metering will be provided at I-10 on-ramps between Monte Vista Avenue interchange and Ford Street interchange except at Etiwanda Avenue EB C-D road on-ramp, Waterman Avenue EB loop on-ramp, Waterman Avenue EB slip on-ramp, and system interchanges as described herein.

Reference: DPR & Safety Analysis Focus Meeting Minutes, December 9, 2015
Geometrics Workshop No. 12 Minutes, Item 2
Deputy Directive 35-R1 dated January 6, 2011
2013 Ramp Metering Development Plan (relevant pages)

Signatures: This decision document has been reviewed and concurred by the following:

Submitted By:

1-22-16

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1/20/16

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2-2-16

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for **Catalino Pining** Date
Deputy District Director
Traffic Operations

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I-10 CORRIDOR PROJECT (PA/ED)

EA 0C2500, PN 0800000040

DECISION DOCUMENT A-11

Topic: **HOV Preferential Lane at On-Ramps**

Issues: Caltrans policy regarding High Occupancy Vehicle (HOV) preferential lane at interchange on-ramps is provided by Deputy Directive (DD) memo DD-35-R1, dated January 6, 2011. This directive states that HOV preferential lanes shall be provided wherever ramp meters are installed.

Within the limits of the Interstate 10 (I-10) HOV Alternative (Alternative 2), there are 50 existing local street interchange on-ramps, 18 ramps with an HOV preferential lane and 32 without. Under the proposed HOV Alternative, an HOV preferential lane will be provided at 24 on-ramp locations. An HOV preferential lane cannot be accommodated at 26 locations due to various reasons.

Within the limits of the I-10 Express Lanes Alternative (Alternative 3), there are 71 existing local street interchange on-ramps, 28 ramps with an HOV preferential lane, and 43 without. Under the proposed Express Lanes Alternative, an HOV preferential lane will be provided at 34 on-ramp locations. An HOV preferential lane cannot be accommodated at 37 locations due to various reasons.

Discussions: The design objective for the I-10 Corridor Project is to provide HOV preferential lane where feasible and practical. However, at several on-ramp locations, provision for an HOV preferential lane cannot be accommodated due to one or more of the following conditions:

- restrictive right of way limiting the ability to widen the ramp for an HOV preferential lane;
- ramp geometrics cannot accommodate the standard lane drop taper prior to the 6-foot point if an additional ramp lane is added and lengthening the ramp to accommodate the standard lane drop taper would reduce the weaving distance to the downstream off-ramp;

The on-ramp HOV preferential lanes were discussed with Caltrans Design, Traffic Operations, and Ramp Metering branches at several I-10 Geometric Workshops and Project Development Team meetings. In summary, Caltrans generally agrees with the following course of action.

For locations where an on-ramp has a ramp meter and there will be some modifications to the ramps as part of the I-10 Corridor Project, an HOV preferential lane will be considered and if an HOV preferential lane cannot be constructed, justification and documentation will be provided for exception to the ramp metering policy.

The following tables provide a summary of existing and proposed on-ramp HOV preferential lanes and documentation required for the HOV and Express Lanes Alternatives. Locations requiring fact sheets are subject to sufficient justification being provided.

Table 1: Alternative 2 – Existing and Proposed HOV Preferential Lanes - EB

No.	EB Interchange Ramps	Ramp Imp with I-10?	Ramp Meter?	HOV Preferential Lane		Documentation Needed
				Existing	Proposed	
1	Milliken EB Loop On-Ramp	Yes	Yes			Fact Sheet
2	Etiwanda EB On-Ramp	No	Yes	x	x	-
3	Etiwanda EB Loop On-Ramp	No	Yes	x	x	-
4	Etiwanda EB On-Ramp (C-D road)	Yes	No*			Not Required
5	Cherry EB On-Ramp	Yes	Yes			Fact Sheet
6	Citrus EB On-Ramp	Yes	Yes			Fact Sheet
7	Sierra EB On-Ramp	Yes	Yes			Fact Sheet
8	Cedar EB On-Ramp	Yes	Yes	x	x	-
9	Riverside EB On-Ramp	Yes	Yes	x	x	-
10	Pepper EB On-Ramp	Yes	Yes		x	-
11	Rancho EB On-Ramp	Yes	Yes			Fact Sheet
12	9th EB On-Ramp	Yes	Yes		x	-
13	Mt Vernon EB On-Ramp	No	Yes			Fact Sheet
14	Waterman EB On-Ramp	No	No*			Not Required
15	Waterman EB Loop On-Ramp	No	No*			Not Required
16	Waterman EB On-Ramp (C-D road)	Yes	Yes			Fact Sheet
17	Tippecanoe EB On-Ramp	Yes	Yes		x	
18	Mountain View EB On-Ramp	Yes	Yes		x	
19	California EB On-Ramp	Yes	Yes			Fact Sheet
20	Tennessee EB On-Ramp	Yes	Yes			Fact Sheet
21	Sixth EB On-Ramp**	No	Yes			DD A-11
22	Cypress EB On-Ramp**	No	Yes			DD A-11
23	Ford EB On-Ramp	Yes	Yes		x	-

**No ramp meter at this location; see DD A-10 for explanation.*

*** The Project Team agreed HOV Preferential Lane will not be proposed since there are no improvements proposed for the mainline and ramp at this location except for restriping.*

Table 2: Alternative 2 – Existing and Proposed HOV Preferential Lanes - WB

No.	WB Interchange Ramps	Ramp Imp with I-10?	Ramp Meter?	HOV Preferential Lane		Documentation Needed
				Existing	Proposed	
1	Milliken WB On-Ramp	Yes	Yes	x	x	-
2	Etiwanda WB On-Ramp	No	Yes	x	x	-
3	Etiwanda WB Loop On-Ramp	No	Yes	x	x	-
4	Valley WB On-Ramp	Yes	Yes	x	x	-
5	Cherry WB On-Ramp	Yes	Yes	x	x	-
6	Cherry WB Loop On-Ramp	Yes	Yes	x	x	-
7	Citrus WB On-Ramp	Yes	Yes	x	x	-
8	Citrus WB Loop On-Ramp	Yes	Yes	x	x	-
9	Sierra WB On-Ramp	Yes	Yes	x	x	-
10	Cedar WB On-Ramp	Yes	Yes	x	x	-
11	Riverside WB On-Ramp	Yes	Yes	x	x	-
12	Pepper WB On-Ramp	Yes	Yes	x	x	-
13	Rancho WB On-Ramp	Yes	Yes	x	x	-
14	La Cadena WB On-Ramp	No	Yes			DD A-11
15	Mt Vernon WB On-Ramp	Yes	Yes	x	x	-
16	E/Sunwest WB On-Ramp	Yes	Yes			Fact Sheet
17	Waterman WB On-Ramp to W10-N/S215	Yes	Yes			Fact Sheet
18	Hospitality /Carnegie WB On-Ramp	Yes	Yes		x	-
19	Tippecanoe WB On-Ramp	Yes	Yes			Fact Sheet
20	Tippecanoe WB Loop On-Ramp	Yes	Yes			Fact Sheet
21	Mountain View WB On-Ramp	Yes	Yes			Fact Sheet
22	California WB On-Ramp	Yes	Yes			Fact Sheet
23	Alabama WB On-Ramp	Yes	Yes			Fact Sheet
24	Orange WB On-Ramp**	No	Yes			DD A-11
25	Orange WB Loop On-Ramp**	No	Yes			DD A-11
26	University WB On-Ramp*, **	No	Yes			DD A-11
27	Ford WB On-Ramp	Yes	Yes		x	-

**Ramp metering will be added at University WB on-ramp by a separate project prior to I-10 Corridor Project.*

***The Project Team agreed HOV Preferential Lane will not be proposed since there are no improvements proposed for the mainline and ramp at this location except for restriping.*

Table 3: Alternative 3 – Existing and Proposed HOV Preferential Lanes - EB

No.	EB Interchange Ramps	Ramp Imp with I-10?	Ramp Meter?	HOV Preferential Lane		Documentation Needed
				Existing	Proposed	
1	Monte Vista/Palo Verde EB On-Ramp	Yes	Yes			Fact Sheet
2	Central EB On-Ramp	Yes	Yes			Fact Sheet
3	Mountain EB On-Ramp	Yes	Yes			Fact Sheet
4	Euclid EB On-Ramp	Yes	Yes			Fact Sheet
5	4th EB On-Ramp	Yes	Yes	x	x	
6	Vineyard EB On-Ramp	Yes	Yes	x	x	-
7	Holt EB On-Ramp	Yes	Yes	x	x	-
8	Archibald EB On-Ramp	Yes	Yes			Fact Sheet
9	Haven EB Loop On-Ramp	Yes	Yes	x	x	-
10	Haven EB On-Ramp	Yes	Yes	x	x	
11	Milliken EB Loop On-Ramp	Yes	Yes			Fact Sheet
12	Etiwanda EB On-Ramp	No	Yes	x	x	-
13	Etiwanda EB Loop On-Ramp	No	Yes	x	x	-
14	Etiwanda EB On-Ramp (C-D road)	Yes	No*			Not Required
15	Cherry EB On-Ramp	Yes	Yes			Fact Sheet
16	Citrus EB On-Ramp	Yes	Yes			Fact Sheet
17	Sierra EB On-Ramp	Yes	Yes			Fact Sheet
18	Cedar EB On-Ramp	Yes	Yes	x	x	-
19	Riverside EB On-Ramp	Yes	Yes	x	x	-
20	Pepper EB On-Ramp	Yes	Yes		x	-
21	Rancho EB On-Ramp	Yes	Yes			Fact Sheet
22	9th EB On-Ramp	Yes	Yes		x	-
23	Mt Vernon EB On-Ramp	Yes	Yes			Fact Sheet
24	Waterman EB On-Ramp	Yes	No*			Not Required
25	Waterman EB Loop On-Ramp	No	No*			Not Required
26	Waterman EB On-Ramp (C-D road)	Yes	Yes			Fact Sheet
27	Tippecanoe EB On-Ramp	Yes	Yes		x	
28	Mountain View EB On-Ramp	Yes	Yes		x	-
29	California EB On-Ramp	Yes	Yes		x	-
30	Tennessee EB On-Ramp	Yes	Yes			Fact Sheet
31	Sixth EB On-Ramp**	No	Yes			DD A-11
32	Cypress EB On-Ramp**	No	Yes			DD A-11
33	Redlands EB On-Ramp	Yes	Yes		x	-

**No ramp meter at this location; see DD A-10 for explanation.*

***The Project Team agreed HOV Preferential Lane will not be proposed since there are no improvements proposed for the mainline and ramp at this location except for restriping.*

Table 4: Alternative 3 – Existing and Proposed HOV Preferential Lanes - WB

No.	WB Interchange Ramps	Ramp Imp with I-10?	Ramp Meter?	HOV Preferential Lane		Documentation Needed
				Existing	Proposed	
1	Monte Vista WB On-Ramp	Yes	Yes	x		Fact Sheet
2	Central WB On-Ramp	Yes	Yes			Fact Sheet
3	Mountain WB On-Ramp	Yes	Yes			Fact Sheet
4	Euclid WB On-Ramp	Yes	Yes			Fact Sheet
5	Euclid WB Loop On-Ramp	Yes	Yes		x	-
6	4th WB On-Ramp	Yes	Yes	x	x	
7	Vineyard WB On-Ramp	Yes	Yes			Fact Sheet
8	Vineyard WB Loop On-Ramp	Yes	Yes		x	-
9	Archibald WB On-Ramp	No	Yes	x	x	-
10	Haven WB On-Ramp	Yes	Yes	x	x	-
11	Haven WB Loop On-Ramp	Yes	Yes	x	x	-
12	Milliken WB On-Ramp	Yes	Yes	x	x	-
13	Etiwanda WB On-Ramp	Yes*	Yes	x	x	-
14	Etiwanda WB Loop On-Ramp	No	Yes	x	x	-
15	Valley WB On-Ramp	Yes	Yes	x	x	-
16	Cherry WB On-Ramp	Yes	Yes	x	x	-
17	Cherry WB Loop On-Ramp	Yes	Yes	x	x	-
18	Citrus WB On-Ramp	Yes	Yes	x	x	-
19	Citrus WB Loop On-Ramp	Yes	Yes	x	x	-
20	Sierra WB On-Ramp	Yes	Yes	x	x	-
21	Cedar WB On-Ramp	Yes	Yes	x	x	-
22	Riverside WB On-Ramp	Yes	Yes	x	x	-
23	Pepper WB On-Ramp	Yes	Yes	x	x	-
24	Rancho WB On-Ramp	Yes	Yes	x	x	-
25	La Cadena WB On-Ramp	Yes	Yes			Fact Sheet
26	Mt Vernon WB On-Ramp	Yes	Yes	x	x	
27	E/Sunwest WB On-Ramp	Yes	Yes			Fact Sheet
28	Waterman WB On-Ramp to W10-N/S215	Yes	Yes			Fact Sheet
29	Hospitality /Carnegie WB On-Ramp	Yes	Yes		x	-
30	Tippecanoe WB On-Ramp	Yes	Yes			Fact Sheet
31	Tippecanoe WB Loop On-Ramp	Yes	Yes			Fact Sheet
32	Mountain View WB On-Ramp	Yes	Yes		x	-
33	California WB On-Ramp	Yes	Yes		x	-
34	Alabama WB On-Ramp	Yes	Yes			Fact Sheet
35	Orange WB On-Ramp**	No	Yes			DD A-11
36	Orange WB Loop On-Ramp**	No	Yes			DD A-11
37	University WB On-Ramp*, **	No	Yes			DD A-11
38	Ford WB On-Ramp	Yes	Yes		x	Fact Sheet

**Ramp metering will be added at University WB on-ramp by a separate project prior to I-10 Corridor Project.*

***The Project Team agreed HOV Preferential Lane will not be proposed since there are no improvements proposed for the mainline and ramp at this location except for restriping.*

Decision: Consideration for an HOV preferential lane at non-metered ramp locations will not be a part of the I-10 Corridor Project. For Locations requiring a fact sheet as noted in Tables 1 through 4 above, deviation from the ramp metering policy and Caltrans District 8 policy will be formally documented in a Fact Sheet.

Reference: DPR & Safety Analysis Focus Meeting, December 9, 2015
Geometrics Workshop No. 12 Minutes, Item 2
Deputy Directive 35-R1 dated January 6, 2011
2013 Ramp Metering Development Plan (relevant pages for I-10)

Signatures: This decision document has been reviewed and concurred by the following:

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1-22-16

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1/20/16

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Approved By:

2-3-16

for **Catalino Pining** Date
Deputy District Director
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I-10 CORRIDOR PROJECT (PA/ED)

EA 0C2500, PN 0800000040

DECISION DOCUMENT B-1

Topic: **Proposed I-10 Cross Sections at Existing Soundwalls between Sixth Street and Highland Avenue**

Issues: There are six segments of existing soundwalls with a total length of 14,364 feet along eastbound and westbound Interstate 10 (I-10) between Sixth Street (PM 31.0) and Highland Avenue (PM 32.6) in the City of Redlands. These 12 or 14-foot high soundwalls were constructed in 2006 under project EA 474404.

The existing soundwalls are typically located along the freeway shoulder, at 76 feet offset from the I-10 centerline. The existing I-10 cross section within the limits of existing soundwalls generally consists of a 1-foot half-width barrier, a 17-foot median shoulder, four 12-foot lanes, and a 10-foot outside shoulder in each direction, as shown in Figure 1.

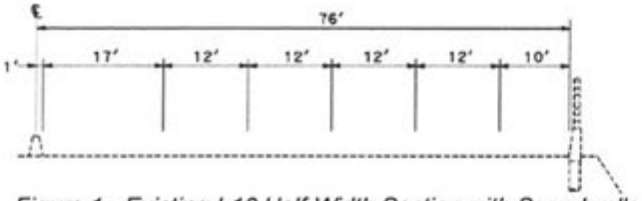

Figure 1 - Existing I-10 Half-Width Section with Soundwalls

Within the limits of existing soundwalls, the proposed I-10 Express Lanes Alternative includes the addition of one Express Lane in each direction. A full-standard cross section for the I-10 Express Lanes Alternative would necessitate 83 feet of pavement in each direction, as shown in Figure 2.

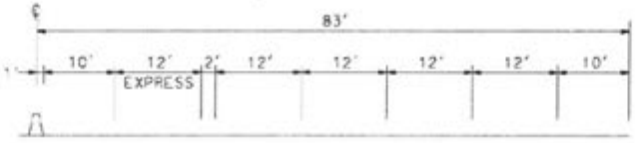

Figure 2 - Standard I-10 Half-Width Section - One Express Lane

To preserve recent investment and avoid repeated construction impacts to neighboring properties, it is proposed to maintain the existing soundwalls and construct the Express Lanes in the I-10 median without additional pavement widening. However, design exceptions will be required for nonstandard stopping sight distance and reduced lane and shoulder widths.

Discussions: Proposed cross sections for I-10 near existing soundwalls were discussed at Geometric Workshop No. 8 and No. 9. In summary, Caltrans agreed that lane and shoulder width reduction would be acceptable to avoid outside widening and preserve existing soundwalls. The following guidelines for construction of the proposed Express Lanes within existing pavement have been agreed upon with Caltrans:

1) The Express Lanes in tangent sections may typically be accommodated within existing pavement by restriping the existing 17-foot median shoulder in each direction to provide a 4-foot median shoulder, an 11-foot Express Lane, and a 2-foot buffer as shown in Figure 3.

2) In curved alignments, the median shoulder on the outside of the curves should be increased to provide stopping sight distance as close to the posted speed limit of 65 mph as possible. For the 4,000-foot radius curve near Sixth Street and Highland Avenue, an 8-foot median shoulder should be provided. For the 3,600-foot radius curve near Citrus Avenue/Cypress Avenue, a 10-foot median shoulder should be provided. Provision for a wider median shoulder on the outside of horizontal curves should be accomplished by shifting the center barrier to the opposite side and reducing the width of some mixed-flow lanes to 11 feet. To attain the 8-foot median shoulder, No. 1 and No. 2 mixed-flow lanes in both directions of I-10 would be reduced per Figure 4. To attain the 10-foot median shoulder, No. 1, No. 2, and No. 3 mixed-flow lanes in both directions would be reduced per Figure 5.

3) For short tangent between two horizontal curves in the same direction, the barrier offset and lane/shoulder arrangement on the tangent section should be similar to that on the curved segments, to minimize lane shifts.

The proposed design of the I-10 Express Lanes between Sixth Street and Highland Avenue will follow the guidelines above. The following I-10 cross sections for implementation in tangent sections and curved alignments (including short tangents between curves) have been reviewed and concurred with by Caltrans. In all cases, the standard width of 12 and 10 feet would be provided for the outermost lane and outside shoulder, respectively.

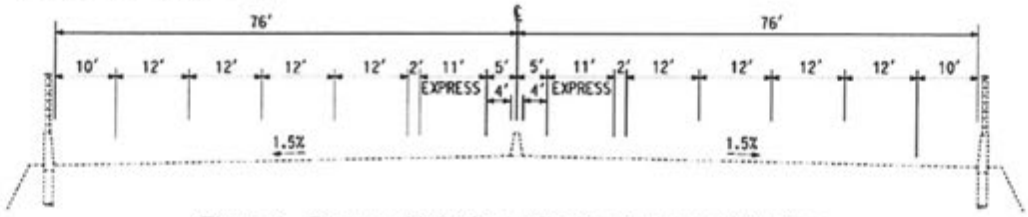

Figure 3 - Proposed I-10 Cross Section in Tangent Sections

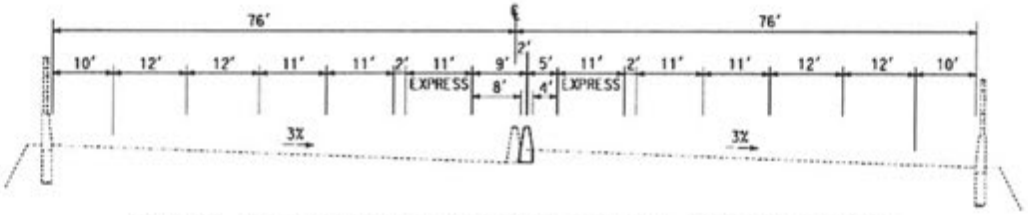

Figure 4 - Proposed I-10 Cross Section on Curves – 8' Median Shoulder

- *4,000-foot curve WB near Sixth Street (65 mph SSD)*
- *4,000-foot curve WB near Highland Avenue (66 mph SSD)*

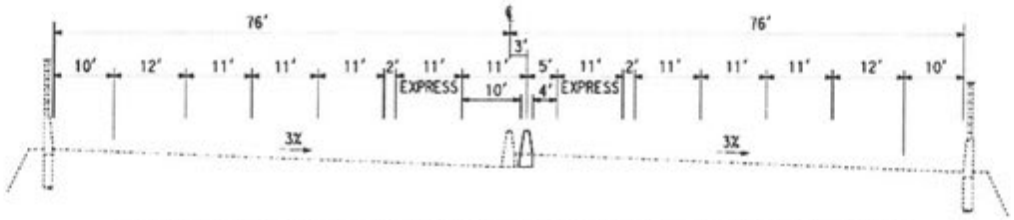

Figure 5 - Proposed I-10 Cross Section on Curves – 10' Median Shoulder

- *3,600-foot curve WB near Citrus Avenue/Cypress Avenue (65 mph SSD)*

Decision: The I-10 Express Lanes Alternative will be designed to preserve existing soundwalls and avoid repeated construction impacts to neighboring properties to extent practical. The proposed I-10 cross sections are deemed to provide acceptable and safe design for the I-10 Corridor Project. Design exceptions will be required for nonstandard stopping sight distance and reduced lane and shoulder widths. A Fact Sheet will be prepared to formally document these design exceptions in accordance with the requirements of the Highway Design Manual.

Reference: Geometrics Workshop No. 8 Minutes, Item 8.8.9
Geometrics Workshop No. 9 Minutes, Item 7.9.1

Signatures: This decision document has been reviewed and concurred by the following:

Submitted By:
6-26-13
Garry Cohoe Date
SANBAG, Director of Project Delivery

Prepared By:
6-24-13
Chris A. Johnson Date
Design Manager, Parsons

Concurred By:
6-28-13
Du Lu Date
Design J, Office Chief

Concurred By:
7/10/13
Haissam Yahya Date
Traffic Operations, Office Chief

Approved By:
7/16/13
Christy Connors Date
Deputy District Director, Design

Approved By:
7/17/13
Jesus Galvan Date
Deputy District Director, Traffic Operations (Acting)

Approved By:
7/25/13
Luis Betancourt Date
HQ Project Development Coordinator

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ATTACHMENT O

TMP Data Sheets and Alternative Route Maps

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For DTM use		Caltrans District 8 (Riverside & San Bernardino)	
Developer		TMP Request form & developed TMP (Ver. Sep. 2014)	

Transportation Management Plan (TMP) Data Sheet is for PID, PSR, PR and PS&E considering DTM's requirements. The validity of this TMP expires at the same time the associated LRCs expires.

The TMP Data Sheet includes background & signature, TMP elements & TMP estimate

Requester: *Complete section (A) & (B) of this page only*

Requester: Submit separate request for each roadway (Type the information in the cells with yellow background ONLY)

Please note that

Project shall not be certified without the approval of the Lane Requirement Charts (LRCs)

& the TMP by the DTM

(A) Requester's info.

1-Date of request	3/19/2015	2-Department	
3-Full name	Chad Costello	4- Phone No.	
5-E-mail address	ccostello@sanbag.ca.gov		
6-Project Manager's name	RK Radhakrishnan		
7-Project Manager's E-mail	Raghuram_Radhakrishnan@dot.ca.gov		

(B) Project information

		1-EA#/ID#	0C2500
2-County/Route	LA-SBd/10	3-phase/sub object	
4-Post mile (From-To)	07-LA-10 PM 44.9/58.3 & 08-SBd-10 PM 0.0/37.0		
5-Short description of job	Alternative 2 - Extend HOV lanes from Haven to Ford, 25 miles		

Construction period per WPS

6-Estimated start date	12/01/19	8-# of working days	1278
7-Estimated end date	07/01/23	9-Estimated Proj. cost	$ 537,377,000

10- Requester: Use section (H), in the bottom of the page, to add any other information that helps developing the TMP

11- Documents to send → *Requester: Please attach the location map in jpeg/pdf format to your E-mail*

12- If hard copies are requested, Send or bring them to the DTM office located on the south side of 11th. Floor, Attn: Al Afaneh. Questions: call 383-6262

13- E-mail the request to: al_afaneh@dot.ca.gov

Following is for DTM use >>>>>>>>>>>> Developer: Fill info in green cells only

C) BACKGROUND INFORMATION					
		Date request received		Job assigned to	
# of working days	1278				
Estimated Project cost ($)	537,377,000	Per E-mail dated			
TMP estimate($)	**$11,678,846**	Equal to **2.17%**	Of the project cost		

D) IMPACT	High	Medium	Low	NA	Developer: (*Briefly, explain the high impact/mitigation):*
State Hwy.		X			
Local road		X			
Ramp/connector		X			

E) Developer: Complete the info

Developed by	Chad Costello	Original signed by:	Chad Costello	Date	
Title	Project Manager				
E-mail	ccostello@sanbag.ca.gov				
Phone/Fax	909.884.8276				

F) Approved by		Original signed by:	Al Afaneh	Date	
Name:	Al Afaneh				
Title	District Traffic Manager				
E-mail	al_k_afaneh@dot.ca.gov				
Phone/Fax	383 6262/383 1068				

G) District's info:

Department of Transportation		
District:	8	
Address:	464 W. Fourth St., San Bernardino, Ca., 92401-1400	
Operations, DTM, MS >>>>	1150	

H) Remarks:

TMP Elements	EA #/ID#	0C2500	Date	

Note: An X in the check box means you need to include this in the project unless staging, material, or work hour changes eliminate the need for the item. A ? in the box means TMP anticipates this - please check into this. A blank box means the item is not needed at this time based on the information received.

				Cost
1		**Public Information/Public Awareness Campaign (PAC)**		
		BEES 066063 (Traffic Management Plan-Public Information). Cost to be reduced by Public Affairs (PA) and Construction Liaison (CL) only. Show under **State Furnished** as the **total** of PA+CL.		
1.1	X	Include Rideshare information in PA/CL project material to encourage vehicles reduction in work area	$	**28,000**
1.2	X	Brochures and Mailers	$	280,000
1.3	X	Media Releases (& minority media sources)	$	42,000
1.4	X	Paid Advertising	$	336,000
1.5	X	DT	$	73,000
1.6	X	Public Meetings/PAC Mtgs./Speakers Bureau (show cost also for room rental)	$	300,000
1.7	X	Hand deliver notices to vicinity	$	140,000
1.8	X	Broadcast fax service	$	56,000
1.9	X	Telephone Hotline OR	$	511,000
1.10		1-800-COMMUTE (The telephone number is shown on CS-Info signs) -		
1.11	X	Visual Information (videos, slide shows, etc.)	$	50,000
1.12	X	Local cable TV and News	$	250,000
1.13	X	Traveler Information System (Internet)	$	73,000
1.14	X	Internet, E-mail	$	36,000
1.15	X	Notification to targeted groups:	$	36,000
	X	Revised Transit Schedules/maps		
	X	Rideshare organizations		
	X	schools		
	X	organizations representing people with disabilities		
	X	bicycle organizations		
1.16	X	Include PA/CL/Consultant resources in WPS	$	175,000
1.17		Commercial traffic reporters/feeds - e.g. brief Traffic Information people (TIP) group		
1.18		Insert SSP's		
		"A representative of the Contractor, at Superintendent level or higher, and authorized to commit the Contractor, shall attend and participate in all Public Awareness Campaign meetings. Time commitment for the meeting(s) varies from two to four hours per month."		
1.19		Others		
			Section 1 Total	$ 2,386,000

2		**Traveler Information Strategies**		
		Project team needs to coordinate with Traffic Design!		
2.1	X	Existing Electronic Message Signs (Stationary) - list locations. See Note 5		
		New Installation (Stationary) - BEES 860532 CHANGEABLE MESSAGE SIGN SYSTEM - list locations. See Note 5		
2.2	X	Portable Changeable Message Signs (PCMS).BEES 128650	$	255,000
		These PCMS advise motorists to divert at remote advance decision points - outside the usual work limits. Unlike stationary CMS, you are allowed to use them for advance motorist information - e.g. a week ahead. Their placement may need to be cleared **environmentally** so that they can be included in plans and SSP later. They may be **in addition** to Traffic Design's PCMS for regular traffic handling in and next to a work area.		
		Placement Details: units to be placed in the direction of travel towards the closure at 1 mile and 1/2 mile before getting to the closure. Total No. of PCMSs needed is units for 6 months ( )= $		

	TMP Elements	EA #/ID#	0C2500	Date	
2.3	X	Lane Closure Web Site			$ -
2.4	X	Caltrans Highway Information Network (CHIN)			$ -
2.5		Radar Speed Message Sign (Specter sign) BEES 066064 (approx. EA @ $30,000)			$ -
2.6	X	Bicycle and pedestrian information, e.g. Detour maps			$ -
2.7		Others			
				Section 2 Total	$ 255,000

3 Incident Management

3.1 CHP's Construction or Maintenance Zone Enhanced Enforcement Program – COZEEP or MAZEEP. BEES 066062 - show under "State or Agency furnished" in the Cost Estimate.

Make sure to consider the LC hours and add CHP driving time to/from their office

Day COZEEP: To protect active closures

# of days	hours/day	CHP vehicles	# of officers.	Rate/Hr.	
1278	8	1	1	$ 95	$ 971,280

Night COZEEP: To protect active closures

# of nights		hours/night	CHP vehicles	# of officers.	Rate/Hr.	
1278		8	1	2	$ 95	$ 1,942,560

3.2 BLANK

3.3 **Freeway Service Patrol (FSP) for Construction (CFSP)** $/hr./truck $55

BEES 066065 - show under "State or Agency furnished" in the Cost Estimate

Short duration or remote area CFSP usually is bid with much higher hourly rates. If enhancement of program FSP feasible, CFSP could tie into the lower long-term FSP rates.

	# of trucks	# of days	Hours per day	
A For service within the regular FSP hours				$0
For service outside the regular FSP hours				
B Extended Peak hour coverage	2	1278	8	$1,124,640
C Night support during structure freeway closures and major traffic shifts	2	1278	8	$1,124,640
D Weekend support				$0

Local agency (SAFE) support 8% $179,942

8% of truck cost

CFSP CHP support 5% $0

5% of truck cost only if within regular FSP and area

Equipment/Supplies 10% $224,928

% of truck cost unless more detail available

Consult with the Inland Empire division of CHP or the border division in the southern Riverside county to select the method which is acceptable for the B,C,D that are outside the regular FSP hours or area.

Method 1

CFSP/CHP support 20% $449,856

20% of truck cost or

CFSP Dispatcher @

# of days		# of nights	hours	# of FSP	Rate	# of FSP vehicles	
			0		$45		$ -
			0				

TMP Elements	EA #/ID#	0C2500	Date	

CFSP CHP Officers (See Cozeep rate)

# of days		# of nights	hours	# of officers	Rate	# of CHP vehicles	
0		0	0	1	45	0	$ -
0		0	0	2	0	0	$ -

- [ ] Cooperative Agreement or Task Order with SAFE
  for $2,429,222
- [X] Task Order with CHP (State-wide Master Agreement for FSP support).
  for $449,856
  Contact District FSP Coordinator for task orders.
- [ ] Service Contract
- [ ] Local Agency will arrange CFSP with SAFE
- [ ] Local Agency will arrange CFSP administration with CHP

3.3 Total $3,104,006

Section 3 Total	$ 6,017,846

4 Construction Strategies

Contact DTM, at 909-383-6262, to get Delay Calculations, Lane Requirement Charts (LRC), Table Z and Special events list. Inform DTM of any concerns/commitments Re special LC days, times, seasons, events; environmental restrictions; if work may be affected by snow and low or high temperatures. E.g. desert heat may delay AC dig out curing which may increase traffic impact when vehicles overheat in the queue; etc. IF traffic volumes vary significantly between seasons, consider 2 sets of LRCs to avoid CCOs.

4.1 This TMP presumes that work is planned as below. If different, TMP needs to be revised. The Lead Project Engineer is responsible to include all appropriate closure charts.

- [X] Off peak
- [X] Night
- [X] Weekend

4.2

- [X] Flagging $ -
- [X] Shoulder
- [X] Lane
- [X] Street
- [X] Ramp
- [X] Connector*
- [X] Extended Weekend Closures*
- [X] Total Facility Closures*

*Consult with TMP developer and the DTM regarding Cozeep & other costs. Show your detour and traffic diversion plans.

CAUTION: If the Lane Requirement Chart (LRC) for full mainline closures, of one or both directions on a highway or freeway, does not show the maximum number of allowable closures, the PSE cannot be certified by DTM/TMP.

4.3 [X] Coordinate with adjacent construction and planned projects - also on detour routes.
Use SSP 07-850

4.4 [ ] BEES 066008 Incentives/Disincentives $ -

4.5 [X] Strictly enforce Constr. Progress Schedule (CPM) $ -

4.6 [X] Include Specification 12-4.03_A0

BEES 066022 (Traffic) Right of Way delay. Show in supplemental work. If State (or agency) denies an approved closure or orders the contractor an earlier pick up, this shall be used to pay damages, e.g. for AC cold load, etc.

4.7 [ ] 10-Min. Delay Penalty — Contact DTM at 909-838-6262 for 10 Min. Delay penalty Calculations. Note that Delay Penalty is different from the R/W Delay shown above!

4.8 [ ] Others

Section 4 Total	$ -

5 Demand Management (DM)

Project team needs to coordinate with RCTC/SANBAG/CVAG

Traffic diversion may increase available work hours.

5.1 [X] A coop will be executed - mentioned in PSR or PR.

- [ ] Instead of a coop, 15% is added to the cost of DM elements since the payment to the local agency will be routed through the contractor.
- [ ] Instead of a coop, the local agency will make their own arrangements with RCTC/SANBAG.

	TMP Elements	EA #/ID#	0C2500	Date	
		PA/CL or local agency need to inform commuters through RCTC/SANBAG. Funds part of PA/CL.			
5.2		HOV Lanes/Ramps (New or Convert)			
5.3		Park-and-Ride Lots			
		Leased spaces (Sponsored spaces may be feasible in exchange for signs and print coverage)			
5.4	X	Parking Management/Pricing (Coordination with local agency is required)			
5.5	X	BEES 066067 Rideshare Promotion		$	200,000
5.6		Rideshare Incentives -		$	350,000
				Section 5 Total	$ 550,000
6	**Alternate Route Strategies**				
	Caution - signed detours may require environmental clearance. Traffic diversion may increase available work hours. Please work with Traffic Design.				
6.1		Add Capacity to Freeway connector			
6.2	X	Ramp Closures		$	-
6.3	X	Temporary Highway Lanes or Shoulder Use		$	-
6.4	X	Parking Restrictions		$	20,000
6.5	X	Street Improvements			
		State R/W - Signals, Widen, etc.			
	X	Local R/W - Signals, Widen, etc. Coop or Permit may be needed		$	-
6.6	X	Local Street USE - Coop or Permit may be needed		$	2,400,000
6.7		Traffic Control Officers (see 3.1 Cozeep)			
6.8	X	Signed detour - using State routes		$	-
6.9	X	Signed detour - using local streets and roads		$	-
6.10	X	Adjust signals		$	-
6.11	X	Temporary bicycle or pedestrian facilities		$	50,000
6.12		Others			
				Section 6 Total	$ 2,470,000
7	**Other Strategies**				
7.1		Application of new technology			
7.2		Innovative products			
7.3		Others			
				Section 7 Total	$ -

TMP Estimate

	EA#/ID#	0C2500	Date	

TMP developer: Amounts under the cost column will automatically be copied from the TMP elements

TMP Elements	Cost
1. Public Information	$2,386,000
2. Motorist Information Strategies	$255,000
3. Incident Management	$6,017,846
4. Construction Strategies	$0
5. Demand Management (DM)	$550,000
6. Alternate Route Strategies	$2,470,000
7. Other Strategies	$0
Total TMP Estimate	$ 11,678,846

For DTM use		Caltrans District 8 (Riverside & San Bernardino)	
Developer		TMP Request form & developed TMP (Ver. Sep. 2014)	

Transportation Management Plan (TMP) Data Sheet is for PID, PSR, PR and PS&E considering DTM's requirements. The validity of this TMP expires at the same time the associated LRCs expires.

The TMP Data Sheet includes background & signature, TMP elements & TMP estimate

Requester: *Complete section (A) & (B) of this page only*

Requester: Submit separate request for each roadway (Type the information in the cells with yellow background ONLY)

Please note that

Project shall not be certified without the approval of the Lane Requirement Charts (LRCs)

& the TMP by the DTM

(A) Requester's info.

1-Date of request	3/19/2015	2-Department	
3-Full name	Chad Costello	4- Phone No.	
5-E-mail address	ccostello@sanbag.ca.gov		
6-Project Manager's name	RK Radhakrishnan		
7-Project Manager's E-mail	Raghuram_Radhakrishnan@dot.ca.gov		

(B) Project information

1-EA#/ID#	0C2500		
2-County/Route	LA-SBd/10	3-phase/sub object	
4-Post mile (From-To)	07-LA-10 PM 44.9/58.3 & 08-SBd-10 PM 0.0/37.0		
5-Short description of job	Alternative 3 - Provide Express Lanes from LA County Line to Ford, 33 miles		

Construction period per WPS

6-Estimated start date	12/01/19	8-# of working days	1825
7-Estimated end date	12/31/24	9-Estimated Proj. cost	$ 1,435,239,000

10- Requester: Use section (H), in the bottom of the page, to add any other information that helps developing the TMP

11- Documents to send → *Requester: Please attach the location map in jpeg/pdf format to your E-mail*

12- If hard copies are requested, Send or bring them to the DTM office located on the south side of 11th. Floor, Attn: Al Afaneh. Questions: call 383-6262

13- E-mail the request to: al_afaneh@dot.ca.gov

Following is for DTM use >>>>>>>>>>>> Developer: Fill info in green cells only

C) BACKGROUND INFORMATION					
# of working days	1825	Date request received		Job assigned to	
Estimated Project cost ($)	1,435,239,000	Per E-mail dated			
TMP estimate($)	**$26,096,840**	Equal to **1.82%**	Of the project cost		

D) IMPACT	High	Medium	Low	NA	Developer: (*Briefly, explain the high impact/mitigation):*
State Hwy.		x			
Local road		x			
Ramp/connector		x			

E) Developer: Complete the info

Developed by	Chad Costello	Original signed by:	Chad Costello	Date	
Title	Project Manager				
E-mail	ccostello@sanbag.ca.gov				
Phone/Fax	909.884.8276				

F) Approved by		Original signed by:	Al Afaneh	Date	
Name:	Al Afaneh				
Title	District Traffic Manager				
E-mail	al_k_afaneh@dot.ca.gov				
Phone/Fax	383 6262/383 1068				

G) District's info:

Department of Transportation		
District:	8	
Address:	464 W. Fourth St., San Bernardino, Ca., 92401-1400	
Operations, DTM, MS >>>>	1150	

H) Remarks:

TMP Elements	EA #/ID#	0C2500	Date	

Note: An X in the check box means you need to include this in the project unless staging, material, or work hour changes eliminate the need for the item. A ? in the box means TMP anticipates this - please check into this. A blank box means the item is not needed at this time based on the information received.

			Cost
1	Public Information/Public Awareness Campaign (PAC)		
	BEES 066063 (Traffic Management Plan-Public Information). Cost to be reduced by Public Affairs (PA) and Construction Liaison (CL) only. Show under **State Furnished** as the **total** of PA+CL.		
1.1	X	Include Rideshare information in PA/CL project material to encourage vehicles reduction in work area	**$ 40,000**
1.2	X	Brochures and Mailers	$ 600,000
1.3	X	Media Releases (& minority media sources)	$ 60,000
1.4	X	Paid Advertising	$ 600,000
1.5	X	DT	$ 104,000
1.6	X	Public Meetings/PAC Mtgs./Speakers Bureau (show cost also for room rental)	$ 400,000
1.7	X	Hand deliver notices to vicinity	$ 250,000
1.8	X	Broadcast fax service	$ 100,000
1.9	X	Telephone Hotline OR	$ 730,000
1.10		1-800-COMMUTE (The telephone number is shown on CS-Info signs) -	
1.11	X	Visual Information (videos, slide shows, etc.)	$ 100,000
1.12	X	Local cable TV and News	$ 500,000
1.13	X	Traveler Information System (Internet)	$ 104,000
1.14	X	Internet, E-mail	$ 52,000
1.15	X	Notification to targeted groups:	$ 52,000
	X	Revised Transit Schedules/maps	
	X	Rideshare organizations	
	X	schools	
	X	organizations representing people with disabilities	
	X	bicycle organizations	
1.16	X	Include PA/CL/Consultant resources in WPS	$ 250,000
1.17		Commercial traffic reporters/feeds - e.g. brief Traffic Information people (TIP) group	
1.18		Insert SSP's	
		"A representative of the Contractor, at Superintendent level or higher, and authorized to commit the Contractor, shall attend and participate in all Public Awareness Campaign meetings. Time commitment for the meeting(s) varies from two to four hours per month."	
1.19		Others	
		Section 1 Total	$ 3,942,000

2	Traveler Information Strategies Project team needs to coordinate with Traffic Design!		
2.1	X	Existing Electronic Message Signs (Stationary) - list locations. See Note 5	
		New Installation (Stationary) - BEES 860532 CHANGEABLE MESSAGE SIGN SYSTEM - list locations. See Note 5	
2.2	X	Portable Changeable Message Signs (PCMS).BEES 128650	$ 465,000

These PCMS advise motorists to divert at remote advance decision points - outside the usual work limits. Unlike stationary CMS, you are allowed to use them for advance motorist information - e.g. a week ahead. Their placement may need to be cleared **environmentally** so that they can be included in plans and SSP later. They may be **in addition** to Traffic Design's PCMS for regular traffic handling in and next to a work area.

Placement Details: units to be placed in the direction of travel towards the closure at 1 mile and 1/2 mile before getting to the closure. Total No. of PCMSs needed is units for 6 months ( )= $

	TMP Elements	EA #/ID#	0C2500	Date	
2.3	X	Lane Closure Web Site			$ -
2.4	X	Caltrans Highway Information Network (CHIN)			$ -
2.5		Radar Speed Message Sign (Specter sign) BEES 066064 (approx. EA @ $30,000)			$ -
2.6	X	Bicycle and pedestrian information, e.g. Detour maps			$ -
2.7		Others			
				Section 2 Total	$ 465,000

3 Incident Management

3.1 CHP's Construction or Maintenance Zone Enhanced Enforcement Program – COZEEP or MAZEEP. BEES 066062 - show under "State or Agency furnished" in the Cost Estimate.

Make sure to consider the LC hours and add CHP driving time to/from their office

Day COZEEP: To protect active closures

# of days	hours/day	CHP vehicles	# of officers.	Rate/Hr.	
1825	8	1	1	$ 95	$ 1,387,000

Night COZEEP: To protect active closures

# of nights		hours/night	CHP vehicles	# of officers.	Rate/Hr.	
1825		8	1	2	$ 95	$ 2,774,000

3.2 BLANK

3.3 **Freeway Service Patrol (FSP) for Construction (CFSP)** $/hr./truck $55

BEES 066065 - show under "State or Agency furnished" in the Cost Estimate

Short duration or remote area CFSP usually is bid with much higher hourly rates. If enhancement of program FSP feasible, CFSP could tie into the lower long-term FSP rates.

	# of trucks	# of days	Hours per day	
A For service within the regular FSP hours				$0
For service outside the regular FSP hours				
B Extended Peak hour coverage	3	1825	8	$2,409,000
C Night support during structure freeway closures and major traffic shifts	3	1825	8	$2,409,000
D Weekend support				$0

Local agency (SAFE) support 8% $385,440

8% of truck cost

CFSP CHP support 5% $0

5% of truck cost only if within regular FSP and area

Equipment/Supplies 10% $481,800

% of truck cost unless more detail available

Consult with the Inland Empire division of CHP or the border division in the southern Riverside county to select the method which is acceptable for the B,C,D that are outside the regular FSP hours or area.

Method 1

CFSP/CHP support 20% $963,600

20% of truck cost or

CFSP Dispatcher @

# of days		# of nights	hours	# of FSP	Rate	# of FSP vehicles	
			0		$45		$ -
			0				

TMP Elements	EA #/ID#	0C2500	Date	

CFSP CHP Officers (See Cozeep rate)

# of days		# of nights	hours	# of officers	Rate	# of CHP vehicles	
0		0	0	1	45	0	$ -
0		0	0	2	0	0	$ -

[ ] Cooperative Agreement or Task Order with SAFE
for $5,203,440
[X] Task Order with CHP (State-wide Master Agreement for FSP support).
for $963,600
Contact District FSP Coordinator for task orders.
[ ] Service Contract
[ ] Local Agency will arrange CFSP with SAFE
[ ] Local Agency will arrange CFSP administration with CHP

3.3 Total $6,648,840

Section 3 Total	$ 10,809,840

4 Construction Strategies

Contact DTM, at 909-383-6262, to get Delay Calculations, Lane Requirement Charts (LRC), Table Z and Special events list. Inform DTM of any concerns/commitments Re special LC days, times, seasons, events; environmental restrictions; if work may be affected by snow and low or high temperatures. E.g. desert heat may delay AC dig out curing which may increase traffic impact when vehicles overheat in the queue; etc. IF traffic volumes vary significantly between seasons, consider 2 sets of LRCs to avoid CCOs.

4.1 This TMP presumes that work is planned as below. If different, TMP needs to be revised. The Lead Project Engineer is responsible to include all appropriate closure charts.

[X] Off peak
[X] Night
[X] Weekend

4.2

[X] Flagging $ -
[X] Shoulder
[X] Lane
[X] Street
[X] Ramp
[X] Connector*
[X] Extended Weekend Closures*
[X] Total Facility Closures*

*Consult with TMP developer and the DTM regarding Cozeep & other costs. Show your detour and traffic diversion plans.

CAUTION: If the Lane Requirement Chart (LRC) for full mainline closures, of one or both directions on a highway or freeway, does not show the maximum number of allowable closures, the PSE cannot be certified by DTM/TMP.

4.3 [X] Coordinate with adjacent construction and planned projects - also on detour routes.
Use SSP 07-850

4.4 [ ] BEES 066008 Incentives/Disincentives $ -

4.5 [X] Strictly enforce Constr. Progress Schedule (CPM) $ -

4.6 [X] Include Specification 12-4.03_A0

BEES 066022 (Traffic) Right of Way delay. Show in supplemental work. If State (or agency) denies an approved closure or orders the contractor an earlier pick up, this shall be used to pay damages, e.g. for AC cold load, etc.

4.7 [ ] 10-Min. Delay Penalty — Contact DTM at 909-838-6262 for 10 Min. Delay penalty Calculations. Note that Delay Penalty is different from the R/W Delay shown above!

4.8 [ ] Others

Section 4 Total	$ -

5 Demand Management (DM)

Project team needs to coordinate with RCTC/SANBAG/CVAG

Traffic diversion may increase available work hours.

5.1 [X] A coop will be executed - mentioned in PSR or PR.

[ ] Instead of a coop, 15% is added to the cost of DM elements since the payment to the local agency will be routed through the contractor.

[ ] Instead of a coop, the local agency will make their own arrangements with RCTC/SANBAG.

Form was developed by Saleh Yadegari (September 2014)

	TMP Elements	EA #/ID#	0C2500	Date	
	[ ] PA/CL or local agency need to inform commuters through RCTC/SANBAG. Funds part of PA/CL.				
5.2	[ ] HOV Lanes/Ramps (New or Convert)				
5.3	[ ] Park-and-Ride Lots				
	[ ] Leased spaces (Sponsored spaces may be feasible in exchange for signs and print coverage)				
5.4	[X] Parking Management/Pricing (Coordination with local agency is required)				
5.5	[X] BEES 066067 Rideshare Promotion				$ 300,000
5.6	Rideshare Incentives -				$ 500,000
				Section 5 Total	$ 800,000

6 Alternate Route Strategies

Caution - signed detours may require environmental clearance. Traffic diversion may increase available work hours. Please work with Traffic Design.

6.1	[ ] Add Capacity to Freeway connector	
6.2	[X] Ramp Closures	$ -
6.3	[X] Temporary Highway Lanes or Shoulder Use	$ -
6.4	[X] Parking Restrictions	$ 30,000
6.5	[X] Street Improvements	
	[ ] State R/W - Signals, Widen, etc.	
	[X] Local R/W - Signals, Widen, etc. Coop or Permit may be needed	$ -
6.6	[X] Local Street USE - Coop or Permit may be needed	$ 10,000,000
6.7	[ ] Traffic Control Officers (see 3.1 Cozeep)	
6.8	[X] Signed detour - using State routes	$ -
6.9	[X] Signed detour - using local streets and roads	$ -
6.10	[X] Adjust signals	$ -
6.11	[X] Temporary bicycle or pedestrian facilities	$ 50,000
6.12	[ ] Others	
	Section 6 Total	$ 10,080,000

7 Other Strategies

7.1	[ ] Application of new technology	
7.2	[ ] Innovative products	
7.3	[ ] Others	
	Section 7 Total	$ -

TMP Estimate

	EA#/ID#	0C2500	Date	

TMP developer: Amounts under the cost column will automatically be copied from the TMP elements

TMP Elements	Cost
1. Public Information	$3,942,000
2. Motorist Information Strategies	$465,000
3. Incident Management	$10,809,840
4. Construction Strategies	$0
5. Demand Management (DM)	$800,000
6. Alternate Route Strategies	$10,080,000
7. Other Strategies	$0
Total TMP Estimate	$ 26,096,840

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

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PLANS APPROVAL DATE

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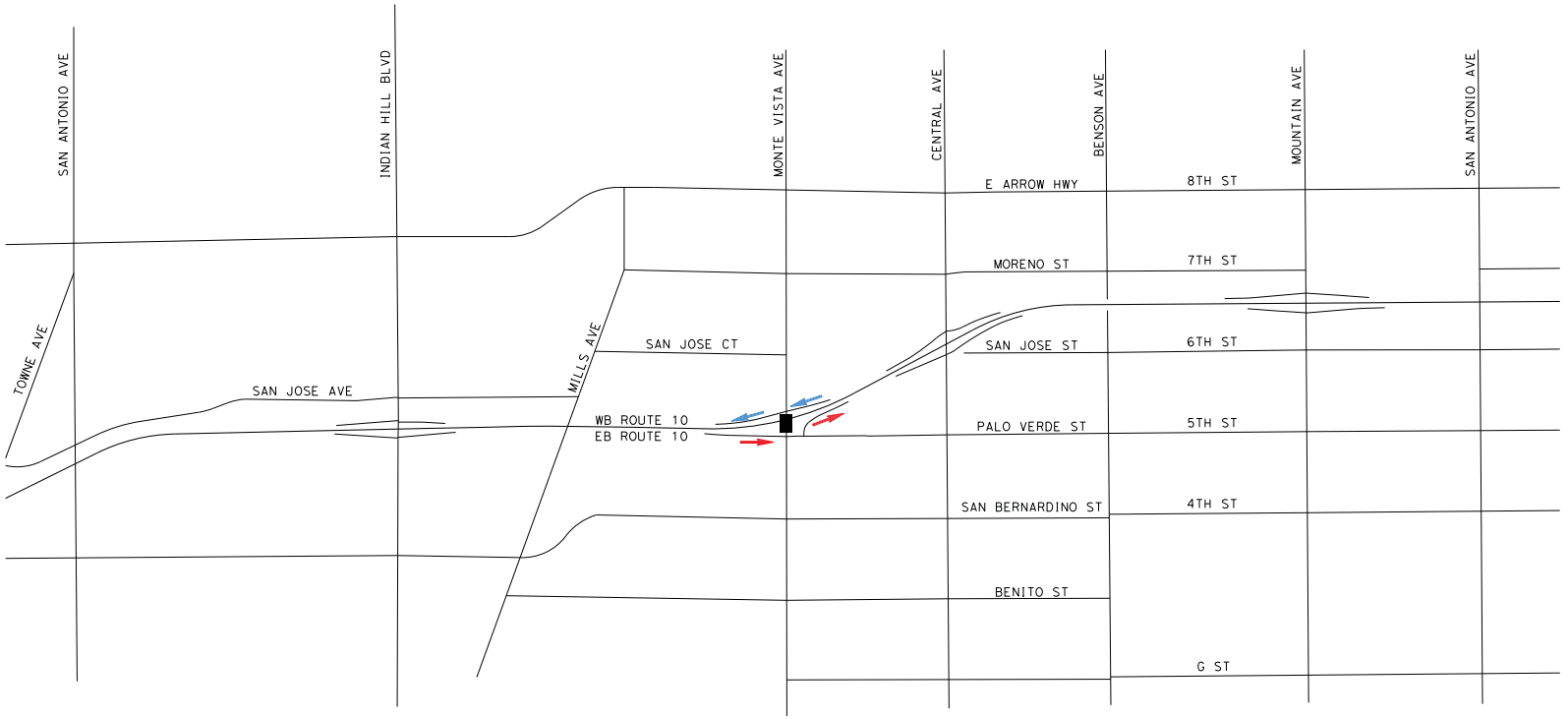
SAN BERNARDINO, CA 92410

LEGEND:

- BRIDGE CONSTRUCTION POTENTIALLY REQUIRING TEMPORARY CLOSURE OF I-10
- ALTERNATIVE ROUTE FOR EB ROUTE 10
- ALTERNATIVE ROUTE FOR WB ROUTE 10



I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR I-10 CLOSURE
AT MONTE VISTA AVE UC

SCALE: 1"=1000'

FREEWAY DE-1

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UNIT 0000

PROJECT NUMBER & PHASE 0800000040

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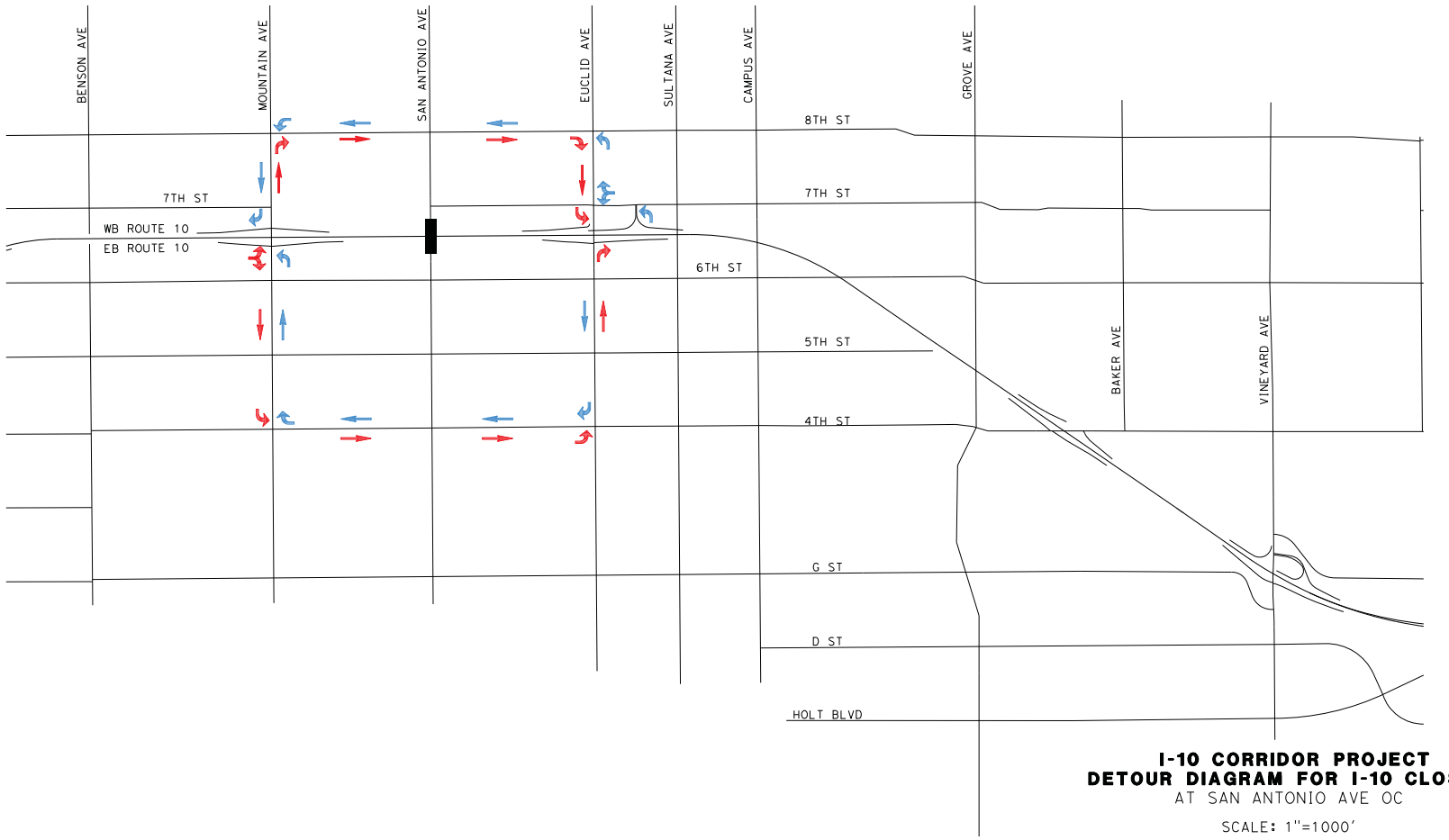
- ALTERNATIVE ROUTE FOR EB ROUTE 10
- ALTERNATIVE ROUTE FOR WB ROUTE 10



I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR I-10 CLOSURE
AT SAN ANTONIO AVE OC

SCALE: 1"=1000'

FREEWAY DE-2

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UNIT 0000

PROJECT NUMBER & PHASE 0800000040

LEGEND:

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ALTERNATIVE ROUTE FOR EB ROUTE 10

ALTERNATIVE ROUTE FOR WB ROUTE 10

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

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I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR I-10 CLOSURE
AT EUCLID AVE OC

SCALE: 1"=1000'

FREEWAY DE-3

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UNIT 0000

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

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SAN BERNARDINO, CA 92410

LEGEND:

- BRIDGE CONSTRUCTION POTENTIALLY REQUIRING TEMPORARY CLOSURE OF I-10
- ALTERNATIVE ROUTE FOR EB ROUTE 10
- ALTERNATIVE ROUTE FOR WB ROUTE 10

I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR I-10 CLOSURE
AT SULTANA AVE OC

SCALE: 1"=1000'

FREEWAY DE-4

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

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SAN BERNARDINO, CA 92410

LEGEND:

- BRIDGE CONSTRUCTION POTENTIALLY REQUIRING TEMPORARY CLOSURE OF I-10
- ALTERNATIVE ROUTE FOR EB ROUTE 10
- ALTERNATIVE ROUTE FOR WB ROUTE 10

I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR I-10 CLOSURE
AT CAMPUS AVE OC

SCALE: 1"=1000'

FREEWAY DE-5

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UNIT 0000

PROJECT NUMBER & PHASE 0800000040

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

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SAN BERNARDINO, CA 92410

LEGEND:

- BRIDGE CONSTRUCTION POTENTIALLY REQUIRING TEMPORARY CLOSURE OF I-10
- ALTERNATIVE ROUTE FOR EB ROUTE 10
- ALTERNATIVE ROUTE FOR WB ROUTE 10

I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR I-10 CLOSURE
AT 6TH ST OC

SCALE: 1"=1000'

FREEWAY DE-6

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LEGEND:

- BRIDGE CONSTRUCTION POTENTIALLY REQUIRING TEMPORARY CLOSURE OF I-10
- ALTERNATIVE ROUTE FOR EB ROUTE 10
- ALTERNATIVE ROUTE FOR WB ROUTE 10

I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR I-10 CLOSURE
AT GROVE AVE UC

SCALE: 1"=1000'

FREEWAY DE-7

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LEGEND:

- BRIDGE CONSTRUCTION POTENTIALLY REQUIRING TEMPORARY CLOSURE OF I-10
- ALTERNATIVE ROUTE FOR EB ROUTE 10
- ALTERNATIVE ROUTE FOR WB ROUTE 10

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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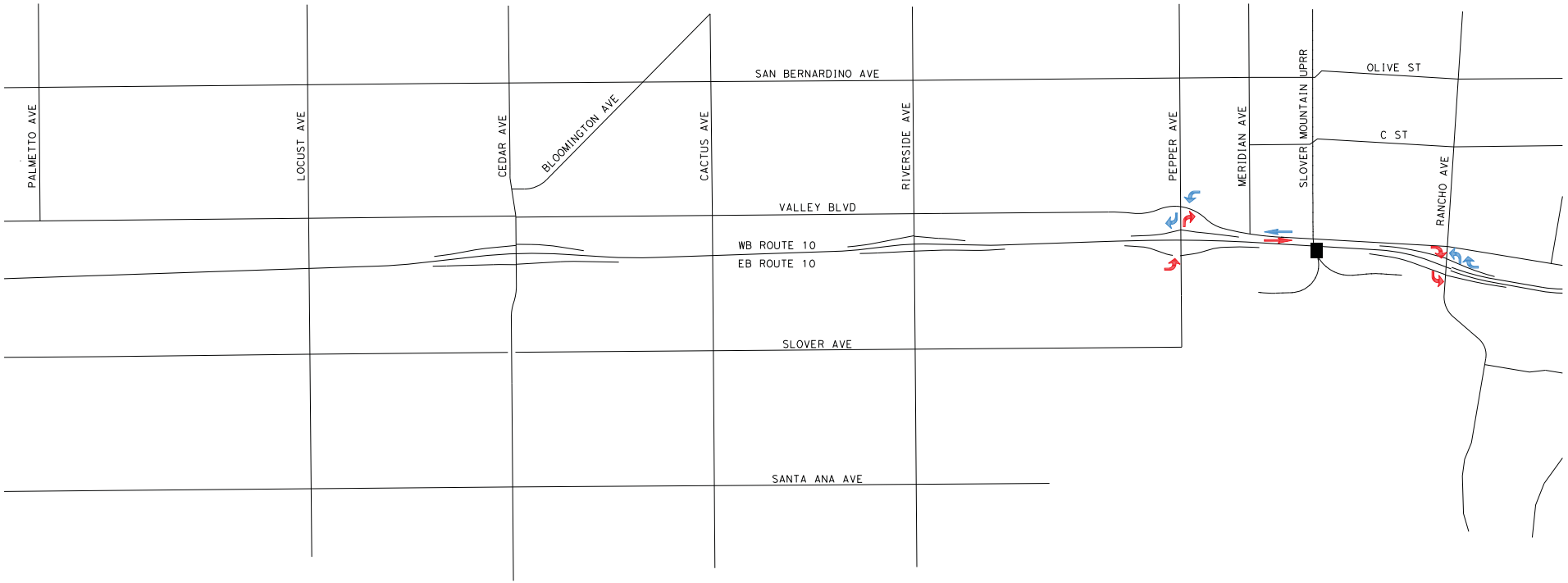

I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR I-10 CLOSURE
AT SLOVER MOUNTAIN UP

SCALE: 1"=1000'

FREEWAY DE-8

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LEGEND:

BRIDGE CONSTRUCTION POTENTIALLY REQUIRING TEMPORARY CLOSURE OF I-10

ALTERNATIVE ROUTE FOR EB ROUTE 10

ALTERNATIVE ROUTE FOR WB ROUTE 10

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

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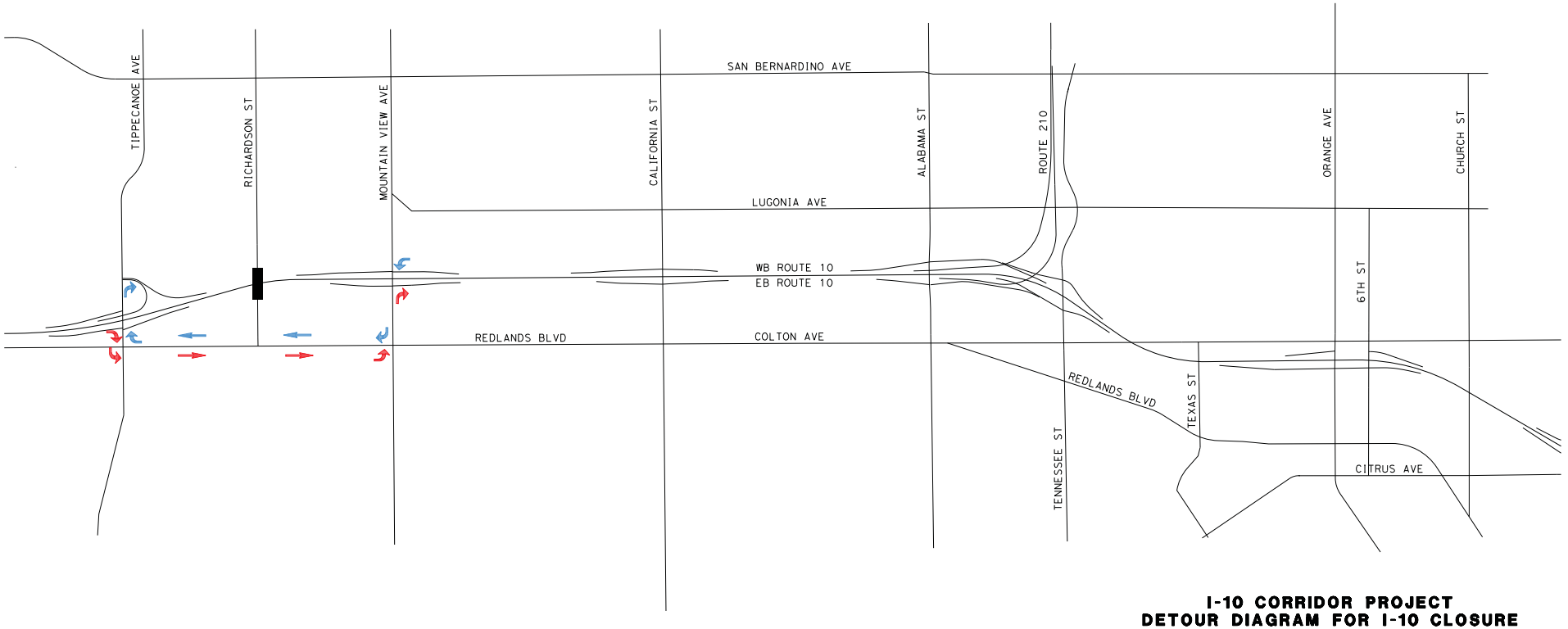
SAN BERNARDINO, CA 92410



I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR I-10 CLOSURE
AT RICHARDSON ST OC

SCALE: 1"=1000'

FREEWAY DE-9

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DATE REVISED

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE 0800000040

LAST REVISION 00-00-00

DATE PLOTTED => 3/30/2015
TIME PLOTTED => 10:29:37 AM

LEGEND:

BRIDGE CONSTRUCTION POTENTIALLY REQUIRING TEMPORARY CLOSURE OF I-10

ALTERNATIVE ROUTE FOR EB ROUTE 10

ALTERNATIVE ROUTE FOR WB ROUTE 10

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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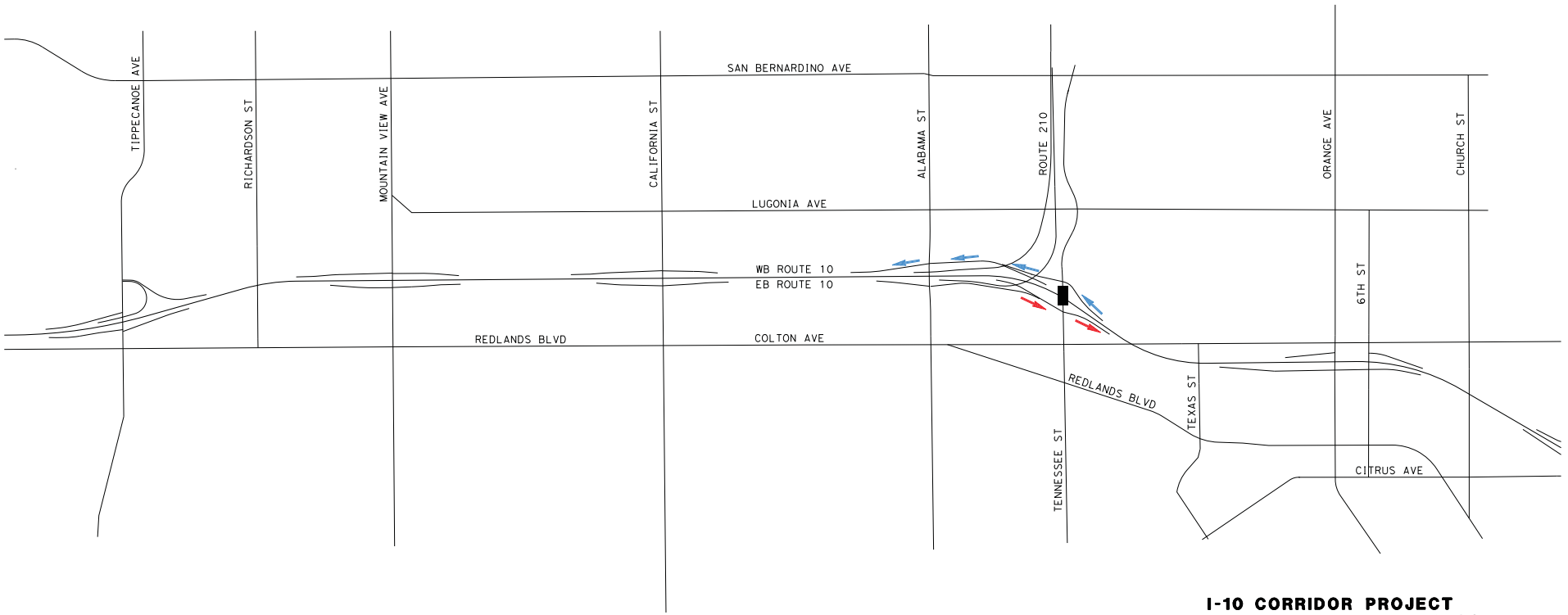
SAN BERNARDINO, CA 92410



I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR I-10 CLOSURE
AT TENNESSEE ST OC

SCALE: 1"=1000'

FREEWAY DE-10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

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BORDER LAST REVISED 7/2/2010

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE 0800000040

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

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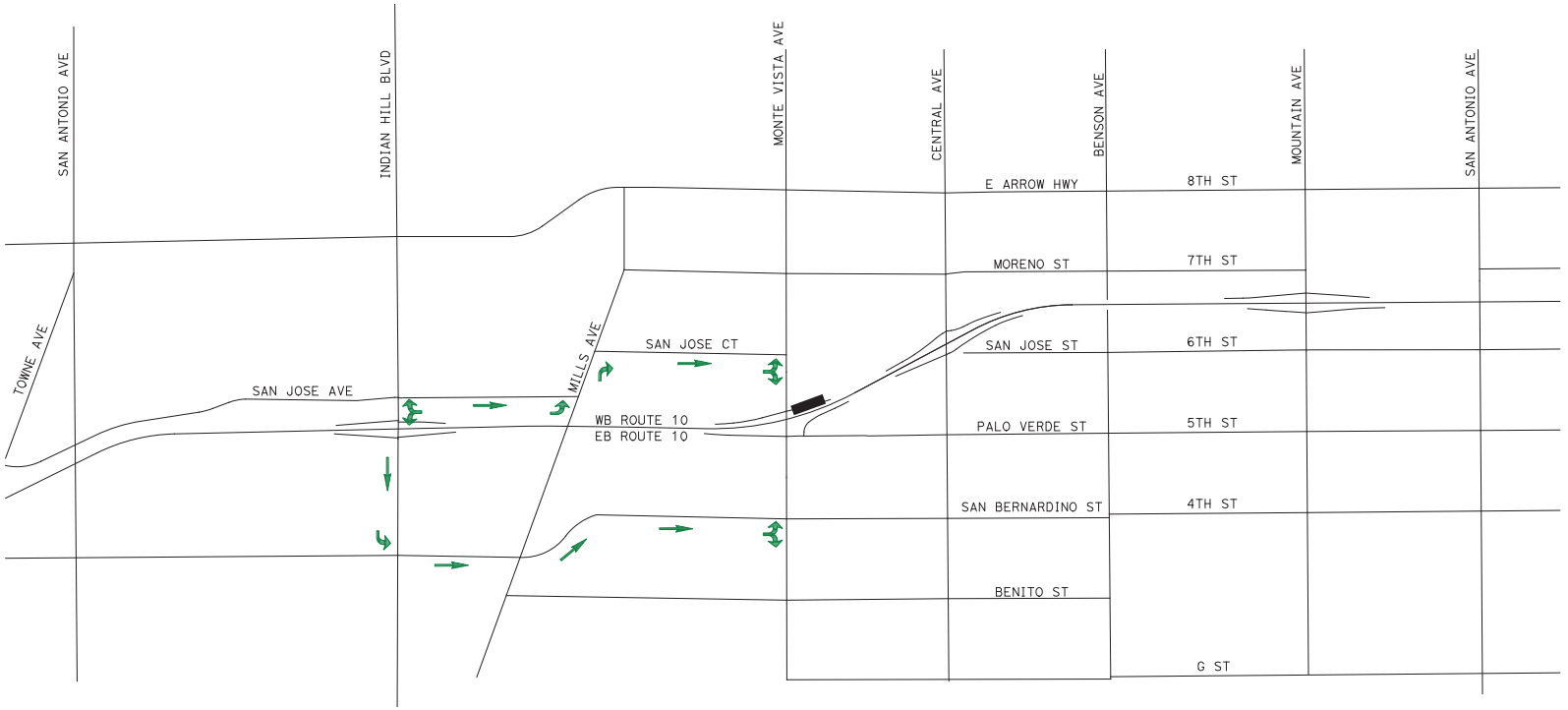
LEGEND:

RAMP CONSTRUCTION POTENTIALLY REQUIRING PROLONGED RAMP CLOSURE

ALTERNATIVE ROUTE



I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR RAMP CLOSURE

MONTE VISTA AVE WB OFF-RAMP

SCALE: 1"=1000'

RAMP DE-1

REVISED BY	DATE REVISED

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE 0800000040

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08'	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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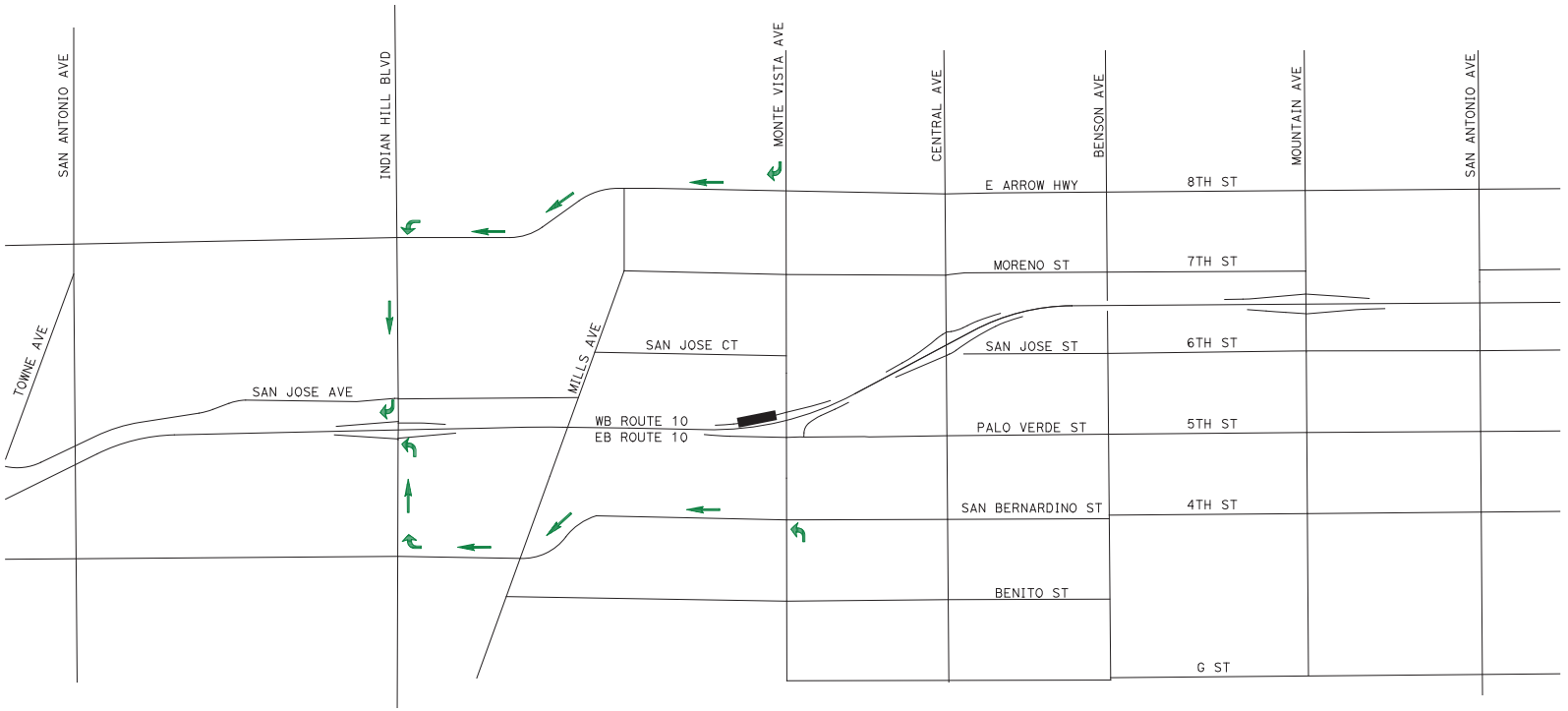
SAN BERNARDINO, CA 92410

LEGEND:

RAMP CONSTRUCTION POTENTIALLY REQUIRING PROLONGED RAMP CLOSURE

ALTERNATIVE ROUTE



I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR RAMP CLOSURE

MONTE VISTA AVE WB ON-RAMP

SCALE: 1"=1000'

RAMP DE-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED

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LAST REVISION 00-00-00
DATE PLOTTED => 9/28/2015
TIME PLOTTED => 4:08:02 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. Exp. CIVIL — STATE OF CALIFORNIA

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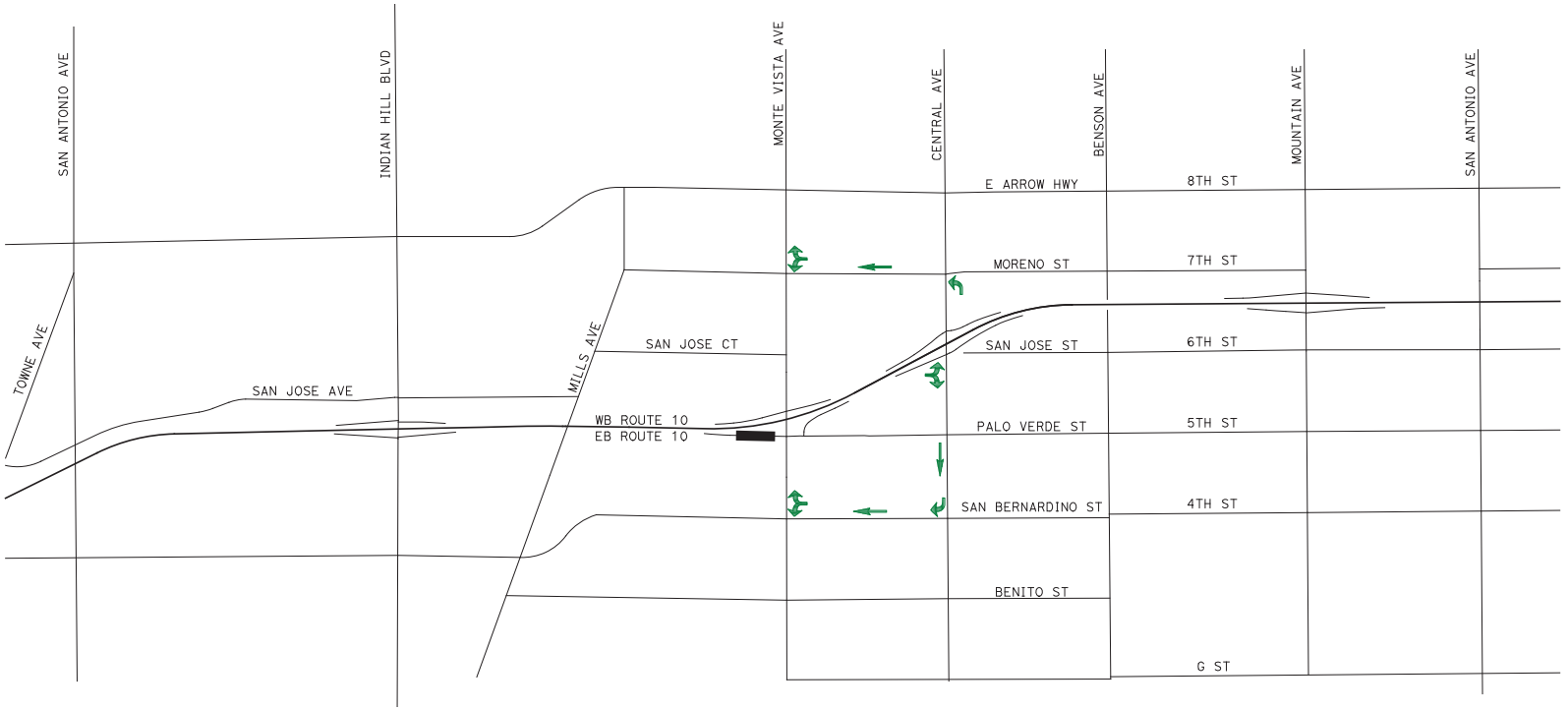
SAN BERNARDINO, CA 92410

LEGEND:

RAMP CONSTRUCTION POTENTIALLY REQUIRING PROLONGED RAMP CLOSURE

ALTERNATIVE ROUTE



I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR RAMP CLOSURE

MONTE VISTA AVE EB OFF-RAMP

SCALE: 1"=1000'

RAMP DE-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE 0800000040

LAST REVISION 00-00-00
DATE PLOTTED => 9/28/2015
TIME PLOTTED => 4:08:08 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

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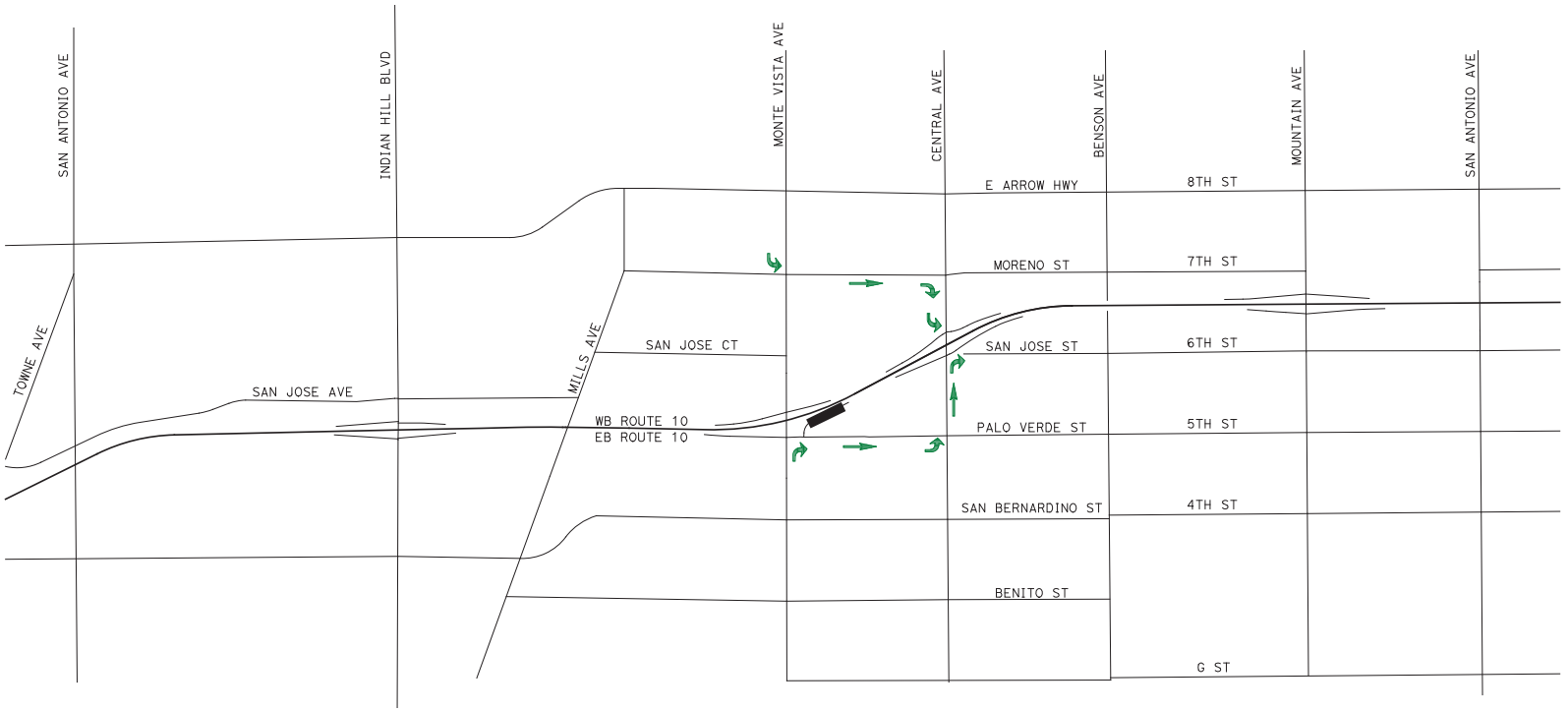
LEGEND:

RAMP CONSTRUCTION POTENTIALLY REQUIRING PROLONGED RAMP CLOSURE

ALTERNATIVE ROUTE



I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR RAMP CLOSURE

MONTE VISTA AVE EB ON-RAMP

SCALE: 1"=1000'

RAMP DE-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE 0800000040

LAST REVISION 00-00-00

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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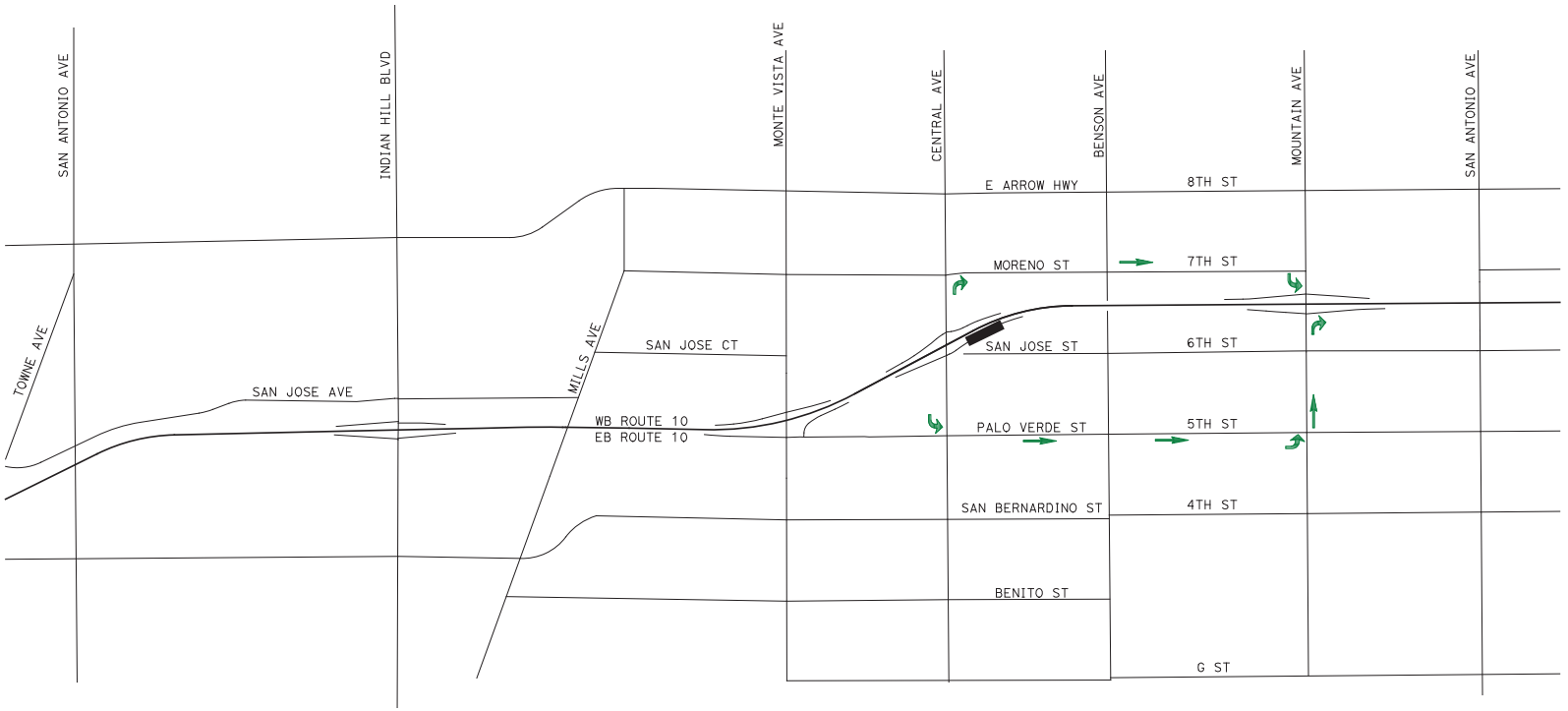
LEGEND:

RAMP CONSTRUCTION POTENTIALLY REQUIRING PROLONGED RAMP CLOSURE

ALTERNATIVE ROUTE



I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR RAMP CLOSURE

CENTRAL AVE EB ON-RAMP

SCALE: 1"=1000'

RAMP DE-5

REVISED BY	DATE REVISED

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LAST REVISION 00-00-00

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08'	LA,SBd	10	44.9/48.3, 0.0/R37.0		

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PLANS APPROVAL DATE

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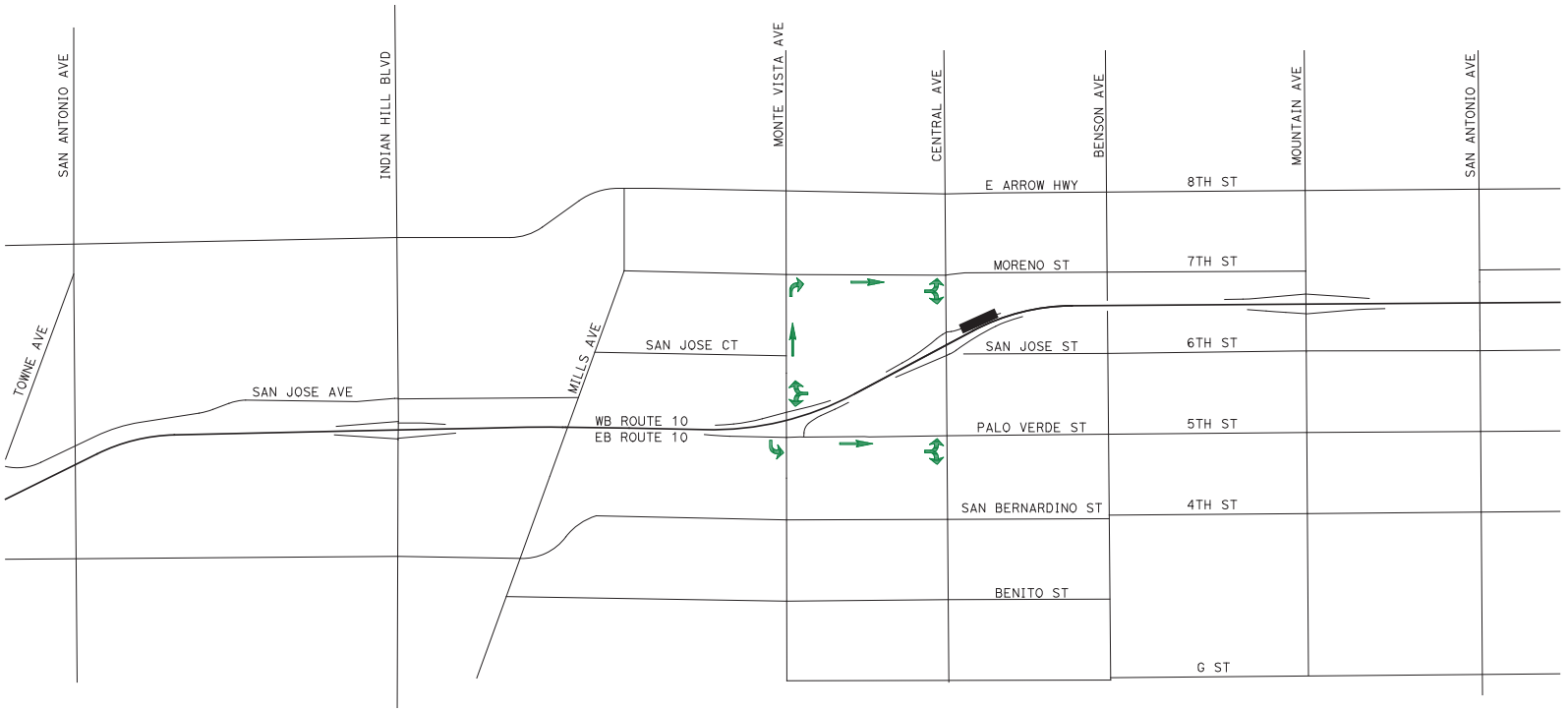
LEGEND:

RAMP CONSTRUCTION POTENTIALLY REQUIRING PROLONGED RAMP CLOSURE

ALTERNATIVE ROUTE



I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR RAMP CLOSURE

CENTRAL AVE WB OFF-RAMP

SCALE: 1"=1000'

RAMP DE-6

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE 0800000040

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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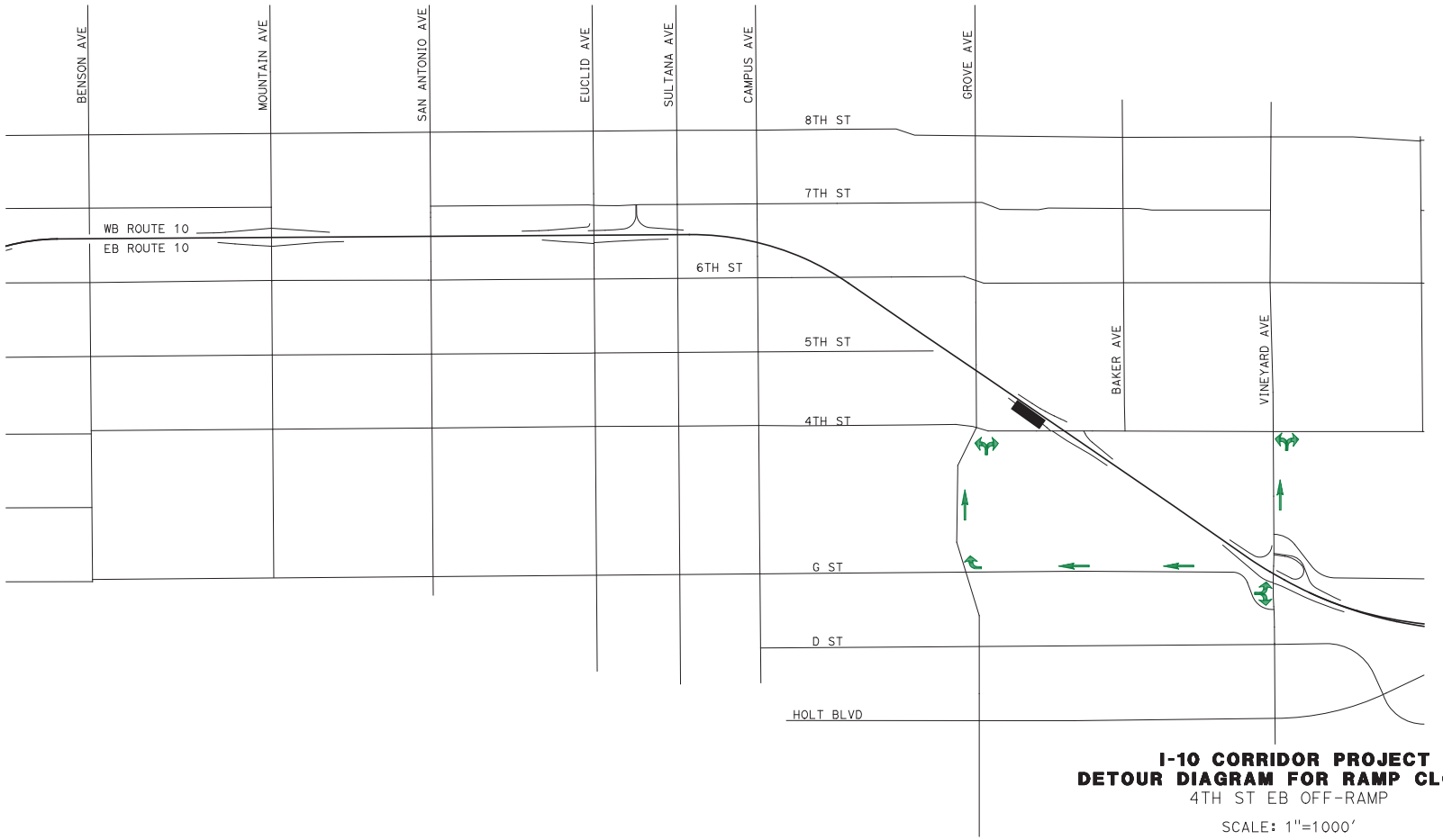
LEGEND:

RAMP CONSTRUCTION POTENTIALLY REQUIRING PROLONGED RAMP CLOSURE

ALTERNATIVE ROUTE



I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR RAMP CLOSURE
4TH ST EB OFF-RAMP

SCALE: 1"=1000'

RAMP DE-7

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE 0800000040

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. Exp. CIVIL — STATE OF CALIFORNIA

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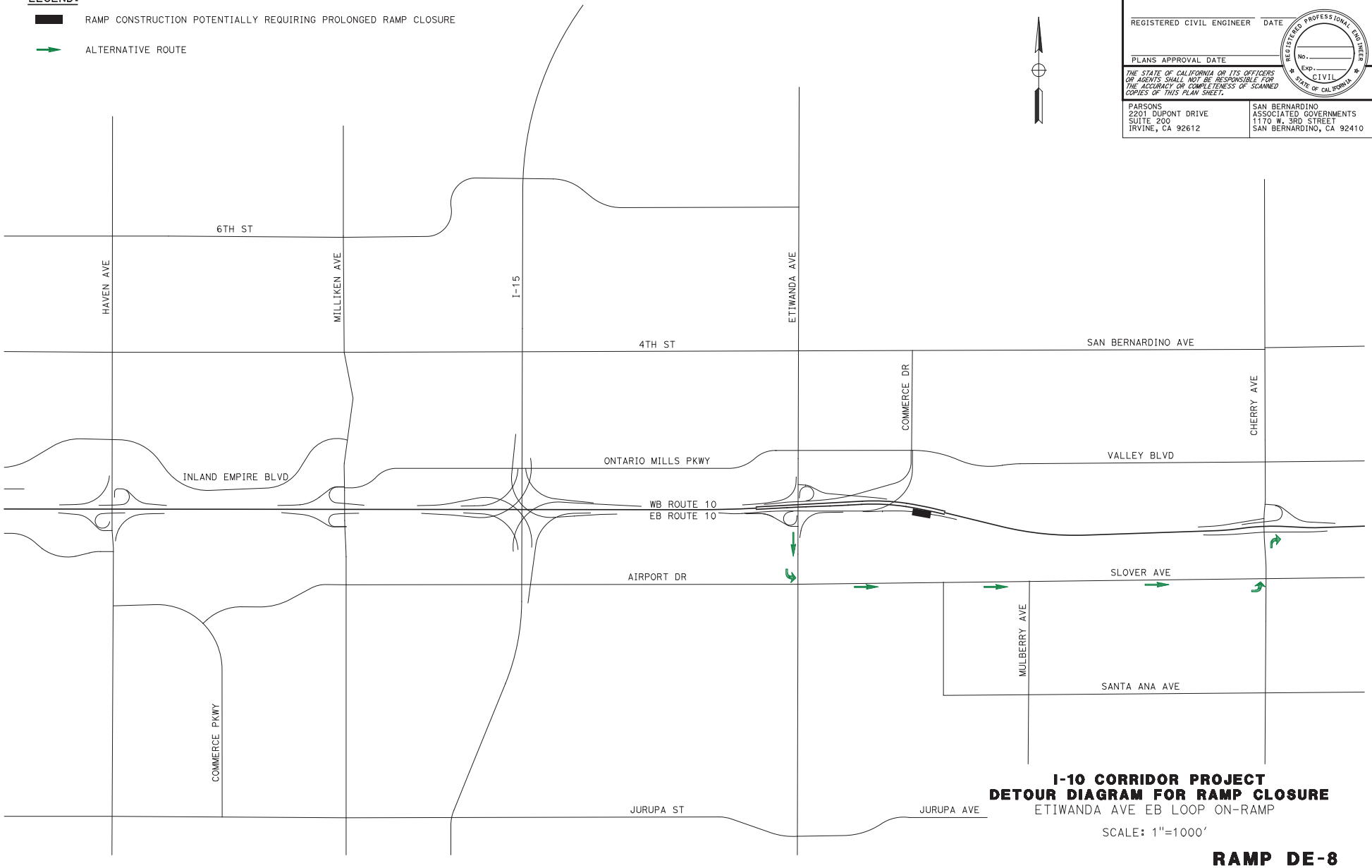
LEGEND:

RAMP CONSTRUCTION POTENTIALLY REQUIRING PROLONGED RAMP CLOSURE

ALTERNATIVE ROUTE



I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR RAMP CLOSURE

ETIWANDA AVE EB LOOP ON-RAMP

SCALE: 1"=1000'

RAMP DE-8

REVISED BY | DATE REVISED

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CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE 0800000040

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. Exp. CIVIL — STATE OF CALIFORNIA

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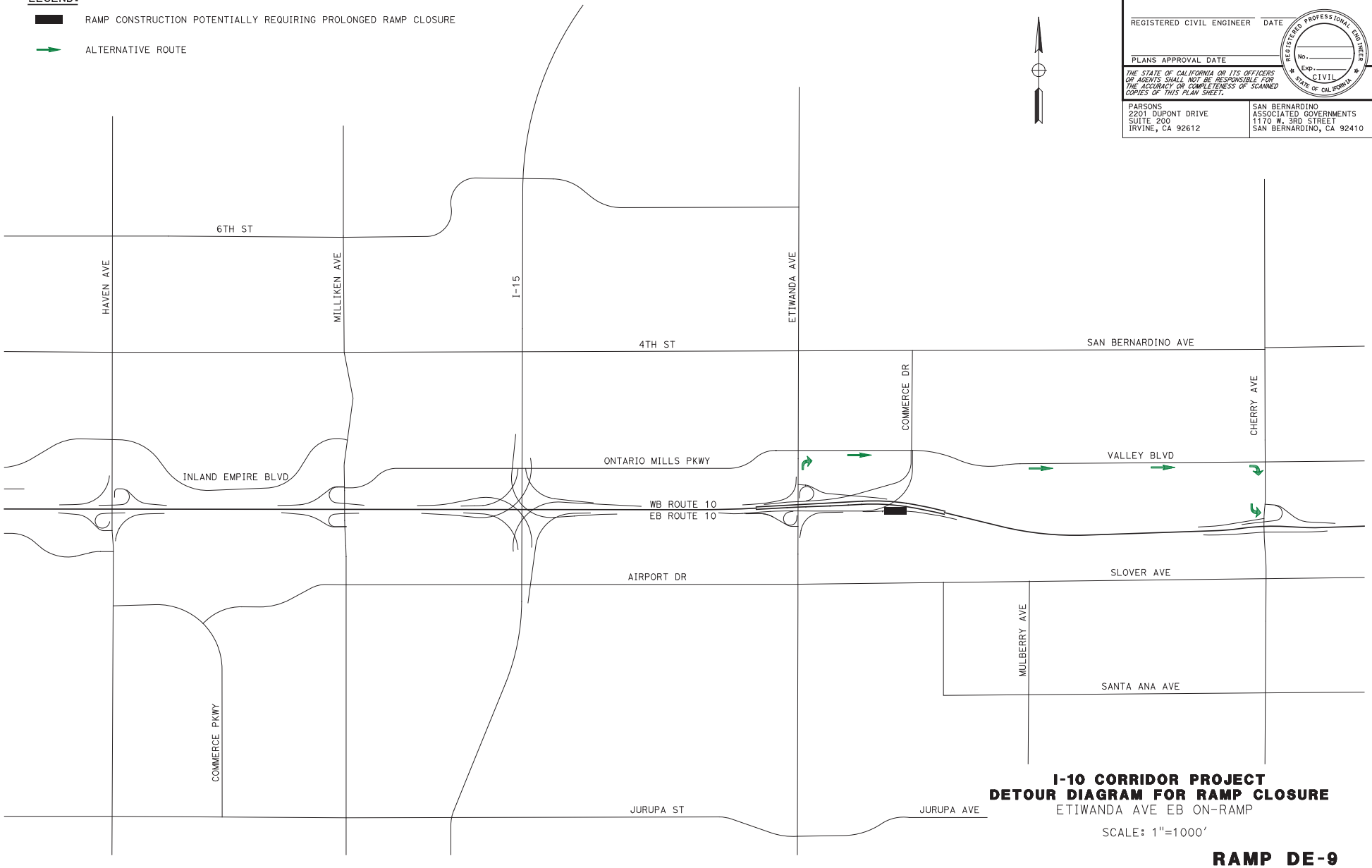
SAN BERNARDINO, CA 92410

LEGEND:

RAMP CONSTRUCTION POTENTIALLY REQUIRING PROLONGED RAMP CLOSURE

ALTERNATIVE ROUTE



I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR RAMP CLOSURE

ETIWANDA AVE EB ON-RAMP

SCALE: 1"=1000'

RAMP DE-9

REVISED BY	DATE REVISED

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CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

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BORDER LAST REVISED 7/2/2010

USERNAME => P003372C
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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE 0800000040

LAST REVISION 00-00-00

DATE PLOTTED => 9/28/2015
TIME PLOTTED => 4:08:44 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. Exp. CIVIL — STATE OF CALIFORNIA

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SAN BERNARDINO, CA 92410

LEGEND:

RAMP CONSTRUCTION POTENTIALLY REQUIRING PROLONGED RAMP CLOSURE

ALTERNATIVE ROUTE

I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR RAMP CLOSURE
9TH ST EB OFF-RAMP

SCALE: 1"=1000'

RAMP DE-10

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE 0800000040

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. Exp. CIVIL — STATE OF CALIFORNIA

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SAN BERNARDINO
ASSOCIATED GOVERNMENTS
1170 W. 3RD STREET
SAN BERNARDINO, CA 92410

LEGEND:

RAMP CONSTRUCTION POTENTIALLY REQUIRING PROLONGED RAMP CLOSURE

ALTERNATIVE ROUTE

I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR RAMP CLOSURE

SUNWEST LN WB ON-RAMP

SCALE: 1"=1000'

RAMP DE-11

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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LEGEND:

RAMP CONSTRUCTION POTENTIALLY REQUIRING PROLONGED RAMP CLOSURE

ALTERNATIVE ROUTE

I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR RAMP CLOSURE

WATERMAN AVE EB ON-RAMP

SCALE: 1"=1000'

RAMP DE-12

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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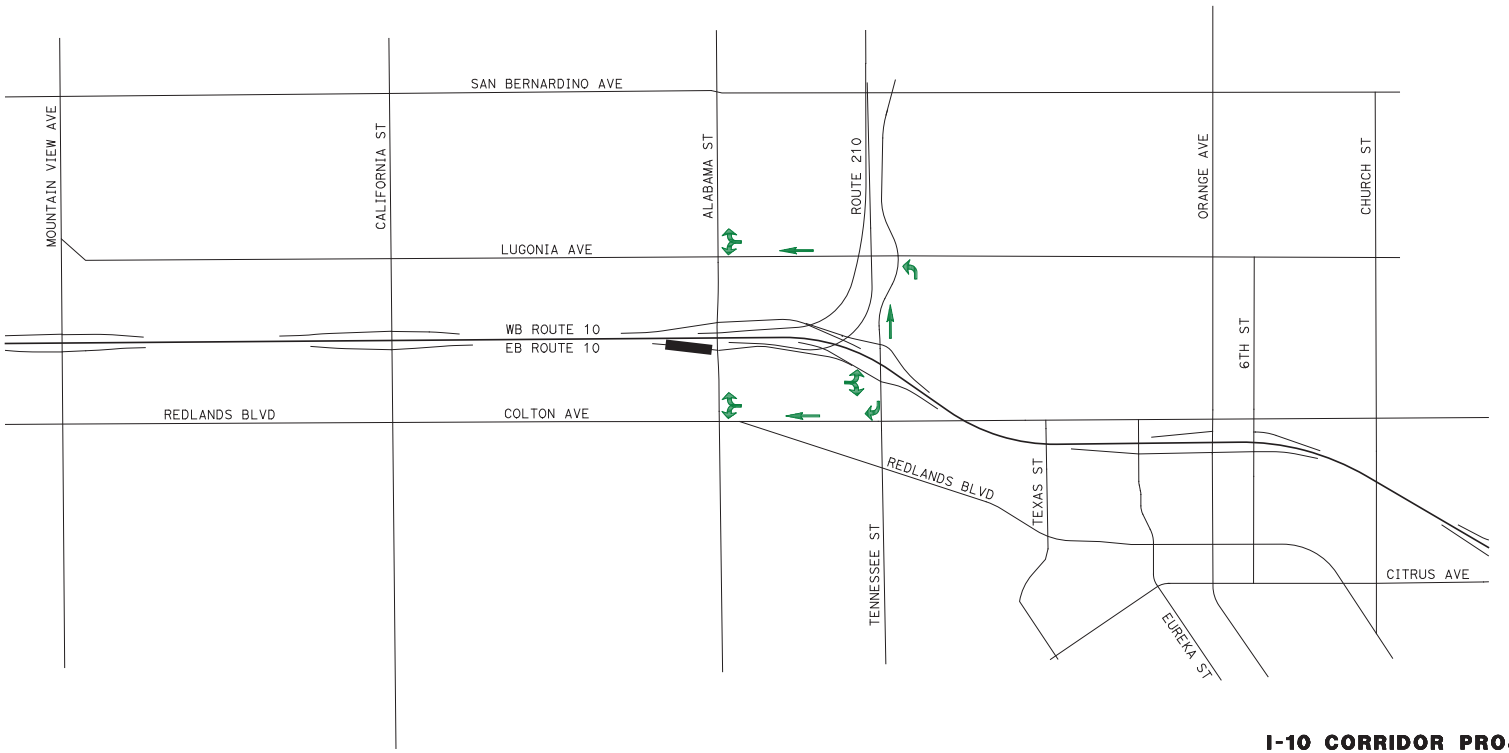
LEGEND:

RAMP CONSTRUCTION POTENTIALLY REQUIRING PROLONGED RAMP CLOSURE

ALTERNATIVE ROUTE



I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR RAMP CLOSURE

ALABAMA ST EB OFF-RAMP

SCALE: 1"=1000'

RAMP DE-13

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

CONSULTANT FUNCTIONAL SUPERVISOR

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE 0800000040

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

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PLANS APPROVAL DATE

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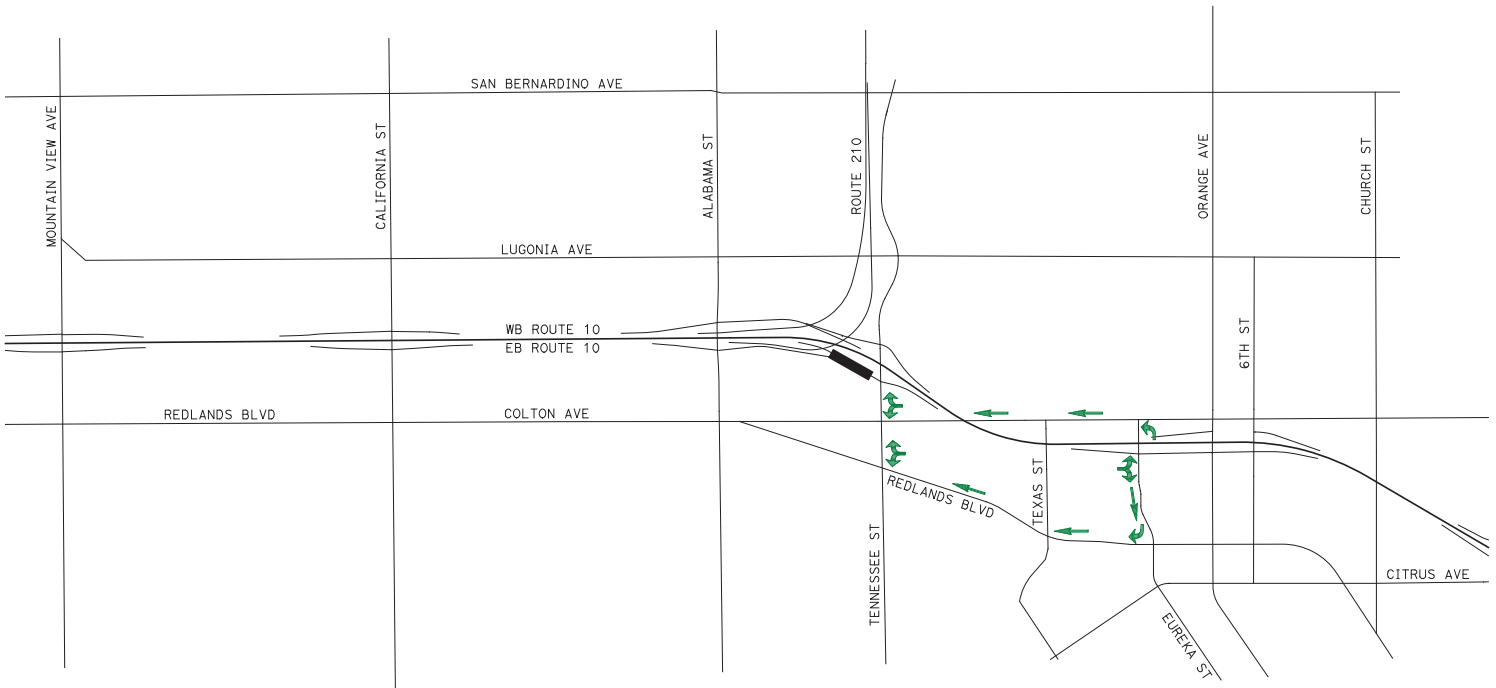
SAN BERNARDINO, CA 92410

LEGEND:

RAMP CONSTRUCTION POTENTIALLY REQUIRING PROLONGED RAMP CLOSURE

ALTERNATIVE ROUTE



I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR RAMP CLOSURE

TENNESSEE ST EB OFF-RAMP

SCALE: 1"=1000'

RAMP DE-14

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UNIT 0000

PROJECT NUMBER & PHASE 0800000040

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

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SAN BERNARDINO, CA 92410

LEGEND:

- OC REPLACEMENT POTENTIALLY REQUIRING TEMPORARY CLOSURE OF ARTERIAL
- ALTERNATIVE ROUTE FOR NB SAN ANTONIO AVE TRAFFIC
- ALTERNATIVE ROUTE FOR SB SAN ANTONIO AVE TRAFIC

I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR ARTERIAL CLOSURE
AT SAN ANTONIO AVE OC

SCALE: 1"=1000'

ARTERIAL DE-1

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

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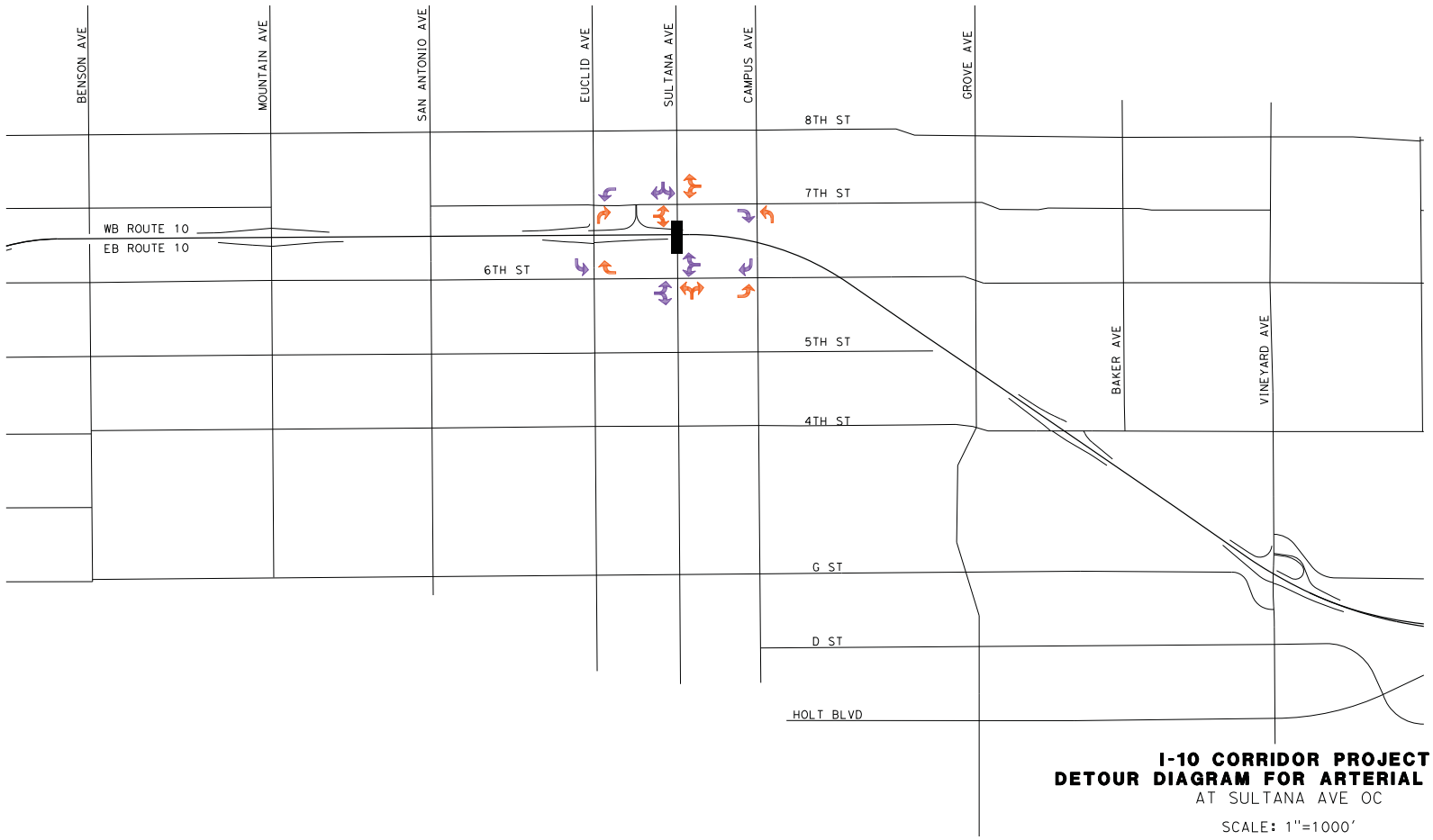
SAN BERNARDINO, CA 92410

LEGEND:

- OC REPLACEMENT POTENTIALLY REQUIRING TEMPORARY CLOSURE OF ARTERIAL
- ALTERNATIVE ROUTE FOR NB SULTANA AVE TRAFFIC
- ALTERNATIVE ROUTE FOR SB SULTANA AVE TRAFFIC



I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR ARTERIAL CLOSURE
AT SULTANA AVE OC

SCALE: 1"=1000'

ARTERIAL DE-2

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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SAN BERNARDINO, CA 92410

LEGEND:

- OC REPLACEMENT POTENTIALLY REQUIRING TEMPORARY CLOSURE OF ARTERIAL
- ALTERNATIVE ROUTE FOR NB CAMPUS AVE TRAFFIC
- ALTERNATIVE ROUTE FOR SB CAMPUS AVE TRAFIC

I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR ARTERIAL CLOSURE
AT CAMPUS AVE OC

SCALE: 1"=1000'

ARTERIAL DE-3

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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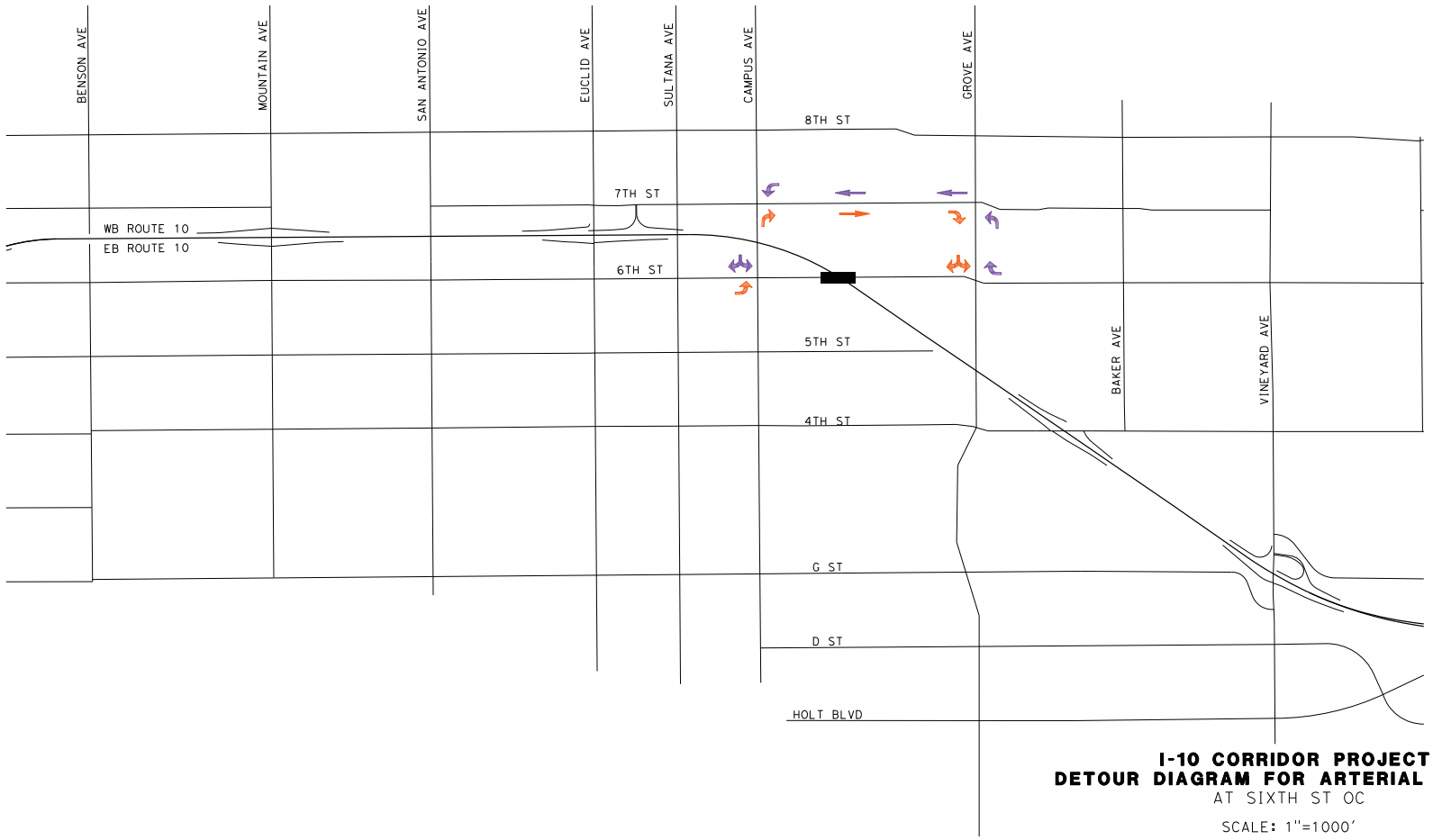
1170 W. 3RD STREET
SAN BERNARDINO, CA 92410

LEGEND:

- OC REPLACEMENT POTENTIALLY REQUIRING TEMPORARY CLOSURE OF ARTERIAL
- ALTERNATIVE ROUTE FOR EB SIXTH STREET TRAFFIC
- ALTERNATIVE ROUTE FOR WB SIXTH STREET TRAFIC



I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR ARTERIAL CLOSURE
AT SIXTH ST OC

SCALE: 1"=1000'

ARTERIAL DE-4

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE 0800000040

LEGEND:

- OC REPLACEMENT POTENTIALLY REQUIRING TEMPORARY CLOSURE OF ARTERIAL
- ALTERNATIVE ROUTE FOR NB SAN ANTONIO AVE TRAFFIC
- ALTERNATIVE ROUTE FOR SB SAN ANTONIO AVE TRAFIC

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. Exp. CIVIL — STATE OF CALIFORNIA

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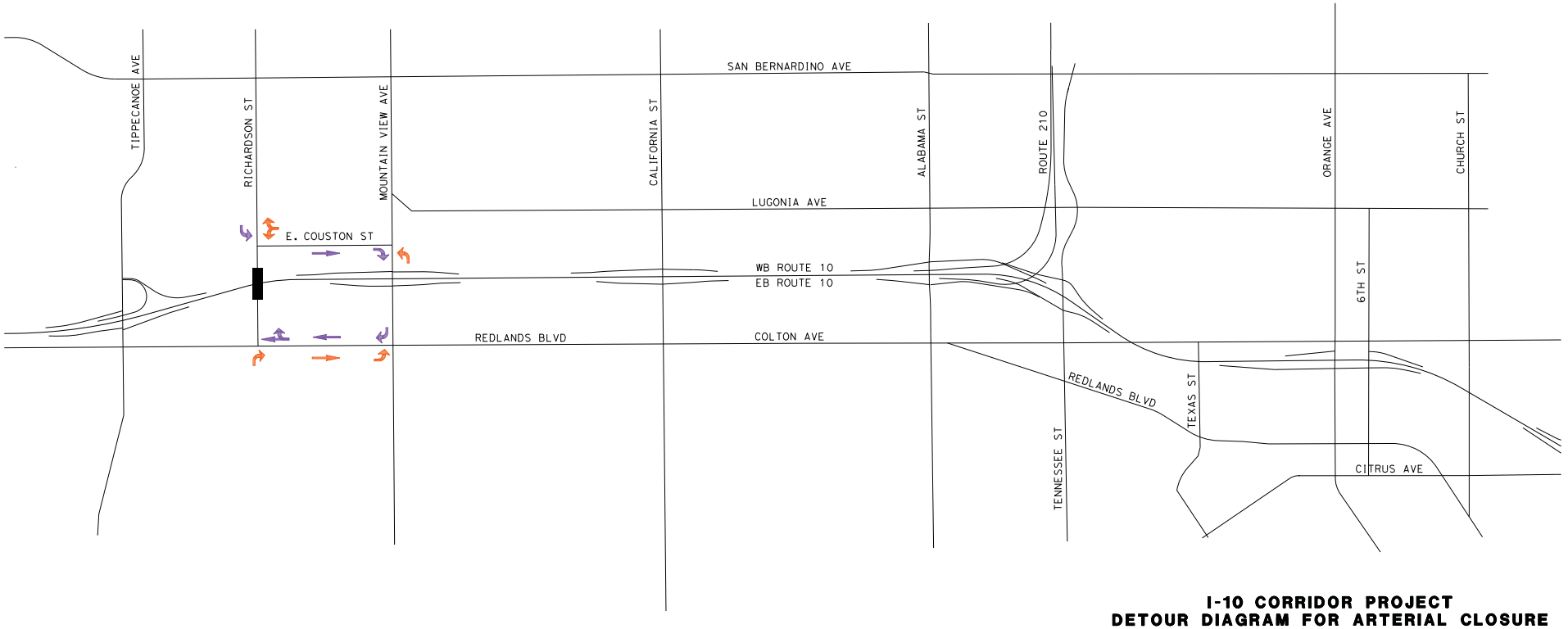

I-10 CORRIDOR PROJECT
DETOUR DIAGRAM FOR ARTERIAL CLOSURE
AT RICHARDSON ST OC

SCALE: 1"=1000'

ARTERIAL DE-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION | CONSULTANT FUNCTIONAL SUPERVISOR | CALCULATED-DESIGNED BY | CHECKED BY | REVISED BY | DATE REVISED

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE 0800000040

LAST REVISION 00-00-00
DATE PLOTTED => 3/30/2015
TIME PLOTTED => 10:36:25 AM

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ATTACHMENT P

Potential Construction Staging Areas

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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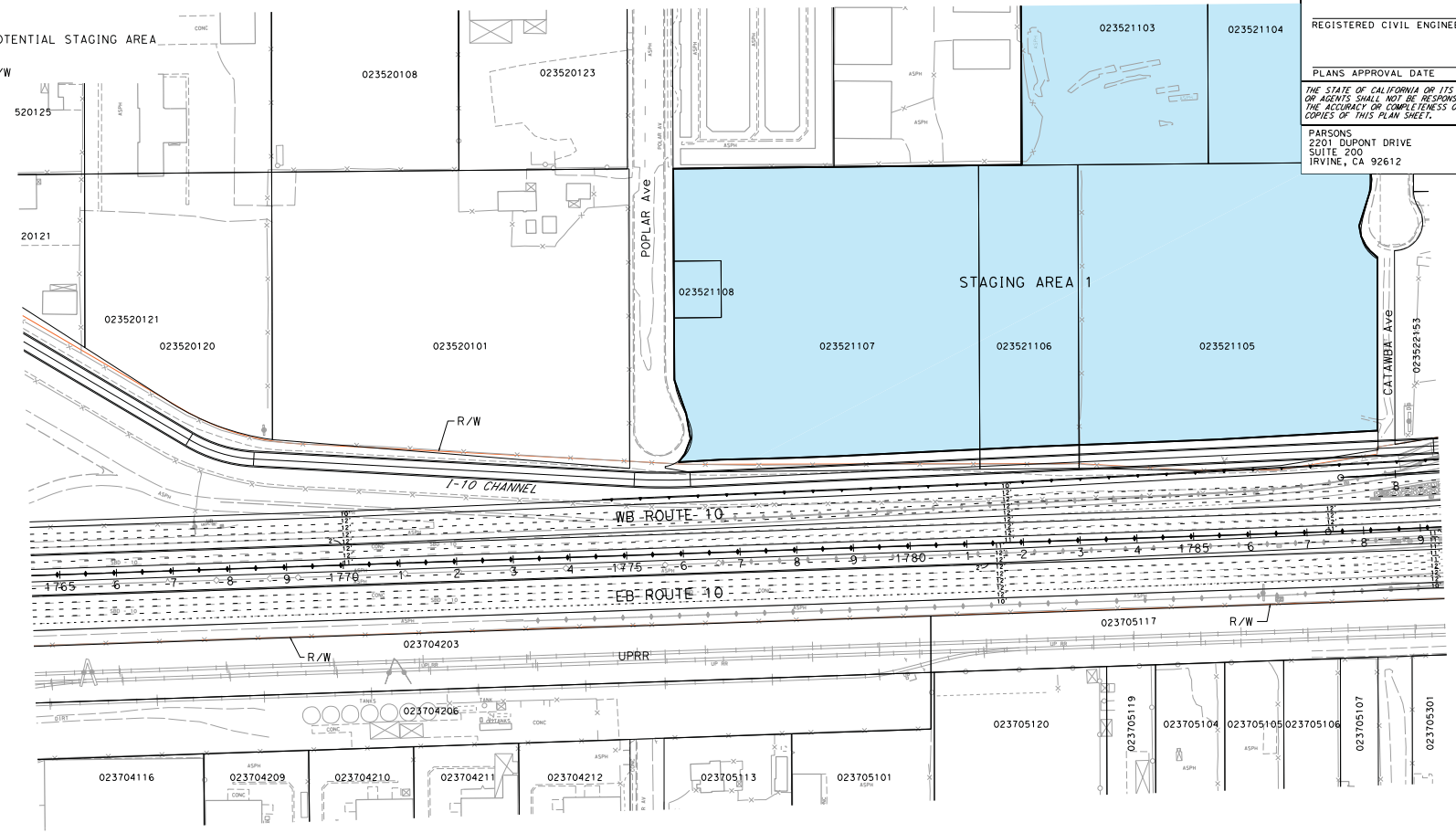
SAN BERNARDINO, CA 92410

LEGEND:

POTENTIAL STAGING AREA

R/W



I-10 CORRIDOR PROJECT

POTENTIAL STAGING AREA

SCALE: 1"=100'

SA-1

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BORDER LAST REVISED 7/2/2010

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2232

PROJECT NUMBER & PHASE 0800000040

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

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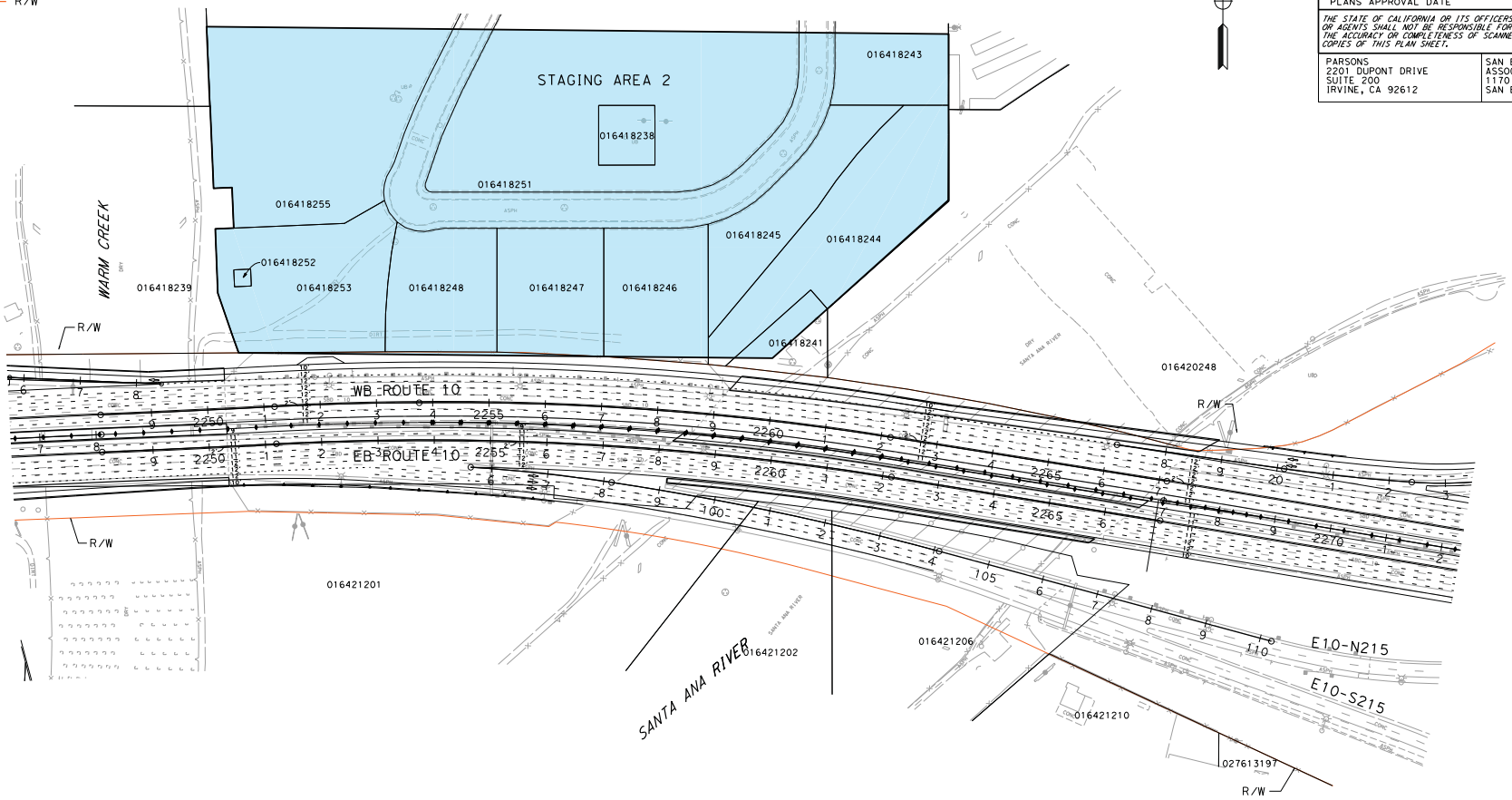
1170 W. 3RD STREET
SAN BERNARDINO, CA 92410

LEGEND:

POTENTIAL STAGING AREA

R/W



I-10 CORRIDOR PROJECT

POTENTIAL STAGING AREA

SCALE: 1"=100'

SA-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION | CONSULTANT FUNCTIONAL SUPERVISOR | CALCULATED-DESIGNED BY | CHECKED BY | REVISED BY | DATE REVISED

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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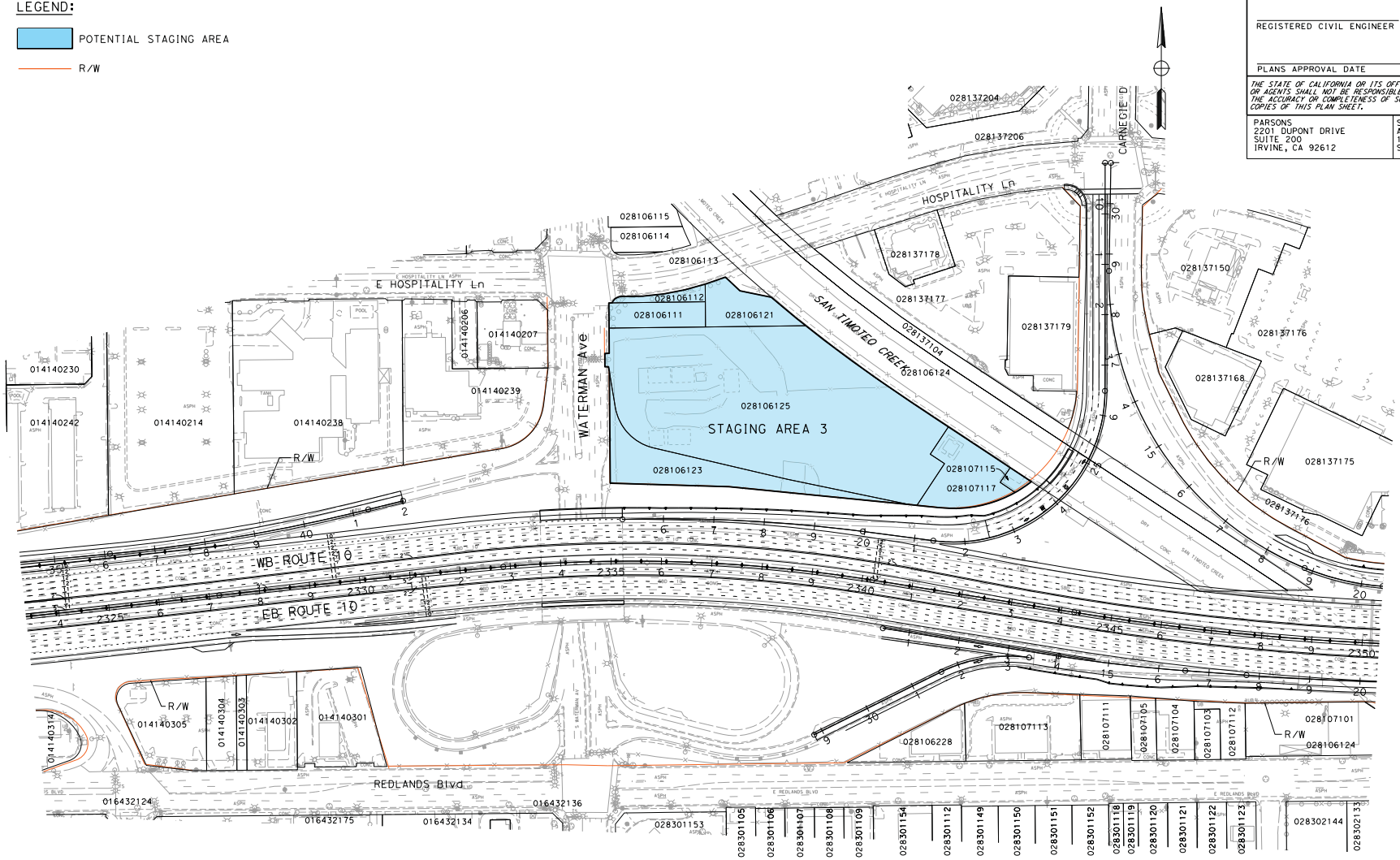
1170 W. 3RD STREET
SAN BERNARDINO, CA 92410

LEGEND:

POTENTIAL STAGING AREA

R/W



I-10 CORRIDOR PROJECT

POTENTIAL STAGING AREA

SCALE: 1"=100'

SA-3

REVISED BY	DATE REVISED	CALCULATED-DESIGNED BY	CHECKED BY	CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 4/1/2015 | TIME PLOTTED => 4:52:33 PM

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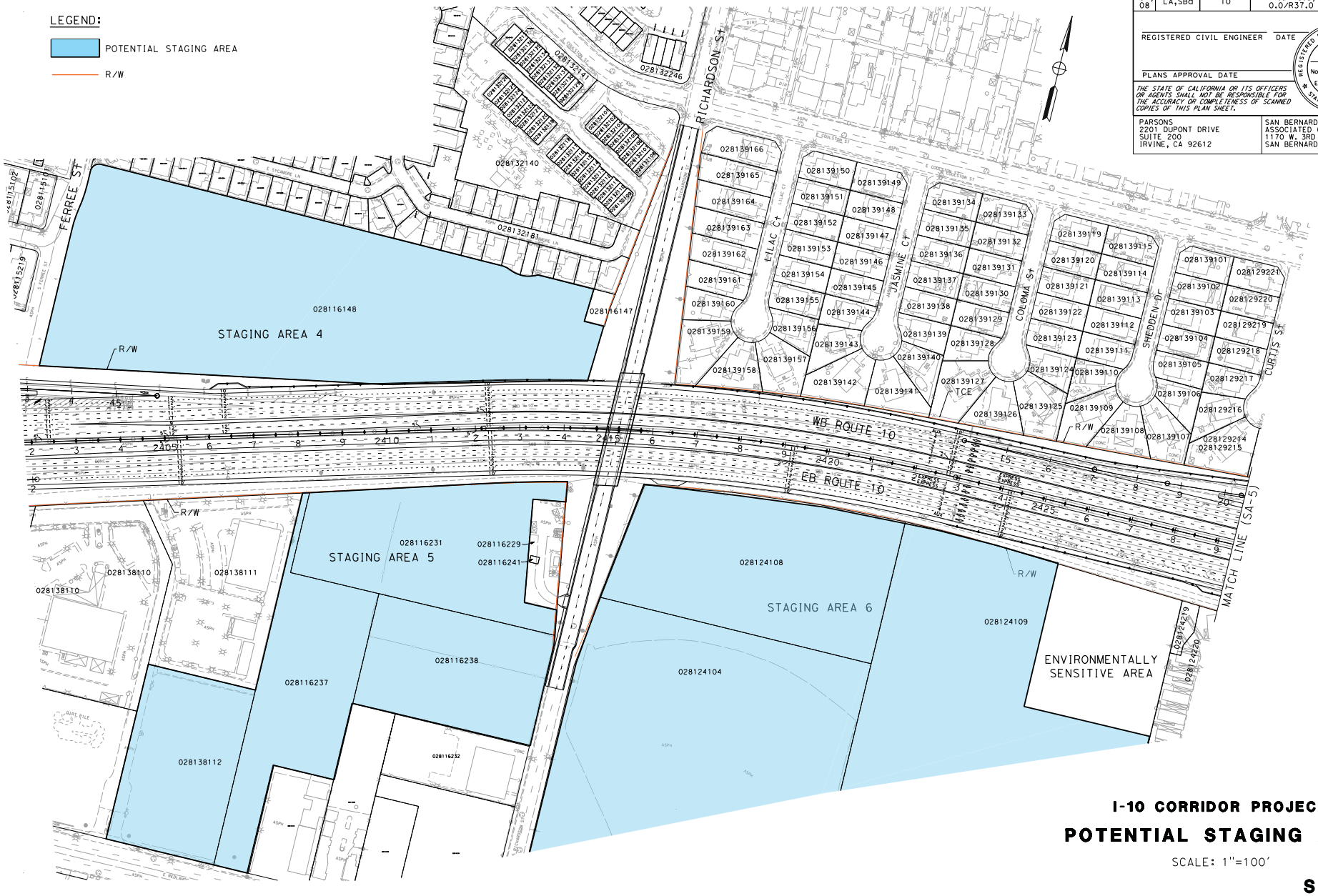

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. Exp. CIVIL — STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

PARSONS
2201 DUPONT DRIVE
SUITE 200
IRVINE, CA 92612

SAN BERNARDINO ASSOCIATED GOVERNMENTS
1170 W. 3RD STREET
SAN BERNARDINO, CA 92410

I-10 CORRIDOR PROJECT

POTENTIAL STAGING AREA

SCALE: 1"=100'

SA-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION | CONSULTANT FUNCTIONAL SUPERVISOR | CALCULATED-DESIGNED BY | CHECKED BY | REVISED BY | DATE REVISED

Caltrans

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. Exp. CIVIL — STATE OF CALIFORNIA

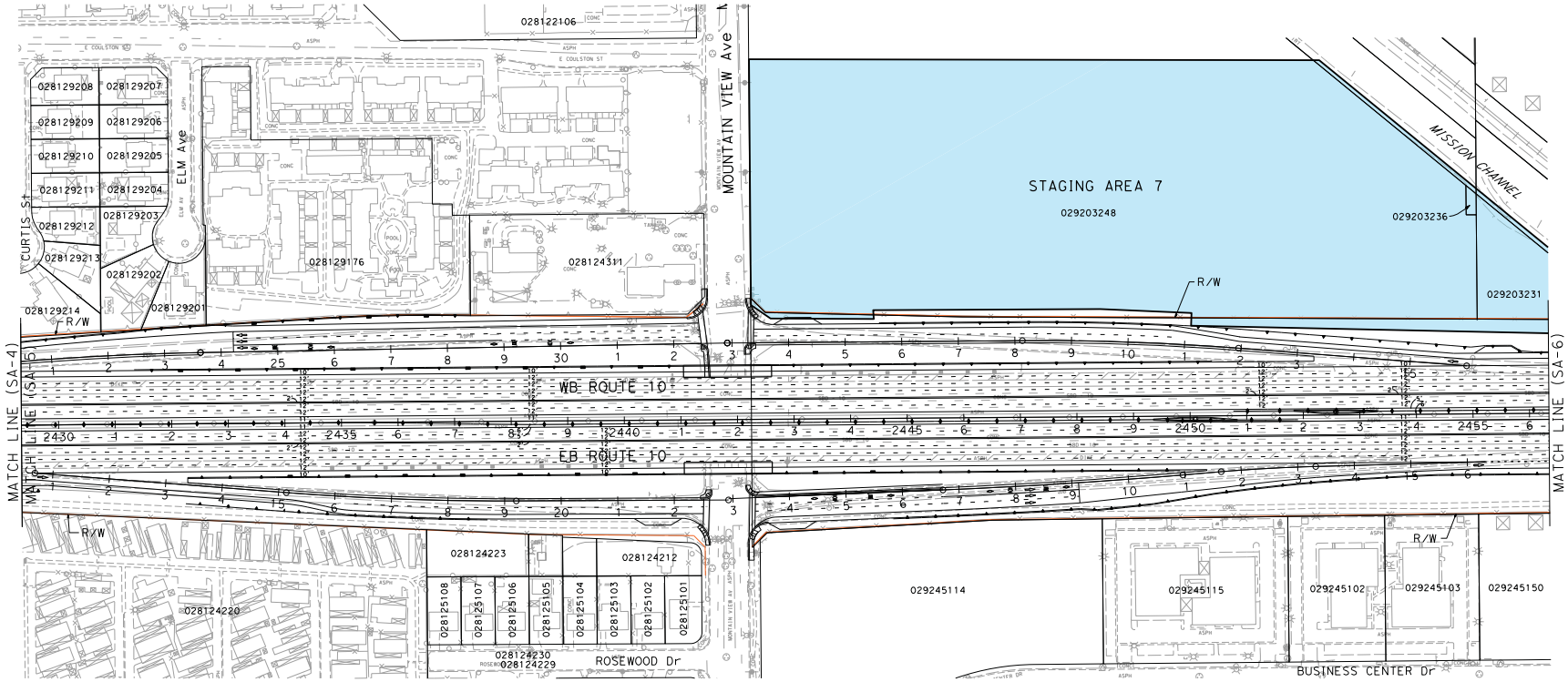
PARSONS
2201 DUPONT DRIVE
SUITE 200
IRVINE, CA 92612

SAN BERNARDINO
ASSOCIATED GOVERNMENTS
1170 W. 3RD STREET
SAN BERNARDINO, CA 92410

LEGEND:

POTENTIAL STAGING AREA

R/W



I-10 CORRIDOR PROJECT

POTENTIAL STAGING AREA

SCALE: 1"=100'

SA-5

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY	CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

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DGN FILE => 80C250ea60.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2232

PROJECT NUMBER & PHASE 0800000040

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. Exp. CIVIL — STATE OF CALIFORNIA

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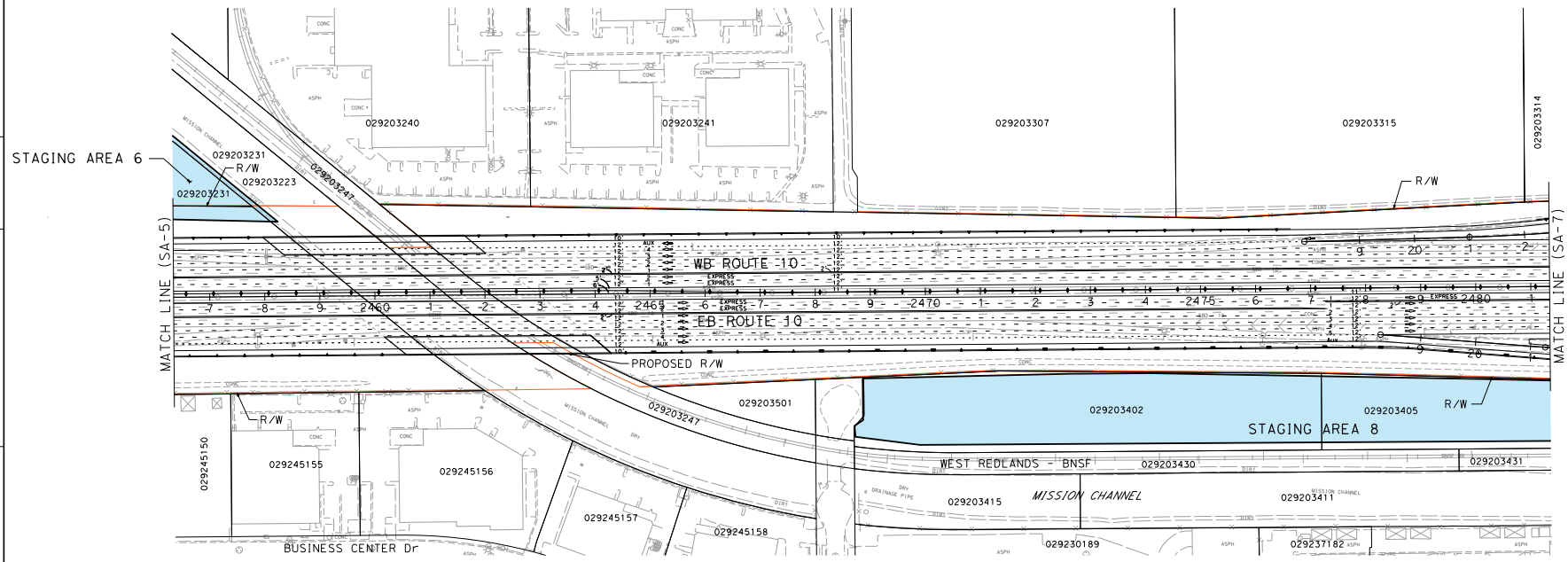
PARSONS
2201 DUPONT DRIVE
SUITE 200
IRVINE, CA 92612

SAN BERNARDINO ASSOCIATED GOVERNMENTS
1170 W. 3RD STREET
SAN BERNARDINO, CA 92410

LEGEND:

POTENTIAL STAGING AREA

R/W



I-10 CORRIDOR PROJECT

POTENTIAL STAGING AREA

SCALE: 1"=100'

SA-6

REVISED BY	DATE REVISED	CALCULATED-DESIGNED BY	CHECKED BY	CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07, 08	LA,SBd	10	44.9/48.3, 0.0/R37.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. Exp. CIVIL — STATE OF CALIFORNIA

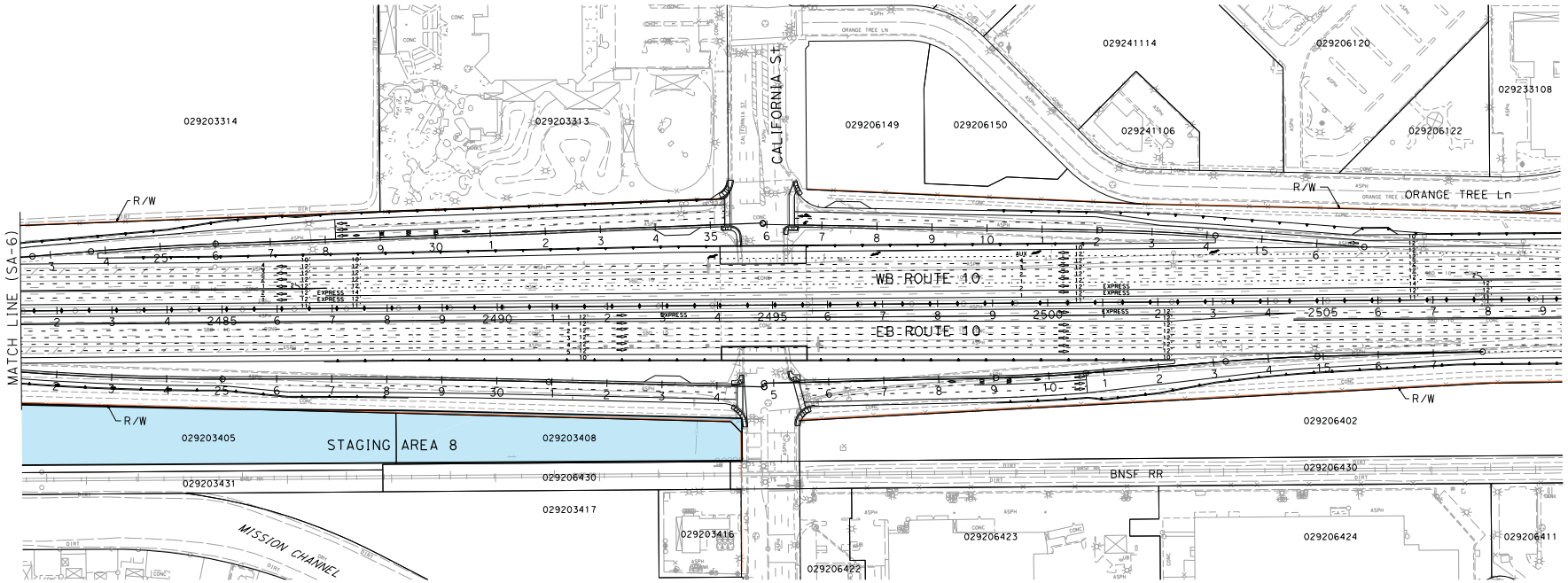
PARSONS
2201 DUPONT DRIVE
SUITE 200
IRVINE, CA 92612

SAN BERNARDINO
ASSOCIATED GOVERNMENTS
1170 W. 3RD STREET
SAN BERNARDINO, CA 92410

LEGEND:

POTENTIAL STAGING AREA

R/W



I-10 CORRIDOR PROJECT

POTENTIAL STAGING AREA

SCALE: 1"=100'

SA-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION | CONSULTANT FUNCTIONAL SUPERVISOR | CALCULATED-DESIGNED BY | CHECKED BY | REVISED BY | DATE REVISED

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ATTACHMENT Q

Level 3 Risk Register

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LEVEL 3 - RISK REGISTER	Project Name:	I-10 Corridor Project - Alternative 2	DIST- EA	08-0C2500	Project Manager	Raghuram Radhakrishnan

Risk Identification						Risk Assessment												
						% Probability		Cost Impact ($)				Time Impact (days)				Rationale	Risk Response			
Status	ID #	Category	Title	Risk Statement	Current status/assumptions	Low	High	Low	Most likely	High	Probable	Low	Most likely	High	Probable		Strategy	Response Actions	Risk Owner	Updated
Active	1	PM	Project Funding	Potential drop in gas sales tax may affect availability of Measure I funds.	Project is to be implemented as one contract.	10	20	$ 100,000	$ 250,000	$ 200,000	$ 28,000	0	2	4	0	Cost is for re-packaging only.	Accept	Develop a contingency plan, implementing the project in a phased approach to meet available fund.	SANBAG	4/2/2015
Active	2	PM	Bid Prices	Depending on the market conditions, bids may come in higher than expected.	Project cost estimate is lean taking into account historical data during economic downturn and economy of scales.	20	40	$ 20,000,000	$ 50,000,000	$ 100,000,000	$ 17,000,000	0	0	0	0		Mitigate	Monitor market and adjust unit prices and add contingency in the cost estimate.	SANBAG	4/2/2015
Active	3	PM	Litigation	Legal action brought by 3rd parties could delay the D-B procurement.	ACEC has a pending lawsuit on D-B language in the SB A140.	10	20	$ 1,000,000	$ 1,500,000	$ 2,000,000	$ 225,000	3	6	12	1		Accept		SANBAG	4/2/2015
Active	4	Environmental	Supplemental EIR	A design change resulting from public/agency comments that is outside of the parameters contemplated in the DEIR/EIS may trigger a supplemental DEIR/EIS, causing in a delay or added cost.		10	30	$ 100,000	$ 200,000	$ 400,000	$ 47,000	1	3	6	1		Mitigate	Address public/agency concerns and monitor design changes against ED to avoid re-evaluation.	SANBAG	4/2/2015
Active	5	Design	Mitigation Requirements	Additional mitigation requirements through the permit process could increase the cost of the project.	Warm Creek, Santa Ana River	10	30	$ 800,000	$ 1,000,000	$ 1,500,000	$ 220,000	1	3	4	1		Avoid	Advance the design and attain permit during D-B RFP.	D-B	4/2/2015
Active	6	Design	Design Exceptions	Due to the large number of design exceptions, approval process may require additional review time.		20	30	$ 50,000	$ 75,000	$ 100,000	$ 19,000	1	2	3	1		Avoid	Coordinate and obtain concurrence from District 8 and HQ prior to DPR.	D-B	4/2/2015
Active	7	Design	Structures Design	Due to grade differential in roadbeds, any change in the project alignment (CL shift) could affect the structures design, potentially resulting in additional bridge reconstruction and cost.	Several UC bridges require replacement of the middle portion of the bridge due to CL shift. However, some are retained if there is no CL shift.	10	50	$ 1,000,000	$ 2,000,000	$ 3,000,000	$ 600,000	1	2	6	1		Accept		D-B	4/2/2015
Active	8	Design	SBFCD Approval	Channel reconstruction requiring SBFCD approval may require additional time and coordination, resulting in a delay.		10	30	$ 100,000	$ 200,000	$ 300,000	$ 40,000	2	4	6	1		Mitigate	Advance the design and attain approval during D-B RFP.	D-B	4/2/2015
Active	9	Design	Detours	Coordination with local cities for detour routes and cooperative agreements may take longer than expected.		30	60	$ 100,000	$ 200,000	$ 300,000	$ 90,000	2	4	6	2		Mitigate	Advance the TMP design and attain approval during D-B RFP.	D-B	4/2/2015
Active	10	Design	Utility Relocations	Discovery of unknown, mis-identified, or new utilities during the final design or construction could impact the schedule.		20	50	$ 3,000,000	$ 5,000,000	$ 10,000,000	$ 2,100,000	3	6	12	2		Mitigate	Advance the design and attain approval during D-B RFP.	D-B	4/2/2015
Active	11	Design	Longitudinal Encroachment	Approval for longitudinal encroachment may take longer than expected.		10	30	$ 50,000	$ 100,000	$ 200,000	$ 23,000	1	2	3	0		Mitigate	Advance the design and attain approval during D-B RFP.	D-B	4/2/2015
Active	12	Design	New Development	New construction/development on or adjacent to the project area could require additional design considerations and potentially, environmental re-evaluation during design or construction.		10	40	$ 200,000	$ 500,000	$ 800,000	$ 125,000	2	4	6	1		Accept		D-B	4/2/2015
Active	13	R/W	Delay of R/W Acquisition	R/W acquisition could delay start of construction by up to one year, increasing construction costs and extend the time for COS.	No full acquisition	10	30	$ 500,000	$ 750,000	$ 1,000,000	$ 150,000	3	6	9	1		Mitigate	Re-sequence the work or create work-around.	D-B	4/2/2015
Active	14	R/W	Additional R/W or TCE	Due to the complex nature of the staging, additional R/W or temporary construction easements may be required to complete the work (e.g. drainage, retaining walls, utilities) as contemplated, resulting in additional time and cost to the project.		10	30	$ 500,000	$ 750,000	$ 1,000,000	$ 150,000	2	6	9	1		Mitigate	Re-sequence the work or create work-around.	D-B	4/2/2015
Active	15	R/W	ADA Compliance	Meeting ADA requirements may require additional right of way at intersections.		20	30	$ 300,000	$ 500,000	$ 750,000	$ 129,000	2	4	6	1		Mitigate	Advance design during D-B RFP.	D-B	4/2/2015
Active	15	Construction	Permit Approval	Long lead time to obtain permits from the U.S. Army Corps could result in a delay.		20	50	$ 100,000	$ 250,000	$ 500,000	$ 99,000	2	4	6	1		Mitigate	Advance design and obtain approval during D-B RFP.	D-B	4/2/2015
Active	16	Construction	Railroad Approval	Railroad construction & maintenance agreement development, review, and approval could take longer than expected.		20	30	$ 100,000	$ 200,000	$ 300,000	$ 50,000	2	4	6	1		Mitigate	Advance design and obtain approval during D-B RFP.	D-B	4/2/2015
Active	17	Construction	Buried Objects	Unanticipated buried man-made objects uncovered during construction require removal and disposal resulting in additional costs.		20	40	$ 200,000	$ 600,000	$ 800,000	$ 160,000	0	2	4	1		Accept		D-B	9/21/2015
Active	18	Construction	Nesting birds	Nesting birds, protected from harassment under the Migratory Bird Treaty Act, may delay construction during the nesting season.	The project has aggressive schedule: 3 structure replacement and 38 structure modification in about 4 years.	0	20	$ 150,000	$ 250,000	$ 300,000	$ 23,000	6	12	18	1		Mitigate	Schedule contract work to avoid the nesting season or remove nesting habitat before starting work.	D-B	4/2/2015

LEVEL 3 - RISK REGISTER	Project Name:	I-10 Corridor Project - Alternative 2	DIST- EA	08-0C2500	Project Manager	Raghuram Radhakrishnan

Risk Assessment

Risk Identification						% Probability		Cost Impact ($)				Time Impact (days)				Rationale	Risk Response			
Status	ID #	Category	Title	Risk Statement	Current status/assumptions	Low	High	Low	Most likely	High	Probable	Low	Most likely	High	Probable		Strategy	Response Actions	Risk Owner	Updated
Active	19	Construction	Unforeseen Cost Escalation	Unforeseen material and/or labor cost escalation (such as oil, steel prices) may result in increased cost to the project.		10	20	$ 5,000,000	$ 7,500,000	$ 10,000,000	$ 1,125,000	0	0	0	0		Accept		D-B	4/2/2015
Active	20	Construction	SCE Tower Relocations	Final design by SCE, cellular site relocation, long lead time for material procurement may result in a delay.		10	30	$ 100,000	$ 200,000	$ 300,000	$ 40,000	1	2	4	0		Mitigate	Advance design during D-B RFP.	D-B	4/2/2015
Active	21	Construction	Temporary Utility Support	Maintaining existing utilities during bridge replacement may require a special-design temporary utility support structure, resulting in added cost.	Critical utility may need to be maintained and cannot be re-routed.	20	50	$ 1,000,000	$ 1,000,000	$ 2,000,000	$ 467,000	1	2	3	1		Accept		D-B	4/2/2015
Active	22	Construction	Material Availability	Due to Buy America Act, some utility work may be delayed due to unavailability of Buy America compliant materials.	Many utility agencies do not require Buy America and do not have materials readily available.	20	40	$ 500,000	$ 1,000,000	$ 2,000,000	$ 350,000	3	8	12	2		Mitigate	Coordinate with utility agencies early.	D-B	4/2/2015
Active	23	Construction	On-Site Hazardous Materials	Hazardous materials (groundwater/soil contamination, ADL, etc.) encountered during construction may require remediation or special handing/disposal which could lead to delay and added cost.	Phase II ISA will be performed prior to construction.	20	50	$ 100,000	$ 800,000	$ 1,000,000	$ 222,000	2	4	6	1		Mitigate	Perform Phase II SA, ADL, LBP, ACM investigations as part of PA/ED to identify & determine extent of hazardous materials and remediation required.	D-B	4/2/2015
Active	24	Construction	Off-Site Hazardous Materials	Acquisition of properties with unidentified hazardous materials (groundwater/soil contamination, LBP, ACM, etc.) could impact the acquisition process and increase the cost to remediate the sites.	Phase II ISA will be performed prior to construction.	20	50	$ 100,000	$ 800,000	$ 1,000,000	$ 222,000	2	4	6	1		Mitigate	Perform Phase II SA, ADL, LBP, ACM investigations as part of PA/ED to identify & determine extent of hazardous materials and remediation required.	D-B	4/2/2015
Active	25	Construction	ADL Variance from DTSC	DTSC no longer grants variance to allow re-use of contaminated soil class Y-1. Disposal at $100/ton could impact	Phase II ISA will be performed prior to construction to determine amount of contaminated soil to be disposed.	50	70	$ 5,000,000	$ 10,000,000	$ 20,000,000	$ 7,000,000	0	0	0	0		Mitigate	Perform Phase II SA, ADL, LBP, ACM investigations as part of PA/ED to identify & determine extent of hazardous materials	D-B	9/1/2015

Prepared by: Patti Tiberi, Project Engineer 12/23/2015
Parsons Date

Concurred by: Chad Costello, Project Manager 12/23/2015
SANBAG Date

LEVEL 3 - RISK REGISTER	Project Name:	I-10 Corridor Project - Alternative 3	DIST- EA	08-0C2500	Project Manager	Raghuram Radhakrishnan

						Risk Assessment											
Risk Identification						% Probability		Cost Impact ($)				Time Impact (days)				Rationale	Risk Response			
Status	ID #	Category	Title	Risk Statement	Current status/assumptions	Low	High	Low	Most likely	High	Probable	Low	Most likely	High	Probable		Strategy	Response Actions	Risk Owner	Updated
Active	1	PM	Project Funding	Potential drop in gas sales tax may affect availability of Measure I funds.	Project is currently planned to be implemented as one contract.	10	30	$ 250,000	$ 250,000	$ 500,000	$ 67,000	2	4	6	1	Cost is for re-packing only	Accept	Develop a contingency plan to implement the project in a phased approach to meet available fund.	SANBAG	4/2/2015
Active	2	PM	Bonding Capacity	Investment-grade toll revenue forecast, high interest rates, and other factors may not meet expectation, potentially affecting the ability to secure TIFIA loan, GARVEE & market bonds.	Is Phase 1 toll revenue forecast optimistic or pessimistic? Does it take into account exempt vehicles? If policy change to HOV 3+ becomes problematic, there would more HOV 2+ free, reducing potential toll revenue.	30	50	$ 250,000	$ 500,000	$ 500,000	$ 167,000	2	2	6	1	Cost is for re-packing only	Accept	Develop a contingency plan, implementing the project in a phased approach to meet available fund.	SANBAG	4/2/2015
Active	3	PM	Bid Prices	Depending on the market conditions, bids may come in higher than expected.	Project cost estimate is lean based on economy of scales and historical data during economic downturn .	20	40	$ 50,000,000	$ 75,000,000	$ 100,000,000	$ 22,500,000	6	10	12	3		Mitigate	Monitor market and adjust unit prices/funding and develop a contingency plan.	SANBAG	4/2/2015
Active	4	PM	Contractor Capacity	Due to the large scale of the project, there may be a lack of capacity in the construction industry, resulting in non-competitiveness and higher bid prices.	Project cost estimate is lean taking into account historical data during economic downturn and economy of scales.	20	50	$ 20,000,000	$ 30,000,000	$ 100,000,000	$ 17,500,000	0	0	0	0		Mitigate	Advise construction industry early allowing time for potential bidders to assemble qualified teams.	SANBAG	4/2/2015
Active	5	PM	Litigation	Legal action brought by 3rd parties could delay the D-B procurement.	ACEC has a pending lawsuit on D-B language in the SB A140.	10	20	$ 1,000,000	$ 1,500,000	$ 2,000,000	$ 225,000	6	10	12	1		Accept	Monitor situation.	SANBAG	4/2/2015
Active	6	Environmental	Public Opposition	Strong public opposition against tolling during public hearing may result in a delay in the FEIR/EIS delivery.	Anti-tolling movement has surfaced.	20	50	$ 500,000	$ 750,000	$ 1,000,000	$ 263,000	4	6	8	2		Mitigate	Strengthen public outreach effort to educate the public of the benefit of the Express Lanes.	SANBAG	4/2/2015
Active	7	Environmental	Supplemental EIR	A design change resulting from public/agency comments that is outside of the parameters contemplated in the DEIR/EIS may trigger a supplemental DEIR/EIS, causing in a delay or added cost.		10	30	$ 200,000	$ 300,000	$ 400,000	$ 60,000	2	4	6	1		Mitigate	Address public/agency concerns diligently and monitor design changes against ED to avoid re-evaluation.	SANBAG	4/2/2015
Active	8	Design	Mitigation Requirements	Additional mitigation requirements through the permit process could increase the cost of the project.	e.g. Montclair Basin #3 & #4, Warm Creek, Santa Ana River	10	30	$ 1,000,000	$ 2,000,000	$ 3,000,000	$ 400,000	1	3	4	1		Avoid	Advance the design and attain permit during D-B RFP.	D-B	4/2/2015
Active	9	Design	New Tolling Policy & Technology	New tolling technology could change current infrastructure/equipment assumptions and could require design changes.	e.g. there may be new technology for occupancy enforcement, rendering CHP areas unnecessary. Continuous toll access, if adopted, would modify I/E design and remove buffer.	20	40	$ 1,000,000	$ 2,000,000	$ 3,000,000	$ 600,000	4	6	10	2		Accept	Monitor industry for new technology and practices.	SANBAG	4/2/2015
Active	10	Design	LA County Improvements	Caltrans District 7 approval for proposed improvements and design exceptions in LA County may require additional coordination.		20	30	$ 100,000	$ 200,000	$ 300,000	$ 50,000	2	4	6	1		Avoid	Coordinate and obtain concurrence from District 7 throughout the PA/ED & design.	D-B	4/2/2015
Active	11	Design	Design Exceptions	Due to the large number of design exceptions, approval process may require additional time.		20	30	$ 100,000	$ 200,000	$ 300,000	$ 50,000	2	4	6	1		Avoid	Coordinate and obtain concurrence from District 8 and HQ prior to DPR.	D-B	4/2/2015
Active	12	Design	Structures Design	Due to grade differential in roadbeds, any change in the project alignment (CL shift) could affect the structures design, potentially resulting in additional bridge reconstruction and cost.	Several UC bridges require replacement of the middle portion of the bridge due to CL shift. However, some are retained if there is no CL shift.	10	50	$ 1,000,000	$ 2,000,000	$ 3,000,000	$ 600,000	2	3	4	1		Accept		D-B	4/2/2015
Active	13	Design	MWD Upper Feeder	Detailed analyses may find construction of freeway facilities adjacent to or on top of the MWD pipeline infeasible or cost prohibitive, requiring investigation of new alternatives.	Assume construction of freeway widening and retaining wall/sound wall on top of pipeline is feasible with concrete encasement around the pipe. Isolation protection structure will be used at San Antonio Wash	20	40	$ 1,000,000	$ 2,000,000	$ 5,000,000	$ 800,000	3	6	12	2		Mitigate	Advance the design and attain approval from MWD during D-B RFP.	D-B	4/2/2015
Active	14	Design	SBFCD Approval	Channel reconstruction requiring SBFCD approval may require additional time and coordination, resulting in a delay.	16 SBFCD facilities needing approval.	10	30	$ 100,000	$ 200,000	$ 300,000	$ 40,000	3	4	6	1		Mitigate	Advance the design and attain approval during D-B RFP.	D-B	4/2/2015
Active	15	Design	Monte Vista Channel	Relocation of Monte Vista Channel requires coordination with City of Montclair, Montclair Shopping Mall, and Condo complex for R/W and TCE - and may affect the design concept.		10	30	$ 100,000	$ 200,000	$ 300,000	$ 40,000	3	4	6	1		Mitigate	Advance the design and attain approval during D-B RFP.	D-B	4/2/2015
Active	16	Design	J Street Drainage	Acceptable solution to address flooding concern on J Street may result in trunk line upgrade, new detention basin, etc.		10	30	$ 100,000	$ 200,000	$ 300,000	$ 40,000	3	4	6	1		Mitigate	Advance the design and attain approval during D-B RFP.	D-B	4/2/2015
Active	17	Design	Weir Structure Protection	Access to the weir structure would be available from the RR side only and may be problematic.		10	30	$ 100,000	$ 200,000	$ 300,000	$ 40,000	1	2	2	0		Mitigate	Advance the design and attain approval during D-B RFP.	D-B	4/2/2015
Active	18	Design	Detours	Coordination with local cities for detour routes and cooperative agreements could require extensive negotiation.		30	60	$ 100,000	$ 200,000	$ 300,000	$ 90,000	4	6	8	3		Mitigate	Advance the TMP design and attain approval during D-B RFP.	D-B	9/23/2015

LEVEL 3 - RISK REGISTER	Project Name:	I-10 Corridor Project - Alternative 3	DIST- EA	08-0C2500	Project Manager	Raghuram Radhakrishnan	

							Risk Assessment												
Risk Identification						% Probability		Cost Impact ($)				Time Impact (days)				Rationale	Risk Response			
Status	ID #	Category	Title	Risk Statement	Current status/assumptions	Low	High	Low	Most likely	High	Probable	Low	Most likely	High	Probable		Strategy	Response Actions	Risk Owner	Updated
Active	19	Design	Utility Relocations	Discovery of unknown, mis-identified, or new utilities during the final design or construction could impact the schedule.		40	70	$ 5,000,000	$ 15,000,000	$ 20,000,000	$ 7,333,000	3	9	12	4		Mitigate	Perform comprehensive utility research during D-B RFP.	D-B	4/2/2015
Active	20	Design	Longitudinal Encroachment	Longitudinal encroachments may be required, requiring Longitudinal Encroachment Committee approval.		20	30	$ 50,000	$ 100,000	$ 200,000	$ 29,000	1	2	3	1		Mitigate	Advance the design in area of longitudinal encroachment during D-B RFP.	D-B	4/2/2015
Active	21	Design	New Development	New construction/development on or adjacent to the project area could require additional design considerations and potentially, environmental re-evaluation during design or construction.		10	40	$ 200,000	$ 500,000	$ 800,000	$ 125,000	2	4	6	1		Accept		D-B	4/2/2015
Active	22	R/W	Delay of R/W Acquisition	Full acquisitions may have to use the condemnation process, which could delay start of construction by up to one year, increasing construction costs and delay schedule. Also, subsurface easement for retaining wall ground anchors or soil nails could delay construction in the trench section.	Full acquisition is anticipated for 22 parcels. Subsurface easement for retaining wall ground anchors or soil nails are anticipated.	30	50	$ 2,000,000	$ 3,000,000	$ 4,000,000	$ 1,200,000	6	10	12	4		Mitigate	Re-sequence the work or create work-around.	D-B	4/2/2015
Active	23	R/W	Additional R/W or TCE	Due to the complex nature of the staging, additional R/W or temporary construction easements may be required to complete the work (e.g. drainage, retaining walls, utilities) as contemplated, resulting in additional time and cost to the project.		40	60	$ 5,000,000	$ 8,000,000	$ 10,000,000	$ 3,833,000	2	4	6	2		Mitigate	Re-sequence the work or create work-around.	D-B	4/2/2015
Active	24	R/W	Business Relocation	Business relocation may take longer than expected.		10	30	$ 1,000,000	$ 1,500,000	$ 2,000,000	$ 300,000	4	8	12	2		Mitigate	Re-sequence the work or create work-around.	D-B	4/2/2015
Active	25	R/W	ADA Compliance	Meeting ADA requirements may require additional right of way at intersections.		20	30	$ 500,000	$ 750,000	$ 1,000,000	$ 188,000	2	4	6	1		Mitigate	Advance design during D-B RFP.	D-B	4/2/2015
Active	26	Construction	Permit Approval	Long lead time to obtain permits from the U.S. Army Corps could result in a delay.		20	50	$ 100,000	$ 250,000	$ 500,000	$ 99,000	2	4	6	1		Mitigate	Coordinate permits during D-B RFP.	D-B	4/2/2015
Active	27	Construction	Railroad Approval	Railroad construction & maintenance agreement development, review, and approval could take longer than expected.	Slover Mountain UPRR replacement may be most challenging.	20	30	$ 100,000	$ 200,000	$ 400,000	$ 58,000	2	4	6	1		Mitigate	Advance design and obtain approval during D-B RFP.	D-B	4/2/2015
Active	28	Construction	Buried Objects	Unanticipated buried man-made objects uncovered during construction require removal and disposal resulting in additional costs.		20	40	$ 200,000	$ 700,000	$ 1,000,000	$ 190,000	0	2	4	1		Accept		D-B	4/2/2015
Active	29	Construction	Nesting birds	Nesting birds, protected from harassment under the Migratory Bird Treaty Act, may delay construction during the nesting season.	The project has aggressive schedule: 12 structure replacement & 55 structure modification in 5 years.	20	50	$ 400,000	$ 400,000	$ 500,000	$ 152,000	6	12	24	5		Avoid	Install net to prevent nesting before construction.	D-B	4/2/2015
Active	30	Construction	Bridge Replacement West End	Replacement of 7 bridges and widening 13 bridges (some with median recon) in west end segment in 3 years is aggressive and may lead to delay.		20	40	$ 1,000,000	$ 4,000,000	$ 7,000,000	$ 1,200,000	12	18	24	5		Mitigate	Provide incentive to contractor for early completion.	D-B	4/2/2015
Active	31	Construction	Trench Section Walls	Replacement of soil nail walls between Mountain Avenue and 6th Street could require additional R/W or TCE and higher cost.		10	40	$ 5,000,000	$ 10,000,000	$ 20,000,000	$ 2,917,000	3	6	12	2		Mitigate	Advance design during D-B RFP.	D-B	4/2/2015
Active	32	Construction	Unforeseen Cost Escalation	Unforeseen material and/or labor cost escalation (such as oil, steel prices) may result in increased cost to the project.	Buy America Act could also affect the ability to attain less expensive sources.	10	20	$ 5,000,000	$ 7,500,000	$ 10,000,000	$ 1,125,000	0	0	0	0		Accept		D-B	4/2/2015
Active	33	Construction	SCE Tower Relocations	Final design by SCE for transmission tower relocations, cellular site relocation, long lead time for material procurement may result in a delay.	A preliminary design has been developed but through coordination with SCE, it appears there could be many uncertainties until the final design.	10	30	$ 100,000	$ 200,000	$ 300,000	$ 40,000	1	2	4	0		Mitigate	Advance design during D-B RFP.	D-B	4/2/2015
Active	34	Construction	Temporary Utility Support	Maintaining existing utilities during bridge replacement may require a special-design temporary utility support structure, resulting in added cost.	Critical utility may need to be maintained and cannot be re-routed.	20	50	$ 2,000,000	$ 4,000,000	$ 5,000,000	$ 1,283,000	1	2	3	1		Accept		D-B	4/2/2015
Active	35	Construction	Utility Delays	Due to large number of utility relocations required, the work may not meet the schedule, resulting in delays to construction.	Utility agencies may have only a few pre-selected contractors that can do the work and there could be multiple facilities by the same owner requiring work.	20	50	$ 500,000	$ 1,500,000	$ 2,000,000	$ 467,000	3	6	12	2		Mitigate	Coordinate with utility agencies early.	D-B	4/2/2015

LEVEL 3 - RISK REGISTER	Project Name:	I-10 Corridor Project - Alternative 3	DIST- EA	08-0C2500	Project Manager	Raghuram Radhakrishnan

Risk Assessment

Risk Identification						% Probability		Cost Impact ($)				Time Impact (days)				Rationale	Risk Response			
Status	ID #	Category	Title	Risk Statement	Current status/assumptions	Low	High	Low	Most likely	High	Probable	Low	Most likely	High	Probable		Strategy	Response Actions	Risk Owner	Updated
Active	36	Construction	Material Availability	Due to Buy America Act, some utility work may be delayed due to unavailability of Buy America compliant materials on-hand.	Many utility agencies do not require Buy America and do not have materials readily available.	20	40	$ 500,000	$ 1,000,000	$ 2,000,000	$ 350,000	3	8	12	2		Mitigate	Coordinate with utility agencies early.	D-B	4/2/2015
Active	37	Construction	On-Site Hazardous Materials	Hazardous materials (groundwater/soil contamination, ADL, etc.) encountered during construction may require remediation or special handing/disposal which could lead to delay and added cost.	Phase II ISA will be performed prior to construction.	20	50	$ 100,000	$ 800,000	$ 1,000,000	$ 222,000	2	4	6	1		Mitigate	Perform Phase II SA, ADL, LBP, ACM investigations as part of PA/ED to identify & determine extent of hazardous materials and remediation required.	D-B	4/2/2015
Active	38	Construction	Off-Site Hazardous Materials	Acquisition of properties with unidentified hazardous materials (groundwater/soil contamination, LBP, ACM, etc.) could impact the acquisition process and increase the cost to remediate the sites.	Phase II ISA will be performed prior to construction.	20	50	$ 100,000	$ 800,000	$ 1,000,000	$ 222,000	2	4	6	1		Mitigate	Perform Phase II SA, ADL, LBP, ACM investigations as part of PA/ED to identify & determine extent of hazardous materials and remediation required.	D-B	4/2/2015
Active	39	Construction	ADL Variance from DTSC	DTSC no longer grants variance to allow re-use of contaminated soil class Y-1. Disposal at $100/ton could impact the cost.	Phase II ISA will be performed prior to construction to determine amount of contaminated soil to be disposed. Monitor Caltrans' appeal for extension of the variance.	50	70	$ 5,000,000	$ 8,000,000	$ 10,000,000	$ 4,600,000	0	0	0	0		Mitigate	Perform Phase II SA, ADL, LBP, ACM investigations as part of PA/ED to identify & determine extent of hazardous materials and remediation required.	D-B	8/6/2015

Prepared by: Patti Tiberi, Project Engineer 12/23/2015
Parsons Date

Concurred by: Chad Costello, Project Manager 12/23/2015
SANBAG Date

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