07 - LA - 91 PM R8.2/R13.8
EA 07-32810K, Project ID: 0716000166
Program Code 20.XX.400.100, PPNO 5051
June 2017

Project Study Report-Project Development Support (PSR-PDS) to Request Approval of a Locally Funded Project to Proceed to Project Approval and Environmental Document Phase

On Route State Route 91

SR-91 between Central Avenue (PM 8.2) and Paramount Boulevard (PM 13.8)

APPROVAL RECOMMENDED:

Lucy Olmos
LOS ANGELES METRO
Accepts Risks Identified in this PSR-PDS and Attached Risk Register

APPROVAL RECOMMENDED:

for *Gary Slater*
DISTRICT DIVISION CHIEF
PLANNING AND LOCAL ASSISTANCE

APPROVAL RECOMMENDED:

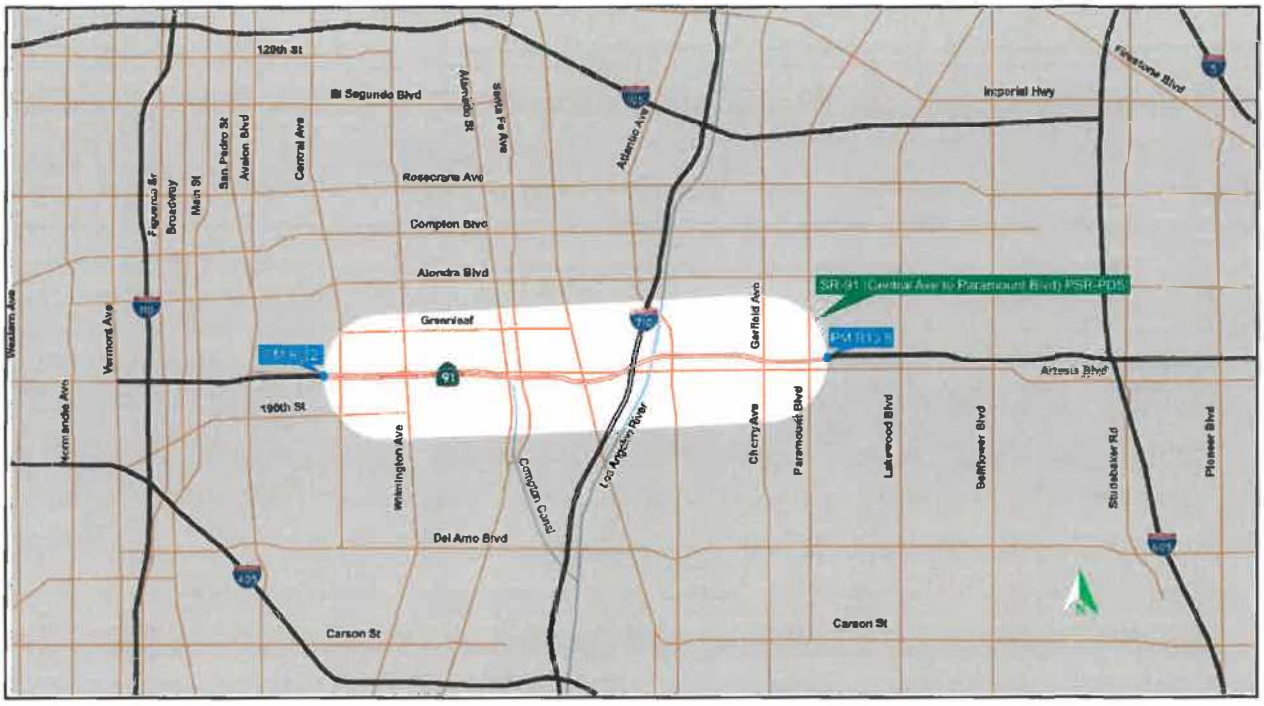
Tin Dinh, P.E.
PROJECT MANAGER

APPROVED:

for *Carrie Bowen*
DISTRICT DIRECTOR

7/25/17
DATE

Vicinity Map



On Route State Route 91

SR-91 between Central Ave (PM 8.2) and Paramount Blvd (PM 13.8)

This project study report-project development support has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

6/23/17

Juan Martin Diaz, P.E.
REGISTERED CIVIL ENGINEER

DATE

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1. INTRODUCTION

The Los Angeles County Metropolitan Transportation Authority (Metro), in cooperation with the Gateway Cities Council of Governments (GCCOG), the California Department of Transportation (Caltrans) District 7, the County of Los Angeles, City of Carson, City of Compton and the City of Long Beach, is proposing to construct improvements along the SR-91 freeway corridor (See Attachment A for the Regional Vicinity Map). SR-91 and I-710 are major facilities within Los Angeles County and carry significant international, interstate, interregional and intraregional travel consisting of people and goods. This area is projected to experience substantial growth for international and domestic goods movement. Reconstruction of the system interchange and widening of the mainline facilities will address existing geometric and operational deficiencies and accommodate projected growth. The project area includes Los Angeles County cities, namely, Carson, Compton and Long Beach.

This project proposes to add one mixed flow lane in each direction on SR-91 from the westerly ramp connections of the Central Avenue interchange (PM R8.2) to the easterly ramp connections of the Paramount Boulevard interchange (PM R13.8). The freeway-to-local street interchanges will be modified to accommodate the mainline SR-91 widening as well as multimodal integration, including provisions for pedestrians (e.g., ADA compliant curb ramps and sidewalks), and designated bikeways on local streets and roads. The freeway-to-freeway (SR-91 / I-710) interchange, also known as "system interchange," will be reconstructed to accommodate both the proposed SR-91 widening as well as the I-710 Corridor Improvements currently under evaluation by a separate project. The proposed connectors at the SR-91/I-710 interchange will be constructed by the I-710 Corridor Project (EA 249900) and are thus not included in the cost estimates for SR-91 in this PSR-PDS.

There are four basic alternatives for the SR-91 widening:

- Alternative 1: No Build,
- Alternative 2: Build (Standard Lanes and Shoulders),
- Alternative 3: Build (Non-Standard Lanes and Shoulders) and
- Alternative 4: (Hybrid with Standard and Non-Standard Lanes and Shoulders including an Eastbound Collector-Distributor Road between Acacia Court and Long Beach Boulevard)

Given that the I-710 Corridor Improvement project has two build alternatives under consideration, namely:

- Alternative 5C: Widens the I-710 mainline to provide 10 mixed flow lanes and
- Alternative 7: Provides eight mixed flow lanes and an exclusive four-lane elevated truckway, or freight corridor on I-710,

Each of the "build" alternatives in this PSR-PDS will include two I-710 scenarios and propose modifications to local and system interchanges.

Below is a summary of the project information:

Table 1 – Project Information Summary

Project Limits	07 - LA - 91 PM R8.2/R13.8						
Number of Alternatives	7 (One No Build, Six Build Alternatives)						
Alternative	Alt 1 No Build	Alt 2 (5C)	Alt 3 (5C)	Alt 4 (5C)	Alt 2 (7)	Alt 3 (7)	Alt 4 (7)
Capital Outlay Support for PA/ED	$0	$45M	$45M	$45M	$45M	$45M	$45M
Capital Outlay Construction Cost (State)	$0	$920-$1,175M	$520-$670M	$615-$790M	$910-$1,165M	$535-$685M	$720-$920M
Capital Outlay Construction Cost (City)	$0	$0	$0	$0	$0	$0	$0
Capital Outlay Right-of-Way Cost (State)	$0	$80-$100M	$20-$25M	$85-$105M	$150-$190M	$55-$70M	$120-$150M
Capital Outlay Right-of-Way Cost (City)	$0	$0	$0	$0	$0	$0	$0
Funding Sources	N/A	Mixed - Local Measure, State and Federal					
Type of Facility	Freeway	10 (W) to 11 (E)-lane Freeway, Freeway Interchange					
Number of Structures	N/A	32	32	32	32	32	32
Anticipated Environmental Determination	N/A	MIT ND/ COMPLEX EA/ FONSI	MIT ND/ COMPLEX EA/ FONSI	MIT ND/ COMPLEX EA/ FONSI	MIT ND/ COMPLEX EA/ FONSI	MIT ND/ COMPLEX EA/ FONSI	MIT ND/ COMPLEX EA/ FONSI
Project Development Category	N/A	4A	4A	4A	4A	4A	4A

Funding is expected to be provided through a combination of funds, not yet secured, but will likely include Measures R and M funds in addition to potential federal, state, and local funding sources further discussed in Section 11. Caltrans will be the lead agency for California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) compliance. Caltrans is anticipated to provide oversight of the Project Approval and Environmental Document (PA/ED) and Plans, Specifications and Estimates (PS&E). Metro is

anticipated to be the sponsoring agency for the development of the PA/ED, PS&E and construction phases.

The remaining support, right-of-way and construction components of the project are preliminary estimates and are not suitable for programming purposes. The Project Report (PR) will serve as the programming document for the remaining support and capital components of the project. For the cost estimate summary, see Attachment D – Cost Estimates. The PR will serve as the approval mechanism for the "preferred" alternative. Project environmental studies are anticipated to begin in 2017 with the PA/ED phase to be completed by 2019. Construction could begin in 2022 with duration dependent on project phasing and funding.

2. BACKGROUND

SR-91 is a major east-west facility in the southerly central portion of Los Angeles County which is used primarily for international, interstate, interregional and intraregional travel carrying people and goods throughout Los Angeles, Orange, Riverside and San Bernardino counties. SR-91 is also used for interregional and intraregional travel and commute travel. It is a major highway for goods movement in California, providing access to the Ports of Los Angeles and Long Beach, and serving the largest center in the Los Angeles basin for warehousing and transloading located at the southwest quadrant of SR-91 and I-710 in the cities of Carson and Compton.

The project area is projected to experience substantial growth for goods movement. Build out of the area, as well as increased shipping traffic from the ports, will generate additional traffic on the freeways and at the SR-91/I-710 system interchange. Widening improvements to the mainline, including local arterial and system interchange improvements, will address existing deficiencies and accommodate projected growth.

SR-91 is part of the National Highway System (NHS) and the Freeway and Expressway (F&E) System. It is a Terminal Access (TA) route. Its functional classification is "other Freeway or Expressway." The segment of SR-91 to the west of I-710 generally has four mixed flow lanes in each direction. To the east of I-710 there are five mixed flow lanes eastbound, four mixed flow lanes westbound and one HOV lane in each direction. Through the interchange area itself are four mixed flow lanes westbound and three mixed flow lanes eastbound. Based on data from Caltrans 2012 Traffic Volumes on California State Highways, the Annual Average Daily Traffic (AADT) volume on SR-91 to the west of the SR-91/I-710 interchange is 236,000 vehicles per day and east of the interchange is approximately 254,000 vehicles per day.

I-710 is functionally classified as an Interstate, State Highway, and an Urban Principal Arterial-P3. It is also included in the Strategic Highway Network (STRAHNET). The I-710 segments within the project area are currently designated as urbanized. It is also a Surface Transportation Assistance Act (STAA) National Network Route for use by oversized trucks.

The segments of I-710 within the project limits generally have five mixed flow lanes in each direction north of SR-91 and four mixed flow lanes in each direction south of SR-91. I-710 has three mixed flow lanes in each direction through the SR-91 interchange.

Based on data from Caltrans 2013 Traffic Volumes on California State Highways, the AADT volume on I-710, south of the SR-91/I-710 interchange, is 251,500 vehicles per day. North of the SR-91 interchange, I-710 carries approximately 298,000 vehicles per day.

Metro and GCCOG have identified the need for operational and capacity improvements at the SR-91/I-710 interchange and approach corridors. The agencies and adjacent cities that are members of the GCCOG Technical Advisory Committee (TAC), and the Corridor Cities Committee (CCC), which is comprised of members representing the respective city councils, and Caltrans, have been involved in the development and approval of the Purpose and Need Statement for the project and are proponents of the project. The various land uses adjacent to SR-91 and I-710 include residential, commercial, industrial, utility corridor, park and open space.

A feasibility study conducted for Metro and the GCCOG for the SR-91/I-605/I-405 Congestion Hot Spots (Feasibility Report) was completed in March 2013. Five study areas were identified in the Feasibility Report to be further evaluated as a PSR-PDS. The I-605/SR-91 PSR-PDS and the I-605/I-5 PSR-PDS were the first two studies completed by Metro as the lead agency and approved by Caltrans in June 2014. The I-605/SR-60 PSR-PDS was also completed in December 2015. The fourth study is the subject project, SR-91/I-710 PSR-PDS. This PSR-PDS is closely coordinated with the proposed improvements in the I-710 Corridor Study currently consisting of Alternatives 5C and 7.

Opportunities to incorporate Multimodal Alternatives (e.g. transit connectivity, etc.), Context Sensitive Solutions (e.g., low impact development solutions, green streets, etc.) and Complete Streets (e.g., bicycle and pedestrian facilities, etc.) concepts are included in this PSR-PDS. In addition, the GCCOG has developed Guiding Principles which help to define a balance between the needs of transportation improvement projects and the goal to minimize right-of-way impacts to be sensitive to community needs. Alternatives were developed with these right-of-way principles in mind. Also, the GCCOG Strategic Transportation Plan Active Transportation Element (Draft, September 2013) provides useful information for consideration of regional and local active transportation needs in regards to Complete Streets.

Caltrans Active Transportation Program (ATP) will complement the GCCOG active transportation guidelines, which includes the Caltrans Complete Streets Policy – Deputy Directive 64-R2 and the Traffic Operations Policy Directive 13-02: Intersection Control Evaluation (ICE) covered in the TEPA.

3. PURPOSE AND NEED

Purpose:

The purpose of the project is to reduce congestion, improve freeway (both mainline and ramps), system interchange and local operations as well as enhance accessibility, safety and multimodal integration, for pedestrian, bicycle, transit and motorist needs, while minimizing adjacent right-of-way, environmental, and economic impacts.

Need:

The SR-91 corridor currently experiences congestion, which is forecast to significantly increase in the future absent of physical and operational improvements to the facility. Congestion is the result of insufficient SR-91 freeway mainline capacity and closely spaced freeway entrance and exit ramps. The existing freeway geometry has many features which do not meet current Caltrans Highway Design Manual (HDM) Standards, such as nonstandard shoulder and lane widths as well as taper and weave lengths. There is also a high concentration of heavy trucks and accidents throughout the corridor.

4. TRAFFIC ENGINEERING PERFORMANCE ASSESSMENT

The project's Traffic Engineering Performance Assessment (TEPA), included in Reference Document No. 1 under separate cover, provides an assessment of readily available traffic information relevant to this project, as well as the proposed traffic analysis methodology that will be performed in the PA/ED phase of project development. The TEPA serves as a reference document for this PSR-PDS and provides existing and forecast traffic conditions in the project area.

The basis for the TEPA background information was the Feasibility Report which included traffic data and analysis for scenarios in Existing Year 2011 and Forecast Year 2035, which was supplemented with current (2016) traffic data. Existing traffic volumes and traffic data were obtained from the following sources:

- Caltrans Performance Measurement System (PeMS) data
- Traffic counts collected at arterial ramp intersections
- Direct SR-91/I-710 connector volumes were obtained from actual traffic counts utilizing videotape
- SR-91/I-710/I-405 Congestion Hot Spots Feasibility Report, dated March 26, 2013

Forecasted traffic volumes and traffic conditions were obtained from the Gateway Cities Strategic Transportation Plan (STP) travel model for future no build and build alternatives. Detailed methodologies and analysis can be found in the TEPA. Key findings and recommendations are summarized herein. The horizon year established for the PSR-PDS is 2045. The scenarios that are evaluated in the SR-91/I-710 TEPA include:

- Existing Baseline Conditions (2016)
- Alternative 1 (No Build) (2045)
- Alternative 2 (2045) – 710 Alternatives 5C and 7
- Alternative 3 (2045) – 710 Alternatives 5C and 7
- Alternative 4 (2045) – 710 Alternatives 5C and 7

Existing Conditions Traffic Analysis

The results of the existing conditions basic freeway segment analysis based on the Highway Capacity Manual (HCM) analysis are shown in Table 2. The results of the freeway merge and

diverge analysis are shown in Table 3. The results of the freeway weaving analysis are shown in Table 4.

Table 2 - Existing Conditions AM/PM Peak Hour Freeway Segment Analysis

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
Eastbound							
Central Ave Off Ramp to HOV Egress/Ingress	4	5,474	23.0	C	4,413	18.5	C
HOV Egress/Ingress to Central Ave On	4	5,435	22.8	C	4,313	18.1	C
Central Ave On Ramp to Wilmington Ave Off Ramp	See Weaving Analysis (1)						
Wilmington Ave Off Ramp to Wilmington Ave On Ramp	4	5,572	23.4	C	4,538	19.0	C
Wilmington Ave On Ramp to Acacia Ct Off Ramp	See Weaving Analysis (2)						
Acacia Ct Off Ramp to Alameda St Off Ramp	4	6,281	26.9	D	5,156	21.6	C
Alameda St Off Ramp to Santa Fe Ave Off Ramp	4	6,000	25.4	C	5,032	21.1	C
Santa Fe Ave Off Ramp to HOV Egress/Ingress	4	5,276	22.1	C	4,884	20.5	C
HOV Egress/Ingress to Alameda St On Ramp	4	5,181	21.7	C	4,866	20.4	C
Alameda St On Ramp to Santa Fe Ave On Ramp	5	5,587	18.7	C	5,923	19.9	C
Santa Fe Ave On Ramp to Long Beach Blvd Off Ramp	See Weaving Analysis (3)						
Long Beach Blvd Off Ramp to Long Beach Blvd On Ramp	5	5,749	19.3	C	6,303	21.1	C
Long Beach Blvd On Ramp to I-710 SB Connector Off Ramp	See Weaving Analysis (4)						
I-710 SB Connector Off Ramp to I-710 NB Connector /Atlantic Ave Off Ramp	5	5,665	19.0	C	6,084	20.4	C
I-710 NB Connector /Atlantic Ave Off Ramp to I-710 NB Connector On Ramp	3	4,018	22.5	C	3,729	20.8	C
I-710 NB Connector On Ramp to I-710 SB Connector On Ramp	4	5,889	24.9	C	5,030	21.1	C
I-710 SB Connector On Ramp to Atlantic Ave On Ramp	5	7,416	25.3	C	6,735	22.7	C
Atlantic Ave On Ramp to HOV Egress/Ingress	5	8,003	27.7	D	7,222	24.5	C
HOV Egress/Ingress to Cherry Ave Off Ramp	5	7,480	25.5	C	7,041	23.8	C
Cherry Ave Off Ramp to Cherry Ave On Ramp	4	6,970	31.1	D	6,622	28.9	D
Cherry Ave On Ramp to Paramount Blvd Off Ramp	See Weaving Analysis (5)						
Paramount Blvd Off Ramp to Paramount Blvd On Ramp	4	7,036	31.5	D	6,919	30.8	D
Westbound							
Paramount Blvd Off Ramp to Paramount Blvd On Ramp	5	7,001	23.7	C	7,667	26.3	D
Paramount Blvd On Ramp to Cherry Ave Off Ramp	5	7,635	26.1	D	8,436	29.7	D
Cherry Ave Off Ramp to HOV Egress/Ingress	5	7,125	24.1	C	7,570	25.9	C
HOV Egress/Ingress to Cherry Ave On Ramp	5	6,859	23.2	C	7,819	26.9	D
Cherry Ave On Ramp to Atlantic Ave Off Ramp	5	7,383	25.1	C	8,411	29.6	D
Atlantic Ave Off Ramp to I-710 NB/SB Off Ramp	5	7,027	23.8	C	7,720	26.5	D
I-710 NB/SB Off Ramp to I-710 NB /Atlantic Ave On Ramp	3	3,319	18.6	C	3,813	21.4	C
I-710 NB /Atlantic Ave On Ramp to I-710 SB On Ramp	4	4,216	17.8	B	4,252	17.9	B
I-710 SB On Ramp to Long Beach Blvd Off Ramp	6	7,074	19.8	C	6,098	17.0	B
Long Beach Blvd Off Ramp to HOV Egress/Ingress	6	6,743	18.8	C	5,651	15.8	B

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
HOV Egress/Ingress to Lane Drop	6	6,733	18.8	C	5,694	15.9	B
Lane Drop to Long Beach Blvd On Ramp	5	6,733	22.6	C	5,694	19.1	C
Long Beach Blvd On Ramp to Santa Fe Ave Off Ramp	See Weaving Analysis (1)						
Santa Fe Off Ramp to HOV Egress/Ingress	4	7,003	31.1	D	5,614	23.6	C
HOV Egress/Ingress to Acacia On Ramp	4	7,193	32.3	D	5,859	24.8	C
Acacia Ct On Ramp to Wilmington Ave Off Ramp	See Weaving Analysis (2)						
Wilmington Ave Off Ramp to Wilmington Ave On Ramp	4	6,994	31.0	D	5,940	25.2	C
Wilmington Ave On Ramp to Central Ave Off Ramp	See Weaving Analysis (3)						
Central Ave Off Ramp to HOV End	4	6,521	28.2	D	5,636	23.7	C
HOV End to Central Ave On Ramp	5	7,954	27.3	D	6,108	20.5	C

Table 3 - Existing Conditions AM/PM Freeway Merge and Diverge Analysis

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
Eastbound							
Central Ave Off Ramp	Diverge	Lane Deletion					
Central Ave On Ramp	Merge	See Weaving Analysis (1)					
Wilmington Ave Off Ramp	Diverge	See Weaving Analysis (1)					
Wilmington Ave On Ramp	Merge	See Weaving Analysis (2)					
Acacia Ct Off Ramp	Diverge	See Weaving Analysis (2)					
Alameda St Off Ramp	Diverge	281	17.9	B	124	12.5	B
Santa Fe Ave Off Ramp	Diverge	724	31.3	D	148	24.3	C
Alameda St On Ramp	Merge	Lane Addition					
Santa Fe Ave On Ramp	Merge	See Weaving Analysis (3)					
Long Beach Blvd Off Ramp	Diverge	See Weaving Analysis (3)					
Long Beach Blvd On Ramp	Merge	See Weaving Analysis (4)					
I-710 SB Connector Off Ramp	Diverge	See Weaving Analysis (4)					
I-710 NB Connector /Atlantic Ave Off Ramp	Diverge	Lane Deletion					
I-710 NB Connector On Ramp	Merge	Lane Addition					
I-710 SB Connector On Ramp	Merge	Lane Addition					
Atlantic Avenue On Ramp	Merge	587	24.4	C	487	22.3	C
Cherry Ave Off Ramp	Diverge	Lane Deletion					
Cherry Ave On Ramp	Merge	See Weaving Analysis (5)					
Paramount Blvd Off Ramp	Diverge	See Weaving Analysis (5)					
Paramount Blvd On Ramp	Merge	Lane Addition					
Westbound							
Paramount Blvd Off Ramp	Diverge	246	28.1	D	401	31.6	D
Paramount Blvd On Ramp	Merge	634	23.9	C	769	26.5	C
Cherry Ave Off Ramp	Diverge	510	30.8	D	866	35.2	E

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
Cherry Ave On Ramp	Merge	524	22.7	C	592	25.3	C
Atlantic Ave Off Ramp	Diverge	356	11.1	B	691	14.2	B
I-710 NB/SB Off Ramp	Diverge	Lane Deletion					
I-710 NB /Atlantic Ave On Ramp	Merge	Lane Addition					
I-710 SB On Ramp	Merge	Lane Addition					
Long Beach Blvd Off Ramp	Diverge	331	27.8	C	447	26.5	C
Long Beach Blvd On Ramp	Merge	See Weaving Analysis (1)					
Santa Fe Ave Off Ramp	Diverge	See Weaving Analysis (1)					
Acacia Ct On Ramp	Merge	See Weaving Analysis (2)					
Wilmington Ave Off Ramp	Diverge	See Weaving Analysis (2)					
Wilmington Ave On Ramp	Merge	See Weaving Analysis (3)					
Central Ave Off Ramp	Diverge	See Weaving Analysis (3)					
Central Ave On Ramp	Merge	Lane Addition					

Table 4 - Existing Conditions AM/PM Freeway Weaving Analysis

	Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
			Volume	Density	LOS	Volume	Density	LOS
Eastbound								
1	Central Ave On Ramp to Wilmington Ave Off Ramp	5	6,149	27.8	C	4,864	20.2	C
2	Wilmington Ave On Ramp to Acacia Ct Off Ramp	5	6,403	27.9	C	5,229	21.6	C
3	Santa Fe Ave On Ramp to Long Beach Blvd Off Ramp	6	5,983	20.3	C	6,605	24.0	C
4	Long Beach Blvd On Ramp to I-710 SB Connector Off Ramp	6	6,150	21.8	C	6,677	24.1	C
5	Cherry Ave On Ramp to Paramount Blvd Off Ramp	5	7,769	38.3	**E**	7,391	34.3	D
Westbound								
1	Long Beach Blvd On Ramp to Santa Fe Ave Off Ramp	6	7,329	27.5	C	6,059	20.9	C
2	Acacia Ct On Ramp to Wilmington Ave Off Ramp	5	7,691	35.3	**E**	6,639	30.9	D
3	Wilmington Ave On Ramp to Central Ave Off Ramp	5	7,408	34.2	D	6,394	28.5	D

The results of the existing conditions freeway HOV analysis are shown in Table 11 of the TEPA. According to Table 11 there are no segments having volumes exceeding 1,650 vehicles per hour per lane (LOS C threshold, also considered capacity of HOV segment).

The results of the existing condition intersection analysis are shown in Table 12 of the TEPA. These intersections include freeway ramp termini, along with other nearby locations that may be affected by changes to the freeway and freeway access. According to Table 12, two locations within the vicinity of the mainline, are operating at LOS E or worse in the AM and/or PM peak hours. They include:

- Acacia Court and Artesia Boulevard (AM and PM peak hours, LOS F/F)
- Alondra Boulevard and Garfield Avenue (AM peak hour, LOS E)

Alternative 1 (No Build) Traffic Analysis

Alternative 1 includes two variations in addition to a traditional no build alternative which does not improve SR-91 and I-710. The two additional variations include no build alternatives for I-710 Alternative 5C (10 mixed flow lanes) and I-710 Alternative 7 (8 mixed flow lanes plus a four-lane elevated truckway or freight corridor). Consequently, the three no build alternatives include:

- Alternative 1 (No Build) – no SR-91 and I-710 improvements
- Alternative 1 (No Build - 5C) – only I-710 Alternative 5C improvements
- Alternative 1 (No Build - 7) – only I-710 Alternative 7 improvements

No Build

Operational deficiencies for Future Year 2045 No Build (Alternative 1) conditions were analyzed and completed for the freeway mainline, freeway ramps, freeway weaving, ramp termini and intersections. The results of the basic freeway segment analysis for No Build conditions are shown in Table 5. The results of the future 2045 No Build conditions freeway merge and diverge analysis are shown in Table 6. The results of the 2045 No Build freeway weaving analysis are shown in Table 7.

Table 5 - 2045 Alternative 1 (No Build) Conditions Freeway Segment Analysis

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
Eastbound							
Central Ave Off Ramp to HOV Egress/Ingress	4	5,983	25.9	C	4,528	20.1	C
HOV Egress/Ingress to Central Ave On	4	5,983	25.9	C	4,528	20.1	C
Central Ave On Ramp to Wilmington Ave Off Ramp	See Weaving Analysis (1)						
Wilmington Ave Off Ramp to Wilmington Ave On Ramp	4	6,227	27.2	D	4,708	20.8	C
Wilmington Ave On Ramp to Acacia Ct Off Ramp	See Weaving Analysis (2)						
Acacia Ct Off Ramp to Alameda St Off Ramp	4	6,948	31.6	D	5,556	24.5	C
Alameda St Off Ramp to Santa Fe Ave Off Ramp	4	6,653	29.7	D	5,291	23.2	C
Santa Fe Ave Off Ramp to HOV Egress/Ingress	4	5,928	25.7	C	5,133	22.5	C
HOV Egress/Ingress to Alameda St On Ramp	4	5,928	25.7	C	5,133	22.5	C
Alameda St On Ramp to Santa Fe Ave On Ramp	5	6,349	21.8	C	6,256	21.9	C
Santa Fe Ave On Ramp to Long Beach Blvd Off Ramp	See Weaving Analysis (3)						
Long Beach Blvd Off Ramp to Long Beach Blvd On Ramp	5	6,459	22.3	C	6,649	23.2	C
Long Beach Blvd On Ramp to I-710 SB Connector Off Ramp	See Weaving Analysis (4)						
I-710 SB Connector Off Ramp to I-710 NB Connector /Atlantic Ave Off Ramp	5	6,433	22.1	C	6,646	23.1	C
I-710 NB Connector /Atlantic Ave Off Ramp to I-710 NB Connector On Ramp	3	4,545	26.6	D	4,087	23.7	C
I-710 NB Connector On Ramp to I-710 SB Connector On Ramp	4	6,566	29.8	D	5,438	24.5	C
I-710 SB Connector On Ramp to Atlantic Ave On Ramp	5	8,225	29.8	D	7,290	26.2	D
Atlantic Ave On Ramp to HOV Egress/Ingress	5	8,821	32.8	D	7,801	28.3	D
HOV Egress/Ingress to Cherry Ave Off Ramp	5	8,821	32.8	D	7,801	28.3	D
Cherry Ave Off Ramp to Cherry Ave On Ramp	4	7,914	40.3	E	6,799	32.3	D
Cherry Ave On Ramp to Paramount Blvd Off Ramp	See Weaving Analysis (5)						
Paramount Blvd Off Ramp to Paramount Blvd On Ramp	4	7,965	40.4	E	7,073	34.2	D

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
Westbound							
Paramount Blvd Off Ramp to Paramount Blvd On Ramp	5	6,947	23.6	C	7,542	26.2	D
Paramount Blvd On Ramp to Cherry Ave Off Ramp	5	7,601	26.0	D	8,326	29.8	D
Cherry Ave Off Ramp to HOV Egress/Ingress	5	7,573	25.9	C	8,201	29.1	D
HOV Egress/Ingress to Cherry Ave On Ramp	5	7,573	25.9	C	8,201	29.1	D
Cherry Ave On Ramp to Atlantic Ave Off Ramp	5	8,095	28.1	D	8,788	31.9	D
Atlantic Ave Off Ramp to I-710 NB/SB Off Ramp	5	7,735	26.6	D	8,085	28.6	D
I-710 NB/SB Off Ramp to I-710 NB /Atlantic Ave On Ramp	3	3,937	22.1	C	4,012	22.7	C
I-710 NB /Atlantic Ave On Ramp to I-710 SB On Ramp	4	4,885	20.6	C	4,783	20.2	C
I-710 SB On Ramp to Long Beach Blvd Off Ramp	6	7,889	22.1	C	6,772	19.2	C
Long Beach Blvd Off Ramp to HOV Egress/Ingress	6	7,534	21.2	C	6,319	17.9	B
HOV Egress/Ingress to Lane Drop	6	7,534	21.2	C	6,319	17.9	B
Lane Drop to Long Beach Blvd On Ramp	5	7,534	25.7	C	6,319	21.5	C
Long Beach Blvd On Ramp to Santa Fe Ave Off Ramp	See Weaving Analysis (1)						
Santa Fe Off Ramp to HOV Egress/Ingress	4	7,446	34.4	D	5,918	25.5	C
HOV Egress/Ingress to Acacia On Ramp	4	7,446	34.4	D	5,918	25.5	C
Acacia Ct On Ramp to Wilmington Ave Off Ramp	See Weaving Analysis (2)						
Wilmington Ave Off Ramp to Wilmington Ave On Ramp	4	7,239	33.2	D	5,960	25.7	C
Wilmington Ave On Ramp to Central Ave Off Ramp	See Weaving Analysis (3)						
Central Ave Off Ramp to HOV End	4	6,772	30.2	D	5,606	23.9	C
HOV End to Central Ave On Ramp	5	8,141	28.7	D	7,038	24.1	C

Table 6 - 2045 Alternative 1 (No Build) Conditions Freeway Merge and Diverge Analysis

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
Eastbound							
Central Ave Off Ramp	Diverge	Lane Deletion					
Central Ave On Ramp	Merge	See Weaving Analysis (1)					
Wilmington Ave Off Ramp	Diverge	See Weaving Analysis (1)					
Wilmington Ave On Ramp	Merge	See Weaving Analysis (2)					
Acacia Ct Off Ramp	Diverge	See Weaving Analysis (2)					
Alameda St Off Ramp	Diverge	284	21.2	C	163	15.4	B
Santa Fe Ave Off Ramp	Diverge	724	34.5	D	158	26.3	C
Alameda St On Ramp	Merge	Lane Addition					
Santa Fe Ave On Ramp	Merge	See Weaving Analysis (3)					
Long Beach Blvd Off Ramp	Diverge	See Weaving Analysis (3)					
Long Beach Blvd On Ramp	Merge	See Weaving Analysis (4)					
I-710 SB Connector Off Ramp	Diverge	See Weaving Analysis (4)					
I-710 NB Connector /Atlantic Ave Off Ramp	Diverge	Lane Deletion					
I-710 NB Connector On Ramp	Merge	Lane Addition					
I-710 SB Connector On Ramp	Merge	Lane Addition					
Atlantic Avenue On Ramp	Merge	596	27.5	C	511	24.4	C
Cherry Ave Off Ramp	Diverge	Lane Deletion					
Cherry Ave On Ramp	Merge	See Weaving Analysis (5)					
Paramount Blvd Off Ramp	Diverge	See Weaving Analysis (5)					
Paramount Blvd On Ramp	Merge	Lane Addition					
Westbound							
Paramount Blvd Off Ramp	Diverge	269	28.2	D	407	31.6	D
Paramount Blvd On Ramp	Merge	654	24.0	C	783	26.6	C
Cherry Ave Off Ramp	Diverge	514	30.6	D	871	35.2	E
Cherry Ave On Ramp	Merge	523	24.4	C	587	27.0	C
Atlantic Ave Off Ramp	Diverge	360	13.2	B	703	15.6	B
I-710 NB/SB Off Ramp	Diverge	Lane Deletion					
I-710 NB /Atlantic Ave On Ramp	Merge	Lane Addition					
I-710 SB On Ramp	Merge	Lane Addition					
Long Beach Blvd Off Ramp	Diverge	355	30.8	D	453	27.8	C
Long Beach Blvd On Ramp	Merge	See Weaving Analysis (1)					
Santa Fe Ave Off Ramp	Diverge	See Weaving Analysis (1)					
Acacia Ct On Ramp	Merge	See Weaving Analysis (2)					
Wilmington Ave Off Ramp	Diverge	See Weaving Analysis (2)					
Wilmington Ave On Ramp	Merge	See Weaving Analysis (3)					
Central Ave Off Ramp	Diverge	See Weaving Analysis (3)					
Central Ave On Ramp	Merge	Lane Addition					

Table 7 - 2045 Alternative 1 (No Build) Conditions Freeway Weaving Analysis

	Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
			Volume	Density	LOS	Volume	Density	LOS
Eastbound								
1	Central Ave On Ramp to Wilmington Ave Off Ramp	5	6,809	33.1	D	4,985	21.9	C
2	Wilmington Ave On Ramp to Acacia Ct Off Ramp	5	7,078	31.7	D	5,633	25.3	C
3	Santa Fe Ave On Ramp to Long Beach Blvd Off Ramp	6	6,791	24.6	C	6,952	26.3	C
4	Long Beach Blvd On Ramp to I-710 SB Connector Off Ramp	6	6,778	25.1	C	6,689	25.4	C
5	Cherry Ave On Ramp to Paramount Blvd Off Ramp	5	8,716	44.9	**E**	7,572	37.1	**E**
Westbound								
1	Long Beach Blvd On Ramp to Santa Fe Ave Off Ramp	6	8,174	31.7	D	6,720	24.2	C
2	Acacia Ct On Ramp to Wilmington Ave Off Ramp	5	7,949	37.2	**E**	6,686	31.4	D
3	Wilmington Ave On Ramp to Central Ave Off Ramp	5	7,676	34.5	D	6,410	28.7	D

The results of the 2045 No Build freeway HOV analysis are shown in Table 16 of the TEPA. As shown, the following segments are represented as having volumes exceeding 1,650 vehicles per hour per lane (LOS C threshold, also considered capacity of HOV segment):

- Long Beach Blvd EB On Ramp to I-710 SB Connector Off Ramp (PM Peak)
- Cherry Avenue EB Off Ramp to Cherry Avenue EB On Ramp (PM Peak)
- Cherry Avenue EB On Ramp to Paramount Blvd EB Off Ramp (PM Peak)
- Paramount Blvd EB Off Ramp to Paramount Blvd EB On Ramp (PM Peak)
- Paramount Blvd WB Off Ramp to Paramount Blvd WB On Ramp (PM Peak)
- Paramount Blvd WB On Ramp to Cherry Avenue WB Off Ramp (PM Peak)

The results of the 2045 No Build intersection analysis are shown in Table 17 of the TEPA. For 2045 No Build conditions, the following intersection locations are projected to operate at LOS E or F in the AM and/or PM peak hours, all other locations are projected to operate at LOS D or better:

- Acacia Court and Artesia Blvd (AM and PM peak hours, LOS F/F)
- Del Amo Blvd and Cherry Avenue (AM and PM peak hours, LOS F/E)
- Rosecrans Avenue and Garfield Avenue (AM and PM peak hours, LOS F/E)
- Del Amo Blvd and Paramount Blvd (AM and PM peak hours, LOS E/E)
- Rosecrans Avenue and Paramount Blvd (AM and PM peak hours, LOS F/F)
- Rosecrans Avenue and Long Beach Blvd (AM and PM peak hours, LOS E/E)
- Del Amo Blvd and Atlantic Avenue (PM peak hour, LOS E)
- Artesia Blvd and Cherry Avenue (PM peak hour, LOS E)
- Artesia Blvd and Paramount Blvd (PM peak hour, LOS E)

- Paramount Blvd and Alondra Blvd (AM and PM peak hours, LOS F/F)
- Wilmington Avenue and Rosecrans Avenue (AM and PM peak hours, LOS F/F)
- Alondra Blvd and Garfield Avenue (AM and PM peak hours, LOS F/E)

No Build - 5C

Operational deficiencies for Future Year 2045 No Build - 5C (Alternative 1) conditions were analyzed and completed for the freeway mainline, freeway ramps, freeway weaving, ramp termini and intersections. The results of the basic freeway segment analysis for No Build - 5C conditions are shown in Table 8. The results of the future 2045 No Build -5C conditions freeway merge and diverge analysis are shown in Table 9. The results of the 2045 No Build - 5C freeway weaving analysis are shown in Table 10. In general, traffic resulting from the construction of I-710 Alternative 5C will result in deteriorated operations on SR-91.

Table 8 - 2045 Alternative 1 (No Build – 5C) Conditions Freeway Segment Analysis

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
Eastbound							
Central Ave Off Ramp to HOV Egress/Ingress	4	6,988	32.1	D	5,627	25.0	C
HOV Egress/Ingress to Central Ave On	4	6,988	32.1	D	5,627	25.0	C
Central Ave On Ramp to Wilmington Ave Off Ramp	See Weaving Analysis (1)						
Wilmington Ave Off Ramp to Wilmington Ave On Ramp	4	7,391	34.8	D	6,258	28.3	D
Wilmington Ave On Ramp to Acacia Ct Off Ramp	See Weaving Analysis (2)						
Acacia Ct Off Ramp to Alameda St Off Ramp	4	8,152	41.6	**E**	6,968	32.6	D
Alameda St Off Ramp to Santa Fe Ave Off Ramp	4	7,856	38.7	**E**	6,782	31.2	D
Santa Fe Ave Off Ramp to HOV Egress/Ingress	4	7,053	31.9	D	6,609	28.3	D
HOV Egress/Ingress to Alameda St On Ramp	4	7,053	31.9	D	6,609	28.3	D
Alameda St On Ramp to Santa Fe Ave On Ramp	5	7,321	25.3	C	6,862	22.8	C
Santa Fe Ave On Ramp to Long Beach Blvd Off Ramp	See Weaving Analysis (3)						
Long Beach Blvd Off Ramp to Long Beach Blvd On Ramp	5	7,436	25.8	C	7,303	24.6	C
Long Beach Blvd On Ramp to I-710 SB Connector Off Ramp	See Weaving Analysis (4)						
I-710 SB Connector Off Ramp to I-710 NB Connector /Atlantic Ave Off Ramp	5	7,107	24.7	C	7,153	24.9	C
I-710 NB Connector /Atlantic Ave Off Ramp to I-710 NB Connector On Ramp	3	4,899	29.5	D	3,626	20.8	C
I-710 NB Connector On Ramp to I-710 SB Connector On Ramp	4	7,436	36.3	**E**	5,601	25.1	C
I-710 SB Connector On Ramp to Atlantic Ave On Ramp	5	8,943	34.0	D	7,148	25.4	C
Atlantic Ave On Ramp to HOV Egress/Ingress	5	9,595	38.1	**E**	7,571	27.2	D

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
HOV Egress/Ingress to Cherry Ave Off Ramp	5	9,595	38.1	**E**	7,571	27.2	D
Cherry Ave Off Ramp to Cherry Ave On Ramp	4	8,974	54.5	**F**	7,056	34.3	D
Cherry Ave On Ramp to Paramount Blvd Off Ramp	See Weaving Analysis (5)						
Paramount Blvd Off Ramp to Paramount Blvd On Ramp	4	8,906	53.3	**F**	7,166	34.9	D
Westbound							
Paramount Blvd Off Ramp to Paramount Blvd On Ramp	5	7,693	26.5	D	7,790	27.3	D
Paramount Blvd On Ramp to Cherry Ave Off Ramp	5	8,454	30.0	D	8,713	31.5	D
Cherry Ave Off Ramp to HOV Egress/Ingress	5	8,667	31.1	D	8,854	32.3	D
HOV Egress/Ingress to Cherry Ave On Ramp	5	8,667	31.1	D	8,854	32.3	D
Cherry Ave On Ramp to Atlantic Ave Off Ramp	5	9,470	35.4	**E**	9,797	37.9	**E**
Atlantic Ave Off Ramp to I-710 NB/SB Off Ramp	5	9,105	33.2	D	9,062	33.5	D
I-710 NB/SB Off Ramp to I-710 NB /Atlantic Ave On Ramp	3	4,783	27.6	D	5,044	29.6	D
I-710 NB /Atlantic Ave On Ramp to I-710 SB On Ramp	4	5,773	24.3	C	5,537	23.3	C
I-710 SB On Ramp to Long Beach Blvd Off Ramp	6	9,014	25.5	C	7,739	21.7	C
Long Beach Blvd Off Ramp to HOV Egress/Ingress	6	8,526	23.9	C	7,199	20.2	C
HOV Egress/Ingress to Lane Drop	6	8,526	23.9	C	7,199	20.2	C
Lane Drop to Long Beach Blvd On Ramp	5	8,526	30.0	D	7,199	24.4	C
Long Beach Blvd On Ramp to Santa Fe Ave Off Ramp	See Weaving Analysis (1)						
Santa Fe Off Ramp to HOV Egress/Ingress	4	8,642	45.2	**F**	7,207	32.4	D
HOV Egress/Ingress to Acacia On Ramp	4	8,642	45.2	**F**	7,207	32.4	D
Acacia Ct On Ramp to Wilmington Ave Off Ramp	See Weaving Analysis (2)						
Wilmington Ave Off Ramp to Wilmington Ave On Ramp	4	8,520	44.3	**E**	7,234	33.1	D
Wilmington Ave On Ramp to Central Ave Off Ramp	See Weaving Analysis (3)						
Central Ave Off Ramp to HOV End	4	7,828	37.8	**E**	6,668	29.4	D
HOV End to Central Ave On Ramp	5	7,828	27.1	D	6,668	22.6	C

Table 9 - 2045 Alternative 1 (No Build – 5C) Freeway Merge and Diverge Analysis

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
Eastbound							
Central Ave Off Ramp	Diverge	Lane Deletion					
Central Ave On Ramp	Merge	See Weaving Analysis (1)					
Wilmington Ave Off Ramp	Diverge	See Weaving Analysis (1)					
Wilmington Ave On Ramp	Merge	See Weaving Analysis (2)					
Acacia Ct Off Ramp	Diverge	See Weaving Analysis (2)					
Alameda St Off Ramp	Diverge	297	26.3	C	128	21.1	C
Santa Fe Ave Off Ramp	Diverge	803	39.9	**E**	173	32.5	D
Alameda St On Ramp	Merge	Lane Addition					
Santa Fe Ave On Ramp	Merge	See Weaving Analysis (3)					
Long Beach Blvd Off Ramp	Diverge	See Weaving Analysis (3)					
Long Beach Blvd On Ramp	Merge	See Weaving Analysis (4)					
I-710 SB Connector Off Ramp	Diverge	See Weaving Analysis (4)					
I-710 NB Connector /Atlantic Ave Off Ramp	Diverge	Lane Deletion					
I-710 NB Connector On Ramp	Merge	Lane Addition					
I-710 SB Connector On Ramp	Merge	Lane Addition					
Atlantic Avenue On Ramp	Merge	652	30.6	D	423	23.2	C
Cherry Ave Off Ramp	Diverge	Lane Deletion					
Cherry Ave On Ramp	Merge	See Weaving Analysis (5)					
Paramount Blvd Off Ramp	Diverge	See Weaving Analysis (5)					
Paramount Blvd On Ramp	Merge	Lane Addition					
Westbound							
Paramount Blvd Off Ramp	Diverge	105	29.3	D	215	30.8	D
Paramount Blvd On Ramp	Merge	760	26.7	C	923	28.2	D
Cherry Ave Off Ramp	Diverge	387	32.9	D	717	35.6	**E**
Cherry Ave On Ramp	Merge	803	30.0	D	942	31.9	D
Atlantic Ave Off Ramp	Diverge	365	17.4	B	734	18.5	B
I-710 NB/SB Off Ramp	Diverge	Lane Deletion					
I-710 NB /Atlantic Ave On Ramp	Merge	Lane Addition					
I-710 SB On Ramp	Merge	Lane Addition					
Long Beach Blvd Off Ramp	Diverge	489	35.0	**E**	540	31.2	D
Long Beach Blvd On Ramp	Merge	See Weaving Analysis (1)					
Santa Fe Ave Off Ramp	Diverge	See Weaving Analysis (1)					
Acacia Ct On Ramp	Merge	See Weaving Analysis (2)					
Wilmington Ave Off Ramp	Diverge	See Weaving Analysis (2)					
Wilmington Ave On Ramp	Merge	See Weaving Analysis (3)					
Central Ave Off Ramp	Diverge	See Weaving Analysis (3)					
Central Ave On Ramp	Merge	Lane Addition					

Table 10 - 2045 Alternative 1 (No Build – 5C) Conditions Freeway Weaving Analysis

	Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
			Volume	Density	LOS	Volume	Density	LOS
Eastbound								
1	Central Ave On Ramp to Wilmington Ave Off Ramp	5	7,740	38.8	**E**	6,446	30.5	D
2	Wilmington Ave On Ramp to Acacia Ct Off Ramp	5	8,275	38.1	**E**	7,006	31.1	D
3	Santa Fe Ave On Ramp to Long Beach Blvd Off Ramp	6	7,626	26.4	C	7,946	33.1	D
4	Long Beach Blvd On Ramp to I-710 SB Connector Off Ramp	6	7,841	30.3	D	7,870	30.9	D
5	Cherry Ave On Ramp to Paramount Blvd Off Ramp	5	9,735	-	**F**	7,745	37.9	**E**
Westbound								
1	Long Beach Blvd On Ramp to Santa Fe Ave Off Ramp	6	9,488	37.0	**E**	7,971	28.2	D
2	Acacia Ct On Ramp to Wilmington Ave Off Ramp	5	9,380	47.2	**E**	8,132	40.4	**E**
3	Wilmington Ave On Ramp to Central Ave Off Ramp	5	8,923	44.6	**E**	7,626	35.9	**E**

The results of the 2045 No Build - 5C freeway HOV analysis are shown in Table 21 of the TEPA. As shown, the following segments are represented as having volumes exceeding 1,650 vehicles per hour per lane (LOS C threshold, also considered capacity of HOV segment):

- Cherry Avenue EB Off Ramp to Cherry Avenue EB On Ramp (PM Peak)
- Cherry Avenue EB On Ramp to Paramount Blvd EB Off Ramp (PM Peak)
- Paramount Blvd EB Off Ramp to Paramount Blvd EB On Ramp (PM Peak)
- Paramount Blvd WB Off Ramp to Paramount Blvd WB On Ramp (PM Peak)
- Paramount Blvd WB On Ramp to Cherry Avenue WB Off Ramp (PM Peak)

No Build - 7

Operational deficiencies for Future Year 2045 No Build - 7 (Alternative 1) conditions were analyzed and completed for the freeway mainline, freeway ramps, freeway weaving, ramp termini and intersections. The results of the basic freeway segment analysis for No Build - 7 conditions are shown in Table 11. The results of the future 2045 No Build - 7 conditions freeway merge and diverge analysis are shown in Table 12. The results of the 2045 No Build - 7 freeway weaving analysis are shown in Table 13. In general, traffic resulting from the construction of I-710 Alternative 7 will result in deteriorated operations on SR-91.

Table 11 - 2045 Alternative 1 (No Build – 7) Conditions Freeway Segment Analysis

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
Eastbound							
Central Ave Off Ramp to HOV Egress/Ingress	4	7,083	32.3	D	5,639	23.6	C
HOV Egress/Ingress to Central Ave On	4	7,083	32.3	D	5,639	23.6	C
Central Ave On Ramp to Wilmington Ave Off Ramp	See Weaving Analysis (1)						
Wilmington Ave Off Ramp to Wilmington Ave On Ramp	4	7,488	35.3	**E**	6,242	26.5	D
Wilmington Ave On Ramp to Acacia Ct Off Ramp	See Weaving Analysis (2)						
Acacia Ct Off Ramp to Alameda St Off Ramp	4	8,238	41.6	**E**	6,926	30.2	D
Alameda St Off Ramp to Santa Fe Ave Off Ramp	4	7,947	38.8	**E**	6,713	28.9	D
Santa Fe Ave Off Ramp to HOV Egress/Ingress	4	7,184	32.8	D	6,600	28.3	D
HOV Egress/Ingress to Alameda St On Ramp	4	7,184	32.8	D	6,600	28.3	D
Alameda St On Ramp to Santa Fe Ave On Ramp	5	7,625	26.6	D	7,017	23.4	C
Santa Fe Ave On Ramp to Long Beach Blvd Off Ramp	See Weaving Analysis (3)						
Long Beach Blvd Off Ramp to Long Beach Blvd On Ramp	5	7,815	27.4	D	7,744	26.3	D
Long Beach Blvd On Ramp to I-710 SB Connector Off Ramp	See Weaving Analysis (4)						
I-710 SB Connector Off Ramp to I-710 NB Connector /Atlantic Ave Off Ramp	5	7,990	28.0	D	7,936	27.1	D
I-710 NB Connector /Atlantic Ave Off Ramp to I-710 NB Connector On Ramp	3	5,782	37.4	**E**	4,409	24.7	C
I-710 NB Connector On Ramp to I-710 SB Connector On Ramp	4	8,272	42.9	**E**	6,164	26.1	D
I-710 SB Connector On Ramp to Atlantic Ave On Ramp	5	10,190	45.9	**F**	8,233	29.5	D
Atlantic Ave On Ramp to HOV Egress/Ingress	5	10,968	58.2	**F**	8,775	35.5	**E**
HOV Egress/Ingress to Cherry Ave Off Ramp	5	10,968	58.2	**F**	8,775	35.5	**E**
Cherry Ave Off Ramp to Cherry Ave On Ramp	4	10,103	77.2	**F**	7,616	35.7	**E**
Cherry Ave On Ramp to Paramount Blvd Off Ramp	See Weaving Analysis (5)						
Paramount Blvd Off Ramp to Paramount Blvd On Ramp	4	9,985	72.4	**F**	7,737	36.7	**E**
Westbound							
Paramount Blvd Off Ramp to Paramount Blvd On Ramp	5	7,576	26.1	D	8,349	29.5	D
Paramount Blvd On Ramp to Cherry Ave Off Ramp	5	8,314	29.3	D	9,263	34.4	D
Cherry Ave Off Ramp to HOV Egress/Ingress	5	8,431	29.9	D	9,114	33.5	D
HOV Egress/Ingress to Cherry Ave On Ramp	5	8,431	29.9	D	9,114	33.5	D
Cherry Ave On Ramp to Atlantic Ave Off Ramp	5	9,198	34.0	D	10,070	39.5	**E**
Atlantic Ave Off Ramp to I-710 NB/SB Off Ramp	5	8,916	31.7	D	9,529	35.5	**E**
I-710 NB/SB Off Ramp to I-710 NB /Atlantic Ave On Ramp	3	4,783	27.6	D	5,044	29.6	D

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
I-710 NB /Atlantic Ave On Ramp to I-710 SB On Ramp	4	5,773	24.3	C	5,537	23.3	C
I-710 SB On Ramp to Long Beach Blvd Off Ramp	6	9,014	25.5	C	7,739	21.7	C
Long Beach Blvd Off Ramp to HOV Egress/Ingress	6	8,526	23.9	C	7,199	20.2	C
HOV Egress/Ingress to Lane Drop	6	8,526	23.9	C	7,199	20.2	C
Lane Drop to Long Beach Blvd On Ramp	5	8,526	30.0	D	7,199	24.4	C
Long Beach Blvd On Ramp to Santa Fe Ave Off Ramp	See Weaving Analysis (1)						
Santa Fe Off Ramp to HOV Egress/Ingress	4	8,642	45.2	F	7,207	32.4	D
HOV Egress/Ingress to Acacia On Ramp	4	8,642	45.2	F	7,207	32.4	D
Acacia Ct On Ramp to Wilmington Ave Off Ramp	See Weaving Analysis (2)						
Wilmington Ave Off Ramp to Wilmington Ave On Ramp	4	8,297	41.9	E	7,085	31.6	D
Wilmington Ave On Ramp to Central Ave Off Ramp	See Weaving Analysis (3)						
Central Ave Off Ramp to HOV End	4	7,629	35.8	E	6,542	28.3	D
HOV End to Central Ave On Ramp	5	7,629	26.1	D	6,542	21.9	C

Table 12 - 2045 Alternative 1 (No Build – 7) Freeway Merge and Diverge Analysis

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
Eastbound							
Central Ave Off Ramp	Diverge	Lane Deletion					
Central Ave On Ramp	Merge	See Weaving Analysis (1)					
Wilmington Ave Off Ramp	Diverge	See Weaving Analysis (1)					
Wilmington Ave On Ramp	Merge	See Weaving Analysis (2)					
Acacia Ct Off Ramp	Diverge	See Weaving Analysis (2)					
Alameda St Off Ramp	Diverge	287	26.3	C	133	19.5	B
Santa Fe Ave Off Ramp	Diverge	763	39.8	E	113	30.7	D
Alameda St On Ramp	Merge	Lane Addition					
Santa Fe Ave On Ramp	Merge	See Weaving Analysis (3)					
Long Beach Blvd Off Ramp	Diverge	See Weaving Analysis (3)					
Long Beach Blvd On Ramp	Merge	See Weaving Analysis (4)					
I-710 SB Connector Off Ramp	Diverge	See Weaving Analysis (4)					
I-710 NB Connector /Atlantic Ave Off Ramp	Diverge	Lane Deletion					
I-710 NB Connector On Ramp	Merge	Lane Addition					
I-710 SB Connector On Ramp	Merge	Lane Addition					
Atlantic Avenue On Ramp	Merge	778	37.5	E	542	27.3	C
Cherry Ave Off Ramp	Diverge	Lane Deletion					
Cherry Ave On Ramp	Merge	See Weaving Analysis (5)					

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
Paramount Blvd Off Ramp	Diverge	See Weaving Analysis (5)					
Paramount Blvd On Ramp	Merge	Lane Addition					
Westbound							
Paramount Blvd Off Ramp	Diverge	124	29.1	D	229	57.6	**E**
Paramount Blvd On Ramp	Merge	738	28.4	D	915	29.8	D
Cherry Ave Off Ramp	Diverge	412	32.5	D	756	37.5	**E**
Cherry Ave On Ramp	Merge	768	29.1	D	956	32.8	D
Atlantic Ave Off Ramp	Diverge	282	16.7	B	541	19.2	B
I-710 NB/SB Off Ramp	Diverge	Lane Deletion					
I-710 NB /Atlantic Ave On Ramp	Merge	Lane Addition					
I-710 SB On Ramp	Merge	Lane Addition					
Long Beach Blvd Off Ramp	Diverge	489	35.0	**E**	540	31.2	D
Long Beach Blvd On Ramp	Merge	See Weaving Analysis (1)					
Santa Fe Ave Off Ramp	Diverge	See Weaving Analysis (1)					
Acacia Ct On Ramp	Merge	See Weaving Analysis (2)					
Wilmington Ave Off Ramp	Diverge	See Weaving Analysis (2)					
Wilmington Ave On Ramp	Merge	See Weaving Analysis (3)					
Central Ave Off Ramp	Diverge	See Weaving Analysis (3)					
Central Ave On Ramp	Merge	Lane Addition					

Table 13 - 2045 Alternative 1 (No Build – 7) Conditions Freeway Weaving Analysis

	Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
			Volume	Density	LOS	Volume	Density	LOS
Eastbound								
1	Central Ave On Ramp to Wilmington Ave Off Ramp	5	7,803	38.9	**E**	6,485	29.1	D
2	Wilmington Ave On Ramp to Acacia Ct Off Ramp	5	8,356	38.1	**E**	6,969	29.5	D
3	Santa Fe Ave On Ramp to Long Beach Blvd Off Ramp	6	8,128	29.9	D	8,804	-	**F**
4	Long Beach Blvd On Ramp to I-710 SB Connector Off Ramp	6	8,482	33.9	D	8,679	37.3	**E**
5	Cherry Ave On Ramp to Paramount Blvd Off Ramp	5	10,825	-	**F**	8,304	39.4	**E**
Westbound								
1	Long Beach Blvd On Ramp to Santa Fe Ave Off Ramp	6	9,488	37.0	**E**	7,971	28.2	D
2	Acacia Ct On Ramp to Wilmington Ave Off Ramp	5	9,159	44.7	**E**	7,951	38.7	**E**
3	Wilmington Ave On Ramp to Central Ave Off Ramp	5	8,724	43.4	**E**	7,486	34.8	D

The results of the 2045 No Build - 7 freeway HOV analysis are shown in Table 25 of the TEPA. As shown, the following segments are represented as having volumes exceeding 1,650 vehicles per hour per lane (LOS C threshold, also considered capacity of HOV segment):

- Cherry Avenue EB Off Ramp to Cherry Avenue EB On Ramp (PM Peak)
- Cherry Avenue EB On Ramp to Paramount Blvd EB Off Ramp (PM Peak)
- Paramount Blvd EB Off Ramp to Paramount Blvd EB On Ramp (PM Peak)
- Paramount Blvd WB Off Ramp to Paramount Blvd WB On Ramp (PM Peak)
- Paramount Blvd WB On Ramp to Cherry Avenue WB Off Ramp (PM Peak)

Alternatives 2 and 3 Traffic Analysis

Alternatives 2 and 3 comprise two design variations – Alternative 5C and Alternative 7. The operations analysis for these alternatives were completed however only the Hybrid Alternative (Alternative 4) results are shown in the TEPA document. This is because the Hybrid Alternative includes elements of Alternatives 2 and 3 and builds upon Alternative 3 with the addition of the collector/distributor roads at select locations.

Alternative 4 Traffic Analysis

Alternative 4 also comprises two design variations – Alternatives 5C and Alternative 7. Results of the analysis for the 2045 Alternative 4 (5C) and Alternative 4 (7), including LOS assessments, are presented for the study area freeways and ramps, and are summarized in this section. Intersection delay has been calculated for arterial intersections.

Alternative 4 (5C)

Alternative 4 (5C) results of the basic freeway segment analysis are shown in Table 14 below. The results of the future Alternative 4 (5C) conditions freeway merge and diverge analysis are shown in Table 15. The results of the 2045 Alternative 4 (5C) freeway weaving analysis are shown in Table 16. The results of the 2045 Alternative 4 (5C) HOV analysis are shown in Table 27 of the TEPA.

Table 14 - 2045 Alternative 4 (5C) Conditions Freeway Segment Analysis

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
Eastbound							
Central Ave Off Ramp to HOV Egress/Ingress	5	7,026	24.3	C	5,601	18.8	C
HOV Egress/Ingress to Central Ave On	5	7,026	24.3	C	5,601	18.8	C
Central Ave On Ramp to Wilmington Ave Off Ramp	See Weaving Analysis (1)						
Wilmington Ave Off Ramp to Wilmington Ave On Ramp	5	7,449	26.0	D	6,210	20.8	C
Wilmington Ave On Ramp to Acacia Ct Off Ramp	See Weaving Analysis (2)						
Acacia Ct Off Ramp to Alameda/Santa Fe/Long Beach Off Ramp	6	8,217	23.5	C	6,903	19.3	C

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
Alameda/Santa Fe/Long Beach Off Ramp to Santa Fe On	5	7,055	24.3	C	6,362	21.3	C
Santa Fe Ave On Ramp to Acacia/Alameda St On Ramp	6	7,580	21.6	C	7,117	19.9	C
Acacia/Alameda On Ramp to Long Beach On Ramp	7	8,019	19.7	C	8,249	19.8	C
Long Beach On Ramp to I-710 SB Connector Off Ramp	7	8,421	20.6	C	8,640	20.7	C
I-710 SB Connector Off Ramp to I-710 NB Connector/Atlantic Off Ramp	6	7,791	22.3	C	8,003	22.4	C
I-710 NB Connector Off Ramp to I-710 NB Connector On Ramp	4	5,627	24.4	C	5,130	21.4	C
I-710 NB Connector On Ramp to I-710 SB Connector On Ramp	6	7,847	22.8	C	6,805	19.1	C
I-710 SB Connector On Ramp to Atlantic On Ramp	7	9,147	22.7	C	8,361	20.1	C
Atlantic Ave On Ramp to HOV Egress/Ingress	7	9,745	24.3	C	8,722	21.0	C
HOV Egress/Ingress to Cherry Ave Off Ramp	7	9,745	24.3	C	8,722	21.0	C
Cherry Ave Off Ramp to Lane Drop	6	8,785	25.7	C	7,588	21.3	C
Lane Drop to Cherry Ave On Ramp	5	8,785	32.8	D	7,588	25.9	C
Cherry Ave On Ramp to Paramount Blvd Off Ramp	See Weaving Analysis (3)						
Paramount Blvd Off Ramp to Paramount Blvd On Ramp	5	8,703	32.4	D	7,728	26.5	D
Westbound							
Paramount Blvd Off Ramp to Paramount Blvd On Ramp	5	7,813	27.2	D	8,165	29.0	D
Paramount Blvd On Ramp to Cherry Ave Off Ramp	6	8,549	24.4	C	9,062	26.1	D
Cherry Ave Off Ramp to HOV Egress/Ingress	5	8,767	31.6	D	9,241	34.5	D
HOV Egress/Ingress to Lane Addition	5	8,767	31.6	D	9,241	34.5	D
Lane Addition to Cherry Ave On Ramp	6	8,767	25.0	C	9,241	26.7	D
Cherry Ave On Ramp to I-710 NB/SB Connector Off Ramp	See Weaving Analysis (1)						
I-710 NB/SB Connector Off Ramp to Atlantic Ave Off Ramp	5	5,590	18.9	C	6,103	20.8	C
Atlantic Ave Off Ramp to Atlantic Avenue On Ramp	4	5,198	21.9	C	5,332	22.5	C
Atlantic Ave On Ramp to Long Beach Blvd Off Ramp	See Weaving Analysis (2)						
HOV Egress/Ingress to I-710 SB Connector On Ramp	4	5,929	25.2	C	5,459	23.0	C
I-710 SB Connector On Ramp to I-710 NB Connector On Ramp	6	8,974	25.5	C	7,401	20.8	C
I-710 NB Connector On Ramp to Santa Ave Off Ramp	See Weaving Analysis (3)						
Santa Fe Ave Off Ramp to Long Beach Blvd On Ramp	5	8,860	31.9	D	7,363	25.2	C
Long Beach Blvd On Ramp to Acacia On Ramp	5	9,045	32.9	D	7,385	25.3	C
Acacia Ct On Ramp to Wilmington Ave Off Ramp	See Weaving Analysis (4)						

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
Wilmington Ave Off Ramp to Wilmington Ave On Ramp	5	8,715	31.1	D	7,237	24.7	C
Wilmington Ave On Ramp to Central Ave Off Ramp	See Weaving Analysis (5)						
Central Ave Off Ramp to HOV End	5	8,024	28.0	D	6,680	22.6	C
HOV End to Lane Drop	6	8,024	22.7	C	6,680	18.8	C
Lane Drop to Central Ave On Ramp	5	8,024	28.0	D	6,680	22.6	C

Table 15 - 2045 Alternative 4 (5C) Freeway Merge and Diverge Analysis

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
Eastbound							
Central Ave Off Ramp	Diverge	Lane Deletion					
Central Ave On Ramp	Merge	See Weaving Analysis (1)					
Wilmington Ave Off Ramp	Diverge	See Weaving Analysis (1)					
Wilmington Ave On Ramp	Merge	See Weaving Analysis (2)					
Acacia Ct Off Ramp	Diverge	See Weaving Analysis (2)					
Alameda/Santa Fe/Long Beach Off Ramp	Diverge	Lane Deletion					
Santa Fe Ave On Ramp	Merge	Lane Addition					
Acacia/Alameda St On Ramp	Merge	Lane Addition					
Long Beach On Ramp	Merge	402	20.0	C	391	20.0	C
I-710 SB Connector Off Ramp	Diverge	Lane Deletion					
I-710 NB Connector/Atlantic Off Ramp	Diverge	Lane Deletion					
I-710 NB Connector On Ramp	Merge	Lane Addition					
I-710 SB Connector On Ramp	Merge	Lane Addition					
Atlantic Avenue On Ramp	Merge	598	23.1	C	362	19.4	B
Cherry Ave Off Ramp	Diverge	Lane Deletion					
Cherry Ave On Ramp	Merge	See Weaving Analysis (3)					
Paramount Blvd Off Ramp	Diverge	See Weaving Analysis (3)					
Paramount Blvd On Ramp	Merge	233	26.4	C	129	21.6	C
Westbound							
Paramount Blvd Off Ramp	Diverge	121	29.9	D	225	32.1	D
Paramount Blvd On Ramp	Merge	736	26.8	C	898	29.3	D
Cherry Ave Off Ramp	Diverge	Lane Deletion					
Cherry Ave On Ramp	Merge	See Weaving Analysis (1)					
I-710 NB/SB Connector Off Ramp	Diverge	See Weaving Analysis (1)					
Atlantic Avenue Off Ramp	Diverge	391	6.8	A	771	8.5	A
Atlantic Ave On Ramp	Merge	See Weaving Analysis (2)					
Long Beach Blvd Off Ramp	Diverge	See Weaving Analysis (2)					
I-710 SB Connector On Ramp	Merge	Lane Addition					

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
I-710 NB Connector On Ramp	Merge	See Weaving Analysis (3)					
Santa Fe Ave Off Ramp	Diverge	See Weaving Analysis (3)					
Long Beach Blvd On Ramp	Merge	185	25.6	C	23	20.0	B
Acacia Ct On Ramp	Merge	See Weaving Analysis (4)					
Wilmington Ave Off Ramp	Diverge	See Weaving Analysis (4)					
Wilmington Ave On Ramp	Merge	See Weaving Analysis (5)					
Central Ave Off Ramp	Diverge	See Weaving Analysis (5)					
Central Ave On Ramp	Merge	Lane Addition					

Table 16 - 2045 Alternative 4 (5C) Conditions Freeway Weaving Analysis

	Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
			Volume	Density	LOS	Volume	Density	LOS
Eastbound								
1	Central Ave On Ramp to Wilmington Ave Off Ramp	6	7,791	33.2	D	6,397	24.4	C
2	Wilmington Ave On Ramp to Acacia Ct Off Ramp	6	8,334	32.0	D	6,941	24.6	C
3	Cherry Ave On Ramp to Paramount Blvd Off Ramp	6	9,557	37.2	**E**	8,293	30.4	D
4	Collector Distributor Alameda/ Santa Fe/Long Beach Off to Alameda Off	2	1,254	13.5	B	1,701	18.2	B
Westbound								
1	Cherry Ave On Ramp to I-710 NB/SB Connector Off Ramp	7	9,575	-	**F**	10,162	-	**F**
2	Atlantic Ave On Ramp to Long Beach Blvd Off Ramp	5	6,282	31.5	D	5,809	24.4	C
3	I-710 NB Connector On Ramp to Santa Fe Ave Off Ramp	7	8,582	29.1	D	6,967	24.3	C
4	Acacia Ct On Ramp to Wilmington Ave Off Ramp	6	9,299	33.8	D	8,015	28.5	D
5	Wilmington Ave On Ramp to Central Ave Off Ramp	6	8,831	31.6	D	7,529	25.6	C

The results of the 2045 Alternative 4 (5C) freeway HOV analysis are shown in Table 29 of the TEPA. As shown, the following segments are represented as having volumes exceeding 1,650 vehicles per hour per lane (LOS C threshold, also considered capacity of HOV segment):

- Cherry Avenue EB Off Ramp to EB Lane Drop (PM Peak)
- EB Lane Drop to Cherry Avenue EB On Ramp (PM Peak)
- Cherry Avenue EB On Ramp to Paramount Blvd EB Off Ramp (PM Peak)
- Paramount Blvd EB Off Ramp to Paramount Blvd EB On Ramp (PM Peak)
- Paramount Blvd WB Off Ramp to Paramount Blvd WB On Ramp (PM Peak)
- Paramount Blvd WB On Ramp to Cherry Avenue WB Off Ramp (PM Peak)

The results of the Alternative 4 (5C) intersection analysis are shown in Table 30 of the TEPA. These intersections include freeway ramp termini, along with other nearby locations that may be affected by changes to the freeway and freeway access. For 2045 Alternative 4 (5C) conditions, there are no intersections projected to operate at LOS E or F in the AM and/or PM peak hours. All locations are projected to operate at LOS D or better.

Alternative 4 (7)

Alternative 4 (7) results of the basic freeway segment analysis are shown in Table 17 below. The results of the future Alternative 4 (7) conditions freeway merge and diverge analysis are shown in Table 18. The results of the 2045 Alternative 4 (7) freeway weaving analysis are shown in Table 19. The results of the 2045 Alternative 4 (7) HOV analysis are shown in Table 27 of the TEPA.

Table 17 - 2045 Alternative 4 (7) Conditions Freeway Segment Analysis

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
Eastbound							
Central Ave Off Ramp to HOV Egress/Ingress	5	7,026	24.3	C	5,601	18.8	C
HOV Egress/Ingress to Central Ave On	5	7,026	24.3	C	5,601	18.8	C
Central Ave On Ramp to Wilmington Ave Off Ramp	See Weaving Analysis (1)						
Wilmington Ave Off Ramp to Wilmington Ave On Ramp	5	7,449	26.0	D	6,210	20.8	C
Wilmington Ave On Ramp to Acacia Ct Off Ramp	See Weaving Analysis (2)						
Acacia Ct Off Ramp to Alameda/Santa Fe/Long Beach Off Ramp	6	8,217	23.5	C	6,903	19.3	C
Alameda/Santa Fe/Long Beach Off Ramp to Santa Fe On	5	7,055	24.3	C	6,362	21.3	C
Santa Fe Ave On Ramp to Acacia/Alameda St On Ramp	6	7,580	21.6	C	7,117	19.9	C
Acacia/Alameda On Ramp to Long Beach On Ramp	7	8,019	19.7	C	8,249	19.8	C
Long Beach On Ramp to I-710 SB Connector Off Ramp	7	8,421	20.6	C	8,640	20.7	C
I-710 SB Off Ramp to I-710 NB /Atlantic Ave Off Ramp	6	7,791	22.1	C	7,704	21.4	C
I-710 NB Connector /Atlantic Ave Off Ramp to I-710 NB Connector On Ramp	4	5,584	24.0	C	4,176	17.4	B
I-710 NB Connector On Ramp to I-710 SB Connector On Ramp	6	8,074	23.0	C	5,931	16.5	B
I-710 SB Connector On Ramp to Cherry Ave Off Ramp	7	See Weaving Analysis (3)					
Cherry Off Ramp to Lane Drop	6	9,492	27.8	D	7,587	21.1	C
Lane Drop to I-710 NB Connector On Ramp (Truck Lane)	5	9,492	36.4	E	7,587	25.6	C
I-710 NB Connector On Ramp (Truck Lane) / Atlantic On Ramp to Cherry Ave On Ramp	5	9,904	39.7	E	7,383	25.1	C
Cherry Ave On Ramp to Paramount Blvd Off Ramp	6	See Weaving Analysis (4)					
Paramount Blvd Off Ramp to Paramount Blvd	5	9,786	38.5	E	7,504	25.6	C

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
On Ramp							
Collector Distributor Alameda On Ramp to Long Beach Off Ramp	3	653	4.4	A	1,895	12.7	B
Westbound							
Paramount Blvd Off Ramp to Paramount Blvd On Ramp	5	7,576	26.1	D	8,349	29.5	D
Paramount Blvd On Ramp to Cherry Ave Off Ramp	6	8,314	23.5	C	9,263	26.6	D
Cherry Ave Off Ramp to HOV Egress/Ingress	5	8,431	29.9	D	9,114	33.5	D
HOV Egress/Ingress to Lane Addition	5	8,431	29.9	D	9,114	33.5	D
Cherry Ave On Ramp to I-710 SB Connector Off Ramp (Truck Lane)	7	See Weaving Analysis (1)					
I-710 SB Connector Off Ramp (Truck Lane) to I-710 NB/SB Connector Off Ramp	6	8,983	25.4	C	9,968	28.9	D
I-710 NB/SB Connector Off Ramp to Atlantic Ave Off Ramp	4	5,065	21.2	C	5,586	23.6	C
Atlantic Ave Off Ramp to Atlantic Avenue On Ramp	4	4,783	21.3	C	5,044	21.2	C
Atlantic Ave On Ramp to I-710 SB Connector On Ramp	5	5,773	19.4	C	5,537	18.6	C
I-710 SB Connector On Ramp to Long Beach Blvd Off Ramp	7	See Weaving Analysis (2)					
Long Beach Blvd Off Ramp to HOV Egress/Ingress	6	8,662	24.4	C	7,389	20.7	C
HOV Egress/Ingress to I-710 NB Connector On Ramp	6	8,662	24.4	C	7,389	20.7	C
I-710 NB Connector On Ramp to Long Beach Blvd On Ramp	6	9,054	25.6	C	7,781	21.8	C
Long Beach Blvd On Ramp to Santa Fe Ave Off Ramp	7	See Weaving Analysis (3)					
Santa Fe Off Ramp to HOV Egress/Ingress	5	8,961	32.2	D	7,373	25.0	C
HOV Egress/Ingress to Acacia On Ramp	5	8,961	32.2	D	7,373	25.0	C
Acacia Ct On Ramp to Wilmington Ave Off Ramp	6	See Weaving Analysis (4)					
Wilmington Ave Off Ramp to Wilmington Ave On Ramp	5	8,631	30.7	D	7,225	24.4	C
Wilmington Ave On Ramp to Central Ave Off Ramp	6	See Weaving Analysis (5)					
Central Ave Off Ramp to HOV End	5	7,940	27.4	D	6,668	22.4	C
HOV End to Lane Drop	6	7,940	22.3	C	6,668	18.6	C
Lane Drop to Central Ave On Ramp	5	7,940	27.4	D	6,668	22.4	C

Table 18 - 2045 Alternative 4 (7) Freeway Merge and Diverge Analysis

Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
Eastbound							
Central Ave Off Ramp	Diverge	Lane Deletion					
Central Ave On Ramp	Merge	See Weaving Analysis (1)					
Wilmington Ave Off Ramp	Diverge	See Weaving Analysis (1)					
Wilmington Ave On Ramp	Merge	See Weaving Analysis (2)					
Acacia Ct Off Ramp	Diverge	See Weaving Analysis (2)					
Alameda/Santa Fe/Long Beach Off Ramp	Diverge	Lane Deletion					
Santa Fe Ave On Ramp	Merge	Lane Addition					
Acacia/Alameda St On Ramp	Merge	Lane Addition					
Long Beach On Ramp	Merge	402	25.0	C	391	25.0	C
I-710 SB Connector Off Ramp	Diverge	Lane Deletion					
I-710 NB Connector /Atlantic Ave Off Ramp	Diverge	Lane Deletion					
I-710 NB Connector On Ramp	Merge	Lane Addition					
I-710 SB Connector On Ramp	Merge	See Weaving Analysis (3)					
Cherry Ave Off Ramp	Diverge	See Weaving Analysis (3)					
I-710 NB Connector On Ramp / Atlantic On Ramp	Merge	778	33.4	D	542	24.8	C
Cherry Ave On Ramp	Merge	See Weaving Analysis (4)					
Paramount Blvd Off Ramp	Diverge	See Weaving Analysis (4)					
Paramount Blvd On Ramp	Merge	227	29.7	D	188	21.5	C
Westbound							
Paramount Blvd Off Ramp	Diverge	124	29.1	D	229	32.5	D
Paramount Blvd On Ramp	Merge	738	26.2	C	915	29.8	D
Cherry Ave Off Ramp	Diverge	Lane Deletion					
Cherry Ave On Ramp	Merge	See Weaving Analysis (1)					
I-710 SB Connector Off Ramp (Truck Lane)	Diverge	See Weaving Analysis (1)					
I-710 NB/SB Connector Off Ramp	Diverge	Lane Deletion					
Atlantic Off Ramp	Diverge	282	21.2	C	541	25.0	C
Atlantic Ave On Ramp	Merge	Lane Addition					
I-710 SB Connector On Ramp	Merge	See Weaving Analysis (2)					
Long Beach Blvd Off Ramp	Diverge	See Weaving Analysis (2)					
I-710 NB Connector On Ramp	Merge	392	33.4	D	392	29.4	D
Long Beach Blvd On Ramp	Merge	See Weaving Analysis (3)					
Santa Fe Ave Off Ramp	Diverge	See Weaving Analysis (3)					
Acacia Ct On Ramp	Merge	See Weaving Analysis (4)					
Wilmington Ave Off Ramp	Diverge	See Weaving Analysis (4)					
Wilmington Ave On Ramp	Merge	See Weaving Analysis (5)					
Central Ave Off Ramp	Diverge	See Weaving Analysis (5)					
Central Ave On Ramp	Merge	Lane Addition					

Table 19 - 2045 Alternative 4 (7) Conditions Freeway Weaving Analysis

	Segment Location	Lanes	AM Peak Hour			PM Peak Hour		
			Volume	Density	LOS	Volume	Density	LOS
Eastbound								
1	Central Ave On Ramp to Wilmington Ave Off Ramp	6	7,791	33.2	D	6,397	24.4	C
2	Wilmington Ave On Ramp to Acacia Ct Off Ramp	6	8,334	32.0	D	6,941	24.6	C
3	I-710 SB Connector On Ramp to Cherry Ave Off Ramp	7	9,992	-	**F**	8,001	-	**F**
4	Cherry Ave On Ramp to Paramount Blvd Off Ramp	6	10,627	47.2	**E**	8,072	32.1	D
Westbound								
1	Cherry Ave On Ramp to I-710 SB Connector Off Ramp (Truck Lane)	7	9,198	33.2	D	10,070	38.3	**E**
2	I-710 SB Connector On Ramp to Long Beach Blvd Off Ramp	7	9,014	-	**F**	7,739	47.5	**E**
3	Long Beach Blvd On Ramp to Santa Fe Ave Off Ramp	7	9,239	26.7	C	7,803	21.4	C
4	Acacia Ct On Ramp to Wilmington Ave Off Ramp	6	9,501	39.0	**E**	8,101	33.3	D
5	Wilmington Ave On Ramp to Central Ave Off Ramp	6	9,033	37.6	**E**	7,616	29.9	D

The results of the 2045 Alternative 4 (7) freeway HOV analysis are shown in Table 34 of the TEPA with the following segments represented as having volumes exceeding 1,650 vehicles per hour per lane (LOS C threshold, also considered capacity of HOV segment):

- I-710 NB Connector On Ramp (Truck Lane)/Atlantic Avenue EB On Ramp to Cherry Avenue EB On Ramp (PM Peak)
- Cherry Avenue EB On Ramp to Paramount Blvd EB Off Ramp (PM Peak)
- Paramount Blvd EB Off Ramp to Paramount Blvd EB On Ramp (PM Peak)
- Paramount Blvd WB Off Ramp to Paramount Blvd WB On Ramp (PM Peak)
- Paramount Blvd WB On Ramp to Cherry Avenue WB Off Ramp (PM Peak)

The results of the Alternative 4 (7) intersection analysis are shown in Table 35 of the TEPA. These intersections include freeway ramp termini, along with other nearby locations that may be affected by changes to the freeway and freeway access. For 2045 Alternative 4 (7) conditions, there are no intersections projected to operate at LOS E or F in the AM and/or PM peak hours. All locations are projected to operate at LOS D or better.

Traffic Analysis Summary

Tables 20 through 25 below (or see Tables 40 through 45 in the TEPA) provide comparisons of the locations that currently operate, or are projected to operate, at LOS E or F; and were made by summarizing the LOS data by AM and PM peak hour for each scenario.

The traffic analysis summaries are provided, in table format, for the following scenarios;

- Existing Conditions;
- Future 2045 No-build;
- Future 2045 No-build with I-710 Alternative 5C;
- Future 2045 No-build with I-710 Alternative 7;
- Future 2045 Build with I-710 Alternative 5C;
- Future 2045 Build with I-710 Alternative 7.

Since some of the alternatives change the number of mainline segments, merge and diverge locations, or weaving sections, the tables identify where these changes occur.

Table 20 - AM Peak Hour Freeway Segment Analysis Summary

Segment Location - Existing & Future Alternative 1 (No Build) (5C and 7)	Segment Location - Future Alternative 4 (5C)	Segment Location - Future Alternative 4 (7)	Existing	2045 Alt 1 (5C)	2045 Alt 1 (7)	2045 Alt 4 (5C)	2045 Alt 4 (7)
Eastbound							
Central Ave Off Ramp to HOV Egress/Ingress	Central Ave Off Ramp to HOV Egress/Ingress	Central Ave Off Ramp to HOV Egress/Ingress	C	D	D	C	C
HOV Egress/Ingress to Central Ave On	HOV Egress/Ingress to Central Ave On	HOV Egress/Ingress to Central Ave On	C	D	D	C	C
Central Ave On Ramp to Wilmington Ave Off Ramp	Central Ave On Ramp to Wilmington Ave Off Ramp	Central Ave On Ramp to Wilmington Ave Off Ramp	-	-	-	-	-
Wilmington Ave Off Ramp to Wilmington Ave On Ramp	Wilmington Ave Off Ramp to Wilmington Ave On Ramp	Wilmington Ave Off Ramp to Wilmington Ave On Ramp	C	D	**E**	D	D
Wilmington Ave On Ramp to Acacia Ct Off Ramp	Wilmington Ave On Ramp to Acacia Ct Off Ramp	Wilmington Ave On Ramp to Acacia Ct Off Ramp	-	-	-	-	-
Acacia Ct Off Ramp to Alameda St Off Ramp	Acacia Ct Off Ramp to Alameda/Santa Fe/Long Beach Off Ramp	Acacia Ct Off Ramp to Alameda/Santa Fe/Long Beach Off Ramp	D	**E**	**E**	C	C
Alameda St Off Ramp to Santa Fe Ave Off Ramp	Alameda/Santa Fe/Long Beach Off Ramp to Santa Fe On	Alameda/Santa Fe/Long Beach Off Ramp to Santa Fe On	C	**E**	**E**	C	C
Santa Fe Ave Off Ramp to HOV Egress/Ingress			C	D	D	N/A	N/A
HOV Egress/Ingress to Alameda St On Ramp			C	D	D	N/A	N/A
Alameda St On Ramp to Santa Fe Ave On Ramp	Santa Fe Ave On Ramp to Acacia/Alameda St On Ramp	Santa Fe Ave On Ramp to Acacia/Alameda St On Ramp	C	C	D	C	C
Santa Fe Ave On Ramp to Long Beach Blvd Off Ramp			-	-	-	N/A	N/A
Long Beach Blvd Off Ramp to Long Beach Blvd On Ramp	Acacia/Alameda On Ramp to Long Beach On Ramp	Acacia/Alameda On Ramp to Long Beach On Ramp	C	C	D	C	C
Long Beach Blvd On Ramp to I-710 SB Connector Off Ramp	Long Beach On Ramp to I-710 SB Connector Off Ramp	Long Beach On Ramp to I-710 SB Connector Off Ramp	-	-	-	C	C
I-710 SB Connector Off Ramp to I-710 NB Connector /Atlantic Ave Off Ramp	I-710 SB Connector Off Ramp to I-710 NB Connector/Atlantic Off Ramp	I-710 SB Off Ramp to I-710 NB /Atlantic Ave Off Ramp	C	C	D	C	C
I-710 NB Connector /Atlantic Ave Off Ramp to I-710 NB Connector On Ramp	I-710 NB Connector Off Ramp to I-710 NB Connector On Ramp	I-710 NB Connector /Atlantic Ave Off Ramp to I-710 NB Connector On Ramp	C	D	**E**	C	C
I-710 NB Connector On Ramp to I-710 SB Connector On Ramp	I-710 NB Connector On Ramp to I-710 SB Connector On Ramp	I-710 NB Connector On Ramp to I-710 SB Connector On Ramp	C	**E**	**E**	C	C
I-710 SB Connector On Ramp to Atlantic Ave On Ramp	I-710 SB Connector On Ramp to Atlantic On Ramp	I-710 SB Connector On Ramp to Cherry Ave Off Ramp	C	D	**F**	C	-
Atlantic Ave On Ramp to HOV Egress/Ingress	Atlantic Ave On Ramp to HOV Egress/Ingress		D	**E**	**F**	C	N/A
HOV Egress/Ingress to Cherry Ave Off Ramp	HOV Egress/Ingress to Cherry Ave Off Ramp		C	**E**	**F**	C	N/A
Cherry Ave Off Ramp to Cherry Ave On Ramp	Cherry Ave Off Ramp to Lane Drop	Cherry Off Ramp to Lane Drop	D	**F**	**F**	C	D
	Lane Drop to Cherry Ave On Ramp	Lane Drop to I-710 NB Connector On Ramp (Truck Lane)	N/A	N/A	N/A	D	**E**
		I-710 NB Connector On Ramp (Truck Lane) / Atlantic On Ramp to Cherry Ave On Ramp	N/A	N/A	N/A	N/A	**E**
Cherry Ave On Ramp to Paramount Blvd Off Ramp	Cherry Ave On Ramp to Paramount Blvd Off Ramp	Cherry Ave On Ramp to Paramount Blvd Off Ramp	-	-	-	-	-
Paramount Blvd Off Ramp to Paramount Blvd On Ramp	Paramount Blvd Off Ramp to Paramount Blvd On Ramp	Paramount Blvd Off Ramp to Paramount Blvd On Ramp	D	**F**	**F**	D	**E**
Westbound							
Paramount Blvd Off Ramp to Paramount Blvd On Ramp	Paramount Blvd Off Ramp to Paramount Blvd On Ramp	Paramount Blvd Off Ramp to Paramount Blvd On Ramp	C	D	D	D	D
Paramount Blvd On Ramp to Cherry Ave Off Ramp	Paramount Blvd On Ramp to Cherry Ave Off Ramp	Paramount Blvd On Ramp to Cherry Ave Off Ramp	D	D	D	C	C
Cherry Ave Off Ramp to HOV Egress/Ingress	Cherry Ave Off Ramp to HOV Egress/Ingress	Cherry Ave Off Ramp to HOV Egress/Ingress	C	D	D	D	D
HOV Egress/Ingress to Cherry Ave On Ramp	HOV Egress/Ingress to Lane Addition	HOV Egress/Ingress to Lane Addition	C	D	D	D	D
Cherry Ave On Ramp to Atlantic Ave Off Ramp	Lane Addition to Cherry Ave On Ramp		C	**E**	D	C	N/A
		Cherry Ave On Ramp to I-710 SB Connector Off Ramp (Truck Lane)	N/A	N/A	N/A	N/A	-
	Cherry Ave On Ramp to I-710 NB/SB Connector		N/A	N/A	N/A	-	N/A
		I-710 SB Connector Off Ramp (Truck Lane) to Atlantic Off Ramp	N/A	N/A	N/A	N/A	C
Atlantic Ave Off Ramp to I-710 NB/SB Off Ramp		Atlantic Off Ramp to I-710 NB/SB Connector Off Ramp	C	D	D	N/A	C
I-710 NB/SB Off Ramp to I-710 NB /Atlantic Ave On Ramp	I-710 NB/SB Connector Off Ramp to Atlantic Ave On Ramp	I-710 NB/SB Connector Off Ramp to Atlantic Ave On Ramp	C	D	D	C	C
I-710 NB /Atlantic Ave On Ramp to I-710 SB On Ramp	Atlantic Ave On Ramp to I-710 Connector SB On Ramp	Atlantic Ave On Ramp to I-710 SB Connector On Ramp	B	C	C	D	C
I-710 SB On Ramp to Long Beach Blvd Off Ramp	I-710 SB Connector On Ramp to Long Beach Blvd Off Ramp	I-710 SB Connector On Ramp to Long Beach Blvd Off Ramp	C	C	C	D	-
Long Beach Blvd Off Ramp to HOV Egress/Ingress	Long Beach Blvd Off Ramp to HOV Egress/Ingress	Long Beach Blvd Off Ramp to HOV Egress/Ingress	C	C	C	C	C
HOV Egress/Ingress to Lane Drop		HOV Egress/Ingress to I-710 NB Connector On Ramp	C	C	C	N/A	C
	HOV Egress/Ingress to I-710 NB Connector On Ramp	I-710 NB Connector On Ramp to Long Beach Blvd On Ramp	N/A	N/A	N/A	C	C
Lane Drop to Long Beach Blvd On Ramp			C	D	D	N/A	N/A
Long Beach Blvd On Ramp to Santa Fe Ave Off Ramp	I-710 NB Connector On Ramp to Santa Fe Ave Off Ramp	Long Beach Blvd On Ramp to Santa Fe Ave Off Ramp	-	-	-	-	-
Santa Fe Off Ramp to HOV Egress/Ingress		Santa Fe Off Ramp to HOV Egress/Ingress	D	**F**	**F**	N/A	D
	Santa Fe Ave Off Ramp to Long Beach Blvd On Ramp		N/A	N/A	N/A	D	N/A

Segment Location - Existing & Future Alternative 1 (No Build) (5C and 7)	Segment Location - Future Alternative 4 (5C)	Segment Location - Future Alternative 4 (7)	Existing	2045 Alt 1 (5C)	2045 Alt 1 (7)	2045 Alt 4 (5C)	2045 Alt 4 (7)
HOV Egress/Ingress to Acacia On Ramp		HOV Egress/Ingress to Acacia On Ramp	D	F	F	N/A	D
	Long Beach Blvd On Ramp to Acacia On Ramp		N/A	N/A	N/A	D	N/A
Acacia Ct On Ramp to Wilmington Ave Off Ramp	Acacia Ct On Ramp to Wilmington Ave Off Ramp	Acacia Ct On Ramp to Wilmington Ave Off Ramp	-	-	-	-	-
Wilmington Ave Off Ramp to Wilmington Ave On Ramp	Wilmington Ave Off Ramp to Wilmington Ave On Ramp	Wilmington Ave Off Ramp to Wilmington Ave On Ramp	D	E	E	D	D
Wilmington Ave On Ramp to Central Ave Off Ramp	Wilmington Ave On Ramp to Central Ave Off Ramp	Wilmington Ave On Ramp to Central Ave Off Ramp	-	-	-	-	-
Central Ave Off Ramp to HOV End	Central Ave Off Ramp to HOV End	Central Ave Off Ramp to HOV End	D	E	E	D	D
	HOV End to Lane Drop	HOV End to Lane Drop	N/A	N/A	N/A	C	C
HOV End to Central Ave On Ramp	Lane Drop to Central Ave On Ramp	Lane Drop to Central Ave On Ramp	D	D	D	D	D

Table 21 - PM Peak Hour Freeway Segment Analysis Summary

Segment Location - Existing & Future Alternative 1 (No Build) (5C and 7)	Segment Location - Future Alternative 4 (5C)	Segment Location - Future Alternative 4 (7)	Existing	2045 Alt 1 (5C)	2045 Alt 1 (7)	2045 Alt 4 (5C)	2045 Alt 4 (7)
Eastbound							
Central Ave Off Ramp to HOV Egress/Ingress	Central Ave Off Ramp to HOV Egress/Ingress	Central Ave Off Ramp to HOV Egress/Ingress	C	C	C	C	C
HOV Egress/Ingress to Central Ave On	HOV Egress/Ingress to Central Ave On	HOV Egress/Ingress to Central Ave On	C	C	C	C	C
Central Ave On Ramp to Wilmington Ave Off Ramp	Central Ave On Ramp to Wilmington Ave Off Ramp	Central Ave On Ramp to Wilmington Ave Off Ramp	-	-	-	-	-
Wilmington Ave Off Ramp to Wilmington Ave On Ramp	Wilmington Ave Off Ramp to Wilmington Ave On Ramp	Wilmington Ave Off Ramp to Wilmington Ave On Ramp	C	D	D	C	C
Wilmington Ave On Ramp to Acacia Ct Off Ramp	Wilmington Ave On Ramp to Acacia Ct Off Ramp	Wilmington Ave On Ramp to Acacia Ct Off Ramp	-	-	-	-	-
Acacia Ct Off Ramp to Alameda St Off Ramp	Acacia Ct Off Ramp to Alameda/Santa Fe/Long Beach Off Ramp	Acacia Ct Off Ramp to Alameda/Santa Fe/Long Beach Off Ramp	C	D	D	C	C
Alameda St Off Ramp to Santa Fe Ave Off Ramp	Alameda/Santa Fe/Long Beach Off Ramp to Santa Fe On	Alameda/Santa Fe/Long Beach Off Ramp to Santa Fe On	C	D	D	C	C
Santa Fe Ave Off Ramp to HOV Egress/Ingress			C	D	D	N/A	N/A
HOV Egress/Ingress to Alameda St On Ramp			C	D	D	N/A	N/A
Alameda St On Ramp to Santa Fe Ave On Ramp	Santa Fe Ave On Ramp to Acacia/Alameda St On Ramp	Santa Fe Ave On Ramp to Acacia/Alameda St On Ramp	C	C	C	C	C
Santa Fe Ave On Ramp to Long Beach Blvd Off Ramp			-	-	-	N/A	N/A
Long Beach Blvd Off Ramp to Long Beach Blvd On Ramp	Acacia/Alameda On Ramp to Long Beach On Ramp	Acacia/Alameda On Ramp to Long Beach On Ramp	C	C	D	C	C
Long Beach Blvd On Ramp to I-710 SB Connector Off Ramp	Long Beach On Ramp to I-710 SB Connector Off Ramp	Long Beach On Ramp to I-710 SB Connector Off Ramp	-	-	-	C	C
I-710 SB Connector Off Ramp to I-710 NB Connector /Atlantic Ave Off Ramp	I-710 SB Connector Off Ramp to I-710 NB Connector/Atlantic Off Ramp	I-710 SB Off Ramp to I-710 NB /Atlantic Ave Off Ramp	C	C	D	C	C
I-710 NB Connector /Atlantic Ave Off Ramp to I-710 NB Connector On Ramp	I-710 NB Connector Off Ramp to I-710 NB Connector On Ramp	I-710 NB Connector /Atlantic Ave Off Ramp to I-710 NB Connector On Ramp	C	C	C	C	B
I-710 NB Connector On Ramp to I-710 SB Connector On Ramp	I-710 NB Connector On Ramp to I-710 SB Connector On Ramp	I-710 NB Connector On Ramp to I-710 SB Connector On Ramp	C	C	D	C	B
I-710 SB Connector On Ramp to Atlantic Ave On Ramp	I-710 SB Connector On Ramp to Atlantic On Ramp	I-710 SB Connector On Ramp to Cherry Ave Off Ramp	C	C	D	C	-
Atlantic Ave On Ramp to HOV Egress/Ingress	Atlantic Ave On Ramp to HOV Egress/Ingress		C	D	E	C	N/A
HOV Egress/Ingress to Cherry Ave Off Ramp	HOV Egress/Ingress to Cherry Ave Off Ramp		C	D	E	C	N/A
Cherry Ave Off Ramp to Cherry Ave On Ramp	Cherry Ave Off Ramp to Lane Drop	Cherry Off Ramp to Lane Drop	D	D	E	C	C
	Lane Drop to Cherry Ave On Ramp	Lane Drop to I-710 NB Connector On Ramp (Truck Lane)	N/A	N/A	N/A	C	C
		I-710 NB Connector On Ramp (Truck Lane) / Atlantic On Ramp to Cherry Ave On Ramp	N/A	N/A	N/A	N/A	C
Cherry Ave On Ramp to Paramount Blvd Off Ramp	Cherry Ave On Ramp to Paramount Blvd Off Ramp	Cherry Ave On Ramp to Paramount Blvd Off Ramp	-	-	-	-	-
Paramount Blvd Off Ramp to Paramount Blvd On Ramp	Paramount Blvd Off Ramp to Paramount Blvd On Ramp	Paramount Blvd Off Ramp to Paramount Blvd On Ramp	D	D	E	D	C
Westbound							
Paramount Blvd Off Ramp to Paramount Blvd On Ramp	Paramount Blvd Off Ramp to Paramount Blvd On Ramp	Paramount Blvd Off Ramp to Paramount Blvd On Ramp	D	D	D	D	D
Paramount Blvd On Ramp to Cherry Ave Off Ramp	Paramount Blvd On Ramp to Cherry Ave Off Ramp	Paramount Blvd On Ramp to Cherry Ave Off Ramp	D	D	D	D	D
Cherry Ave Off Ramp to HOV Egress/Ingress	Cherry Ave Off Ramp to HOV Egress/Ingress	Cherry Ave Off Ramp to HOV Egress/Ingress	C	D	D	D	D
HOV Egress/Ingress to Cherry Ave On Ramp	HOV Egress/Ingress to Lane Addition	HOV Egress/Ingress to Lane Addition	D	D	D	D	D
Cherry Ave On Ramp to Atlantic Ave Off Ramp	Lane Addition to Cherry Ave On Ramp		D	E	E	D	N/A

Segment Location - Existing & Future Alternative 1 (No Build) (5C and 7)	Segment Location - Future Alternative 4 (5C)	Segment Location - Future Alternative 4 (7)	Existing	2045 Alt 1 (5C)	2045 Alt 1 (7)	2045 Alt 4 (5C)	2045 Alt 4 (7)
		Cherry Ave On Ramp to I-710 SB Connector Off Ramp (Truck Lane)	N/A	N/A	N/A	N/A	-
	Cherry Ave On Ramp to Atlantic Ave Off Ramp		N/A	N/A	N/A	-	N/A
		I-710 SB Connector Off Ramp (Truck Lane) to Atlantic Off Ramp	N/A	N/A	N/A	N/A	D
Atlantic Ave Off Ramp to I-710 NB/SB Off Ramp		Atlantic Off Ramp to I-710 NB/SB Connector Off Ramp	D	D	**E**	C	C
I-710 NB/SB Off Ramp to I-710 NB /Atlantic Ave On Ramp	I-710 NB/SB Connector Off Ramp to Atlantic Ave On Ramp	I-710 NB/SB Connector Off Ramp to Atlantic Ave On Ramp	C	D	D	C	C
I-710 NB /Atlantic Ave On Ramp to I-710 SB On Ramp	Atlantic Ave On Ramp to I-710 Connector SB On Ramp	Atlantic Ave On Ramp to I-710 SB Connector On Ramp	B	C	C	C	C
I-710 SB On Ramp to Long Beach Blvd Off Ramp	I-710 SB Connector On Ramp to Long Beach Blvd Off Ramp	I-710 SB Connector On Ramp to Long Beach Blvd Off Ramp	B	C	C	C	-
Long Beach Blvd Off Ramp to HOV Egress/Ingress	Long Beach Blvd Off Ramp to HOV Egress/Ingress	Long Beach Blvd Off Ramp to HOV Egress/Ingress	B	C	C	C	C
HOV Egress/Ingress to Lane Drop		HOV Egress/Ingress to I-710 NB Connector On Ramp	B	C	C	N/A	C
	HOV Egress/Ingress to I-710 NB Connector On Ramp	I-710 NB Connector On Ramp to Long Beach Blvd On Ramp	N/A	N/A	N/A	C	C
Lane Drop to Long Beach Blvd On Ramp			C	C	C	N/A	N/A
Long Beach Blvd On Ramp to Santa Fe Ave Off Ramp	I-710 NB Connector On Ramp to Santa Fe Ave Off Ramp	Long Beach Blvd On Ramp to Santa Fe Ave Off Ramp	-	-	-	-	-
Santa Fe Off Ramp to HOV Egress/Ingress		Santa Fe Off Ramp to HOV Egress/Ingress	C	D	D	N/A	C
	Santa Fe Ave Off Ramp to Long Beach Blvd On Ramp		N/A	N/A	N/A	C	N/A
HOV Egress/Ingress to Acacia On Ramp		HOV Egress/Ingress to Acacia On Ramp	C	D	D	N/A	C
	Long Beach Blvd On Ramp to Acacia On Ramp		N/A	N/A	N/A	C	N/A
Acacia Ct On Ramp to Wilmington Ave Off Ramp	Acacia Ct On Ramp to Wilmington Ave Off Ramp	Acacia Ct On Ramp to Wilmington Ave Off Ramp	-	-	-	-	-
Wilmington Ave Off Ramp to Wilmington Ave On Ramp	Wilmington Ave Off Ramp to Wilmington Ave On Ramp	Wilmington Ave Off Ramp to Wilmington Ave On Ramp	C	D	D	C	C
Wilmington Ave On Ramp to Central Ave Off Ramp	Wilmington Ave On Ramp to Central Ave Off Ramp	Wilmington Ave On Ramp to Central Ave Off Ramp	-	-	-	-	-
Central Ave Off Ramp to HOV End	Central Ave Off Ramp to HOV End	Central Ave Off Ramp to HOV End	C	D	D	C	C
	HOV End to Lane Drop	HOV End to Lane Drop	N/A	N/A	N/A	C	C
HOV End to Central Ave On Ramp	Lane Drop to Central Ave On Ramp	Lane Drop to Central Ave On Ramp	C	C	C	C	C

Table 22 - AM Peak Hour Freeway Merge and Diverge Analysis Summary

Segment Location - Existing & Future Alternative 1 (No Build) (5C and 7)	Segment Location - Future Alternative 4 (5C)	Segment Location - Future Alternative 4 (7)	Existing	2045 Alt 1 (5C)	2045 Alt 1 (7)	2045 Alt 4 (5C)	2045 Alt 4 (7)
Eastbound							
Central Ave Off Ramp	Central Ave Off Ramp	Central Ave Off Ramp	weave	weave	weave	weave	weave
Central Ave On Ramp	Central Ave On Ramp	Central Ave On Ramp	weave	weave	weave	weave	weave
Wilmington Ave Off Ramp	Wilmington Ave Off Ramp	Wilmington Ave Off Ramp	weave	weave	weave	weave	weave
Wilmington Ave On Ramp	Wilmington Ave On Ramp	Wilmington Ave On Ramp	weave	weave	weave	weave	weave
Acacia Ct Off Ramp	Acacia Ct Off Ramp	Acacia Ct Off Ramp	weave	weave	weave	weave	weave
Alameda St Off Ramp	Alameda/Santa Fe/Long Beach Off Ramp	Alameda/Santa Fe/Long Beach Off Ramp	B	C	C	Ln Drop	Ln Drop
Santa Fe Ave Off Ramp			D	**E**	**E**	N/A	N/A
	Santa Fe Ave On Ramp	Santa Fe Ave On Ramp	N/A	N/A	N/A	Ln Add	Ln Add
Alameda St On Ramp	Acacia/Alameda St On Ramp	Acacia/Alameda St On Ramp	Ln Add	Ln Add	Ln Add	Ln Add	Ln Add
Santa Fe Ave On Ramp			weave	weave	weave	N/A	N/A
Long Beach Blvd Off Ramp			weave	weave	weave	N/A	N/A
Long Beach Blvd On Ramp	Long Beach On Ramp	Long Beach On Ramp	weave	weave	weave	C	C
I-710 SB Connector Off Ramp	I-710 SB Connector Off Ramp	I-710 SB Connector Off Ramp	weave	weave	weave	Ln Drop	Ln Drop
I-710 NB Connector /Atlantic Ave Off Ramp	I-710 NB Connector/Atlantic Off Ramp	I-710 NB Connector /Atlantic Ave Off Ramp	Ln Drop	Ln Drop	Ln Drop	Ln Drop	Ln Drop
I-710 NB Connector On Ramp	I-710 NB Connector On Ramp	I-710 NB Connector On Ramp	Ln Add	Ln Add	Ln Add	Ln Add	Ln Add
I-710 SB Connector On Ramp	I-710 SB Connector On Ramp	I-710 SB Connector On Ramp	Ln Add	Ln Add	Ln Add	Ln Add	weave
Atlantic Avenue On Ramp	Atlantic Avenue On Ramp	Cherry Ave Off Ramp	C	D	**E**	C	weave
Cherry Ave Off Ramp	Cherry Ave Off Ramp	I-710 NB Connector On Ramp / Atlantic On Ramp	Ln Drop	Ln Drop	Ln Drop	Ln Drop	D
Cherry Ave On Ramp	Cherry Ave On Ramp	Cherry Ave On Ramp	weave	weave	weave	weave	weave
Paramount Blvd Off Ramp	Paramount Blvd Off Ramp	Paramount Blvd Off Ramp	weave	weave	weave	weave	weave

Segment Location - Existing & Future Alternative 1 (No Build) (5C and 7)	Segment Location - Future Alternative 4 (5C)	Segment Location - Future Alternative 4 (7)	Existing	2045 Alt 1 (5C)	2045 Alt 1 (7)	2045 Alt 4 (5C)	2045 Alt 4 (7)
Paramount Blvd On Ramp	Paramount Blvd On Ramp	Paramount Blvd On Ramp	Ln Add	Ln Add	Ln Add	C	D
		Westbound					
Paramount Blvd Off Ramp	Paramount Blvd Off Ramp	Paramount Blvd Off Ramp	D	D	D	D	D
Paramount Blvd On Ramp	Paramount Blvd On Ramp	Paramount Blvd On Ramp	C	C	D	C	C
Cherry Ave Off Ramp	Cherry Ave Off Ramp	Cherry Ave Off Ramp	D	D	D	Ln Drop	Ln Drop
Cherry Ave On Ramp	Cherry Ave On Ramp	Cherry Ave On Ramp	C	D	D	Ln Add	weave
	I-710 SB Connector Off Ramp (Truck Lane)	I-710 SB Connector Off Ramp (Truck Lane)	N/A	N/A	N/A	weave	weave
Atlantic Ave Off Ramp	Atlantic Ave Off Ramp	Atlantic Off Ramp	B	B	B	Ln Drop	C
I-710 NB/SB Off Ramp		I-710 NB/SB Connector Off Ramp	Ln Drop	Ln Drop	Ln Drop	Ln Drop	Ln Drop
I-710 NB /Atlantic Ave On Ramp	Atlantic Ave On Ramp	Atlantic Ave On Ramp	Ln Add	Ln Add	Ln Add	weave	Ln Add
I-710 SB On Ramp		I-710 SB Connector On Ramp	Ln Add	Ln Add	Ln Add	N/A	weave
Long Beach Blvd Off Ramp	Long Beach Blvd Off Ramp	Long Beach Blvd Off Ramp	C	**E**	**E**	C	weave
	I-710 NB Connector On Ramp	I-710 NB Connector On Ramp	N/A	N/A	N/A	weave	D
Long Beach Blvd On Ramp		Long Beach Blvd On Ramp	weave	weave	weave	N/A	weave
	Santa Fe Ave Off Ramp		N/A	N/A	N/A	weave	N/A
Santa Fe Ave Off Ramp		Santa Fe Ave Off Ramp	weave	weave	weave	N/A	weave
	Long Beach Blvd On Ramp		N/A	N/A	N/A	C	N/A
Acacia Ct On Ramp	Acacia Ct On Ramp	Acacia Ct On Ramp	weave	weave	weave	weave	weave
Wilmington Ave Off Ramp	Wilmington Ave Off Ramp	Wilmington Ave Off Ramp	weave	weave	weave	weave	weave
Wilmington Ave On Ramp	Wilmington Ave On Ramp	Wilmington Ave On Ramp	weave	weave	weave	weave	weave
Central Ave Off Ramp	Central Ave Off Ramp	Central Ave Off Ramp	weave	weave	weave	weave	weave
Central Ave On Ramp	Central Ave On Ramp	Central Ave On Ramp	weave	weave	weave	weave	weave

Table 23 - PM Peak Hour Freeway Merge and Diverge Analysis Summary

Segment Location - Existing & Future Alternative 1 (No Build) (5C and 7)	Segment Location - Future Alternative 4 (5C)	Segment Location - Future Alternative 4 (7)	Existing	2045 Alt 1 (5C)	2045 Alt 1 (7)	2045 Alt 4 (5C)	2045 Alt 4 (7)
		Eastbound					
Central Ave Off Ramp	Central Ave Off Ramp	Central Ave Off Ramp	weave	weave	weave	weave	weave
Central Ave On Ramp	Central Ave On Ramp	Central Ave On Ramp	weave	weave	weave	weave	weave
Wilmington Ave Off Ramp	Wilmington Ave Off Ramp	Wilmington Ave Off Ramp	weave	weave	weave	weave	weave
Wilmington Ave On Ramp	Wilmington Ave On Ramp	Wilmington Ave On Ramp	weave	weave	weave	weave	weave
Acacia Ct Off Ramp	Acacia Ct Off Ramp	Acacia Ct Off Ramp	weave	weave	weave	weave	weave
Alameda St Off Ramp	Alameda/Santa Fe/Long Beach Off Ramp	Alameda/Santa Fe/Long Beach Off Ramp	B	C	B	Ln Drop	Ln Drop
Santa Fe Ave Off Ramp			C	D	D	N/A	N/A
	Santa Fe Ave On Ramp	Santa Fe Ave On Ramp	N/A	N/A	N/A	Ln Add	Ln Add
Alameda St On Ramp	Acacia/Alameda St On Ramp	Acacia/Alameda St On Ramp	Ln Add	Ln Add	Ln Add	Ln Add	Ln Add
Santa Fe Ave On Ramp			weave	weave	weave	N/A	N/A
Long Beach Blvd Off Ramp			weave	weave	weave	N/A	N/A
Long Beach Blvd On Ramp	Long Beach On Ramp	Long Beach On Ramp	weave	weave	weave	C	C
I-710 SB Connector Off Ramp	I-710 SB Connector Off Ramp	I-710 SB Connector Off Ramp	weave	weave	weave	Ln Drop	Ln Drop
I-710 NB Connector /Atlantic Ave Off Ramp	I-710 NB Connector/Atlantic Off Ramp	I-710 NB Connector /Atlantic Ave Off Ramp	Ln Drop	Ln Drop	Ln Drop	Ln Drop	Ln Drop
I-710 NB Connector On Ramp	I-710 NB Connector On Ramp	I-710 NB Connector On Ramp	Ln Add	Ln Add	Ln Add	Ln Add	Ln Add
I-710 SB Connector On Ramp	I-710 SB Connector On Ramp	I-710 SB Connector On Ramp	Ln Add	Ln Add	Ln Add	Ln Add	weave
Atlantic Avenue On Ramp	Atlantic Avenue On Ramp	Cherry Ave Off Ramp	C	C	C	B	weave
Cherry Ave Off Ramp	Cherry Ave Off Ramp	I-710 NB Connector On Ramp / Atlantic On Ramp	Ln Drop	Ln Drop	Ln Drop	Ln Drop	C
Cherry Ave On Ramp	Cherry Ave On Ramp	Cherry Ave On Ramp	weave	weave	weave	weave	weave
Paramount Blvd Off Ramp	Paramount Blvd Off Ramp	Paramount Blvd Off Ramp	weave	weave	weave	weave	weave
Paramount Blvd On Ramp	Paramount Blvd On Ramp	Paramount Blvd On Ramp	Ln Add	Ln Add	Ln Add	C	C

Segment Location - Existing & Future Alternative 1 (No Build) (5C and 7)	Segment Location - Future Alternative 4 (5C)	Segment Location - Future Alternative 4 (7)	Existing	2045 Alt 1 (5C)	2045 Alt 1 (7)	2045 Alt 4 (5C)	2045 Alt 4 (7)
Westbound							
Paramount Blvd Off Ramp	Paramount Blvd Off Ramp	Paramount Blvd Off Ramp	D	D	**E**	D	D
Paramount Blvd On Ramp	Paramount Blvd On Ramp	Paramount Blvd On Ramp	C	D	D	D	D
Cherry Ave Off Ramp	Cherry Ave Off Ramp	Cherry Ave Off Ramp	**E**	**E**	**E**	Ln Drop	Ln Drop
Cherry Ave On Ramp	Cherry Ave On Ramp	Cherry Ave On Ramp	C	D	D	weave	weave
	I-710 SB Connector Off Ramp (Truck Lane)	I-710 SB Connector Off Ramp (Truck Lane)	N/A	N/A	N/A	weave	weave
Atlantic Ave Off Ramp	Atlantic Ave Off Ramp	Atlantic Off Ramp	B	B	B	A	D
I-710 NB/SB Off Ramp		I-710 NB/SB Connector Off Ramp	Ln Drop	Ln Drop	Ln Drop	N/A	Ln Drop
I-710 NB /Atlantic Ave On Ramp	Atlantic Ave On Ramp	Atlantic Ave On Ramp	Ln Add	Ln Add	Ln Add	weave	Ln Add
I-710 SB On Ramp		I-710 SB Connector On Ramp	Ln Add	Ln Add	Ln Add	N/A	weave
Long Beach Blvd Off Ramp	Long Beach Blvd Off Ramp	Long Beach Blvd Off Ramp	C	D	D	weave	weave
	I-710 NB Connector On Ramp	I-710 NB Connector On Ramp	N/A	N/A	N/A	weave	D
Long Beach Blvd On Ramp		Long Beach Blvd On Ramp	weave	weave	weave	N/A	weave
	Santa Fe Ave Off Ramp		N/A	N/A	N/A	weave	N/A
Santa Fe Ave Off Ramp		Santa Fe Ave Off Ramp	weave	weave	weave	N/A	weave
	Long Beach Blvd On Ramp		N/A	N/A	N/A	B	N/A
Acacia Ct On Ramp	Acacia Ct On Ramp	Acacia Ct On Ramp	weave	weave	weave	weave	weave
Wilmington Ave Off Ramp	Wilmington Ave Off Ramp	Wilmington Ave Off Ramp	weave	weave	weave	weave	weave
Wilmington Ave On Ramp	Wilmington Ave On Ramp	Wilmington Ave On Ramp	weave	weave	weave	weave	weave
Central Ave Off Ramp	Central Ave Off Ramp	Central Ave Off Ramp	weave	weave	weave	weave	weave
Central Ave On Ramp	Central Ave On Ramp	Central Ave On Ramp	weave	weave	weave	weave	weave

Table 24 - AM Peak Hour Freeway Weaving Analysis Summary

Segment Location - Existing & Future Alternative 1 (No Build) (5C and 7)	Segment Location - Future Alternative 4 (5C)	Segment Location - Future Alternative 4 (7)	Existing	2045 Alt 1 (5C)	2045 Alt 1 (7)	2045 Alt 4 (5C)	2045 Alt 4 (7)
Eastbound							
Central Ave On Ramp to Wilmington Ave Off Ramp	Central Ave On Ramp to Wilmington Ave Off Ramp	Central Ave On Ramp to Wilmington Ave Off Ramp	C	**E**	**E**	D	D
Wilmington Ave On Ramp to Acacia Ct Off Ramp	Wilmington Ave On Ramp to Acacia Ct Off Ramp	Wilmington Ave On Ramp to Acacia Ct Off Ramp	C	**E**	**E**	D	D
Santa Fe Ave On Ramp to Long Beach Blvd Off Ramp			C	C	D	N/A	N/A
Long Beach Blvd On Ramp to I-710 SB Connector Off Ramp			C	D	D	N/A	N/A
		I-710 SB Connector On Ramp to Cherry Ave Off Ramp	N/A	N/A	N/A	N/A	**F**
Cherry Ave On Ramp to Paramount Blvd Off Ramp	Cherry Ave On Ramp to Paramount Blvd Off Ramp	Cherry Ave On Ramp to Paramount Blvd Off Ramp	**E**	**F**	**F**	**E**	**E**
Westbound							
		Cherry Ave On Ramp to I-710 SB Connector Off Ramp (Truck Lane)	N/A	N/A	N/A	N/A	D
	Cherry Ave On Ramp to I-710 NB/SB Connector Off Ramp		N/A	N/A	N/A	**F**	N/A
	Atlantic Ave On ramp to Long Beach Blvd Off ramp		N/A	N/A	N/A	D	N/A
		I-710 SB Connector On Ramp to Long Beach Blvd Off Ramp	N/A	N/A	N/A	N/A	**F**
Long Beach Blvd On Ramp to Santa Fe Ave Off Ramp		Long Beach Blvd On Ramp to Santa Fe Ave Off Ramp	C	**E**	**E**	N/A	C
	I-710 NB Connector On Ramp to Santa Fe Ave Off Ramp		N/A	N/A	N/A	C	N/A
Acacia Ct On Ramp to Wilmington Ave Off Ramp	Acacia Ct On Ramp to Wilmington Ave Off Ramp	Acacia Ct On Ramp to Wilmington Ave Off Ramp	**E**	**E**	**E**	D	**E**
Wilmington Ave On Ramp to Central Ave Off Ramp	Wilmington Ave On Ramp to Central Ave Off Ramp	Wilmington Ave On Ramp to Central Ave Off Ramp	D	**E**	**E**	D	**E**

Table 25 - PM Peak Hour Freeway Weaving Analysis Summary

Segment Location - Existing & Future Alternative 1 (No Build) (5C and 7)	Segment Location - Future Alternative 4 (5C)	Segment Location - Future Alternative 4 (7)	Existing	2045 Alt 1 (5C)	2045 Alt 1 (7)	2045 Alt 4 (5C)	2045 Alt 4 (7)
Eastbound							
Central Ave On Ramp to Wilmington Ave Off Ramp	Central Ave On Ramp to Wilmington Ave Off Ramp	Central Ave On Ramp to Wilmington Ave Off Ramp	C	D	D	C	C
Wilmington Ave On Ramp to Acacia Ct Off Ramp	Wilmington Ave On Ramp to Acacia Ct Off Ramp	Wilmington Ave On Ramp to Acacia Ct Off Ramp	C	D	D	C	C
Santa Fe Ave On Ramp to Long Beach Blvd Off Ramp			C	D	**F**	N/A	N/A
Long Beach Blvd On Ramp to I-710 SB Connector Off Ramp			C	D	**E**	N/A	N/A
		I-710 SB Connector On Ramp to Cherry Ave Off Ramp	N/A	N/A	N/A	N/A	**F**
Cherry Ave On Ramp to Paramount Blvd Off Ramp	Cherry Ave On Ramp to Paramount Blvd Off Ramp	Cherry Ave On Ramp to Paramount Blvd Off Ramp	D	**E**	**E**	D	D
Westbound							
		Cherry Ave On Ramp to I-710 SB Connector Off Ramp (Truck Lane)	N/A	N/A	N/A	N/A	**E**
	Cherry Ave On Ramp to I-710 NB/SB Connector Off Ramp		N/A	N/A	N/A	**F**	N/A
	Atlantic Ave On ramp to Long Beach Blvd Off ramp		N/A	N/A	N/A	D	N/A
		I-710 SB Connector On Ramp to Long Beach Blvd Off Ramp	N/A	N/A	N/A	N/A	**F**
Long Beach Blvd On Ramp to Santa Fe Ave Off Ramp		Long Beach Blvd On Ramp to Santa Fe Ave Off Ramp	C	D	D	N/A	C
	I-710 NB Connector On Ramp to Santa Fe Ave Off Ramp		N/A	N/A	N/A	C	N/A
Acacia Ct On Ramp to Wilmington Ave Off Ramp	Acacia Ct On Ramp to Wilmington Ave Off Ramp	Acacia Ct On Ramp to Wilmington Ave Off Ramp	D	**E**	**E**	D	D
Wilmington Ave On Ramp to Central Ave Off Ramp	Wilmington Ave On Ramp to Central Ave Off Ramp	Wilmington Ave On Ramp to Central Ave Off Ramp	D	**E**	D	C	D

The tables of the different analysis scenarios show that in all cases, the future Alternative 1 (No Build) conditions have more locations at LOS E and/or F than existing conditions, and project alternatives generally improve the overall operations of the freeway mainline, merge and diverge segments, and weaving sections.

In this case, Alternatives 2 and 3 are not included in the operations analysis summary. These two alternatives are essentially the same from a traffic analysis perspective as they primarily differ in terms of the use of standard versus non-standard lanes and shoulders. In addition, Alternative 4 builds upon Alternative 3 and incorporates other elements intended to improve the operating characteristics within the project area. Including all eight possible scenarios is not required because Alternative 4 includes the same configuration elements of Alternatives 2 and 3. In addition to make the TEPA most useful to the reader, Alternative 4 was chosen for the summary analysis and findings discussion.

The results in the tables show that for the two build alternatives, Alternative 4 (5C) and Alternative 4 (7), the operational characteristics of those two scenarios are very similar to the west of the SR-91/I-710 interchange. This is mainly due to the fact that the physical differences between the alternatives in terms of lane configurations, interchange and ramp geometrics and intersection geometrics occur east of I-710. For analysis purposes, to the west of I-710 most of the differences are limited to lengths of weaving sections as well as the length of the merging and diverging areas available to the motorist. In terms of levels of service, these types of changes were found to result in little difference in levels of service. Towards the east of I-710 there are significant traffic operations differences between Alternative 4 (5C) and Alternative 4 (7) including the proposed truck lanes under I-710 Alternative 7. Under Alternative 7 there are significant modifications including decreased truck demand and the addition of the freight corridor connectors which change the geometric characteristics. The model projects that fewer trucks will use SR-91 east of I-710 under Alternative 7 because more trucks will prefer to remain on the dedicated truck corridor along I-710. However, the model also projects higher auto demand on this portion of SR-91 due to the reduction in truck flow.

Of the multiple mainline segments that were analyzed, nearly all experience an improvement under the build alternatives and only a few are shown to experience a possible worsening of LOS with the project build alternatives as compared to the future No Build conditions. Under 2045 Alternative 4 (5C) conditions all freeway mainline, ramp and weaving segments are projected to operate at LOS D or better, except one weaving segment on eastbound SR-91 between the Cherry Avenue on ramp and Paramount Boulevard off ramp. Under 2045 Alternative 4 (7) conditions, three freeway mainline segments and six freeway weaving segments are projected to operate at LOS E/F.

Truck Volumes and Passenger Car Equivalents – Because the project area has relatively high truck volumes due to proximity to the Ports and local industrial and warehouse activities, special attention was paid to the effect of trucks on existing and future traffic operations. As noted, the traffic model forecasts both auto and heavy duty truck volumes for all future scenarios. All of the operational analyses included adjustments for Passenger Car Equivalencies (PCE) for freeway and intersection analysis. Actual truck percentages were used in Highway Capacity Manual calculations and, for intersection analysis, PCE factors ranging from 1.5 PCE to 2.5 PCE were used, depending on size of truck.

For reference, the following truck percentages were used in the analysis, based on both traffic counts and model projections. Under existing conditions portions of SR-91 as well as the connectors to and from I-710 experience approximately 7% to 8% trucks during peak hours. In the future with Alternative 4, those percentages are projected to increase as high as 14 percent. Much of this increase is due to projected growth in cargo throughput at the Ports of Long Beach and Los Angeles. With the truck Passenger Car Equivalency factors that are applied, this means that in some locations over one quarter of the system capacity would be used by trucks in the future. The operations analysis conducted for both the freeway and intersections fully accounts for truck impacts.

In summary, all of the build alternatives are shown to benefit the mainline, merge and diverge, and weaving segments for nearly all of the study locations throughout the freeway corridors, even with higher forecasted volumes due to proposed freeway capacity enhancements.

Safety / Accident Data

Traffic Accident Surveillance and Analysis System (TASAS) – Transportation System Network (TSN) data was provided by Caltrans District 7 and included accidents that occurred between January 1, 2011 and December 31, 2013 on SR-91, from PM R008.195 to R014.247, and on I-710, from PM 010.687 to 015.437, including the interchange ramps. This data was analyzed for the PSR-PDS and a summary of the accident data provided in TASAS Table B is shown below in Tables 26 through 28 for the freeway mainline, freeway-to-freeway direct connector and freeway-to-arterial ramps on I-710 and SR-91, respectively.

Table 26 - Freeway Mainline TASAS Table B Accident Rates from 1/1/2011 to 12/31/2013

Location		Total Actual Accident Rates	Statewide Avg. Accident Rates		
			Fatal	F+I	Total
I-710 Freeway Mainline Segments					
I-710 NB	DEL AMO BLVD - ROSECRANS AVE	0.75	0.003	0.27	0.90
I-710 SB	DEL AMO BLVD - ROSECRANS AVE	0.68	0.003	0.27	0.90
SR-91 Freeway Mainline Segments					
SR-91 WB	CENTRAL AVE - PARAMOUNT BLVD	0.66	0.003	0.26	0.88
SR-91 EB	CENTRAL AVE - PARAMOUNT BLVD	**1.00**	0.003	0.26	0.88

Table 27 - Direct Connector TASAS Table B Accident Rates from 1/1/2011 to 12/31/2013

Location		Total Actual Accident Rates	Statewide Avg. Accident Rates		
			Fatal	F+I	Total
I-710 Freeway-to-Freeway Direct Connectors					
I-710 NB	710/NB OFF TO EB 91/ARTESIA BLVD	0.12	0.002	0.08	0.25
I-710 NB	710/NB OFF TO WB RTE 91	0.64	0.004	0.2	0.68
I-710 NB	710/NB ON FROM EB RTE 91	**0.60**	0.003	0.14	0.41
I-710 NB	710/NB ON FROM WB 91/ATLANTIC AVE	**0.33**	0.001	0.06	0.18
I-710 SB	710/SB ON EB RTE 91/ARTESIA BLVD	0.00	0.001	0.06	0.18
I-710 SB	710/SB ON FROM WB RTE 91	**0.74**	0.003	0.14	0.41
I-710 SB	710/SB OFF TO WB RTE 91	0.18	0.005	0.13	0.38
I-710 SB	710/SB OFF TO EB 91/ATLANTIC AVE	**0.66**	0.004	0.16	0.49
SR-91 Freeway-to-Freeway Direct Connectors					
SR-91 WB	091/WB ON FROM NB 710/ATLANTIC AVE	0.07	0.001	0.06	0.18

Location		Total Actual Accident Rates	Statewide Avg. Accident Rates		
			Fatal	F+I	Total
SR-91 WB	091/SEG WB OFF TO NB 710	0.07	0.005	0.13	0.38
SR-91 WB	091/WB OFF TO RTE 710	0.07	0.002	0.08	0.25
SR-91 EB	091/EB OFF TO RTE 710	1.05	0.005	0.13	0.38
SR-91 EB	091/EB OFF TO NB 710/ATLANTIC AVE	0.10	0.002	0.08	0.25
SR-91 EB	091/EB ON FROM NB RTE 710	0.91	0.003	0.11	0.32
SR-91 EB	091/DUM EB ON FROM SB RTE 710	-	-	-	

Table 28 - Freeway-to-Arterial Ramps TASAS Table B Accident Rates from 1/1/2011 to 12/31/2013

Location		Total Actual Accident Rates	Statewide Avg. Accident Rates		
			Fatal	F+I	Total
SR-91 Freeway-to- Arterial Ramps					
SR-91 WB	CENTRAL AVE (PM 8.4)	1.58	0.003	0.11	0.31
SR-91 WB	CENTRAL AVE (PM 8.4)	0.44	0.003	0.10	0.28
SR-91 WB	WILMINGTON AVE (PM 9.2)	0.65	0.003	0.11	0.31
SR-91 WB	WILMINGTON AVE (PM 9.2)	0.75	0.03	0.10	0.28
SR-91 WB	ACACIA AVE (PM 9.8)	0.45	0.003	0.11	0.31
SR-91 WB	ALAMEDA ST/ARTESIA BLVD (PM 10.6)	0.21	0.003	0.10	0.28
SR-91 WB	SANTA FE AVE (PM 10.4)	0.75	0.004	0.33	1.00
SR-91 WB	SANTA FE/ARTESIA (PM 10.4)	0.40	0.002	0.08	0.25
SR-91 WB	LONG BEACH BLVD (PM 11.1)	0.98	0.002	0.22	0.63
SR-91 WB	LONG BEACH BLVD (PM 11.1)	**1.21**	0.003	0.35	1.01
SR-91 WB	ATLANTIC AVE/NB RTE 710 (PM 12.1)	0.07	0.001	0.06	0.18
SR-91 WB	ATLANTIC AVE (PM 12.1)	0.00	0.003	0.14	0.41
SR-91 WB	ATLANTIC AVE (PM 12.1)	0.39	0.002	0.22	0.63
SR-91 WB	ATLANTIC AVE (PM 12.1)	0.99	0.003	0.35	1.01
SR-91 WB	CHERRY AVE (PM 13.1)	**0.75**	0.002	0.22	0.63
SR-91 WB	CHERRY AVE (PM 13.1)	0.67	0.003	0.35	1.01
SR-91 WB	PARAMOUNT BLVD (PM 13.6)	**0.64**	0.002	0.22	0.63
SR-91 WB	PARAMOUNT BLVD (PM 13.6)	0.81	0.003	0.35	1.01
SR-91 WB	DOWNEY AVE (PM 14.1)	**0.78**	0.002	0.22	0.63
SR-91 WB	DOWNEY AVE (PM 14.1)	0.69	0.003	0.35	1.01
SR-91 EB	CENTRAL AVE (PM 8.4)	0.22	0.003	0.10	0.28
SR-91 EB	CENTRAL AVE (PM 8.4)	0.09	0.003	0.11	0.31
SR-91 EB	WILMINGTON AVE (PM 9.2)	0.15	0.003	0.10	0.28
SR-91 EB	WILMINGTON AVE (PM 9.2)	**0.34**	0.003	0.11	0.31
SR-91 EB	ACACIA AVE (PM 9.8)	0.00	0.003	0.10	0.28
SR-91 EB	ALAMEDA ST (PM 10.4)	0.93	0.003	0.35	1.01
SR-91 EB	SANTA FE AVE (PM 10.4)	**1.06**	0.003	0.35	1.01
SR-91 EB	ALAMEDA ST (PM 10.4)	1.53	0.003	0.24	0.72
SR-91 EB	SANTA FE AVE (PM 10.4)	1.21	0.002	0.22	0.63
SR-91 EB	LONG BEACH BLVD (PM 11.1)	**1.25**	0.003	0.35	1.01
SR-91 EB	LONG BEACH BLVD (PM 11.1)	0.68	0.003	0.24	0.72
SR-91 EB	ATLANTIC AVE/NB RTE 710	0.10	0.002	0.08	0.25
SR-91 EB	ATLANTIC AVE (PM 12.1)	3.86	0.003	0.35	1.01
SR-91 EB	ATLANTIC AVE (PM 12.1)	0.56	0.002	0.22	0.63
SR-91 EB	CHERRY AVE (PM 13.1)	0.90	0.003	0.35	1.01
SR-91 EB	CHERRY AVE (PM 13.1)	**0.76**	0.002	0.22	0.63
SR-91 EB	PARAMOUNT BLVD (PM 13.6)	0.44	0.003	0.35	1.01
SR-91 EB	PARAMOUNT BLVD (PM 13.6)	0.59	0.002	0.22	0.63

Location		Total Actual Accident Rates	Statewide Avg. Accident Rates		
			Fatal	F+I	Total
SR-91 EB	DOWNEY AVE (PM 14.1)	**1.05**	0.003	0.35	1.01
SR-91 EB	DOWNEY AVE (PM 14.1)	**0.77**	0.002	0.22	0.63

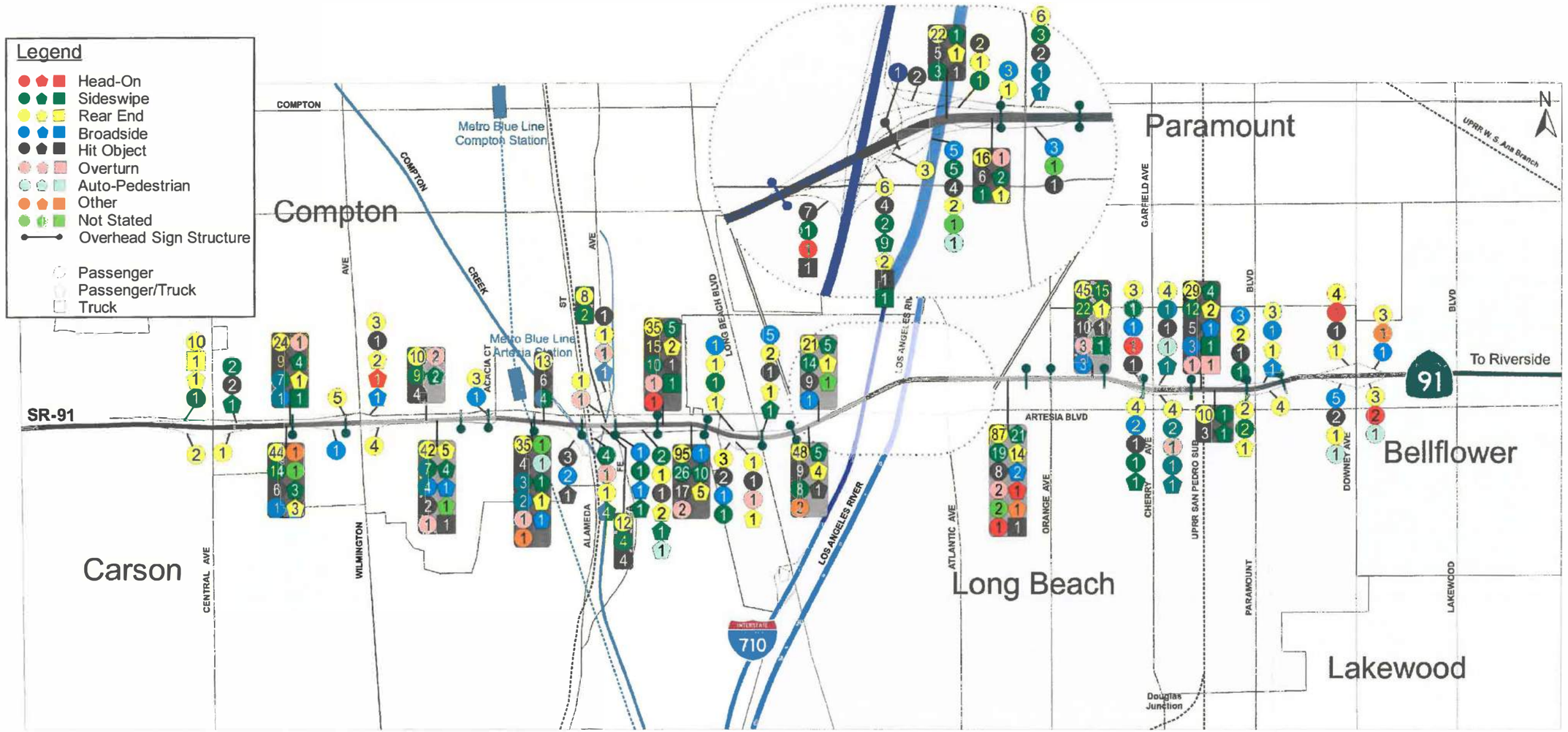
Notes:

1. Accident rates are expressed as # of accidents/Million vehicles for connector and ramps.
2. F+I = fatal plus injury, PDO = Property Damage Only.
3. **Bold** accident rates above are in excess of the statewide average.
4. **Bold Red** accident rates above are 30% (or more) greater than the statewide average.

According to the Accident Cluster Map (Figure 1) on the following page, there are a couple of accident trends which require special attention and mitigation as follows:

- Rear End Accidents - there are substantial rear end accidents occurring at each approach of SR-91 to I-710 which is symptomatic of congestion on SR-91.

- Side Swipe Accidents - SR-91 experienced a high number of sideswipe accidents which coincide with HOV ingress/egress access points resulting in outbound merge movements conflicting with inbound merge movements by multiple on-ramps on SR-91 at each approach to the I-710 interchange.



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SR-91 ACCIDENT CLUSTER MAP

FIGURE
1

Specific accident concentration locations with accident rates generally thirty (30) percent greater than the statewide average are presented in Figure 2 of the TEPA.

Design Features and Traffic Infrastructure

The following features will be considered during PA/ED and PS&E to improve operations and safety within the SR-91/I-710 corridor study area:

- HOV Ingress/Egress Locations and Merging
- Acceleration/Deceleration lanes
- Bicyclist, pedestrian, and transit facilities
- Traffic signals
- Protective railings/barriers
- Lighting
- Ramp metering and detection systems
- CHP enforcement areas
- On- and off-ramp location analysis
- Goods movement enhancements
- ITS Enhancements

Traffic Engineering Studies

The traffic analysis that will be prepared for the project during PA/ED will study existing (2016), opening year (2025), and long-range (2045) conditions. The following analyses will be included:

- Capacity
- Delay
- Queue
- Level of service
- Signal warrants
- Ramp merge/diverge
- Weave analysis
- Special truck studies
- Ramp metering analysis
- Railroad preemption analysis (at Santa Fe Avenue)

Other Traffic Considerations and Coordination

In addition to the traffic analyses listed above, traffic-related efforts during PA/ED should include the following:

- Electrical systems, including traffic signals, safety lighting, and overhead sign structures
- Coordination with Caltrans and Cities regarding signal coordination and connection to City Traffic Management Centers
- Transportation Management Plan data sheets
- Stage construction

5. DEFICIENCIES

Based on traffic analysis in the TEPA as summarized herein (Section 4) the existing mainline segments, system interchange connectors, and local interchange ramps do not have adequate capacity to support the growth in traffic volumes anticipated by the forecast year 2045 due to future traffic growth and economic development.

Without this project, the operation and efficiency of the project corridors would continue to deteriorate over time, resulting in increased congestion, delays, and consequently decreased LOS at the system interchange, local interchanges, and adjacent intersections. Further, without safety improvements to provide improved geometric design features for mainline segments, system interchange connectors, and local interchange ramps and intersections, high accident trends may continue.

Current operational deficiencies for the freeway mainline, freeway ramps, freeway weaving, and intersections and ramp termini are described in more detail below. In summary, the HCS analysis shows that all basic freeway segments operate at LOS D or better during the peak hours. Most of the merge/diverge sections along SR-91 are LOS D or better during both peak hours, with the exception of westbound Cherry Ave Off Ramp, which operates at LOS E during the PM peak hour. Two weaving segments operate at LOS D: Eastbound Cherry Avenue On to Paramount Boulevard Off and Westbound Acacia Court on ramp to Wilmington Avenue off ramp.

Freeway Ramp Merge and Diverge

The results of the existing conditions merge and diverge segment analysis are shown in Table 9 of the TEPA. Based on the HCM analysis, most freeway segments are shown to operate at LOS D or better in both directions. Only the westbound Cherry Avenue off ramp operates at LOS E based on the HCM results.

Freeway Weaving

The results of the existing conditions freeway weaving analysis are shown in 10 of the TEPA. Based on the HCM analysis, all segments operate with LOS D or better, with the exception of two (2) segments that operate at LOS E. The weaving section shown to operate at LOS E are as follows:

Eastbound

- Cherry Avenue On Ramp to Paramount Boulevard Off Ramp

Westbound

- Acacia Court On Ramp to Wilmington Avenue Off Ramp

HOV Analysis

The results of the existing conditions freeway High Occupancy Vehicle (HOV) segment analysis are represented in terms of volume-to-capacity ratios in Table 11 of the TEPA. As shown, three

HOV segments currently have volumes exceeding 1,650 vehicles per hour per lane (LOS C threshold, also considered capacity of HOV segment).

The project provides recommended improvements to the general purpose lanes, ramps, auxiliary lanes and other corridor elements, but does not directly add capacity or other improvements to the HOV lane system. By virtue of improving the overall corridor operations and improving level of service and reducing delay, there may be indirect benefits to the HOV lane operations as well. However, as the project is not designed to directly improve HOV lane performance or add capacity to the HOV system, HOV degradation will not significantly diminish by the proposed project under 710 scenarios 5C and 7. The proposed project will improve the Long Beach Blvd to 710 SB connector Off Ramp segment in the eastbound direction only. However, the following segments will remain at poor operating levels mostly due to high projected traffic volumes, close proximity to I-710 and close spacing of interchanges (to the east) to allow adequate merging and weaving.

- Cherry Avenue Off Ramp to Cherry Avenue On Ramp (EB)
- Cherry Avenue On Ramp to Paramount Blvd Off Ramp (EB)
- Paramount Blvd Off Ramp to Paramount Blvd On Ramp (EB and WB)
- Paramount Blvd Off Ramp to Paramount Blvd On Ramp (EB and WB)
- Paramount Blvd On Ramp to Cherry Avenue Off Ramp (WB)

Addressing HOV degradation requires a regional solution that extends beyond the I-710 zone of influence and I-605 to the east.

Intersections/Ramp Termini Analysis

The results of the existing conditions intersection analysis are shown in Table 12 of the TEPA. These intersections include freeway ramp termini, along with other nearby locations that may be affected by changes to the freeway and freeway access. Two locations are operating at LOS E or F in the AM and/or PM peak hours. All other locations are represented as operating at LOS D or better. It should be noted that the intersections at freeway/arterial ramp interchange locations sometimes experience poor operating conditions due to close intersection spacing and vehicle queues which back up from one location and negatively affect the operating conditions at the adjacent location. The HCM methodology fails to capture this since each location is assessed on its own. Thus, at some of these locations actual operating conditions may be worse.

6. CORRIDOR AND SYSTEM COORDINATION

The Functional Classification for SR-91 is P1, an extension of a rural principal arterial into an urban area. I-710 is functionally classified as an Interstate, State Highway, and an Urban Principal Arterial-P3. I-710 is also a part of the National Highway System. SR-91 and I-710 are part of the Federal Surface Transportation Assistance Act (STAA) route network for oversized trucks, Strategic Highway Network (STRAHNET) and Intermodal Corridors of Economic

Significance (ICES). I-710 is identified as a Major International Trade Highway Route in 2014 California Freight Mobility Plan and Interregional Transportation Strategic Plan of 2012 and serves as a part of the Intermodal Corridors of Economic Significance (ICES). SR-91 is classified as a Gateway Route in the Caltrans Interregional Transportation Strategic Plan (ITSP) of 1998. Global Gateways are designated as Goods Movement Corridors connecting with other major urban highways.

The 2012 Regional Transportation Plan (RTP), titled "2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): Towards a Sustainable Future," adopted by SCAG in April 2012 identifies SR-91 within the project limits as having existing rail transit.

The 2015 Federal Transportation Improvement Program (FTIP) adopted by SCAG's Executive/Administration Committee in December 2014 includes the following project, within the project limits of the SR-91/I-710 interchange project:

(1) FTIP Project ID# LA0G1138, RTP Project ID# LA990921
Description: Route 710: Los Angeles County MTA. Improvements to I-710 Soundwalls. The purpose of this project is to mitigate noise levels and provide aesthetic treatments on the 710 soundwalls. EA00234, ID 0700000201. PM from 4.9 to 24.9.

(2) FTIP Project ID# LA0B952, RTP Project ID# LA0B952
Description: Route 710: Reconstruct I-710 Interchanges at I-5, at I-405, at SR-91, and at I-105. As part of the I-710 Corridor Program proposing 4 truck lanes (ports-rail yards), 10 general purpose lanes (ports-SR-60)(ISTEA ID # 37)(SAFTEA-LU 3773). EA 249900. PM from 4.9 to 24.9.

The 2015 FTIP only includes SR-91 project improvements within the Orange and Riverside Counties, which are outside of the study limits of this PSR-PDS.

For local highway projects, the following projects are included in the FTIP and are within the project limits of study:

(3) FTIP Project ID# LA0G1131, RTP Project ID# 7120004
Description: City of Compton. Wilmington Ave Safe Streets Ped/Bicycle Improvements is a Ped/Bike Safety Improvement Project for the communities adjacent to the Wilmington Avenue transportation corridor by developing safer pedestrian crossings and intersections as well as installing bike paths to improve ped/bike safety. Total length of Class II bike way is 1.09 miles along Wilmington Avenue between El Segundo Blvd and Rosecrans Ave and along Rosecrans Ave between Wilmington Ave and Compton Creek. Program NCR30. Construction in 2015/16.

(4) FTIP Project ID# LA0G718, RTP Project ID# 1AL04
Description: City of Compton. Install safety lights on Compton Creek. Program NCR35. Construction in 2014/15.

(5) FTIP Project ID# LAE2194, RTP Project ID# LAE2194
Description: City of Compton. Greenleaf ROW Community Enhancement Project, design and construction of bikeway pedestrian walk way and upgrade signalization. Program NCR25. Construction in 2014/15.

(6) FTIP Project ID# LAE2819, RTP Project ID# LAE2819
Description: City of Compton. Rosecrans Ave Overhead and Arterial Reconstruction Project (Non-Capacity), SAFETEA-LU 1321. ISTEA 36. Program NCR36. Construction in 2014/16.

(7) FTIP Project ID# LA0G993, RTP Project ID# REG0703
Description: City of Long Beach. Atlantic Avenue and Willow Street Intersection Improvements. Addition of left and right turn lanes for the northbound and southbound approach. Program NCRH1.

(8) FTIP Project ID# LAE0701, RTP Project ID# LAE0701
Description: City of Long Beach. Develop and Implement Traffic Calming Measures for traffic exiting the I-710 into Long Beach. Program NCRT2. Construction in 2014/15.

(9) FTIP Project ID# LAE1296, RTP Project ID# LAE1296
Description: City of Long Beach. Long Beach Intelligent Transportation System. Program ITS12. Construction in 2014/15.

(10) FTIP Project ID# LAE3793, RTP Project ID# LAE3793
Description: City of Long Beach. California Avenue Widening: From Willow Avenue and Spring St, Widen California Avenue to Secondary Modified Highway Street Standards (Non-Capacity). Program NCR91. Construction in 2014/15.

(11) FTIP Project ID# LAF3615, RTP Project ID# 1NL04
Description: City of Long Beach. Long Beach Boulevard Pedestrian Improvement Project. Project provides pedestrian-oriented improvements to Long Beach Boulevard including pedestrian lighting, street trees, and crosswalk treatments. Program NCN27. Construction in 2014/15.

(12) FTIP Project ID# LAF5503, RTP Project ID# 1O1007
Description: City of Long Beach. City of Long Beach Phase II Bike Share Program. This project is located in the City of Long Beach and will implement a Phase II bike-share program. Funds are requested for the purchase and installation of 500 bikes, 50 docking stations and kiosks, and wayfinding signage. The project will support local and Metro transit stations, employment areas, business districts, and major activity nodes. Program TDM24. Construction in 2014/15.

(13) FTIP Project ID# LAF5508, RTP Project ID# 1O1009
Description: City of Long Beach. Atlantic Avenue Streetscape Enhancement. This project is located in Long Beach along Atlantic Avenue between Market Street and South Street. It will install streetscape improvements, shade trees, pedestrian lighting and decorative pavement features. Funds are requested for design, construction and installation cost. Program NCR27. Construction in 2015/16.

(14) FTIP Project ID# LAF7314, RTP Project ID# 1ITS04
Description: City of Long Beach. Santa Fe Avenue Synchronization Enhancement Project. Upgrade traffic signals along Santa Fe Avenue Corridor and replace obsolete equipment. Replace existing signal buttons with advanced traffic controllers to connect to the Adaptive Traffic Control System (ATCS). Install CCTVs and Class III bike route along Santa Fe Avenue. Furnish pedestrian push buttons and LED countdown pedestrian heads. Program ITS14. Construction in 2017/18.

(15) FTIP Project ID# LAF7316, RTP Project ID# 1ITS04
Description: City of Long Beach. Artesia Corridor ATCS Enhancement Project. Upgrade traffic signals along Artesia Boulevard between Long Beach Boulevard and Downey Avenue to connect with Adaptive Control System (ATCS). Install Class II bike lane in both directions from Atlantic Avenue to Susana Road. Pedestrian Improvements. Program ITS02. Construction in 2017/18.

The SR-91 TCR (Caltrans, July 2013) shows that 11 lanes (both directions) are required on SR-91 both west and east of I-710 to attain the minimum acceptable LOS F0 and that 14 lanes are required west of I-710 and 15 lanes east of I-710 to attain LOS D. The existing SR-91 includes four mixed flow lanes, and one HOV lane west of the I-710 interchange. East of the I-710 interchange, SR-91 includes five mixed flow lanes and one HOV lane on the WB side and four mixed flow lanes and one HOV lane on the EB side.

The I-710 TCR (Caltrans, July 2013) shows that 10 lanes are required (both directions) north of the I-710 and nine lanes are required south of the SR-91 to attain the minimum acceptable LOS F0 and that 13 lanes are required north and 9 lanes are required south of the SR-91 to attain a LOS D. The existing I-710 includes three mixed flow lanes in each direction south of the SR-91 and five mixed flow lanes in each direction north of the SR-91.

Caltrans published the California High-Occupancy Vehicle Lane Degradation Action Plan (September, 2015) (HOV Action Plan) in response to the findings within the 2014 California High-Occupancy Vehicle Lane Degradation Determination Report (September, 2015). The HOV Action Plan includes recommendations for HOV improvements within the project study area. According to the Report, degraded segments of existing HOV lanes exist within the project limits on EB SR-91 from I-110 to I-605 and WB from I-605 to I-710. The WB SR-91, west of I-710, is not considered degraded. There are no existing HOV lanes on I-710.

For EB SR-91, the potential causes of the degradation have been determined to be due to:

- General Purpose lane drop at Route 710 interchange
- Route 605 interchange causes bottleneck
- Vehicle weaving conflict at ingress/egress locations due to congestion on the general purpose lanes

For WB SR-91, the potential causes of the degradation have been determined to be due to:

- General Purpose lane drop at Route 710 interchange
- Route interchange causes bottleneck

- Vehicle weaving conflict at ingress/egress locations due to congestion on the general purpose lanes
- Issues with the vehicle detector system such as communication and power disruptions

In addition to the Caltrans HOV Degradation Report and Action Plan, SCAG has been conducting traffic modeling and analysis for an "Express Travel Choices Study" throughout the Los Angeles metropolitan region. Possible future implementation of the study findings needs to be monitored during the PA/ED phase to determine how the SR-91/I-710 study area may be impacted by, or benefit from, the SCAG study in regard to variable tolls, a network of toll express lanes, and other potential pricing scenarios.

State Highway Operation and Protection Program (SHOPP) Projects

Caltrans has proposed SHOPP projects along SR-91 and I-710 which are outlined in Tables 29 and 30, respectively.

Table 29 – Projects Along SR-91

Project ID	EA	Co-Rte-PM	CT_ Status	Active	FY 2015/ 16 DP	FY 2015/ 16 BL	FY 2016/ 17 DP	CFD	MTA	FS	CR	PM	Area	Dgn Sr	Capital Cost ($K)	Location	Work Description
071200003	29010	LA-091-6.5/11	APL	Yes	X		X			X	X	SB	PM2	MC	$11,320	IN LOS ANGELES COUNTY ON ROUTES 91 AND 105 AT VARIOUS LOCATIONS	INSTALL CONCRETE BARRIERS & RECONSTRUCT METAL BEAM GUARD RAILINGS
071400021	30720	LA-091-6.298/6.298	APL	Yes	X		X	X		X	X	PC	PM2	MC	$1,700	IN LOS ANGELES COUNTY, AT SPOT LOCATIONS ON ROUTES 91, 105, 110 AND 405	INSTALL HIGH FRICTION SURFACE TREATMENTS
070000184	26050	LA-091-6R/12	APL	No	X		X			X	X	GGH	PM1	RD	$2,087	IN LOS ANGELES COUNTY IN LOS ANGELES AND LONG BEACH AT ROUTE 110/91 SEPARATION AND ROUTE 91/710 SEPARATION	REPAIR BRIDGE CRACKS AND OVERLAY
071200009	29170	LA-091-11.43/11.43	APL	Yes	X		X			X	X	GGH	PM1	MC	$1,519	IN LOS ANGELES COUNTY ON ROUTES 1, 19 AND 91 AT VARIOUS LOCATIONS	UPGRADE BRIDGE RAILINGS
071300008	1W980	LA-091-6.1/11.4	APL	Yes						X	X	GKK	MNT	LAW	$6,000	IN LOS ANGELES COUNTY, FROM VERMONT AVENUE TO PM 11.32, PCC GRIND 110/91 CONNECTORS, SLABS REPAIR, GRIND LANES PM 6.057/6.698 EB & WB NO. 2,3,4 LANES, CPOL SHOULDERS	IN LOS ANGELES COUNTY, FROM VERMONT AVENUE TO PM 11.32, PCC GRIND 110/91 CONNECTORS, SLABS REPAIR, GRIND LANES PM 6.057/6.698 EB & WB NO. 2,3,4 LANES, CPOL SHOULDERS
071500003	3W050	LA-091-6.03/13.86	APL	Yes						X	X	CS	MNT	KK3	$1,381	IN LOS ANGELES COUNTY AT VARIOUS LOCATIONS ON ROUTES 110, 710, 405, 1, 47 AND 91.	PATCH DECK SPALLS; METHACRYLATE BRIDGE DECKS; PLACE POLYESTER DECK OVERLAY; REPLACE JOINT SEALS;
071400002	30160	LA-091-10.19/10.39	APL	Yes			X				X	OJS	PM1	MAA	$8,790	IN LA @ RTE 39,71,91,110,138,710 AT VAR LOCS	SEISMIC RETROFIT PROJECT (PID)
071400005	30410	LA-091-14.1R/16.6	APL	Yes			X				X	OJS	PM1	RR2	$2,003	IN LA FR DOWNEY AV / SAN GABRIEL RIVER	WORKER SAFETY
071300002	29620	LA-091-11.8R/14.1R	APL	Yes	X		X			X	X	MKT	PM1	DTH	$2,103	IN THE CITY OF LONG BEACH, FROM I-710 TO DOWNEY AVENUE	ROADWAY SAFETY IMPROVEMENTS
070002091	2X920	LA-091-9.7/11.7	APL	No	X	X				X	X	MKT	PM1	MOK	$1,165	IN LOS ANGELES COUNTY IN COMPTON AND LONG BEACH AT VARIOUS LOCATIONS FROMA ACACIA AVENUE UNDERCROSSING TO LOS ANGELES RIVER	HIGHWAY PLANTING AND IRRIGATION
071500017	4T770	LA-091-12.96/13.76	On-Hold	Yes			X				X	EKW	PM5	OE	$1,056	IN LA, WB 91 ONRAMP FR NB CHERRY AV EB 91 ONRAMP FR SB PARAMOUNT BL	MODIFYSIGNAL & ADA IMPROVEMENT
071200041	4T630	LA-091-6.87R/7R	APL	Yes	X					X	X	EKW	PM5	SE2	$4,530	IN LA COUNTY, IN CARSON JUST EAST OF MAIN STREET UNDERCROSSING BRIDGE	REGRADE SLOPE & IMPROVE DRAINAGE
071600001	31910	LA-091-11.65R/ 11.65R	On-Hold	Yes							X	DAY	PM1	DAY	$5,500		
071600002	31920	LA-091-6/18	On-Hold	Yes							X	DAY	PM1	DAY	$1,800		

Table 30 – Projects Along I-710

Project ID	EA	Co-Rte-PM	CT_ Status	Active	FY 2015/ 16 DP	FY 2015/ 16 BL	FY 2016/ 17 DP	CFD	MTA	FS	CR	PM	Area	Dgn Sr	Capital Cost ($K)	Location	Work Description
0700000182	18312	LA-710-9.4/18.4	APL	Yes	X		X			X	X	AW	PM2	RR2	$1,934	IN LA COUNTY IN LONG BEACH AND SOUTH GATE ROUTE 405 TO FIRESTONE BLVD	REQUIRED LANDSCAPE MITIGATION
0700000443	24990	LA-710-4.9/24.9	APL	Yes	X		X		X	X	X	JMV	PM4	MAG	$7,000,000	PORTS IN CITY OF LONG BEACH TO CESAR CHAVEZ OC IN EAST LOS ANGELES	I-710 SOUTH EXPANSION *O/S

7. ALTERNATIVES

Project Alternatives

The project alternatives are briefly summarized below and further described in Table 32 followed by a list of 32 bridges in Table 33 including 18 bridges to be modified (widened or reconstructed) by each build alternative that will also modify the current structural pavement section.

SR-91

Seven alternatives were analyzed for the project consisting of one no build and six build alternatives. Each of the six proposed build alternatives includes the addition of one general purpose lane in each direction which is consistent with the SR-91/I-605/I-405 Congestion Hot Spots Feasibility Report prepared for Metro and the Gateway Cities Council of Governments (GCCOG), dated March 26, 2013.

I-710

The six build alternatives are equally divided among two possible I-710 widening alternatives, namely Alternative 5C and Alternative 7. Alternative 5C consists of widening I-710 to provide 10 general purpose lanes. Alternative 7 consists of widening to provide 8 general purpose lanes and an elevated 4-lane truckway or freight corridor within the current Southern California Edison (SCE) easement, bordering the east side of I-710. Alternatives 5C and 7 must both be evaluated because the decision on the preferred alternative for I-710 has not been made and will not occur until Spring of 2017.

This project proposes to add one mixed flow lane in each direction on SR-91 from the westerly ramp connections of the Central Avenue interchange (PM R8.2) to the easterly ramp connections of the Paramount Boulevard interchange (PM R13.8). The freeway-to-local street interchanges will be modified to accommodate the mainline SR-91 widening as well as multimodal integration, including provisions for pedestrians (e.g., ADA compliant curb ramps and sidewalks), and designated bikeways on local streets and roads. Existing sidewalks vary between 5 (e.g. at Central Avenue bridge) and 10 feet to match existing sidewalk widths and, in some cases, to allow standard widths where widening is proposed. The freeway-to-freeway (SR-91 / I-710) interchange, also known as "system interchange," will be reconstructed to accommodate both the proposed SR-91 widening as well as the I-710 Corridor Improvements currently under evaluation by a separate project. The proposed connectors at the SR-91/I-710 interchange are assumed to be constructed by the I-710 Corridor Project and are thus not included in the cost estimates for SR-91 in this PSR-PDS.

There are four basic alternatives for the SR-91 widening:

- Alternative 1: No Build,
- Alternative 2: Build (Standard Lanes and Shoulders),
- Alternative 3: Build (Non-Standard Lanes and Shoulders) and

- Alternative 4: (Hybrid with Standard and Non-Standard Lanes and Shoulders including an Eastbound Collector-Distributor Road between Acacia Court and Long Beach Boulevard)

Given that the I-710 Corridor Improvement project has two build alternatives under consideration, namely:

- Alternative 5C: Widens the I-710 mainline to provide 10 mixed flow lanes and
- Alternative 7: Provides eight mixed flow lanes and an exclusive four-lane elevated truckway, or freight corridor on I-710,

Each of the "build" alternatives will include two I-710 scenarios in this PSR-PDS.

The project improvement limits include SR-91 from the westerly ramp connections of the Central Avenue interchange (PM R8.2) to the easterly ramp connections of the Paramount Boulevard interchange (PM R13.8). This PSR-PDS includes six build alternatives and one no build alternative. The build alternatives within this PSR-PDS involve two I-710 alternatives currently considered by a separate project:

- Alternative 5C which widens the I-710 mainline to provide 10 mixed flow lanes and
- Alternative 7 which provides eight mixed flow lanes and an exclusive four-lane elevated truckway, or freight corridor on I-710.

Alternative 1 – No Build, Alternative 2 - Build (Standard Lanes and Shoulders), Alternative 3 Build (Non-Standard Lanes and Shoulders) and Alternative 4 (Hybrid with Non-Standard Lanes and Shoulders including an Eastbound Collector-Distributor Road between Acacia Court and Long Beach Boulevard). In general, the proposed build alternatives add one mixed flow lane in each direction on SR-91 within the project limits. Due to mainline widening and multimodal integration, including provisions for pedestrians (e.g., ADA, sidewalks, etc.), bikeways and truckways, local streets and system interchanges are affected, and therefore, the build alternatives include modifications to local and system interchanges.

Additional details of each alternative are provided below:

Alternative 1

This alternative is the No Build alternative which avoids any reconstruction or improvements to the existing SR-91 freeway. All freeway facilities remain in their existing condition and operational deficiencies along SR-91 will continue to deteriorate as traffic volumes increase. This alternative does not address or alleviate traffic congestion anticipated in the area. Consequently, the No Build alternative does not address the Purpose and Need for the project.

The No Build alternative is being considered because it serves as the baseline against which to evaluate the effectiveness of proposed build alternatives. This alternative allows decision makers to compare and evaluate the impacts of build alternatives with those of a no build alternative.

Alternative 2

This alternative adds one mixed flow lane in each direction on SR-91. Auxiliary lanes are also provided primarily at locations where congestion, merging and weaving warrant the need for them. The freeway cross section is widened to meet HDM standard lanes and shoulders. This alternative proposes standard lanes and shoulder widths in addition to standard 4-foot wide HOV buffers. Right-of-way acquisition will be necessary to accommodate the Alternative 2 improvements.

SR-91 mainline widening requires the reconstruction of ramps at local and system interchanges as follows:

Central Avenue Interchange

The Central Avenue interchange on and off ramps are realigned with the SR-91 freeway widening. The current diamond interchange is widened at the Artesia Boulevard and Albertoni Street intersections by restriping to add an exclusive westbound and eastbound through lane, respectively.

A Class IV bikeway on Central Avenue requires the widening of the current bridge by 16 feet.

Improvements are identical to I-710 alternatives 5C and 7.

Wilmington Avenue Interchange

Like Central Avenue, the WB and EB ramps at the Wilmington Avenue interchange are realigned with the SR-91 freeway widening and the current diamond interchange. In this case, however, the existing lane configurations at the intersections north and south of SR-91 remain as they operate adequately with projected traffic volumes. There is no bikeway on Wilmington Avenue.

Improvements are identical to I-710 alternatives 5C and 7.

Alameda Street Interchange

The EB Alameda Street on and off ramps are realigned with SR-91 freeway widening and the EB ramp intersection with Alameda Street. Alameda Street accommodate two lanes in each direction beneath SR-91 and does not have a designated bikeway.

710 Alt. 5C: This alternative proposes a standard loop on-ramp in the EB direction and connects the Alameda Street EB on ramp to the mainline further east at Susana Road/Harbor Avenue, via flyover of the Santa Fe Avenue EB on and offramp and braid over the realigned Long Beach Boulevard EB offramp.

710 Alt. 7: This alternative proposed to maintain the current EB Alameda Street on and off ramps in their current location without adjustment.

Santa Fe Avenue Interchange

The EB and WB Santa Fe Avenue on and off ramps are realigned with SR-91 freeway widening. In addition, Santa Fe Avenue, beneath SR-91, is reconfigured to accommodate a Class II Bike Lane and street parking.

710 Alt. 5C: This alternative proposes the realignment and widening of the EB Santa Fe Avenue on ramp to provide a two lane on ramp to connect further east near Susana Road/Harbor Avenue.

710 Alt. 7: This alternative proposed to maintain the current EB Santa Fe Avenue on and off ramps in their current location without adjustment.

Long Beach Boulevard Interchange

The WB and EB Long Beach Boulevard ramps are realigned with the SR-91 freeway widening and Long Beach Boulevard is reconfigured to accommodate Class II Bike Lanes.

710 Alt. 5C: This alternative relocates the EB Long Beach Boulevard off ramp further west to a point east of the Santa Fe Avenue interchange. This off ramp crosses beneath a braided EB Santa Fe Avenue on ramp. In addition, this alternative eliminates the existing EB Long Beach Boulevard hook ramp and the WB off ramp at Long Beach Boulevard. Also, this alternative realigns the WB Long Beach Boulevard on ramp to join the mainline west of Santa Fe Avenue.

710 Alt. 7: This alternative proposed to maintain the current WB and EB Long Beach Boulevard on and off ramps in their current location without adjustment. The only change is a new NB to WB 710 connector ramp which is braided to cross above the WB offramp at Long Beach Boulevard and join the mainline immediately west of Long Beach Boulevard.

Long Beach Boulevard will be widened and restriped to accommodate a Class II bikeway in each direction.

SR-91/I-710 System Interchange

At the SR-91/I-710 System Interchange the existing direct connectors and loop connectors are reconstructed to accommodate the mainline widening.

710 Alt. 5C: This alternative eliminates the NB 710 Artesia Boulevard off ramp, the SR-91 EB Atlantic Boulevard off-ramp, the NB 710/WB SR-91 loop ramp, the WB Atlantic Boulevard on ramp and the WB SR-91 to NB 710 connector ramp from Atlantic Avenue. Also, the 710 SB to SR-91 EB connector is modified to eliminate the EB Atlantic Boulevard off ramp. A new NB 710 Atlantic Avenue off ramp is provided.

710 Alt. 7: This alternative eliminates the NB 710 Artesia Boulevard off ramp, the SR-91 EB Atlantic Boulevard off-ramp, the NB 710/WB SR-91 loop ramp, the WB SR-91 to NB 710 connector ramp from Atlantic Avenue. Also, the 710 SB to SR-91 EB connector is modified to eliminate the EB Atlantic Boulevard off ramp. A new 710 NB Atlantic Avenue off ramp and SR-91 EB Atlantic Blvd off ramp are provided. A new north-south four-lane 710 Freight Corridor is provided including NB to EB as well as WB to SB freight corridor connector ramps.

Atlantic Avenue Interchange

Atlantic Avenue on and off ramps which remain are realigned with the SR-91 freeway widening and the Atlantic Avenue undercrossing is widened to accommodate turn lanes. Atlantic Avenue is a designated Class III Bike Route.

710 Alt. 5C: This alternative converts the Atlantic Avenue interchange to a half diamond interchange by eliminating the WB Atlantic Blvd on ramp and EB Atlantic Blvd off ramp.

710 Alt. 7: This alternative eliminates the WB SR-91 to 710 NB connector from Atlantic Avenue and the EB Atlantic Boulevard off ramp. The WB Atlantic Boulevard off ramp is widened and realigned with a braided WB freight corridor connector crossing above it. New SR-91 EB Atlantic Boulevard on and off ramps are provided by this alternative.

Cherry Avenue Interchange

Cherry Avenue on and off ramps are realigned with the SR-91 freeway widening and Cherry Avenue is reconfigured to accommodate a Class III Bike Route.

710 Alt. 5C: This alternative does not change the current interchange.

710 Alt. 7: This alternative realigns the EB Cherry Avenue off ramp with the freight corridor connector on ramp west of Cherry Avenue.

Paramount Boulevard Interchange

Paramount Boulevard on and off ramps are realigned with the SR-91 freeway widening and Paramount Boulevard is widened to accommodate Class II Bike Lanes.

710 Alt. 5C: This alternative does not change the current interchange.

710 Alt. 7: This alternative does not change the current interchange.

Alternative 2 addresses the Purpose and Need for the project by reducing congestion and improving freeway mainline and ramp operations, improving safety, and improving local and system interchange operations. By proposing Caltrans' geometric design standards related to lane and shoulder widths, however, the alternative does not minimize adjacent right-of-way, environmental and economic impacts.

Alternative 3

Alternative 3 improvements are generally the same as for Alternative 2 on SR-91, however, Alternative 3 includes non-standard design features within the SR-91 mainline cross section, such as 11-foot mixed flow/HOV lanes and a 2-foot HOV buffer. Two truck lanes on the outside remain at 12 feet wide. Alternative 3 will operate the same within the mainline and at interchanges as Alternative 2 under both 710 Alternatives 5C and 7. Alternative 3, however, has fewer right-of-way impacts than Alternative 2 due to the narrower geometric cross section.

Alternative 3 addresses the Purpose and Need for the project by reducing congestion, and improving freeway mainline and ramp operations, safety and interchange operations, while minimizing adjacent right-of-way, environmental and economic (e.g., travel time and delay cost, etc.) impacts as compared to Alternative 2.

Alternative 4

Alternative 4 improvements are largely the same as Alternative 3 with the exception of a 1.3 mile EB collector-distributor road between Acacia Court and Long Beach Boulevard as well as wider buffers and shoulders, wherever possible, than those in Alternative 3.

Alternative 4 addresses the Purpose and Need for the project by further reducing congestion, and improving freeway mainline and ramp operations, safety and interchange operations as compared to Alternative 3. In addition, Alternative 4 optimizes lanes, shoulders and buffers while limiting right-of-way, environmental and economic impacts.

SR-91 mainline widening requires the reconstruction of ramps at local and system interchanges as follows:

Central Avenue Interchange

Unlike Alternative 2, the Central Avenue interchange on and off ramps are realigned with the SR-91 freeway widening but the interchange is converted from a diamond interchange to a modified diverging diamond interchange between Artesia Boulevard and Albertoni Street. The diverging diamond interchange allows for better interchange operations in terms of left turn storage, less queuing and wider turn movements for trucks. A modified diverging diamond was required to allow two EB through lanes at Albertoni Street and one WB through lane at Artesia Boulevard.

The modified diverging diamond also accommodates a Class IV bikeway on Central Avenue without the need to widen the middle of the Central Avenue Bridge.

Improvements are identical to I-710 alternatives 5C and 7.

Wilmington Avenue Interchange

Like Central Avenue, the WB and EB ramps at the Wilmington Avenue interchange are realigned with the SR-91 freeway widening and a modified diverging diamond interchange is proposed to improve left turn storage, reduce queuing and improve maneuverability for trucks. Like Central Avenue, a modified diverging diamond was required to allow two EB through lanes at Albertoni Street and one WB through lane at Artesia Boulevard. Unlike Central Avenue, there is no designated bikeway on Wilmington Avenue.

Improvements are identical to I-710 alternatives 5C and 7.

Acacia Court Interchange

A new two-lane EB on ramp and collector-distributor road begins at this interchange and extends easterly to Long Beach Boulevard.

Alameda Street Interchange

The EB Alameda Street on and off ramps are realigned with SR-91 freeway widening and the EB ramp intersection with Alameda Street.

710 Alt. 5C: This alternative proposes standard two-lane EB on and off ramps which are connected to the C-D road from Acacia Court.

710 Alt. 7: This alternative proposes the same improvements as those by Alternative 5C.

Santa Fe Avenue Interchange

The EB and WB Santa Fe Avenue on and off ramps are realigned with SR-91 freeway widening. In addition, Santa Fe Avenue, beneath SR-91, is reconfigured to accommodate a Class II Bike Lane and street parking.

710 Alt. 5C: This alternative proposes to maintain the current EB Santa Fe Avenue on and off ramps in their current location without adjustment. The proposed 3-lane C-D road spans over the EB on and off ramps at Santa Fe Avenue.

710 Alt. 7: This alternative proposes the same improvements as those in Alternative 5C.

Long Beach Boulevard Interchange

The WB and EB Long Beach Boulevard ramps are realigned with the SR-91 freeway widening and Long Beach Boulevard is reconfigured to accommodate Class II Bike Lanes.

710 Alt. 5C: This alternative realigns the EB Long Beach Boulevard off ramp from the C-D road instead of the current mainline connection. In addition, this alternative maintains the existing EB Long Beach Boulevard hook ramp and realigns the WB Long Beach Boulevard on ramp to join the mainline west of Santa Fe Avenue. In addition, this alternative provides a realigned WB off-ramp at Long Beach Boulevard connected, via an auxiliary lane, to the WB on ramp at Atlantic Avenue.

710 Alt. 7: This alternative proposes to maintain the current WB and EB Long Beach Boulevard on and off ramps in their current location without adjustment. The only change is a new NB to WB 710 connector ramp which is braided to cross above the WB off-ramp at Long Beach Boulevard and join the mainline immediately west of Long Beach Boulevard.

Alternative 4 addresses the Purpose and Need for the project by reducing congestion and improving freeway operations (both mainline and ramps), improving safety, improving local and system interchange operations, utilizing a non-standard design cross section where possible and minimizing right-of-way acquisition needs to minimize environmental and economic impacts compared to Alternatives 2 and 3.

Multimodal Integration

All build alternatives include interchange improvements to improve accessibility (i.e., provide missing curb ramps or sidewalks) and accommodate designated bikeways including Class I, II, III and IV bikeways.

For all build alternatives, FHWA involvement will be required. Any proposed modifications to the highway access control (such as at arterial interchanges) will require California Transportation Commission (CTC) action. Additional right-of-way would be required where nonstandard features cannot be justified. Lane and ramp closures would be required during construction of the build alternatives, and potential agency limitations on such closures could impact the project schedule and cost (cost estimate ranges for all alternatives are provided in Section 11 - Funding).

Considerations Requiring Further Study

Consideration for the truck lanes on SR-91 will be evaluated during the PA/ED phase to determine whether a truck lane study will become part of the scope. Several truck lane studies have been conducted and are ongoing by SCAG, including the SR-91 Truck Lane Feasibility Study, February 2014. The truck lane study should consider future truck route performance, operations, goods movement, safety, and pollution reduction.

Consideration for High Occupancy Toll (HOT) lanes on I-710 will be evaluated during the PA/ED phase to determine whether the HOT lane studies become part of the scope. Consideration for HOT lanes or conversion of HOV lanes to HOT lanes was not included in this PSR-PDS.

Value Analysis

A Value Analysis (VA) Study was conducted during the week of October 3, 2016 to assess value added suggestions that can further enhance the project. The VA suggestions and related actions of the VA Study are outlined in Table 31 below.

Table 31 - VA Design Suggestions and Actions

No.	Code	VA Design Suggestions	Action
1.0	SL-2	Use pre-cast in lieu of cast in place for structure construction.	Apply by Including in cost estimate
2.0	IO-2	Construct split diamond interchanges in lieu of diamond interchanges.	Apply in PA/ED
3.0	MS-1	Maintain vertical clearance by reducing depth of certain structures.	Apply
4.0	IO-2	Provide braided ramps in lieu of diamond ramps between Cherry and Paramount.	Delete, not feasible due to RR overpass.
5.0	MS-3	Increase widths of local street overcrossings to accommodate current standards.	Apply in PA/ED. Add contingency for bridge retrofits now.
6.0	SL-5	Reduce shift of proposed design to utilize existing pavement.	Apply wherever possible.
7.0	RI-2	Decrease the buffer width to allow standard lane and shoulder widths.	Apply wherever possible.

8.0	AR-1	Redesign the west SR-91 to I-710 ramp to reduce R/W acquisition.	Apply if possible
9.0	MS-4	Increase length of west SR-91 Atlantic on-ramp to accommodate grade differential.	Apply
10.0	AR-2	Optimize geometry at north I-710 to west SR-91 connector to reduce R/W acquisitions.	Apply
No.	**Code**	**VA Other Considerations**	**Action**
1.0	DP-1	Use alternate method of contract delivery for the project.	Apply
2.0	TW-3	Repurpose retired facilities for drainage system use.	Apply
3.0	PP-1	Split project into smaller component projects.	Apply
4.0	IP-2	Integrate ITS elements to inform motorists of changing traffic conditions.	Apply

Several of the above suggestions were considered during the PSR-PDS phase. During the PA/ED phase, when a preferred 710 Alternative is selected, VA suggestions can be considered for optimum applicability.

Table 32 - SR-91/I-710 PSR-PDS Alternative Descriptions

Location	Alternative 1 (No Build)	Alternative 2	Alternative 3	Alternative 4
SR-91: Central Avenue to Wilmington Avenue	Mainline: No improvements.	Mainline: Adds one mixed flow lane in each direction, WB and EB. All Lanes and shoulders are standard widths, including 4' HOV buffer. Maintain existing WB and EB auxiliary lanes.	Mainline: Adds one standard mixed flow lane in each direction, WB and EB. Reduce lane widths to 11'. Inside shoulder and HOV buffer are non-standard.	Mainline: Adds one standard mixed flow lane in each direction, WB and EB. All Lanes are standard width. Inside shoulder and HOV buffer are non-standard.
	Ramps: No improvements.	Ramps: Realign WB and EB ramps to match freeway widening. Maintain existing ramp lane configurations.	Ramps: Realign WB and EB ramps to match freeway widening. Maintain existing ramp lane configurations.	Ramps: Realign WB and EB ramps to match freeway widening. Maintain existing ramp lane configurations.
	Local Streets: No improvements.	Local Streets: Reconfigure Central Avenue Lane Configuration to accommodate Class II Bike Lanes. The Artesia Boulevard, frontage Road in this segment will be maintained as existing.	Local Streets: Reconfigure Central Avenue Lane Configuration to accommodate Class II Bike Lane. The Artesia Boulevard, frontage Road in this segment will be maintained as existing.	Local Streets: Reconfigure Central Avenue Lane Configuration to accommodate Class II Bike Lane. The Artesia Boulevard, frontage Road in this segment will be maintained as existing.
SR-91: Wilmington Avenue to Acacia Street	Mainline: No improvements.	Mainline: Adds one mixed flow lane in each direction, WB and EB. Widen Acacia Avenue Undercrossing structure. All Lanes and shoulders are standard widths, including 4' HOV buffer. Maintain existing WB and EB auxiliary lanes.	Mainline: Adds one standard mixed flow lane in each direction, WB and EB. Reduce lane widths to 11'. Inside shoulder and HOV buffer are non-standard. Widen Acacia Avenue Undercrossing structure. Maintain existing WB and EB auxiliary lanes.	Mainline: Adds one standard mixed flow lane in each direction, WB and EB. All Lanes are standard width. Inside shoulder and HOV buffer are non-standard. Widen Acacia Avenue Undercrossing structure. Maintain existing WB and EB auxiliary lanes.
	Ramps: No improvements.	Ramps: Realign WB and EB ramps to match freeway widening. Maintain existing ramp lane configurations.	Ramps: Realign WB and EB ramps to match freeway widening. Maintain existing ramp lane configurations.	Ramps: Realign WB and EB ramps to match freeway widening. Maintain existing ramp lane configurations.
	Local Streets: No improvements.	Local Streets: Maintain existing lane configuration on Wilmington Avenue. The Artesia Boulevard, frontage Road in this segment will be maintained as existing. Wilmington will be restriped.	Local Streets: Maintain existing lane configuration on Wilmington Avenue. The Artesia Boulevard, frontage Road in this segment will be maintained as existing. Wilmington will be restriped.	Local Streets: Maintain existing lane configuration on Wilmington Avenue. The Artesia Boulevard, frontage Road in this segment will be maintained as existing. Wilmington will be restriped.
SR-91: Acacia Street to Alameda Street	Mainline: No improvements.	Mainline: Adds one mixed flow lane in each direction, WB and EB. Widen College Overhead structure. All Lanes and shoulders are standard widths, including 4' HOV buffer. Maintain existing EB auxiliary lane.	Mainline: Adds one standard mixed flow lane in each direction, WB and EB. Reduce lane widths to 11'. Inside shoulder and HOV buffer are non-standard. Widen College Overhead structure. Maintain existing EB auxiliary lane.	Mainline: Adds one standard mixed flow lane in each direction, WB and EB. All Lanes are standard width. Inside shoulder and HOV buffer are non-standard. Widen College Overhead structure. Maintain existing EB auxiliary lane.
	Ramps: No improvements.	Ramps: Realign EB ramps to match freeway widening. Reconfigure EB ramp intersection with Alameda Street to standard clover leaf.	Ramps: Realign EB ramps to match freeway widening. Reconfigure EB ramp intersection with Alameda Street to standard clover leaf.	Ramps: Realign EB ramps to match freeway widening. Reconfigure EB ramp intersection with proposed frontage road.
	Local Streets: No improvements.	Local Streets: Maintain existing conditions.	Local Streets: Maintain existing conditions.	Local Streets: Maintain existing conditions.
SR-91: Alameda Street to Santa Fe Avenue	Mainline: No improvements.	Mainline: Adds one mixed flow lane in each direction, WB and EB. Widen Compton Creek Overhead structure. Realign Compton Creek Overhead structures for the Alameda EB on-ramp and the EB Santa FE Avenue off-ramp. All Lanes and shoulders are standard widths, including 4' HOV buffer.	Mainline: Adds one standard mixed flow lane in each direction, WB and EB. Reduce lane widths to 11'. Inside shoulder and HOV buffer are non-standard. Widen Compton Creek Overhead structure. Realign Compton Creek Overhead structures for the Alameda EB on-ramp and the EB Santa FE Avenue off-ramp.	Mainline: Adds one standard mixed flow lane in each direction, WB and EB. All Lanes are standard width. Inside shoulder and HOV buffer are non-standard. Widen Compton Creek Overhead structure. Realign Compton Creek Overhead structures for the Alameda EB on-ramp and the EB Santa FE Avenue off-ramp.
	Ramps: No improvements.	Ramps: Realign WB and EB ramps to match freeway widening. Reconfigure EB ramp intersection with Alameda Street to standard clover leaf.	Ramps: Realign WB and EB ramps to match freeway widening. Reconfigure EB ramp intersection with Alameda Street to standard clover leaf.	Ramps: Realign WB and EB ramps to match freeway widening. Reconfigure EB ramp intersection with the proposed frontage road.
	Local Streets: No improvements.	Local Streets: Reconfigure Santa Fe Avenue to accommodate Class II Bike Lane and street parking.	Local Streets: Reconfigure Santa Fe Avenue to accommodate Class II Bike Lane and street parking.	Local Streets: Reconfigure Santa Fe Avenue to accommodate Class II Bike Lane and street parking.
SR-91: Santa Fe Avenue to Long Beach Boulevard	Mainline: No improvements.	Mainline: Adds one mixed flow lane in each direction, WB and EB. Widen Susana Road and Long Beach Boulevard Undercrossing structures. All Lanes and shoulders are standard widths, including 4' HOV buffer. Maintain existing WB and EB auxiliary lanes.	Mainline: Adds one standard mixed flow lane in each direction, WB and EB. Reduce lane widths to 11'. Inside shoulder and HOV buffer are non-standard. Widen Susan Road and Long Beach Boulevard Undercrossing structures. Maintain existing WB and EB auxiliary lanes.	Mainline: Adds one standard mixed flow lane in each direction, WB and EB. All Lanes are standard width. Inside shoulder and HOV buffer are non-standard. Widen Susan Road and Long Beach Boulevard Undercrossing structures. Maintain existing WB and EB auxiliary lanes.
	Ramps: No improvements.	Ramps: Realign WB and EB ramps to match freeway widening. Maintain existing ramp lane configurations.	Ramps: Realign WB and EB ramps to match freeway widening. Maintain existing ramp lane configurations.	Ramps: Realign WB and EB ramps to match freeway widening. Maintain existing ramp lane configurations.
	Local Streets: No improvements.	Local Streets: Reconfigure Long Beach Boulevard to accommodate Class II Bike Lanes.	Local Streets: Reconfigure Long Beach Boulevard to accommodate Class II Bike Lanes.	Local Streets: Reconfigure Long Beach Boulevard to accommodate Class II Bike Lanes.
SR-91: Long Beach Boulevard to I-710	Mainline: No improvements.	Mainline: Adds one mixed flow lane in each direction, WB and EB. Widen Butler Avenue and Artesia Boulevard Undercrossing Structures and SR-91/I-710 Separation Structure. All Lanes and shoulders are standard widths, including 4' HOV buffer. Maintain existing EB auxiliary lane.	Mainline: Adds one standard mixed flow lane in each direction, WB and EB. Reduce lane widths to 11'. Inside shoulder and HOV buffer are non-standard. Widen Butler Avenue and Artesia Boulevard Undercrossing Structures and SR-91/I-710 Separation Structure. Maintain existing EB auxiliary lane.	Mainline: Adds one standard mixed flow lane in each direction, WB and EB. All Lanes are standard width. Inside shoulder and HOV buffer are non-standard. Widen Butler Avenue and Artesia Boulevard Undercrossing Structures and SR-91/I-710 Separation Structure. Maintain existing EB auxiliary lane.

Location	Alternative 1 (No Build)	Alternative 2	Alternative 3	Alternative 4
	Ramps: No improvements.	Ramps: Realign WB off-ramp at Long Beach Boulevard and I-710 direct connectors to match freeway widening.	Ramps: Realign WB off-ramp at Long Beach Boulevard and I-710 direct connectors to match freeway widening.	Ramps: Realign WB off-ramp at Long Beach Boulevard and I-710 direct connectors to match freeway widening.
	Local Streets: No improvements.	Local Streets: Maintain existing conditions. A Class II Bikeway is proposed in each direction.	Local Streets: Maintain existing conditions. A Class II Bikeway is proposed in each direction.	Local Streets: Maintain existing conditions. A Class II Bikeway is proposed in each direction.
SR-91: I-710 to Atlantic Avenue	Mainline: No improvements.	Mainline: Adds one mixed flow lane in each direction, WB and EB. Widen Los Angeles River and Atlantic Avenue Undercrossing structures. All Lanes and shoulders are standard widths, including 4' HOV buffer.	Mainline: Adds one standard mixed flow lane in each direction, WB and EB. Reduce lane widths to 11'. Inside shoulder and HOV buffer are non-standard. Widen Los Angeles River and Atlantic Avenue Undercrossing structures.	Mainline: Adds one standard mixed flow lane in each direction, WB and EB. All Lanes are standard width. Inside shoulder and HOV buffer are non-standard. Widen Los Angeles River and Atlantic Avenue Undercrossing structures.
	Ramps: No improvements.	Ramps: Realign I-710 direct connector to match SR-91 widening.	Ramps: Realign I-710 direct connector to match SR-91 widening.	Ramps: Realign I-710 direct connector to match SR-91 widening.
	Local Streets: No improvements.	Local Streets: Widen Atlantic Avenue to accommodate Class II Bike Lane.	Local Streets: Widen Atlantic Avenue to accommodate Class II Bike Lane.	Local Streets: Widen Atlantic Avenue to accommodate Class II Bike Lane.
SR-91: Atlantic Avenue to Cherry Avenue	Mainline: No improvements.	Mainline: Adds one mixed flow lane in each direction, WB and EB. Widen Myrtle Avenue, Orange Avenue, Walnut Avenue and Cherry Avenue Undercrossing structures. All Lanes and shoulders are standard widths, including 4' HOV buffer. Maintain existing WB and EB auxiliary lanes.	Mainline: Adds one standard mixed flow lane in each direction, WB and EB. Reduce lane widths to 11'. Inside shoulder and HOV buffer are non-standard. Widen Myrtle Avenue, Orange Avenue, Walnut Avenue and Cherry Avenue Undercrossing structures.	Mainline: Adds one standard mixed flow lane in each direction, WB and EB. All Lanes are standard width. Inside shoulder and HOV buffer are non-standard. Widen Myrtle Avenue, Orange Avenue, Walnut Avenue and Cherry Avenue Undercrossing structures.
	Ramps: No improvements.	Ramps: Realign WB and EB ramps to match SR-91 freeway widening. Maintain existing WB and EB auxiliary lanes.	Ramps: Realign WB and EB ramps to match SR-91 freeway widening. Maintain existing WB and EB auxiliary lanes.	Ramps: Realign WB and EB ramps to match SR-91 freeway widening. Maintain existing WB and EB auxiliary lanes.
	Local Streets: No improvements.	Local Streets: Reconfigure Cherry Avenue to accommodate Class III Bike Route.	Local Streets: Reconfigure Cherry Avenue to accommodate Class III Bike Route.	Local Streets: Reconfigure Cherry Avenue to accommodate Class III Bike Route.
SR-91: Cherry Avenue to Paramount Boulevard	Mainline: No improvements.	Mainline: Adds one mixed flow lane in each direction, WB and EB. Widen North Long Beach Overhead and Paramount Boulevard Undercrossing structures. All Lanes and shoulders are standard widths, including 4' HOV buffer. Maintain existing WB and EB auxiliary lanes.	Mainline: Adds one standard mixed flow lane in each direction, WB and EB. Reduce lane widths to 11'. Inside shoulder and HOV buffer are non-standard. Widen North Long Beach Overhead and Paramount Boulevard Undercrossing structures. Maintain existing WB and EB auxiliary lanes.	Mainline: Adds one standard mixed flow lane in each direction, WB and EB. All Lanes are standard width. Inside shoulder and HOV buffer are non-standard. Widen North Long Beach Overhead and Paramount Boulevard Undercrossing structures. Maintain existing WB and EB auxiliary lanes.
	Ramps: No improvements.	Ramps: Realign WB and EB ramps to match SR-91 freeway widening.	Ramps: Realign WB and EB ramps to match SR-91 freeway widening.	Ramps: Realign WB and EB ramps to match SR-91 freeway widening.
	Local Streets: No improvements.	Local Streets: Widen Paramount Boulevard to accommodate Class II Bike Lanes and provide double left turn lanes for the SR-91 EB on-ramp.	Local Streets: Widen Paramount Boulevard to accommodate Class II Bike Lanes and provide double left turn lanes for the SR-91 EB on-ramp.	Local Streets: Widen Paramount Boulevard to accommodate Class II Bike Lanes and provide double left turn lanes for the SR-91 EB on-ramp.

Table 33 - SR-91 (Central Ave. to Paramount Blvd.) PSR-PDS – Bridge Improvements

Postmile	Bridge Number	OU	Structure Name Or Route Information	Structure Types Main	Structure Types Appr	City	Bridge Length	Width	Num Span	Min VC over Rdwy	Sidewalk Lt	Sidewalk Rt	Year Built	Year Wid/Ext	Permit Rating	P
R008.43	53 2459	U	CENTRAL AVENUE OC	605		CRSN	77.1	29.3	2	5.61	1.5	1.5	1974		PPPPP	-
R009.15	53 1865	U	WILMINGTON AVENUE OC	605		COM	79.6	29.3	2	5.74	1.5	1.5	1974		PPPPP	-
R009.80	53 2371	O	ACACIA AVENUE UC	205		COM	45.1	48.8	3	4.9			1974		PPPPP	Widen
R009.97	53 2234	O	COLLEGE OH	205		COM	55.2	48.8	3	7.37			1974		PPPPP	Widen
R010.19	53 2235	O	COMPTON CREEK BOH	605		COM	387.1	45.1	10	6.58			1974		PPPPP	Widen
R010.26	53 2236S	O	COMPTON CREEK BOH (ON-RAMP)	605		COM	238.7	10.4	9	5.03			1974		PPPPP	Reconstruct
R010.28	53 2237S	O	COMPTON CREEK BOH (OFF-RAMP)	205		COM	157.3	10.4	6	8.05			1974		PPPPP	Reconstruct
R010.39	53 2238K	O	ARTESIA-SANTA FE UC (OFF-RAMP)	605		COM	186.8	11.6	5	5.23			1974		PPPPP	-
R010.81	53 2252	O	SUSANA ROAD UC	505		COM	51.2	59.7	1	4.98			1974		PPPPP	Widen
R011.10	53 2373	O	LONG BEACH BLVD UC	505		LBCH	61.3	56.7	1	5.18			1974		PPPPP	Widen
R011.43	53 2169	O	BUTLER-ARTESIA UC	605		LBCH	158.8	66.5	10	4.6			1974		PPPPP	Widen
R011.60	53 0820	U	ARTESIA BLVD OC	205		LBCH	79.9	29.3	4	4.62	1.5	1.5	1953		PPPPP	Widen
R011.63			JCT RTE 710			LBCH										-
R011.64	53 2240	O	ROUTE 91/710 SEPARATION	502		LBCH	111.0	44.5	3	4.9			1974		PPPPP	-
R011.64	53 2240	U	ROUTE 91/710 SEPARATION	502		LBCH	111.0	44.5	3	4.9			1974		PPPPP	-
R011.65	53 2241G	O	E91-N710 CONNECTOR OC	602		LBCH	115.8	12.5	4	4.49			1974		PPGGG	-
R011.65	53 2241G	U	E91-N710 CONNECTOR OC	602		LBCH	115.8	12.5	4	4.49			1974		PPGGG	-
R011.70	53 2143F	O	LA RIVER (W91-N710&S710)	302		LBCH	644.5	15.8	15	4.7			1971		PPPPP	-
R011.70	53 2143F	U	LA RIVER (W91-N710&S710)	302		LBCH	644.5	15.8	15	4.7			1971		PPPPP	-
R011.72	53 2362G	O	EQUIPMENT ACCESS UC (E91-N710)	107		LBCH	4.3	41.0	1	4.57			1971		PPPPP	-
R011.74	53 2142F	U	LA RIVER (S710-E91)	605	105	LBCH	1021.0	12.5	29	5.28			1971		PPPPP	-
R011.80	53 2227	O	EQUIPMENT ACCESS UC	101		LBCH	12.9	70.3	1	4.55			1971		PPPPP	-
R011.81	53 2142	O	LOS ANGELES RIVER	502		LBCH	286.5	41.5	9	4.72			1971		PPPPP	Widen
R011.82	53 2144K	O	LA RIVER (ATLANTIC AVE-WB91 ON)	505		LBCH	316.4	7.9	10	5.79			1971		PPPPP	Reconstruct
R011.90	53 2142F	U	LA RIVER (S710-E91)	605	105	LBCH	1021.0	12.5	29	5.28			1971		PPPPP	-
R012.09	53 2124	O	ATLANTIC AVENUE UC	205		LBCH	48.2	56.1	2	5.03			1970		PPPPP	Widen
R012.34	53 2121	O	MYRTLE AVENUE UC	505		LBCH	32.3	58.0	1	5			1970		PPPPP	Widen
R012.59	53 2122	O	ORANGE AVENUE UC	505		LBCH	36.6	52.4	1	5.08			1970		PPPPP	Widen
R012.84	53 2127	O	WALNUT AVENUE UC	505		LBCH	34.7	52.4	1	4.98			1970		PPPPP	Widen
R013.09	53 2123	O	CHERRY AVENUE UC	605		LBCH	54.9	45.1	2	5.03			1970		PPPPP	Widen
R013.35	53 2101	O	NORTH LONG BEACH OH	205		LBCH	41.8	51.2	3	7.19			1970		PPPPP	Widen
R013.59	53 2129	O	PARAMOUNT BLVD UC	205		LBCH	57.3	45.1	2	5.23			1970		PPPPP	Widen

Source: Caltrans, California Log of Bridges on State Highways, January 2016

Project Phasing

Preliminary review and analysis has identified that the project can be feasibly divided into three (3) separate construction projects that have logical termini and independent utility. The three separate projects identified in Attachment L are as follows:

- Construction Project 1: SR-91 segment from Central Avenue to Harbor Avenue - Susana Road.
- Construction Project 2: SR-91 corridor segment from Harbor Avenue - Susana Road to Myrtle Avenue.
- Construction Project 3: SR-91 corridor segment from Myrtle Avenue to Paramount Boulevard.

Each of the three projects can be standalone projects with an identified need that the projects are of sufficient length to address environmental impacts on a broad scope, and that none of the projects would force immediate transportation improvements on the remainder of the facility. Preliminary analysis conducted as part of the PEAR for the SR-91/I-710 PSR-PDS indicates that, under CEQA, an Initial Study or Focused Initial Study with proposed Negative Declaration (ND) or Mitigated ND would be required for the overall project assuming that all alternatives (Alternatives 2, 3 and 4) are carried forward into the PA/ED phase of project development. Under NEPA, a Complex Environmental Assessment with proposed Finding of No Significant Impact is anticipated.

Table 34 - Project Phasing Limits and Cost

Construction Project	Construction Project Limits (Post Mile)	Project Cost (Million)					
	Alternative	2-5C	2-7	3-5C	3-7	4-5C	4-7
1	SR-91: 8.2 to 10.2	$365.4M-$463.6M	$386.9M-$491.1M	$205.3M-$258.8M	$221.5M-$279.5M	$260.9M-$329.9M	$308.8M-$391.1M
2	SR-91: 10.2 to 11.6	$319.8M-$405.7M	$338.5M-$429.7M	$179.6M-$226.4M	$193.8M-$244.6M	$228.3M-$288.6M	$270.2M-$342.2M
3	SR-91: 11.6 to R13.8	$353.0M-$447.8M	$373.7M-$474.3M	$198.3M-$249.9M	$213.9M-$270.0M	$252.0M-$318.6M	$298.2M-$377.8M

Nonstandard Design Features

There are nonstandard features that have been identified in the No Build and proposed build Alternatives based on the 2015 Caltrans Highway Design Manual (HDM) 6th Edition standards. Further analysis will be performed in the PA/ED phase. Fact sheets for exceptions to design standards will be prepared to document nonstandard features prior to completion of the PA/ED phase. See Attachment K for the Nonstandard Design Features Matrix that has been developed for the No Build and the three build Alternatives. The SR-91 segment within the project limits is currently designated as urban.

Mandatory Design Exception Features

Attachment K – Nonstandard Design Features Matrix for mandatory design exceptions.

Advisory Design Exception Features

Attachment K – Nonstandard Design Features Matrix for advisory design exceptions.

Common Features for all Alternatives

Engineering Studies

The following engineering studies are anticipated to obtain approval of Build Alternatives 2, 3, and 4 during the PA/ED phase of the project:

- Fact Sheets for proposed exceptions to design standards;
- Modified Access Report (MAR);
- Right of Way Data Sheets including Utility Information Sheet and Railroad Information Sheet;
- Advanced Planning Studies (APS) for all bridges and non-standard retaining walls;
- Preliminary materials and geotechnical design reports;
- Life-Cycle Cost Analysis for pavement design;
- Preliminary Drainage Report to address existing and proposed hydrology and hydraulic designs;
- Storm Water Data Report (PA/ED level);
- Traffic Forecasting and Methodology;
- Traffic Analyses, and;
- Traffic Management Plan (TMP) and Ramp Closure Study.

Aesthetics

Design of the proposed improvements during the PA/ED and PS&E phases will include aesthetic elements consistent with Caltrans and local agency master plans for aesthetics and landscaping, if applicable. The corridor theme will be applied to project elements including bridge aesthetics, slope paving, walls, lighting (roadway and pedestrian), landscaping, and hardscaping.

Intelligent Transportation Systems (ITS)

The project ITS elements will be further studied during the PA/ED and PS&E. The ITS elements will include a communication trunk line within the SR-91 shoulder. The trunk line can be comprised of 2-4" conduits with 4 size 25 innerducts. The trunk line is a combination of 50P22 and 36SMFO communication cable for data/phone, and 12SMFO video cable for video/data.

The communication trunk line could serve ramp meters, Changeable Message Signs (CMSs), CCTV cameras and traffic monitoring stations within the project limits. Specific items that will be installed include conduit innerducts, cables, traffic monitoring stations, count stations, CCTV cameras with pole and cabinet, traffic related communication pull boxes, cable nodes and Type 334 cabinets. CCTV cameras can be installed on existing and new overhead signs. The cost estimate breakdown for the ITS items is included in Attachment D.

In addition, implementation of Active Traffic Management (ATM) strategies will be part of each alternative. ATM is a proactive traffic management approach which uses various strategies to dynamically manage and control traffic based on prevailing conditions for recurrent and non-recurrent congestion. These strategies include speed harmonization, queue warning, junction control, part-time shoulder use, dynamic re-routing and traveler information. These strategies will ultimately improve mobility and enhance safety by using real-time data, technology, and decision support structures for system operators to make informed, performance-driven decisions on how to manage traffic flow.

Transportation Management Plan

Based on the initial examination of items related to the Transportation Management Plan (TMP) Data Sheet, lane closures will be required, and lane closure charts will be included in Caltrans Standard Special Provisions (SSP). It may be necessary to temporarily close on/off-ramps and connectors during the project construction. The PS&E package will include detour plans, staging plans, and traffic handling plans. Supporting traffic counts for rerouting traffic during construction will be developed during PA/ED. TMP data sheets will be further developed during the PA/ED phase to recommend specific methods of reducing construction and circulation impacts. Preliminary TMP data sheets have been prepared for each alternative and are included as Attachment G.

Construction Staging

It is anticipated the project will be designed and constructed as separate segments to facilitate project delivery based on available funding. Each project segment would include construction staging to minimize impacts to existing traffic. The same number of existing mainline freeway lanes will be maintained open to traffic during construction whenever feasible.

A preliminary stage construction concept was prepared and independently reviewed to ensure there were no fatal flaws and that the improvements are constructible. Refer to Attachment L for the preliminary stage construction concept. More detailed stage construction and detour plans will be developed in the PA/ED phase. Detailed stage construction plans and traffic handling plans will also be developed in PS&E.

Storm Water BMPs

A Storm Water Data Report (SWDR) has been prepared to accompany this PSR-PDS and is based on Alternative 2 Option 7, which has the largest footprint compared to Alternatives 3 and 4. The anticipated storm water project risk level is Level 2. The SWDR recommends the implementation of treatment BMPs to treat the project targeted design pollutants. It is anticipated that post-project State right-of-way will provide adequate area for BMPs. This will be confirmed during the PA/ED and PS&E phases. The SWDR will be updated during both the PA/ED and PS&E phases to confirm the risk level, disturbed soil area, change in amount of impervious area and specific BMPs to be implemented for design pollution prevention, treatment and construction. The contractor for each project segment will prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) to address construction site BMPs. For this phase,

permanent BMPs have been evaluated from a corridor scoping level and locations have been indicated on the project alternative plans included in Attachment B of this PSR-PDS. The Caltrans Corridor Storm Water Management Study for I-710 (dated February 2010) and SR-91 (dated September 2010) were used as references to identify proposed BMP locations and types of treatment BMPs.

The downstream receiving water bodies for the project are the Los Angeles River and the Compton Creek. The Los Angeles River Reaches 2 is on the 2012 303(d) list for ammonia, coliform bacteria, copper, lead, nutrients, oil and trash with a required Total Maximum Daily Load (TMDL). The Compton Creek is on the 2012 303(d) list for Benthic-Macroinvertebrate, coliform, copper, lead, trash and pH. The Los Angeles River generally flows from the north to south collecting water from the San Gabriel Mountains down through the Los Angeles Basin. The Compton Creek flows from northwest to southeast through the project area until reaching the Los Angeles River. The total impervious area treated by the proposed treatment BMPs is approximately 36.83 acres. The new impervious area for Alternative 2 Option 7, which includes the largest footprint of all the Alternatives, is approximately 108.3 acres; therefore, the treatment BMPs are expected to provide 34% treatment of the added impervious area. The SWDR cover is included as Attachment J.

Permits

It is anticipated that the following permits will be required for the project:

- 401 Certification (Regional Water Quality Control Board)
- Clean Water Act (CWA) Section 404 Permit (U.S. Army Corps of Engineers)
- Section 1602 Agreement (California Dept. of Fish and Wildlife)
- National Pollutant Discharge Elimination System (NPDES)
- Permit Notice of Intent (NOI)
- Clean Air Act, Transportation Conformity Determination (FHWA; Caltrans)
- South Coast Air Quality Management District Rules 403, 1403 and 1166
- Section 106 Compliance with National Historic Preservation Act
- Section 7 Consultation with U.S. Fish and Wildlife Service in the event Waters of the U.S.
- State Right-of-Way and Rail Road Encroachment Permits
- Monitoring wells and de-watering Permits
- Various City Encroachment Permits.

The Initial Site Assessment (ISA) prepared during PA/ED will identify any contaminated sites that require site investigation and mitigation and anticipated entry permits. Permits would be required for residential, commercial, industrial and railroad properties.

The Aerially Deposited Lead (ADL) testing, analysis, and reporting will be completed during the PS&E phase of the project. Testing for lead-based paint and asbestos containing material surveys will be required.

8. RIGHT-OF-WAY

Below is a summary of the right-of-way required for each project alternative. Attachment H provides the Conceptual Cost Estimate – Right-of-Way Component. Table 35 below includes the number of permanently affected properties (full or partial takes as shown) by land use type.

Table 35 - Number of Affected Properties by Land Use Type

Land Use	No Build	Alternative 2		Alternative 3		Alternative 4	
	Partial/Full (5C/7)	Partial (5C/7)	Full (5C/7)	Partial (5C/7)	Full (5C/7)	Partial (5C/7)	Full (5C/7)
Residential	0/0	2/2	30/93	0/5	6/19	2/8	24/44
Commercial/ Industrial	0/0	21/17	6/7	2/1	2/2	12/13	6/5
Agency/Other	0/0	0/0	0/0	0/0	0/1	0/0	1/1
TOTAL	**0/0**	**23/19**	**37/101**	**2/6**	**8/22**	**14/21**	**31/50**

In addition, temporary construction and highway aerial easements would be required for all three build alternatives. Due to the urbanized nature of the communities adjacent to the project area and the local vacancy rates, it is assumed that replacement housing or office space is available for displaced families or businesses. The goal for each alternative was to minimize the impacts to residential, major business, and industrial areas.

Utilities

A utility investigation was performed as part of the PSR-PDS. Potential utility owners were researched or contacted to obtain information about their existing facilities. Based on the gathering of that information, the following types of facilities and owners are present within the project limits:

Utility	**Owner**
Water	City of Long Beach, Water Department
	California Water Service/Dominguez Water Company
	Metropolitan Water District
Sewer	Los Angeles County Sanitation District
	City of Long Beach
	City of Compton
Storm Drain	Los Angeles County Flood Control District
	City of Long Beach
	City of Compton
Telephone/Communications	AT&T Transmission
	AT&T Distribution
	Charter Communications
	Crown Castle - Los Angeles and Ventura
	Verizon/Frontier Communications

Utility	Owner
	Pacific Telephone & Telegraph
	Next G Networks Incorporated
	Time Warner Cable
	Verizon Business MCI
	MFS
	Zayo
	Qwest
	Level 3
	Motorola
	Metro
Electrical	Southern California Edison
	Torrance Logistics Company/PBF Energy
	Kinder Morgan Energy Partners/SFPP
	City of Long Beach Street Lighting
Gas	Southern California Gas Company
	Plains All American Pipeline
	Crimson Pipeline LP
	Southern California Gas Olympic - Transmission
	City of Long Beach Gas and Oil
Oil	Shell Oil Pipeline
	Paramount Petroleum Corporation
	Plains All American Pipeline
	Crimson Pipeline LP
	Tesoro Refining and Marketing Company

Information provided by the Dig Alert web site and available utility as-built plans was used to prepare this list.

Thorough coordination with the identified utility companies will be carried out during the PA/ED, PS&E, and construction phases. It is anticipated that all proposed build alternatives will impact existing facilities. The specific facilities in conflict with the proposed build alternative, and subsequent need for relocation of, will be confirmed, coordinated and included in a Utility Conflict Matrix during the PA/ED phase.

Railroad

Within the study limits of the PSR-PDS, SR-91 crosses (from west to east) four railroad corridors, namely, the Wilmington Subdivision, Alameda Corridor Subdivision, Delores Industrial Lead and the San Pedro Subdivision each owned and maintained by the entities outlined in the table below.

Railroad Corridors (West to East)	Owner and Maintainer
Wilmington Subdivision	LACMTA or Metro

Alameda Corridor Subdivision	Alameda Corridor Transportation Authority (ACTA)
Delores Industrial Lead	Union Pacific Railroad (UPRR)
San Pedro Subdivision	UPRR

There are five (5) railroad/freeway crossings as follows:

- Freeway Overhead SR-91 – West of Alameda Street (College Overpass)
- Freeway Overhead SR-91 – West of Alameda Street (Compton Creek Overpass)
- Freeway Overhead SR-91 – East of Alameda Street (Compton Creek Overpass, On-Ramp)
- Freeway Overhead SR-91 – East of Alameda Street (Compton Creek Overpass, Off-Ramp)
- Freeway Overhead SR-91 – West of Paramount Boulevard (Union Pacific San Pedro Branch Overpass)

The College OH (or overpass) crosses the Wilmington Subdivision and is maintained by the Union Pacific Railroad (UPRR) and is jointly operated by Metro for the Long Beach Blue Line light rail corridor. The existing freeway mainline structure has a vertical clearance of 24'-4" feet which exceeds the minimum 22'-6" required by California Public Utilities Commission General Order No. 26-D and 23'-4" required by Caltrans (HDM, Section 309.5). All build Alternatives widen both sides of the freeway structure and will maintain the minimum 23'-4" required by Caltrans. There are currently 131 light rail and 6 freight trains per day operating on these tracks, which will require design, permitting and coordination including meeting construction falsework and window requirements. A Construction and Maintenance (C&M) Agreement with UPRR will be needed prior to construction for work to be performed by UPRR and LACMTA, if any.

The Compton Creek BOH (or overpass) crosses the Alameda Corridor Subdivision and Delores Industrial Lead maintained by the Alameda Corridor Transportation Authority (ACTA) and UPRR, respectively. The existing freeway mainline structure has a vertical clearance of 26'-5" feet over the Alameda Corridor tracks and 26'-10" over the Delores Industrial Lead which exceed the minimum 22'-6" required by CPUC and 23'-4" required by Caltrans. All build alternatives propose to widen the freeway mainline and realign on and off ramps and maintain a minimum vertical clearance of 23'-4" required by Caltrans. There are currently 38 trains per day operating on the ACTA tracks and one (1) train per day operating on the Delores Industrial Lead track, requiring design, permitting and coordination including meeting construction falsework and window requirements. A Construction and Maintenance (C&M) Agreement with ACTA and UPRR will be needed prior to construction for work to be performed by ACTA and UPRR, if any.

The Compton Creek BOH on and off ramps cross the Alameda Corridor Subdivision and Delores Industrial Lead owned and operated by ACTA and UPRR, respectively. The existing Alameda Street eastbound on ramp has a vertical clearance of 23'-6" and 30'-0" over the Alameda Corridor tracks and Delores Industrial Lead track, respectively. The existing Santa Fe Avenue eastbound off ramp has a vertical clearance of 27'-1" and 25'-6" over the Alameda Corridor

tracks and Delores Industrial Lead track, respectively. Both on and off ramps exceed the minimum 22'-6" required by CPUC and 23'-4" required by Caltrans. All build Alternatives proposed to widen the mainline structure and realign the current on and off ramps while maintaining a minimum vertical clearance of 23'-4" required by Caltrans. These improvements will require design, permitting and coordination including meeting construction falsework and window requirements. A Construction and Maintenance (C&M) Agreement with ACTA and UPRR will be needed for the Alameda Corridor Subdivision and Delores Industrial Lead, respectively, prior to construction for work to be performed by ACTA and UPRR, if any.

The North Long Beach OH (or overpass) is maintained by UPRR and provides a vertical clearance of 23'-6". There are currently 2 trains per day operating on these tracks. All build Alternatives propose to widen this mainline structure and maintain a minimum vertical clearance of 23'-4" required by Caltrans. These improvements will require design, permitting and coordination including meeting construction falsework and window requirements. A Construction and Maintenance (C&M) Agreement with UPRR will be needed prior to construction to be performed by UPRR, if any.

All railroad corridors crossing beneath SR-91 have existing longitudinal utilities which parallel existing mainline track alignments. Consequently, proposed SR-91 freeway mainline and ramp improvements that follow current bridge column alignment locations and maintain current clearances to existing utilities will avoid or minimize utility impacts within railroad corridors.

9. STAKEHOLDER INVOLVEMENT

The Cities of Compton and Long Beach; County of Los Angeles; Metro (the project sponsor); GCCOG; and Caltrans have attended PDT and/or TAC meetings and geometric workshops to develop the purpose and need in addition to reviewing the alternatives and design options. The stakeholders' input has been reviewed and incorporated as applicable and, to their knowledge; there is no known opposition to the proposed project. In addition, the TAC meetings with the cities and County of Los Angeles have served as the process by which community input and involvement has occurred to balance transportation needs with community values. Further concurrence has been provided at a GCCOG public meeting by the Corridor Cities Committee (CCC), which is composed of a City Council representative for each city within the project vicinity. The three build alternatives (Alternatives 3 and 4) were also developed with the GCCOG SR-91/I-710/I-405 Guiding Principles of balancing transportation needs with community concerns regarding right-of-way impacts to preserve and enhance local economies and environments. This included consideration of current Artesia Boulevard improvements designed to provide complete street and traffic calming measures between the Cities of Compton and Bellflower.

The draft environmental document prepared for this project during PA/ED will be publicly noticed and circulated as applicable. A series of public workshops and/or potential interviews with stakeholders and property owners are anticipated to gain input prior to completion of the draft environmental document during the PA/ED phase. In addition, a public workshop is anticipated to be held during the public circulation of the draft environmental document.

10. ENVIRONMENTAL DETERMINATION/DOCUMENT

A Preliminary Environmental Analysis Report (PEAR) has been prepared for this project, and is included as Attachment E. The PEAR includes an initial evaluation of the project, summarizes key environmental issues, and identifies the environmental documentation that will be required. Based on the preliminary evaluation, the project does not have significant impacts on the environment with the incorporation of avoidance, minimization and/or mitigation measures. Therefore, the anticipated environmental document to comply with CEQA is an Initial Study with proposed Mitigated Negative Declaration. Under NEPA, a Complex Environmental Assessment with proposed Finding of No Significant Impact is anticipated. This determination is based on review of Appendix G of the CEQA Guidelines, as well as preliminary geometric plans and other available information.

Alternative 1 – No Build
The No Build Alternative does not include any construction or improvements to SR-91; therefore, no studies, permits or commitments are required. Key environmental issues related to this alternative include increased congestion due to projected growth within the area resulting in increased emissions within the corridor.

Alternative 2 – Build (Standard Lanes and Shoulders)
Key environmental issues for Alternative 2 include; Noise and Community Impacts related to right-of-way acquisitions.

Required studies include; Community Impact Assessment, Abbreviated Visual Impact Assessment, Historic Resources Evaluation Report, Historic Property Survey Report (summary form/report), Location Hydraulic Study, Summary Floodplain Encroachment Report, Water Quality Questionnaire, Preliminary Geotechnical Report, Initial Site Assessment, Air Quality Report, Noise Study Report, Natural Environment Study, and Jurisdictional Determination.

Required permits include:

- NPDES
- General Construction
- Permits to enter
- ACOE Section 408
- ACOE Section 404
- RWQCB Section 401
- CDFW 1602 Agreement

Potential environmental commitments include; noise barriers, pre-construction surveys, clearing and grubbing timeframes, agency permit conditions, traffic management plan, hazardous wastes/materials handling, and aesthetic treatments.

Possible time constraints and special considerations include; SHPO consultation, Native American consultation, FEMA coordination, Section 4(f) consultation, acquisition of agency permits, extensive or subsequent hazardous waste/materials studies, pre-construction surveys, construction windows (clearing/grubbing, surveys), and acquisition of permits to enter.

Alternative 3 – Build (Non Standard Lanes and Shoulders)

Same as above for Alternative 2.

Alternative 4 – Hybrid (Standard and Non Standard Lanes and Shoulders including an Eastbound Collector-Distributor Road between Acacia Court and Long Beach Boulevard)
Same as above for Alternative 2.

A Full Initial Site Assessment, will be conducted within the project limits, including the project corridor and parcel specific areas, prior to commencement of any construction activities. The ISA report will be prepared in compliance with the American Society for Testing and Materials (ASTM) standard 1527-13. Following the ISA completion, initial site investigation (SI) will be conducted at sites identified during the ISA process as contaminated or potentially contaminated. Based on the results of the initial SI, a detailed SI may be conducted to determine the full nature and extent of contamination and an estimation of the project hazardous waste mitigation costs. All site investigation activities will be conducted prior to any parcel acquisitions or commencement of construction activities, and in accordance with applicable Caltrans policies, entry permits, utility agreements, and regulatory agency approvals.

Additional studies to characterize identified Recognized Environmental Concerns (RECs) may be needed. Site Investigations may be needed for Right of Way acquisition. Environmental Indemnification Agreements (EIAs) may be necessary/required from the Responsible Party if contaminated sites are identified.

11. FUNDING

Funding sources have not been identified and secured at this time, however, it is anticipated a combination of funds may be sought including federal, State, and local Measures R and M for this project.

Capital Outlay Project Cost Estimate

Table 36 - Capital Outlay Project Cost Estimate

	Range of Cost Estimate		Measure M Funds	
	Construction	Right-of-Way	Construction	Right-of-Way
I-710 - 5C				
Alternative 1	$0	$0	$0	$0
Alternative 2	$920-1,175M	$80-100M	TBD	TBD
Alternative 3	$520-670M	$20-25M	TBD	TBD
Alternative 4	$615-790M	$85-105M	TBD	TBD
I-710 - 7				
Alternative 1	$0	$0	$0	$0
Alternative 2	$910-1,165M	$150-190M	TBD	TBD
Alternative 3	$535-685M	$55-70M	TBD	TBD
Alternative 4	$720-920M	$120-150M	TBD	TBD

The level of detail available to develop these capital outlay project estimates is only accurate to within the above cost estimate and is useful for long-range planning purposes only. The capital outlay project estimates should not be used to program or commit State-programmed capital

outlay funds. The Project Report (PR) will serve as the appropriate document from which the remaining support and capital components of the project will be programmed. For the cost estimate summary, see Attachment D – Cost Estimates.

Capital Outlay PA/ED Support Estimate

Capital outlay support estimate for programming PA/ED in the 2017 State Transportation Improvement Program (STIP) for this project: $45M as shown in Table 1 on page 2.

12. SCHEDULE

The project schedule includes several project development milestones outlined in Table 37 below.

Table 37 - Schedule

Project Milestones		Scheduled Delivery Date (Month/Year)
Program Project	M015	Jul 2017
Begin Environmental Document	M020	Jan 2018
Circulate Draft Project Report & Draft Environmental Document Externally	M120	Mar 2020
Approve PA & ED	M200	Mar 2021

The anticipated funding fiscal year for construction is 2022/2023. Pending availability of project construction funding, the project may be implemented in phases. This phasing approach would extend the overall project schedule accordingly.

13. RISKS

The Project Development Team has identified 12 potential risks, all threats. While the probability and impact varies with each one, these risks require close attention throughout the project development. These risks should be monitored and updated during the PA/ED, PS&E and the construction phase. See Attachment I for the Risk Register and Attachment K for the non-standard design feature risk evaluation.

14. FHWA COORDINATION

This PSR-PDS will be discussed with the Federal Highway Administration (FHWA) Liaison, Josue Yambo and is eligible for federal aid funding. Interstate 710 is on the federal interstate system and will require federal approval for design. The project is anticipated to be a High Profile Project (HPP) due to the anticipated Major Project cost being in excess of $800M. This status may change due to the final phasing of improvements that may fall under the Major Project threshold.

15. PROJECT REVIEWS

Internal Quality Control (QC) reviews were completed in accordance with the Quality Management Plan (QMP).

Caltrans completed the following reviews on the PSR-PDS and attachments:

District Maintenance	Shawn Enjily	Date: 3/17/17
District Traffic Safety Engineer	Lewis Yee	Date: 3/17/17
District Quality Review	PDT	Date: 4/4/17
District Office of Design	Mario Gutierrez	Date: 3/17/17
District Design Liason	Zebunnesa Tareque	Date: 3/17/17
District ICE Coordinator	Fraid Nowshiravan	Date: 3/17/17
Project Manager	Tin Dinh	Date: 3/17/17

16. PROJECT PERSONNEL

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LA Metro

Caltrans
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Gateway Cities Council of Governments

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JMD

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Iteris, Inc.

Jarrod Miller.....(909) 888-1106
Water Quality
WSP | Parsons Brinkerhoff

ATTACHMENTS

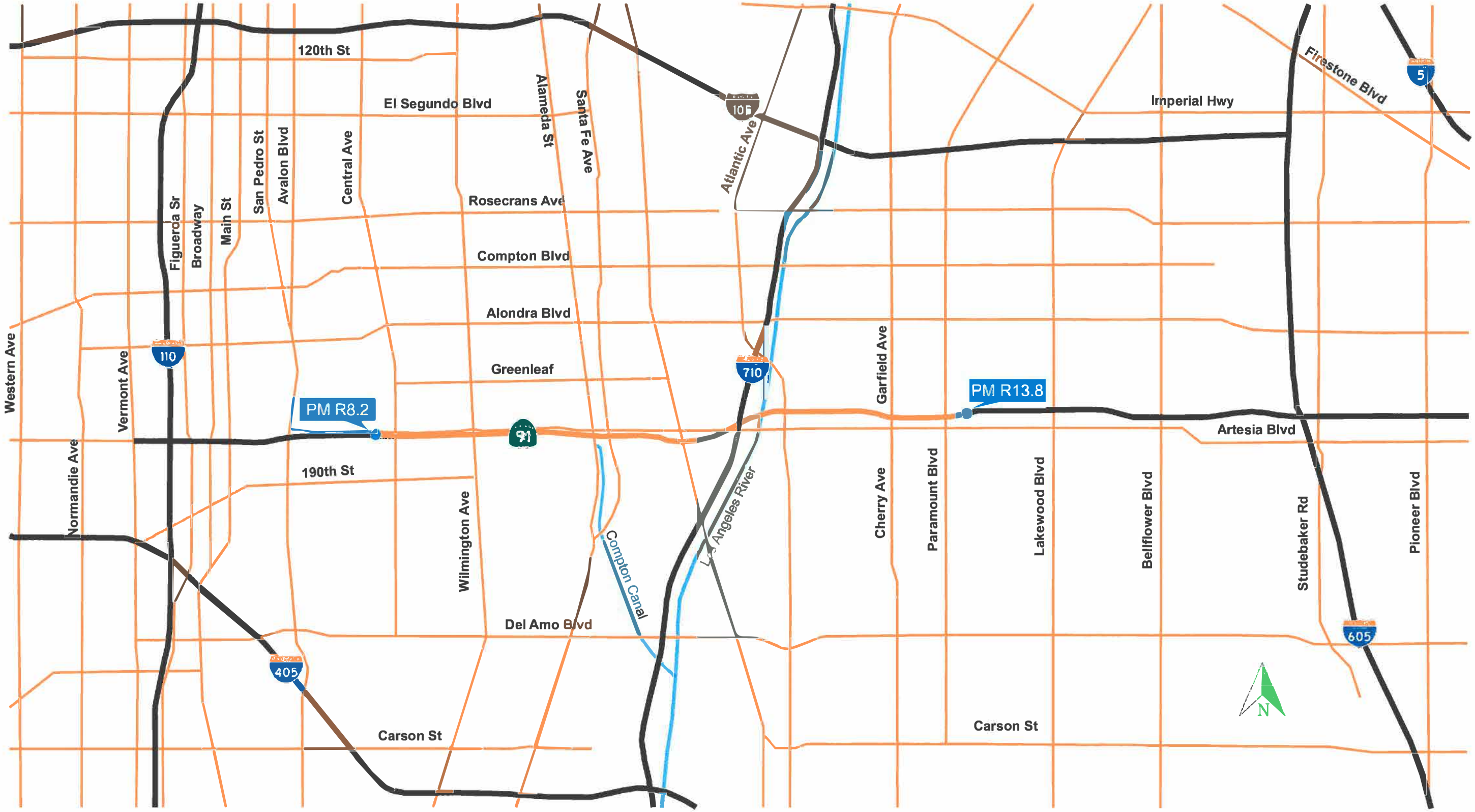
Attachment A – Regional Vicinity Map
Attachment B – Alternatives Plans
Attachment C – Typical Cross Sections
Attachment D – Cost Estimates
Attachment E – Preliminary Environmental Analysis Report (PEAR)
Attachment F – Transportation Planning Scoping Information Sheet
Attachment G – Transportation Management Plan (TMP) Data Sheets
Attachment H – Conceptual Cost Estimate – Right-of-Way Component
Attachment I – Risk Register
Attachment J – Storm Water Data Report (SWDR)
Attachment K – Nonstandard Design Features Matrix
Attachment L – Construction Phasing Concept
Attachment M – PSR-PDS Survey Needs Questionnaire
Attachment N – Preliminary Stage Construction Concept for the SR-91/I-710 Improvements

REFERENCE DOCUMENTS

1. Traffic Engineering Performance Assessment (TEPA)
2. Project Initiation Document Design Scoping Index
3. Division of Engineering Services PSR-PDS Scoping Checklist
4. Value Analysis (VA) Study
5. Initial Site Assessment Screening Report (ISA)

ATTACHMENT A

Regional Vicinity Map



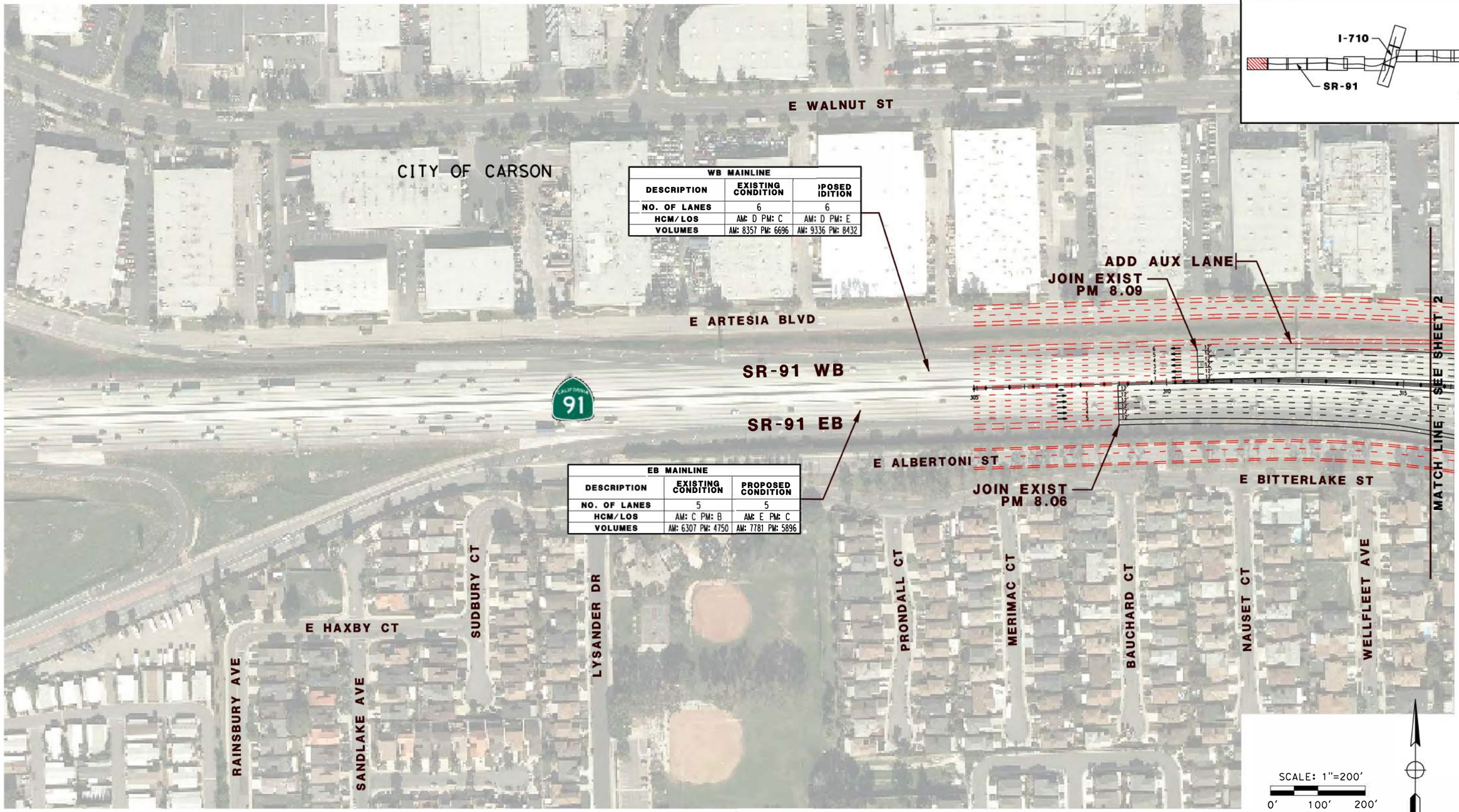
Vicinity Map
SR-91/I-710 Interchange PSR-PDS

Attachment A

JMD

ATTACHMENT B

Alternatives Plans



WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	6	6
HCM/LOS	AM: D PM: C	AM: D PM: E
VOLUMES	AM: 8357 PM: 6696	AM: 9336 PM: 8432

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	5
HCM/LOS	AM: C PM: B	AM: E PM: C
VOLUMES	AM: 6307 PM: 4750	AM: 7781 PM: 5896

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X / X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 2
WITH I-710 ALTERNATIVE 5C
SHEET 1 OF 14

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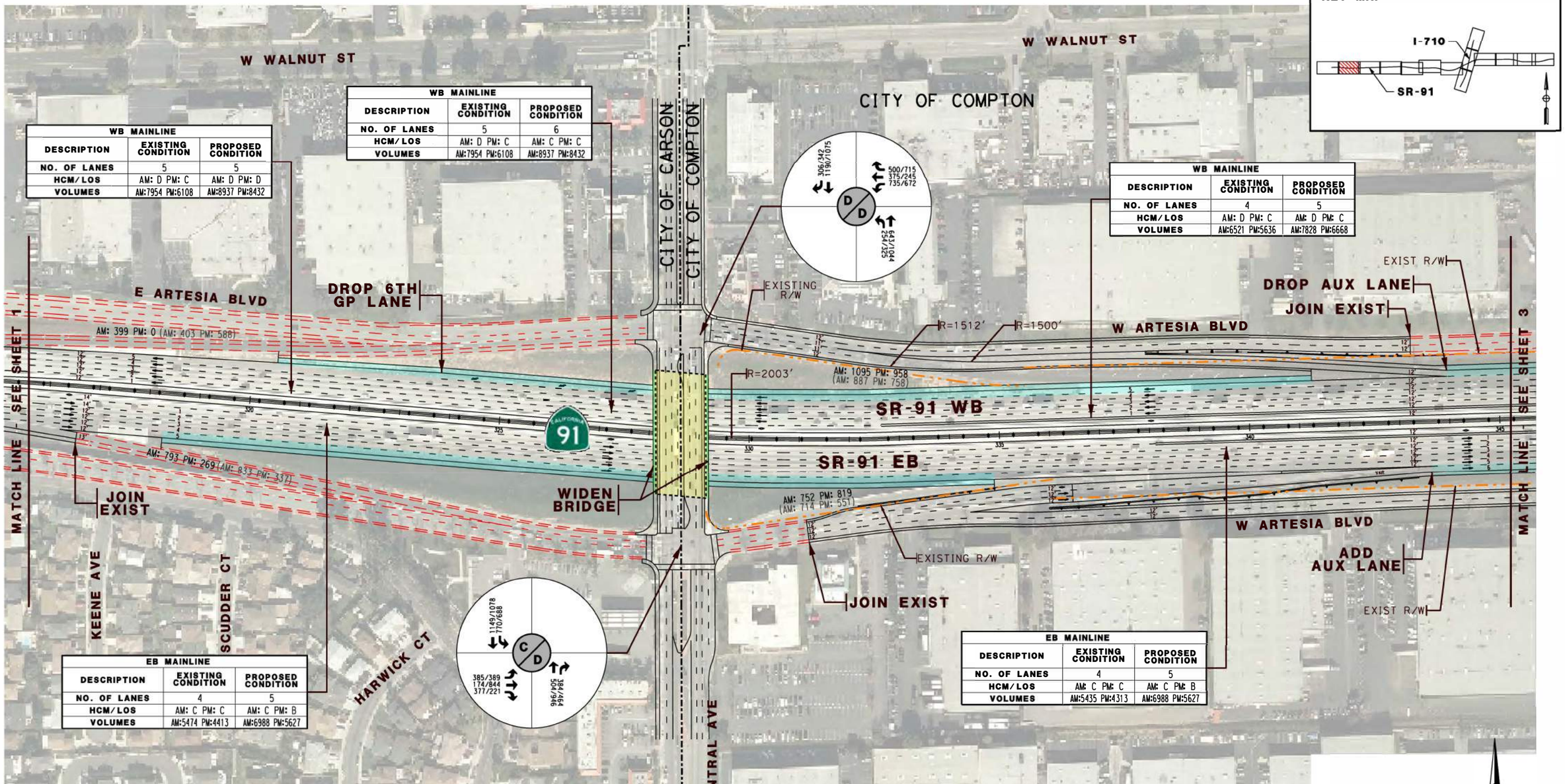

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- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 2
WITH I-710 ALTERNATIVE 5C
SHEET 2 OF 14

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CITY OF COMPTON

S ANDERSON AVE

S WILMINGTON AVE

W ARTESIA BLVD

SR-91 WB

SR-91 EB

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: D PM: D	AM: E PM: D
VOLUMES	AM: 7408 PM: 6394	AM: 8923 PM: 7626

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 6994 PM: 5940	AM: 8520 PM: 7234

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: C	AM: D PM: C
VOLUMES	AM: 6149 PM: 4864	AM: 7740 PM: 6446

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 5572 PM: 4538	AM: 7391 PM: 6258

ADD AUX LANE

DROP AUX LANE

JOIN EXIST

JOIN EXIST

JOIN EXIST

EXIST R/W

R=1012'

R=1438'

R=550'

AM: 403 PM: 392
(AM: 414 PM: 454)

AM: 349 PM: 188
(AM: 557 PM: 326)

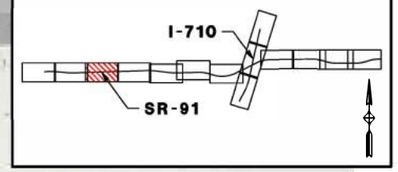
AM: 860 PM: 898
(AM: 697 PM: 693)

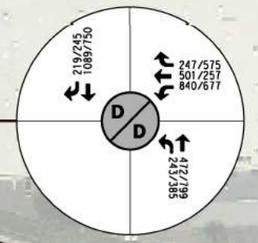
AM: 884 PM: 748
(AM: 831 PM: 691)

MATCH LINE SEE SHEET 2

MATCH LINE SEE SHEET 4

KEY MAP





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LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 2 WITH I-710 ALTERNATIVE 5C SHEET 3 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-5C_Sht-3.dgn

LAST REVISION DATE PLOTTED => 14-MAR-2017
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BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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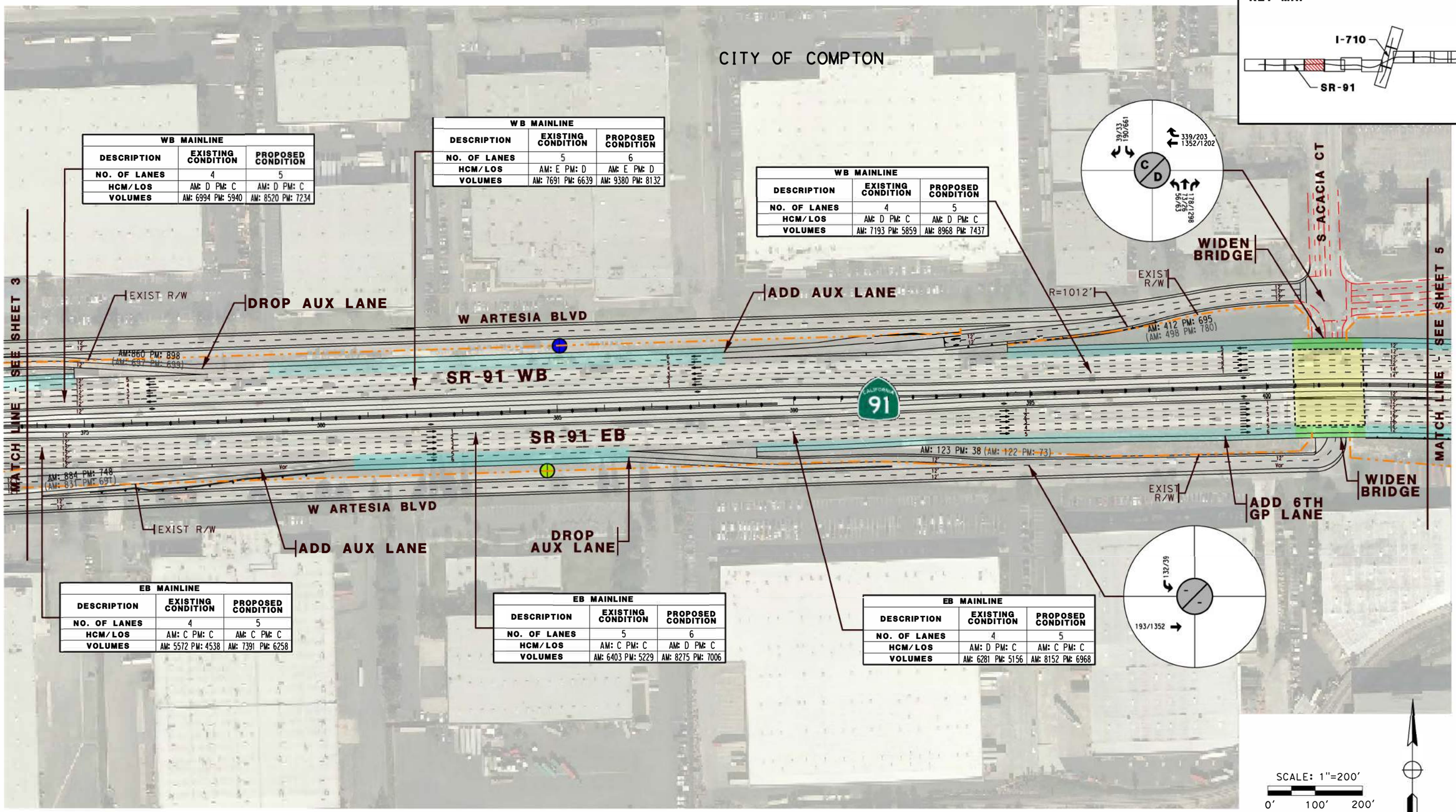

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 2 WITH I-710 ALTERNATIVE 5C SHEET 4 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\ADD\Sheets\Layouts\01-SR91-ALT2-5C_Sht-4.dgn

LAST REVISION | DATE PLOTTED => 14-MAR-2017 | TIME PLOTTED => 16:22 | 00-00-00

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CITY OF COMPTON

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 7193 PM: 5859	AM: 8968 PM: 7437

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 7003 PM: 5614	AM: 8968 PM: 7437

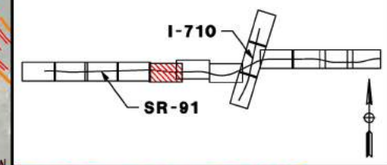
WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 7003 PM: 5614	AM: 8785 PM: 7388

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	6
HCM/LOS	AM: D PM: C	AM: C PM: C
VOLUMES	AM: 6281 PM: 5156	AM: 8152 PM: 6968

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 6000 PM: 5032	AM: 7856 PM: 6782

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 5276 PM: 4884	AM: 7053 PM: 6609

KEY MAP



MATCH LINE - SEE SHEET 4

MATCH LINE - SEE SHEET 6

W ARTESIA BLVD

SR-91 WB

SR-91 EB

COMPTON CREEK

WIDEN BRIDGE

EXIST R/W

R=5500'

DROP AUX LANE

AM: 296 PM: 186
(AM: 281 PM: 124)

R/W IMPACT

PROP R/W

EXIST R/W

MERGE ON RAMP

FULL PARCEL TAKE

AM: 183 PM: 49

AM: 803 PM: 173
(AM: 724 PM: 148)

R=612'

WIDEN BRIDGE

EXIST R/W

R=1516'

PROP R/W

EXIST R/W
PROP R/W

R=1900'

R/W IMPACT

JOIN EXIST

RECONSTRUCT SR-91 EB/E ALAMEDA ST OFF RAMP

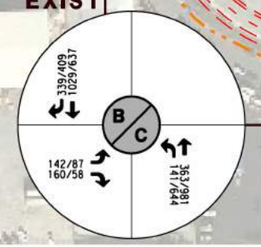
RECONSTRUCT SR-91 EB/ARTESIA BLVD OFF RAMP

R=165'

JOIN EXIST

E ALAMEDA ST

SPT CO RAILROAD



SCALE: 1"=200'

0' 100' 200'

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 2
WITH I-710 ALTERNATIVE 5C
SHEET 5 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-5C_Sht-5.dgn

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00-00-00 | TIME PLOTTED => 16:22

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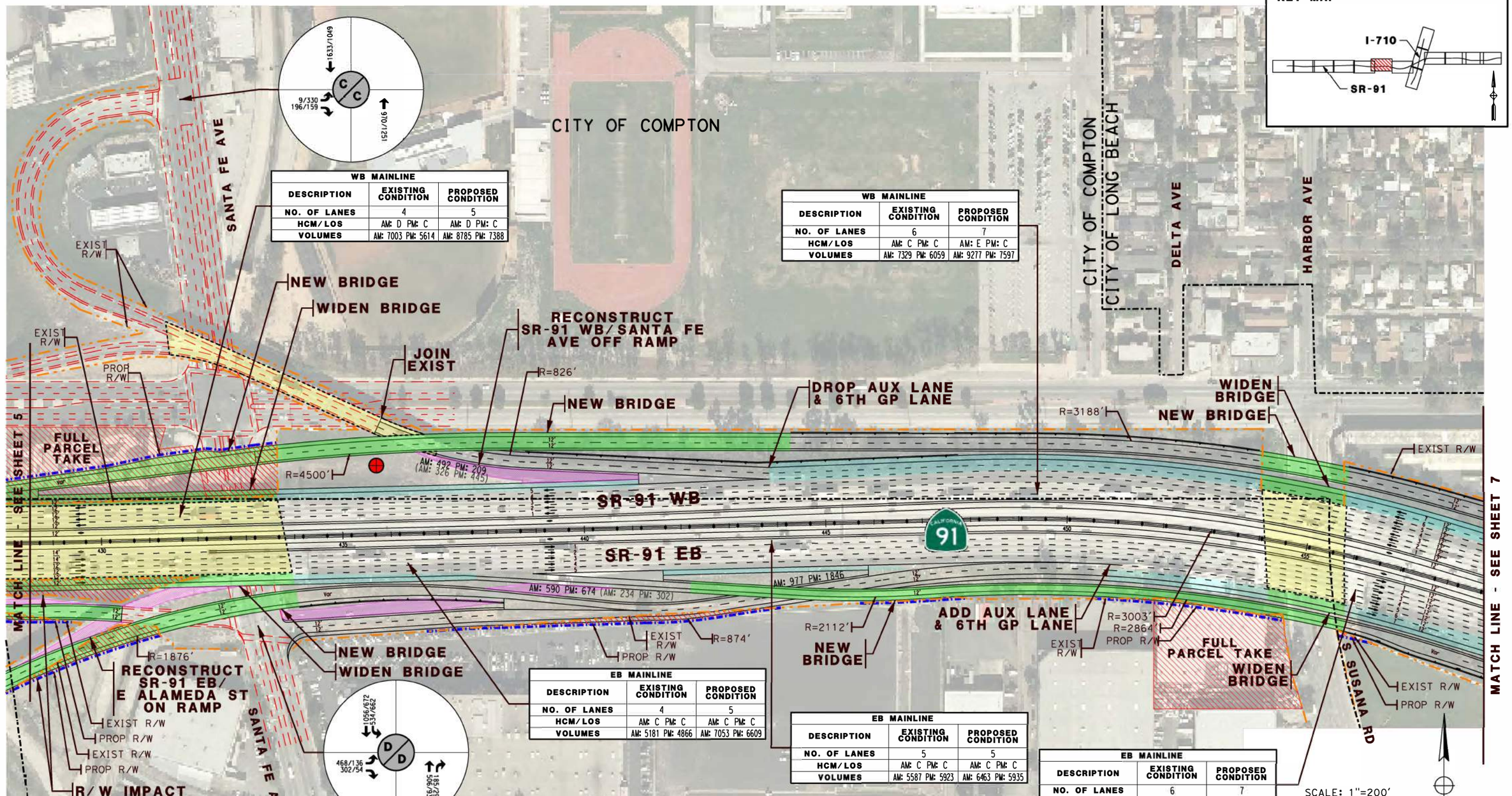

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 2 WITH I-710 ALTERNATIVE 5C SHEET 6 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-5C_Sht-6.dgn

LAST REVISION DATE PLOTTED => 14-MAR-2017
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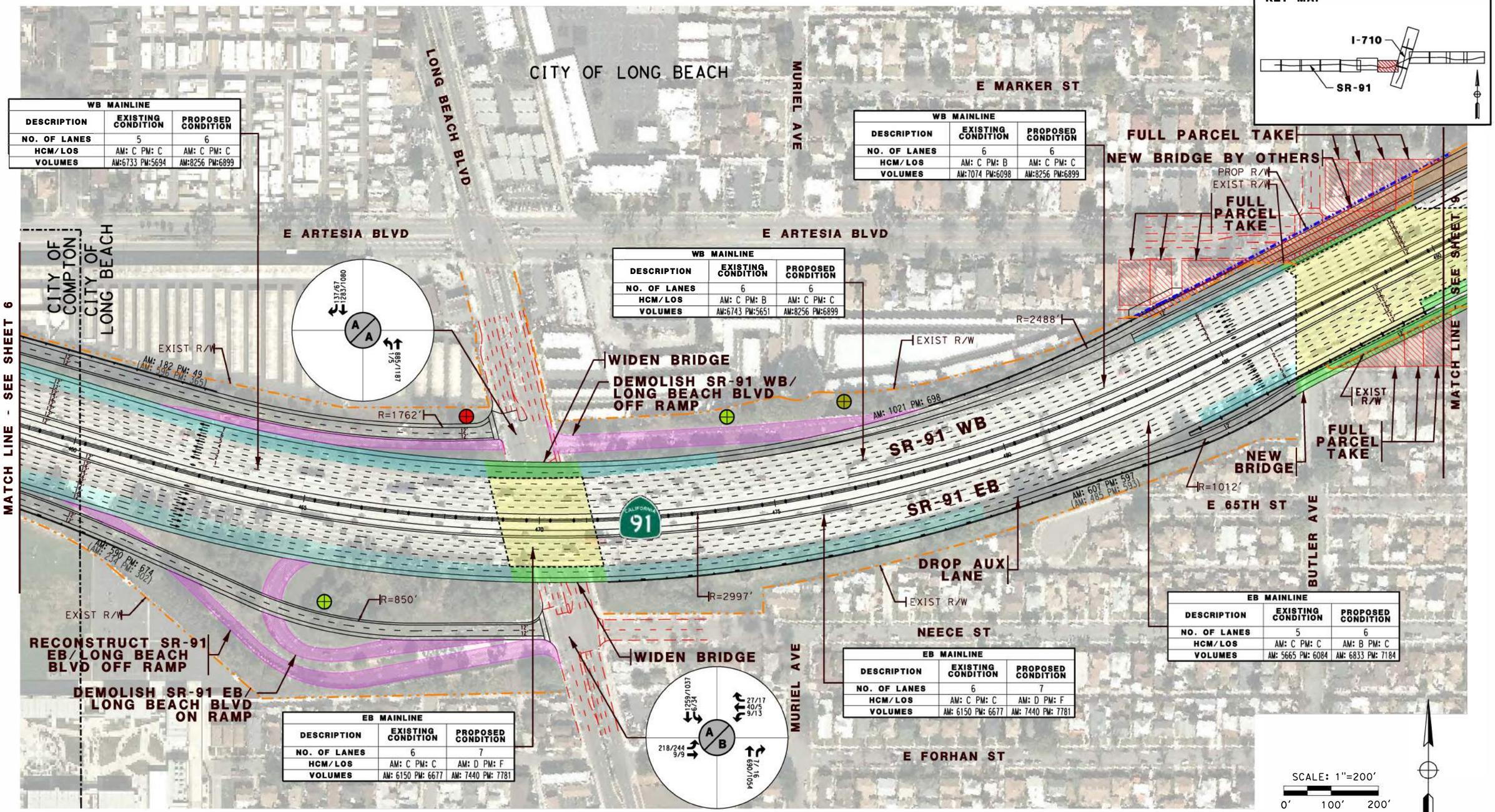

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 2 WITH I-710 ALTERNATIVE 5C

SHEET 7 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-5C_Sht-7.dgn

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LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 2 WITH I-710 ALTERNATIVE 5C SHEET 8 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-5C_Sht-8.dgn

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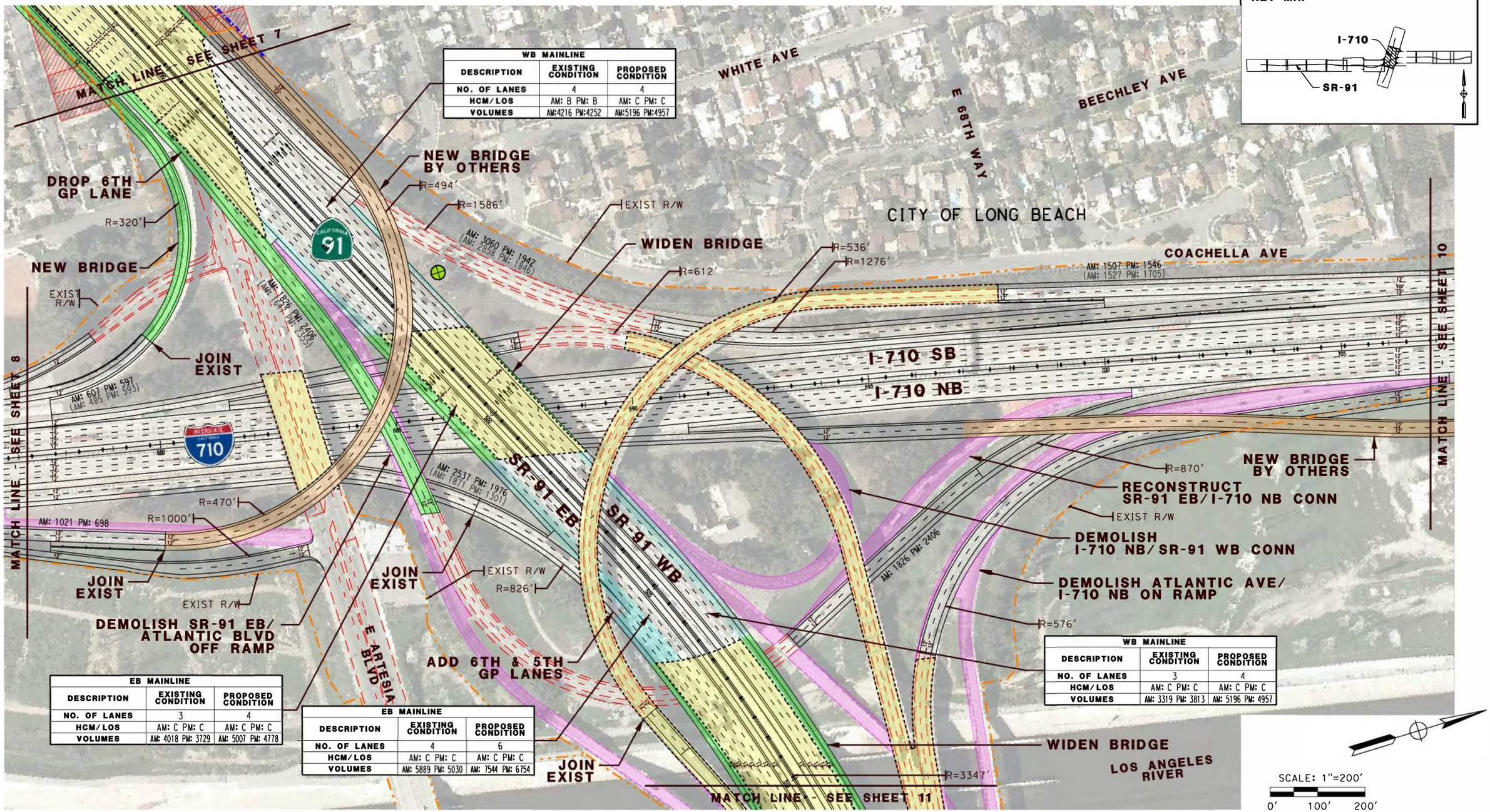

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 2 WITH I-710 ALTERNATIVE 5C SHEET 9 OF 14

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LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X / X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 2
WITH I-710 ALTERNATIVE 5C
SHEET 10 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-5C_Sht-10.dgn

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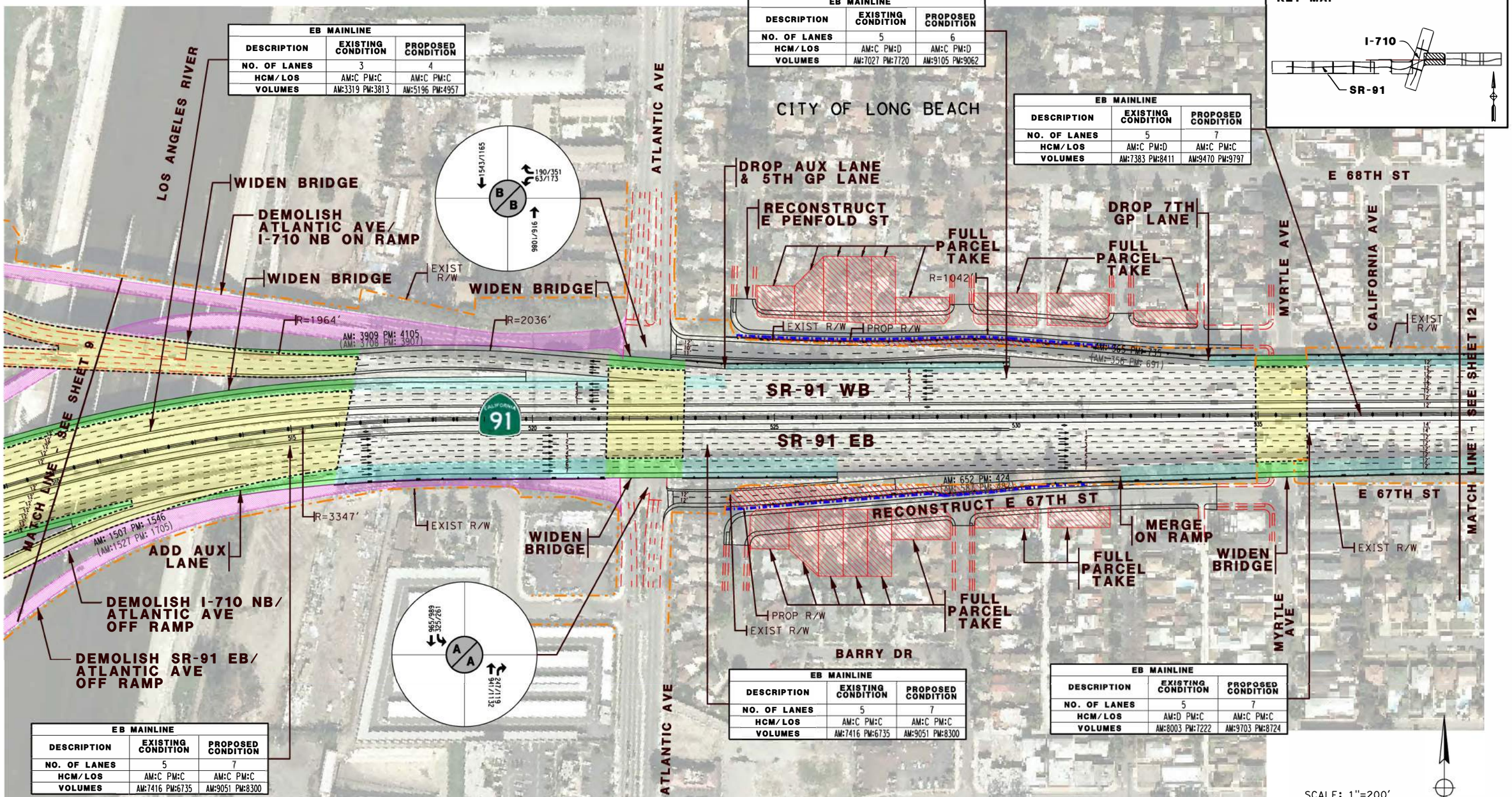

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	3	4
HCM/LOS	AM:C PM:C	AM:C PM:C
VOLUMES	AM:3319 PM:3813	AM:5196 PM:4957

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM:C PM:D	AM:C PM:D
VOLUMES	AM:7027 PM:7720	AM:9105 PM:9062

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	7
HCM/LOS	AM:C PM:D	AM:C PM:C
VOLUMES	AM:7383 PM:8411	AM:9470 PM:9797

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	7
HCM/LOS	AM:C PM:C	AM:C PM:C
VOLUMES	AM:7416 PM:6735	AM:9051 PM:8300

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	7
HCM/LOS	AM:D PM:C	AM:C PM:C
VOLUMES	AM:8003 PM:7222	AM:9703 PM:8724

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 2 WITH I-710 ALTERNATIVE 5C SHEET 11 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-5C_Sht-11.dgn

LAST REVISION DATE PLOTTED => 14-MAR-2017
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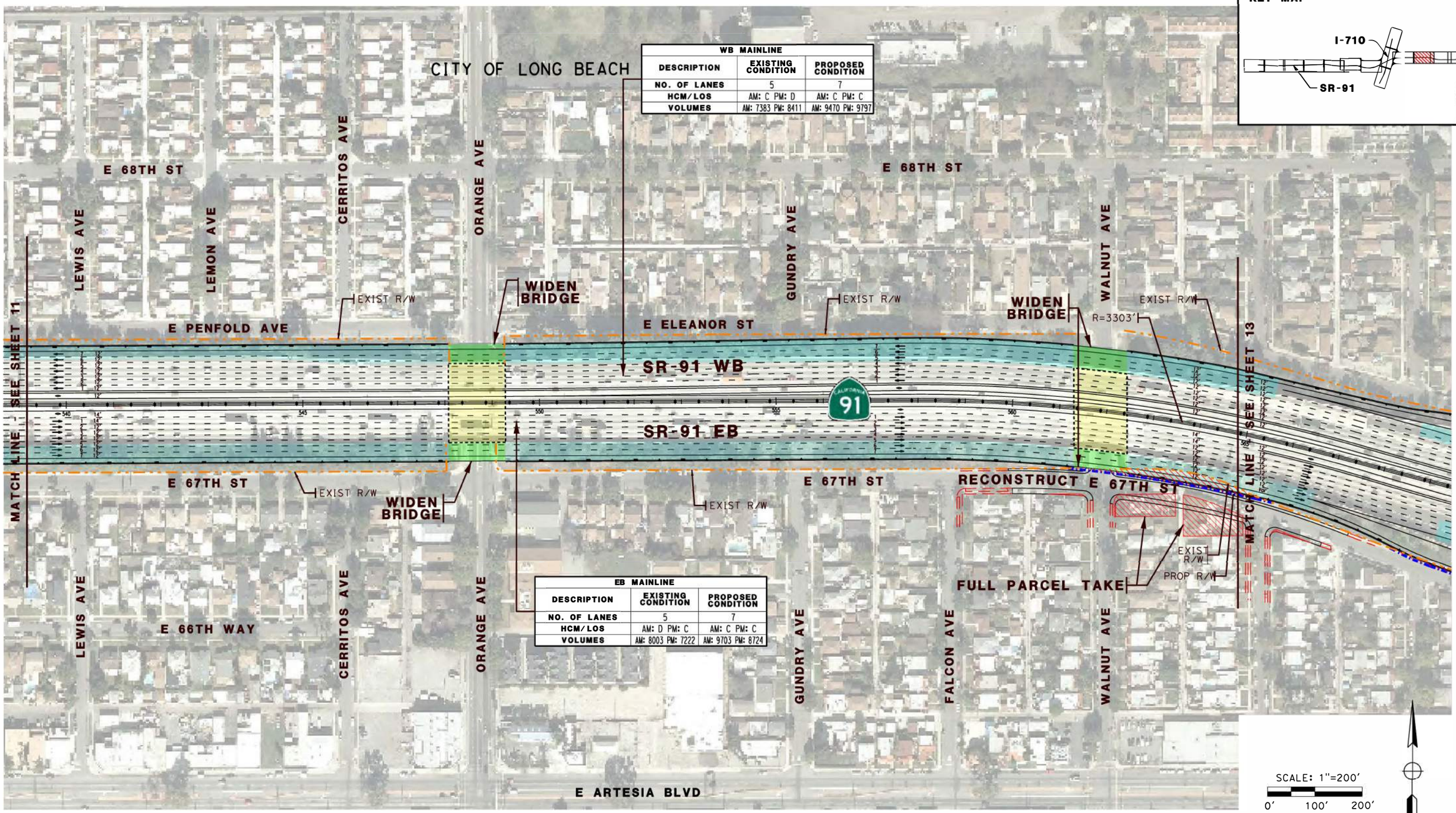

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
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RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 2 WITH I-710 ALTERNATIVE 5C SHEET 12 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-5C_Sht-12.dgn

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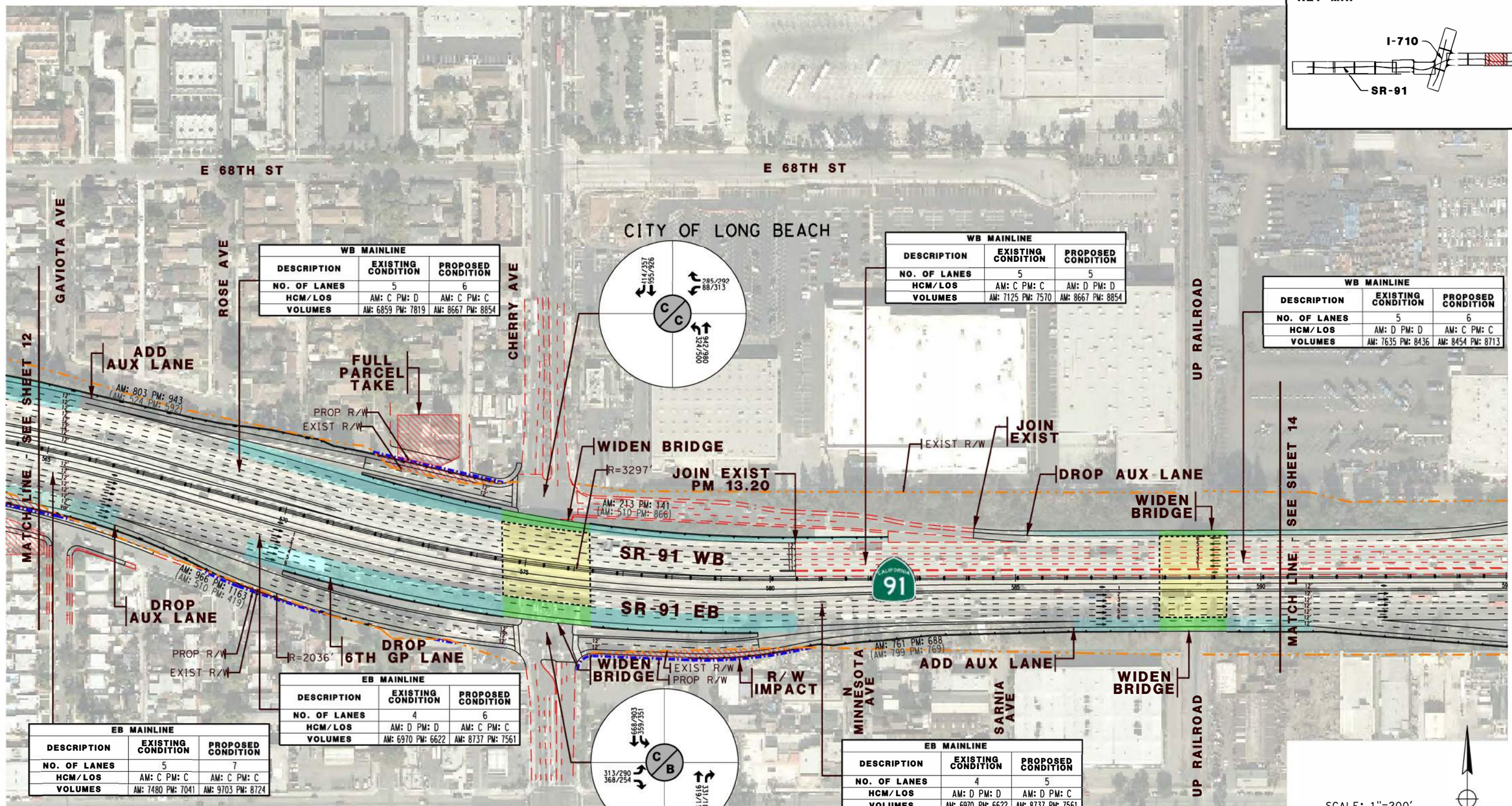

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: D	AM: C PM: C
VOLUMES	AM: 6859 PM: 7819	AM: 8667 PM: 8854

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	5
HCM/LOS	AM: C PM: C	AM: D PM: D
VOLUMES	AM: 7125 PM: 7570	AM: 8667 PM: 8854

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: D PM: D	AM: C PM: C
VOLUMES	AM: 7635 PM: 8436	AM: 8454 PM: 8713

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	6
HCM/LOS	AM: D PM: D	AM: C PM: C
VOLUMES	AM: 6970 PM: 6622	AM: 8737 PM: 7561

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	7
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 7480 PM: 7041	AM: 9703 PM: 8724

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: D	AM: D PM: C
VOLUMES	AM: 6970 PM: 6622	AM: 8737 PM: 7561

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 2
WITH I-710 ALTERNATIVE 5C
SHEET 13 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-5C_Sht-13.dgn

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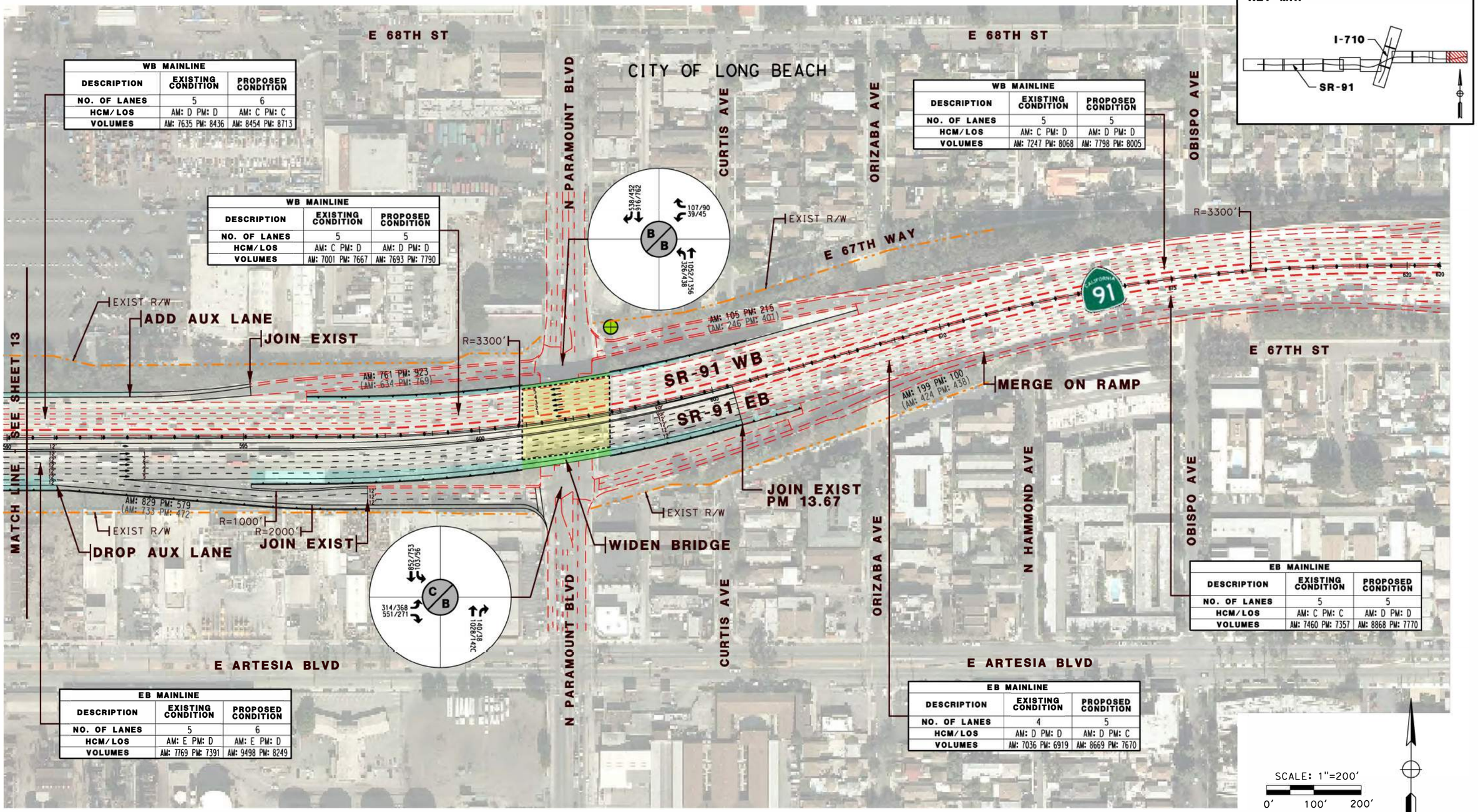

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 2 WITH I-710 ALTERNATIVE 5C SHEET 14 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-5C_Sht-14.dgn

LAST REVISION | DATE PLOTTED => 14-MAR-2017 | TIME PLOTTED => 16:23 | 00-00-00

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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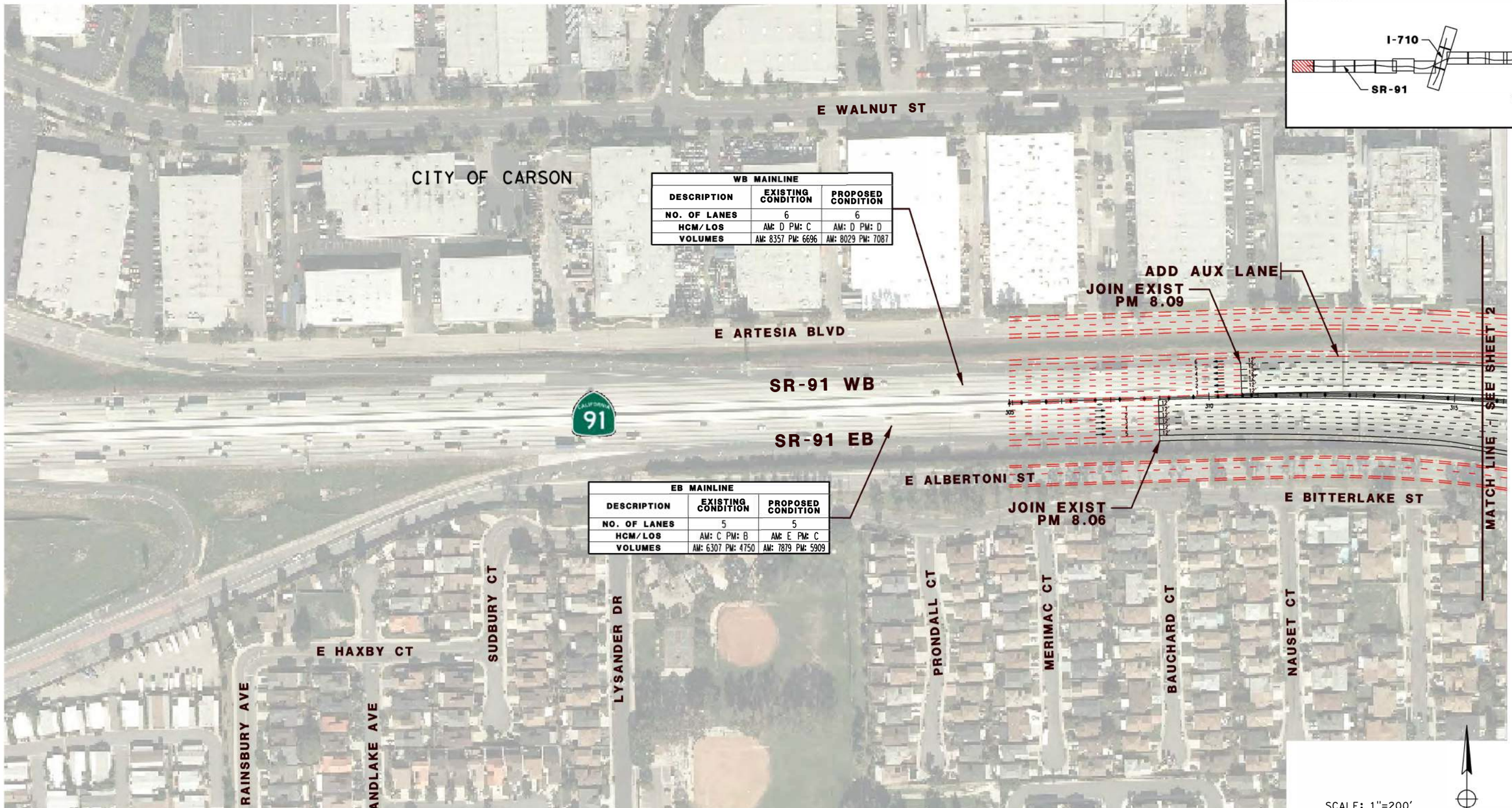

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	6	6
HCM/LOS	AM: D PM: C	AM: D PM: D
VOLUMES	AM: 8357 PM: 6696	AM: 8029 PM: 7087

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	5
HCM/LOS	AM: C PM: B	AM: E PM: C
VOLUMES	AM: 6307 PM: 4750	AM: 7879 PM: 5909

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X / X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 2
WITH I-710 ALTERNATIVE 7
SHEET 1 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-7_Sht-1.dgn

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BORDER LAST REVISED 3/1/2007

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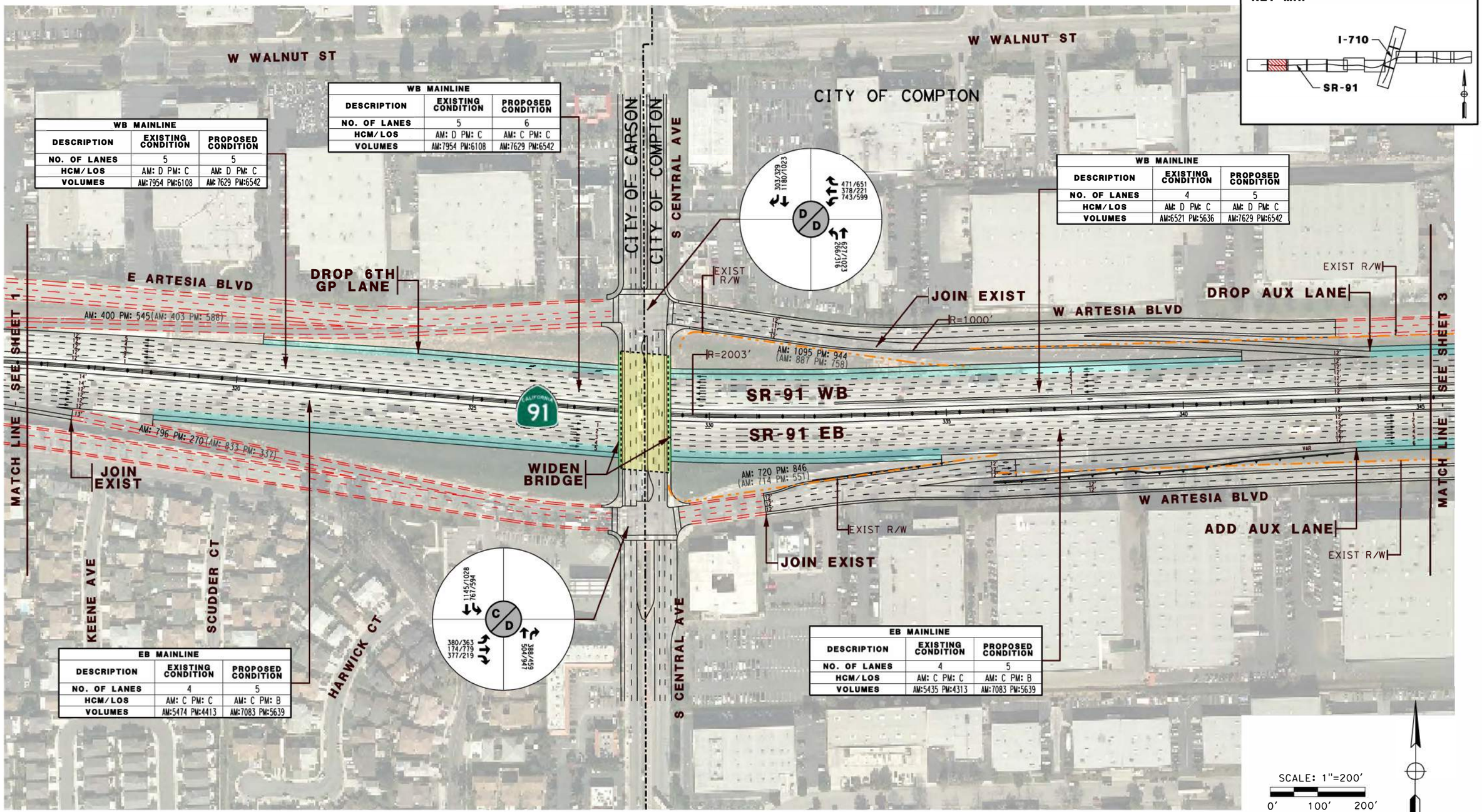

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM:7954 PM:6108	AM:7629 PM:6542

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: D PM: C	AM: C PM: C
VOLUMES	AM:7954 PM:6108	AM:7629 PM:6542

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM:6521 PM:5636	AM:7629 PM:6542

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: B
VOLUMES	AM:5474 PM:4413	AM:7083 PM:5639

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: B
VOLUMES	AM:5435 PM:4313	AM:7083 PM:5639

KEY MAP

SCALE: 1"=200'

0' 100' 200'

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 2 WITH I-710 ALTERNATIVE 7 SHEET 2 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-7_Sht-2.dgn

LAST REVISION DATE PLOTTED => 14-MAR-2017
00-00-00 TIME PLOTTED => 16:23

BORDER LAST REVISED 3/1/2007

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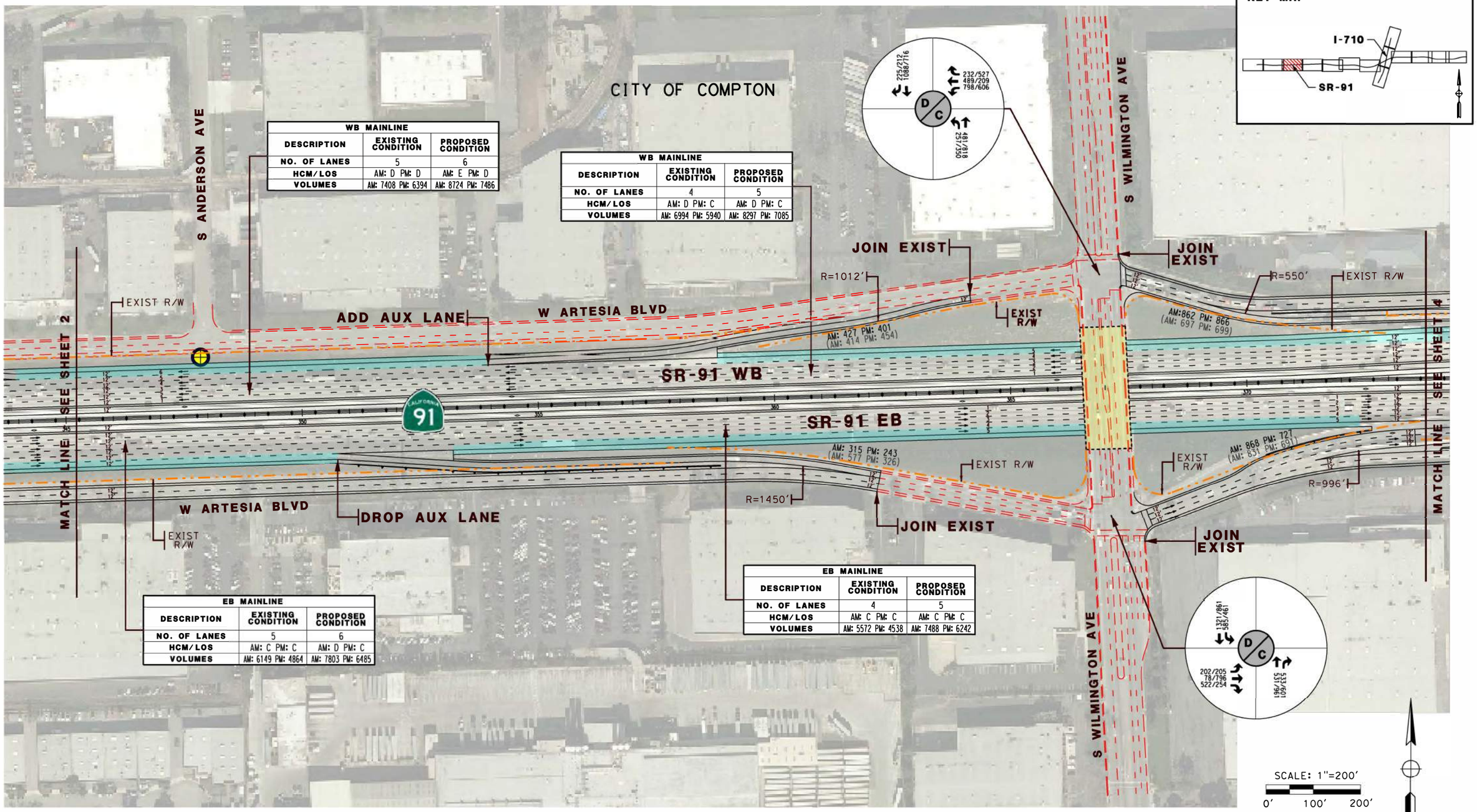

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 2 WITH I-710 ALTERNATIVE 7 SHEET 3 OF 14

LAST REVISION DATE PLOTTED => 14-MAR-2017
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BORDER LAST REVISED 3/1/2007

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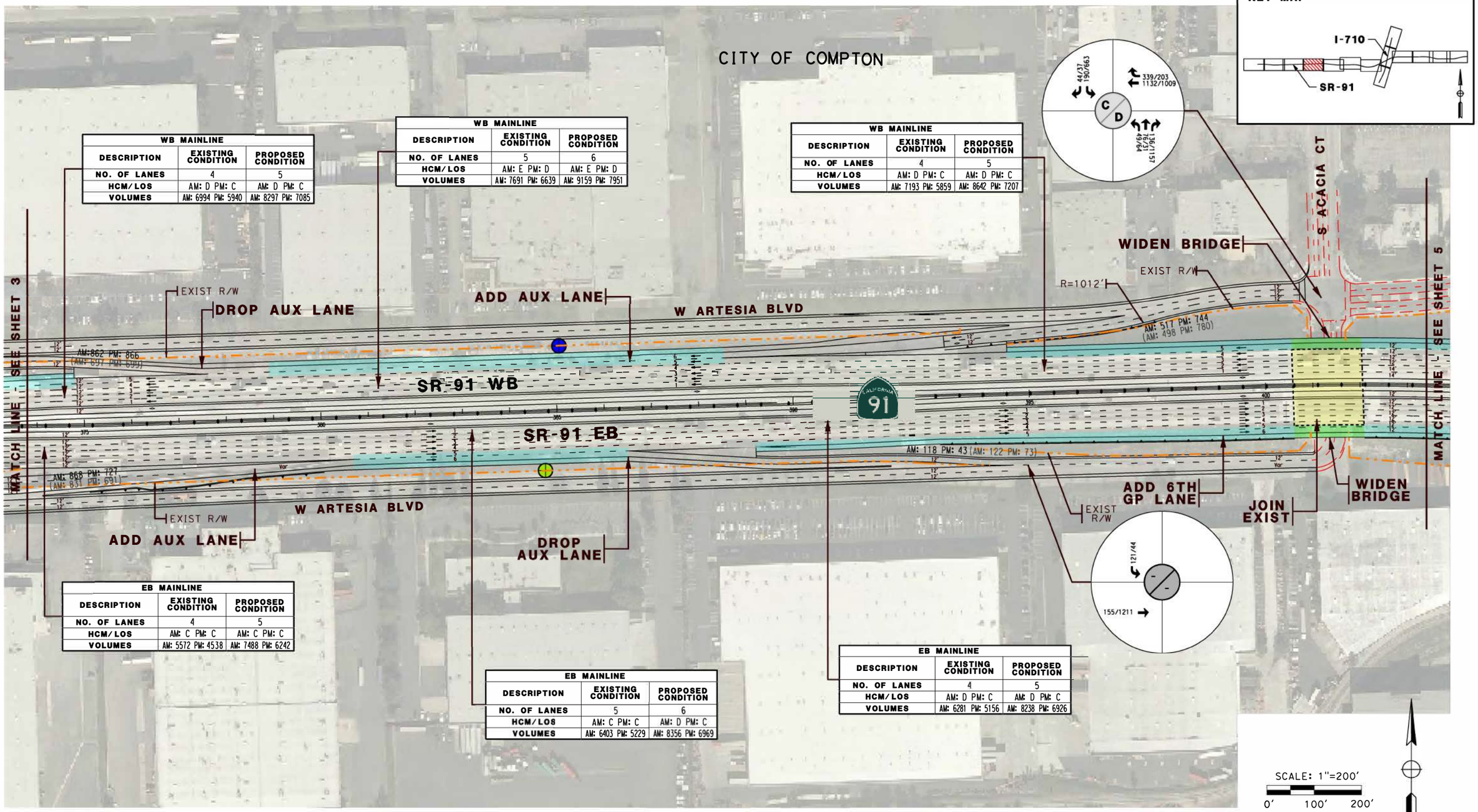

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 2
WITH I-710 ALTERNATIVE 7
SHEET 4 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-7_Sht-4.dgn

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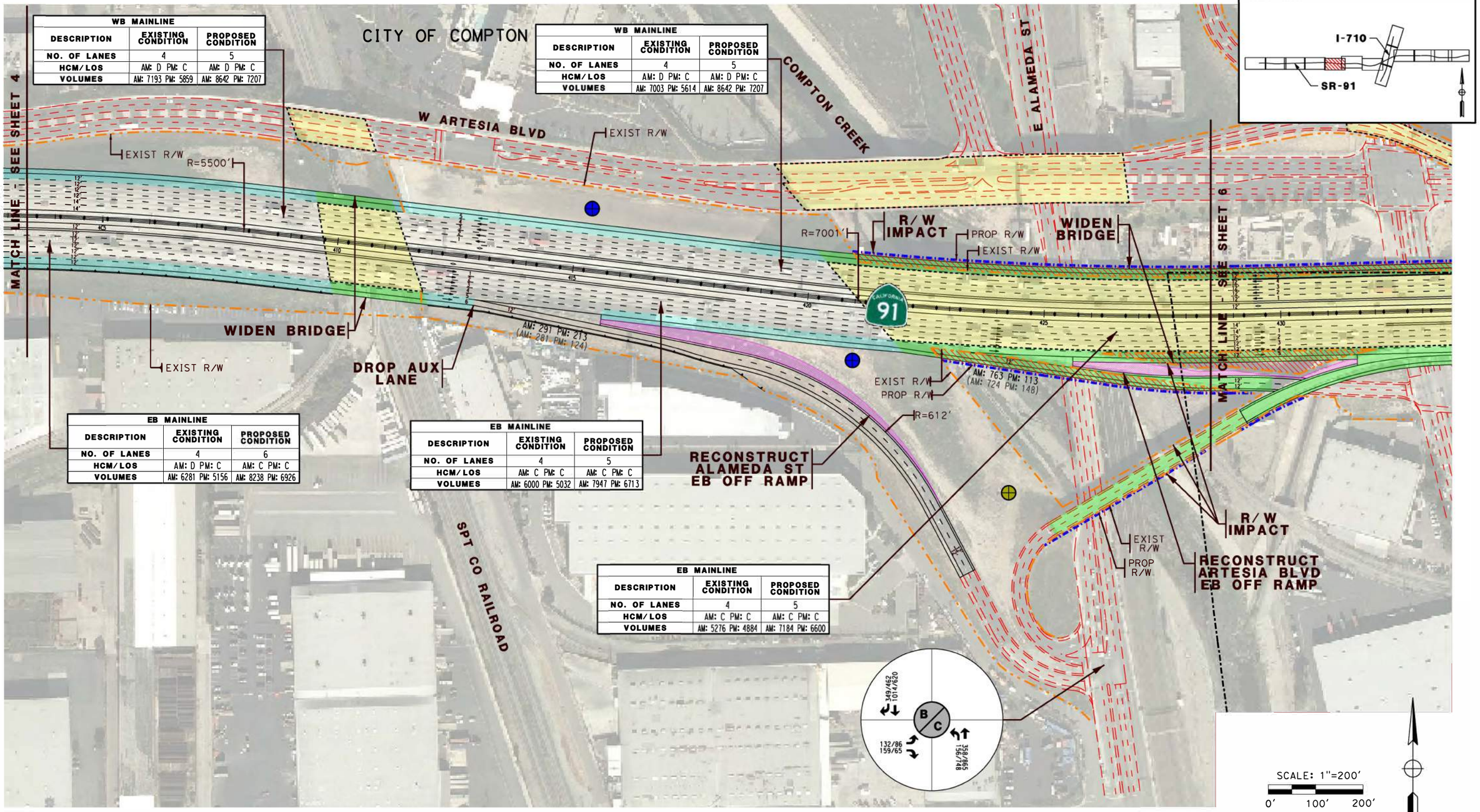

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 7193 PM: 5859	AM: 8642 PM: 7207

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 7003 PM: 5614	AM: 8642 PM: 7207

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	6
HCM/LOS	AM: D PM: C	AM: C PM: C
VOLUMES	AM: 6281 PM: 5156	AM: 8238 PM: 6926

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 6000 PM: 5032	AM: 7947 PM: 6713

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 5276 PM: 4884	AM: 7184 PM: 6600

KEY MAP

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 2 WITH I-710 ALTERNATIVE 7 SHEET 5 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-7_Sht-5.dgn

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BORDER LAST REVISED 3/1/2007

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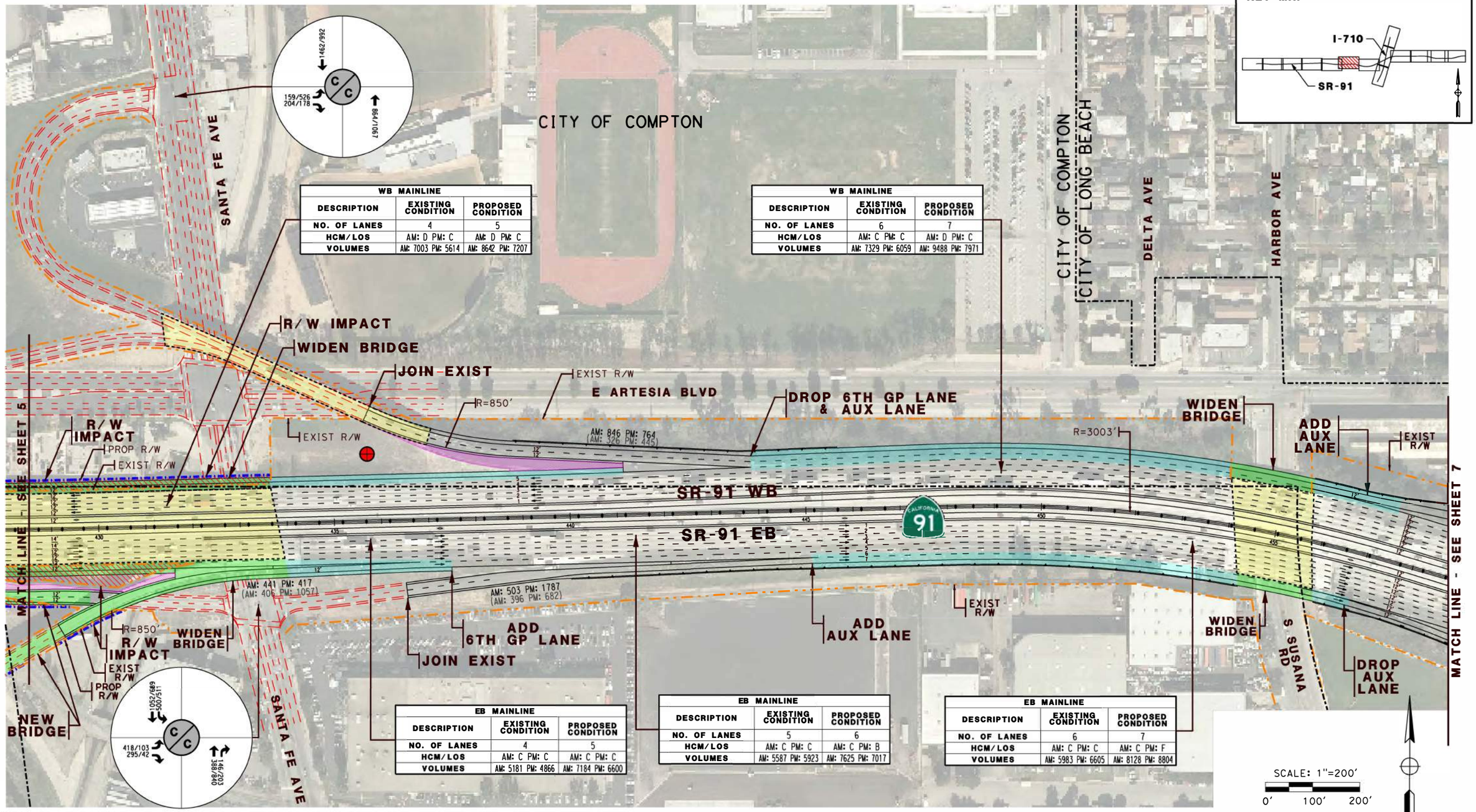

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 2
WITH I-710 ALTERNATIVE 7
SHEET 6 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-7_Sht-6.dgn

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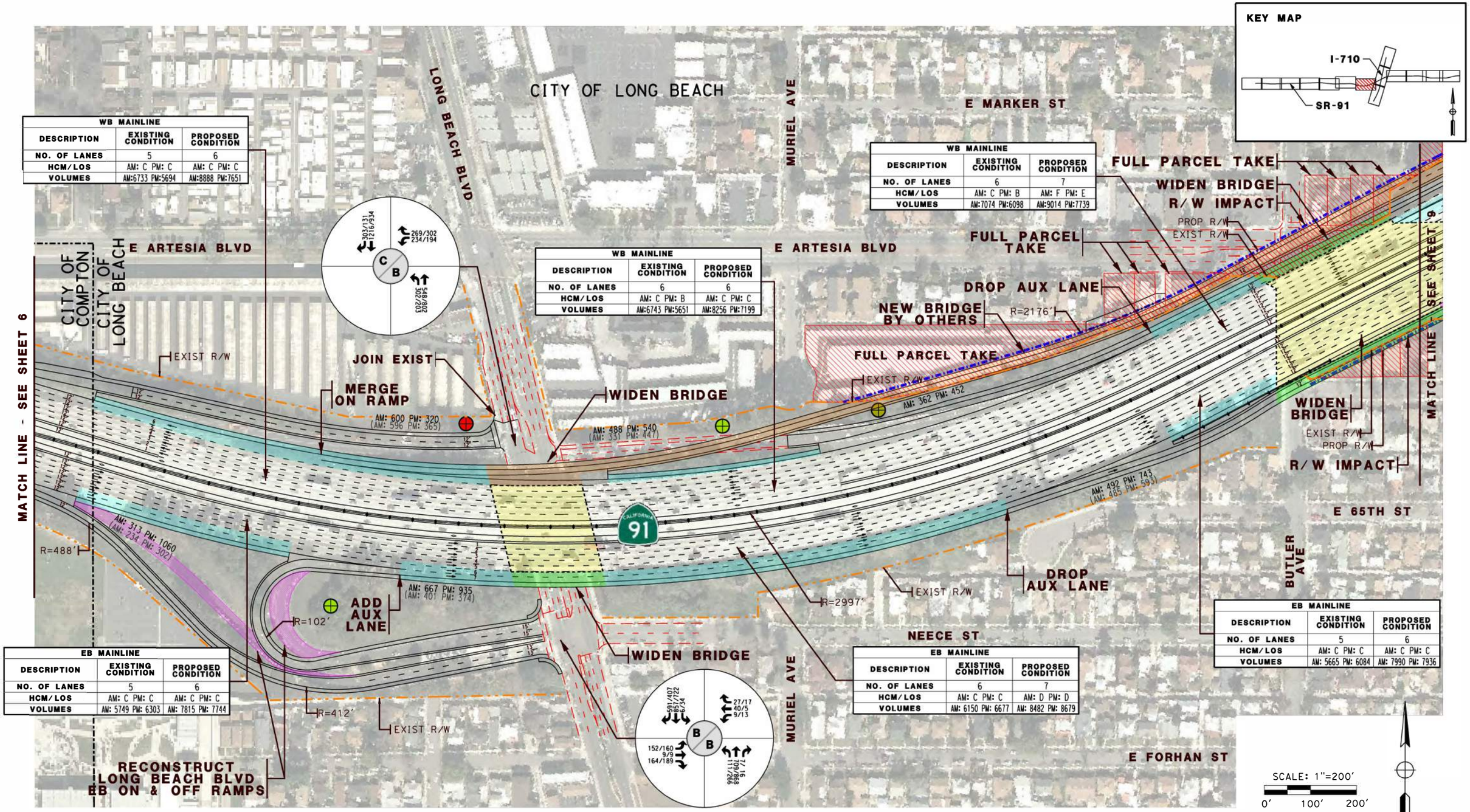

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM:6733 PM:5694	AM:8888 PM:7651

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	6	6
HCM/LOS	AM: C PM: B	AM: C PM: C
VOLUMES	AM:6743 PM:5651	AM:8256 PM:7199

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	6	7
HCM/LOS	AM: C PM: B	AM: F PM: E
VOLUMES	AM:7074 PM:6098	AM:9014 PM:7739

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 5749 PM: 6303	AM: 7815 PM: 7744

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	6	7
HCM/LOS	AM: C PM: C	AM: D PM: D
VOLUMES	AM: 6150 PM: 6677	AM: 8482 PM: 8679

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 5665 PM: 6084	AM: 7990 PM: 7936

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 2 WITH I-710 ALTERNATIVE 7 SHEET 7 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-7_Sht-7.dgn

LAST REVISION DATE PLOTTED => 14-MAR-2017
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LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 2 WITH I-710 ALTERNATIVE 7 SHEET 8 OF 14

LAST REVISION | DATE PLOTTED => 14-MAR-2017
00-00-00 | TIME PLOTTED => 16:23

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BORDER LAST REVISED 3/1/2007

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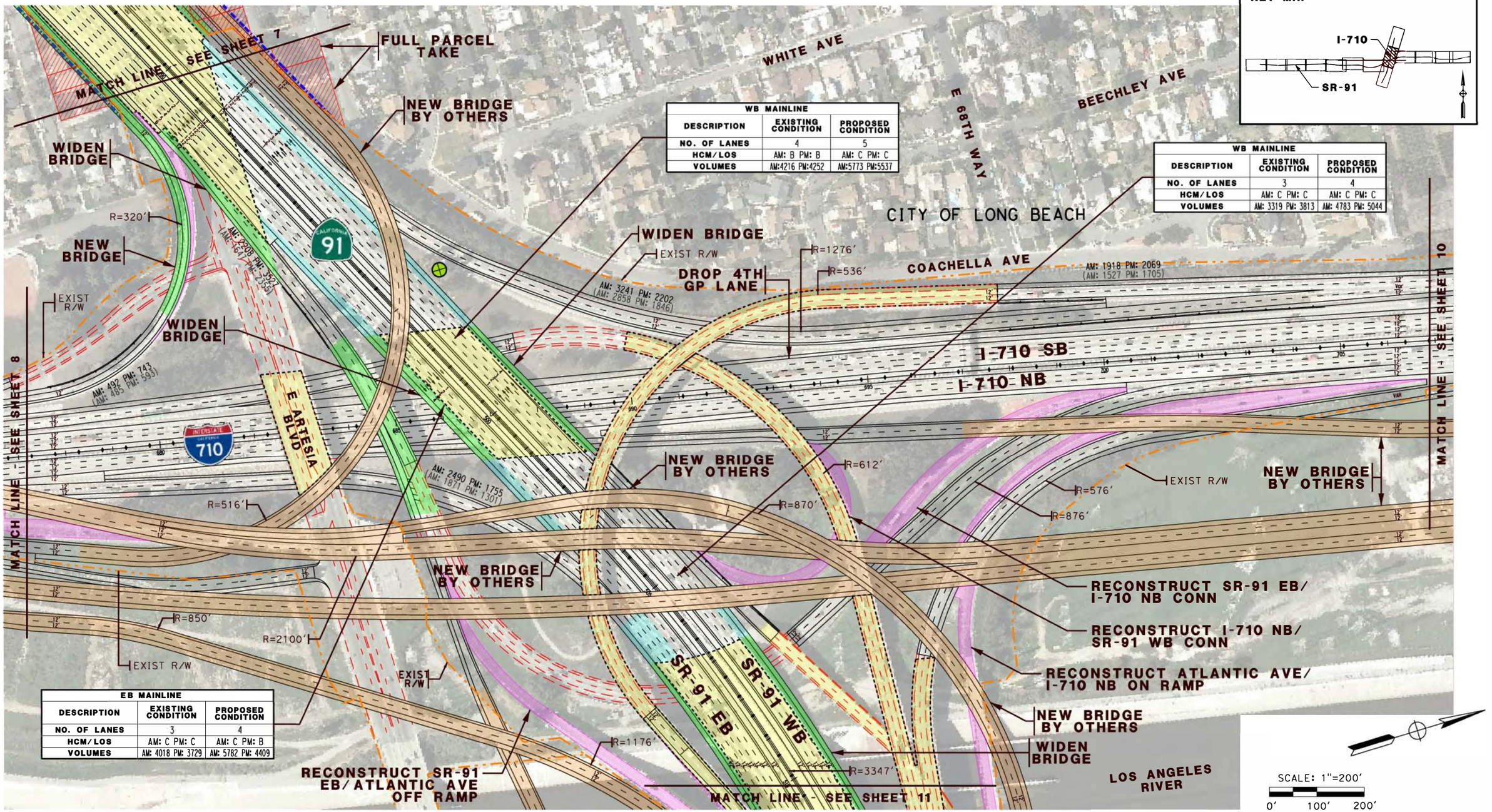

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: B PM: B	AM: C PM: C
VOLUMES	AM:4216 PM:4252	AM:5773 PM:5537

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	3	4
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 3319 PM: 3813	AM: 4783 PM: 5044

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	3	4
HCM/LOS	AM: C PM: C	AM: C PM: B
VOLUMES	AM: 4018 PM: 3729	AM: 5782 PM: 4409

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 2 WITH I-710 ALTERNATIVE 7 SHEET 9 OF 14

DGN FILE = 7:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-7_Sht-9.dgn

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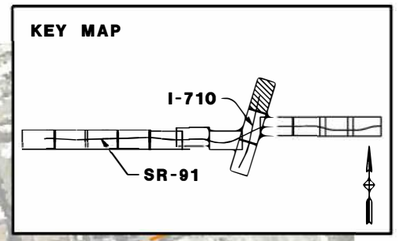

SCALE: 1"=200'
0' 100' 200'

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 2 WITH I-710 ALTERNATIVE 7 SHEET 10 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-7_Sht-10.dgn

LAST REVISION DATE PLOTTED => 14-MAR-2017
00-00-00 TIME PLOTTED => 16:23

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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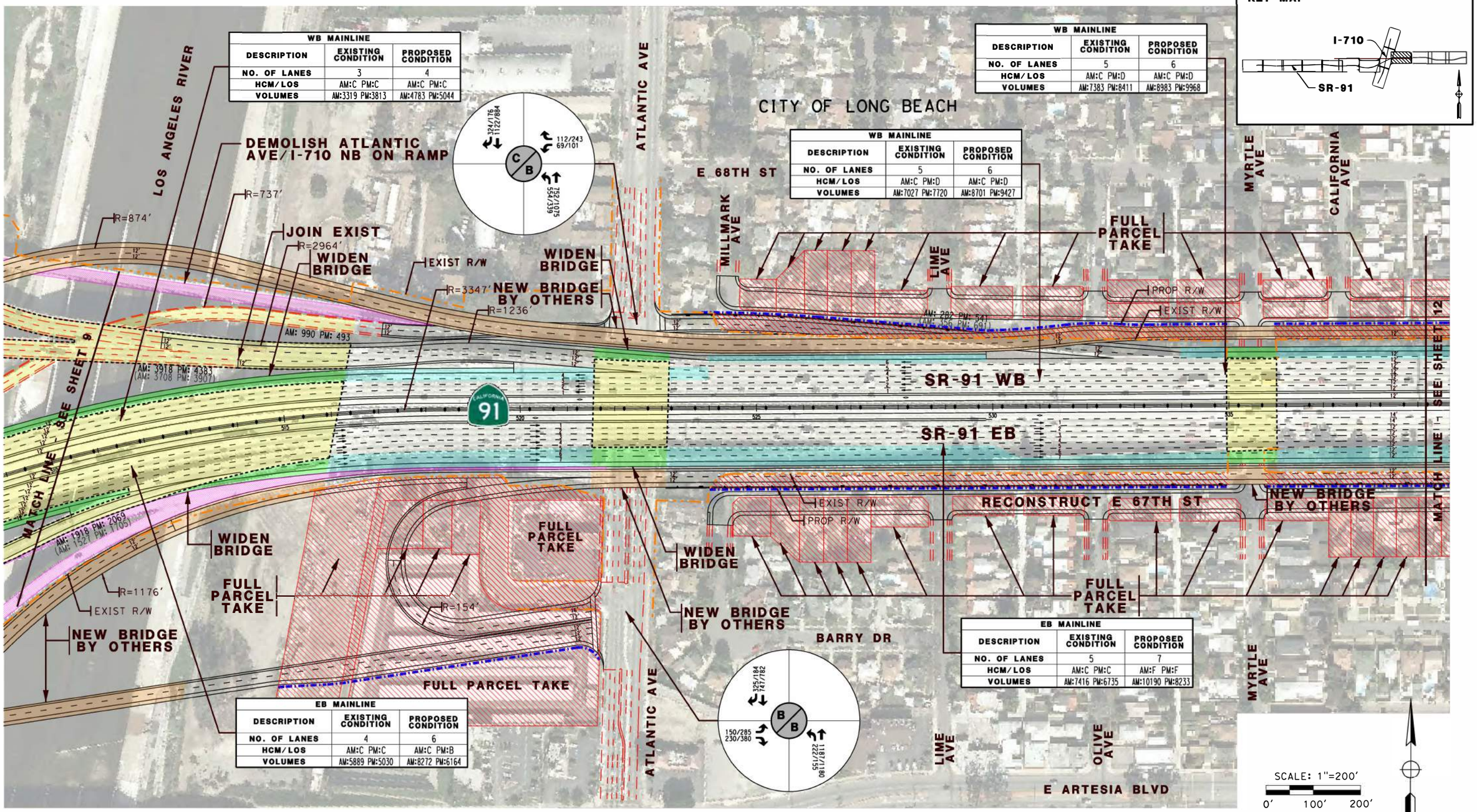

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	3	4
HCM/LOS	AM:C PM:C	AM:C PM:C
VOLUMES	AM:3319 PM:3813	AM:4783 PM:5044

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM:C PM:D	AM:C PM:D
VOLUMES	AM:7383 PM:8411	AM:8983 PM:9968

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM:C PM:D	AM:C PM:D
VOLUMES	AM:7027 PM:7720	AM:8701 PM:9427

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	6
HCM/LOS	AM:C PM:C	AM:C PM:B
VOLUMES	AM:5889 PM:5030	AM:8272 PM:6164

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	7
HCM/LOS	AM:C PM:C	AM:F PM:F
VOLUMES	AM:7416 PM:6735	AM:10190 PM:8233

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 2 WITH I-710 ALTERNATIVE 7 SHEET 11 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-7_Sht-11.dgn

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00-00-00 TIME PLOTTED => 16:24

BORDER LAST REVISED 3/1/2007

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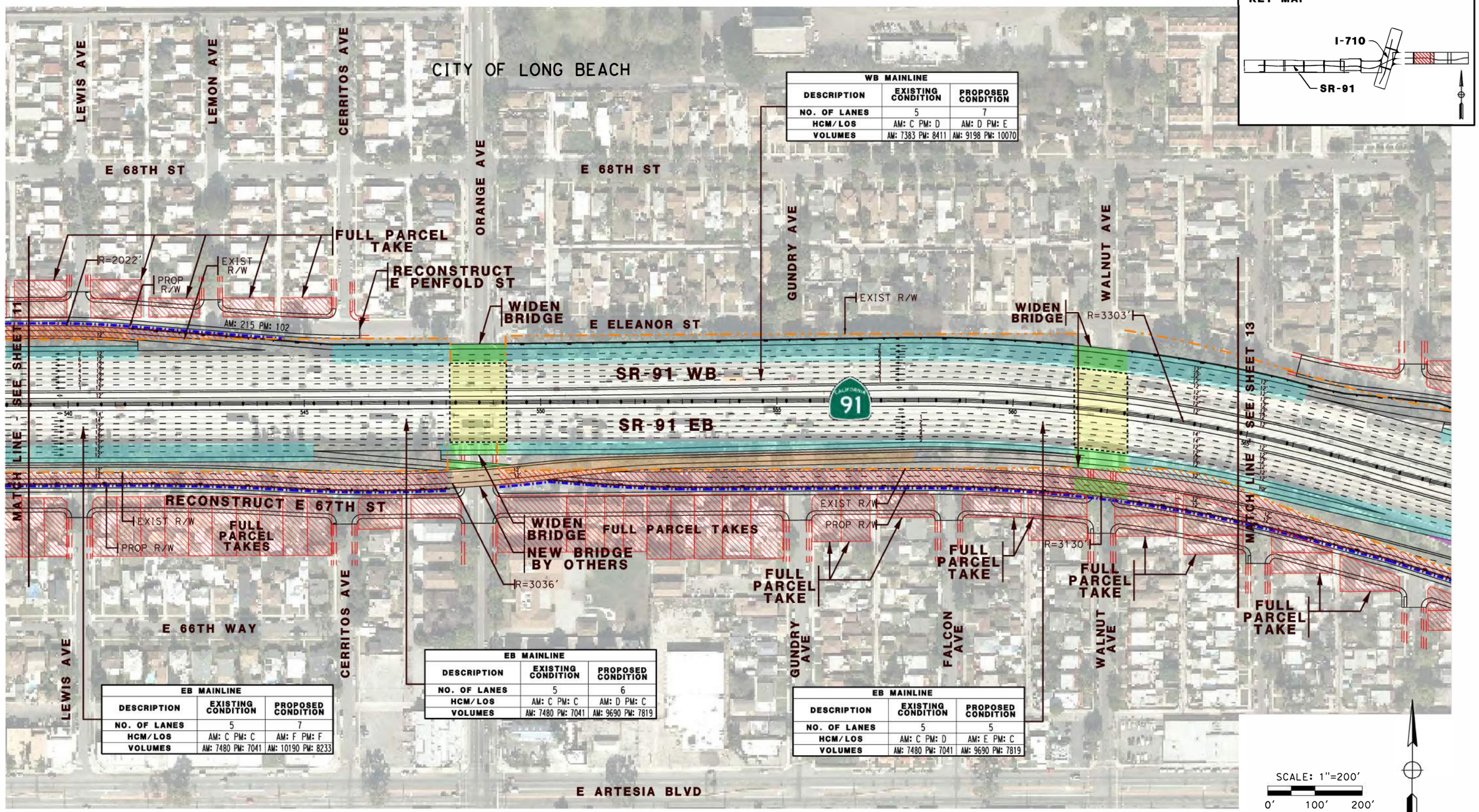

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 2
WITH I-710 ALTERNATIVE 7
SHEET 12 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-7_Sht-12.dgn

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BORDER LAST REVISED 3/1/2007

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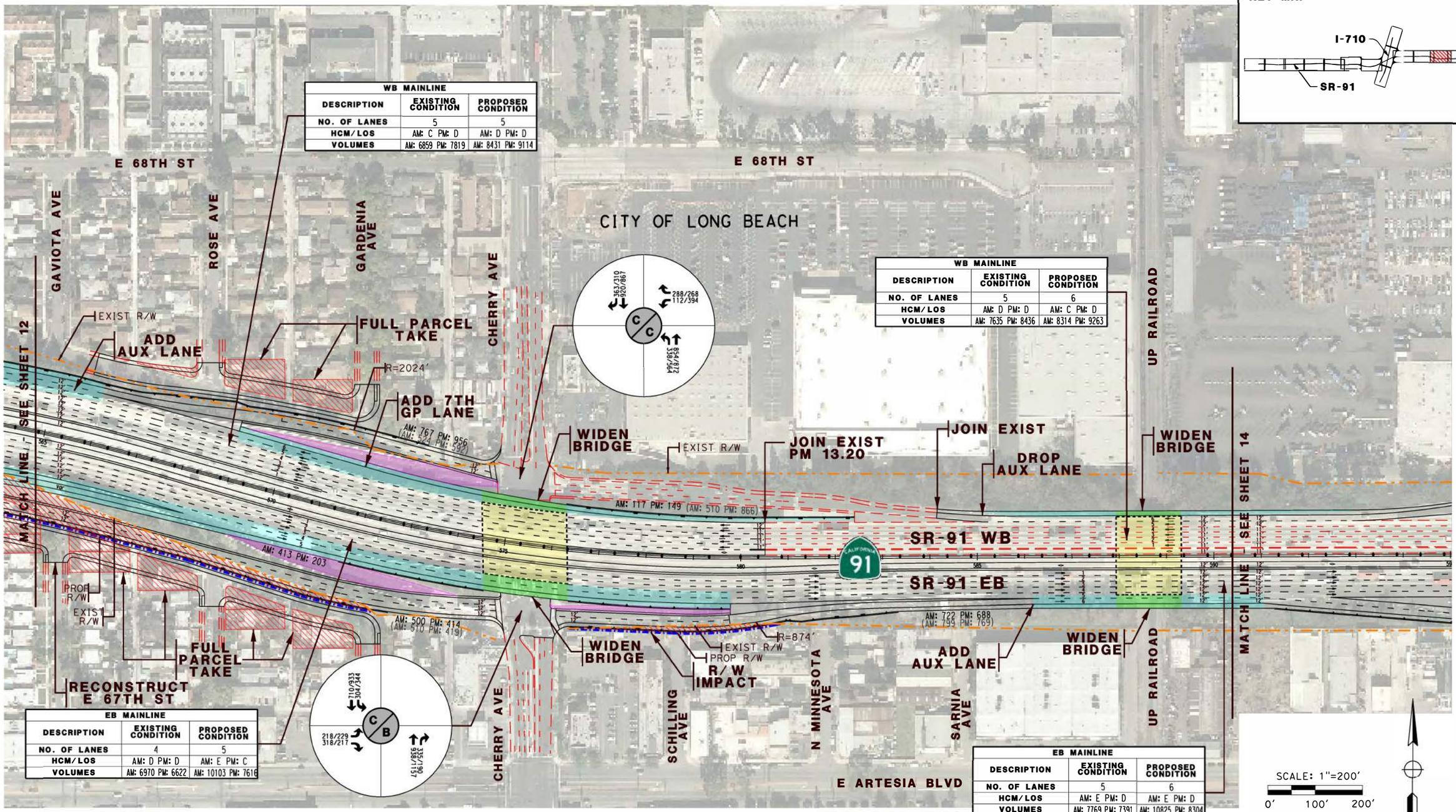

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 2 WITH I-710 ALTERNATIVE 7 SHEET 13 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-7_Sht-13.dgn

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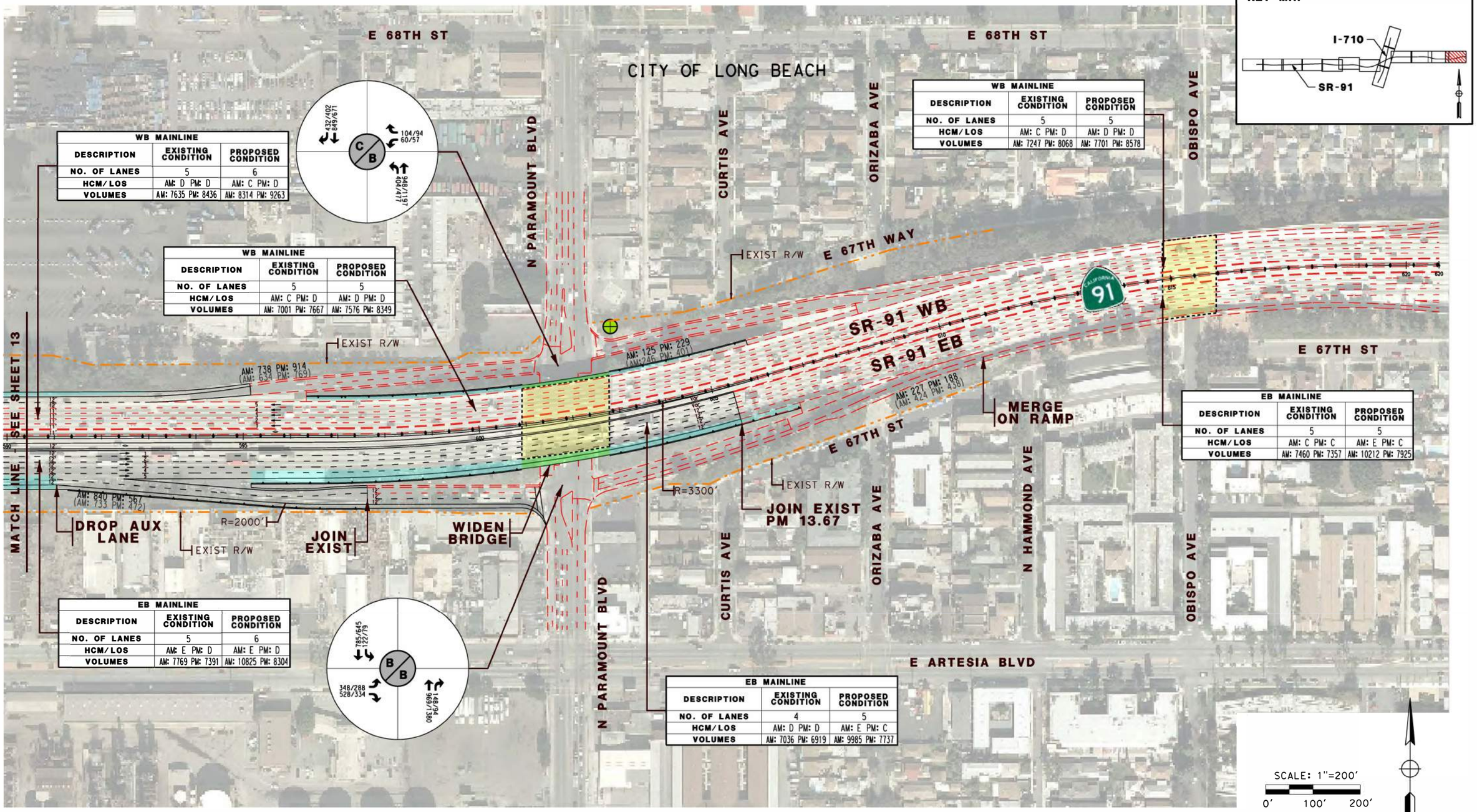

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: D PM: D	AM: C PM: D
VOLUMES	AM: 7635 PM: 8436	AM: 8314 PM: 9263

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	5
HCM/LOS	AM: C PM: D	AM: D PM: D
VOLUMES	AM: 7001 PM: 7667	AM: 7576 PM: 8349

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	5
HCM/LOS	AM: C PM: D	AM: D PM: D
VOLUMES	AM: 7247 PM: 8068	AM: 7701 PM: 8578

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	5
HCM/LOS	AM: C PM: C	AM: E PM: C
VOLUMES	AM: 7460 PM: 7357	AM: 10212 PM: 7925

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: E PM: D	AM: E PM: D
VOLUMES	AM: 7769 PM: 7391	AM: 10825 PM: 8304

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: D	AM: E PM: C
VOLUMES	AM: 7036 PM: 6919	AM: 9985 PM: 7737

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 2 WITH I-710 ALTERNATIVE 7 SHEET 14 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT2-7_Sht-14.dgn

LAST REVISION | DATE PLOTTED => 14-MAR-2017
00-00-00 | TIME PLOTTED => 16:24

BORDER LAST REVISED 3/1/2007

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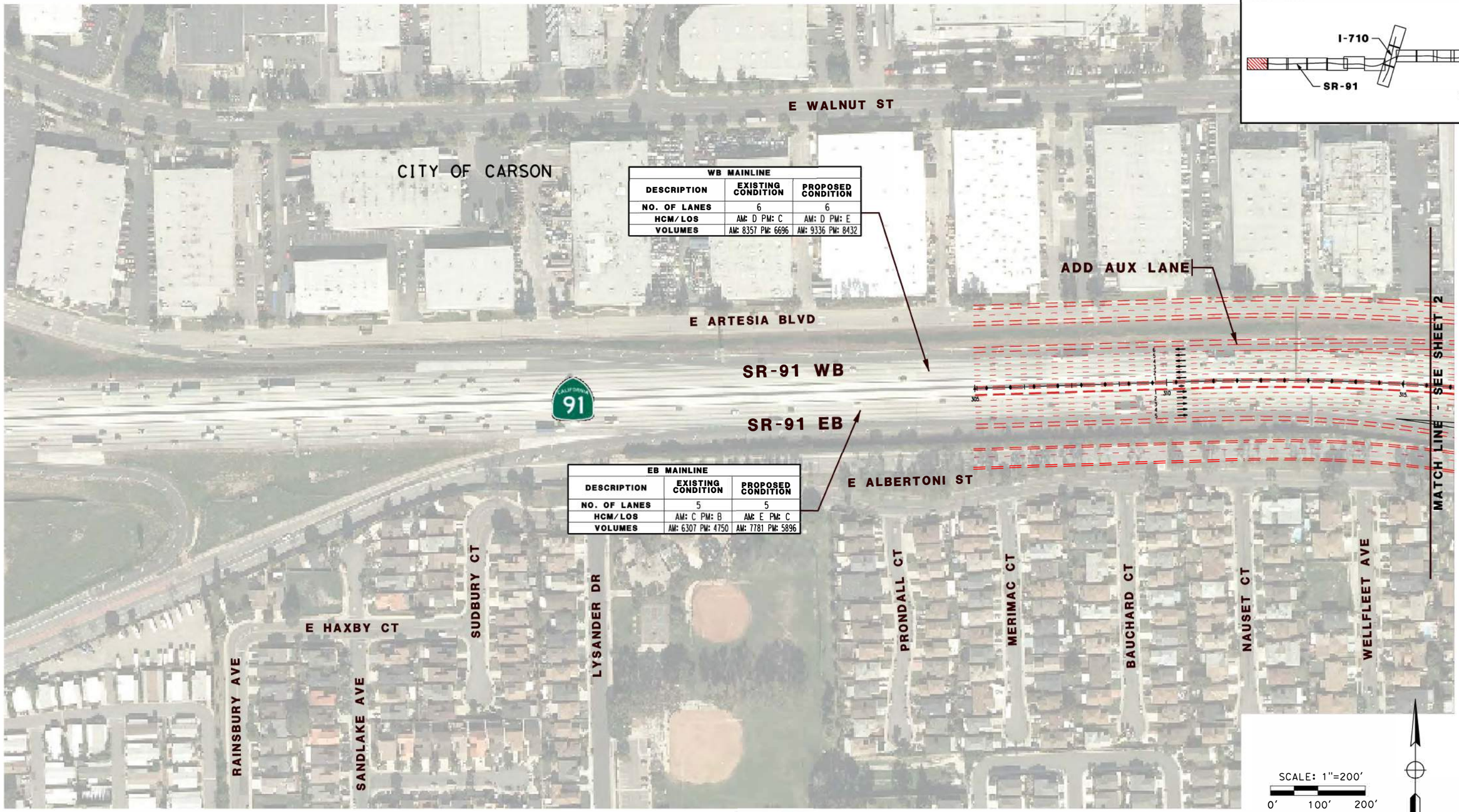

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X / X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 3 WITH I-710 ALTERNATIVE 5C SHEET 1 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-5C_Sht-1.dgn

LAST REVISION | DATE PLOTTED => 14-MAR-2017
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BORDER LAST REVISED 3/1/2007

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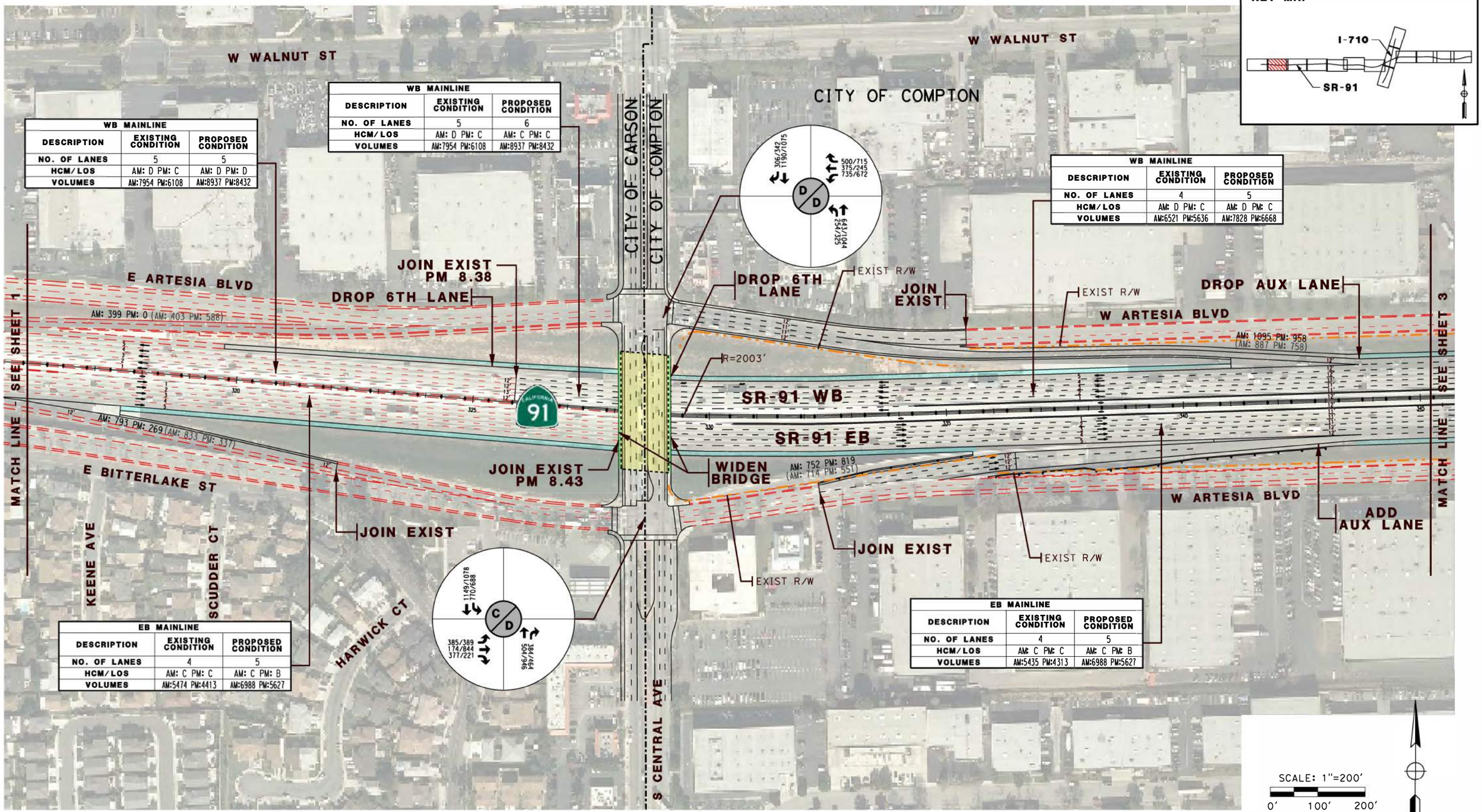

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	5
HCM/LOS	AM: D PM: C	AM: D PM: D
VOLUMES	AM:7954 PM:6108	AM:8937 PM:8432

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: D PM: C	AM: C PM: C
VOLUMES	AM:7954 PM:6108	AM:8937 PM:8432

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM:6521 PM:5636	AM:7828 PM:6668

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: B
VOLUMES	AM:5474 PM:4413	AM:6988 PM:5627

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: B
VOLUMES	AM:5435 PM:4313	AM:6988 PM:5627

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 3
WITH I-710 ALTERNATIVE 5C
SHEET 2 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-5C_Sht-2.dgn

LAST REVISION 00-00-00 | DATE PLOTTED => 14-MAR-2017 | TIME PLOTTED => 16:24

BORDER LAST REVISED 3/1/2007

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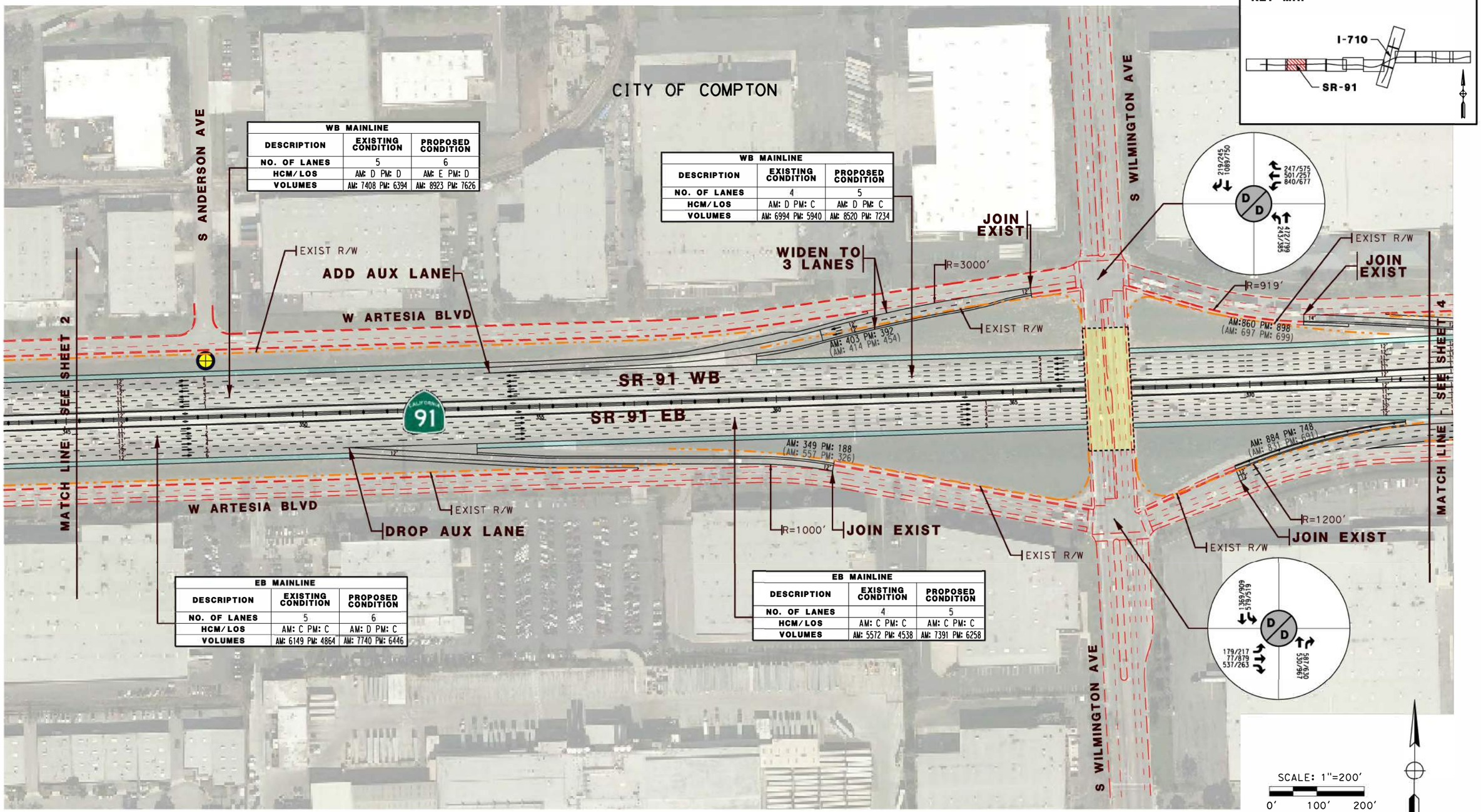

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: D PM: D	AM: E PM: D
VOLUMES	AM: 7408 PM: 6394	AM: 8923 PM: 7626

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 6994 PM: 5940	AM: 8520 PM: 7234

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: C	AM: D PM: C
VOLUMES	AM: 6149 PM: 4864	AM: 7740 PM: 6446

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 5572 PM: 4538	AM: 7391 PM: 6258

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 3 WITH I-710 ALTERNATIVE 5C SHEET 3 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-5C_Sht-3.dgn

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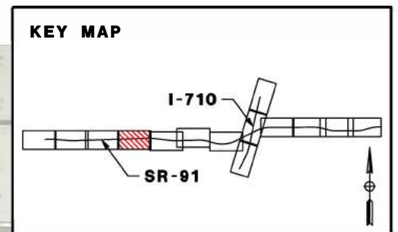
CITY OF COMPTON

KEY MAP



WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 6994 PM: 5940	AM: 8520 PM: 7234

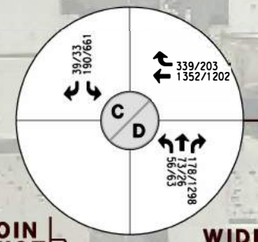
WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: E PM: D	AM: E PM: D
VOLUMES	AM: 7691 PM: 6639	AM: 9380 PM: 8132

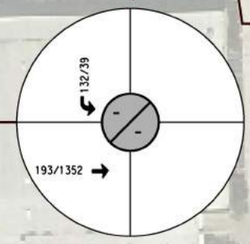
WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 7193 PM: 5859	AM: 8968 PM: 7437

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 5572 PM: 4538	AM: 7391 PM: 6258

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: C	AM: D PM: C
VOLUMES	AM: 6403 PM: 5229	AM: 8275 PM: 7006

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: C PM: C
VOLUMES	AM: 6281 PM: 5156	AM: 8152 PM: 6968





SEE SHEET 3

MATCH LINE

EXIST R/W

DROP AUX LANE

W ARTESIA BLVD

ADD AUX LANE

AM:860 PM: 898
(AM: 697 PM: 699)

SR-91 WB

SR-91 EB

AM: 884 PM: 749
(AM: 837 PM: 691)

AM: 412 PM: 695
(AM: 498 PM: 780)

R=1478'

JOIN EXIST

WIDEN BRIDGE

S ACACIA CT

SEE SHEET 5

MATCH LINE

AM: 123 PM: 38
(AM: 122 PM: 73)

EXIST R/W

JOIN EXIST

WIDEN BRIDGE

ADD 6TH GP LANE

SCALE: 1"=200'

0' 100' 200'

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 3 WITH I-710 ALTERNATIVE 5C SHEET 4 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-5C_Sht-4.dgn

LAST REVISION | DATE PLOTTED => 14-MAR-2017
00-00-00 | TIME PLOTTED => 16:24

BORDER LAST REVISED 3/1/2007

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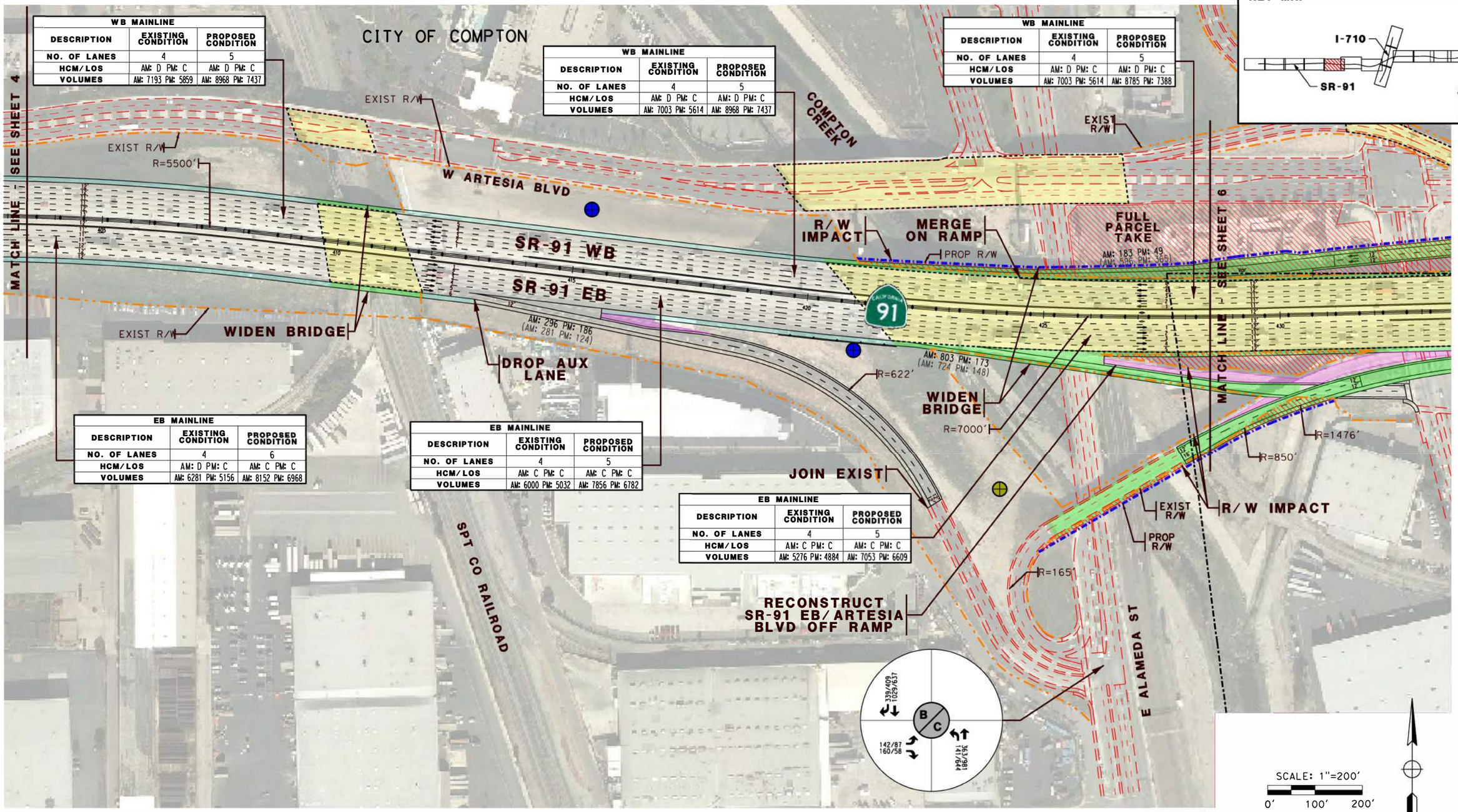

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 7193 PM: 5859	AM: 8968 PM: 7437

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 7003 PM: 5614	AM: 8968 PM: 7437

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 7003 PM: 5614	AM: 8785 PM: 7388

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	6
HCM/LOS	AM: D PM: C	AM: C PM: C
VOLUMES	AM: 6281 PM: 5156	AM: 8152 PM: 6968

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 6000 PM: 5032	AM: 7856 PM: 6782

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 5276 PM: 4884	AM: 7053 PM: 6609

KEY MAP

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 3 WITH I-710 ALTERNATIVE 5C SHEET 5 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-5C_Sht-5.dgn

LAST REVISION | DATE PLOTTED => 14-MAR-2017 | TIME PLOTTED => 16:24 | 00-00-00

BORDER LAST REVISED 3/1/2007

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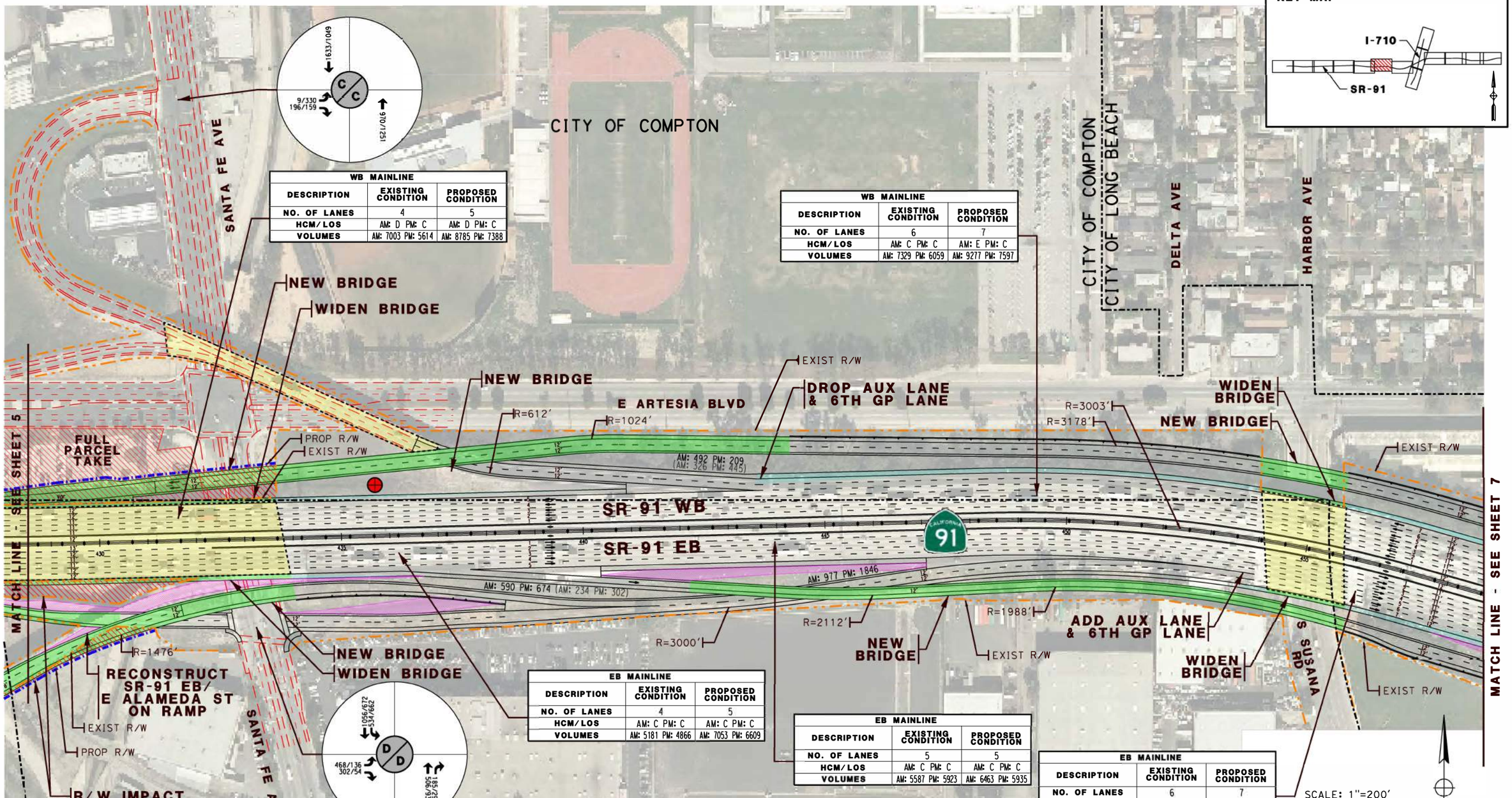

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 3
WITH I-710 ALTERNATIVE 5C
SHEET 6 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-5C_Sht-6.dgn

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00-00-00 TIME PLOTTED => 16:24

BORDER LAST REVISED 3/1/2007

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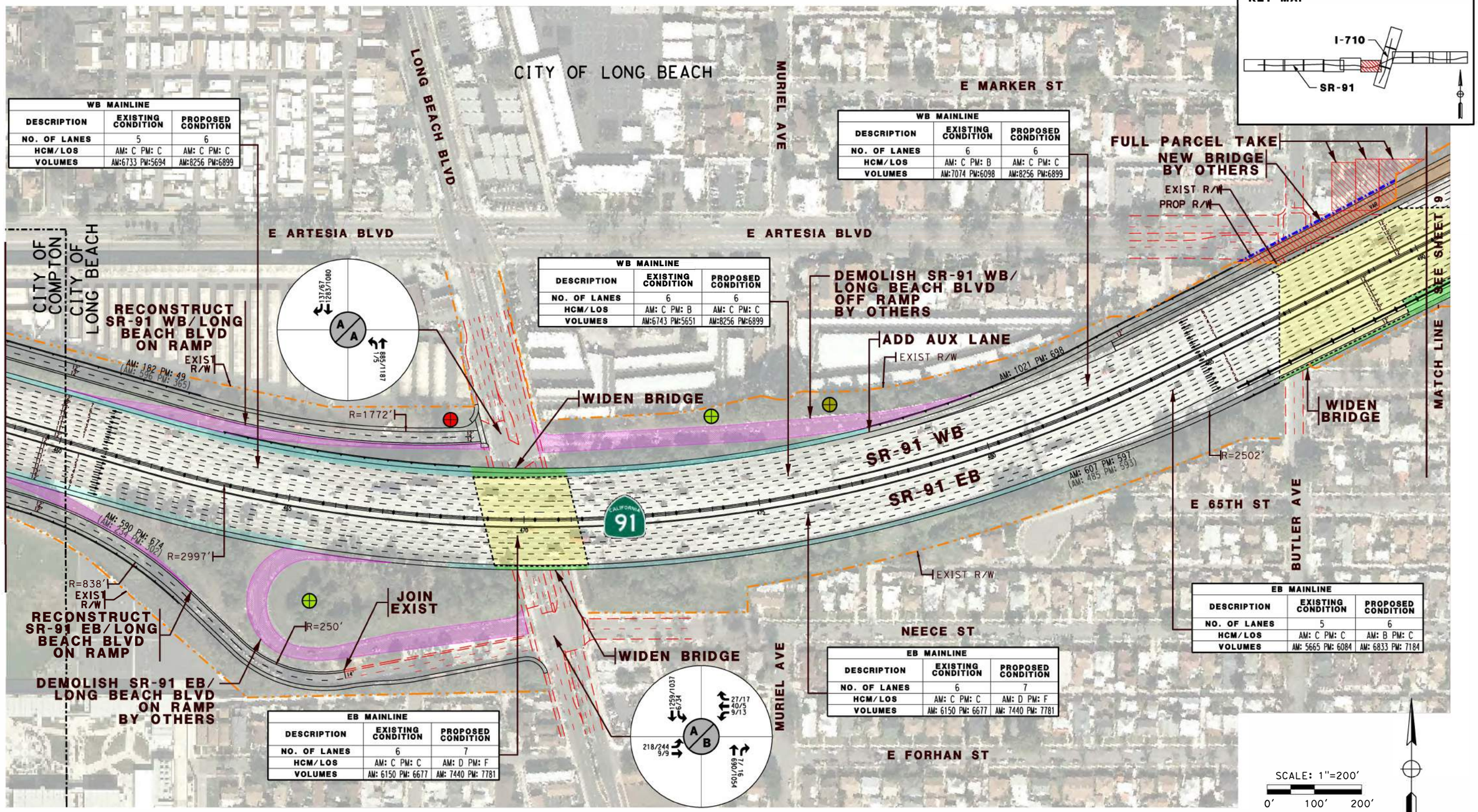

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 3 WITH I-710 ALTERNATIVE 5C

SHEET 7 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-5C_Sht-7.dgn

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BORDER LAST REVISED 3/1/2007

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LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 3
WITH I-710 ALTERNATIVE 5C
SHEET 8 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-5C_Sht-8.dgn

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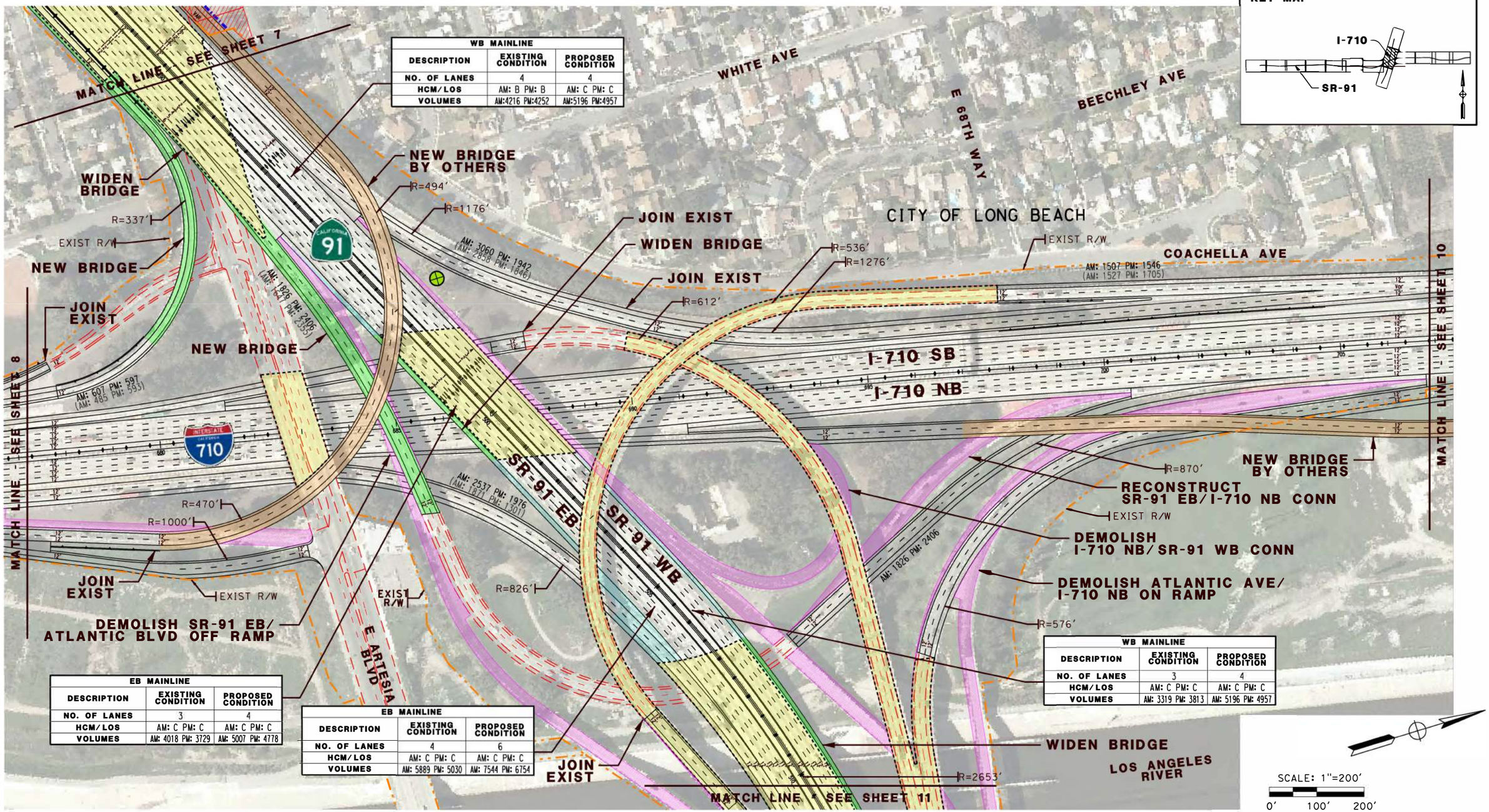

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 3 WITH I-710 ALTERNATIVE 5C

SHEET 9 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-5C_Sht-9.dgn

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BORDER LAST REVISED 3/1/2007

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LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X / X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 3 WITH I-710 ALTERNATIVE 5C SHEET 10 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-5C_Sht-10.dgn

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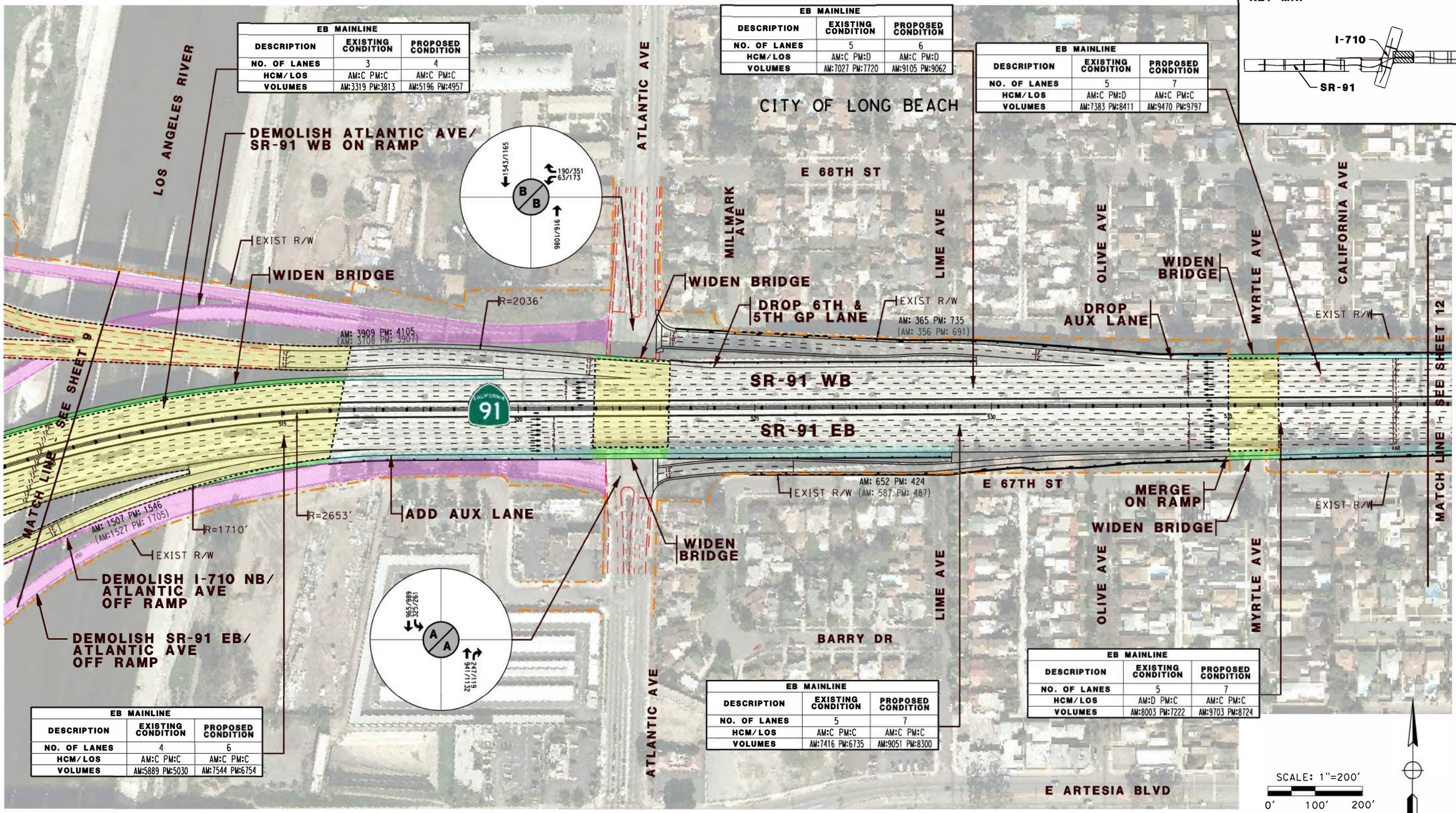

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	3	4
HCM/LOS	AM:C PM:C	AM:C PM:C
VOLUMES	AM:3319 PM:3813	AM:5196 PM:4957

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM:C PM:D	AM:C PM:D
VOLUMES	AM:7027 PM:7720	AM:9105 PM:9062

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	7
HCM/LOS	AM:C PM:D	AM:C PM:C
VOLUMES	AM:7383 PM:8411	AM:9470 PM:9797

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	6
HCM/LOS	AM:C PM:C	AM:C PM:C
VOLUMES	AM:5889 PM:5030	AM:7544 PM:6754

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	7
HCM/LOS	AM:C PM:C	AM:C PM:C
VOLUMES	AM:7416 PM:6735	AM:9051 PM:8300

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	7
HCM/LOS	AM:D PM:C	AM:C PM:C
VOLUMES	AM:8003 PM:7222	AM:9703 PM:8724

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 3 WITH I-710 ALTERNATIVE 5C SHEET 11 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-5C_Sht-11.dgn

LAST REVISION DATE PLOTTED => 14-MAR-2017
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BORDER LAST REVISED 3/1/2007

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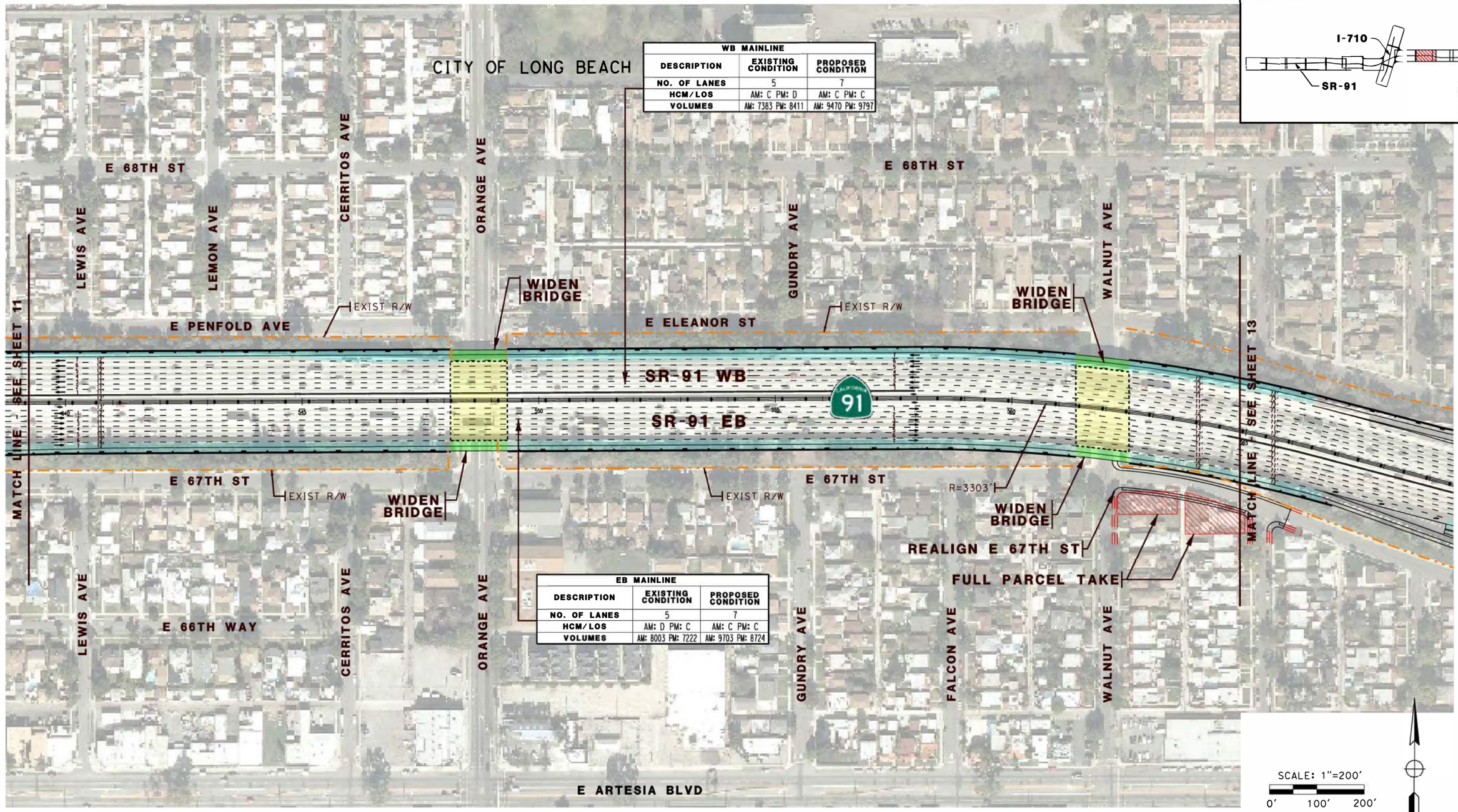

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 3
WITH I-710 ALTERNATIVE 5C
SHEET 12 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-5C_Sht-12.dgn

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BORDER LAST REVISED 3/1/2007

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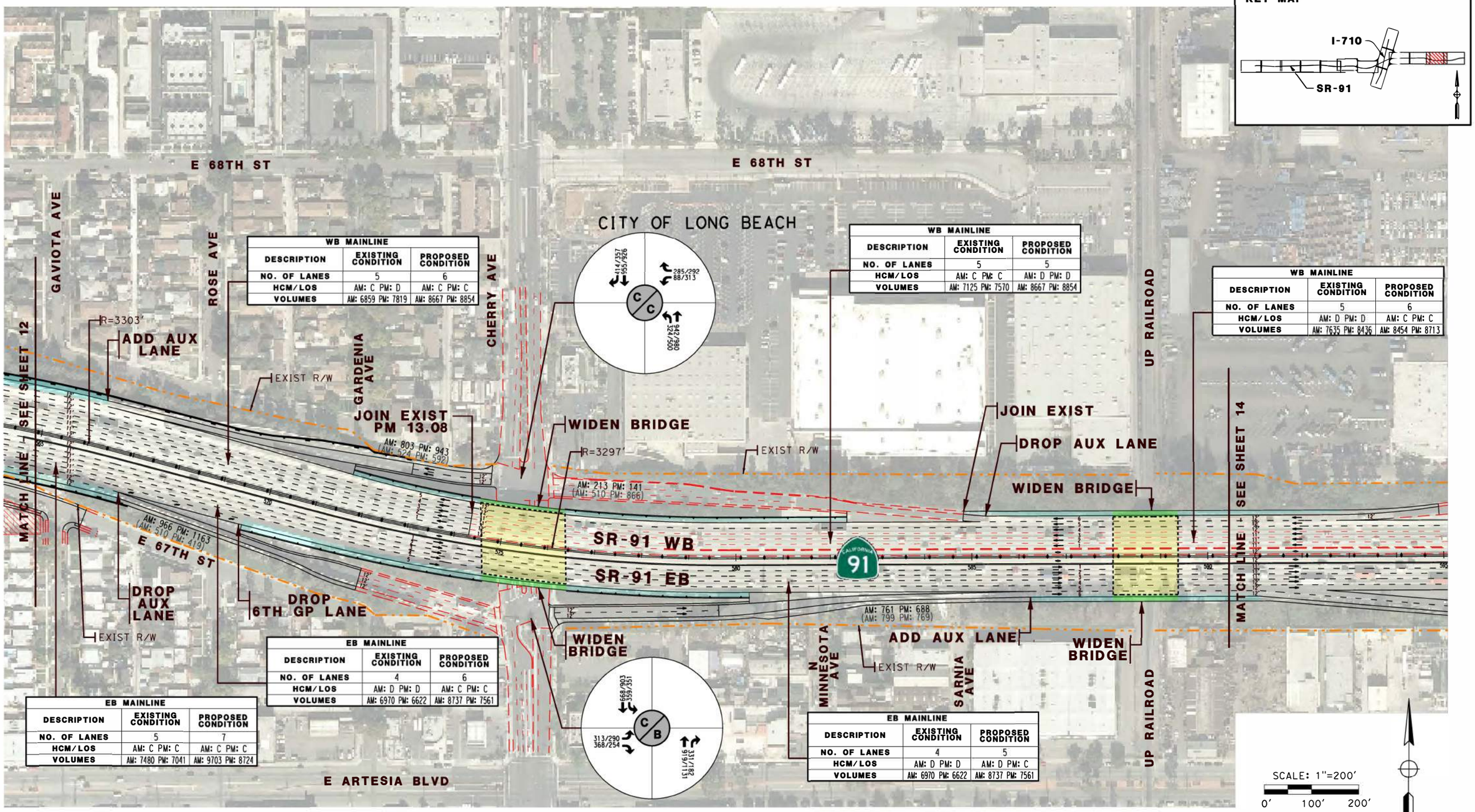

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: D	AM: C PM: C
VOLUMES	AM: 6859 PM: 7819	AM: 8667 PM: 8854

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	5
HCM/LOS	AM: C PM: C	AM: D PM: D
VOLUMES	AM: 7125 PM: 7570	AM: 8667 PM: 8854

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: D PM: D	AM: C PM: C
VOLUMES	AM: 7635 PM: 8436	AM: 8454 PM: 8713

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	6
HCM/LOS	AM: D PM: D	AM: C PM: C
VOLUMES	AM: 6970 PM: 6622	AM: 8737 PM: 7561

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	7
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 7480 PM: 7041	AM: 9703 PM: 8724

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: D	AM: D PM: C
VOLUMES	AM: 6970 PM: 6622	AM: 8737 PM: 7561

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 3
WITH I-710 ALTERNATIVE 5C
SHEET 13 OF 14

DGN FILE = i:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-5C_Sht-13.dgn

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BORDER LAST REVISED 3/1/2007

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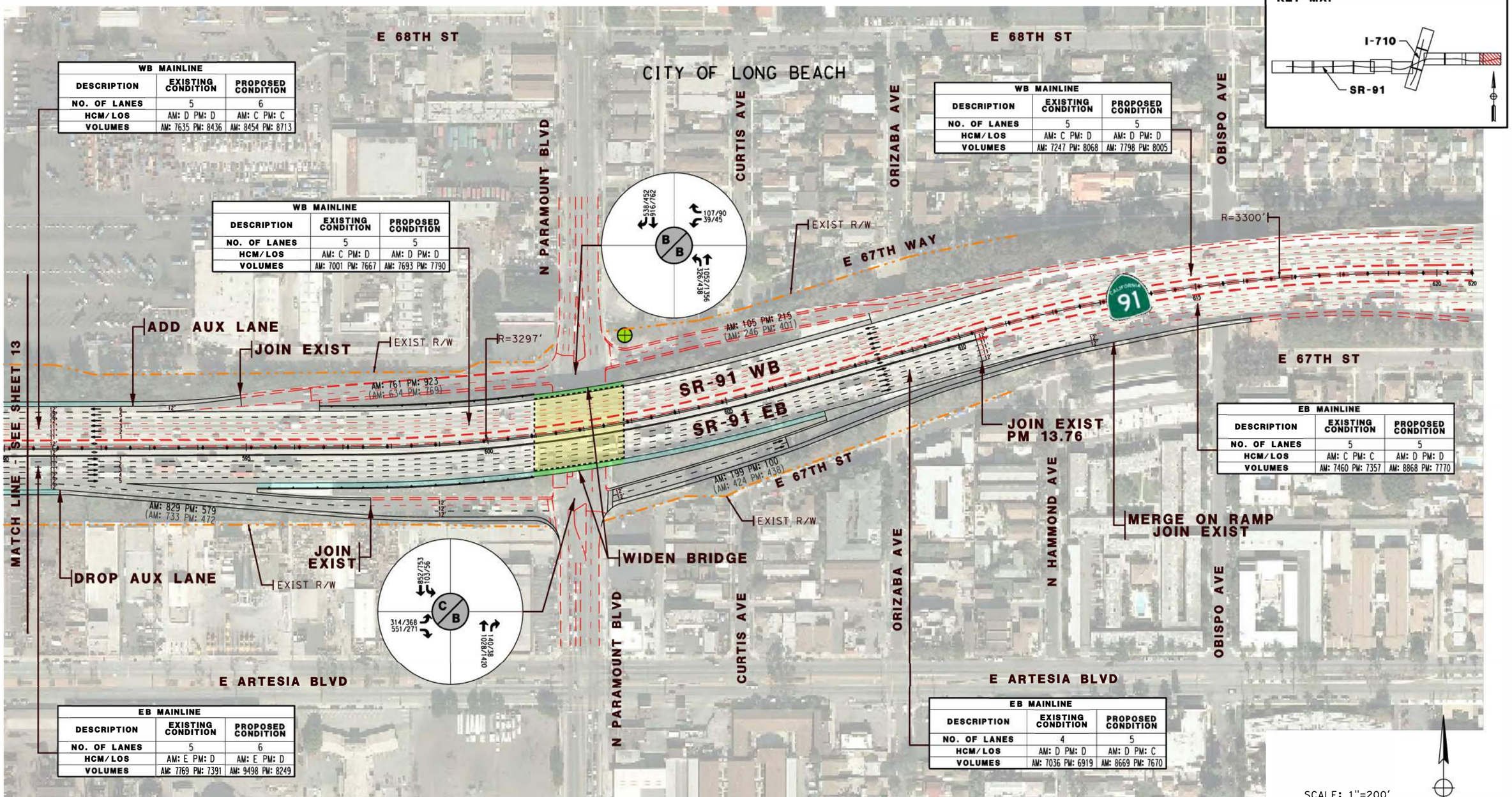

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: D PM: D	AM: C PM: C
VOLUMES	AM: 7635 PM: 8436	AM: 8454 PM: 8713

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	5
HCM/LOS	AM: C PM: D	AM: D PM: D
VOLUMES	AM: 7001 PM: 7667	AM: 7693 PM: 7790

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	5
HCM/LOS	AM: C PM: D	AM: D PM: D
VOLUMES	AM: 7247 PM: 8068	AM: 7798 PM: 8005

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	5
HCM/LOS	AM: C PM: C	AM: D PM: D
VOLUMES	AM: 7460 PM: 7357	AM: 8868 PM: 7770

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: E PM: D	AM: E PM: D
VOLUMES	AM: 7769 PM: 7391	AM: 9498 PM: 8249

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: D	AM: D PM: C
VOLUMES	AM: 7036 PM: 6919	AM: 8669 PM: 7670

KEY MAP

SCALE: 1"=200'

0' 100' 200'

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 3 WITH I-710 ALTERNATIVE 5C SHEET 14 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-5C_Sht-14.dgn

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BORDER LAST REVISED 3/1/2007

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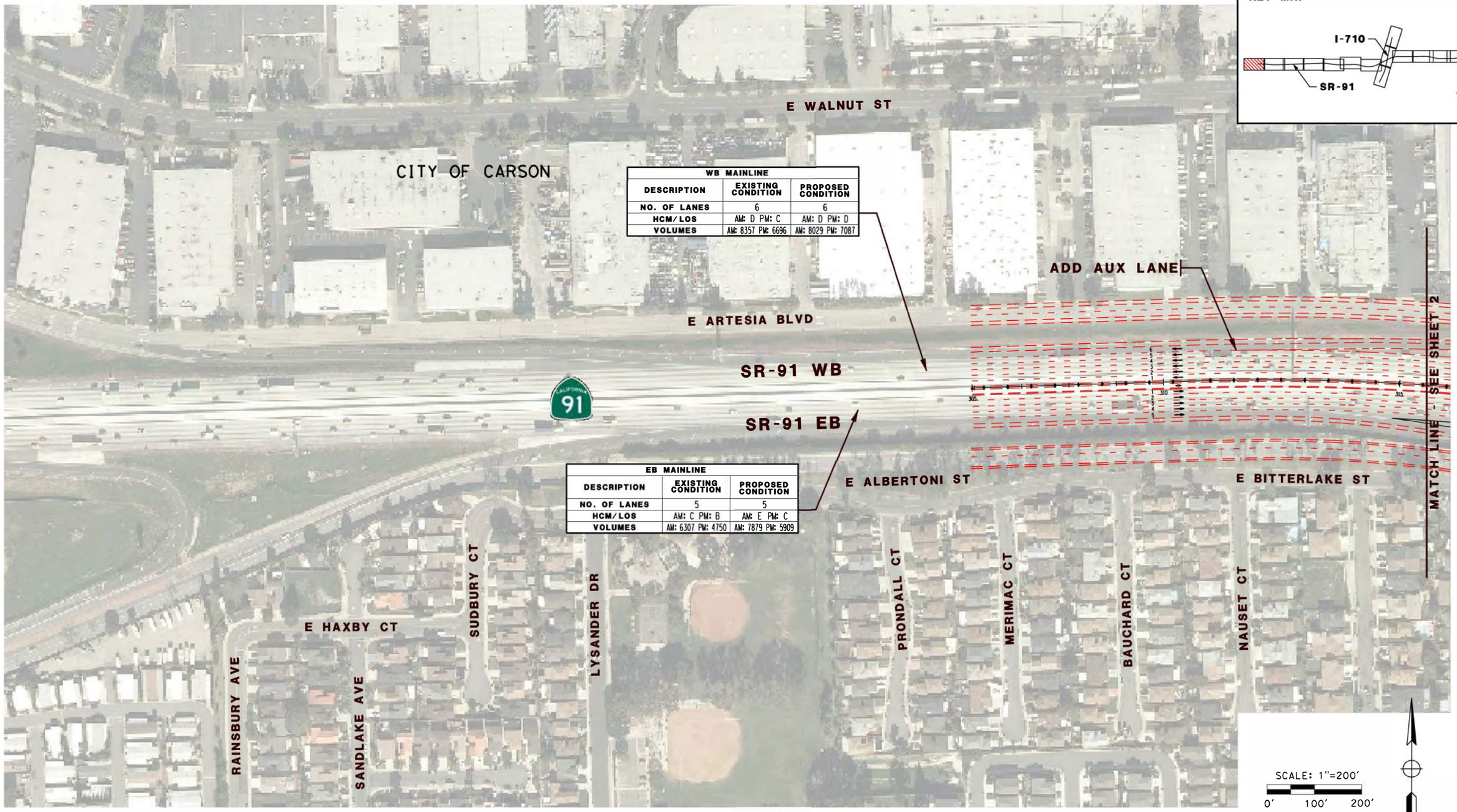

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 3 WITH I-710 ALTERNATIVE 7 SHEET 1 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-7_Sht-1.dgn

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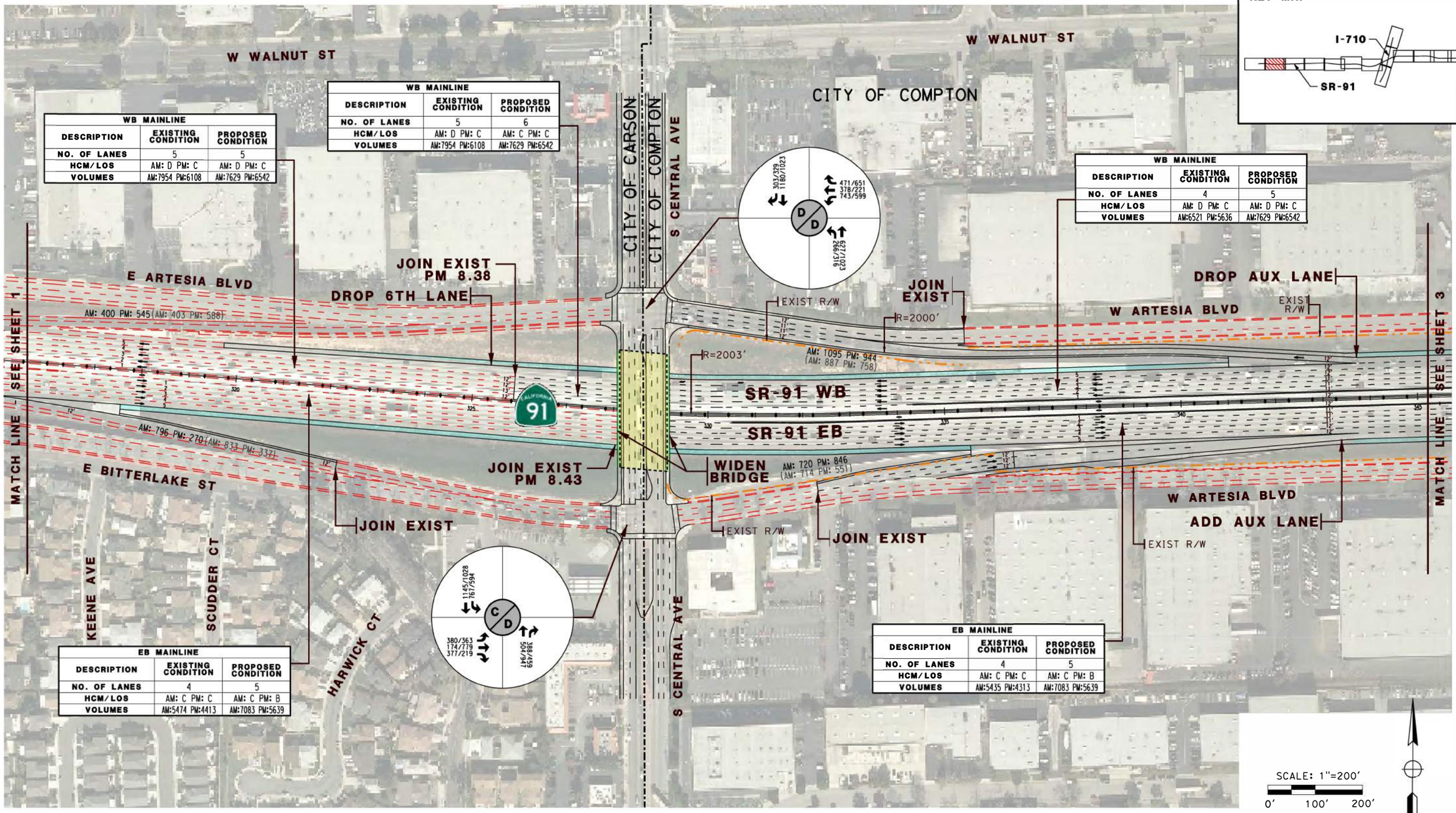

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM:7954 PM:6108	AM:7629 PM:6542

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: D PM: C	AM: C PM: C
VOLUMES	AM:7954 PM:6108	AM:7629 PM:6542

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM:6521 PM:5636	AM:7629 PM:6542

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: B
VOLUMES	AM:5474 PM:4413	AM:7083 PM:5639

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: B
VOLUMES	AM:5435 PM:4313	AM:7083 PM:5639

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 3
WITH I-710 ALTERNATIVE 7
SHEET 2 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-7_Sht-2.dgn

LAST REVISION 00-00-00 | DATE PLOTTED => 14-MAR-2017 | TIME PLOTTED => 16:25

BORDER LAST REVISED 3/1/2007

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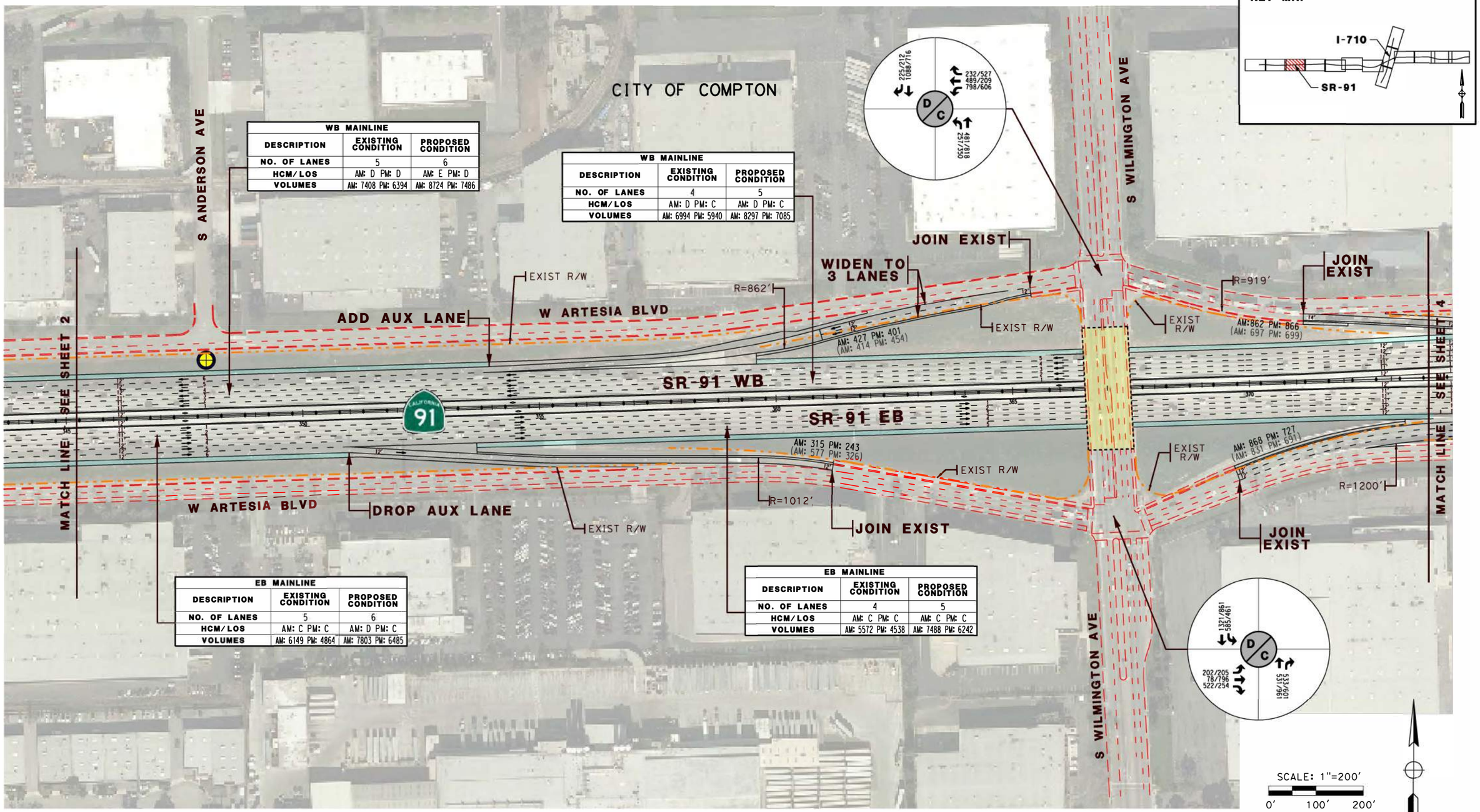

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: D PM: D	AM: E PM: D
VOLUMES	AM: 7408 PM: 6394	AM: 8724 PM: 7486

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 6994 PM: 5940	AM: 8297 PM: 7085

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: C	AM: D PM: C
VOLUMES	AM: 6149 PM: 4864	AM: 7803 PM: 6485

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 5572 PM: 4538	AM: 7488 PM: 6242

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 3 WITH I-710 ALTERNATIVE 7 SHEET 3 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-7_Sht-3.dgn

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BORDER LAST REVISED 3/1/2007

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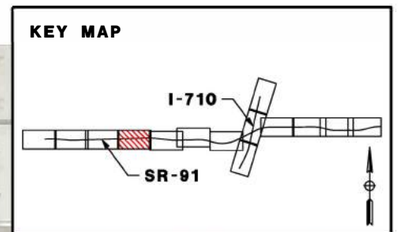
CITY OF COMPTON

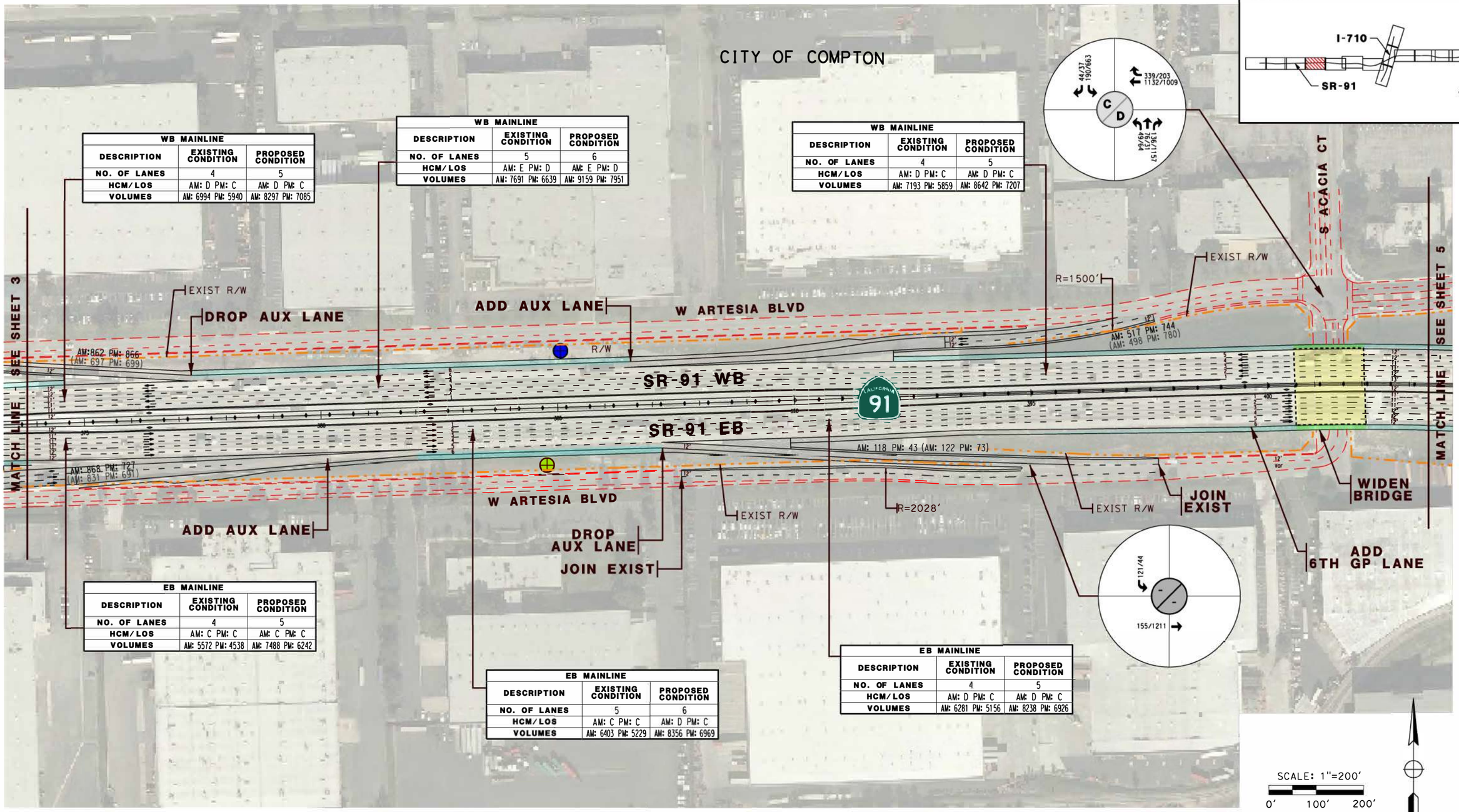
KEY MAP



WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 6994 PM: 5940	AM: 8297 PM: 7085

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: E PM: D	AM: E PM: D
VOLUMES	AM: 7691 PM: 6639	AM: 9159 PM: 7951

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 7193 PM: 5859	AM: 8642 PM: 7207



EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 5572 PM: 4538	AM: 7488 PM: 6242

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: C	AM: D PM: C
VOLUMES	AM: 6403 PM: 5229	AM: 8356 PM: 6969

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 6281 PM: 5156	AM: 8238 PM: 6926

SCALE: 1"=200'

0' 100' 200'

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 3 WITH I-710 ALTERNATIVE 7 SHEET 4 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-7_Sht-4.dgn

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00-00-00 | TIME PLOTTED => 16:25

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => 01-SR91-ALT3-7_Sht-4.dgn

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EA 000000

CITY OF COMPTON

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 7193 PM: 5859	AM: 8642 PM: 7207

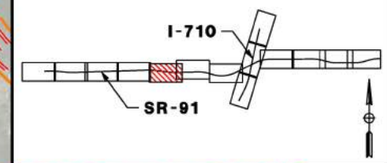
WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 7003 PM: 5614	AM: 8642 PM: 7207

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	6
HCM/LOS	AM: D PM: C	AM: C PM: C
VOLUMES	AM: 6281 PM: 5156	AM: 8238 PM: 6926

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 6000 PM: 5032	AM: 7947 PM: 6713

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 5276 PM: 4884	AM: 7184 PM: 6600

KEY MAP



MATCH LINE - SEE SHEET 4

MATCH LINE - SEE SHEET 6

W ARTESIA BLVD

COMPTON CREEK

E ALAMEDA ST

SPT CO RAILROAD

EXIST R/W

R=5500'

R=7001'

R=622'

R=165'

R=214'

WIDEN BRIDGE

DROP AUX LANE

RECONSTRUCT ALAMEDA ST EB OFF RAMP

RECONSTRUCT ARTESIA BLVD EB OFF RAMP

R/W IMPACT

AM: 291 PM: 213
(AM: 281 PM: 124)

AM: 763 PM: 113
(AM: 724 PM: 148)

349/462
1014/620

132/86
159/65

358/865
156/748

B
C

SCALE: 1"=200'

0' 100' 200'

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 3
WITH I-710 ALTERNATIVE 7
SHEET 5 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-7_Sht-5.dgn

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00-00-00 | TIME PLOTTED => 16:25

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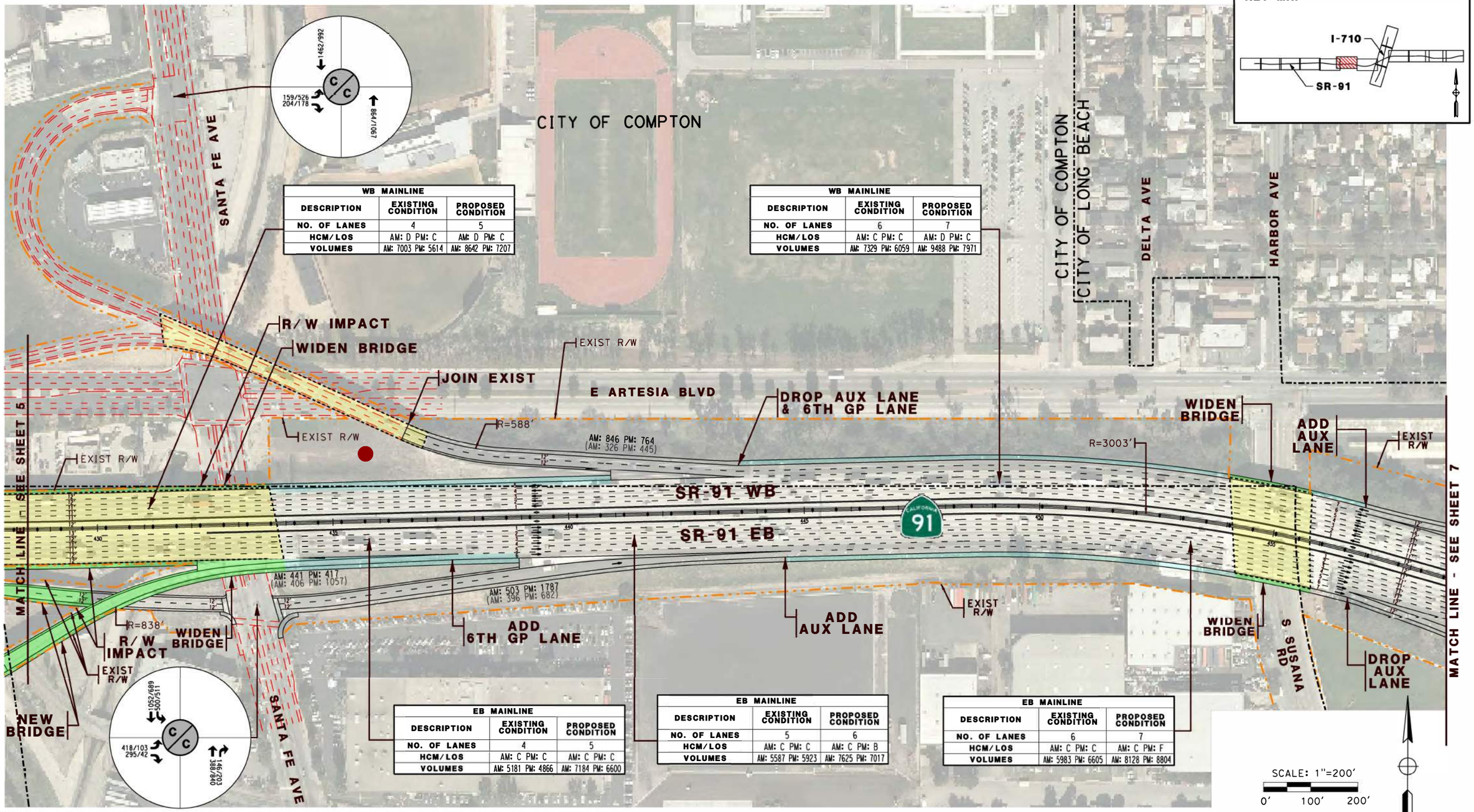

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 3
WITH I-710 ALTERNATIVE 7
SHEET 6 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-7_Sht-6.dgn

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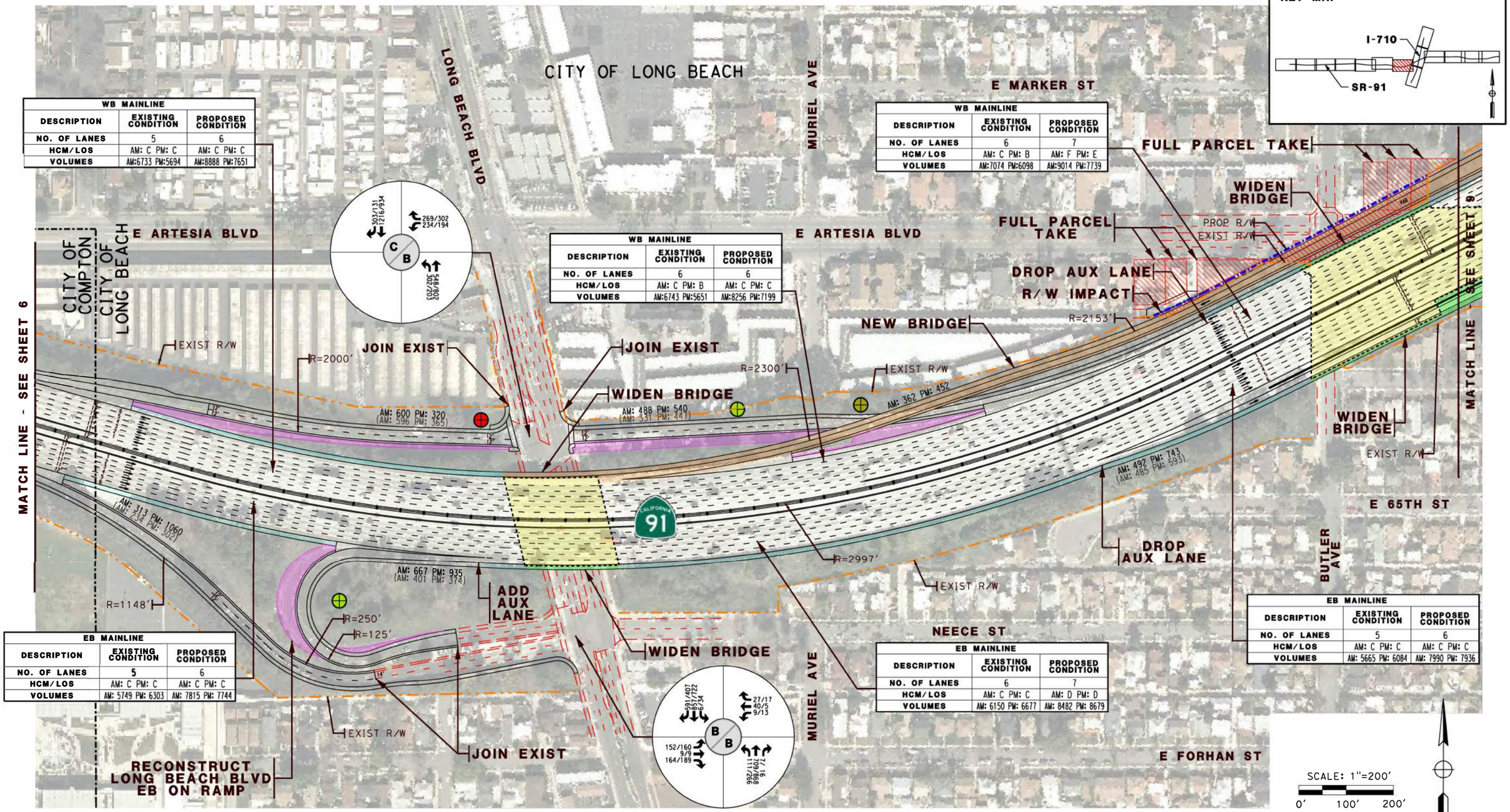

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM:6733 PM:5694	AM:8888 PM:7651

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	6	7
HCM/LOS	AM: C PM: B	AM: F PM: E
VOLUMES	AM:7074 PM:6098	AM:9014 PM:7739

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	6	6
HCM/LOS	AM: C PM: B	AM: C PM: C
VOLUMES	AM:6743 PM:5651	AM:8256 PM:7199

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 5749 PM: 6303	AM: 7815 PM: 7744

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	6	7
HCM/LOS	AM: C PM: C	AM: D PM: D
VOLUMES	AM: 6150 PM: 6677	AM: 8482 PM: 8679

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 5665 PM: 6084	AM: 7990 PM: 7936

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 3 WITH I-710 ALTERNATIVE 7

SHEET 7 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-7_Sht-7.dgn

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LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 3 WITH I-710 ALTERNATIVE 7 SHEET 8 OF 14

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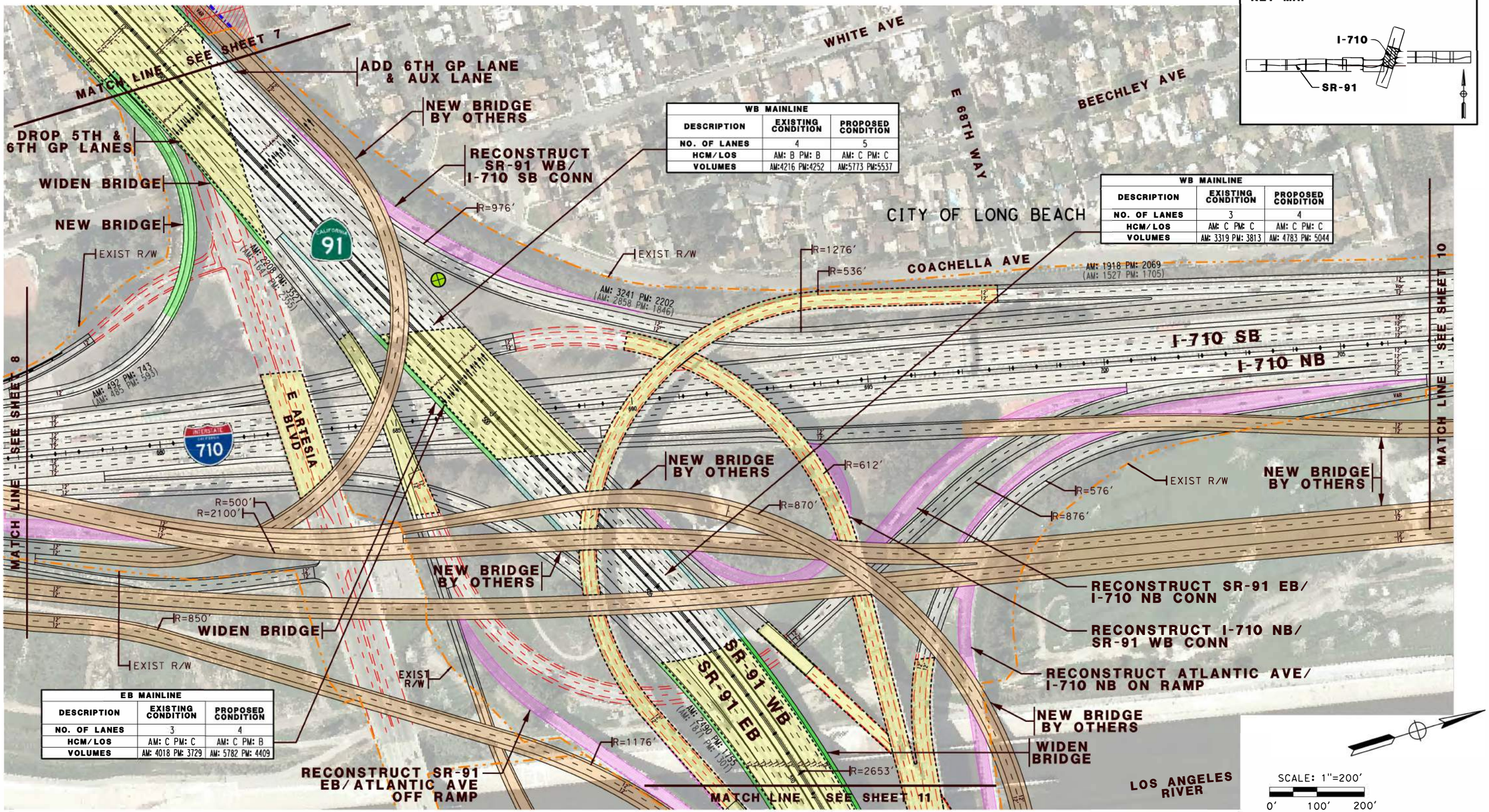

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 3 WITH I-710 ALTERNATIVE 7 SHEET 9 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-7_Sht-9.dgn

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LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X / X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 3
WITH I-710 ALTERNATIVE 7
SHEET 10 OF 14

LAST REVISION | DATE PLOTTED => 14-MAR-2017
00-00-00 | TIME PLOTTED => 16:25

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-7_Sht-10.dgn

BORDER LAST REVISED 3/1/2007

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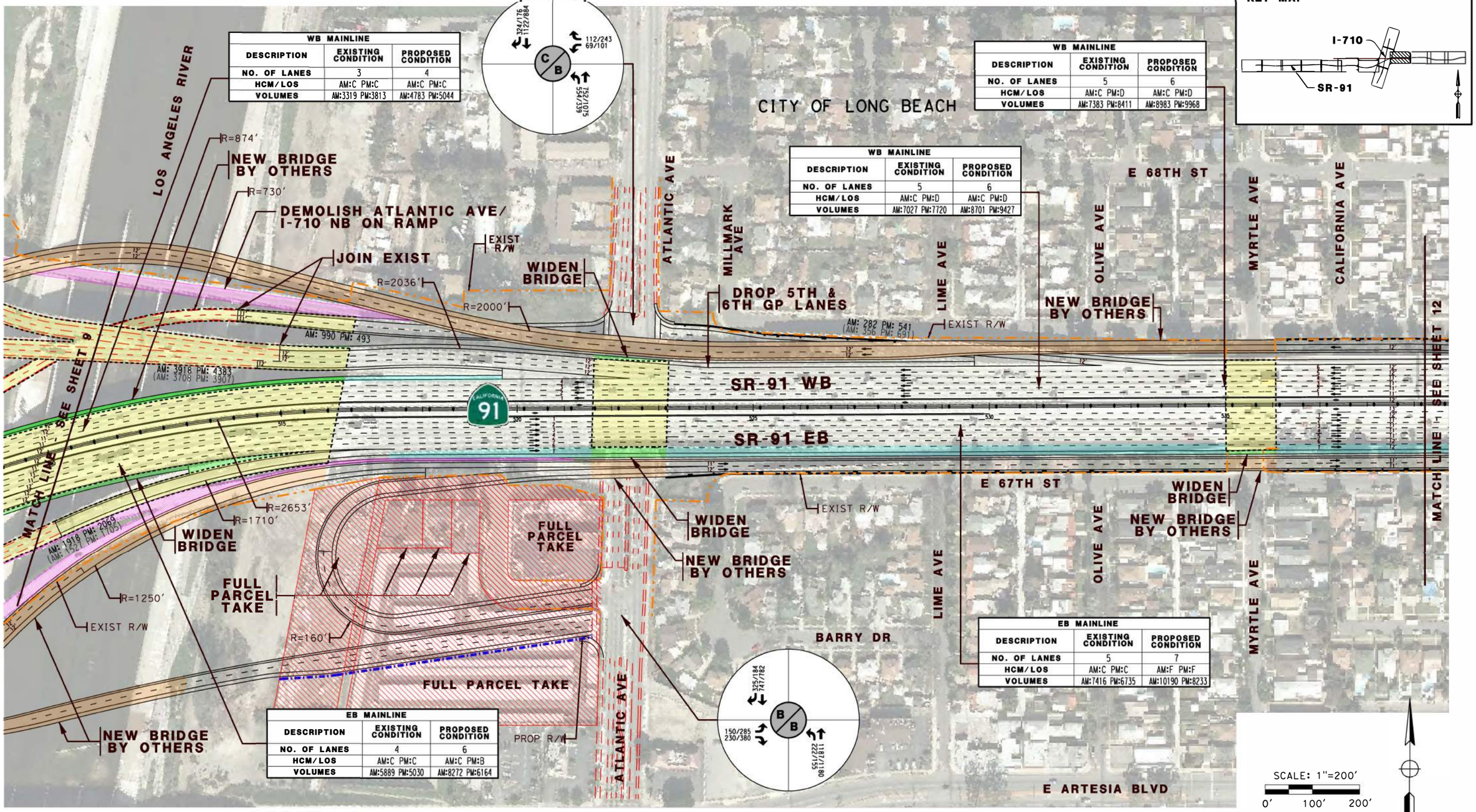

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	3	4
HCM/LOS	AM:C PM:C	AM:C PM:C
VOLUMES	AM:3319 PM:3813	AM:4783 PM:5044

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM:C PM:D	AM:C PM:D
VOLUMES	AM:7383 PM:8411	AM:8983 PM:9968

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM:C PM:D	AM:C PM:D
VOLUMES	AM:7027 PM:7720	AM:8701 PM:9427

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	6
HCM/LOS	AM:C PM:C	AM:C PM:B
VOLUMES	AM:5889 PM:5030	AM:8272 PM:6164

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	7
HCM/LOS	AM:C PM:C	AM:F PM:F
VOLUMES	AM:7416 PM:6735	AM:10190 PM:8233

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 3
WITH I-710 ALTERNATIVE 7
SHEET 11 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-7_Sht-11.dgn

LAST REVISION 00-00-00 | DATE PLOTTED => 14-MAR-2017 | TIME PLOTTED => 16:25

BORDER LAST REVISED 3/1/2007

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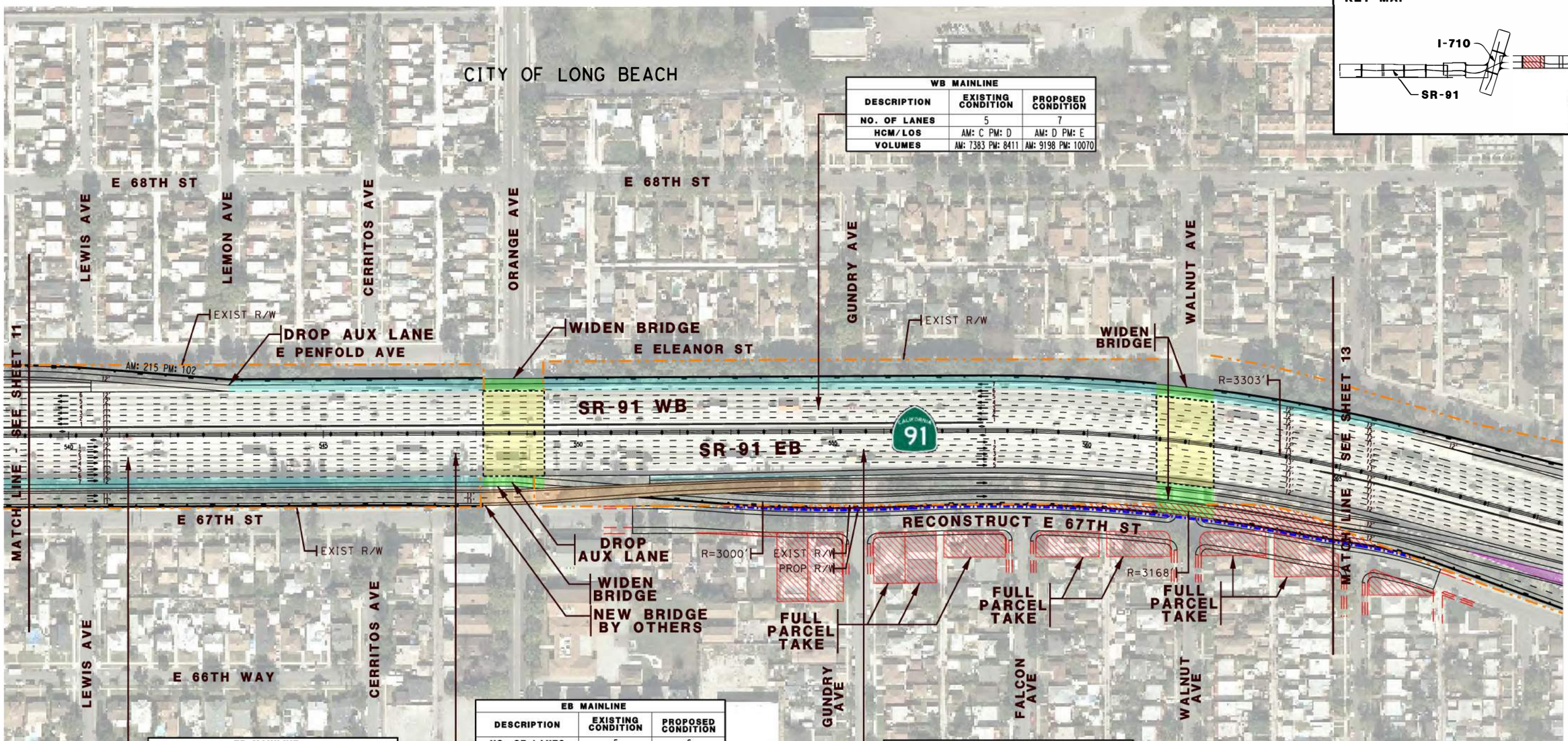

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 3
WITH I-710 ALTERNATIVE 7
SHEET 12 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-7_Sht-12.dgn

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00-00-00 | TIME PLOTTED => 16:25

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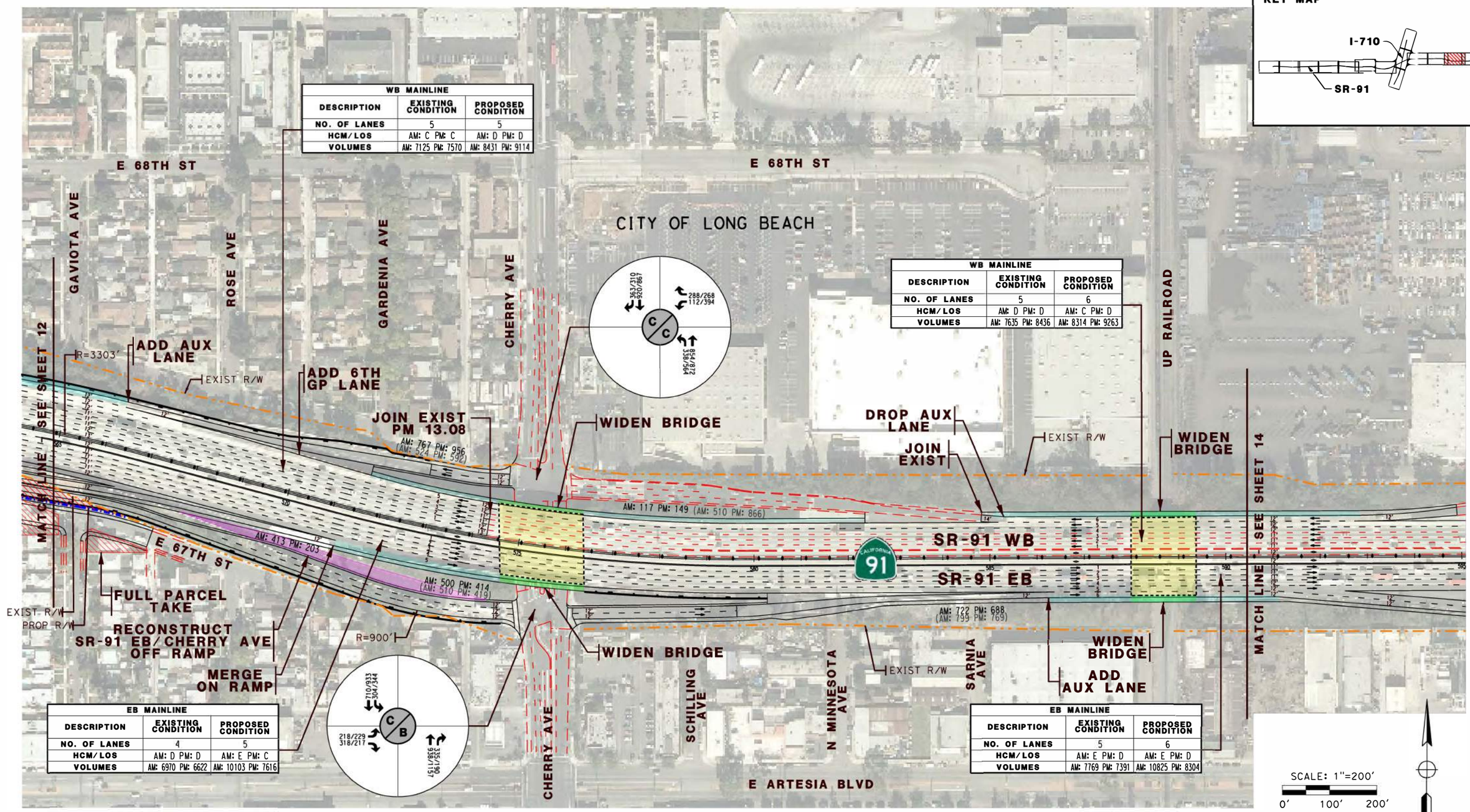

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	5
HCM/LOS	AM: C PM: C	AM: D PM: D
VOLUMES	AM: 7125 PM: 7570	AM: 8431 PM: 9114

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: D PM: D	AM: C PM: D
VOLUMES	AM: 7635 PM: 8436	AM: 8314 PM: 9263

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: D	AM: E PM: C
VOLUMES	AM: 6970 PM: 6622	AM: 10103 PM: 7616

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: E PM: D	AM: E PM: D
VOLUMES	AM: 7769 PM: 7391	AM: 10825 PM: 8304

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
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- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 3 WITH I-710 ALTERNATIVE 7 SHEET 13 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-7_Sht-13.dgn

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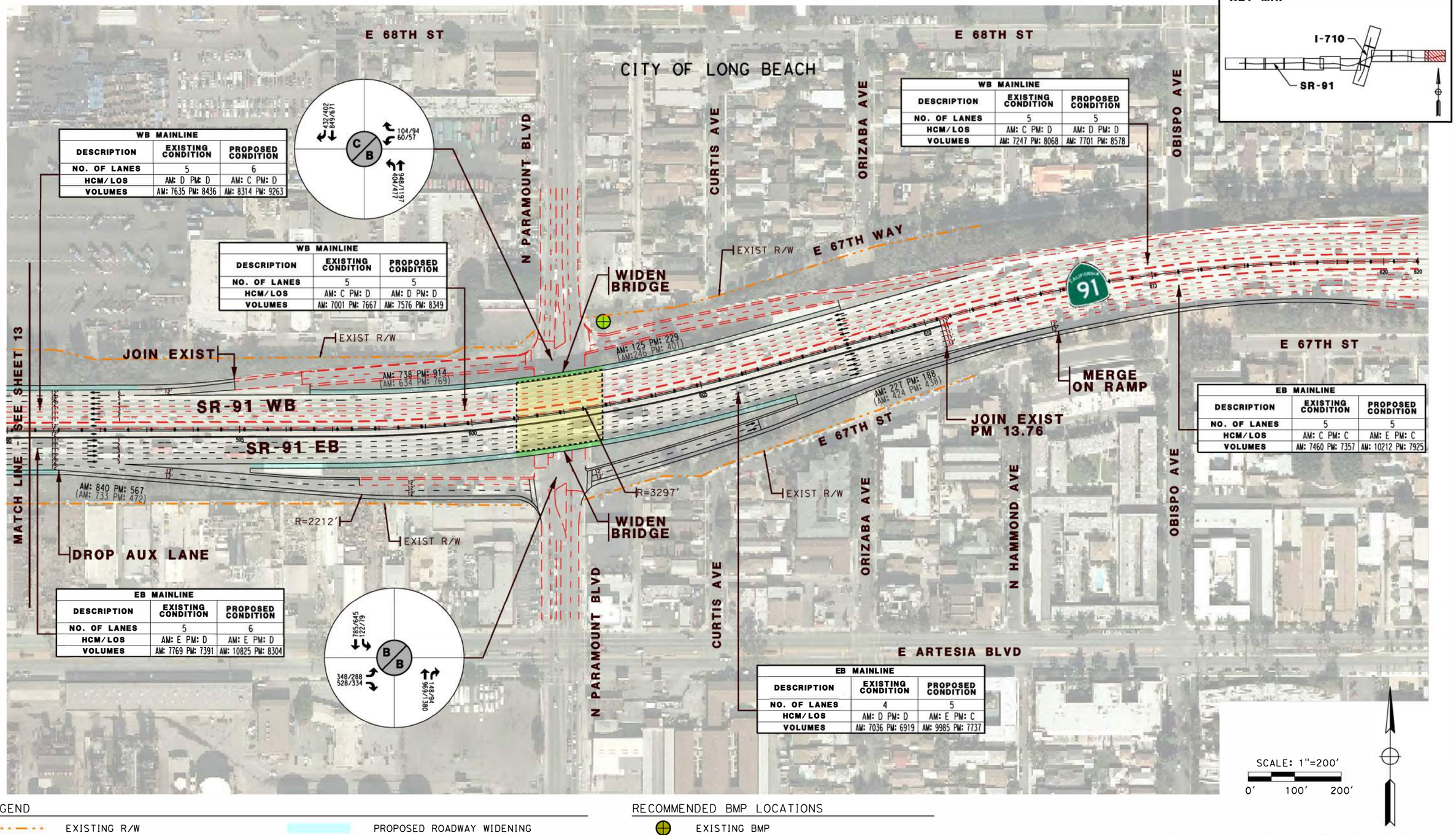

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
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- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 3
WITH I-710 ALTERNATIVE 7
SHEET 14 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT3-7_Sht-14.dgn

LAST REVISION 00-00-00 | DATE PLOTTED => 14-MAR-2017 | TIME PLOTTED => 16:25

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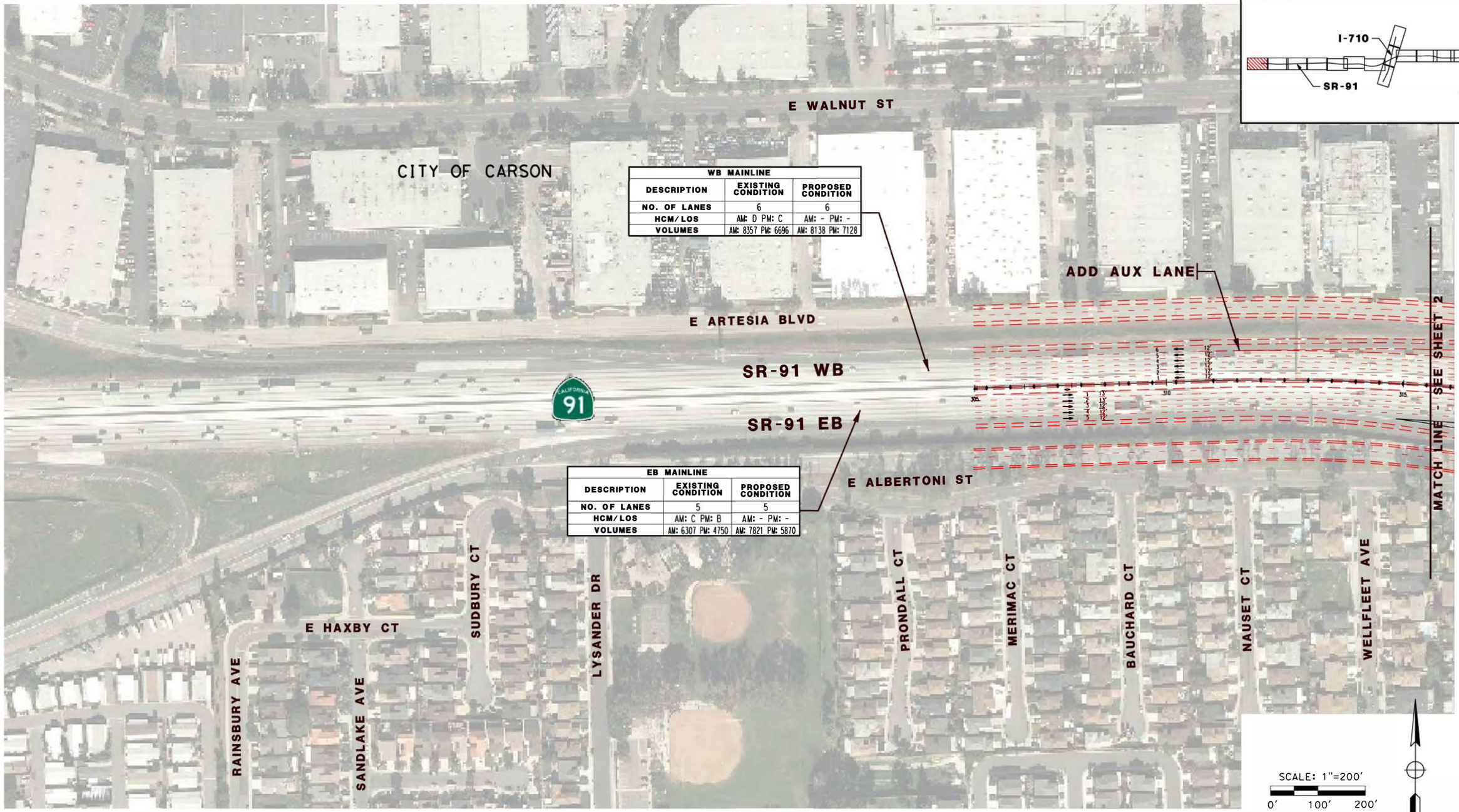

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
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- PROPOSED ROADWAY WIDENING
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- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X / X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 4 WITH I-710 ALTERNATIVE 5C SHEET 1 OF 14

DGN FILE = i:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-5C_Sht-1.dgn

LAST REVISION | DATE PLOTTED => 14-MAR-2017
00-00-00 | TIME PLOTTED => 16:25

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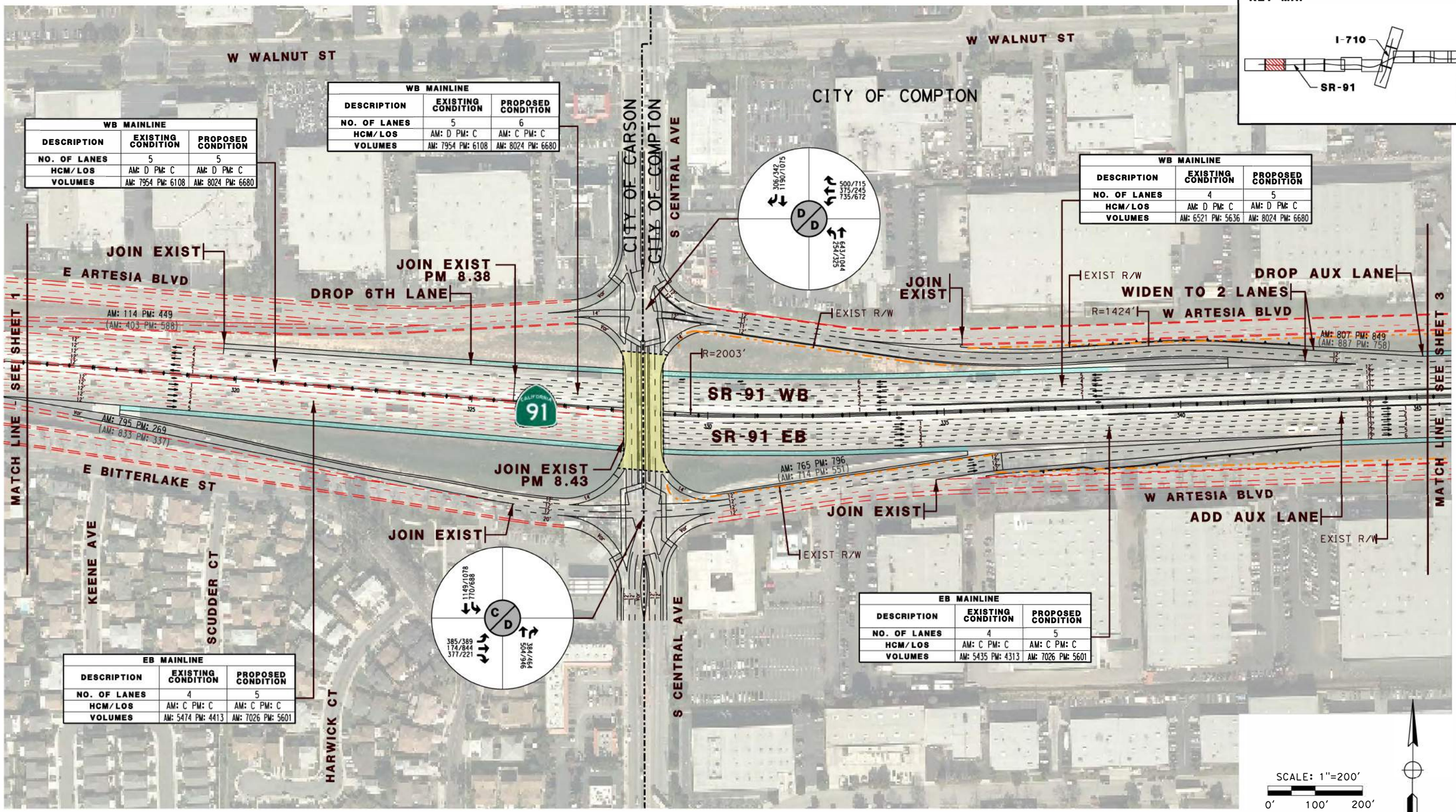

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 4
WITH I-710 ALTERNATIVE 5C
SHEET 2 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-5C_Sht-2.dgn

LAST REVISION | DATE PLOTTED => 14-MAR-2017 | TIME PLOTTED => 16:26 | 00-00-00

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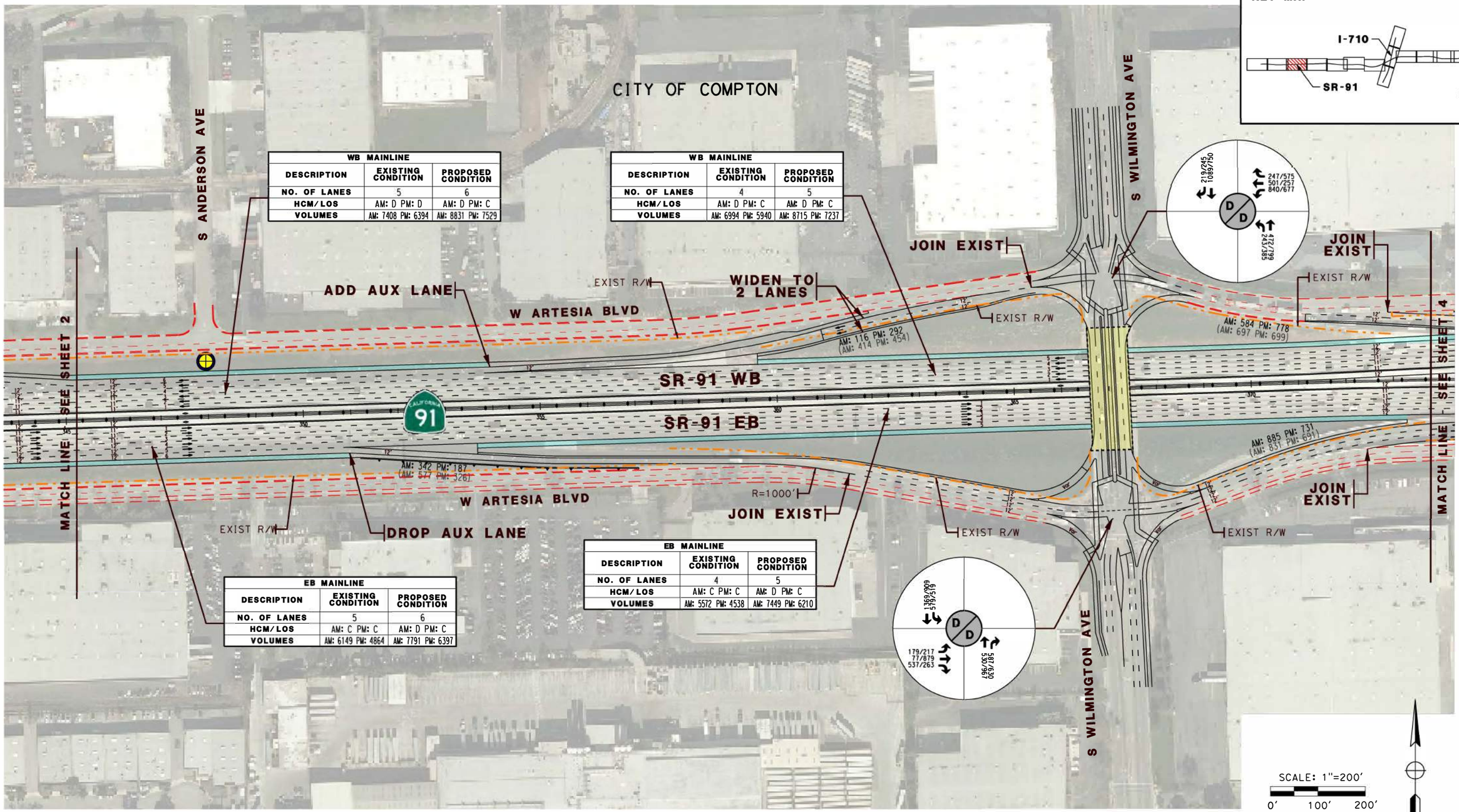

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: D PM: D	AM: D PM: C
VOLUMES	AM: 7408 PM: 6394	AM: 8831 PM: 7529

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 6994 PM: 5940	AM: 8715 PM: 7237

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: C	AM: D PM: C
VOLUMES	AM: 6149 PM: 4864	AM: 7791 PM: 6397

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: D PM: C
VOLUMES	AM: 5572 PM: 4538	AM: 7449 PM: 6210

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 4 WITH I-710 ALTERNATIVE 5C SHEET 3 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-5C_Sht-3.dgn

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00-00-00 | TIME PLOTTED => 16:26

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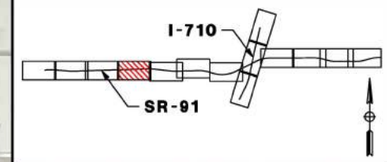
CITY OF COMPTON

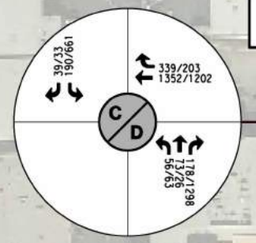
KEY MAP



WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 6994 PM: 5940	AM: 8715 PM: 7237

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: E PM: D	AM: D PM: D
VOLUMES	AM: 7691 PM: 6639	AM: 9299 PM: 8015

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 7193 PM: 5859	AM: 9045 PM: 7385



MATCH LINE - SEE SHEET 3

DROP AUX LANE

W ARTESIA BLVD

AM: 870 PM: 877
(AM: 697 PM: 699)

EXIST R/W

ADD AUX LANE

SR-91 WB

SR-91 EB

R=1478'

JOIN EXIST

WIDEN BRIDGE

S ACACIA CT

AM: 254 PM: 630
(AM: 498 PM: 780)

EXIST R/W

MATCH LINE - SEE SHEET 5

AM: 117 PM: 38 (AM: 122 PM: 73)

AM: 883 PM: 731
(AM: 831 PM: 691)

W ARTESIA BLVD

ADD AUX LANE

EXIST R/W

DROP AUX LANE

JOIN EXIST

R=1800'

EXIST R/W

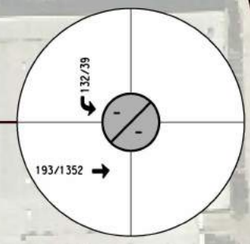
WIDEN BRIDGE

ADD 6TH GP LANE

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: D PM: C
VOLUMES	AM: 5572 PM: 4538	AM: 7449 PM: 6210

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: C	AM: D PM: C
VOLUMES	AM: 6403 PM: 5229	AM: 8334 PM: 6941

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	6
HCM/LOS	AM: D PM: C	AM: C PM: C
VOLUMES	AM: 6281 PM: 5156	AM: 8217 PM: 6903



SCALE: 1"=200'

0' 100' 200'

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 4 WITH I-710 ALTERNATIVE 5C SHEET 4 OF 14

DGN FILE = i:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-5C_Sht-4.dgn

LAST REVISION | DATE PLOTTED => 14-MAR-2017
00-00-00 | TIME PLOTTED => 16:26

BORDER LAST REVISED 3/1/2007

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DGN FILE => 01-SR91-ALT4-5C_Sht-4.dgn

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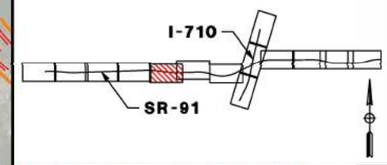
WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 7193 PM: 5859	AM: 9045 PM: 7385

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 7003 PM: 5614	AM: 9045 PM: 7385

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 6000 PM: 5032	AM: 7055 PM: 6362

KEY MAP



CITY OF COMPTON

W ARTESIA BLVD

COMPTON CREEK

MATCH LINE - SEE SHEET 4

MATCH LINE - SEE SHEET 6

EXIST R/W

R=5500'

WIDEN BRIDGE

PROP R/W

EXIST R/W

WIDEN BRIDGE

R/W IMPACT
MERGE
ON RAMP

FULL
PARCEL TAKE
AM: 185 PM: 12

SR-91 WB

SR-91 EB

AM: 1162 PM: 541

R=2520'

EXIST R/W

NEW BRIDGE

R/W IMPACT

PROP R/W

EXIST R/W

RECONSTRUCT
SR-91 EB/E ALAMEDA
ST OFF RAMP

WIDEN BRIDGE

NEW BRIDGE

R=316'

R=7001'

EXIST R/W

PROP R/W

EXIST R/W

R=166'

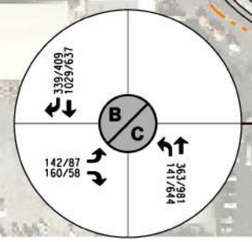
R/W
IMPACT

RECONSTRUCT
SR-91 EB/
ARTESIA BLVD
OFF RAMP

SPT CO
RAILROAD

R=214'

E ALAMEDA ST



SCALE: 1"=200'

0' 100' 200'

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
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- PROPOSED BRIDGE IMPROVEMENTS
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- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
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RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 4
WITH I-710 ALTERNATIVE 5C
SHEET 5 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-5C_Sht-5.dgn

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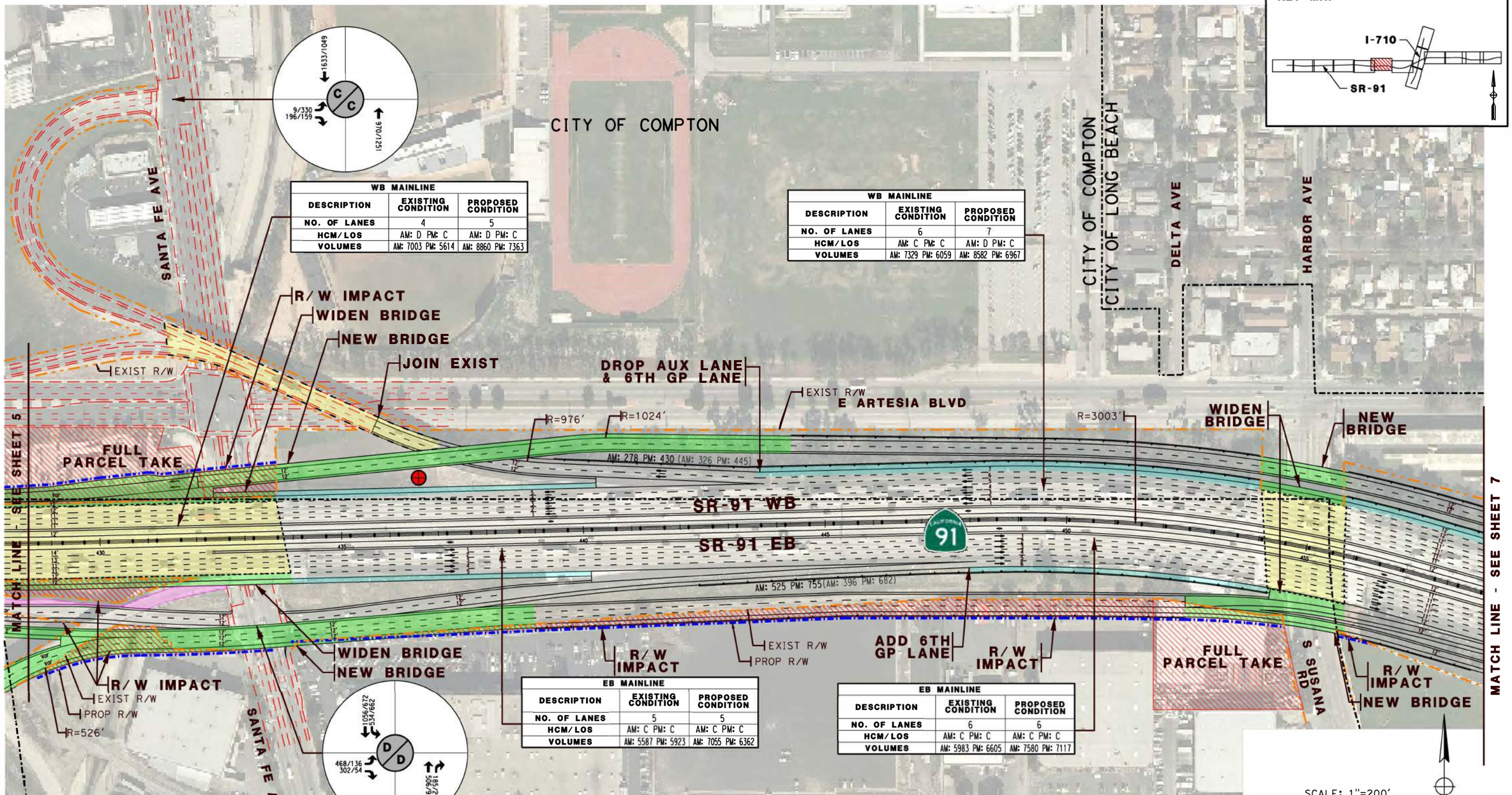

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
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- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 4 WITH I-710 ALTERNATIVE 5C SHEET 6 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-5C_Sht-6.dgn

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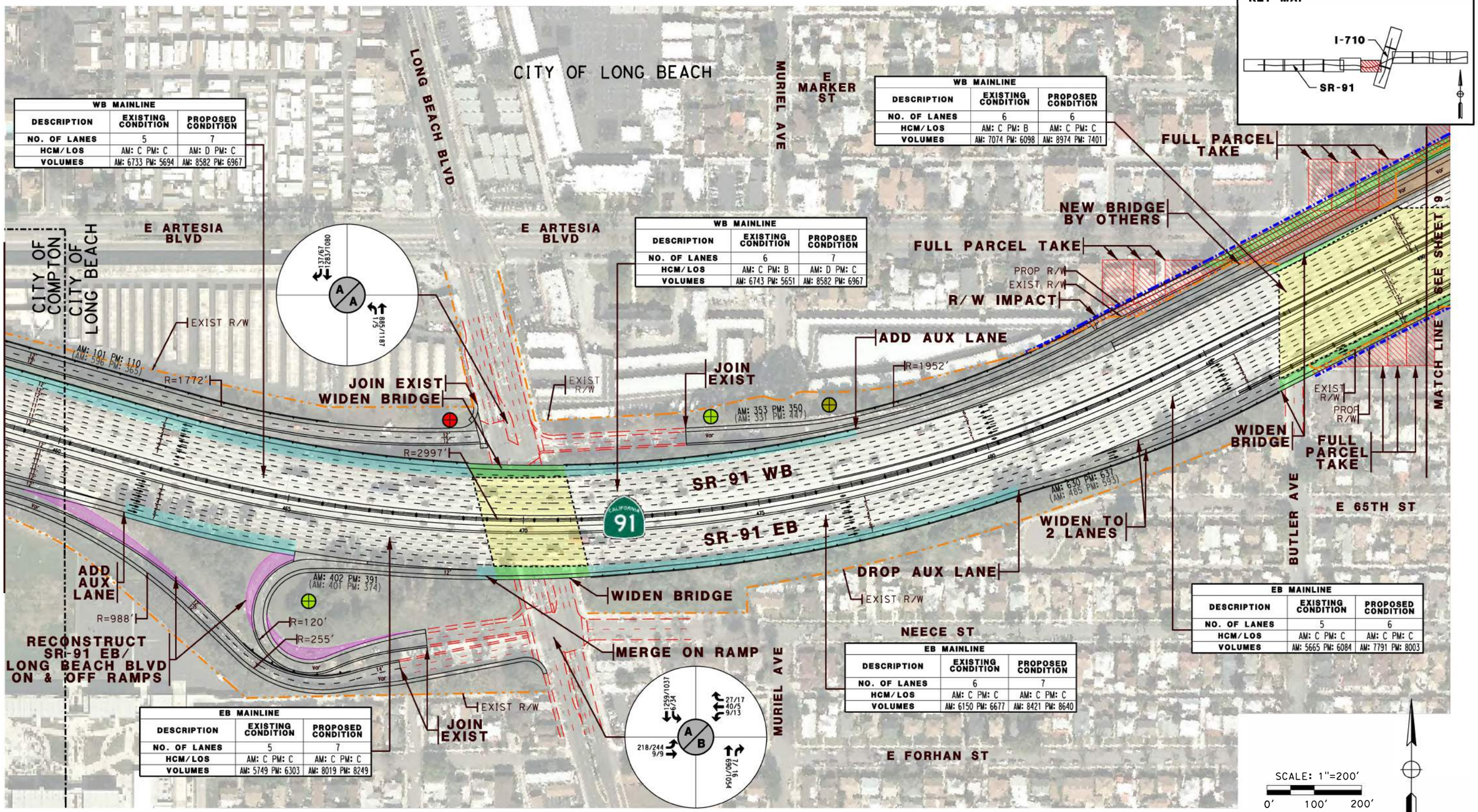

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	7
HCM/LOS	AM: C PM: C	AM: D PM: C
VOLUMES	AM: 6733 PM: 5694	AM: 8582 PM: 6967

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	6	6
HCM/LOS	AM: C PM: B	AM: C PM: C
VOLUMES	AM: 7074 PM: 6098	AM: 8974 PM: 7401

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	6	7
HCM/LOS	AM: C PM: B	AM: D PM: C
VOLUMES	AM: 6743 PM: 5651	AM: 8582 PM: 6967

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	7
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 5749 PM: 6303	AM: 8019 PM: 8249

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	6	7
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 6150 PM: 6677	AM: 8421 PM: 8640

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 5665 PM: 6084	AM: 7791 PM: 8003

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 4 WITH I-710 ALTERNATIVE 5C SHEET 7 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\ADD\Sheets\Layouts\01-SR91-ALT4-5C_Sht-7.dgn

LAST REVISION 00-00-00 | DATE PLOTTED => 14-MAR-2017 | TIME PLOTTED => 16:26

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => fillionkt
DGN FILE => 01-SR91-ALT4-5C_Sht-7.dgn

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LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 4 WITH I-710 ALTERNATIVE 5C SHEET 8 OF 14

LAST REVISION | DATE PLOTTED => 14-MAR-2017
00-00-00 | TIME PLOTTED => 16:26

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-5C_Sht-8.dgn

BORDER LAST REVISED 3/1/2007

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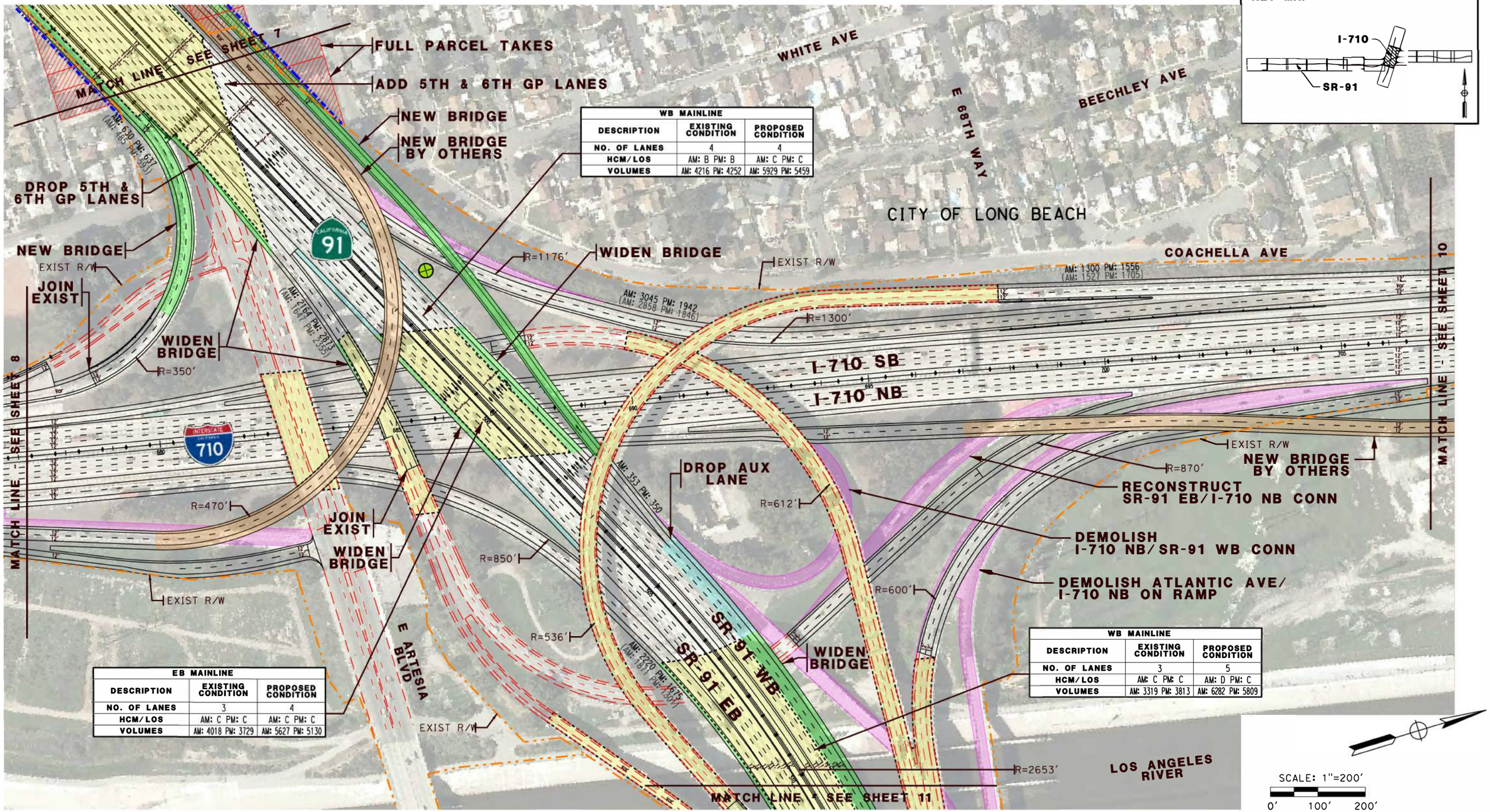

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	4
HCM/LOS	AM: B PM: B	AM: C PM: C
VOLUMES	AM: 4216 PM: 4252	AM: 5929 PM: 5459

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	3	4
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 4018 PM: 3729	AM: 5627 PM: 5130

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	3	5
HCM/LOS	AM: C PM: C	AM: D PM: C
VOLUMES	AM: 3319 PM: 3813	AM: 6282 PM: 5809

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 4 WITH I-710 ALTERNATIVE 5C SHEET 9 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-5C_Sht-9.dgn

LAST REVISION DATE PLOTTED => 14-MAR-2017
00-00-00 TIME PLOTTED => 16:26

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X / X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 4 WITH I-710 ALTERNATIVE 5C SHEET 10 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-5C_Sht-10.dgn

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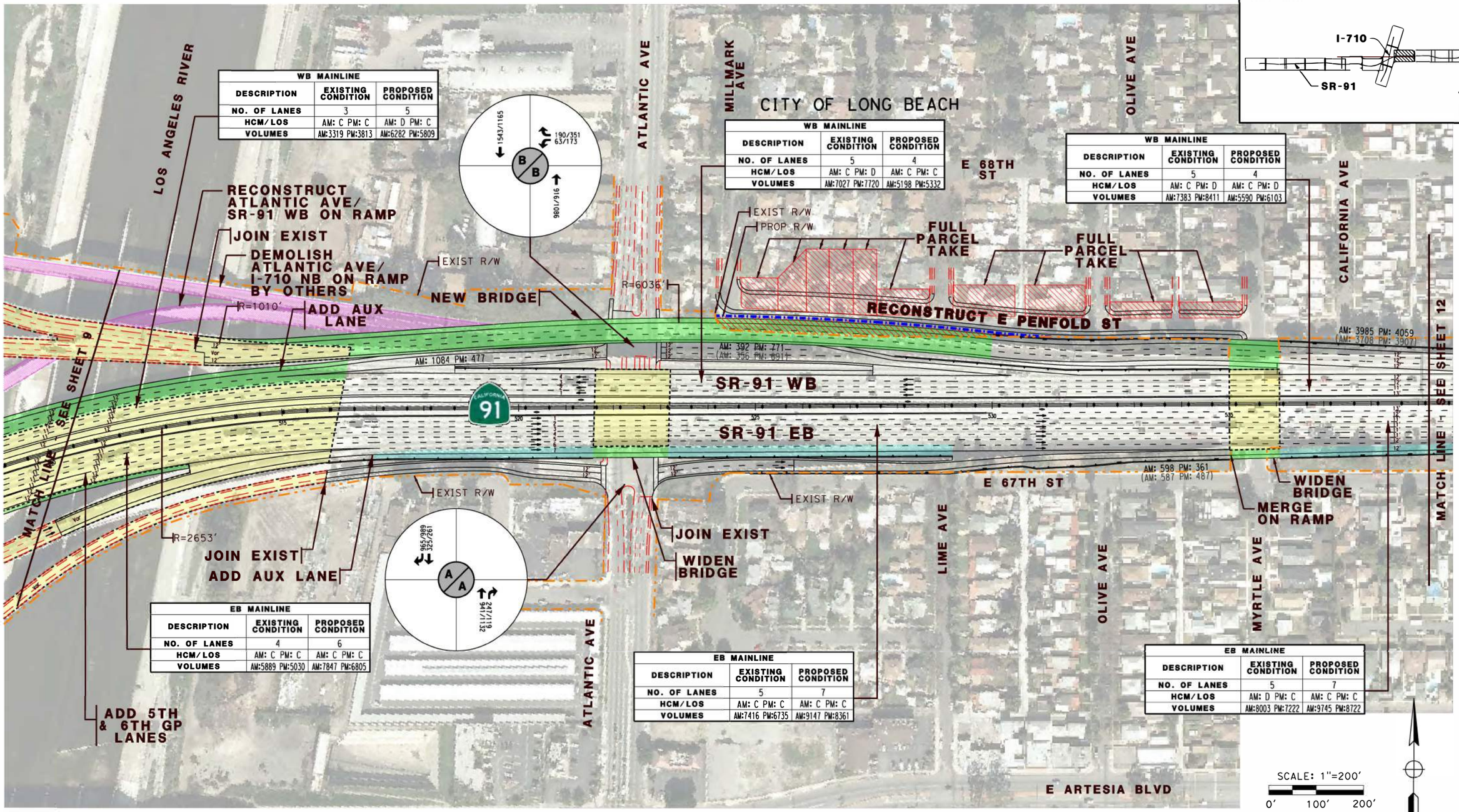

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 4 WITH I-710 ALTERNATIVE 5C SHEET 11 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-5C_Sht-11.dgn

LAST REVISION DATE PLOTTED => 14-MAR-2017
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BORDER LAST REVISED 3/1/2007

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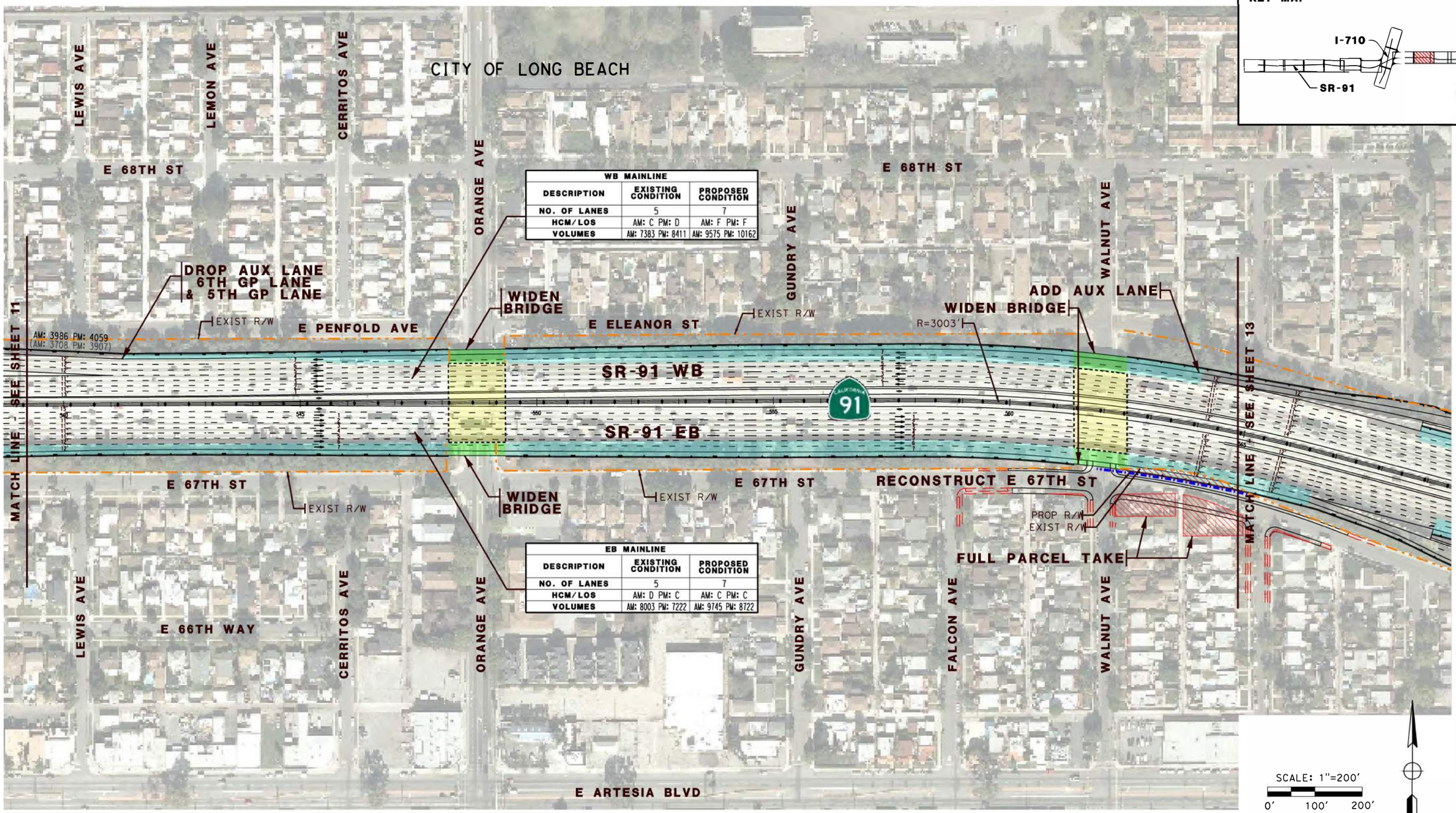

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 4 WITH I-710 ALTERNATIVE 5C SHEET 12 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-5C_Sht-12.dgn

LAST REVISION 00-00-00 | DATE PLOTTED => 14-MAR-2017 | TIME PLOTTED => 16:26

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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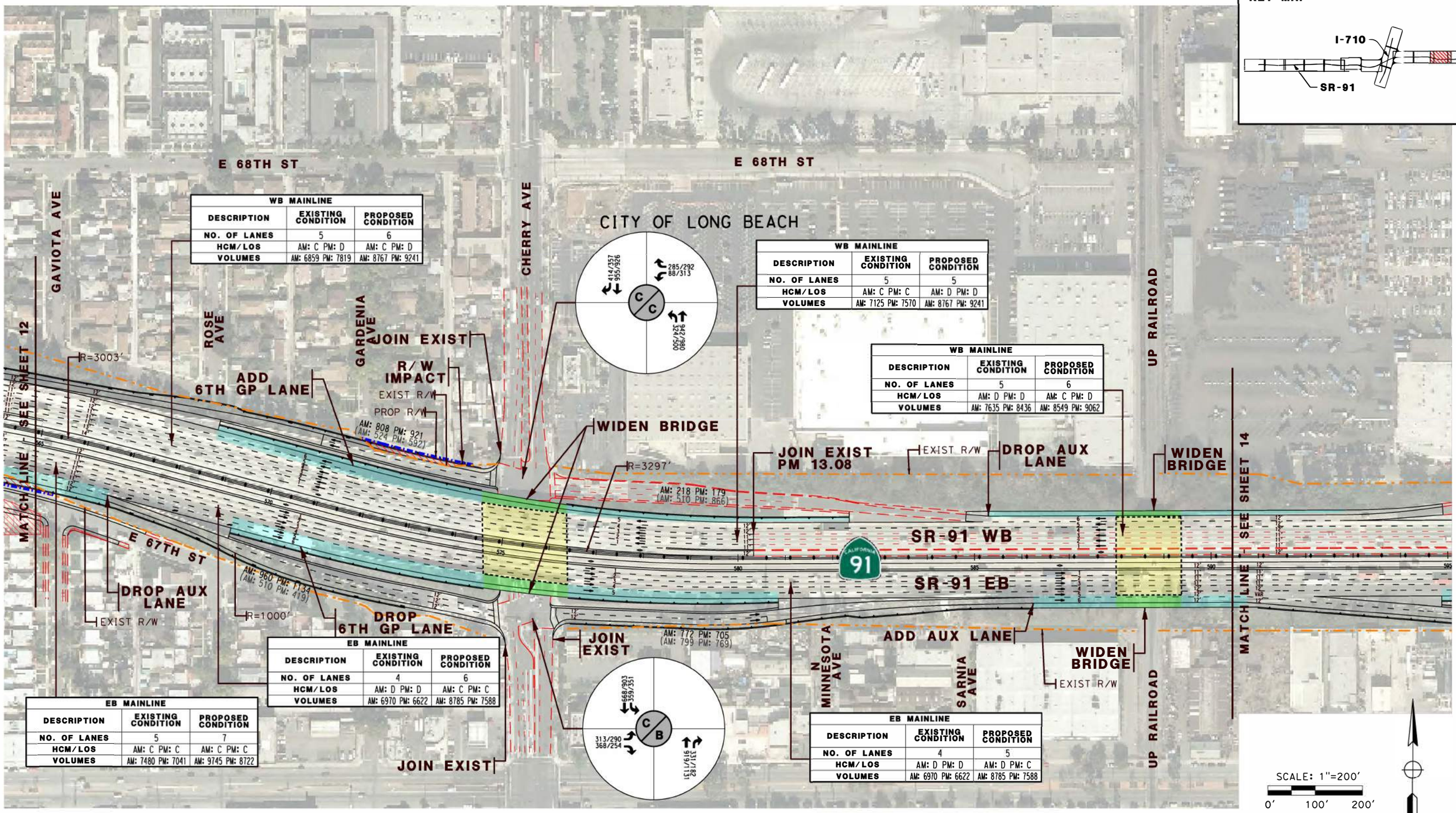

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: D	AM: C PM: D
VOLUMES	AM: 6859 PM: 7819	AM: 8767 PM: 9241

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	5
HCM/LOS	AM: C PM: C	AM: D PM: D
VOLUMES	AM: 7125 PM: 7570	AM: 8767 PM: 9241

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: D PM: D	AM: C PM: D
VOLUMES	AM: 7635 PM: 8436	AM: 8549 PM: 9062

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	6
HCM/LOS	AM: D PM: D	AM: C PM: C
VOLUMES	AM: 6970 PM: 6622	AM: 8785 PM: 7588

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	7
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 7480 PM: 7041	AM: 9745 PM: 8722

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: D	AM: D PM: C
VOLUMES	AM: 6970 PM: 6622	AM: 8785 PM: 7588

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 4
WITH I-710 ALTERNATIVE 5C
SHEET 13 OF 14

DGN FILE = i:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-5C_Sht-13.dgn

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00-00-00 | TIME PLOTTED => 16:26

BORDER LAST REVISED 3/1/2007

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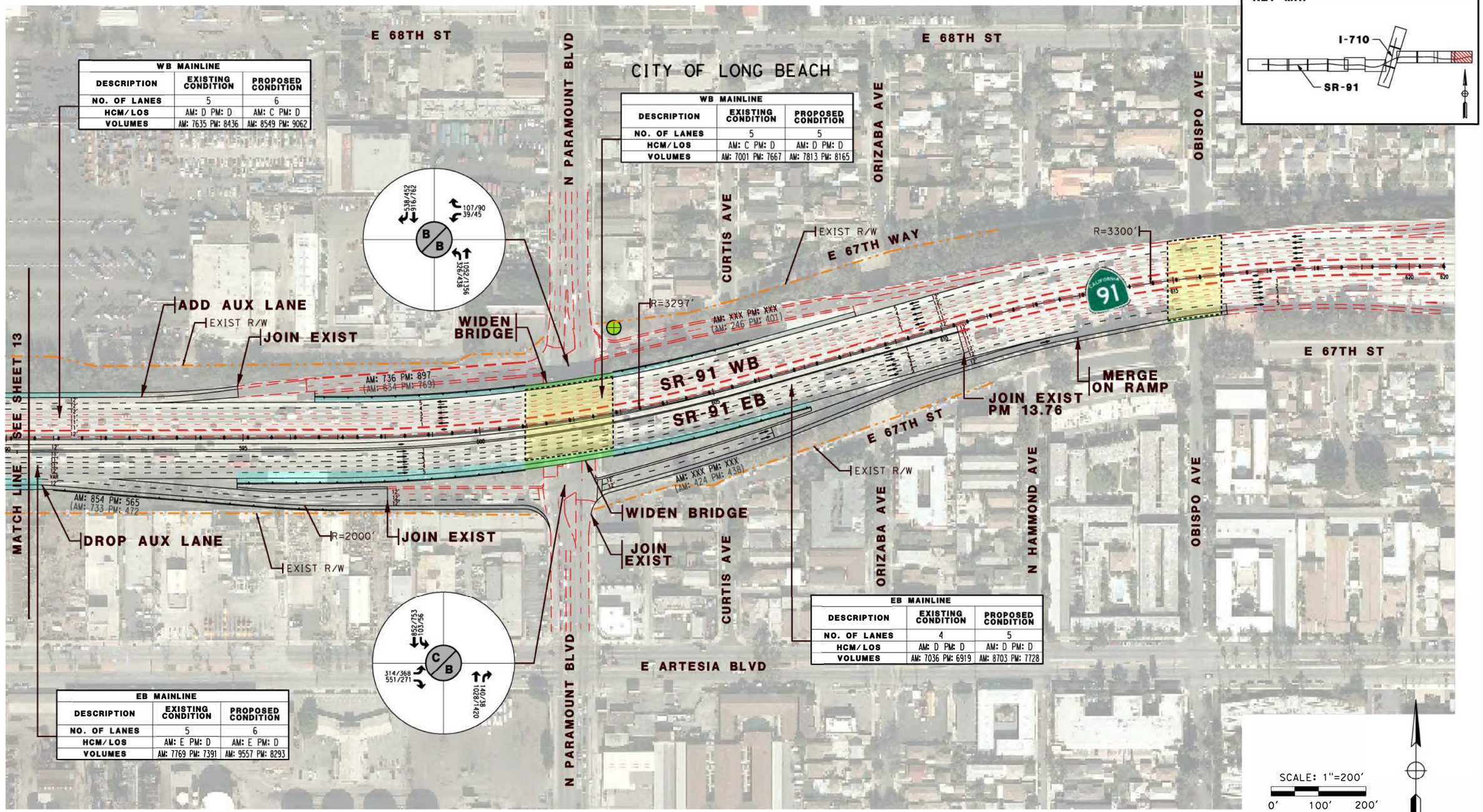

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 4 WITH I-710 ALTERNATIVE 5C SHEET 14 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-5C_Sht-14.dgn

LAST REVISION | DATE PLOTTED => 14-MAR-2017 | TIME PLOTTED => 16:26 | 00-00-00

BORDER LAST REVISED 3/1/2007

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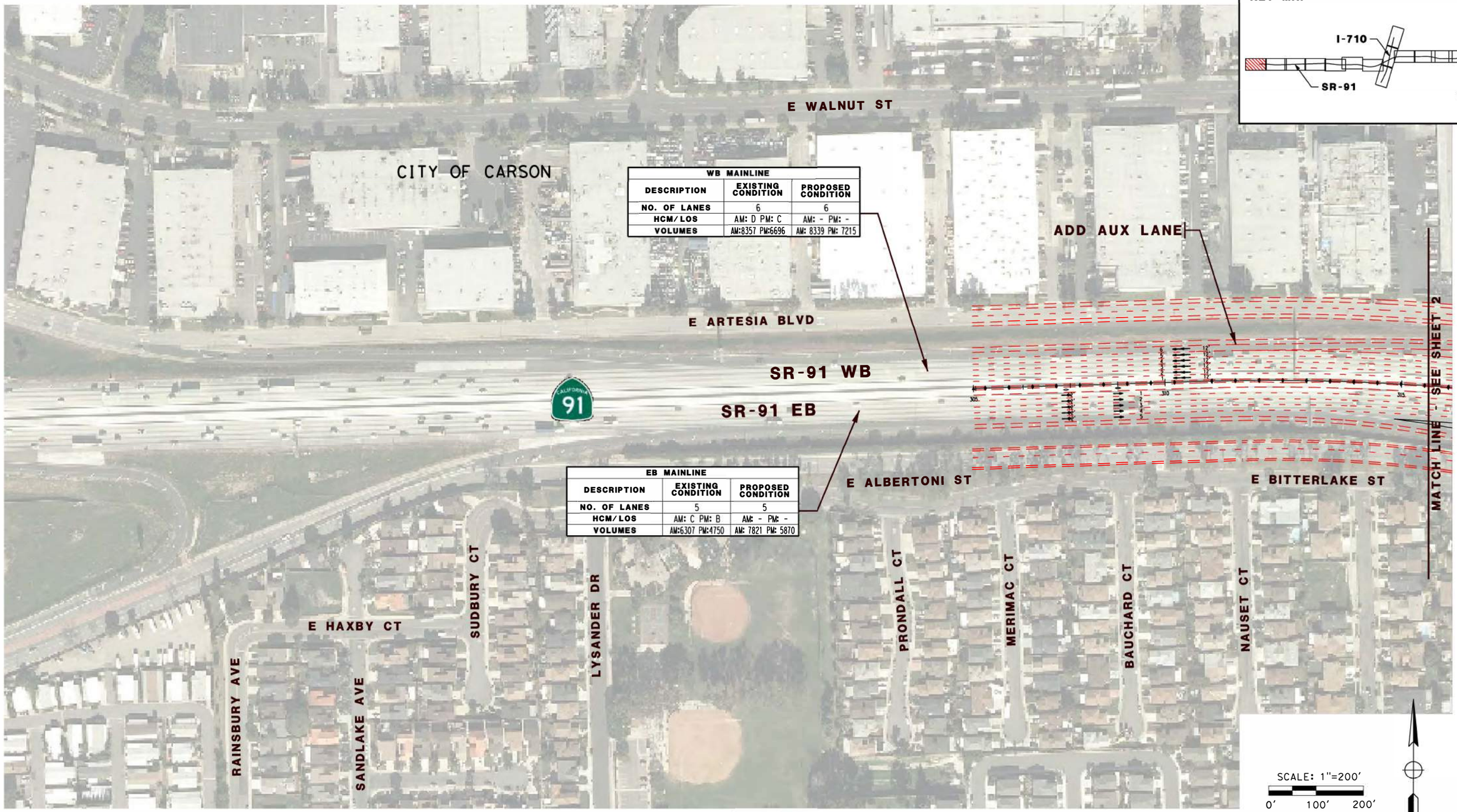

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 4
WITH I-710 ALTERNATIVE 7
SHEET 1 OF 14

DGN FILE = i:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-7_Sht-1.dgn

LAST REVISION DATE PLOTTED => 14-MAR-2017
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BORDER LAST REVISED 3/1/2007

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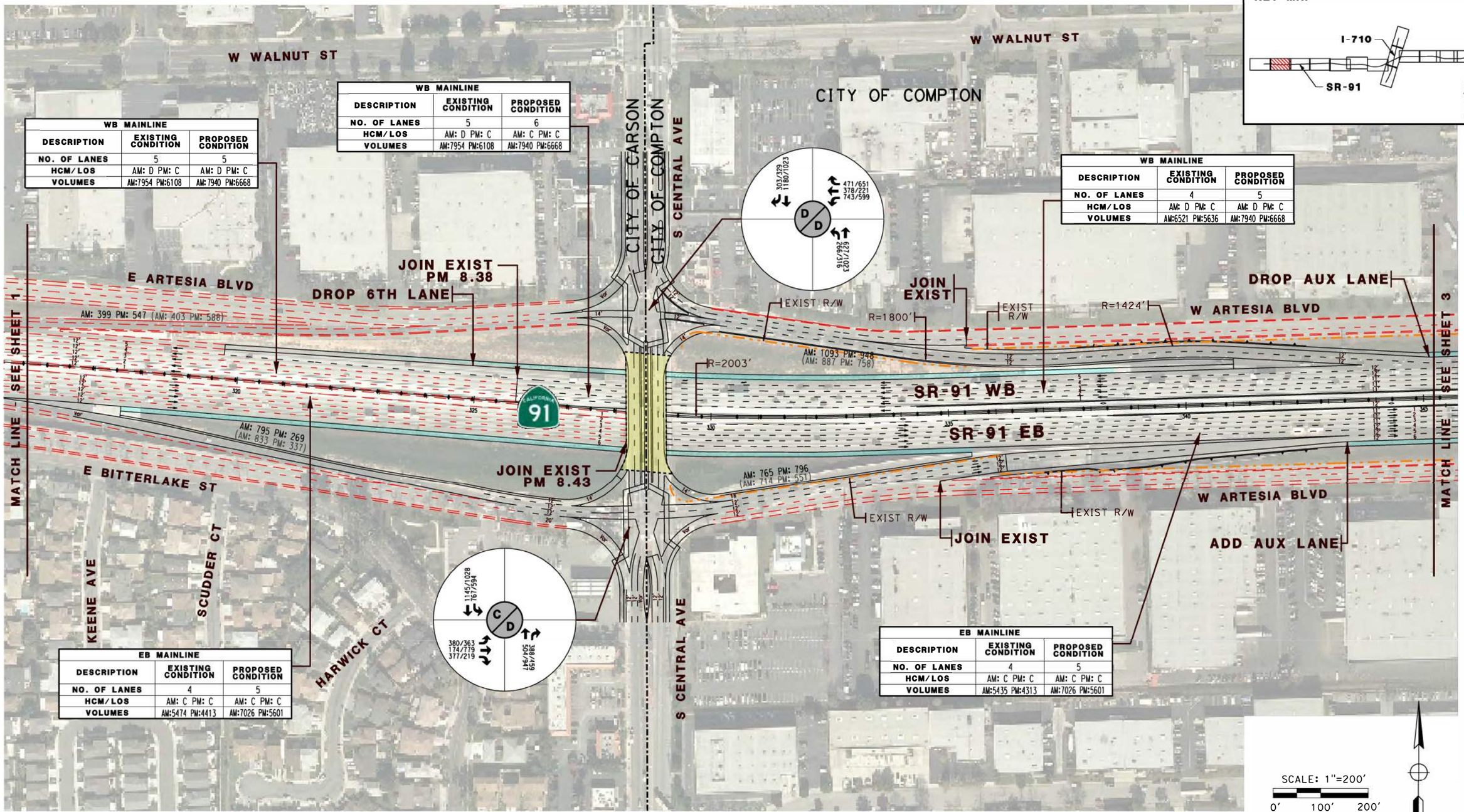

KEY MAP

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM:7954 PM:6108	AM:7940 PM:6668

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: D PM: C	AM: C PM: C
VOLUMES	AM:7954 PM:6108	AM:7940 PM:6668

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM:6521 PM:5636	AM:7940 PM:6668

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM:5474 PM:4413	AM:7026 PM:5601

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM:5435 PM:4313	AM:7026 PM:5601

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 4
WITH I-710 ALTERNATIVE 7
SHEET 2 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-7_Sht-2.dgn

LAST REVISION 00-00-00 | DATE PLOTTED => 14-MAR-2017 | TIME PLOTTED => 16:26

BORDER LAST REVISED 3/1/2007

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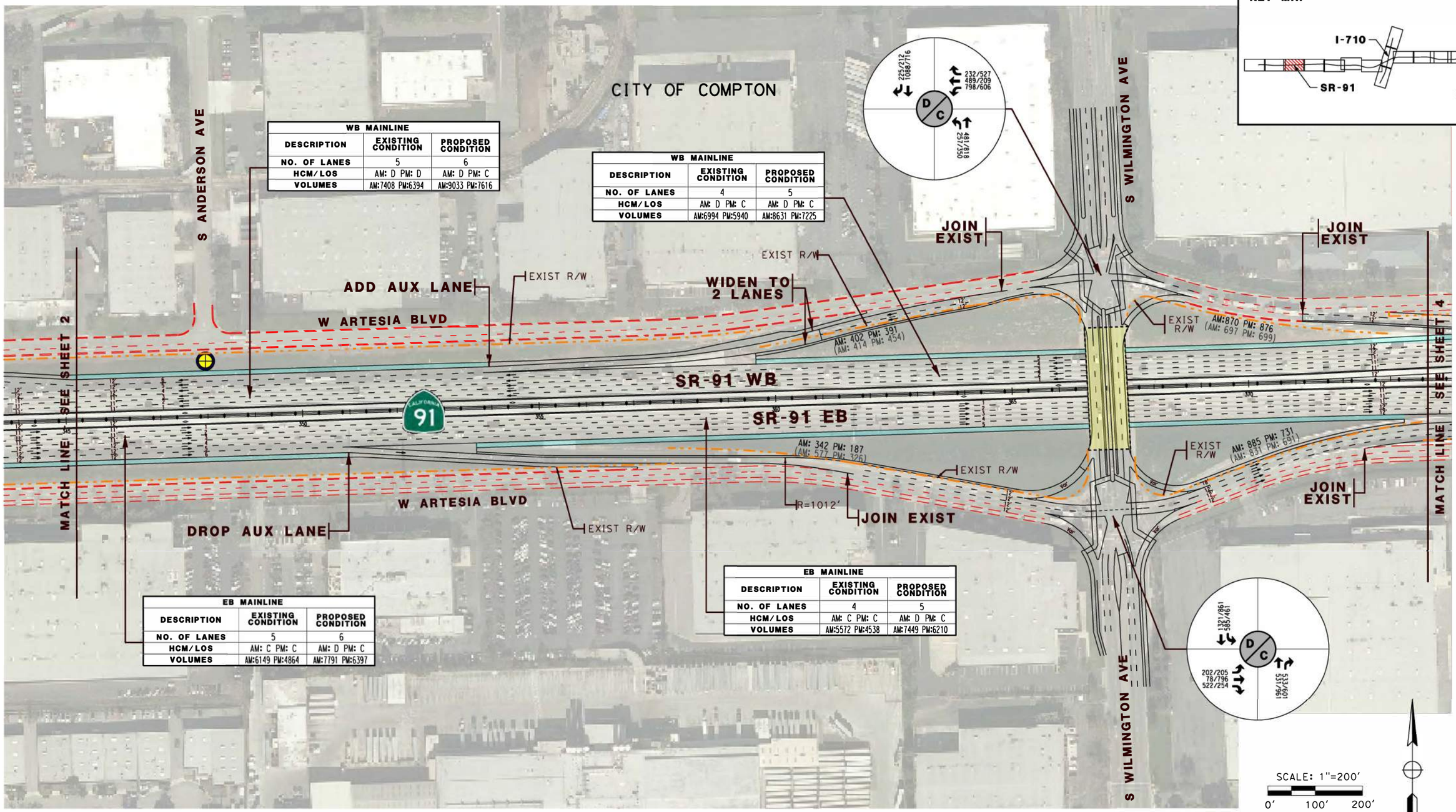

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: D PM: D	AM: D PM: C
VOLUMES	AM:7408 PM:6394	AM:9033 PM:7616

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM:6994 PM:5940	AM:8631 PM:7225

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: C	AM: D PM: C
VOLUMES	AM:6149 PM:4864	AM:7791 PM:6397

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: D PM: C
VOLUMES	AM:5572 PM:4538	AM:7449 PM:6210

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 4 WITH I-710 ALTERNATIVE 7 SHEET 3 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-7_Sht-3.dgn

LAST REVISION DATE PLOTTED => 14-MAR-2017
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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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CITY OF COMPTON

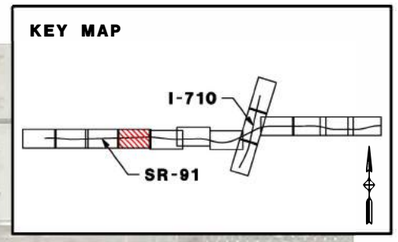
WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: E PM: D	AM: D PM: D
VOLUMES	AM:7691 PM:6639	AM:9501 PM:8101

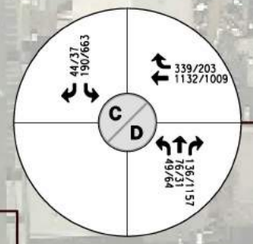
WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM:7193 PM:5859	AM:8961 PM:7373

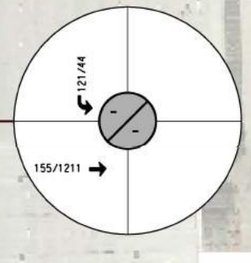
EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: C	AM: D PM: C
VOLUMES	AM:6403 PM:5229	AM:8334 PM:6941

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	6
HCM/LOS	AM: D PM: C	AM: C PM: C
VOLUMES	AM:6281 PM:5156	AM:8217 PM:6903

KEY MAP







SEE SHEET 3

MATCH LINE

DROP AUX LANE

EXIST R/W

W ARTESIA BLVD

ADD AUX LANE

EXIST R/W

JOIN EXIST

WIDEN BRIDGE

S ACACIA CT

AM:870 PM: 876
(AM: 697 PM: 699)

AM: 540 PM: 728
(AM: 498 PM: 780)

SR-91 WB

SR-91 EB

91

AM: 117 PM: 38
(AM: 122 PM: 73)

AM: 885 PM: 731
(AM: 831 PM: 691)

EXIST R/W

W ARTESIA BLVD

ADD AUX LANE

DROP AUX LANE

JOIN EXIST

EXIST R/W

ADD 6TH GP LANE

WIDEN BRIDGE

NEW INTERSECTION

MATCH LINE

SEE SHEET 5

SCALE: 1"=200'

0' 100' 200'

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 4 WITH I-710 ALTERNATIVE 7 SHEET 4 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\ADD\Sheets\Layouts\01-SR91-ALT4-7_Sht-4.dgn

LAST REVISION | DATE PLOTTED => 14-MAR-2017
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BORDER LAST REVISED 3/1/2007

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WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 7193 PM: 5859	AM: 8961 PM: 7373

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: C	AM: D PM: C
VOLUMES	AM: 7003 PM: 5614	AM: 8961 PM: 7373

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 6000 PM: 5032	AM: 7055 PM: 6362

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 5276 PM: 4884	AM: 7055 PM: 6362

CITY OF COMPTON

W ARTESIA BLVD

COMPTON CREEK

SR-91 WB

SR-91 EB

SPT CO RAILROAD

E ALAMEDA ST

MATCH LINE - SEE SHEET 4

MATCH LINE - SEE SHEET 6

R=5500'

R=2520'

R=7001'

R=166

EXIST R/W

WIDEN BRIDGE

NEW BRIDGE

R/W IMPACT

RECONSTRUCT ALAMEDA ST EB OFF RAMP

RECONSTRUCT ARTESIA BLVD EB OFF RAMP

AM: 1162 PM: 541

349/462
1014/620

132/86
159/65

358/865
156/748

B
C

KEY MAP

I-710

SR-91

SCALE: 1"=200'

0' 100' 200'

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 4 WITH I-710 ALTERNATIVE 7 SHEET 5 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-7_Sht-5.dgn

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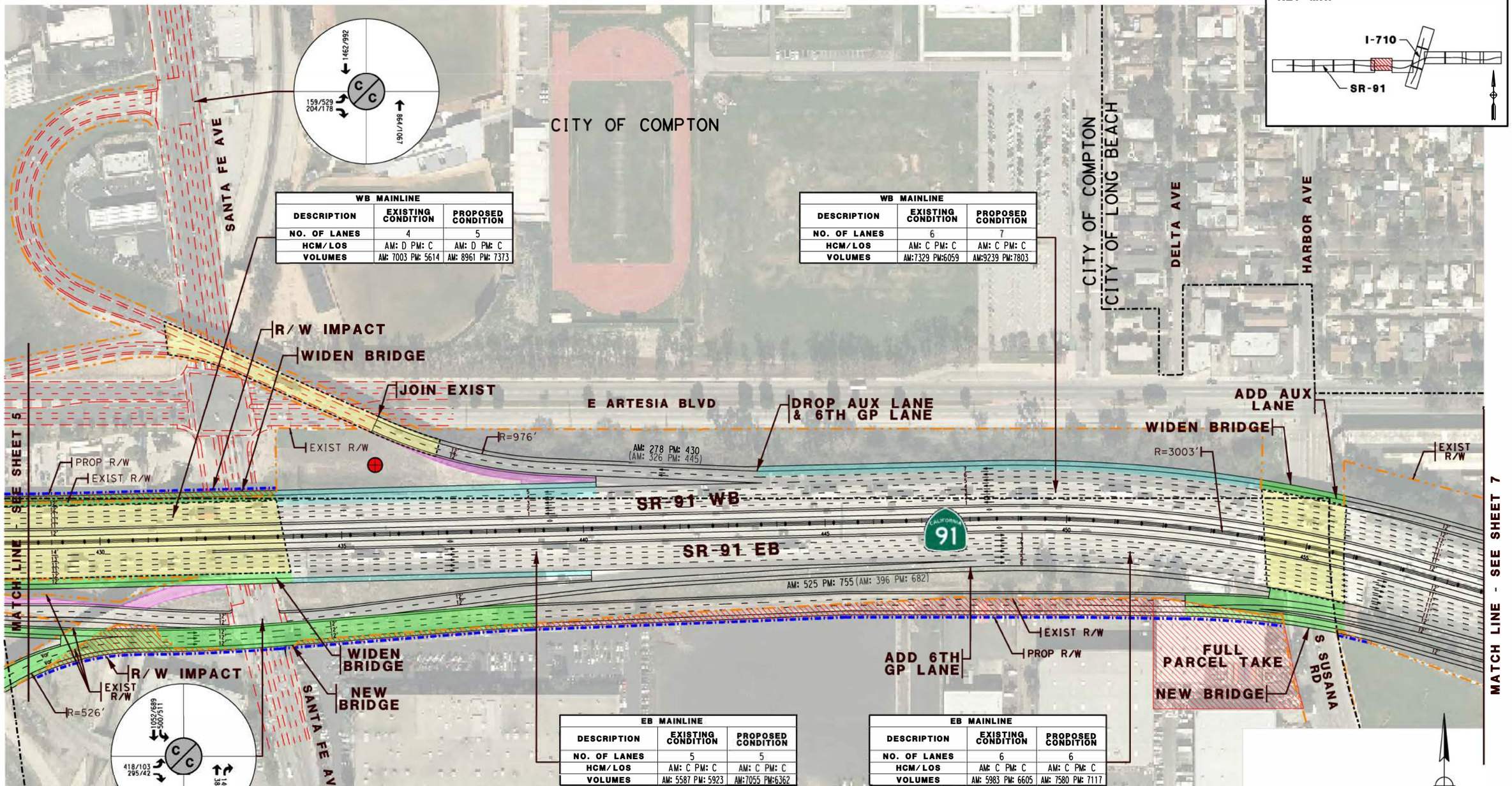

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 4
WITH I-710 ALTERNATIVE 7
SHEET 6 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-7_Sht-6.dgn

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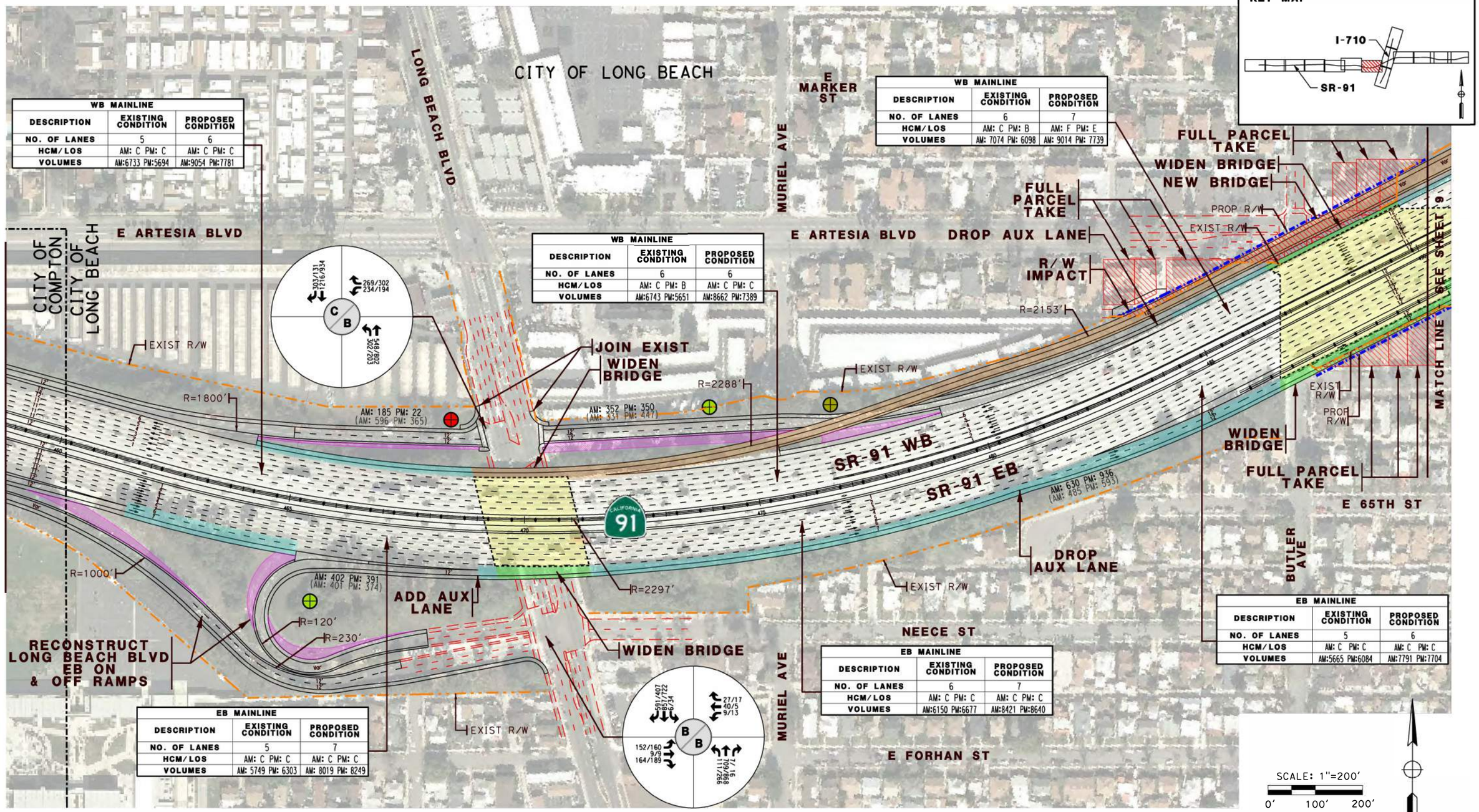

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM:6733 PM:5694	AM:9054 PM:7781

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	6	7
HCM/LOS	AM: C PM: B	AM: F PM: E
VOLUMES	AM: 7074 PM: 6098	AM: 9014 PM: 7739

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	6	6
HCM/LOS	AM: C PM: B	AM: C PM: C
VOLUMES	AM:6743 PM:5651	AM:8662 PM:7389

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	7
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM: 5749 PM: 6303	AM: 8019 PM: 8249

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	6	7
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM:6150 PM:6677	AM:8421 PM:8640

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM:5665 PM:6084	AM:7791 PM:7704

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 4 WITH I-710 ALTERNATIVE 7

SHEET 7 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\ADD\Sheets\Layouts\01-SR91-ALT4-7_Sht-7.dgn

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LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X / X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 4
WITH I-710 ALTERNATIVE 7
SHEET 8 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-7_Sht-8.dgn

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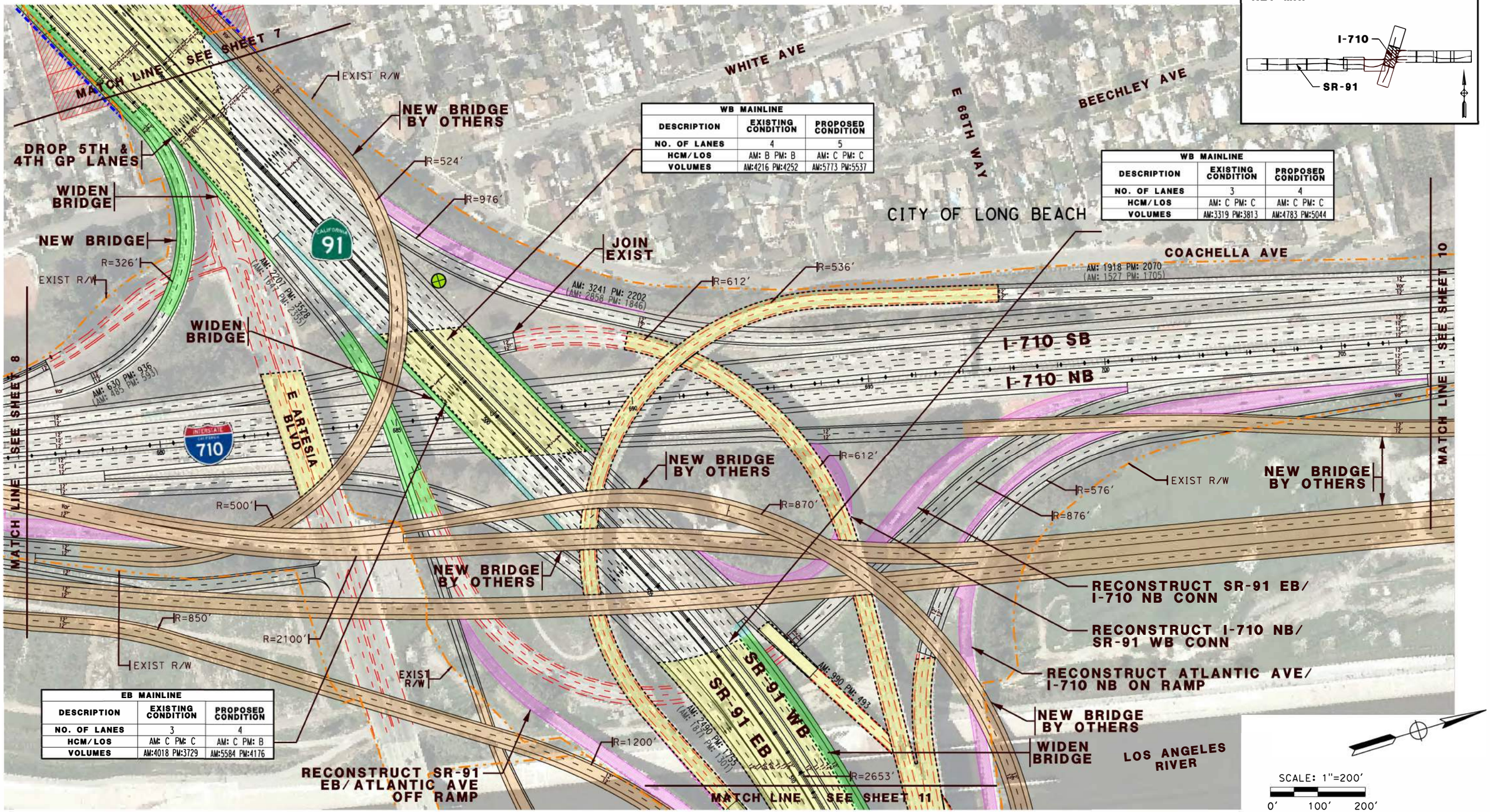

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: B PM: B	AM: C PM: C
VOLUMES	AM:4216 PM:4252	AM:5773 PM:5537

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	3	4
HCM/LOS	AM: C PM: C	AM: C PM: C
VOLUMES	AM:3319 PM:3813	AM:4783 PM:5044

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	3	4
HCM/LOS	AM: C PM: C	AM: C PM: B
VOLUMES	AM:4018 PM:3729	AM:5584 PM:4176

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 4 WITH I-710 ALTERNATIVE 7 SHEET 9 OF 14

LAST REVISION | DATE PLOTTED => 14-MAR-2017
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LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X / X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 4 WITH I-710 ALTERNATIVE 7 SHEET 10 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-7_Sht-10.dgn

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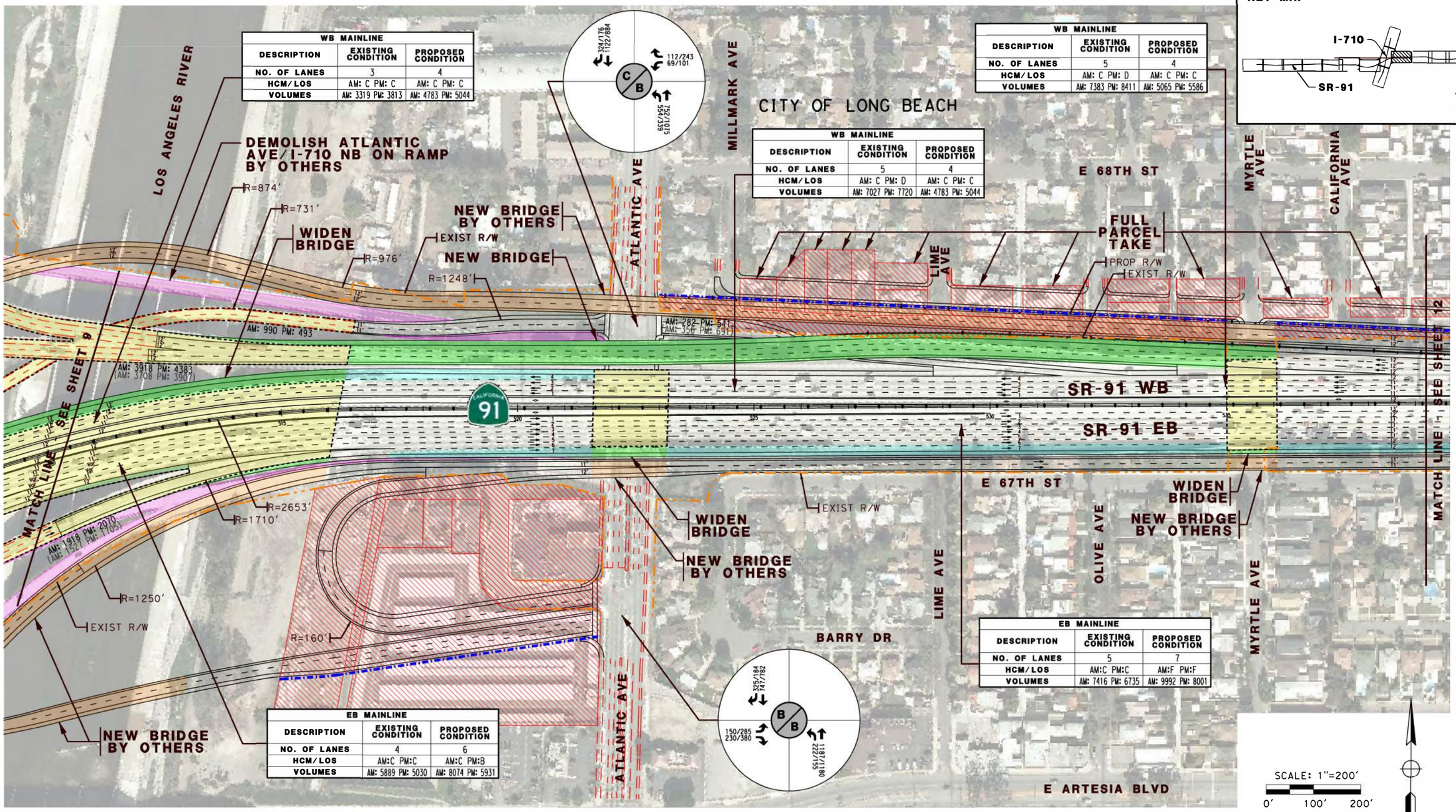

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 4 WITH I-710 ALTERNATIVE 7 SHEET 11 OF 14

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-7_Sht-11.dgn

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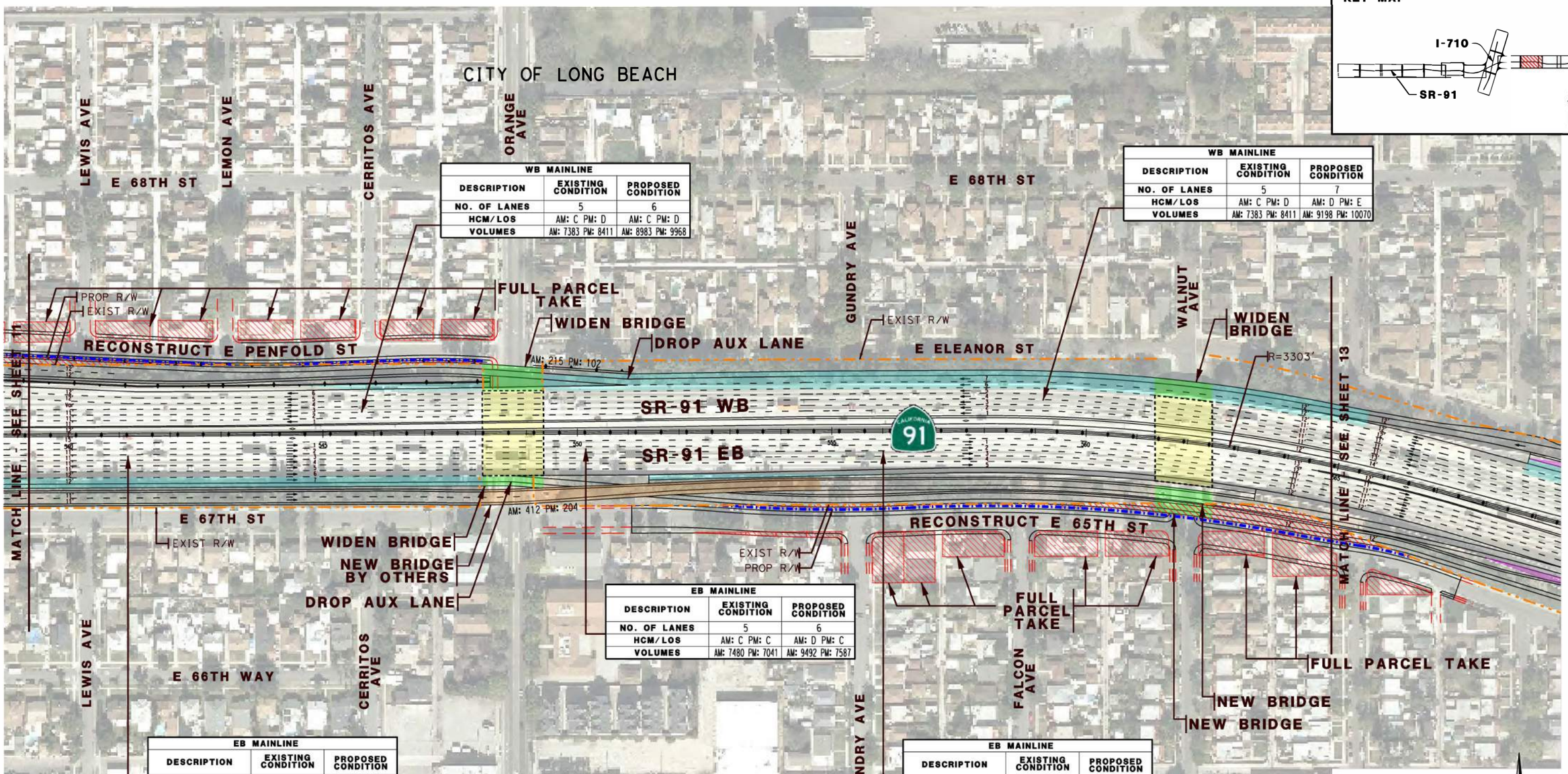

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: D	AM: C PM: D
VOLUMES	AM: 7383 PM: 8411	AM: 8983 PM: 9968

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	7
HCM/LOS	AM: C PM: D	AM: D PM: E
VOLUMES	AM: 7383 PM: 8411	AM: 9198 PM: 10070

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: C	AM: D PM: C
VOLUMES	AM: 7480 PM: 7041	AM: 9492 PM: 7587

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	7
HCM/LOS	AM: C PM: C	AM: F PM: F
VOLUMES	AM: 7480 PM: 7041	AM: 9992 PM: 8001

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	5
HCM/LOS	AM: C PM: C	AM: E PM: C
VOLUMES	AM: 7480 PM: 7041	AM: 9492 PM: 7587

KEY MAP

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 4 WITH I-710 ALTERNATIVE 7 SHEET 12 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-7_Sht-12.dgn

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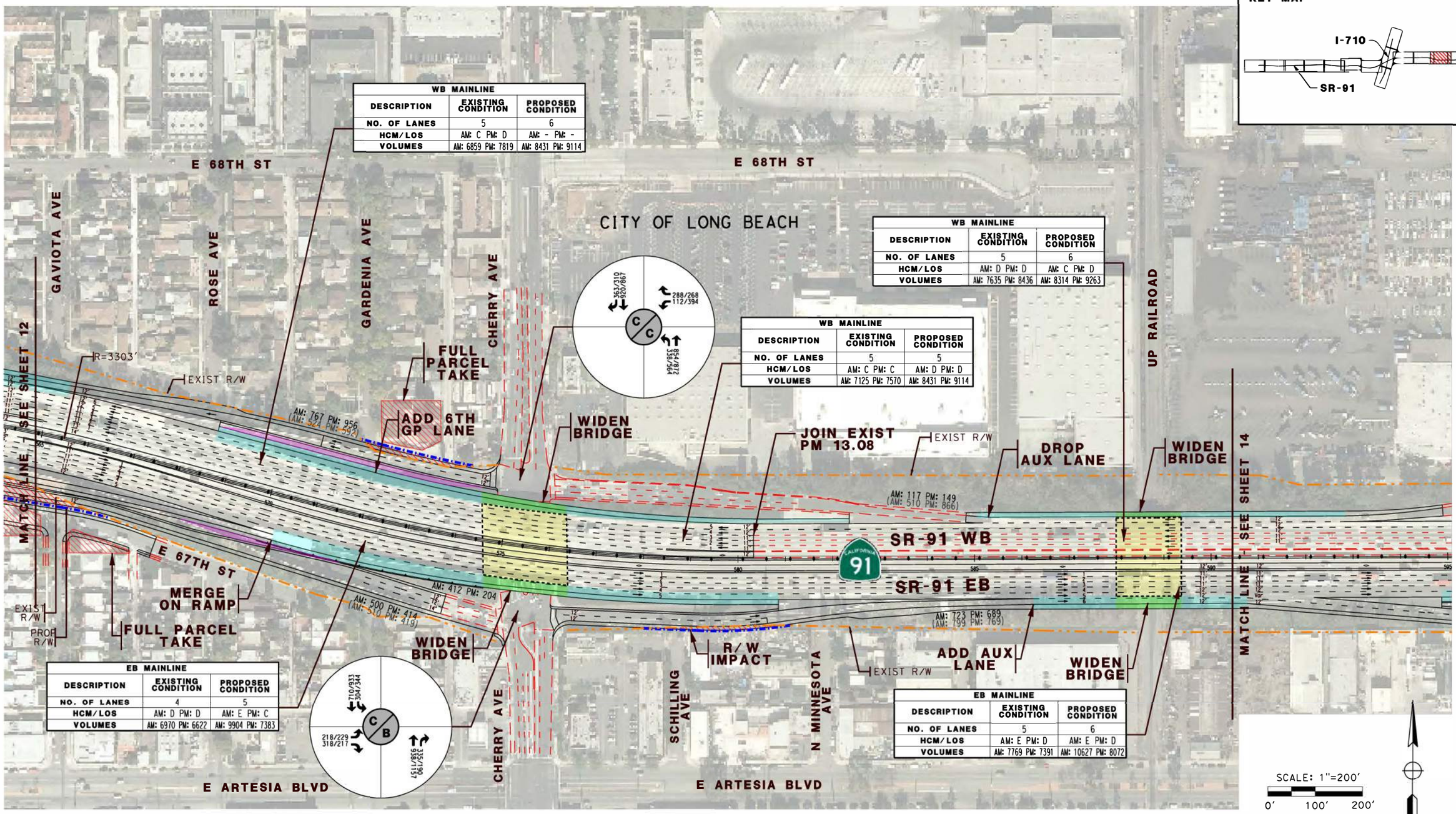

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: C PM: D	AM: - PM: -
VOLUMES	AM: 6859 PM: 7819	AM: 8431 PM: 9114

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: D PM: D	AM: C PM: D
VOLUMES	AM: 7635 PM: 8436	AM: 8314 PM: 9263

WB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	5
HCM/LOS	AM: C PM: C	AM: D PM: D
VOLUMES	AM: 7125 PM: 7570	AM: 8431 PM: 9114

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	4	5
HCM/LOS	AM: D PM: D	AM: E PM: C
VOLUMES	AM: 6970 PM: 6622	AM: 9904 PM: 7383

EB MAINLINE		
DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION
NO. OF LANES	5	6
HCM/LOS	AM: E PM: D	AM: E PM: D
VOLUMES	AM: 7769 PM: 7391	AM: 10627 PM: 8072

LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS ALTERNATIVE 4 WITH I-710 ALTERNATIVE 7 SHEET 13 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-7_Sht-13.dgn

LAST REVISION 00-00-00 | DATE PLOTTED => 14-MAR-2017 | TIME PLOTTED => 16:27

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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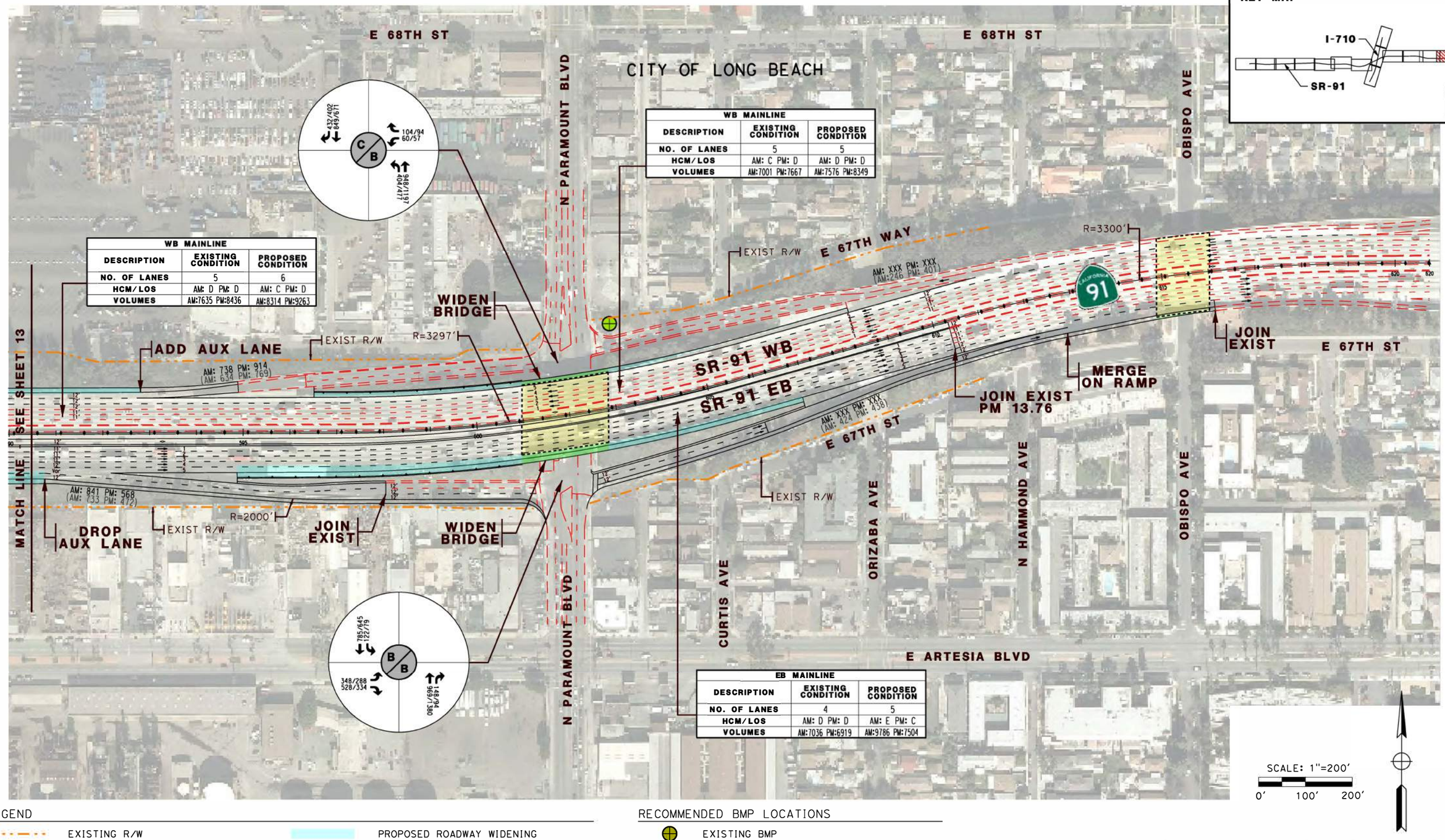
EA 000000



LEGEND

- EXISTING R/W
- EXISTING CITY LIMITS
- EXISTING ROADWAY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE IMPROVEMENTS
- PROPOSED I-710 BRIDGE IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- POTENTIAL R/W CONFLICT
- ELIMINATION OF EXISTING PAVEMENT
- AM: XXXX PM: XXXX — 2045 BUILD HOV/MAINLINE VOLUMES
- (AM: XXXX PM: XXXX) — EXISTING (HOV/MAINLINE) VOLUMES
- X/X — 2045 BUILD: AM/PM LOS (PEAK HOUR)

RECOMMENDED BMP LOCATIONS

- EXISTING BMP
- POTENTIAL BIOFILTRATION STRIP
- POTENTIAL BIOFILTRATION SWALE
- POTENTIAL EARTHEN AUSTIN SAND FILTER
- POTENTIAL IFD FOR SECONDARY AND DETAILED SITE SELECTION

SR-91/I-710 PSR-PDS
ALTERNATIVE 4
WITH I-710 ALTERNATIVE 7
SHEET 14 OF 14

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Layouts\01-SR91-ALT4-7_Sht-14.dgn

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BORDER LAST REVISED 3/1/2007

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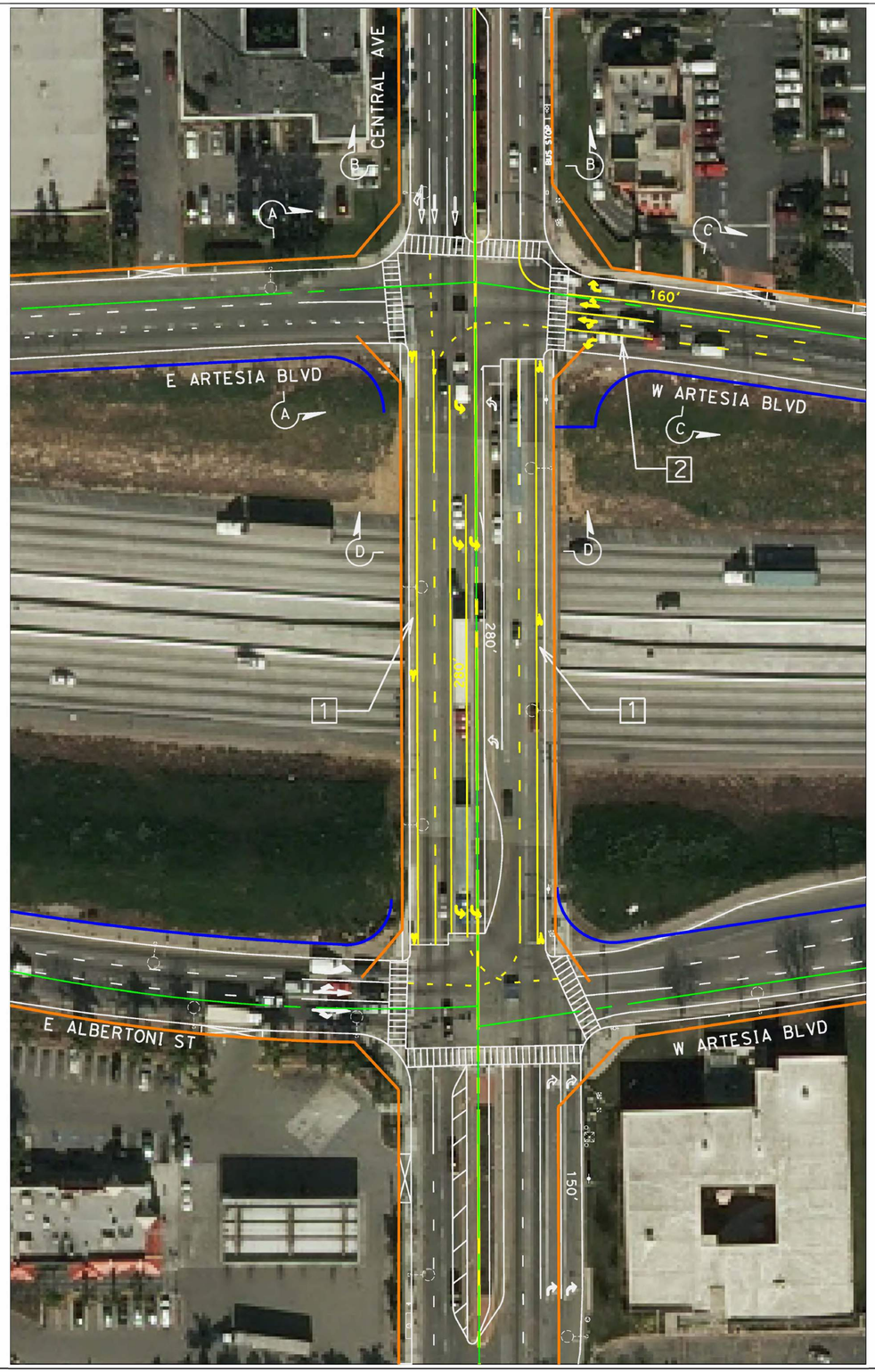
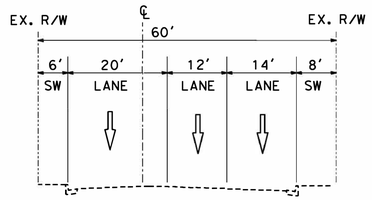
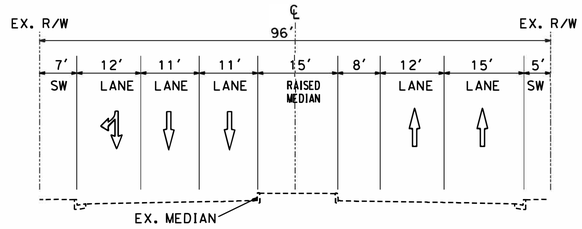




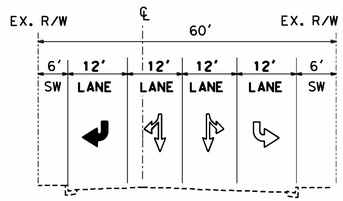
SECTION A-A

NTS



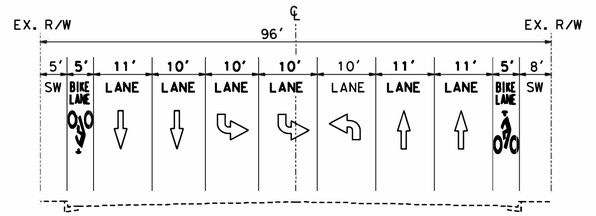
SECTION B-B

NTS



SECTION C-C

NTS



SECTION D-D

NTS

NOTES:

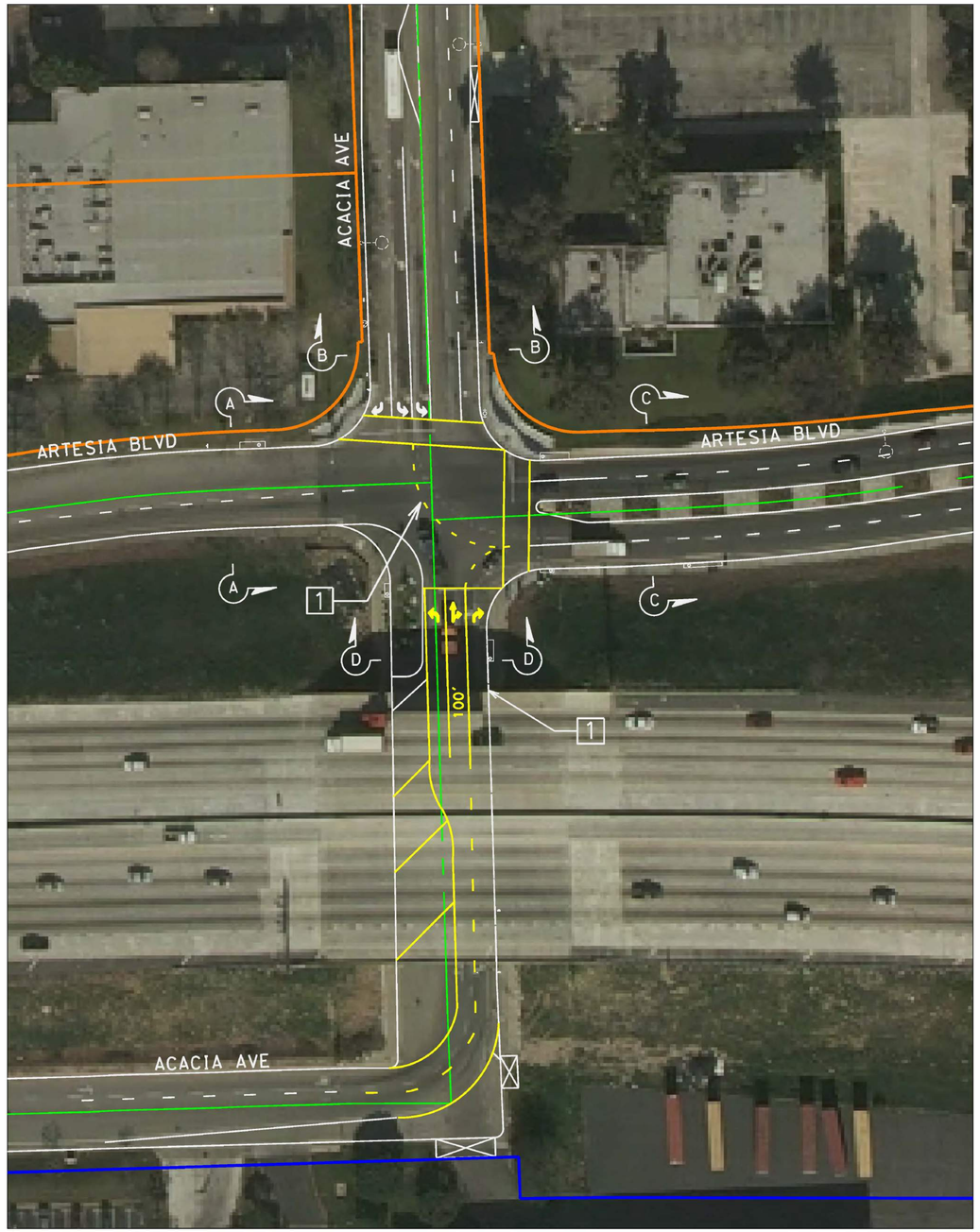
1. PROPOSED BIKE LANE ALONG CENTRAL AVE AS PART OF THE CITY OF COMPTON MASTER PLAN.
2. PROPOSED WB DUAL RT LANES ON WB OFF RAMP OF SR 91 TO NB CENTRAL AVE ARE INSTALLED TO IMPROVE LEVEL OF SERVICE.

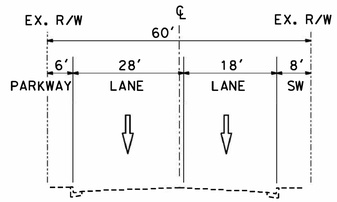
SCALE: 1"=40'

METRO SR-91/ARTERIAL CONCEPTUAL PLAN

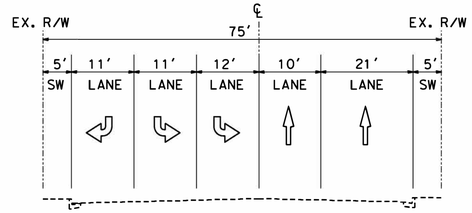
CENTRAL AVE AT EAST AND WEST ARTESIA BLVD'S
ALT 2-5C
CITY OF COMPTON/CARSON **SHEET 1 OF 14**

P:\2015\2015.0084.0001.00 Metro SR-91-I-710 Interchange PSR-PDS\Project Design\CADD\Sheets\Arterials\Alt 5C\01-Central_91 WB On and OffRamps.dgn
6/20/2017

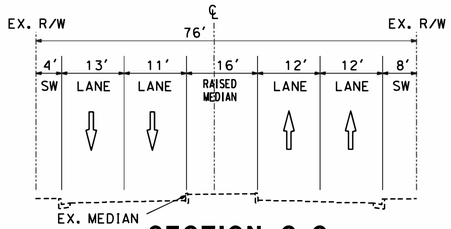




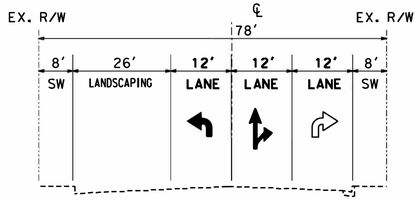
SECTION A-A
NTS



SECTION B-B
NTS



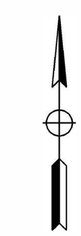
SECTION C-C
NTS



SECTION D-D
NTS

NOTES:

1. PROPOSED LANE CONFIGURATION IS TO ACCOMMODATE IMPROVED LEVEL OF SERVICE. SIGNAL OPERATION AND TIMING IS TO BE MODIFIED.

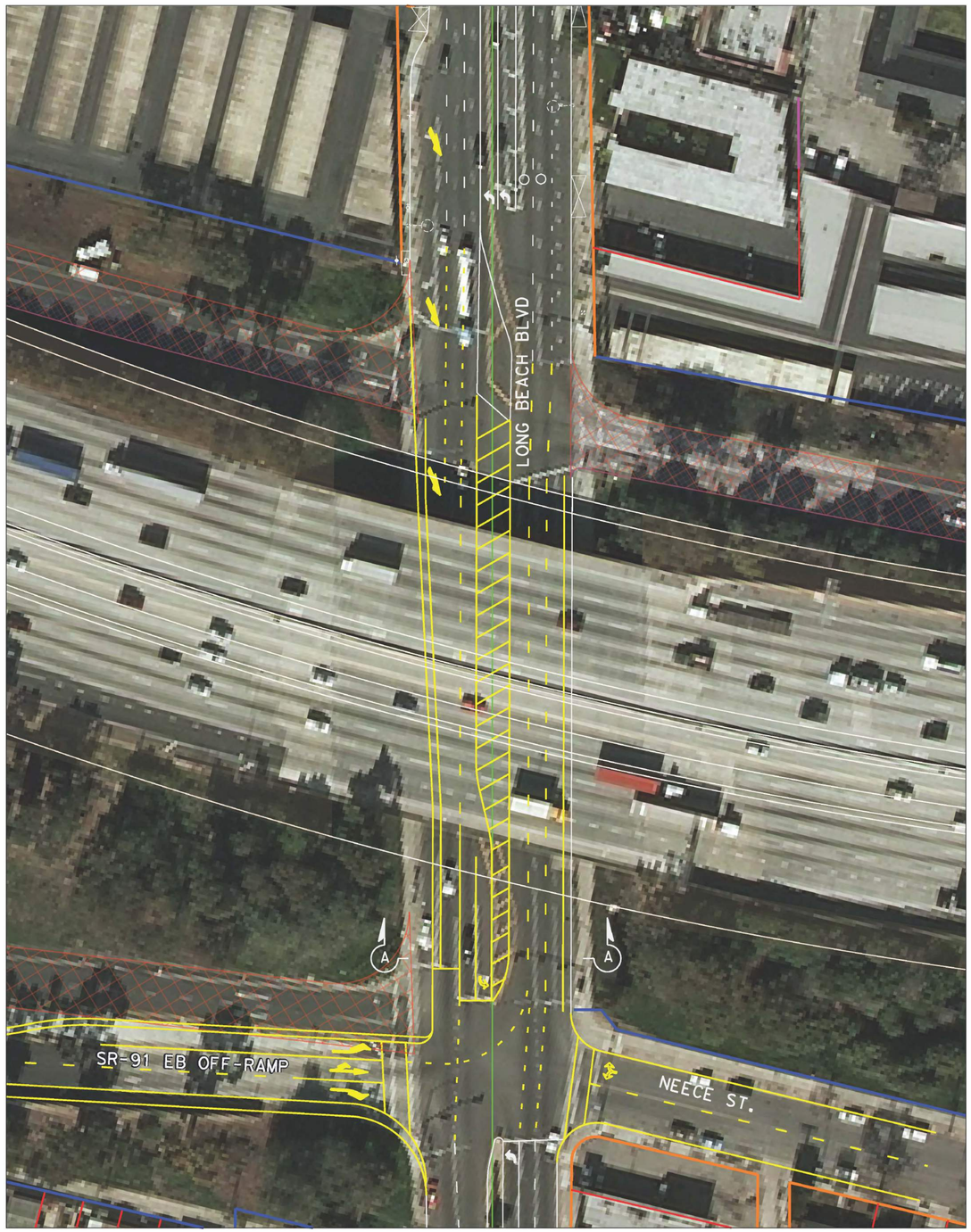


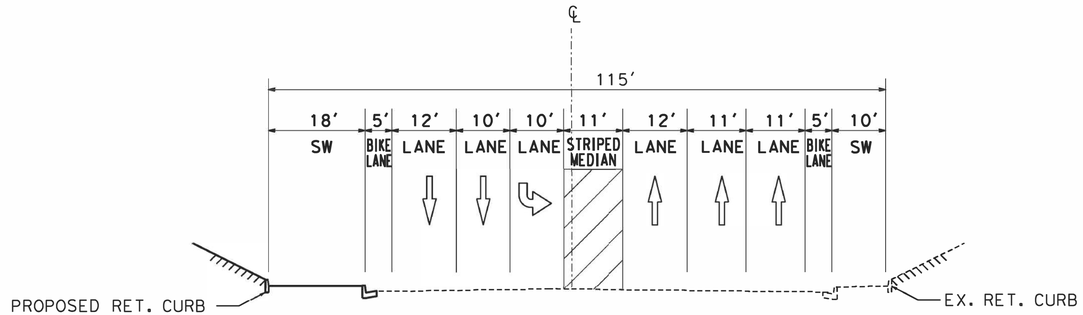
SCALE: 1"=40'

METRO SR-91/ARTERIAL CONCEPTUAL PLAN

ACACIA CT AT ARTESIA BLVD
ALT 2-5C
CITY OF COMPTON **SHEET 2 OF 14**

P:\2015\2015.0084.0001.00 Metro SR-91-I-710 Interchange PSR-PDS\Project Design\CADD\Sheets\Arterials\Alt 5C\02-Acacia_91 WB On Ramp.dgn
6/20/2017



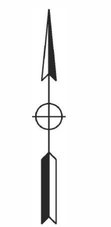


SECTION A-A

NTS

NOTES:

1. WB ON AND OFF RAMPS ARE REMOVED.
2. SB-RT TO THE EXISTING 91-WB FWY IS REMOVED. SB LANE DROP IS PROPOSED.
3. NB-LT FOR 91-WB FWY IS REMOVED.
4. 91-EB OFF RAMP IS RELOCATED.
5. BIKE LANES ALONG LONG BEACH BLVD ARE PER CITY'S MASTER PLAN.
6. SB-RT AND NB-LT TO THE EXISTING 91-EB FWY IS REMOVED.



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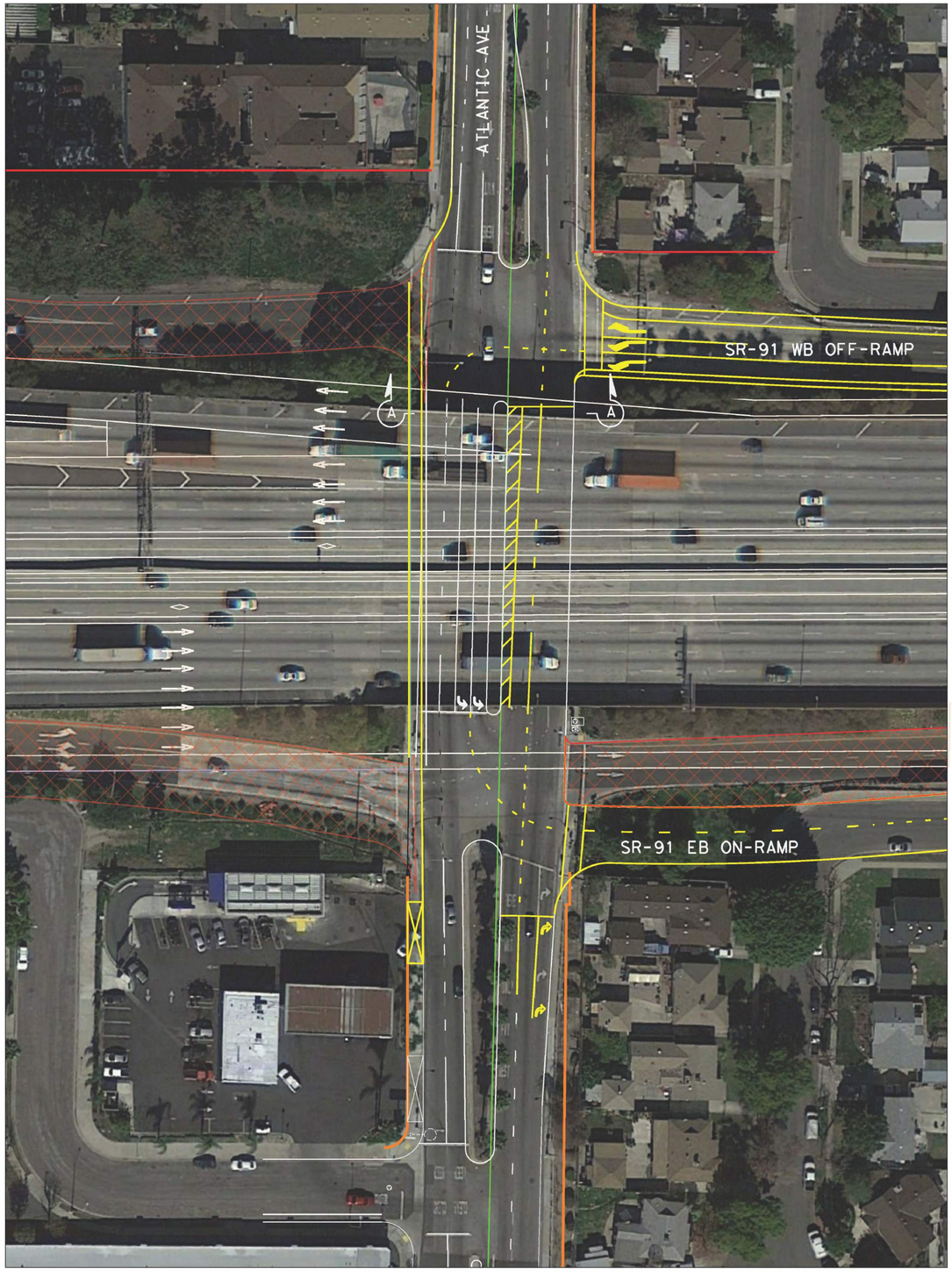

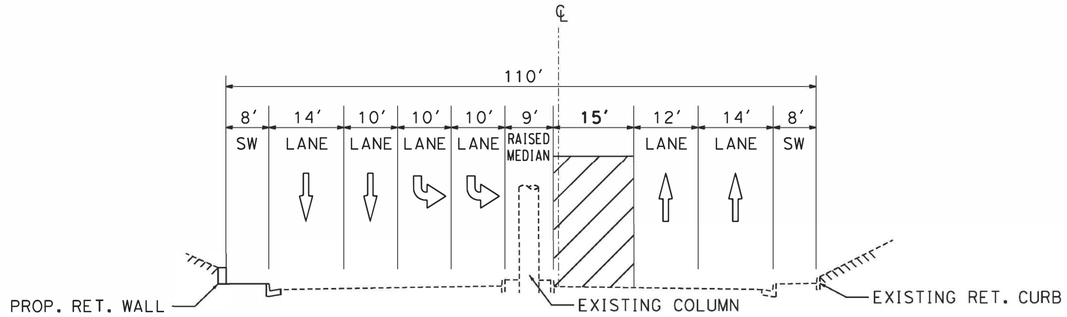

SECTION A-A

NTS

NOTES:

1. 91-WB ON RAMP IS REMOVED.
2. ROADWAY WIDENED BY 3' ALONG WEST SIDE.
3. W'LY SIDEWALK REDUCED FROM 10' TO 8'.
4. W'LY BW MOVED 1' INTO SLOPE.
5. 91-EB OFF RAMP IS RELOCATED.

SCALE: 1"=80'

METRO SR-91/ARTERIAL CONCEPTUAL PLAN

ATLANTIC AVE AT SR-91 WB OFF-RAMP AND SR-91 EB ON-RAMP
ALT 2-5C
CITY OF LONG BEACH SHEET 4 OF 14

P:\2015\2015.0084.0001.00 Metro SR-91-I-710 Interchange PSR-PDS\Project Design\CADD\Sheets\Arterials\Alt 5C\04-Atlantic_91 Alt2-5C.dgn
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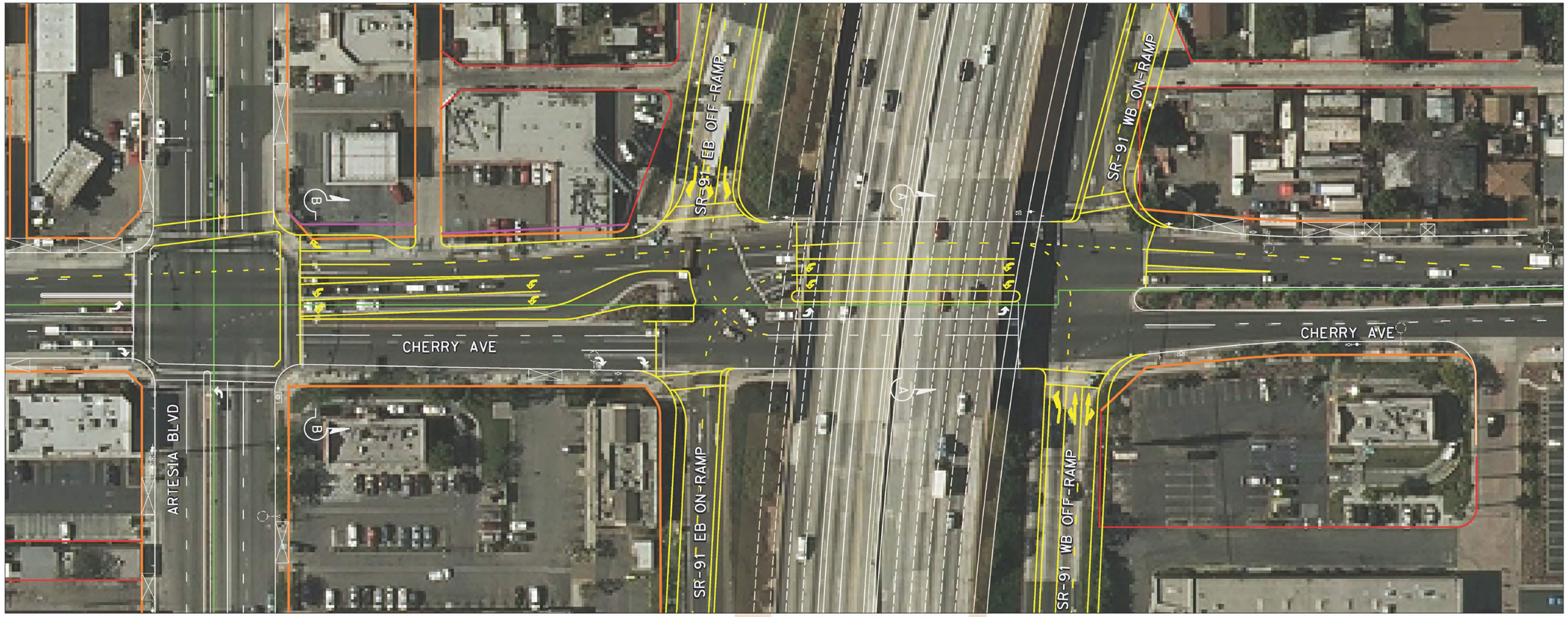
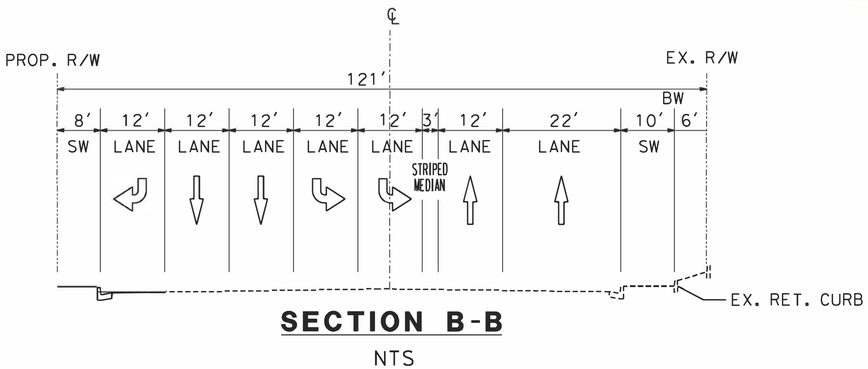
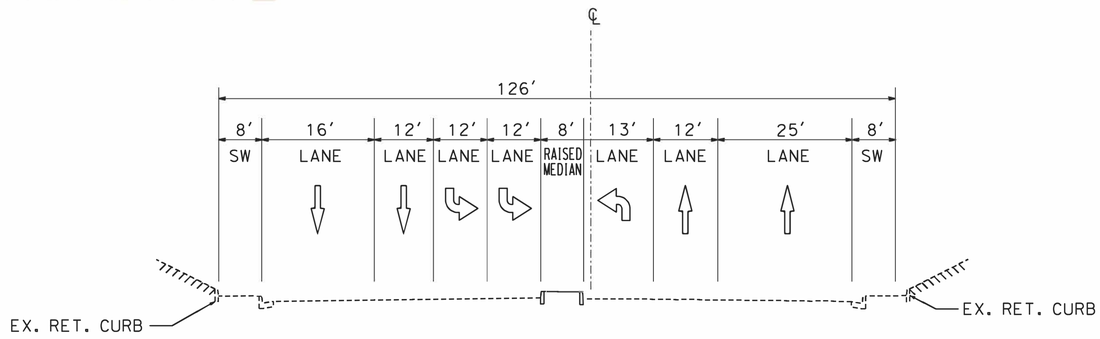




SECTION B-B

NTS



SECTION A-A

NTS

NOTES:

1. 12 FT WIDENING ALONG ATLANTIC IS REQUIRED FOR SB TAPER AND RT POCKET.
2. EB AND WB RAMPS ARE RE-ALIGNED.

SCALE: 1"=80'

METRO SR-91/ARTERIAL CONCEPTUAL PLAN

CHERRY AVE AT SR-91 WB AND EB ON AND OFF RAMPS
ALT 2-5C
CITY OF LONG BEACH **SHEET 5 OF 14**

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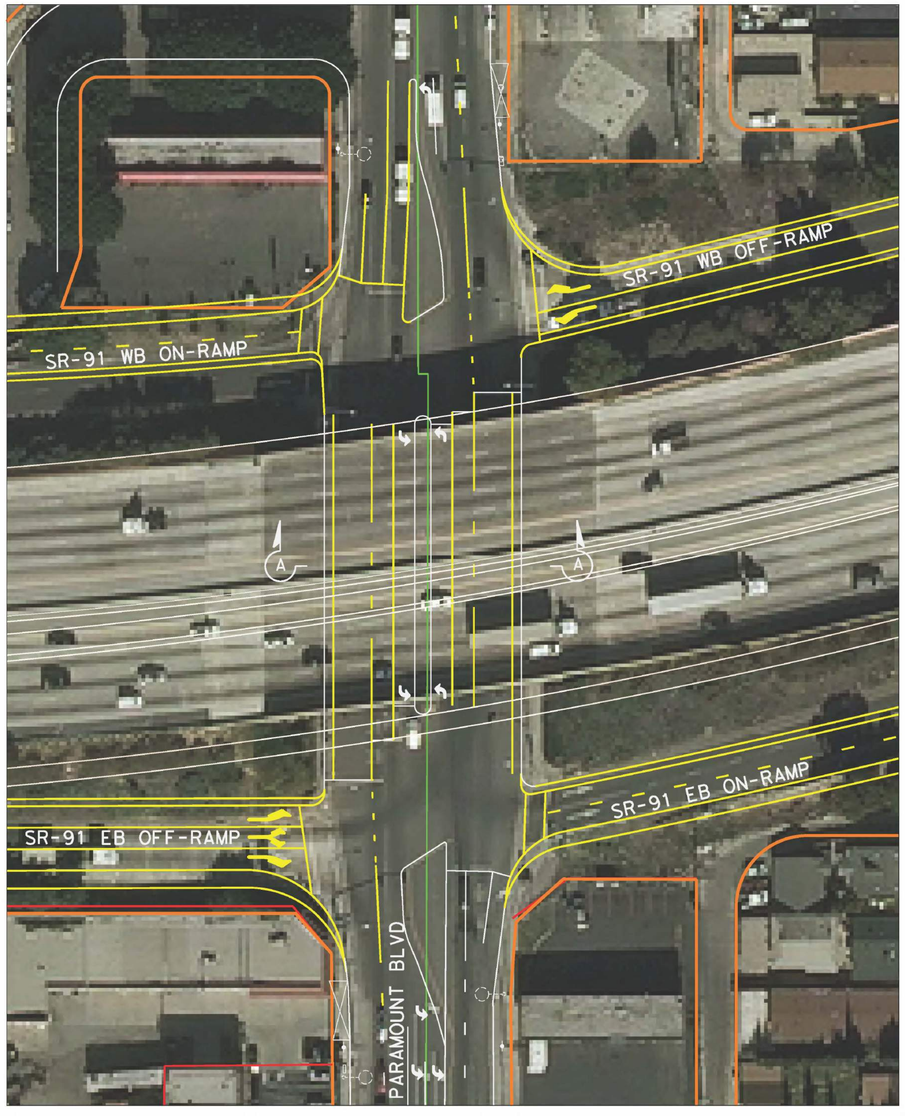

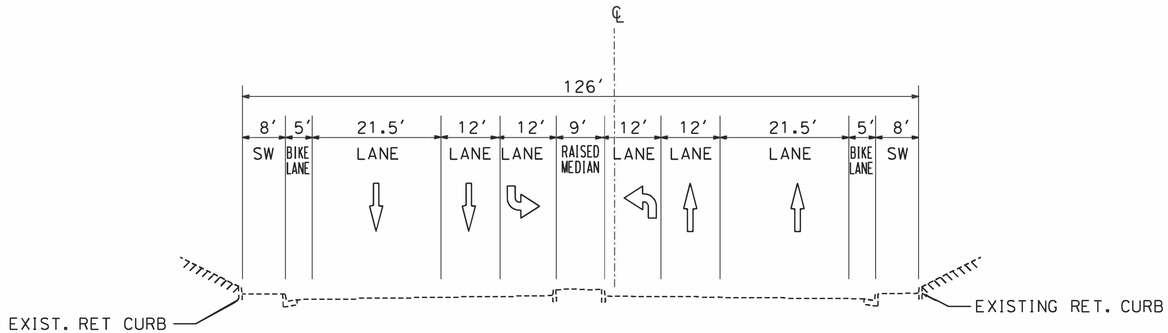

SECTION A-A

NTS

NOTES:

1. BIKE LANES ALONG PARAMOUNT BLVD ARE PER CITY'S MASTER PLAN.
2. EB AND WB RAMPS ARE RE-ALIGNED.
3. SR-91 WB AND EB RAMPS ARE RECONSTRUCTED.

SCALE: 1"=80'

METRO SR-91/ARTERIAL CONCEPTUAL PLAN

PARAMOUNT BLVD AT SR-91 WB AND EB ON AND OFF RAMPS
ALT 2-5C
CITY OF LONG BEACH SHEET 6 OF 14

P:\2015\2015.0084.0001.00 Metro SR-91-I-710 Interchange PSR-PDS\Project Design\CADD\Sheets\Arterials\Alt 5C\06 -Paramount_91 Alt2-5C.dgn
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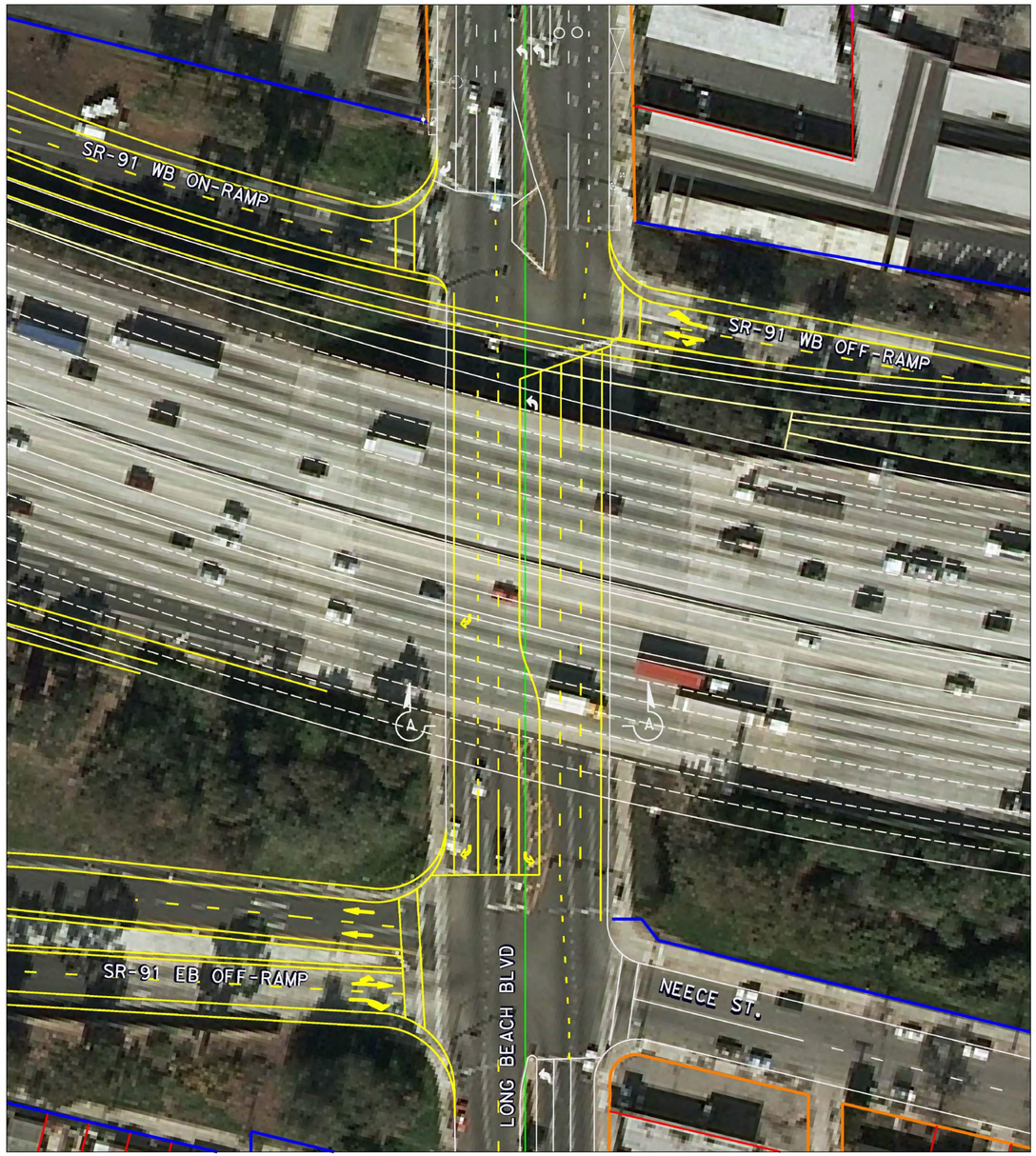

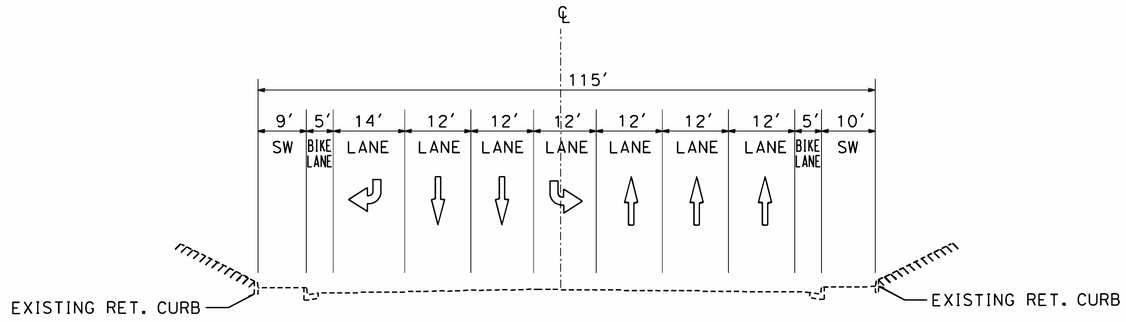

SECTION A-A

NTS

NOTES:

1. EB AND WB RAMPS ARE RE-ALIGNED.
2. BIKE LANES ALONG LONG BEACH BLVD ARE PER CITY'S MASTER PLAN.

SCALE: 1"=80'

METRO SR-91/ARTERIAL CONCEPTUAL PLAN

LONG BEACH BLVD AT SR-91 EB OFF-RAMP
ALT 2-7
CITY OF LONG BEACH SHEET 7 OF 14

P:\2015\2015.0084.0001.00 Metro SR-91-I-710 Interchange PSR-PDS\Project Design\CADD\Sheets\Arterials\Alt 7\07-Long Beach_91 Alt2-7.dgn
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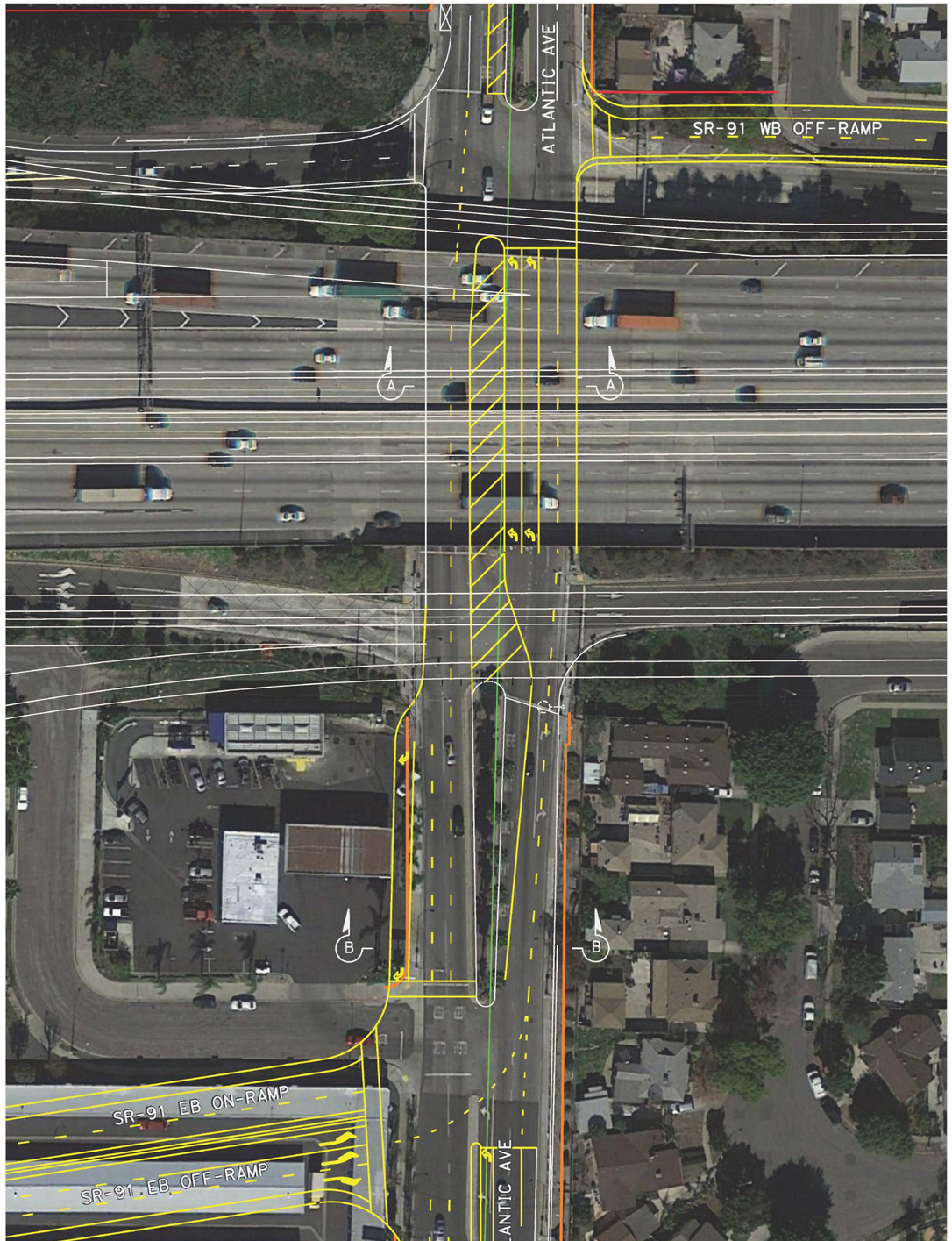
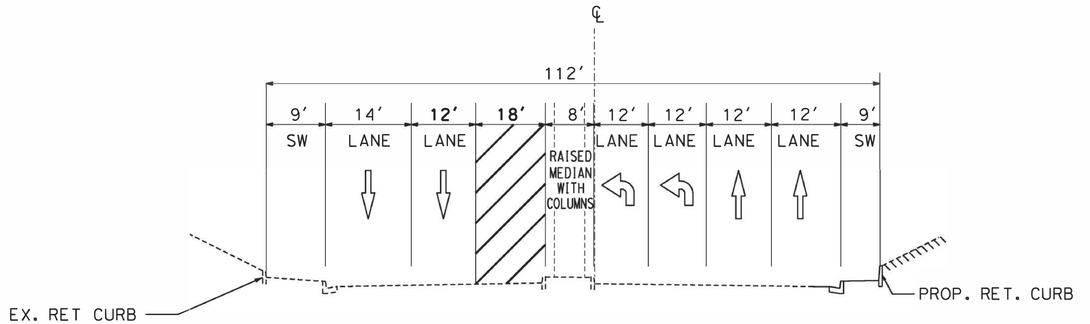


MATCH LINE
SEE SHEET 9 OF 14

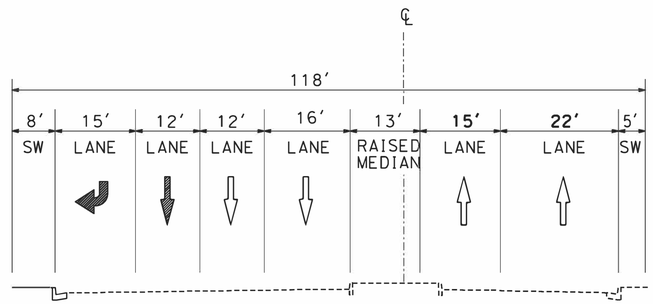


SECTION A-A

NTS

NOTES:

1. 91-WB OFF RAMP IS RE-CONSTRUCTED.
2. 91-EB ON RAMP AND OFF RAMP IS REMOVED.

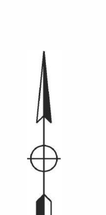


SECTION B-B

NTS

NOTES:

1. ROADWAY WIDENED 23.5′
2. ADDITION OF 1 SB LANE, 1 SB RT LANE



METRO SR-91/ARTERIAL CONCEPTUAL PLAN

ATLANTIC AVE AT SR-91 WB OFF-RAMP AND EB ON AND OFF RAMPS
ALT2-7
CITY OF LONG BEACH SHEET 8 OF 14

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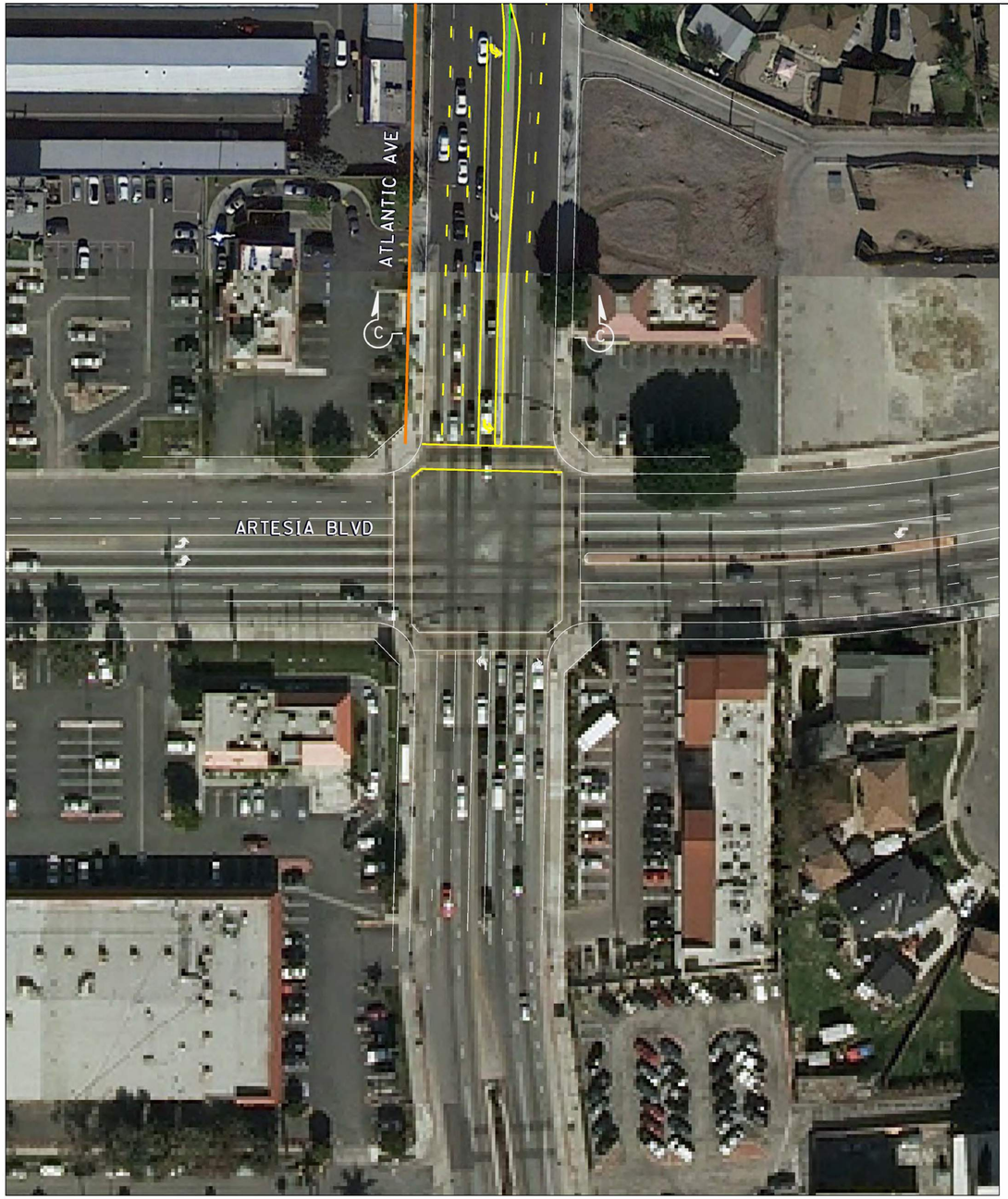
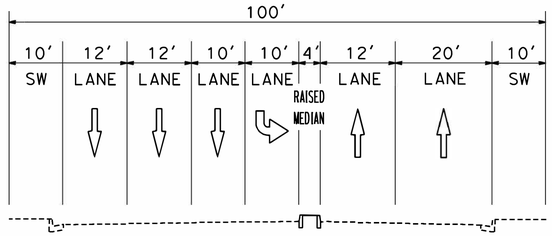
6/20/2017

MATCH LINE
SEE SHEET 8 OF 14





SECTION C-C
NTS

SCALE: 1"=80'

METRO SR-91/ARTERIAL CONCEPTUAL PLAN

ATLANTIC AVE AT SR-91 WB OFF-RAMP AND EB ON AND OFF RAMPS
ALT 2-7
CITY OF LONG BEACH **SHEET 9 OF 14**

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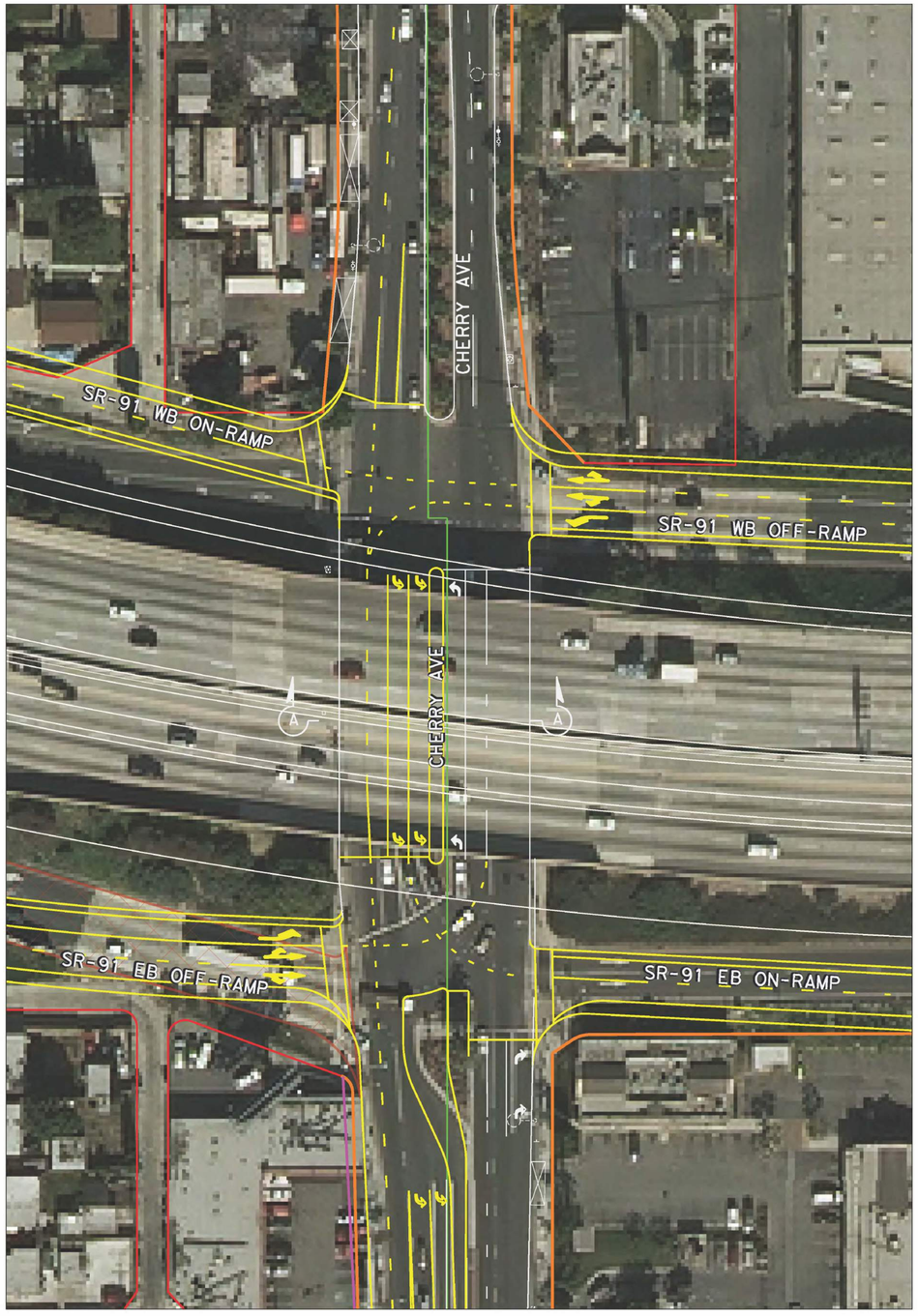
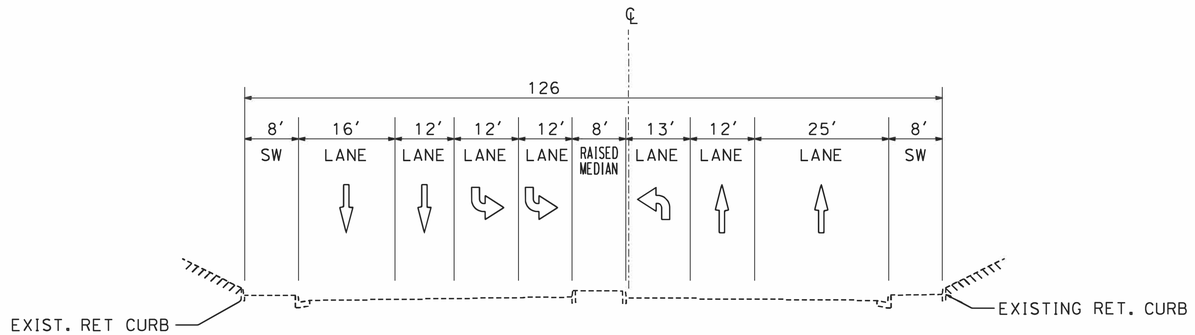
6/20/2017



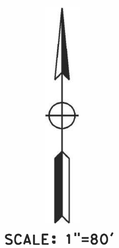
NOTES:

1. 91-EB OFF RAMP IS RE-ALIGNED.



SECTION A-A

NTS

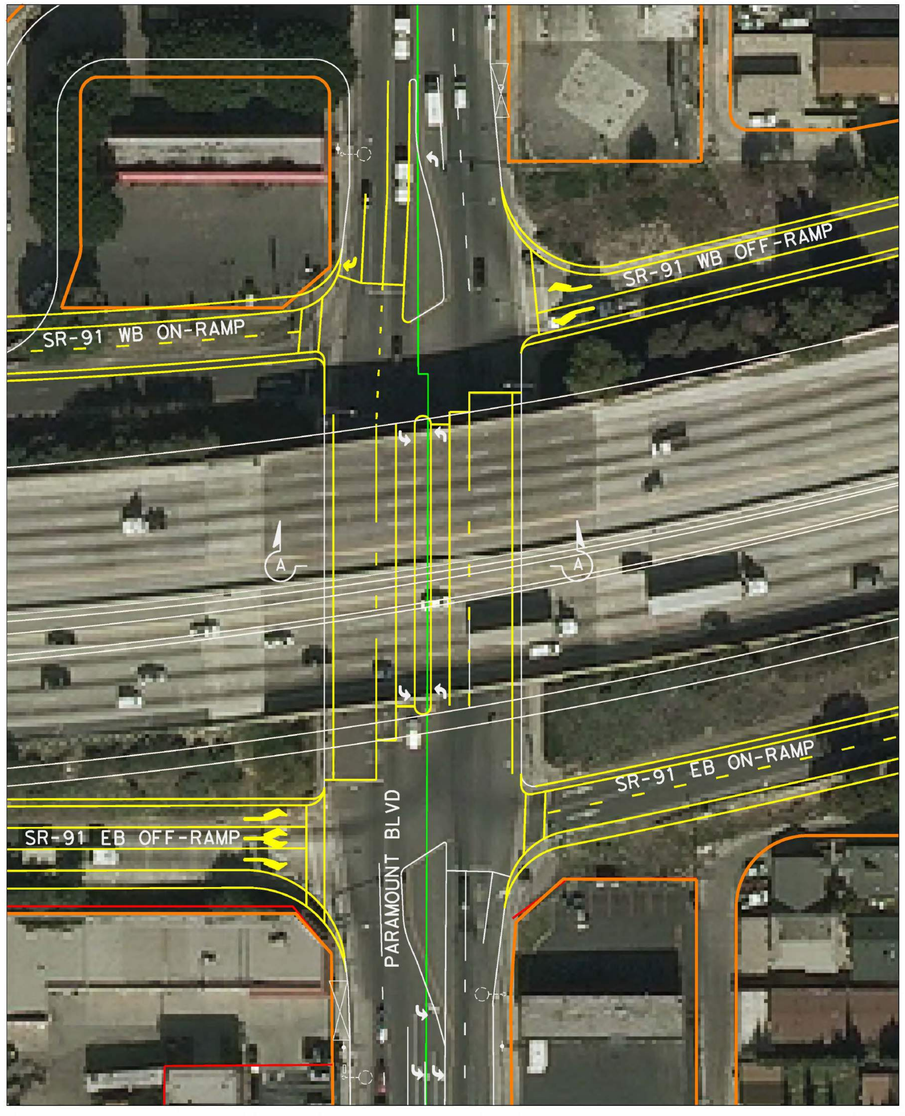


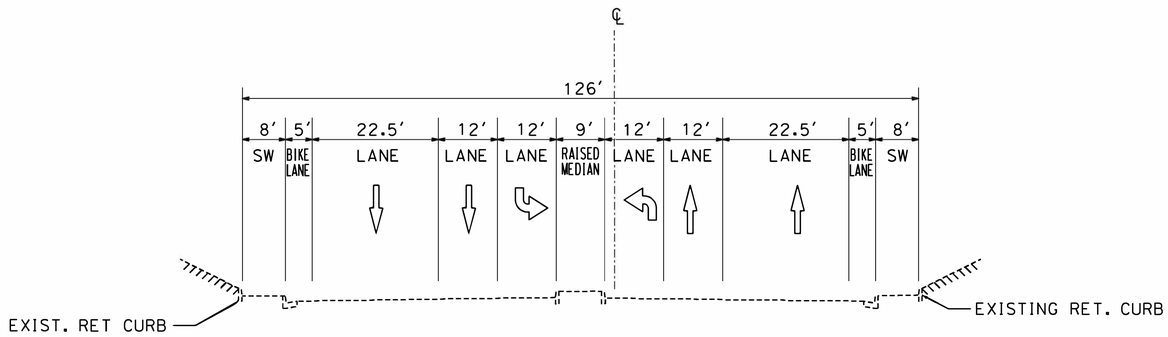
SCALE: 1"=80'

METRO SR-91/ARTERIAL CONCEPTUAL PLAN

CHERRY AVE AT SR-91 WB AND EB ON AND OFF RAMPS
ALT 2-7
CITY OF LONG BEACH SHEET 10 OF 14

P:\2015\2015.0084.0001.00 Metro SR-91-I-710 Interchange PSR-PDS\Project Design\CADD\Sheets\Arterials\Alt 2\10-Cherry_91 Alt2-7.dgn
6/20/2017





SECTION A-A

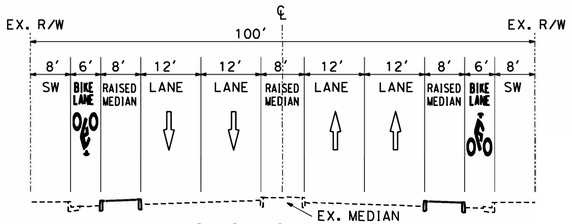
NTS

SCALE: 1"=80'

METRO SR-91/ARTERIAL CONCEPTUAL PLAN

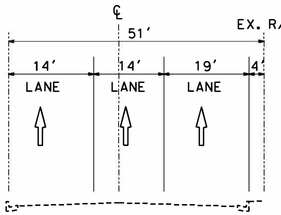
PARAMOUNT BLVD AT SR-91 WB AND EB ON AND OFF RAMPS
ALT 2-7
CITY OF LONG BEACH SHEET 11 OF 14

P:\2015\2015.0084.0001.00 Metro SR-91-I-710 Interchange PSR-PDS\Project Design\CADD\Sheets\Arterials\Alt 7\11-Paramount_91 Alt2-7.dgn
6/20/2017



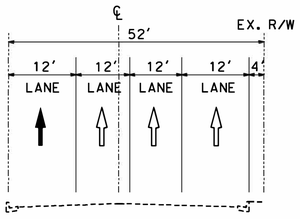
SECTION A-A

NTS



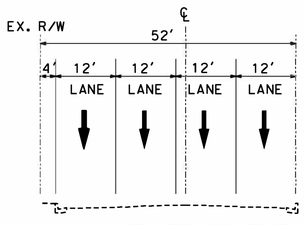
SECTION B-B

NTS



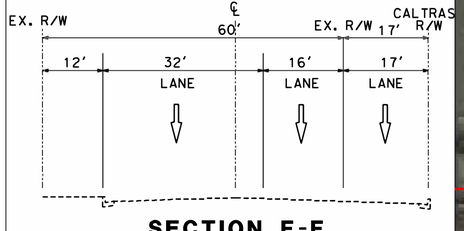
SECTION C-C

NTS



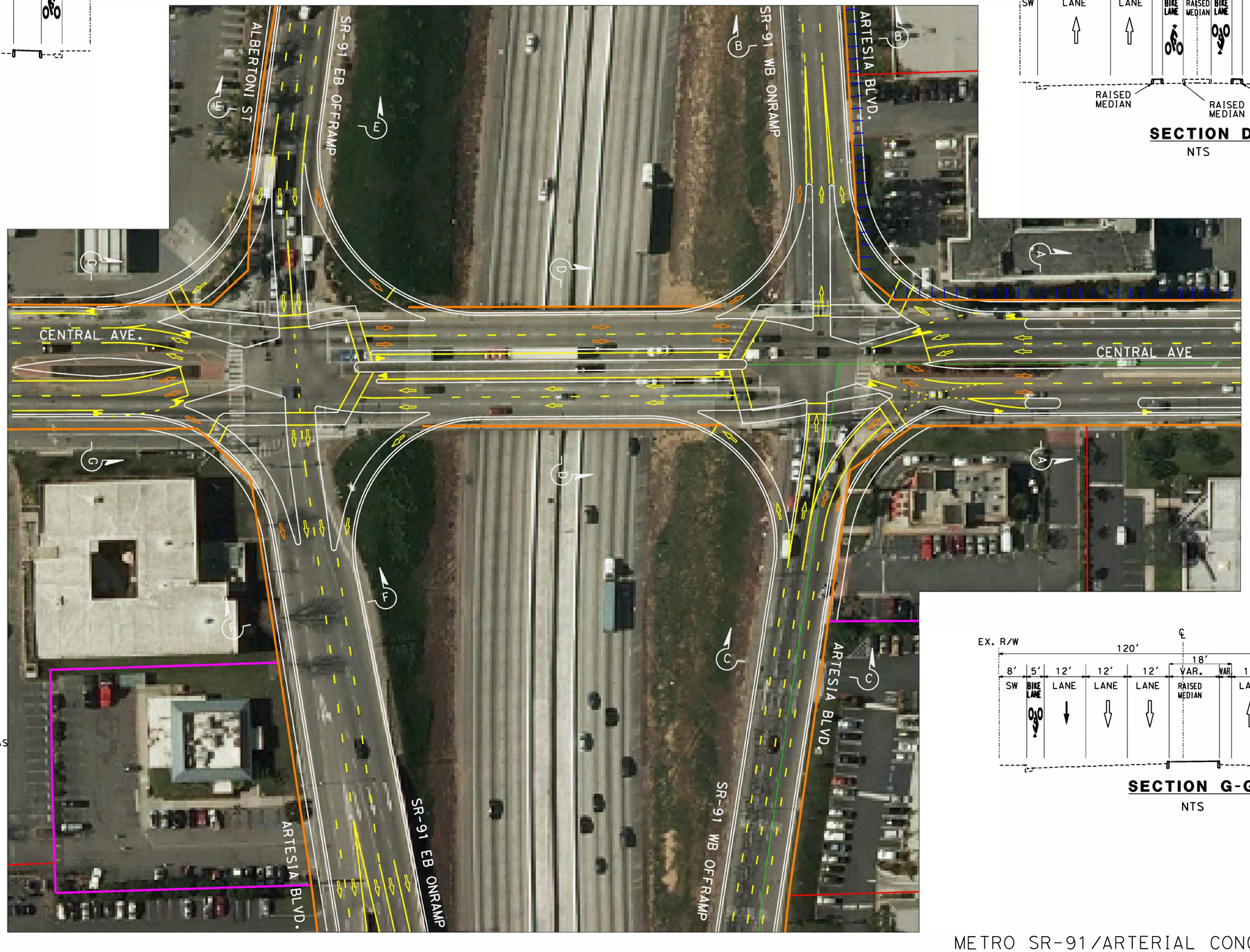
SECTION E-E

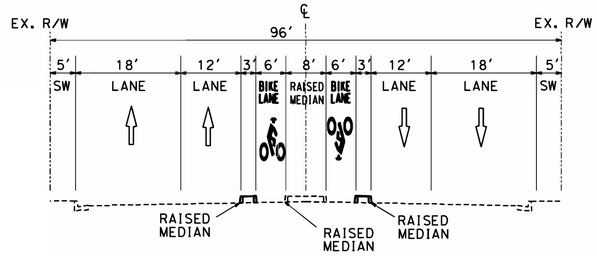
NTS



SECTION F-F

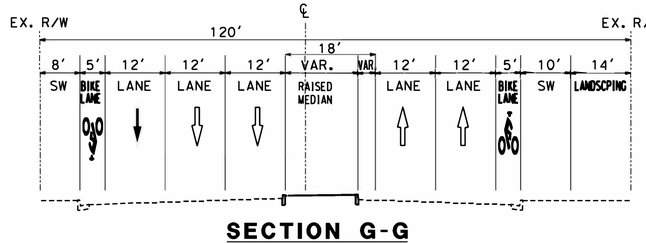
NTS





SECTION D-D

NTS



SECTION G-G

NTS

SCALE: 1"==80'

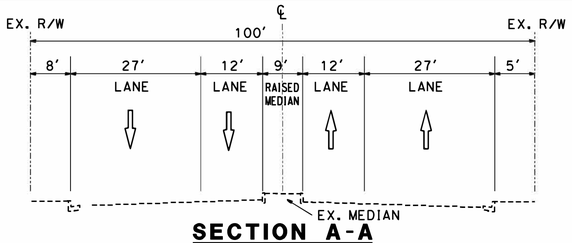
NOTES:

1. BIKE LANES ALONG CENTRAL AVE ARE PER CITY OF COMPTON MASTER PLAN.
2. TRAFFIC AT INTERSECTIONS SHOWN ARE TO BE COORDINATED FOR SYNC OPERATION.
3. DIVERGING DIAMOND ALLOWS FOR FREE FLOWING LEFT TURN MOVEMENTS ELIMINATING THE NEED FOR QUEUING STORAGE.

METRO SR-91/ARTERIAL CONCEPTUAL PLAN

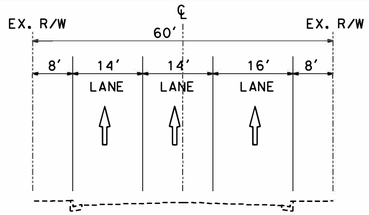
CENTRAL AVE AT EAST AND WEST ARTESIA BLVD'S
ALT 4
CITY OF COMPTON SHEET 12 OF 14

P:\2015\2015.0084.0001.00 Metro SR-91-I-710 Interchange PSR-PDS\Project Design\CADD\Sheets\Arterials\Alt 4\12 - Central Ave at East and West Artesia Blvd's (Divergent Diamond with Thru and Dual rights).dgn
6/20/2017



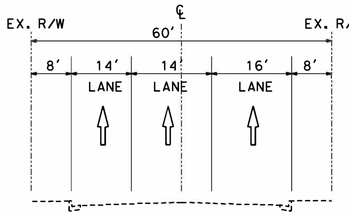
SECTION A-A

NTS



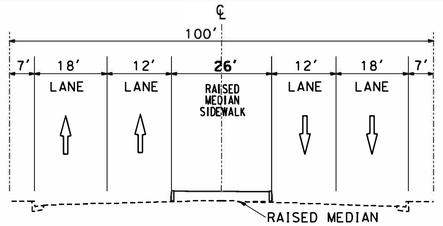
SECTION B-B

NTS



SECTION C-C

NTS

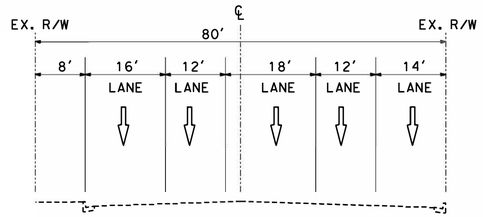


SECTION D-D

NTS

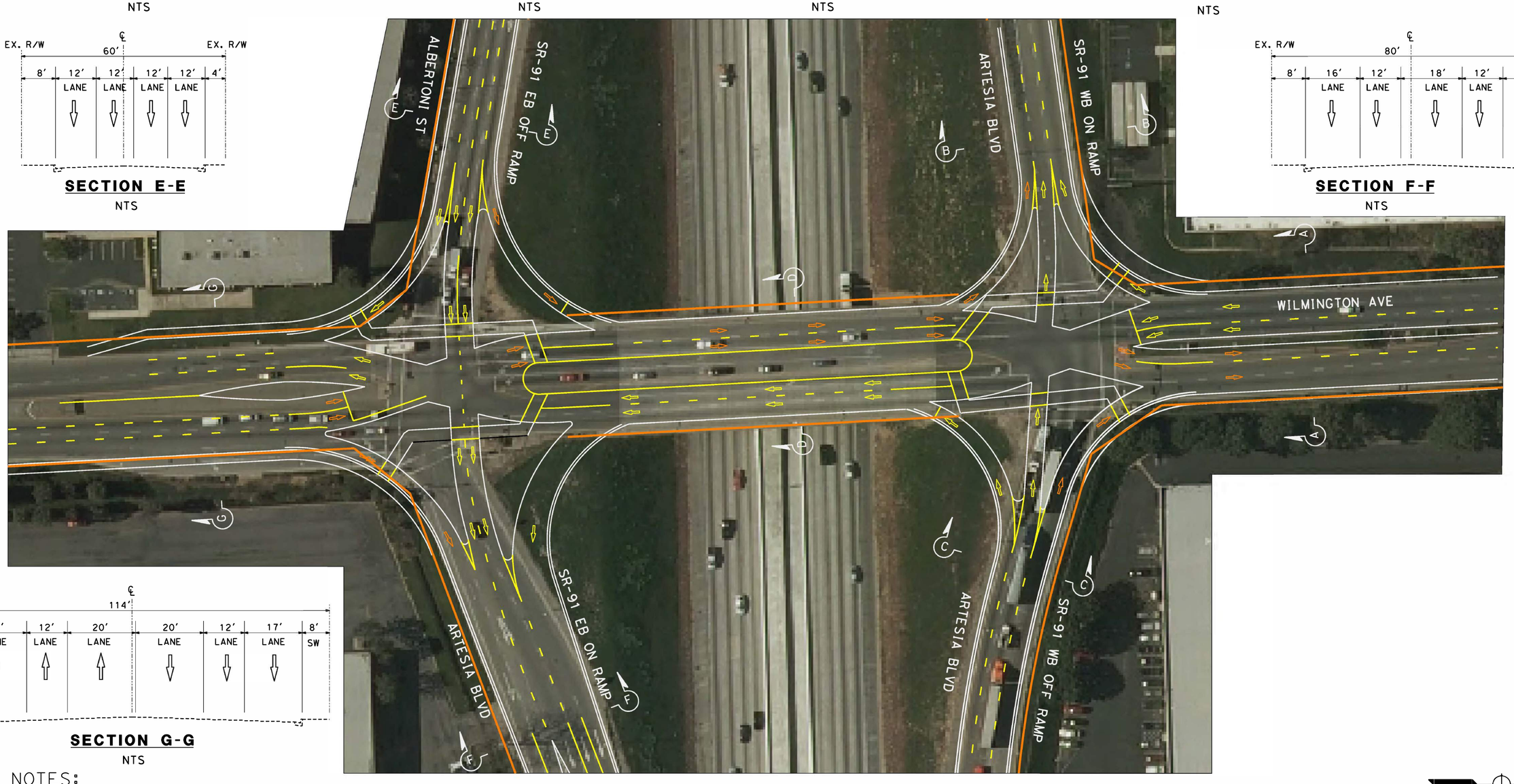
SECTION E-E

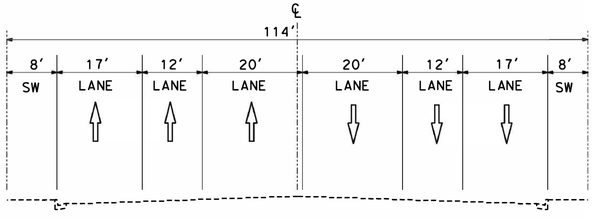
NTS



SECTION F-F

NTS





SECTION G-G

NTS

NOTES:

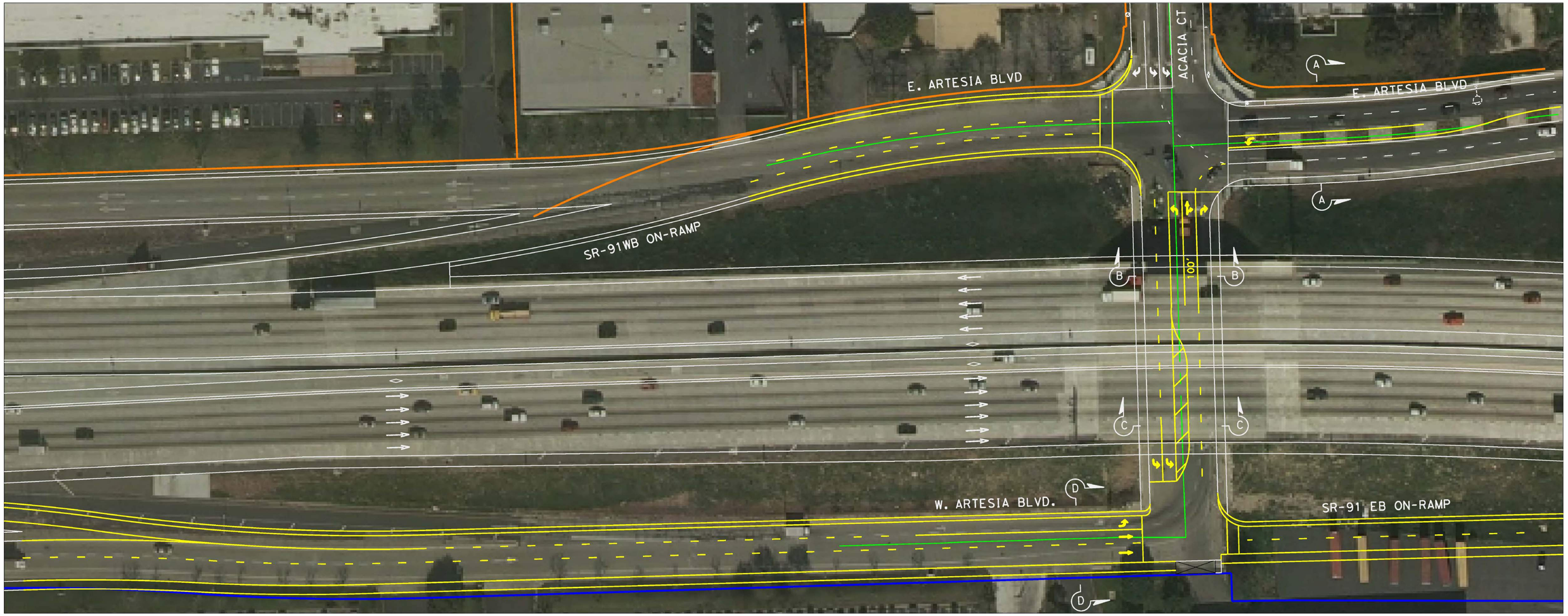
1. BIKE LANES ALONG CENTRAL AVE ARE PER CITY OF COMPTON MASTER PLAN.
2. TRAFFIC AT INTERSECTIONS SHOWN ARE TO BE COORDINATED FOR SYNC OPERERATION.
3. DIVERGENT DIAMOND ALLOWS FOR FREE FLOWING LEFT TURN MOVEMENTS ELIMINATING THE NEED FOR QUEUING STORAGE.

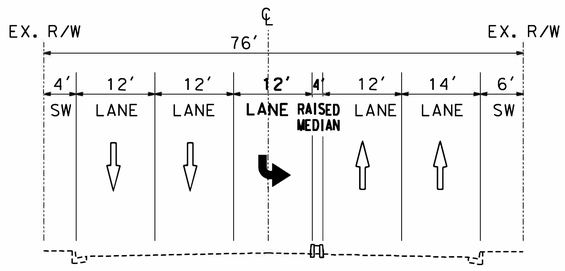
SCALE: 1"=80'

METRO SR-91/ARTERIAL CONCEPTUAL PLAN

WILMINGTON AVE AT EAST AND WEST ARTESIA BLVD'S
ALT 4-5C AND ALT 4-7
CITY OF COMPTON SHEET 13 OF 14

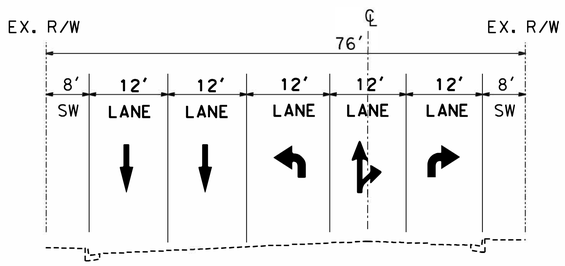
P:\2015\2015.0084.0001.00 Metro SR-91-I-710 Interchange PSR-PDS\Project Design\CADD\Sheets\Arterials\Alt 4\13-Wilmington_91 Proposed (Divergent Diamond with Thru).dgn
6/20/2017





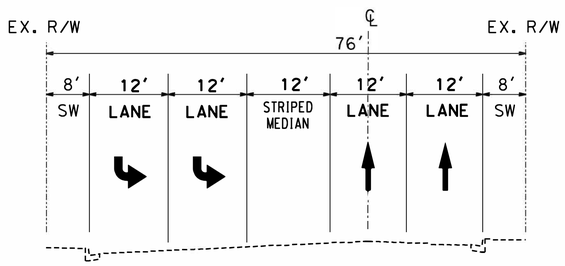
SECTION A-A

NTS



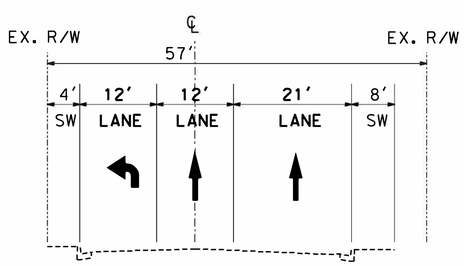
SECTION B-B

NTS



SECTION C-C

NTS



SECTION D-D

NTS

SCALE: 1"=40'

NOTES:

1. ACACIA AVE. - ADDED 2 SB-LT LANES.
2. EB ARTESIA BLVD. - ADDITION OF 1 EB-LT LANE AND 2 EB THRU LANES.
3. WB ARTESIA BLVD. - ADDITION OF 1 WB-LT LANE.
4. NEW TRAFFIC SIGNAL AT INTERSECTION OF ACACIA CT AND W ARTESIA BLVD.

METRO SR-91/ARTERIAL CONCEPTUAL PLAN

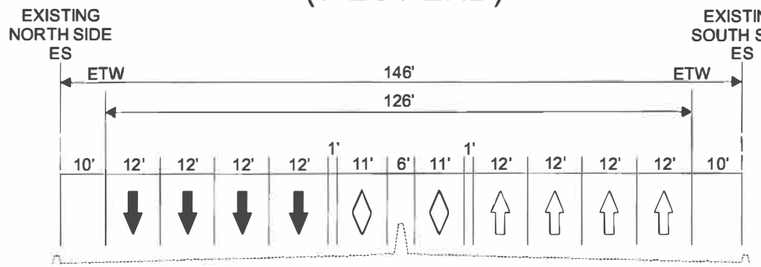
ACACIA CT AT EAST AND WEST ARTESIA BLVD'S
ALT 4-5C AND ALT 4-7
CITY OF COMPTON SHEET 14 OF 14

P:\2015\2015.0084.0001.00 Metro SR-91-I-710 Interchange PSR-PDS\Project Design\CADD\Sheets\Arterials\Alt 4\14-Acacia Court_91 Alt4.dgn
6/20/2017

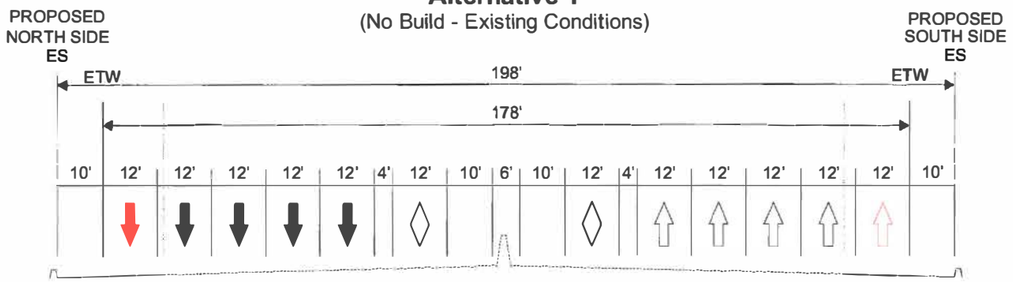
ATTACHMENT C

Typical Cross Sections

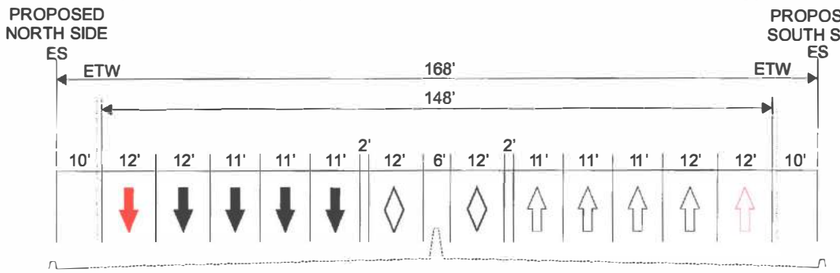
CENTRAL AVENUE (WEST END)



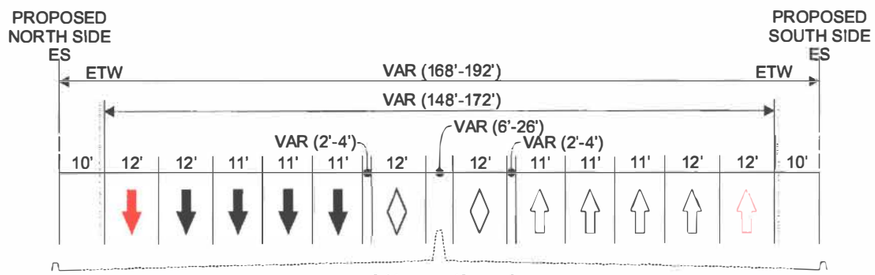
Alternative 1
(No Build - Existing Conditions)



Alternative 2
(Add 1 General Purpose Lane - Standard Lanes and Shoulders Only)

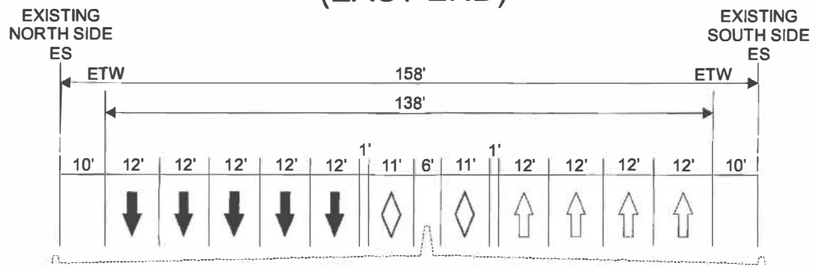


Alternative 3
(Add 1 General Purpose Lane - Non Standard)

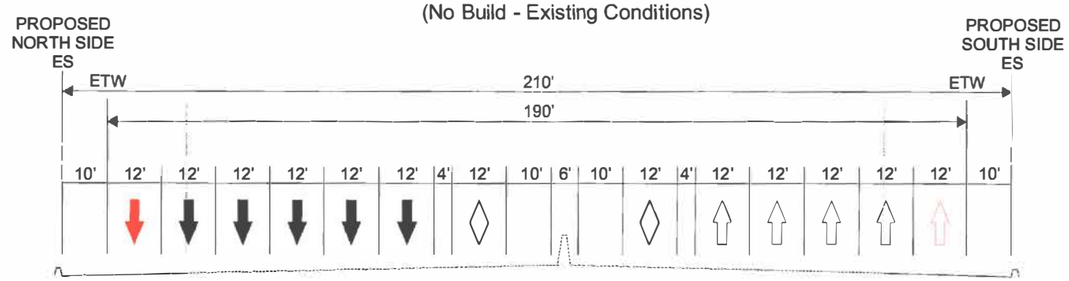


Alternative 4
(Add 1 Standard General Purpose Lane and CD within Existing Conditions - Hybrid)

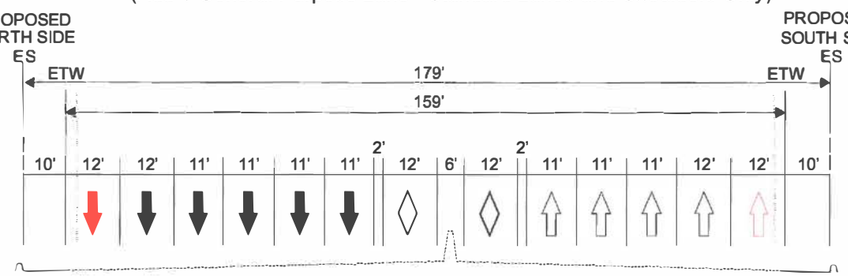
PARAMOUNT BOULEVARD (EAST END)



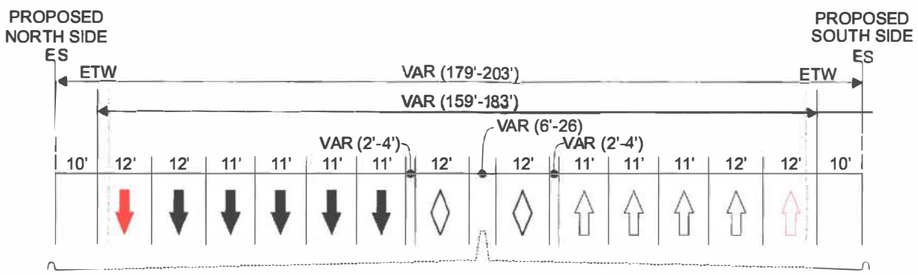
Alternative 1
(No Build - Existing Conditions)



Alternative 2
(Add 1 General Purpose Lane - Standard Lanes and Shoulders Only)



Alternative 3
(Add 1 General Purpose Lane - Non Standard)



Alternative 4
(Add 1 Standard General Purpose Lane and CD within Existing Conditions - Hybrid)

Alternative Cross Sections

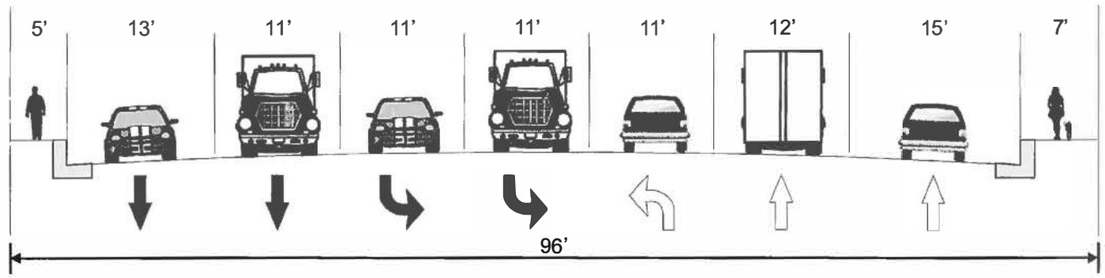
SR-91/I-710 Interchange PSR-PDS

JMD

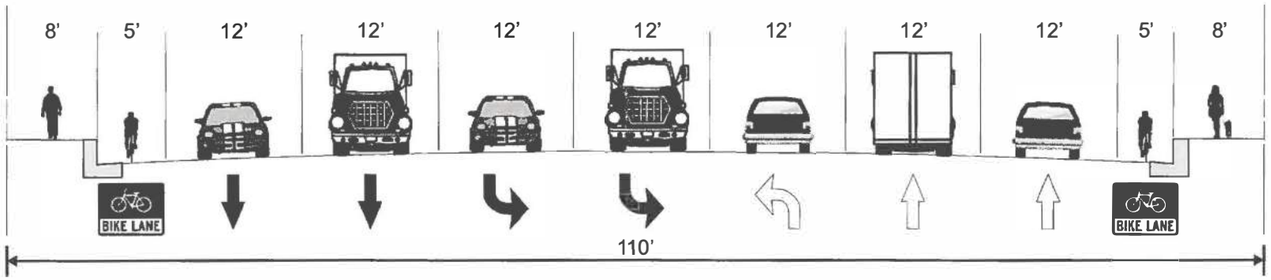
Central Avenue Overcrossing

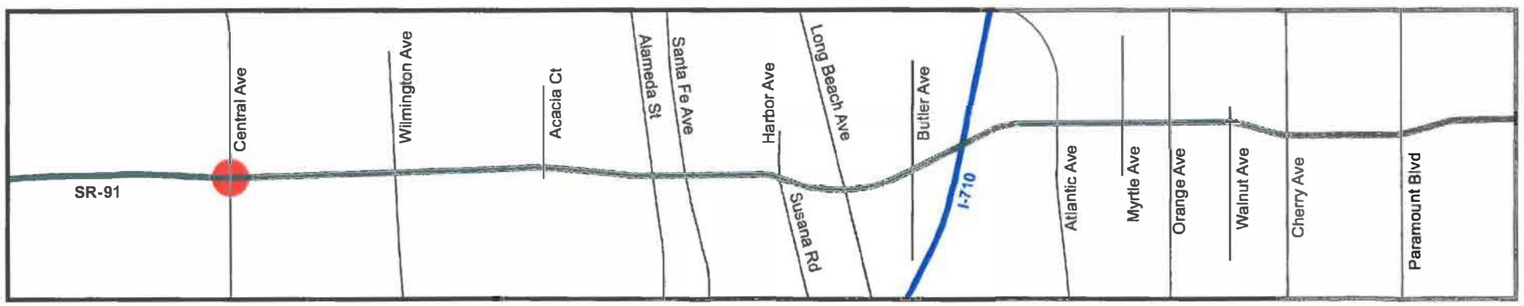
(Major Highway, Class II)
Alternatives 2 & 3

Existing



Proposed





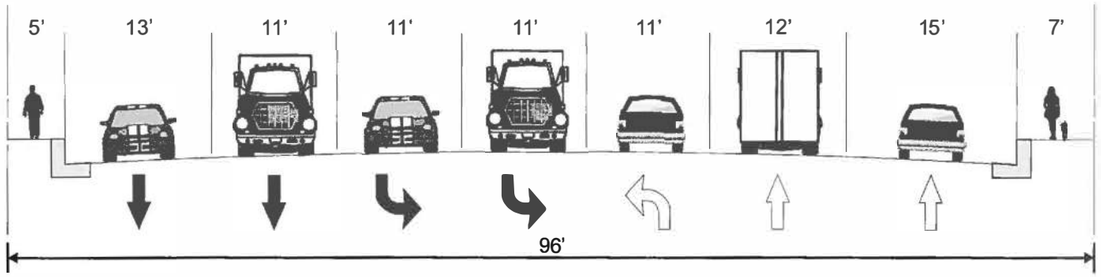
Alternative Cross Sections
SR-91/I-710 Interchange PSR-PDS

JMD

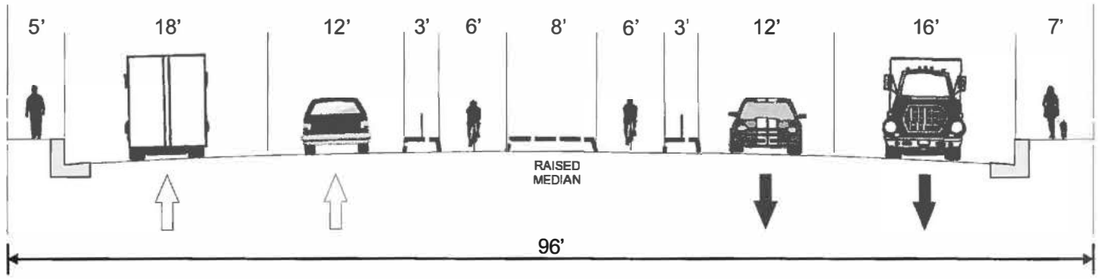
Central Avenue Overcrossing

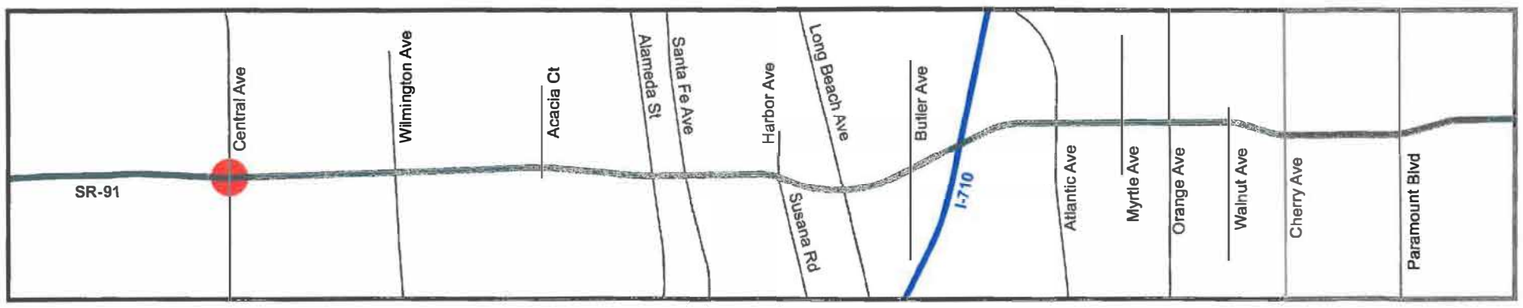
(Major Highway, Class IV)
Alternative 4

Existing



Proposed (Modified Diverging Diamond)

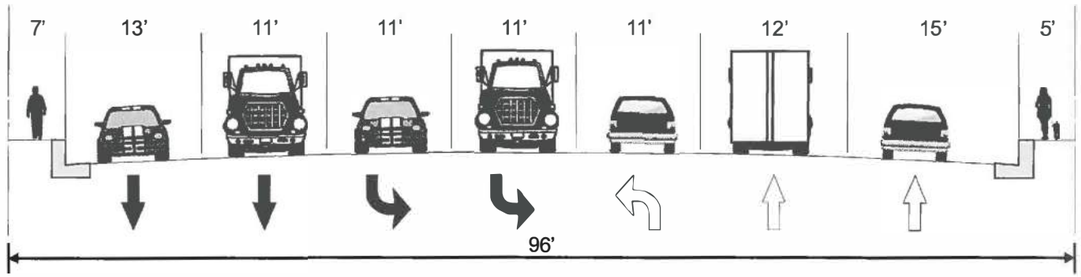




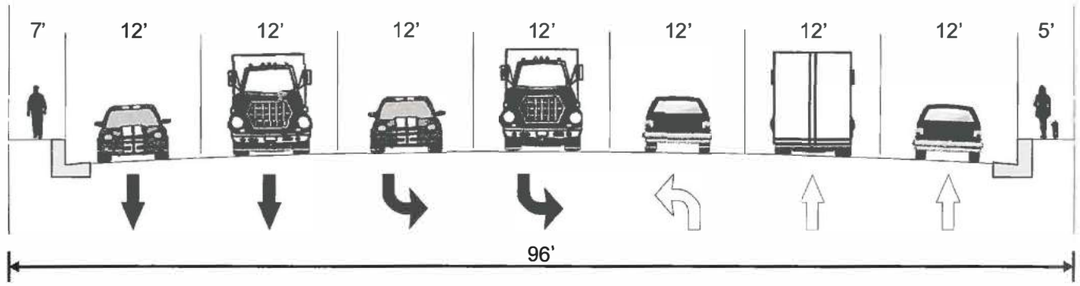
Wilmington Avenue Overcrossing

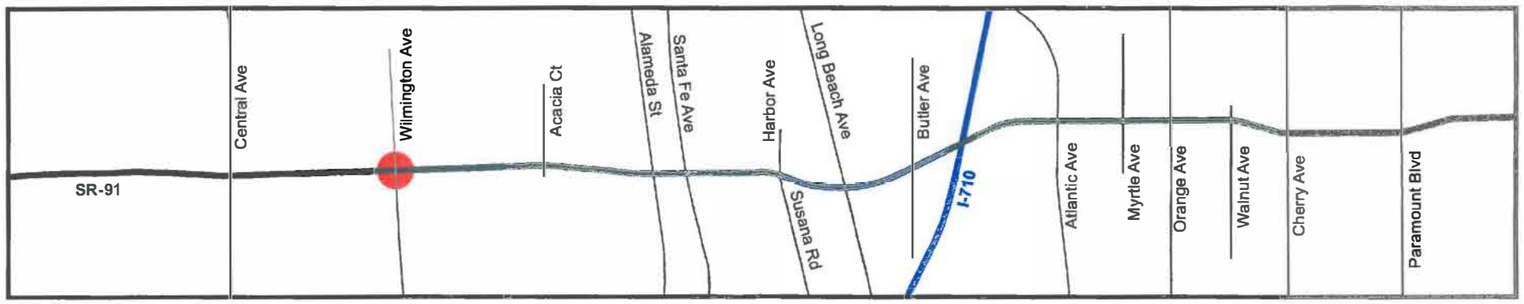
(Major Highway, No Bikeway)
Alternatives 2 & 3

Existing



Proposed

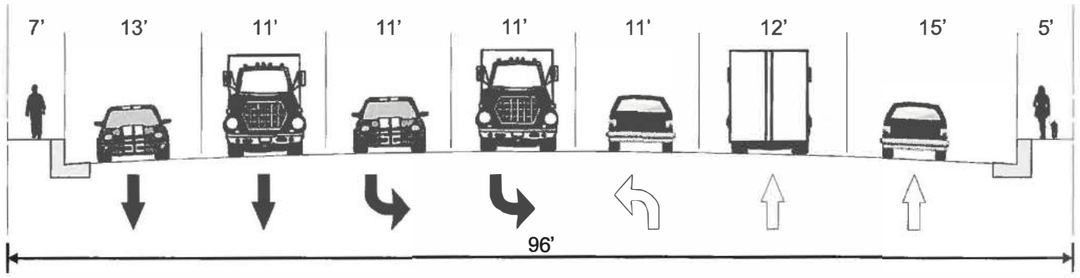




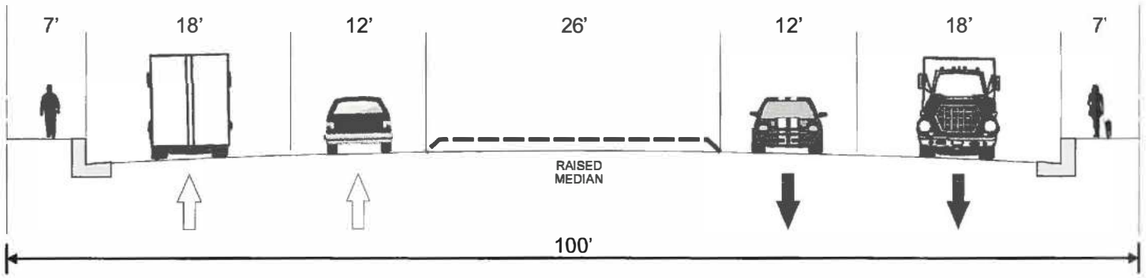
Wilmington Avenue Overcrossing

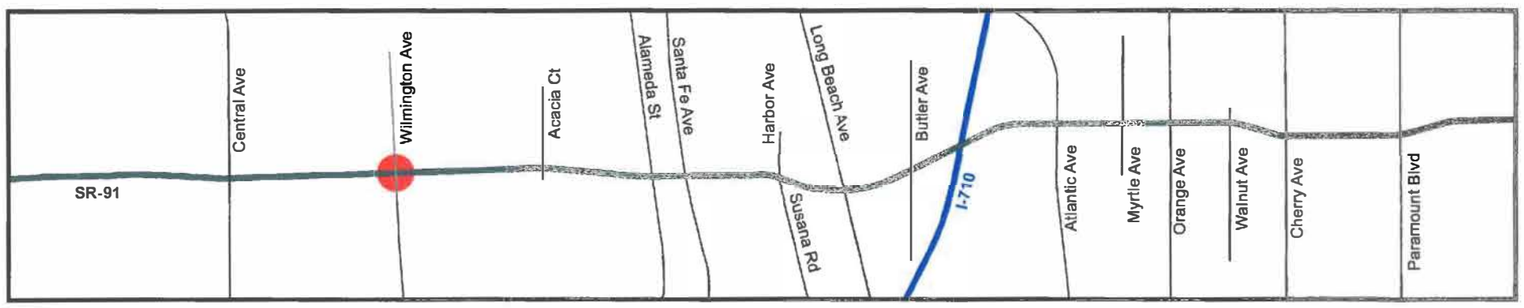
(Major Highway, No Bikeway)
Alternative 4

Existing



Proposed (Modified Diverging Diamond)

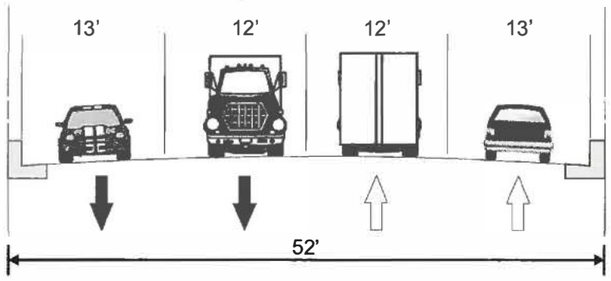


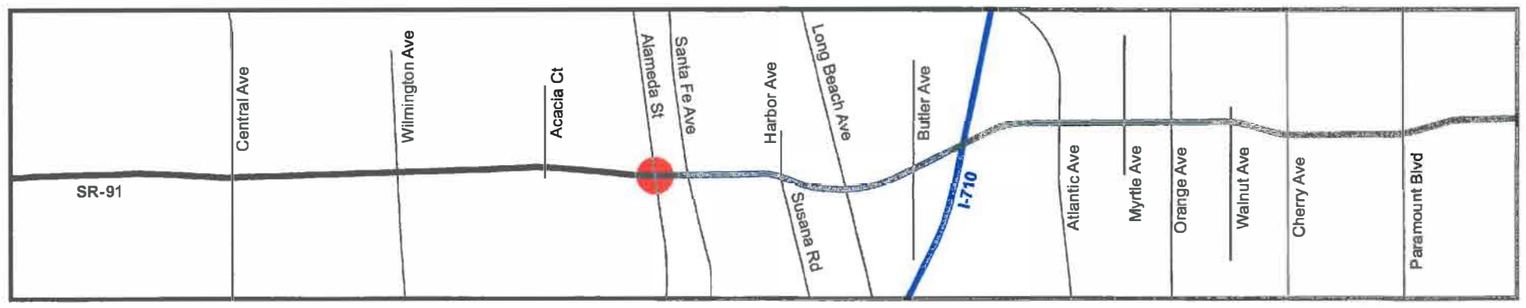


Alameda Street Undercrossing

(Major Highway, No Bikeway)

Existing

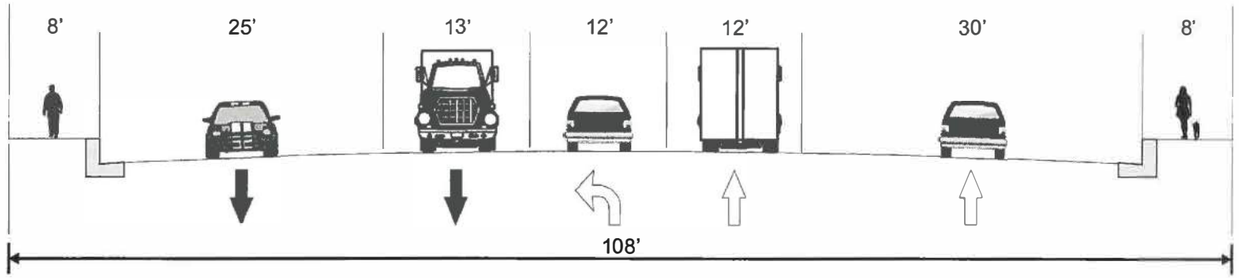




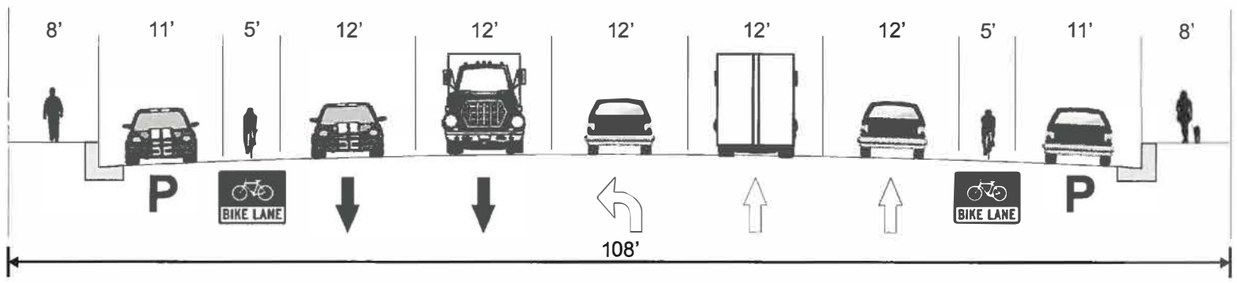
Santa Fe Avenue Undercrossing

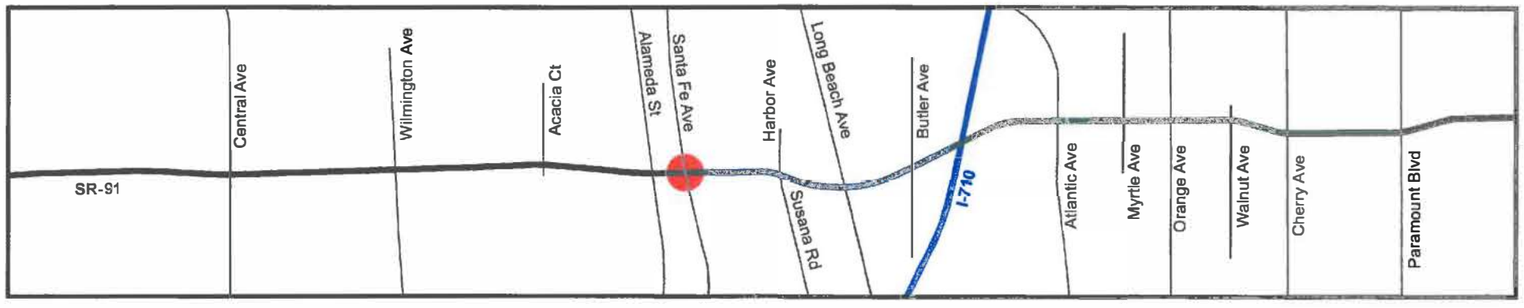
(Major Highway, Class II)

Existing



Proposed





Alternative Cross Sections

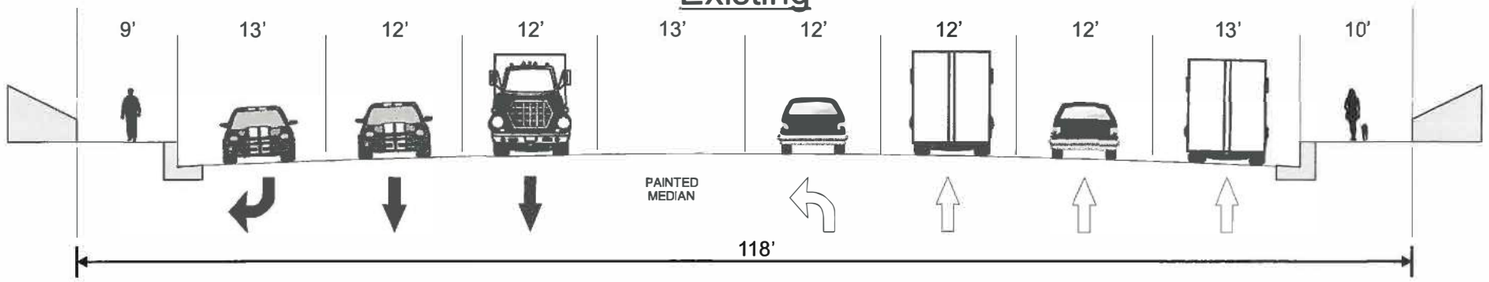
SR-91/I-710 Interchange PSR-PDS

JMD

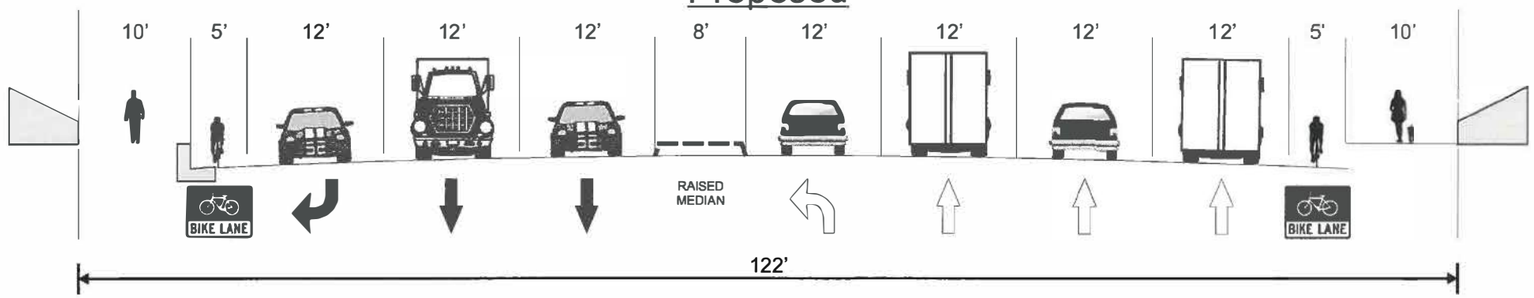
Long Beach Boulevard Undercrossing

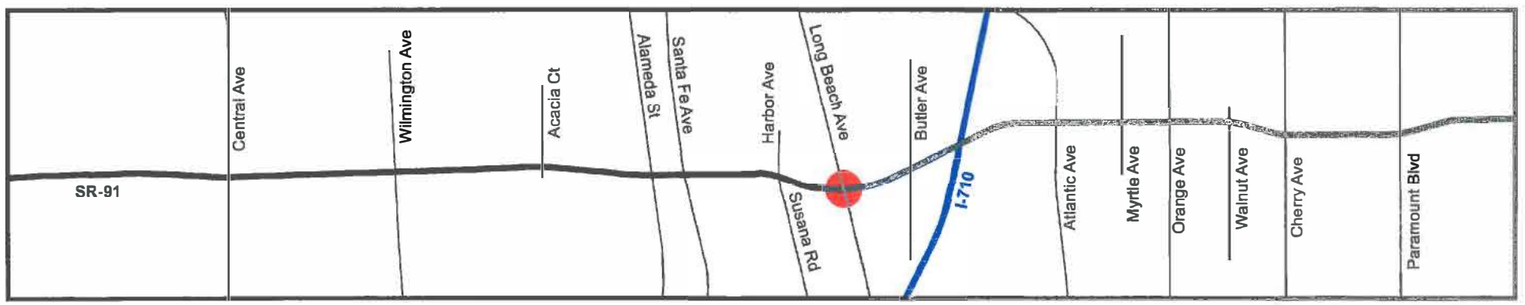
(Boulevard, Class II)

Existing



Proposed





Alternative Cross Sections

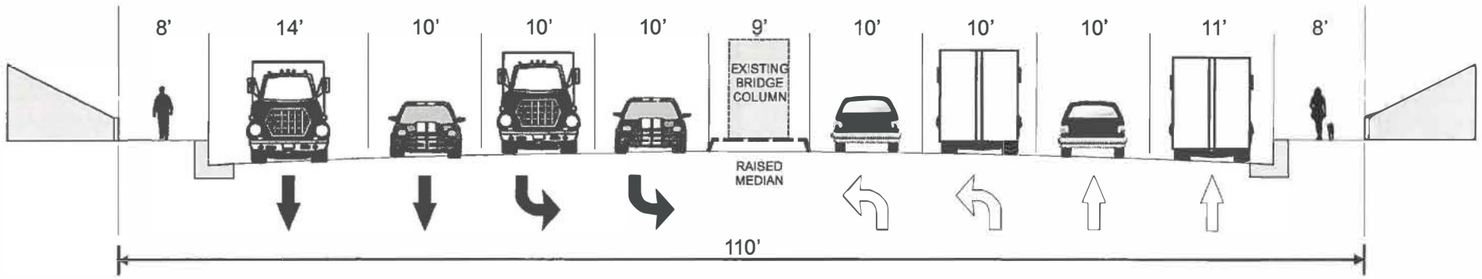
SR-91/I-710 Interchange PSR-PDS

JMD

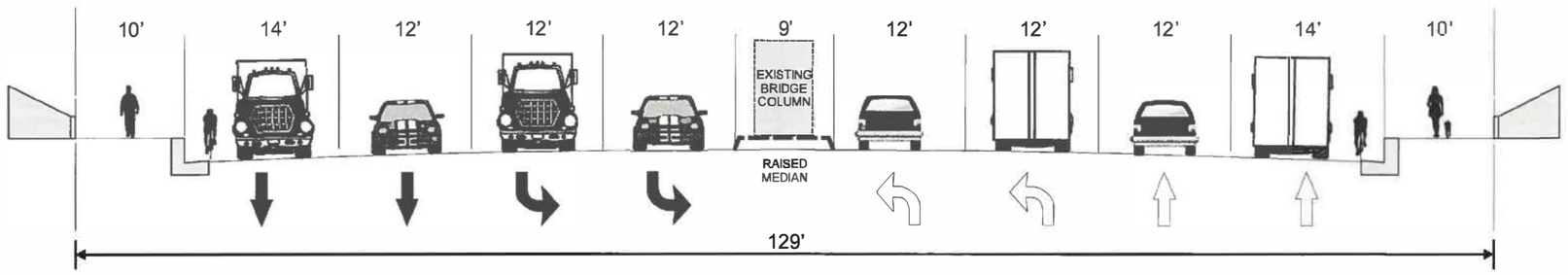
Atlantic Avenue Undercrossing

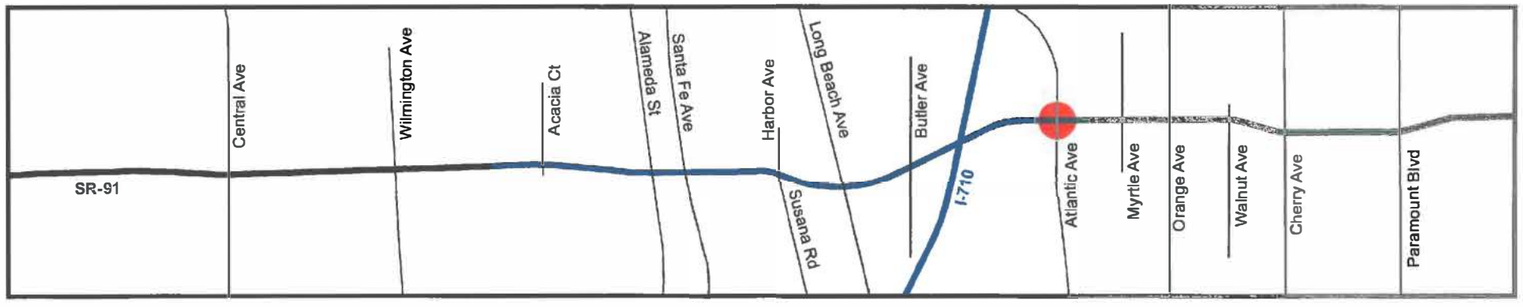
(Major Avenue, Class III)

Existing



Proposed





Alternative Cross Sections

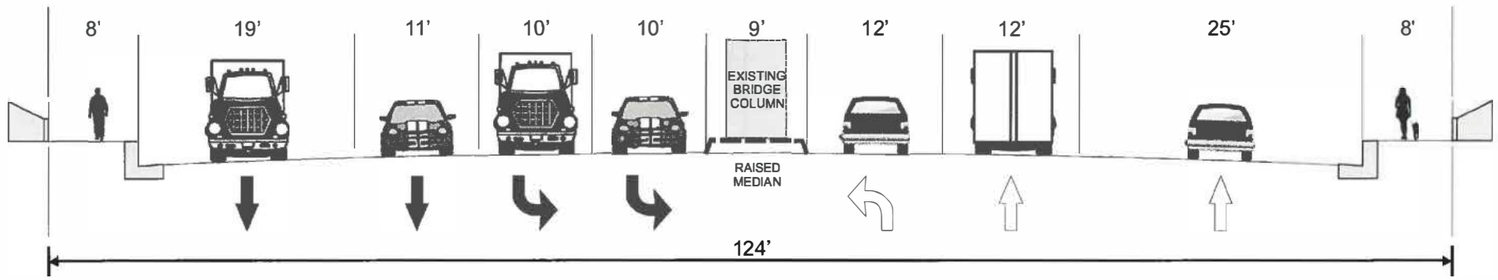
SR-91/I-710 Interchange PSR-PDS

JMD

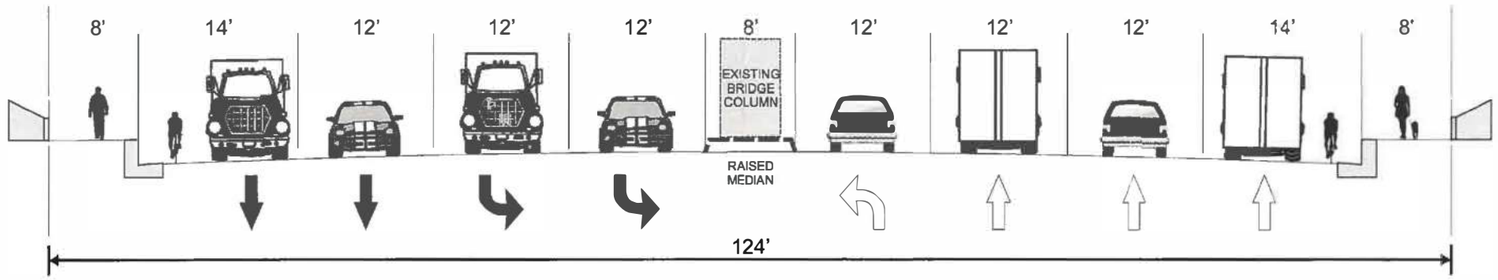
Cherry Avenue Undercrossing

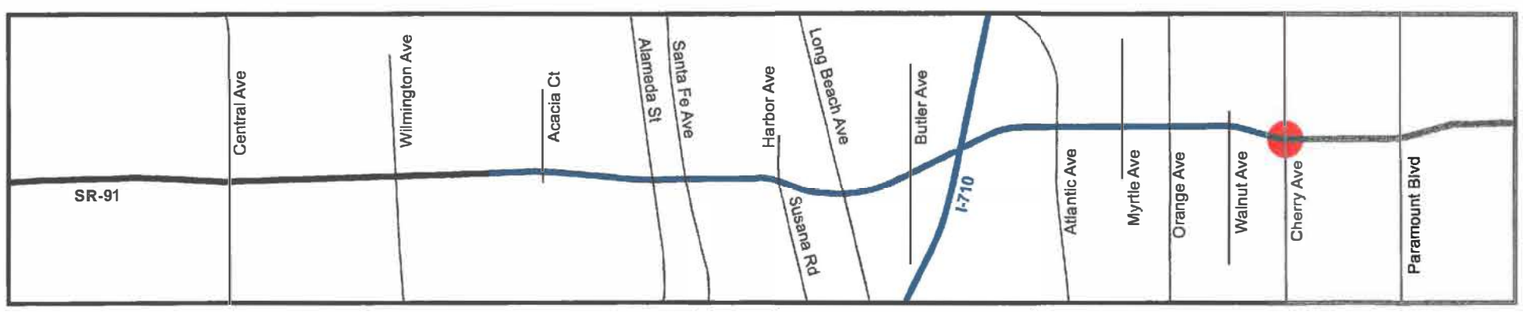
(Major Avenue, Class III)

Existing



Proposed

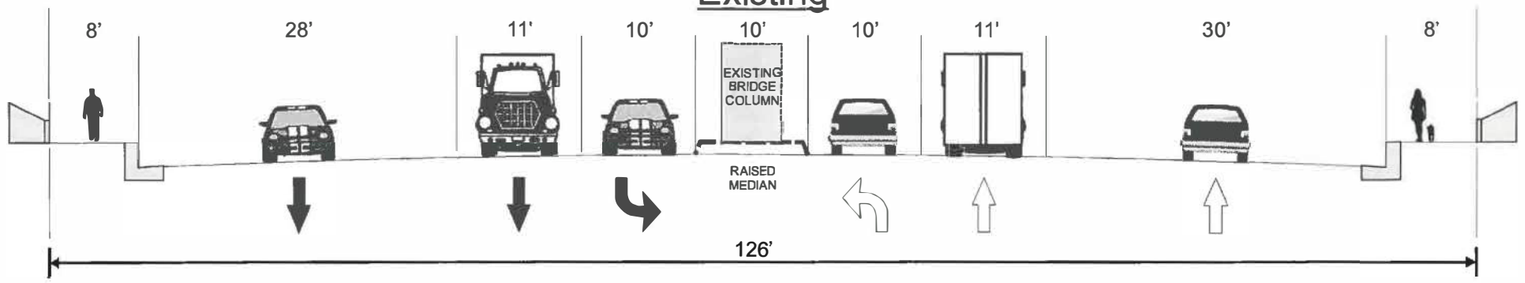




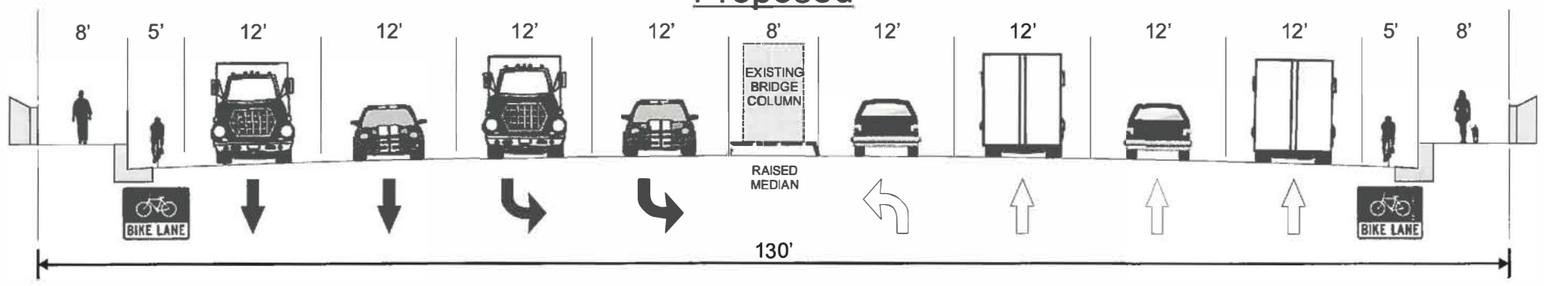
Paramount Boulevard Undercrossing

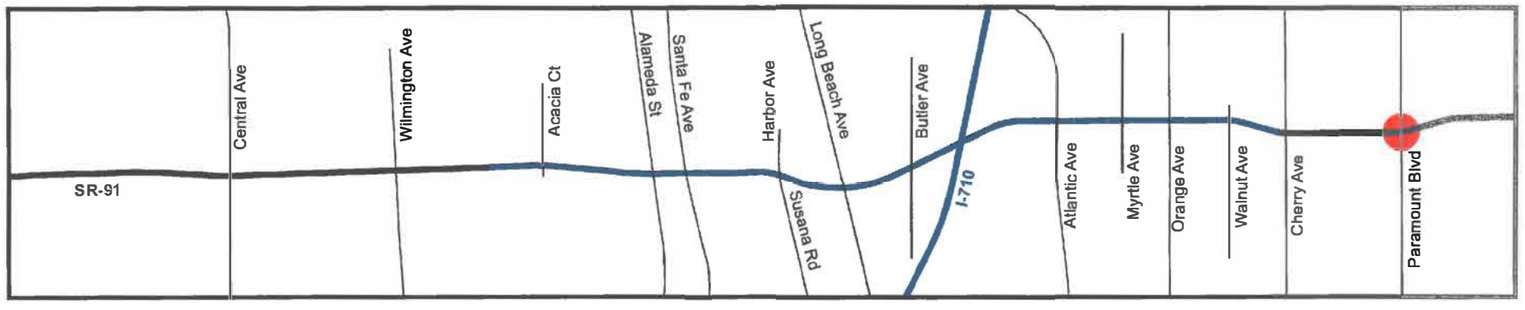
(Major Avenue, Class II)

Existing



Proposed





Alternative Cross Sections

SR-91/I-710 Interchange PSR-PDS

JMD

ATTACHMENT D

Cost Estimate

Project Study Report - Project Development Support
Capital Outlay Project Estimate

Dist-Co-Rte: 07-LA-91
PM: R8.2/R13.8
Program Code: 400.100
Project Number: 07-1600-0166
EA: 07-32810K
Month/Year: June 2017

Project Description:

Limits:

On SR-91 between Central Ave. (PM R8.2) and Paramount Blvd. (PM R13.8)

Proposed Improvement (Scope)

Freeway Widening

SR-91 Alternative 2 / I-710 Alternative 5C

Summary of Project Cost Estimate

	Cost (Low)	Cost (High)
TOTAL ROADWAY ITEMS	$ 484,838,168	$ 619,515,437
TOTAL STRUCTURE ITEMS	$ 405,864,000	$ 518,604,000
TOTAL ENVIRONMENTAL MITIGATION ITEMS	$ 25,241,908	$ 35,475,772
SUBTOTAL CONSTRUCTION COSTS	$ 915,945,000	$ 1,173,596,000
TOTAL RIGHT-OF-WAY ITEMS	$ 76,575,130	$ 97,846,000
STATE SUPPORT COST	$ 45,000,000	$ 45,000,000
TOTAL STATE CAPITAL OUTLAY COST	$ 1,037,521,000	$ 1,316,442,000
TOTAL PROJECT CAPITAL OUTLAY COST	**$ 1,038,000,000**	**$ 1,317,000,000**

I. ROADWAY ITEMS

	Cost (Low)	Cost (High)
Mainline Cost:	$ 405,067,313	$ 517,586,010
Ramp Cost:	$ 51,858,665	$ 66,263,849
Storm Water BMP's	$ 27,912,191	$ 35,665,577
Total Roadway Items:	$ 484,838,168	$ 619,515,437

Explanation:

An average cost per mile approach was used for this project. The method calculated mainline and ramps separately. Reconfigured ramp lane mile costs were estimated to be half the mainline lane mile cost. The mainline costs also include the cost of any realignment of ramps. Items that are included in the Average Cost per Lane Mile are: one lane, shoulder, excavation, new pavement structure, drainage, speciality items (e.g., soundwalls, barriers, etc.), realignment of ramps and contingencies. These costs also include a contingency of 25%.

	Cost (Low)	Cost (High)
TOTAL ROADWAY ITEMS	$ 484,838,168	$ 619,515,437

II. STRUCTURE ITEMS

Total Number of Structures	32
Total Structure Cost	$ 518,604,000

Explanation:

An average cost per square foot of $450 was used for structures. These costs are determined by evaluating various components of the structure, such as: construction method, structure, abutment and retaining wall types. These costs also include a contingency of 25%.

	Cost (Low)	Cost (High)
TOTAL STRUCTURE ITEMS	$405,864,000.00	$518,604,000.00

III. ENVIRONMENTAL ITEMS

The environmental mitigation is calculated out to be 5% of the total calculated roadway cost. These costs also include contingencies.

	Cost (Low)	Cost (High)
TOTAL ENVIRONMENTAL MIGITATION ITEMS	$ 25,241,908	$ 35,475,772

IV. RIGHT-OF-WAY ITEMS

	Cost (Low)	Cost (High)
A. Acquisition, including excess lands, damages to remainder (s) and Goodwill	$ 69,486,055	$ 88,787,737
B. Utility Relocation (State share)	$ 7,089,075	$ 9,058,263

Anticipated Date of Right-of-Way Certification (Date to which values are escalated): July 12, 2022

Explanation:
Include in the Total Right-of-Way items cost estimate are project costs within Caltrans R/W. The costs per square foot of Residential, Commercial, Agency, and TCE costs were calculated on a case-by-case basis. The utility conflicts were also estimated based on layout drawings and current utility relocations. These costs also include a contingency of 25%.

	Cost (Low)	Cost (High)
TOTAL RIGHT-OF-WAY ITEMS	$ 76,575,130	$ 97,846,000

Project Study Report - Project Development Support
Capital Outlay Project Estimate

Dist-Co-Rte: 07-LA-91
PM: R8.2/R13.8
Program Code: 400.100
Project Number: 07-1600-0166
EA: 07-32810K
Month/Year: June 2017

Project Description:

Limits:

On SR-91 between Central Ave. (PM R8.2) and Paramount Blvd. (PM R13.8)

Proposed Improvement (Scope)

Freeway Widening

SR-91 Alternative 3 / I-710 Alternative 5C

Summary of Project Cost Estimate

		Cost (Low)		Cost (High)
TOTAL ROADWAY ITEMS	$	198,648,576	$	253,828,736
TOTAL STRUCTURE ITEMS	$	319,502,813	$	408,253,594
TOTAL ENVIRONMENTAL MITIGATION ITEMS	$	1,200,000	$	4,500,000
SUBTOTAL CONSTRUCTION COSTS	$	519,352,000	$	666,583,000
TOTAL RIGHT-OF-WAY ITEMS	$	18,296,572	$	23,378,953
STATE SUPPORT COST	$	45,000,000	$	45,000,000
TOTAL STATE CAPITAL OUTLAY COST	$	582,649,000	$	734,962,000
TOTAL PROJECT CAPITAL OUTLAY COST	**$**	**583,000,000**	**$**	**735,000,000**

I. ROADWAY ITEMS

	Cost (Low)	Cost (High)
Mainline Cost:	$ 128,032,781	$ 163,597,443
Ramp Cost:	$ 42,703,604	$ 54,565,717
Storm Water BMP's	$ 27,912,191	$ 35,665,577
Total Roadway Items:	$ 198,648,576	$ 253,828,736

Explanation:

An average cost per mile approach was used for this project. The method calculated mainline and ramps separately. Reconfigured ramp lane mile costs were estimated to be half the mainline lane mile cost. The mainline costs also include the cost of any realignment of ramps. Items that are included in the Average Cost per Lane Mile are: one lane, shoulder, excavation, new pavement structure, drainage, speciality items (e.g., soundwalls, barriers, etc.), realignment of ramps and contingencies. These costs also include a contingency of 25%.

SR-91 Alternative 3 / I-710 Alternative 5C	Cost (Low)	Cost (High)
TOTAL ROADWAY ITEMS	$ 198,648,576	$ 253,828,736

II. STRUCTURE ITEMS

Total Number of Structures	32
Total Structure Cost	$ 408,253,594

Explanation:

An average cost per square foot of $450 was used for structures. These costs are determined by evaluating various components of the structure, such as: construction method, structure, abutment and retaining wall types. These costs also include a contingency of 25%.

	Cost (Low)	Cost (High)
TOTAL STRUCTURE ITEMS	$319,502,812.50	$408,253,593.75

III. ENVIRONMENTAL ITEMS

The environmental mitigation is calculated out to be 5% of the total calculated roadway cost. These costs also include contingencies and cost for Hazardous Materials.

	Cost (Low)	Cost (High)
TOTAL ENVIRONMENTAL MITIGATION ITEMS	$ 1,200,000	$ 4,500,000

IV. RIGHT-OF-WAY ITEMS

	Cost (Low)	Cost (High)
A. Acquisition, including excess lands, damages to remainder (s) and Goodwill	$11,207,497	$ 14,320,690
B. Utility Relocation (State share)	$ 7,089,075	$ 9,058,263

SR-91 Alternative 3 / I-710 Alternative 5C

Anticipated Date of Right-of-Way Certification (Date to which values are escalated): July 12, 2022

Explanation:
Include in the Total Right-of-Way items cost estimate are project costs within Caltrans R/W. The costs per square foot of Residential, Commercial, Agency, and TCE costs were calculated on a case-by-case basis. The utility conflicts were also estimated based on layout drawings and current utility relocations. These costs also include contingency of 25%.

	Cost (Low)	Cost (High)
TOTAL RIGHT-OF-WAY ITEMS	$ 18,296,572	$ 23,378,953

Project Study Report - Project Development Support
Capital Outlay Project Estimate

Dist-Co-Rte: 07-LA-91
PM: R8.2/R13.8
Program Code: 400.100
Project Number: 07-1600-0166
EA: 07-32810K
Month/Year: June 2017

Project Description:

Limits:

On SR-91 between Central Ave. (PM R8.2) and Paramount Blvd. (PM R13.8)

Proposed Improvement (Scope)

Freeway Widening

SR-91 Alternative 4 / I-710 Alternative 5C

Summary of Project Cost Estimate

	Cost (Low)	Cost (High)
TOTAL ROADWAY ITEMS	$ 276,034,045	$ 352,710,168
TOTAL STRUCTURE ITEMS	$ 323,325,000	$ 413,137,500
TOTAL ENVIRONMENTAL MITIGATION ITEMS	$ 15,001,702	$ 22,135,508
SUBTOTAL CONSTRUCTION COSTS	$ 614,361,000	$ 787,984,000
TOTAL RIGHT-OF-WAY ITEMS	$ 81,356,218	$ 103,955,168
STATE SUPPORT COST	$ 45,000,000	$ 45,000,000
TOTAL STATE CAPITAL OUTLAY COST	$ 740,718,000	$ 936,940,000
TOTAL PROJECT CAPITAL OUTLAY COST	**$ 741,000,000**	**$ 937,000,000**

I. ROADWAY ITEMS

	Cost (Low)	Cost (High)
Mainline Cost:	$ 205,418,250	$ 262,478,875
Ramp Cost:	$ 42,703,604	$ 54,565,717
Storm Water BMP's	$ 27,912,191	$ 35,665,577
Total Roadway Items:	$ 276,034,045	$ 352,710,168

Explanation:

An average cost per mile approach was used for this project. The method calculated mainline and ramps separately. Reconfigured ramp lane mile costs were estimated to be half the mainline lane mile cost. The mainline costs also include the cost of any realignment of ramps. Items that are included in the Average Cost per Lane Mile are: one lane, shoulder, excavation, new pavement structure, drainage, speciality items (e.g., soundwalls, barriers, etc.), realignment of ramps and contingencies. These costs also include a contingency of 25%.

	Cost (Low)	Cost (High)
TOTAL ROADWAY ITEMS	$ 276,034,045	$ 352,710,168

II. STRUCTURE ITEMS

Total Number of Structures	32
Total Structure Cost	$ 413,137,500

Explanation:

An average cost per square foot of $450 was used for structures. These costs are determined by evaluating various components of the structure, such as: construction method, structure, abutment and retaining wall types. These costs also include a contingency of 25%.

	Cost (Low)	Cost (High)
TOTAL STRUCTURE ITEMS	$323,325,000.00	$413,137,500.00

III. ENVIRONMENTAL ITEMS

The environmental mitigation is calculated out to be 5% of the total calculated roadway cost. These costs also include contingencies.

	Cost (Low)	Cost (High)
TOTAL ENVIRONMENTAL MITIGATION ITEMS	$ 15,001,702	$ 22,135,508

IV. RIGHT-OF-WAY ITEMS

	Cost (Low)	Cost (High)
A. Acquisition, including excess lands, damages to remainder (s) and Goodwill	$ 74,267,143	$ 94,896,905
B. Utility Relocation (State share)	$ 7,089,075	$ 9,058,263

Anticipated Date of Right-of-Way Certification (Date to which values are escalated): July 12, 2022

Explanation:
Include in the Total Right-of-Way items cost estimate are project costs within Caltrans R/W. The costs per square foot of Residential, Commercial, Agency, and TCE costs were calculated on a case-by-case basis. The utility conflicts were also estimated based on layout drawings and current utility relocations. These costs also include contingency of 25%

	Cost (Low)	Cost (High)
TOTAL RIGHT-OF-WAY ITEMS	$ 81,356,218	$ 103,955,168

Project Study Report - Project Development Support
Capital Outlay Project Estimate

Dist-Co-Rte: 07-LA-91
PM: R8.2/R13.8
Program Code: 400.100
Project Number: 07-1600-0166
EA: 07-32810K
Month/Year: June 2017

Project Description:

Limits:
On SR-91 between Central Ave. (PM R8.2) and Paramount Blvd. (PM R13.8)

Proposed Improvement (Scope)
Freeway Widening

SR-91 Alternative 2 / I-710 Alternative 7

Summary of Project Cost Estimate

	Cost (Low)	Cost (High)
TOTAL ROADWAY ITEI32	$ 437,720,155	$ 559,309,087
TOTAL STRUCTURE ITEMS	$ 445,697,903	$ 569,502,876
TOTAL ENVIRONMENTAL MITIGATION ITEMS	$ 22,886,008	$ 32,465,454
SUBTOTAL CONSTRUCTION COSTS	$ 906,305,000	$ 1,161,278,000
TOTAL RIGHT-OF-WAY ITEMS	$ 146,100,697	$ 186,684,224
STATE SUPPORT COST	$ 45,000,000	$ 45,000,000
TOTAL STATE CAPITAL OUTLAY COST	$ 1,097,406,000	$ 1,392,963,000
TOTAL PROJECT CAPITAL OUTLAY COST	**$ 1,098,000,000**	**$ 1,393,000,000**

I. ROADWAY ITEMS

	Cost (Low)	Cost (High)
Mainline Cost:	$ 351,977,156	$ 449,748,589
Ramp Cost:	$ 57,830,808	$ 73,894,922
Storm Water BMP's	$ 27,912,191	$ 35,665,577
Total Roadway Items:	$ 437,720,155	$ 559,309,087

Explanation:

An average cost per mile approach was used for this project. The method calculated mainline and ramps separately. Reconfigured ramp lane mile costs were estimated to be half the mainline lane mile cost. The mainline costs also include the cost of any realignment of ramps. Items that are included in the Average Cost per Lane Mile are: one lane, shoulder, excavation, new pavement structure, drainage, specialty items (e.g., soundwalls, barriers, etc.), realignment of ramps and contingencies. These costs also include a contingency of 25%.

	Cost (Low)	Cost (High)
TOTAL ROADWAY ITEMS	$ 437,720,155	$ 559,309,087

II. STRUCTURE ITEMS

Total Number of Structures	32
Total Structure Cost	$ 569,502,876

Explanation:

An average cost per square foot of $450 was used for structures. These costs are determined by evaluating various components of the structure, such as: construction method, structure, abutment and retaining wall types. These costs also include a contingency of 25%.

	Cost (Low)	Cost (High)
TOTAL STRUCTURE ITEMS	$ 445,697,903	$ 569,502,876

III. ENVIRONMENTAL ITEMS

The environmental mitigation is calculated out to be 5% of the total calculated roadway cost. These costs also include contingencies.

	Cost (Low)	Cost (High)
TOTAL ENVIRONMENTAL MITIGATION ITEMS	$ 22,886,008	$ 32,465,454

IV. RIGHT-OF-WAY ITEMS

	Cost (Low)	Cost (High)
A. Acquisition, including excess lands, damages to remainder (s) and Goodwill	$ 139,011,622	$ 177,625,962
B. Utility Relocation (State share)	$ 7,089,075	$ 9,058,263

Anticipated Date of Right-of-Way Certification (Date to which values are escalated): July 12, 2022

Explanation:

Include in the Total Right-of-Way items cost estimate are project costs within Caltrans R/W. The costs per square foot of Residential, Commercial, Agency, and TCE costs were calculated on a case-by-case basis. The utility conflicts were also estimated based on layout drawings and current utility relocations. These costs also include contingencies.

	Cost (Low)	Cost (High)
TOTAL RIGHT-OF-WAY ITEMS	$ 146,100,697	$ 186,684,224

Project Study Report - Project Development Support
Capital Outlay Project Estimate

Dist-Co-Rte: 07-LA-91
PM: R8.2/R13.8
Program Code: 400.100
Project Number: 07-1600-0166
EA: 07-32810K
Month/Year: June 2017

Project Description:

Limits:

On SR-91 between Central Ave. (PM R8.2) and Paramount Blvd. (PM R13.8)

Proposed Improvement (Scope)

Freeway Widening

SR-91 Alternative 3 / I-710 Alternative 7

Summary of Project Cost Estimate

		Cost (Low)		Cost (High)
TOTAL ROADWAY ITEMS	$	210,999,699	$	269,610,726
TOTAL STRUCTURE ITEMS	$	307,376,438	$	392,758,781
TOTAL ENVIRONMENTAL MITIGATION ITEMS	$	11,749,985	$	17,980,536
SUBTOTAL CONSTRUCTION COSTS	$	530,127,000	$	680,351,000
TOTAL RIGHT-OF-WAY ITEMS	$	52,973,001	$	67,687,724
STATE SUPPORT COST	$	45,000,000	$	45,000,000
TOTAL STATE CAPITAL OUTLAY COST	$	628,101,000	$	793,039,000
TOTAL PROJECT CAPITAL OUTLAY COST	**$**	**629,000,000**	**$**	**794,000,000**

I. ROADWAY ITEMS

	Cost (Low)	Cost (High)
Mainline Cost:	$ 131,096,475	$ 167,512,163
Ramp Cost:	$ 51,991,033	$ 66,432,987
Storm Water BMP's	$ 27,912,191	$ 35,665,577
Total Roadway Items:	$ 210,999,699	$ 269,610,726

Explanation:

An average cost per mile approach was used for this project. The method calculated mainline and ramps separately. Reconfigured ramp lane mile costs were estimated to be half the mainline lane mile cost. The mainline costs also include the cost of any realignment of ramps. Items that are included in the Average Cost per Lane Mile are: one lane, shoulder, excavation, new pavement structure, drainage, speciality items (e.g., soundwalls, barriers, etc.), realignment of ramps and contingencies. These costs also include a contingency of 25%.

SR-91 Alternative 3 / I-710 Alternative 7	Cost (Low)	Cost (High)
TOTAL ROADWAY ITEMS	$ 210,999,699	$ 269,610,726

II. STRUCTURE ITEMS

Total Number of Structures	32
Total Structure Cost	$ 392,758,781

Explanation:

An average cost per square foot of $450 was used for structures. These costs are determined by evaluating various components of the structure, such as: construction method, structure, abutment and retaining wall types. These costs also include a contingency of 25%.

	Cost (Low)	Cost (High)
TOTAL STRUCTURE ITEMS	$307,376,437.50	$392,758,781.25

III. ENVIRONMENTAL ITEMS

The environmental mitigation is calculated out to be 5% of the total calculated roadway cost. These costs also include contingencies.

	Cost (Low)	Cost (High)
TOTAL ENVIRONMENTAL MIGITATION ITEMS	$ 11,749,985	$ 17,980,536

IV. RIGHT-OF-WAY ITEMS

	Cost (Low)	Cost (High)
A. Acquisition, including excess lands, damages to remainder (s) and Goodwill	$ 45,883,926	$ 58,629,461
B. Utility Relocation (State share)	$ 7,089,075	$ 9,058,263

SR-91 Alternative 3 / I-710 Alternative 7

Anticipated Date of Right-of-Way Certification (Date to which values are escalated): July 12, 2022

Explanation:

Include in the Total Right-of-Way items cost estimate are project costs within Caltrans R/W. The costs per square foot of Residential, Commercial, Agency, and TCE costs were calculated on a case-by-case basis. The utility conflicts were also estimated based on layout drawings and current utility relocations. These costs also include contingency of 25%.

	Cost (Low)	Cost (High)
TOTAL RIGHT-OF-WAY ITEMS	$ 52,973,001	$ 67,687,724

Project Study Report - Project Development Support
Capital Outlay Project Estimate

PM: R8.2/R13.8
Program Code: 400.100
Project Number: 07-1600-0166
EA: 07-32810K
Month/Year: June 2017

Project Description:

Limits:

On SR-91 between Central Ave. (PM R8.2) and Paramount Blvd. (PM R13.8)

Proposed Improvement (Scope)

Freeway Widening

SR-91 Alternative 4 / I-710 Alternative 7

Summary of Project Cost Estimate

	Cost (Low)	Cost (High)
TOTAL ROADWAY ITEMS	$ 212,516,066	$ 271,548,306
TOTAL STRUCTURE ITEMS	$ 490,930,328	$ 627,299,863
TOTAL ENVIRONMENTAL MITIGATION ITEMS	$ 11,825,803	$ 18,077,415
SUBTOTAL CONSTRUCTION COSTS	$ 715,273,000	$ 916,926,000
TOTAL RIGHT-OF-WAY ITEMS	$ 116,114,524	$ 148,368,559
STATE SUPPORT COST	$ 45,000,000	$ 45,000,000
TOTAL STATE CAPITAL OUTLAY COST	$ 876,388,000	$ 1,110,295,000
TOTAL PROJECT CAPITAL OUTLAY COST	**$ 877,000,000**	**$ 1,111,000,000**

I. ROADWAY ITEMS

	Cost (Low)	Cost (High)
Mainline Cost:	$ 129,278,719	$ 165,189,474
Ramp Cost:	$ 55,325,156	$ 70,693,255
Storm Water BMP's	$ 27,912,191	$ 35,665,577
Total Roadway Items:	$ 212,516,066	$ 271,548,306

Explanation:

An average cost per mile approach was used for this project. The method calculated mainline and ramps separately. Reconfigured ramp lane mile costs were estimated to be half the mainline lane mile cost. The mainline costs also include the cost of any realignment of ramps. Items that are included in the Average Cost per Lane Mile are: one lane, shoulder, excavation, new pavement structure, drainage, speciality items (e.g., soundwalls, barriers, etc.), realignment of ramps and contingencies. These costs also include a contingency of 25%.

	Cost (Low)	Cost (High)
TOTAL ROADWAY ITEMS	$ 212,516,066	$ 271,548,306

II. STRUCTURE ITEMS

Total Number of Structures	32
Total Structure Cost	$ 627,299,863

Explanation:

An average cost per square foot of $450 was used for structures. These costs are determined by evaluating various components of the structure, such as: construction method, structure, abutment and retaining wall types. These costs also include a contingency of 25%.

	Cost (Low)	Cost (High)
TOTAL STRUCTURE ITEMS	$ 490,930,328	$ 627,299,863

III. ENVIRONMENTAL ITEMS

The environmental mitigation is calculated out to be 5% of the total calculated roadway cost. These costs also include contingencies.

	Cost (Low)	Cost (High)
TOTAL ENVIRONMENTAL MITIGATION ITEMS	$ 11,825,803	$ 18,077,415

IV. RIGHT-OF-WAY ITEMS

	Cost (Low)	Cost (High)
A. Acquisition, including excess lands, damages to remainder (s) and Goodwill	$ 109,025,449	$ 139,310,296
B. Utility Relocation (State share)	$ 7,089,075	$ 9,058,263

Anticipated Date of Right-of-Way Certification (Date to which values are escalated): July 12, 2022

Explanation:
Include in the Total Right-of-Way items cost estimate are project costs within Caltrans R/W. The costs per square foot of Residential, Commercial, Agency, and TCE costs were calculated on a case-by-case basis. The utility conflicts were also estimated based on layout drawings and current utility relocations. These costs also include contingency of 25%.

	Cost (Low)	Cost (High)
TOTAL RIGHT-OF-WAY ITEMS	$ 116,114,524	$ 148,368,559

ATTACHMENT E

Preliminary Environmental Analysis Report (PEAR)

PRELIMINARY ENVIRONMENTAL ANALYSIS REPORT

1. Project Information

District	County	Route	PM	EA
07	Los Angeles	SR-91 and I-710	R8.2-R13.8	EA 07-32810K
Project Title: SR-91 Central Avenue to Paramount Boulevard Improvements				
Project Manager Lucy Olmos, LA Metro			Phone # 213-922-7099	
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2. Project Description

The Los Angeles County Metropolitan Transportation Authority (Metro), in cooperation with the Gateway Cities Council of Governments (GCCOG), the California Department of Transportation (Caltrans) District 7, the County of Los Angeles, City of Carson, City of Compton and the City of Long Beach, is proposing to construct improvements along the SR-91 freeway corridor. The project area includes the following cities within Los Angeles County; namely, Carson, Compton and Long Beach.

The project improvement limits include SR-91 from west of the Central Avenue interchange (PM R8.2) to east of the Paramount Boulevard interchange (PM R13.8). Project alternatives include three build alternatives and one no build alternative. In general, the proposed build alternatives add one mixed flow lane in each direction on SR-91 within the project limits. Due to mainline widening and multimodal integration, including provisions for pedestrians (e.g., ADA, sidewalks, etc.), bikeways and truckways, local streets and system interchanges are affected, and therefore, the build alternatives include modifications to local and system interchanges.

Purpose and Need

SR-91 and I-710 are major facilities within Los Angeles County and carry significant international, interstate, interregional and intraregional travel. This area is projected to experience substantial growth for goods movement. Reconstruction of the system interchange and widening of the mainline facilities will address existing deficiencies and accommodate projected growth.

The purpose of the project is to optimize accessibility and safety of freeway mainlines. The proposed improvements at the SR-91 and I-710 interchange will accomplish the following objectives:

- Enhance operations by improving trip safety and traffic circulation.
- Minimize noise and capacity impacts to the local community.

Deficiencies found within the SR-91/I-710 project limits are summarized below:

- Insufficient merging and weaving distances.
- Lack of appropriate sight distances, truck accessibility and pedestrian accessibility.
- Lack of available off-street parking in proportion to increasing lane capacities.
- Noise impacts to residential land uses.

Description of work

Possible work that will be done includes:

- Providing Collector-Distributor Roads to separate trucks from vehicles and improve standard ramp spacing, capacity and geometrics.
- Realigning ramps away from mainlines to increase storage and queuing capacities.
- Provide standard sidewalks, curb ramps, countdown traffic signals, designated bikeways and refuge areas to shelter pedestrians.
- Provide soundwalls or noise barriers.
- Improve interchanges, via modified diverging diamonds, to enhance truck turn movements, storage and accommodate designated bikeways.

Alternatives

The alternatives consist of Alternative 1 – No Build, Alternative 2 - Build (Standard Lanes and Shoulders), Alternative 3 Build (Non Standard Lanes and Shoulders) and Alternative 4 (Hybrid with Standard and Non Standard Lanes and Shoulders including an Eastbound Collector-Distributor Road between Acacia Court and Long Beach Boulevard).

SR-91

Seven alternatives were analyzed for the project consisting of one no build and six build alternatives. Each of the six proposed build alternatives includes the addition of one general purpose lane in each direction which is consistent with the SR-91/I-605/I-405 Congestion Hot Spots Feasibility Report prepared for Metro and the Gateway Cities Council of Governments (GCCOG), dated March 26, 2013.

I-710

The six build alternatives are equally divided among two possible I-710 widening alternatives, namely Alternative 5C and Alternative 7. Alternative 5C consists of widening I-710 to provide 10 mixed flow lanes. Alternative 7 consists of widening to provide 8 mixed flow lanes and an elevated 4-lane truckway or freight corridor within the current Southern California Edison (SCE) easement which, borders the east side of I-710 in the vicinity of SR-91. Alternatives 5C and 7 must both be evaluated because the selection of the preferred alternative for I-710 has not been made and will not occur until the Spring of 2017.

Additional details of each alternative are provided below:

Alternative 1

This alternative is the No Build alternative which avoids any reconstruction or improvements to the existing SR-91 freeway. All freeway facilities remain in their existing condition and operational deficiencies along SR-91 will continue to deteriorate as traffic volumes increase. This alternative does not address or alleviate traffic congestion anticipated in the area. Consequently, the No Build alternative does not address the Purpose and Need for the project.

The No Build alternative is being considered because it serves as the baseline against which to evaluate the effectiveness of proposed build alternatives. This alternative allows decision makers to compare and evaluate the impacts of build alternatives with those of a no build alternative.

Alternative 2

This alternative adds one mixed flow lane in each direction on SR-91, wherever needed. Auxiliary lanes are also provided primarily at locations where congestion, merging and weaving warrant the need for them. The freeway cross section is widened to meet Caltrans HDM standard lanes and shoulders. This alternative proposes standard lanes and shoulder widths in addition to standard 4-foot wide HOV buffer areas. Right-of-way acquisition will be necessary to accommodate Alternative 2 improvements.

SR-91 mainline widening, per Alternative 2, requires the reconstruction of ramps at local and system interchanges as follows:

Central Avenue Interchange

The Central Avenue interchange on and off ramps are realigned with the SR-91 freeway widening. The current diamond interchange is widened at the Artesia Boulevard and Albertoni Street intersections by restriping to add an exclusive westbound and eastbound through lane, respectively.

A Class IV bikeway on Central Avenue requires the widening of the current bridge by 16 feet.

Improvements are identical for both I-710 Alternatives 5C and 7.

Wilmington Avenue Interchange

Like Central Avenue, the WB and EB ramps at the Wilmington Avenue interchange are realigned with the SR-91 freeway widening and the current diamond interchange. In this case, however, the existing lane configurations at the intersections north and south of SR-91 remain as they operate adequately with projected traffic volumes. In addition, there is no designated bikeway on Wilmington Avenue.

Improvements are identical for both I-710 Alternatives 5C and 7.

Alameda Street Interchange

The EB Alameda Street on and off ramps are realigned with SR-91 freeway widening and the EB ramp intersection with Alameda Street. There is no designated bikeway on Alameda Street.

7 10 Alt. 5C: This alternative proposes a standard loop on-ramp in the EB direction and connects the Alameda Street EB on ramp to the mainline further east at Susana

Road/Harbor Avenue, via flyover of the Santa Fe Avenue EB on and off-ramp and braid over the realigned Long Beach Boulevard EB off-ramp.

710 Alt. 7: This alternative proposes to maintain the current EB Alameda Street on and off ramps in their current location with the only adjustment of connecting to a wider mainline.

Santa Fe Avenue Interchange

The EB and WB Santa Fe Avenue on and off ramps are realigned with SR-91 freeway widening. In addition, Santa Fe Avenue, beneath SR-91, is reconfigured to accommodate a Class II Bike Lane and street parking.

710 Alt. 5C: This alternative proposes the realignment and widening of the EB Santa Fe Avenue on ramp to provide a two lane on ramp to connect further east near Susana Road/Harbor Avenue.

710 Alt. 7: This alternative proposed to maintain the current EB Santa Fe Avenue on and off ramps in their current location adjusted only to meet a wider mainline.

Long Beach Boulevard Interchange

The WB and EB Long Beach Boulevard ramps are realigned with the SR-91 freeway widening and Long Beach Boulevard is reconfigured to accommodate Class II Bike Lanes.

710 Alt. 5C: This alternative relocates the EB Long Beach Boulevard off ramp further west to a point east of the Santa Fe Avenue interchange. This off ramp crosses beneath a braided EB Santa Fe Avenue on ramp. In addition, this alternative eliminates the existing EB hook on ramp and the WB off ramp at Long Beach Boulevard. Also, this alternative realigns the WB Long Beach Boulevard on ramp to join the mainline west of Santa Fe Avenue.

710 Alt. 7: This alternative proposed to maintain the current WB and EB Long Beach Boulevard on and off ramps in their current location without adjustment. The only change is a new NB to WB 710 connector ramp which is braided to cross above the WB off-ramp at Long Beach Boulevard and join the mainline immediately west of Long Beach Boulevard.

SR-91/I-710 System Interchange

At the SR-91/I-710 System Interchange the existing direct connectors and loop connectors are reconstructed to accommodate the mainline widening.

710 Alt. 5C: This alternative eliminates the NB 710 Artesia Boulevard off ramp, the SR-91 EB Atlantic Avenue off ramp, the NB 710/WB SR-91 loop ramp, the WB Atlantic Avenue on ramp and the WB SR-91 to NB 710 connector ramp from Atlantic Avenue. Also, the 710 SB to SR-91 EB connector is modified to eliminate the EB Atlantic Avenue off ramp. A new NB 710 Atlantic Avenue off ramp is provided.

710 Alt. 7: This alternative eliminates the NB 710 Artesia Boulevard off ramp, the SR-91 EB Atlantic Avenue off-ramp, the NB 710/WB SR-91 loop ramp, the WB SR-91 to NB 710 connector ramp from Atlantic Avenue. Also, the 710 SB to SR-91 EB connector is modified to eliminate the EB Atlantic Avenue off ramp. A new 710 NB Atlantic Avenue off ramp and SR-91 EB Atlantic Avenue off ramp are provided. A new north-south four-lane 710 Freight Corridor is provided including NB to EB as well as WB to SB freight corridor connector ramps.

Atlantic Avenue Interchange

Atlantic Avenue on and off ramps which remain are realigned with the SR-91 freeway widening and the Atlantic Avenue undercrossing is widened to accommodate designated Class II Bike Lanes.

710 Alt. 5C: This alternative converts the Atlantic Avenue interchange to a half diamond interchange by eliminating the WB Atlantic Avenue on ramp and EB Atlantic Blvd off ramp.

710 Alt. 7: This alternative eliminates the WB SR-91 to 710 NB connector from Atlantic Avenue and the EB Atlantic Avenue off ramp. The WB Atlantic Avenue off ramp is widened and realigned with a braided WB freight corridor connector crossing above it. New SR-91 EB Atlantic Avenue on and off ramps are provided by this alternative.

Cherry Avenue Interchange

Cherry Avenue on and off ramps are realigned with the SR-91 freeway widening and Cherry Avenue is reconfigured to accommodate a designated Class III Bike Route.

710 Alt. 5C: This alternative does not change the current interchange.

710 Alt. 7: This alternative realigns the EB Cherry Avenue off ramp with the freight corridor connector on ramp west of Cherry Avenue.

Paramount Boulevard Interchange

Paramount Boulevard on and off ramps are realigned with the SR-91 freeway widening and Paramount Boulevard is widened to accommodate designated Class II Bike Lanes.

710 Alt. 5C: This alternative does not change the current interchange.

710 Alt. 5C: This alternative does not change the current interchange.

Alternative 2 addresses the Purpose and Need for the project by reducing congestion and improving freeway mainline and ramp operations, improving safety, and improving local and system interchange operations. By proposing Caltrans' geometric design standards related to lane and shoulder widths, however, the alternative does not minimize adjacent right-of-way, environmental and economic impacts.

Alternative 3

Alternative 3 improvements are generally the same as for Alternative 2 on I-710; however, it includes non-standard design features within the SR-91 mainline cross section, such as 11-foot mixed flow/HOV lanes and 2-foot HOV buffer zones. Two truck lanes on the outside remain at 12 feet wide. This alternative has fewer right-of-way impacts than Alternative 2 due to the narrower geometric cross section. The proposed improvements on SR-91 are the same as Alternative 2 with Alternative 5C and 7, respectively.

Alternative 3 addresses the Purpose and Need for the project by reducing congestion, and improving freeway mainline and ramp operations, safety and interchange operations, while minimizing adjacent right-of-way, environmental and economic impacts as compared to Alternative 2.

Alternative 4

Alternative 4 improvements are largely the same as Alternative 3 with the exception of a 1.3 mile EB collector-distributor road between Acacia Court and Long Beach Boulevard as well as wider buffers and shoulders, wherever possible, than those in Alternative 3.

Alternative 4 addresses the Purpose and Need for the project by further reducing congestion, and improving freeway mainline and ramp operations, safety and interchange operations as compared to Alternative 3. In addition, Alternative 4 optimizes lanes, shoulders and buffers without impacting right-of-way, environmental and economic impacts as compared to Alternative 3.

SR-91 mainline widening requires the reconstruction of ramps at local and system interchanges as follows:

Central Avenue Interchange

Unlike Alternative 2, the Central Avenue interchange on and off ramps are realigned with the SR-91 freeway widening but the interchange is converted from a diamond interchange to a modified diverging diamond interchange between Artesia Boulevard and Albertoni Street. The modified diverging diamond interchange allows for better interchange operations in terms of left turn storage, less queuing and wider turn movements for trucks. A modified diverging diamond was required to allow two EB through lanes at Albertoni Street and one WB through lane at Artesia Boulevard.

The modified diverging diamond also accommodates a Class IV bikeway on Central Avenue without the need to widen the Central Avenue Bridge.

Improvements are identical to I-710 alternatives 5C and 7.

Wilmington Avenue Interchange

Like Central Avenue, the WB and EB ramps at the Wilmington Avenue interchange are realigned with the SR-91 freeway widening and a modified diverging diamond interchange is proposed to improve left turn storage, reduce queuing and improve maneuverability for trucks. Like Central Avenue, a modified diverging diamond was required to allow two EB through lanes at Albertoni Street and one WB through lane at Artesia Boulevard. There is no bikeway on Wilmington Avenue.

Improvements are identical to I-710 alternatives 5C and 7.

Acacia Court Interchange

A new two-lane EB on ramp and collector-distributor road begins at this interchange and extends easterly to Long Beach Boulevard.

Alameda Street Interchange

The EB Alameda Street on and off ramps are realigned with SR-91 freeway widening and the EB ramp intersection with Alameda Street.

710 Alt. 5C: This alternative proposes standard two-lane EB on and off ramps which are connected to the C-D road from Acacia Court.

710 Alt. 7: This alternative proposes the same improvements as those by Alternative 5C.

Santa Fe Avenue Interchange

The EB and WB Santa Fe Avenue on and off ramps are realigned with SR-91 freeway widening. In addition, Santa Fe Avenue, beneath SR-91, is reconfigured to accommodate a Class II Bike Lane and street parking.

710 Alt. 5C: This alternative proposes to maintain the current EB Santa Fe Avenue on and off ramps in their current location without adjustment. The proposed 3-lane C-D road spans over the EB on and off ramps at Santa Fe Avenue.

710 Alt. 7: This alternative proposes the same improvements as those in Alternative 5C.

Long Beach Boulevard Interchange

The WB and EB Long Beach Boulevard ramps are realigned with the SR-91 freeway widening and Long Beach Boulevard is reconfigured to accommodate Class II Bike Lanes.

710 Alt. 5C: This alternative realigns the EB Long Beach Boulevard off ramp from the C-D road instead of the current mainline connection. In addition, this alternative maintains the existing EB Long Beach Boulevard hook ramp and realigns the WB Long Beach Boulevard on ramp to join the mainline west of Santa Fe Avenue. In addition, this alternative provides a realigned WB off-ramp at Long Beach Boulevard connected, via an auxiliary lane, to the WB on ramp at Atlantic Avenue.

710 Alt. 7: This alternative proposes to maintain the current WB and EB Long Beach Boulevard on and off ramps in their current location without adjustment. The only change is a new NB to WB 710 connector ramp which is braided to cross above the WB off-ramp at Long Beach Boulevard and join the mainline immediately west of Long Beach Boulevard.

3. Anticipated Environmental Approval

CEQA		NEPA	
Environmental Determination			
Statutory Exemption	☐		
Categorical Exemption	☐	Categorical Exclusion	☐
Environmental Document			
Initial Study or Focused Initial Study with proposed Negative Declaration (ND) or Mitigated ND	☒	Routine Environmental Assessment with proposed Finding of No Significant Impact	☐
		Complex Environmental Assessment with proposed Finding of No Significant Impact	☒
Environmental Impact Report	☐	Environmental Impact Statement	☐
CEQA Lead Agency (if determined):		Caltrans	
Estimated length of time (months) to obtain environmental approval:		36-42 months	
Estimated person hours to complete identified tasks:			

4. Special Environmental Considerations

The following is a brief summary of the special considerations that may affect project delivery:

Alternative 1 – No Build

The No Build Alternative does not include any construction or improvements to SR-91; therefore, no special processes are required.

Alternative 2 – Build (Standard Lanes and Shoulders)

- Section 106 Process, including Native American Consultation
- Section 4(f), including coordination with the official(s) with jurisdiction
- Air Quality Conformity Determination
- Permits and approvals from SWRCB, LARWQCB, USACE, CDFW
- Surveys for biological species conducted during the appropriate timeframes
- Clearing and grubbing during specified timeframes to avoid impacts to migratory birds
- Hazardous wastes and materials (potentially ADL, ACM, LBP)

Alternative 3 – Build (Non Standard Lanes and Shoulders)

Same as above for Alternative 2.

Alternative 4 – Hybrid (Standard and Non Standard Lanes and Shoulders including an Eastbound Collector-Distributor Road between Acacia Court and Long Beach Boulevard)

Same as above for Alternative 2.

5. Anticipated Environmental Commitments

Community Impacts. Development and implementation of a Traffic Management Plan (TMP), and noise and dust best management practices will be needed to reduce construction related impacts. Compliance with relocation regulation would be required for affected properties.

Aesthetics. Context sensitive design solutions to address project aesthetics.

Noise Abatement. Abatement measures (typically, soundwalls) may be necessary to comply with city, State and federal noise guidelines. Abatement is subject to reasonability and feasibility, as well as property owner approval.

Hazardous Waste/Materials. Additional studies to characterize identified Recognized Environmental Concerns (RECs). Site Investigations may be needed for R/W acquisition. Environmental Indemnification Agreements (EIAs) may be necessary/required from the Responsible Party if contaminated sites are identified.

Biological Resources. Pre-construction surveys. Avoidance and minimization measures for identified species/habitats.

Permits. Mitigation may be required by resource agencies as part of permit conditions.

6. Permits and Approvals

- Caltrans National Pollutant Discharge Elimination System (NPDES) Permit (Order 2012-0011-DWQ as amended by Order WQ 2014-0006-EXEC, Order WQ 2014-0077-DWQ and Order WQ 2015-0036-EXEC, NPDES No. CAS000003)
- Caltrans Statewide Storm Water Management Plan (SWMP), May 2003 and any subsequent revisions
- Construction General Permit (Order No. 2009-0009-DWQ as amended by 2010-0014-DWQ, and 2012-0006-DWQ, NPDES No. CAS000002)
- Storm Water Pollution Prevention Plan (SWPPP)
- Permits to enter and coordination with the railroad authorities for any investigation or work within the railroad right-of-way.
- Transportation Conformity Working Group for a project determination of air quality concern.
- FHWA for Air Quality Conformity Determination
- Section 408 permit from Army Corps of Engineers for permanent or temporary alteration or use of a USACE Civil Works project. The time it takes to obtain a permit varies significantly based on the complexity of the request, as well as a number of other factors. At a minimum the permit typically takes 6 to 12 months to process; however, some requests can take over 24 months.
- Section 404 permit from Army Corps of Engineers for impacts on waters of the U.S. A nationwide permit takes approximately 3 months to complete. An individual permit can take up to a year.
- Section 401 permit from Los Angeles Regional Water Quality Control Board for impacts on waters of the U.S. and State. The permit can take 3-6 months to obtain
- 1602 Agreement with California Department of Fish and Wildlife for work within waters of the State jurisdictional areas. The agreement can take 3-6 months to obtain.

7. Level of Effort: Risks and Assumptions

Community Impacts. There is a potential for community controversy base on impacts to community facilities and services due to the proposed right-of-way. Extensive level of community outreach and coordination to identify relocation impacts and mitigation measures may be required.

Historic Resources. Potential consultation with Caltrans headquarters and State Office of Historic Preservation (SHPO) for effects to historic properties (Finding of Effect [FOE]) and consultation regarding appropriate mitigation measures and Memorandum of Agreement, if required. Consultation is also required under the California Historical Building Code.

Hazardous Waste/Materials. The project may involve acquisition of new right-of-way, structure(s) demolition or modification, and/or excavation. Risks associated with hazardous waste/materials may require more extensive and/or subsequent studies to adequately delineate the presence of contamination, which is necessary to support the analysis of alternatives.

Regulatory permits (401, 404, 1602). Coordination with resource agencies will be required for impacts on State and US jurisdictional waters.

Rivers and Harbors Act Section 14 Authorization. A 33 USC 408 (Section 408) permit for modifications and alterations to USACE Projects would be required for possible modifications to the Los Angeles River.

Floodplain Impacts. If structure widening and pier wall modifications within the Los Angeles River cause a significant encroachment to the 100-year floodplain, preparation of a Floodplain Evaluation Report would be required, including the development and evaluation of avoidance alternatives. Any impacts to 100-year floodplain would require coordination with FEMA.

Biological Resources. Construction activities may affect migratory birds, Monarch Butterfly roosts, swallows, and bats. Measures to avoid and protect species may affect construction schedule.

Section 4(f). If additional right-of-way needs along the project corridor result in a "use" of parks and public recreational facilities, a Section 4(f) evaluation will be required. The evaluation requires coordination with and concurrence from officials with jurisdiction.

8. PEAR Technical Summaries

8.1 Land Use:

The SR-91 and I-710 are major transportation facilities that serve Southern California communities. The project is located within the limits of the cities of Compton, Long Beach, and a portion of unincorporated Los Angeles County. Existing land uses found adjacent to the project location include, single-family and multi-family residential, commercial, and industrial. Residential uses with pockets of commercial developments are located along the majority of the project limits. Industrial land uses are generally located along the western end of SR-91 in the City of Compton. El Camino College and Jordan High schools are also located adjacent to SR-91 in the project area west of Long Beach Boulevard. Coolidge Park is located adjacent to the SR-91 eastbound connector to southbound I-710. Open space and bicycle paths associated with the Los Angeles River exist on both sides of SR-91just east of the SR-91/I-710 Interchange.

Build alternative 2 and 3 are anticipated to require additional right-of-way for the construction of the project and may have an impact on the existing land use within the project area. Properties within the limits of the project may be acquired partially or fully to provide the additionally needed right-of-way. However, it is not anticipated that these alternatives would cause changes to the land use designations of the local jurisdictions general plans. It is anticipated that the project would be consistent with the established goals and policies of the state, regional, and local plans for the area including strategic and long term transportation plans. Build alternative 4 will not require additional right of way, and will not affect existing or future land use and transportation plans for the area. It is anticipated that this alternative would also be consistent with the goals and policies of the local, regional, and state plans.

A consistency analysis with the applicable land use plans will be performed to evaluate the proposed project alternatives on land use plans and consistency with

plans goals and policies. Some of the plans to be considered in the evaluation include counties and cities general plans, strategic and long range transportation plans, and local and regional active transportation plans. The evaluation will be included in the Community Impact Assessment completed during the Project Approval/Environmental Document (PA&ED) Phase.

8.2 Growth:

Caltrans guidance for preparing growth related impact analysis focuses on the influence that transportation projects may have on growth and land development and resulting effects on the community and the environmental resources. Transportation projects have the potential to influence growth due to factors related to potential improvement of accessibility for land development. Caltrans guidance provides a two-phase approach to evaluate the project's growth related impacts. The first phase is a "First Cut Screening" to determine if the project has the potential to influence growth, and determine if a stand-alone growth related impact study is needed.

The proposed project does not provide new access to the surrounding communities. It is located within a fully developed urban environment, and will not encourage new land development. The project's proposed improvements would improve traffic flow and safety conditions. It is anticipated that a "First Cut Screening" evaluation of growth factors would indicate that the project does not have the potential to result in growth impacts, therefore, would not require further growth impact analysis. The "First Cut Screening" analysis and findings will be documented in the environmental document prepared for the project.

8.3 Farmlands/Timberlands:

The project is located in an area that is developed as a highly urbanized area of the Los Angeles County. There are no existing or planned agricultural land use, or timberlands in the project area. The environmental document for the project will not be required to review impacts on farmlands and timberlands.

8.4 Community Impacts:

The existing freeway facilities act as a physical barrier that separates communities. The proposed improvements would improve circulation and mobility without creating new barriers or further impacts to community cohesion. The Project impacts on population and housing characteristics, employment, and other socioeconomic characteristics are anticipated to be minimal. Short term impacts from project construction activities may affect communities adjacent to the project limits due to temporary roadway closures, detours, noise, etc. Development and implementation of a Traffic Management Plan (TMP), and noise and dust best management practices would reduce construction related impacts.

Alternatives 2 and 3 will require right-of-way acquisition that may impact properties adjacent to the project limits. Assessment of right-of-way and potential relocation information will be provided to evaluate impacts on the residential and other property owners. In addition, the project has the potential to impact directly and indirectly several community facilities including parks and schools that are located adjacent to the freeway facilities within the project limits. Right-of-way needs of build alternatives 2 and 3 have the potential to directly impact these

facilities partially or fully. Other community services including parks and recreational facilities, schools, hospitals, libraries, and others are located within close proximity of the project limits. The project has the potential to affect accessibility to these facilities during construction. Other community facilities that may be affected directly or indirectly by the project include bike trails along the Los Angeles River, and other designated existing or proposed bike routes within major corridors within the Cities of Long Beach and Compton.

A Community Impact Assessment (CIA) will be prepared to evaluate direct and indirect community impacts, including permanent and construction impacts on community services including schools and recreational facilities. Environmental justice population will also be identified and the potential for environmental justice impacts would be addressed. The CIA will address temporary and short term construction impacts such as access interruption, delays, noise, and dust.

Evaluation of impacts on parks and public recreational facilities will also be required in compliance with 49 USC § 303: Section 4(f) of the Department of Transportation Act of 1966 as amended. If right-of-way needs result in a "use" of these resources, a de minimis or individual Section 4(f) evaluation will be prepared and documented in the environmental document as a separate appendix.

8.5 Visual/Aesthetics:

The overall visual environment within the project area is a mix of land uses in developed urban setting. Along the mainline of both SR-91 and I-710 the views include areas of vegetation, noise barriers, and adjacent land uses. The San Gabriel Mountains to the north are visible throughout the corridor. SR-91 and I-710 are not designated scenic highways within Los Angeles County. Parks in close proximity to the SR-91 include Stevenson, Coolidge, DeForest, and Houghton. Within the City of Compton there are several historic resources approximately one mile from the project corridor. These include the Angeles Abby Mausoleum, Woodlawn Cemetery, Heritage House, First United Methodist Church and the Dominguez Rancho Adobe Seminary. Both the city of Compton and the city of Long Beach general plans include policies and guidelines addressing the aesthetic character and visual quality of the interface between the SR-91 corridor and identified city gateways.

Long-term impacts that could affect visual quality include potential vegetation removal, widening outside of the existing roadway, additional noise barriers and additional highway hardscape. Short-term impacts to the visual quality within the project area may include clearing and grubbing activities, equipment and materials storage, safety and directional signage, and barriers/screening for safety, noise, and traffic control.

To minimize potential visual effects, the project may require additional design considerations, such as structural enhancement of walls or decorative architectural features such as light standards, in visually sensitive areas. Other measures, such as re-vegetation or other landscape treatments, may be needed to reduce visual impacts and enhance the aesthetic quality of project components. In addition to design considerations, other context sensitive solutions may be needed to address concerns from impacted residents and property owners.

Coordination with the city of Compton and the city of Long Beach during project design and environmental clearance is recommended to facilitate decisions regarding aesthetic treatments and to address community concerns related to aesthetics and visual quality. Based on the project score from the Visual Impact Assessment (VIA) Questionnaire, an abbreviated VIA is the appropriate level of documentation for environmental clearance.

8.6 Cultural Resources:

The city of Compton General Plan identifies the Heritage House as a State Historic Landmark. The Heritage House is located a little over a mile away from SR-91. Other historical sites identified in the General Plan include the First United Methodist Church (about 0.5 mile north of SR-91) and Angeles Abbey Mausoleum (about 0.5 mile south of SR-91). The Dominguez Ranch Adobe is a California Historical Landmark and on the National Register of Historic Places. This landmark is also located in the City of Compton approximately 0.4 mile from SR-91. Considering Compton is one of the oldest communities in Los Angeles County it is expected that some of the neighboring uses along the SR-91/I-710 corridors may contain structures built before 1950.

The SR-91 corridor is heavily urbanized with limited open or undeveloped areas; therefore, the probability of exposing undiscovered archaeological resources is unlikely. In addition, project excavation is expected to be shallow and located within previously disturbed roadway areas.

During the environmental document phase a Historic Resources Evaluation Report and Historic Property Survey Report (summary form/report) will be prepared, as well as an Area of Potential Effects (APE) map for historic resources and letters to Native American Tribes requesting information on historic resources.

8.7 Hydrology and Floodplain

Within the project area there are two hydrological features. Compton Creek bisects SR-91 just west of Alameda Street and the Los Angeles River runs parallel to the east side of I-710. Both features are contained in concrete channels. Based on the Federal Emergency Management Agency's (FEMA) National Flood Hazard data, the majority of the project area is located in an area with 0.2 percent annual chance of flood hazard. The western end of SR-91 is located in an area designated as minimal flood hazard. Most of the floodplains located within the project area are associated with the Compton Creek and the Los Angeles River channels, which are designated as areas with a 1 percent annual chance of flood, also referred to as the 100-year flood.[1]

If an increase in the base floodplain elevation is anticipated as a result of construction within the Los Angeles River, the potential impact on the base floodplain will be calculated to determine the floodplain encroachment impacts. The identification of significant encroachment to 100-year floodplains would require the preparation of a Floodplain Evaluation Report, including the development and evaluation of avoidance alternatives. Any impacts to 100-year floodplains would require coordination with FEMA. The project is not anticipated

[1] http://fema.maps.arcgis.com/home/webmap/viewer.html?webmap=cbc088e7c8704464aa0fc34eb99e7130

to have an impact on the base floodplain; therefore, a Floodplain Evaluation Report will not be required. A Location Hydraulic Study will be required to identify potential impacts to floodplains. Additionally, at a minimum, a Summary Floodplain Encroachment Report will be prepared for the project according to Caltrans guidance. The project may also require a 408 permit from the ACOE as a result of modifications to the pier walls as part of structure widening over the Los Angeles River.

8.8 Water Quality and Storm Water Runoff:

The project area is within the jurisdiction of the Los Angeles Regional Water Quality Control Board (RWQCB). It is located within the Los Angeles River watershed. Storm water runoff from the project area flows into either the Los Angeles River Reach 2, and Compton Creek. There are no water reservoirs or ground water percolation facilities within the project area. The project is located within the urban MS4 areas of the Cities of Long Beach, Compton, and Carson.

Alternative 2 was considered in the preparation of the preliminary Storm Water Data Report (SWDR) for the project due to being the alternative that represents the worst case scenario, and the alternative with potentially the largest water quality impacts. Based on the SWDR, the estimated total Disturbed Soil Area (DSA) for Alternative 2 is approximately 138.8 acres, and a Net New Impervious Surface (NNI) Area of 71.7 acres will result from the project. Soils containing aerially deposited lead from primarily historical uses are anticipated to be in the project area.

A Scoping Questionnaire for Water Quality Issues will be prepared. Contingent upon the results, preparation of a Water Quality Assessment Report may be required. Given the fact the Los Angeles River is concrete lined, it is not at risk for stream instability and therefore, is exempt from a rapid stream assessment. Compton Creek is an unlined channel (soft bottom) within the project boundary and downstream of the project. This drainage crossing meets requirements for a rapid stream assessment. Therefore a rapid stream assessment will be completed for this stream crossing using Caltrans Hydromodification Requirements Guidance, 2015. In addition, water quality in the project area would be assessed as related to wetland, habitats, and species that may be present in the project area.

Construction activities associated with the SR-91/I-710 System Interchange include structure widening over the Los Angeles River and Compton Creek, which is expected to include work on the footings, foundation, and pier walls. Work within the river or channel would require a Section 404 permit from the Army Corps of Engineers as part of the Clean Water Act (CWA). The CWA process requires that a project consider a least damaging, practicable alternative, as well as minimization of potential impacts, and compensation for all unavoidable impacts. Alternatives 3, 4, and 5 are expected to impact less than a ½ acre and therefore, would be processed under a nationwide permit. Alternative 7 includes a more extensive system of connector ramps and therefore, it may require an individual permit if selected. A nationwide permit can take about 3 months to complete and an individual permit can take up to a year. Permits may also include additional mitigation as part of the permit requirements.

According to the Storm Water Data Report (SWDR) prepared for phase K of the project, Best Management Practice strategies (BMPs) would be implemented to treat 100 percent, at a minimum, of Water Quality Volume within the NNI of the project area. The Targeted Design Constituents for this project include nutrients, copper and lead. The Permanent Treatment BMP strategy will be based on the Corridor Stormwater Management Study for State Route 91 from Vermont Avenue to Orange County Line. Nine of the Caltrans approved Permanent Treatment BMPs were analyzed, and it was found that infiltration devices are considered the desired treatment BMP for all constituents. Prioritization was based on load reduction performance for the listed constituent.

Final BMPs will be determined during the design phase of project development. BMPs will be designed and implemented to avoid and reduce the discharge of pollutants from the storm drain system to the Maximum Extent Practicable. Additionally, temporary pollution controls will be implemented during the early construction phases to address any construction storm water impacts. It is anticipated that the project will require a 401 Certificate, compliance with Caltrans National Pollutant Discharge Elimination System (NPDES) Permit (Order 2012-0011-DWQ as amended by Order WQ 2014-0006-EXEC, Order WQ 2014-0077-DWQ and Order WQ 2015-0036-EXEC, NPDES No. CAS000003) and a Construction General Permit (Order No. 2009-0009-DWQ as amended by 2010-0014-DWQ, and 2012-0006-DWQ, NPDES No. CAS000002).

8.9 Geology, Soils, Seismic and Topography:

According to the California Geological Survey maps for geological hazards published by the California Department of Conservation, the project is located within or adjacent to what is considered Fault Zones, Landslide and Liquefaction Zones[2]. The project is located within Long Beach 7.5-Minute Quadrangle map, which indicates that the project area has historically witnessed the occurrence of liquefaction, or local geological conditions indicating the potential for ground displacements. A preliminary geotechnical report will be prepared for the project during the PA/ED phase to guide the final design considerations required to reduce ground displacement impacts. Applicable environmental compliance documentation will be completed prior to project specific subsurface exploration being performed for preparation of the report and design information, if needed.

8.10 Paleontology:

The project is located within the Los Angeles Basin, which is a broad, almost level alluvial plain. The plain is primarily composed of surficial deposits, some of which are active beach sands. These deposits typically do not contain significant vertebrate fossils, at least in the upper most layers; however, these deposits often overlie sediment that can contain paleontological resources. Fossil deposits have been found throughout Los Angeles County particularly within the hills and in the vicinity of Rancho La Brea (located over 10 miles from the project corridor). Fossils continue to be discovered in fossil-rich areas during ground-disturbing

[2] http://maps.conservation.ca.gov/cgs/informationwarehouse/
http://www.conservation.ca.gov/cgs/geologic_hazards/regulatory_hazard_zones/Pages/Index.aspx

activities. However, the project area and adjacent areas are developed and have been previously disturbed due to past and on-going development activities. Therefore, the likelihood of discovering undisturbed paleontological resources is low.

Due to the level of disturbance within the project corridor and low likelihood of discovering undisturbed paleontological resources, preparation of a Paleontological Identification Report (PIR) and/or Paleontological Evaluation Report (PER) during the environmental document phase are not justified at this time.

8.11 Hazardous Waste/Materials:

An Initial Site Assessment (ISA) Screening was conducted to identify known or potential sources of contamination that exist or may exist within or in close proximity to the project corridor. Four radius map reports were obtained from Environmental Data Resources (EDR) databases. The reports identified a total of 1,711 facility listings; however, many of these listings were duplicates or overlaps from the four reports. Once the listings were condensed, and certain databases were removed from consideration based on whether those databases were likely to provide relevant information about potential use or storage of hazardous substances or petroleum products, or whether known or potential soil and/or groundwater contamination existed on the property, 229 facilities were identified as potential concern for the project. The 229 facilities were ranked as high, medium or low according to the level of risk the contamination presented to the proposed project. The ranking was based on information obtained from the EDR report, as well as data from Geotracker and EnviroStor (where available).

The risk ranking identified 12 high risk facilities, 53 medium risk facilities, and 164 low risk facilities; 49 of the high and medium risk facilities did not have GeoTracker records. In addition to these facilities, the screening also identified the presence of several petroleum, chemical, and high-pressure natural gas pipelines that cross the project corridor. These pipelines should be considered to pose a medium risk to the project. Other sources of potential contamination could include: spills or accidental releases from handling operations and leaks from storage tanks, containers or pipelines; releases of petroleum or cleaning solvents used in commercial and industrial operations; releases of hazardous substances from facilities that treat, store, transfer, or dispose of municipal, industrial, or construction wastes; presence of Aerially Deposited Lead (ADL) in shallow soils along highway shoulders; asbestos containing materials (ACMs) in structures located throughout the project corridor; lead based paint (LBP) in painted surfaces/components, lane striping, and pavement markings.

To address risks associated with identified and potential contaminants a full ISA report will be prepared in general accordance with the ASTM E1527-13 Phase I ESA standard practice during the environmental phase to determine if known or potential contamination is present within the project corridor and parcel specific areas prior to commencement of any construction activities. Based on the results of the ISA investigation, identified areas with known or potential contamination should be further evaluated, and preliminary and detailed site investigations should

be conducted to determine the full nature and extent of contamination to allow for remedial cost estimation.

8.12 Air Quality:

The project area is located in the South Coast Air Basin and is under jurisdiction of the South Coast Air Quality Management District (SCAQMD). The proposed project is a capacity-increasing project within an area designated as non-attainment and would be designed to reduce congestion and improve traffic flow which could yield beneficial impacts to air quality. An Air Quality Technical Study will be completed for the project, utilizing the project traffic report and identification of anticipated construction activities and phasing, to document the potential construction and operational effect on air quality associated with the proposed project Alternatives. The study will also utilize information available from the June 2013 "Gateway Cities Air Quality Action Plan Final Report" to identify and implement appropriate measures to improve air quality during construction and operation associated with the proposed project.

The potential impacts that may adversely affect project development are twofold: regional and project level. Projects that anticipate federal funding, but are not included in the regional emissions analysis of the most recent Regional Transportation Plan (RTP)/Federal Transportation Improvement Program (FTIP) are not eligible to receive such funds except for those projects exempt pursuant to 40 CFR 93.126. The proposed project is not an exempt project and proposes changes to regionally significant transportation facilities. The proposed project must thus be properly included in the regional planning and programming documents (RTP and TIP) to demonstrate conformity at the regional level. The District Regional Conformity Coordinator will be informed of the project scope and requirement and will verify if the project satisfactorily demonstrates the regional conformity requirements.

For projects in areas that are in maintenance or nonattainment of federal standards for CO, PM_{10}, or $PM_{2.5}$, a hot-spot analysis is required in accordance with the US EPA transportation conformity regulations for projects that are not considered exempt pursuant to 40 CFR 93.126. The project is located in the South Coast Air Basin (SCAB) which is in attainment/maintenance of the federal and state Sulfur Dioxide (SO_2), Nitrogen Dioxide (NO_2) and Carbon Monoxide (CO) standards; federal and state non-attainment of the ozone (O_3) and Lead (Pb) standards; federal attainment/maintenance and state non-attainment of the respirable particulate Matter (PM_{10}); and federal and state non-attainment of fine particulate matter ($PM_{2.5}$) standards. As a result, CO and PM hot spot analyses are required to demonstrate conformity at the project level. The CO analysis will be performed in accordance with the *Transportation Project-Level Carbon Monoxide Protocol* (1997). For the PM analysis, coordination with the Southern California Association of Governments (SCAG) Transportation Conformity Working Group is required to determine if the proposed project is a project of air quality concern.

An Air Quality Technical Study will be prepared; this study will include the regional analysis, project level CO and PM analyses, a Mobile Source Air Toxic

(MSAT) analysis, and a construction analysis. In addition, a separate Air Quality Conformity Analysis will be prepared.

8.13 Noise and Vibration:

The project is a Type I project as defined by 23 CFR 772 and the Traffic Noise Analysis protocol because it could increase the number of through traffic lanes by providing collector-distributor roads to separate trucks from mainline vehicles. Residential and other noise sensitive land uses located near the SR-91/I-710 Interchange may be exposed to higher noise levels as a result of the proposed improvements.

A Noise Study Report (NSR) would be required in accordance with Caltrans and federal policies such as the requirements of the current Caltrans Noise Protocol, issued in July 2011.

The NSR will evaluate whether the proposed project would result in noise levels that approach or exceed the noise abatement criteria specified in 23 CFR 772. All aspects of the existing condition in the study area will be evaluated in this regard. Abatement measures (typically sound walls) may be necessary to comply with federal and/or state requirements regarding noise impacts. In addition, if construction of the project involves noise such as pile driving, structure demolition, and blasting, the NSR would also consider land uses or activities that could be affected by this type of noise and identify minimization and/or avoidance measures. If sound walls are found to meet the feasible guidelines per Caltrans Noise Protocol, a Noise Abatement Decision Report (NADR) would be required to determine which sound walls meet the reasonable cost and could be carried on into final design. A required survey of property owners affected by the proposed sound walls would be completed prior to circulation of the Draft Environmental Document. The survey must obtain 100 percent concurrence from affected landowners in favor of their construction for sound walls to be included in the project.

A permit to enter or right of entry is required to access private properties for field noise measurements. Information needed to prepare the NSR and NADR include: Information from the Traffic Report – for existing and future traffic, no-build and build alternatives; and CADD design files – for use in building the TNM 2.5 noise model.

8.14 Energy and Climate Change:

Per the FHWA Technical Advisory 6640.8A, a detailed energy study, including computations, is only required for large-scale EIS projects with potentially substantial energy impacts. Accordingly, preparation of a separate Energy Study is not planned for the proposed study project.

Regarding climate change, at this time, there are no federal, state, or regional regulatory procedures or protocols for determining whether an individual project makes a considerable cumulative impact on greenhouse gas (GHG) emissions and, therefore, on global climate change. A CEQA only analysis of climate change will be prepared for the project according to the guidance provided in the most current version of Caltrans' Annotated Outline, and/or consistent with other specific guidance issued by Caltrans on this subject. According to existing guidance, since the proposed project is a congestion relief project, a quantitative analysis will be

used to compare relative CO2 emissions for the no-build and build alternatives. Relieving congestion by enhancing operations and improving travel times in high congestion travel corridors is anticipated to most likely lead to an overall reduction in GHG emissions. Input data required to prepare the analysis include VMT and speeds for the no-build and build alternatives, data expected to be included in the traffic operations analysis prepared for the project.

8.15 Biological Environment:

A preliminary search of the California Natural Diversity Database (CNDDB, November 2016) identified the historic occurrence of one plant species (Coulter's Goldfield flowers) and two animal species (Coast Horned Lizard and Palos Verdes Blue Butterfly) within a 0.5-mile buffer of the project area. These three species are currently not listed as federal or state threatened and/or endangered.

In addition, migratory bird species have the potential to nest in the area. For the build alternatives, the clearing and grubbing of trees and vegetation has the potential to impact migratory birds and possibly Monarch Butterfly roosts. The breeding season for most passerine species is between February 15 and September 1. For work scheduled during the breeding window, a qualified biologist should conduct a pre-construction survey for nesting birds prior to the initiation of work. Other measures to avoid and protect migratory bird species should be implemented as necessary to maintain compliance with the Migratory Bird Treaty Act.

Work at bridge structures, especially adjacent to water features, have the potential to impact swallows and/or bats. Vacated swallow nests should be removed outside of the migratory nesting season and an effort should be made to keep bridges nest-free and bat roost-free until construction commences at these structures.

The work at the crossings over the river and stream channels will require a Lake or Streambed Alternation (LSA) notification to comply with California Department of Fish and Wildlife Code section 1602 to determine potential effects to existing fish or wildlife resources and measures to protect them. Other water quality considerations are discussed in Section 8.8.

Due to the project area being highly urbanized, it is anticipated that a Natural Environment Study (NES) Report will be the technical report for biological resources issues, as there is a small potential for habitat of the sensitive species listed above to be present within the project area. A Jurisdictional Determination would be required to obtain regulatory permits and for purposes of computation of impacts and determination of compensatory mitigation requirements and other resource protection measures.

8.16 Cumulative Impacts:

A cumulative impact analysis will be completed to evaluate the potential direct and indirect effects on the human environment and natural resources due to past, present, and foreseeable future projects. The eight-step process as defined in Caltrans document titled "Guidance for Preparers for Cumulative Impacts Analysis" will be followed to assess the aforementioned potential impacts of the project. The results of this analysis will be included in the environmental document; therefore, a separate technical study is not necessary. Related projects in the project vicinity will be considered.

The focus of the cumulative impact analysis will be on the health and status of resources impacted by the project. A study area will be defined for each of the resources included in the analysis. If the project is found to have a cumulative effect, plans to avoid and minimize such impacts will be identified. Measures to address cumulative impacts may require a multi-agency effort, which would be

carried out through the implementation of area wide policies and measures for the protection and conservation of resources.

8.17 Context Sensitive Solutions:

The project is anticipated to include elements that would improve or maintain safety, mobility and infrastructure conditions. Efforts to minimize right-of-way impacts will be explored during design to reduce effects on neighboring communities and resources. Where new retaining or sound walls are required, they would be built to match existing walls and may include structural enhancements to address community fit and other aesthetic considerations, such as presence of gateways. Project design will consider features such as structural enhancement and decorative architectural features, as well as softscape treatments to reduce visual impacts and enhance the aesthetic quality of the various project components.

9. Summary Statement for PSR or PSR-PDS

Based on the preliminary evaluation, the project does not have significant impacts on the environment with the incorporation of avoidance, minimization and/or mitigation measures. Therefore, the anticipated environmental document to comply with CEQA is an Initial Study with proposed Mitigated Negative Declaration. Under NEPA, a Complex Environmental Assessment with proposed Finding of No Significant Impact is anticipated. This determination is based on review of Appendix G of the CEQA Guidelines, as well as preliminary geometric plans and other available information.

Alternative 1 – No Build

The No Build Alternative does not include any construction or improvements to SR-91; therefore, no studies, permits or commitments are required. Key environmental issues related to this alternative include increased congestion due to projected growth within the area resulting in increased emissions within the corridor.

Alternative 2 – Build (Standard Lanes and Shoulders)

Key environmental issues for Alternative 2 include; Noise and Community Impacts related to right-of-way acquisitions.

Required studies include; Community Impact Assessment, Abbreviated Visual Impact Assessment, Historic Resources Evaluation Report, Historic Property Survey Report (summary form/report), Location Hydraulic Study, Summary Floodplain Encroachment Report, Water Quality Questionnaire, Preliminary Geotechnical Report, Initial Site Assessment, Air Quality Report, Noise Study Report, Natural Environment Study, and Jurisdictional Determination.

Required permits include:

- NPDES
- General Construction
- Permits to enter
- ACOE Section 408
- ACOE Section 404
- RWQCB Section 401
- CDFW 1602 Agreement

Potential environmental commitments include; noise barriers, pre-construction surveys, clearing and grubbing timeframes, agency permit conditions, traffic management plan, hazardous wastes/materials handling, and aesthetic treatments.

Possible time constraints and special considerations include; SHPO consultation, Native American consultation, FEMA coordination, Section 4(f) consultation, acquisition of agency permits, extensive or subsequent hazardous waste/materials studies, pre-construction surveys, construction windows (clearing/grubbing, surveys), and acquisition of permits to enter.

Alternative 3 – Build (Non Standard Lanes and Shoulders)
Same as above for Alternative 2.

Alternative 4 – Hybrid (Standard and Non Standard Lanes and Shoulders including an Eastbound Collector-Distributor Road between Acacia Court and Long Beach Boulevard)
Same as above for Alternative 2.

10. Disclaimer

This Preliminary Environmental Analysis Report (PEAR) provides information to support programming of the proposed project. It is not an environmental determination or document. Preliminary analysis, determinations, and estimates of mitigation costs are based on the project description provided in the Project Study Report (PSR). The estimates and conclusions in the PEAR are approximate and are based on cursory analyses of probable effects. A reevaluation of the PEAR will be needed for changes in project scope or alternatives, or in environmental laws, regulations, or guidelines.

11. List of Preparers

Cultural Resources specialist Theresa Dickerson	Date: 11/7/2016
Biologist Lesley Maurer	Date: 2/28/2017
Community Impacts specialist Maisoon Afaneh	Date: 11/3/2016
Noise and Vibration specialist Michael Lieu	Date: 11/3/2016
Air Quality specialist Michael Lieu	Date: 2/17/2017
Paleontology specialist/liaison Theresa Dickerson	Date: 11/28/2016
Water Quality specialist Maisoon Afaneh	Date: 2/22/2017
Hydrology and Floodplain specialist Maisoon Afaneh	Date: 11/8/2016
Hazardous Waste/Materials specialist David Vangoethem/Adam Heft	Date: 3/8/2017
Visual/Aesthetics specialist Theresa Dickerson	Date: 11/3/2016

Energy and Climate Change specialist Michael Lieu	Date: 11/3/2016
Other:	Date:
PEAR Preparer Theresa Dickerson, Supervising Planner	Date: 6/7/2017

12. Review and Approval

I confirm that environmental cost, scope, and schedule have been satisfactorily completed and that the PEAR meets all Caltrans requirements. Also, if the project is scoped as a routine EA, complex EA, or EIS, I verify that the HQ DEA Coordinator has concurred in the Class of Action.

Environmental Branch Chief — Date: 6/28/17

Project Manager — Date: 6/27/17

REQUIRED ATTACHMENTS:

Attachment E-1: PEAR Environmental Studies Checklist
Attachment E-2: Estimated Resources by WBS Code

Attachment E-1
PEAR Environmental Studies Checklist

Rev. 11/08

Environmental Studies for PA&ED Checklist					
	Not anticipated	Memo to file	Report required	Risk* L M H	Comments
Land Use	☐	☐	☒	L	Evaluation to be included in the CIA
Growth	☒	☐	☐	L	First-cut screening to be included in the CIA
Farmlands/Timberlands	☒	☐	☐	L	Not required
Community Impacts	☐	☐	☒	M	CIA will address EJ and Section 4(f)
Community Character and Cohesion	☐	☐	☒	M	Evaluation to be included in the CIA
Relocations	☐	☐	☒	M	Evaluation to be included in the CIA
Environmental Justice	☐	☐	☒	M	Evaluation to be included in the CIA
Utilities/Emergency Services	☐	☐	☒	L	Evaluation to be included in the CIA
Visual/Aesthetics	☐	☐	☒	L	Abbreviated VIA
Cultural Resources:	☐	☐	☒	L	
Archaeological Survey Report	☐	☐	☒	L	Urbanized area
Historic Resources Evaluation Report	☐	☐	☒	M	Identified historic resources within project area
Historic Property Survey Report	☐	☐	☒	M	Summary of ASR and HRER
Historic Resource Compliance Report	☒	☐	☐	L	
Section 106 / PRC 5024 & 5024.5	☐	☐	☒	L	Required process
Native American Coordination	☐	☐	☒	L	Required process
Finding of Effect	☒	☐	☐	L	
Data Recovery Plan	☒	☐	☐	L	
Memorandum of Agreement	☒	☐	☐	L	
Other:	☐	☐	☐	L	
Hydrology and Floodplain	☐	☐	☒	L	Location Hydraulic Study and a Summary Floodplain Encroachment Report
Water Quality and Stormwater Runoff	☐	☐	☒	L	A WQ questionnaire is required that may lead to a WQA report
Geology, Soils, Seismic and Topography	☐	☐	☒	L	
Paleontology	☒	☐	☐	L	
PER	☒	☐	☐	L	
PMP	☒	☐	☐	L	
Hazardous Waste/Materials:	☐	☐	☒	M	
ISA (Additional)	☐	☐	☒	M	ISA to be completed during PA & ED
PSI	☒	☐	☐	L	

Environmental Studies for PA&ED Checklist					
	Not anticipated	Memo to file	Report required	Risk* L M H	Comments
Other:	☐	☐	☐	L	
Air Quality	☐	☐	☒	L	Will include MSAT and conformity analysis
Noise and Vibration	☐	☐	☒	L	Project is a Type I
Energy and Climate Change	☒	☐	☐	L	
Biological Environment	☐	☐	☒	L	
Natural Environment Study	☐	☐	☒	L	NES will be required to address work within the river/channel and MBTA compliance
Section 7:	☒	☐	☐	L	
Formal	☒	☐	☐	L	
Informal	☒	☐	☐	L	
No effect	☒	☐	☐	L	
Section 10	☒	☐	☐	L	
USFWS Consultation	☒	☐	☐	L	
NMFS Consultation	☒	☐	☐	L	
Species of Concern (CNPS, USFS, BLM, S, F)	☒	☐	☐	L	Discussion to be included in the NES
Wetlands & Other Waters/Delineation	☐	☐	☒	L	To support permit applications
404(b)(1) Alternatives Analysis	☒	☐	☐	L	
Invasive Species	☒	☐	☐	L	Discussion to be included in the NES
Wild & Scenic River Consistency	☒	☐	☐	L	No wild or scenic rivers
Coastal Management Plan	☒	☐	☐	L	Not within coastal zone
HMMP	☒	☐	☐	L	Not within HMMP
DFG Consistency Determination	☒	☐	☐	L	
2081	☒	☐	☐	L	
Other:	☐	☐	☐	L	
Cumulative Impacts	☒	☐	☐	L	Discussion to be included in ED
Context Sensitive Solutions	☒	☐	☐	L	Discussion to be included in ED
Section 4(f) Evaluation	☐	☐	☒	M	Separate Appendix with document (Individual Analysis or de minimis) if a 'use' is identified
Permits:					
401 Certification Coordination	☐	☐	☒	M	Certification required
404 Permit Coordination, IP, NWP, or LOP	☐	☐	☒	M	NWP required
1602 Agreement Coordination	☐	☐	☒	M	Agreement may be required

Environmental Studies for PA&ED Checklist					
	Not anticipated	Memo to file	Report required	Risk* L M H	Comments
408 Permit Coordination	☐	☐	☒	**M**	Permit required
Local Coastal Development Permit Coordination	☒	☐	☐	L	
State Coastal Development Permit Coordination	☒	☐	☐	L	
NPDES Coordination	☐	☐	☒	L	
US Coast Guard (Section 10)	☒	☐	☐	L	
TRPA	☒	☐	☐	L	
BCDC	☒	☐	☐	L	

Attachment E-2
Estimated Resources by WBS Code

Division of Environmental Planning Resources for:

0716000166 (07-32810) LA091, Pm 8.44/13.61, Interchange Improvements

PM: Tin T Dinh
SEP: Jason Roach

ED:	IS/CEA
	O.S.

PAED:	12/20/17
DED:	10/30/17

PROJECT TASK (WBS Code - Activity)	General	Biology	Cultural	HW	Air	Noise	Paleo	Steward	Sup Svcs	OEE Supv	Contracts	Total
FUNCTIONAL UNITS:	7.1776	7.1781	7.1779	7.1846	7.1848	7.1845	7.4110	7.1782	7.1775	7.1769	7.1773	
Project Management												
100.10 - PAED Component	100	-	-	-	-	-	-	-	24	-	-	124
100.15 - PS&E Component	-	-	-	-	-	-	-	-	24	-	-	24
100.20 - Construction Component	-	-	-	-	-	-	-	-	24	-	-	24
Total Project Management	100	-	-	-	-	-	-	-	72	-	-	172
Perform Preliminary Engineering Studies and Draft Project Report												
160.05 Update Project Information	-	-	-	-	-	-	-	-	-	-	-	-
160.10 Engineering Studies	-	-	-	-	-	-	-	-	-	-	-	-
160.15 Draft Project Report	40	-	-	-	16	-	-	-	-	-	-	56
160.20 Engineering and Land Net Surveys	-	-	-	-	-	-	-	-	-	-	-	-
160.30 Environmental Study Request	-	-	-	-	-	-	-	-		-	-	-
Total Prelim Eng. Studies & Approved DPR	40	-	-	-	16	-	-	-	-	-	-	56
Perform Environmental Studies and Prepare Draft Environmental Document												
165.05 – Env. Scoping of Alternatives	100	-	-	-	-	-	-	-	-	-	-	100
165.10 – General Env. Studies	120	80	-	180	280	240	-	20	-	30	-	950
165.15 – Biological Studies	-	40	-	-	-	-	-	-	-	-	-	40
165.20 – Cultural Resource Studies	-	-	200	-	-	-	-	-	-	-	-	200
165.25 – Draft Environmental Doc.	350	16	40	20	40	-	-	-	-	-	-	466
165.30 - NEPA Assignment	40	-	-	-	-	-	-	-	100	-	-	140
Total Env Studies & Approved DED	610	136	240	200	320	240	-	20	100	30	-	1,896
Obtain Permits, Licenses, Agreements, & Certifications (PLAC) at PAED												
170.05 - Required PLACs	-	-	-	-	-	-	-	-	-	-	-	-
170.10 - PLACs	-	-	-	-	-	-	-	-	-	-	-	-
Total Obtained PLACs	-	-	-	-	-	-	-	-	-	-	-	-
Circulate Draft Environmental Document and Select Preferred Project Alternative												
175.05 – DED Circulation	16	-	-	-	-	140	-	-	-	-	-	156
175.10 – Public Hearing	16	-	-	-	-	20	-	-	16	8	-	60
175.15 – Public Comment Responses	80	16	40	40	45	20	-	-	-	-	-	241
175.20 – Project Preferred Alternative	-	-	-	-	-	-	-	-	-	-	-	-
175.25 - NEPA Assignment	-	-	-	-	-	-	-	-	-	-	-	-
Total Circulate DED & Public Hearing	112	16	40	40	45	180	-	-	16	8	-	457
Prepare and Approve Project Report and Final Environmental Document												
180.05 - Final Project Report	-	-	-	-	16	30	-	-	-	-	-	46
180.10 - Final Environmental Doc.	200	16	40	16	40	-	-	-	-	-	-	312
180.15 - Complete Env. Documents	8	-	-	-	-	-	-	16	-	-	-	24
180.20 - NEPA Assignment	40	-	-	-	40	-	-	-	60	-	-	140
Total Approved Final PR & ED	248	16	40	16	96	30	-	16	60	-	-	522
Sub-Total for PAED Phase	**1,110**	**168**	**320**	**256**	**477**	**450**	**-**	**36**	**200**	**38**	**-**	**3,055**

PROJECT TASK (WBS Code - Activity)	General	Biology	Cultural	HW	Air	Noise	Paleo	Steward	Sup Svcs	OEE Supv	Contracts	Total
FUNCTIONAL UNITS:	7.1776	7.1781	7.1779	7.1846	7.1848	7.1845	7.4110	7.1782	7.1775	7.1769	7.1773	
Obtain Permits, Licenses, Agreements, & Certifications (PLAC) at PS&E												
205.05 - PLACs Determination	-	-	-	-	-	-	-	-	-	-	-	-
205.10 - PLACs	-	-	-	-	-	-	-	-	-	-	-	-
205.55 - NEPA Assignment	-	-	-	-	-	-	-	-	-	-	-	-
Total Obtained PLACs	-	-	-	-	-	-	-	-	-	-	-	-
Mitigate Environmental Impacts and Clean-up Hazardous Waste												
235.05 - Environmental Mitigation	24	16	80	-	-	80	-	100	16	24	-	340
235.10 - Site Investigation of HW	-	-	-	400	-	-	-	-	-	-	-	400
235.15 - HW Management Plan	-	-	-	-	-	-	-	-	-	-	-	-
235.20 - Hazardous Waste	-	-	-	-	-	-	-	-	-	-	-	-
235.25 - HW Clean Up	-	-	-	-	-	-	-	-	-	-	-	-
Total Mitigation & HW Clean-up	24	16	80	400	-	80	-	100	16	24	-	740
Circulate, Review and Prepare Final District PS&E Package												
255.05 – Circ & Rev Draft Dist PS&E	16	8	16	-	-	-	-	20	-	-	-	60
255.10 – Update Technical Reports	-	-	-	80	-	-	-	-	-	12	-	92
255.15 – Env Reevaluation	16	8	16	-	-	-	-	-	16	-	-	56
255.20 - Final PS&E Package	-	-	-	-	-	-	-	-	-	-	-	-
255.40 – Prep Res Engs File	-	-	-	-	-	-	-	-	-	-	-	-
Total PS&E Package	32	16	32	80	-	-	-	20	16	12	-	208
Contract Bid Documents Ready to List												
260.75 - Environmental Certificate	8	-	-	-	-	-	-	-	-	-	-	8
Total Environmental Certificate	8	-	-	-	-	-	-	-	-	-	-	8
Sub-Total for PS&E Phase	**64**	**32**	**112**	**480**	-	**80**	-	**120**	**56**	**36**	-	**980**
Construction Engineering & General Contract Administration												
270.22 - Contract Admin (Pre-Const Mtg)	8	-	-	-	-	100	-	80	-	-	-	188
270.66 - Technical Support	-	-	-	80	-	-	-	-	-	8	-	88
Total General Contract Admin	8	-	-	-	-	100	-	80	-	-	-	276
Administration of Permits, Licenses, Agreements & Certifications (PLACs) and Environmental Stewardship												
280.10 - PLAC Compliance	-	-	-	40	-	-	-	300	-	8	-	348
280.40 - PLAC Violations	-	-	-	-	-	-	-	-	-	-	-	-
280.50 - Other Environmental Compliance	-	-	-	-	-	-	-	-	8	-	-	8
280.60 - Other Environmental Violations	-	-	-	-	-	-	-	-	-	-	-	-
280.70 – Updated ECR	-	-	-	-	-	-	-	-	-	-	-	-
280.75 - Environmental Reevaluation	-	-	-	-	-	-	-	-	-	-	-	-
280.80 - Updated PLAC	16	-	-	-	-	-	-	-	-	-	-	16
Total Const Engineering	16	-	-	40	-	-	-	300	8	8	-	372
Accept Contract, Prepare Final Construction Estimate & Prepare Final Report												
295.35 – Prep Cert of Env Compliance	8	-	-	-	-	-	-	40	-	-	-	48
295.40 - Long Term Env. Mitigation	-	-	-	-	-	-	-	-	-	-	-	-
Total Obtained PLACs	8	-	-	-	-	-	-	40	-	-	-	48
Sub-Total for Construction	**32**	-	-	**40**	-	**100**	-	**420**	**32**	**8**	-	**720**
Total Labor Hours by Funtional Units:	**1,206**	**200**	**432**	**776**	**477**	**630**	-	**576**	**288**	**82**	-	**4,755**

ATTACHMENT F

Transportation Planning Scoping Information Sheet

ARTICLE 4 Transportation Planning Scoping Information Sheet

PROJECT INFORMATION

District	County	Route	Post Miles	Project ID No/ Expenditure Authorization No.
07	LA	91	R8.2/R13.8	ID 0716000166 / EA 07-32810K

Project Name and Description :
SR-91 (Central Ave to Paramount Blvd) Project Study Report – Project Development Support (PSR-PDS)

Prepared by:

District Information Sheet Point of Contact*:	Name: Mohamed A. Ahmed	Functional Unit:	Office of Projects and Special Studies

* The District Information Sheet Point of Contact is responsible for completing Project Information, PDT Team and Stakeholder Information, and coordinating the completion of project-related information with the Transportation Planning Stakeholders. Upon completion, provides the Transportation Planning PDT Representative and Project Manager with a copy of the Information Sheet.

Project Development Team (PDT) Information		
Title	**Name**	**Phone Number**
Project Manager	Tin Dinh	(213) 897-0112
Project Engineer		
Transportation Planning PDT Representative**	Albert Andraos	(213) 897-4921

Transportation Planning Stakeholder Information		
Title	**Name**	**Phone Number**
Regional Planner		
System Planner		
Local Development-Intergovernmental Review (LD-IGR) Planner		
Community Planner		
Goods Movement Planner		
Transit Planner		
Bicycle and Pedestrian Coordinator		
Park and Ride Coordinator		
Native American Liaison		
Other Coordinators:	TBD	

Project Purpose and Need –**

Purpose: The purpose of the project is to reduce congestion, improve freeway (both mainline and ramps), system interchange and local operations as well as enhance accessibility, safety and multimodal integration, for pedestrian, bicycle, transit and motorist needs, while minimizing adjacent right-of-way, environmental, and economic impacts.

Need: The SR-91 corridor currently experiences significant congestion, which is forecast to increase in the future absent of physical and operational improvements to the facility. Congestion is the result of insufficient SR-91 freeway mainline capacity and closely spaced freeway entrance and exit ramps. The existing freeway geometry has many features which do not meet current Caltrans Highway Design Manual (HDM) Standards, such as nonstandard shoulder and lane widths as well as taper and weave lengths. There is also a high concentration of heavy trucks and accidents throughout the corridor.

** The Transportation Planning PDT Representative is responsible for providing the PDT with the system-wide and corridor level deficiencies identified by Transportation Planning. The PDT uses the information provided by Transportation Planning to develop the purpose and need with contributions from other Caltrans functional units and external stakeholders at the initiation of the PID and is refined throughout the PID process. As the project moves past the project initiation stage and more data becomes available, the purpose and need is refined. For additional information on purpose and need see: www.dot.ca.gov/hq/env/emo/purpose_need.htm

1. Project Funding:

a	List all known and potential funding sources and percent splits: (ie. State Transportation Improvement Program (STIP)/State Highway Operations and Protection Program (SHOPP)/Transportation Enhancement (TE)/Environmental Enhancement and Mitigation (EEM)/Safe Routes to School (SR2S)/etc.).
	Measures R and M
b	Is this a measure project? Yes_X_/No__. If yes, name and describe the measure.
	Measures R and M will likely be used to fund part of the project. A Transportation Strategic Plan will be developed as part of the PSR-PDS to identify project funding.

2. Regional Planning:

a	Name of and contact information for Metropolitan Planning Organization (MPO) or Regional Transportation Planning Agency (RTPA).
	RTPA: Los Angeles County Metropolitan Transportation Authority (METRO) Ms. Lucy Olmos-Delgadillo, METRO, (213) 922-7099, olmosl@metro.net
b	Name of and contact information for local jurisdiction (City or County)
	Department of Transportation, Caltrans Tin Dinh
c	Provide the page number and project description as identified in the Regional Transportation Plan (RTP) and the date of adoption, or provide an explanation if not in RTP.
	The project is not currently in the RTP. The project will be added to the RTP by preparing an amendment to the RTP once the PSR-PDS is completed and approved.
d	Provide nexus between the RTP objectives and the project to establish the basis for the project purpose and need.
	The proposed project will provide congestion relief and enhance overall operations and safety.
e	Is the project located in an area susceptible to sea-level rise?
	No
f	Name of Air Quality Management District (AQMD)
	South Coast Air Quality Management District
g	If the project is located in a federal non-attainment or attainment-maintenance area is the project:
	• Regionally Significant? (per 40 (Code of Federal Regulations (CFR) 93.101) Y_X_/N
	• Exempt from conformity? (per 40 CFR 93.126 and 93.128) Y__/N_X_
	• Exempt from regional analysis? (per 40 CFR 93.127) Y__/N_X_
	• Not exempt from conformity (must meet all requirements)? Y_X_/N__

3. Native American Consultation and Coordination:

a	If project is within or near an Indian Reservation or Rancheria? If so, provide the name of Tribe.
	No
b	Has/have the Tribal Government(s) been consulted? Y___/N_X_. If no, why not?
	N/A
c	If the project requires Caltrans to use right-of-way on trust or allotted lands, this information needs to be included as soon as possible as a key topic in the consultation with the Tribe(s). Has the Tribe been consulted on this topic? Y___/N_X_. If no, why not?
	N/A
d	Has the Bureau of Indian Affairs (BIA) been notified? Y__/N_X_
	N/A
e	Have all applicable Tribal laws, ordinances and regulations [Tribal Employment Rights Ordinances (TERO), etc.] been reviewed for required contract language and coordination?
	N/A
f	If the Tribe has a TERO, is there a related Memorandum of Understanding between the District and the Tribe?
	No.
g	Has the area surrounding the project been checked for prehistoric, archeological, cultural, spiritual, or ceremonial sites, or areas of potentially high sensitivity? If such areas exist, has the Tribe, Native American Heritage Commission or other applicable persons or entities been consulted?
	No.
h	If a Native American monitor is required for this project, will this cost be reflected in cost estimates?
	N/A
i	In the event of project redesign, will the changes impact a Native American community as described above in d, e, or h?
	No.

4. System Planning:

a	Is the project consistent with the DSMP? Y__/N_X_. If yes document approval date. If no, explain.
	District System Management Plans for District 7 is currently under development.
b	Is the project identified in the TSDP? Y__/N_X_? If yes, document approval date____. If no, explain.
	Transportation System Management Program for District 7 is currently under development.
c	Is the project identified in the TCR/RCR or CSMP? Y_X_/N__. If yes, document approval date is July 22, 2013. If no, explain. Is the project consistent with the future route concept? Y_X_/N__. If no, explain.
d	Provide the Concept Level of Service (LOS) through project area.
	Per the 1996 District System Management Plan, Caltrans has established the minimum acceptable level of service of F0 for the freeway system.
e	Provide the Concept Facility – include the number of lanes. Does the Concept Facility include High Occupancy Vehicle lanes? Y_X_/N__.
	The 2013 Transportation Concept Report describes SR-91as follows: • West of I-710, 5 MF+1 HOV each direction • East of I-710, 4 MF+1 HOV each direction
f	Provide the Ultimate Transportation Corridor (UTC) – include the number of lanes. Does the UTC include High Occupancy Vehicle Lanes? Y_X_/N__.
	• West of I-710, 6 MF+1 HOV each direction • East of I-710, 5 MF+1 HOV each direction
g	Describe the physical characteristics of the corridor through the project area (i.e. flat, rolling or mountainous terrain...).

	The project area is predominantly flat with a minor curved alignment.
h	Is the highway in an urban or rural area? Urban_X_/Rural__. Provide Functional Classification.
	Freeway
i	Is facility a freeway, expressway or conventional highway?
	Freeway
j	Provide Route Designations: (i.e. Interregional Transportation Strategic Plan (ITSP) High Emphasis or Focus Route, Surface Transportation Assistance Act (STAA) Route, Scenic Route…).
	The SR-91 serves as an Interregional and Intra-regional Route, Shipping Route, Major Goods Movement Route, STAA Route, NHS.
k	Describe the land uses adjacent to project limits (i.e. agricultural, industrial…).
	Residential, Commercial and Industrial.
l	Describe any park and ride facility needs identified in the TCR/CSMP, local plans, and RTP.
	N/A
m	Describe the Forecasted 10 and 20-year Vehicle Miles Traveled (VMT), Annual Average Daily Traffic (AADT), and Peak Hour truck data in the TCR. Include the source and year of Forecast, and names and types of traffic and travel demand analysis tools used.
	The 2013 Transportation Concept Report describes SR-91 as follows: • West of I-710 2008 AADT = 249,900, VMT = 1,126,300, AADT = 12,400 2035 AADT = 251,500, VMT = 1,133,487 • East of I-710 2008 AADT = 289,300, VMT = 637,200, AADT = 27,300 2035 AADT = 298,000, VMT = 655,600
n	Has analysis on Daily Vehicle Hours of Delay (DVHD) from the Highway Congestion Monitoring Program (HICOMP) been completed and included? Y_X_/N__.
	Per the 2008 State Highway Congestion Monitoring Program, the Daily Vehicle Hours of Delay for Los Angeles County was 127,924.

5. Local Development – Intergovernmental Review (LD-IGR):

List LD-IGR projects that may directly or indirectly impact the proposed Caltrans project or that the proposed Caltrans project may impact. (Attach additional project information if needed.)

LD-IGR Project Information		Project
a	County-Route-Postmile & Distance to Development.	07-LA-710-PM 10.8/15.0
b	Development name, type, and size.	I-710 Corridor
c	Local agency and/or private sponsor, and contact information.	METRO
d	California Environmental Quality Act (CEQA) status and Implementation Date.	Currently under RDEIR process to be completed May 2017.
e	If project includes federal funding, National Environmental Policy Act (NEPA) status.	Federal funding to be determined.
f	All vehicular and non-vehicular unmitigated impacts and planned mitigation measures including Transportation Demand Management (TDM) and Transportation System Management (TSM) that would affect Caltrans facilities.	Currently reduced to two finalist alternatives, Alternative 5C (Widening to 10 mixed flow lanes), Alternative 7 (8 mixed flow lanes plus one four lane elevated truckway).

g	Approved mitigation measures and implementing party.	Widening and METRO/Caltrans
h	Value of constructed mitigation and/or amount of funds provided.	1 Billion Dollars
i	Encroachment Permit, Transportation Permit, Traffic Management Plan, or California Transportation Commission (CTC) Access approvals needed.	Yes
j	Describe relationship to Regional Blueprint, General Plans, or County Congestion Management Plans.	Project is consistent with Gateway Cities Strategic Plan.
k	Inclusion in a Regional Transportation Plan Sustainable Community Strategy or Alternative Planning Strategy?	To be included upon project approval.
l	Regional or local mitigation fee program in place?	Pending

6. Community Planning:

	INITIAL PID INFORMATION
a	Has lead agency staff worked with any neighborhood/community groups in the area of the proposed improvements? Y_X_/N__. If yes, summarize the process and its results including any commitments made to the community. If no, why not?
	Multiple GCCOG Technical Advisory Committee (TAC) and Corridor Cities Committee (CCC) meetings have been held to date. Input from cities and County have been incorporated or responded to. The TAC and CCC will both be involved in moving the Alternatives forward into the PA/ED phase.
b	Are any active/completed/proposed Environmental Justice (EJ) or Community-Based Transportation (CBTP) Planning Grants in the project area? Y__/N_X_. If yes, summarize the project, its location, and whether/how it may interact with the proposed project.
	N/A
c	Describe any community participation plans for this PID including how recommendations will be incorporated and/or addressed. Has a context sensitive solutions (CSS) approach been applied? Y /N X
	Pending further development and community participation to be conducted during the PA/ED phase.
	FINAL PID INFORMATION
d	How will the proposed transportation improvements impact the local community? Is the project likely to create or exacerbate existing environmental or other issues, including public health and safety, air quality, water quality, noise, environmental justice or social equity? Y__/N_X_. Describe issues, concerns, and recommendations (from sources including neighborhood/community groups) and what measures will be taken to reduce existing or potential negative effects.
	Refer to the PEAR in the PSR-PDS (Attachment E).
e	Does this highway serve as a main street? Y__/N_X_. If yes, what main street functions and features need to be protected or preserved?

7. Freight Planning:

	INITIAL PID INFORMATION
a	Identify all modal and intermodal facilities that may affect or be affected by the project.
	Ports of Los Angeles and Long Beach, and local/regional intermodal facilities at Hobart (Commerce, CA).
	FINAL PID INFORMATION

b	Describe how the design of this project could facilitate or impede Goods Movement and relieve choke points both locally and statewide through grade separations, lane separations, or other measures (e.g., special features to accommodate truck traffic and at-grade railroad crossings).
	The project will add general purpose lanes including a possible exclusive truckway as well as correct existing non-standard conditions for most system and local interchanges, enhancing safety and relieving traffic congestion which will improve Goods Movement throughout the project area.
c	Describe how the project integrates and interconnects with other modes (rail, maritime, air, etc.). Do possibilities exist for an intermodal facility or other features to improve long-distance hauling, farm-to-market transportation and/or accessibility between warehouses, storage facilities, and terminals?
	The project will serve the Ports of Los Angeles and Long Beach as well as Hobart, which provide rail and maritime facilities for container goods movement.
d	Is the project located in a high priority goods movement area, included in the Goods Movement Action Plan (GMAP) or on a Global Gateways Development Program (GGDP) route? Y_X_/N__. If yes, describe.
	SR-91 is considered as one of the major Goods Movement Routes in Los Angeles County.
e	Is the project on a current and/or projected high truck volume route [e.g., Average Annual Daily Truck Traffic (AADTT) of 5 axle trucks is greater than 3000]? Yes_X_/N__. If yes, describe how the project addresses this demand.
	By offering additional outside truck lanes and an exclusive truckway or freight corridor.
f	If the project is located near an airport, seaport, or railroad depot, describe how circulation (including truck parking) needs are addressed.
	Port and railroad facilities are not within the boundaries of the project, thus parking is not required. Truck parking is provided within local industrial facilities along SR-91.
g	Describe any other freight issues.
	Freight issues pertain to capacity and safety from passenger vehicles. Such issues are addressed by an exclusive freight corridor on I-710 in Alternative 7 currently under evaluation.

8. Transit (bus, light rail, commuter rail, intercity rail, high speed rail):

	INITIAL PID INFORMATION
a	List all local transit providers that operate within the corridor.
	LA Metro light rail and buses as well as local city bus routes.
b	Have transit agencies been contacted for possible project coordination? Y__/N_X_. If no, why not?
	Impacts to transit will be reviewed and coordinated during the PA/ED phase.
c	Describe existing transit services and transit features (bus stops, train crossings, and transit lines) within the corridor.
	There are multiple bus lines and one light rail corridor crossing beneath SR-91 currently with connection to such facilities.
d	Describe transit facility needs identified in short- and long-range transit plans and RTP. Describe how these future plans affect the corridor.
	Needs are currently unknown.
	FINAL PID INFORMATION
e	Describe how the proposed project integrates transit and addresses impacts to transit services and transit facilities.
	The proposed project enhances accessibility to local transit lines and stations through enhanced mainline and interchanges.
f	Have transit alternatives and improvement features been considered in this project? Y__/N_X_ If yes, describe. If no, why not?
	SR-91 provides access to local transit facilities.

9. Bicycle:

	INITIAL PID INFORMATION
a	Does the facility provide for bicyclist safety and mobility needs? If no, please explain.
	Yes, multiple locations will be improved to accommodate designated Class II, III and IV Bikeways.
b	Are any improvements for bicyclist safety and mobility proposed for this facility by any local agencies or included in bicycle master plans? If yes, describe (including location, time frame, funding, etc.).
	Yes, the project will provide bikeways in accordance with local agencies bicycle master plans.
c	Are there any external bicycle advocacy groups and bicycle advisory committees that should be included in the project stakeholder list? If so, provide contact information.
	Yes there are, and these will be contacted during the PA/ED phase.
	FINAL PID INFORMATION
d	Will bicycle travel deficiencies be corrected? How or why not?
	Yes by closing existing bikeway segment gaps across SR-91.
e	How will this project affect local agency plans for bicycle safety and mobility improvements?
	This project will implement local agency plans for bicycle safety and mobility near SR-91.
f	If the project is the construction of a new freeway or modification to an existing freeway, will it sever or destroy existing provisions for bicycle travel? If yes, describe how bicycle travel provisions will be included in this project.
	This project provides connectivity to existing bikeway gaps without disruption.

10. Pedestrian including Americans with Disabilities Act (ADA):

	INITIAL PID INFORMATION
a	Does this facility provide for pedestrian safety and mobility needs? If so, describe pedestrian facilities. Do continuous and well-maintained sidewalks exist? Are pedestrians forced to walk in the roadway at any locations due to lack of adequate pedestrian facilities? Please explain.
	Yes, by improving non ADA compliant pedestrian facilities (e.g., curb ramps and sidewalk).
b	Are pedestrian crossings located at reasonable intervals?
	Yes.
c	Are all pedestrian facilities within the corridor ADA accessible and in compliance with Federal and State ADA laws and regulations?
	No, not all existing facilities comply with ADA, Federal and State laws and regulations.
	FINAL PID INFORMATION
d	Will pedestrian travel deficiencies be corrected? How or why not?
	Where feasible, pedestrian travel deficiencies will be corrected by providing ADA compliant ramps and sidewalks, roadway signs and ADA compliant traffic signal hardware.
e	How will this project affect local agency plans for pedestrian safety and mobility improvements?
	This project will provide improvements consistent with local agency plans for pedestrian safety and mobility.
f	If the project is the construction of a new freeway or modification to an existing freeway, will it sever or destroy existing provisions for pedestrian travel? If yes, describe how pedestrian travel provisions will be included in this project.
	This project does not sever or destroy any existing provisions for pedestrian travel. Pedestrian travel will maintained during construction.
g	Are there any external pedestrian advocacy groups and advisory committees that should be included in the project stakeholder list? If so, provide contact information.
	Yes and these (including local schools) will be identified and contacted during the PA/ED phase.
h	Have ADA barriers as noted in the District's ADA Transition Plan been identified within the project limits? If not included in the project, provide justification and indicate whether District Design coordinator approval was obtained.
	ADA barriers, if any, will be studied in the PA/ED phase.

11. Equestrian:

	INITIAL PID INFORMATION
a	If this corridor accommodates equestrian traffic, describe any project features that are being considered to improve safety for equestrian and vehicular traffic?
	N/A
	FINAL PID INFORMATION
b	Have features that accommodate equestrian traffic been identified? If so, are they included a part of this project? Describe. If no, why not?
	N/A

12. Intelligent Transportation Systems (ITS):

	INITIAL PID INFORMATION
a	Have ITS features such as closed-circuit television cameras, signal timing, multi-jurisdictional or multimodal system coordination been considered in the project? Y_X_/N__. If yes, describe. If no, explain.
	CCTV and signal timing coordination will be considered to enhance highway communication and interface with adjacent arterial operations and emergency response units.
	FINAL PID INFORMATION
b	Have ITS features been identified? If so, are they included a part of this project? Describe. If no, why not?
	ITS features have been identified conceptually and will continue in the PA/ED phase.

ATTACHMENT G

TMP Data Sheets

TRANSPORTATION MANAGEMENT PLAN DATA SHEET
(Preliminary TMP Elements and Cost)

Co/Rte/PM LA/91/8.2-13.8 EA: 07-32810K Alternaive No. All Build Alternatives
Project Limit Central Avenue to Paramount Boulevard
Project Description SR-91 PSR-PDS (Central Avenue to Paramount Boulevard)
Expected Construction Schedule 2024 - 2026

1) Public Information		
[X]	a. Brochures and Mailers	$ 600,000
[X]	b. Press Release	$ 80,000
[X]	c. Paid Advertising	$ 40,000
[ ]	d. Public Information Center/Kiosk	$
[ ]	e. Public Meeting/Speakers Bureau	$
[ ]	f. Telephone Hotline	$
[X]	g. Internet/Project web-site/Social media	$ 100,000
[ ]	h. Others	$
2) Motorists Information Strategies		
[ ]	a. Changeable Message Signs	$
[X]	b. Portable Changeable Message Signs	$ 200,000
[X]	c. Ground Mounted Signs	$ 100,000
[ ]	d. Highway Advisory Radio	$
[ ]	e. California Highway Information Network	$
[ ]	f. Others	$
3) Incident Management		
[X]	a. Construction Zone Enhanced Enforcement Program	$ 2,400,000
[X]	b. Tow/Freeway Service Patrol	$ 1,800,000
[ ]	c. Traffic Management Team	$
[ ]	d. Helicopter Surveillance	$
[ ]	e. Traffic Surveillance Stations (Loop Detector and	$
[ ]	f. Others _____	$
4) Construction Strategies		
[X]	a. Lane Requirement Chart	$ 50,000
[ ]	b. Reversible Lanes	$
[X]	c. Total Facility Closure	$ 100,000
[ ]	d. Contra Flow	$
[ ]	e. Truck Traffic Restrictions	$
[ ]	f. Reduced Speed Zone	$
[X]	g. Connector and Ramp Closures	$ 2,400,000
[X]	h. Incentive and Disincentive Clause	$ 4,000,000
[ ]	i. Moveable Barrier	$
[ ]	j. Others	$

5) Demand Management

☐	a. HOV Lanes/Ramps (New or Convert)	$
☐	b. Park and Ride Lots	$
☐	c. Rideshare Incentives	$
☐	d. Variable Work Hours	$
☐	e. Telecommute	$
☐	f. Ramp Metering (Temporary Installation)	$
☐	g. Ramp Metering (Modify Existing)	$
☐	h. Others	$

6) Alternative Route Strategies

☐	a. Add Capacity to Freeway Connector	$
☒	b. Street Improvement (widening, traffic	$ 1,000,000
☐	c. Traffic Control Officers	$
☐	d. Parking Restrictions	$
☐	e. Others	$

7) Other Strategies

☐	a. Application of New Technology	$
☐	e. Others	$

TOTAL ESTIMATED COST OF TMP ELEMENTS = $ 12,870,000

ATTACHMENT H

Conceptual Cost Estimate – Right-of-Way Component

CONCEPTUAL COST ESTIMATE – RIGHT OF WAY COMPONENT
Alternative 2_5C

To: Juan M. Diaz, PE, MBA
President/CEO
JMDiaz, Inc., dba (JMD)

From: Maile Kop
Analyst / Agent
Overland, Pacific & Cutler

Date: June 21, 2017
07-LA-91/710-PM
Project ID 0716000166
EA 07-32810K
SR-91/I-710 Interchange
Project

A Field Review was conducted ✓ Yes ___ No

Scope of the Right of Way

The SR-91/I-710 Interchange project (Alternative 2_5C) is located at the SR-91 and I-710 interchange, primarily within the cities of Carson, Compton and Long Beach, impacting approximately 60 assessor's parcel lots. Impacted parcels generally consist of Industrial, Commercial, Residential and Flood Control owned property types, and right of way required for acquisition includes 554,656 square feet of fee acquisition.

Right of Way Required ✓ Yes ___ No
Number of Parcels ___ 1-10 ___ 11-25 ___ 26-50 ✓ 51-100 ___ >100
✓ Urban ___ Rural

Land Area: Fee: 554,656 SF
Displaced Persons/Businesses ✓ Yes ___ No
Demolition/Clearance ✓ Yes ___ No
Railroad Involvement ✓ Yes ___ No
Utility Involvements ✓ Yes ___ No 1-5 Number of Utilities in area

Cost Estimates

Support Costs
___ $0-$25,000
___ $25,001-$100,000
___ $100,001-$250,000
___ $250,001-$500,000
___ $500,001-$1,000,000
___ $1,000,001-$5,000,000
___ $5,000,001-$10,000,000
✓ >$10,000,000

Capital Costs
___ $0-$100,000
___ $100,001-$500,000
___ $500,001-$1,000,000
___ $1,000,001-$5,000,000
___ $5,000,001-$15,000,000
___ $15,000,001-$50,000,000
✓ $50,000,001-$100,000,000
___ >$100,000,000

Schedule

Right of Way will require 18 months to deliver a Right of Way Certification #1 from Final R/W Maps. This estimate is based on a Right of Way Certification date of 1/1/2022.

Areas of Concern

APN 7306-001-901 and 7306-001-902 Flood Control owned parcel (located west of Santa Fe Avenue): Currently used as a drainage channel, assumed drainage will be protected in place or re-configured to avoid drainage issues. Additional right of way may be required.

APN 7306-007-034 (located west of Santa Fe Avenue): Has a concrete headwall structure drain, assumed drainage will be protected in place or re-configured to avoid drainage issues. Additional right of way may be required.

Several billboards located along the north and south side of the SR-91, west of Acacia Court (appears is not on private right of way). Assume the project will compensate the billboard owners for any billboards impacted by proposed improvements. These costs are not included in this estimate at this time due to the early stage of design, further analysis required to determine such conflicts and full impacts to the billboards.

The project design is based on preliminary schematic plans and aerial photography, property impacts should be expected to change with more precise information as the design progresses and could potentially impact Utility / Right of Way costs.

Assumptions and Limiting Conditions

- The right of way limits assumed were located using available county GIS parcel data. Visual impacts to properties were analyzed through available aerial photography. Although land net and design surveying will be required at a later date, it was generally assumed these to be sufficient for cost estimation purposes.
- Due to the preliminary design efforts, it was generally assumed full acquisition was required for parcels with substantial severance damages.
- Permanent easements, aerial easements or Temporary Construction Easements were not considered for partial acquisition due to the preliminary design efforts for the purposes of this estimate. Where proposed bridges and freeway improvements cross over private property, additional Right of Way may be necessary. Current easement rights needs to be reviewed and further analysis is required.
- Assumed access is maintained during and after construction for frontage road improvements and crossing collector/arterial highway facilities. Assumed contractor will provide ingress / egress and maintain access to properties and businesses during construction.
- Utilities currently within public Right of Way that are in conflict will be relocated within public Right of Way, and not require additional private Right of Way.
- Utilities within acquisition areas currently on private Right of Way that are in conflict may require replacement utility easements, due to limited utility mapping, these easements were not considered at this time.

- A contingency of 25% of the total estimated costs is utilized in this estimate due to unknown information such as access to leases and land use agreements, cooperation of land owners and unforeseen future market increases.
- A blended 6% escalation rate was utilized in the estimate as it best represents the market, which ranges 3%-12% between the miscellaneous land uses.
- A search for ownership information was not completed as it is not necessary for this level of right of way cost estimate. Unless easily identifiable, parcels were generally analyzed on a per assessor's parcel basis and not per larger parcel.
- City owned parcels are not included in this estimate as it is assumed no acquisition costs necessary for the city owned parcels.
- The costs related to relocation, loss of goodwill, fixtures and equipment, and demolition, were derived without any interviews of the occupant(s) or any specific business information and based upon past experience of similar cases within the general south Los Angeles County area.
- Estimated relocation assistance values are based on historical data on similar past projects and assumed tenants / occupants are eligible for relocation benefits per the Uniform Relocation Act.
- All properties assumed to be occupied and paying market rent.
- Assumed demolition costs are based on past experience demolishing buildings / sites in the Long Beach and Riverside area on similar properties to remove all improvements on site. This does not include environmental remediation.
- Limited analysis of severance damages (reduction of value to the remainder based upon the severance of the property or construction of the project) for partial acquisition was provided as design information is very limited, further analysis is required at more complete stages of design.
- Support/Right of Way services do not include environmental remediation.
- Monument signs impacted by the project could be custom made and costs are highly variable. There are many unknown factors such as the manufacturer, materials, and unforeseen additional costs for specialty signs. Further analysis required.
- Billboards - Without access to the terms of the billboard agreements, there are many unknown factors such as if there is a ground lease or an easement, lease costs and terms, income produced by the billboard, etc. The following assumptions were made based upon numbers we have seen in the past, but further analysis is required.
    - Assumed unable to relocation billboards.
    - Assumed 2% vacancy rate, 4% expense rate and 6.5% capitalization rate.
    - Assumed the ground lease is $3,500 per month and no percentage of gross earned revenue paid to the property owner.
    - Assumed no easement encumbrances, encroachments or sublicense/lease agreements associated with the billboard improvements.
    - Loss of the ground lease income to the property owner is combined in the loss of goodwill column within the estimate.
    - Assumed income produced by single a sided billboard is $6,000 per month and a double sided billboard is $10,000.
    - The billboard cost column includes the goodwill and structure value to the billboard owner within the estimate

- The estimate of probable cost for right of way acquisition and support does not include the following properties, however these properties were included the identified parcel counts and acquisition square footages listed herein.

7306-002-034	17600 S Santa Fe Ave
7306-002-037	3000 E Via Mondo
7306-002-059	3111 E Via Mondo

Contact

Juan M. Diaz, PE, MBA
President/CEO
JMDiaz, Inc., dba (JMD)
626-820-1137

CONCEPTUAL COST ESTIMATE – RIGHT OF WAY COMPONENT
Alternative 3_5C

To: Juan M. Diaz, PE, MBA
President/CEO
JMDiaz, Inc., dba (JMD)

From: Maile Kop
Analyst / Agent
Overland, Pacific & Cutler

Date: June 21, 2017
07-LA-91/710-PM
Project ID 0716000166
EA 07-32810K
SR-91/I-710 Interchange
Project

A Field Review was conducted ✓ Yes ___ No

Scope of the Right of Way

The SR-91/I-710 Interchange project (Alternative 3_5C) is located at the SR-91 and I-710 interchange, primarily within the cities of Carson, Compton and Long Beach, impacting approximately 10 assessor's parcel lots. Impacted parcels generally consist of Industrial, Commercial, Residential and Flood Control owned property types, and right of way required for acquisition includes 116,992 square feet of fee acquisition.

Right of Way Required ✓ Yes ___ No
Number of Parcels ✓ 1-10 ___ 11-25 ___ 26-50 ___ 51-100 ___ >100
✓ Urban ___ Rural

Land Area: Fee: 116,992 SF
Displaced Persons/Businesses ✓ Yes ___ No
Demolition/Clearance ✓ Yes ___ No
Railroad Involvement ✓ Yes ___ No
Utility Involvements ✓ Yes ___ No 1-5 Number of Utilities in area

Cost Estimates

Support Costs
___ $0-$25,000
___ $25,001-$100,000
___ $100,001-$250,000
___ $250,001-$500,000
___ $500,001-$1,000,000
___ $1,000,001-$5,000,000
___ $5,000,001-$10,000,000
✓ >$10,000,000

Capital Costs
___ $0-$100,000
___ $100,001-$500,000
___ $500,001-$1,000,000
___ $1,000,001-$5,000,000
___ $5,000,001-$15,000,000
✓ $15,000,001-$50,000,000
___ $50,000,001-$100,000,000
___ >$100,000,000

Schedule

Right of Way will require 18 months to deliver a Right of Way Certification #1 from Final R/W Maps. This estimate is based on a Right of Way Certification date of 1/1/2022.

Areas of Concern

APN 7306-001-902 Flood Control owned parcel (located west of Santa Fe Avenue): Currently used as a drainage channel, assumed drainage will be protected in place or re-configured to avoid drainage issues. Additional right of way may be required.

APN 7306-007-034 (located west of Santa Fe Avenue): Has a concrete headwall structure drain, assumed drainage will be protected in place or re-configured to avoid drainage issues. Additional right of way may be required.

Several billboards located along the north and south side of the SR-91, west of Acacia Court (appears is not on private right of way). Assume the project will compensate the billboard owners for any billboards impacted by proposed improvements. These costs are not included in this estimate at this time due to the early stage of design, further analysis required to determine such conflicts and full impacts to the billboards.

The project design is based on preliminary schematic plans and aerial photography, property impacts should be expected to change with more precise information as the design progresses and could potentially impact Utility / Right of Way costs.

Assumptions and Limiting Conditions

- The right of way limits assumed were located using available county GIS parcel data. Visual impacts to properties were analyzed through available aerial photography. Although land net and design surveying will be required at a later date, it was generally assumed these to be sufficient for cost estimation purposes.
- Due to the preliminary design efforts, it was generally assumed full acquisition was required for parcels with substantial severance damages.
- Permanent easements, aerial easements or Temporary Construction Easements were not considered for partial acquisition due to the preliminary design efforts for the purposes of this estimate. Where proposed bridges and freeway improvements cross over private property, additional Right of Way may be necessary. Current easement rights needs to be reviewed and further analysis is required.
- Assumed access is maintained during and after construction for frontage road improvements and crossing collector/arterial highway facilities. Assumed contractor will provide ingress / egress and maintain access to properties and businesses during construction.
- Utilities currently within public Right of Way that are in conflict will be relocated within public Right of Way, and not require additional private Right of Way.
- Utilities within acquisition areas currently on private Right of Way that are in conflict may require replacement utility easements, due to limited utility mapping, these easements were not considered at this time.

- A contingency of 25% of the total estimated costs is utilized in this estimate due to unknown information such as access to leases and land use agreements, cooperation of land owners and unforeseen future market increases.
- A blended 6% escalation rate was utilized in the estimate as it best represents the market, which ranges 3%-12% between the miscellaneous land uses.
- A search for ownership information was not completed as it is not necessary for this level of right of way cost estimate. Unless easily identifiable, parcels were generally analyzed on a per assessor's parcel basis and not per larger parcel.
- City owned parcels are not included in this estimate as it is assumed no acquisition costs necessary for the city owned parcels.
- The costs related to relocation, loss of goodwill, fixtures and equipment, and demolition, were derived without any interviews of the occupant(s) or any specific business information and based upon past experience of similar cases within the general south Los Angeles County area.
- Estimated relocation assistance values are based on historical data on similar past projects and assumed tenants / occupants are eligible for relocation benefits per the Uniform Relocation Act.
- All properties assumed to be occupied and paying market rent.
- Assumed demolition costs are based on past experience demolishing buildings / sites in the Long Beach and Riverside area on similar properties to remove all improvements on site. This does not include environmental remediation.
- Limited analysis of severance damages (reduction of value to the remainder based upon the severance of the property or construction of the project) for partial acquisition was provided as design information is very limited, further analysis is required at more complete stages of design.
- Support/Right of Way services do not include environmental remediation.
- Monument signs impacted by the project could be custom made and costs are highly variable. There are many unknown factors such as the manufacturer, materials, and unforeseen additional costs for specialty signs. Further analysis required.
- Billboards - Without access to the terms of the billboard agreements, there are many unknown factors such as if there is a ground lease or an easement, lease costs and terms, income produced by the billboard, etc. The following assumptions were made based upon numbers we have seen in the past, but further analysis is required.
    - Assumed unable to relocation billboards.
    - Assumed 2% vacancy rate, 4% expense rate and 6.5% capitalization rate.
    - Assumed the ground lease is $3,500 per month and no percentage of gross earned revenue paid to the property owner.
    - Assumed no easement encumbrances, encroachments or sublicense/lease agreements associated with the billboard improvements.
    - Loss of the ground lease income to the property owner is combined in the loss of goodwill column within the estimate.
    - Assumed income produced by single a sided billboard is $6,000 per month and a double sided billboard is $10,000.
    - The billboard cost column includes the goodwill and structure value to the billboard owner within the estimate

Contact

Juan M. Diaz, PE, MBA
President/CEO
JMDiaz, Inc., dba (JMD)
626-820-1137

CONCEPTUAL COST ESTIMATE – RIGHT OF WAY COMPONENT
Alternative 4_5C

To: Juan M. Diaz, PE, MBA
President/CEO
JMDiaz, Inc., dba (JMD)

From: Maile Kop
Analyst / Agent
Overland, Pacific & Cutler

Date: June 21, 2017
07-LA-91/710-PM
Project ID 0716000166
EA 07-32810K
SR-91/I-710 Interchange Project

A Field Review was conducted ✓ Yes ___ No

Scope of the Right of Way

The SR-91/I-710 Interchange project (Alternative 4_5C) is located at the SR-91 and I-710 interchange, primarily within the cities of Carson, Compton and Long Beach, impacting approximately 45 assessor's parcel lots. Impacted parcels generally consist of Industrial, Commercial, Residential and Flood Control owned property types, and right of way required for acquisition includes 534,822 square feet of fee acquisition.

Right of Way Required ✓ Yes ___ No
Number of Parcels ___ 1-10 ___ 11-25 ✓ 26-50 ___ 51-100 ___ >100
✓ Urban ___ Rural

Land Area: Fee: 534,822 SF
Displaced Persons/Businesses ✓ Yes ___ No
Demolition/Clearance ✓ Yes ___ No
Railroad Involvement ✓ Yes ___ No
Utility Involvements ✓ Yes ___ No 1-5 Number of Utilities in area

Cost Estimates

Support Costs
___$0-$25,000
___$25,001-$100,000
___$100,001-$250,000
___$250,001-$500,000
___$500,001-$1,000,000
___$1,000,001-$5,000,000
___$5,000,001-$10,000,000
✓ >$10,000,000

Capital Costs
___$0-$100,000
___$100,001-$500,000
___$500,001-$1,000,000
___$1,000,001-$5,000,000
___$5,000,001-$15,000,000
___$15,000,001-$50,000,000
___$50,000,001-$100,000,000
✓ >$100,000,000

Schedule

Right of Way will require 18 months to deliver a Right of Way Certification #1 from Final R/W Maps. This estimate is based on a Right of Way Certification date of 1/1/2022.

Areas of Concern

APN 7306-001-901 and 7306-001-902 Flood Control owned parcel (located west of Santa Fe Avenue): Currently used as a drainage channel, assumed drainage will be protected in place or re-configured to avoid drainage issues. Additional right of way may be required.

APN 7306-007-034 (located west of Santa Fe Avenue): Has a concrete headwall structure drain, assumed drainage will be protected in place or re-configured to avoid drainage issues. Additional right of way may be required.

APN 7115-002-004 Mobile Gas Station (located at 6685 Atlantic Ave): Environmental remediation is not included within this estimate due to the very preliminary design layout and unknown hazardous waste / improvements to remediate. There is high potential for severe impacts to both project right of way delivery schedules and cost estimates.

Several billboards located along the north and south side of the SR-91, west of Acacia Court (appears is not on private right of way). Assume the project will compensate the billboard owners for any billboards impacted by proposed improvements. These costs are not included in this estimate at this time due to the early stage of design, further analysis required to determine such conflicts and full impacts to the billboards.

The project design is based on preliminary schematic plans and aerial photography, property impacts should be expected to change with more precise information as the design progresses and could potentially impact Utility / Right of Way costs.

Assumptions and Limiting Conditions

- The right of way limits assumed were located using available county GIS parcel data. Visual impacts to properties were analyzed through available aerial photography. Although land net and design surveying will be required at a later date, it was generally assumed these to be sufficient for cost estimation purposes.
- Due to the preliminary design efforts, it was generally assumed full acquisition was required for parcels with substantial severance damages.
- Permanent easements, aerial easements or Temporary Construction Easements were not considered for partial acquisition due to the preliminary design efforts for the purposes of this estimate. Where proposed bridges and freeway improvements cross over private property, additional Right of Way may be necessary. Current easement rights needs to be reviewed and further analysis is required.
- Assumed access is maintained during and after construction for frontage road improvements and crossing collector/arterial highway facilities. Assumed contractor will provide ingress / egress and maintain access to properties and businesses during construction.
- Utilities currently within public Right of Way that are in conflict will be relocated within public Right of Way, and not require additional private Right of Way.

- Utilities within acquisition areas currently on private Right of Way that are in conflict may require replacement utility easements, due to limited utility mapping, these easements were not considered at this time.
- A contingency of 25% of the total estimated costs is utilized in this estimate due to unknown information such as access to leases and land use agreements, cooperation of land owners and unforeseen future market increases.
- A blended 6% escalation rate was utilized in the estimate as it best represents the market, which ranges 3%-12% between the miscellaneous land uses.
- A search for ownership information was not completed as it is not necessary for this level of right of way cost estimate. Unless easily identifiable, parcels were generally analyzed on a per assessor's parcel basis and not per larger parcel.
- City owned parcels are not included in this estimate as it is assumed no acquisition costs necessary for the city owned parcels.
- The costs related to relocation, loss of goodwill, fixtures and equipment, and demolition, were derived without any interviews of the occupant(s) or any specific business information and based upon past experience of similar cases within the general south Los Angeles County area.
- Estimated relocation assistance values are based on historical data on similar past projects and assumed tenants / occupants are eligible for relocation benefits per the Uniform Relocation Act.
- All properties assumed to be occupied and paying market rent.
- Assumed demolition costs are based on past experience demolishing buildings / sites in the Long Beach and Riverside area on similar properties to remove all improvements on site. This does not include environmental remediation.
- Limited analysis of severance damages (reduction of value to the remainder based upon the severance of the property or construction of the project) for partial acquisition was provided as design information is very limited, further analysis is required at more complete stages of design.
- Support/Right of Way services do not include environmental remediation.
- Monument signs impacted by the project could be custom made and costs are highly variable. There are many unknown factors such as the manufacturer, materials, and unforeseen additional costs for specialty signs. Further analysis required.
- Billboards - Without access to the terms of the billboard agreements, there are many unknown factors such as if there is a ground lease or an easement, lease costs and terms, income produced by the billboard, etc. The following assumptions were made based upon numbers we have seen in the past, but further analysis is required.
    - Assumed unable to relocation billboards.
    - Assumed 2% vacancy rate, 4% expense rate and 6.5% capitalization rate.
    - Assumed the ground lease is $3,500 per month and no percentage of gross earned revenue paid to the property owner.
    - Assumed no easement encumbrances, encroachments or sublicense/lease agreements associated with the billboard improvements.
    - Loss of the ground lease income to the property owner is combined in the loss of goodwill column within the estimate.
    - Assumed income produced by single a sided billboard is $6,000 per month and a double sided billboard is $10,000.

- The billboard cost column includes the goodwill and structure value to the billboard owner within the estimate

Contact

Juan M. Diaz, PE, MBA
President/CEO
JMDiaz, Inc., dba (JMD)
626-820-1137

CONCEPTUAL COST ESTIMATE – RIGHT OF WAY COMPONENT
Alternative 2_7

To: Juan M. Diaz, PE, MBA
President/CEO
JMDiaz, Inc., dba (JMD)

From: Maile Kop
Analyst / Agent
Overland, Pacific & Cutler

Date: June 20, 2017
07-LA-91/710-PM
Project ID 0716000166
EA 07-32810K
SR-91/I-710 Interchange Project

A Field Review was conducted ✓ Yes ___ No

Scope of the Right of Way

The SR-91/I-710 Interchange project (Alternative 2_7) is located at the SR-91 and I-710 interchange, primarily within the cities of Carson, Compton and Long Beach, impacting approximately 120 assessor's parcel lots. Impacted parcels generally consist of Industrial, Commercial, Residential and Flood Control owned property types, and right of way required for acquisition includes 1,100,610 square feet of fee acquisition.

Right of Way Required ✓ Yes ___ No
Number of Parcels ___ 1-10 ___ 11-25 ___ 26-50 ___ 51-100 ✓ >100
✓ Urban ___ Rural

Land Area: Fee: 1,100,610 SF
Displaced Persons/Businesses ✓ Yes ___ No
Demolition/Clearance ✓ Yes ___ No
Railroad Involvement ✓ Yes ___ No
Utility Involvements ✓ Yes ___ No 1-5 Number of Utilities in area

Cost Estimates

Support Costs
___$0-$25,000
___$25,001-$100,000
___$100,001-$250,000
___$250,001-$500,000
___$500,001-$1,000,000
___$1,000,001-$5,000,000
___$5,000,001-$10,000,000
✓ >$10,000,000

Capital Costs
___$0-$100,000
___$100,001-$500,000
___$500,001-$1,000,000
___$1,000,001-$5,000,000
___$5,000,001-$15,000,000
___$15,000,001-$50,000,000
___$50,000,001-$100,000,000
✓ >$100,000,000

Schedule

Right of Way will require 18 months to deliver a Right of Way Certification #1 from Final R/W Maps. This estimate is based on a Right of Way Certification date of 1/1/2022.

Areas of Concern

APN 7306-007-034 (located west of Santa Fe Avenue): Has a concrete headwall structure drain, assumed drainage will be protected in place or re-configured to avoid drainage issues. Additional right of way may be required.

APN 7115-002-004 Mobile Gas Station (located at 6685 Atlantic Ave): Environmental remediation is not included within this estimate due to the very preliminary design layout and unknown hazardous waste / improvements to remediate. There is high potential for severe impacts to both project right of way delivery schedules and cost estimates.

APN 7114-001-022 St John Lutheran Church & First Friendships Preschool (located at 6698 Orange Ave): Higher costs and delays to the schedule may occur due to the complex nature of displacing a church which may result in negative public perception and adverse community impacts. Assumed full acquisition of entire parcel due to impacting the church building on the northwest corner and assuming the need to relocate both the church and the school. Careful planning with regards to construction and the school session schedule should be considered to avoid increased costs, delays in the schedule and potential negative public perception.

Several billboards located along the north and south side of the SR-91, west of Acacia Court (appears is not on private right of way). Assume the project will compensate the billboard owners for any billboards impacted by proposed improvements. These costs are not included in this estimate at this time due to the early stage of design, further analysis required to determine such conflicts and full impacts to the billboards.

The project design is based on preliminary schematic plans and aerial photography, property impacts should be expected to change with more precise information as the design progresses and could potentially impact Utility / Right of Way costs.

Assumptions and Limiting Conditions

- The right of way limits assumed were located using available county GIS parcel data. Visual impacts to properties were analyzed through available aerial photography. Although land net and design surveying will be required at a later date, it was generally assumed these to be sufficient for cost estimation purposes.
- Due to the preliminary design efforts, it was generally assumed full acquisition was required for parcels with substantial severance damages.
- Permanent easements, aerial easements or Temporary Construction Easements were not considered for partial acquisition due to the preliminary design efforts for the purposes of this estimate. Where proposed bridges and freeway improvements cross over private property, additional Right of Way may be necessary. Current easement rights needs to be reviewed and further analysis is required.
- Assumed access is maintained during and after construction for frontage road improvements and crossing collector/arterial highway facilities. Assumed contractor will

provide ingress / egress and maintain access to properties and businesses during construction.

- Utilities currently within public Right of Way that are in conflict will be relocated within public Right of Way, and not require additional private Right of Way.
- Utilities within acquisition areas currently on private Right of Way that are in conflict may require replacement utility easements, due to limited utility mapping, these easements were not considered at this time.
- A contingency of 25% of the total estimated costs is utilized in this estimate due to unknown information such as access to leases and land use agreements, cooperation of land owners and unforeseen future market increases.
- A blended 6% escalation rate was utilized in the estimate as it best represents the market, which ranges 3%-12% between the miscellaneous land uses.
- A search for ownership information was not completed as it is not necessary for this level of right of way cost estimate. Unless easily identifiable, parcels were generally analyzed on a per assessor's parcel basis and not per larger parcel.
- City owned parcels are not included in this estimate as it is assumed no acquisition costs necessary for the city owned parcels.
- The costs related to relocation, loss of goodwill, fixtures and equipment, and demolition, were derived without any interviews of the occupant(s) or any specific business information and based upon past experience of similar cases within the general south Los Angeles County area.
- Estimated relocation assistance values are based on historical data on similar past projects and assumed tenants / occupants are eligible for relocation benefits per the Uniform Relocation Act.
- All properties assumed to be occupied and paying market rent.
- Assumed demolition costs are based on past experience demolishing buildings / sites in the Long Beach and Riverside area on similar properties to remove all improvements on site. This does not include environmental remediation.
- Limited analysis of severance damages (reduction of value to the remainder based upon the severance of the property or construction of the project) for partial acquisition was provided as design information is very limited, further analysis is required at more complete stages of design.
- Support/Right of Way services do not include environmental remediation.
- Monument signs impacted by the project could be custom made and costs are highly variable. There are many unknown factors such as the manufacturer, materials, and unforeseen additional costs for specialty signs. Further analysis required.
- Billboards - Without access to the terms of the billboard agreements, there are many unknown factors such as if there is a ground lease or an easement, lease costs and terms, income produced by the billboard, etc. The following assumptions were made based upon numbers we have seen in the past, but further analysis is required.
    - Assumed unable to relocation billboards.
    - Assumed 2% vacancy rate, 4% expense rate and 6.5% capitalization rate.
    - Assumed the ground lease is $3,500 per month and no percentage of gross earned revenue paid to the property owner.
    - Assumed no easement encumbrances, encroachments or sublicense/lease agreements associated with the billboard improvements.

- Loss of the ground lease income to the property owner is combined in the loss of goodwill column within the estimate.
- Assumed income produced by single a sided billboard is $6,000 per month and a double sided billboard is $10,000.
- The billboard cost column includes the goodwill and structure value to the billboard owner within the estimate

Contact

Juan M. Diaz, PE, MBA
President/CEO
JMDiaz, Inc., dba (JMD)
626-820-1137

CONCEPTUAL COST ESTIMATE – RIGHT OF WAY COMPONENT
Alternative 3_7

To: Juan M. Diaz, PE, MBA
President/CEO
JMDiaz, Inc., dba (JMD)

From: Maile Kop
Analyst / Agent
Overland, Pacific & Cutler

Date: June 21, 2017
07-LA-91/710-PM
Project ID 0716000166
EA 07-32810K
SR-91/I-710 Interchange Project

A Field Review was conducted ✓ Yes ___ No

Scope of the Right of Way

The SR-91/I-710 Interchange project (Alternative 3_7) is located at the SR-91 and I-710 interchange, primarily within the cities of Carson, Compton and Long Beach, impacting approximately 28 assessor's parcel lots. Impacted parcels generally consist of Industrial, Commercial, Residential and Flood Control owned property types, and right of way required for acquisition includes 398,292 square feet of fee acquisition.

Right of Way Required ✓ Yes ___ No
Number of Parcels ___ 1-10 ___ 11-25 ✓ 26-50 ___ 51-100 ___ >100
✓ Urban ___ Rural

Land Area: Fee: 398,292 SF
Displaced Persons/Businesses ✓ Yes ___ No
Demolition/Clearance ✓ Yes ___ No
Railroad Involvement ✓ Yes ___ No
Utility Involvements ✓ Yes ___ No 1-5 Number of Utilities in area

Cost Estimates

Support Costs
___ $0-$25,000
___ $25,001-$100,000
___ $100,001-$250,000
___ $250,001-$500,000
___ $500,001-$1,000,000
___ $1,000,001-$5,000,000
___ $5,000,001-$10,000,000
✓ >$10,000,000

Capital Costs
___ $0-$100,000
___ $100,001-$500,000
___ $500,001-$1,000,000
___ $1,000,001-$5,000,000
___ $5,000,001-$15,000,000
___ $15,000,001-$50,000,000
✓ $50,000,001-$100,000,000
___ >$100,000,000

Schedule

Right of Way will require 18 months to deliver a Right of Way Certification #1 from Final R/W Maps. This estimate is based on a Right of Way Certification date of 1/1/2022.

Areas of Concern

APN 7306-001-902 Flood Control owned parcel (located west of Santa Fe Avenue): Currently used as a drainage channel, assumed drainage will be protected in place or re-configured to avoid drainage issues. Additional right of way may be required.

APN 7306-007-034 (located west of Santa Fe Avenue): Has a concrete headwall structure drain, assumed drainage will be protected in place or re-configured to avoid drainage issues. Additional right of way may be required.

APN 7115-002-004 Mobile Gas Station (located at 6685 Atlantic Ave): Environmental remediation is not included within this estimate due to the very preliminary design layout and unknown hazardous waste / improvements to remediate. There is high potential for severe impacts to both project right of way delivery schedules and cost estimates.

Several billboards located along the north and south side of the SR-91, west of Acacia Court (appears is not on private right of way). Assume the project will compensate the billboard owners for any billboards impacted by proposed improvements. These costs are not included in this estimate at this time due to the early stage of design, further analysis required to determine such conflicts and full impacts to the billboards.

The project design is based on preliminary schematic plans and aerial photography, property impacts should be expected to change with more precise information as the design progresses and could potentially impact Utility / Right of Way costs.

Assumptions and Limiting Conditions

- The right of way limits assumed were located using available county GIS parcel data. Visual impacts to properties were analyzed through available aerial photography. Although land net and design surveying will be required at a later date, it was generally assumed these to be sufficient for cost estimation purposes.
- Due to the preliminary design efforts, it was generally assumed full acquisition was required for parcels with substantial severance damages.
- Permanent easements, aerial easements or Temporary Construction Easements were not considered for partial acquisition due to the preliminary design efforts for the purposes of this estimate. Where proposed bridges and freeway improvements cross over private property, additional Right of Way may be necessary. Current easement rights needs to be reviewed and further analysis is required.
- Assumed access is maintained during and after construction for frontage road improvements and crossing collector/arterial highway facilities. Assumed contractor will provide ingress / egress and maintain access to properties and businesses during construction.
- Utilities currently within public Right of Way that are in conflict will be relocated within public Right of Way, and not require additional private Right of Way.

- Utilities within acquisition areas currently on private Right of Way that are in conflict may require replacement utility easements, due to limited utility mapping, these easements were not considered at this time.
- A contingency of 25% of the total estimated costs is utilized in this estimate due to unknown information such as access to leases and land use agreements, cooperation of land owners and unforeseen future market increases.
- A blended 6% escalation rate was utilized in the estimate as it best represents the market, which ranges 3%-12% between the miscellaneous land uses.
- A search for ownership information was not completed as it is not necessary for this level of right of way cost estimate. Unless easily identifiable, parcels were generally analyzed on a per assessor's parcel basis and not per larger parcel.
- City owned parcels are not included in this estimate as it is assumed no acquisition costs necessary for the city owned parcels.
- The costs related to relocation, loss of goodwill, fixtures and equipment, and demolition, were derived without any interviews of the occupant(s) or any specific business information and based upon past experience of similar cases within the general south Los Angeles County area.
- Estimated relocation assistance values are based on historical data on similar past projects and assumed tenants / occupants are eligible for relocation benefits per the Uniform Relocation Act.
- All properties assumed to be occupied and paying market rent.
- Assumed demolition costs are based on past experience demolishing buildings / sites in the Long Beach and Riverside area on similar properties to remove all improvements on site. This does not include environmental remediation.
- Limited analysis of severance damages (reduction of value to the remainder based upon the severance of the property or construction of the project) for partial acquisition was provided as design information is very limited, further analysis is required at more complete stages of design.
- Support/Right of Way services do not include environmental remediation.
- Monument signs impacted by the project could be custom made and costs are highly variable. There are many unknown factors such as the manufacturer, materials, and unforeseen additional costs for specialty signs. Further analysis required.
- Billboards - Without access to the terms of the billboard agreements, there are many unknown factors such as if there is a ground lease or an easement, lease costs and terms, income produced by the billboard, etc. The following assumptions were made based upon numbers we have seen in the past, but further analysis is required.
    - Assumed unable to relocation billboards.
    - Assumed 2% vacancy rate, 4% expense rate and 6.5% capitalization rate.
    - Assumed the ground lease is $3,500 per month and no percentage of gross earned revenue paid to the property owner.
    - Assumed no easement encumbrances, encroachments or sublicense/lease agreements associated with the billboard improvements.
    - Loss of the ground lease income to the property owner is combined in the loss of goodwill column within the estimate.
    - Assumed income produced by single a sided billboard is $6,000 per month and a double sided billboard is $10,000.

- The billboard cost column includes the goodwill and structure value to the billboard owner within the estimate

Contact

Juan M. Diaz, PE, MBA
President/CEO
JMDiaz, Inc., dba (JMD)
626-820-1137

CONCEPTUAL COST ESTIMATE – RIGHT OF WAY COMPONENT
Alternative 4_7

To: Juan M. Diaz, PE, MBA
President/CEO
JMDiaz, Inc., dba (JMD)

From: Maile Kop
Analyst / Agent
Overland, Pacific & Cutler

Date: June 21, 2017
07-LA-91/710-PM
Project ID 0716000166
EA 07-32810K
SR-91/I-710 Interchange Project

A Field Review was conducted ✓ Yes ___ No

Scope of the Right of Way

The SR-91/I-710 Interchange project (Alternative 4_7) is located at the SR-91 and I-710 interchange, primarily within the cities of Carson, Compton and Long Beach, impacting approximately 71 assessor's parcel lots. Impacted parcels generally consist of Industrial, Commercial, Residential and Flood Control owned property types, and right of way required for acquisition includes 263,760 square feet of fee acquisition.

Right of Way Required ✓ Yes ___ No
Number of Parcels ___ 1-10 ___ 11-25 ___ 26-50 ✓ 51-100 ___ >100
✓ Urban ___ Rural

Land Area: Fee: 263,760 SF
Displaced Persons/Businesses ✓ Yes ___ No
Demolition/Clearance ✓ Yes ___ No
Railroad Involvement ✓ Yes ___ No
Utility Involvements ✓ Yes ___ No 1-5 Number of Utilities in area

Cost Estimates

Support Costs
___ $0-$25,000
___ $25,001-$100,000
___ $100,001-$250,000
___ $250,001-$500,000
___ $500,001-$1,000,000
___ $1,000,001-$5,000,000
___ $5,000,001-$10,000,000
✓ >$10,000,000

Capital Costs
___ $0-$100,000
___ $100,001-$500,000
___ $500,001-$1,000,000
___ $1,000,001-$5,000,000
___ $5,000,001-$15,000,000
___ $15,000,001-$50,000,000
___ $50,000,001-$100,000,000
✓ >$100,000,000

Schedule

Right of Way will require 18 months to deliver a Right of Way Certification #1 from Final R/W Maps. This estimate is based on a Right of Way Certification date of 1/1/2022.

Areas of Concern

APN 7306-001-902 Flood Control owned parcel (located west of Santa Fe Avenue): Currently used as a drainage channel, assumed drainage will be protected in place or re-configured to avoid drainage issues. Additional right of way may be required.

APN 7306-007-034 (located west of Santa Fe Avenue): Has a concrete headwall structure drain, assumed drainage will be protected in place or re-configured to avoid drainage issues. Additional right of way may be required.

APN 7115-002-004 Mobile Gas Station (located at 6685 Atlantic Ave): Environmental remediation is not included within this estimate due to the very preliminary design layout and unknown hazardous waste / improvements to remediate. There is high potential for severe impacts to both project right of way delivery schedules and cost estimates.

Several billboards located along the north and south side of the SR-91, west of Acacia Court (appears is not on private right of way). Assume the project will compensate the billboard owners for any billboards impacted by proposed improvements. These costs are not included in this estimate at this time due to the early stage of design, further analysis required to determine such conflicts and full impacts to the billboards.

The project design is based on preliminary schematic plans and aerial photography, property impacts should be expected to change with more precise information as the design progresses and could potentially impact Utility / Right of Way costs.

Assumptions and Limiting Conditions

- The right of way limits assumed were located using available county GIS parcel data. Visual impacts to properties were analyzed through available aerial photography. Although land net and design surveying will be required at a later date, it was generally assumed these to be sufficient for cost estimation purposes.
- Due to the preliminary design efforts, it was generally assumed full acquisition was required for parcels with substantial severance damages.
- Permanent easements, aerial easements or Temporary Construction Easements were not considered for partial acquisition due to the preliminary design efforts for the purposes of this estimate. Where proposed bridges and freeway improvements cross over private property, additional Right of Way may be necessary. Current easement rights needs to be reviewed and further analysis is required.
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ATTACHMENT I

Risk Register

LEVEL 2 - RISK REGISTER						Project Name:	SR-91/I-710 INTERCHANGE PSR-PDS		DIST-EA	07-32810K	Project Manager:		Juan M. Diaz					
RISK IDENTIFICATION									Risk Assessment						Risk Response			
Status	ID #	Type	Category	Date Risk Identified	Cost or Schedule Risk?	Title	Risk Statement	Current Status/Assumptions	Probability	Cost Impact	Cost Score	Time Impact	Time Score	Rationale	Strategy	Response Actions	Risk Owner	Updated
Active	1	Threat	Design	3/12/16	Both	Survey File	Inaccurate or insufficient survey information could require the completion of supplemental surveys and the rework of the project design.		2-Low	2-Low	4	4-Moderate	8	Need to obtain additional surveys could require 30-60 days.	Mitigate	Check available survey information against project limits to determine if coverage is sufficient. Have survey data independently checked to confirm accuracy.		
Active	2	Threat	Organizational	3/12/16	Schedule	Delay in cooperative agreement	As a result of a delay in the sign-off of the cooperative agreement, Caltrans will not initiate review of project deliverables or participate in PDT meetings, which would result in project delays.		3-Moderate	2-Low	6	4-Moderate	8	Delay in having coop agreement signed could have impacts on being able to complete project in a timely manner.	Mitigate	Support Metro's efforts to obtain Caltrans sign off of the cooperative agreement.		
Active	3	Threat	Organizational	3/12/16	Schedule	Deliverable reviews by Caltrans	Due to other commitments by key Caltrans staff, Caltrans reviews of project deliverables may exceed allocated 60-day period, delaying project schedule.		2-Low	1-Very Low	3	4-Moderate	12	Availability of necessary review staff has been an issue on past projects.	Mitigate	Work early with Caltrans to define dates for review periods so that they can program these commitments into their work plan.		
Active	4	Threat	Design	3/12/16	Both	Bad traffic count data	Anomalies within traffic count data received requires that new counts be obtained.		1-Very Low	2-Low	2	4-Moderate	4	Inaccurate data will yield inaccurate results. Traffic model and count data must be checked carefully for adequacy and accuracy.	Accept	Gather new and review current count data thoroughly when received to check for validity.		
Active	5	Threat	Design	3/12/16	Schedule	Bad model forecasts	Anomalies within model forecasts data received requires revisions to model and rerunning of future year forecasts.		1-Very Low	2-Low	2	4-Moderate	4	Inaccurate data will yield inaccurate results. Traffic model and count data must be checked carefully for adequacy and accuracy.	Accept	Review traffic data generated from model carefully to check for questionable output.		
Active	6	Threat	Design	3/12/16	Schedule	Different horizon year traffic numbers	Drastically different future year traffic volumes relative to a feasibility study require detailed review and modifications to Alt. 2		1-Very Low	1-Very Low	1	4-Moderate	4	Horizon year is being extrapolated to 2040 from 2035 for feasibility study, so numbers will go up.	Accept	Rely on most relevant and local regional model for consistency.		
Active	7	Threat	Design	3/12/16	Schedule	Caltrans comments on designs for build alternatives.	Due to the level of detail provided by Metro in the PSR-PDS, a large number of design related comments may be provided by Caltrans which may require extensive design modifications.		1-Very Low	1-Very Low	1	4-Moderate	4	The ability to engage Caltrans staff throughout the design process is critical to avoid receiving large numbers of comments.	Mitigate	Engage Caltrans throughout design process to solicit input and comments in order to minimize the number of comments generated as part of formal review.		
Active	8	Threat	Design	3/12/16	Schedule	Delays in scheduling stakeholder meetings	As a result of stakeholder availability, delays in scheduling project meetings may impact project schedule.		1-Very Low	1-Very Low	1	4-Moderate	4	Caltrans requires a minimum 2-week period to schedule a meeting upon receiving agenda and backup information.	Mitigate	Schedule as far in advance as possible. Reach out to stakeholders early on during project to give them a heads up regarding the need for upcoming coordination.		
Active	9	Threat	Design	5/16/17	Schedule	I-710 Corridor Alternatives SC or 7	I-710 Corridor Project can impact schedule and cost of SR-91 Improvements.		4-High	8 - High	8	8-High	8	The 710 Corridor improvements influence ultimate improvements on SR-91 in terms of cost and schedule. This Includes the connectors at the SR-91/I-710 interchange which assume will be constructed by the 710 Corridor Project.	Prioritize	Define congestion relief improvements that benefit both I-710 and SR-91.		
Active	10	Threat	Design	3/12/16	Schedule	Delays in Obtaining Design Exceptions	Delays in obtaining concurrence on non standard features associated with Alt. 4 can delay overall schedule.		2-Low	1-Very Low	2	4-Moderate	8	Based on similar project experience, working through nonstandard features with Caltrans can be time consuming. However, fact sheets are not required at this phase.	Mitigate	Identify nonstandard features as far in advance as possible and discuss these with Caltrans as part of the PDT process.		
Active	11	Threat	Funding	12/2/16	Schedule	Delays in Obtaining Project Funding	Delays in obtaining Project Funding will impact project schedule and may also impact project design requirements if standards change.		3-Moderate	4-Moderate	6	4-Moderate	8	Due to the size of the project, funding may not be readily available.	Accept	Work with lead agency to ensure funding is sought after early in the process to increase funding opportunities. May require constructing the project in multiple phases as funding becomes available.		
Active	12	Threat	Right of Way	12/2/16	Both	Right of Way Condemnation may Impacts project cost and schedule.	As a result of utility and railroad interfaces, potential right-of-way impacts going through condemnation are anticipated and will increase the project cost and impact the project schedule.		3-Moderate	4-Moderate	6	4-Moderate	4	Due to the number of partial and full property takes, including utility relocation and railroad encroachments, it is possible that a number of properties may end up in condemnation.	Accept	The project should initiate long lead right of way acquisition efforts as early as possibly and implement contingencies for schedule and cost should condemnation occur.		
Active	13	Threat	Construction	12/2/16	Both	Construction Constraints	As a result of potential construction constraints, related to the Los Angeles River and Compton Creek, the construction phase may experience delays.		2-Low	2-Low	4	4-Moderate	4	Due to the project's proximity to the Los Angeles River and Compton Creek, any adjacent improvements over the river, may be delayed due to weather patterns.	Mitigate	The construction schedule should consider weather patterns to avoid construction near the rivers during the rainy season.		

ATTACHMENT J

Storm Water Data Report (SWDR)

Dist-County-Route: 07-LA-91
Post Mile Limits: PM R8.20 to PM R13.76
Type of Work: Highway Widening
Project ID (EA): 0716000166 (07-32810K)
Program Identification: 20.XX.400.100

Phase: ☒ PID ☐ PA/ED ☐ PS&E

Regional Water Quality Control Board(s): Los Angeles Region 4

Total Disturbed Soil Area: 138.8 Acres Post Construction Treatment Area: 108.3 Acres

Alternative Compliance (acres): 70.5 Acres

Estimated Const. Start Date: 01/01/2020 Estimated Const. Completion Date: 12/01/2022

Risk Level: RL 1 ☐ RL 2 ☒ RL 3 ☐ WPCP ☐ Other:

Is the Project within a TMDL watershed? Yes ☒ No ☐

TMDL Compliance Units (acres): 35.7 Acres

Notification of ADL reuse (if yes, provide date): Yes ☒ Date: TBD 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.

Jeff Fromhertz,
Registered Project Engineer

Albert Andraos, 6/28/17
Caltrans Designated Oversight Representative Date

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

Tin Dinh, Project Manager 6/28/17 *Date*

Charles Isaac, Designated Maintenance Representative 6/28/17 *Date*

Ron Russak, Designated Landscape Architect Representative 06/29/17 *Date*

[Stamp Required at PS&E only]

Shirley Pak, District/Regional Design SW Coordinator or Designee 6/29/2017 *Date*

STORMWATER DATA INFORMATION

1. Project Description

- The Los Angeles County Metropolitan Transportation Authority (Metro), in cooperation with the Gateway Cities Council of Governments (GCCOG), the California Department of Transportation (Caltrans) District 7, and the County of Los Angeles, is proposing to construct improvements along the SR-91 freeway corridor (See Attachment A for the Regional Vicinity Map). SR-91 and I-710 are major facilities within Los Angeles County and carry significant international, interstate, interregional and intraregional travel. This area is projected to experience substantial growth for goods movement. Reconstruction of the system interchange and widening of the mainline facilities will address existing deficiencies and accommodate projected growth. The project area includes the following cities within Los Angeles County: Carson, Compton and Long Beach.
- The project improvement limits include SR-91 from west of the Central Avenue interchange (PM R8.2) to east of the Paramount Boulevard interchange (PM R13.8). This PSR-PDS includes three build alternatives and one no build alternative. The alternatives within this PSR-PDS consist of Alternative 1 – No Build, Alternative 2 - Build (Standard Lanes and Shoulders), Alternative 3 Build (Non Standard Lanes and Shoulders) and Alternative 4 (Hybrid with Standard and Non Standard Lanes and Shoulders including a Collector-Distributor Road). In general, the proposed build alternatives add one mixed flow lane in each direction on SR-91 within the project limits. Due to mainline widening and multimodal integration, including provisions for pedestrians (e.g., ADA, sidewalks, etc.), bikeways and truckways, local streets and system interchanges are affected, and therefore, the build alternatives include modifications to local and system interchanges. For the purposes of this stormwater data report, Alternative 2-7 will be considered since it has the largest footprint. The approximate cost for Alternative 2-7 is $ 1,393,000,000. This represents the highest cost of the alterntive with the largest footprint. This SWDR is also based on Alternative 2-7.
- Funding is expected to be provided through a combination of funds, not yet fully secured, but may include Measure M funds in addition to potential federal, state, and local funding sources. Caltrans will be the lead agency for California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) compliance. Caltrans is anticipated to provide oversight of the Project Approval and Environmental Document (PA/ED) and Plans, Specifications and Estimates (PS&E). Metro is anticipated to manage the PA/ED, PS&E and construction phases.
- The Total Disturbed Soil Area (DSA) for the project site is approximately 138.8 acres, calculated based on the boundary of proposed improvements plus an additional street.
- Within the project limits, the total impervious surface areas for this site are as follows:
    - Net New Impervious Surface (NNI) Area = 71.7 acres
    - Replaced Impervious Surface (RIS) Area = 36.6 acres
    - New Impervious Surface (NIS) = 108.3 acres
    - Post Construction Treatment Area=108.3 acres
    - Total Post Project Impervious Area = 224 acres
        - 108.3 acres is 48% of total impervious area 224 therefore NNI is less than 50% of the post project impervious area

          At this time it is assumed no existing Treatment BMPs will be removed.
- The areas (DSA, NNI, RIS, and NIS) for this project were calculated using MicroStation.

- This project results in an increase in impervious acres above one acre, therefore treatment BMPs are required to be implemented within the project site. The NNI for this project is not greater than 50% of the total post-project impervious area, therefore only the NNI will be included for the post construction treatment area. Additional information on the exact locations and design of the permanent treatment BMPs will be provided in the PS&E phase.
- The proposed project is located within the jurisdiction of Los Angeles Regional Water Quality.

  The Los Angeles Regional Water Quality Control Board (RWQCB) requires all new/major reconstruction projects that increase impervious area to evaluate the feasibility of post construction treatment BMP as a condition for the permit process. It has been determined that the following BMPs will be incorporated into the project: biolfiltration strips, sand filters, detention devices, and GSRDs to meet the permit requirement.

  This project does not qualify for a CE (Categorical Exemption), a 401 Permit will be acquired to address discharges to receiving waters. Construction site BMPs combined with post-construction stormwater BMPs will ensure impacts to receiving waters is minimized.
- Treatment BMPs are required to address TMDLs.

2. Site Data and Stormwater Quality Design Issues

Hydrologic Units

- The proposed project is located in the Los Angeles River watershed within the Hydrologic Sub-Area (405.15). Typically, the runoff indirectly flows into either the Los Angeles River or Compton Creek. However, a portion of the project area crosses over the Los Angeles River and Compton Creek and includes direct discharges.

Receiving Water Bodies

- The principal receiving waterbodies that this project directly and indirectly discharges to are Compton Creek and Los Angeles River Reach 2.

2012 CWA Section 303(d) List

- The project limits is within the Dominguez Channel and Los Angeles River watershed. The Total Maximum Daily Loads (TMDLs) are as follows:

  Dominguez Channel

  Established TMDL

  Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL

  Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL became effective on March 23, 2012. Targeted pollutants are copper, lead, zinc, PAH, DDT, PCBs, Benzopyrene and Dieldrin for water column in the channel and harbors, and for sediments in the harbors. The TMDL requires the dischargers of the Los Angeles River and the San Gabriel River to monitor water quality at the mouth of each River. Caltrans will participate in groups of agencies to jointly comply with the TMDL. Project engineers shall consider

treatment controls for the project and consult with the District NPDES Storm Water Coordinator.

Los Angeles River

Established TMDLs

Los Angeles River Trash TMDL

The Los Angeles River Trash TMDL became effective August 28, 2002. Caltrans is proceeding with Trash TMDL Implementation Projects, which are to retrofit Gross Solid Removal Devices (GSRDs) at the existing drainage outfalls in the rights-of-way. Table A lists those Trash TMDL Implementation Projects that are either in construction or completed. Any projects that overlap within the limits of freeway corridors listed in Table A are not required to consider GSRDs for those overlapping limits. However, Project Engineers shall consider placing infiltration basins or media filters as much as possible in lieu of GSRDs at existing and proposed drainage systems.

Table A

EA	Route	PM		Status
		From	To	
226611	405	30.31	36.15	completed
226711	60	2.7	6.6	completed
	710	22.5	23.8	
2266A1	5	27.62	28.15	completed
	10	9.02	13.82	
	90	1.84	2.70	
2267A1	10	5.59	8.80	completed
	91	10.25	13.88	
	105	8.25	13.15	
	110	21.65	23.61	
231311	2	15.40	21.46	completed
	101	7.21	7.21	
	170	14.78	19.92	
	134/710	13.34	13.34	
	210	22.73	23.88	
	405	25.46	29.41	
235901	5	16.35	16.35	completed
	101	12.70	26.50	
	134	0.00	9.86	

Los Angeles River Nitrogen Compounds and Related Effects TMDL

The Los Angeles River Nitrogen Compounds and Related Effects TMDL became effective March 23, 2004. The TMDL requires the Storm Water NPDES Permittees to submit a Monitoring Work Plan by March 23, 2005 to estimate nitrogen loadings associated with runoff from the storm drain systems. County of Los Angeles has submitted the Monitoring Work Plan as required on behalf of Caltrans and other Storm Water NPDES Co-Permittees in the watershed. Targeted pollutants are Total ammonia as nitrogen (NH3-N), Nitrate-nitrogen (N03-N), nitrite-nitrogen (N02-N), and Nitrate nitrogen plus nitrite-nitrogen (N03-N + N02-N).The Department's monitoring data depicts Caltrans discharges to be below the TMDL limits, thus no additional measures are needed to be considered for meeting the conditions of the Nitrogen TMDL.

Los Angeles River and Tributaries Metals TMDL

The Los Angeles River and Tributaries Metals TMDL became effective on January 11, 2006. Caltrans will work with 5 groups of Responsible Agencies toward compliance of the TMDL. Targeted Pollutants are total Cu, Pb, Zn, Cd and Se. Project Engineers shall consider treatment controls for the project and consult with the District NPDES Storm Water Coordinator.

Total Maximum Daily Loads for Indicator Bacteria in the Los Angeles River

The Total Maximum Daily Loads for Indicator Bacteria in the Los Angeles River became effective on March 23, 2012. The TMDL requires the Responsible Agencies, including Caltrans, to reduce number of exceedance days of bacteria concentrations in the Los Angeles River and achieve waste load allocations in 25 years. Caltrans will be working with groups of Responsible Agencies to jointly comply with the TMDL. Project Engineer shall consider treatment controls for the project and consult with the District NPDES Storm Water Coordinator.

Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL

Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL became effective on March 23, 2012. Targeted pollutatnts are copper, lead, zinc, PAH, DDT, PCBs, Benzopyrene and Dieldrin for water column in the channel and harbors, and for sediments in the harbors. The TMDL requires the discharger of the Los Angeles River and the San Gabriel River to monitor water quality at the mouth of each River. Caltrans will particicapte in groups of agencies to jointly comply with the TMDL. Project engineers shall consider treatment controls for the project and consult with the District NPDES Storm Water Coordinator.

The following table summarizes the list of receiving water bodies with its impairments that the proposed project will discharge to, from its initial discharge to a receiving water body and following the flow downstream to the Pacific Ocean. The table below provides the list of

impairments for these waterbodies based on the State Water Quality Control Board's 2012 integrated Report.

Water Body Name	303(d) List Constituent	TMDL Constituent
Los Angeles River Reach 2	Ammonia, Coliform, Copper, Lead, Nutrients, Oil, Trash	Ammonia, Copper, Lead, Nutrients, Trash
Compton Creek	Benthic-Macroinvertebrate Bioassessments, Coliform Bacteria, Copper, Lead, Trash, pH	Copper, Lead, Trash, pH

Municipal or Domestic Water Supply Reservoirs of Groundwater Percolation Facilities

- There are no water reservoirs or groundwater percolation facilities within the project area. According to California Department of Water Resources Water Data Library, groundwater in the area is approximately 130 feet below ground surface.

401 Certification

- It is anticipated that this project will require Section 401 Water Quality Certification to be obtained from the Los Angeles Regional Water Quality Control Board. Additional information on this will be provided during later phases as drainage impacts can be better defined.

Local Agency Requirements

- There are no additional local agency requirements or concerns for this project at this time. Additional information on this will be provided as obtained from local agency correspondence.

Climate

- The proposed project is located within the City of Long Beach, Compton and Carson. According to the National Oceanic and Atmospheric Administration the average annual precipitation within the project area is approximately 14.5 inches. The region has a semi-arid climate which is generally hot in the summer with warm winters. The majority of the precipitation occurs between November and April.

Topography

- The topography in the area generally slopes from north to south at an approximate slope of 0.3 %. Based on Google Earth, the proposed project area highest elevations approximately 140 feet above sea level to its lowest elevation of approximately 78 feet above sea level at the crossing of the Los Angeles River.

Erosion Potential

- According to State Water Resources Control Board, the erosion factor K within the project area was estimated to be 0.32.

Caltrans Right-of-Way Requirements/Costs

- The majority of the proposed construction will be within Caltrans right-of-way. At this time it is unknown how much additional ROW will be acquired for this project. Additional details regarding right-of-way requirements and costs will be provided as they become available.
- Right of way takes will reflect takings of entire parcel with exception to Central Avenue where very small takes less than 4 feet will be executed and result in only a partial take.

Land Use

- Land use within the project area is limited to roadway traffic. The land uses adjacent to the proposed project are mostly residential, commercial, industrial, and open space.

Dry Weather

- The presence of dry weather flow is not anticipated within the project limits.

Reduction Potential Stormwater Impacts

- The proposed improvements on SR-91 will lead to minimal stormwater impacts on the downstream waters. However, as described in the Caltrans Storm Water Management Plan (SWMP), Best Management Practices (BMPs) will be designed and implemented to reduce the discharge of pollutants from the Caltrans storm drain system to the Maximum Extent Practicable (MEP). Permanent treatment controls will be implemented to address the stormwater impacts caused by this projects. Additionally, temporary pollution controls will be implemented during the early construction phases to provide additional protection and to address any construction stormwater impacts. Slopes will be disturbed only when necessary and cut and fills will be minimized to reduce slope lengths as necessary. The project will be scheduled or phased such that minimal soil-disturbance work will be completed during the rainy season. The presence of dry weather flow is not anticipated within the project limits.

Slope Stabilization

- Existing slopes will only be disturbed when necessary. Minimization of cut and fill areas will be considered to reduce slope lengths and retaining walls will be incorporated, if necessary, to reduce steepness of slopes. Cut and fill areas will be minimized to allow re-vegetation and limit erosion to pre-construction rates. Slopes will be rounded and shaped to reduce concentrated flow. Concentrated flow from the site will be collected in stabilized drains and channels from this project site.

Aerial Deposited Lead

- Soils containing Aerially Deposited Lead (ADL) are anticipated to be within the project limits, however it is not yet known whether this project involves reuse of these soils. Additional information about ADL use will be provided during later phases of the project.

Existing Treatment BMPs

- During field investigations one existing BMP was identified adjacent to the eastbound on ramp form Alameda Street (Site 18 PM 10.23). The BMP is located underground and the grate could not be removed to identify the type of BMP. An existing BMP is also located on the north side

of the west bound off ramp for Long Beach Boulevard (Site 27 PM 11.21). The BMP is an underground vault. There is the potential for other BMPs to exist below existing grade.

Therefore further evaluation will be completed during the PA-ED phase, using Caltrans Storm Drain System Inventory to determine if there are any other existing BMPs in the project area

- Proposed treatment BMPs by other projects are shown in the BMP Exhibits.

3. Construction Site BMPs to be used on Project

- The project construction duration is scheduled to be from January 2020 to December 2022.
- Non-stormwater management measures, also known as "good housekeeping practices", will be implemented on this project to prevent pollution by limiting or reducing potential pollutants at their source before they come in contact with stormwater. These BMPs will be identified at a later phase.
- The construction site BMP strategy consists of a Storm Water Pollution Prevention Plan, Rain Event Action Plan, Stormwater Annual Report, and Stormwater Monitoring.
- DSAs will be protected in accordance with the projects pollution control measures. Measures that will be considered for this project include: Soil Stabilization Measures, Sediment Control Measures, Tracking Control, Non-Stormwater Management Measures, General Construction Site Management Measures, and Stormwater Sampling and Analysis.
- At this time it is unknown if dewatering is anticipated to occur during construction of the project. Additional information on dewatering will be provided during the later phases.
- The Los Angeles River and Compton Creek cross under the bridges of SR-91 within the proposed project limits, but it is anticipated that there will be no commingling of flows from the construction areas adjacent to these channels. Therefore, it is determined that the project site does not anticipate any run-on from the channels and any other off-site sources. Construction activities adjacent to and over these channels which may impact downstream stormwater will be identified in a SWPPP.
- Active Treatment Systems (ATS) will not be used for the site, or portions thereof.
- On November 4, 2016, Mr. Hussein Saad, Construction Storm Water Coordinator, agreed to the temporary construction site BMPs strategy used for the scope of work of this project.
- The specific temporary construction BMPs that are being considered as separate Bid Items or lump sum items for this project will be provided during later phases of the project.
- The construction site BMP costs for this project are estimated based on the "Project Initiation Cost Estimate" Method presented in Appendix F.3.1 of the Caltrans Project Planning and Design Guide.
- The percentage of extra cost to the corridor project due to Construction Site BMPs will be adjusted for a baseline cost percentage of 1.25% plus any additional percentage per Table F-2 of the Project Planning and Design Guide (PPDG). This project construction site BMP cost will be 1.25% of the total construction cost for the project. Therefore, the total cost for stormwater BMPs for this project are anticipated to be approximately **$12,719,389**. This cost will be continuously updated as costs are more precisely estimated in later phases of the project.

Risk Assessment

- The R factor was determined from the United States Environmental Protection Agency (EPA) "Rainfall Erosivity Factor" Calculator for Small Construction Sites based on future construction dates. The K and LS factors were determined by the State Water Resources Control Board.
- This project site sediment risk calculated based on the product of R*K*LS factors resulted in a MEDIUM risk. The receiving water risk for this project site is LOW and the sediment risk for this project is MEDIUM. Therefore, the project combined medium sediment risk and low receiving water risk that resulted in a Risk Level 2 for this project, which means that it will be required to meet the narrative and numeric requirements (including effluent monitoring from the proposed project area).

Monitoring, Sampling and Reporting

- Due to the Risk Level 2 for this project, the Construction General Permit requires the dischargers to develop a monitoring and reporting program. The requirements for this monitoring and sampling will be provided in the SWPPP.

Storm Water Pollution Prevention Plan

- The Project will disturb an excess of 1 acre and therefore a SWPPP will be developed prior to start of construction.

4. Maintenance BMPs

- Drain inlet stenciling is not required for freeway projects since pedestrian traffic is not allowed and the risk of dumping is considered low. Drain inlet stenciling is required within cities, towns, and communities with populations of 10,000 or more, or within designated MS4 areas. The cities of Long Beach, Compton and Carson have met the population limit requirement, therefore any new drainage inlet within the project area will require stenciling. Additional information and detailed locations of all the inlets will be provided during the later phases of the project.

- Maintenance Vehicle Pullouts are likely needed for this project's treatment BMPs. The exact locations of these pullouts will be determined when final design of the BMPs is completed.

5. Other Water Quality Requirements and Agreements

- A meeting was held on September 7, 2016 to discuss the project with District 7 Stormwater Staff and the following is a summary of the items discussed.
    - Alternative 2 will be considered in the SWDR due to largest impervious footprint being associated with this alternative.
    - Attachments to the SWDR will include Risk Assessment Analysis, Cost Summary spread sheets and a Vicinity Map
    - Consideration of receiving waters will focus on Compton Creek and the Los Angeles River, Reach 2.
    - Hydromodification requirements will be discussed in the SWDR for Compton Creek due to the channel being soft bottomed, but no detailed hydromodification calculations will be performed until later phases of the project.

6. Permanent BMPs

Rapid Stream Assessment

- The Los Angeles River is a concrete lined channel within the project boundary and downstream of the project to the Pacific Ocean. Given the concrete lining, the Los Angeles River is not at risk due to stream instability and therefore is exempt from a rapid stream assessment.
- Compton Creek is an unlined channel within the project boundary and downstream of the project. This drainage crossing meets the requirement for a rapid stream assessment. Therefore, a rapid stream assessment will be completed for this stream crossing in later phase using the guidance outlined by the Caltrans Hydromodification Requirements Guidance 2015.

Design Pollution Prevention (DPP) BMP Strategy

- The project will result in some localized increases in runoff due to an increase in impervious area. In order to mitigate an increase in flow, treatment BMPs are proposed within the project limits. The outlets of the proposed BMPs will incorporate energy dissipation devices, and transitions between the outlets and channels will be smoothed to reduce turbulence and scour.
- The project will increase the impervious surface which will increase the velocity and volume of downstream flow. This increase will be mitigated by implementing Design Pollution Prevention (DPP) BMP to treat the runoff.
- Additional information on this will be provided at later phases of the project. However, it is anticipated that the project site will not pose any additional sediment discharge risk into downstream waters than it did prior to the commencement of construction activity. There will be approximately 27.65 acres of stabilized area. The areas considered for stabilization comprise of the interchange locations where embankments exist between freeway and the on and off ramps. These areas exist within the following post mile locations (91 WB PM 8.24-13.7, 91 EB 8.24-13.7) and are also identified in the SWDR summary spreadsheet. DPP BMPs that will be incorporated to protect slopes will include Vegetated Surfaces and Hard Surfaces. These DPP BMPs will be implemented in cut and fill slope locations.
- Existing vegetation shall be preserved as feasible. Additional coordination between the Landscape Architect and Roadway Design/Grading will be conducted during later phases to protect existing vegetation where feasible. It is also anticipated that standard practices BMPs will be implemented for areas that require preservation within the project limits. It is anticipated that there will be minimal clearing and grubbing at this project site, because majority of the project area is paved or not vegetated. Any Existing Landscape that is removed will be replaced following Caltrans Replacement Planting Policy.
- Runoff will be draining to existing storm drain systems and calculations shall be completed during later phases to show the increase in runoff volume can be contained.
- The cost for Design Pollution BMPs and Treatment BMPs for this project has been estimated based on $250,000 per lane mile. The approximate total cost is $10,000,000.

Treatment BMP Strategy

- The Targeted Design Constituents for this project include nutrients, copper and lead.
- The Permanent Treatment BMP strategy will be considered based on the Corridor Stormwater Management Study for State Route 91 from Vermont Avenue to Orange County Line. Nine of the Caltrans approved Permanent Treatment BMPs were recommended, including Infiltration

Devices, Biofiltration Strip, Wet Basin, Delaware Sand Filter, Biofiltration Swale, Detention Device, Gross Solids Removal Devices and Multi Chamber Treatment Trains. Infiltration devices are considered the desired treatment BMP for all constituents. Prioritization was based on load reduction performance for the listed constituent.

- The goal of the proposed treatment BMP strategy is to treat 100% at a minimum of Water Quality Volume/Water Quality Flow (WQV/WQF) generated from proposed impervious surfaces within the project limits.
- Dry Weather Flow Diversion BMPs are not feasible for this project as they will not address the additional impervious area runoff to meet the post construction treatment requirements. Therefore, these BMPs are not proposed to be implemented for this project.
- GSRDs have been excluded from future consideration, but existing GSRDs and their tributary treatment areas will be accounted for in Table E-1 and SWDR Summary Spreadsheet.
- MCTTs were considered but are not proposed because they are typically installed at critical source areas that do not exist within the project boundary.
- 12 potential BMP locations have been identified in the Corridor Stormwater Management Study for State Route 91 that include an Infiltration Device, Bioswales and Bio Strips, and Sand filters. These locations are illustrated on exhibits in the attachments. These locations will be further refined based on feasibility at the PA/ED phase of the project. At this phase of the project it is assumed all BMPs are feasible and that funds are available. An approximate of 50.8 acres of impervious and pervious area will be treated by these BMPs within and outside Caltrans Right-of-Way. If adequate treatment cannot be provided within the project area, alternative compliance will be sought to treat the remaining amount of stormwater.
- The cost for Design Pollution BMPs and Treatment BMPs for this project has been estimated based on $250,000 per lane mile. The approximate total cost is $10,000,000.

Table E-1. Overall Project Treatment Summary Table

	Post Construction Treatment Area (ac)	A 108.3
Total Treated Area	Treated Impervious Area (CT RW) (ac)	B 36.83
	Treated Impervious Area (Outside CT RW) (ac)	C 1.02
	Treated Pervious Area (CT RW) (CUs) (ac)	D 12.03
	Treated Pervious Area (Outside CT RW) (CUs) (ac)	E 0.91
	Post Construction Treatment Balance (ac)	F = (B+C) – A = -70.45
TMDL Areas Only	Stabilized Area (ac)	G 27.65
	Alternative Compliance (ac)[1]	F -70.45
	TMDL Compliance Units (ac)[2]	H = D + E + F + G = -29.86

[1] Available Alternative Compliance

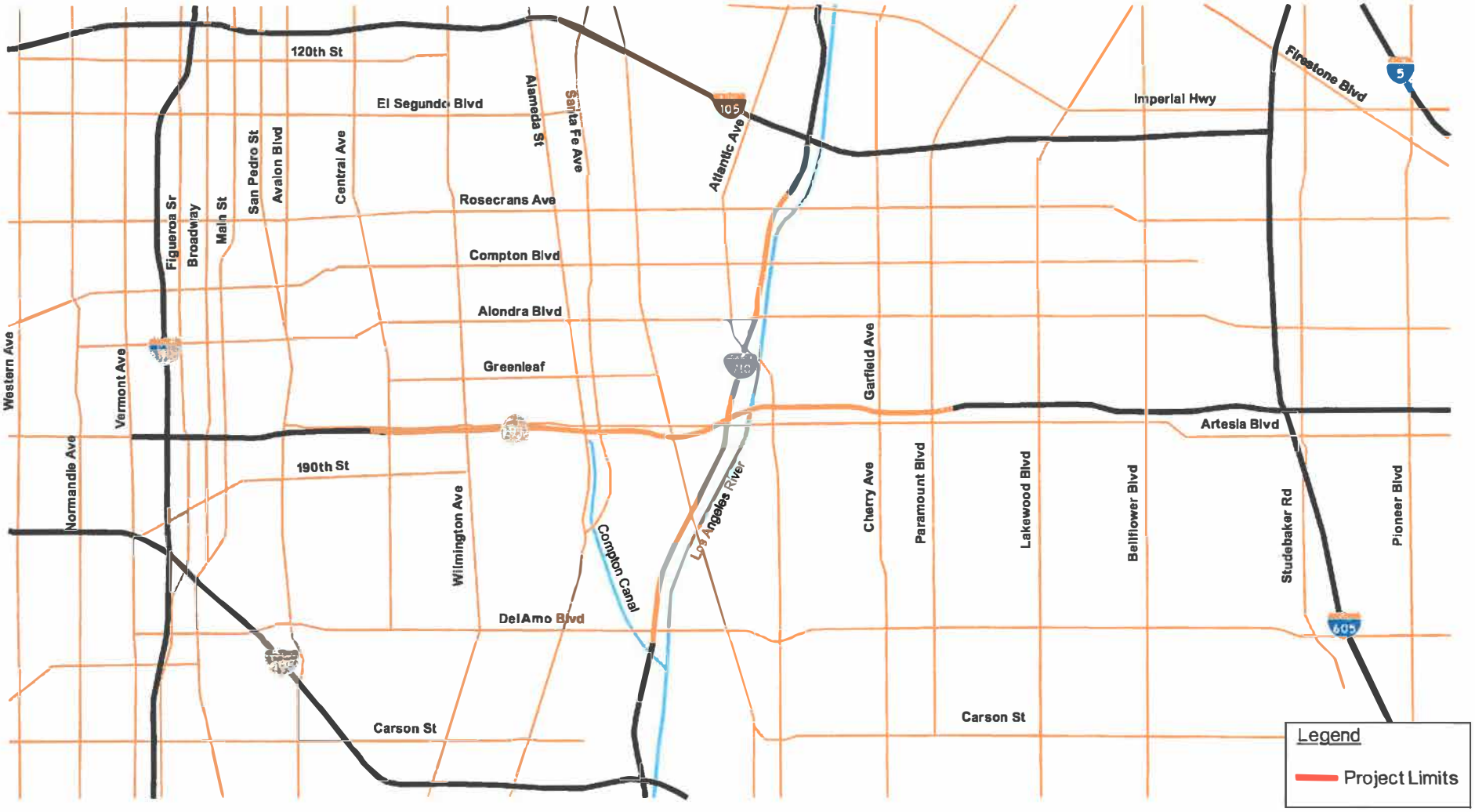
- Negative Value - amount of treatment needed through Alternative Compliance.

[2] Stabilized Areas (G) within a TMDL can only be applied when the area is not included in the Total Treated Area (D and E).

Required Attachments

- Vicinity Map
- Evaluation Documentation Form (EDF)
- Risk Level Determination Documentation
- SWDR Summary Spreadsheet
- Permanent Treatment BMP Deviation from Corridor Stormwater Management Study
- Overall Cost Summary
- BMP Exhibits

VICINITY MAP



Vicinity Map

Exhibit 1

SR-91/I-710 Interchange PSR-PDS

07-LA-91, PM R8.2/R13.8, EA07-32810K (EFIS: 0716000166)

EVALUATION DOCUMENTATION FORM

DATE: 5/15/2016

Project ID (EA): 0716000166

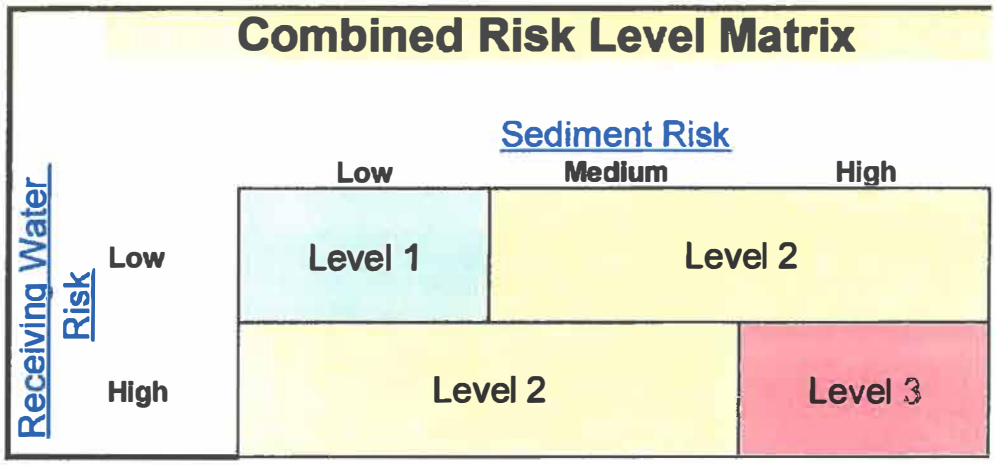
No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation
1.	Begin Project evaluation regarding requirement for implementation of Treatment BMPs	✓		See Figure 4-1, Project Evaluation Process for Consideration of Treatment BMPs. Continue to 2.
2.	Is the scope of the Project to install Treatment BMPs (e.g., Alternative Compliance or TMDL Compliance Units)?		✓	If **Yes**, go to 8. If **No**, continue to 3.
3.	Is there a direct or indirect discharge to surface waters?	✓		If **Yes**, continue to 4. If **No**, go to 9.
4.	As defined in the WQAR or ED, does the project: a. discharge to areas of Special Biological Significance (ASBS), or b. discharge to a TMDL watershed where Caltrans is named stakeholder, or c. have other pollution control requirements for surface waters within the project limits?	 ✓ 	✓ ✓	If **Yes to any**, contact the District/Regional Design Stormwater Coordinator or District/Regional NPDES Coordinator to discuss the Department's obligations, go to 8 or 5. SP. Malcolm 6/29/2017 *(Dist./Reg. Coordinator initials)* If **No** to all, continue to 5.
5.	Are any existing Treatment BMPs partially or completely removed? (ATA condition #1, Section 4.4.1)		✓	If **Yes**, go to 8 **AND** continue to 6. If **No**, continue to 6.
6.	Is this a Routine Maintenance Project?		✓	If **Yes**, go to 9. If **No**, continue to 7.
7.	Does the project result in an increase of one acre or more of new impervious surface (NIS)?	✓		If **Yes**, go to 8. If **No**, go to 9.
8.	Project is required to implement Treatment BMPs.	Complete Checklist T-1, Part 1.		
9.	Project is not required to implement Treatment BMPs. _____ *(Dist./Reg. Design SW Coord. Initials)* _____ *(Project Engineer Initials)* _____ *(Date)*	Document for Project Files by completing this form and attaching it to the SWDR.		

RISK LEVEL DETERMINATION DOCUMENTATION

	A	B	C
1	**Sediment Risk Factor Worksheet**		**Entry**
2	**A) R Factor**		
3	Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site.		
4	http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm		
5	**R Factor Value**		110
6	**B) K Factor (weighted average, by area, for all site soils)**		
7	The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted.		
8	Site-specific K factor guidance		
9	**K Factor Value**		0.32
10	**C) LS Factor (weighted average, by area, for all slopes)**		
11	The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.		
12	LS Table		
13	**LS Factor Value**		1.4
14			
15	**Watershed Erosion Estimate (=RxKxLS) in tons/acre**		49.28
16	**Site Sediment Risk Factor**		**Medium**
17	Low Sediment Risk: < 15 tons/acre		
18	Medium Sediment Risk: >=15 and <75 tons/acre		
19	High Sediment Risk: >= 75 tons/acre		
20			

Receiving Water (RW) Risk Factor Worksheet	Entry	Score
A. Watershed Characteristics	**yes/no**	
A.1. Does the disturbed area discharge (either directly or indirectly) to a **303(d)-listed waterbody impaired by sediment**? For help with impaired waterbodies please check the attached worksheet or visit the link below: 2006 Approved Sediment-impared WBs Worksheet http://www.waterboards.ca.gov/water_issues/programs/tmdl/303d_lists2006_epa.shtml **OR**	**no**	**Low**
A.2. Does the disturbed area discharge to a waterbody with designated beneficial uses of SPAWN & COLD & MIGRATORY? http://www.ice.ucdavis.edu/geowbs/asp/wbquse.asp		

Combined Risk Level Matrix



Project Sediment Risk: Medium

Project RW Risk: Low

Project Combined Risk: Level 2

Facility Information

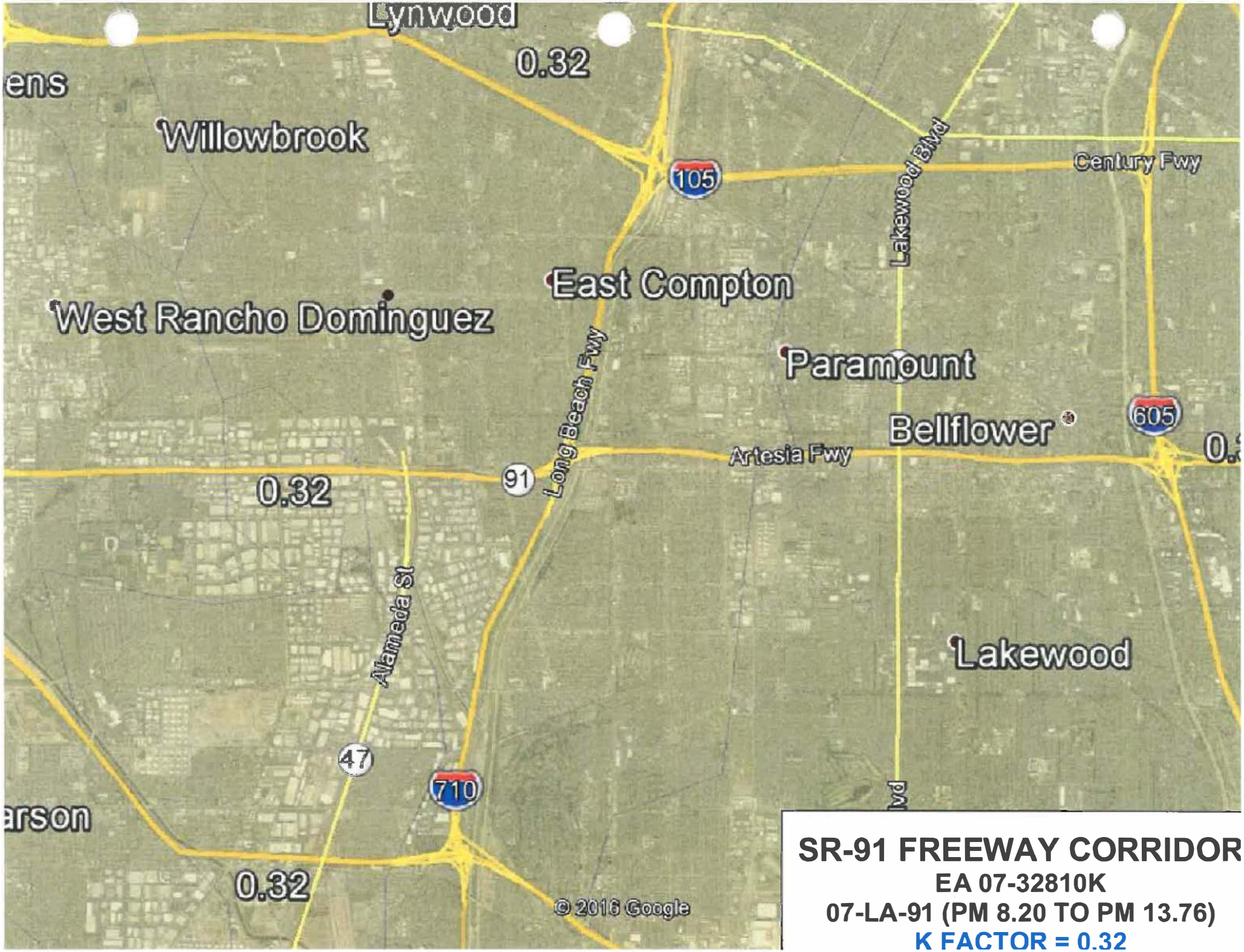
- Start Date: 01/01/2020
- End Date: 12/31/2022
- Latitude: 33.8754
- Longitude: -118.1931

Erosivity Index Calculator Results

An erosivity index value Of **110** has been determined for the construction period of **01/01/2020 - 12/31/2022**.

A rainfall erosivity factor of 5.0 or greater has been calculated for your site and period of construction. **You do NOT qualify for a waiver from NPDES permitting requirements**.

Start Over

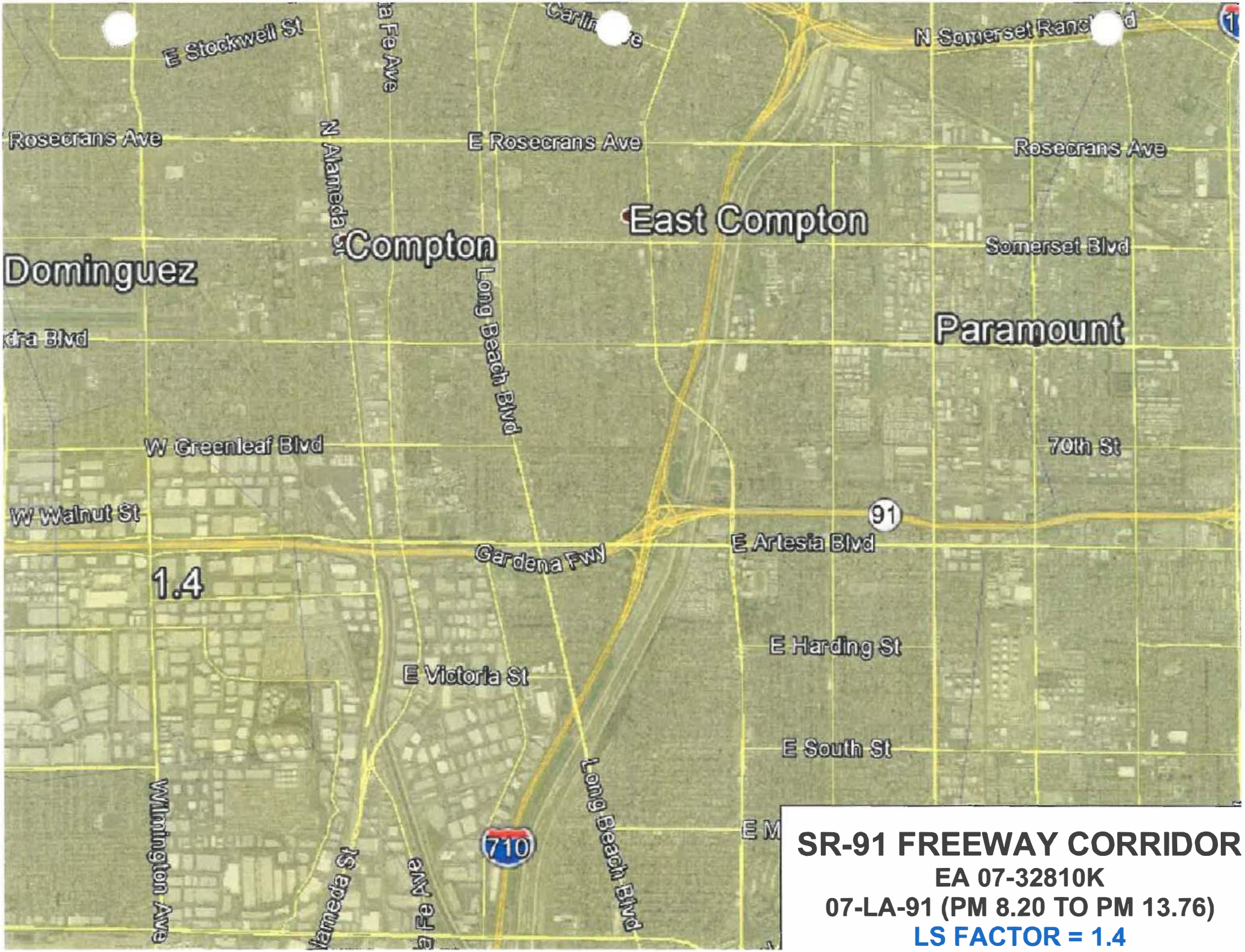


SR-91 FREEWAY CORRIDOR

EA 07-32810K

07-LA-91 (PM 8.20 TO PM 13.76)

K FACTOR = 0.32



SR-91 FREEWAY CORRIDOR

EA 07-32810K

07-LA-91 (PM 8.20 TO PM 13.76)

LS FACTOR = 1.4

SWDR SUMMARY SPREADSHEET

(7-LA-91, PM 8.2-13.76
(EA 07-32810K)

SWDR Summary Spreadsheet

SWDR Signed Date	Distnct	EA/Project ID	County	Route	Beg_PM	End_PM	Project Description	Project Phase	Long SWDR	Risk Level	DSA (ac)	TMDL Waterbody	Biofiltration Strips and Swales	Detention	Infiltration Devices	GSRD	TST	MedFilter	DPPIA	SA	Other BMP	Est Const_Start	Est Const _Comp	SW Comment	Post Const Treatment Area (ac)	Treated Impervious Area (ac)	Treated Impervious Area Balance (ac)	Treated Pervious Area (ac)	Stabilized Area (ac)	MWELO	RSA
	7	07-32810K/ 716000166	LA	91	8.20	13.76	Highway Widening	PID	Yes	RL2	138.8	Yes	7	0	1	2	0	4	0	4	0	1/1/2020	12/1/2022		108.30	37.85	-70.45	12.94	27.65	Yes	Yes

IDNO	EA / Project ID	BMP Type	District	County	Route	LocBPM	Begin Latitude (d d)	Begin Longitude (d d)	LocEPM	End Latitude (d d)	End Longitude (d d)	Direction	Trash/Sand Capacity (cyd)	BMP Specific Comments	Treated Impervious Area (ac CT R/W)	Treated Pervious Area (ac CT R/W)	WQV Capacity (cf)	WQF Capacity (cfs)	Basis of BMP Requirement (non 402)	Stabilized Area (ac)	TMDL Waterbody	BMP Capital Cost	Watershed	RWB
07-32810K/716000166-1	07-32810K/716000166	Infiltration	7	LA	91	8.790	33.873800	-118.242300	8.790	33.873800	-118.242300	W		Includes Biofiltration Strip	4.37	0.78	13,809	0.00			Los Angeles River (Trash)		Los Angles River 405.15	Los Angeles (Region 4)
07-32810K/716000166-2	07-32810K/716000166	BioSwale	7	LA	91	9.490	33.873500	-118.230000	9.490	33.873500	-118.230000	E			2.19	0.32	6,746	0.50			Los Angeles River (Trash)		Los Angles River 405.15	Los Angeles (Region 4)
07-32810K/716000166-3	07-32810K/716000166	BioStrip	7	LA	91	9.490	33.874100	-118.230000	9.490	33.874100	-118.230000	W			4.98	0.50	14,783	1.09			Los Angeles River (Trash)		Los Angles River 405.15	Los Angeles (Region 4)
07-32810K/716000166-4	07-32810K/716000166	Medfilter	7	LA	91	10.070	33.874100	-118.220100	10.070	33.874100	-118.220100	E		Delaware Sand Filter	1.42	2.05	8,889	0.00			Los Angeles River (Trash)		Los Angles River 405.15	Los Angeles (Region 4)
07-32810K/716000166-5	07-32810K/716000166	Medfilter	7	LA	91	10.180	33.873200	-118.218300	10.180	33.873200	-118.218300	E		Delaware Sand Filter	1.94	2.54	11,505	0.00			Los Angeles River (Trash)		Los Angles River 405.15	Los Angeles (Region 4)
07-32810K/716000166-6	07-32810K/716000166	GSRD	7	LA	91	10.230	33.872500	-118.217500	10.230	33.872500	-118.217500	E		Linear Radial GSRD	0.71	0.48	3,109	0.23			Los Angeles River (Trash)		Los Angles River 405.15	Los Angeles (Region 4)
07-32810K/716000166-7	07-32810K/716000166	BioSwale	7	LA	91	10.330	33.875794	-118.215460	10.330	33.875794	-118.215460	W			0.73	0.81	3,972	0.29			Los Angeles River (Trash)		Los Angles River 405.15	Los Angeles (Region 4)
07-32810K/716000166-8	07-32810K/716000166	Medfilter	7	LA	91	10.430	33.873900	-118.213600	10.430	33.873900	-118.213600	W		Earthen Austin Sand Filter	7.54	1.07	23,149	0.00			Los Angeles River (Trash)		Los Angles River 405.15	Los Angeles (Region 4)
07-32810K/716000166-9	07-32810K/716000166	BioSwale	7	LA	91	11.030	33.872100	-118.203700	11.030	33.872100	-118.203700	E			0.60	1.66	5,701	0.42			Los Angeles River (Trash)		Los Angles River 405.15	Los Angeles (Region 4)
07-32810K/716000166-10	07-32810K/716000166	Medfilter	7	LA	91	11.070	33.873200	-118.202800	11.070	33.873200	-118.202800	W		Delaware Sand Filter	0.72	0.51	3,210	0.00			Los Angeles River (Trash)		Los Angles River 405.15	Los Angeles (Region 4)
07-32810K/716000166-11	07-32810K/716000166	BioSwale	7	LA	91	11.160	33.873200	-118.201500	11.160	33.873200	-118.201500	W			0.92	0.83	6,915	0.51			Los Angeles River (Trash)		Los Angles River 405.15	Los Angeles (Region 4)
07-32810K/716000166-12	07-32810K/716000166	GSRD	7	LA	91	11.210	33.873200	-118.200400	11.210	33.873200	-118.200400	W		Linear Radial GSRD	10.39	0.46	29,414	2.16			Los Angeles River (Trash)		Los Angles River 405.15	Los Angeles (Region 4)
07-32810K/716000166-13	07-32810K/716000166	BioSwale	7	LA	91	11.630	33.875300	-118.194300	11.630	33.875300	-118.194300	W			0.78	0.48	3,300	0.24			Los Angeles River (Trash)		Los Angles River 405.15	Los Angeles (Region 4)
07-32810K/716000166-14	07-32810K/716000166	BioSwale	7	LA	91	13.660	33.876700	-118.159700	13.660	33.876700	-118.159700	W			0.56	0.45	2,627	0.19			Los Angeles River (Trash)		Los Angles River 405.15	Los Angeles (Region 4)
07-32810K/716000166-15	07-32810K/716000166	SA	7	LA	91	8.240	33.873881	-118.238767	8.630	33.874011	-118.234254	W		Various locations along project slopes						1.34	Dominguez Channel & Greater Los Angeles & Long Beach Harbor Waters (Metals (Cu, Pb, Zn), DDT, PAHs, and PCBs)		Los Angles River 405.15	Los Angeles (Region 4)

PERMANENT TREATMENT BMP DEVIATION FROM CORRIDOR STORMWATER MANAGEMENT STUDY

Deviation of BMPs from the Corridor Study Recommendation
(supplemental attachment to SWDR)

Date: 3/7/2017
District-County-Route: 07-LA-91
EA 07-32810K
SWDR Phase: PID

Treatment BMPs by the Corridor Storm Water Management Study				Proposed Treatment BMPs outlined in the Storm Water Data Report (SWDR)										Watershed	Comments
Site No.	BMP Type	Paved Tributary Area (acres)	Unpaved Tributary Area (Acres)	Site No.	County	Route	Post mile	Dir	BMP Type	Paved Tributary Area Treated (In Caltrans R/W) (acres)	Paved Tributary Area Treated (Outside Caltrans R/W) (acres)	Unpaved Tributary Area Treated (In Caltrans R/W) (acres)	Unpaved Tributary Area Treated (Outside Caltrans R/W) (acres)	Total Area Treated (Inside and Outside Clatrans R/W) (acres)	
12	IFD for Secondary and Detailed Site Selection, and Biofiltration Strip	3.90	1.68	12	LA	91	8.79	WB	IFD for Secondary and Detailed Site Selection, and Biofiltration Strip	4.37		0.78		5.1	Los Angeles River
13	Biofiltration Swale	2.88	1.05	13	LA	91	9.49	EB	Biofiltration Swale	2.19		0.32		2.5	Los Angeles River
14	Biofiltration Strip	2.14	0.94	14	LA	91	9.49	WB	Biofiltration Strip	4.97	0.01	0.50		5.5	Los Angeles River
16	Delaware Sand Filter	1.34	0	16	LA	91	10.07	EB	Delaware Sand Filter	1.42		2.05		3.5	Los Angeles River
17	Delaware Sand Filter	2.09	0	17	LA	91	10.18	EB	Delaware Sand Filter	1.94		2.54		4.5	Los Angeles River
18	Existing BMP - Linear Radial GSRD	0.49	0.00	18	LA	91	10.23	EB	Existing BMP - Linear Radial GSRD	0.71		0.48		1.2	Los Angeles River
20	Biofiltration Swale	0.60	0.46	20	LA	91	10.33	WB	Biofiltration Swale	0.73		0.20	0.61	1.5	Los Angeles River
21	Earthen Austin Sand Filter	3.57	0	21	LA	91	10.43	WB	Earthen Austin Sand Filter	6.91	0.63	1.07	-	8.6	Los Angeles River
24	Biofiltration Swale	0.41	0.83	24	LA	91	11.03	EB	Biofiltration Swale	0.60		1.66		2.3	Los Angeles River
25	Delaware Sand Filter	3.62	0	25	LA	91	11.07	WB	Delaware Sand Filter	0.72		0.51		1.2	Los Angeles River
26	Biofiltration Swale	0.44	0.03	26	LA	91	11.16	WB	Biofiltration Swale	0.67	0.25	0.53	0.30	1.8	Los Angeles River
27	Existing BMP - Linear Radial GSRD	4.64	0	27	LA	91	11.21	WB	Existing BMP - Linear Radial GSRD	10.26	0.13	0.46		10.9	Los Angeles River
28	Biofiltration Swale	0.87	0.20	28	LA	91	11.63	WB	Biofiltration Swale	0.78		0.48		1.3	Los Angeles River
29	Biofiltration Swale	0.39	0.23	29	LA	91	13.66	WB	Biofiltration Swale	0.56		0.45		1.0	Los Angeles River
Total		27.38	5.42							36.83	1.02	12.03	0.91	50.79	

Note: water quality volume (WQV) = (Acres) X (43560) X (0.75 inch/12)

I have reviewed and concur with the contents of the above table.

Print name: Signature: Date:

Timothy H Tieu, District 7 Corridor Study Manager or designated representative (signature required at PS&E only)

OVERALL COST SUMMARY

Storm Water BMP Cost Summary- PID Phase Only

THIS INFORMATION IS FOR CALTRANS INTERNAL USE ONLY

Project Name:	SR-91 Corridor Project
District:	07
County:	Los Angeles
Route:	91
Postmile Limits:	07 - LA - 91 PM R8.2/R13.8
Project ID (or EA)	0716000166 (07-32810K)

1.0 Design Pollution Prevention and Treatment BMP's

Lane Miles of Pavement	Cost Per Lane Mile			
40	$250,000	**SUBTOTAL**	$	10,000,000

2.0 Construction Site BMP's

Total Construction Cost	x.x% per Table F-3			
$186,684,223	1.25	**SUBTOTAL**	$	2,333,553

3.0 Prepare SWPPP

Total Construction Cost	Cost per Table F-4[1]			
$186,684,223	$45,600	**SUBTOTAL**	$	45,600

RQM Value (if SWPPP is required): $39,600

4.0 Job Site Management

Years of Construction	JSM Cost[2]			
2	$152,000	**SUBTOTAL**	$	152,000

5.0 Rain Event Action Plan

Forecasted Storm over 0.1-in	Cost per REAP			
45.6	$500	**SUBTOTAL**	$	22,800

6.0 Stormwater Annual Report

Years of Construction	Cost per Year			
2	$2,000	**SUBTOTAL**	$	4,000

7.0 Stormwater Monitoring

Project Risk Level	SWM Cost-PPDG Apndx F[3]			
2	$147,400	**SUBTOTAL**	$	147,400

8.0 Supplemental Costs: Additional Water Pollution Control

Prepare SWPPP Rate			
$6,000	**SUBTOTAL**	$	6,000

9.0 Annual Construction General Permit Fees

DSA Acres	FY 2015-16 Fee After Reduction			
139	$4,018	**SUBTOTAL**	$	8,036

TOTAL COST FOR STORM WATER BMP's	$	12,719,389

[1] RQM Cost= (months/3+1)x(N+4)xLabor
where months=24; N= 1/lane mile; and Labor = $100/hour

[2] JSM Cost = $CPM_{(DRY)}$ x $Months_{(DRY)}$ + $CPM_{(RAINY)}$ x $Months_{(RAINY)}$ +$CPM_{(SUSP)}$ x $Months_{(SUSP)}$
where $CPM_{(DRY)}$ = 8; $Months_{(DRY)}$= $6000; $CPM_{(RAINY)}$=4; $Months_{(RAINY)}$ =$7000; $CPM_{(SUSP)}$=0; $Months_{(SUSP)}$=$2000

[3] SWM Cost= M x {[$Days_{0.5''}$ x $1000] + $2000(1+0.1(Months/12))}
where M=10; $Days_{0.5''}$ = 14.5; and Months = 24

BMP EXHIBITS

Aerial Source: Environmental Systems Research Institute, 2009

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- Potential IFD Recommended for Secondary and Detailed Site Selection
- Potential Biofiltration Strip Recommended
- Potential Delaware Sand Filter Recommended
- Potential Detention Devices Recommended
- Potential Biofiltration Swale Recommended
- Potential Earthen Austin Sand Filter Recommended
- Potential GSRD Recommended
- Existing BMP
- Post Mile Marker
- Other Project BMP - Swale
- Other Project BMP - Sand Filter
- Other Project BMP - GSRD

N

0 500 1,000 Feet

Recommended BMPs
Location Map
Route 91 Post Mile 6.0 to 20.7
Map 2 of 11

Corridor Stormwater Management Study

Aerial Source: Environmental Systems Research Institute, 2009

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- Potential IFD Recommended for Secondary and Detailed Site Selection
- Potential Biofiltration Strip Recommended
- Potential Delaware Sand Filter Recommended
- Potential Detention Devices Recommended
- Potential Biofiltration Swale Recommended
- Potential Earthen Austin Sand Filter Recommended
- Potential GSRD Recommended
- Existing BMP
- Post Mile Marker
- Other Project BMP - Swale
- Other Project BMP - Sand Filter
- Other Project BMP - GSRD

N

0 500 1,000 Feet

Recommended BMPs
Location Map
Route 91 Post Mile 6.0 to 20.7
Map 3 of 11

Corridor Stormwater Management Study

Aerial Source: Environmental Systems Research Institute, 2009

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- Potential IFD Recommended for Secondary and Detailed Site Selection
- Potential Biofiltration Strip Recommended
- Potential Delaware Sand Filter Recommended
- Potential Detention Devices Recommended
- Potential Biofiltration Swale Recommended
- Potential Earthen Austin Sand Filter Recommended
- Potential GSRD Recommended
- Existing BMP
- Post Mile Marker
- Other Project BMP - Swale
- Other Project BMP - Sand Filter
- Other Project BMP - GSRD

N

0 500 1,000 Feet

Recommended BMPs Location Map
Route 91 Post Mile 6.0 to 20.7
Map 4 of 11

Corridor Stormwater Management Study

Aerial Source: Environmental Systems Research Institute, 2009

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- Potential IFD Recommended for Secondary and Detailed Site Selection
- Potential Biofiltration Strip Recommended
- Potential Delaware Sand Filter Recommended
- Potential Detention Devices Recommended
- Potential Biofiltration Swale Recommended
- Potential Earthen Austin Sand Filter Recommended
- Potential GSRD Recommended
- Existing BMP
- Post Mile Marker
- Other Project BMP - Swale
- Other Project BMP - Sand Filter
- Other Project BMP - GSRD

N

0 500 1,000 Feet

Recommended BMPs Location Map
Route 91 Post Mile 6.0 to 20.7
Map 5 of 11

Corridor Stormwater Management Study

Aerial Source: Environmental Systems Research Institute, 2009

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- Potential IFD Recommended for Secondary and Detailed Site Selection
- Potential Biofiltration Strip Recommended
- Potential Delaware Sand Filter Recommended
- Potential Detention Devices Recommended
- Potential Biofiltration Swale Recommended
- Potential Earthen Austin Sand Filter Recommended
- Potential GSRD Recommended
- Existing BMP
- Post Mile Marker
- Other Project BMP - Swale
- Other Project BMP - Sand Filter
- Other Project BMP - GSRD

N

0 500 1,000 Feet

Recommended BMPs
Location Map
Route 91 Post Mile 6.0 to 20.7
Map 6 of 11

Corridor Stormwater Management Study

ATTACHMENT K

Nonstandard Design Features Matrix

Attachment K
SR-91 & I-710 PSR/PDS
Inventory of Design Exceptions

Legend:
M = Meets Design Standard
V = Violates Design Standards (Exception Needed)
N/A = Not Applicable

= High Probability of Approval
= Medium Probability of Approval
= Low Probability of Approval

HDM Index	HDM Index Heading	Mandatory or Advisory	Design Standard	Probability of Approval	Location Description	Alternative 1 No Build	Alternative 2-5C	Alternative 3-5C	Alternative 4-5C	Alternative 2-7	Alternative 3-7	Alternative 4-7
201.1	Stopping Sight Distance	Mandatory	Table 201.1 shows the minimum standards for stopping sight distance related to design speed for motorists.	Low	SR-91 WB at S Susana Rd	V	V	V	V	V	V	V
					SR-91 EB at Long Beach Blvd	V	V	V	V	V	V	V
					SR-91 WB at Los Angeles River Bridge	V	V	V	V	V	V	V
					SR-91 EB to I-710 NB Connector	V	V	V	V	V	V	V
					SR-91 EB to I-710 SB Connector	V	V	V	V	V	V	V
					SR-91 WB to I-710 NB/SB Connector	V	V	V	V	V	V	V
					I-710 NB to SR-91 WB Connector	V	V	V	V	V	V	V
					I-710 SB to SR-91 EB Connector	V	V	V	V	V	V	V
203.2 & 203.3	Standards for Curvature	Mandatory	Table 203.2 shall be the minimum radius of curve for specific design speeds on highways. Where physical restrictions on curve radius cannot be overcome and it becomes necessary to introduce curvature of lower standard than the design speed for the project, the design speed between successive curves should change not more than 10 miles per hour. Introduction of curves with lower design speeds should be avoided at the end of long tangents, steep downgrades, or at other locations where high approach speeds may be anticipated.	Low	SR-91 EB to I-710 NB Connector	V	V	V	V	V	V	V
					SR-91 EB to I-710 SB Connector	V	V	V	V	V	V	V
					SR-91 WB to I-710 NB/SB Connector	V	V	V	V	V	V	V
					I-710 NB to SR-91 WB Connector	V	V	V	V	V	V	V
					I-710 SB to SR-91 EB Connector	V	V	V	V	V	V	V
203.5	Compound Curves	Advisory	Where compound curves are necessary, the shorter radius should be at least two-thirds longer radius when the shorter radius is 100 feet or less. On one-way roads, the larger radius should follow the smaller radius.	Medium	EB SR-91 Long Beach Blvd On Ramps	V	N/A	N/A	N/A	N/A	N/A	N/A
203.6	Reversing Curves	Advisory	When horizontal curves reverse direction the connection tangents should be long enough to accommodate the standard super elevation runoffs given on Figure 202.5. If this is not possible, the 6 percent per 100 feet rate of change should govern (see Index 202.5(3)).	Medium	EB: SR-91 Alameda Off-Ramp	V	N/A	N/A	N/A	N/A	N/A	N/A
					EB SR-91 to NB I-710 Connector/Atlantic	V	N/A	N/A	N/A	N/A	N/A	N/A
					EB: SR-91 to Atlantic Off-Ramp	V	N/A	N/A	N/A	N/A	N/A	N/A
					SB I-710 to EB SR-91/Atlantic Connector	V	N/A	N/A	N/A	N/A	N/A	N/A
					SR-91 : Santa Fe to Long Beach	V	N/A	N/A	N/A	N/A	N/A	N/A
					SR-91 : Orange to Cherry	V	N/A	N/A	N/A	N/A	N/A	N/A
					SR-91 : Paramount to Downey	V	N/A	N/A	N/A	N/A	N/A	N/A
301.1	Lane Width	Mandatory	The minimum lane width on two-lane and multilane highways, ramps, collector-distributor roads, and other appurtenant roadways shall be 12 feet.	Medium	SR-91 Mainline	V	M	V	V	M	V	V
302.1	Shoulder Width	Mandatory	The shoulder widths given in Table 302.1 shall be the minimum continuous usable width of paved shoulder on highways.	Low	SR-91 Mainline	V	M	V	V	M	V	V
					SR-91 WB On-Ramp at Atlantic Ave	V	V	V	V	V	V	V
					SR-91 EB On-Ramp at Atlantic Ave	V	M	V	V	M	V	V
					I-710 SB On-Ramp at Artesia Blvd	V	V	V	V	V	V	V
305.1(1)(a)	Median Width	Advisory	The minimum median width for freeways and expressways in urban areas should be 36 feet.	Medium	SR-91 Mainline	V	V	V	V	V	V	V
305.1(3)(a)	Median Width	Mandatory	In areas where restrictive conditions prevail the minimum median width shall be 22 feet.	Low	SR-91 Mainline	V	M	V	V	M	V	V

Attachment K
SR-91 & I-710 PSR/PDS
Inventory of Design Exceptions

Legend:
M = Meets Design Standard
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N/A = Not Applicable

= High Probability of Approval
= Medium Probability of Approval
= Low Probability of Approval

HDM Index	HDM Index Heading	Mandatory or Advisory	Design Standard	Probability of Approval	Location Description	Alternative 1 No Build	Alternative 2-5C	Alternative 3-5C	Alternative 4-5C	Alternative 2-7	Alternative 3-7	Alternative 4-7
309.1(3)(a)	Horizontal Clearances for Highways - Minimum Clearances	Mandatory	The minimum horizontal clearance to all objects, such as bridge rails and safety-shaped concrete barriers, as well as sand-filled barrels, metal beam guardrail, etc., on all freeway and expressway facilities, including auxiliary lanes, ramps, and collector-distributor roads, shall be equal to the standard shoulder width of the highway facility as stated in Table 302.1. A minimum clearance of 4 feet shall be provided where the standard shoulder width is less than 4 feet.	Medium	SR-91 Mainline	V	M	V	V	M	V	V
					SR-91 WB On-Ramp at Atlantic Ave	V	V	V	V	V	V	V
					SR-91 EB On-Ramp at Atlantic Ave	V	M	V	V	M	V	V
					I-710 SB On-Ramp at Artesia Blvd	V	V	V	V	V	V	V
309.1 (3)(b)	Minimum Clearances	Mandatory	The minimum horizontal clearance to walls, such as abutment walls, retaining walls in cut locations, and noise barriers on all facilities, including auxiliary lanes, ramps, and collector-distributor roads shall not be less than 10 feet per Table 302.1.	High	SR-91 Median at Central Ave	V	N/A	N/A	N/A	N/A	N/A	N/A
					SR-91 Median at Wilmington Ave	V	N/A	N/A	N/A	N/A	N/A	N/A
					EB SR-91 to SB I-710 Connector	V	N/A	N/A	N/A	N/A	N/A	N/A
					NB I-710 to EB SR-91 Connector	V	N/A	N/A	N/A	N/A	N/A	N/A
					EB SR-91/SB I-710 to Atlantic Off Ramp	V	N/A	N/A	N/A	N/A	N/A	N/A
309.2(1)	Vertical Clearances - Major Structures	Mandatory	16 feet 6 inches shall be the minimum vertical clearance over the roadbed of the State facility (e.g., main lanes, shoulders, ramps, collector-distributor roads, speed change lanes, etc.).	Medium	Artesia Blvd Overcrossing Structure over I-710 SB	V	V	V	V	V	V	V
					Artesia Blvd Overcrossing Structure over I-710 NB	V	V	V	V	V	V	V
					SR-91 Overcrossing Structure over I-710 SB	V	V	V	V	V	V	V
					SR-91 Overcrossing Structure over the SR-91 EB to I-710 NB Connector	V	V	V	V	V	V	V
					SR-91 WB to I-710 NB and SB Connector Structures over the Atlantic Blvd WB On-Ramp	V	V	V	V	V	V	V
403.3	Angle of Intersection	Advisory	A right angle (90°) intersection provides the most favorable conditions for intersecting and turning traffic movements. When a right angle cannot be provided due to physical constraints, the interior angle should be designed as close to 90 degrees as is practical, but should not be less than 75 degrees. Mitigation should be considered for the affected intersection design features.	High	SR-91 EB Alameda St Off-Ramp	V	V	V	V	V	V	V
501.3	Interchange Spacing	Mandatory	The minimum interchange spacing shall be one mile in urban areas, two miles outside of urban areas, and two miles between freeway-to-freeway interchanges and other interchanges. The minimum interchange spacing on Interstates outside of urban areas shall be three miles.	High	Between Central Ave and Wilmington Ave	V	V	V	V	V	V	V
					Between Wilmington Ave and Acacia Ave	V	V	V	V	V	V	V
					Between Acacia Ave and S. Alameda St	V	V	V	V	V	V	V
					Between S. Alameda St and Artesia-Santa Fe Ave	V	V	V	V	V	V	V
					Between Artesia Blvd-Santa Fe Ave and Long Beach Blvd	V	V	V	V	V	V	V
					Between Long Beach Blvd and SR-710	V	V	V	V	V	V	V
					Between SR-710 and Atlantic Ave	V	V	V	V	V	V	V
					Between Cherry Ave and Paramount Blvd	V	V	V	V	V	V	V

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HDM Index	HDM Index Heading	Mandatory or Advisory	Design Standard	Probability of Approval	Location Description	Alternative 1 No Build	Alternative 2-5C	Alternative 3-5C	Alternative 4-5C	Alternative 2-7	Alternative 3-7	Alternative 4-7
502.2	Local Street Interchanges - Isolated Off-Ramps and Partial Interchanges	Mandatory	Isolated off-ramps or partial interchanges shall not be used because of the potential for wrong-way movements.	Low	SR-91 WB Off-Ramp at Santa Fe Ave	V	V	V	V	V	V	V
					SR-91 EB Off-Ramp at Acacia Ave	V	V	V	V	V	V	V
					SR-91 WB Off-Ramp at Acacia Ave	V	V	V	V	V	V	V
201.7 & 504.2 (4)(a)	Decision Sight Distance & Freeway Entrances and Exits Decision Speed Consideration Freeway Entrances and Exits (Design Speed Considerations - Freeway Exit)	Advisory	On freeways and expressways the decision sight distance values in Table 201.7 should be used at lane drops and at off-ramp noses to interchanges, branch connections, roadside rests, vista points, and inspection stations. Decision sight distance given in Table 201.7 should be provided at freeway exits and branch connectors. At secondary exits on collector-distributor roads, a minimum of 600 feet of decision sight distance should be provided.	Medium	EB SR-91: Long Beach Blvd Off Ramp	V	N/A	N/A	N/A	N/A	N/A	N/A
					WB SR-91: Long Beach Blvd Off Ramp	V	N/A	N/A	N/A	N/A	N/A	N/A
					EB SR-91: Cherry Ave Off Ramp	V	N/A	N/A	N/A	N/A	N/A	N/A
504.2(3)	Freeway Entrances and Exits	Advisory	When an exit must be located where physical restrictions to visibility cannot be corrected by cut widening or object removal, an auxiliary lane in advance of the exit should be a minimum of 600 feet, 1,000 feet preferred.	Medium	EB SR-91: Santa Fe Ave Off Ramp	V	N/A	N/A	N/A	N/A	N/A	N/A
					WB SR-91: Long Beach Blvd Off Ramp	V	N/A	N/A	N/A	N/A	N/A	N/A
504.3(1)(b)	Ramps - Lane Widths	Mandatory	Ramp lanes shall be a minimum of 12 feet in width. Where ramps have curve radii of 300 feet or less, measured along the outside edge of traveled way for single lane ramps or along the outside lane line for multilane ramps, with a central angle greater than 60 degrees, the single ramp lane, or the lane furthest to the right if the ramp is multilane, shall be widened in accordance with Table 504.3 in order to accommodate large truck wheel paths.	Low	SR-91 WB On-Ramp at Atlantic Ave	V	V	V	V	V	V	V
504.3(1)(c)	Ramps - Shoulder Width	Mandatory	Shoulder widths for ramps shall be as indicated in Table 302.1.	Low	SR-91 WB On-Ramp at Atlantic Ave	V	V	V	V	V	V	V
504.3(1)(d)	Ramps - Lane Drops	Advisory	Depending on approach geometry and speed, the lane drop transition between the limit line and the 6 foot separation point should be accomplished with a taper of between 30:1 and 50:1 (longitudinal to lateral).	Medium	SR-91 EB On-Ramp at Central Ave	V	V	V	V	V	V	V
					SR-91 EB On-Ramp at Wilmington Ave	V	V	V	V	V	V	V

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HDM Index	HDM Index Heading	Mandatory or Advisory	Design Standard	Probability of Approval	Location Description	Alternative 1 No Build	Alternative 2-5C	Alternative 3-5C	Alternative 4-5C	Alternative 2-7	Alternative 3-7	Alternative 4-7
504.3(3)	Ramps - Location and Design of Ramp Intersections on the Crossroads	Mandatory	The minimum distance (curb return to curb return) between ramp intersections and local road intersections shall be 400 feet.	Low	Alameda St EB Off-Ramp Intersection and Alameda St/ E. Manville St Intersection	V	V	V	V	V	V	V
					Santa Fe Ave EB On/Off-Ramp Intersection and Santa Fe Ave/E. Artesia Blvd Intersection	V	V	V	V	V	V	V
					Santa Fe Ave WB Off-Ramp Intersection and Santa Fe Ave/E. Artesia Blvd Intersection	V	V	V	V	V	V	V
					Long Beach Blvd EB On/Off-Ramp Intersection and Long Beach Blvd/ E. Forhan St Intersection	V	V	V	V	V	V	V
					Long Beach Blvd WB On/Off-Ramp Intersection and Long Beach Blvd/ E. Artesia Blvd Intersection	V	V	V	V	V	V	V
					Atlantic Ave EB On/Off-Ramp Intersection and Atlantic Ave/ E. 67th St Intersection	V	V	V	V	V	V	V
					Atlantic Ave WB On/Off-Ramp Intersection and Atlantic Ave/ E. 68th St Intersection	V	V	V	V	V	V	V
					Cherry Ave EB On/Off-Ramp Intersection and Cherry Ave/ E. Artesia Blvd Intersection	V	V	V	V	V	V	V
					Paramount Ave EB On/Off-Ramp Intersection and Paramount Ave/ E. Artesia Blvd Intersection	V	V	V	V	V	V	V
					Paramount Ave WB On/Off-Ramp Intersection and Paramount Ave/ E. 67th Way Intersection	V	V	V	V	V	V	V
504.3(5)	Ramps (Single-lane Ramps)	Advisory	If the length of a single lane ramps exceeds 1,000 feet, an additional lane should be provided on the ramp to permit passing maneuvers.	High	EB SR-91 Central Ave Off Ramp	V	N/A	N/A	N/A	N/A	N/A	N/A
					WB SR-91 Central Ave On Ramp	V	N/A	N/A	N/A	N/A	N/A	N/A
					EB SR-91 Wilmington Ave Off Ramp	V	N/A	N/A	N/A	N/A	N/A	N/A
					WB SR-91 Wilmington Ave On Ramp	V	N/A	N/A	N/A	N/A	N/A	N/A
					NB I-710 Atlantic Ave On Ramp	V	N/A	N/A	N/A	N/A	N/A	N/A
504.4(2)	Freeway-to-Freeway Connections - Design Speed	Advisory	The design speed for single lane directional and all branch connections should be a minimum of 50 miles per hour. When smaller radius curves, with lower design speeds, are used the vertical sight distance should be consistent with approaching vehicle speeds.	Medium	SR-91 EB to I-710 NB Connector	V	V	V	V	V	V	V
					SR-91 EB to I-710 SB Connector	V	V	V	V	V	V	V
					SR-91 WB to I-710 NB/SB Connector	V	V	V	V	V	V	V
					I-710 NB to SR-91 WB Connector	V	V	V	V	V	V	V
					I-710 SB to SR-91 EB Connector	V	V	V	V	V	V	V
504.4(6)	Freeway-to-Freeway Connections (Branch Connections)	Advisory	At a branch merge, a 2,500 foot length auxiliary lane should be provided beyond the merge of one lane of the inlet, except where it does not appear that the capacity on the freeway will be reached until 5 or more yeas after the 20 year design period. In this case the length of the auxiliary lane should be a minimum of 1,000 feet.	Medium	WB SR-91: SB I-710 Connector to Long Beach Blvd	V	N/A	N/A	N/A	N/A	N/A	N/A
					SB I-710: WB SR-91 NB/SB Connector to Long Beach Blvd	V	N/A	N/A	N/A	N/A	N/A	N/A
					NB I-710: EB SR-91/Atlantic Ave Connector to Alondra Blvd	V	N/A	N/A	N/A	N/A	N/A	N/A
504.6	Mainline Lane Reduction at Interchanges	Advisory	The basic number of mainline lanes should not be dropped through a local service interchange.	Medium	SR-91 EB between Cherry Ave Off-Ramp and On-Ramp	M	V	V	V	V	V	V
					SR-91 WB between Central Ave Off-Ramp and On-Ramp	M	V	V	V	V	V	V

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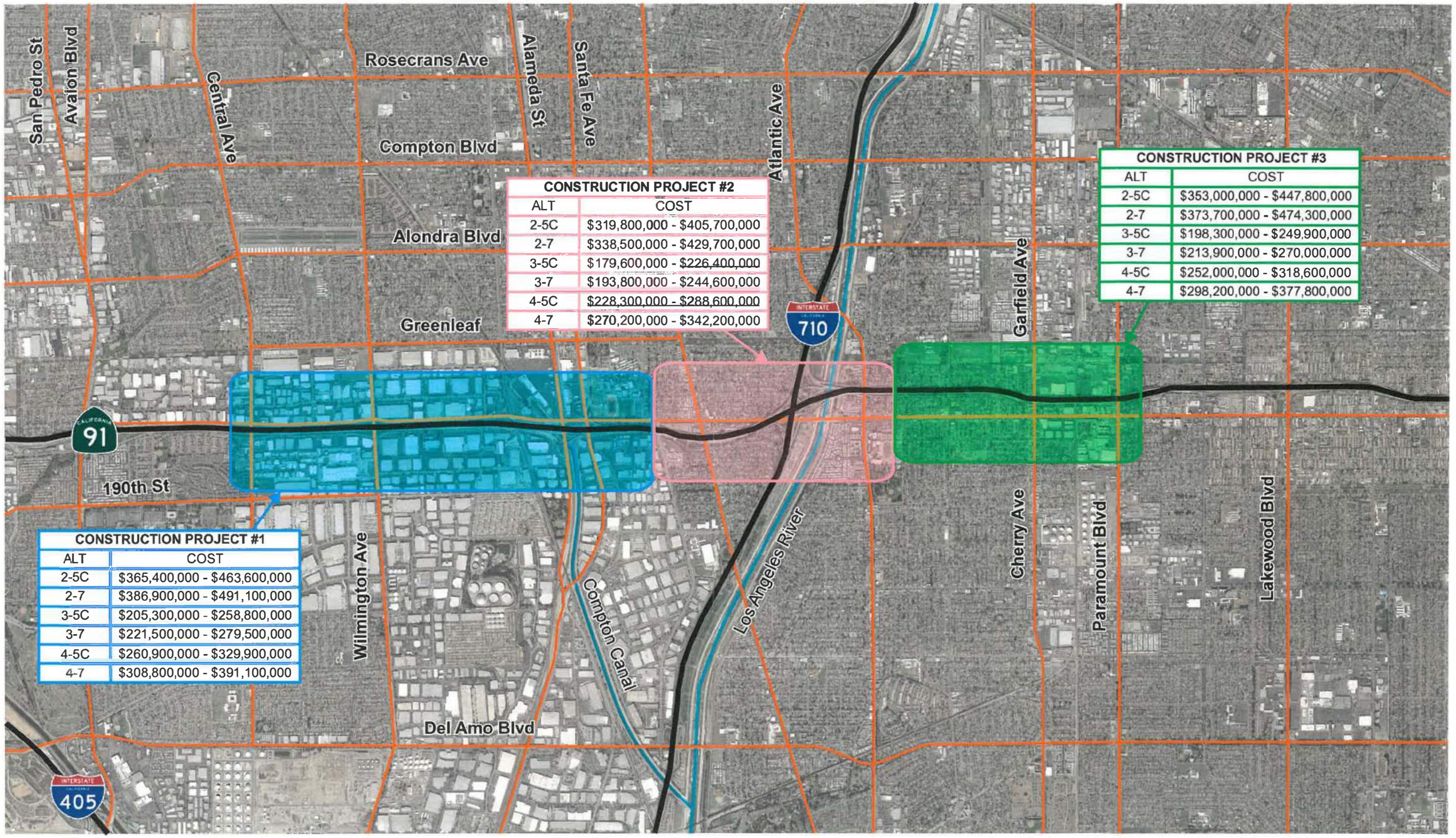
= Medium Probability of Approval
= Low Probability of Approval

HDM Index	HDM Index Heading	Mandatory or Advisory	Design Standard	Probability of Approval	Location Description	Alternative 1 No Build	Alternative 2-5C	Alternative 3-5C	Alternative 4-5C	Alternative 2-7	Alternative 3-7	Alternative 4-7
504.7	Weaving Sections	Mandatory	The minimum weaving length, measured as shown on Figures 504.2A and 504.2B shall be 2,000 feet in urban areas, 5,000 feet outside urban areas, and 5,000 feet between freeway-to-freeway interchanges and other interchanges.	Medium	SR 91 EB between Central Ave and Wilmington Ave	V	V	V	V	V	V	V
					SR 91 EB between Wilmington Ave and Acacia Ave	V	V	V	V	V	V	V
					SR 91 EB between Artesia Blvd-Santa Fe Ave and Long Beach Blvd	V	V	V	V	V	V	V
					SR 91 EB between Long Beach Blvd and I-710	V	V	V	V	V	V	V
					SR 91 EB between Cherry Ave and Paramount Blvd	V	V	V	V	V	V	V
					SR 91 WB between Central Ave and Wilmington Ave	V	V	V	V	V	V	V
					SR 91 WB between Wilmington Ave and Acacia Ave	V	V	V	V	V	V	V
					SR 91 WB between Long Beach Blvd and SR-710	V	V	V	V	V	V	V
					SR 91 WB between Cherry Ave and Paramount Blvd	V	V	V	V	V	V	V
504.8	Access Control	Mandatory	Access rights shall be acquired along interchange ramps to their junction with the nearest public road. Access control shall extend at least 50 feet beyond the end of curb return, ramp radius, or taper. For new construction or major reconstruction, access rights shall be acquired on the opposite side of the local road from ramp terminals to preclude the construction of future driveways or local roads within the ramp intersection.	Medium	WB SR-91 Santa Fe Ave Off Ramp	V	N/A	N/A	N/A	N/A	N/A	N/A
					EB SR-91 Santa Fe Ave Off/On Ramps	V	N/A	N/A	N/A	N/A	N/A	N/A
					EB Long Beach Blvd Off/On Ramps	V	N/A	N/A	N/A	N/A	N/A	N/A
					EB SR-91 Atlantic Ave Off Ramp	V	N/A	N/A	N/A	N/A	N/A	N/A
					WB SR-91 Atlantic Off/On Ramps	V	N/A	N/A	N/A	N/A	N/A	N/A
					EB SR-91 Cherry Ave Off Ramp	V	N/A	N/A	N/A	N/A	N/A	N/A
					WB SR-91 Cherry Ave On Ramp	V	N/A	N/A	N/A	N/A	N/A	N/A
					SR-91 Paramount Off/On Ramps	V	N/A	N/A	N/A	N/A	N/A	N/A

ATTACHMENT L

Construction Phasing/Project Phasing Concept



CONSTRUCTION PROJECT #1	
ALT	COST
2-5C	$365,400,000 - $463,600,000
2-7	$386,900,000 - $491,100,000
3-5C	$205,300,000 - $258,800,000
3-7	$221,500,000 - $279,500,000
4-5C	$260,900,000 - $329,900,000
4-7	$308,800,000 - $391,100,000

CONSTRUCTION PROJECT #2	
ALT	COST
2-5C	$319,800,000 - $405,700,000
2-7	$338,500,000 - $429,700,000
3-5C	$179,600,000 - $226,400,000
3-7	$193,800,000 - $244,600,000
4-5C	$228,300,000 - $288,600,000
4-7	$270,200,000 - $342,200,000

CONSTRUCTION PROJECT #3	
ALT	COST
2-5C	$353,000,000 - $447,800,000
2-7	$373,700,000 - $474,300,000
3-5C	$198,300,000 - $249,900,000
3-7	$213,900,000 - $270,000,000
4-5C	$252,000,000 - $318,600,000
4-7	$298,200,000 - $377,800,000

Construction Project Phasing Concept

SR-91 (Central Avenue to Paramount Boulevard) PSR-PDS

JMD

ATTACHMENT M

PSR-PDS Survey Needs Questionnaire

ATTACHMENT M

PSR-PDS Survey Needs Questionnaire

ARTICLE 8

PSR-PDS SURVEY NEEDS QUESTIONNAIRE

General Guidance:

The project datums, vertical and horizontal, need to be established as soon as possible in the schedule, and all other mapping adjusted to the project datums. Obsolete datums such as NAD27 and NGVD29 should not be used for new projects.

What Survey Control Datums will be used for project design and mapping?

Vertical Control

- ☐ NAVD 1988 (Preferred) s
- ☐ NGVD 1929 (Alternative)
- ☒ Other (Must consult with Caltrans Surveys)

Horizontal Control

California Coordinate System of 1983

- ☐ Epoch _____
- ☒ Other than CCS83 (Must consult with Caltrans Surveys)

Will the project need a Sea Level Rise Risk Assessment? No

Does the project adjoin the ocean or tidal waterways? No

Is the existing highway protected by levees, sea walls, or rip-rap? No

Will existing as-builts, centerlines, or base mapping require any datum or unit conversions? Yes

Are the right of way record maps current? Yes

Is there any need to accelerate design accuracy surveys for this project? No

ATTACHMENT N

Preliminary Stage Construction Concept for the SR-91/I-710 Improvements

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 1
SHEET 1 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-01.dgn

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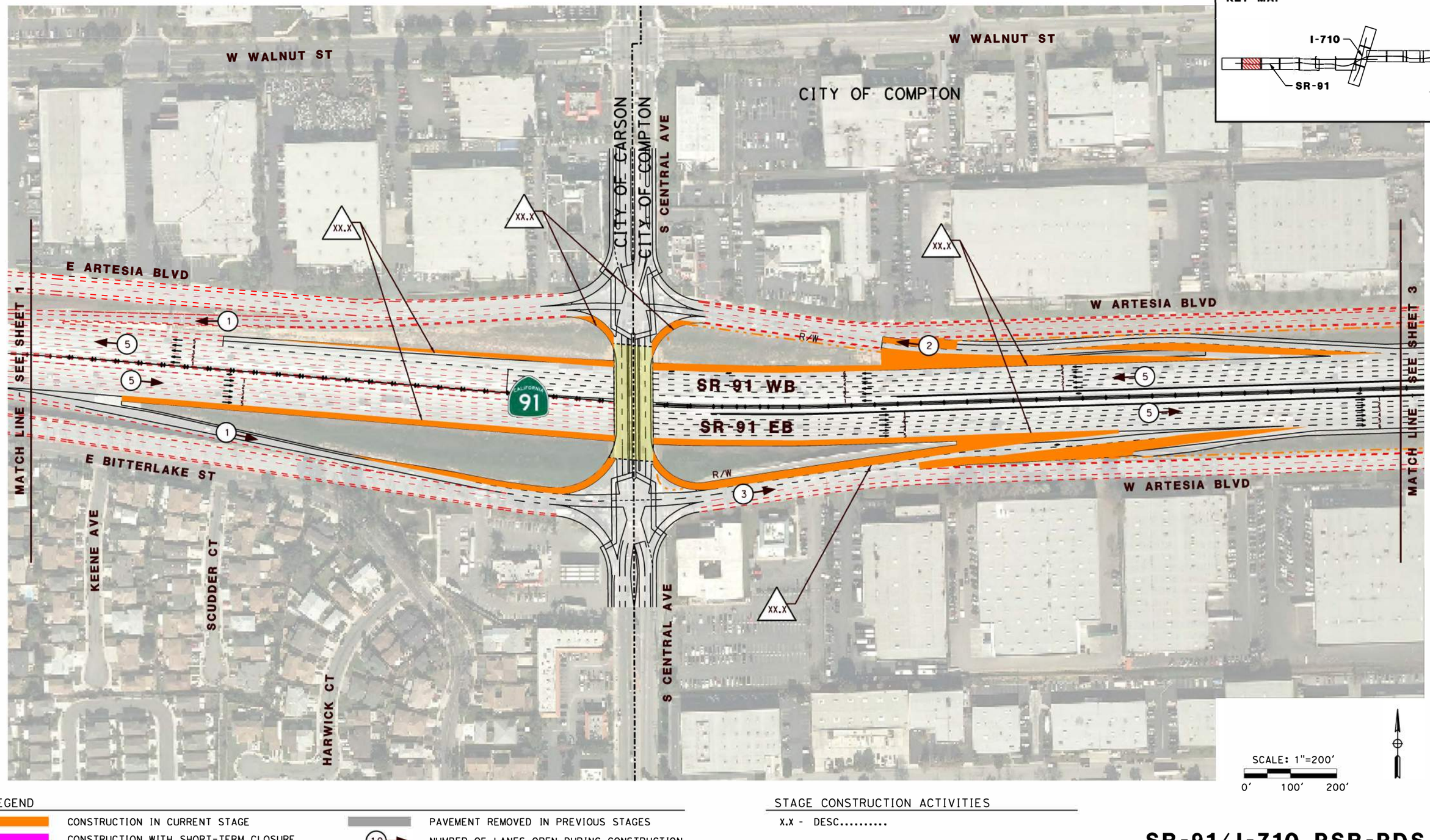

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 1
SHEET 2 OF 42

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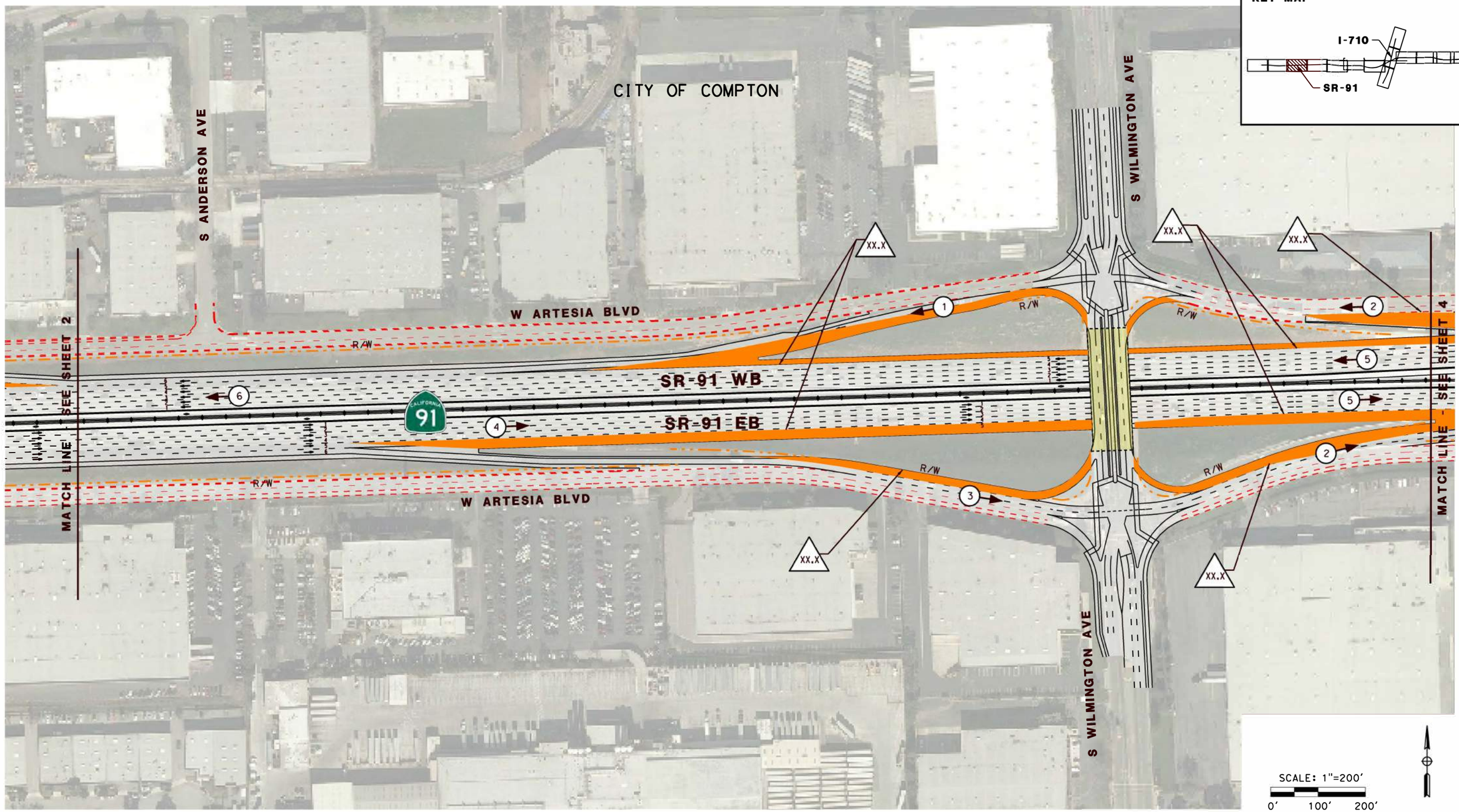

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 1
SHEET 3 OF 42

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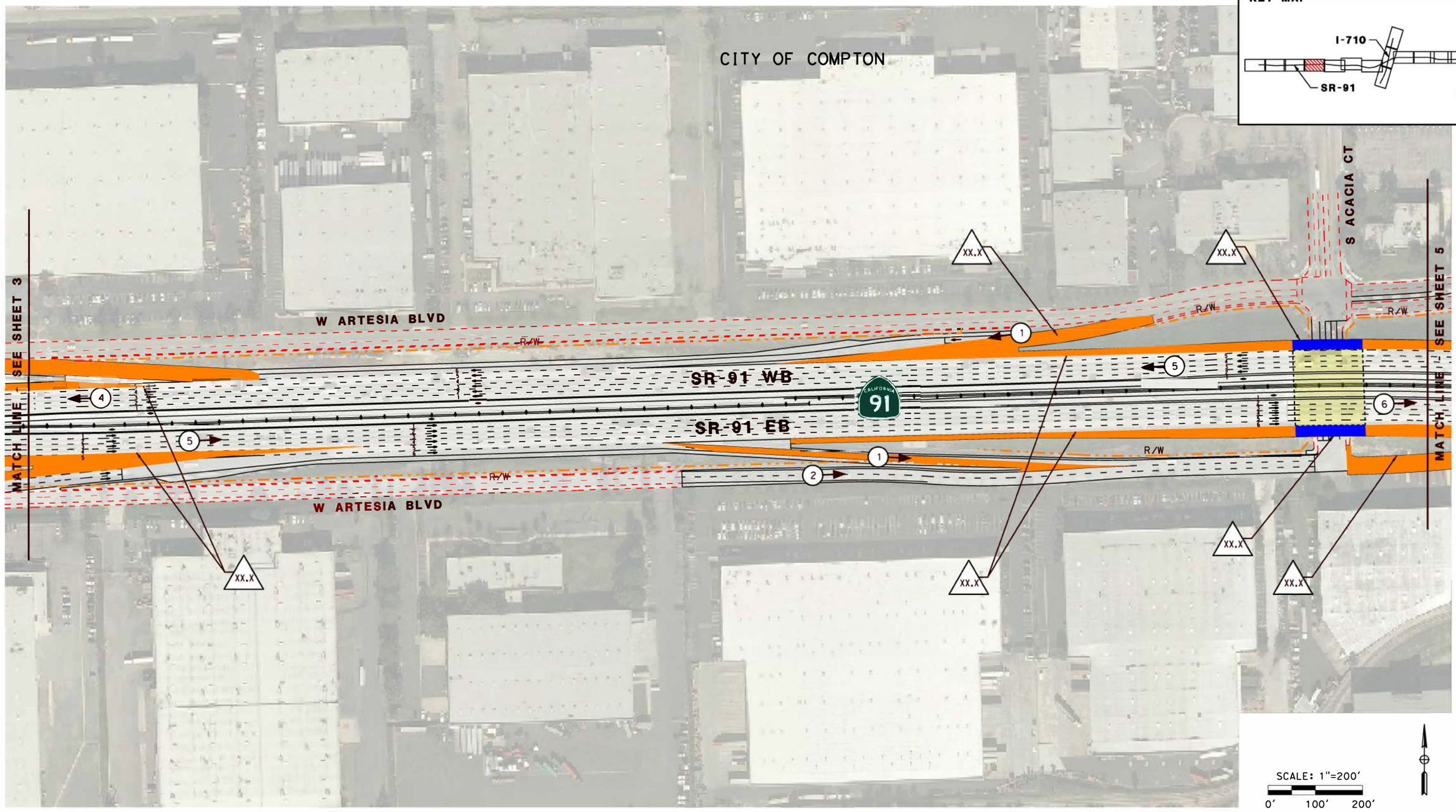

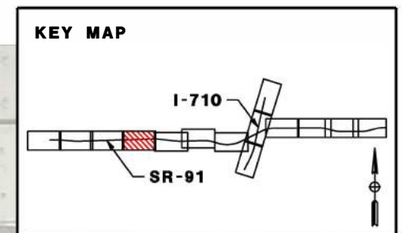

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0' 100' 200'

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 1
SHEET 4 OF 42

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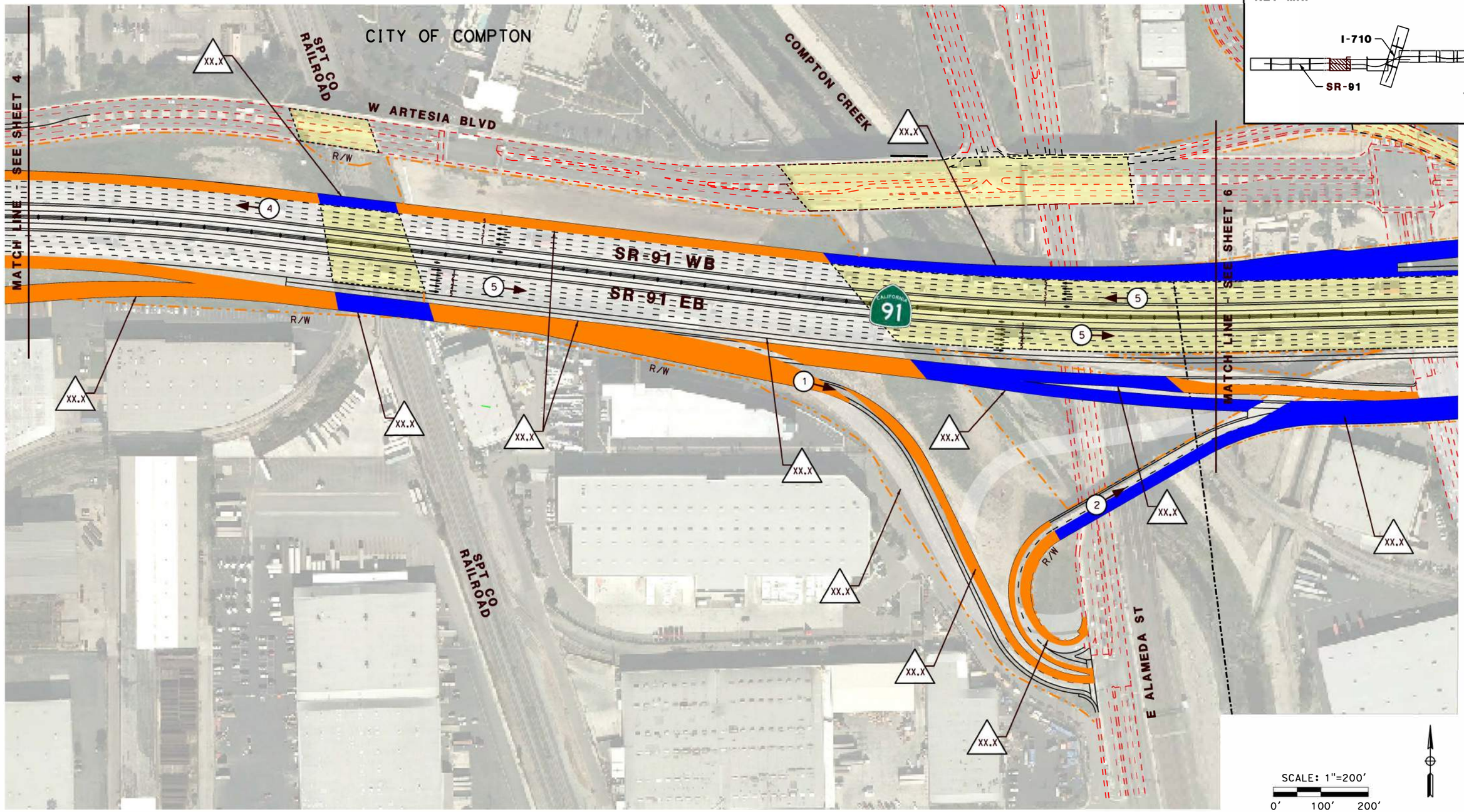

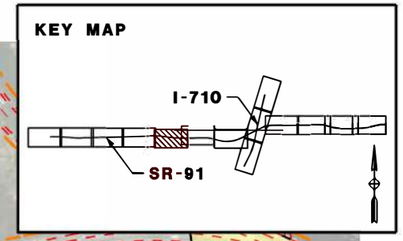

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 1
SHEET 5 OF 42

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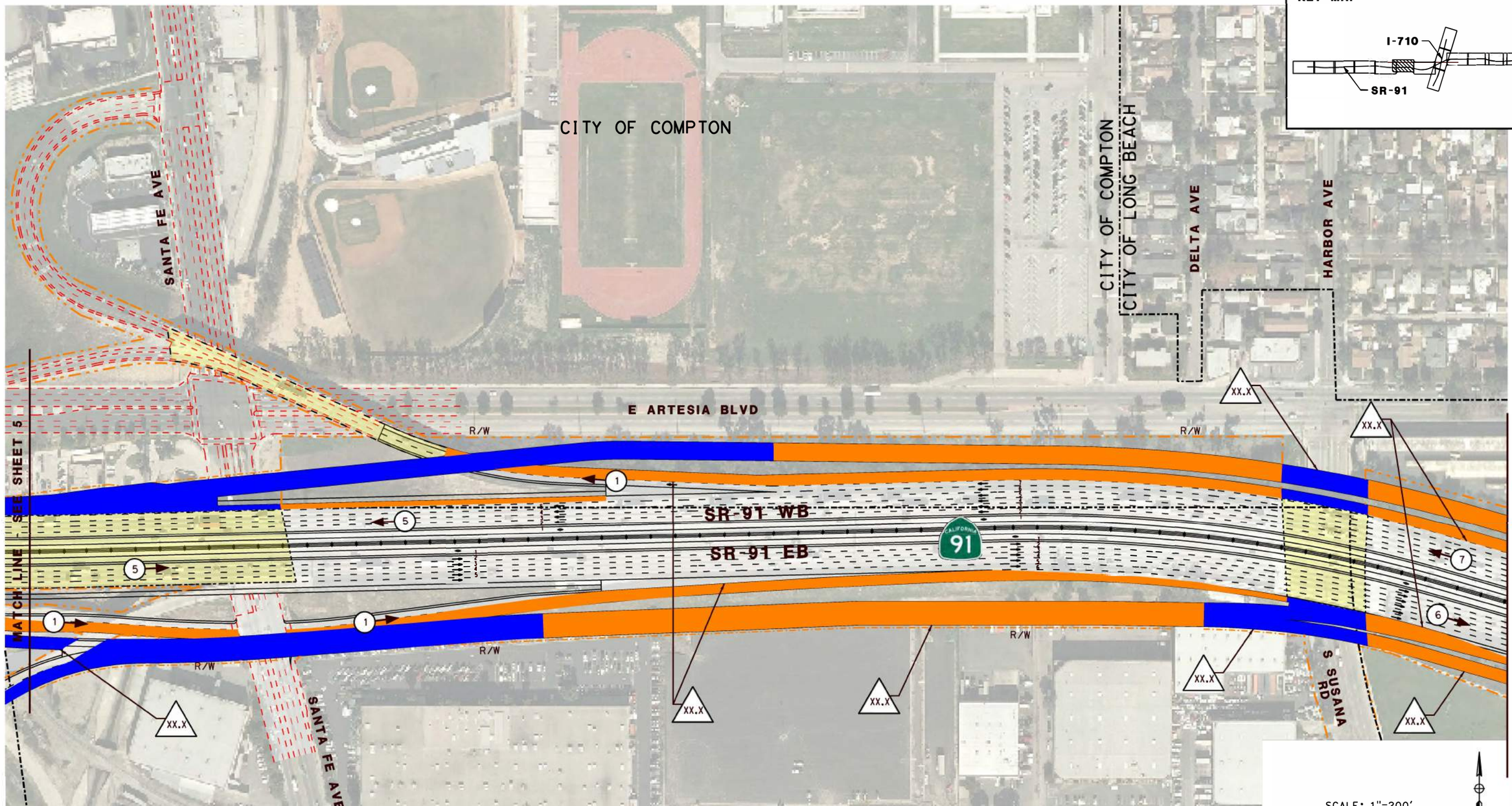

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 1
SHEET 6 OF 42

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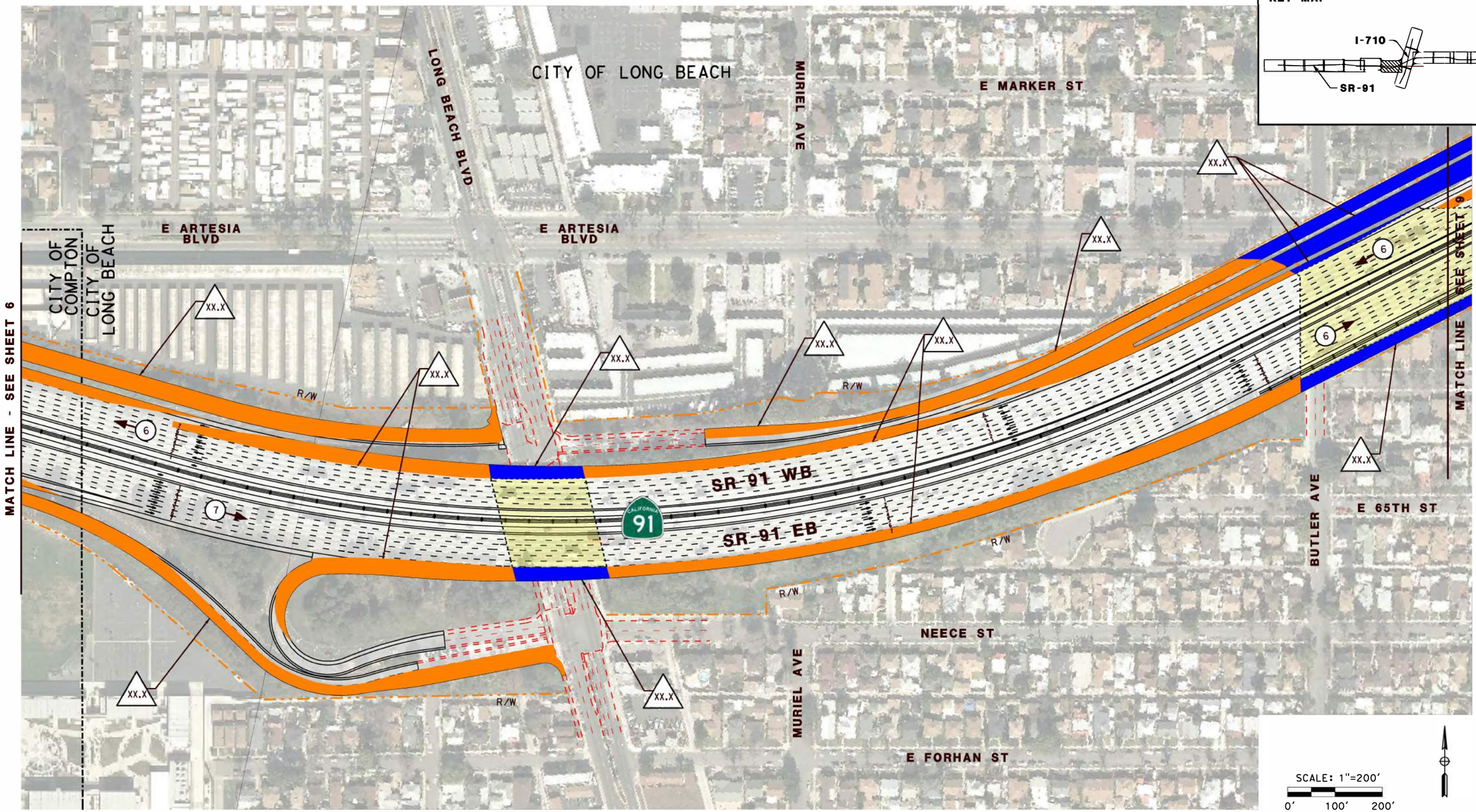

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 1
SHEET 7 OF 42

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LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10)→ NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 1
SHEET 8 OF 42

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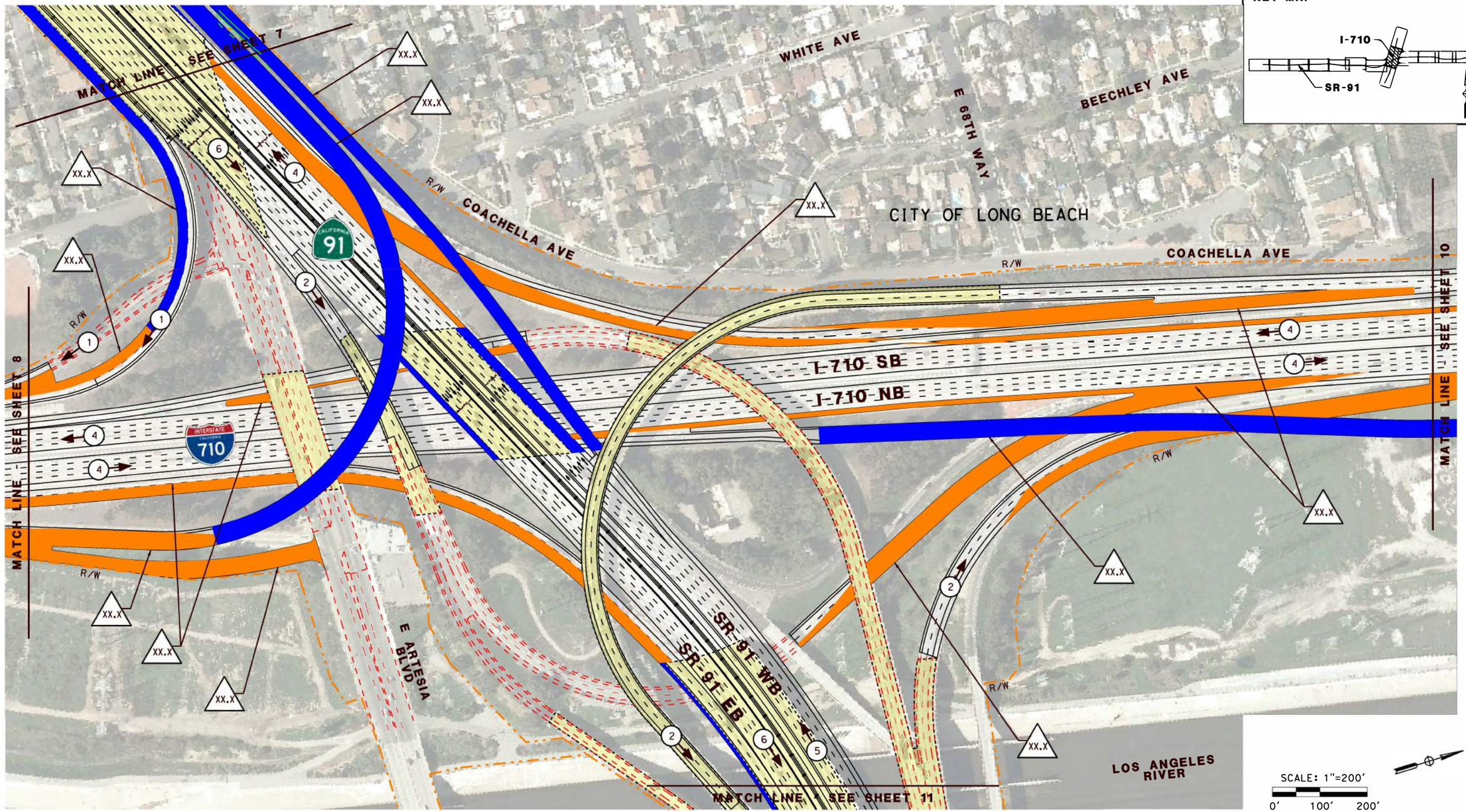

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 1
SHEET 9 OF 42

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LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 1
SHEET 10 OF 42

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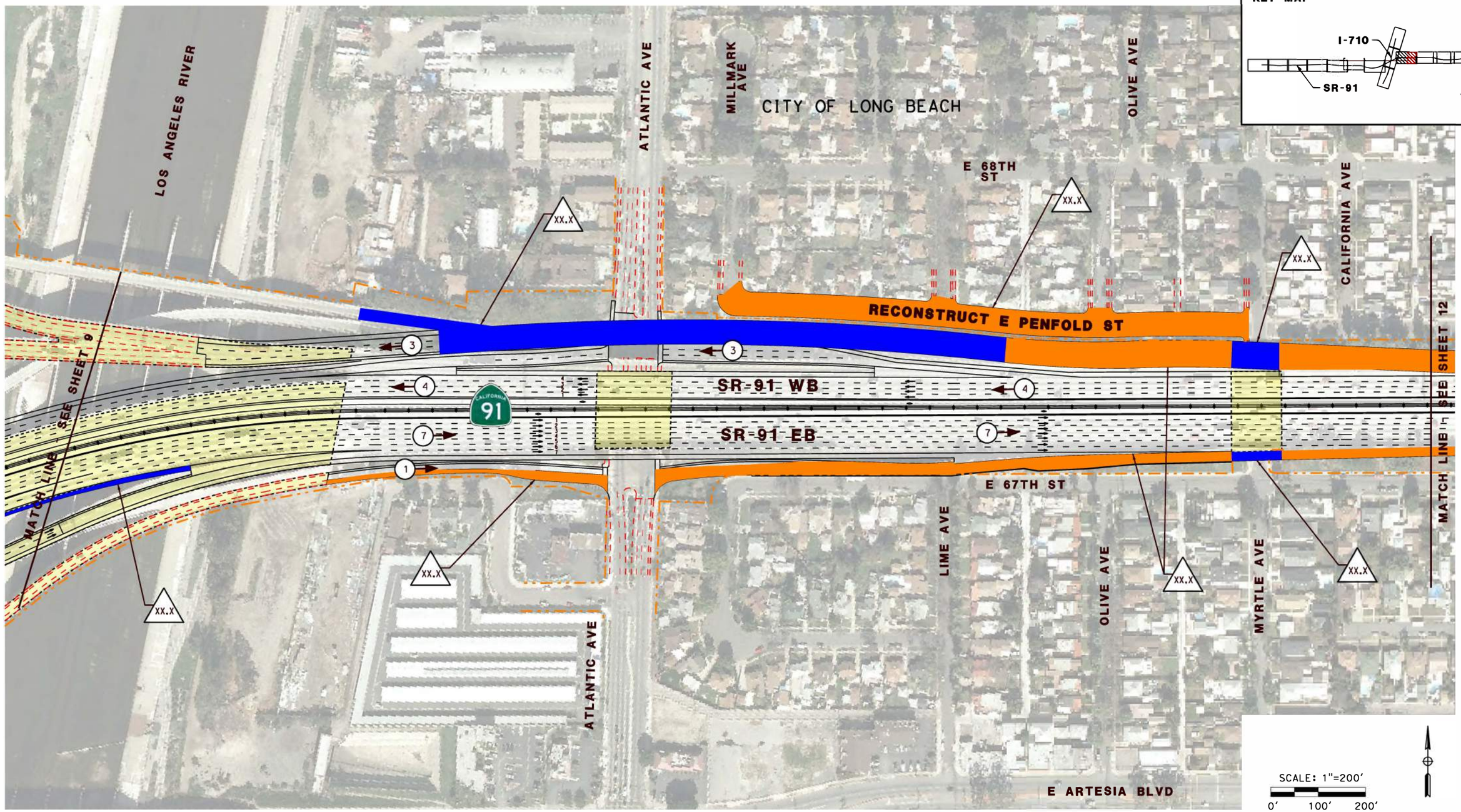

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 1
SHEET 11 OF 42

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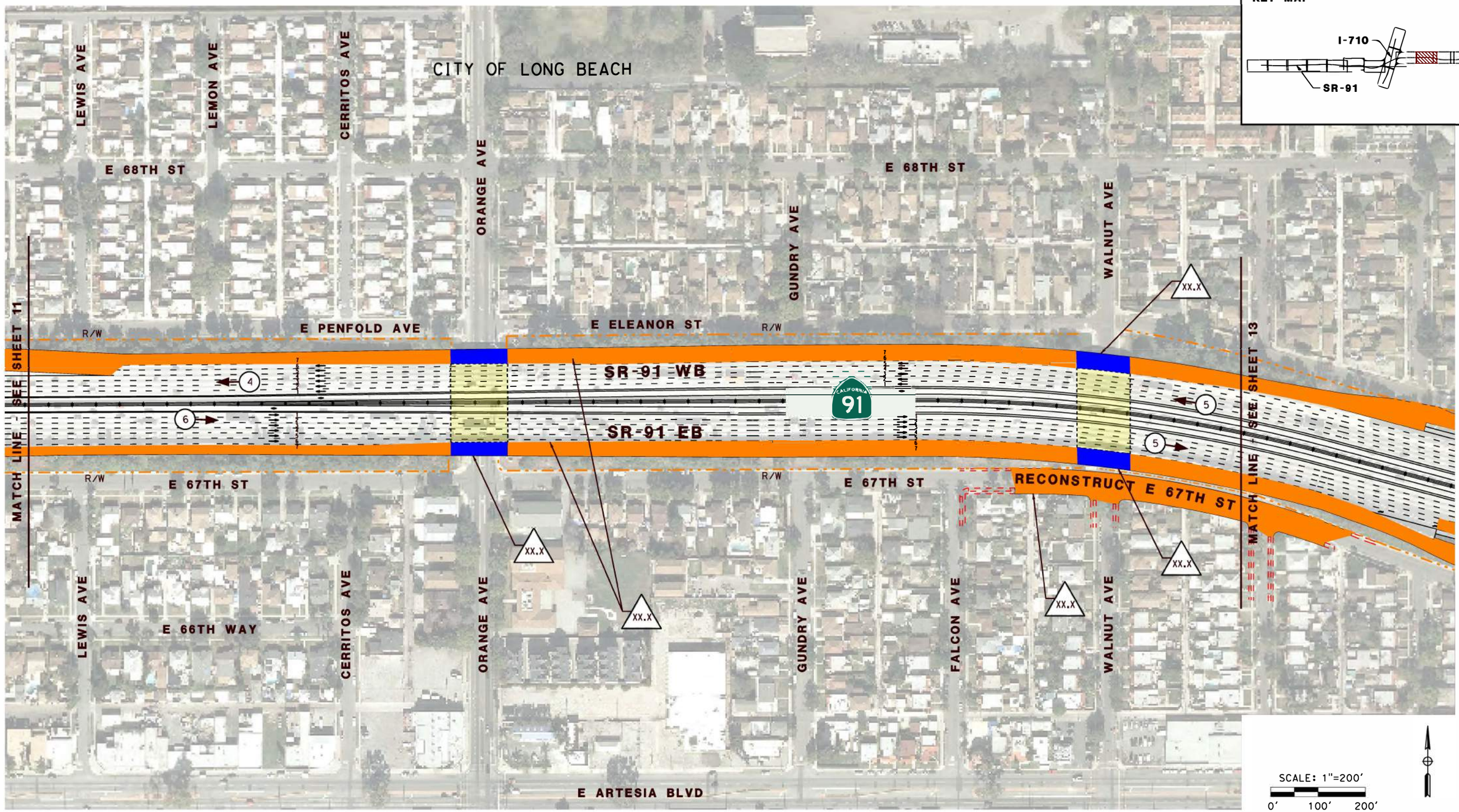

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 1
SHEET 12 OF 42

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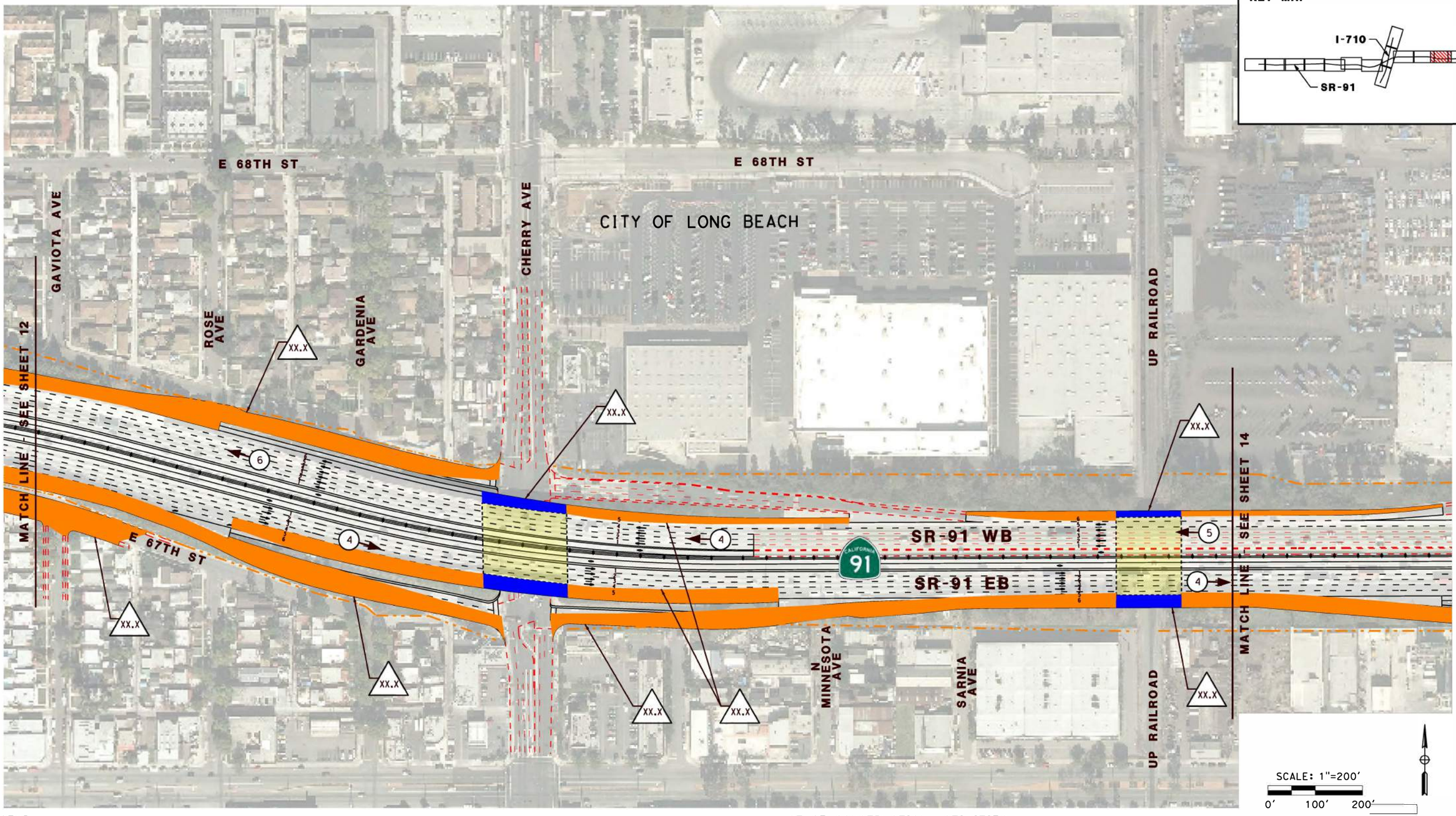

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- 10 → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 1
SHEET 13 OF 42

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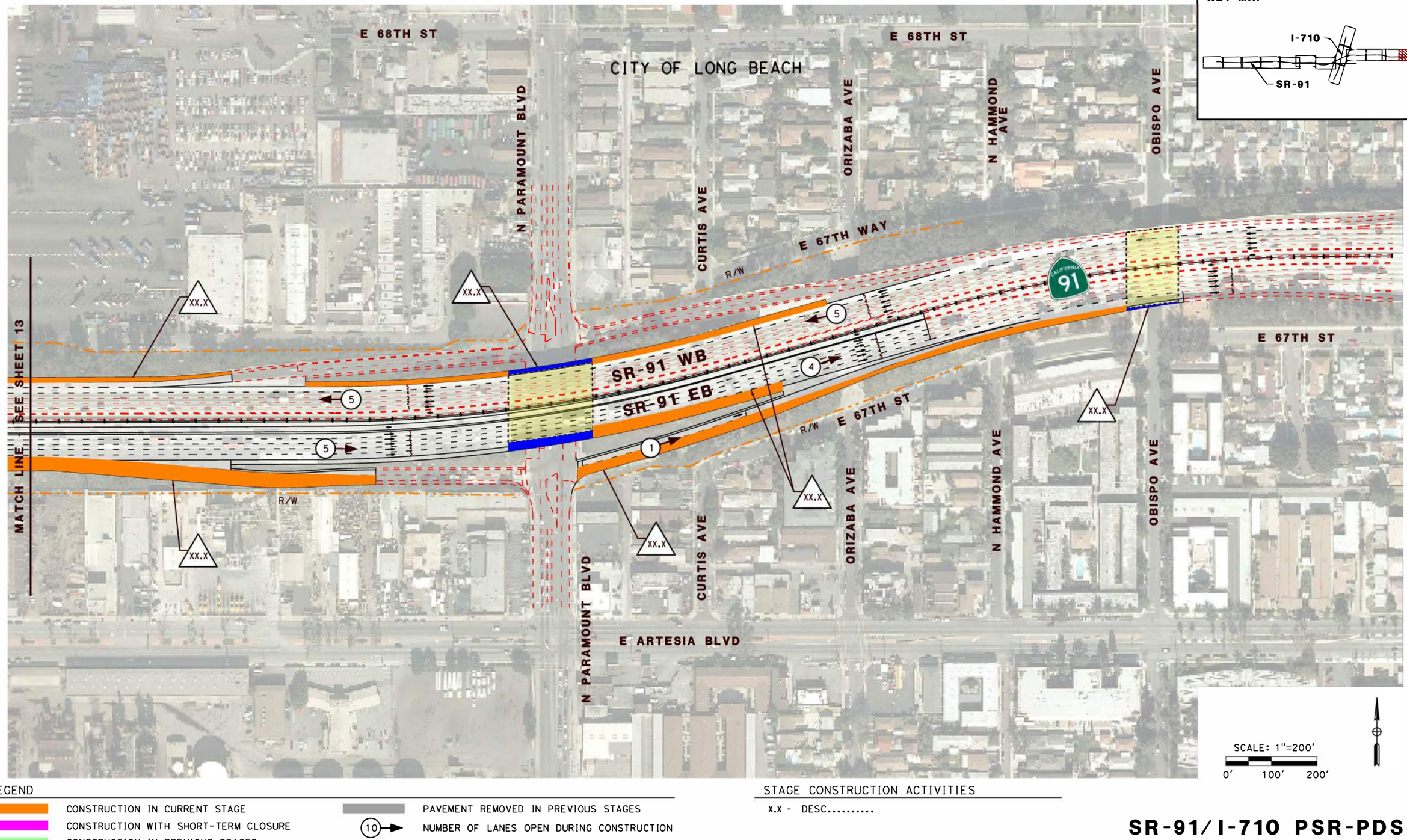

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 1
SHEET 14 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-14.dgn

LAST REVISION 00-00-00 | DATE PLOTTED => 30-NOV-2016 | TIME PLOTTED => 08:38

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-14.dgn

CU 00000

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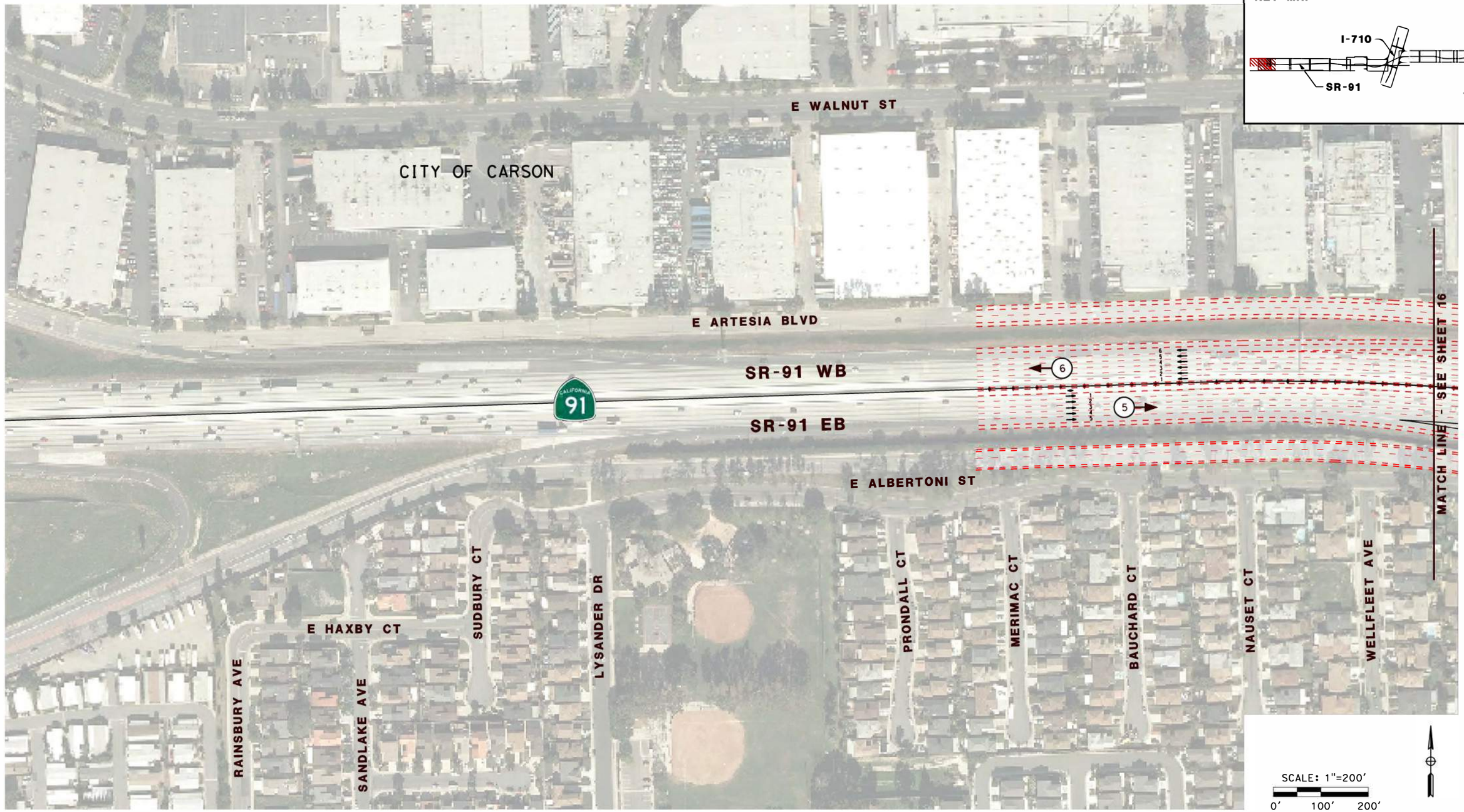


LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 2
SHEET 15 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-15.dgn

LAST REVISION 00-00-00 | DATE PLOTTED => 30-NOV-2016 | TIME PLOTTED => 08:38

BORDER LAST REVISED 3/1/2007

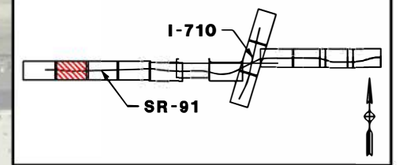
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-15.dgn

CU 00000

EA 000000

KEY MAP



W WALNUT ST

W WALNUT ST

CITY OF COMPTON

CITY OF CARSON

CITY OF COMPTON

S CENTRAL AVE

E ARTESIA BLVD

W ARTESIA BLVD

MATCH LINE - SEE SHEET 15

MATCH LINE - SEE SHEET 17

SR-91 WB

SR-91 EB

R/W

E BITTERLAKE ST

KEENE AVE

SCUDDER CT

HARWICK CT

S CENTRAL AVE

W ARTESIA BLVD

XX.X

XX.X

SCALE: 1"=200'

0' 100' 200'

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 2
SHEET 16 OF 42

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-16.dgn

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00-00-00 | TIME PLOTTED => 08:38

BORDER LAST REVISED 3/1/2007

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DGN FILE => 01-SR91-ALT4-5C_SC-16.dgn

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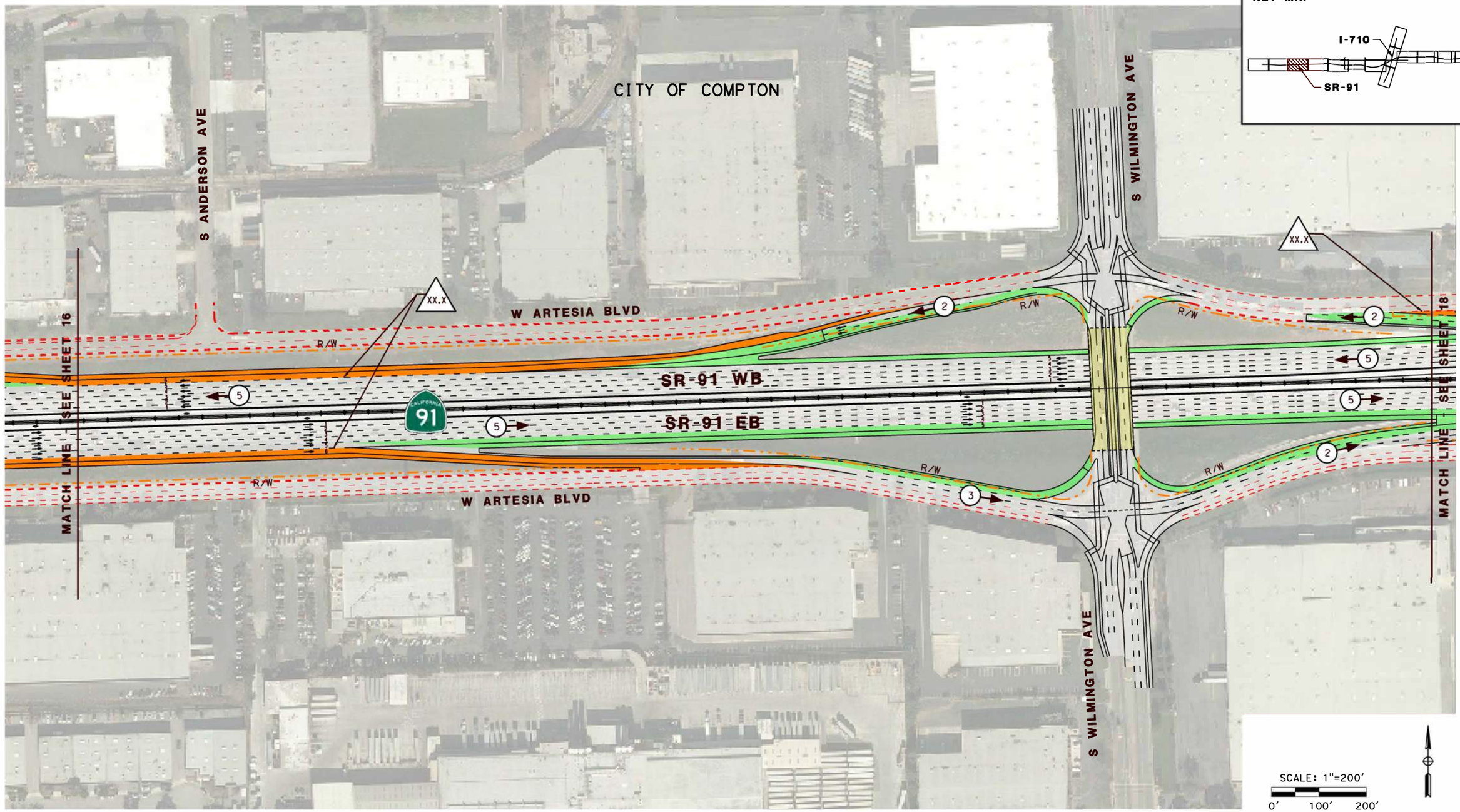

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 2
SHEET 17 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-17.dgn

LAST REVISION 00-00-00
DATE PLOTTED => 30-NOV-2016
TIME PLOTTED => 08:38

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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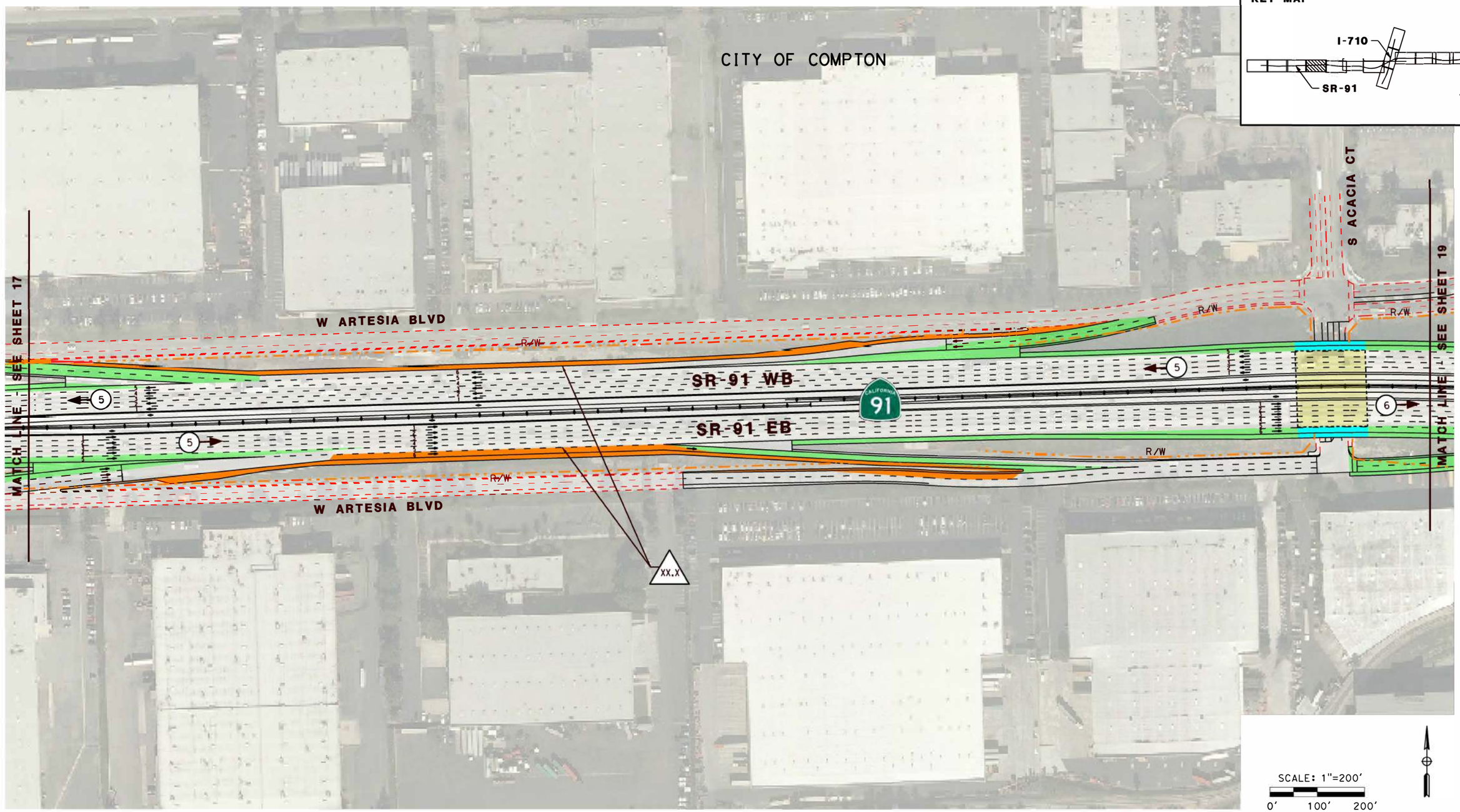

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 2
SHEET 18 OF 42

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-18.dgn

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00-00-00 | TIME PLOTTED => 08:38

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-18.dgn

CU 00000

EA 000000

CITY OF COMPTON

SPT CO RAILROAD

W ARTESIA BLVD

COMPTON CREEK

MATCH LINE - SEE SHEET 18

MATCH LINE - SEE SHEET 20

SR-91 WB

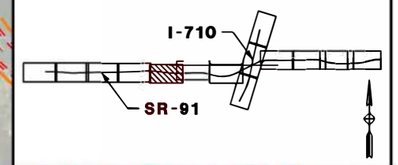
SR-91 EB

R/W

XX.X

E ALAMEDA ST

KEY MAP



SCALE: 1"=200'

0' 100' 200'

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 2
SHEET 19 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-19.dgn

LAST REVISION 00-00-00 | DATE PLOTTED => 30-NOV-2016 | TIME PLOTTED => 08:39

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-19.dgn

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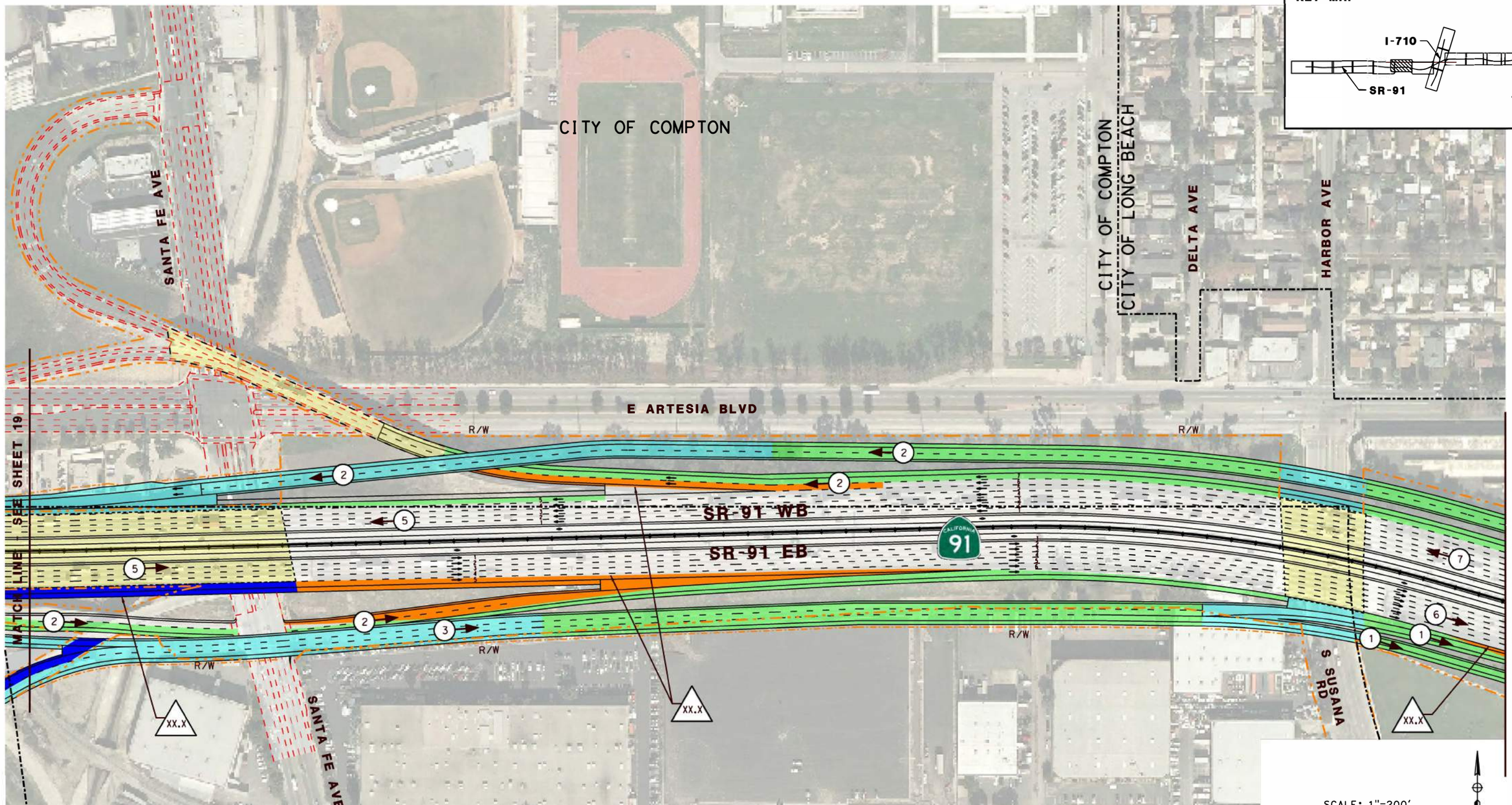
EA 000000



LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- 10 → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 2
SHEET 20 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-20.dgn

LAST REVISION DATE PLOTTED => 30-NOV-2016
00-00-00 TIME PLOTTED => 08:39

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => 01-SR91-ALT4-5C_SC-20.dgn

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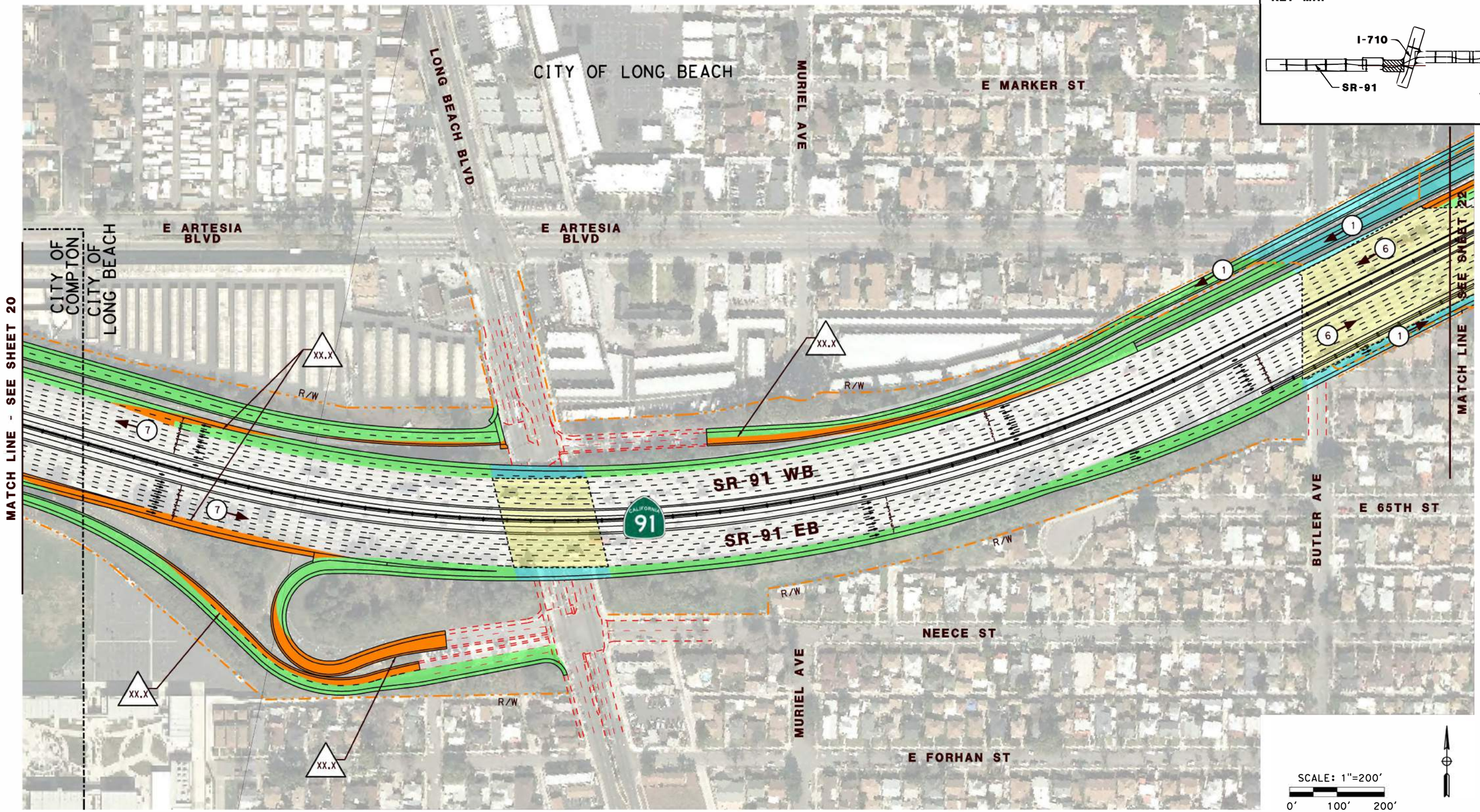

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 2
SHEET 21 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-21.dgn

LAST REVISION | DATE PLOTTED => 30-NOV-2016
00-00-00 | TIME PLOTTED => 08:39

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-21.dgn

CU 00000

EA 000000

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 2
SHEET 22 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-22.dgn

LAST REVISION 00-00-00
DATE PLOTTED => 30-NOV-2016
TIME PLOTTED => 08:39

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-22.dgn

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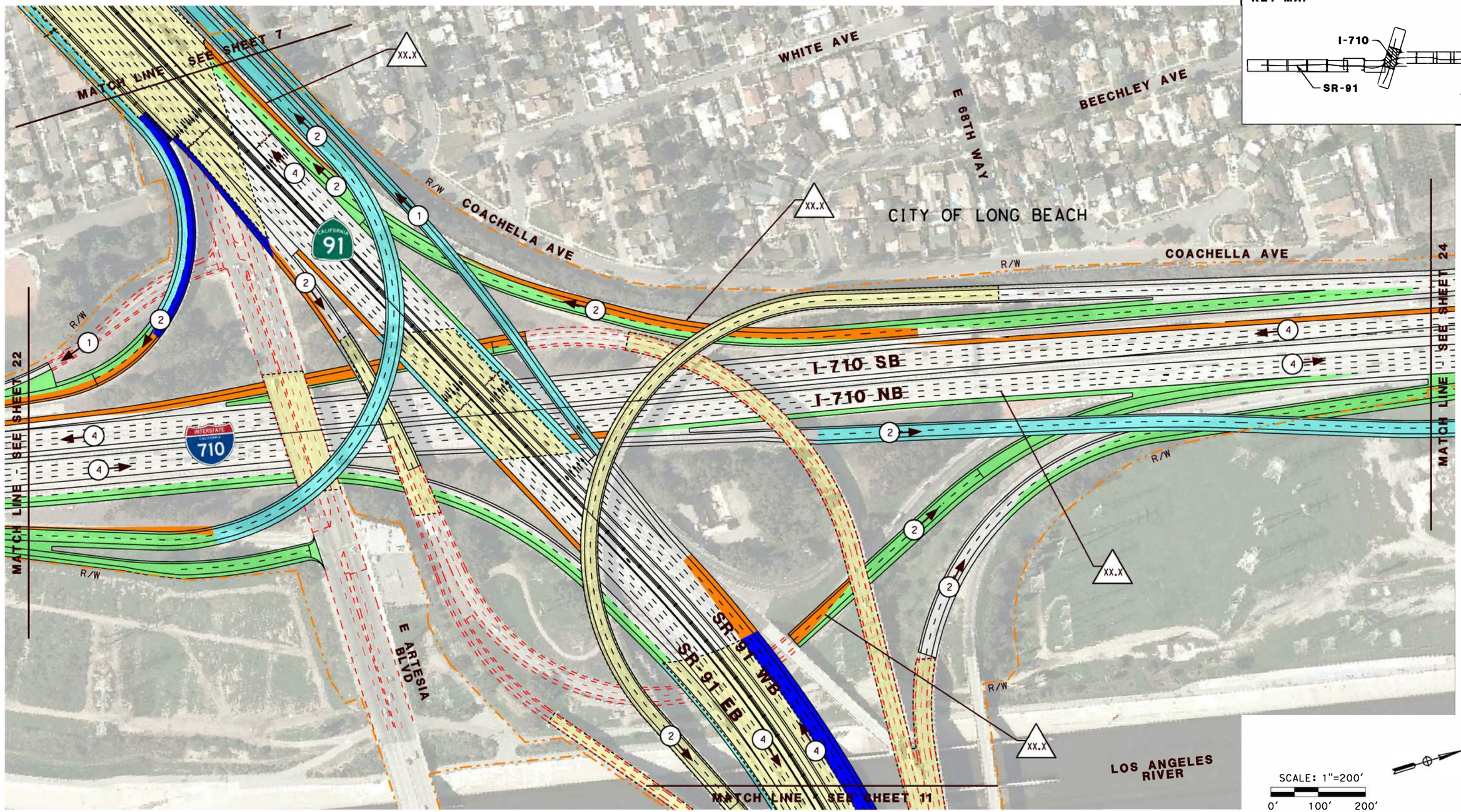

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 2
SHEET 23 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-23.dgn

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BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-23.dgn

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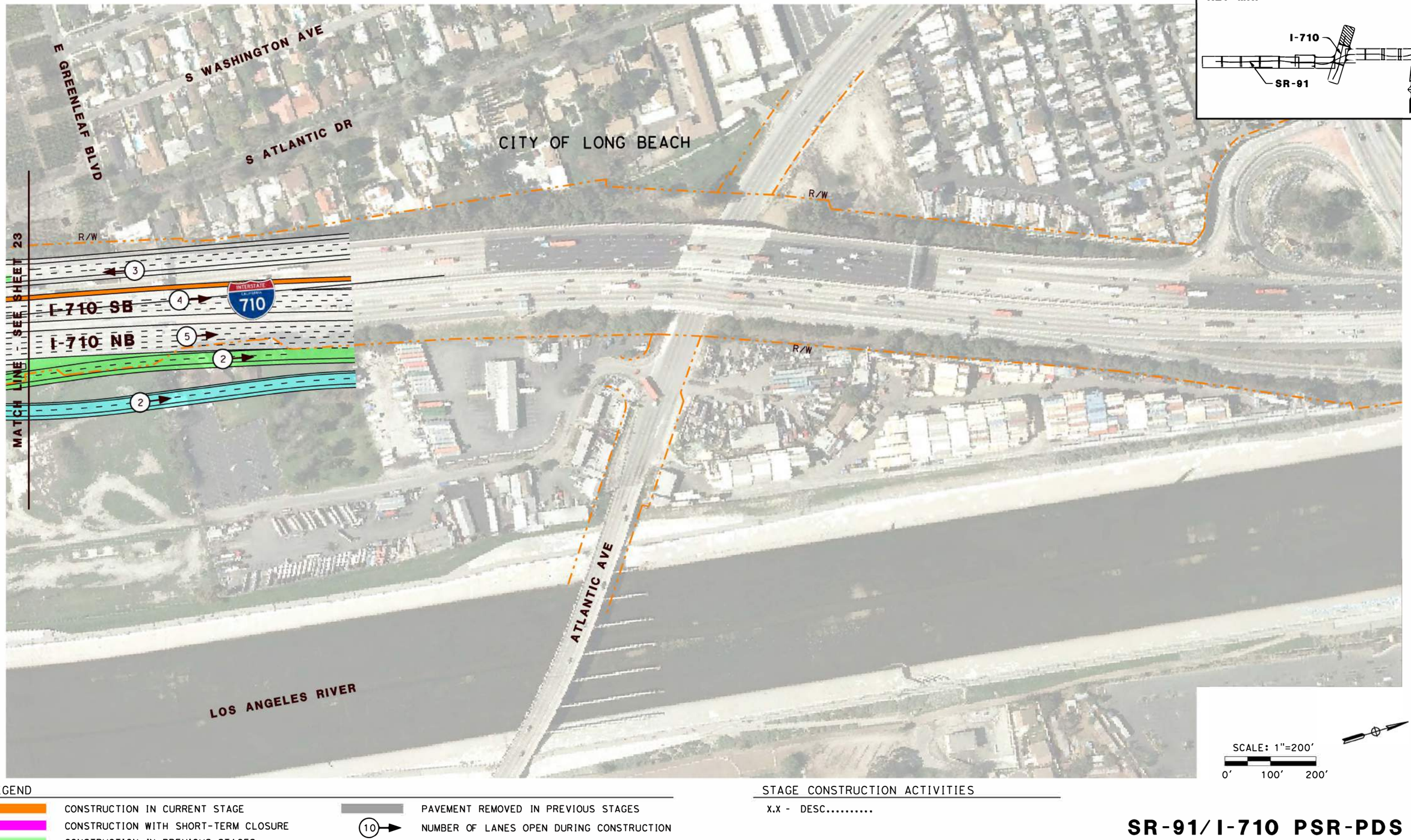
EA 000000



LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 2
SHEET 24 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-24.dgn

LAST REVISION 00-00-00
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TIME PLOTTED => 08:39

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-24.dgn

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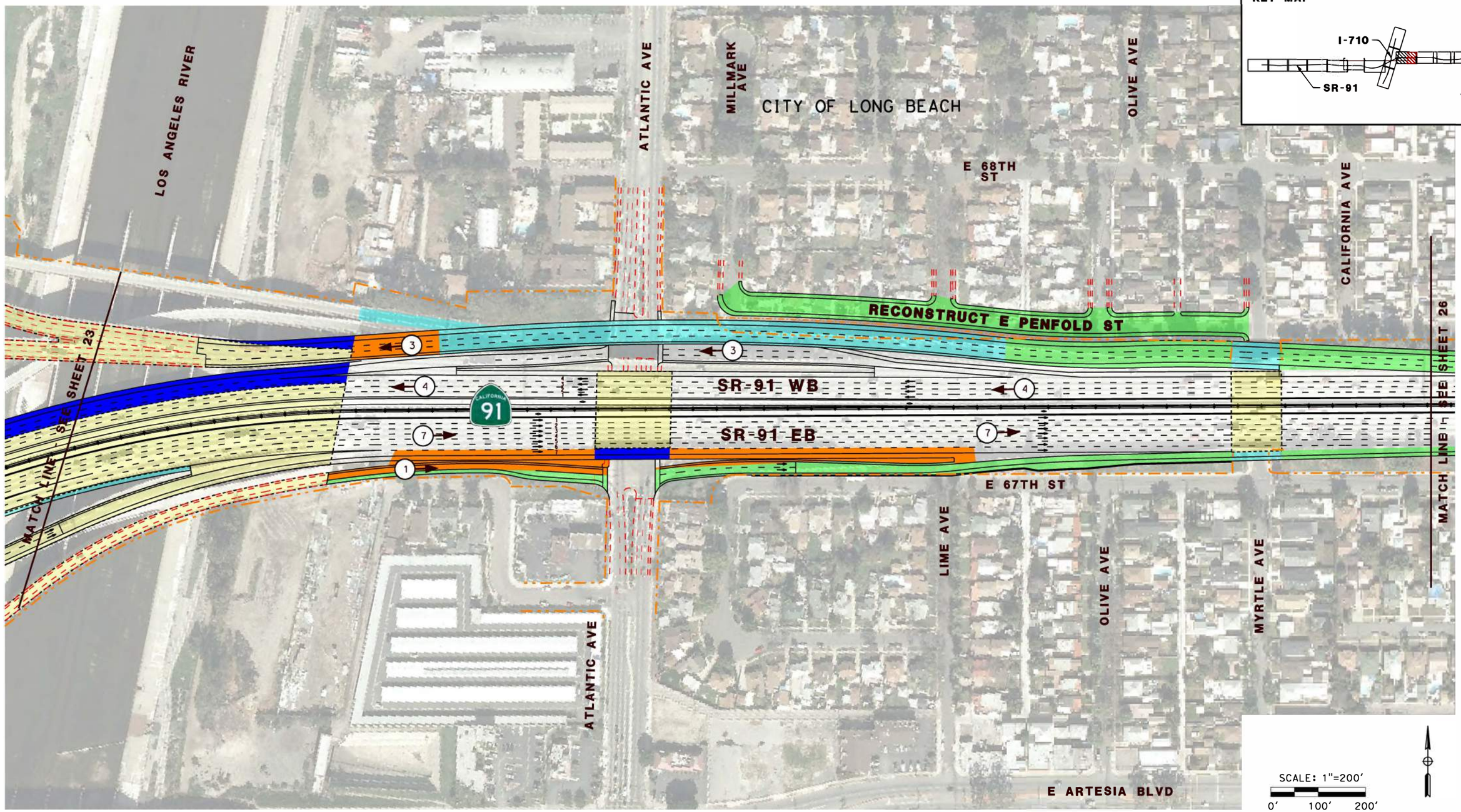
EA 000000



LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 2
SHEET 25 OF 42

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-25.dgn

LAST REVISION 00-00-00 | DATE PLOTTED => 30-NOV-2016 | TIME PLOTTED => 08:39

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-25.dgn

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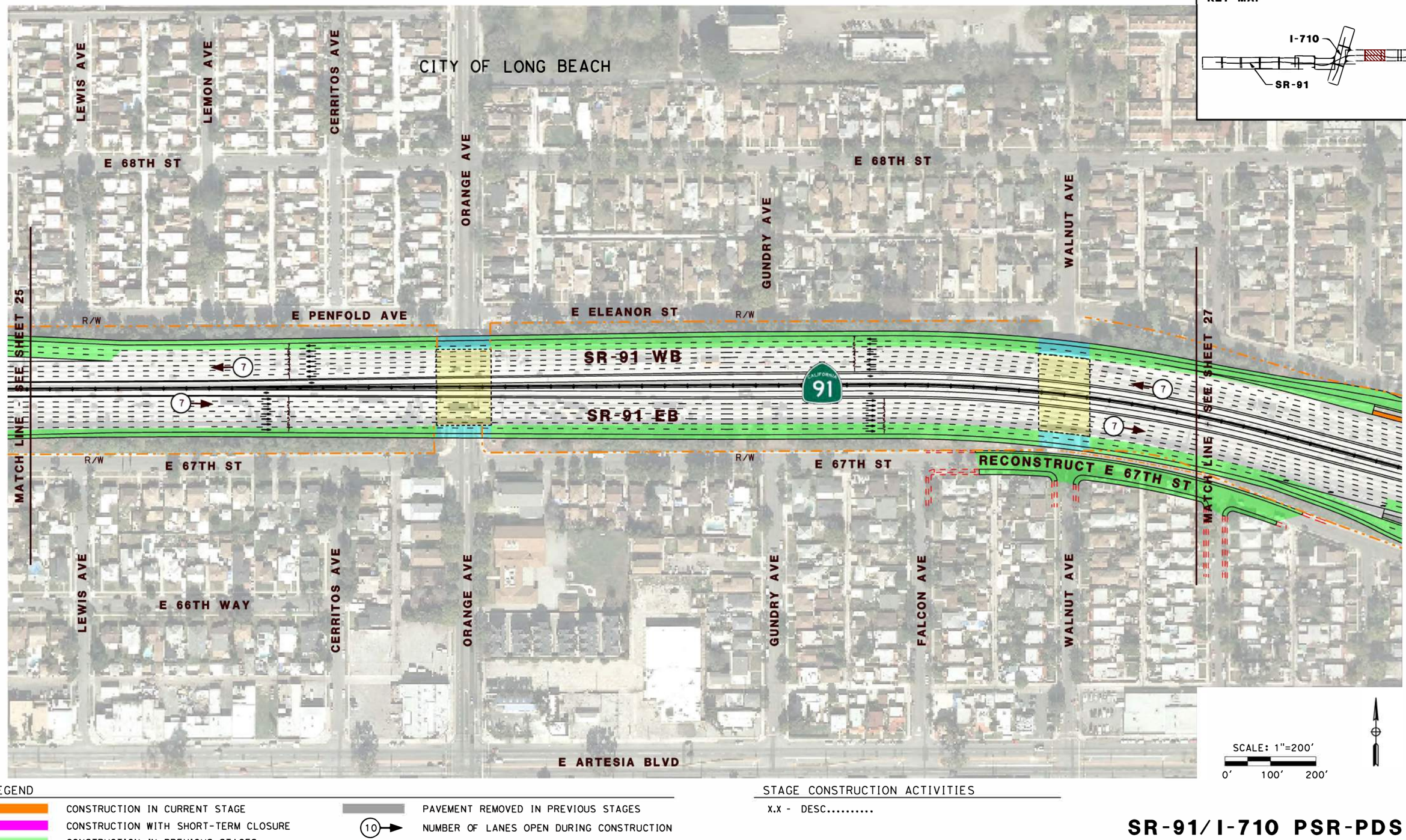
EA 000000



LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 2
SHEET 26 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-26.dgn

LAST REVISION 00-00-00 | DATE PLOTTED => 30-NOV-2016 | TIME PLOTTED => 08:39

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-26.dgn

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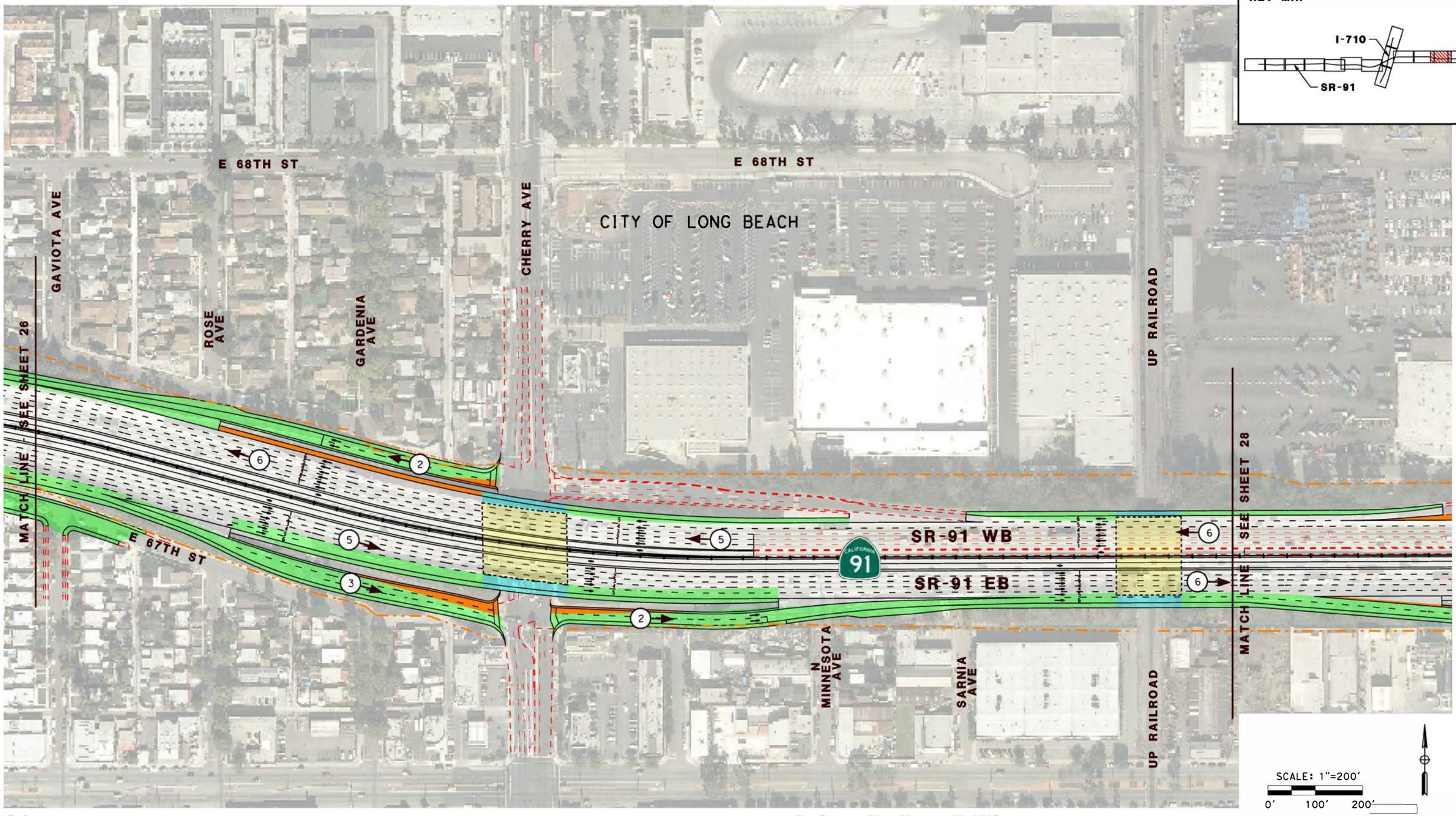
EA 000000



LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- 10 → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 2
SHEET 27 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-27.dgn

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00-00-00 TIME PLOTTED => 08:39

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-27.dgn

CU 00000

EA 000000

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 2
SHEET 28 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-28.dgn

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BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-28.dgn

CU 00000

EA 000000

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 3
SHEET 29 OF 42

DGN FILE = I:\28082A-SR91-I-710-interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-29.dgn

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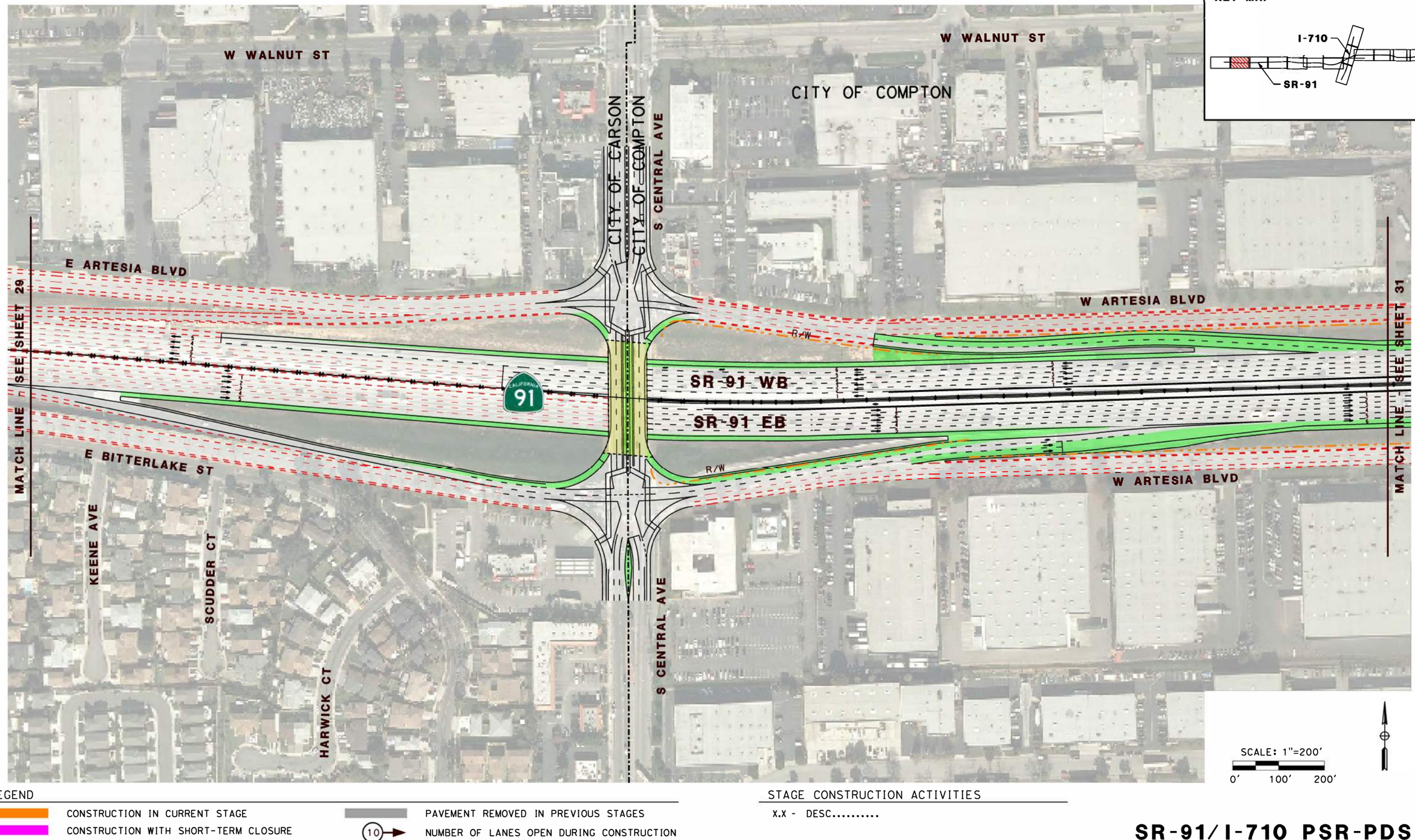
BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-29.dgn

CU 00000

EA 000000



LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 3
SHEET 30 OF 42

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-30.dgn

LAST REVISION | DATE PLOTTED => 30-NOV-2016
00-00-00 | TIME PLOTTED => 08:40

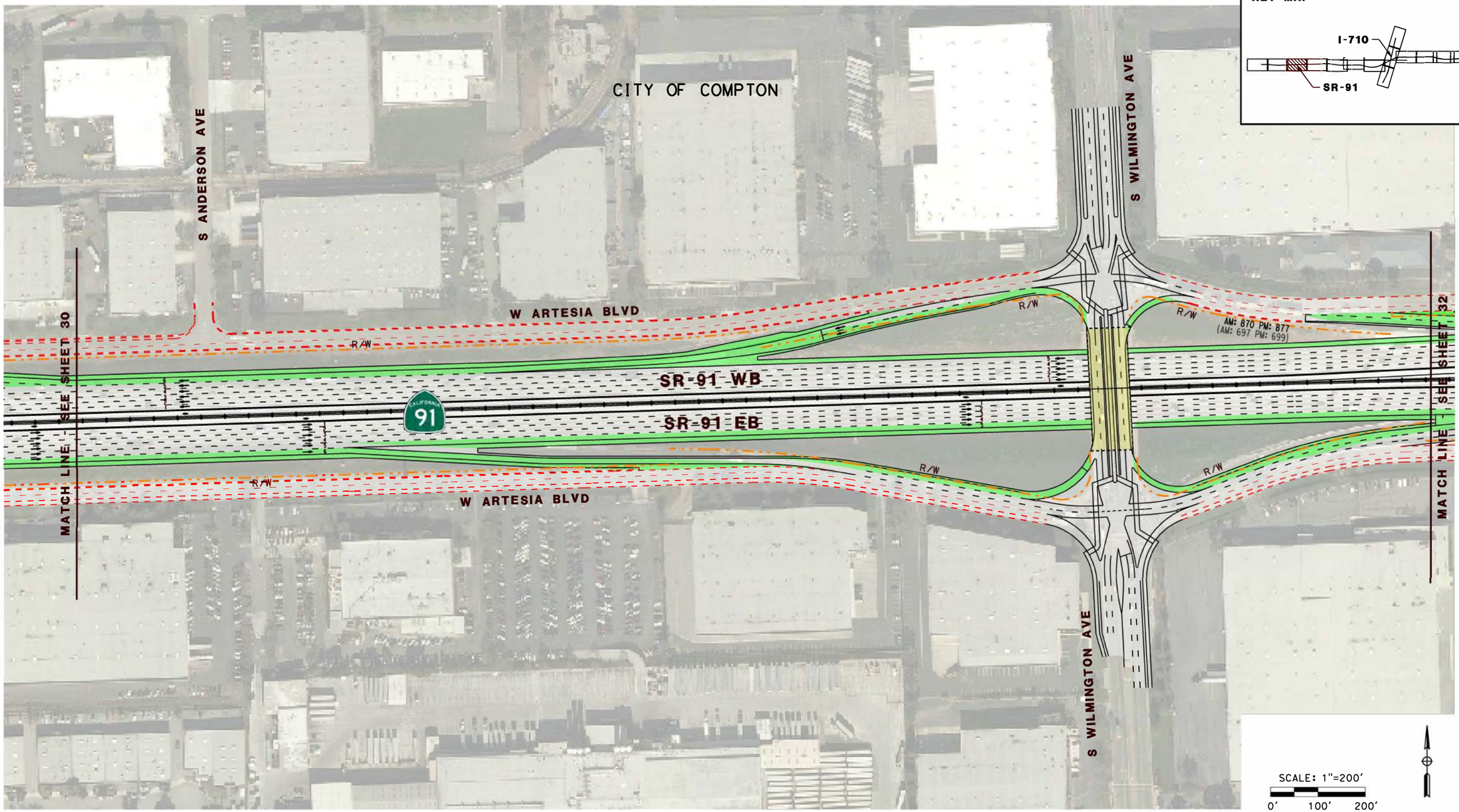
BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-30.dgn

CU 00000

EA 000000



LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- (XX.X) CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 3
SHEET 31 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-31.dgn

LAST REVISION 00-00-00
DATE PLOTTED => 30-NOV-2016
TIME PLOTTED => 08:40

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-31.dgn

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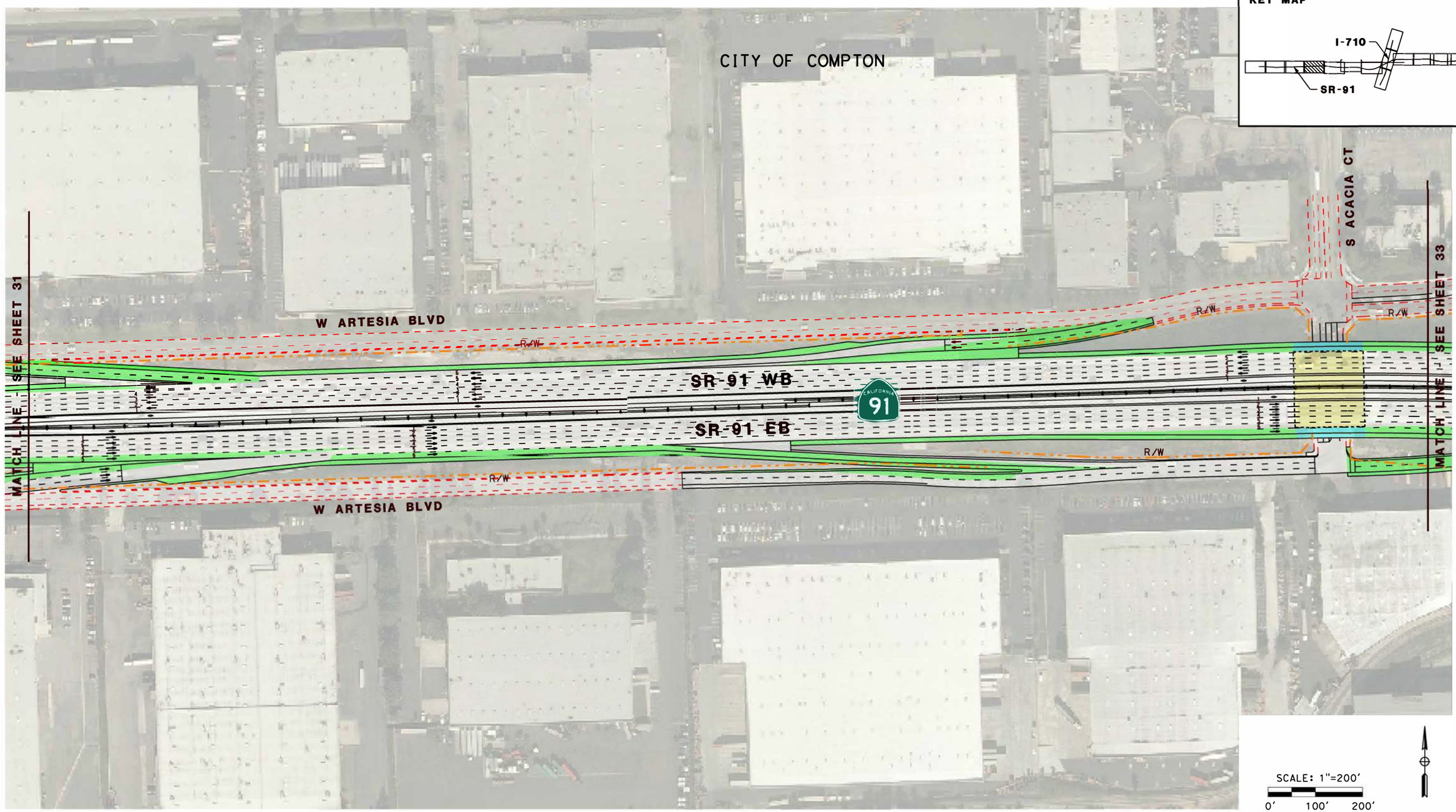

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 3
SHEET 32 OF 42

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-32.dgn

LAST REVISION | DATE PLOTTED => 30-NOV-2016 | 00-00-00 | TIME PLOTTED => 08:40

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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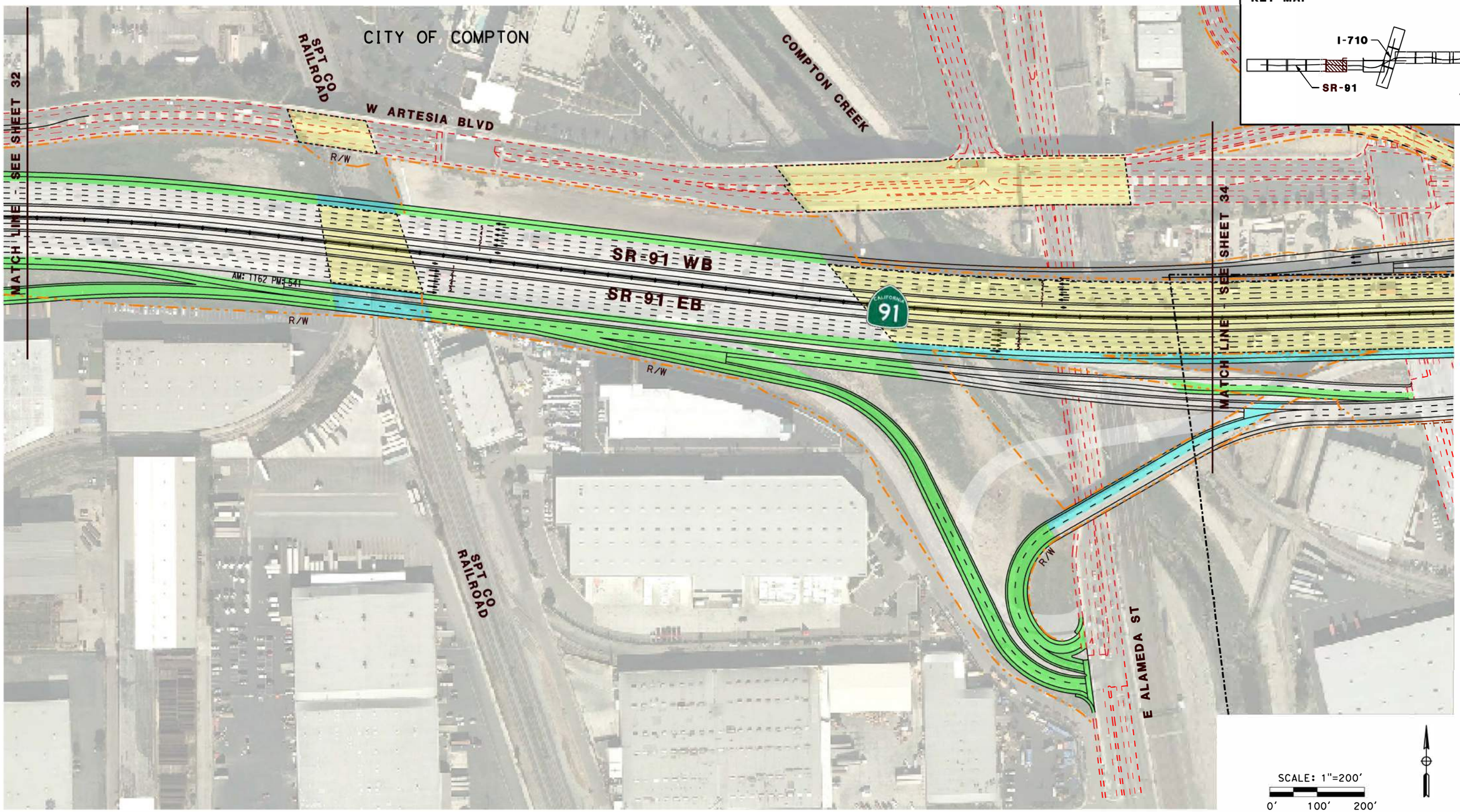

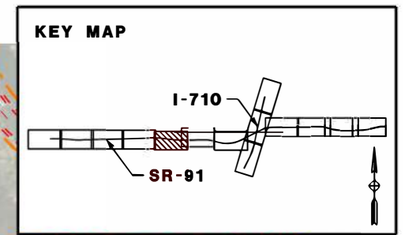

SCALE: 1"=200'
0' 100' 200'

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 3
SHEET 33 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-33.dgn

LAST REVISION 00-00-00
DATE PLOTTED => 30-NOV-2016
TIME PLOTTED => 08:40

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-33.dgn

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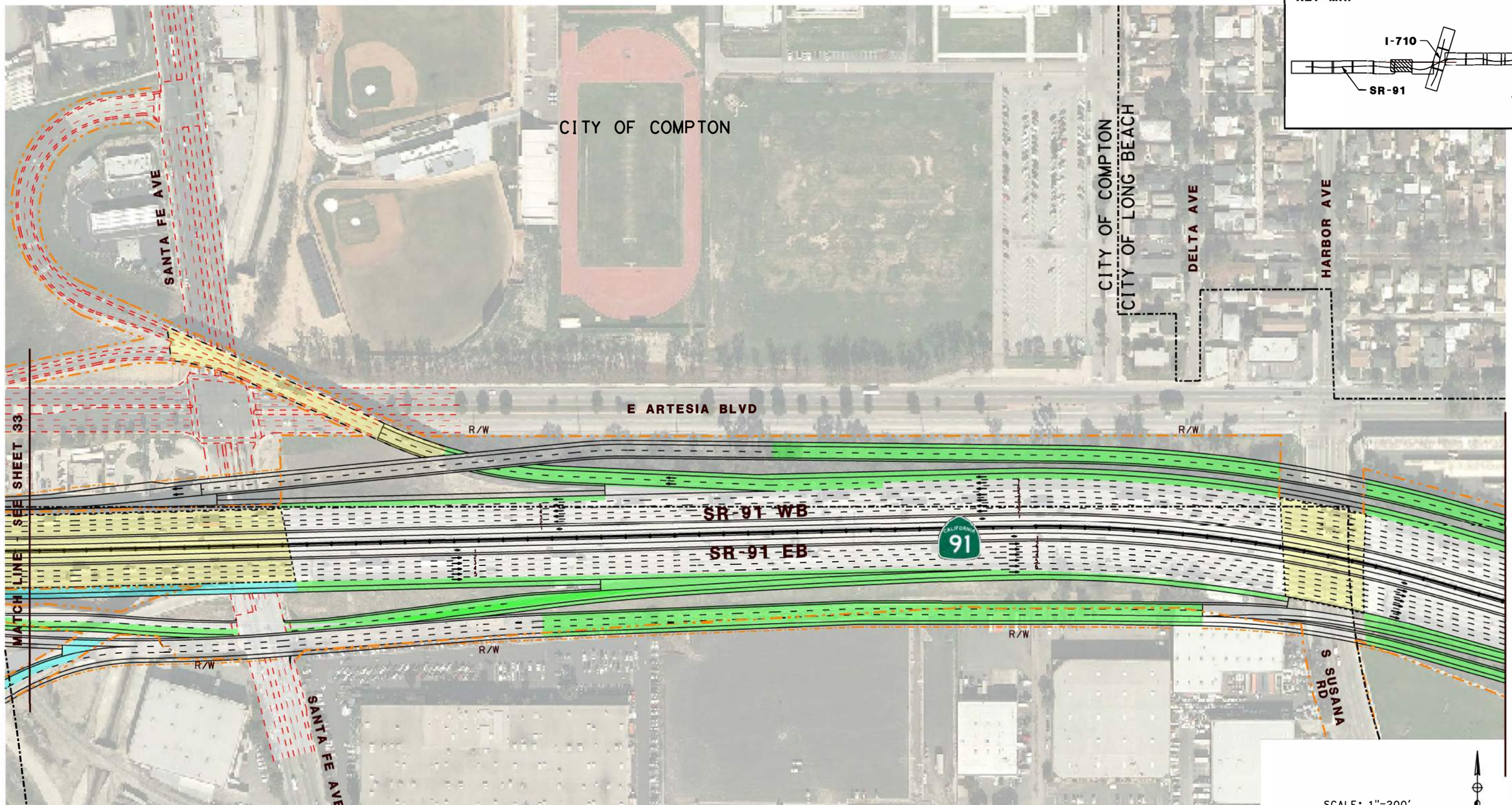

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 3
SHEET 34 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-34.dgn

LAST REVISION DATE PLOTTED => 30-NOV-2016
00-00-00 TIME PLOTTED => 08:40

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-34.dgn

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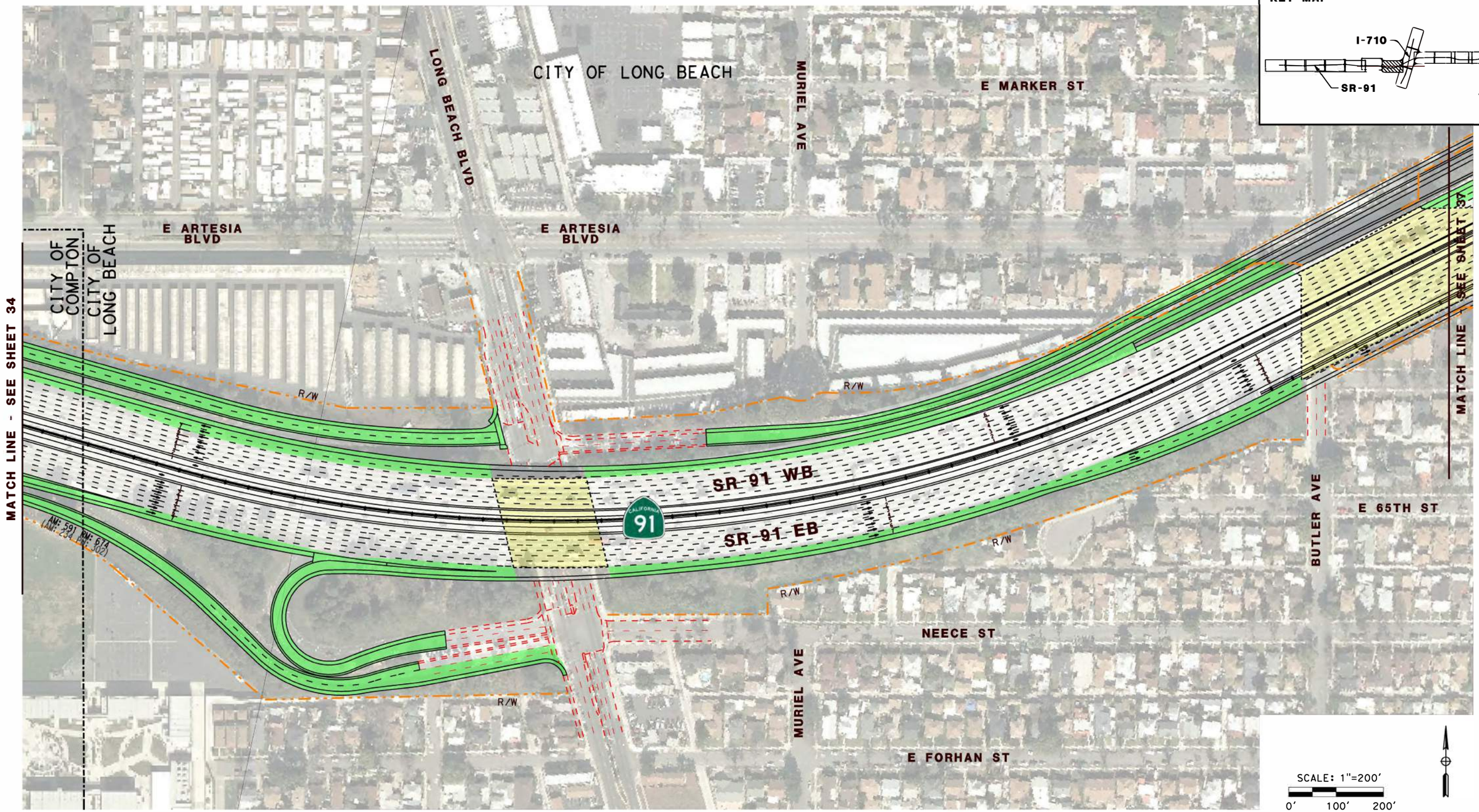

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 3
SHEET 35 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-35.dgn

LAST REVISION 00-00-00 | DATE PLOTTED => 30-NOV-2016 | TIME PLOTTED => 08:40

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-35.dgn

CU 00000

EA 000000

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 3
SHEET 36 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-36.dgn

LAST REVISION 00-00-00 DATE PLOTTED => 30-NOV-2016 TIME PLOTTED => 08:40

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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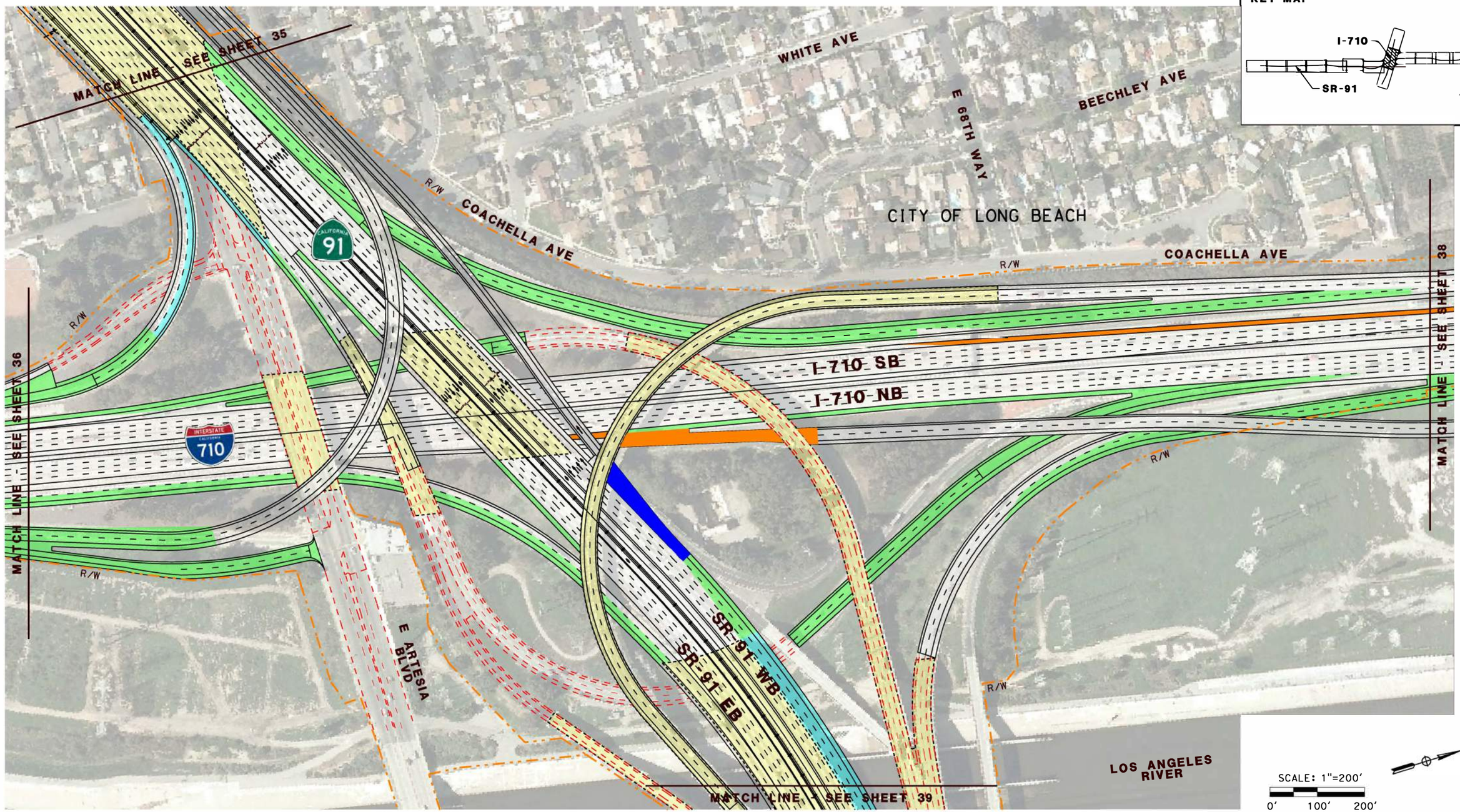

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 3
SHEET 37 OF 42

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-37.dgn

LAST REVISION 00-00-00 | DATE PLOTTED => 30-NOV-2016 | TIME PLOTTED => 08:40

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-37.dgn

CU 00000

EA 000000

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 3
SHEET 38 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-38.dgn

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DATE PLOTTED => 30-NOV-2016
TIME PLOTTED => 08:40

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-38.dgn

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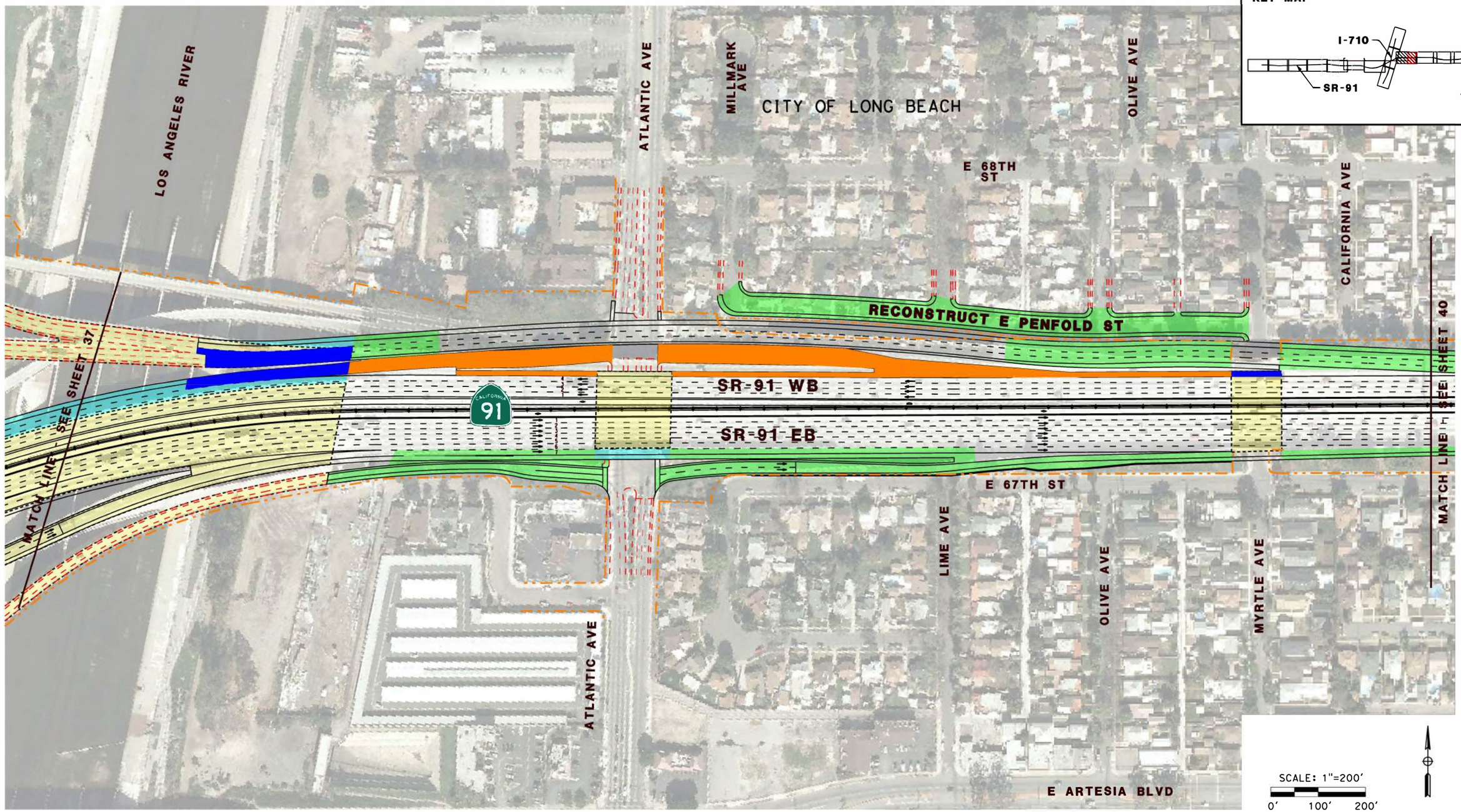

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 3
SHEET 39 OF 42

DGN FILE = I:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-39.dgn

LAST REVISION | DATE PLOTTED => 30-NOV-2016
00-00-00 | TIME PLOTTED => 08:40

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-39.dgn

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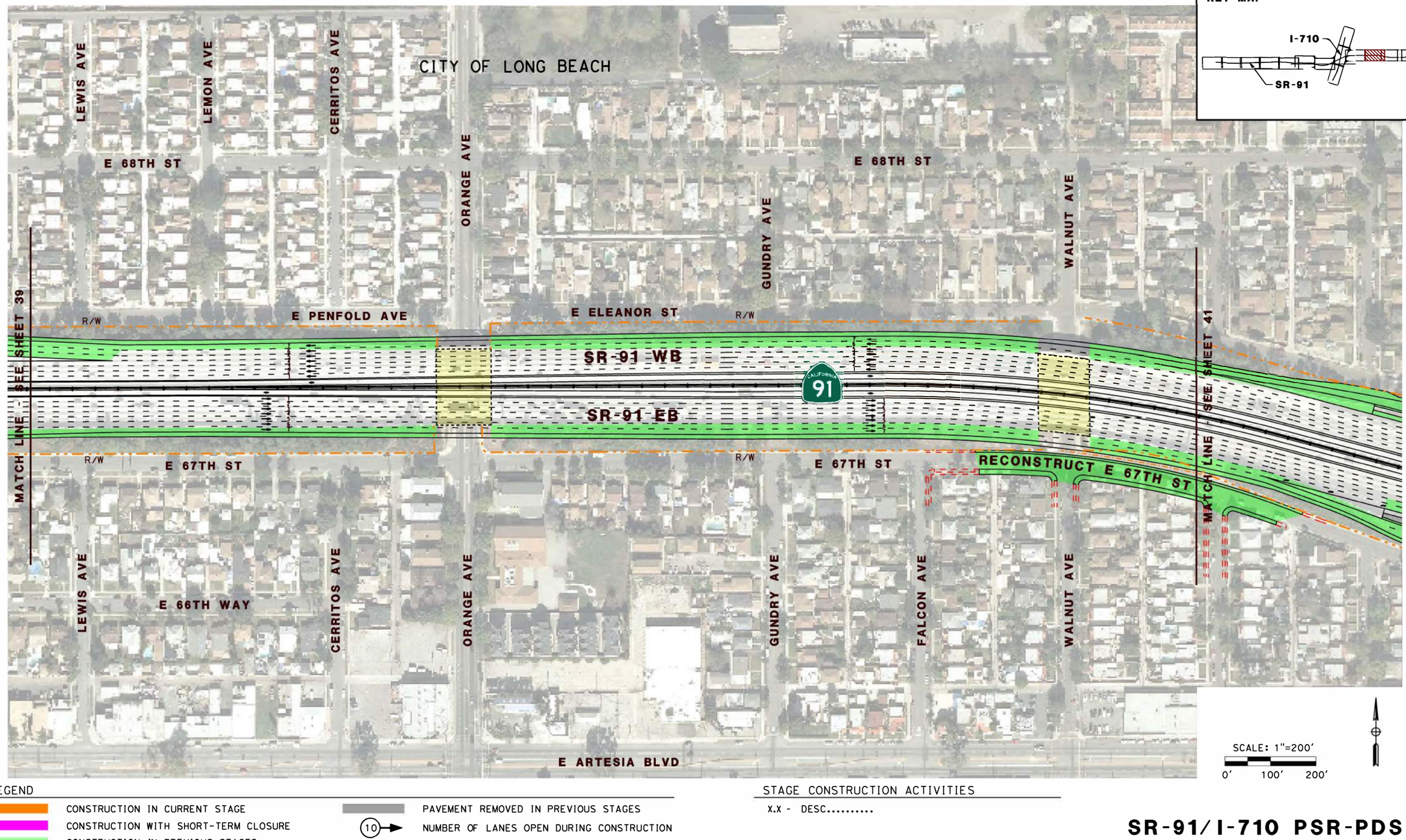

LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 3
SHEET 40 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-40.dgn

LAST REVISION 00-00-00 | DATE PLOTTED => 30-NOV-2016 | TIME PLOTTED => 08:41

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-40.dgn

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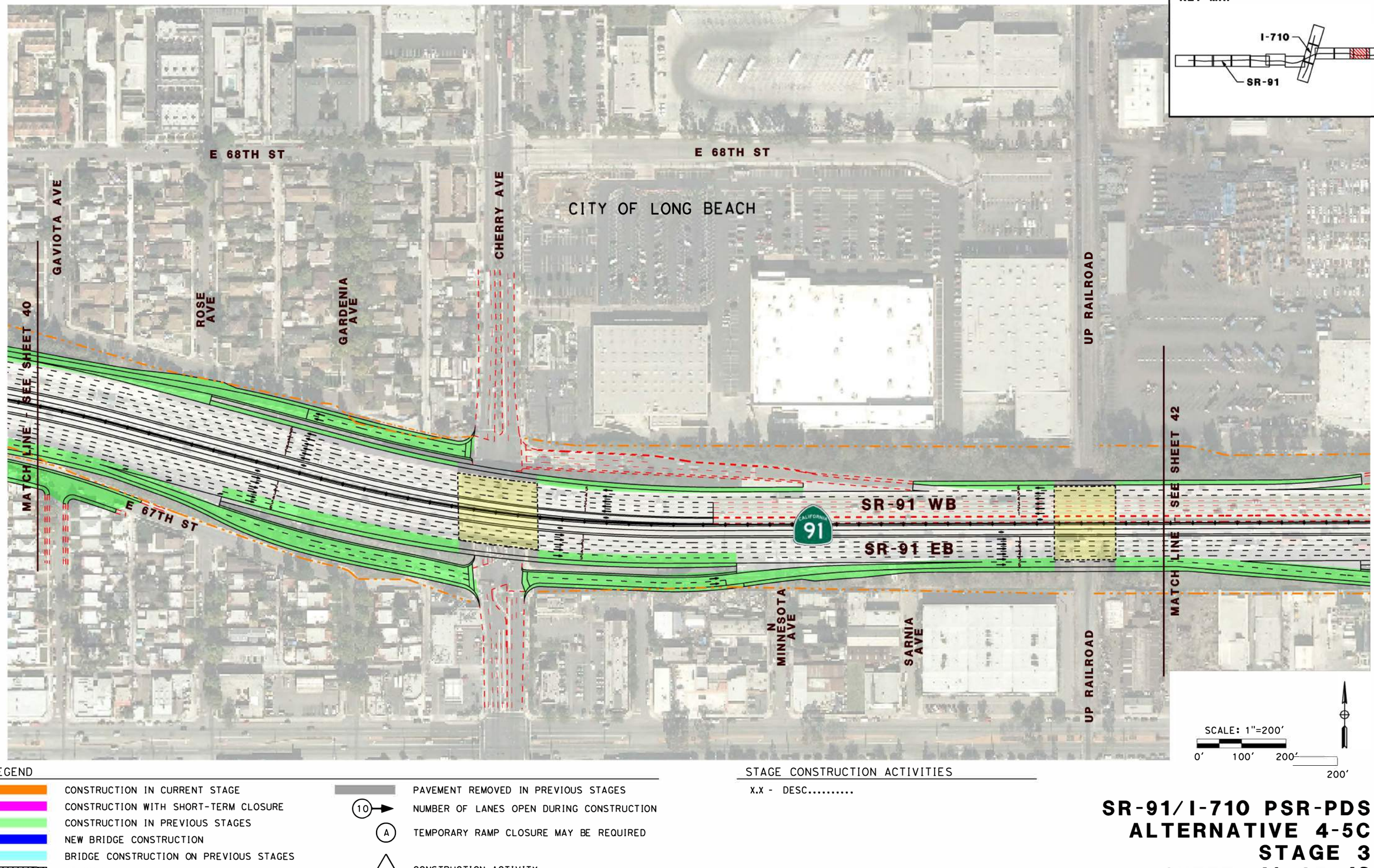
EA 000000



LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 3
SHEET 41 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-41.dgn

LAST REVISION DATE PLOTTED => 30-NOV-2016
00-00-00 TIME PLOTTED => 08:41

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-41.dgn

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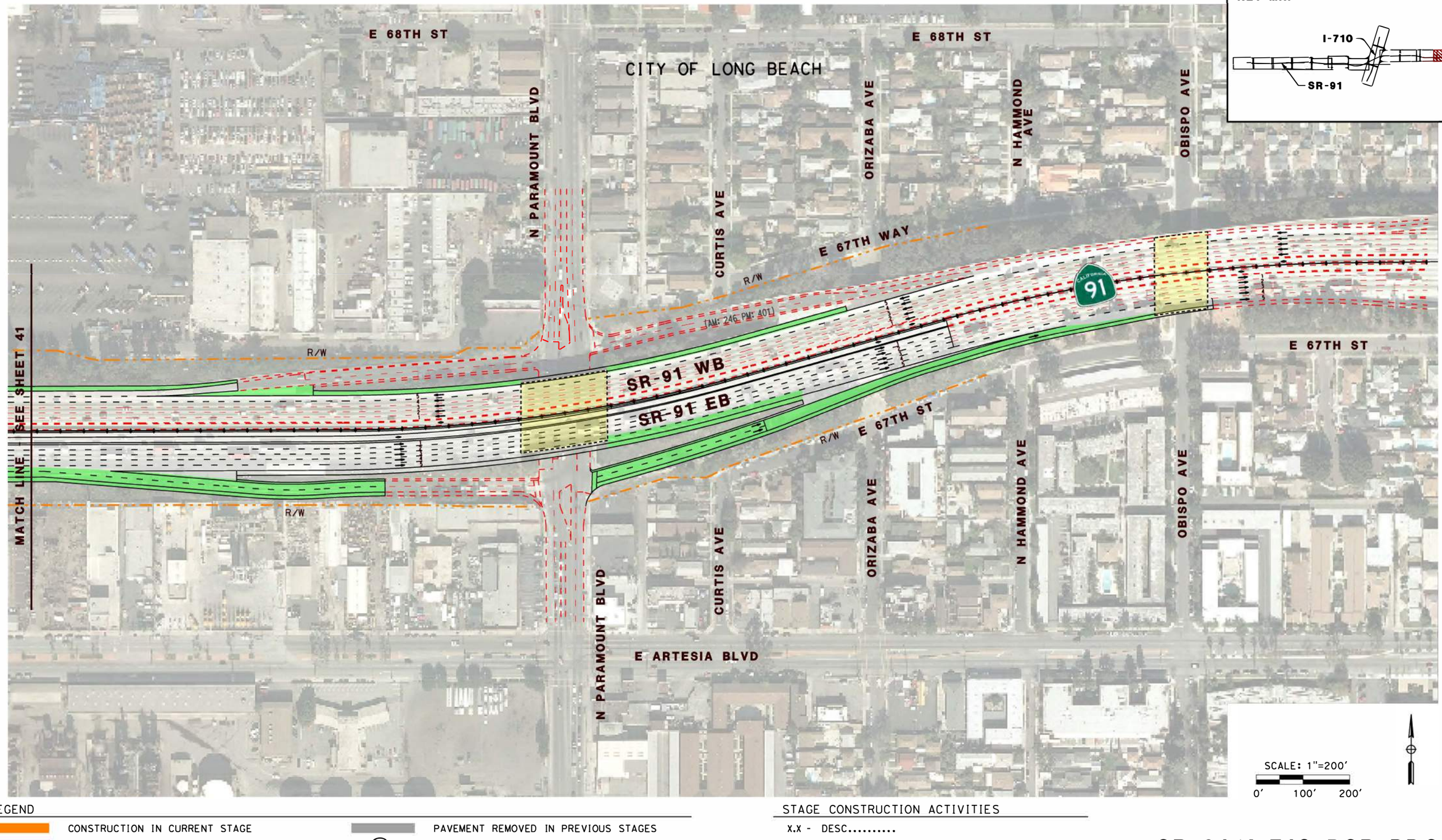
EA 000000



LEGEND

- CONSTRUCTION IN CURRENT STAGE
- CONSTRUCTION WITH SHORT-TERM CLOSURE
- CONSTRUCTION IN PREVIOUS STAGES
- NEW BRIDGE CONSTRUCTION
- BRIDGE CONSTRUCTION ON PREVIOUS STAGES
- REMOVAL
- PAVEMENT REMOVED IN PREVIOUS STAGES
- (10) → NUMBER OF LANES OPEN DURING CONSTRUCTION
- (A) TEMPORARY RAMP CLOSURE MAY BE REQUIRED
- XX.X CONSTRUCTION ACTIVITY

STAGE CONSTRUCTION ACTIVITIES

X.X - DESC.....

SR-91/I-710 PSR-PDS
ALTERNATIVE 4-5C
STAGE 3
SHEET 42 OF 42

DGN FILE = T:\28082A-SR91-I-710-Interchange-PSR-PDS\CADD\Sheets\Stage_Const\01-SR91-ALT4-5C_SC-42.dgn

LAST REVISION 00-00-00
DATE PLOTTED => 30-NOV-2016
TIME PLOTTED => 08:41

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => HernandezH
DGN FILE => 01-SR91-ALT4-5C_SC-42.dgn

CU 00000

EA 000000