

**Draft Project Study Report-Project Report
To
Recommend Approval
And
To Publicly Circulate the

Draft Environmental Document**

On Route 210

Between 0.5 miles east of Riverside Avenue

And 0.6 miles west of State Street/University Parkway

I have reviewed the right-of-way information contained in this Draft Project Study Report – Project Report and the R/W Data Sheet attached hereto, and find the data to be complete, current and accurate:



ROBERT SO, DEPUTY DISTRICT DIRECTOR, RIGHT OF WAY

APPROVAL
RECOMMENDED:



MEARDEY TIM - PROJECT MANAGER

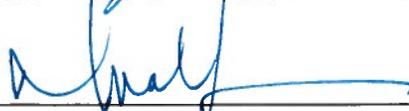
For 

DAVID BRICKER –DEPUTY DISTRICT DIRECTOR, ENVIRONMENTAL PLANNING



CHRISTY CONNORS – DEPUTY DISTRICT DIRECTOR, DESIGN

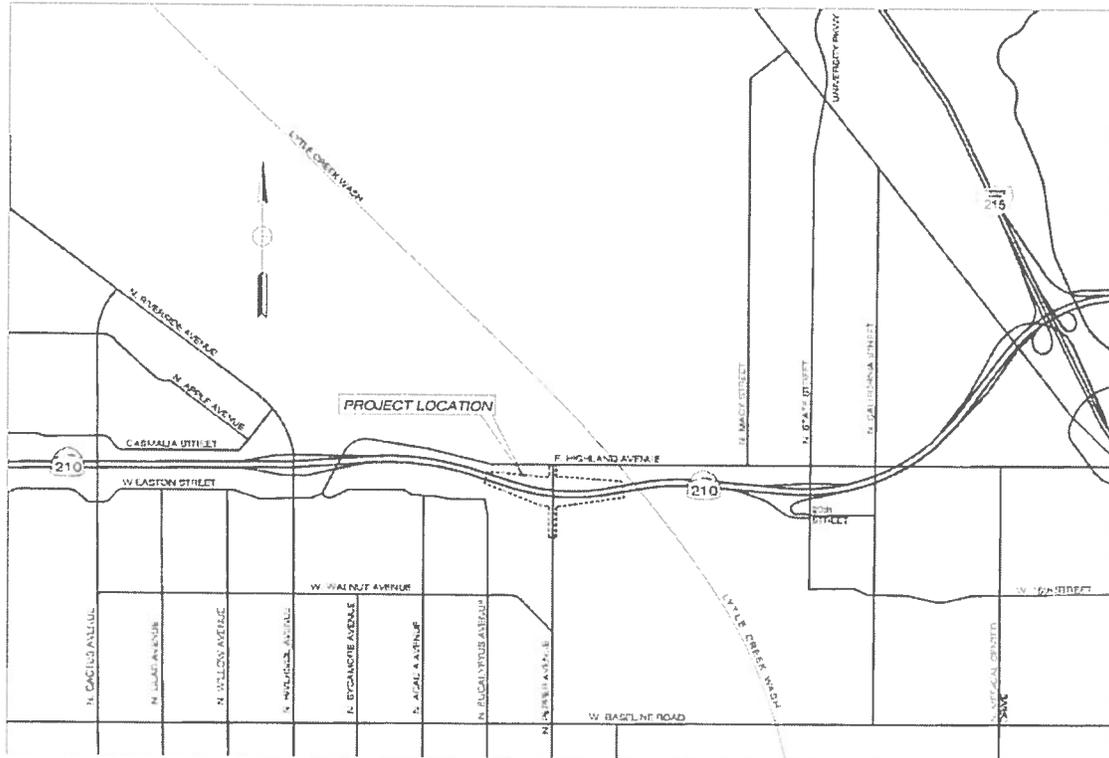
APPROVED:



BASEM E. MUALLEM, P.E. - DISTRICT 8 DIRECTOR

5/15/14
DATE

Vicinity Map



On Route 210

Between 0.5 miles east of Riverside Avenue

And 0.6 miles west of State Street / University Parkway

This draft project study report – project report 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.


REGISTERED CIVIL ENGINEER
Civil Works Engineers


DATE



Concurred By:

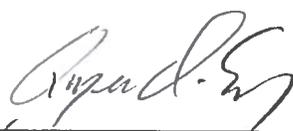

Jon Bumps, P.E.
Caltrans Oversight Manager

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ATTACHMENTS

- A. Location Map
- B. Project Detail Maps (Geometrics – Layout, Profiles, Superelevation & Typical Sections)
- C. Cost Estimate
- D. Cover Page and Signed Title Sheet of Initial Study with Proposed Negative Declaration/
Environmental Assessment (from Draft Environmental Document for Project)
- E. Traffic Impact Analysis Report
- F. TMP Data Sheet
- G. Right-of-Way Data Sheet
- H. Initial Site Assessment
- I. Life Cycle Cost Analysis Forms
- J. Storm Water Data Report Cover Sheet
- K. Risk Register
- L. Project Category Assignment Memorandum

1. INTRODUCTION

The San Bernardino Associated Governments (SANBAG), in cooperation with the California Department of Transportation (Caltrans) and the City of Rialto (City), propose to construct a new compact diamond interchange along State Route 210 (SR- 210) at Pepper Avenue, in the cities of Rialto and San Bernardino and unincorporated San Bernardino County, California. The proposed Pepper Avenue compact diamond interchange on SR-210 would be constructed between the existing Riverside Avenue interchange at post mile (PM) 18.69 to the west and the existing State Street/University Parkway interchange (PM 20.695) to the east at the existing Pepper Avenue Undercrossing (Bridge No. 54-1160L/R). The new interchange will provide improved regional connectivity and consistency with existing local planning documents. See Attachment A for the location map.

The City is nearing construction completion of the four-lane Pepper Avenue extension between Winchester Drive to approximately 1300 feet south of Highland Avenue. The remaining section from 1300 feet south of Highland Avenue to the proposed Highland Avenue intersection is also nearing construction completion as a temporary two-lane roadway (one lane in each direction), also constructed by the City as the Gap Closure project. The two-lane section of Pepper Avenue will be maintained until the interchange project is constructed. The Pepper Avenue extension and the two-lane section are both expected to complete construction and be open to traffic by the end of fiscal year 2013/14. As part of the interchange project, the two-lane portion of Pepper Avenue would be widened to four-lanes (two in each direction) completing Pepper Avenue as a four-lane roadway to the terminus with Highland Avenue. Table 1 below shows the project summary.

Table 1: PROJECT SUMMARY

Project Limits (Dist-Co-Rte-PM)	08-SBd-210-19.3/20.1
Number of Alternatives	2
Alternative Recommended for Programming	Alternative 1 – Compact diamond interchange configuration
Current Capital Outlay Construction Estimate	\$15.577 million
Current Capital Outlay Right-of-Way Estimate	\$5.507 million
Funding Source	Local San Bernardino County Measure I
Type of Facility	Freeway
Number of Structures:	0
Anticipated Environmental Determination or Document:	Initial Study with Proposed Negative Declaration/Environmental Assessment with Finding of No Significant Impact
Legal Description	Construct new full-service interchange with diamond configuration at SR-210 and Pepper Avenue in the City of Rialto. Includes local street improvements (construct four lanes on Pepper Avenue from Highland Avenue to 1300 feet south of Highland Avenue.
Project Development Category	3

This report presents a no build alternative and a recommended Alternative 1.

- Alternative 1 – This alternative proposes to construct a new diamond configuration interchange, Type L-1, at the location of the extended Pepper Avenue. The project includes the widening construction of 1300 feet of Pepper Avenue from the City terminus to Highland Avenue from two through lanes to four through lanes, four new access ramps, three new traffic signals, and two new retaining walls adjacent to the undercrossing abutment slopes. Right-of-way is required to accommodate the slopes on Pepper Avenue and the interchange water quality treatment and peak flow attenuation basin.
- Alternative 2 (No Build) – The No-Build alternative proposes to maintain the existing conditions of the freeway without the interchange improvement. Under this alternative, the City of Rialto's Pepper Avenue Extension project and two-lane temporary Pepper Avenue project would continue to operate as constructed; however, the 1,300-foot two-lane gap closure portion of Pepper Avenue beneath SR-210 connecting Pepper Avenue with Highland Avenue would not be widened to four lanes under this alternative. This alternative is not recommended since it does not meet the project purpose and need; however, it does not preclude the construction of future improvements as part of a future project.

The project has been assigned the Project Development Processing Category 3 because it is a new interchange on a previously constructed access controlled route, requiring a revised freeway agreement, but not a route adoption. The program code is 800.100 as Task New Highway Construction HE11, New Connections/Cross Traffic Improvements.

The project cost has been estimated at \$21,084,000 on December 10, 2013 which includes \$5,507,000 for right-of-way and utility relocation and \$15,577,000 for construction. The project is proposed to be funded from Measure I funds in the 2015-16 FY. See the Cost Estimate for the specific work items included in this project.

2. RECOMMENDATION

The affected local agencies have been consulted with respect to the recommended alternative. Their views have been considered and the local agencies are in general accord with the alternatives as presented in this PSR-PR.

This Draft PSR-PR recommends approval to publicly circulate the Draft Initial Study with Proposed Negative Declaration/Environmental Assessment (Cover Page and signed Title Sheet included in Attachment D), and also recommends to schedule a Public Meeting.

It is recommended that a Cooperative Agreement be negotiated and approved between Caltrans and SANBAG to proceed with construction of the proposed project following the completion and approval of PS&E.

3. BACKGROUND

Project History

Preliminary engineering was previously completed and final design was initiated for the proposed interchange within Segment 10 of the eleven-segment SR-210 freeway extension project. In mid-2003, the planned Pepper Avenue interchange was removed from the SR-210 freeway extension project as the construction of Pepper Avenue to the SR-210 right-of-way, which is a separate local project by the City, was not completed. Construction documents for the SR-210 freeway extension project were completed in 2004. As part of the SR-210 freeway extension project for which construction was completed in 2008, some grading occurred and partial right-of-way was preserved for a future tight diamond configuration interchange at this location. The Pepper Avenue Interchange is shown as a future interchange in the City's General Plan and Pepper Avenue is also shown in the General Plan as a north/south truck route.

Pepper Avenue currently extends to a point approximately 1,900 feet north of East Base Line Road and approximately 3,400 feet south of Highland Avenue. The City is nearing construction completion of the Pepper Avenue Extension project from 1,900 feet north of East Base Line Road to the south side of the existing SR-210 right-of-way, which is located approximately 1,300 feet south of Highland Avenue along the proposed Pepper Avenue alignment. They are also currently constructing a temporary two-lane gap closure Pepper Avenue project from the terminus of the Extension to Highland Avenue.

The CEQA document for the Pepper Avenue Extension project was adopted by the City on December 14, 2010. The City completed final design and obtained the necessary permits for the Extension project in 2012. The City obtained separate CEQA documentation for the two-lane gap closure project in October 2013. Project construction on both projects is expected to be completed by May 2014. The interchange project would then provide freeway access from Pepper Avenue to SR-210.

The determination of a diamond interchange as the appropriate configuration for the SR-210 Pepper Avenue interchange was confirmed through a project specific Traffic Impact Analysis report approved by Caltrans District 8 on March 28, 2012 and a Supplemental Traffic Impact Analysis approved on September 19, 2013. This PSR-PR documents the extent of project development efforts in developing the build alternative. Additional right-of-way is required to complete the construction. The additional right-of-way has not yet been acquired.

Existing Facility

SR-210 is a major west-east state highway within the greater San Bernardino area of Southern California. Within the project limits, Segment 10 of SR-210 was constructed in 2005-06 and open to traffic in 2008. All of Route 210 within San Bernardino County from the Los Angeles/San Bernardino County line and east to the end of the Route at the connection with I-10 in Redlands is a State Route. From SR-57 and west, Route 210 becomes Interstate (I) 210. I-210 extends to the west until it connects with I-5 in north Los Angeles. Caltrans has requested permission from FHWA for all of Route 210 to be an interstate highway, although that has not yet occurred. The entire route length is 86 miles.

Within the project limits, SR-210 is an eight lane freeway with three general purpose lanes and one high occupancy vehicle (HOV) lane in each direction. The existing right-of-way width for the mainline varies from approximately 250 to 350 feet wide within the project area. The entire mainline is access-controlled. Access control exists along the right-of-way preserved for Pepper Avenue from Highland Avenue to approximately 320 feet south of the mainline right-of-way line.

The current average daily traffic volume (ADT) is approximately 110,500 vehicles between the Riverside Avenue and State Street/University Parkway interchanges. The Riverside Avenue interchange is a tight diamond. The State Street/University Parkway interchange is a modified diamond with a loop eastbound on-ramp in the southwest quadrant rather than a direct on-ramp in the southeast quadrant. The SR-210 Pepper Avenue interchange project is located along SR-210 between post mile 19.3 and 20.1 and is within the jurisdictional limits of the cities of Rialto and San Bernardino. The Riverside Avenue (PM 18.69) interchange is located approximately one mile to the west and the State Street/University Parkway (PM 20.73) interchange is located approximately one mile to the east of the project. Current peak hour volumes on the mainline in the westbound direction are estimated to be about 3,300 vehicles in the AM and 3,440 vehicles in the PM. In the eastbound direction, volumes are 3,161 vehicles in the AM and about 4,344 vehicles in the PM. Peak hour directional split has been considered to be 56.33%, with 12% of truck volume. The project will provide additional roadway capacity over existing since the Pepper Avenue and the proposed ramps do not currently exist.

Highland Avenue is a west-east street generally paralleling and north of the portion of SR-210 in the project limits. Within the project limits, the Highland Avenue cross-section consists of five lanes total. There are two lanes in each direction with a left turn lane provided in the center to accommodate each direction. There is a striped median. One of two main access points to the gravel quarry owned by Vulcan Materials Company, which fronts a portion of the north side of Highland Avenue, is located directly across from the new Pepper Avenue intersection with Highland Avenue, within the limits of the SR-210 Pepper Avenue interchange project.

Existing Structures

The Pepper Avenue undercrossings (Bridge No. 54-1160L/R) for eastbound and westbound SR-210 were constructed as part of Segment 10 of the SR-210 freeway extension project. They are cast-in-place/prestressed (CIP/PS) concrete box girders. These structures are single span each with an approximate length of 164.0 feet and width of 74.4 feet. There is a clear distance of approximately 22.1 feet between the east and west bridges. The two abutments rest on spread footings. Existing embankment side slopes along the mainline range from approximately 1.5h:1v (horizontal:vertical) to 5h:1v and the slopes beneath the abutments are paved and inclined at 1.5h:1v.

Both bridges include structure approach slabs prior to the begin bridge and following the end bridge. The log of test borings for the bridges primarily shows sand with gravel, silty sand, large gravel, and small cobbles. Groundwater was not encountered in the approximate 35-foot-deep borings.

The structure depth is approximately 7.4 feet. The as-builts indicate a 12.5-foot vertical clearance over the ground surface. The structures each carry a 4-inch communication conduit in the outside cell.

4. PURPOSE AND NEED

Purpose

The purpose of the proposed SR-210/Pepper Avenue Interchange project is to:

- Provide improved connectivity to the regional transportation system from the local transportation network; and
- Achieve the goals of the existing local planning documents regarding access to the regional transportation system.

Need

Access to SR-210 is restricted from the northeast part of the City of Rialto due to the orientation of Lytle Creek, a tributary of the Santa Ana River, which runs diagonally adjacent to much of the northeastern part of the City, including south of SR-210. This limits access for both local traffic attempting to connect to the regional transportation network, and in particular in trying to directly access SR-210 as well as for regional connectivity to the local transportation network, particularly in the northeastern portion of the City of Rialto. Between Ayala Drive and I-215, local access to and from SR-210 is limited to the interchanges at Riverside Avenue and State Street/University Parkway. According to the Project Supplemental Traffic Impact Analysis, projected traffic conditions indicate increased traffic volumes at all on- and off-ramps, and increased delays at most of the ramp areas, for the Riverside Avenue and State Street / University Parkway interchanges.

According to the City of Rialto General Plan, due to its location and access to SR-210, I-10, rail lines, and airports, the City is attractive to goods movement businesses. Truck routes have been designated in the City to accommodate the large volumes of truck traffic associated with goods movement. The City of Rialto has designated two truck route classes based on California legislation: National Network (NN) and Terminal Access (TA) routes. The truck routes in Rialto are defined as TA routes. The NN and TA routes utilize portions of State routes or local roads that can accommodate Surface Transportation Assistance Act (STAA) standard trucks. TA routes allow STAA trucks to: 1) travel between NN routes; 2) reach a truck's operating facility, or 3) reach a facility where freight originates, terminates, or is handled in the transportation process. Within the City of Rialto, Pepper Avenue is designated as a truck route, however, this route currently does not provide connectivity to SR-210, which hinders the ability of the route to accommodate truck traffic and to meet the defined requirements of TA routes. Within the City the next closest north/south designated truck route is Cedar Avenue/Ayala Drive, which is located approximately 2.5 miles to the west. Once Pepper Avenue is operational, it is anticipated to accommodate trucks traveling between Highland Avenue and intersecting roadways south of SR-210. The proposed project would provide access for trucks traveling along the Pepper Avenue TA route to SR-210, contributing to efficient goods movement with access to a connection between I-215 and I-15. The proposed project would also facilitate a connection for regional truck traffic between SR-210 and I-10 via Pepper Avenue. Through these linkages to the regional transportation system, it is anticipated the proposed project would contribute to more efficient goods movement; this result would be consistent with local planning goals for increased access to the regional transportation network.

5. DEFICIENCIES

Current and Forecasted Traffic

A Traffic Impact Analysis (TIA) and a Supplemental TIA were performed to evaluate the with and without project conditions for existing year (2011), opening year (2016), and horizon year (2036) traffic. The purpose of the TIA was to identify and analyze the traffic conditions and traffic impacts associated with the implementation of a new interchange on SR-210 at Pepper Avenue. Forecast horizon year ADT is 176,700 vehicles between Riverside Avenue and Pepper Avenue and 176,300 between Pepper Avenue and University Avenue/State Street. Peak hour volumes on the mainline mixed flow lanes in the westbound direction between University Avenue/State Street and Pepper Avenue are estimated at 4,413 vehicles in the AM peak and 5,961 vehicles in the PM peak. In the westbound direction between Pepper Avenue and Riverside Avenue they are estimated at 4,354 in the AM peak and 5,629 in the PM peak. In the eastbound direction, volumes between Riverside Avenue and Pepper Avenue are estimated at 4,874 vehicles in the AM peak and 5,607 vehicles in the PM peak and between Pepper Avenue and University Avenue/State Street are 4,692 vehicles in the AM peak and 5,296 in the PM peak. Peak hour directional split and truck percentage are assumed to be the same as the existing condition.

The study examined the levels of service at the future Pepper Avenue intersections with Highland Avenue, the westbound ramps, and the eastbound ramps. A queuing analysis was performed along Pepper Avenue as well as a signal warrant analysis. A freeway mainline and ramp analysis for capacity level of service as well as weaving level of service was examined. The traffic study verified a diamond interchange configuration would provide acceptable levels of service through the horizon year without significant impacts to the freeway or adjacent ramp terminal and local street intersections. Based on the forecast peak hour turning movement volumes through the interchange, no issues related to traffic progression on Pepper Avenue or Highland Avenue were identified through the horizon year. No significant impacts were forecast to be generated by the project with regard to queuing or level of service for study intersections, freeway ramps, freeway mainline, or freeway weaving segments. Traffic analysis results are summarized in Table 2 through Table 7.

Table 2: INTERSECTION ANALYSIS

INTERSECTION ANALYSIS	EXISTING YEAR 2011		OPENING YEAR 2016 (without project)		OPENING YEAR 2016 (with project)		DESIGN YEAR 2036 (without project)		DESIGN YEAR 2036 (with project)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Pepper Ave/Highland Ave	A*	A*	A	A	B	B	A	A	B	B
Pepper Ave/SR-210 WB Ramps	--	--	--	--	B	B	--	--	B	B
Pepper Ave/SR-210 EB Ramps	--	--	--	--	A	B	--	--	B	B
Riverside Ave/SR-210 WB Ramps	B	B	C	C	B	B	C	C	B	B
Riverside Ave/SR-210 EB Ramps	B	B	B	C	B	B	B	C	B	B
State Street -University Parkway/SR-210 WB Ramps	B	B	B	B	B	B	B	B	B	B
State Street – University Parkway/SR-210 EB Ramps	B	C	B	C	B	B	B	C	B	C

* - unsignalized

Table 3: QUEUING ANALYSIS

QUEUING ANALYSIS	OPENING YEAR 2016				DESIGN YEAR 2036			
	AM		PM		AM		PM	
	Pk Hr Vols	95th % (ft)	Pk Hr Vols	95th % (ft)	Pk Hr Vols	95th % (ft)	Pk Hr Vols	95th % (ft)
WB Highland Avenue	37	24	51	31	179	147	274	235
NBL Turn Lane	41	26	70	38	205	78	338	191
NBT Lane	5	7	5	6	7	5	5	3
NBR Turn Lane	75	24	95	27	372	12	426	19
WB 210 Off-Ramp at Pepper Ave	107	47	211	74	532	167	876	271
NBL Turn Lane	64	49	49	41	317	236	291	250
NBT Lane	63	11	59	11	297	33	305	45
SBT Lane	62	20	87	26	282	48	408	88
EB 210 Off-Ramp at Pepper Ave	99	40	115	44	488	120	583	142
SBL Turn Lane	11	17	30	33	54	46	84	71
SBT Lane	68	15	116	24	318	41	527	138

Table 4: RAMP ANALYSIS

RAMP ANALYSIS	OPENING YEAR 2016		DESIGN YEAR 2036	
	AM	PM	AM	PM
Pepper EB Off	C	D	D	E
Pepper EB On	C	C	C	D
Pepper WB Off	C	C	D	E
Pepper WB On	weaving	weaving	weaving	weaving

Table 5: SR-210 FREEWAY CAPACITY ANALYSIS

SR-210 FREEWAY CAPACITY ANALYSIS	EXISTING YEAR 2011		OPENING YEAR 2016		DESIGN YEAR 2036	
	AM	PM	AM	PM	AM	PM
EB Upstream Riverside Off	B	C	C	C	D	D
EB Between Riverside Ramps	B	C	B	C	C	D
EB Between Riverside On & State Off	C	C	--	--	--	--
EB Between Riverside On & Pepper Off	--	--	Overlap	Overlap	Overlap	Overlap
EB Between Pepper Ramps	--	--	C	D	D	D
EB Between Pepper On & State Off	--	--	Overlap	Overlap	Overlap	Overlap
EB Between State Ramps	B	B	B	C	C	D
WB Upstream State Ramps	C	C	C	C	D	E
WB Between State Ramps	B	C	C	C	C	E
WB Between State On & Riverside Off	C	C	--	--	--	--
WB Between State On & Pepper Off	--	--	Overlap	Overlap	Overlap	Overlap
WB Between Pepper Ramps	--	--	C	C	C	D
WB Between Pepper On & Riverside Off	--	--	Weaving	Weaving	Weaving	Weaving
WB Between Riverside Ramps	B	B	B	C	C	D

Table 6: SR-210 FREEWAY WEAVING ANALYSIS

SR-210 FREEWAY WEAVING ANALYSIS	EXISTING YEAR 2011		OPENING YEAR 2016		DESIGN YEAR 2036	
	AM	PM	AM	PM	AM	PM
EB Riverside to State/University	n/a	n/a	n/a	n/a	n/a	n/a
EB Riverside to Pepper	n/a	n/a	n/a	n/a	n/a	n/a
EB Pepper to State/University	n/a	n/a	n/a	n/a	n/a	n/a
WB State/University to Pepper	n/a	n/a	n/a	n/a	n/a	n/a
WB Pepper to Riverside	--	--	A	A	B	B
WB State/University to Riverside	n/a	n/a	n/a	n/a	n/a	n/a

Table 7: ROUTE 210 DESIGN DESIGNATION, ESAL, & TI

FACILITY	EXISTING ADT	FUTURE ADT	DHV	ESAL*, **	D	T	V	Calculated TI
Mainline	110,500	176,700	14,170	80,583,682*	56.33%	12%	65 mph	15.0
Aux Lane – WB down	--	15,700	--	17,899,884*	N/A	12%	--	12.5
Mainline	110,500	238,000	19,100	217,078,848**	56.33%	12%	65 mph	17.0
Aux Lane – WB down	--	21,000	--	48,113,054**	N/A	12%	--	14.5

ADT – Average Daily Traffic
 DHV – Design Hourly Volume
 ESAL – Equivalent Single Axle Load
 D – Peak Hour Directional Split
 T – Truck Percentage consistent with daily truck traffic forecast, Caltrans District 8
 V – Mainline Design Speed
 TI – Traffic Index (17.0 is maximum value specified by Caltrans)
 * - 20-year time period
 ** - 40-year time period

Accident Data

Traffic Accident Surveillance and Analysis System (TASAS) accident data was obtained from Caltrans District 8 for the 36-month period from October 1, 2008, through September 30, 2011, for the mainline and is presented in Table 8. The data indicates the actual accident rates to be lower than the average rates for fatal, fatal plus injury, and total accidents. No high collision frequency spot locations were found within the proposed project limits.

Table 8: SR-210 ACCIDENT DATA

SR-210 Accident Data - 10/1/08 - 9/30/11									
Eastbound SR-210 from PM 19.300 to 20.101									
Actual No. of Accidents				Actual Rate			Average Rate		
Total	Fatal	Injury	PDO	Fat	F+I	Tot	Fat	F+I	Tot
9	0	4	5	0.000	0.09	0.19	0.003	0.16	0.50
Westbound SR-210 from PM 19.300 to 10.101									
Actual No. of Accidents				Actual Rate			Average Rate		
Total	Fatal	Injury	PDO	Fat	F+I	Tot	Fat	F+I	Tot
3	0	2	1	0.000	0.04	0.06	0.003	0.16	0.50

6. CORRIDOR AND SYSTEM COORDINATION

Identify Systems

The SR-210 is on the National Highway System. Per the City of Rialto’s 2010 General Plan Update, Pepper Avenue is defined as a future Terminal Access (TA) Truck Route to accommodate Surface Transportation

Assistance Act standard trucks. The proposed interchange will be located on SR-210 with Pepper Avenue at PM 19.7.

State Planning

The current Caltrans District 8 Route Concept Report for SR-210 is dated March 2000. Pepper Avenue lies within Segment 5 between Macy Street and the junction with I-215. This document shows the existing facility as 4F (four mixed-flow lanes) and the 2020 concept facility as 6F (six mixed-flow lanes). It describes the ultimate transportation corridor as a ten-lane freeway including two HOV lanes for the entire length.

The updated report is currently incomplete and unsigned. In this report, Pepper Avenue lies within Segment 2 between I-15 and I-215. This draft report shows the concept for SR-210 through year 2035. Segment 2 (I-15 to I-215) includes six mix-flow lanes and two managed lanes. The existing cross section of SR-210 includes six mixed-flow lanes and two high occupancy vehicle (HOV) lanes at the proposed Pepper Avenue Interchange project location. The project is compatible with the Route Concept Report. District 8 does not have a District System Management Plan (DSMP) or a Transportation System Development Plan.

The project is consistent with the State Implementation Plan for air quality.

Regional Planning

The proposed project build alternative is included in the 2013 Federal Transportation Improvement Program (FTIP), including Amendments 1-16, as project identification (ID) 20110110. It is also included in Amendment No. 1 to the SCAG 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (2012-2035) (RTP) as project ID 4M1007 (project identification number 08-0002-0180).

Local Planning

The project build alternative is consistent with the City of Rialto's General Plan. The City is nearing construction completion of the construction of the four-lane Pepper Avenue extension between Winchester Drive to approximately 1300 feet south of Highland Avenue. The remaining section from 1300 feet south of Highland Avenue to the proposed intersection with Highland Avenue is also nearing construction completion as a temporary two-lane roadway (one lane in each direction), also constructed by the City. The two-lane section of Pepper Avenue will be maintained as a two-lane facility until the proposed interchange project is constructed. The Pepper Avenue extension and the two-lane temporary Pepper Avenue are both expected to complete construction and open to traffic by the end of fiscal year 2013/14. Existing state right of way currently extends approximately 500 feet south of the proposed eastbound SR-210 ramps / Pepper Avenue intersection. As part of the interchange project, the two-lane portion of Pepper Avenue would be widened to four-lanes (two in each direction) completing Pepper Avenue as a four-lane roadway to the terminus with Highland Avenue.

Pepper Avenue is designated as a Modified Major Arterial in the City of Rialto 2010 General Plan Update. The remaining two lanes of the four-lane segment of Pepper Avenue from the City's terminus to Highland Avenue would be constructed as part of the interchange project. Pepper Avenue in its existing location is not a designated bike route or bus route. Immediately south of the freeway, land use designation on the west side of Pepper Avenue is identified in the City's General Plan as "business park" and on the east side as "residential 6." No development proceedings have been initiated with the City for these currently vacant parcels.

According to the City of Rialto General Plan, the project area is classified as MRZ-2: "An area where geologic data indicate that significant PCC-Grade aggregate resources are present." The State Mining and Geology Board has also designated the general area of the project as a Mineral Resource Zone. However, the project site and a majority of the project area adjacent to SR-210 has been designated by the State as "...lost to land uses incompatible with mining since 1987." A mining facility exists immediately north of Highland Avenue. The project area would not affect mining operations at the facility. Therefore, the proposed project would not impact accessibility or availability of a known mineral resource that would be of value to the region and/or residents of the state. The facility is anticipated to benefit from the proposed project, as the project would provide improved access to SR-210 by trucks that transport materials from the mining operation.

Transit Operator Planning

Omnitrans is the local transit operator for this area. The Omnitrans' Systemwide Transit Corridor Plan does not include Pepper Avenue for Bus Rapid Transit (BRT). Omnitrans also provides para-transit service. Public transit routes nearest to the project area are two bus lines operated by Omnitrans: Route 10 that travels along Baseline Road and Route 22 that travels along Riverside Avenue. Routes 10 and 22 are each located approximately one mile from the project site.

The project is over a mile away from the Metrolink commuter rail line. The SR-210 has one existing HOV lane in each direction. The proposed on-ramps will each include an HOV bypass lane.

7. ALTERNATIVES

This section describes the proposed action and the design alternatives that were developed to meet the identified need through accomplishing the defined purpose while avoiding or minimizing environmental impacts. For the proposed project, a Build Alternative and a No-Build Alternative are being considered. The proposed Build Alternative diamond interchange configuration was originally identified during the SR-210 freeway extension project. The interchange type was reconfirmed as an appropriate configuration during the TIA for this project. The PDT determined that only one build alternative would be studied in conjunction with completing the PA&ED phase of the proposed project.

A. VIABLE ALTERNATIVES

Proposed Engineering Features

The proposed Build Alternative would construct a new tight diamond interchange, Type L-1, along SR-210 at Pepper Avenue. A spread diamond interchange was dismissed due to the minimal spacing between intersections along Pepper Avenue that would result and the difficulty in realignment due to right-of-way and environmental constraints of either Highland Avenue or the SR-210 to gain acceptable spacing. Other interchange configurations were dismissed since the diamond configuration provides acceptable traffic operations. Other configurations would also likely result in the potential realignment of Highland Avenue, additional right-of-way acquisition, and interruption of lands with sensitive species habitats. The project would provide a freeway access ramp at the four quadrants of the interchange. The eastbound and westbound off-ramps would widen from one lane where the ramps diverge from SR-210 to two lanes at the intersection with Pepper Avenue where a dedicated left turn lane and a dedicated right turn lane would be provided. The eastbound and westbound on-ramps would each include two lanes at the intersection with Pepper Avenue and after the ramp meter would taper to one lane prior to merging onto SR-210. At the ramp intersections with Pepper Avenue, traffic signals would be installed. A traffic signal would also be installed at the Pepper Avenue/Highland Avenue intersection.

Pepper Avenue is proposed to be a four-lane modified major arterial. Pepper Avenue would be constructed from Highland Avenue to just south of the intersection of Pepper Avenue and the eastbound ramps; a distance of approximately 1,300 feet. This portion of Pepper Avenue would be a four through lane cross section consisting of two 12-foot through lanes in each direction with an 8-foot shoulder, curb and gutter, a 6.5-foot parkway, and a 5-foot-wide sidewalk on both sides of the roadway (i.e., northbound and southbound). Under the mainline beneath the undercrossings, the sidewalk would be adjacent to the curb and would be a width of 6.5 feet from the curb face to the back of walk (6-foot sidewalk) on both sides of the roadway. A dedicated 12-foot left turn lane from northbound Pepper Avenue to the westbound on-ramp and a dedicated 12-foot left turn lane from southbound Pepper Avenue to the eastbound on-ramp would also be constructed. The south end of the interchange project would match the Pepper Avenue Extension that is currently under construction by the City.

South of the freeway, within the City right-of-way, the 100-foot right-of-way width for Pepper Avenue includes two 12-foot lanes, a 6-foot shoulder, and a 14-foot parkway in each direction. A 12-foot striped median is included. Sidewalk width varies within the 14-foot parkway from 4 feet to 6 feet.

Right-of-way acquisition is anticipated for the proposed Build Alternative. Right-of-way is required for Pepper Avenue on the west side of the street north of the westbound ramps and on the west side of the street south of the eastbound ramps. Right -of-way is also required in the southeast quadrant, south of the eastbound on-ramp to provide space for an infiltration and peak attenuation basin.

Best Management Practice (BMP) features that would include modifications to the existing, or the installation of new, water quality control features, would also be included as part of the project. To the fullest extent practicable, BMPs would be designed to convey both stormwater quantity flows and peak flows. Two infiltration/retention basins, one in the northeast quadrant and one in the southeast quadrant have been preliminarily identified as the treatment BMPs. Those basins will be located within Caltrans right-of-way. Treatment for Pepper Avenue within Caltrans right-of-way and south of the eastbound ramps will be performed by the City's Contech Stormfilter system further south in the City's right-of-way.

Two retaining walls are required adjacent to the back of sidewalk along both sides of Pepper Avenue to retain the abutment slopes of the existing undercrossing. The retaining walls are proposed to be modified Type 1 walls with an approximate height of 10 feet and an approximate length of 400 feet each. The modification to the Type 1 wall is necessary based on Caltrans' June 13, 2013 memorandum stating that for sites with peak ground acceleration (PGA) greater than 0.6 g, the standard plans are not applicable. The Pepper Avenue interchange site has a PGA of 0.98g.

Non Standard Mandatory and Advisory Design Features

Mandatory Design Exception Features

Design Exception Feature #1: HDM Index 504.3(3) – Locations and Design of Ramp Intersections on the Crossroads

It is proposed to construct the westbound ramp intersection on Pepper Avenue at a distance of 186.9 feet from the Highland Avenue intersection. The distance is measured along the east curb from the curb return of Highland Avenue to the curb return of the westbound off-ramp.

Advisory Design Exception Features

Design Exception Feature #1: HDM Index 105.5(2) – Guidelines for the Location and Design of Curb Ramps

It is proposed to provide one curb ramp at each of the eight corners listed below instead of the standard two curb ramps. The eight locations include the:

- Pepper Avenue/Westbound Ramps intersection - all four corners,
- Pepper Avenue/Eastbound Ramps intersection - northwest and northeast corners, and
- Pepper Avenue/Highland Avenue - southeast and southwest corners.

Design Exception Feature #2: HDM Index 202.5(2) – Superelevation Transition, General

It is proposed to deviate from the standard runoff length at three locations. These locations include the westbound off-ramp between the 2,700-foot curve and the 1,900-foot curve, the eastbound on-ramp between the 4,500-foot curve and the 3,000-foot curve, and the eastbound off-ramp between the 3,000-foot curve and the 950-foot curve.

Design Exception Feature #3: HDM Index 202.5(2) – Superelevation Transition, Runoff

It is proposed to deviate slightly from the 2/3, 1/3 rule for superelevation runoff in three locations. The three locations include on the westbound off-ramp between the 2,700-foot and the 1,900-

foot curves, on the eastbound on-ramp between the 4,500-foot and the 3,000-foot curves, and the eastbound off-ramp between the 3,000-foot and the 950-foot curves.

Design Exception Feature #4: HDM Index 304.1 –Side Slope Standards

It is proposed to construct the new ramps to Pepper Avenue generally using existing embankment slopes which vary from 1.5h:1v to 4h:1v at four locations. The locations include the south side of the eastbound off-ramp, the south side of the eastbound on-ramp, the north side of the westbound off-ramp, and the north side of the westbound on-ramp.

No-Build Alternative

Under the No-Build Alternative no interchange would be constructed along SR-210 at Pepper Avenue. This alternative, however, does not preclude the construction of future improvements.

Interim Features

There are no planned interim features.

High Occupancy Vehicle (HOV) (Bus and Carpool) Lanes

HOV preferential lanes are proposed for the two on-ramps.

Ramp Metering

It is proposed to meter the two on-ramps. The on-ramp geometry accommodates the ramp metering. The ramp meter will control the general purpose lane only with the HOV preferential lane bypassing the ramp meter.

California Highway Patrol (CHP) Enforcement Areas

CHP enforcement areas have been provided along the entrance ramps in conformance with the Highway Design Manual.

Park and Ride Facilities

A park and ride facility is not included within this interchange project. There is no available right-of-way to construct a park and ride facility and providing for one is not included in the scope of this interchange project.

Utility and Other Owner Involvement

Based on the preliminary research of the utility information in the project area, the following utilities are present within or nearby the project limits:

Utilities would be protected, adjusted, relocated, or proposed, as needed, to accommodate the new interchange as follows:

<u>Utility Owner</u>	<u>Facility</u>	<u>Risk Level</u>	<u>Location</u>	<u>Disposition</u>
So Cal Gas Co	4" Steel Gas - Med. Press	Low	In Pepper Ave. (NB side)	Lowered during Temp Road construction, by SCG
	6" Steel Gas - Med Press	Low	In Highland Ave. (WB side)	Protect, No Impact
SCE	OH Electrical (12 kV)	High	Cross Highland to Pepper Ave.	Relocate during Temp Road construction, by SCE
	Power Pole #200466		West Side Pepper Ave.	Relocate during Temp Road construction, by SCE
	4" UG Duct with 12kV		West Side Pepper Ave.	Relocate during Temp Road construction, by SCE
Caltrans	120/240V Cabinets/UG Line		West Side Pepper Ave. north of SR-210 WB On-Ramp	Protect, No Impact (New connections required to supply power to traffic signals, ramp meters, street lights, and irrigation controllers)
	Fiber Optics		EB Side of SR-210 Mainline	Protect, No Impact (irrigation controllers and other joins may be required)
AT&T	Overhead Telephone		Cross Highland to Pepper Ave.	To be Abandoned
	On SCE Power Pole #200466		West Side Pepper Ave.	To be Abandoned
	4" UG Duct (joint trench w/ SCE)		West Side Pepper Ave.	To be Abandoned
W. Valley Water Dist.	16" Water		West Side Pepper Ave.	Protect, No Impact
	12" Water		East Side Pepper Ave. at R/W	Abandoned, Not Found
	30" Water		West Side Pepper Ave.	Proposed new construction by WVWD, Design Revision necessary to lower profile

Utility as-built plans have been obtained and used to prepare this list. Potholing has been performed. The coordination effort will be carried through the PS&E and construction phases. It is anticipated the electrical and gas will require relocation and this will be performed in advance of the interchange construction. The horizontal and vertical alignment of the proposed water and sewer lines will be coordinated with the West Valley Water District and are anticipated to be constructed in advance of the interchange construction. The proposed sewer line is expected to end at the south side of the interchange. It is anticipated that the 16-inch water line will be protected in place.

Other Facilities

There is an existing Caltrans fiber optics line in the area of the proposed eastbound on-ramp. This was noted by posted signs found during the field review. Precautions will be taken during the PS&E phase to note the requirements for excavation in the area where the fiber optics line exist. The fiber optic main trunk line shall not be down more than 8 hours and then only at night.

Railroad Involvement

The project has no railroad involvement. The nearest railroad lies east of Lytle Creek and is not impacted by this project.

Highway Planting

Highway planting and landscape is anticipated to be included within this project's construction. Specific plant palettes will be determined during PS&E. It is anticipated the new interchange landscaping will be consistent with the existing landscape palate on the sections of SR-210 adjacent to Pepper Avenue.

Erosion Control

Erosion control measures will be implemented to protect the facility and meet water quality discharge requirements. An Erosion Control Plan and applicable specifications will be included in the project PS&E.

Noise Barriers

No noise barriers are currently included in the project. A Noise Abatement Decision Report has been prepared.

Nonmotorized and Pedestrian Features

Pepper Avenue includes sidewalk along both sides of the street throughout the project limits. Access ramps are provided to facilitate cross movements of the street and ramps. A bicycle lane is not included in the project since the street is not included in the City of Rialto's Bicycle Routes as identified in their General Plan. The street does provide 8-foot shoulders which per the General Plan, does exceed the width required for a Class II or Class III bike lane/route, respectively.

Needed Roadway Rehabilitation and Upgrading

Based on preliminary review of the existing SR-210 mainline PCC (JPCP) pavement and PCC/AC (JPCP/HMA) shoulder and median appear to be in good condition. Pavements along Highland Avenue appear to be in generally good to locally fair condition, with isolated longitudinal cracking. No paving work is anticipated on Highland Avenue. New pavement will be constructed for Pepper Avenue and the ramps. Therefore, no roadway rehabilitation or upgrading is included in the project.

Needed Structure Rehabilitation and Upgrading

The two existing Pepper Avenue undercrossing structures were constructed at the time the mainline was constructed, completion in March 2008. The structures are assumed to be constructed to current codes and requirements and therefore, no rehabilitation or upgrading is included in the project.

Cost Estimates

The cost estimate for Alternative 1 is \$21,084,000. The cost estimate is included in Attachment C.

Right-of-Way Data

The cost estimate for right-of-way for Alternative 1, including utilities is \$5,507,000. The approved right-of-way data sheet is included in Attachment G.

Effect of Projects Funded by Others on State Highway

The proposed project adds an interchange to the existing state highway. Four new access points will be added to the state highway. A Traffic Impact Analysis was performed to study the effect on the mainline including capacity and weaving. No detrimental impact was found to the state highway.

B. REJECTED ALTERNATIVES

No alternatives were initiated or studied and later rejected.

8. CONSIDERATIONS REQUIRING DISCUSSION

A. HAZARDOUS WASTE

An Initial Site Assessment (ISA) was prepared for the project in accordance with the Caltrans' ISA Checklist for Hazardous Waste. In addition, a site reconnaissance was conducted to assess the present site conditions. No known hazardous waste sites have been identified within the project limits during the site survey, records search and review of historical photographs. The ISA recommended an ADL study be conducted. At the time of the investigation, an area of stained surface soil underneath the existing bridge structure as well as trash and other miscellaneous debris, was observed. This material has been removed and disposed of offsite with the onset of the City's construction project.

An Aerially Deposited Lead Investigation was performed in May 2012. One boring of the 24 borings taken indicated a total lead concentration of 132 mg/kg at 0.5 feet. The estimated impacted area radius is 10 feet from this boring which was located where the future Pepper Avenue will meet Highland Avenue. The ADL Report recommended the upper 1 foot of soil within the 10-foot radius be considered California Hazardous Waste Caltrans soil type 72 and be disposed off-site by the contractor prior to starting grading activities. This soil will be removed prior to the project as part of the Pepper Avenue Gap Closure project. The remainder of the Site soil is considered non-hazardous and can be used without restrictions.

B. VALUE ANALYSIS

A Value Analysis was not performed and is not required for the project as the project cost is less than \$50 million value subject to the federal law mandate.

C. RESOURCE CONSERVATION

There are limited opportunities for recycling of existing materials and resource conservation since this is a new construction and there are limited existing facilities. There is only a small amount of existing asphalt concrete pavement on the Pepper Avenue alignment. The existing slope paving beneath the undercrossings will be removed. The new roadway and retaining wall will be placed at these locations. The remaining slope from the top of the retaining wall to the bridge abutment will be paved with new slope paving. These two materials could be removed and crushed to become crushed miscellaneous base for the project if the contractor deems suitable. The existing signs (stop sign and vertical clearance) will be salvaged.

D. RIGHT-OF-WAY ISSUES

Right-of-Way Required

The project will require additional right-of-way. The Right-of-Way Data Sheet in Attachment G provides a conceptual cost estimate of the right-of-way acquisition cost and the impacted parcels. Below is a discussion of the locations of the right-of-way needs.

Alternative 1:

The following six involvements are necessary for the construction of Alternative 1:

1. A fee acquisition of a portion on the easterly side of the private property parcel (APN 0264-191-11) is needed for Pepper Avenue roadway from the eastbound ramps to the join with the Pepper Avenue Extension project. Property is owned by BBC Properties, LLC. The parcel is located west of Pepper Avenue and south of the eastbound off-ramp.
2. A temporary construction easement is needed on the easterly and northerly sides of the private property parcel (APN 0264-191-11) to accommodate construction. Property is owned by BBC Properties, LLC.
3. A temporary construction easement is needed on the northerly side of the private property parcel (APN 0264-191-10) to accommodate construction. Property is owned by BBC Properties, LLC. The parcel is located west of Pepper Avenue and south of the eastbound off-ramp.
4. A fee acquisition of a portion on the northwesterly portion of the private property parcel (APN 0264-191-02) is necessary to construct a BMP for the project. Property is owned by State Sand & Gravel Company. The parcel is located east of Pepper Avenue and south of the eastbound on-ramp.
5. A temporary construction easement is needed on the westerly and northerly sides of the private property parcel (APN 0264-191-02) to accommodate construction. Property is owned by State Sand & Gravel Company.

6. A temporary construction easement is needed on the northerly side of the private property parcel (APN 0264-191-04) to accommodate construction. Property is owned by State Sand & Gravel Company.

Alternative 2:

No parcels are required.

Relocation Impact Studies

The project does not involve relocations. All of the adjacent properties which may potentially require acquisition, which would be anticipated to only be partial acquisitions, are vacant.

Airspace Lease Areas

There is no potential for future airspace lease.

E. NOISE ABATEMENT DECISION REPORT

The January 2014 SR-210 Pepper Avenue New Interchange Noise Study Report indicated that noise abatement criteria would be reached or exceeded under the Build and No-Build Alternatives. Forecast traffic noise in the design year would approach or exceed the FHWA/Caltrans noise abatement criterion of 67 A-weighted decibels for recreational activities at three locations within Frisbie Park. Therefore, noise abatement considerations are required. The configuration and location of the project dictate the only feasible form of abatement would be a noise barrier such as a soundwall/noise barrier. As identified in the Noise Study Report, one noise barrier was found to be feasible at wall heights ranging from 12 to 16 feet. This noise barrier (NB-1) was evaluated in the March 2014 Noise Abatement Decision Report that was prepared for the project. As shown in Table 9, it was estimated the construction cost would exceed the reasonable allowance for each of the evaluated barrier heights found to be acoustically feasible; therefore, the preliminary decision on the incorporation of noise abatement was to omit the noise barrier. This preliminary noise abatement decision was included in the Draft ED and deemed final in the final ED.

Table 9: SUMMARY OF NOISE ABATEMENT INFORMATION

BARRIER	HEIGHT (feet)	ACOUSTICALLY FEASIBLE?	NUMBER OF BENEFITED RESIDENCES	DESIGN GOAL ACHIEVED	TOTAL REASONABLE ALLOWANCE	ESTIMATED CONSTRUCTION COST	COST LESS THAN ALLOWANCE?
NB-1	12	Yes	6	Yes	\$330,000	\$1,800,800	No
	14	Yes	6	Yes	\$330,000	\$1,941,100	No
	16	Yes	7	Yes	\$385,000	\$2,046,400	No

9. OTHER CONSIDERATIONS AS APPROPRIATE

Public Hearing Process

A public meeting, following the Open House format, will be scheduled during the circulation of the Draft Environmental Document.

Route Matters

The project is compatible with the existing unsigned Route Concept Report (RCR) and the existing March 2000 RCR. A revision to the freeway agreement will be required to reflect the additional access points to SR-210. The existing undercrossings are shown in the existing Caltrans Freeway Agreement. An amendment to the Freeway Agreement will be necessary to revise from undercrossing to interchange. The interchange is considered a new connection, however, since it is not an interstate route, a New Connection Report is not required. A route adoption is not required.

Highland Avenue was formerly Route 30. In the vicinity of Pepper Avenue where it intersects Highland Avenue, a portion of the southerly side (eastbound) of Highland Avenue was relinquished from Caltrans to the City of Rialto on May 11, 2011. The remainder of Highland Avenue, north of this relinquished portion is owned by Caltrans and is expected to be relinquished at a later date. No relinquishments are anticipated to be included in this project.

Permits

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

- US Army Corps of Engineers Clean Water Act Section 404 Nationwide Permit
- California Department of Fish & Wildlife Section 1602 Streambed Alteration Agreement
- State Water Resources Control Board Clean Water Act Section 402 – National Pollutant Discharge Elimination System (NPDES)
- Regional Water Quality Control Board Section 401 Water Quality Certification
- US Fish & Wildlife Section 7 Consultation, Biological Opinion
- Federal Highway Administration Air Quality Conformity Analysis Determination
- City of Rialto Freeway Agreement Modification
- California Construction General Permit, NPDES No. CAS000002, California Department of Transportation MS4 Permit, NPDES CAS000003, County of San Bernardino & City of Rialto MS4 Permit NPDES No. CAS618036 (Order No. R8-2010-0036)

Cooperative Agreements

The following agreements will be required for the project:

Cooperative Agreement Number 08-1499 (C11088) sets forth the terms and conditions for the project between Caltrans and SANBAG for the PA/ED, PS&E, and right-of-way phases. A separate cooperative

agreement is recommended to be negotiated and approved for construction between Caltrans and SANBAG.

Other Agreements

A maintenance agreement will be required between the City of Rialto and Caltrans for the street, landscaping, and traffic signals.

No other agreements are known to be necessary for the project.

Report on Feasibility of Providing Access to Navigable Rivers

Since there are no navigable rivers within or nearby the project limits, this does not apply.

Public Boat Ramps

There are no public boat ramps within or nearby the project.

Transportation Management Plan for Use During Construction

A Transportation Management Plan (TMP) Data Sheet has been developed to provide recommendations to minimize the traffic impacts of construction activities so as to maintain the highest level of traffic circulation during the construction period on SR-210 and Highland Avenue. The TMP Data Sheet is included in Attachment F.

Stage Construction

Staging for the project is minimal since the interchange does not currently exist and, therefore, construction can primarily occur in untraveled areas. Stage construction plans will be prepared for the joins at the mainline SR-210, along the two-lane section of temporary Pepper Avenue, and Highland Avenue. No ramp or freeway closures are anticipated. The mainline right shoulder and outermost lane will require brief closures during the short-term construction periods for the ramp gore areas. No detour route is needed.

Accommodation of Oversize Loads

Pepper Avenue is a designated truck route through the City of Rialto. Therefore, the street and interchange will be designed for the STAA truck.

Graffiti Control

Graffiti control will be determined during the PS&E phase. It is anticipated the proposed retaining walls will include a surface treatment to deter graffiti. There are no other anticipated locations within the project limits that would necessitate graffiti control.

Life Cycle Cost Analyses (LCCA)

Upon Caltrans approval of the Traffic Indices (TIs) for the project, a Life Cycle Cost Analysis (LCCA) was prepared documenting 20-year and 40-year pavement design lives. The analysis was performed on off-

ramps and found the most cost-effective alternative over the 55-year analysis period was for 20-year flexible pavement when compared to three other alternatives, 40-year jointed plain concrete pavement (JPCP), 40-year flexible and 20-year JPCP. At off-ramp termini, a 40-year rigid pavement was determined to be the most cost-effective alternative over the 55-year analysis period.

The life cycle cost analysis was not performed for Pepper Avenue, the two on-ramps, or for the short auxiliary lane. It is anticipated that Pepper Avenue will be asphalt concrete pavement, off-ramp termini will be Portland cement concrete, and the remainder of the ramps will be asphalt concrete pavement. The ramp transitions, or merging lanes, where the ramps merge with the mainline will consist of JPCP. The Life Cycle Cost Analysis Forms are included in the appendix.

Design Information Bulletin Number 77 – Interchange Spacing

In compliance with Design Information Bulletin (DIB) Number 77, this section addresses the additional requirements for the interchange.

- Initial Screening of Proposals

- Interchange Justification – The existing interchanges and local roads do not provide the project’s purpose of improved connectivity to the regional transportation system from the local transportation network nor do they achieve the goals of the existing local planning documents regarding access to the regional transportation system.

- Consideration of Alternatives – Reasonable alternatives were assessed. Ramp metering is proposed. HOV lanes currently exist.

- Interchange Spacing – The proposed interchange is located approximately mid-way between the existing Riverside Avenue and State Street/University Parkway interchanges which are two miles apart.

- No Significant Adverse Impact – The proposed interchange does not have a significant adverse impact on the safety and operation of the highway facility based on the analysis of current and future traffic.

- Connection to Public Road – The proposed interchange connects to Pepper Avenue, a public road and will provide all traffic movements.

- Meets Local Planning – The proposal considers and is consistent with local and regional land use and transportation plans.

- Coordination with Development – The proposed new interchange is not generated by new or expanded development.

- Purpose of the Project

- The purpose of the proposed SR-210/Pepper Avenue Interchange project is to:

- Provide improved connectivity to the regional transportation system from the local transportation network; and
- Achieve the goals of the existing local planning documents regarding access to the regional transportation system.

- Description of Existing and Proposed Interchanges

The Riverside Avenue (PM 18.69) interchange is located approximately one mile to the west of the proposed Pepper Avenue interchange within the City of Rialto. It is configured as a tight diamond. The mainline consists of eight lanes through the interchange: two HOV and six general purpose lanes. Riverside Avenue is a four-lane roadway (two lanes in each direction) with two left turn pockets in each direction destined to the on-ramps. The Riverside Avenue overcrossing is an eight-lane structure.

The State Street/University Parkway (PM 20.73) interchange is located approximately one mile to the east of the proposed Pepper Avenue interchange within the City of San Bernardino. It is configured as a modified diamond with a loop eastbound on-ramp in the southwest quadrant rather than a direct on-ramp in the southeast quadrant. The mainline consists of eight lanes through the interchange: two HOV and six general purpose lanes. State Street/University Parkway consists of two through northbound and southbound lanes beneath the undercrossing with two northbound left turn lanes and one southbound left turn lane.

The proposed SR-210 Pepper Avenue interchange project is located along SR-210 at approximately post mile 19.7 and is primarily located within the jurisdictional limits of the City of Rialto with the eastbound on-ramp and the westbound off-ramp extending slightly into the City of San Bernardino. The mainline consists of eight lanes through the interchange: two HOV and six general purpose lanes. Pepper Avenue is proposed as a four-lane roadway with side by side left turn lanes beneath the undercrossing to the on-ramps. Therefore, the roadway cross section beneath the structure would be six lanes.

The project traffic report entitled State Route 210/Pepper Avenue Interchange – Traffic Impact Analysis dated March 28, 2012, was approved by Caltrans. Additionally, a State Route 210/Pepper Avenue Interchange - Supplemental Traffic Impact Analysis report dated August 20, 2013, was approved by Caltrans on September 19, 2013. That report includes the freeway mainline and crossroad traffic volumes (Average Daily Traffic [ADT] and Design Hourly Volumes [DHV]) including turning movements for the existing year (2011), opening year (2016) both with and without project, and design year (2036) both with and without project.

- Description of Alternatives Considered

The Pepper Avenue interchange was originally identified for inclusion in the State Route 210 project. It was included in the project development documentation until the PS&E phase and at

that time was dropped from the project since the City of Rialto's Pepper Avenue extension to Highland Avenue was not funded for construction. During the SR-210 project development, a diamond interchange configuration was identified. At that time, some study was given to a modified diamond configuration by including an additional northbound to westbound loop on-ramp. This alternative would involve relocating Highland Avenue and significant acquisition of right-of-way. That alternative was dropped since the traffic analysis proved the addition of the loop on-ramp was unnecessary. No additional alternatives were considered during the current project development.

Per the conclusions and recommendations of the project Traffic Report named above, the technical traffic operational analysis concluded the proposed diamond configuration with signalized ramp intersections would operate at acceptable level of services through the design year 2036 without significant impacts to the freeway or adjacent ramp terminal and local street intersections. No issues related to traffic progression on Pepper Avenue or Highland Avenue were identified. The project is not expected to generate any significant impacts to the Riverside Avenue and State Street/University Parkway interchange ramp intersections.

- Accident Data Analysis

Traffic Accident Surveillance and Analysis System (TASAS) accident data was obtained from Caltrans District 8 for the 36-month period from October 1, 2008 through September 30, 2011, for the mainline and is presented Table 10. The data indicates the actual accident rates to be lower than the average rates for fatal, fatal plus injury, and total accidents. No high collision frequency spot locations were found within the proposed project limits.

Table 10: SR-210 ACCIDENT DATA

SR-210 ACCIDENT DATA - 10/1/08 - 9/30/11									
Eastbound SR-210 from PM 19.300 to 20.101									
Actual No. of Accidents				Actual Rate			Average Rate		
Total	Fatal	Injury	PDO	Fat	F+I	Tot	Fat	F+I	Tot
9	0	4	5	0.000	0.09	0.19	0.003	0.16	0.50
Westbound SR-210 from PM 19.300 to 10.101									
Actual No. of Accidents				Actual Rate			Average Rate		
Total	Fatal	Injury	PDO	Fat	F+I	Tot	Fat	F+I	Tot
3	0	2	1	0.000	0.04	0.06	0.003	0.16	0.50

There is no accident data for the proposed location since the roadways are not yet constructed. It is not anticipated the proposed project will affect the mainline SR-210 accident rate.

- Traffic and Operational Analysis for Existing and Proposed Conditions

The approved project traffic report provides the traffic and operational analysis for existing and proposed conditions including an analysis of adjacent segments of the freeway as well as the existing interchanges on each side of the proposed Pepper Avenue interchange. The results of the operational analysis conclude that freeway mainline capacity, freeway weaving, ramp merging, freeway diverge, ramp intersections, and local street intersections all operate satisfactorily in the opening year and design year for the proposed project.

10. COMMUNITY INVOLVEMENT

The PDT, which includes representatives from the City, SANBAG, Caltrans, and consultants, was identified to ensure a collaborative communication among stakeholders. The representatives have actively participated in the engineering and environmental studies leading up to the development of this Draft PSR-PR and are in support of the proposed project. There is no known opposition. No meetings have been held with the public, legislators, or politicians to date. There has been no contact with special interest groups, minorities, elderly, non-drivers, physically challenged, bicyclists, and economically disadvantaged.

A Notice of Intent to Adopt a Negative Declaration and Availability of IS/EA will be published in conjunction with the start of public circulation of the DED.

11. ENVIRONMENTAL DETERMINATION/DOCUMENT

Caltrans has statutory obligation to maintain and operate the State Highway System (SHS) as the owner of the SHS, and accordingly, is the California Environmental Quality Act (CEQA) Lead Agency for all improvement projects on the SHS.

Section 6005(a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), P.L. 109-59, codified as Section 327 of amended Chapter 3 of Title 23, United States Code (23 U.S.C. 327), established a Surface Transportation Project Delivery Pilot Program that allowed the Secretary of the United States Department of Transportation (USDOT) to assign, and a State to assume, the USDOT Secretary's responsibilities under the National Environmental Policy Act of 1969 (42 U.S.C. 4321, et seq.), and all or part of the USDOT Secretary's responsibilities for environmental review, consultation, or other action required under any Federal environmental law with respect to one or more highway projects within the State. In conjunction with implementation of Section 6005 of SAFETEA-LU, a Section 6005 Memorandum of Understanding (MOU) between the Federal Highway Administration (FHWA) and Caltrans was prepared, which became effective on July 1, 2007.

California participated in the "Surface Transportation Project Delivery Pilot Program" (Pilot Program) pursuant to 23 USC 327, for more than five years, beginning July 1, 2007 and ending September 30, 2012.

MAP-21 (P.L. 112-141), signed by President Obama on July 6th, 2012, amended 23 USC 327 to establish a revised and permanent Surface Transportation Project Delivery Program. As a result, the Department entered into a memorandum of understanding pursuant to 23 USC 327 (NEPA Assignment MOU) with FHWA. The NEPA Assignment MOU became effective October 1, 2012 and terminates eighteen months from the effective date of FHWA regulations developed to clarify amendments to 23 USC 327 or on January 1, 2017.

The NEPA Assignment MOU incorporates by reference the terms and conditions of the Pilot Program MOU. In summary, the Department continues to assume FHWA responsibilities under NEPA and other federal environmental laws in the same manner as was assigned under the Pilot Program, with minor changes. With NEPA Assignment, FHWA assigned and the Department assumed all of the United States Department of Transportation (USDOT) Secretary's responsibilities under NEPA. This assignment includes projects on the State Highway System and Local Assistance Projects off of the State Highway System within the State of California, except for certain categorical exclusions that FHWA assigned to the Department under the 23 USC 326 CE Assignment MOU, projects excluded by definition, and specific project exclusions.

Caltrans is the lead agency in conjunction with completion of all NEPA compliance requirements and associated documentation for this project.

The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 U.S.C. 327.

In compliance with CEQA documentation requirements, Caltrans determined that preparation of an Initial Study (IS) to be the appropriate type of environmental document. In compliance with NEPA, the class of action determination for the proposed project was made in consultation with the Caltrans headquarters Environmental Coordinator assigned to District 8. An Environmental Assessment (EA) was identified as the appropriate type of environmental document. Consistent with Caltrans requirements, the Initial Study with Proposed Negative Declaration / Environmental Assessment (Draft Environmental Document, DED) prepared for this project was prepared as a combined Environmental Document (IS/EA).

The IS/EA has been prepared in accordance with Caltrans' environmental procedures, as well as State and federal environmental regulations, and has been approved by Caltrans for public circulation and review. The Cover Page and signed Title Sheet from the approved DED for this project are included in Attachment D of this Draft Project Study Report-Project Report (Draft PSR-PR). The entire DED is stipulated to be included, by this reference, as an attachment to this DPR.

If the scope of work (including utility relocation requirements—if any) or limits for this project change, prior to completion of the Project Approval & Environmental Document (PA&ED) Phase, during the Plans, Specifications and Estimates (PS&E) phase, or during the Construction phase, a determination must be

made by the District's Division of Environmental Planning, in advance of the project change being implemented, as to whether the project will require an Environmental Re-Evaluation to be completed. In conjunction with performing an Environmental Re-Evaluation to confirm if the environmental documentation for CEQA compliance and NEPA compliance documentation remains sufficient and complete, additional Technical Studies may be required, and/or existing Technical Studies may need to be revised, and/or the type of documentation for CEQA compliance and NEPA compliance required for the project may be changed as a result.

It is required that the Environmental Commitments Record (ECR) prepared in conjunction with completion of the PA&ED phase (included as an appendix in the Caltrans approved DED for this project), be referenced and completed timely throughout the PS&E and Construction phases of the project, and updated as necessary based on direct coordination with the Caltrans Environmental Planner Generalist and Caltrans Senior Environmental Planner assigned to the project. The Caltrans Senior Environmental Planner assigned to the project is responsible for approving changes to the ECR.

An Environmental Certification will be required at the end of the PS&E phase, and a Certificate of Environmental Compliance (CEC) will be required following completion of construction of the project.

Wetlands and Flood Plains

The floodplain lies within Lytle Creek in the City of Rialto, County of San Bernardino. Lytle Creek is an 18-mile-long watercourse that originates in the San Gabriel Mountains and flows to the Santa Ana River. The floodplain in the vicinity of the project is confined by the existing levee located in the vicinity of the easterly project limits. The levee confines the westerly edge of the floodplain limits. The project risk associated with the proposed encroachment is insignificant. The project will not involve any placement of fill within the floodplain and all project improvements will be constructed above the elevation of the existing top of levee. There is no longitudinal encroachment into the floodplain and the proposed project will not raise floodplain elevations. There are no present beneficial uses or natural values associated with the existing floodplain that will be affected by the project.

There are no wetlands within or adjacent to the project limits.

Air Quality Conformity

The proposed project is included in the 2012-2035 Regional Transportation Plan (RTP), which was found to be conforming by FHWA and the Federal Transit Administration (FTA) on June 6, 2012. The project is also included in the adopted 2013 Federal Transportation Improvement Program, which was found to be conforming by FHWA and FTA on December 14, 2012. The project is listed in the RTP under Project ID 4M1007 and FTIP under Project ID 20110110. The proposed project was determined to be Not a Project of Air Quality Concern by the SCAG Transportation Conformity Working Group (TCWG) at their meeting on September 24, 2013.

Title VI Considerations

Implementation of the proposed project will not result in any disproportionately high or adverse impacts on minority or low-income neighborhoods or communities. Caltrans and FHWA policies demonstrate a commitment to Title VI of the Civil Rights Act, which provides that no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefit of, or be subjected to, discrimination under any program or activity receiving federal financial assistance. All considerations under Title VI of the Civil Rights Act and related statutes have also been included in this project.

12. FUNDING/PROGRAMMING

Although this project is presently funded entirely by local Measure I funds if future federal aid is available, this project is eligible for federal funding.

This is an oversight project and as such, support components through the right-of-way phase have been addressed in the Department’s cooperative agreement with SANBAG as Independent Quality Assurance (IQA).

13. SCHEDULE

A project milestone schedule is presented in Table 11.

Table 11: MILESTONE SCHEDULE

PROJECT MILESTONES		DELIVERY DATE (Month, Day, Year)
Program Project	M015	
Begin Environmental	M020	3/1/11
Notice of Preparation (NOP)	M030	N/A
Notice of Intent (NOI)	M035	N/A
Circulate DED Externally	M120	5/19/14
PA&ED	M200	8/1/14
Draft Structures PS&E	M378	N/A
Project PS&E	M380	1/29/15
Right-of-Way Certification	M410	3/1/15
Ready to List	M460	3/1/15
Award	M495	5/15/15
Approve Contract	M500	7/1/15
Contract Acceptance	M600	7/1/16
End Project	M800	12/1/16

The anticipated funding fiscal years for construction is 2015-17.

14. RISKS

A risk assessment has been performed with twelve project risks identified. The risk register is included in the appendix. Table 12 summarizes the potential risks, overall probability and the ownership. See Attachment J for the complete risk register.

Table 12: RISK REGISTER

Category	Title	Risk Statement	Probability	Risk Owner
Design	Field Survey / Base Maps	Ongoing Temp Road construction could alter survey data, base mapping, and design.	3-Moderate	SANBAG
ROW	Utility Relocation Delays	Utility modifications are required which may delay project schedule.	2-Low	SANBAG
ROW	Delay of R/W Acquisition	Since R/W acquisition cannot begin until an approved ED is obtained and at-risk design is being initiated, there will be minimal time for r/w acquisition. If owners are unwilling, time delay could be incurred.	3-Moderate	SANBAG
Construction	Uncovered Findings	Native American remains are found during construction and construction would then be delayed.	3-Moderate	SANBAG
Construction	Sensitive Species Found	During construction, the woolly star or SBKR are found on the site, thereby delaying construction.	2-Low	SANBAG
Design	Drainage Issues	Lawsuit with railroad due to flooding issues necessitate change to drainage concept design.	2-Low	SANBAG
PM	Funding Source	Funding source is changed necessitating changes to construction bid documents.	3-Moderate	SANBAG
Construction	Contractor Yard	It is determined that no contractor yard is available at site - either at Caltrans owned parcels which are in-use as water quality basins or elsewhere within project r/w.	4-High	SANBAG
Organizational	Changes to Storm Water Requirements	Caltrans makes changes to SW requirements requiring changes to the SWDR and schedule delays.	2-Low	SANBAG

Construction	Permanent Erosion Control Establishment	Permanent Erosion Control Establishment is required by end of construction phase, in order to file the Notice of Termination (NOT) in compliance of the California Construction General Permit.	3-Moderate	SANBAG
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15. FHWA COORDINATION

This Report has been reviewed by Anthony Ng, *Caltrans FHWA Liaison Engineer* reviewing on 5/01/14. No federal-aid funding is currently anticipated and no FHWA action is required for this project. The project is not located on an interstate and does not require any federal discretionary approvals such as a New Connection Report. The project is also currently funded entirely with local Measure I funds and does not require federal approval to obligate funds. The Caltrans project identification number is 0800020180.

Sufficient funding is expected to be available at the time of circulation and/or approval of the environmental determination/document to allow for the inclusion of the fully funded preferred alternative in the financially constrained Metropolitan Planning Organization (MPO) or Regional Transportation Improvement Program (RTIP), Regional Transportation Plan (RTP) and Federal Transportation Improvement Program (FTIP). The source of funds is expected to be County of San Bernardino Measure I.

16. PROJECT REVIEWS

Field Review:

District Maintenance:

HQ Design Coordinator: Luis Betancourt

HQ Design Reviewer: Anthony Ng

District Safety Quality Review Date:

17. PROJECT PERSONNEL

The following individuals may be contacted for information pertaining to this Project Study Report-Project Report:

Caltrans District 8

Meardey Tim (909) 383-6480
Project Manager

Jon Bumps (909) 383-4952
Design Oversight

Theresa Sasis (909) 383-6997
Traffic Operations

Keith Williams (909) 383-5747
Utilities

James Shankel (909) 383-5747
Environmental Planning

Steve Mcclaury (909) 888-0484
Right of Way

San Bernardino County Transportation Authority (SANBAG)

Paul Melocoton (909) 884-8276
Project Manager

Dennis Saylor (909) 884-8276
Project Delivery Manager

Civil Works Engineers, Inc.

Marie Marston (714) 966-9060
Project Manager

IBI Group

Bill Delo (949) 833-5588
Traffic Analyst

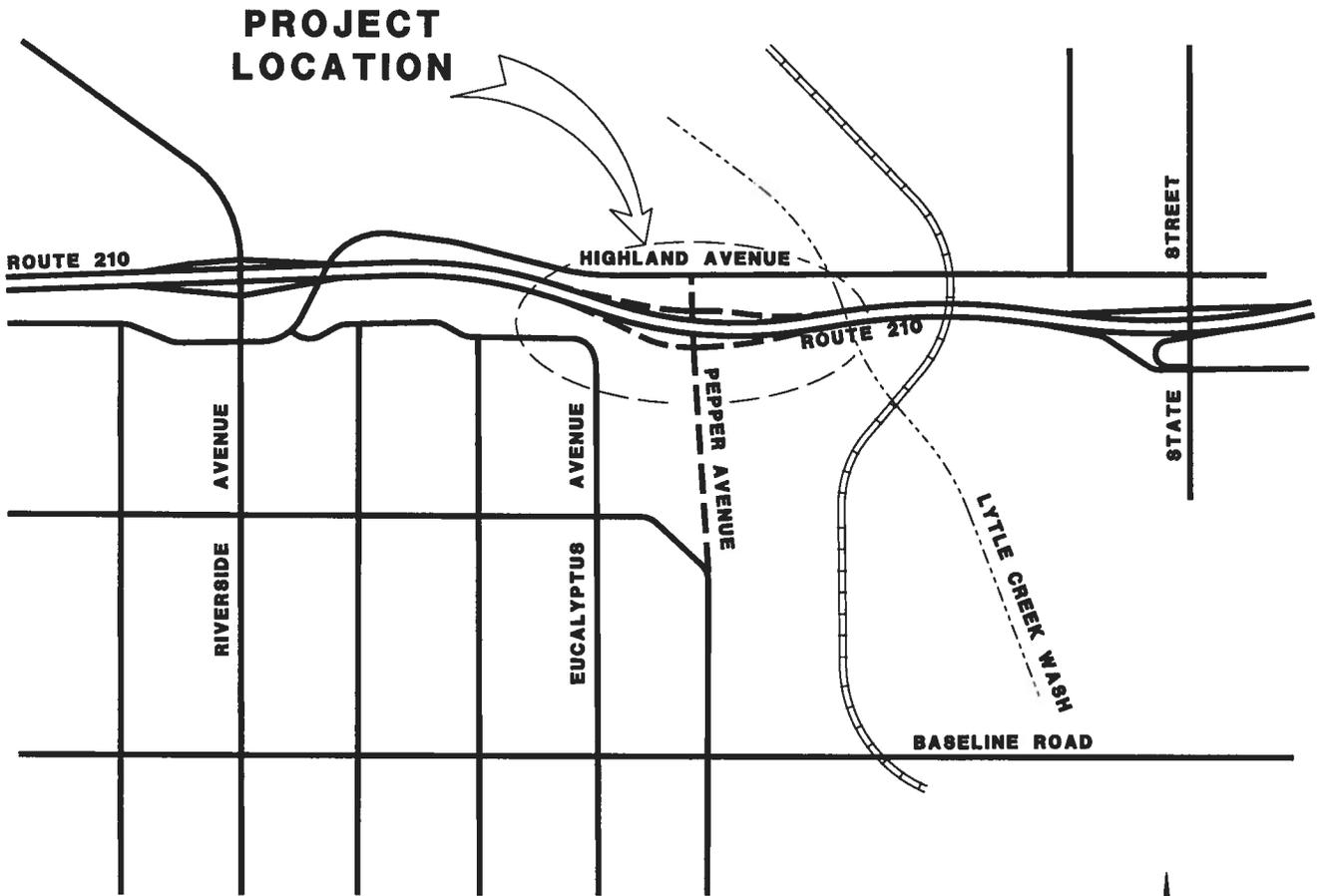
Jonathan Levy (619) 234-4110
Traffic Engineer

ATTACHMENTS

- A. Location Map
- B. Project Detail Maps (Geometrics – Layout, Profiles, Superelevation & Typical Sections)
- C. Cost Estimate
- D. Cover Page and Signed Title Sheet of Initial Study with Proposed Negative Declaration/
Environmental Assessment (from Draft Environmental Document for Project)
- E. Traffic Impact Analysis Report
- F. TMP Data Sheet
- G. Right-of-Way Data Sheet
- H. Initial Site Assessment
- I. Life Cycle Cost Analysis Forms
- J. Storm Water Data Report Cover Sheet
- K. Risk Register
- L. Project Category Assignment Memorandum

Attachment A - Location Map

**SR-210 Pepper Avenue Interchange
EA 08-44394**



**VICINITY MAP
Attachment A**

Attachment B - Geometrics
Typical Sections
Layouts
Profiles
Superelevations

DIR#	COUNTY	ROUTE	POST MILES	SHEET NO.	TOTAL SHEETS
08	SBD	210	19.3/20.1		

YEAR 2036	SOUTHBOUND		NORTHBOUND		TOTAL
PEPPER AVENUE	ADT	ESAL	T	ESAL	T
NORTH OF WB RAMP	4,610	5,255,953	12%	8,690	9,907,643
UNDER SR-210	6,910	7,676,229	12%	6,740	7,684,409
SOUTH OF EB RAMP	10,490	11,959,859	12%	6,340	7,228,361
					12%
					1,310

REGISTERED CIVIL ENGINEER	DATE
MAJIE MADSON	19.3.20.1
No. 38798	
Exp. 3.31.15	

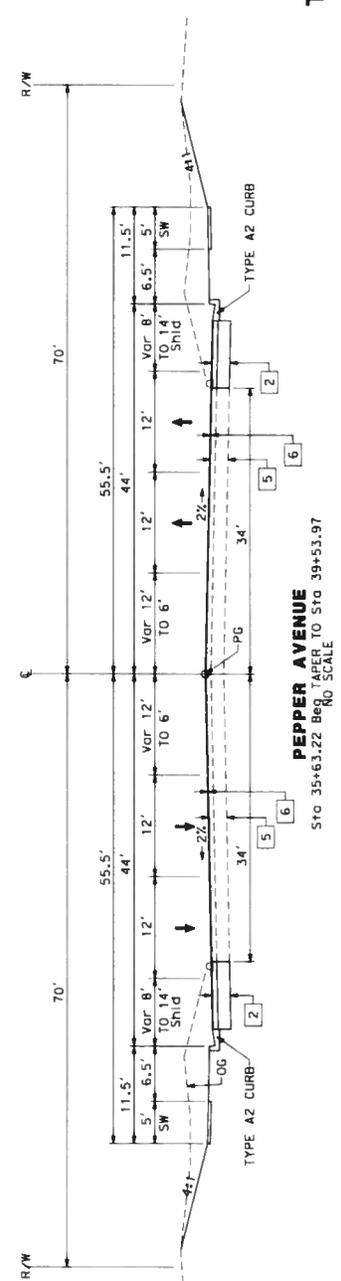
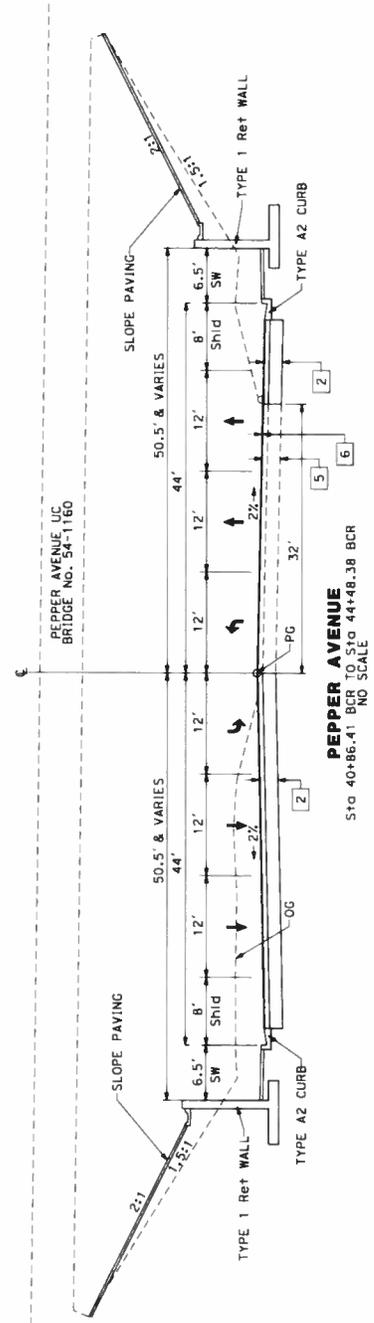
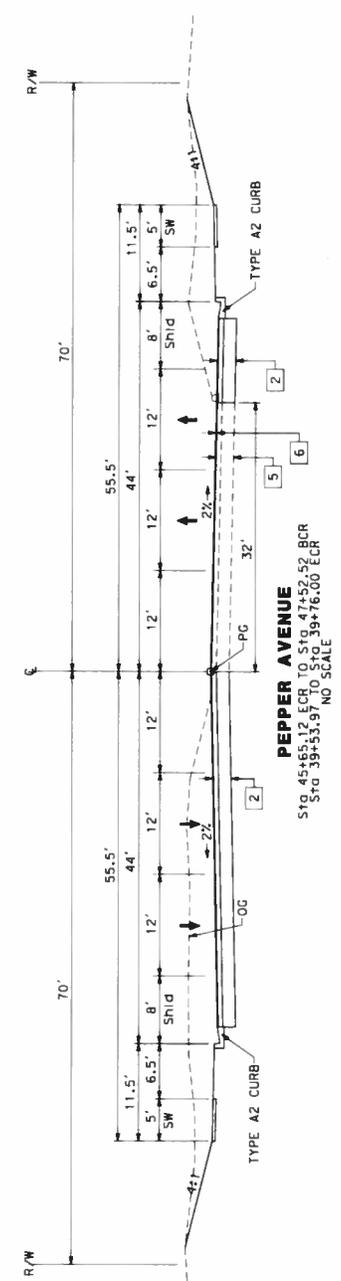
PLANS APPROVAL DATE: _____

FOR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF EXAMINED PLANS.

CIVIL WORKS ENGINEERS
SMBAG
1500 TILDEN ST., 2ND FLOOR
COSTA MESA, CA 92626
SAN BERNARDINO, CA 92410

YEAR 2036	SOUTHBOUND		NORTHBOUND		TOTAL
PEPPER AVENUE	ADT	ESAL	T	ESAL	T
NORTH OF WB RAMP	4,610	5,255,953	12%	8,690	9,907,643
UNDER SR-210	6,910	7,676,229	12%	6,740	7,684,409
SOUTH OF EB RAMP	10,490	11,959,859	12%	6,340	7,228,361
					12%
					1,310

NOTES:
 - Exist pavement section from as-built, actual section may differ
 - Proposed pavement sections are preliminary and subject to change



TYPICAL PAVEMENT STRUCTURAL SECTIONS

- 1 EXIST 0.85" PCC TYPE A (BOND BREAKER)
0.10" AC
0.30" LCB
- 2 0.20" RMA-G
0.80" RMA-C
0.80" AB CLASS 2
- 3 0.95" JPCP
0.50" LCB
- 4 0.20" HRPB (BOND BREAKER)
0.50" LCB
- 5 0.40" HMA-C (WITH 0.10 MILL)
0.80" AB CLASS 2
- 6 0.20" RMA-G

TYPICAL SECTIONS
 NO SCALE

X-1



USERNAME: USER
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EA 44394

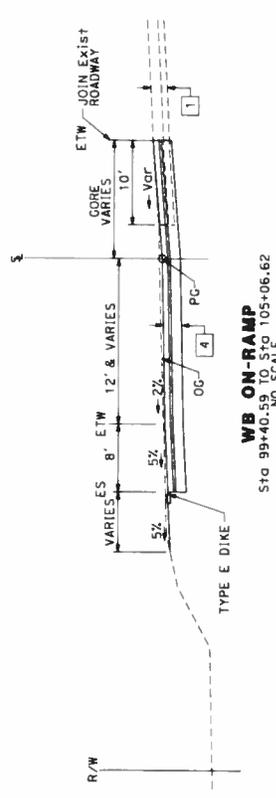
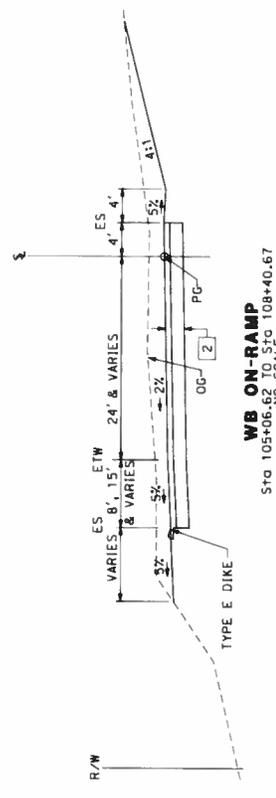
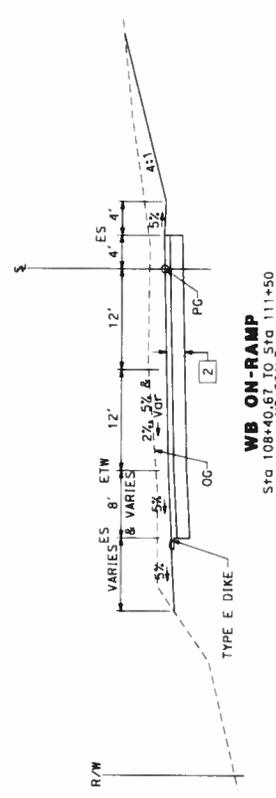
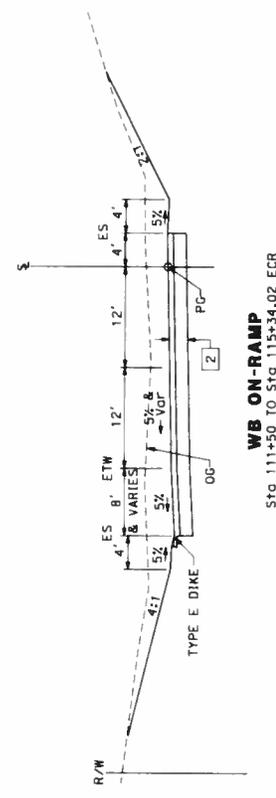
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PLANS APPROVAL DATE	

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REGISTERED PROFESSIONAL ENGINEER	NO.	SHEET TOTAL
MARIE MARSTON	38798	



TYPICAL SECTIONS
NO SCALE

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RELATIVE BORDER SCALE
1/8" = 15' IN INCHES

USER NAME: MRSER
JOB FILE: 02 REQUEST

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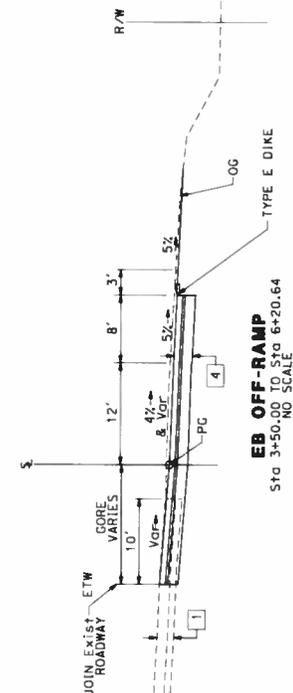
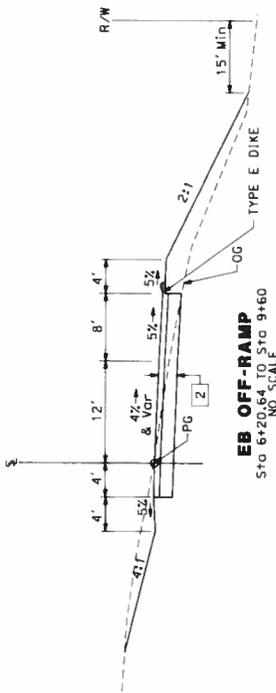
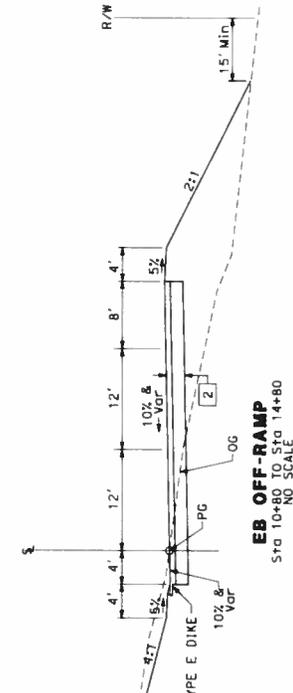
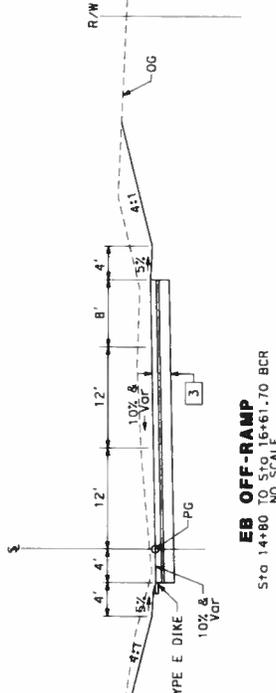
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MAIL MARSTON	NOV. 30, 2010
PROFESSIONAL ENGINEER No. 38798 Exp. 12-31-15 CIVIL STATE OF CALIFORNIA	

CIVIL WORKS ENGINEERS	SANBAG
11700 FIFTH ST., 2ND FLOOR	
COSTA MESA, CA 92626	SAN BERNARDINO, CA, 92410

PLANS APPROVAL DATE: 11/30/10
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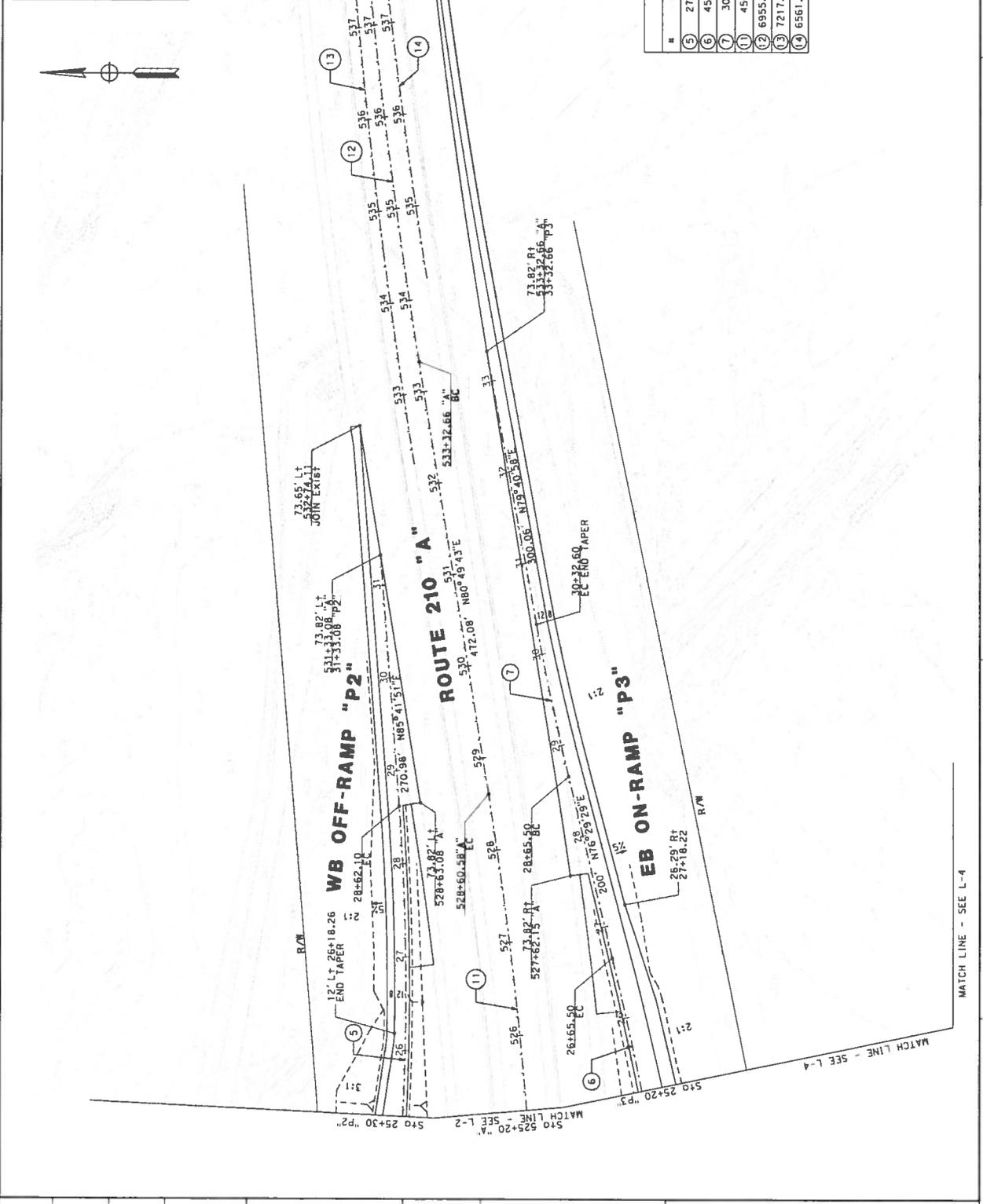
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RELATIVE BORDER SCALE 15" IN INCHES

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 AMIE MARSHON
 No. 381798
 Exp. 12-31-15
 CIVIL
 STATE OF CALIFORNIA
 REGISTERED CIVIL ENGINEER
 CIVIL WORKS ENGINEERS SANBAG THIRD ST. 2ND FLOOR
 1511 AVENUE COSTA MESA, CA 92626 SAN BERNARDINO, CA 92410



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5	2700'	112°33'00"	544.29'	273.07'
6	4500'	102°21'51"	814.00'	408.12'
7	3000'	3°11'29"	167.10'	83.57'
11	4500'	27°19'14"	2145.75'	1093.67'
12	6955.37'	7°49'38"	950.18'	475.83'
13	7217.83'	5°29'48"	692.43'	346.46'
14	6561.67'	12°39'04"	1448.84'	727.38'

LAYOUT
 SCALE: 1" = 100'

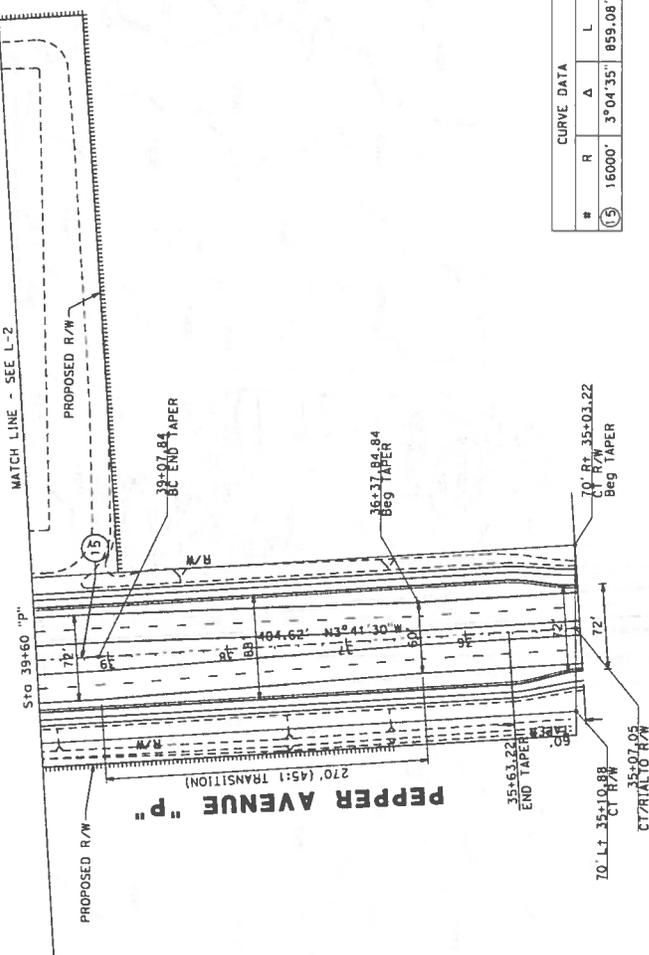
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 THE STATE OF CALIFORNIA OR ITS OFFICER
 THE AUTHORITY OF COMPETENCY OF SEALING
 GRANTED BY THIS PLAN SHEET.
 RECEIVED PROFESSIONAL ENGINEER
 MARIE MARSTON
 No. 38798
 Exp. 12-31-15
 CIVIL
 STATE OF CALIFORNIA
 CIVIL WORKS ENGINEERS SANBAG
 3151 AIRWAY AVE. L-1 1170 W. THIRD ST., 2nd FLOOR
 COSTA MESA, CA 92626 SAN BERNARDINO, CA, 92410



MATCH LINE - SEE L-3



CURVE DATA				
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(5)	16000'	3°04'35"	859.08'	429.64'

LAYOUT
 SCALE: 1" = 100'

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RELATIVE BORDER SCALE IS IN INCHES

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 1170 W. THIRD ST., 2ND FLOOR
 COSTA MESA, CA 92626 SAN BERNARDINO, CA 92410



REGISTERED CIVIL ENGINEER DATE
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 COSTA MESA, CA 92626 SAN BERNARDINO, CA 92410

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 OF THE REGISTERED PROFESSIONAL ENGINEERS
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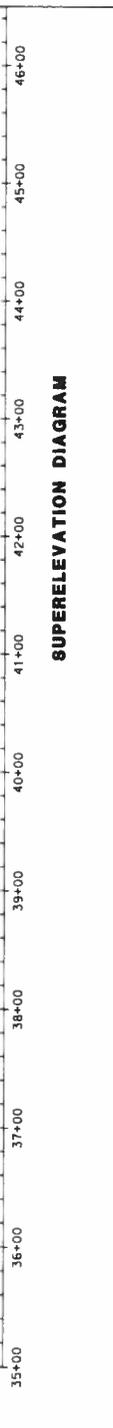
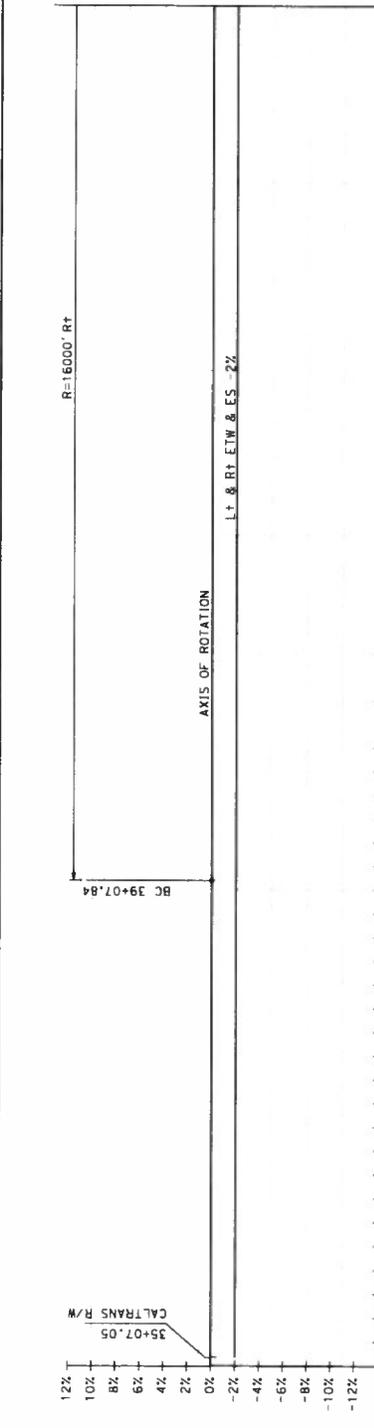
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REGISTERED CIVIL ENGINEER DATE
 CIVIL WORKS ENGINEERS SANBAG
 1170 W. THIRD ST., 2ND FLOOR
 COSTA MESA, CA 92626 SAN BERNARDINO, CA 92410



PROFILE "A" LINE
 PEPPER AVENUE
 SCALE: HORIZ 1"=100'
 VERT 1"=10'

MATCH LINE STA 46+50 - SEE SHEET P-2

200.00' VC
 G1 0.70%
 G2 1.40%
 G3 0.30%
 DS = 30' MPH

200.00' VC
 G1 0.70%
 G2 1.40%
 G3 0.30%
 DS = 68 MPH

EB RAMP 9'S 40+60.67
 WB RAMP 5'S 44+67.46

PVI 41+10.00 Elev 1289.89
 PVI 42+10.00 Elev 1291.29
 PVI 43+60.00 Elev 1293.58
 PVI 44+60.00 Elev 1294.78

BVC 40+10.00 Elev 1289.19
 BVC 43+60.00 Elev 1293.58
 BVC 46+35.92 Elev 1295.31

ELEV 1285.68
 ELEV 1288.80
 ELEV 1291.08
 ELEV 1295.08
 ELEV 1295.31

0.70%
 1.40%
 0.81%
 0.30%

PG
 OG

35+00 36+00 37+00 38+00 39+00 40+00 41+00 42+00 43+00 44+00 45+00 46+00

1270 1280 1290 1300 1310 1320 1330

BC 39+07.84
 CALTRANS R/W 35+07.05

R=16000' Rt

L+ & R RT ETW & ES -2%

AXIS OF ROTATION

SUPERELEVATION DIAGRAM

PROFILE "A" LINE
 PEPPER AVENUE
 SCALE: HORIZ 1"=100'
 VERT 1"=10'

MATCH LINE STA 46+50 - SEE SHEET P-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	USER	DATE	TIME
DESIGNED BY	CHECKED BY			
REVISOR	DATE REVISOR			
REVISOR	DATE REVISOR			

BORDER LAST REVISED 7/2/2010
 USERNAME: MUSER
 DON FILE: REQUEST

RELATIVE BORDER SCALE
 15 IN INCHES

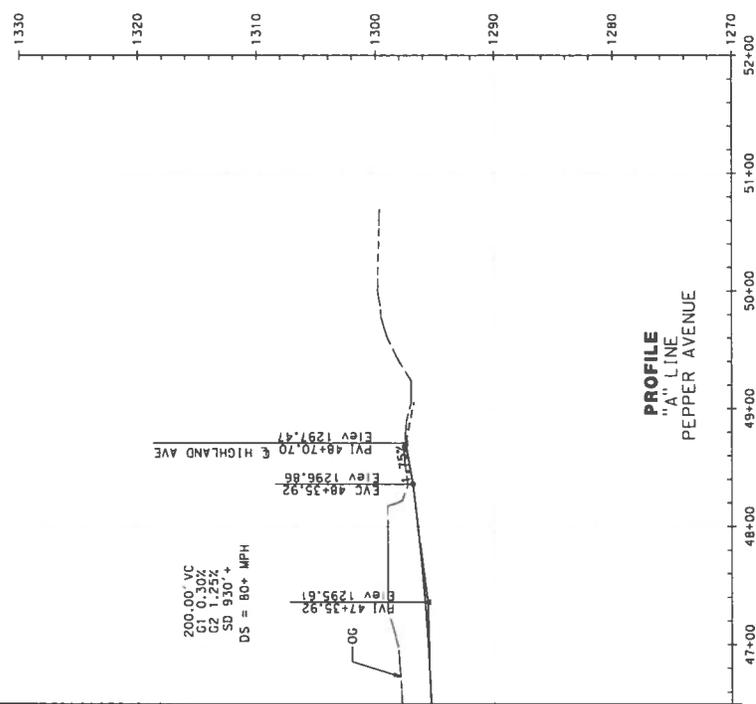
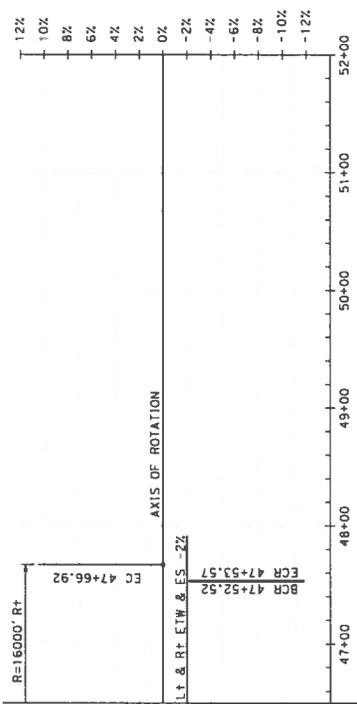
0 1 2 3

EA 44394

P-1

12-20-11
 DATE PLOTTED: 8/1/11
 TIME PLOTTED: 8:11 AM

DIR#	COUNTY	ROUTE	SHEET TOTAL
08	SBD	210	19,3/20,1
REGISTERED CIVIL ENGINEER			DATE
MARIE MADSON			19.3.20.1
No. 38798			
Exp. 3.31.15			
CIVIL			
REGISTRATION BOARD FOR ENGINEERS AND ARCHITECTS, STATE OF CALIFORNIA			
PLANS APPROVAL DATE			
FOR AGENTS SHALL NOT BE RESPONSIBLE FOR			
CONSTRUCTION OF THIS PROJECT			
CIVIL WORKS ENGINEERS			
SMBAC			
11400 ST. 204 FLOOR			
COSTA MESA, CA 92626			
SAN BERNARDINO, CA, 92410			



PROFILE
 SCALE: HORIZ 1"=100'
 VERT 1"=10'

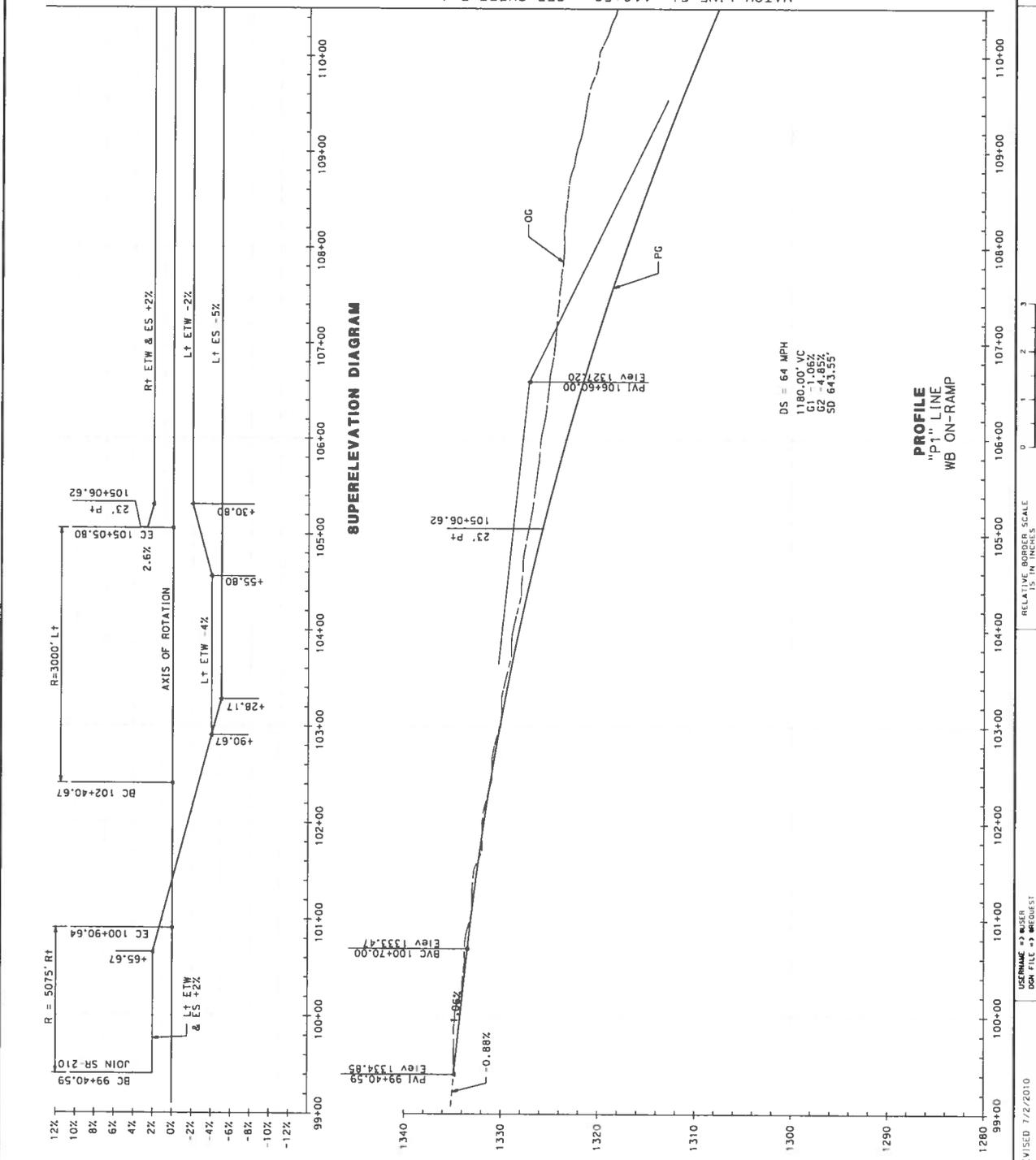
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT NO.	SHEET TOTAL SHEETS
08	SBG	210	19.3/20.1	

REGISTERED CIVIL ENGINEER	DATE

PLANS APPROVAL DATE	REGISTERED PROFESSIONAL ENGINEER
	MARIE MARSH
	No. 38738
	Exp. 12/31/13
	Civil
	State of California

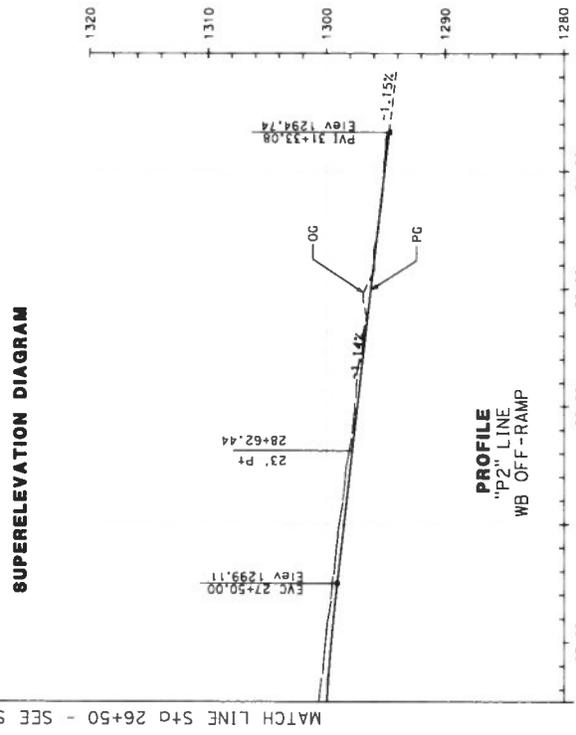
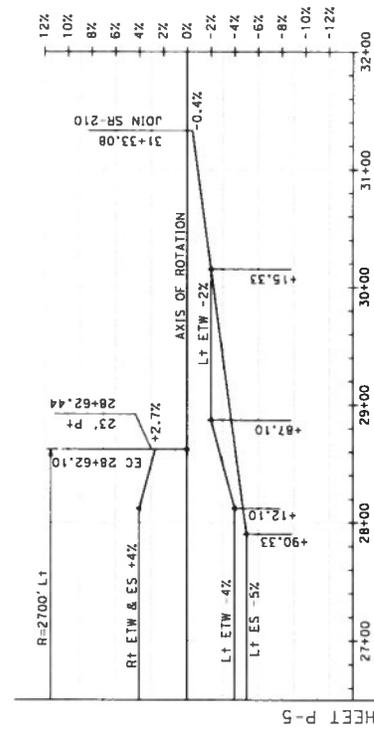
CIVIL WORKS ENGINEERS	SANBAG
3151 AIRWAY AVE., T-1	1170 W. THIRD ST., 2nd FLOOR
COSTA MESA, CA 92626	SAN BERNARDINO, CA, 92410

DATE PLOTTED: 12-20-11
 TIME PLOTTED: 8:41 AM
 P-3
 SCALE: HORIZ 1"=100'
 VERT 1"=10'



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	DATE REVISION
DESIGNED BY	DATE REVISION	DATE REVISION	DATE REVISION
CALCULATED BY	DATE REVISION	DATE REVISION	DATE REVISION
DESIGNED BY	DATE REVISION	DATE REVISION	DATE REVISION
CHECKED BY	DATE REVISION	DATE REVISION	DATE REVISION
DESIGNED BY	DATE REVISION	DATE REVISION	DATE REVISION
CHECKED BY	DATE REVISION	DATE REVISION	DATE REVISION
DESIGNED BY	DATE REVISION	DATE REVISION	DATE REVISION

DIR#	COUNTY	ROUTE	POST MILES	SHEET TOTAL
08	SBD	210	19.3/20.1	INC. SHEETS
REGISTERED CIVIL ENGINEER DATE				
PLANS APPROVAL DATE				
CIVIL WORKS ENGINEERS 3480 G ST., THIRD FLOOR COSTA MESA, CA 92626				



PROFILE
SCALE: HORIZ 1"=100'
VERT 1"=10'

P-6

EA 44394

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	DATE
DESIGNED BY	DATE	REVISOR	DATE
DATE	REVISOR	DATE	REVISOR

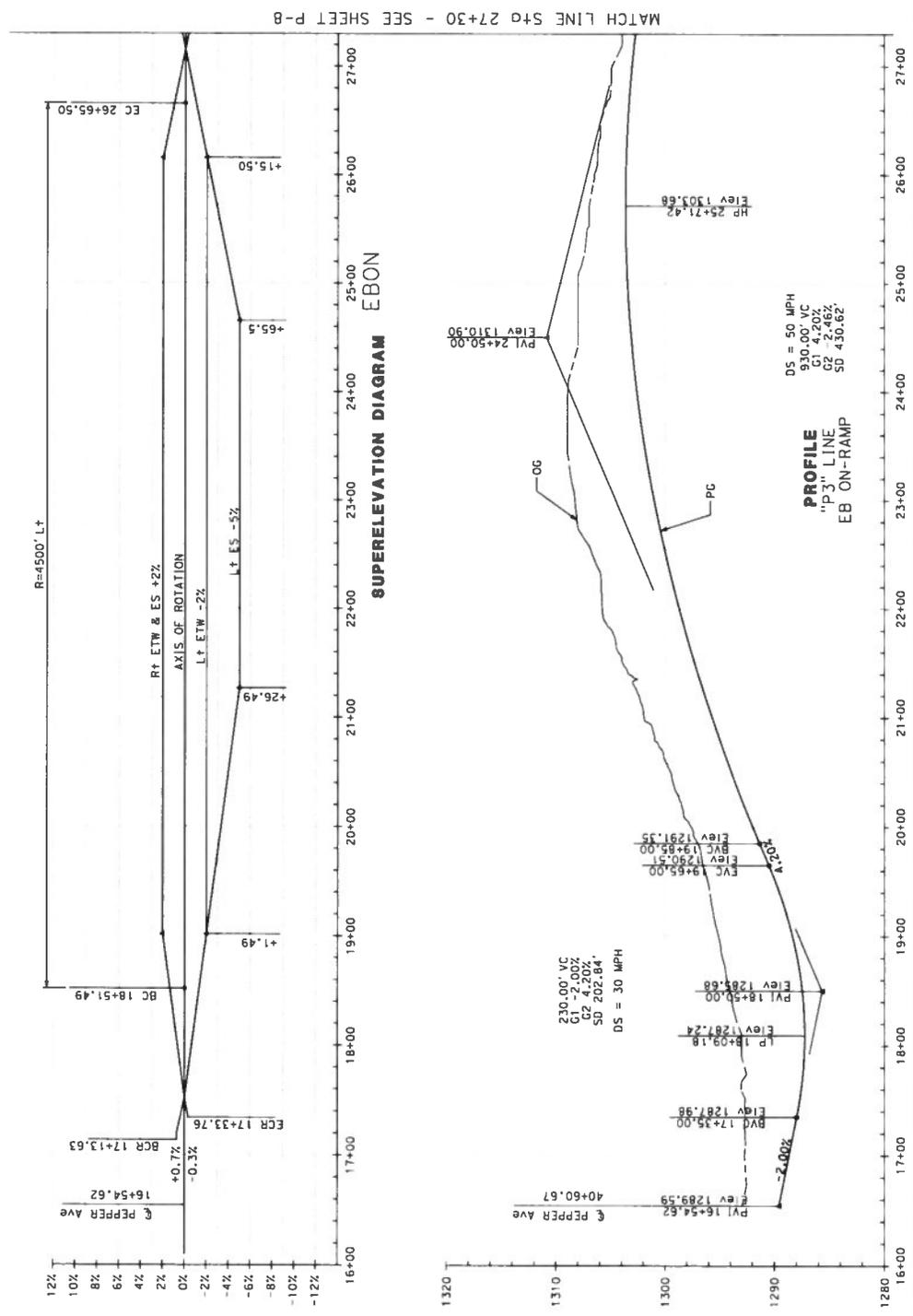
USERNAME: JUSER
JOB FILE: J3.BREQEST

BORDER LAST REVISED 7/2/2010

RELATIVE BORDER SCALE
15 IN INCHES

12-20-11 DATE PLOTTED: 03/11/11

DIST COUNTY ROUTE POST MILES SHEET TOTAL
 08 SBD 210 19.3/20.1 TOTAL PROJECT NO. SHEETS
 REGISTERED CIVIL ENGINEER DATE
 RECEIVED PROFESSIONAL ENGINEER
 JAMIE MARSHALL
 No. 18298
 Exp. 12-31-15
 CIVIL
 STATE OF CALIFORNIA
 THE STATE OF CALIFORNIA OR ITS OFFICERS
 THE ACCOUNT, OR COMPLETENESS OF EXAMINED
 COPIES OF THIS PLAN SHEET.
 CIVIL WORKS ENGINEERS SANBAC
 3151 AIRWAY AVE., 1-1 1170 W. THIRD ST., 2ND FLOOR
 COSTA MESA, CA 92626 SAN BERNARDINO, CA, 92410



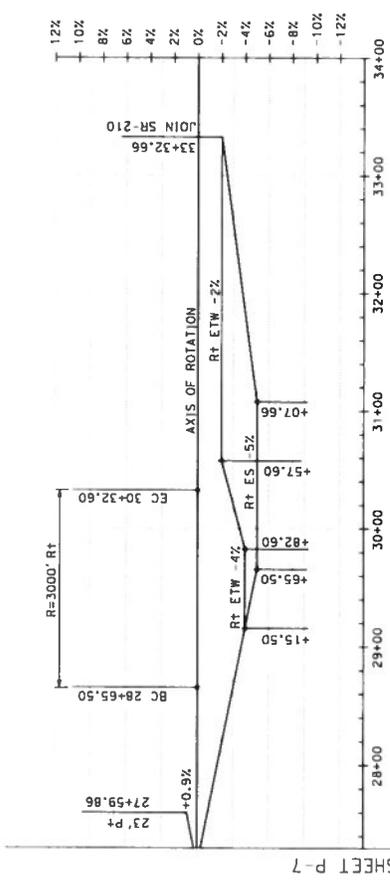
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	DATE REVISION
USER	DESIGNED BY	REVISION	DATE
TIME	DATE	BY	REVISION

DIST COUNTY ROUTE POST MILE PROJECT SHEET TOTAL SHEETS
 08 SBD 210 19.3/20.1

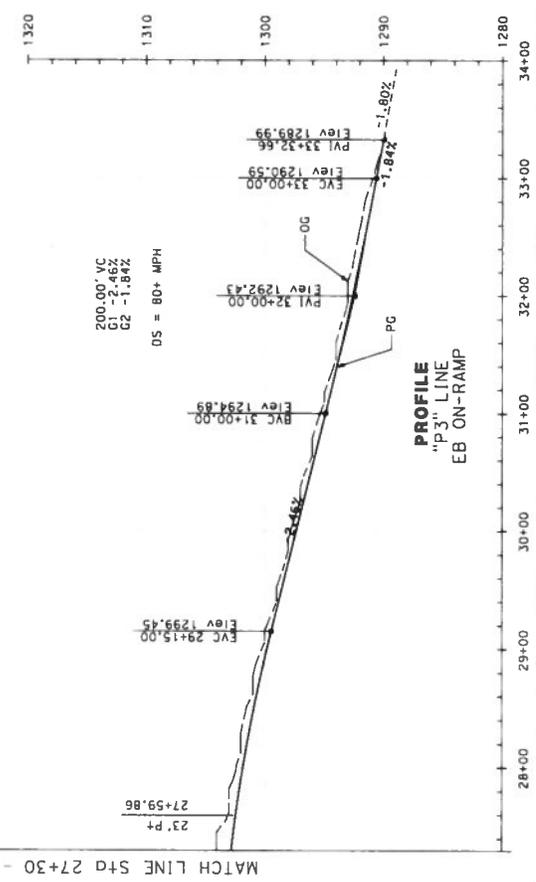
REGISTERED CIVIL ENGINEER DATE REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF CALIFORNIA
 MARIE MARSHON No. 38798 Exp. 3-31-15

PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS THE ACCEPTOR OR COMPLETNESS OF SCANNED COPIES OF THIS PLAN SHEET.

CIVIL WORKS ENGINEERS SANBAG 1170 N. THIRD ST., 2ND FLOOR
 3151 AIRWAY AVE., #1 SAN BERNARDINO, CA, 92410



SUPERELEVATION DIAGRAM



PROFILE
 "P3" LINE
 EB ON-RAMP

PROFILE
 SCALE: HORIZ 1"=100'
 VERT 1"=10'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	DESIGNED BY	DATE
USER	CHECKED BY	REVISOR	DATE
DATE	DATE	DATE	DATE

BORDER LAST REVISED 7/2/2010
 USER: M3 M3R
 DON FILE M3 M3R

12-20-11 DATE PLOTTED M3 M3R

DIST	COUNTY	ROUTE	POST MILES	TOTAL SHEETS	TOTAL SHEETS
08	SBD	210	19.37/20.1		

REGISTERED CIVIL ENGINEER	DATE
MARC MANSION	19.37.20.1

PROFESSIONAL ENGINEER	NO.	EXPIRES
CIVIL	33115	

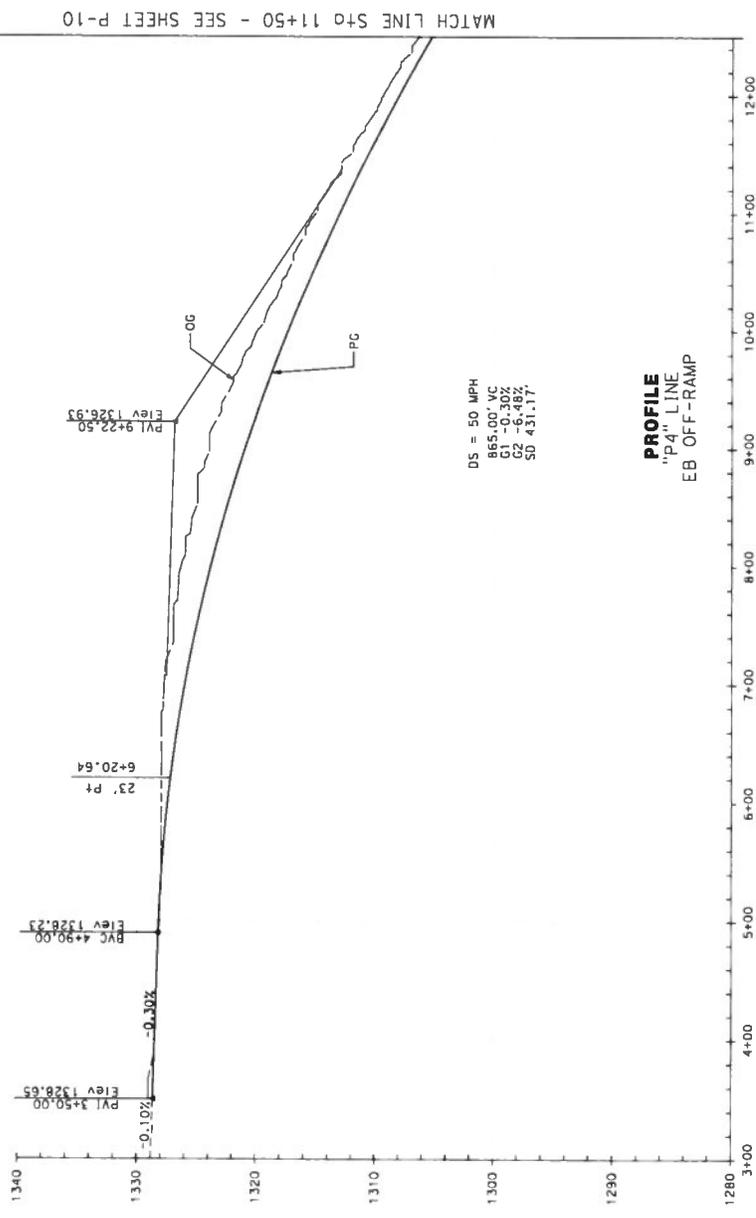
PLANS APPROVAL DATE	DATE

CIVIL WORKS ENGINEERS	SANBAC
3151 AIRWAY AVE., 1-1	1170 W. THIRD ST., 2ND FLOOR
COSTA MESA, CA 92626	SAN BERNARDINO, CA, 92410

THE STATE OF CALIFORNIA OR ITS OFFICERS
 AND AGENCIES ACCEPT FOR RECORD AND
 THE ACCOUNT OF COMPLETENESS OF SAID
 COPIES OF THIS PLAN SHEET.

DATE PLOTTED => 8/1/10
 TIME PLOTTED => 8:11 AM

12-20-11



MATCH LINE STA 11+50 - SEE SHEET P-10

DS = 50 MPH
 865.00' VC
 G1 = -0.30%
 G2 = -6.48%
 SO 431.17'

PROFILE
 "P4" LINE
 EB OFF-RAMP

SCALE: HORIZ 1"=100'
 VERT 1"=10'

P-9

EA 44394

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	DATE
USER	DESIGNED BY	REVISOR	DATE
REVISION	BY	DATE	DESCRIPTION

REQUEST
 BORDER LAST REVISED 7/2/2010
 USERNAME => USER
 DON FILE => REQUEST

RELATIVE BORDER SCALE
 IS IN INCHES

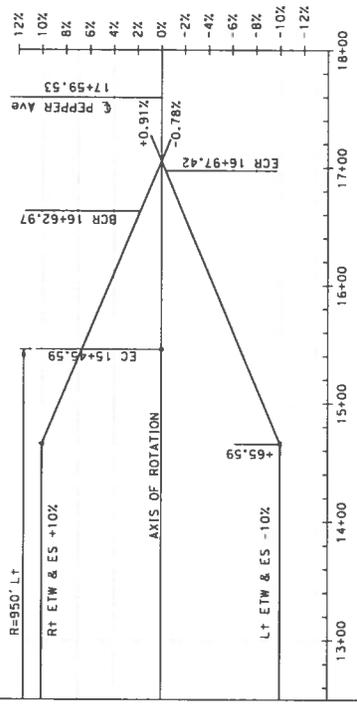
CU

DIR#	COUNTY	ROUTE	SHEET NO.	TOTAL SHEETS
08	SBG	210	19,3/20-1	

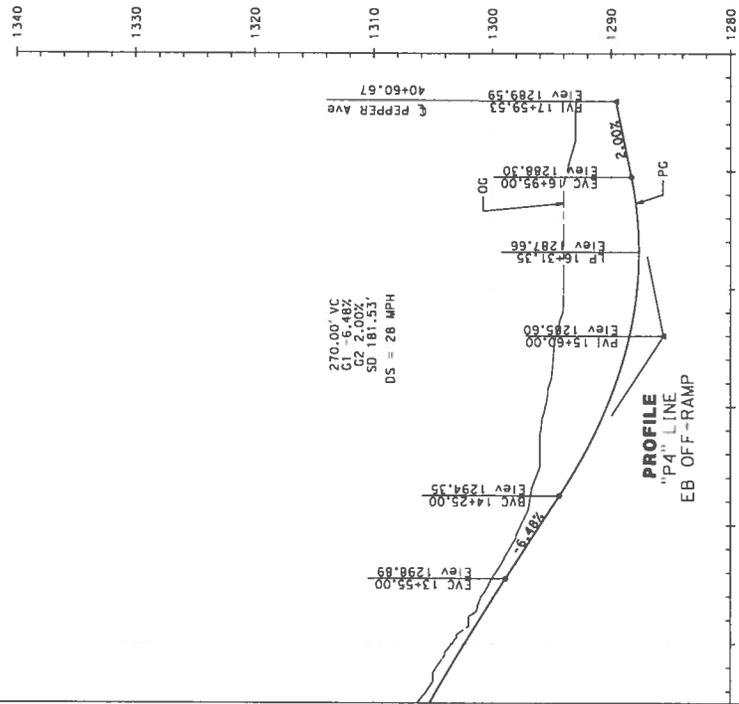
REGISTERED CIVIL ENGINEER	DATE

PLANS APPROVAL DATE	NO.
	38798

CIVIL WORKS ENGINEERS	SANBAG
170 THIRD ST., 2ND FLOOR	
COSTA MESA, CA 92626	SAN BERNARDINO, CA 92410



SUPERELEVATION DIAGRAM



PROFILE
"P4" LINE
EB OFF-RAMP

PROFILE
SCALE: HORIZ 1"=100'
VERT 1"=10'

P-10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	DATE REVISION
USER	DESIGNED BY	REVISION BY	
REQUEST			

BORDER LAST REVISED 7/2/2010
 USERNAME: USER
 DOB FILE: REQUEST

EA 44394

12-20-11 TIME PLOTTED: 0:04:16

Attachment C - Cost Estimate

District-County-Route 08-SBd-210
 KP 19 3-20.1
 EA 44,394

	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
<u>Section 4 Specialty Items</u>					
RE Office	12	Month	\$ 5,000	\$ 60,000	
Retaining Walls	8,000	SQFT	\$ 100	\$ 800,000	
Structure Excavation	2,100	CUYD	\$ 50	\$ 105,000	
Structure Backfill	1,500	CUYD	\$ 45	\$ 67,500	
Hazardous Waste (ADL)	1	LS	\$ 5,000	\$ 5,000	
MBGR	3,100	LF	\$ 25	\$ 77,500	
Chain Link Fence	1,300	LF	\$ 20	\$ 26,000	
HMA Dike	6,000	LF	\$ 3	\$ 18,000	
Design Pollution Prevention BMPs	1	LS	\$ 19,000	\$ 19,000	
Treatment BMPs	1	LS	\$ 247,000	\$ 247,000	
Construction BMPs	1	LS	\$ 279,400	\$ 279,400	
Biological Monitoring	1	LS	\$ 389,000	\$ 389,000	

Subtotal Specialty Items \$ 2,093,400

<u>Section 5 Traffic Items</u>					
Traffic Signal at Highland	1	LS	\$ 200,000	\$ 250,000	
Traffic Signal at Ramps	2	LS	\$ 200,000	\$ 500,000	
Signage (Remove, Install)	1	LS	\$ 40,000	\$ 40,000	
Lighting	1	LS	\$ 200,000	\$ 200,000	
Pavement Delineation Items	1	LS	\$ 50,000	\$ 50,000	
Traffic Control Systems	1	LS	\$ 300,000	\$ 300,000	
Traffic Management Plan	1	LS	\$ 26,400	\$ 26,400	
Traffic Handling	1	LS	\$ 25,000	\$ 75,000	
Ramp Metering	2	LS	\$ 75,000	\$ 150,000	
Freeway Sign Structure		EA			
Overhead Sign Structure	4	EA	\$ 150,000	\$ 600,000	
Modify Overhead Signs	6	EA	\$ 20,000	\$ 120,000	
Modify Existing TMS	1	LS	\$ 150,000	\$ 250,000	

Subtotal Traffic Items \$ 2,561,400

District-County-Route 08-SBd-210
 KP 19.3-20.1
 EA 44394

	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
<u>Section 6 Planting and Irrigation</u>					
Plant Establishment	<u>24</u>	<u>Month</u>	<u>\$ 1,000</u>	<u>\$ 24,000</u>	
Highway Planting	<u>13</u>	<u>Acre</u>	<u>\$ 40,000</u>	<u>\$ 520,000</u>	
Irrigation Modifications	<u>1</u>	<u>LS</u>	<u>\$ 75,000</u>	<u>\$ 75,000</u>	

Subtotal Specialty Items \$ 619,000

Section 7 Roadside Management and Safety Section

Vegetation Control Treatment	<u>1</u>	<u>LS</u>	<u>\$ 5,000</u>	<u>\$ 5,000</u>	
Gore Area Pavement	<u>1</u>	<u>LS</u>	<u>\$ 10,000</u>	<u>\$ 10,000</u>	
MBGR Vegetation Control	<u>50</u>	<u>SQYD</u>	<u>\$ 100</u>	<u>\$ 5,000</u>	
Erosion Control	<u>1</u>	<u>LS</u>	<u>\$ 30,000</u>	<u>\$ 30,000</u>	
Slope Protection	<u></u>	<u></u>	<u></u>	<u></u>	

Subtotal Traffic Items \$ 50,000

TOTAL SECTIONS 1 Thru 7 \$ 10,451,700

District-County-Route 08-SBd-210
 KP 19 3-20.1
 EA 44394

Section 8 Minor Items

\$ 10,451,700
 (Subtotal Sections 1 Thru 7)

X 8%

= \$ 836,100

TOTAL MINOR ITEMS \$ 836,100

Section 9 Roadway Mobilization

\$ 11,287,800
 (Subtotal Sections 1 Thru 8)

X 10%

= \$ 1,128,800

TOTAL ROADWAY MOBILIZATION \$ 1,128,800

Section 10 Roadway Additions

Supplemental Work

\$ 11,287,800
 (Subtotal Sections 1 Thru 8)

X 8%

= \$ 903,000

Contingencies

\$ 11,287,800
 (Subtotal Sections 1 Thru 8)

X 20%

= \$ 2,257,600

TOTAL ROADWAY ADDITIONS \$ 3,160,600

TOTAL ROADWAY ITEMS 1. \$ 15,577,200

(Subtotal Sections 1 Thru 8)

ROUNDED TOTAL 1. \$ 15,577,000

Estimate Prepared By: Francois Zugmeyer

Phone: 714-966-9060

Date: 12/04/13

Estimate Checked By: Marie Marston

Phone: 714-966-9060

Date: 12/04/13

II. STRUCTURE ITEMS

	STRUCTURE			
Bridge Name	_____	_____	_____	
Structure Type	_____	_____	_____	
Width (out to out) - (ft)	_____	_____	_____	
Span Lengths - (ft)	_____	_____	_____	
Total Area - (sqft)	-	-	-	_____
Footing Type				
Cost \$/sqft (10% mobilizati and 20% Contingency)	-	-	-	-
Total Cost for Structure	_____	_____	_____	
SUBTOTAL STRUCTURE ITEMS				_____
Railroad Related Costs:	_____	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____
SUBTOTAL RAILROAD ITEMS				_____
TOTAL STRUCTURES ITEMS				_____

COMMENTS:

Estimate Prepared By:

Phone:

Date:

District-County-Route 08-SBd-210
 KP 19.3-20.1
 EA 44394

III. RIGHT-OF-WAY ITEMS

	ESCALATED VALUE
A. Acquisition, including Excess Lands, Pepper TCE, Damages and Goodwill	<u>\$ 832,516</u>
Land for Environmental Mitigation	<u>\$ 3,900,000</u>
B. Utility Relocation	<u>\$ 602,000</u>
C. Relocation Assistance	<u> </u>
D. Clearance / Demolition	<u> </u>
E. Title, Permits and Escrow Fees	<u>\$ 52,000</u>
F. R/W Support	<u>\$ 120,000</u>

TOTAL RIGHT-OF-WAY ITEMS **\$ 5,506,516**

ROUNDED TOTAL **\$5,507,000**

Anticipated Date of Right-of-Way Acquisition
 (Date to which Values are Escalated) September 2015

F. Construction Contract Work

Brief Description of Work:

Right-of-Way Branch Cost Estimate for Work*

This dollar amount is to be included in the Roadway and/or
 Structures Items of Work, as appropriate. Do Not include in
 Right-of-Way Items.

COMMENTS:

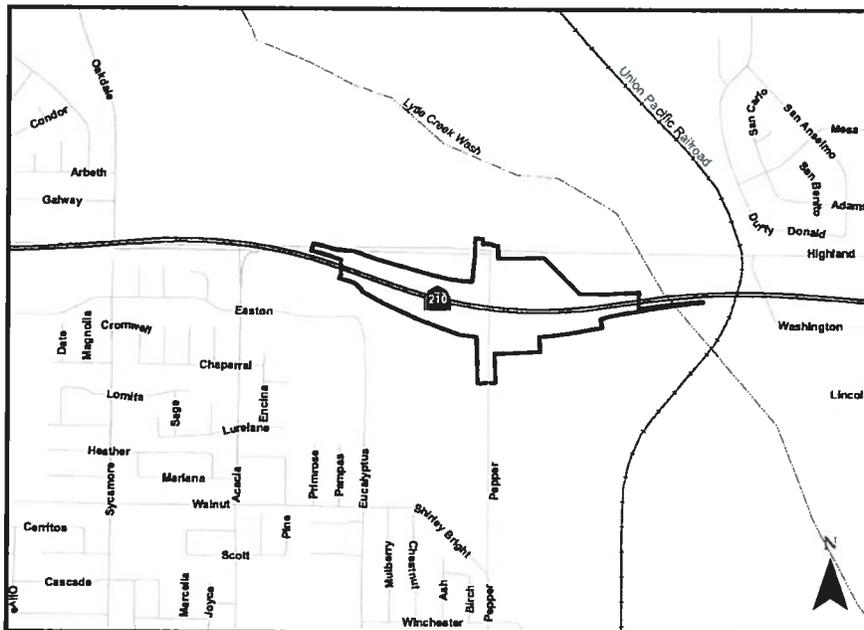
Estimate Prepared By Don McDougald Phone: (949) 474-1401 Date: 12/10/13

*Attachment D - Cover Page and
Signed Title Sheet of Initial Study with
Proposed Negative Declaration/
Environmental Assessment (from Draft
Environmental Document)*

State Route 210/Pepper Avenue New Interchange Project

City of Rialto, San Bernardino County, California
District 08-SBD-210 (PM 19.3/20.1)
PN 0800020180
EA 08-443940

Initial Study [with Proposed Negative Declaration]/Environmental Assessment



Prepared by the
State of California Department of Transportation

The environmental review, consultation, and any other action required in accordance with applicable Federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 USC 327.



May 2014

Construct a new diamond interchange along State Route 210 at Pepper Avenue (postmile 19.3 to postmile 20.1) in the City of Rialto, San Bernardino County, California.

**INITIAL STUDY [with Proposed Negative Declaration]/
Environmental Assessment**

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

THE STATE OF CALIFORNIA
Department of Transportation

5/15/14
Date of Approval



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

The following persons may be contacted for information concerning this document:

California Department of Transportation
James Shankel, Senior Environmental Planner
464 W. 4th St, 6th Floor, MS-827
San Bernardino, CA 92401-1400
(909) 383-6379

San Bernardino Associated Governments
Tim Watkins, Public Information
1170 West 3rd Street
San Bernardino, CA 92410
(909) 884-8276

Attachment E – Traffic Impact Analysis Report

Marie Marston

From: Bill Delo [bdelo@IBIGroup.com]
Sent: Monday, August 06, 2012 3:26 PM
To: Marie Marston
Subject: FW: EA 44394 SR-210/Pepper Ave Interchange- Revised Traffic Impact Analysis

Marie

Attached is the approval email we received from Caltrans for the TIA.

Bill

-----Original Message-----

From: Meardey Tim [mailto:meardey_tim@dot.ca.gov]
Sent: Tuesday, April 24, 2012 2:56 PM
To: pmelocoton@sanbag.ca.gov
Cc: Bill Delo; Theresa Sasis; Jon Bumps; Charles Moore; Maria Aranguiz; Jane Pham; tescobedo@sanbag.ca.gov
Subject: EA 44394 SR-210/Pepper Ave Interchange- Revised Traffic Impact Analysis

Paul,

Caltrans has completed its review of the revised Traffic Impact Analysis (TIA) that was submitted on April 13, 2012. We have no further comments on the report. Please consider this email as our approval of the TIA and submit to us 9 signed copies.

Thanks.

Meardey Tim
Project Manager
(909) 383-6480 (Office)

Note: The complete Traffic Impact Analysis Report is under separate cover, the Executive Summary has been attached to this report.

Marie Marston

From: Tim, Meardey S@DOT <meardey.tim@dot.ca.gov>
Sent: Thursday, September 19, 2013 3:24 PM
To: Melocoton, Paul@SANBAG
Cc: Bill Delo; Marie Marston; Melocoton, Paul@SANBAG; Thornton, Gaylon C@DOT; Christina de Freitas
Subject: RE: SR-210 Pepper Ave IC (EA 44394): submittal of supplement to Approved TIA

With this email from Rusty, Caltrans have no further comments on the Supplemental Traffic Report. Please considered it approved. Please prepare the final copy with appropriate signatures and provide us with 7 copies.

Thanks

From: Thornton, Gaylon C@DOT
Sent: Thursday, September 19, 2013 3:09 PM
To: Christina de Freitas
Cc: Bill Delo; Marie Marston; Melocoton, Paul@SANBAG; Tim, Meardey S@DOT
Subject: RE: SR-210 Pepper Ave IC (EA 44394): submittal of supplement to Approved TIA

Christina,

Thank you for sending the TIA for review. The documents looks good, and Forecasting has no additional comments.

Best,

G.C. "Rusty" Thornton
District 8, Division of Planning
Office of Forecasting
909-388-7016
rusty.thornton@dot.ca.gov
www.dot.ca.gov

From: Christina de Freitas [<mailto:christina.defreitas@IBIGroup.com>]
Sent: Tuesday, September 17, 2013 12:09 PM
To: Thornton, Gaylon C@DOT
Cc: Bill Delo; Marie Marston; Melocoton, Paul@SANBAG; Tim, Meardey S@DOT
Subject: FW: SR-210 Pepper Ave IC (EA 44394): submittal of supplement to Approved TIA

Rusty,

Please find attached for your review the revised document submitted to Caltrans on August 22nd. I believe that both of your comments related to the report functioning as a standalone document were incorporated and this is reflected not only in the text, but also in the appendices. Please let us know if you have further comments.

Thank you,

Christina de Freitas

IBI Group

18401 Von Karman Avenue, Suite 110
Irvine CA 92612 United States

tel 949 833 5588 ext 186

fax 949 833 5511

email christina.defreitas@IBIGroup.com

web <http://www.ibigroup.com>

NOTE: This e-mail message and attachments may contain privileged and confidential information. If you have received this message in error, please immediately notify the sender and delete this e-mail message.

From: Bill Delo

Sent: Thursday, August 22, 2013 11:34 AM

To: Meardey Tim (meardey_tim@dot.ca.gov)

Cc: Paul Melocoton (pmelocoton@sanbag.ca.gov); Christina de Freitas; Marie Marston (mmarston@civilworksenineers.com)

Subject: SR-210 Pepper Ave IC (EA 44394): submittal of supplement to Approved TIA

Meardey

Attached, please find the revised supplement to the TIA for the Pepper Ave/SR-210 Interchange project. Hard copies of this report are being produced by SANBAG and will be delivered to you shortly. Please don't hesitate to contact me if you have questions or if you need anything else related to this submittal.

Thanks,

Bill Delo AICP

Associate

IBI Group

18401 Von Karman Avenue, Suite 110
Irvine CA 92612 United States

tel 949 833 5588 ext 119

fax 949 833 5511

email bdelo@IBIGroup.com

web www.ibigroup.com

NOTE: This e-mail message and attachments may contain privileged and confidential information. If you have received this message in error, please immediately notify the sender and delete this e-mail message.

San Bernardino Associated Governments (SANBAG)

**STATE ROUTE 210/PEPPER AVENUE INTERCHANGE
– TRAFFIC IMPACT ANALYSIS**

FINAL REPORT

MARCH 28, 2012



STATE ROUTE 210/PEPPER AVENUE INTERCHANGE – TRAFFIC IMPACT ANALYSIS

1. EXECUTIVE SUMMARY

This report documents the traffic analysis for the State Route 210 and Pepper Avenue interchange (SR-210/Pepper) project. The purpose of the traffic impact analysis is to identify and analyze the traffic conditions and traffic impacts associated with the implementation of a new interchange on SR-210 at Pepper Avenue. The proposed interchange is located approximately one mile east of the existing SR-210/Riverside Avenue interchange and one mile west of the existing SR-210/State Street/University Parkway interchange.

The results of this technical analysis conclude that the proposed diamond interchange at Pepper Avenue with signalized ramp intersections will operate at an acceptable level of service in the Project Opening Year (2016) and through the Horizon Year (2036) without significant impacts to the freeway or adjacent ramp terminal and local street intersections. Based on the forecast peak hour turning movement volumes through the interchange, no issues related to traffic progression on Pepper Avenue or Highland Avenue were identified through the Horizon Year. No significant impacts are forecast to be generated by the project with regard to queuing or level of service for study intersections, freeway ramps, freeway mainline, or freeway weaving segments.

Intersection Level of Service Summary

All intersections are forecast to perform at an acceptable level of service (LOS C or better) with the project through the Horizon Year (2036). It is assumed that the intersections of Pepper Avenue and Highland Avenue (#3), Pepper Avenue and the SR-210 westbound ramps (#4) and Pepper Avenue and the SR-210 eastbound ramps (#5) would be signalized as part of the project. No significant impacts are generated by the project as proposed.

Queuing Analysis

The queuing analysis includes all study area facilities with limited storage capacity, such as freeway off-ramps, turn pockets, and approaches between closely-spaced intersections on Pepper Avenue. Synchro software was used to estimate the 50th percentile and 95th percentile queue lengths for each of these facilities during the AM and PM peak hours under project conditions. All study facilities have sufficient capacity with the exception of Intersection #4. The northbound-left turn stacked single lane facility as shown in the Pepper Avenue Initial Study and the previously prepared Draft GAD (2008), does not provide sufficient capacity to meet future demand. It is recommended that additional storage capacity be provided for this movement.

The eastbound and westbound SR-210 off-ramps to Pepper Avenue should provide, respectively, at least 300 feet and 150 feet of storage capacity to serve forecast traffic volumes. The actual ramp lengths should be designed to conform to national, state and local standards and should be at least 300 feet long.

Freeway Mainline and Ramp Analysis

All freeway mainline segments and access ramps within the study area are expected to perform at an acceptable level of service (LOS C or better) with the project through the Horizon Year (2036), and no significant impacts are generated by the proposed project. It is anticipated that HOV access to and from Pepper Avenue interchange will be provided through the existing ingress and egress areas for Riverside Avenue and State Street.

STATE ROUTE 210/PEPPER AVENUE INTERCHANGE – TRAFFIC IMPACT ANALYSIS

Weaving Analysis

All freeway weaving segments analyzed perform at Level of Service C or better with the project through the Horizon Year (2036), and no significant impacts were observed from the proposed project.

Signal Warrant Analysis

A signal warrant analysis was conducted based on the Manual on Uniform Traffic Control Devices (MUTCD) Chapter 4C. A signal is warranted at the intersections of Pepper Avenue and Highland Avenue, SR-210 WB Ramp and Pepper Avenue, and SR-210 EB Ramp and Pepper Avenue in the Horizon Year (2036) condition.

Ramp Metering

Project ramps will be metered per Caltrans Deputy Directive DD-35-R1. Meter calculations will be done in concert with traffic signal design. Ramp metering will be implemented at a future date when system is implemented for the SR-210. The provisions shall include metering for one single occupancy vehicle lane and for one high occupancy vehicle lane on each ramp.

Diamond Interchange Feasibility

Based on the proposed project assumptions and analysis results above, a diamond interchange is feasible at Pepper Avenue.

San Bernardino Associated Governments (SANBAG)

**STATE ROUTE 210/PEPPER AVENUE INTERCHANGE
– SUPPLEMENTAL TRAFFIC IMPACT ANALYSIS**

FINAL

AUGUST 20, 2013



STATE ROUTE 210/PEPPER AVENUE INTERCHANGE – SUPPLEMENTAL TRAFFIC IMPACT ANALYSIS

1. EXECUTIVE SUMMARY

This memorandum documents the results of a supplement to the Approved Traffic Impact Study (dated March 28, 2012) for the State Route 210 and Pepper Avenue interchange (SR-210/Pepper) project. The purpose of the supplemental traffic impact analysis is to incorporate updated Year 2011 mainline traffic volumes for SR-210. This supplement then presents updated results for the analysis of traffic conditions and traffic impacts associated with the implementation of a new interchange on SR-210 at Pepper Avenue. The proposed interchange is located approximately one mile east of the existing SR-210/Riverside Avenue interchange and one mile west of the existing SR-210/State Street/University Parkway interchange. This document has been revised and formatted to function as a stand-alone document.

The results of this technical analysis conclude that the proposed diamond interchange at Pepper Avenue with signalized ramp intersections will operate at an acceptable level of service in the Project Opening Year (2016) and through the Horizon Year (2036) without significant impacts to the freeway or adjacent ramp terminal and local street intersections. Based on the forecast peak hour turning movement volumes through the interchange, no issues related to traffic progression on Pepper Avenue or Highland Avenue were identified through the Horizon Year. No significant impacts are forecast to be generated by the project with regard to queuing or level of service for study intersections, freeway ramps, freeway mainline, or freeway weaving segments.

Intersection Level of Service Summary

All intersections are forecast to perform at an acceptable level of service (LOS C or better) with the project through the Horizon Year (2036). It is assumed that the intersections of Pepper Avenue and Highland Avenue (#3), Pepper Avenue and the SR-210 westbound ramps (#4) and Pepper Avenue and the SR-210 eastbound ramps (#5) would be signalized as part of the project. No significant impacts are generated by the project as proposed.

Queuing Analysis

The queuing analysis includes all study area facilities with limited storage capacity, such as freeway off-ramps, turn pockets, and approaches between closely-spaced intersections on Pepper Avenue. Synchro software was used to estimate the 50th percentile and 95th percentile queue lengths for each of these facilities during the AM and PM peak hours under project conditions.

The eastbound and westbound SR-210 off-ramps to Pepper Avenue should provide, respectively, at least 300 feet and 150 feet of storage capacity to serve forecast traffic volumes. The actual ramp lengths should be designed to conform to national, state and local standards and should be at least 300 feet long.

Freeway Mainline Analysis

All freeway mainline segments within the study area are expected to perform at an acceptable level of service with the project through the Horizon Year (2036), and no significant impacts are generated by the proposed project. It is anticipated that HOV access to and from Pepper Avenue interchange will be provided through the existing ingress and egress areas for Riverside Avenue and State Street.

Weaving/Merge-Diverge Analysis

All freeway merge-diverge segments within the study area are expected to perform at an acceptable level of service with the project through the Horizon Year (2036). A weaving analysis was performed

STATE ROUTE 210/PEPPER AVENUE INTERCHANGE – SUPPLEMENTAL TRAFFIC IMPACT ANALYSIS

for the westbound segment between Pepper Avenue and Riverside Avenue, as new auxiliary lane is proposed for this location. This weave segment is expected to operate at acceptable level of service through the project Horizon Year (2036).

Signal Warrant Analysis

Signal warrant analysis was conducted based on the Manual on Uniform Traffic Control Devices (MUTCD) Chapter 4C. A signal is warranted at the intersections of Pepper Avenue and Highland Avenue, SR-210 WB Ramp and Pepper Avenue, and SR-210 EB Ramp and Pepper Avenue in the Horizon Year (2036) condition.

Ramp Metering

Project ramps will be metered per Caltrans Deputy Directive DD-35-R1. Meter calculations will be done in concert with traffic signal design. Ramp metering will be implemented at a future date when system is implemented for the SR-210. The provisions shall include metering for one single occupancy vehicle lane and for one high occupancy vehicle lane on each ramp.

Diamond Interchange Feasibility

Based on the proposed project assumptions and analysis results above, a diamond interchange is feasible at Pepper Avenue.

*Attachment F – Transportation Management
Plan Data Sheet*

TRANSPORTATION MANAGEMENT PLAN DATA SHEET (Preliminary TMP Elements and Costs)

Co/Rte/PM San Bernardino/210/19.3-20.1 EA 44394 Alternative No. 1

Project Limit SR-210 at the Pepper Drive OC

Project Description Construction of New Interchange with Pepper Drive
City of Rialto

1) Public Information

- | | | |
|-------------------------------------|---|----------|
| <input type="checkbox"/> | a. Brochures and Mailers | \$ |
| <input checked="" type="checkbox"/> | b. Press Release | |
| <input type="checkbox"/> | c. Paid Advertising | \$ |
| <input type="checkbox"/> | d. Public Information Center/Kiosk | \$ |
| <input type="checkbox"/> | e. Public Meeting/Speakers Bureau | |
| <input type="checkbox"/> | f. Telephone Hotline | |
| <input checked="" type="checkbox"/> | g. Internet | |
| <input checked="" type="checkbox"/> | h. Others <u>Communication with Selected Stakeholders</u> | \$ 5,000 |

2) Motorists Information Strategies

- | | | |
|-------------------------------------|--|-------------|
| <input checked="" type="checkbox"/> | a. Changeable Message Signs (Fixed) | \$ Existing |
| <input checked="" type="checkbox"/> | b. Changeable Message Signs (Portable) | \$ 9,000 |
| <input checked="" type="checkbox"/> | c. Ground Mounted Signs | \$ 1,000 |
| <input type="checkbox"/> | d. Highway Advisory Radio | \$ |
| <input type="checkbox"/> | e. Caltrans Highway Information Network (CHIN) | |
| <input type="checkbox"/> | f. Others _____ | \$ |

3) Incident Management

- | | | |
|-------------------------------------|--|-------------|
| <input checked="" type="checkbox"/> | a. Construction Zone Enhanced Enforcement Program (COZEEP) | \$ 11,400 |
| <input type="checkbox"/> | b. Freeway Service Patrol | \$ |
| <input checked="" type="checkbox"/> | c. Traffic Management Team | |
| <input type="checkbox"/> | d. Helicopter Surveillance | \$ |
| <input checked="" type="checkbox"/> | e. Traffic Surveillance Stations (Loop Detector and CCTV) | \$ Existing |
| <input type="checkbox"/> | f. Others _____ | \$ |

4) Construction Strategies

- a. Lane Closure Chart
- b. Reversible Lanes
- c. Total Freeway Mainline Closure
- d. Extended Weekend Closure
- e. Contra Flow
- f. Truck Traffic Restrictions \$ _____
- g. Reduced Speed Zone \$ _____
- h. Connector and Ramp Closures
- i. Incentive and Disincentive \$ _____
- j. Moveable Barrier \$ _____
- k. 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/Ramps \$ _____
- b. Street Improvement (widening, traffic signal... etc) \$ _____
- c. Traffic Control Officers \$ _____
- d. Parking Restrictions
- e. Others _____ \$ _____

7) Other Strategies

- a. Application of New Technology \$ _____
- e. Others - Construction Contingency Plans \$ _____

TOTAL ESTIMATED COST OF TMP ELEMENTS = \$ 26,400

Attachment G – Right of Way Data Sheet

RIGHT OF WAY DATA SHEET FOR LOCAL PUBLIC AGENCIES

(Form #)

EXHIBIT

17-EX-21 (NEW 12/2007)

Page 1 of 5

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

Date: March 25, 2013

Attention: District Branch Chief
R/W Local Programs

Co. SBD Rtc. SR-210Expense Authorization #08-44394Project ID: 0800020180Subject: **RIGHT OF WAY DATA SHEET - LOCAL PUBLIC AGENCIES**

Project Description:

Right of way necessary for the subject project will be the responsibility of Caltrans & SANBAG.The information in this data sheet was developed by Corridor Analysis and VA Consulting, Inc.I. Right of Way Engineering

Will Right of Way Engineering be required for this project?

- No
- Yes X

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

II. Engineering Surveys

1. Is any surveying or photogrammetric mapping required?

No Yes X (Complete the following.)2. Datum RequirementsYes X Project will adhere to the following criteria:

- Horizontal - datum policy is NAD 83, CA-HIPGN, EPOCH 1991.35 and English system of units and measures.
- Vertical - datum policy is NAVD 88.
- Units - metric is not required.

No Provide an explanation on additional page.

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

Yes No X Provide explanation on additional page.*No new monumentation is required for this project.*

III. Parcel Information (Land and Improvements)

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

No Yes (Complete the following.)

	Part Take	Full Take	Estimate \$
A. Number of Vacant Land Parcels	<u>3¹</u>	<u>0</u>	\$ <u>780,091.</u>
B. Number of Single Family Residential Units	<u>0</u>	<u>0</u>	\$ <u>0</u>
C. Number of Multifamily Residential Units	<u>0</u>	<u>0</u>	\$ <u>0</u>
D. Number of Commercial/Industrial Parcels	<u>0</u>	<u>0</u>	\$ <u>0</u>
E. Number of Farm/Agricultural Parcels	<u>0</u>	<u>0</u>	\$ <u>0</u>
F. Permanent and/or Temporary Easements	<u>4</u>	<u>0</u>	\$ <u>52,425.</u>
G. Other Parcels (define in "Remarks" section)	<u>0</u>	<u>0</u>	\$ <u>0</u>
Totals	<u>7</u>	<u>0</u>	\$ <u>832,516.</u>

¹This does not include the two Caltrans parcels.

Provide a general description of the right of way and excess lands required (zoning, use, improvements, critical, or sensitive parcels, etc.). Zoning includes Industrial, Open Space & BP. No improvements on impacted parcels. Existing Rialto City Streets are not included.

IV. Dedications

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

No Yes (Complete the following.)

Number of dedicated parcels 0

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

V. Excess Lands / Relinquishments

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

No Yes (Provide an explanation on additional page.)

R/W Data Sheet - Local Public Agencies
Page 3 of 5

VI. Relocation Information

Are relocation displacements anticipated?

No Yes (Complete the following.)

A. Number of Single Family Residential Units	0	
Estimated RAP Payments		\$ _____
B. Number of Multifamily Residential Units	0	
Estimated RAP Payments		\$ _____
C. Number of Business/Nonprofit	0	
Estimated RAP Payments		\$ _____
D. Number of Farms	0	
Estimated RAP Payments		\$ _____
E. Other (define in the "Remarks" section)	0	
Estimated RAP Payments		\$ _____
Totals	0	\$ 0

VII. Utility Relocation Information

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

No Yes (Complete the following.)

Facility	Owner	Estimated Relocation Expense			
		Total Cost	State Obligation	Local Obligation (SANBAG)	Utility Owner Obligation
A. UG 4" Gas Line ²	SCG	\$138,000	\$ 0	\$138,000	\$ TBD
B. OH & UG Power Lines	SCE	\$237,000	\$ 0	\$237,000	\$ TBD
C. OH & UG Tel Lines	AT&T	\$139,000	\$ 0	\$139,000	\$ TBD
D. Existing Water Line	WWD	\$ 64,000	\$ 0	\$ 64,000	\$ TBD
E. Proposed Water Line	WWD	\$ 24,000	\$ 0	\$ 24,000	\$ TBD
F.		\$	\$	\$	\$
Totals		\$602,000	\$ 0³	\$602,000	\$ TBD
Number of facilities		5	0	TBD	TBD

² A Portion of this Cost is anticipated to be borne by City of Rialto during construction of the Pepper Avenue interim street project. The remainder of this cost for the interchange improvements will be to SANBAG.

³ This amount reflects the estimated total financial obligation by the State.

Any additional information concerning utility involvement on this project? See statement in XIII⁴.

R/W Data Sheet - Local Public Agencies
Page 4 of 5

VIII. Rail Information

Are railroad facilities or railroad rights of way affected?

No X Yes _____ (Complete the following.)

Describe railroad facilities or railroad rights of way affected.

Owner's Name	Transverse Crossing	Longitudinal Encroachment
A.		
B.		

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

IX. Clearance Information

Are there improvements that require clearance?

No X Yes _____ (Complete the following.)

A. Number of Structures to be Demolished 0
Estimated Cost of Demolition \$ 0

X. Hazardous Materials/Waste

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

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

XI. Project Scheduling

	Proposed lead time	Completion date
* Preliminary Engineering, Surveys	_____ (months)	12/13
* R/W Engineering Submittals	_____ (months)	6/14
* R/W Appraisals/Acquisition	15 (months)	12/15
Proposed Environmental Clearance		1/14
Proposed R/W Certification		2/15

R/W Data Sheet - Local Public Agencies
 Page 5 of 5

XII. Proposed Funding

	Local ⁵	State	Federal	Other
Acquisition	\$832,516.			
Env. Land or Mitigation Bank	\$3,000,000.			
Utilities	\$602,000.			
Relocation Assistance Program	0	0	0	0
R/W Support (labor)	\$120,000.			
Cost (Eng. Appraisals, etc.)	\$52,000.			

XIII. Remarks

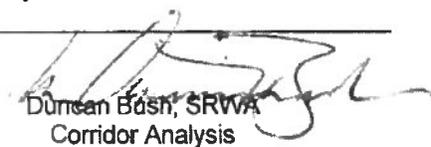
⁴ From Page 3, the allocation of costs between SANBAG and Utility Owners has not yet been determined.

⁵ From Page 5, the allocation of Local Funding between SANBAG and Utility Owners has not yet been determined. To be conservative, it is assumed for now that all affected utility owners have "prior rights" and the cost must be borne by SANBAG.

Project Sponsor Consultant

Civil Works Engineers

Prepared by:


 Duncan Bush, SRWA
 Corridor Analysis

Date: 04/09/2013

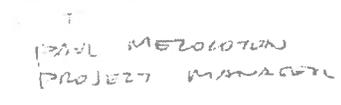

 Don McDougald
 VA Consulting, Inc.

Date: 04/09/13

Project Sponsor:

SANBAG

Reviewed and Approved by:


 PAUL MELOY
 PROJECT MANAGER

Date: 7/19/13

Date

R/W Data Sheet - Local Public Agencies
 Page 5 of 5

XII. Proposed Funding

	Local ⁵	State	Federal	Other
Acquisition	\$832,516.			
Env. Land or Mitigation Bank	\$3,000,000.			
Utilities	\$602,000.			
Relocation Assistance Program	0	0	0	0
R/W Support (labor)	\$120,000.			
Cost (Eng. Appraisals, etc.)	\$52,000.			

XIII. Remarks

⁴ From Page 3, the allocation of costs between SANBAG and Utility Owners has not yet been determined.

⁵ From Page 5, the allocation of Local Funding between SANBAG and Utility Owners has not yet been determined. To be conservative, it is assumed for now that all affected utility owners have "prior rights" and the cost must be borne by SANBAG.

Project Sponsor Consultant
 Civil Works Engineers
 Prepared by:

Project Sponsor:
 SANBAG
 Reviewed and Approved by:

Duncan Bush, SRWA
 Corridor Analysis

Date

Date

Don McDougald
 VA Consulting, Inc.

Date

Date

Caltrans
 Reviewed and approved based on information provided to date:


 Dana Foster
 Caltrans District Branch Chief
 Local Programs
 Division of Right of Way

7/24/2013
 Date

Attachment H - Initial Site Assessment

**REPORT OF INITIAL SITE ASSESSMENT
STATE ROUTE 210
PEPPER AVENUE INTERCHANGE
RIALTO, CALIFORNIA**

Prepared for

**Civil Works Engineers.
3151 Airway Avenue, Suite T-1
Costa Mesa, California 92626**

Prepared By:

**GROUP DELTA CONSULTANTS, INC.
32 Mauchly, Suite B
Irvine, California 92618
Tel. (949) 450-2100
FAX: (949) 450-2108**



**Group Delta Project No. IE-219
June 14, 2012**



June 14, 2012

Civil Works Engineers
3151 Airway Avenue, Suite T-1
Costa Mesa, California 92626

Attention: Marie Marston, PE

*Geotechnical
Engineering*

Geology

Hydrogeology

*Earthquake
Engineering*

*Materials Testing &
Inspection*

Forensic Services

**SUBJECT: REPORT OF INITIAL SITE ASSESSMENT
STATE ROUTE 210
PEPPER AVENUE INTERCHANGE
RIALTO, CALIFORNIA
GROUP DELTA PROJECT NO IE-219**

Dear Marie:

Group Delta Consultants, Inc. (GDC) is pleased to submit this Initial Site Assessment Report (ISA) for the Pepper Avenue Interchange for State Route 210, located in the City of Rialto, California.

This ISA report is intended for the sole use of Civil Works Engineers and on the specific project identified. Our services have been performed under mutually agreed-upon terms and conditions. If other parties wish to rely on this report, please have them contact us so that a mutual understanding and agreement of the terms and conditions for our services can be established prior to their use and reliance of this report and the information it contains.

We appreciate your selection of Group Delta Consultants, Inc. for this project and look forward to assisting you further on this and other projects. If you have any questions, please do not hesitate to contact us.

Sincerely,
GROUP DELTA CONSULTANTS, INC.

Vesna G. Petrilla

Prepared by:
Vesna Glisic Petrilla, P.E.
Project Engineer



S. Ghanbari

Technical Reviewer:
Shah Ghanbari PE
President



1.0 EXECUTIVE SUMMARY

Civil Works Engineers, Inc. on behalf of San Bernardino Associated Governments (SANBAG), has engaged Group Delta Consultants, Inc. to perform a Phase I Initial Site Assessment (ISA) of the State Route 210 (SR-210)/ Pepper Avenue interchange project, located in City of Rialto, San Bernardino County, California. This ISA was conducted in general accordance with the scope and limitations of the guidance provided by the American Society for Testing and Materials (ASTM) E1527-05 standard.

The Site is located in the City of Rialto at the intersection of the State Route 210 (SR-210 Freeway) and extension of Pepper Avenue, as shown in *Figure 1 Vicinity Map*. The Site's immediately adjacent properties are vacant land to the west, east and south and Highland Avenue bounding the Site on the north.

Site improvement consists of the construction of SR-210/ Pepper Avenue interchange including construction of on-ramps and off-ramps, and construction of Pepper Avenue. The project will be constructed within the existing Caltrans Right-of-Way (ROW) limits. No property acquisition is proposed as part of the project. The proposed Site improvements are presented in Figures 2a, b.

The natural topography can be described as a gentle sloping terrain towards south to southeast. SR-210 Freeway was constructed after 2005 including the Pepper Avenue (Under-Crossing) UC. Existing site elevations along Pepper Avenue range between 1,292 feet and 1298 feet Mean Sea Level (MSL), and elevations along SR-210 freeway range between 1,283 feet and 1,340 feet MSL within the project limits.

A Site reconnaissance was performed as part of the ISA to observe current conditions throughout the Site. We reviewed available federal and state data searched and reported by Environmental Data Resources (EDR); available data from State Water Resources Control Board (SWRCB) and Department of Toxic Substances Control (DTSC); reviewed available historic aerial photographs; historic topographic maps; Sanborn fire maps, City Directories, and Department of Oil and Gas maps in order to determine potential recognized environmental conditions (RECs). These reviewed documents are presented in Appendices A through D of this report. Figures are presented at the end of this report. Tables are incorporated in the report. ISA Check List is presented in Appendix G.

Findings and Conclusions – As a result of the ISA, GDC found no recognized environmental conditions (RECs) at the Site and immediately adjacent areas except as follows:

- Highland Avenue, an east-west roadway has been used as a roadway in excess of



100 years. Aerially Deposited Lead (ADL) is anticipated to be found in the unpaved soil adjacent to Highland Avenue.

- An oil stain covering approximately 15 feet by 10 feet area was observed near the pile, under the Pepper Avenue UC, representing an REC. It appears that the staining is surficial and can be removed by scarifying the upper 0.5 ft of soil.

Opinions – Based on the findings of this ISA, our opinions are as follows:

- ADL investigation of unpaved portions of the Site in the vicinity of Highland Avenue should be conducted prior to construction to assess potential worker's health hazards and determine proper soil disposal or reuse methods.
- Area with observed surface staining should be scraped off, and all stained soil disposed off site prior to construction.
- A pile of dumped household trash and construction debris such as plywood, hot tub and other miscellaneous household trash items is observed under the Pepper Avenue UC. The construction debris piles under Pepper Avenue UC and along Pepper Avenue eastbound shoulder need to be disposed of prior to construction, as part of the Caltrans regular maintenance program.



Attachment I - Life Cycle Cost Analysis Forms

Life Cycle Cost Analysis Form

Appendix E-1

Ramp Termini

Alternative 1 (Pavement-alternative-identified-to-program-project cost or Preferred Alternative) Delete either "Pavement-alternative-identified-to-program-project cost" "or "Preferred Alternative" as appropriate for project milestone. Briefly describe the pavement strategy and other unique features

20 yr HMA

Pavement Design	20	Years	
Life:	<hr/>		
Initial Construction Costs:			\$ 173.64
Initial Project Support Costs:			\$ 67.72
Future Maintenance & Rehabilitation Costs:**			\$ 101.07
TOTAL AGENCY COSTS:			<hr/> \$ 342.43
USER COSTS:			<hr/> \$ 1.24
TOTAL LIFE-CYCLE COSTS:			<hr/> \$ 343.67

Alternative 2: *
Briefly describe the pavement strategy and differences in scope from Alternative 1.

40-yr JPCP

Pavement Design	40	Years	
Life:	<hr/>		
Initial Project Support Costs:			\$ 185.34
Future Maintenance & Rehabilitation Costs:**			\$ 72.28
			\$ 13.24
TOTAL AGENCY COSTS:			<hr/> \$ 270.86
USER COSTS:			<hr/> \$ 0.16
TOTAL LIFE-CYCLE COSTS:			<hr/> \$ 271.02

Reason that this is not Alternative 1:
40-yr JPCP is lower life cycle cost and should be used.

* Repeat as often as needed, with appropriate numbering, to cover all pavement alternatives investigated.
** Includes both future maintenance, construction, and project support costs.

Life Cycle Cost Analysis Form
Appendix E-2
 Off Ramps

Alternative 1 (Pavement-alternative-identified-to-program-project cost or Preferred Alternative) *Delete either "Pavement-alternative-identified-to-program-project cost" "or "Preferred Alternative" as appropriate for project milestone. Briefly describe the pavement strategy and other unique features*

20-yr AC

Pavement Design Life: <u>20</u> Years			
Initial Construction Costs:	\$	382.31	
Initial Project Support Costs:	\$	149.1	
Future Maintenance & Rehabilitation Costs:**	\$	448.85	
TOTAL AGENCY COSTS:		\$ 980.26	
USER COSTS:		\$ 2.03	
TOTAL LIFE-CYCLE COSTS:		\$ 982.29	

Alternative 2: *
Briefly describe the pavement strategy and differences in scope from Alternative 1.

40-yr JPCP

Pavement Design Life: <u>40</u> Years			
Initial Project Support Costs:	\$	782.53	
Future Maintenance & Rehabilitation Costs:**	\$	57.17	
TOTAL AGENCY COSTS:		\$ 1144.8	
USER COSTS:		\$ 0.73	
TOTAL LIFE-CYCLE COSTS:		\$ 1145.53	

Reason that this is not Alternative 1:

20-yr Flexible pavement has lower life cycle cost and should be used

* Repeat as often as needed, with appropriate numbering, to cover all pavement alternatives investigated.
 ** Includes both future maintenance, construction, and project support costs.

Life Cycle Cost Analysis Form

Appendix E-3

Ramps

Alternative 3 (Pavement-alternative-identified-to-program-project cost or Preferred Alternative) *Delete either "Pavement-alternative-identified-to-program-project cost" "or" "Preferred Alternative" as appropriate for project milestone. Briefly describe the pavement strategy and other unique features*

40-yr Flexible

Pavement Design Life: <u>40</u> Years		
Initial Construction Costs:	\$	723.93
Initial Project Support Costs:	\$	282.33
Future Maintenance & Rehabilitation Costs:**	\$	516.29
TOTAL AGENCY COSTS:	\$	1522.85
USER COSTS:	\$	0.77
TOTAL LIFE-CYCLE COSTS:	\$	1523.62

Alternative 4:*

Briefly describe the pavement strategy and differences in scope from Alternative 1.

20 yr JPCP

Pavement Design Life: <u>20</u> Years		
Initial Project Support Costs:	\$	733.15
Future Maintenance & Rehabilitation Costs:**	\$	285.93
TOTAL AGENCY COSTS:	\$	433.58
USER COSTS:	\$	1452.66
TOTAL LIFE-CYCLE COSTS:	\$	2.11
		1454.77

Reason that this is not Alternative 1:

Alternative 1 is lower cost than Alternates 2, 3, and 4 and should be adopted.

* Repeat as often as needed, with appropriate numbering, to cover all pavement alternatives investigated.
 ** Includes both future maintenance, construction, and project support costs.

Attachment J - Storm Water Data Report

Long Form - Storm Water Data Report



Dist-County-Route: 08-SBd-210
Post Mile Limits: 19.3 / 20.1
Project Type: New Interchange
Project ID (or EA): 44394
Program Identification: HE11
Phase: [] PID, [x] PA/ED, [] PS&E

Regional Water Quality Control Board(s): Santa Ana Regional Water Quality Control Board - Region 8

Is the Project required to consider Treatment BMPs? Yes [x] No []
If yes, can Treatment BMPs be incorporated into the project? Yes [x] No []

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

Total Disturbed Soil Area: 18.5 Acres Risk Level: 1
Estimated: Construction Start Date: 5/1/15 Construction Completion Date: 4/30/16
Notice of Intent (NOI) Date to be submitted: T.B.D. (30 Days Before Construction Start Date)

Erosivity Waiver Yes [] Date: _____ No [x]
Notification of ADL reuse (if Yes, provide date) Yes [x] Date: 4/1/15 No []
Separate Dewatering Permit (if yes, permit number) Yes [] Permit # _____ No [x]

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.

Marie Marston, Registered Project Engineer Date

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

Meardey Tim, Project Manager Date

Cindy Gano, Designated Maintenance Representative Date

Ray Desselle, Designated Landscape Architect Representative Date

[Stamp Required for PS&E only] William Pan, District NPDES/Design SW Coordinator (Acting) Date

Attachment K - Risk Register

LEVEL 2 - RISK REGISTER			Project Name: SR-210 Pepper Avenue Interchange				DIST- EA 08-443940				Monday Tim				
Status	ID #	Type	Category	Risk Identification				Risk Assessment				Risk Response			
				Title	Risk Statement	Current status/assumptions	Probability	Cost Impact	Time Impact	Time Score	Rationale	Strategy	Response Actions	Risk Owner	Updated
Active	1	Threat	Environmental	Environmental Document Schedule	State schedule for EIS processing through Caltrans is delayed	Current status/assumptions Current schedule allows minimal review time.	5-Very High	2-Low	10	8-High	40	Mitigate	Regular communication and meetings/workshops with Caltrans to identify issues	SANBAG	11/27/2013
Active	2	Threat	Design	Field Survey / Base Maps	Ongoing Temp Road construction could alter survey data base mapping and design		3-Moderate	2-Low	6	2-Low	6	Mitigate	Perform additional survey after City's construction is complete or Hwy's City's contractor provides final survey data to identify base maps.	SANBAG	11/27/2013
Active	3	Threat	Environmental	Caltrans Functional Units	Caltrans is the buyer of most staffed to respond to a timely manner		3-Moderate	1-Very Low	3	4-Moderate	12	Enhance	Ensure active OADOC program in place to support quality decisions.	ICF	11/27/2013
Active	4	Threat	Design	Caltrans Functional Units	Caltrans is the buyer of most staffed to respond to a timely manner		4-High	1-Very Low	4	4-Moderate	18	Enhance	Ensure active OADOC program in place to support quality decisions.	Civil Works	11/27/2013
Active	5	Threat	ROW	Utility Relocation Delays	Utility relocations are required which may delay project schedule		2-Low	1-Very Low	2	8-High	16	Mitigate	Provide as early as possible notification to utility owners.	SANBAG	11/27/2013
Active	6	Threat	ROW	Delay of ROW Acquisition	Since ROW acquisition cannot begin until after EIS is complete, there will be minimal time for the acquisition. If owners are unwilling, time delay could be incurred		5-Moderate	4-Moderate	12	6-High	28				11/27/2013
Active	7	Threat	Construction	Uncovered Findings	Native American remains are found during construction and construction will then be delayed	Native American remains must be present during grading operations	3-Moderate	4-Moderate	12	4-Moderate	12	Accept			11/27/2013
Active	8	Threat	Construction	Sensitive Species / Findings	During construction, the possibility of SHRP are found on the site, thereby delaying construction	Native American remains must be present during grading operations	2-Low	6-High	18	8-High	15	Mitigate	Thorough probability of finding species is performed during PAED	SANBAG	11/27/2013
Active	9	Threat	Design	Findings / Findings	Funding source is changed necessitating change to construction bid documents	Current assumption allows design to equal existing flow at outlet	2-Low	2-Low	4	2-Low	4	Accept	Work with SANBAG to determine funding sources for preparation of Caltrans' bid to create modification of final design	SANBAG	11/27/2013
Active	10	Threat	PKI	Funding Source	Funding source is changed necessitating change to construction bid documents	Currently all fiscal funds are assumed	3-Moderate	2-Low	6	2-Low	6	Accept	Work with SANBAG to determine funding sources for preparation of Caltrans' bid to create modification of final design	SANBAG	11/27/2013
Active	11	Threat	Construction	Contractor / Bid	It is determined that no contractor is bid is available at site, either at Caltrans owned parcels which are the site or other quality bidders or off-site within project		4-High	2-Low	6	1-Very Low	6	Mitigate	Work with SANBAG and Caltrans to determine a potential contractor and	SANBAG	11/27/2013
Active	12	Threat	Organizational	Change to Storm Water Requirements	Caltrans makes changes to SW requirements requiring change to the SWDR and schedule delays	Recent major changes to FFGG lessens the probability of this risk although additional change in right to process could occur	2-Low	1-Very Low	1	4-Moderate	8	Accept	No ability to change requirements until the point in project where any change could mean that previous requirements were no longer	SANBAG	11/27/2013
Active	13	Threat	Construction	Permanent Erosion Control Establishment	Permanent Erosion Control Establishment is required by end of construction phase in order to file the Notice of Termination (NOT) in compliance of the California Construction Control Permit		3-Moderate	2-Low	6	2-Low	6	Accept		SANBAG	4/29/14

*Attachment L – Project Category Assignment
Memorandum*
