

ROAD REPAIR AND ACCOUNTABILITY ACT OF 2017
PROJECT BASELINE AGREEMENT
SR-55 NB Auxiliary Lane (EA 12-0G950)

Resolution SHOPP-P-1819-04B
(will be completed by CTC)

1. FUNDING PROGRAM

- Active Transportation Program
- Local Partnership Program (Competitive)
- Solutions for Congested Corridors Program
- State Highway Operation and Protection Program
- Trade Corridor Enhancement Program

2. PARTIES AND DATE

2.1 This Project Baseline Agreement (Agreement) for the *SR-55 NB Auxiliary Lane (EA 12-0G950)*, effective on, OCTOBER 17, 2018 (will be completed by CTC), is made by and between the California Transportation Commission (Commission), the California Department of Transportation (Caltrans), the Project Applicant, *Caltrans*, and the Implementing Agency, *Caltrans*, sometimes collectively referred to as the "Parties".

3. RECITAL

- 3.2 Whereas at its March 22, 2018 meeting the Commission approved the State Highway Operation and Protection Program, and included in this program of projects the *SR-55 NB Auxiliary Lane (EA 12-0G950)*, the parties are entering into this Project Baseline Agreement to document the project cost, schedule, scope and benefits, as detailed on the Project Programming Request Form attached hereto as Exhibit A and the Project Report attached hereto as Exhibit B, as the baseline for project monitoring by the Commission.
- 3.3 The undersigned Project Applicant certifies that the funding sources cited are committed and expected to be available; the estimated costs represent full project funding; and the scope and description of benefits is the best estimate possible.

4. GENERAL PROVISIONS

The Project Applicant, Implementing Agency, and Caltrans agree to abide by the following provisions:

- 4.1 To meet the requirements of the Road Repair and Accountability Act of 2017 (Senate Bill [SB] 1, Chapter 5, Statutes of 2017) which provides the first significant, stable, and on-going increase in state transportation funding in more than two decades.
- 4.2 To adhere, as applicable, to the provisions of the Commission:
- Resolution *Insert Number*, "Adoption of Program of Projects for the Active Transportation Program", dated
 - Resolution *Insert Number*, "Adoption of Program of Projects for the Local Partnership Program", dated
 - Resolution *Insert Number*, "Adoption of Program of Projects for the Solutions for Congested Corridors Program", dated
 - Resolution G-18-13, "Adoption of Program of Projects for the State Highway Operation and Protection Program", dated March 22, 2018
 - Resolution *Insert Number*, "Adoption of Program of Projects for the Trade Corridor Enhancement Program", dated

- 4.3 All signatories agree to adhere to the Commission's State Highway Operation and Protection Program, Guidelines. Any conflict between the programs will be resolved at the discretion of the Commission.
- 4.4 All signatories agree to adhere to the Commission's SB 1 Accountability and Transparency Guidelines and policies, and program and project amendment processes.
- 4.5 Caltrans agrees to secure funds for any additional costs of the project.
- 4.6 Caltrans agrees to report on a quarterly basis; after July 2019, reports will be on a semi-annual basis on the progress made toward the implementation of the project, including scope, cost, schedule, outcomes, and anticipated benefits.
- 4.7 Caltrans agrees to prepare program progress reports on a quarterly basis; after July 2019, reports will be on a semi-annual basis and include information appropriate to assess the current state of the overall program and the current status of each project identified in the program report.
- 4.8 Caltrans agrees to submit a timely Completion Report and Final Delivery Report as specified in the Commission's SB 1 Accountability and Transparency Guidelines.
- 4.9 All signatories agree to maintain and make available to the Commission and/or its designated representative, all work related documents, including without limitation engineering, financial and other data, and methodologies and assumptions used in the determination of project benefits during the course of the project, and retain those records for four years from the date of the final closeout of the project. Financial records will be maintained in accordance with Generally Accepted Accounting Principles.
- 4.10 The Transportation Inspector General of the Independent Office of Audits and Investigations has the right to audit the project records, including technical and financial data, of the Department of Transportation, the Project Applicant, the Implementing Agency, and any consultant or sub-consultants at any time during the course of the project and for four years from the date of the final closeout of the project, therefore all project records shall be maintained and made available at the time of request. Audits will be conducted in accordance with Generally Accepted Government Auditing Standards.

5. SPECIFIC PROVISIONS AND CONDITIONS

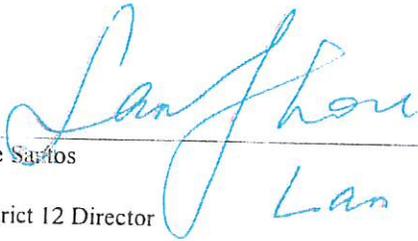
- 5.1 Project Schedule and Cost
See Project Programming Request Form, attached as Exhibit A.
- 5.2 Project Scope
See Project Report or equivalent, attached as Exhibit B. At a minimum, the attachment shall include the cover page, evidence of approval, executive summary, and a link to or electronic copy of the full document.
- 5.3 Other Project Specific Provisions and Conditions

Attachments:

Exhibit A: Project Programming Request Form
Exhibit B: Project Report

SIGNATURE PAGE
TO
PROJECT BASELINE AGREEMENT
SR-55 NB Auxiliary Lane (EA 12-0G950)

Resolution SHOPP-P-1819-04B

for  8/27/2018
Am Gerardo De Santos Date
Acting District 12 Director Lan Zhou
California Department of Transportation

Per  9/19/18
Laurie Berman Date
Director
California Department of Transportation

 10/26/18
Susan Bransen Date
Executive Director
California Transportation Commission

Baseline agreement information was extracted from Caltrans's project data systems. Project description, funding and performance measures are from CTIPS. Project delivery milestones are from PRSM. All information is current and accurate.

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

BASELINE AGREEMENT

Date:	08/31/18 04:11:04 PM
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District	EA	Project ID		PPNO	Project Manager
12	0G950	1215000045		3483	BAZARGAN, BOB
County	Route	Begin Postmile	End Postmile	Implementing Agency	
ORA	55	R 8.0	R 9.2	PA&ED	Orange County Transportation Authority (OCTA)
				PS&E	Orange County Transportation Authority (OCTA)
				Right of Way	Orange County Transportation Authority (OCTA)
				Construction	Caltrans

Project Nickname
12-0G950 Rte 55 NB Aux lane

Location/Description
In the cities of Santa Ana and Tustin, from Dyer Road onramp to Edinger Avenue offramp. Construct northbound auxiliary lane.

Legislative Districts

Assembly:	69	Senate:	34	Congressional:	46
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PERFORMANCE MEASURES

	Primary Asset	Good	Fair	Poor	New	Total	Units
Existing Condition	Operational Improvements			5574		5574	Daily vehicle-hours of delay
Programmed Condition	Operational Improvements				3097	3097	Daily vehicle-hours of delay

Project Milestone	Actual	Planned
Project Approval and Environmental Document Milestone	09/11/17	
Right of Way Certification Milestone		06/01/20
Ready to List for Advertisement Milestone		06/15/20
Begin Construction Milestone (Approve Contract)		01/04/21

FUNDING

Component	Fiscal Year	SHOPP				Total
PA&ED	17/18	200				200
PS&E	17/18	3,500				3,500
RW Support	17/18	2,700				2,700
Const Support	19/20	2,800				2,800
RW Capital	19/20	24,500				24,500
Const Capital	19/20	13,100				13,100
Total		46,800				46,800



**PROJECT STUDY REPORT
(PROJECT DEVELOPMENT SUPPORT)**

12-ORA-055
KP R12.63/R14.81
12840-0G950K
Mobility Improvement
20.10.201.310
SEPTEMBER 2005



**PROJECT
AREA**

**NORTHBOUND SR-55 AUXILIARY LANE
Between Dyer Road On-ramp and Edinger Avenue Off-ramp**

SUBMITTED BY: *Gary T Slater*
Gary T Slater
Branch Chief, Project Studies Unit

9/1/05
Date

APPROVAL RECOMMENDED BY: *Leo Chen*
Leo Chen
Project Manager

9/1/05
Date

APPROVED BY: *Cindy Quon*
Cindy Quon
District Director, District 12

9/1/05
Date

TABLE OF CONTENTS

1. INTRODUCTION

2. BACKGROUND

3. NEED & PURPOSE

- A. Investigation
- B. Accident History
- C. Traffic Volumes

4. ALTERNATIVES

5. SYSTEM PLANNING

6. ENVIRONMENTAL DETERMINATION AND ENVIRONMENTAL ISSUES

- Hazardous Waste
- NPDES/ Storm Water Quality Compliance
- Noise
- Environmental Status
- Special Consideration

7. RIGHT OF WAY

8. FUNDING / SCHEDULING

9. PROGRAMMING RECOMMENDATION

10. DISTRICT CONTACTS

11. RECOMMENDED BY

LIST OF EXHIBITS

Exhibit A	Alternative 1 (Layout and Typical Cross Sections)
Exhibit B	Alternative 2 (Layout and Typical Cross Sections)
Exhibit C	Alternative 1A (Layout and Typical Cross Sections)
Exhibit D	Alternative 2A (Layout and Typical Cross Sections)
Exhibit E	Cost Estimate for Alternative 1
Exhibit F	Cost Estimate for Alternative 2
Exhibit G	Cost Estimate for Alternative 1A
Exhibit H	Cost Estimate for Alternative 2A
Exhibit I	Structure Cost Estimate

LIST OF ATTACHMENTS

Attachment 1	Accident History Summary (TASAS Table B- District 12)
Attachment 2	Traffic Analysis
Attachment 3	City of Santa Ana Standard Plans
Attachment 4	Initial Site Assessment
Attachment 5	Storm Water Data Report
Attachment 6	Preliminary Environmental Analysis Report
Attachment 7	Right of Way Data Sheet
Attachment 8	Project Support and Project Schedule

12-ORA-055
KP R12.63/R14.81
NB SR-55 from Dyer Road On-ramp to Edinger Avenue Off-ramp
12840-0G950K - 20.10.201.310

This Project Study Report (Project Development Support) has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.



Kim-Phong Robinson
Registered Civil Engineer

8/30/2005
Date



PROJECT STUDY REPORT (PROJECT DEVELOPMENT SUPPORT)

1. INTRODUCTION

This Project Study Report (Project Development Support) (PSR/PDS) proposes a project to construct an auxiliary lane on Northbound (NB) State Route 55 (SR-55) between Dyer Road On-ramp and Edinger Avenue Off-ramp in the Cities of Santa Ana and Tustin in County of Orange. Caltrans District 12 Traffic Operations North Branch initiated this traffic operational improvement project to relieve the choke point congestion and thereby improve the traffic flow through this 2.18 kilometers length of freeway.

This project proposes five alternatives: No-built alternative, Alternative 1 (*Exhibit A*), Alternative 2 (*Exhibit B*), Alternative 1A (*Exhibit C*), and Alternative 2A (*Exhibit D*). All alternatives will add an auxiliary lane in the northbound direction and provide full standard features, which will require the acquisition of additional right of way. The estimated cost including R/W and Utilities relocation for Alternative 1 is \$30.0 million, Alternative 2 is \$34.2 million, Alternative 1A is \$29.7 million, and Alternative 2A is \$33.9 million.

Beside Orange County Transportation Authority (OCTA) would fund the project from the Regional Transportation Improvement Program (RTIP) in the 2006 STIP for construction in the 2009/2010 fiscal years or other local funding sources, this project is also proposed for federal funding.

This project is considered as being a Mobility Improvement project. Therefore, per FHWA/Caltrans stewardship agreement of December 2002, this project is a State Authorized project with review and oversight responsibilities delegated to Caltrans. The project is categorized as Category 4B as described in the Project Development Procedure Manual Chapter 8, Section 5.

2. BACKGROUND

SR-55, the Costa Mesa Freeway, provides north-south access in Orange County from SR-91 to 19th Street, approximately 4 kilometers north of SR-1. It is the main corridor for commerce and daily commuters connecting the I-5, SR-22, SR-91 to the I-405 and SR-1. The freeway is the only connection between the western and eastern portions of the County of Orange and it is also the main route to the beach and tourist attractions in the county's coastal communities.

SR-55 was originally constructed in 1962 as a four-lane freeway. In 1970, two traffic lanes were added to SR 55. In 1985, Orange County's first HOV lanes were added on this route between I-405 and SR-91. In 1990 the freeway was extended to 19th Street in the City of Costa Mesa. In late 1995, the county's first freeway to freeway HOV direct connector opened at the I-5/SR-55 interchange. In early 2005, the completion of freeway to freeway HOV direct connector at I-405/SR-55 interchange has increased traffic volume on Northbound SR-55.

Currently, Northbound SR-55 in the project area has four general-purpose lanes and one HOV lane. The pavement structural section of 3.3-m HOV is Portland Cement Concrete from beginning of

project limits to station 132+00 and Asphalt Concrete from station 132+00 to the end of project limits. The HOV buffer varies from 0-m to 0.6-m, inside shoulder varies from 1.08-m to 3.0-m, and outside shoulder is 3.0-m. The existing lane width for lanes number one, two, and three vary from 3.3-m to 3.6-m. The pavement structural section of these lanes are Portland Cement Concrete from beginning of project limits to station 132+00 and Asphalt Concrete from station 132+00 to the end of project limits. Lane number four varies from 3.5-m to 3.6-m with Asphalt Concrete pavement structure section. West Dyer Road NB on-ramp begins with a single lane on-ramp with 5.2-m lane width and ends with two 3.6-m lane widths with 1.2-m inside shoulder and an 2.4-m outside shoulder. East Dyer Road NB on-ramp is a single lane loop ramp with 3.6-m lane width with 1.2-m inside shoulder and 2.4-m outside shoulder. Edinger Avenue off-ramp is a single lane ramp with 3.6-m lane width with 1.2-m inside shoulder and 2.4-m outside shoulder.

Two structures are within the project limits: Dyer Road undercrossing, Br. No: 55-0409, is a four-span precast/prestressed "T" Girder bridge. Warner Avenue overcrossing, Br. No: 55-0394, is a two-span Cast in Place Prestressed Concrete Box Girder bridge.

The PSR/PDS project EA 0G960K proposes to add a 3.6-m width auxiliary lane on the Southbound SR-55 from Edinger Ave. on-ramp to Dyer Road off-ramp. Also, the Permit project number 12-014304 by the City of Tustin will reconstruct the northbound off-ramp at Edinger Avenue. This project (EA 0G950K) will tie to that new alignment with some minor modifications providing a continuously auxiliary lane between Dyer Road and Edinger Avenue.

3. NEED AND PURPOSE

The project is needed to improve the merging, diverging and weaving operation of vehicles entering and exiting the freeway on this portion of northbound SR-55. The addition of an auxiliary lane will improve the level of service (LOS) along this segment, improve goods movement for the heavy truck traffic in accessing the area, and alleviate overall traffic delay and traffic congestion on this portion of freeway. By adding the auxiliary lane for traffic to weave and by providing the additional lane along the segment, significant improvement can be achieved in travel speed. This would also allow for improvement in traffic flow and traffic safety from the SR-55/SR-405 interchange. With the less encumbered general-purpose lanes, accident rates for sideswipe and rear end collisions should be reduced.

3A. Investigation by District 12 Traffic Operations Branch

It was observed that the portion of northbound SR-55 between the northbound Dyer Road on-ramp and Edinger Avenue off-ramp were congested due to the difficulty of motorists merging into the general purpose lanes. Additionally, there is an excess of heavy truck traffic trying to exit at the Edinger Avenue off-ramps to proceed to the industrial and manufacturing facilities. According to 2003 Annual Average Daily Truck Traffic on California Highway System, annual truck percentage on SR-55 within the proposed project area is 6.2%.

Traffic Operation North Branch prepared the Priority Index Number (PIN) for each alternative. The PIN for Alternative 1 is 1583, for Alternative 2 is 1112, for Alternative 1A is 1653, and for Alternative 2A is 1150.

3B. Accident History

Table 1. TASAS Table B

LOCATION	TOTAL No. of Accidents	ACCIDENT RATE Accidents / Million Vehicles					
		ACTUAL			AVERAGE		
		FAT	F+I	TOT	FAT	F+I	TOT
Northbound SR-55	211	0	0.24	1.06	0	0.36	1.14
Northbound (East) Dyer Road On-ramp	2	0	0	0.31	0	0.24	0.70
Northbound (West) Dyer Road On-ramp	5	0	0.10	0.51	0	0.22	0.60
Northbound Edinger Avenue Off-ramp	3	0	0.15	0.46	0	0.61	1.50

The TASAS (Traffic Accident Surveillance and Analysis System) accident data shows that the accident rate on north bound SR-55 within project limits has been lower than average for similar facilities statewide during a 36-month period from January 01, 2001 through December 31, 2003.

Of the accidents in the project area on the mainline freeway, during the same three-year period 73.4 percent were rear end collisions, 13.7 percent were sideswipe accidents, 9.9 percent were due to hitting an object, 0.4 percent were broadside accidents, and 1.4 percent were overturned vehicles. The remaining 0.8 percent was other accidents.

See Attachment 1: Accident History Summary (TASAS Table B District 12)

3C. Traffic Volumes

Currently, this section of SR-55 has a two-way ADT of 262,000 vehicles and a two-way peak hour volume of 19,900 vehicles. Forecasts indicate that in 2030 SR-55 is expected to have two-way ADT of 325,000 vehicles and a two-way peak hour volume of 24,700 vehicles.

Table 2. Peak Hour Volumes

Traffic Volumes	PEAK HOUR (2005)		PEAK HOUR (2030)	
	AM	PM	AM	PM
NB SR-55 Between NB OFF and Mc Arthur and NB ON from EB Dyer Road	7218	6147	8951	7623
NB SR-55 Between NB ON from EB Dyer Rd. and NB ON from WB Dyer Rd.	7878	7162	9769	8881
NB SR-55 Between NB ON from WB Dyer Rd. and NB OFF to Edinger Ave.	8280	8381	10268	10393
NB SR-55 Between NB OFF to Edinger Ave. and NB ON from Mc Fadden Ave.	7642	7975	9477	9889
Northbound On-Ramp from EB Dyer Road	660	1015	819	1259
Northbound On-Ramp from WB Dyer Road	402	1219	499	1512
Northbound Off-Ramp to Edinger Avenue	638	406	792	504

(Note: Traffic volumes shown in Table 2 are mainline volumes only. HOV volumes are not included in this Table.)

See Attachment 2: Traffic Analysis

4. ALTERNATIVES

The following Alternatives are considered for the project:

NO-BUILD ALTERNATIVE:

This “No-Build” Alternative retains the existing roadway conditions that will not improve traffic operation nor LOS at this segment of SR-55. This alternative is not a desired alternative.

ALTERNATIVE 1: *(Exhibit A)*

Alternative 1 proposes to add a 3.6-m wide auxiliary lane between northbound (West) Dyer Road on-ramp (KP R13.00) and northbound Edinger Avenue off-ramp (KP R14.81). This alternative also provides standard lanes, shoulders, and standard median width specified in the Caltrans Highway Design Manual. The taper from non-standard to standard lane width and from standard to non-

standard lane width will be accomplished by striping the lanes at 1:115 taper. Northbound (West) Dyer Road on-ramp alignment will be realigned, and a type 1 retaining wall will be required at the Warner Avenue overcrossing, Bridge No. 55-394, along northbound SR-55 to accommodate pavement widening. This alternative will require additional right of way from 9 parcels along the northbound SR-55 from (West) Dyer Road on-ramp to Edinger Avenue off-ramp. Table 3 is a list of parcel numbers based on Assessor's map of County of Orange.

Table 3. Parcel Number

Parcel	Parcel Numbers
1	430-031-09
2	430-031-03
3	430-031-02
4	430-11-03
5	430-011-04
6	430-012-03
7	430-241-12
8	430-241-07
9	430-251-01

This alternative will widen northbound Edinger Avenue Off-ramp to a two-lane exit ramp. The auxiliary lane will be a mandatory exit lane and the fourth lane would be an optional exit lane.

Alternative 1 will provide direct accessibility from main lines to Edinger Ave. off-ramp without merging with (West) Dyer Road on-ramp traffic. This alternative also limits traffic weave to a single directional weave in lieu of two directional. This will result in minimizing on-ramp merge impact.

The total estimated cost for Alternative 1 is \$ 30.0 million. The cost of Right of Way and Utility Relocation is \$20.5 million. (*Exhibit E*)

ALTERNATIVE 2: (*Exhibit B*)

Alternative 2 proposes to add a 3.6-m wide auxiliary lane from the existing edge of travel way between northbound (East) Dyer Road on-ramp (KP R12.63) and northbound Edinger Avenue off-ramp (KP R14.81). Alternative 2 also provides standard lanes, shoulders, and mandatory standard median width specified in the Caltrans Highway Design Manual. The taper from non-standard to standard lane width and from standard to non-standard lane width will be accomplished by striping the lanes at 1:115 taper. Northbound (East and West) Dyer Road on-ramp alignments will be realigned to accommodate the pavement widening. Due to the change of West Dyer Road on-ramp alignment this single lane on-ramp will become to two-lane on-ramp in order to provide sufficient

storage length. Northbound West Dyer Road on-ramp will begin with two lanes (first lane is 3.6-m and second lane is 5.2-m) and end with three lanes (3.6-m) at the ramp metering.

The proposed auxiliary lane will start from East Dyer Road on-ramp then merge to West Dyer Road on-ramp lane and become a mandatory exit lane at northbound Edinger Avenue off-ramp. Number fourth lane will be an optional exit lane. This alternative will widen northbound Edinger Ave. Off-ramp to a two-lane exit ramp.

Alternative 2 will require additional right of way from 9 parcels that run along northbound SR-55 between West Dyer on-ramp and Edinger Avenue off-ramp. (Table 3)

In addition, A type 1 retaining wall will be required at the Warner Avenue overcrossing, Bridge No. 55-0394, along northbound SR-55 to accommodate the widening. Also Dyer Road undercrossing, Bridge No 55-0409, will be widened to accommodate the upgrade of all the lanes, shoulders, and mandatory median to standard width as specified in the Caltrans Highway Design Manual.

Similar to Alternative 1, Alternative 2 will provide direct accessibility from main lines to Edinger Ave. off-ramp without merging with (East and West) Dyer Road on-ramp traffic. This alternative also limits traffic weave to a single directional weave in lieu of two directional. This will result in minimizing on-ramp merge impact.

The total estimated cost for Alternative 2 is \$ 34.2 million. The cost of Right of Way and Utility Relocation is \$21.1 million. (*Exhibit F*)

ALTERNATIVE 1A: (*Exhibit C*)

Alternative 1A is the same as Alternative 1 except the two-lane off-ramp at Edinger will be a single lane off-ramp. The auxiliary lane will be an exit lane only.

The total estimated cost for Alternative 1A is \$29.7 million. The cost of Right of Way and Utility Relocation is \$20.5 million. (*Exhibit G*)

ALTERNATIVE 2A: (*Exhibit D*)

Alternative 2A is the same as Alternative 2 except the two-lane off-ramp at Edinger Avenue will be a single lane off-ramp. The auxiliary lane will be an exit lane only.

The total estimated cost for Alternative 2A is \$33.9 million. The cost of Right of Way and Utility Relocation is \$21.1 million. (*Exhibit H*)

Based on the assumption of R-value of 10 and TI value of 14.5, proposed structural section for the auxiliary lane for all alternatives would be 215mm Asphalt Concrete (Type A) on top of 75mm Concrete Treated Permeable Base, over 170mm Asphalt Concrete Base (Type A) and 500mm Class 2 Aggregate. Based on the assumption of R-value of 10 and TI value of 12, proposed structural section for all ramps would be 180mm Asphalt concrete on top of 180mm Asphalt Concrete Base and over 400mm Class 2 Aggregate. Based on the assumption of R-value of 10 and TI value of 9,

proposed structural section for the shoulders would be 125mm Asphalt Concrete on top of 140mm Asphalt Concrete Base and over 305mm Class 2 Aggregate Subbase.

The project engineer shall request a Material Report in the early stage of PS&E and report shall be developed per Topic 114 of Highway Design Manual and California Testing Methods -130.

All alternatives will require realign the Pullman Street's alignment due to freeway widening. Also all the work along Pullman Street will be design as specified in the City of Santa Ana design standard plans (*Attachment 3*).

In addition, all Alternatives will require relocation of electrical power lines and communication boxes, which belong to Southern California Edison and Pacbell, respectively.

5. SYSTEM PLANNING

This project is consistent with the SR-55 Route Concept Report prepared in October 2000. The Route Concept Report indicates that Segment 6 KP 9.6/16.8 (PM R5 5.99/10.45) from I-405 to I-5 calls for 8 lanes plus 2 High Occupancy Vehicle (HOV) lanes. The concept LOS is projected to be at F0 range.

The Central Orange County Corridor Study from Orange County Transportation Authority (OCTA) is a study to explore ways to improve north-south mobility between north Orange County and the South Coast Metro area and the coast. One of the strategies of the study is freeway improvement on SR-55 between SR 22 and I-405. As mentioned in Central Orange County Corridor study that future projects will relieve current and future freeway peak hour congestion, increase capacity of freeway corridors, and increase transit connectivity between central area and residential and employment centers.

This project would be a phase alternative to the ultimate needs of SR-55.

The following projects on SR-55, in Orange County, are within or adjacent to the proposed project. Coordination with these projects is necessary.

Table 4. Proposed Projects

EA	KP (PM)	DESCRIPTION	LOCATION
0G7901	22.2 (13.8)	Install State Furnished Highway Advisory Radio Sign	In orange
0G8300	7.6 (4.7)	Remove And Replace Elastomeric Bearings And Joint Seals At The Superstructure Hinge 1 In Span #10	In Costa Mesa At The SR-55/SR73 Connector Over-crossing BR #55-0538f
0G8401	20.8 (12.9)	Emergency District Director Order Force Account Work To Remove And Replace Damaged/Failed 36" CMP Section	In Orange At The NB 55 To WB 22
0G9801	20.4 (12.7)	Install Safety Lighting	In Orange - EB Rte 022 To Southbound Rte 55
005500	R11.21/R13.44 (R6.97/R8.35)	Alton Avenue Overcrossing and HOV Direct Access Drop Ramps	In Santa Ana and Tustin on SB and NB SR-55
0F4101	9.10/10.2	Replace Existing Sign Structures and Place Additional Signs	In Santa Ana and Tustin from Edinger Ave. Off-ramp to I-5/SR-55 Interchange
0G960K	13.0/14.8 (8.1/9.2)	Construct An Aux. Lane In SB Direction From Edinger On-Ramp To Dyer Road Off-Ramp	In Santa Ana, Tustin SB 55 From Edinger On-Ramp/Dyer Road Off-Ramp
0H0040	8.2 (5.1)	Traffic Signal Modification At 4 Ramp Intersections	In Costa Mesa
0H0141	17.4 (10.8)	Construct Retaining Wall To Provide Access For Drainage System & Install Stairway Case For Landscape Access	In Tustin And Orange At Various Locations From 4th St OC To Sr-22
0E250K	7.20/7.62	Add An Aux. Lane Between Dyer And Mc. Arthur	In Santa Ana On SR-55 From Dyer To Mc Arthur
014301	14.5/15.3 (9.01/9.51)	Reconstruct NB SR-55/ Edinger Avenue Interchange	In Tustin On SR-55 At Edinger Ave. Off-Ramp
		Central Orange County Corridor Study	Orange County

6. ENVIRONMENTAL DETERMINATION AND ENVIRONMENTAL ISSUES

Hazardous Waste

Environmental Engineering Branch visited the project site and performed visual site inspection and completed the Initial Site Assessment study. Based on the findings during the site inspection, no evidence of known hazardous waste contamination was observed. It appears that no Hazardous Material within the proposed Right-of-Way is found to be significant enough to impact the project. The soil in unpaved areas next to traffic lanes or shoulders may be contaminated with lead from vehicle emissions. Soil samples would be collected, tested, and analyzed for lead contamination during the PS&E stage. The Environmental Engineering Branch would conduct the Lead Investigation. Process takes approximately four to six months. It is essential that at the early stage of PS&E, the Design Branch provide EE with two sets of plans showing the limit of the excavation for EE to conduct the lead investigation. If lead contamination were found, the results/conclusions would be included in the PS&E package.

See Attachment 4: Initial Site Assessment

NPDES / Storm Water Quality Compliance

This project will be covered by the Caltrans Statewide National Pollutant Discharge Elimination System (NPDES) Storm Water Permit (Order No. 99-06-DWQ, NPDES No. CAS000003), NPDES Permit for Storm Water Discharges Associated with Construction Activities (Order No. 99-08-DWQ, NPDES No. CAS000002), the Caltrans Storm Water Management Plan (SWMP) and any other requirements of the Santa Ana Regional Water Quality Control Board (RWQCB).

Since the proposed project would require more than 0.4 hectares (one acre) of Disturbed Soil Area (DSA), a Storm Water Pollution Prevention Plan (SWPPP) would be required to be prepared and implemented for all alternatives. The SWPPP must fully conform to Caltrans requirements and include SWRCB Resolution No. 2001-046, Sampling and Analytical Procedures (SAP) Plan.

The construction activity is estimated to run eighteen months. October 1 to May 1 is established "rainy season" for this district. This is the timeframe that the SWPPP and its pollution preventing Best Management Practices (BMPs) must be implemented to ensure NPDES permit compliance. Erosion control should be considered during construction to stabilize new slopes and other disturbed soil areas. Geo-technical report would be required to determine the presence of existing soil classification and groundwater table.

See Attachment 5: Storm Water Data Report

Noise

According to the Traffic Noise Analysis Protocol, this project is a type 1 project, and it requires traffic noise impact evaluation for all alternatives. Field investigation reveals that this project does not pass the screening procedure as defined in the Noise Analysis Screening Procedure Checklist; therefore, a detail noise analysis should be performed during the environmental phase of the project. Sound wall cost is included in cost estimates of all alternatives.

Environmental Status

A Categorical Exemption under CEQA Class 3 and a programmatic Categorical Exclusion (CE/PCE) would be an appropriate environmental document. The project must conform to the requirements of the Department's Statewide National Pollutant Discharge Elimination System Storm Water Permit, Statewide Storm Water Management Plan (SWMP), and General Construction Permit. Since the proposed project would require more than 0.4 hectares (1.0 acre) of Disturbed Soil Area (DSA), Storm Water Pollution prevention Plan would be required. Lead investigations must be performed for any excavation on unpaved areas. In addition, an archeological and historic survey and biological survey for the presence of birds, bats, and other protected species will be required for the project. If the proposed project requires removal of vegetation during nesting season, then a pre-construction bird survey is required. If nesting birds are found suitable vegetation removal may be delayed until the birds have fledged. Any subsequent changes in project scope may require additional environmental review.

Special Considerations:

Any work within Alton Channel may require permits from the following agencies: US Army Corp of Engineers (Nationwide Permit), Regional Water Quality Control (401), and California Department of Fish and Game (1602).

See Attachment 6: *Preliminary Environmental Analysis Report*

7. RIGHT OF WAYS

Right of Way Cost Estimate

	Current Value Future Use	Escalation Rate	Escalation Value
Total Acquisition Cost	\$ 9,500,000.00	10%	\$ 12,644,500.00
Utility Relocation	\$ 5,144,000.00	10%	\$ 7,530,000.00
Relocation Assistance	\$ 125,000.00	10%	\$ 166,000.00
Clearance/ Demolition	\$ 75,000.00	10%	\$ 100,000.00
Title and Escrow	\$ 22,500.00	5%	\$ 26,000.00
Total Estimate Cost	\$ 14,866,500.00		\$ 20,466,500.00

Type	Dual/Appr	Utilities	RR Involvement	Misc. R/W Work
X		U4-1 0	None	RAP Displ 2
A		-2 0	C&M Agrmt	Clear/Demo 1
B	6	-3 0	Svc Contract	Const Permit 0
C	2	1		Condemnation 0
D		U5-7 0	Lic/RE/Clauses	Excess 0
E	XX	-8 0		
	X			
F	XX	-9 0		
	X			
TOTAL	8			

See Attachment 7: *Right of Way Data sheet*

Utilities

Table 5. Existing Utilities

UTILITY	AGENCY
Over head Power Line	Southern California Edison Co.
Water Line	City of Santa Ana
Gas Line	Southern California Gas Co.
Sewer Line	Orange County Sanitation District
Telephone line	Pacific Bell
Cable	Adelphia

The above table shows identifiable utilities per site visit and as-built plans. Existing public utilities under the existing facility will be relocated as shown on layout sheets and utilities index. Further details regarding utility relocation will be discuss in PS&E stage.

Table 6. Utilities to be relocated

	UTILITIES DESCRIPTION	OWNERSHIP
1	Power Pole No.1631453E	Southern California Edison
2	Power Pole No.1631452E	Southern California Edison
3	Power Pole No.1631451E	Southern California Edison
4	Power Pole No.	Southern California Edison
5	Power Pole No.1477796E	Southern California Edison
6	Pacific Bell Box	Pacbell
7	Power Pole No.1477795E	Southern California Edison
8	Power Pole No.1477794E	Southern California Edison
9	Power Pole No.1477793E	Southern California Edison
10	Sewer Manhole	Orange County Sanitation District
11	Power Pole No.	Southern California Edison
12	Power Pole No.	Southern California Edison
13	Power Pole No.1477791E	Southern California Edison
14	Power Pole No.1477790E	Southern California Edison
15	Power Pole No.1477789E	Southern California Edison
16	Power Pole No.1477788E	Southern California Edison
17	Power Pole No.4086154E	Southern California Edison
18	Power Pole No.1477786E	Southern California Edison
19	Power Pole No.	Southern California Edison
20	Power Pole No.4086155E	Southern California Edison
21	Power Pole No.1477784E	Southern California Edison
22	Power Pole No.1477783E	Southern California Edison
23	Power Pole No.1477782E	Southern California Edison
24	Edison Power Box	Southern California Edison
25	Edison Power Box	Southern California Edison
26	Edison Power Box	Southern California Edison
27	Power Pole No.4086156E	Southern California Edison
28	Edison Power Box	Southern California Edison
29	Edison Power Box	Southern California Edison
30	Power Pole No.1477780E	Southern California Edison
31	Power Pole No.1477779E	Southern California Edison
32	Power Pole No.4086155E	Southern California Edison
33	Power Pole No.1611256E	Southern California Edison

8. FUNDING / SCHEDULING

See Attachment 8: Project Support and Project Schedule

Table 7. Capital Outlay Support Estimate for PA/ED

Fiscal Year	STIP PY's and \$'s		Other Funding Sources PY's and \$'s	
	PY's	\$'s	PY's	\$'s
05/06	2.78	0		
06/07	1.03	0		
07/08	0.95	0		
08/09	11.52	0		
Total Support Cost	17.08	0		

Table 8. Capital Outlay Estimate

	Range for Total Cost	STIP Funds
Alternative 1	30.0 Million	
Alternative 2	34.2 Million	
Alternative 1A	29.7 Million	
Alternative 2A	33.9 Million	

The tentative schedule of the project is as follows:

Table 9. Tentative Project Schedule

Milestone	Fiscal Year
PA/ED	01/01/2006
PS&E	09/01/2009
Construction Completion	12/01/2011

9. PROGRAMMING RECOMMENDATION

The Orange County Transportation Authority (OCTA) will fund the project from the Regional Transportation Improvement Program (RTIP) in the 2006 STIP.

10. DISTRICT CONTACTS:

Kim Robinson (949) 756-4952
Project Engineer, Project Studies Unit

Gary Slater (949) 756-7685
Branch Chief, Project Studies Unit

Isaac Alonso Rice (949) 724-2929
Branch Chief, Traffic Operations North

Leo Chen (949) 223-5431
Project Manager, Project Management

Leslie Manderscheid (949) 724-2243
Branch Chief, Environmental Planning

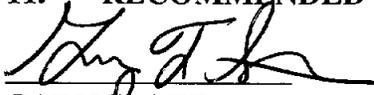
Kathy J. Anderson (949) 724-2407
Right of Way
Project Coordinator

Tam Nguyen (949) 724-2282
Office Chief
Engineering Services
Acting, Office Chief Design

Frank Lin (949) 724-2126
Acting, Deputy District Director
Program/ Project Management

Gale McIntyre (949) 724-2899
Deputy District Director
Planning

11. RECOMMENDED BY:



GARY SLATER
Branch Chief
Project Studies Unit

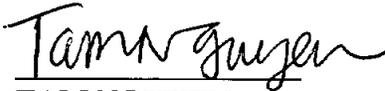
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ISAAC ALONSO RICE
Program Advisor
Branch Chief, Traffic Operations North

DATE: 8/31/05

CONCURRENCE:



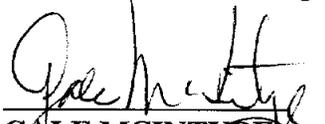
TAM NGUYEN
Office Chief, Engineering Services
Acting, Office Chief, Design

DATE: 8/31/05



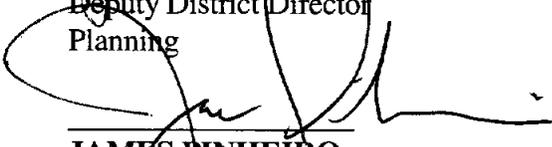
SYLVIA VEGA
Office Chief
Environmental Planning

DATE: 8/31/05



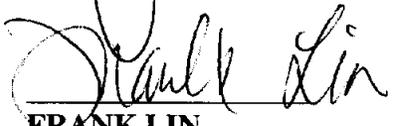
GALE MCINTYRE
Deputy District Director
Planning

DATE: 9/1/05



JAMES PINHEIRO
Deputy District Director
Operations and Maintenance

DATE: 9/1/05



FRANK LIN
Acting, Deputy District Director
Program/Project Management

DATE: 9/1/05

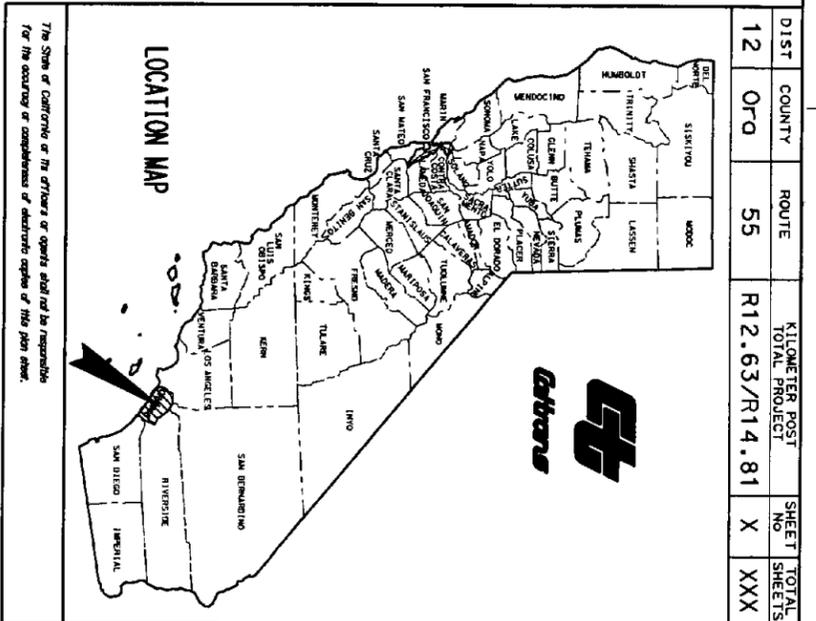
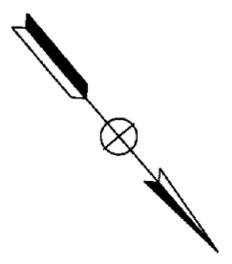
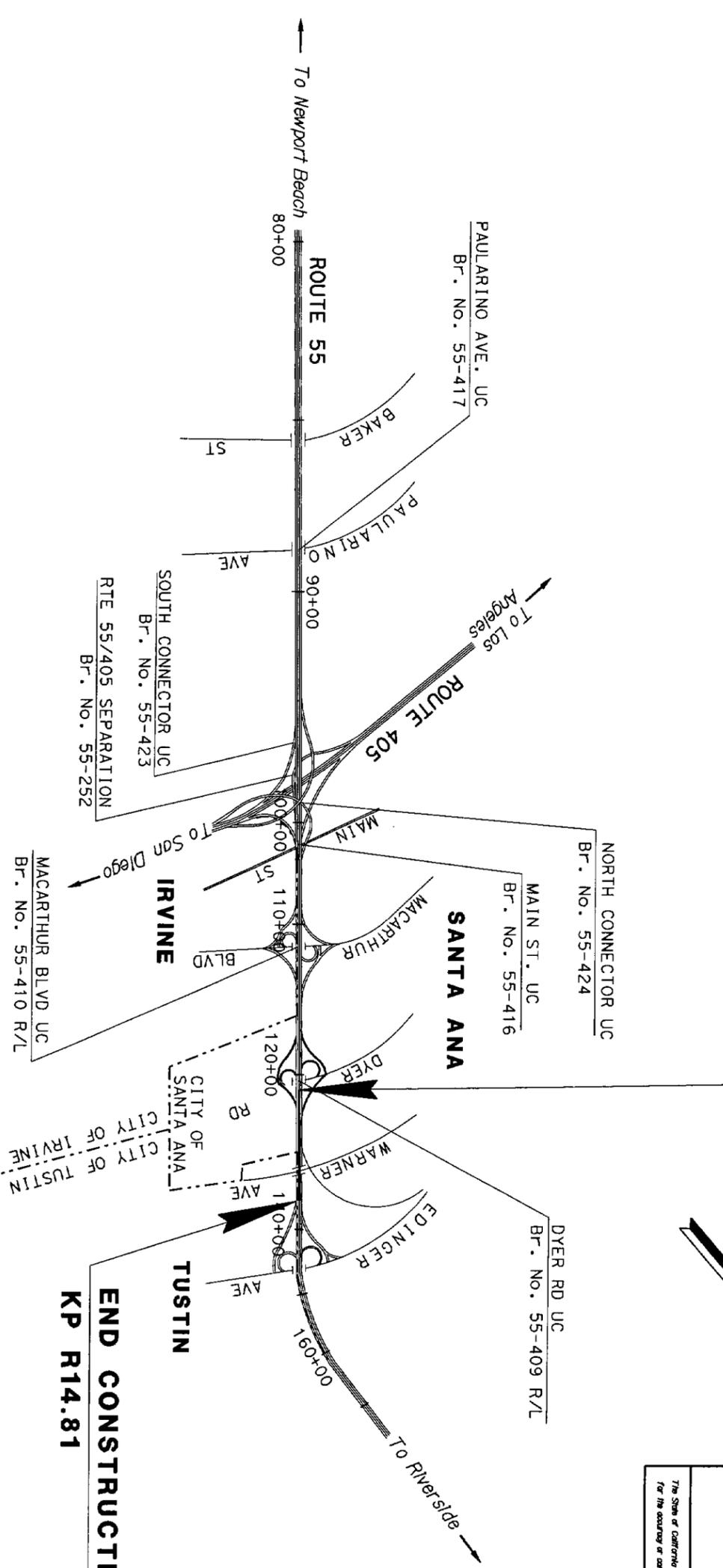
EXHIBIT A

**ALTERNATIVE 1
LAYOUT & CROSS SECTION**

DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
 IN ORANGE COUNTY
 FROM DYER ROAD UNDERCROSSING
 TO EDINGER AVENUE UNDERCROSSING

BEGIN CONSTRUCTION
 KP R12.63

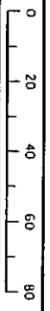


**ALTERNATIVE 1: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING
 BETWEEN WEST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP**

PROJECT ENGINEER	DATE	PROJECT MANAGER	DATE
KIM ROBINSON	01/05	LEO CHEN	

FORM DC-08-93-PF (REV. 3/88)

FOR REDUCED PLANS ORIGINAL
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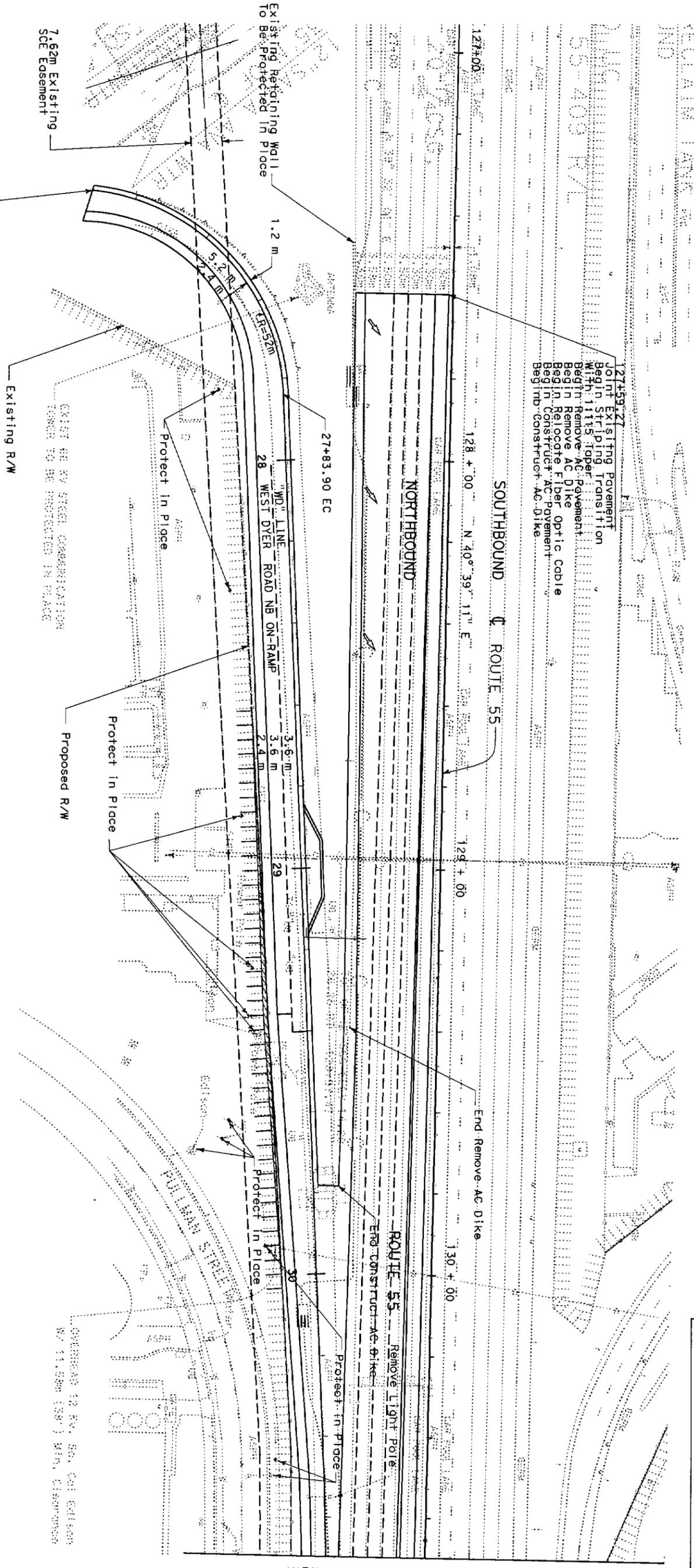
CU 12840 EA 0G950K

Contract No. **12-0G950K**

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER	CALCULATED/DESIGNED BY	DATE	REVISED BY	
Caltrans PSR UNIT	KIM ROBINSON	CHECKED BY		DATE REVISED	

- LEGEND
- R/W TO BE ACQUIRED
 - UTILITIES TO BE RELOCATED
 - UTILITIES TO BE ADJUSTED TO GRADE



ALTERNATIVE 1: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING BETWEEN WEST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP

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RELATIVE BORDER SCALE
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CU 12840

EA 06950K

LAYOUT
SCALE 1 : 500
L-1

MATCH LINE STA 130+70 SEE SHEET L-2



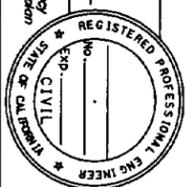
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12	Orange	55	R12.63/R14.81	NO SHEETS

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

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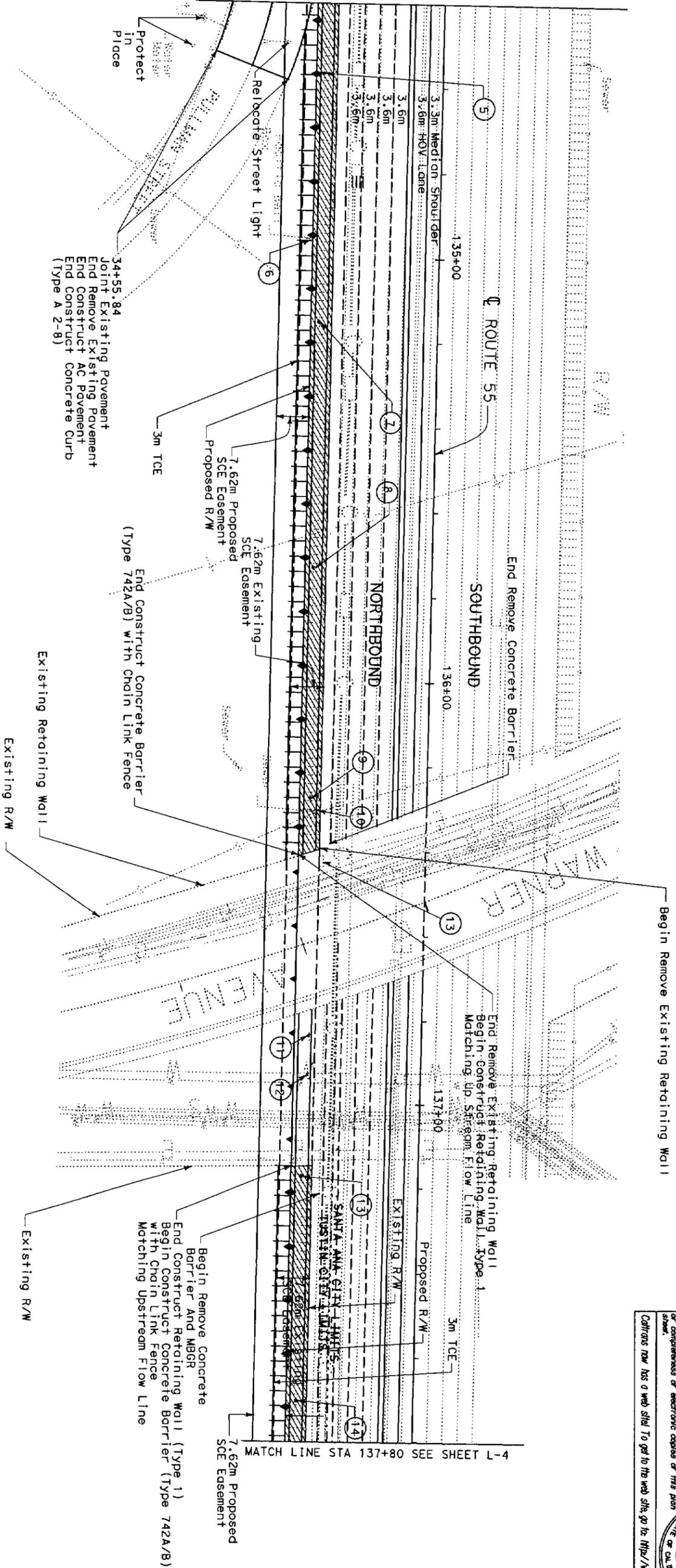
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Caltrans PSR UNIT	KIM ROBINSON	CHECKED BY		DATE REVISED	

- LEGEND
- R/W TO BE ACQUIRED
 - UTILITIES TO BE RELOCATED
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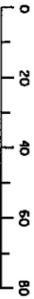
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RELATIVE BORDER SCALE
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CU 12840

EA 0G950K



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
12	Orange	55	R12.63/R14.81		

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

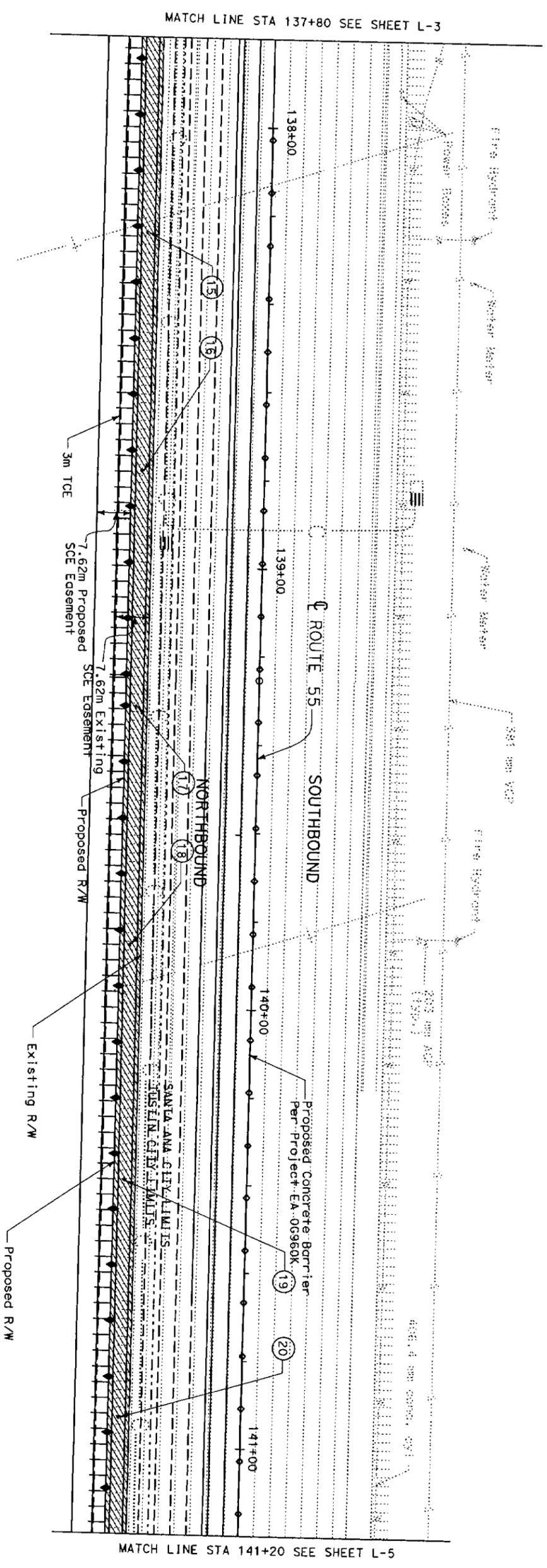
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MATCH LINE STA 137+80 SEE SHEET L-4

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Caltrans PSR UNIT	KIM ROBINSON	CHECKED BY		DATE REVISED		

- LEGEND**
-  R/W TO BE ACQUIRED
 -  UTILITIES TO BE RELOCATED
 -  UTILITIES TO BE ADJUSTED TO GRADE



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CU 12840

EA 06950K

LAYOUT
SCALE 1 : 500

L-4



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT KP	SHEET NO.	TOTAL SHEETS
12	Orange	55	R12.63/R14.81		

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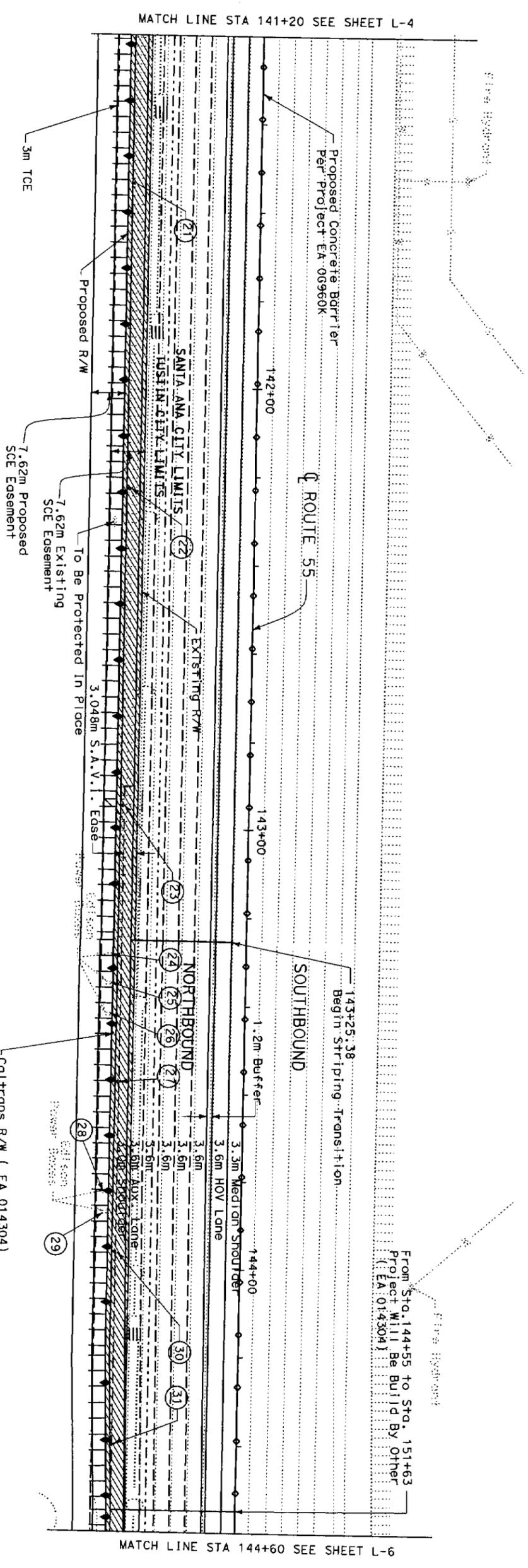
REGISTERED PROFESSIONAL ENGINEER

NO. _____

STATE OF CALIFORNIA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER	CALCULATED/DESIGNED BY	DATE	REVISED BY	
Caltrans PSR UNIT	KIM ROBINSON	CHECKED BY		DATE REVISED	

- LEGEND
-  R/W TO BE ACQUIRED
 -  UTILITIES TO BE RELOCATED
 -  UTILITIES TO BE ADJUSTED TO GRADE



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CU 12840

EA 06950K

LAYOUT
SCALE 1 : 500
L-5



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT KP	SHEET NO.	TOTAL SHEETS
12	Orange	55	R12.63/R14.81		

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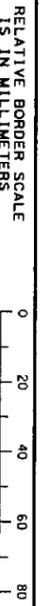
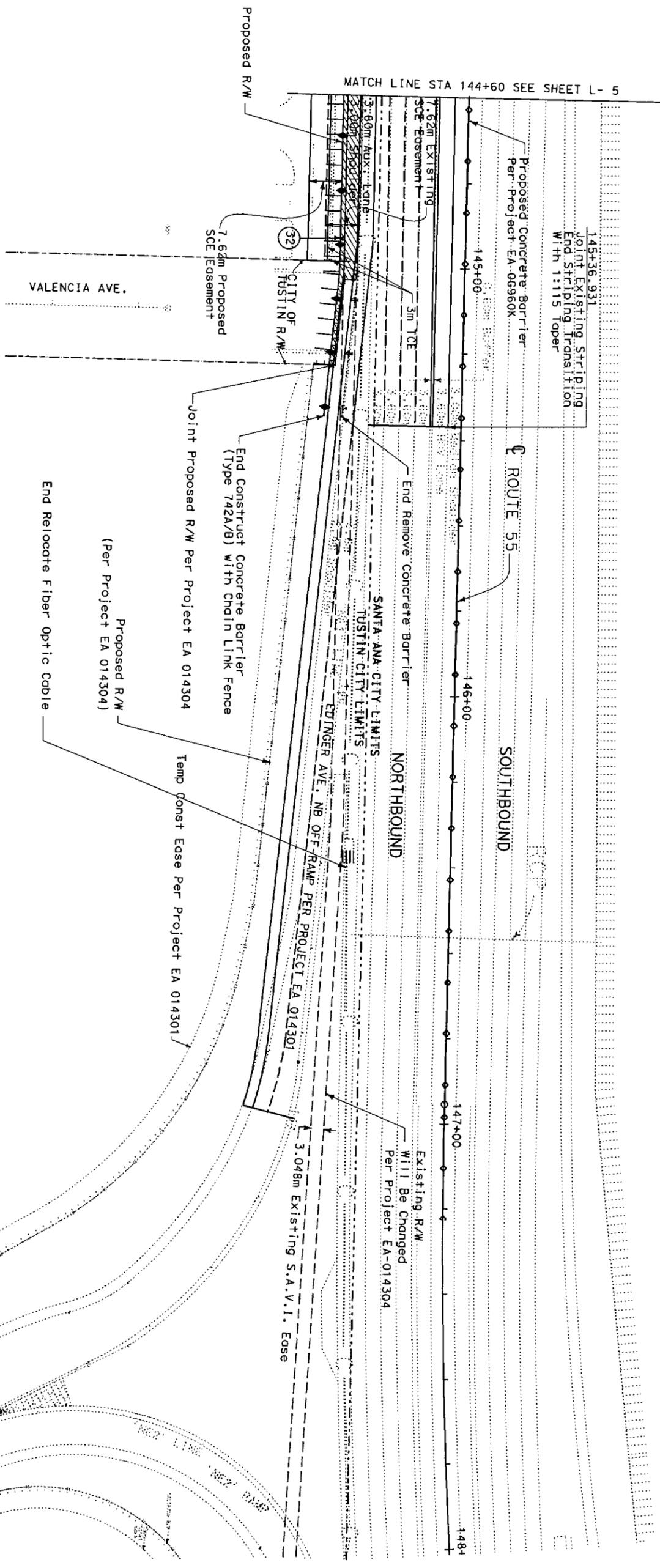


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	PSR UNIT	KIM ROBINSON	CHECKED BY	DATE REVISED		

- LEGEND**
-  R/W TO BE ACQUIRED
 -  UTILITIES TO BE RELOCATED
 -  UTILITIES TO BE ADJUSTED TO GRADE

ALTERNATIVE 1: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING BETWEEN WEST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP

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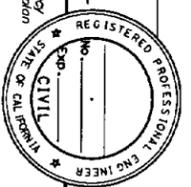
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT KP	SHEET NO.	TOTAL SHEETS
12	Orange	55	R12.63/R14.81		

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UTILITIES TO BE RELOCATED

UTILITY DESCRIPTION	OWNERSHIP
1 Power Pole No. 1631453E	SOUTHERN CALIFORNIA EDISON
2 Power Pole No. 1631452E	SOUTHERN CALIFORNIA EDISON
3 Power Pole No. 1631451E	SOUTHERN CALIFORNIA EDISON
4 Power Pole No. 1477796E	SOUTHERN CALIFORNIA EDISON
5 Pacific Bell Box	SOUTHERN CALIFORNIA EDISON
6 Power Pole No. 1477795E	SOUTHERN CALIFORNIA EDISON
7 Power Pole No. 1477794E	SOUTHERN CALIFORNIA EDISON
8 Power Pole No. 1477793E	SOUTHERN CALIFORNIA EDISON
9 Sewer Manhole	ORA COUNTY SANITATION DISTRICT
10 Power Pole No.	SOUTHERN CALIFORNIA EDISON
11 Power Pole No.	SOUTHERN CALIFORNIA EDISON
12 Power Pole No. 1477791E	SOUTHERN CALIFORNIA EDISON
13 Power Pole No. 1477790E	SOUTHERN CALIFORNIA EDISON
14 Power Pole No. 1477789E	SOUTHERN CALIFORNIA EDISON
15 Power Pole No. 1477788E	SOUTHERN CALIFORNIA EDISON
16 Power Pole No. 4086154E	SOUTHERN CALIFORNIA EDISON
17 Power Pole No. 1477786E	SOUTHERN CALIFORNIA EDISON
18 Power Pole No. 1477786E	SOUTHERN CALIFORNIA EDISON
19 Power Pole No. 4086155E	SOUTHERN CALIFORNIA EDISON
20 Power Pole No. 1477784E	SOUTHERN CALIFORNIA EDISON
21 Power Pole No. 1477783E	SOUTHERN CALIFORNIA EDISON
22 Power Pole No. 1477782E	SOUTHERN CALIFORNIA EDISON
23 Edison Power Box	SOUTHERN CALIFORNIA EDISON
24 Edison Power Box	SOUTHERN CALIFORNIA EDISON
25 Edison Power Box	SOUTHERN CALIFORNIA EDISON
26 Edison Power Box	SOUTHERN CALIFORNIA EDISON
27 Edison Power Box	SOUTHERN CALIFORNIA EDISON
28 Edison Power Box	SOUTHERN CALIFORNIA EDISON
29 Edison Power Box	SOUTHERN CALIFORNIA EDISON
30 Edison Power Box	SOUTHERN CALIFORNIA EDISON
31 Power Pole No. 1477799E	SOUTHERN CALIFORNIA EDISON
32 Power Pole No. 4086155E	SOUTHERN CALIFORNIA EDISON
33 Power Pole No. 1611256E	SOUTHERN CALIFORNIA EDISON

UTILITIES TO BE ADJUSTED TO GRADE

UTILITY DESCRIPTION	OWNERSHIP
1 Water	City of Santa Ana
2 Water	City of Santa Ana
3 Sewer Manhole	Orange County Storm Drain
4 Water	City of Santa Ana
5 Water	City of Santa Ana
6 Sewer Manhole	Orange County Storm Drain

FEE R/W TO BE ACQUIRED EASEMENT AREA TO BE ACQUIRED

SHEET NUMBER	AREA (m ²)
L-1	86
L-2	1250
L-3	1415
L-4	1615
L-5	1430
L-6	215
TOTAL	5711

SHEET NUMBER	AREA (m ²)
L-1	0
L-2	930
L-3	1725
L-4	1735
L-5	1645
L-6	165
TOTAL	5711

ALTERNATIVE 1: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING BETWEEN WEST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP

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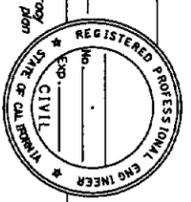
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12	Orange	55	R12.63/R14.81		

REGISTERED CIVIL ENGINEER

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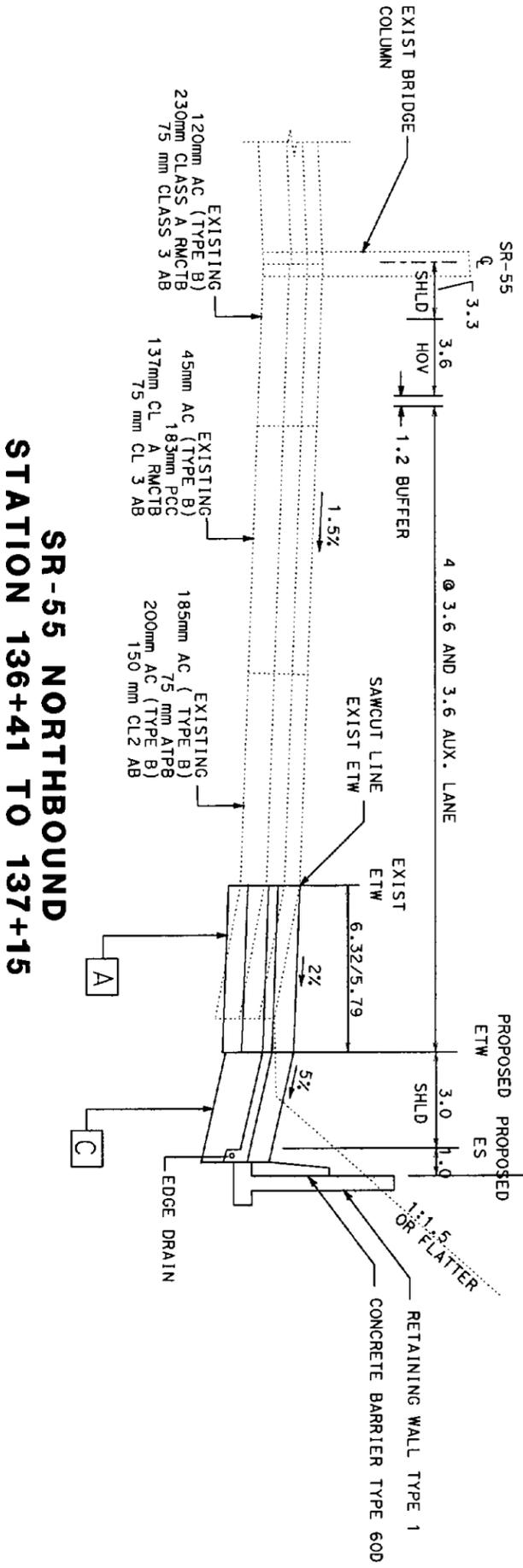


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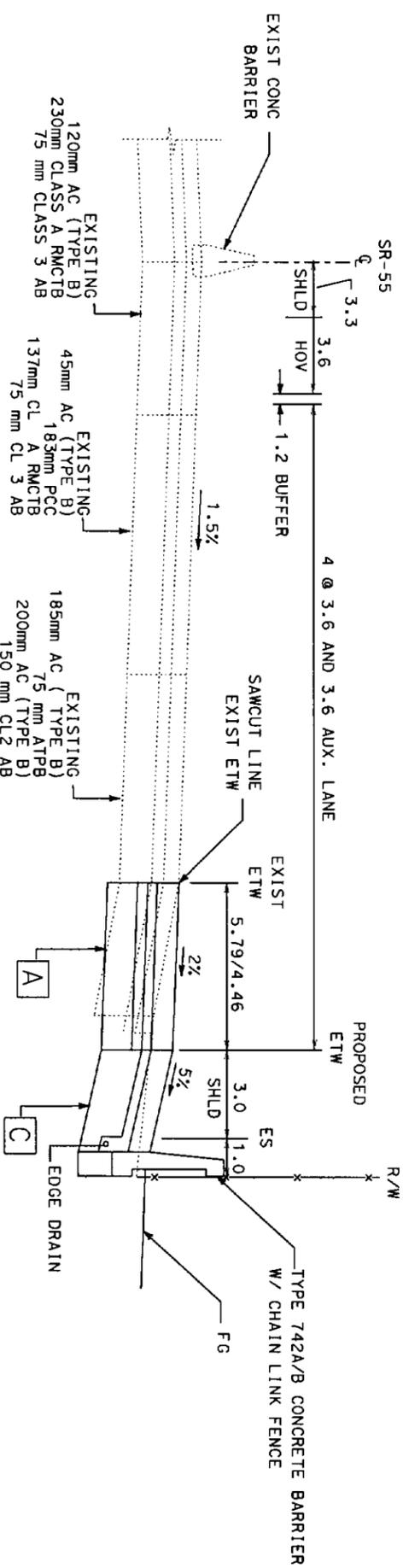
CU 12840 EA 00950K

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER	CALCULATED/DESIGNED BY	DATE	REVISED BY	
Caltrans PSR UNIT	KIM ROBINSON	CHECKED BY		DATE REVISED	

NOTE: FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY MAPS AT DISTRICT OFFICE.



**SR-55 NORTHBOUND
STATION 136+41 TO 137+15**



**SR-55 NORTHBOUND
STATION 137+15 TO 143+25**

**ALTERNATIVE 1: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING
BETWEEN WEST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP**

THIS PLAN ACCURATE FOR PSR WORK ONLY.



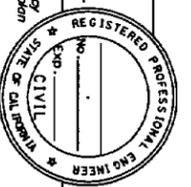
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
12	Orange	55	R12.63/R14.81		

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

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RELATIVE BORDER SCALE
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ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN.

TYPICAL CROSS-SECTION

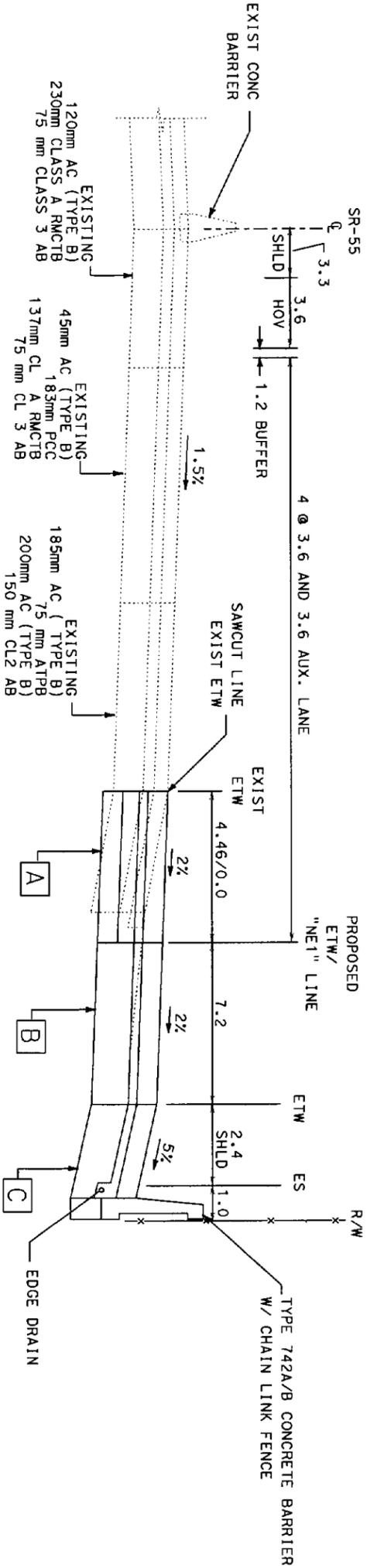
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CU 12840

EA 06950K

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER	CALCULATED/DESIGNED BY	DATE	REVISED BY		
Caltrans PSR UNIT	KIM ROBINSON	CHECKED BY		DATE REVISED		

NOTE: FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY MAPS AT DISTRICT OFFICE.

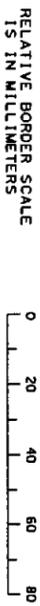


**SR-55 NORTHBOUND
STATION 143+25.38 TO 145+36.93**

**ALTERNATIVE 1: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING
BETWEEN WEST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP**

**TYPICAL CROSS-SECTION
NO SCALE
X-3**

THIS PLAN ACCURATE FOR PSR WORK ONLY.



USERNAME => tkrobin
DGN FILE => xsection.dgn

ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN.

CU 12840 EA 00950K



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
12	Orange	55	R12.63/R14.81		

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

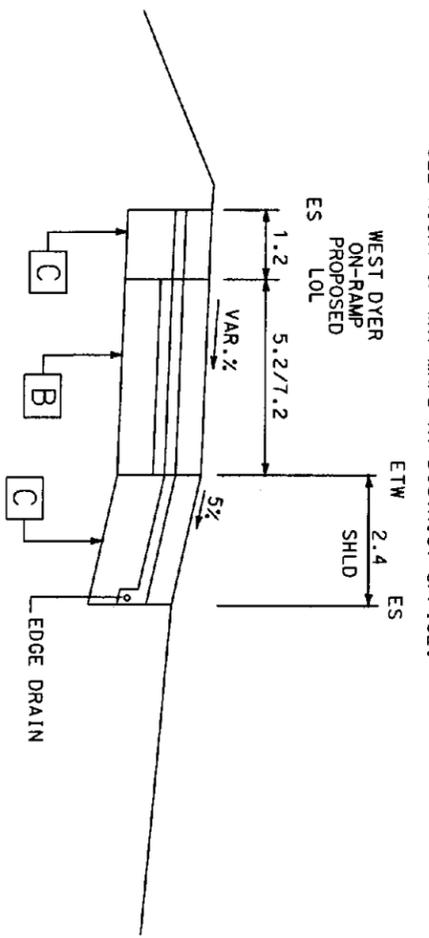
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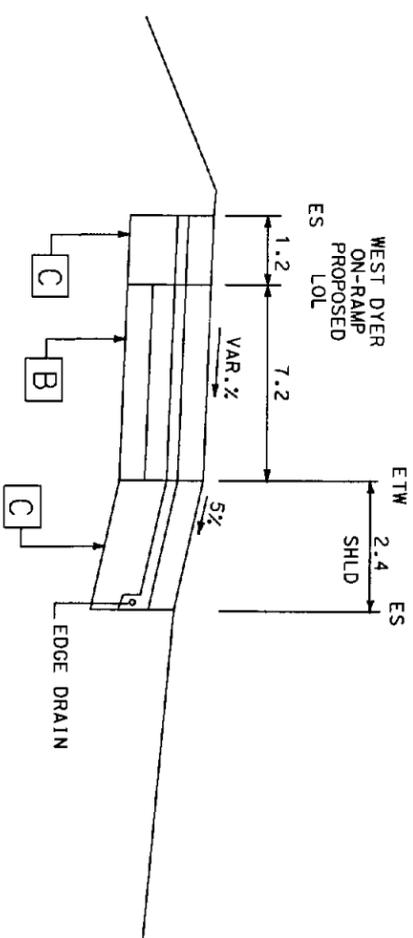


STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER	CALCULATED/DESIGNED BY	DATE	REVISED BY	
Caltrans PSR UNIT	KIM ROBINSON	CHECKED BY		DATE REVISED	

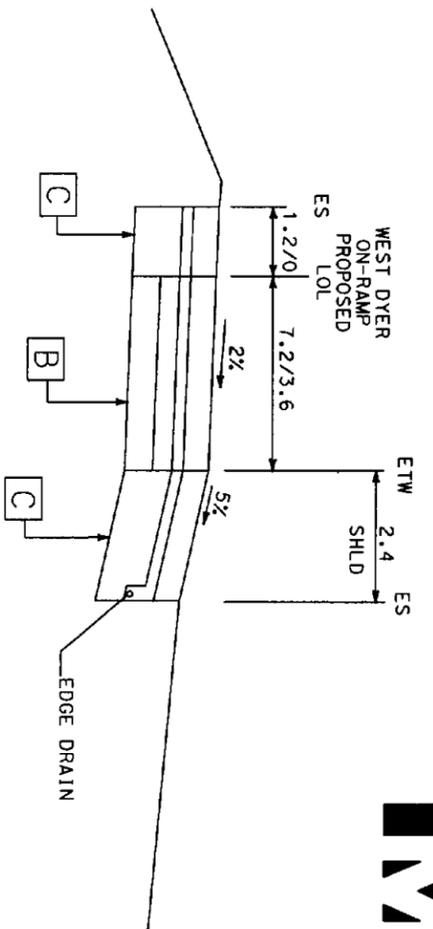
NOTE: FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY MAPS AT DISTRICT OFFICE.



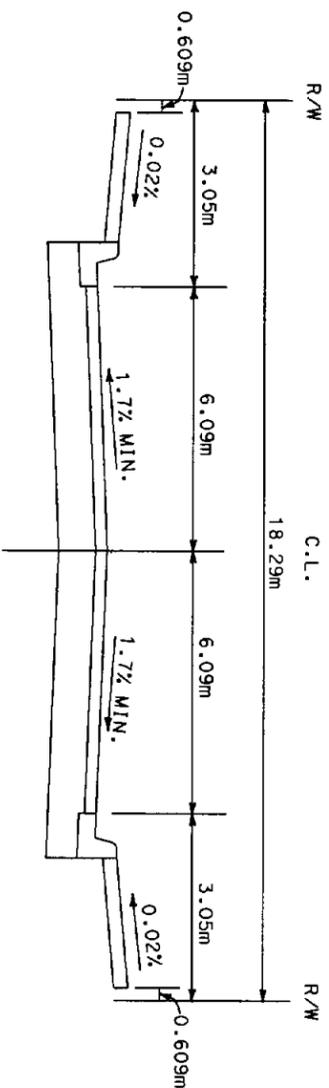
**WEST DYER ON-RAMP
"WD" LINE
STA. 27+09.20 TO 27+82.65**



**WEST DYER ON-RAMP
"WD" LINE
STA. 29+35.62 TO 32+00**



**PULLMAN STREET
"WD" LINE
STA. 32+73.25 TO 35+83.70**



**PULLMAN STREET
STA. 32+73.25 TO 35+83.70
(SEE CITY OF SANTA ANA STD PLAN NUMBER 1102)**

**ALTERNATIVE 1: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING
BETWEEN WEST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP**

TYPICAL CROSS-SECTION

THIS PLAN ACCURATE FOR PSR WORK ONLY.



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT KP	SHEET NO	TOTAL SHEETS
12	Orange	55	R12.63/R14.81		

REGISTERED CIVIL ENGINEER

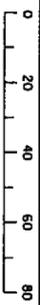
PLANS APPROVAL DATE

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RELATIVE BORDER SCALE IS IN MILLIMETERS



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JOB FILE => xedctn.dgn

ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN.

NO SCALE
X-4

EXHIBIT B

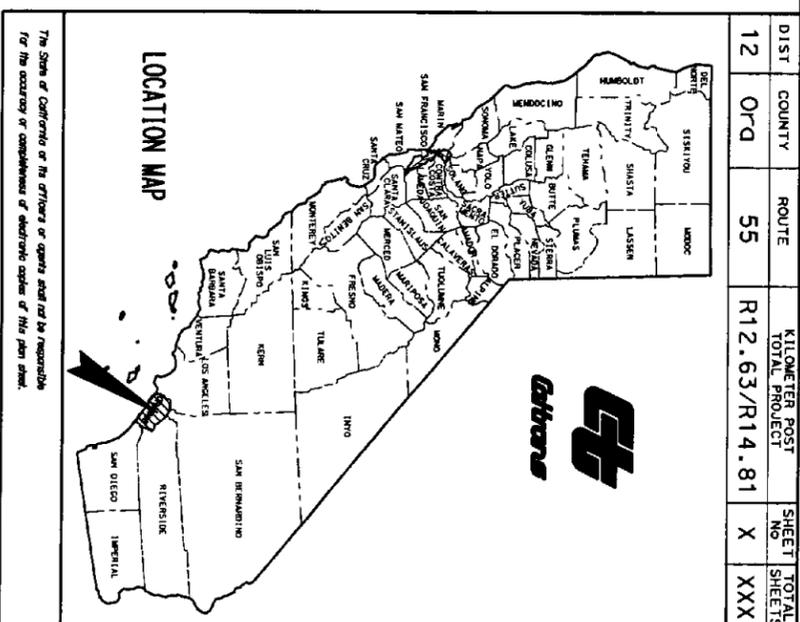
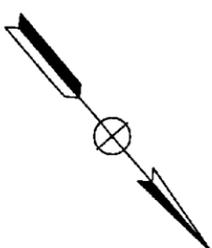
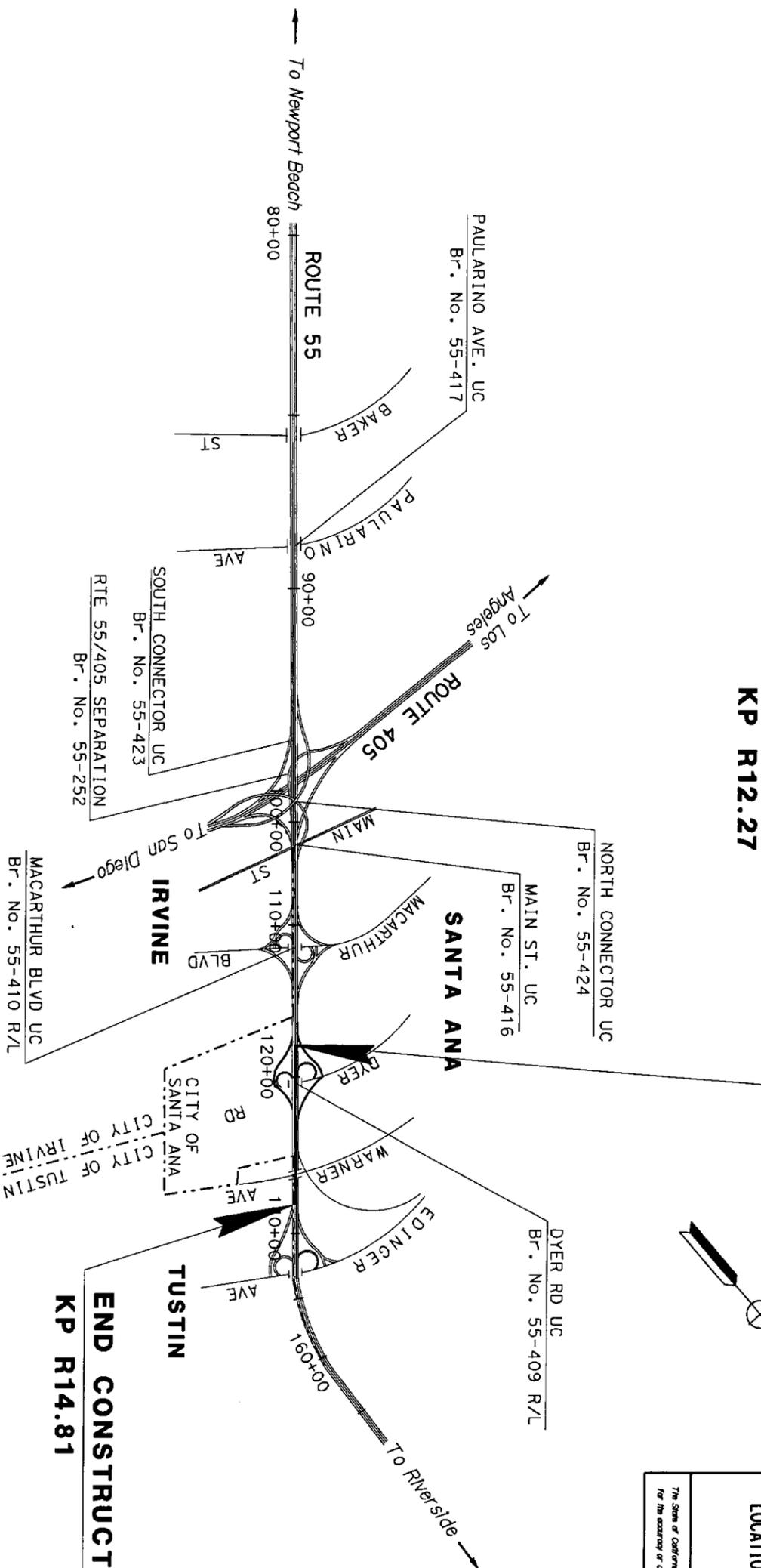
**ALTERNATIVE 2
LAYOUT & CROSS SECTION**

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
 IN ORANGE COUNTY
 FROM DYER ROAD UNDERCROSSING
 TO EDINGER AVENUE UNDERCROSSING

BEGIN CONSTRUCTION
 KP R12.27



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	ORC	55	R12.63/R14.81	X	XXX

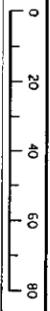


ALTERNATIVE 2: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING BETWEEN EAST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP

PROJECT ENGINEER	DATE	PROJECT MANAGER	DATE
KIM ROBINSON	01/05	LEO CHEN	

FORM DC-05-93-PF (REV. 3/88)

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS



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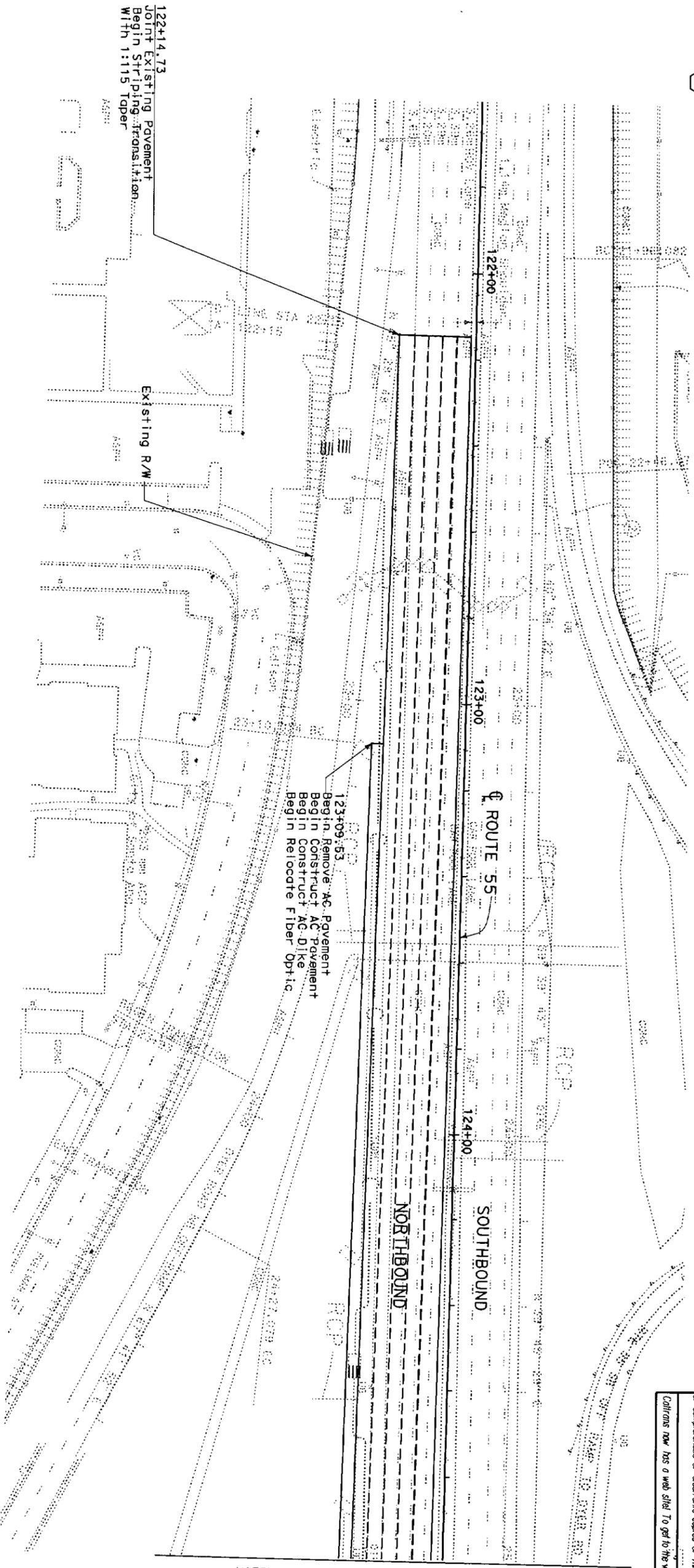
CU 12840 EA 0G950K

Contract No. **12-0G950K**

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER	CALCULATED/DESIGNED BY	DATE	REVISED BY			
Caltrans	PSR UNIT	KIM ROBINSON					
		CHECKED BY		DATE REVISED			

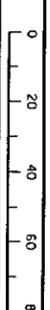
- LEGEND**
-  R/W TO BE ACQUIRED
 -  UTILITIES TO BE RELOCATED
 -  UTILITIES TO BE ADJUSTED TO GRADE



ALTERNATIVE 2: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING BETWEEN EAST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP

THIS PLAN ACCURATE FOR PSR WORK ONLY.

RELATIVE BORDER SCALE IS IN MILLIMETERS




DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
12	Orange	55	R12.63/R14.81		

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

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MATCH LINE STA 125+00 SEE SHEET L-2

LAYOUT
SCALE 1 : 500
L-1

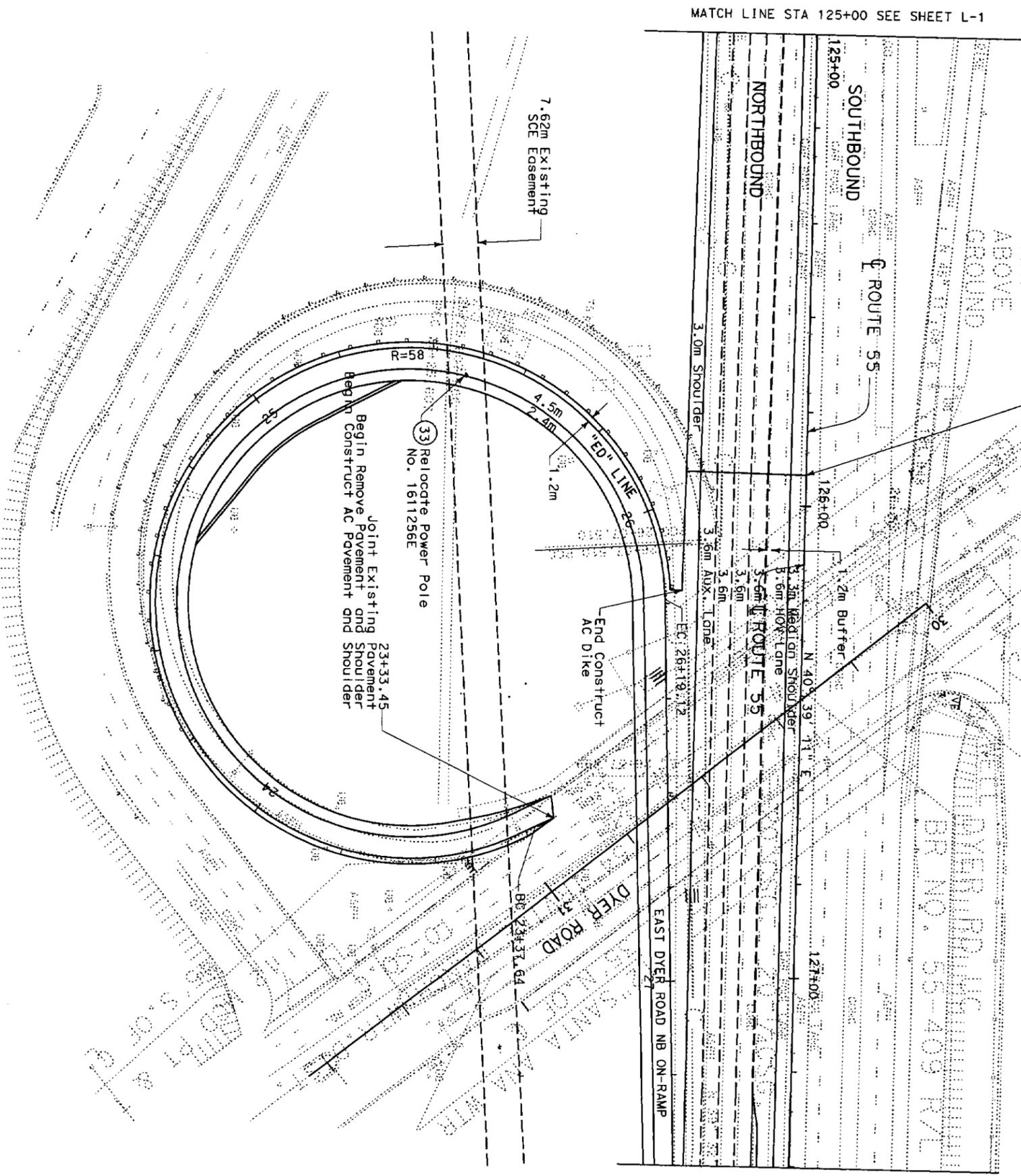
CU 12840 EA 0G950K

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER	CALCULATED/DESIGNED BY	DATE	REVISED BY	
Caltrans	PSRSONMIT	KIM ROBINSON			
		CHECKED BY		DATE REVISED	

- LEGEND**
-  R/W TO BE ACQUIRED
 -  UTILITIES TO BE RELOCATED
 -  UTILITIES TO BE ADJUSTED TO GRADE

THIS PLAN ACCURATE FOR PSR WORK ONLY.

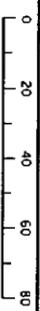
ALTERNATIVE 2: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING BETWEEN EAST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP



MATCH LINE STA 125+00 SEE SHEET L-1

MATCH LINE STA 127+40 SEE SHEET L-3

RELATIVE BORDER SCALE IS IN MILLIMETERS



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DGN FILE => L2.dgn

CU 12840

EA 0G950K



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
12	Orange	55	R12.63/R14.81	KP	

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

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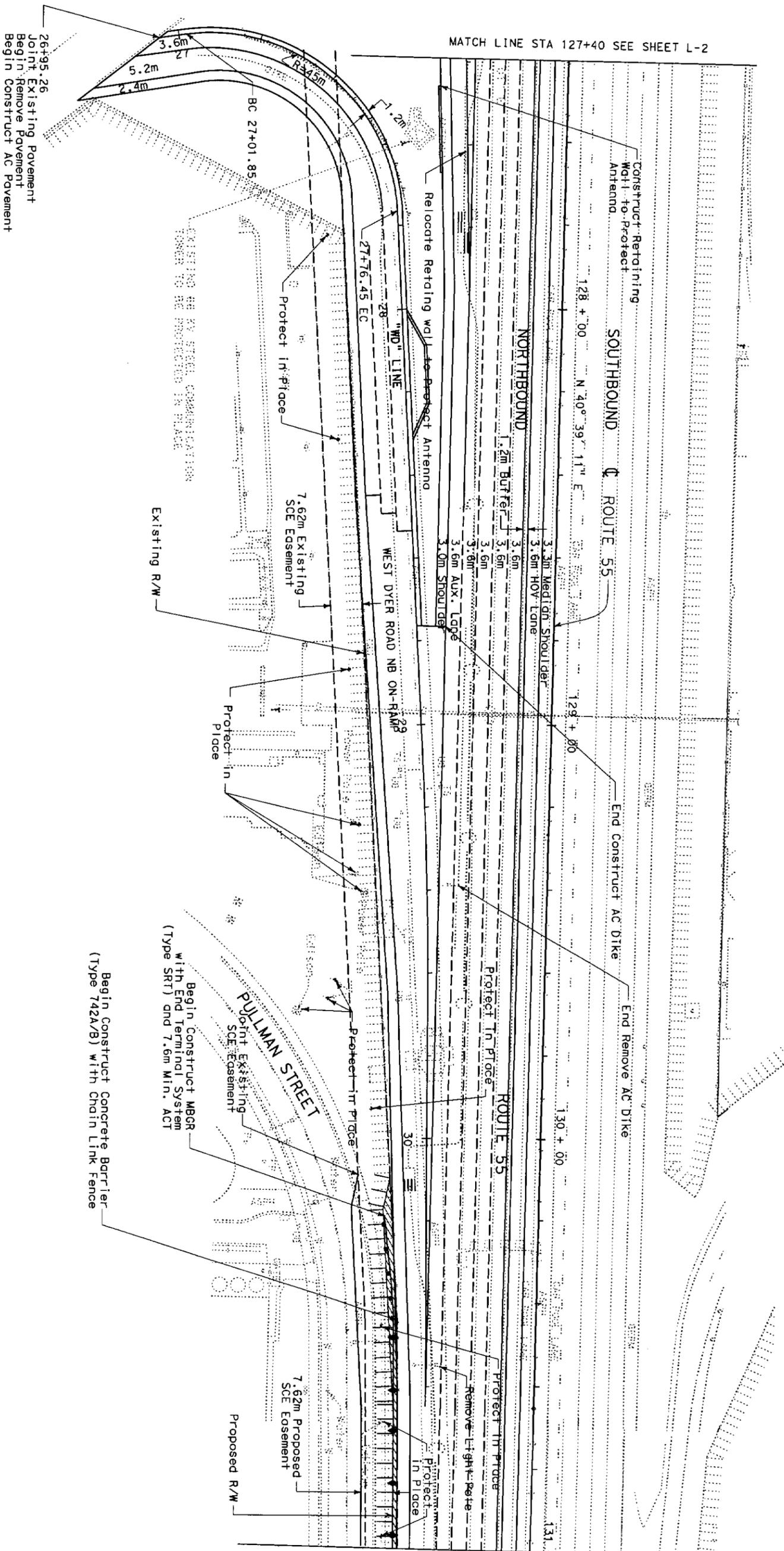
LAYOUT
SCALE 1 : 500

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION Caltrans	PROJECT ENGINEER PSR UNIT KIM ROBINSON	CALCULATED/DESIGNED BY CHECKED BY	DATE	REVISED BY			
				DATE REVISED			

- LEGEND**
-  R/W TO BE ACQUIRED
 -  UTILITIES TO BE RELOCATED
 -  UTILITIES TO BE ADJUSTED TO GRADE

THIS PLAN ACCURATE FOR PSR WORK ONLY.

ALTERNATIVE 2: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING BETWEEN EAST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP



DIST	COUNTY	ROUTE	KILOMETER POST SHEET TOTALS
12	Orange	55	TOTAL PROJECT NO. SHEETS R12.63/R14.81
REGISTERED CIVIL ENGINEER			REGISTERED PROFESSIONAL ENGINEER
PLANS APPROVAL DATE			NO. CIVIL ENGINEER

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LAYOUT
SCALE 1:500

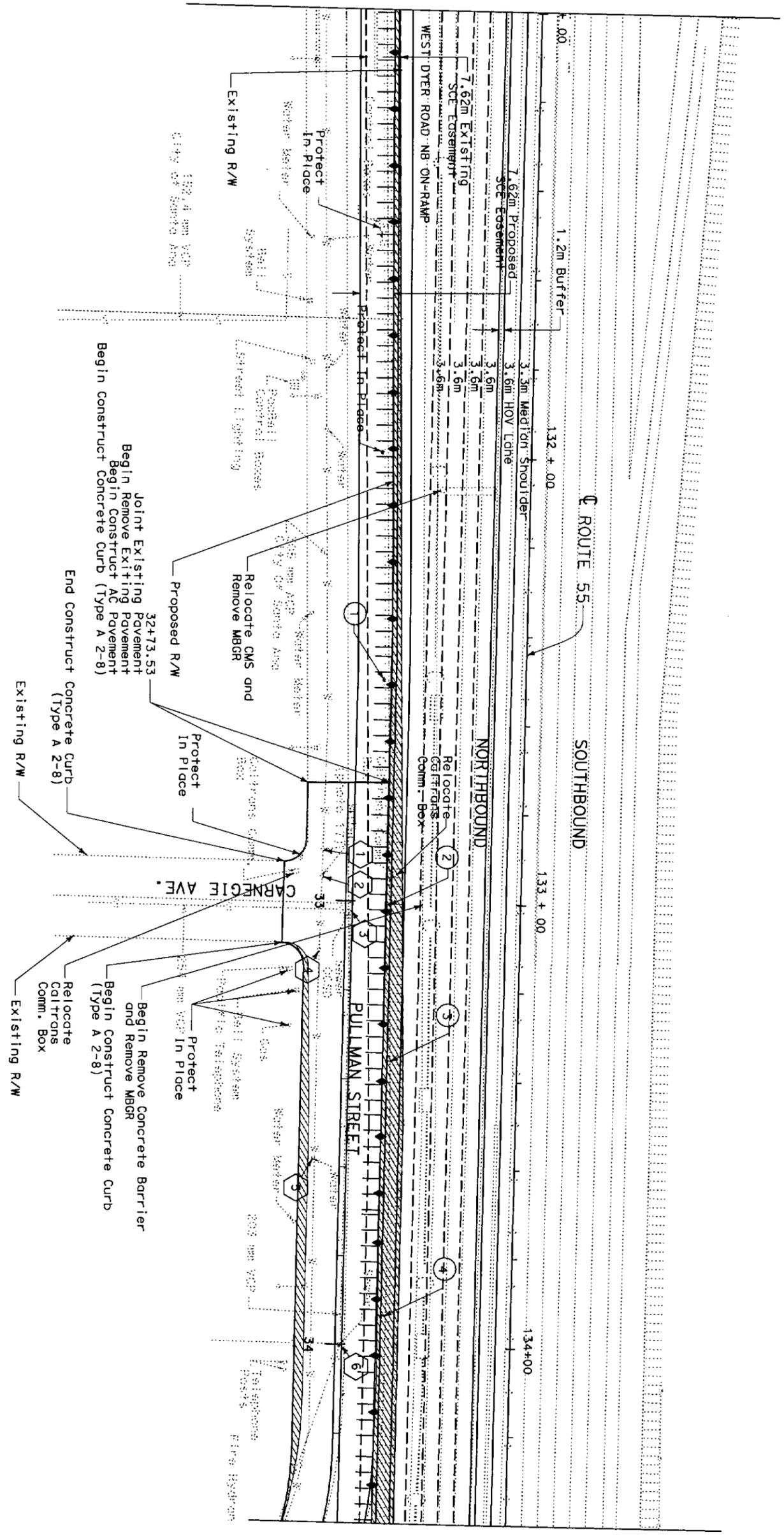
L-3

CU 12840 EA 00950K

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION Caltrans	PROJECT ENGINEER PSR UNIT KIM ROBINSON	CALCULATED/DESIGNED BY CHECKED BY	DATE	REVISED BY		
				DATE REVISED		

- LEGEND**
-  R/W TO BE ACQUIRED
 -  UTILITIES TO BE RELOCATED
 -  UTILITIES TO BE ADJUSTED TO GRADE

MATCH LINE STA 131+00 SEE SHEET L-3



MATCH LINE STA 134+40 SEE SHEET L-5

ALTERNATIVE 2: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING BETWEEN EAST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP

THIS PLAN ACCURATE FOR PSR WORK ONLY.



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CU 12840

EA 06950K

LAYOUT
SCALE 1 : 500
L-4



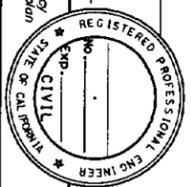
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Orange	55	R12.63/R14.81		

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

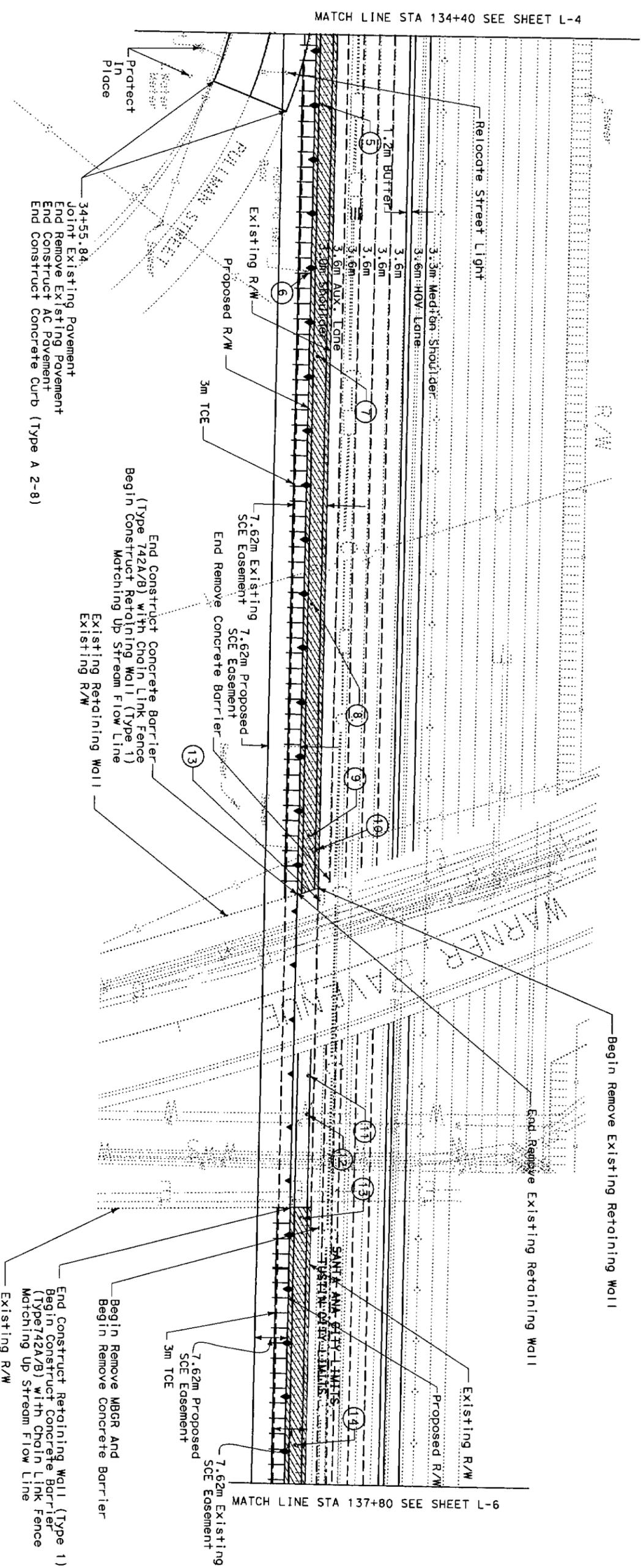
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER	CALCULATED/DESIGNED BY	DATE	REVISED BY	
Caltrans PSR UNIT	KIM ROBINSON	CHECKED BY		DATE REVISED	

- LEGEND**
-  R/W TO BE ACQUIRED
 -  UTILITIES TO BE RELOCATED
 -  UTILITIES TO BE ADJUSTED TO GRADE



ALTERNATIVE 2: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING BETWEEN EAST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP

THIS PLAN ACCURATE FOR PSR WORK ONLY



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CU 12840

EA 06950K

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
12	Orange	55	R12.63/R14.81		

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

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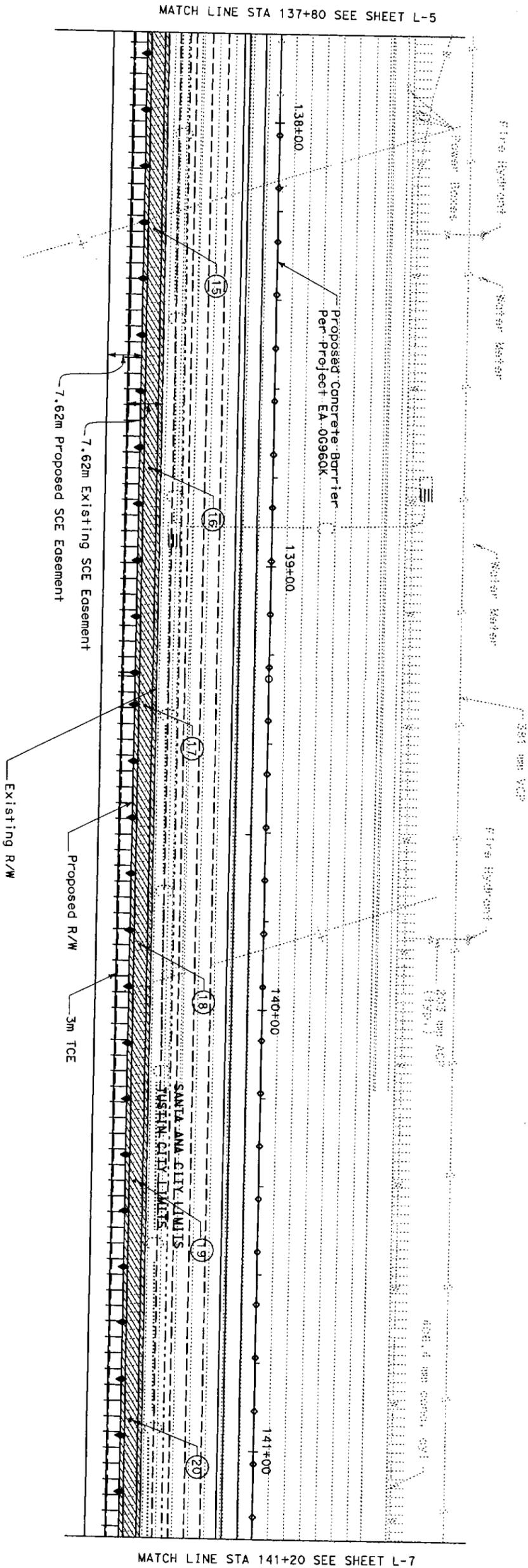


LAYOUT
SCALE 1 : 500

L-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER	CALCULATED/DESIGNED BY	DATE	REVISED BY			
Caltrans PSR UNIT	KIM ROBINSON	CHECKED BY		DATE REVISED			

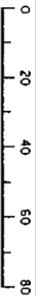
- LEGEND**
-  R/W TO BE ACQUIRED
 -  UTILITIES TO BE RELOCATED
 -  UTILITIES TO BE ADJUSTED TO GRADE



ALTERNATIVE 2: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING BETWEEN EAST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP

THIS PLAN ACCURATE FOR PSR WORK ONLY.

RELATIVE BORDER SCALE
IS IN MILLIMETERS



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DGN FILE => L6.dgn

CU 12840

EA 0G950K

LAYOUT
SCALE 1 : 500
L-6



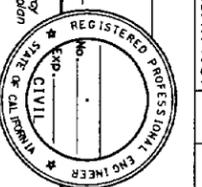
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
12	Orange	55	R12.63/R14.81		

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

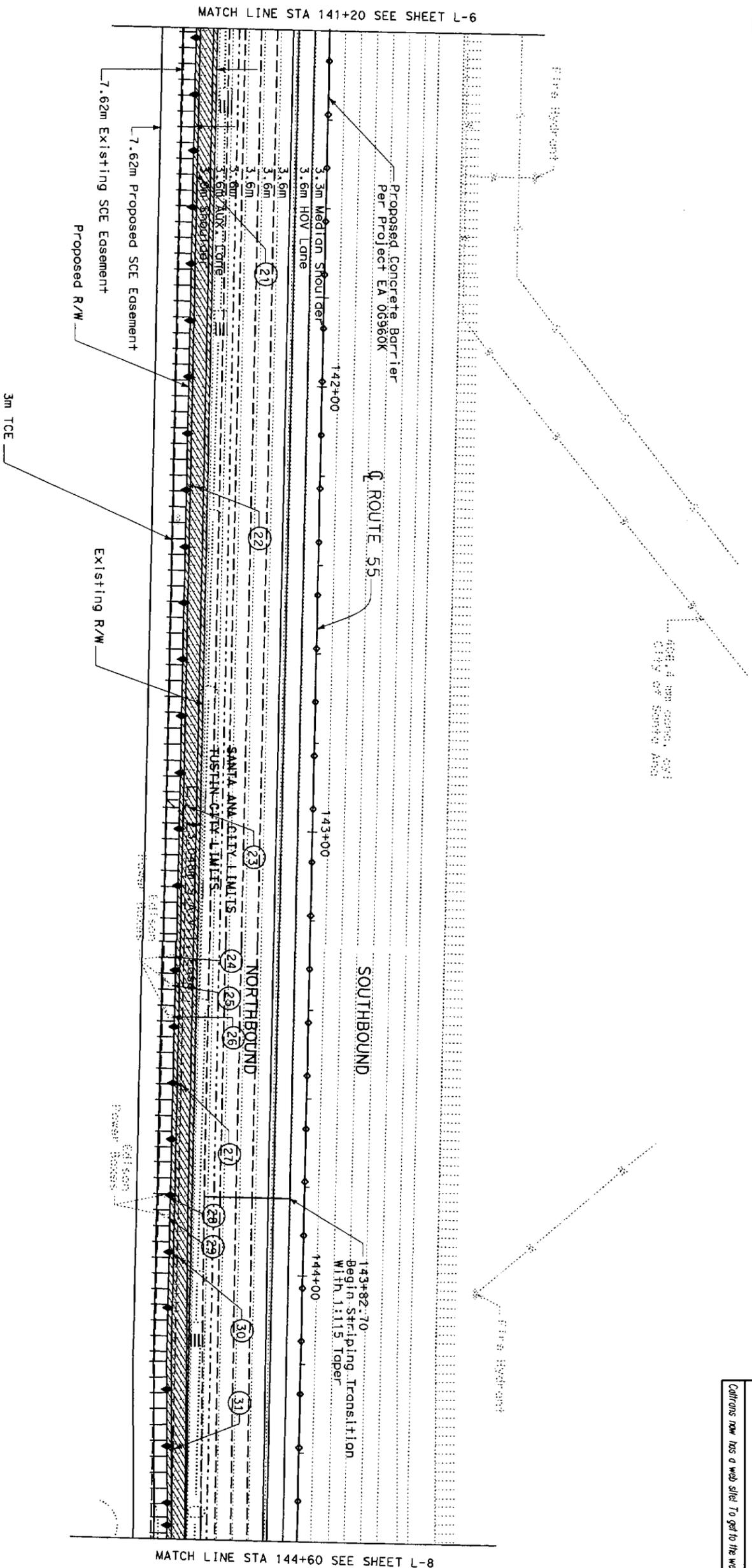
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER	CALCULATED/DESIGNED BY	DATE	REVISED BY		
Caltrans PSR UNIT	KIM ROBINSON	CHECKED BY		DATE REVISED		

- LEGEND**
-  R/W TO BE ACQUIRED
 -  UTILITIES TO BE RELOCATED
 -  UTILITIES TO BE ADJUSTED TO GRADE



**ALTERNATIVE 2: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING
BETWEEN EAST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP**

THIS PLAN ACCURATE FOR PSR WORK ONLY.



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DGN FILE => L7.dgn

CU 12840
EA 0G950K

LAYOUT
SCALE 1: 500
L-7



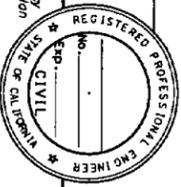
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT KP	SHEET TOTAL SHEETS
12	Orange	55	R12.63/R14.81	

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

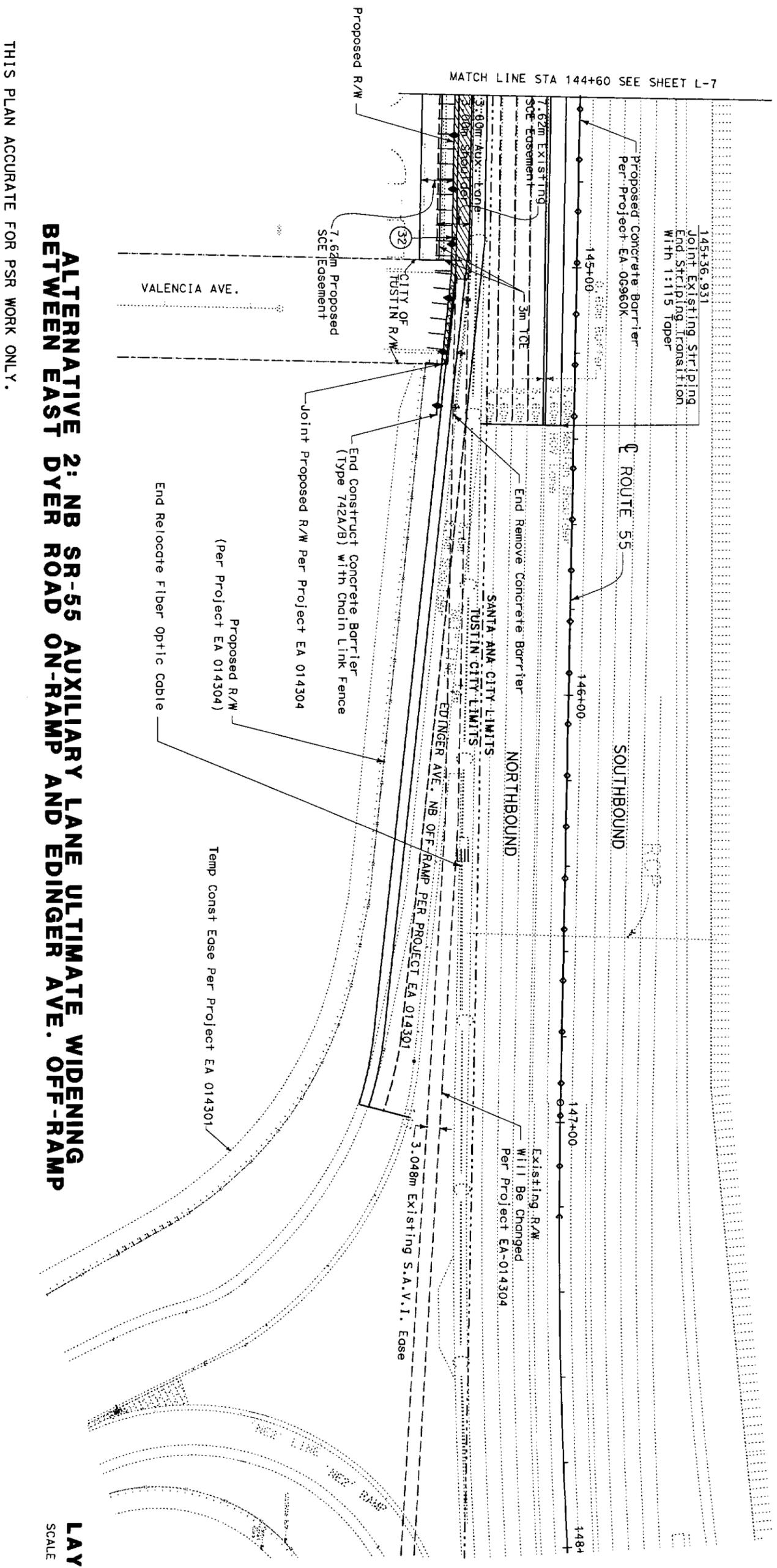
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION Caltrans	PROJECT ENGINEER KIM ROBINSON	CALCULATED/DESIGNED BY	DATE	REVISED BY			
PSR UNIT		CHECKED BY		DATE REVISED			

- LEGEND**
-  R/W TO BE ACQUIRED
 -  UTILITIES TO BE RELOCATED
 -  UTILITIES TO BE ADJUSTED TO GRADE



THIS PLAN ACCURATE FOR PSR WORK ONLY.

ALTERNATIVE 2: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING BETWEEN EAST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP



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CU 12840

EA 06950K

LAYOUT
SCALE 1: 500
L-8



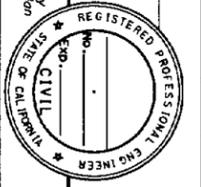
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
12	Orange	55	R12.63/R14.81		

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER	CALCULATED/DESIGNED BY	DATE	REVISED BY		
PSR UNIT	KIM ROBINSON	CHECKED BY		DATE REVISED		

UTILITIES TO BE RELOCATED

UTILITY DESCRIPTION	OWNERSHIP
1 Power Pole No. 1631453E	SOUTHERN CALIFORNIA EDISON
2 Power Pole No. 1631452E	SOUTHERN CALIFORNIA EDISON
3 Power Pole No. 1631451E	SOUTHERN CALIFORNIA EDISON
4 Power Pole No. 1477796E	SOUTHERN CALIFORNIA EDISON
5 Pacific Bell Box	SOUTHERN CALIFORNIA EDISON
6 Power Pole No. 1477795E	PACBELL
7 Power Pole No. 1477794E	SOUTHERN CALIFORNIA EDISON
8 Power Pole No. 1477793E	SOUTHERN CALIFORNIA EDISON
9 Sewer Manhole	SOUTHERN CALIFORNIA EDISON
10 Power Pole No.	ORA COUNTY SANITATION DISTRICT
11 Power Pole No.	SOUTHERN CALIFORNIA EDISON
12 Power Pole No. 1477791E	SOUTHERN CALIFORNIA EDISON
13 Power Pole No. 1477790E	SOUTHERN CALIFORNIA EDISON
14 Power Pole No. 1477789E	SOUTHERN CALIFORNIA EDISON
15 Power Pole No. 1477788E	SOUTHERN CALIFORNIA EDISON
16 Power Pole No. 4086154E	SOUTHERN CALIFORNIA EDISON
17 Power Pole No. 1477786E	SOUTHERN CALIFORNIA EDISON
18 Power Pole No. 1477786E	SOUTHERN CALIFORNIA EDISON
19 Power Pole No. 4086155E	SOUTHERN CALIFORNIA EDISON
20 Power Pole No. 1477784E	SOUTHERN CALIFORNIA EDISON
21 Power Pole No. 1477782E	SOUTHERN CALIFORNIA EDISON
22 Power Pole No. 1477782E	SOUTHERN CALIFORNIA EDISON
23 Power Pole No. 1477782E	SOUTHERN CALIFORNIA EDISON
24 Edison Power Box	SOUTHERN CALIFORNIA EDISON
25 Edison Power Box	SOUTHERN CALIFORNIA EDISON
26 Edison Power Box	SOUTHERN CALIFORNIA EDISON
27 Edison Power Box	SOUTHERN CALIFORNIA EDISON
28 Edison Power Box	SOUTHERN CALIFORNIA EDISON
29 Edison Power Box	SOUTHERN CALIFORNIA EDISON
30 Power Pole No. 1477780E	SOUTHERN CALIFORNIA EDISON
31 Power Pole No. 1477779E	SOUTHERN CALIFORNIA EDISON
32 Power Pole No. 4086155E	SOUTHERN CALIFORNIA EDISON
33 Power Pole No. 1611256E	SOUTHERN CALIFORNIA EDISON

UTILITIES TO BE ADJUSTED TO GRADE

UTILITY DESCRIPTION	OWNERSHIP
1 Water	City of Santa Ana
2 Water	City of Santa Ana
3 Sewer Manhole	Orange County Storm Drain
4 Water	City of Santa Ana
5 Water	City of Santa Ana
6 Sewer Manhole	Orange County Storm Drain

R/W TO BE ACQUIRED

SHEET NUMBER	AREA (m ²)
L-1	0
L-2	0
L-3	130
L-4	1310
L-5	1360
L-6	1730
L-7	1480
L-8	215
TOTAL	6225

EASEMENT AREA TO BE ACQUIRED

SHEET NUMBER	AREA (m ²)
L-1	0
L-2	0
L-3	135
L-4	1060
L-5	1725
L-6	1675
L-7	1615
L-8	165
TOTAL	6375

ALTERNATIVE 2: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING BETWEEN EAST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP

THIS PLAN ACCURATE FOR PSR WORK ONLY.



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
12	Orange	55	R12.63/R14.81		

REGISTERED CIVIL ENGINEER

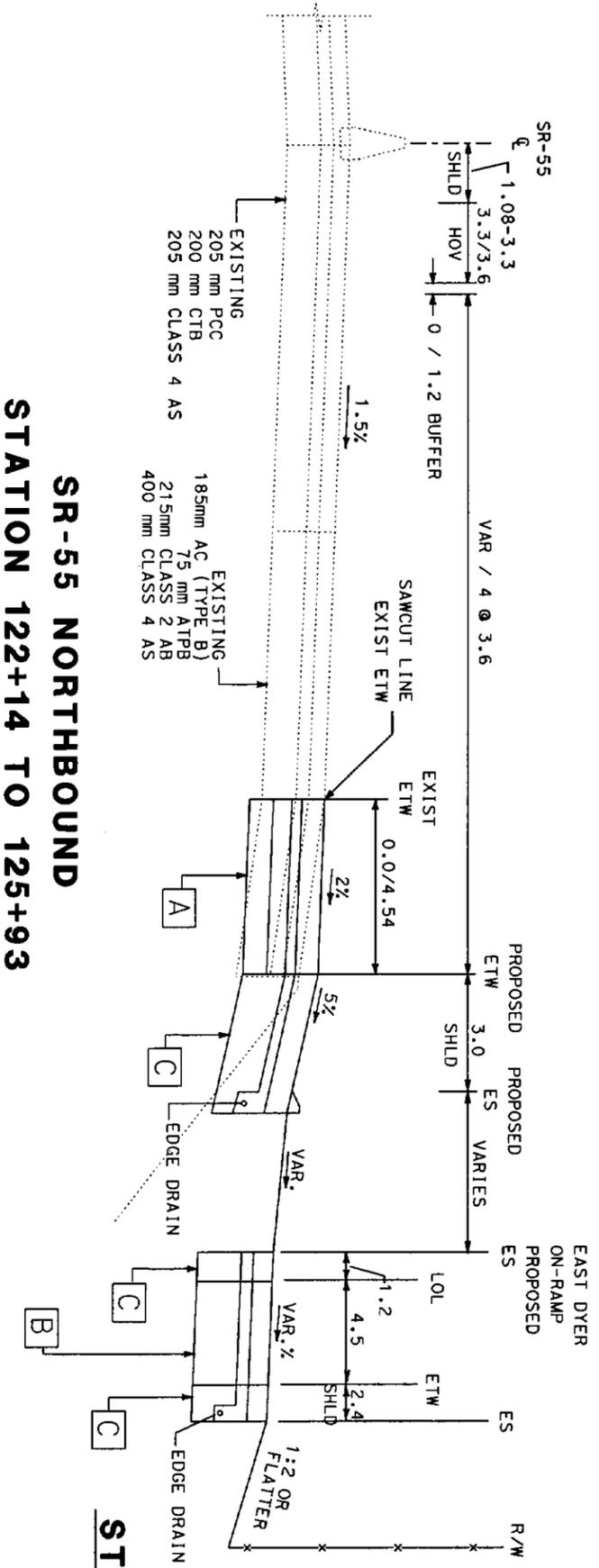
PLANS APPROVAL DATE

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER	CALCULATED/DESIGNED BY	DATE	REVISED BY	
Caltrans PSR UNIT	KIM ROBINSON	CHECKED BY		DATE REVISED	

NOTE: FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY MAPS AT DISTRICT OFFICE.



SR-55 NORTHBOUND
STATION 122+14 TO 125+93

Caltrans
atic

REGISTERED CIVIL ENGINEER

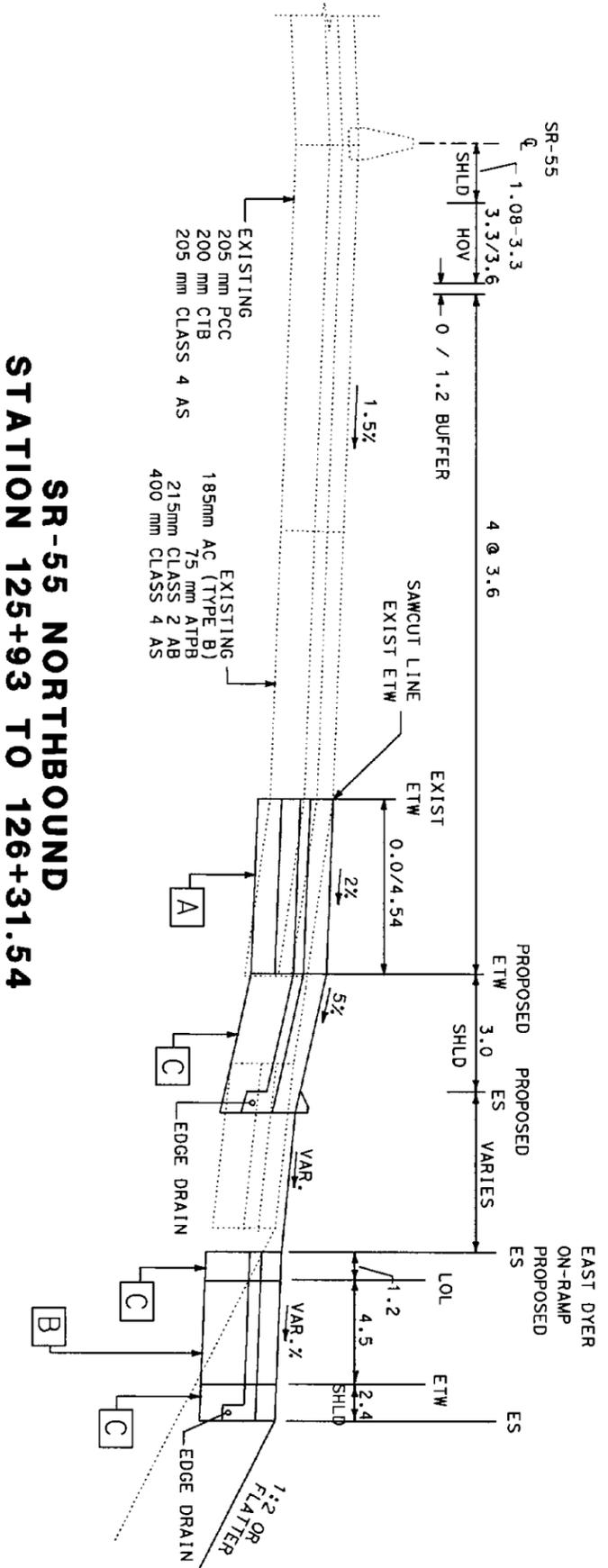
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DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
12	Orange	55	R12.63/R14.81		

- STRUCTURAL SECTION TYPES**
- A [215 mm AC (TYPE A)
75 mm CTPB
170 mm ACB
500 mm AS (CLASS 2)]
 - B [180 mm AC (TYPE A)
180 mm ACB
400 mm AS (CLASS 2)]
 - C [125 mm AC (TYPE A)
140 mm ACB
305 mm AS (CLASS 2)]



SR-55 NORTHBOUND
STATION 125+93 TO 126+31.54

TYPICAL CROSS-SECTION

NO SCALE
X-1

THIS PLAN ACCURATE FOR PSR WORK ONLY.

RELATIVE BORDER SCALE IS IN MILLIMETERS

0 20 40 60 80

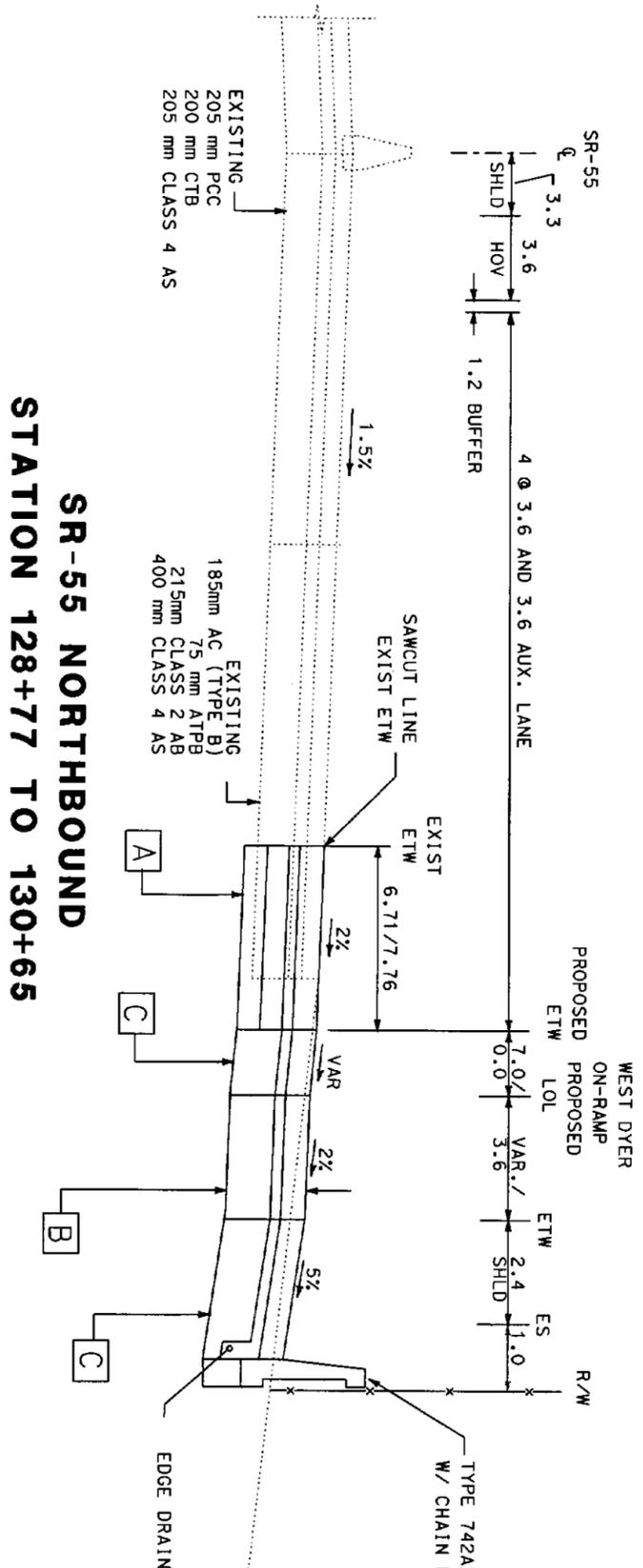
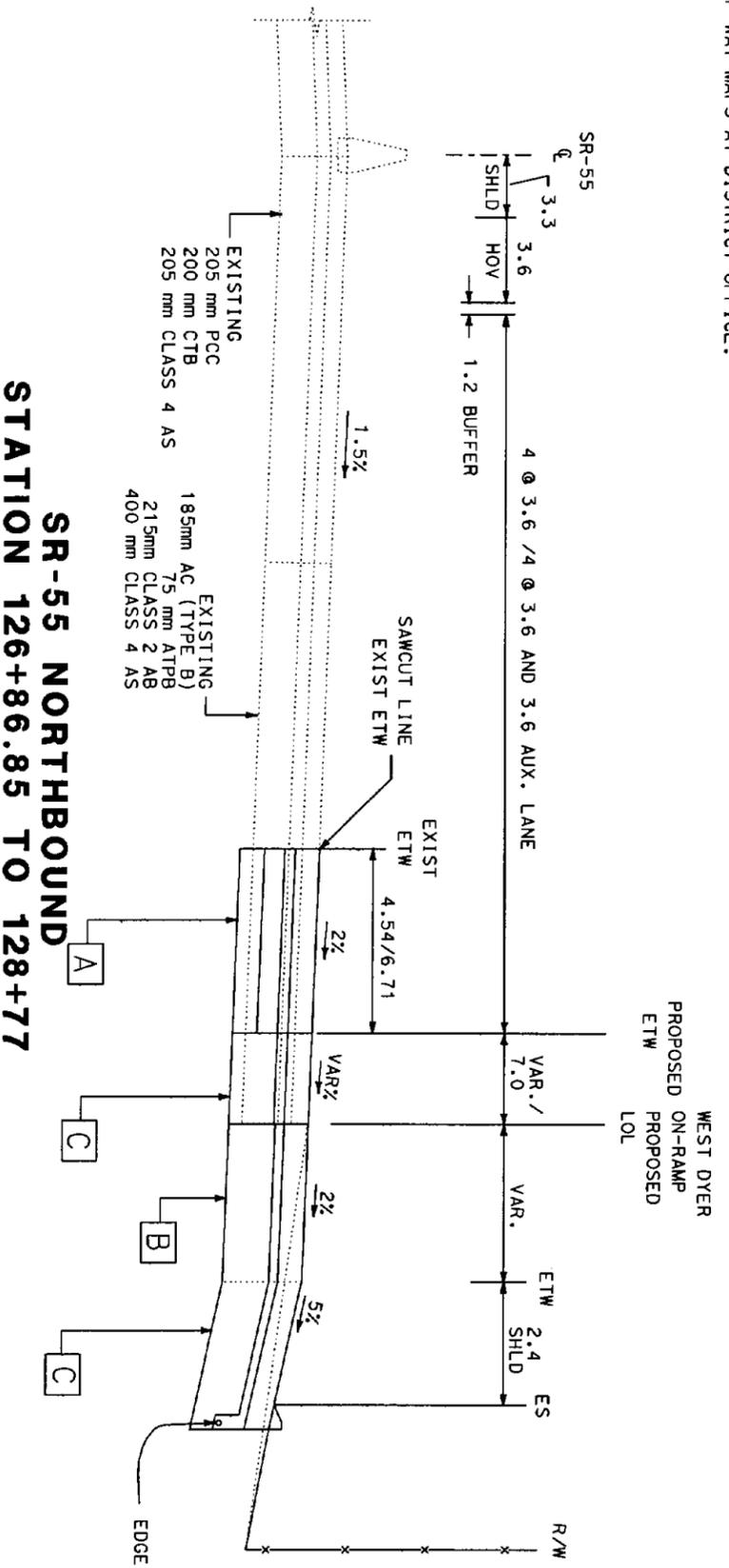
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CU 12840 EA 0G950K

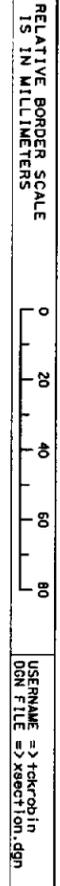
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER	CALCULATED/DESIGNED BY	DATE	REVISED BY	
Caltrans PSR UNIT	KIM ROBINSON	CHECKED BY		DATE REVISED	

NOTE: FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY MAPS AT DISTRICT OFFICE.



ALTERNATIVE 2: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING BETWEEN EAST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP

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TYPICAL CROSS-SECTION

NO SCALE
X-2



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT KP	SHEET NO	TOTAL SHEETS
12	Orange	55	R12.63/R14.81		

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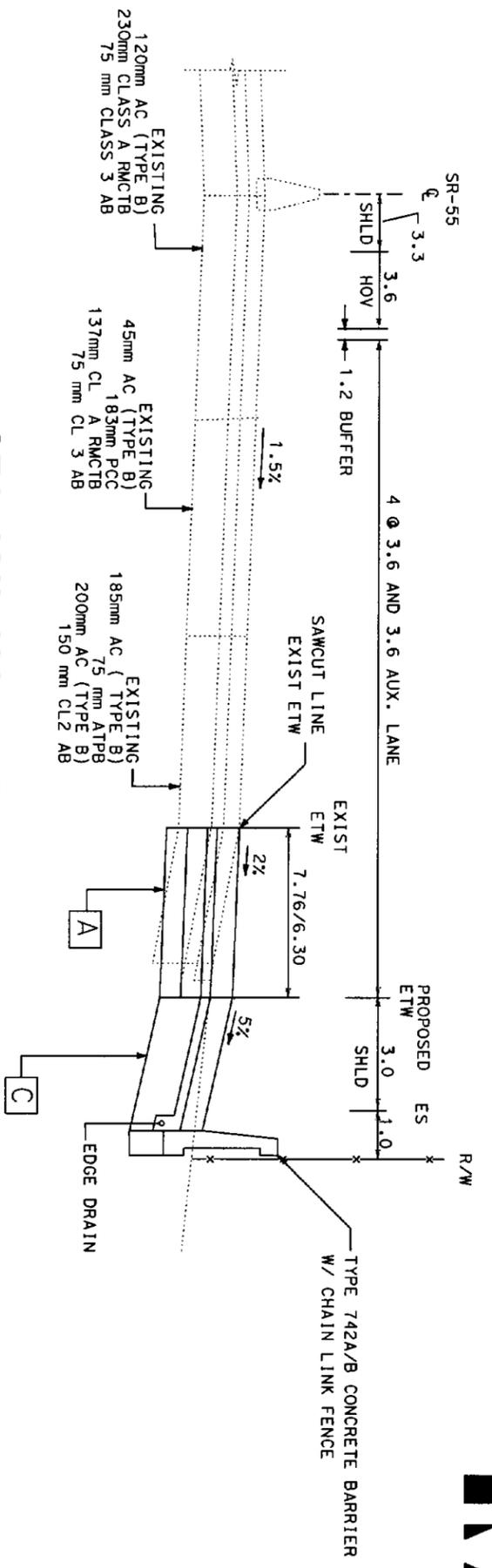
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REGISTERED PROFESSIONAL ENGINEER

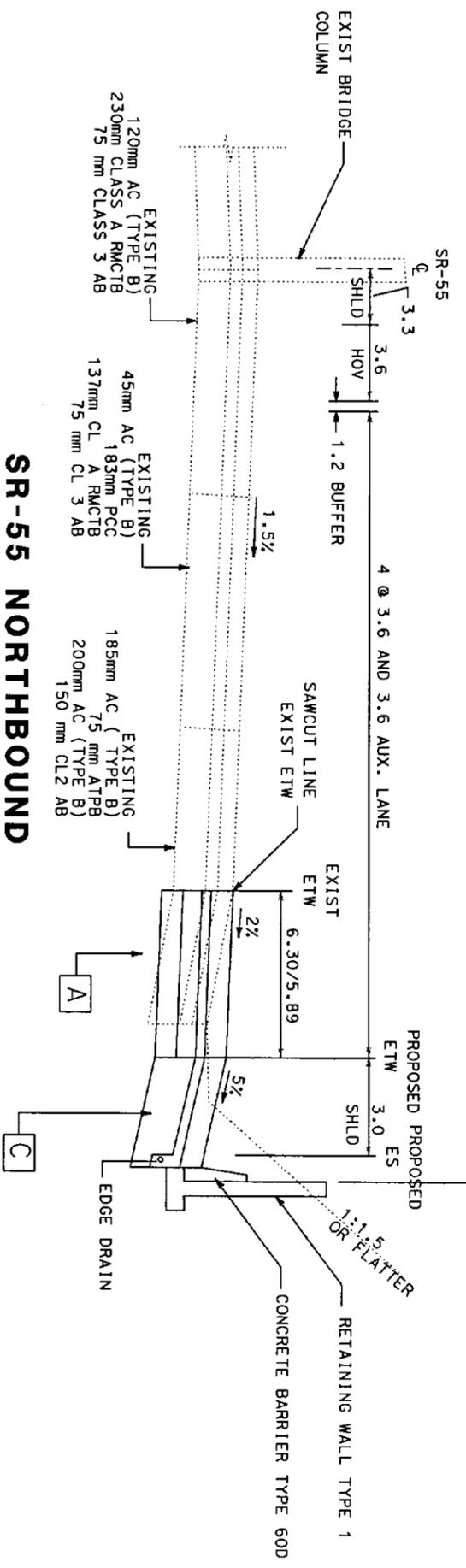
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EXP. DATE _____
STATE OF CALIFORNIA
CIVIL ENGINEER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER	CALCULATED/DESIGNED BY	DATE	REVISED BY	
Caltrans PSR UNIT	KIM ROBINSON	CHECKED BY		DATE REVISED	

NOTE: FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY MAPS AT DISTRICT OFFICE.



**STATION 130+65 TO 136+41
SR-55 NORTHBOUND**



**STATION 136+41 TO 137+15
SR-55 NORTHBOUND**

**ALTERNATIVE 2: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING
BETWEEN EAST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP**

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DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT KP	SHEET TOTAL SHEETS
12	Orange	55	R12.63/R14.81	

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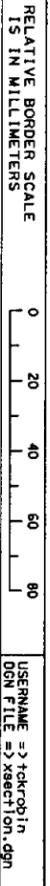
REGISTERED PROFESSIONAL ENGINEER

NO. _____

EXP. DATE _____

CIVIL ENGINEER

STATE OF CALIFORNIA



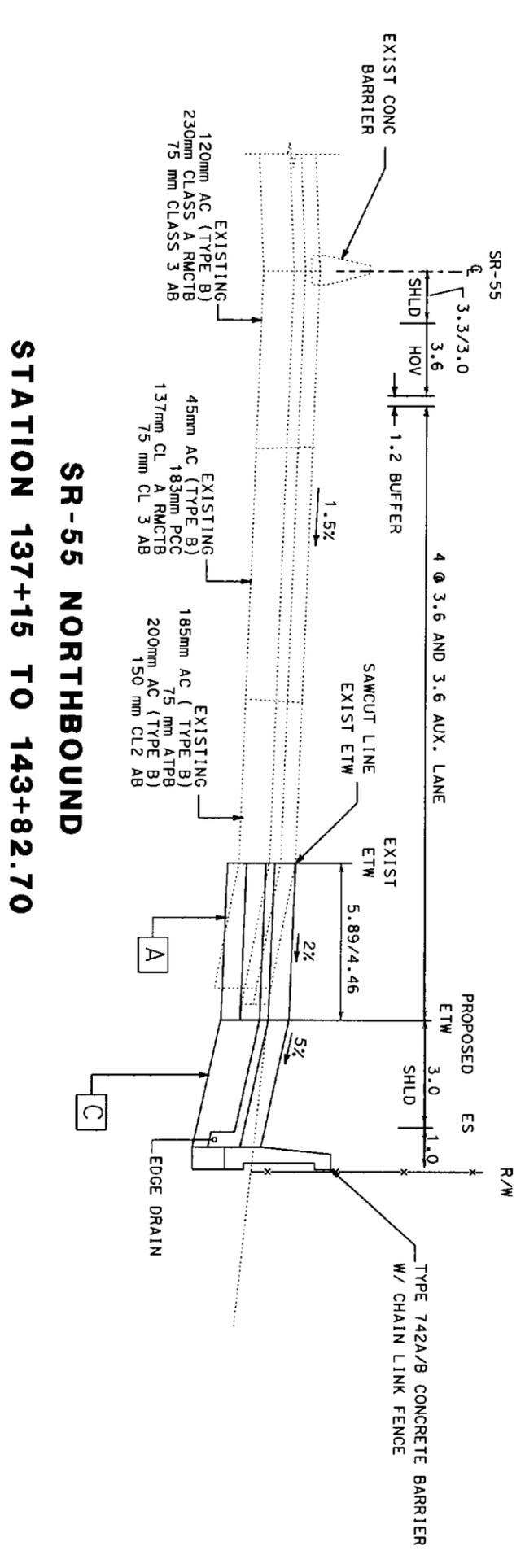
ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN.

TYPICAL CROSS-SECTION

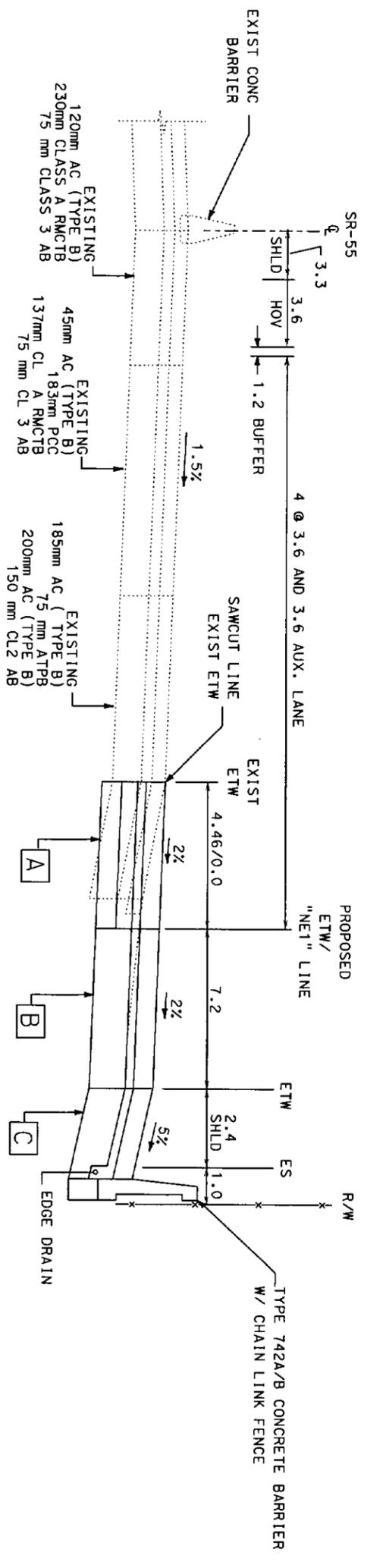
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X-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER	CALCULATED/DESIGNED BY	DATE	REVISED BY	
Caltrans PSR UNIT	KIM ROBINSON	CHECKED BY		DATE REVISED	

NOTE: FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY MAPS AT DISTRICT OFFICE.



**SR-55 NORTHBOUND
STATION 137+15 TO 143+82.70**



**SR-55 NORTHBOUND
STATION 143+82.70 TO 145+36.93**

**ALTERNATIVE 2: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING
BETWEEN EAST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP**

THIS PLAN ACCURATE FOR PSR WORK ONLY.



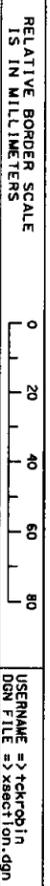
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT KP	SHEET NO.	TOTAL SHEETS
	Orange	55	R12.63/R14.81		

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

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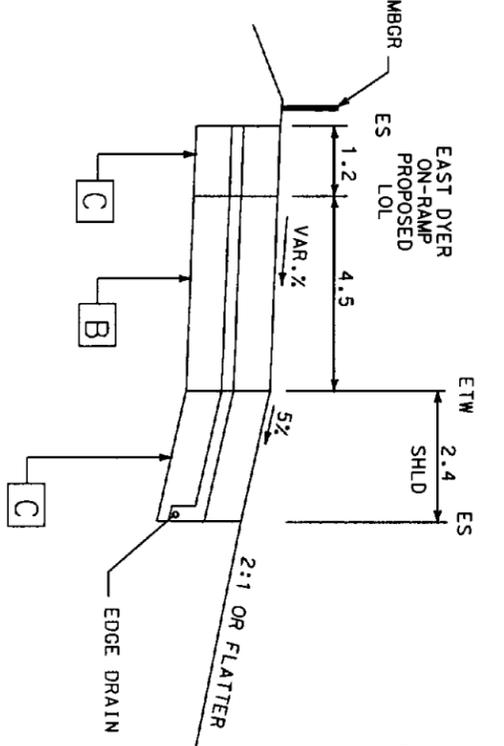


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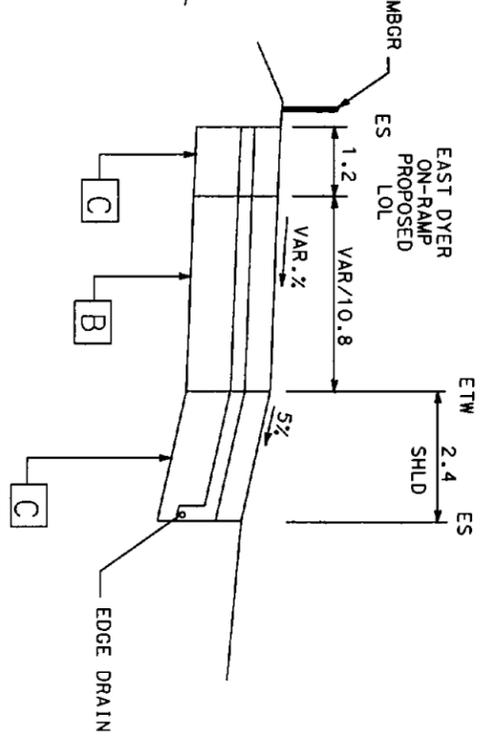
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X-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER	CALCULATED/DESIGNED BY	DATE	REVISED BY
Caltrans PSR UNIT	KIM ROBINSON	CHECKED BY		DATE REVISED

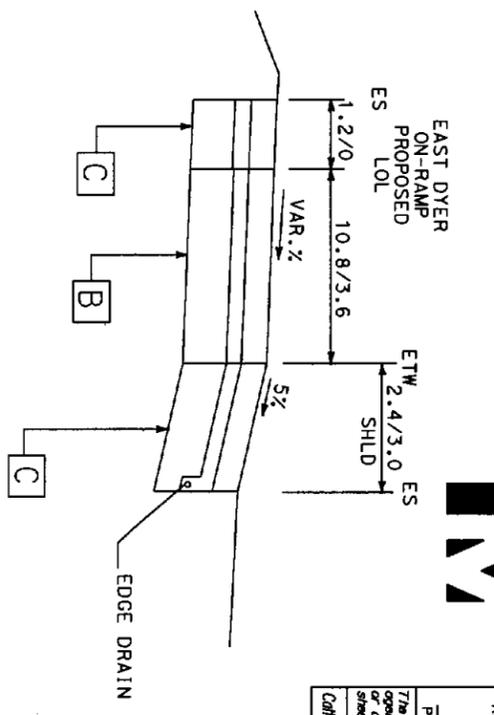
NOTE: FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY MAPS AT DISTRICT OFFICE.



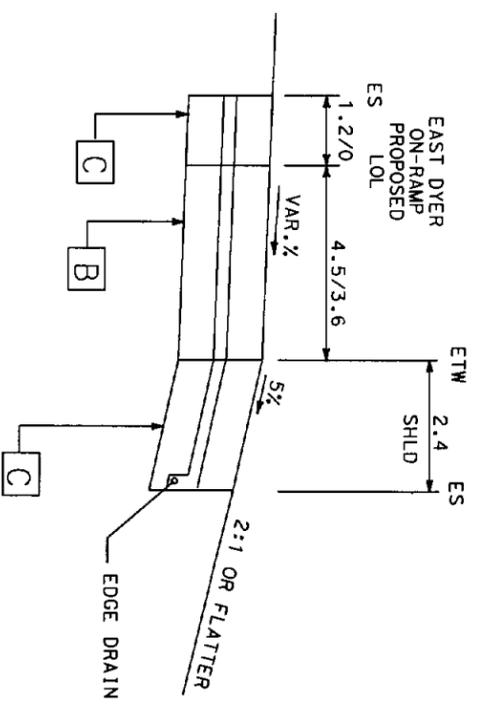
**EAST DYER ON-RAMP
"ED" LINE
STA. 23+33.64 TO 26+10.57**



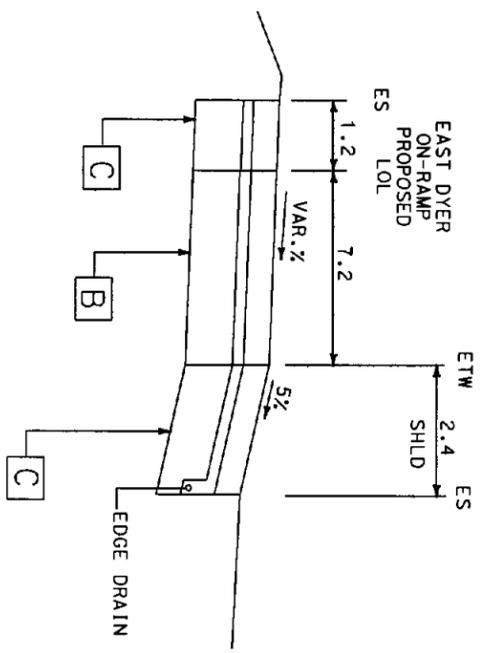
**WEST DYER ON-RAMP
"WD" LINE
STA. 26+95.26 TO 28+44.35**



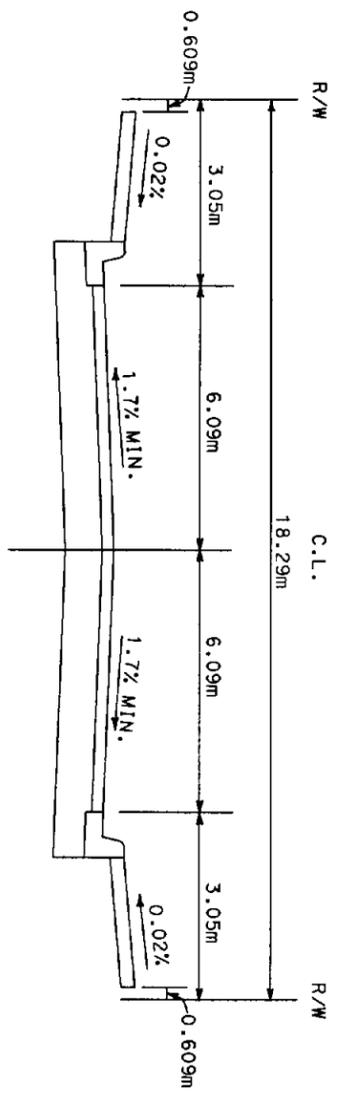
**WEST DYER ON-RAMP
"WD" LINE
STA. 28+48.86 TO 30+64.80**



**EAST DYER ON-RAMP
"ED" LINE
STA. 26+10.57 TO 28+46.95**



**WEST DYER ON-RAMP
"WD" LINE
STA. 27+71.83 TO 28+48.86**



**PULLMAN STREET
STA. 32+73.53 TO 34+55.84
(SEE SANTA ANA CITY STD PLAN NUMBER 1102)**

**ALTERNATIVE 2: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING
BETWEEN EAST DYER ON-RAMP AND EDINGER AVE. OFF-RAMP**

TYPICAL CROSS-SECTION

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CU 12840

EA 00950K

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL
12	Orange	55	RP 12.63/14.81
REGISTERED CIVIL ENGINEER			REGISTERED PROFESSIONAL ENGINEER
PLANS APPROVAL DATE			NO. EXP. CIVIL
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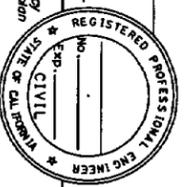


EXHIBIT C

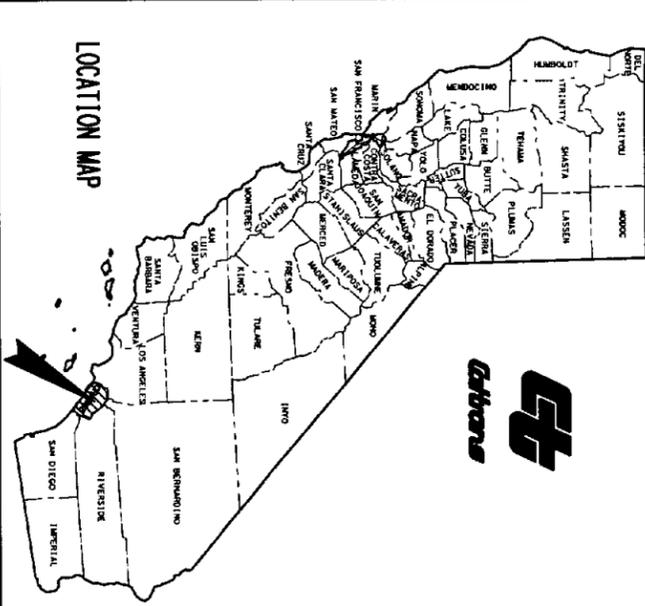
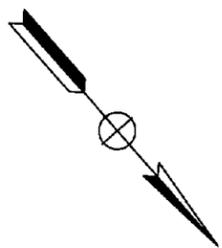
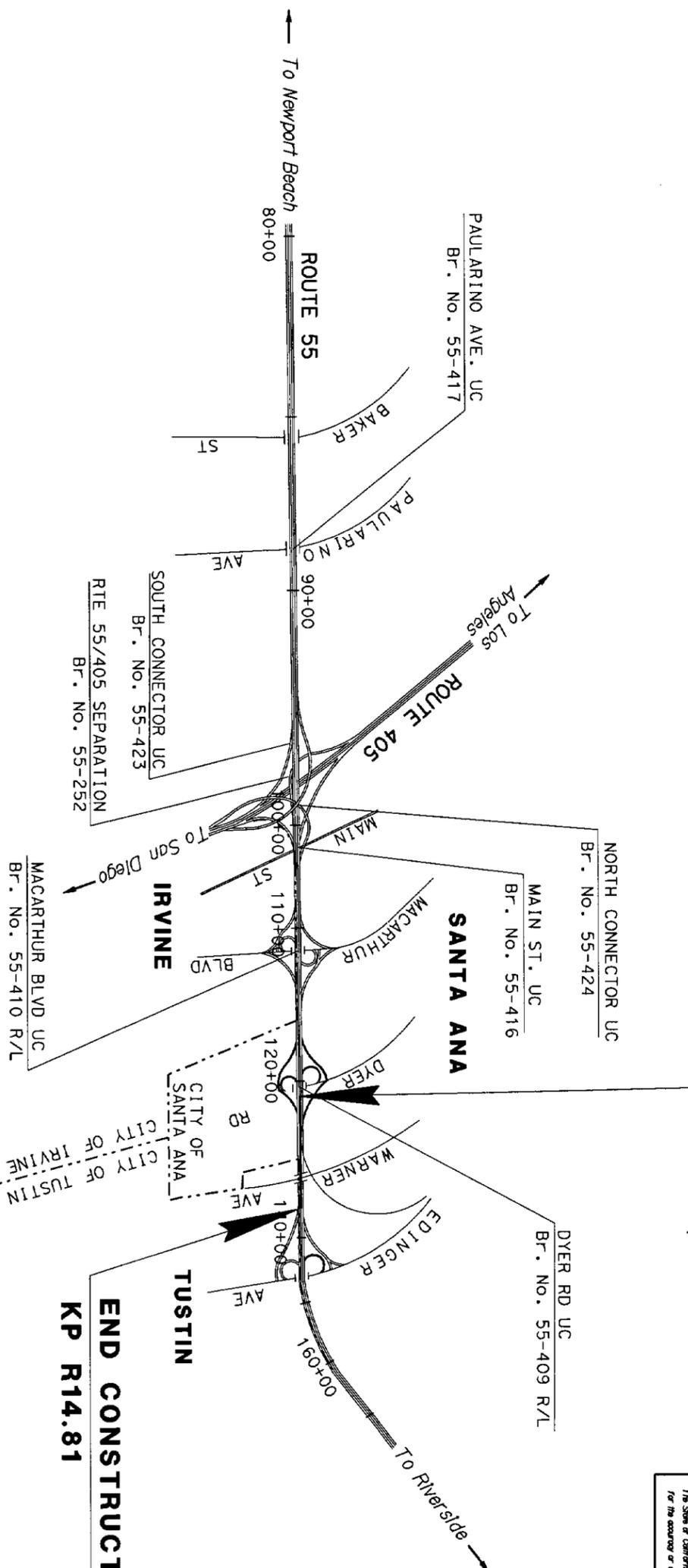
**ALTERNATIVE 1A
LAYOUT & CROSS SECTION**

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON STATE HIGHWAY IN ORANGE COUNTY IN SANTA ANA AND TUSTIN CITIES FROM DYER ROAD UNDERCROSSING TO EDINGER AVENUE UNDERCROSSING

BEGIN CONSTRUCTION
KP R12.63



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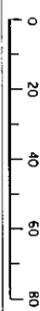
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END CONSTRUCTION
KP R14.81

PROJECT ENGINEER	DATE	PROJECT MANAGER	DATE
KIM ROBINSON	01/05	LEO CHEN	

FORM DC-0E-93-PF (REV. 3/98)

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS



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CU 12840

EA 0G950K

Contract No. 12-0G950K

NO SCALE

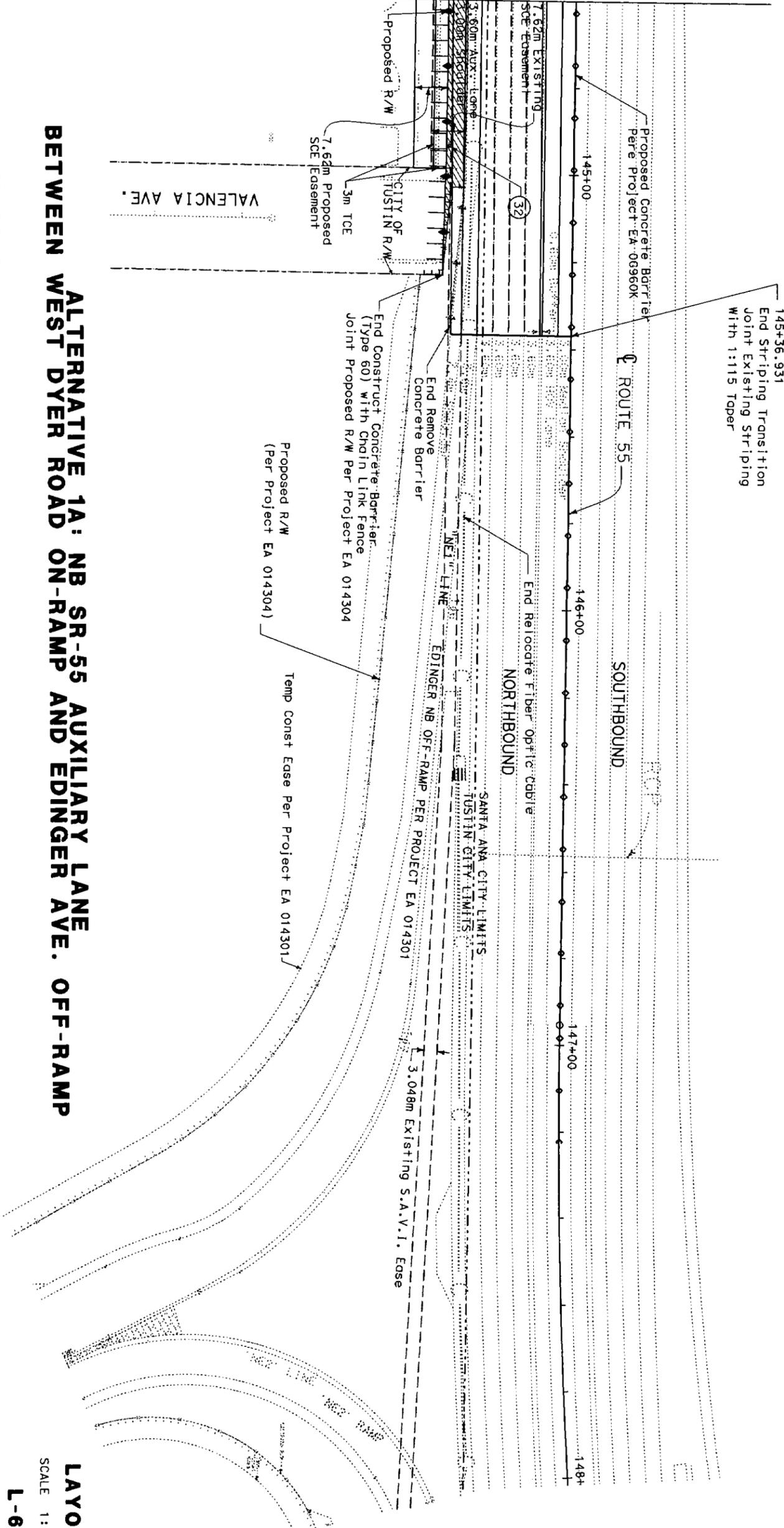
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER	CALCULATED/DESIGNED BY	DATE	REVISED BY		
Caltrans PSR UNIT	KIM ROBINSON	CHECKED BY		DATE REVISED		

- LEGEND
- R/W TO BE ACQUIRED
 - UTILITIES TO BE RELOCATED
 - UTILITIES TO BE ADJUSTED TO GRADE

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ALTERNATIVE 1A: NB SR-55 AUXILIARY LANE BETWEEN WEST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP

MATCH LINE STA 144+60 SEE SHEET L-5 ALTERNATIVE 1



RELATIVE BORDER SCALE
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DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT KP	SHEET NO	TOTAL SHEETS
12	Orange	55	R13.00/R14.81		

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REGISTERED PROFESSIONAL ENGINEER

NO. _____

Exp. DATE _____

CIVIL

LAYOUT
SCALE 1 : 500
L-6

CU 12840 EA 0G950K

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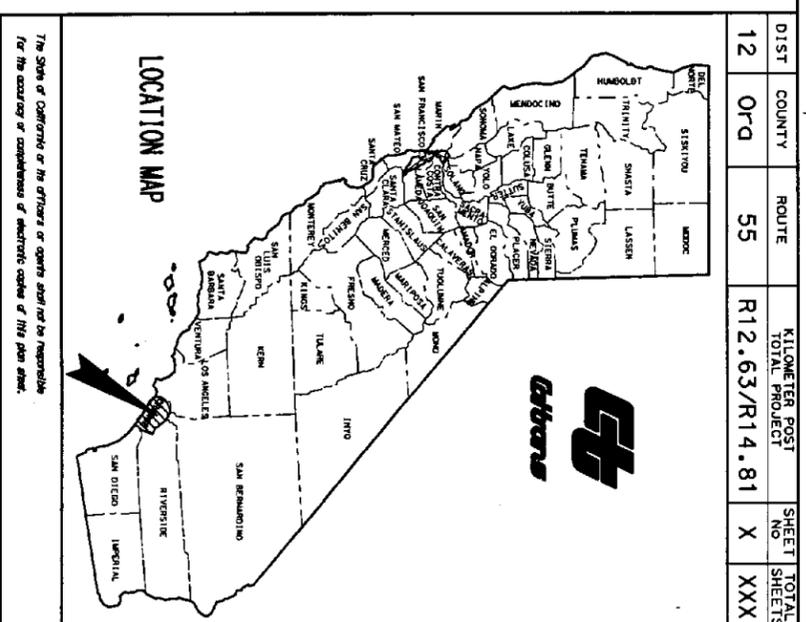
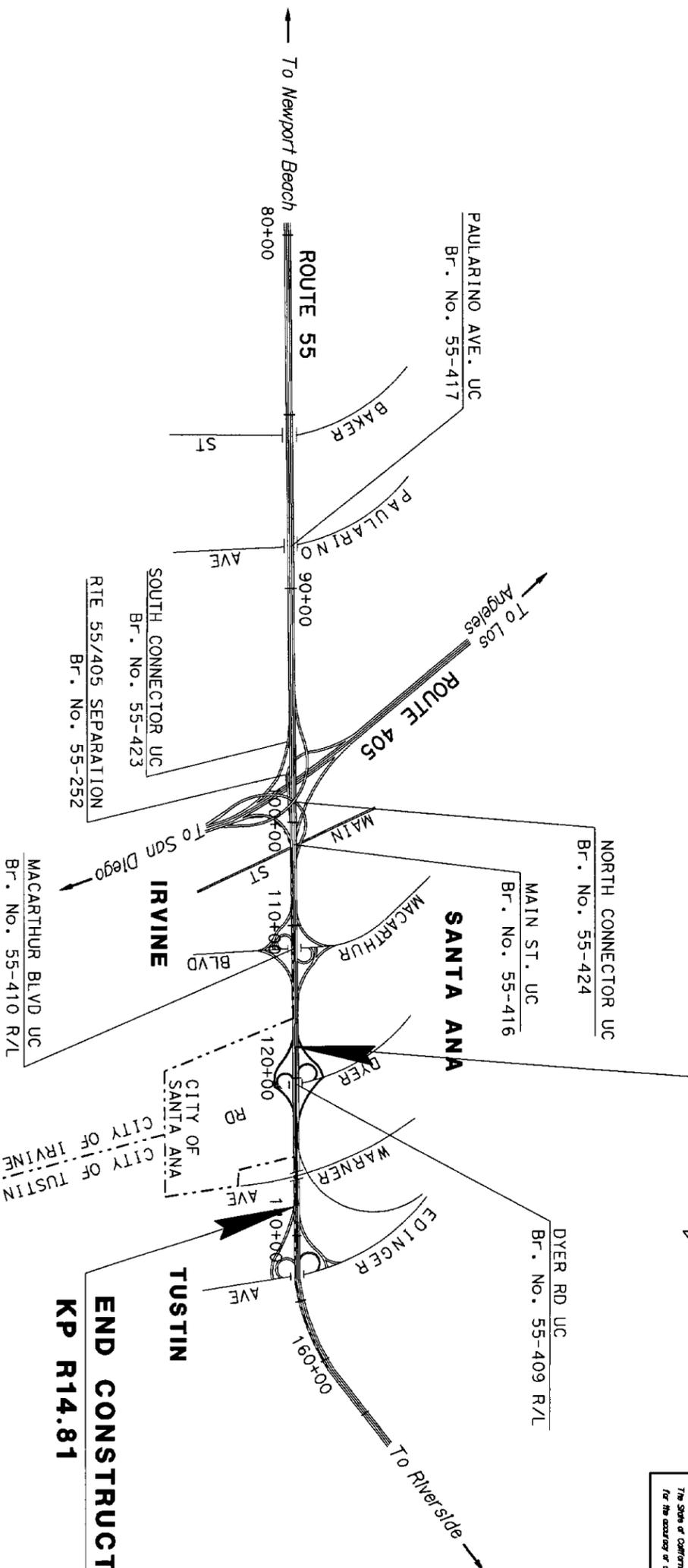
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LAYOUT & CROSS SECTION**

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DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON STATE HIGHWAY IN ORANGE COUNTY IN SANTA ANA AND TUSTIN CITIES FROM DYER ROAD UNDERCROSSING TO EDINGER AVENUE UNDERCROSSING

BEGIN CONSTRUCTION
KP R12.27



ALTERNATIVE 2A: NB SR-55 AUXILIARY LANE BETWEEN EAST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP

END CONSTRUCTION
KP R14.81

PROJECT ENGINEER	DATE	PROJECT MANAGER	DATE
KIM ROBINSON	01/05	LEO CHEN	

FORM DC-06-93-PF (REV. 3/88)

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS

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CU 12840 EA 0G950K

Contract No. **12-0G950K**

NO SCALE

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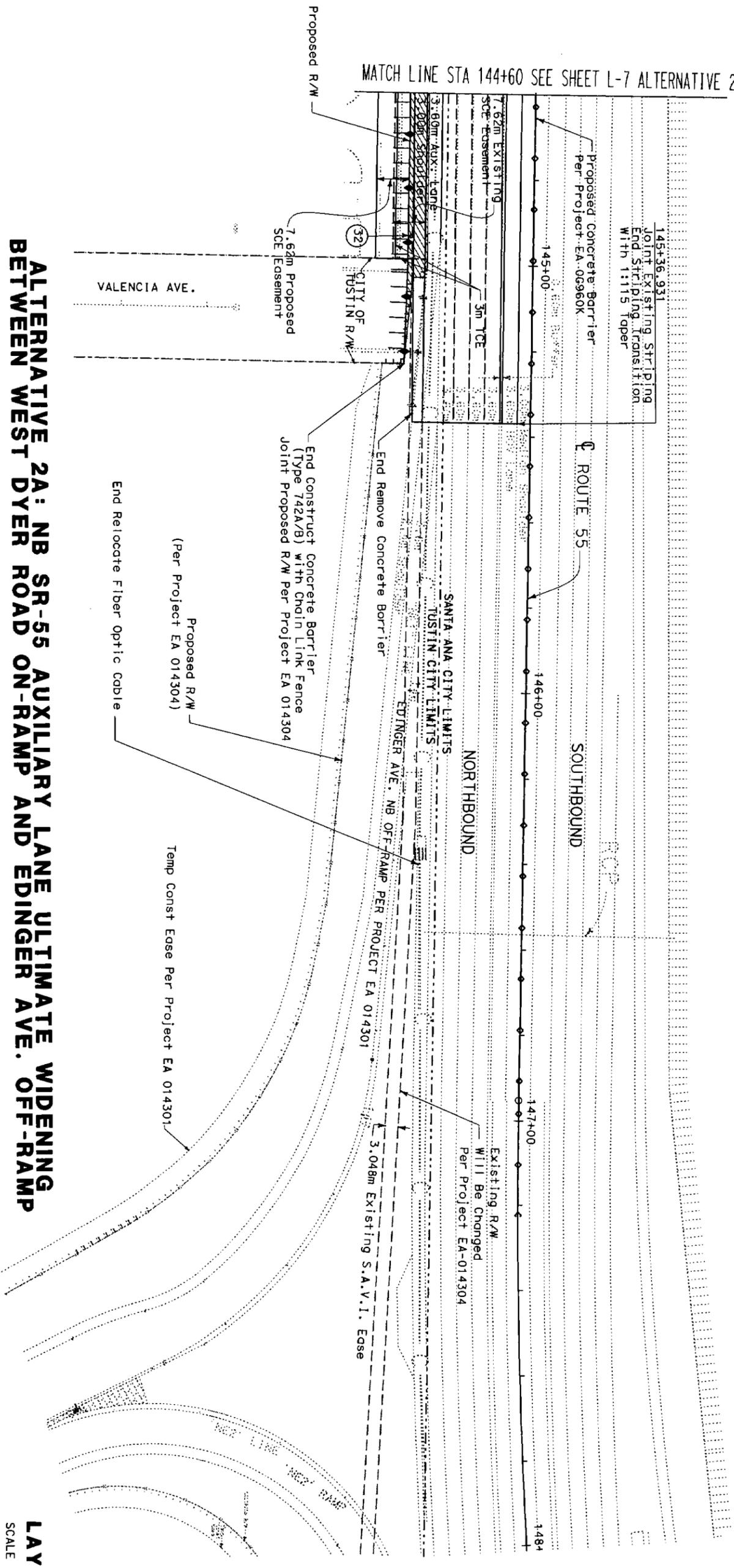


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12	ORC	55	R12.63/R14.81	X	XXX

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION Caltrans	PROJECT ENGINEER KIM ROBINSON	CALCULATED/DESIGNED BY	DATE	REVISED BY
PSR UNIT		CHECKED BY		DATE REVISED

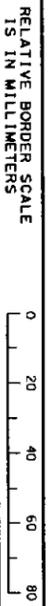
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-  R/W TO BE ACQUIRED
 -  UTILITIES TO BE RELOCATED
 -  UTILITIES TO BE ADJUSTED TO GRADE

MATCH LINE STA 144+60 SEE SHEET L-7 ALTERNATIVE 2



ALTERNATIVE 2A: NB SR-55 AUXILIARY LANE ULTIMATE WIDENING BETWEEN WEST DYER ROAD ON-RAMP AND EDINGER AVE. OFF-RAMP

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CU 12840
EA 0G950K

LAYOUT
SCALE 1 : 500
L-8



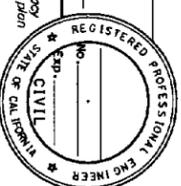
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT KP	SHEET NO	TOTAL SHEETS
12	Orange	55	R12.63/R14.81		

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ATTACHMENT 4

INITIAL SITE ASSESSMENT

Memorandum

*Flex your power!
Be energy efficient!*

To: GARY SLATER, Chief
Project Study Report
Attention: ~~Kim Robinson~~

Date: March 23, 2005

File: 12-ORA-55
0G950K

From: DEPARTMENT OF TRANSPORTATION
DISTRICT 12 DIVISION OF PROJECT DELIVERY

Subject: Initial Site Assessment for
State Route 55, from Dyer Road On-ramp to Edinger Avenue Off-ramp Widening Project

Please refer to your request on February 8, 2005 to us for providing an Initial Site Assessment (ISA) study for the above referenced project and provide you with the result of this investigation.

In response to your request, we performed visual site inspection on March 8, 2005 to complete the Initial Site Assessment study, and enclosed it for your reference. Based on the findings during the site inspection, no evidence of known significant hazardous waste contamination that may impact the project was observed.

Since you need to incorporate the result of the ISA into your Project Study Report (PSR), we recommend you to include the following paragraph into your PSR under "Hazardous Waste" section to provide the ISA result.

Environmental Engineering Branch visited the project site and performed visual site inspection and completed the Initial Site Assessment study. Based on the findings during the site inspection, no evidence of known hazardous waste contamination was observed. It appears that no Hazardous Material within the proposed Right-of-Way is found to be significant enough to impact the project.

If there are any unpaved areas to be excavated during this project, the Lead Investigation (LI) should be conducted, and the result of this investigation should be incorporated into the PS&E package. As a result, we recommend you to include the following paragraph describing the Lead Investigation process into your PSR in the "Hazardous Waste" section under sub-header "Lead Investigation":

The soil in unpaved areas next to the traffic lanes or shoulders might be contaminated with the Lead from vehicle emissions. Soil samples will be collected, tested and analyzed for lead contamination during the PS&E stage. The Lead Investigation will be conducted by the Environmental Engineering

process takes about four to six months, it is essential that at the early stage of PS&E, the Design Branch provides EE with two sets of the plans showing the limits of the excavation for EE to conduct the lead investigation. If lead contamination is found, the results/conclusions will be included in the PS&E package.

If you have any further questions, please call Mr. Paul Chang of my staff at Ext. 7814.

R. Aurasteh

**REZA AURASTEH, Chief
Environmental Engineering Branch**

Attachement: ISA Checklist

c: Leo Chen



Initial Site Assessment (ISA) Checklist

Project Information

District 12 County Orange Route 55 Kilometer Post (Post Mile) 13.0(14.8) EA 0G950K

Description: Construct an auxiliary lane on NB SR-55 between Dyer Road On-ramp and Edinger Avenue Off-ramp in the City of Santa Ana and the City of Tustin.

Is the project on the HW Study Minimal-Risk Projects List (HW1)? No

Project Manager: Leo Chen phone # (949) 223-5431

Project Engineer: Kim Robinson phone # (949) 756-4952

Project Screening

Attach the project location map to this checklist to show location of all know and/or potential HW sites identified.

- Project Features: New R/W? Yes Excavation? Yes Railroad Involvement? No
Structure demolition/modification? Yes Subsurface utility relocation? Yes
- Project Setting SR-55 North Bound from Dyer Road On-ramp to Edinger Avenue Off-ramp Widening
Rural or Urban Urban
Current land uses Existing SR-55, On-ramp, and Off-ramp
Adjacent land uses Commercial, Public, Industrial and Vacant
(industrial, light industry, commercial, agricultural, residential, etc.)
- Check federal, State, and local environmental and health regulatory agency records as necessary, to see if any known hazardous waste site is in or near the project area. If a known site is identified, show its location on the attached map and attach additional sheets, as needed, to provide pertinent information for the proposed project.
- Conduct Field Inspection. Date 3/8/2005 Use the attached map to locate potential or known HW sites.

STORAGE STRUCTURES / PIPELINES:

Underground tanks Not observed Surface tanks Not observed

Sumps Not observed Ponds Not observed

Drums Not observed Basins Not observed

Transformers Not observed Landfill Not observed

Other _____

Initial Site Assessment (ISA) Checklist

(continued)

CONTAMINATION: (spills, leaks, illegal dumping, etc.)

Surface staining Not observed Oil sheen Not observed

Odors Not observed Vegetation damage Not observed

Other _____

HAZARDOUS MATERIALS: (asbestos, lead, etc.)

Buildings N/A Spray-on fireproofing N/A

Pipe wrap N/A Friable tile N/A

Acoustical plaster N/A Serpentine N/A

Paint N/A Other _____

5. Additional record search, as necessary, of subsequent land uses that could have resulted in a hazardous waste site. Use the attached map to show the location of potential hazardous waste sites.
6. Other comments and/or observations: The needed Right-of-way area is located in mostly grassy or planter areas adjacent to commercial and/or industrial properties. From observation, it is very unlikely to find Hazardous Material in these locations.

ISA Determination

Does the project have potential hazardous waste involvement? No If there is known or potential hazardous waste involvement, is additional ISA work needed before task orders can be prepared for the Investigation? No If "YES," explain; then give an estimate of additional time required: _____

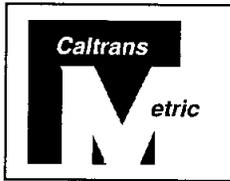
A brief memo should be prepared to transmit the ISA conclusions to the Project Manager and Project Engineer.

ISA Conducted by Paul Chang Date 03/16/05

ATTACHMENT 5

STORM WATER DATA REPORT

APPENDIX E



Dist-County-Route 12-ORA-55
Kilometer Post (Post Mile) Limits R12.63/R14.81
Project Type STIP
EA: 0G950K
RU: 12/840
Program Identification: 20.10.201.310
Phase: PID PA/ED PS&E

Regional Water Quality Control Board(s): SANTA ANA

Is the project required to consider incorporating Treatment BMPs? Yes No

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

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

Total Disturbed Soil Area: 2.0-2.5 HECTARES

Estimated: Construction Start Date: To Be Determined
Construction Completion Date: To Be Determined

Notification of Construction (NOC) Date to be submitted: At least 30 days prior to construction start date.

Notification of ADL reuse (if Yes, provide date) Yes Date _____ No

Separate Dewatering Permit (if Yes, permit number) Yes
Order No. R8-2004-0021, NPDES No. CAG998002

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 data upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E.

Kim-Phong Robinson 8/30/05
Kim-Phong Robinson, Registered Project Engineer Date

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

Leo Chen 11/18/05
Leo Chen, Project Manager Date

Carol Lonebear 12/05/05
Carol Lonebear, Designated Maintenance Representative Date

Sandy Anghasirisan 11/18/05
Sandy Anghasirisan, Designated Landscape Architect Representative Date

STAMP
[Required for PS&E only]

Grace Pinn-garrett 11/10/05
Grace Pinn-garrett, District/Regional SW Coordinator Date

ATTACHMENT 6

PRILIMINARY ENVIRONMENTAL ANALYSIS REPORT



Preliminary Environmental Analysis Report

Project Information

District 12 County ORA Route 55 KP(PM) R13.0/R14.81 (PM R8.08/R9.21) EA 0G950K

Project Title: North Bound SR-55 Auxiliary Lane Between Dyer Road Off-ramp and Edinger Avenue.

Project Manager Leo Chen Phone # 724-5431

Project Engineer Kim Robinson Phone # 724-4952

Environmental (Manager) Office Chief Sylvia Vega Phone # 724-2018

Environmental Planner Generalist Ryan P. Chamberlain Phone # 724-2889

Project Description

Purpose and Need:

The project is needed to improve the weaving operation of vehicles entering and exiting the freeway on this portion of northbound SR-55. The addition of an auxiliary lane would improve the level of service (LOS) along this segment, at the ingress and egress locations, and alleviate overall traffic delay and traffic congestion on this portion of freeway. By adding the auxiliary lane for traffic to weave and by providing the additional lane along the segment significant improvement can be achieved in travel speed. This would also allow for improvement in traffic flow from the SR-55/SR-405 interchange. With the less encumbered general-purpose lanes, accident rates for sideswipe and rear end collisions should be reduced.

Description of work:

Project proposes to construct an auxiliary lane on Northbound State Route 55 between Southbound Dyer Road On-ramp and Southbound Edinger Avenue Off-ramp in the City of Santa Ana within the County of Orange. This project will include but is not limited to curb and gutter removal, clearing and grubbing, roadway excavation, aggregate subbase, drainage improvements, concrete barrier, guard railing, and signage.

Alternatives:

NO-BUILD ALTERNATIVE: The "No-Build" Alternative retains the existing roadway conditions. The "No-Build" Alternative is contrary to the Department's goal to improve mobility across the State. This alternative is not a desired alternative.

ALTERNATIVE 1: Alternative 1 proposes to add a 3.6 m wide auxiliary lane from the existing edge of travel way between northbound (West) Dyer Road on-ramp and northbound Edinger Avenue off-ramp. Alternative 1 also provides standard lanes, shoulders, and mandatory standard median width specified in the Caltrans Highway Design Manual. The taper from non-standard to standard lane width and from standard to non-standard lane width would be accomplished by striping the lanes at 1:115. Northbound (West) Dyer Road on-ramp alignment would be realigned to accommodate pavement widening.

This alternative would require additional right of way from parcels along the northbound SR-55 from (West) Dyer Road on-ramp to Edinger Avenue off-ramp.

This alternative would widen northbound Edinger Avenue Off-ramp to a two-lane exit ramp. The auxiliary lane would be a mandatory exit lane and the number four lane would be an optional exit lane. A tie-back or type 1 retaining wall would be required at the Warner Avenue overcrossing, Bridge No. 55-394, along northbound SR-55 to accommodate the widening. Structures Advance Planning study will provide the type selection of the retaining wall at Warner Avenue overcrossing.

ALTERNATIVE 2: Alternative 2 proposes to add a 3.6-m wide auxiliary lane from the existing edge of travel way between northbound (East) Dyer Road on-ramp and northbound Edinger Avenue off-ramp. Alternative 2 also provides standard lanes, shoulders, and mandatory standard median width specified in the Caltrans Highway Design Manual. The taper from non-standard to standard lane width and from standard to non-standard lane width would be accomplished by striping the lanes at 1:115 taper. Northbound (East and West) Dyer Road on-ramp alignments would be realigned to accommodate the pavement widening. This auxiliary lane would start from East Dyer Road on-ramp then merge to West Dyer Road on-ramp lane and become a mandatory exit lane at northbound Edinger Avenue off-ramp. Number fourth lane would be an optional exit lane. This alternative would widen northbound Edinger Ave. Off-ramp to a two-lane exit ramp.

Alternative 3 would require additional right of way from parcels that run along northbound SR-55 between West Dyer on-ramp and Edinger Avenue off-ramp.

In addition, A tie-back or type 1 retaining wall will be required at the Warner Avenue overcrossing; Bridge No. 55-394, along northbound SR-55 to accommodate the widening. Also Dyer Road undercrossing, Bridge No 55-409, would be widened to accommodate the upgrade of all the lanes, shoulders, and mandatory median to standard width as specified in the Caltrans Highway Design Manual. Structures Advance Planning study will provide the type selection of retaining wall at Warner Avenue overcrossing and the bridge widening plan at Dyer Road undercrossing.

ALTERNATIVE 3: Alternative 3 proposes to add a 3.6 m wide auxiliary lane from the existing edge of travel way between northbound (West) Dyer Road on-ramp and northbound Edinger Avenue off-ramp. Alternative 3 also provides standard lanes, shoulders, and mandatory standard median width specified in the Caltrans Highway Design Manual. The taper from non-standard to standard lane width and from standard to non-standard lane width would be accomplished by striping the lanes at 1:115. Northbound (West) Dyer Road on-ramp alignment would be realigned to accommodate pavement widening.

This alternative would require additional right of way from parcels along the northbound SR-55 from (West) Dyer Road on-ramp to Edinger Avenue off-ramp.

Alternative 3 would provide a one lane exit ramp at the northbound Edinger egress ramp. The auxiliary lane would be a mandatory exit lane. A tie-back or type 1 retaining wall would be required at the Warner Avenue overcrossing, Bridge No. 55-394, along northbound SR-55 to accommodate the widening. Structures Advance Planning study will provide the type selection of the retaining wall at Warner Avenue overcrossing.

ALTERNATIVE 4: Alternative 4 proposes to add a 3.6-m wide auxiliary lane from the existing edge of travel way between northbound (East) Dyer Road on-ramp and northbound Edinger Avenue off-ramp. Alternative 4 also provides standard lanes, shoulders, and mandatory standard median width specified in the Caltrans Highway Design Manual. The taper from non-standard to standard lane width and from standard to non-standard lane width would be accomplished by striping the lanes at 1:115 taper.

Northbound (East and West) Dyer Road on-ramp alignments would be realigned to accommodate the pavement widening. This auxiliary lane would start from East Dyer Road on-ramp then merge to West Dyer Road on-ramp lane and become a mandatory exit lane at northbound Edinger Avenue off-ramp. This alternative would provide a one-lane exit ramp at the northbound Edinger Ave egress ramp. The auxiliary lane would be a mandatory exit lane.

Alternative 4 would require additional right of way from parcels that run along northbound SR-55 between West Dyer on-ramp and Edinger Avenue off-ramp.

In addition, A tie-back or type 1 retaining wall will be required at the Warner Avenue overcrossing; Bridge No. 55-394, along northbound SR-55 to accommodate the widening. Also Dyer Road undercrossing, Bridge No 55-409, would be widened to accommodate the upgrade of all the lanes, shoulders, and mandatory median to standard width as specified in the Caltrans Highway Design Manual. Structures Advance Planning study will provide the type selection of retaining wall at Warner Avenue overcrossing and the bridge widening plan at Dyer Road undercrossing.

Anticipated Environmental Approval

- | <u>CEQA</u> | <u>NEPA</u> |
|---------------------------------------------------------------------|-----------------------------------------------------------|
| <input checked="" type="checkbox"/> Categorical/Statutory Exemption | <input checked="" type="checkbox"/> Categorical Exclusion |
| <input type="checkbox"/> Negative Declaration / focused ND | <input type="checkbox"/> Finding of No Significant Impact |
| <input type="checkbox"/> Environmental Impact Report | <input type="checkbox"/> Environmental Impact Statement |

Anticipated environmental document is a Categorical Exemption and Programmatic Categorical Exclusion (CE/PCE) under CEQA Class 3 and NEPA 23 CFR 771.117 (1).

Summary Statement

A Categorical Exemption under CEQA Class 3 and a Programmatic Categorical Exclusion (CE/PCE) would be the appropriate environmental document. The project must conform to the requirements of the Department's Statewide National Pollutant Discharge Elimination System Storm Water Permit, Statewide Storm Water Management Plan (SWMP), and General Construction Permit. Since the propose project would require more than 0.4 hectares (1 acre) of Disturbed Soil Area (DSA), a Storm Water Pollution Prevention Plan will be required. Lead investigations must be performed for any excavation on unpaved areas. In addition, an archeological and historic survey and biological survey for the presence of birds, bats, and other protected species will be required for the project. If the proposed project requires removal of vegetation during nesting season, then a pre-construction bird survey is required. If nesting birds are found suitable vegetation removal may be delayed until the birds have fledged. Any subsequent changes in project scope may require additional environmental review.

Special Considerations: Any work within Alton Channel may require permits from the following agencies; US Army Corps of Engineers (Nationwide Permit), Regional Water Quality Control Board (401), and California Department of Fish and Game (1602). The cost estimates associated with these permit fees will be \$3,391.00.

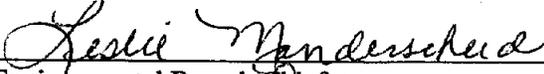
Anticipated Project Compliance Measures (for standard PSR only)

Cost for compliance measures (if required) will be determined during the PA/ED and PS&E phases of the project.

Disclaimer

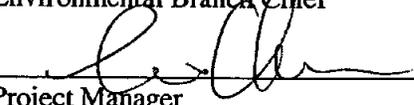
This report is not an environmental document. Preliminary analysis, determinations, and estimates of mitigation costs are based on the project description provided in this report. The estimates and conclusions provided are approximate and are based on cursory analysis of probable effects. This report is to provide a preliminary level of environmental analysis to supplement the Project Study Report. Changes in project scope, alternatives, or environmental laws will require a re-evaluation of this report.

Reviewed by:



Environmental Branch Chief

Date: 4/25/05



Project Manager

Date: 4/25/05

Environmental Technical Reports or Studies Required

	<u>Study</u>	<u>Document</u>	<u>N/A</u>
Community Impact Study	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Farmland	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Section 4(f) Evaluation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Visual Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Water Quality	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Floodplain Evaluation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Noise Study	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Quality Study	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Paleontology	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Wild and Scenic River Consistency	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cumulative Impacts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cultural			
ASR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HSR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
HASR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
HPSR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Section 106 / SHPO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Native American Coordination	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other			
Finding of Effect _____	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Data Recovery Plan _____	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hazardous Waste			
ISA (Additional)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PSI	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other			
<u>-Lead Investigation</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Biological			
Endangered Species (Federal)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Endangered Species (State)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Species of Concern (CNPS, USFS, BLM, S, F)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Biological Assessment (USFWS, NMFS, State)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Wetlands	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Invasive Species	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Natural Environment Study	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NEPA 404 Coordination	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other			
<u>Nesting Bird & bat surveys</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Permits			
401 Permit Coordination	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
404 Permit Coordination	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1602 Permit Coordination	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
City/County Coastal Permit Coordination	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
State Coastal Permit Coordination	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
NPDES Coordination	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
US Coast Guard (Section 10)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion of Technical Review

Socio-economic and Community Effects. The project is not expected to have any effects on the local community or the economy, which would require a separate technical because no structures or major parking takes would be required. Temporary construction easements will be needed, but no long-term effects would occur from these easements. Documentation for Community Involvement would occur through the environmental document, not a separate study.

Scoping meetings/Open Houses with the community involved would give a better indication for level of documentation required. If a Community Impact Assessment were requested, the formal technical report would require at least 3 months preparation.

Farmlands. N/A. No farmlands in project vicinity.

4(f) Impacts. Since the project work will remain on State ROW, the project is not anticipated to create 4(f) issues.

Visual Effects. Visual resources shall be reviewed and documented within the environmental document, since substantial impacts are not anticipated; however, further coordination with a Landscape Architect is required.

Water Quality and Erosion. This project is covered under the Caltrans Statewide NPDES Permit (Order No. 99-06-DWQ, NPDES No. CAS000003) issued by the State Water Resources Control Board (SWRCB) and is located within the jurisdiction of the Santa Ana Regional Water Quality Control Board (SARWQCB). This project must conform to all applicable water quality regulations and/or permit requirements of the SWRCB, SARWQCB, and the Caltrans Storm Water Management Plan (May 2003), and any subsequent revisions and/or additional requirements at the time of construction. Since the proposed project would require more than 0.4 hectares (one acre) of Disturbed Soil Area (DSA), a Storm Water Pollution Prevention Plan (SWPPP) will need to be prepared and implemented. The SWPPP must fully conform to Caltrans requirements and include SWRCB Resolution No. 2001-046, Sampling and Analytical Procedures (SAP) Plan. The contractor must submit a SWPPP to Caltrans for review and approval within 30 days of award of the contract. The review of a SWPPP generally requires 40 days (15 days for Caltrans review, 15 days to re-submit, and 10 days for final review). In addition, a Notice of Construction (NOC) must be submitted to the Santa Ana RWQCB at least 30 days prior to any soil-disturbing activities.

Floodplain. A floodplain evaluation report will not be needed.

Air and Noise. Air quality and noise impacts should be assessed by Air Quality and Noise Quality Engineers to ensure compliance with appropriate laws. A noise study is required for this project and there is the potential for noise impacts to sensitive receptors for this project. Sound walls may need to be added to the project scope to lessen any potential noise issues. Environmental Engineering should make work and time estimates.

Wild and Scenic River. No wild or scenic rivers are in the project area. There is a no potential for impact to any Federally designated wild and scenic river.

Cultural Resources. An archeological survey will be required for the project. The proposed Area of Potential Effect (APE) must include all access roads, work areas and staging areas beyond the existing paved highway. Any subsequent changes in project scope may require additional archaeological or historical review.

Native American Coordination. The Native American Heritage Commission and any Native American tribes or groups who may have any interest in or be affected by the proposed project must be contacted to avoid adverse impact to cultural resources within the proposed project area.

Hazardous Waste/Materials. SSP's need to be included for removing yellow stripes. Additionally lead investigation needs to be performed for excavation of unpaved areas.

Biological Resources. A Natural Environment Study will be prepared for this project, however this project is unlikely to affect sensitive biological resources. The California Natural Diversity Data Base (CNDDB) does not indicate any other known sensitive biological resources in this location. There are no known sensitive plant species in this location. Nesting bird surveys will need to be done prior to construction. If any trees will be removed then construction windows may be imposed to limit impacts to nesting birds.

Wetlands. The project does not involve any wetlands. Alton Channel may meet the definition of "Waters of the U.S". Permits from resource agencies may be required for any alternative, which has the potential to discharge materials into Alton Channel.

Invasive Pest Plant Species. Executive Order 13112 requires that any Federal action may not cause or promote the spread or introduction of invasive species. Since this project does not include any changes to landscaping or any plantings/plant removals, this project is unlikely to promote the spread or introduce invasive species.

Right-of-Way Relocation or Staging Area. No new Right-of-Way is indicated for this project and temporary construction easements will be used on a short term basis. Material sites and disposal sites are assumed, but not identified. These areas, which must be identified prior to initiating environmental studies, would require complete environmental evaluation as part of this project.

Mitigation (For standard PSR only). No mitigation is anticipated for this project. The Natural Environmental Study (NES) will address project compliance with Executive Order 13112 for invasive Plant Species and Migratory Bird Treaty Act. Avoidance and minimization measures will be implemented if the proposed project alternatives require the removal of trees that have the potential to support migratory birds.

Permits. Alton Channel may meet the definition of "Waters of the U.S". The following permits from resource agencies may be required for Alternatives 2 and 3: Nationwide Permit 404 (Army Corps of Engineers), 401 (Regional Water Quality Control Board), and 1602 (CA Fish and Game).

Coastal Zone. This project is not within the County coastal jurisdiction and will not require a County Coastal Development Permit.

List of Preparers

Hazardous Waste Review by Reza Aurasteh	Date 2/22/05
Biological Review by Kedest Ketsela	Date 3/24/05
Cultural Review by Chuck Baker	Date 3/04/05
Community Impact Review by Ryan P. Chamberlain	Date 3/22/05
Visual Review by Ryan P. Chamberlain	Date 3/22/05
Water Quality & Floodplain Review by Ryan Hansen	Date 3/22/05

Attachment A - PEAR Compliance Measures and Cost Estimates *(Standard PSRs Only)

Dist.-Co.-Rte.-KP/PM: R13.0/R14.81 (PM R8.08/R9.21)

EA OG950K

Project Description: Project proposes to construct an auxiliary lane on Northbound State Route 55 between Southbound Dyer Road On-ramp and Southbound Edinger Avenue Off-ramp in the City of Santa Ana within the County of Orange. This project will include but is not limited to curb and gutter removal, clearing and grubbing, roadway excavation, aggregate subbase, drainage improvements, concrete barrier, guard railing, and signage.

Person completing form/Dist. Office.: Ryan Chamberlain/ D12 Environmental

Project Manager: Leo Chen Phone number: x5431

Date: 4/20/05

	Compliance Measures			Compliance
	Project Feature ¹	Enviro. Obligation ²	Statutory Require. ³	Permit & Agreement ⁴
Fish & Game 1602 Agreement	N/A	\$1,500	N/A	N/A
Coastal Development Permit	N/A	N/A	N/A	N/A
State Lands Agreement	N/A	N/A	N/A	N/A
NPDES Permit (WPCP or SWPPP required)	1.5-2% of total project cost	N/A	N/A	N/A
COE 404 Permit- Nationwide	N/A	\$2,000	N/A	N/A
COE 404 Permit- Individual	N/A	N/A	N/A	N/A
COE Section 10 Permit	N/A	N/A	N/A	N/A
COE Section 9 Permit	N/A	N/A	N/A	N/A
Other:	N/A	N/A	N/A	N/A
Noise attenuation	1%	N/A	N/A	N/A
Special landscaping	N/A	N/A	N/A	N/A
Archaeological	N/A	N/A	N/A	N/A
Biological	N/A	\$500-5,000	N/A	N/A
Historical	N/A	N/A	N/A	N/A
Scenic resources	N/A	N/A	N/A	N/A
Wetland/riparian	N/A	N/A	N/A	N/A
Other:	N/A	N/A	N/A	N/A
TOTAL (Enter zeros if no cost)	2.5-3% of total project cost	\$4,000-8,500	---0---	---0---

• Costs are to include all costs to complete the commitment including: 1) capital outlay and staff support; 2) cost of right-of-way or easements; 3) long-term monitoring and reporting; and 4) any follow-up maintenance.

¹ Mitigation that Caltrans would normally do if not required by a permit or environmental agreement.

² Mitigation that Caltrans would not normally do but is required by conditions of a permit or environmental agreement.

³ Mitigation that Caltrans would not normally do and is not required by a permit or Enviro. Agreement, but is required by a law.

⁴ Non-mitigation Caltrans would not normally do but is required by conditions of a permit or agreement.

ATTACHMENT B Resources by WBS Code

EA:	OG950K	Southbound SR-55 Aux Lane From Dyer Road to Edinger Avenue														
Description:		WBS Task Activity Code	Senior	Coord	Biology	Cultural	Haz Waste	Socio-Economic	Storm Water	Noise /Air	Sup Svcs	Total	Begin Date	End Date	Duration	
Assigned Unit																
Project Management																
		100.05.05 – Proj. Init. & Ping.	5	10								15				
		100.05.10 – PID Exec. & Ctrl.		4	10	4	4	2	2	4		30				
		100.05.15 – PID Closeout		2								2				
		100.10.05 – PA&ED Init. & Ping.	5	15								20				
		100.10.10 – PA&ED Exec. & Ctrl.		10								10				
		100.10.15 – PA&ED Closeout		5								5				
		100.10.20 – Project Shelving (PA&ED)		2								2				
		100.10.25 – Project Unshelving (PA&ED)		5								5				
		100.10.30 – Prep/Updt Admin Record PA&ED		1								1				
		100.15.05 – PS&E Init. & Ping.		1								1				
		100.15.10 – PS&E Exec. & Ctrl.		1								1				
		100.15.15 – PS&E Closeout		1								1				
		100.15.20 – Project Shelving (PS&E)										-				
		100.15.25 – Project Unshelving (PS&E)										-				
		100.15.30 – Prep/Update Admin Record PS&E										-				
		100.20.05 – Const. Init. & Ping.		1								1				
		100.20.10 – Const. Exec. & Ctrl.		4								4				
		100.20.15 – Const. Closeout										-				
		100.20.20 – Project Shelving (Construction)										-				
		100.20.25 – Project Unshelving (Construction)										-				
		100.20.30 – Prep/Update Admin Record Const										-				
		100.25.05 – RW Init. & Ping.										-				
		100.25.10 – RW Exec. & Ctrl.										-				
		100.25.15 – RW Closeout										-				
		100.25.20 – Project Shelving (Right of Way)										-				
		100.25.25 – Project Unshelving (Right of Way)										-				
		100.25.30 – Prep/Update Admin Record RW										-				
		Total Project Management	10	62	10	4	4	2	2	4	4	98				

WBS Task Activity Code	Senior	Coord	Biology	Cultural	Haz Waste	Socio-Economic	Storm Water	Noise /Air	Sup Svcs	Total	Begin Date	End Date	Duration
Perform Preliminary Engineering Studies and Prepare Draft Project Report													
160.05.05 - Review Approved PID		2								2			
160.05.10 - Review Geotechnical Information													
160.05.20 - Review Traffic Data & Forecasts													
160.05.30 - Review Project Scope													
160.10.20 - Perform Value Analysis													
160.10.25 - Perform Hydraulics/Hydro Study													
160.10.30 - Dev Hwy Planting Des Concepts													
160.10.20 - Prepare Draft Project Report		10								10			
160.15.25 - Circ, Rev & App Draft PR													
160.30 - Dev ESR													
Total Perf Pre Eng Studies		-	12							-			12
Perform Environmental Studies and Prepare Draft Environmental Document													
165.05.05 - Rev Project Information		2	15										17
165.05.10 - Pub & Agency Scoping													
165.05.15 - Select Alt for Fut Study													
165.05.20 - Maps for Env Evaluation													
165.10.05 - Surveys & Map for Study													
165.10.10 - Obtain Rights of Entry		4								4			4
165.10.15 - CIA, Land Use & Growth										40			42
165.10.25 - Noise Study		2											
165.10.30 - Air Quality Study		2								20			22
165.10.35 - Water Quality Studies		2					4						6
165.10.40 - Energy Studies													
165.10.45 - Sum Geotech Report													
165.10.50 - Site Investigation HW					20								20
165.10.65 - Paleontology Study													
165.15.05 - Biological Assessment													
165.15.10 - Wetlands Study													
165.15.15 - Resource Agency Coord			20										20
165.15.20 - NES Report			30										30
165.20.05 - Archaeology Survey							5						5
165.20.05.05 - Perform Archy Survey							5						5
165.20.05.10 - Conduct NA Consultation							2						2
165.20.05.15 - Perform Records Search							5						5
165.20.05.20 - Conduct Field Survey							5						5
165.20.05.25 - Prepare ASR							5						5
165.20.10 - Phase I Archy Studies													
165.20.10.05 - Conduct NA Consultation													

WBS Task Activity Code	Senior	Coord	Biology	Cultural	Haz Waste	Socio-Economic	Storm Water	Noise /Air	Sup Svcs	Total	Begin Date	End Date	Duration
165.20.10.10 – Prepare Phase I Proposal										-			
165.20.10.15 – Conduct Field Investigation										-			
165.20.10.20 – Analyze Materials										-			
165.20.10.25 – Prepare Report										-			
165.20.15 – Phase II Archy Studies										-			
165.20.15.05 – Conduct NA Consultation										-			
165.20.15.10 – Prepare Phase II Proposal										-			
165.20.15.15 – Conduct Field Investigation										-			
165.20.15.20 – Analyze Materials										-			
165.20.15.25 – Prepare Report										-			
165.20.20 – Hist & Architect Studies										-			
165.20.20.05 – Prepare Prelim APE/SAM										-			
165.20.20.10 – Prep Hist Res Eval Rpt - Archy										-			
165.20.20.15 – Prep Hist Res Eval Rpt - Arct										-			
165.20.20.20 – Prepare Bridge Evaluation										-			
165.20.25 – Cultural Res Comp Docs										-			
165.20.25.05 – Prepare Final APE Maps										-			
165.20.25.10 – Perform PRC 5024.5 Consult										-			
165.20.25.15 – Prep HPSR/Det Elig/HRCR										-			
165.20.25.20 – Prep Finding of Effect										-			
165.20.25.25 – Prep Archy Data Recovery Pln										-			
165.20.25.30 – Prepare MOA										-			
Perform Environmental Studies and Prepare Draft Environmental Document (Continued)													
165.25.05 – Prepare DED	2	20								22			
165.25.10 – 4(f) Evaluation										-			
165.25.15 – CE/CE Determination		4								4			
165.25.20 – Peer & Other Reviews	1	1								2			
165.25.25 – Obtain Approval to Circ										-			
165.25.30 – Perform Env Coordination		8								8			
Total Env Studies & Prep DED	5	58	50	27	20		4	60		224			
Circulate Draft Environmental Document and Select Preferred Project Alternative													
175.05.05 – Master Dist & Inv Lists										-			
175.05.10 – Not Pub Hear & Avail										-			
175.05.15 – Pub & Circulate DED										-			
175.05.20 – Fed Const Det (Coastal)										-			
175.10.05 – Need for Pub Hearing										-			
175.10.10 – Pub Hearing Logistics										-			
175.10.15 – Displays for Pub Hearing										-			

WBS Task Activity Code	Senior	Coord	Biology	Cultural	Haz Waste	Socio-Economic	Storm Water	Noise /Air	Sup Svcs	Total	Begin Date	End Date	Duration
175.10.20 - Not Pub Hear & Avail													
175.10.25 - Review Map Displays													
175.10.30 - Display Pub Hear Maps													
175.10.35 - Hold Public Hearing													
175.10.40 - Dist Rec or Pub Hearing													
175.15 - Res to Pub Hear Comments													
175.20 - Select Preferred Alternative													
Total DED & Preferred Alt	-	-	-	-	-	-	-	-	-	-	-	-	-
Prepare and Approve Project Report and Final Environmental Document													
180.05.10 - Rev & App Project Rep	2	8								10			
180.10.05 - Prep & Approve FED		2								2			
180.10.05.10 - Circulate for Review													
180.10.05.10 - Rev due to Review Comments													
180.10.05.15 - Section 4(f) Evaluation													
180.10.05.20 - Findings Report													
180.10.05.25 - Statement of Overriding Consid													
180.10.05.30 - Prepare CEQA Certification		2								2			
180.10.05.35 - FHWA and Approval		2								2			
180.10.05.40 - Section 106 Cons & MOA													
180.10.05.45 - Conduct Section 7 Consult													
180.10.05.50 - Finalize Section 4(f) Statement													
180.10.05.55 - Prep Floodplain Only PAF													
180.10.05.60 - Prep Wetlands Only PAF													
180.10.05.65 - Coord Section 404 Permit			5							5			
180.10.05.70 - Finalize Mitigation Measures		2	2							4			
180.10.10 - Public Dist of FED													
180.10.10.05 - Resp to Comments on FED													
180.15.05 - Prep & App ROD (NEPA)													
180.15.10 - Prep & File NOD (CEQA)													
180.15.20 - Prep/Update Env Commitments													
Total App PR & FED	2	16	7							25			
Coordinate Utilities													
200.15 - Utility Conflict Resolution													
Total Coordinate Utilities	-	-	-	-	-	-	-	-	-	-	-	-	-
Obtain Permits, Agreements and Route Adoptions													
205.10.05 - Army Corp Permit (404)			20							20			
205.10.10 - USFS Permit													
205.10.15 - US Coast Guard Permit													

WBS Task Activity Code	Senior	Coord	Biology	Cultural	Haz Waste	Socio-Economic	Storm Water	Noise /Air	Sup Svcs	Total	Begin Date	End Date	Duration
205.10.20 - DFG Permit (1602/1603)			15							15			
205.10.25 - Coastal Dev Permit													
205.10.30 - Loc Agcy Concurrence													
205.10.40 - Waste Dischg (NPDES)													
205.10.45 - USFWS Approval													
205.10.50 - RWQCB Permit (401)			20							20			
205.10.60 - Update Summary of Env Commit													
205.10.95 - "Other" Permits													
205.20.05 - Draft Fwy Agreement													
205.20.10 - Review Draft Fwy Agree													
205.20.15 - Prep Final Fwy Agree													
205.20.20 - Execute Fwy Agreement													
205.25 - Prep Agreement for Material Sites													
205.35.05 - Prep & Exc Coop for Env													
205.40.10 - New Conn & Rte Adopt													
205.45 - MOU from TERO													
Total Permits, Agree & Rte			55							55			
Prepare Draft PS&E													
205.05.45 - Prepare Noise Barrier Plans													
230.10.05 - Prepare Hwy Planning Plans													
230.10.15 - Prepare Plant List													
230.35.10 - Dev Hwy Planting Specs													
230.35.35 - Dev Water Poll Ctrl Specs													
230.35.40 - Dev Erosion Control Specs													
230.30.60 - Rev & Updt Proj Info Draft PS&E													
Total Prepare Draft PS&E													
Mitigate Environmental Impacts and Clean-up Hazardous Waste													
235.05.05 - Hist Structures Mitig													
235.05.10 - Archy & Cult Mitigation													
235.05.15 - Biological Mitigation													
235.05.20 - Perform Env Mit RW													
235.05.25 - Paleontology Mitigation													
235.10.10 - Surveys to Locate HW													
235.10.15 - Conduct Detailed Invest													
235.15 - Dev HW Management Plan													
235.20 - Prepare HW PS&E													
235.25 - Perform HW Clean-up													
235.30 - Certify Freedom of HW													

WBS Task Activity Code	Senior	Coord	Biology	Cultural	Haz Waste	Socio-Economic	Storm Water	Noise /Air	Sup Svcs	Total	Begin Date	End Date	Duration
235.35 - Long Term Mitigation Mon										-			
235.40 - Update Summary of Env Commit										-			
Total Mitigation & HW Clean-up	-	-	-	-	-	-	-	-	-	-			
Circulate, Review and Prepare Final District PS&E Package													
255.05 - Circ & Rev Draft Dist PS&E	2	20	5	2	5	2	2	2	2	38			
255.10.25 - Update Technical Reports	4	2	2							4			
255.15 - Env Reevaluation	4	10	2	2	2		2	2	2	20			
255.20.05 - Rev Plans for Stds Comp										-			
255.40 - Prep Res Eng File		2								2			
Total PS&E	2	34	9	4	7	-	4	4	4	64			
Prepare Contract Documents													
260.15.15 - Env Cert at RTL	2	8								10			
Total Prepare Contract Documents	2	8	-	-	-	-	-	-	-	10			
Perform Construction Engineering and General Contract Administration													
270.20.50 - Technical Support			5							5			
270.50 - Cert of Comp with Mit Req			2							2			
270.55 - Perf Final Inspect & Rec Accept										-			
270.70 - Update Summary of Env Commit										-			
Total Const Engineering	-		7	-	-	-	-	-	-	7			
Prepare and Administer Contract Change Orders													
285.05.05 - Det Need for CCO										-			
285.10.95 - Prov Other Func Support			4							4			
Total CCOs	-		4	-	-	-	-	-	-	4			
Resolve Contract Claims													
290.35 - Provide Technical Support										-			
Total Contract Claims	-	-	-	-	-	-	-	-	-	-			
Accept Contract, Prepare Final Construction Estimate & Prepare Final Report													
295.35 - Prep Cert of Env Compliance			2							2			
Total Final Construction	-	-	-	-	-	-	-	-	-	2			
Total Project Hours	25	201	131	35	31	2	10	68	-	501			

ATTACHMENT 7

RIGHT OF WAY DATA SHEET

To: Gary Slater, Chief
Project Studies Unit

Date: August 17, 2005

Dist: 12 Co: ORA Route: 55

KP: R13.0/R14.81

Attn: Kim Robinson

E.A.: 0G950K ALTERNATE # 1

Project Description: To construct an auxiliary lane (3.6 m) from NB 55 on-ramp from EB Dyer Rd. to NB 55 off-ramp to Edinger Ave. As a result the existing edge of pavement will be pushed outward from 3.6m to 7.0 m.

From: KATHY J. ANDERSON, Chief
RW Project Coordination

Subject: CURRENT ESTIMATED RIGHT OF WAY COSTS

We have completed an estimate of the right of way costs for the above referenced project based on maps we received from you on 3-15-05, and the following assumptions and limiting conditions:

- 1. The mapping did not provide sufficient detail to determine the limits of the right of way required.
- 2. The transportation facilities have not been sufficiently designed so our estimator could determine the damage to any of the remainder parcels affected by the project.
- 3. Additional right of way requirements are anticipated, but are not defined due to the preliminary nature of the early design requirements.
- 4. As per maps provided.
- 5. We have determined there are no right of way functional involvement's in the proposed project at this time, as designed.

Right of Way Lead-time will require a minimum of 22 months after we begin Regular right of way (PYPSCAN node No. 224), necessary environmental clearance has been obtained, and freeway agreements have been approved. From the date of receipt of final right of way requirements (PYPSCAN node No. 265), we will require a minimum of 18 months prior to the date of certification of the project.



KATHY J. ANDERSON, Chief
RW Project Coordination, Local Programs
and Project Control, Irvine Office
Southern Right of Way Region

Attachments:

- Right of Way Data Sheet – Page one (always required)
- Right of Way Data Sheet – All Pages (required when interest in real property is being acquired)
- Utility Information Sheet
- Railroad Information Sheet

RIGHT OF WAY DATA SHEET

(Form #)

To: Gary Slater, Chief
 Project Studies Unit
 Attention: Kim Robinson

Date August 17, 2005

Dist 12 Co ORA Rte 55
 EA 0G950K

K/P:R13.0- PM:R8.08-
 R14.81 R9.21

Project Description:

To construct an auxiliary lane (3.6m) from NB 55 on-ramp from EB Dyer Rd. to NB 55 off-ramp to Edinger Ave. As a result the existing edge of pavement will Be pushed outward from 3.6m to 7.0m.

Subject: Right of Way Data

Alternate No.1

This Alternate meets the criteria for a Design/Build project: Yes No

1. Right of Way Cost Estimate: To be entered into PMCS COST RW1-5 Screens.

	Current Value Future Use	Escalation Rate		Escalated Value
A. Total Acquisition Cost:				
Acquisition, including Excess Lands, Damages, and Goodwill.	\$ 9,500,000.00	10 %		\$ 12,644,500.00
Project Permit Fees.	\$ 0.00	N/A		\$ 0.00
B. Utility Relocation (State Share)	\$ 5,144,000.00	10 %		\$ 7,530,000.00
C. Relocation Assistance	\$ 125,000.00	10 %		\$ 166,000.00
D. Clearance/Demolition	\$ 75,000.00	10 %		\$ 100,000.00
E. Title and Escrow	\$ 22,500.00	5 %		\$ 26,000.00
F. Total Estimated Cost	\$ 14,866,500.00			\$ 20,466,500.00
G. Construction Contract Work	\$ 0			

2. Current Date of Right of Way Certification 11/09 T

3. Parcel Data: To be entered into PMCS EVNT RW Screen.

Type	Dual/Appr	Utilities	RR Involvements	
X		U4-1 0	None	None
A		-2 0	C&M Agrmt	None
B <u>6</u>		-3 0	Svc Contract	None
C <u>2</u>	<u>1</u>	-4 7		
D		U5-7 0		
E XXXX		-8 0	Lic/RE/Clauses	None
F XXXX		-9 0		
Total <u>8</u>			Misc. R/W Work	
			RAP Displ	<u>2</u>
			Clear/Demo	<u>1</u>
			Const Permits	<u>0</u>
			Condemnation	<u>0</u>
			Excess	<u>0</u>

Areas: R/W N/A No. Excess Parcels N/A
 Entered PMCS Screens 08/ 17/ 05 by Simin Yazdan
 Entered AGRE Screen (Railroad data only) / / by

RIGHT OF WAY DATA SHEET – ALTERNATIVE #1

(Form #)

EA: 0G950K

4-EX-1 (REV 3/2004)

Page 2 of 6

4. Are there any major items of construction contract work? Yes No (If "Yes," explain.)
5. Provide a general description of the right of way and excess lands required (zoning, use, major improvements, critical or sensitive parcels, etc.). No right of way required.

Commercial Industrial properties to include motel, retail, & light manufacturing. Construction and utility relocations will temporarily impact 40 customer parking spaces at Bedrosians and approximately 120 secured employee-parking spaces at Ricoh. Caltrans contractor will construct a temporary secured employee parking lot across from the Ricoh site on Caltrans owned property. It appears that, the total of Bedrosians customer parking is currently under utilized and that the physical impact to 40 customer parking spaces for a short time will pose no great problem to their business. Caltrans construction will permanently remove approximately 46 employee parking spaces at Sweet Life and Western Switches/Controls and permanently physically impact Sweet Life Loading Dock. It is proposed to purchase the Western Switches/Controls parcel to relocate the said parking and dock structure. It appears that Sweet Life currently shares warehouse space at Western Switches/ Controls. All Right of Way requirements have been reviewed and approved by the project engineer of the Project Studies Unit.

6. Is there an effect on assessed valuation? Yes Not Significant No (If "Yes," explain.)

7. Are utility facilities or rights of way affected?
Yes No (If "Yes," attach Utility Information Sheet, Exhibit 4-EX-5.)
The following checked items may seriously impact lead time for utility relocation:
 Longitudinal policy conflict(s)
 Environmental concerns impacting acquisition of potential easements
 Power lines operating in excess of 50 KV and substations
(See attached Exhibit 4-EX-5 for explanation.)

8. Are Railroad facilities or rights of way affected?
Yes No (If "Yes," attach Railroad Information Sheet, Exhibit 4-EX-6.)

9. Were any previously unidentified sites with hazardous waste and/or material found?
Yes None Evident (If "Yes," attach memorandum per R/W Manual, Chapter 4, Section 4.01.10.00.)

10. Are RAP displacements required? Yes No (If "Yes," provide the following information.)

No. of single family _____ No. of business/nonprofit 2

No. of multi-family _____ No. of farms _____

Based on Draft/Final Relocation Impact Statement/Study dated N/A, it is anticipated that sufficient replacement housing (will/will not) be available without Last Resort Housing.

11. Are there Material Borrow and/or Disposal Sites required? Yes No (If "Yes," explain.)

12. Are there potential relinquishments and/or abandonments? Yes No (If "Yes," explain.)

13. Are there any existing and/or potential airspace sites? Yes No (If "Yes," explain.)

RIGHT OF WAY DATA SHEET – ALTERNATIVE #1
(Form #)

EA: 0G950K
4-EX-1 (REV 3/2004)
Page 4 of 6

14. Indicate the anticipated Right of Way schedule and lead time requirements. (Discuss if district proposes less than PMCS lead-time and/or if significant pressures for project advancement are anticipated.)

Based on the R/W requirements on Page 1 of this Data Sheet, R/W will require a lead-time of 22 months from the date regular appraisals can begin to project certification.

In any event, RW Maps will require 18 months from Final Maps to project certification.

15. Is it anticipated that Caltrans staff will perform all Right of Way work? Yes No (If "No," discuss.)

Evaluation Prepared By:

Right of Way:

Name

Hany Pantoyi

Date

8.17.05

Railroad:

Name

Markus Fred Bobosik

Date

8-17-05

Utilities:

Name

John Dymun

Date

August 17, 2005

I have personally reviewed this Right of Way Data Sheet and all supporting information. I certify that the probable Highest and Best Use, estimated values, escalation rates, and assumptions are reasonable and proper subject to the limiting conditions set forth, and I find this Data Sheet complete and current.

Katny J. Anderson

KATNY J. ANDERSON, Chief
R/W Project Coordination, Local Programs
and Project Control
Irvine Office
Southern Right of Way Region

8-17-05
Date

RAILROAD INFORMATION SHEET

1. Describe railroad facilities or right of way affected.

- None

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

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

- None

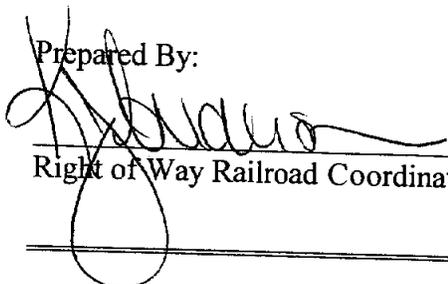
4. Remarks (non-operating railroad right of way involved?):

- No R/R within project limits.

5. PMCS Input Information

<u>RR Involvements</u>	
None	<u>None</u>
C&M Agreement	<u>None</u>
Service Contract	<u>None</u>
Design	<u>None</u>
Const.	<u>None</u>
Lic/RE/Clauses	<u>None</u>

Prepared By:


Right of Way Railroad Coordinator

8-17-05
Date

UTILITY INFORMATION SHEET

1. Name of utility companies involved in project:

- Southern California Edison
- Pacific Bell
- Adelphia
- Santa Ana Water
- Orange County Sanitation District

2. Types of facilities and agreements required:

- SCE street light. Notice to owner and utility agreement
- SCE 12KV & 66 KV electrical (overhead), Notice to owner and utility agreement
- PB telecommunication cables (overhead), Notice to owner and utility agreement
- Adelphia Telecommunication cables (overhead), Notice to owner and utility agreement
- Santa Ana Water Lines, Notice to owner and utility agreement
- Orange County Sanitation District, sewer, Notice to owner and utility agreement

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

- SCE, PB & Adelphia overhead facilities are adjacent longitudinally to NB SR 55. The engineer has determined that those facilities need to be relocated.

Disposition of longitudinal encroachment(s):

- Relocation required.
- Exception to policy needed.
- Other. Explain.

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

- Steel Power poles have been determined, by the engineer, to be in conflict resulting in relocation. Lead time for ordering power poles can be up to 18 months. Relocation may need to occur in off- peak season.

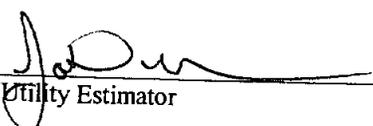
5. PMCS Input Information

Total estimated cost of State's obligation for utility relocation on this project:
\$ 7,530,000.00

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

Utility Involvements			
U4-1	<u>0</u>	U5-7	<u>0</u>
-2	<u>0</u>	-8	<u>0</u>
-3	<u>0</u>	-9	<u>0</u>
-4	<u>7</u>		

Prepared By:


Right of Way Utility Estimator

To: Gary Slater, Chief
Project Studies Unit

Attn: Kim Robinson

Date: August 17, 2005

Dist: 12 Co: ORA Route: 55

KP: R13.0/R14.81

E.A.: 0G950K ALTERNATE # 2

Project Description: To construct an auxiliary lane (3.6 m) from NB 55 on-ramp from EB Dyer Rd. to NB 55 off-ramp to Edinger Ave. As a result the existing edge of pavement will be pushed outward from 3.6m to 10.5 m.

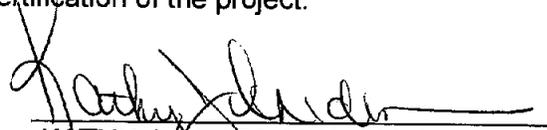
From: KATHY J. ANDERSON, Chief
R/W Project Coordination

Subject: CURRENT ESTIMATED RIGHT OF WAY COSTS

We have completed an estimate of the right of way costs for the above referenced project based on maps we received from you on 3-15-05, and the following assumptions and limiting conditions:

- 1. The mapping did not provide sufficient detail to determine the limits of the right of way required.
- 2. The transportation facilities have not been sufficiently designed so our estimator could determine the damage to any of the remainder parcels affected by the project.
- 3. Additional right of way requirements are anticipated, but are not defined due to the preliminary nature of the early design requirements.
- 4. As per maps provided.
- 5. We have determined there are no right of way functional involvement's in the proposed project at this time, as designed.

Right of Way Lead-time will require a minimum of 22 months after we begin Regular right of way (PYPSCAN node No. 224), necessary environmental clearance has been obtained, and freeway agreements have been approved. From the date of receipt of final right of way requirements (PYPSCAN node No. 265), we will require a minimum of 18 months prior to the date of certification of the project.


KATHY J. ANDERSON, Chief
R/W Project Coordination, Local Programs
and Project Control, Irvine Office
Southern Right of Way Region

Attachments:

- Right of Way Data Sheet – Page one (always required)
- Right of Way Data Sheet – All Pages (required when interest in real property is being acquired)
- Utility Information Sheet
- Railroad Information Sheet

RIGHT OF WAY DATA SHEET

(Form #)

To: Gary Slater, Chief

Date August 17, 2005

Attention: Project Studies Unit
Kim Robinson

Dist 12 Co ORA Rte 55 K/P:R13.0- PM:R8.08-
EA 0G950K R14.81 R9.21

Project Description:

To construct an auxiliary lane (3.6m) from NB 55 on-ramp from EB Dyer Rd. to NB 55 off-ramp to Edinger Ave. As a result the existing edge of pavement will Be pushed outward from 3.6m to 10.5m.

Subject: Right of Way Data

Alternate No.2 Preferred

This Alternate meets the criteria for a Design/Build project: Yes No

1. **Right of Way Cost Estimate:** To be entered into PMCS COST RW1-5 Screens.

	Current Value Future Use	Escalation Rate	Escalated Value
A. Total Acquisition Cost: Acquisition, including Excess Lands, Damages, and Goodwill.	\$ 9,600,000.00	10 %	\$ 12,777,600.00
Project Permit Fees.	\$ 0.00	N/A	\$ 0.00
B. Utility Relocation (State Share)	\$ 5,444,000.00	10 %	\$ 8,000,000.00
C. Relocation Assistance	\$ 125,000.00	10 %	\$ 166,000.00
D. Clearance/Demolition	\$ 75,000.00	10 %	\$ 100,000.00
E. Title and Escrow	\$ 22,500.00	5 %	\$ 26,000.00
F. Total Estimated Cost	\$ 15,266,500.00		\$ 21,069,600.00
G. Construction Contract Work	\$ 0		

2. **Current Date of Right of Way Certification** 11/09 T

3. **Parcel Data:** To be entered into PMCS EVNT RW Screen.

Type	Dual/Appr	Utilities	RR Involvements
X _____	_____	U4-1 <u>0</u>	None <u>None</u>
A _____	_____	-2 <u>0</u>	C&M Agrmt <u>None</u>
B <u>6</u>	_____	-3 <u>0</u>	Svc Contract <u>None</u>
C <u>2</u>	<u>1</u>	-4 <u>7</u>	
D _____	_____	U5-7 <u>0</u>	
E XXXX	_____	-8 <u>0</u>	Lic/RE/Clauses <u>None</u>
F XXXX	_____	-9 <u>0</u>	
Total <u>8</u>			Misc. R/W Work
			RAP Displ <u>2</u>
			Clear/Demo <u>1</u>
			Const Permits <u>0</u>
			Condemnation <u>0</u>
			Excess <u>0</u>

Areas: R/W N/A No. Excess Parcels 0
Entered PMCS Screens 08/17/05 by Simin Yazdan
Entered AGRE Screen (Railroad data only) / / by _____

RIGHT OF WAY DATA SHEET – ALTERNATIVE #2
(Form #)

EA: 0G950K
4-EX-1 (REV 3/2004)
Page 2 of 6

4. Are there any major items of construction contract work? Yes No (If "Yes," explain.)

5. Provide a general description of the right of way and excess lands required (zoning, use, major improvements, critical or sensitive parcels, etc.). No right of way required.

Commercial Industrial properties to include motel, retail, & light manufacturing. Construction and utility relocations will temporarily impact 40 customer parking spaces at Bedrosians and approximately 120 secured employee-parking spaces at Ricoh. Caltrans contractor will construct a temporary secured employee parking lot across from the Ricoh site on Caltrans owned property. It appears that, the total of Bedrosians customer parking is currently under utilized and that the physical impact to 40 customer parking spaces for a short time will pose no great problem to their business. Caltrans construction will permanently remove approximately 46 employee parking spaces at Sweet Life and Western Switches/Controls and permanently physically impact Sweet Life Loading Dock. It is proposed to purchase the Western Switches/Controls parcel to relocate the said parking and dock structure. It appears that Sweet Life currently shares warehouse space at Western Switches/ Controls. All Right of Way requirements have been reviewed and approved by the project engineer of the Project Studies Unit.

6. Is there an effect on assessed valuation? Yes Not Significant No (If "Yes," explain.)

7. Are utility facilities or rights of way affected?
Yes No (If "Yes," attach Utility Information Sheet, Exhibit 4-EX-5.)
The following checked items may seriously impact lead time for utility relocation:
 Longitudinal policy conflict(s)
 Environmental concerns impacting acquisition of potential easements
 Power lines operating in excess of 50 KV and substations
(See attached Exhibit 4-EX-5 for explanation.)

8. Are Railroad facilities or rights of way affected?
Yes No (If "Yes," attach Railroad Information Sheet, Exhibit 4-EX-6.)

RIGHT OF WAY DATA SHEET – ALTERNATIVE #2

(Form #)

EA: 0G950K

4-EX-1 (REV 3/2004)

Page 3 of 6

9. Were any previously unidentified sites with hazardous waste and/or material found?
Yes None Evident (If "Yes," attach memorandum per R/W Manual, Chapter 4, Section 4.01.10.00.)

10. Are RAP displacements required? Yes No (If "Yes," provide the following information.)

No. of single family _____ No. of business/nonprofit 2

No. of multi-family _____ No. of farms _____

Based on Draft/Final Relocation Impact Statement/Study dated N/A, it is anticipated that sufficient replacement housing (will/will not) be available without Last Resort Housing.

11. Are there Material Borrow and/or Disposal Sites required? Yes No (If "Yes," explain.)

12. Are there potential relinquishments and/or abandonments? Yes No (If "Yes," explain.)

13. Are there any existing and/or potential airspace sites? Yes No (If "Yes," explain.)

RIGHT OF WAY DATA SHEET - ALTERNATIVE #2
(Form #)

EA: 0G950K
4-EX-1 (REV 3/2004)
Page 4 of 6

14. Indicate the anticipated Right of Way schedule and lead time requirements. (Discuss if district proposes less than PMCS lead-time and/or if significant pressures for project advancement are anticipated.)

Based on the R/W requirements on Page 1 of this Data Sheet, R/W will require a lead-time of 22 months from the date regular appraisals can begin to project certification.

In any event, RW Maps will require 18 months from Final Maps to project certification.

15. Is it anticipated that Caltrans staff will perform all Right of Way work? Yes No (If "No," discuss.)

Evaluation Prepared By:

Right of Way:

Name

Hany Pantogo

Date

8.17.05

Railroad:

Name

Anderson for B. Bobosik

Date

8-17-05

Utilities:

Name

[Signature]

Date

August 17, 2005

I have personally reviewed this Right of Way Data Sheet and all supporting information. I certify that the probable Highest and Best Use, estimated values, escalation rates, and assumptions are reasonable and proper subject to the limiting conditions set forth, and I find this Data Sheet complete and current.

[Signature]

KATHY J. ANDERSON, Chief
R/W Project Coordination, Local Programs
and Project Control
Irvine Office
Southern Right of Way Region

8-17-05

Date

RAILROAD INFORMATION SHEET

1. Describe railroad facilities or right of way affected.

- None

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

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

- None

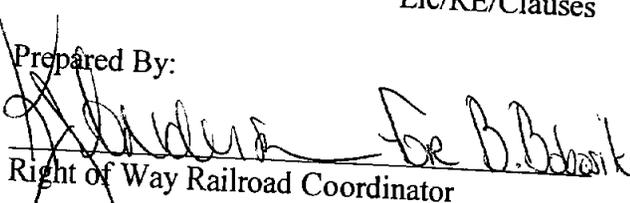
4. Remarks (non-operating railroad right of way involved?):

- No R/R within project limits.

5. PMCS Input Information

<u>RR Involvements</u>	
None	<u>None</u>
C&M Agreement	<u>None</u>
Service Contract	<u>None</u>
Design	<u>None</u>
Const.	<u>None</u>
Lic/RE/Clauses	<u>None</u>

Prepared By:


Right of Way Railroad Coordinator

8-17-05

Date

UTILITY INFORMATION SHEET

1. Name of utility companies involved in project:

- Southern California Edison
- Pacific Bell
- Adelphia
- Santa Ana Water
- Orange County Sanitation District

2. Types of facilities and agreements required:

- SCE street light. Notice to owner and utility agreement
- SCE 12KV & 66 KV electrical (overhead), Notice to owner and utility agreement
- PB telecommunication cables (overhead), Notice to owner and utility agreement
- Adelphia Telecommunication cables (overhead), Notice to owner and utility agreement
- Santa Ana Water Lines, Notice to owner and utility agreement
- Orange County Sanitation District, sewer, Notice to owner and utility agreement

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

- SCE, PB & Adelphia overhead facilities are adjacent longitudinally to NB SR 55. The engineer has determined that those facilities need to be relocated.

Disposition of longitudinal encroachment(s):

- Relocation required.
- Exception to policy needed.
- Other. Explain.

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

- Steel Power poles have been determined, by the engineer, to be in conflict resulting in relocation. Lead time for ordering power poles can be up to 18 months. Relocation may need to occur in off- peak season.

5. PMCS Input Information

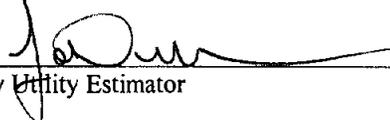
Total estimated cost of State's obligation for utility relocation on this project:

\$ 8,000,000.00

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

<u>Utility Involvements</u>			
U4-1	0	U5-7	0
-2	0	-8	0
-3	0	-9	0
-4	7		

Prepared By:


 Right of Way Utility Estimator

To: Gary Slater, Chief
Project Studies Unit

Date: August 17, 2005

Dist: 12 Co: ORA Route: 55

KP: R13.0/R14.81

Attn: Kim Robinson

E.A.: 0G950K ALTERNATE # 1 A

Project Description: To construct an auxiliary lane (3.6 m) from NB 55 on-ramp from EB Dyer Rd. to NB 55 off-ramp to Edinger Ave. As a result the existing edge of pavement will be pushed outward from 3.6m to 7.0 m.

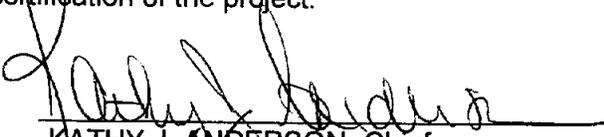
From: KATHY J. ANDERSON, Chief
RW Project Coordination

Subject: CURRENT ESTIMATED RIGHT OF WAY COSTS

We have completed an estimate of the right of way costs for the above referenced project based on maps we received from you on 3-15-05, and the following assumptions and limiting conditions:

- 1. The mapping did not provide sufficient detail to determine the limits of the right of way required.
- 2. The transportation facilities have not been sufficiently designed so our estimator could determine the damage to any of the remainder parcels affected by the project.
- 3. Additional right of way requirements are anticipated, but are not defined due to the preliminary nature of the early design requirements.
- 4. As per maps provided.
- 5. We have determined there are no right of way functional involvement's in the proposed project at this time, as designed.

Right of Way Lead-time will require a minimum of 22 months after we begin Regular right of way (PYPSCAN node No. 224), necessary environmental clearance has been obtained, and freeway agreements have been approved. From the date of receipt of final right of way requirements (PYPSCAN node No. 265), we will require a minimum of 18 months prior to the date of certification of the project.


KATHY J. ANDERSON, Chief
RW Project Coordination, Local Programs
and Project Control, Irvine Office
Southern Right of Way Region

Attachments:

- Right of Way Data Sheet – Page one (always required)
- Right of Way Data Sheet – All Pages (required when interest in real property is being acquired)
- Utility Information Sheet
- Railroad Information Sheet

RIGHT OF WAY DATA SHEET

(Form #)

To: Gary Slater, Chief

Date August 17, 2005

Attention: Project Studies Unit
Kim Robinson

Dist 12 Co ORA Rte 55 K/P:R13.0- R14.81 PM:R8.08- R9.21

EA 0G950K

Project Description:
To construct an auxiliary lane (3.6m) from NB 55 on-ramp from EB Dyer Rd. to NB 55 off-ramp to Edinger Ave. As a result the existing edge of pavement will Be pushed outward from 3.6m to 7.0m.

Subject: Right of Way Data

Alternate No.1

This Alternate meets the criteria for a Design/Build project: Yes No

1. **Right of Way Cost Estimate:** To be entered into PMCS COST RW1-5 Screens.

	Current Value Future Use	Escalation Rate	Escalated Value
A. Total Acquisition Cost: Acquisition, including Excess Lands, Damages, and Goodwill.	\$ <u>9,500,000.00</u>	<u>10</u> %	\$ <u>12,644,500.00</u>
Project Permit Fees.	\$ <u>0.00</u>	N/A	\$ <u>0.00</u>
B. Utility Relocation (State Share)	\$ <u>5,144,000.00</u>	<u>10</u> %	\$ <u>7,530,000.00</u>
C. Relocation Assistance	\$ <u>125,000.00</u>	<u>10</u> %	\$ <u>166,000.00</u>
D. Clearance/Demolition	\$ <u>75,000.00</u>	<u>10</u> %	\$ <u>100,000.00</u>
E. Title and Escrow	\$ <u>22,500.00</u>	<u>5</u> %	\$ <u>26,000.00</u>
F. Total Estimated Cost	\$ <u>14,866,500.00</u>		\$ <u>20,466,500.00</u>
G. Construction Contract Work	\$ <u>0</u>		

2. **Current Date of Right of Way Certification** 11/09 T

3. **Parcel Data:** To be entered into PMCS EVNT RW Screen.

Type	Dual/Appr	Utilities	RR Involvements
X		U4-1 <u>0</u>	None
A		-2 <u>0</u>	C&M Agrmt <u>None</u>
B <u>6</u>		-3 <u>0</u>	Svc Contract <u>None</u>
C <u>2</u>	<u>1</u>	-4 <u>7</u>	
D		U5-7 <u>0</u>	
E XXXX		-8 <u>0</u>	Lic/RE/Clauses <u>None</u>
F XXXX		-9 <u>0</u>	
Total <u>8</u>			Misc. R/W Work
			RAP Displ <u>2</u>
			Clear/Demo <u>1</u>
			Const Permits <u>0</u>
			Condemnation <u>0</u>
			Excess <u>0</u>

Areas: R/W N/A No. Excess Parcels N/A
Entered PMCS Screens 08/17/05 by Simin Yazdan
Entered AGRE Screen (Railroad data only) / / by

RIGHT OF WAY DATA SHEET – ALTERNATIVE #1
(Form #)

EA: 0G950K
4-EX-1 (REV 3/2004)
Page 2 of 6

4. Are there any major items of construction contract work? Yes No (If "Yes," explain.)
5. Provide a general description of the right of way and excess lands required (zoning, use, major improvements, critical or sensitive parcels, etc.). No right of way required.

Commercial Industrial properties to include motel, retail, & light manufacturing. Construction and utility relocations will temporarily impact 40 customer parking spaces at Bedrosians and approximately 120 secured employee-parking spaces at Ricoh. Caltrans contractor will construct a temporary secured employee parking lot across from the Ricoh site on Caltrans owned property. It appears that, the total of Bedrosians customer parking is currently under utilized and that the physical impact to 40 customer parking spaces for a short time will pose no great problem to their business. Caltrans construction will permanently remove approximately 46 employee parking spaces at Sweet Life and Western Switches/Controls and permanently physically impact Sweet Life Loading Dock. It is proposed to purchase the Western Switches/Controls parcel to relocate the said parking and dock structure. It appears that Sweet Life currently shares warehouse space at Western Switches/ Controls. All Right of Way requirements have been reviewed and approved by the project engineer of the Project Studies Unit.

6. Is there an effect on assessed valuation? Yes Not Significant No (If "Yes," explain.)

7. Are utility facilities or rights of way affected?
Yes No (If "Yes," attach Utility Information Sheet, Exhibit 4-EX-5.)
The following checked items may seriously impact lead time for utility relocation:
 Longitudinal policy conflict(s)
 Environmental concerns impacting acquisition of potential easements
 Power lines operating in excess of 50 KV and substations
(See attached Exhibit 4-EX-5 for explanation.)

8. Are Railroad facilities or rights of way affected?
Yes No (If "Yes," attach Railroad Information Sheet, Exhibit 4-EX-6.)

RIGHT OF WAY DATA SHEET – ALTERNATIVE #1

(Form #)

EA: 0G950K

4-EX-1 (REV 3/2004)

Page 3 of 6

9. Were any previously unidentified sites with hazardous waste and/or material found?
Yes None Evident (If "Yes," attach memorandum per R/W Manual, Chapter 4, Section 4.01.10.00.)

10. Are RAP displacements required? Yes No (If "Yes," provide the following information.)

No. of single family _____ No. of business/nonprofit 2

No. of multi-family _____ No. of farms _____

Based on Draft/Final Relocation Impact Statement/Study dated N/A, it is anticipated that sufficient replacement housing (will/will not) be available without Last Resort Housing.

11. Are there Material Borrow and/or Disposal Sites required? Yes No (If "Yes," explain.)

12. Are there potential relinquishments and/or abandonments? Yes No (If "Yes," explain.)

13. Are there any existing and/or potential airspace sites? Yes No (If "Yes," explain.)

RAILROAD INFORMATION SHEET

1. Describe railroad facilities or right of way affected.

- None

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

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

- None

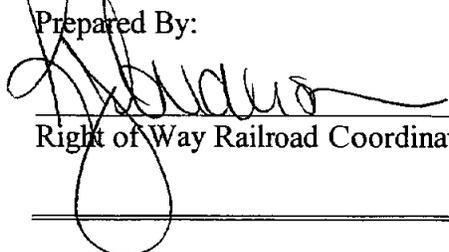
4. Remarks (non-operating railroad right of way involved?):

- No R/R within project limits.

5. PMCS Input Information

<u>RR Involvements</u>	
None	<u>None</u>
C&M Agreement	<u>None</u>
Service Contract	<u>None</u>
Design	<u>None</u>
Const.	<u>None</u>
Lic/RE/Clauses	<u>None</u>

Prepared By:


Right of Way Railroad Coordinator

8-17-05
Date

UTILITY INFORMATION SHEET

1. Name of utility companies involved in project:

- Southern California Edison
- Pacific Bell
- Adelphia
- Santa Ana Water
- Orange County Sanitation District

2. Types of facilities and agreements required:

- SCE street light. Notice to owner and utility agreement
- SCE 12KV & 66 KV electrical (overhead), Notice to owner and utility agreement
- PB telecommunication cables (overhead), Notice to owner and utility agreement
- Adelphia Telecommunication cables (overhead), Notice to owner and utility agreement
- Santa Ana Water Lines, Notice to owner and utility agreement
- Orange County Sanitation District, sewer, Notice to owner and utility agreement

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

- SCE, PB & Adelphia overhead facilities are adjacent longitudinally to NB SR 55. The engineer has determined that those facilities need to be relocated.

Disposition of longitudinal encroachment(s):

- Relocation required.
- Exception to policy needed.
- Other. Explain.

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

- Steel Power poles have been determined, by the engineer, to be in conflict resulting in relocation. Lead time for ordering power poles can be up to 18 months. Relocation may need to occur in off- peak season.

5. PMCS Input Information

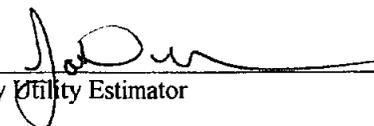
Total estimated cost of State's obligation for utility relocation on this project:

\$ 7,530,000.00

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

<u>Utility Involvements</u>			
U4-1	0	U5-7	0
	-2		-8
	-3		-9
	-4		7

Prepared By:



 Right of Way Utility Estimator

To: Gary Slater, Chief
Project Studies Unit

Date: August 17, 2005

Dist: 12 Co: ORA Route: 55

KP: R13.0/R14.81

Attn: Kim Robinson

E.A.: 0G950K ALTERNATE # 2 A

Project Description: To construct an auxiliary lane (3.6 m) from NB 55 on-ramp from EB Dyer Rd. to NB 55 off-ramp to Edinger Ave. As a result the existing edge of pavement will be pushed outward from 3.6m to 10.5 m.

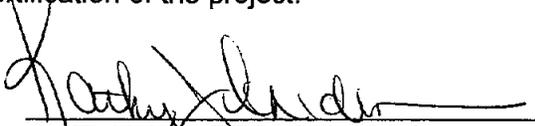
From: KATHY J. ANDERSON, Chief
RW Project Coordination

Subject: CURRENT ESTIMATED RIGHT OF WAY COSTS

We have completed an estimate of the right of way costs for the above referenced project based on maps we received from you on 3-15-05, and the following assumptions and limiting conditions:

- 1. The mapping did not provide sufficient detail to determine the limits of the right of way required.
- 2. The transportation facilities have not been sufficiently designed so our estimator could determine the damage to any of the remainder parcels affected by the project.
- 3. Additional right of way requirements are anticipated, but are not defined due to the preliminary nature of the early design requirements.
- 4. As per maps provided.
- 5. We have determined there are no right of way functional involvement's in the proposed project at this time, as designed.

Right of Way Lead-time will require a minimum of 22 months after we begin Regular right of way (PYPSCAN node No. 224), necessary environmental clearance has been obtained, and freeway agreements have been approved. From the date of receipt of final right of way requirements (PYPSCAN node No. 265), we will require a minimum of 18 months prior to the date of certification of the project.


KATHY J. ANDERSON, Chief
RW Project Coordination, Local Programs
and Project Control, Irvine Office
Southern Right of Way Region

Attachments:

- Right of Way Data Sheet – Page one (always required)
- Right of Way Data Sheet – All Pages (required when interest in real property is being acquired)
- Utility Information Sheet
- Railroad Information Sheet

RIGHT OF WAY DATA SHEET

(Form #)

4-EX-1 (REV 3/2004)

Page 1 of 6

To: Gary Slater, Chief Date August 17, 2005

Project Studies Unit Dist 12 Co ORA Rte 55 K/P:R13.0- PM:R8.08-
 Attention: Kim Robinson EA 0G950K R14.81 R9.21

Project Description:
To construct an auxiliary lane (3.6m) from NB 55 on-ramp from EB Dyer Rd. to NB 55 off-ramp to Edinger Ave. As a result the existing edge of pavement will Be pushed outward from 3.6m to 10.5m.

Subject: Right of Way Data Alternate No.2 Preferred

This Alternate meets the criteria for a Design/Build project: Yes No

1. **Right of Way Cost Estimate:** To be entered into PMCS COST RW1-5 Screens.

	Current Value Future Use	Escalation Rate	Escalated Value
A. Total Acquisition Cost: Acquisition, including Excess Lands, Damages, and Goodwill.	\$ <u>9,600,000.00</u>	<u>10</u> %	\$ <u>12,777,600.00</u>
Project Permit Fees.	\$ <u>0.00</u>	N/A	\$ <u>0.00</u>
B. Utility Relocation (State Share)	\$ <u>5,444,000.00</u>	<u>10</u> %	\$ <u>8,000,000.00</u>
C. Relocation Assistance	\$ <u>125,000.00</u>	<u>10</u> %	\$ <u>166,000.00</u>
D. Clearance/Demolition	\$ <u>75,000.00</u>	<u>10</u> %	\$ <u>100,000.00</u>
E. Title and Escrow	\$ <u>22,500.00</u>	<u>5</u> %	\$ <u>26,000.00</u>
F. Total Estimated Cost	\$ <u>15,266,500.00</u>		\$ <u>21,069,600.00</u>
G. Construction Contract Work	\$ <u>0</u>		

2. **Current Date of Right of Way Certification** 11/09 T

3. **Parcel Data:** To be entered into PMCS EVNT RW Screen.

Type	Dual/Appr	Utilities	RR Involvements
X _____	_____	U4-1 <u>0</u>	None <u>None</u>
A _____	_____	-2 <u>0</u>	C&M Agrmt <u>None</u>
B <u>6</u>	_____	-3 <u>0</u>	Svc Contract <u>None</u>
C <u>2</u>	<u>1</u>	-4 <u>7</u>	
D _____	_____	U5-7 <u>0</u>	
E XXXX	_____	-8 <u>0</u>	Lic/RE/Clauses <u>None</u>
F XXXX	_____	-9 <u>0</u>	
Total <u>8</u>			Misc. R/W Work
			RAP Displ <u>2</u>
			Clear/Demo <u>1</u>
			Const Permits <u>0</u>
			Condemnation <u>0</u>
			Excess <u>0</u>

Areas: R/W N/A No. Excess Parcels 0
 Entered PMCS Screens 08/17/05 by Simin Yazdan
 Entered AGRE Screen (Railroad data only) / / by _____

RIGHT OF WAY DATA SHEET – ALTERNATIVE #2

(Form #)

EA: 0G950K

4-EX-1 (REV 3/2004)

Page 2 of 6

4. Are there any major items of construction contract work? Yes No (If "Yes," explain.)
5. Provide a general description of the right of way and excess lands required (zoning, use, major improvements, critical or sensitive parcels, etc.). No right of way required.

Commercial Industrial properties to include motel, retail, & light manufacturing. Construction and utility relocations will temporarily impact 40 customer parking spaces at Bedrosians and approximately 120 secured employee-parking spaces at Ricoh. Caltrans contractor will construct a temporary secured employee parking lot across from the Ricoh site on Caltrans owned property. It appears that, the total of Bedrosians customer parking is currently under utilized and that the physical impact to 40 customer parking spaces for a short time will pose no great problem to their business. Caltrans construction will permanently remove approximately 46 employee parking spaces at Sweet Life and Western Switches/Controls and permanently physically impact Sweet Life Loading Dock. It is proposed to purchase the Western Switches/Controls parcel to relocate the said parking and dock structure. It appears that Sweet Life currently shares warehouse space at Western Switches/ Controls. All Right of Way requirements have been reviewed and approved by the project engineer of the Project Studies Unit.

6. Is there an effect on assessed valuation? Yes Not Significant No (If "Yes," explain.)

7. Are utility facilities or rights of way affected?
Yes No (If "Yes," attach Utility Information Sheet, Exhibit 4-EX-5.)
The following checked items may seriously impact lead time for utility relocation:
 Longitudinal policy conflict(s)
 Environmental concerns impacting acquisition of potential easements
 Power lines operating in excess of 50 KV and substations
(See attached Exhibit 4-EX-5 for explanation.)

8. Are Railroad facilities or rights of way affected?
Yes No (If "Yes," attach Railroad Information Sheet, Exhibit 4-EX-6.)

RIGHT OF WAY DATA SHEET – ALTERNATIVE #2
(Form #)

EA: 0G950K
4-EX-1 (REV 3/2004)
Page 3 of 6

9. Were any previously unidentified sites with hazardous waste and/or material found?
Yes None Evident (If "Yes," attach memorandum per R/W Manual, Chapter 4, Section 4.01.10.00.)

10. Are RAP displacements required? Yes No (If "Yes," provide the following information.)

No. of single family _____ No. of business/nonprofit 2

No. of multi-family _____ No. of farms _____

Based on Draft/Final Relocation Impact Statement/Study dated N/A, it is anticipated that sufficient replacement housing (will/will not) be available without Last Resort Housing.

11. Are there Material Borrow and/or Disposal Sites required? Yes No (If "Yes," explain.)

12. Are there potential relinquishments and/or abandonments? Yes No (If "Yes," explain.)

13. Are there any existing and/or potential airspace sites? Yes No (If "Yes," explain.)

RIGHT OF WAY DATA SHEET - ALTERNATIVE #2
(Form #)

EA: 0G950K
4-EX-1 (REV 3/2004)
Page 4 of 6

14. Indicate the anticipated Right of Way schedule and lead time requirements. (Discuss if district proposes less than PMCS lead-time and/or if significant pressures for project advancement are anticipated.)

Based on the R/W requirements on Page 1 of this Data Sheet, R/W will require a lead-time of 22 months from the date regular appraisals can begin to project certification.

In any event, RW Maps will require 18 months from Final Maps to project certification.

15. Is it anticipated that Caltrans staff will perform all Right of Way work? Yes No (If "No," discuss.)

Evaluation Prepared By:

Right of Way:

Railroad:

Utilities:

Name

Name

Name

Date

Date

Date

8.17.05

8-17-05

August 17, 2005

I have personally reviewed this Right of Way Data Sheet and all supporting information. I certify that the probable Highest and Best Use, estimated values, escalation rates, and assumptions are reasonable and proper subject to the limiting conditions set forth, and I find this Data Sheet complete and current.


KATHY J. ANDERSON, Chief
R/W Project Coordination, Local Programs
and Project Control
Irvine Office
Southern Right of Way Region

Date

8-17-05

RAILROAD INFORMATION SHEET

1. Describe railroad facilities or right of way affected.

- None

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

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

- None

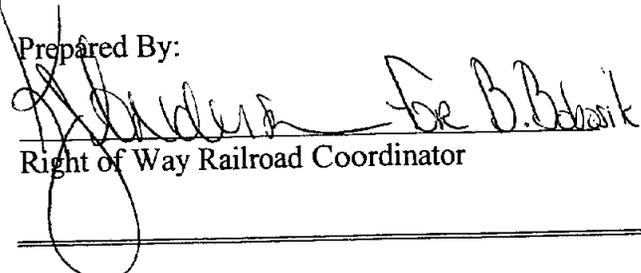
4. Remarks (non-operating railroad right of way involved?):

- No R/R within project limits.

5. PMCS Input Information

<u>RR Involvements</u>	
None	<u>None</u>
C&M Agreement	<u>None</u>
Service Contract	<u>None</u>
Design	<u>None</u>
Const.	<u>None</u>
Lic/RE/Clauses	<u>None</u>

Prepared By:


Right of Way Railroad Coordinator

8-17-05
Date

UTILITY INFORMATION SHEET

1. Name of utility companies involved in project:

- Southern California Edison
- Pacific Bell
- Adelphia
- Santa Ana Water
- Orange County Sanitation District

2. Types of facilities and agreements required:

- SCE street light. Notice to owner and utility agreement
- SCE 12KV & 66 KV electrical (overhead), Notice to owner and utility agreement
- PB telecommunication cables (overhead), Notice to owner and utility agreement
- Adelphia Telecommunication cables (overhead), Notice to owner and utility agreement
- Santa Ana Water Lines, Notice to owner and utility agreement
- Orange County Sanitation District, sewer, Notice to owner and utility agreement

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

- SCE, PB & Adelphia overhead facilities are adjacent longitudinally to NB SR 55. The engineer has determined that those facilities need to be relocated.

Disposition of longitudinal encroachment(s):

- Relocation required.
- Exception to policy needed.
- Other. Explain.

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

- Steel Power poles have been determined, by the engineer, to be in conflict resulting in relocation. Lead time for ordering power poles can be up to 18 months. Relocation may need to occur in off- peak season.

5. PMCS Input Information

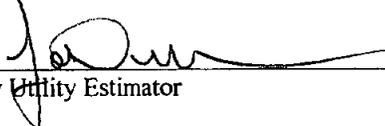
Total estimated cost of State's obligation for utility relocation on this project:

\$ 8,000,000.00

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

<u>Utility Involvements</u>			
U4-1	0	U5-7	0
-2	0	-8	0
-3	0	-9	0
-4	7		

Prepared By:



 Right of Way Utility Estimator

ATTACHMENT 8

PROJECT SUPPROT & PROJECT SCHEDULE

12. PROJECT SUPPORT:

Proposed Program FY	District PY's		Engineering Service Center PY's				FY Total PY's	Other Costs (\$)	
	Design	R/W	Engineering and Others		Structures				Office Eng.
			Design	Constr	Design	Constr			
2005/2006	2.48	0.17	0.00	0.00	0.00	0.00	0.12	0	
2006/2007	0.56	0.16	0.00	0.83	0.00	0.00	0.28	0	
2007/2008	0.79	0.16	0.00	0.00	0.00	0.00	0.00	0	
2008/2009	2.94	0.51	7.17	0.00	0.10	0.00	0.79	0	
TOTAL ESTIMATED PROJECT PY'S AND OTHER SHUPPORT COST:								17.08	0

PROJECT SCHEDULE

09/02/2005

TASK NAME	IDENTIFIER	START DATES	END DATES	RESOURCES	DUR DAYS	% Complete
12-0G950_PROJ MGMT - PID COMPONENT	CT.12.CO.0G950_0.100.05	07/01/2004	06/01/2005	539	335.00	0
12-0G950_PROJ MGMT - PA&ED COMPONENT	CT.12.CO.0G950_0.100.10	07/01/2005	01/01/2006	401	184.00	0
12-0G950_PERF PRELIM ENGRG STUDIES & PREP DRA	CT.12.CO.0G950_2.160	07/01/2005	11/25/2005	2408	147.00	0
12-0G950_PERF ENVIRO STUDIES & PREP DED	CT.12.CO.0G950_2.165	07/01/2005	11/25/2005	874	147.00	0
12-0G950_PREP & APPROVE PROJ RPT	CT.12.CO.0G950_2.180.05	11/25/2005	12/21/2005	181	26.00	0
12-0G950_PREP & APPROVE FNL ENVIRO DOC [FED]	CT.12.CO.0G950_2.180.10	11/25/2005	12/21/2005	122	26.00	0
12-0G950_COMPLETE ENVIRO COMPLIANCE	CT.12.CO.0G950_2.180.15	12/20/2005	01/01/2006	0	12.00	0
12-0G950_REV & UPDATE PROJ INFO	CT.12.CO.0G950_3.185.05	12/31/2005	08/09/2006	115	221.00	0
12-0G950_PERF DSGN SURVEYS & PHOTOG MAPPING	CT.12.CO.0G950_3.185.10	12/31/2005	08/09/2006	852	221.00	0
12-0G950_PERF PRELIM DSGN	CT.12.CO.0G950_3.185.15	12/31/2005	08/09/2006	190	221.00	0
12-0G950_PROJ MGMT - PS&E COMPONENT	CT.12.CO.0G950_0.100.15	01/01/2006	06/13/2010	496	1624.00	0
12-0G950_DETER REQUIRED PERMITS	CT.12.CO.0G950_2.205.05	01/01/2006	01/31/2006	18	30.00	0
12-0G950_PA & ED	CT.12.CO.0G950_M200	01/01/2006	01/01/2006	0	0.00	0
12-0G950_PERF R/W ENGRG	CT.12.CO.0G950_4.220	03/01/2006	03/02/2006	612	1.00	0
12-0G950_OBT R/W INTERESTS FOR PROJ R/W CERTI	CT.12.CO.0G950_4.225	03/01/2006	11/01/2009	680	1341.00	0
12-0G950_REGULAR R/W	CT.12.CO.0G950_M225	03/01/2006	03/01/2006	0	0.00	0
12-0G950_COORDINATE UTIL	CT.12.CO.0G950_3.185.20	05/27/2006	03/17/2007	1072	294.00	0
12-0G950_PERF DETAILED SITE INVESTIGATION FOR	CT.12.CO.0G950_4.200	09/01/2006	06/23/2009	274	1026.00	0
12-0G950_PREP DRAFT ROADWAY PLANS	CT.12.CO.0G950_3.235.10	03/17/2007	12/07/2007	222	265.00	0
12-0G950_PREP DRAFT UTIL PLANS	CT.12.CO.0G950_3.230.05	03/17/2007	08/28/2008	696	530.00	0
12-0G950_OBT RAILROAD AGREEMENTS	CT.12.CO.0G950_2.205.25	03/17/2007	05/31/2008	0	441.00	0
12-0G950_OBT FREEWAY AGREEMENTS	CT.12.CO.0G950_2.205.15	03/18/2007	09/01/2009	0	898.00	0
12-0G950_PREP & EXECUTE COOP AGREEMENT	CT.12.CO.0G950_2.205.20	03/18/2007	09/01/2009	36	898.00	0
12-0G950_PREP AGREEMENT FOR MATERIALS SITES	CT.12.CO.0G950_2.205.25	03/18/2007	09/01/2009	0	712.00	0
12-0G950_PREP & EXECUTE MAINT AGREEMENT	CT.12.CO.0G950_2.205.30	09/19/2007	08/31/2009	0	712.00	0
12-0G950_OBT ROUTE ADOPTIONS	CT.12.CO.0G950_2.205.40	09/19/2007	08/31/2009	0	712.00	0
12-0G950_DEV HAZ WASTE MGMT PLAN	CT.12.CO.0G950_3.235.15	12/07/2007	03/04/2008	120	88.00	0
12-0G950_OBT PERMITS	CT.12.CO.0G950_2.205.10	12/08/2007	08/17/2009	189	618.00	0
12-0G950_PREP DRAFT HIGHWAY PLANTING PLANS	CT.12.CO.0G950_3.230.10	02/24/2008	10/02/2008	104	221.00	0
12-0G950_PREP HAZ WASTE PS&E	CT.12.CO.0G950_3.235.20	03/04/2008	10/11/2008	20	221.00	0
12-0G950_PREP TRANSPORTATION MGMT PLAN [TMP]	CT.12.CO.0G950_3.230.20	03/22/2008	10/29/2008	290	221.00	0
12-0G950_PREP DRAFT DRAINAGE PLANS	CT.12.CO.0G950_3.230.30	04/17/2008	04/05/2009	915	353.00	0
12-0G950_PREP DRAFT TRAFFIC PLANS	CT.12.CO.0G950_3.230.15	05/14/2008	02/03/2009	352	265.00	0
12-0G950_PREPARE STRUCTURE GENERAL PLANS FOR	CT.12.CO.0G950_3.215.01	08/25/2008	11/23/2008	604	90.00	0
12-0G950_PERF HAZ WASTE CLEAN-UP	CT.12.CO.0G950_3.235.25	10/11/2008	07/20/2009	20	282.00	0
12-0G950_PREP DRAFT PS&E QUANTITIES & ESTS	CT.12.CO.0G950_3.230.40	11/24/2008	05/20/2009	313	177.00	0
12-0G950_PREPARE PRELIMINARY STRUCTURE FOUND	CT.12.CO.0G950_3.210.01.25	12/05/2008	02/28/2009	64	85.00	0
12-0G950_PREP DRAFT SPECIFICATIONS	CT.12.CO.0G950_3.230.35	01/07/2009	05/19/2009	416	132.00	0
12-0G950_PREP DRAFT STRUC PS&E	CT.12.CO.0G950_3.240	03/31/2009	07/29/2009	110	120.00	0
12-0G950_PREP FNL STRUC PS&E PKG	CT.12.CO.0G950_3.250	03/31/2009	05/30/2009	32	60.00	0
12-0G950_INCORPORATE STRUC DRAFT PS & E	CT.12.CO.0G950_3.230.55	05/19/2009	07/02/2009	0	44.00	0
12-0G950_REV & UPDATE PROJ INFO FOR PS & E PK	CT.12.CO.0G950_3.230.60	07/02/2009	08/15/2009	96	44.00	0
12-0G950_CERTIFY FREEDOM OF HAZ WASTE	CT.12.CO.0G950_3.235.30	07/20/2009	08/15/2009	36	26.00	0
12-0G950_CIRCULATE/REV & PREP FNL DISTRICT PS	CT.12.CO.0G950_3.255	08/16/2009	08/31/2009	1155	15.00	0
12-0G950_PREP CONTRACT DOCS	CT.12.CO.0G950_3.260	09/01/2009	12/01/2009	325	91.00	0
12-0G950_PROJ PS&E	CT.12.CO.0G950_M380	09/01/2009	09/01/2009	0	0.00	0
12-0G950_PROP MGMT	CT.12.CO.0G950_4.195.40	11/01/2009	10/31/2013	55	1460.00	0
12-0G950_POST R/W CERTIFICATION WORK	CT.12.CO.0G950_4.245	11/01/2009	05/01/2011	158	546.00	0

RESOURCE REQ.

TASK NAME	IDENTIFIER	START DATES	END DATES	RESOURCES	DUR DAYS
09/02/2005					
12-601-MAINT					
12-0G950_PERF PRELIM ENGRG STUDIES & PREP DRAFT PROJ	CT.12.CO.0G950_.2.160	07/01/2005	11/25/2005	50	147.00
12-0G950_CIRCULATE/REV & PREP FNL DISTRICT PS&E PKG	CT.12.CO.0G950_.3.255	08/16/2009	08/31/2009	20	15.00
Sub-Total				70	
12-510-CONST_OFC					
12-0G950_ADVERTISE/OPEN BIDS/AWARD & APPROVE CONTRAC	CT.12.CO.0G950_.3.265	01/02/2010	07/01/2010	35	180.00
12-0G950_PREP & ADMINISTER CONTRACT CHANGE ORDERS	CT.12.CO.0G950_.5.285	07/01/2010	07/15/2011	63	379.00
12-0G950_PERF CONSTR ENGRG & GENERAL CONTRACT ADMIN	CT.12.CO.0G950_.5.270	07/01/2010	05/01/2011	127	304.00
Sub-Total				225	
12-511-CONST_OFC					
12-0G950_PROJ MGMT - PID COMPONENT	CT.12.CO.0G950_.0.100.05	07/01/2004	06/01/2005	21	335.00
12-0G950_PROJ MGMT - PA&ED COMPONENT	CT.12.CO.0G950_.0.100.10	07/01/2005	01/01/2006	21	184.00
12-0G950_PERF PRELIM ENGRG STUDIES & PREP DRAFT PROJ	CT.12.CO.0G950_.2.160	07/01/2005	11/25/2005	15	147.00
12-0G950_PROJ MGMT - PS&E COMPONENT	CT.12.CO.0G950_.0.100.15	01/01/2006	06/13/2010	21	1624.00
12-0G950_REV & UPDATE PROJ INFO FOR PS & E PKG	CT.12.CO.0G950_.3.230.60	07/02/2009	08/15/2009	13	44.00
12-0G950_CIRCULATE/REV & PREP FNL DISTRICT PS&E PKG	CT.12.CO.0G950_.3.255	08/16/2009	08/31/2009	21	15.00
12-0G950_PROJ MGMT - CONSTR COMPONENT	CT.12.CO.0G950_.0.100.20	07/01/2010	11/28/2011	13	515.00
12-0G950_PREP & ADMINISTER CONTRACT CHANGE ORDERS	CT.12.CO.0G950_.5.285	07/01/2010	07/15/2011	13	379.00
12-0G950_RESOLVE CONTRACT CLAIMS	CT.12.CO.0G950_.5.290	07/01/2010	12/27/2011	47	544.00
12-0G950_PERF CONSTR ENGRG & GENERAL CONTRACT ADMIN	CT.12.CO.0G950_.5.270	07/01/2010	05/01/2011	362	304.00
Sub-Total				547	
12-512-CONST_OFC					
12-0G950_PERF CONSTR ENGRG & GENERAL CONTRACT ADMIN	CT.12.CO.0G950_.5.270	07/01/2010	05/01/2011	53	304.00
12-0G950_PROCESS EST AFTER ACPTANCE	CT.12.CO.0G950_.5.295.05	03/01/2011	12/27/2011	35	301.00
12-0G950_PREP PROPOSED FNL CONTRACT EST	CT.12.CO.0G950_.5.295.10	03/01/2011	12/27/2011	35	301.00
12-0G950_PREP AS-BUILT PLANS	CT.12.CO.0G950_.5.295.15	03/01/2011	12/27/2011	35	301.00
12-0G950_PREP PROJ HISTORY FILE	CT.12.CO.0G950_.5.295.20	03/01/2011	12/27/2011	35	301.00
12-0G950_PREP FNL RPT	CT.12.CO.0G950_.5.295.25	03/01/2011	12/27/2011	35	301.00
12-0G950_PROCESS FNL EST	CT.12.CO.0G950_.5.295.30	03/01/2011	12/27/2011	35	301.00
Sub-Total				263	
12-513-CONST_OFC-CONST_QUALITY_CONTROL					
12-0G950_PROJ MGMT - PA&ED COMPONENT	CT.12.CO.0G950_.0.100.10	07/01/2005	01/01/2006	18	184.00
12-0G950_PERF PRELIM ENGRG STUDIES & PREP DRAFT PROJ	CT.12.CO.0G950_.2.160	07/01/2005	11/25/2005	57	147.00
12-0G950_REV & UPDATE PROJ INFO	CT.12.CO.0G950_.3.185.05	12/31/2005	08/09/2006	57	221.00
12-0G950_PROJ MGMT - PS&E COMPONENT	CT.12.CO.0G950_.0.100.15	01/01/2006	06/13/2010	20	1624.00
12-0G950_PREP DRAFT ROADWAY PLANS	CT.12.CO.0G950_.3.230.05	03/17/2007	08/28/2008	20	530.00
12-0G950_PREP DRAFT PS&E QUANTITIES & ESTS	CT.12.CO.0G950_.3.230.20	03/22/2008	10/29/2008	23	221.00
12-0G950_PREP DRAFT SPECIFICATIONS	CT.12.CO.0G950_.3.230.40	11/24/2008	05/20/2009	23	177.00
12-0G950_REV & UPDATE PROJ INFO FOR PS & E PKG	CT.12.CO.0G950_.3.230.35	01/07/2009	05/19/2009	28	132.00
12-0G950_CIRCULATE/REV & PREP FNL DISTRICT PS&E PKG	CT.12.CO.0G950_.3.255	07/02/2009	08/15/2009	80	44.00
12-0G950_PROJ MGMT - CONSTR COMPONENT	CT.12.CO.0G950_.0.100.20	08/16/2009	08/31/2009	67	15.00
12-0G950_PREP & ADMINISTER CONTRACT CHANGE ORDERS	CT.12.CO.0G950_.5.285	07/01/2010	11/28/2011	28	515.00
12-0G950_PERF CONSTR ENGRG & GENERAL CONTRACT ADMIN	CT.12.CO.0G950_.5.270	07/01/2010	07/15/2011	40	379.00
Sub-Total				99	304.00

12-0G950_PERF ENVIRO STUDIES & PREP DED 147.00
 12-0G950_PREP & APPROVE PROJ RPT 26.00
 12-0G950_PREP & APPROVE FNL ENVIRO DOC [FED] 26.00
 12-0G950_CIRCULATE/REV & PREP FNL DISTRICT PS&E PKG 15.00
 12-0G950_PREP & ADMINISTER CONTRACT CHANGE ORDERS 379.00
 12-0G950_PERF CONSTR ENGRG & GENERAL CONTRACT ADMIN 304.00
 Sub-Total 327

07/01/2005 11/25/2005 28
 11/25/2005 12/21/2005 11
 11/25/2005 12/21/2005 11
 08/16/2009 08/31/2009 49
 07/01/2010 07/15/2011 78
 07/01/2010 05/01/2011 53

CT.12.CO.0G950_2.165
 CT.12.CO.0G950_2.180.05
 CT.12.CO.0G950_2.180.10
 CT.12.CO.0G950_3.255
 CT.12.CO.0G950_5.285
 CT.12.CO.0G950_5.270

12.369-TRAF_OPS-MGMT/FLD_OPS 147.00
 12-0G950_PERF PRELIM ENGRG STUDIES & PREP DRAFT PROJ 147.00
 12-0G950_PERF ENVIRO STUDIES & PREP DED 26.00
 12-0G950_PREP & APPROVE PROJ RPT 26.00
 12-0G950_PREP & APPROVE FNL ENVIRO DOC [FED] 26.00
 12-0G950_PREP ENGRG RPTS 294.00
 12-0G950_CIRCULATE/REV & PREP FNL DISTRICT PS&E PKG 15.00
 12-0G950_PERF CONSTR ENGRG & GENERAL CONTRACT ADMIN 304.00
 Sub-Total 589

07/01/2005 11/25/2005 194
 07/01/2005 11/25/2005 56
 11/25/2005 12/21/2005 22
 11/25/2005 12/21/2005 22
 05/27/2006 03/17/2007 121
 08/16/2009 08/31/2009 121
 07/01/2010 05/01/2011 53

CT.12.CO.0G950_2.160
 CT.12.CO.0G950_2.165
 CT.12.CO.0G950_2.180.05
 CT.12.CO.0G950_2.180.10
 CT.12.CO.0G950_3.185.20
 CT.12.CO.0G950_3.255
 CT.12.CO.0G950_5.270

12.379-TRAF_OPS 379.00
 12-0G950_PREP & ADMINISTER CONTRACT CHANGE ORDERS 304.00
 12-0G950_PERF CONSTR ENGRG & GENERAL CONTRACT ADMIN 16
 Sub-Total

07/01/2010 07/15/2011 8
 07/01/2010 05/01/2011 16

CT.12.CO.0G950_5.285
 CT.12.CO.0G950_5.270

12.385-TRAF_ENGR-TRAFFIC_SAFETY_REVIEW 147.00
 12-0G950_PERF PRELIM ENGRG STUDIES & PREP DRAFT PROJ 1624.00
 12-0G950_PROJ MGMT - PS&E COMPONENT 15.00
 12-0G950_CIRCULATE/REV & PREP FNL DISTRICT PS&E PKG 515.00
 12-0G950_PROJ MGMT - CONSTR COMPONENT 304.00
 12-0G950_PERF CONSTR ENGRG & GENERAL CONTRACT ADMIN 206
 Sub-Total

07/01/2005 11/25/2005 90
 01/01/2006 06/13/2010 3
 08/16/2009 08/31/2009 80
 07/01/2010 11/28/2011 3
 07/01/2010 05/01/2011 30

CT.12.CO.0G950_2.160
 CT.12.CO.0G950_0.100.15
 CT.12.CO.0G950_3.255
 CT.12.CO.0G950_0.100.20
 CT.12.CO.0G950_5.270

12.386-TRAF_ENGR-RAMP_METERING 335.00
 12-0G950_PROJ MGMT - PID COMPONENT 184.00
 12-0G950_PROJ MGMT - PA&E COMPONENT 1624.00
 12-0G950_PROJ MGMT - PS&E COMPONENT 221.00
 12-0G950_PREP TRANSPORTATION MGMT PLAN [TMP] 177.00
 12-0G950_PREP DRAFT PS&E QUANTITIES & ESTS 132.00
 12-0G950_PREP DRAFT SPECIFICATIONS 15.00
 12-0G950_CIRCULATE/REV & PREP FNL DISTRICT PS&E PKG 379.00
 12-0G950_PROJ MGMT - CONSTR COMPONENT 304.00
 Sub-Total 368

07/01/2004 06/01/2005 6
 07/01/2005 01/01/2006 4
 01/01/2006 06/13/2010 5
 03/22/2008 10/29/2008 243
 11/24/2008 05/20/2009 49
 01/07/2009 05/19/2009 34
 08/16/2009 08/31/2009 24
 07/01/2010 11/28/2011 3

CT.12.CO.0G950_0.100.05
 CT.12.CO.0G950_0.100.10
 CT.12.CO.0G950_0.100.15
 CT.12.CO.0G950_3.230.20
 CT.12.CO.0G950_3.230.40
 CT.12.CO.0G950_3.230.35
 CT.12.CO.0G950_3.255
 CT.12.CO.0G950_0.100.20

12.390-ELEC_SYS-ELEC_DESIGN 221.00
 12-0G950_REV & UPDATE PROJ INFO 88.00
 12-0G950_DEV HAZ WASTE MGMT PLAN 132.00
 12-0G950_PREP DRAFT SPECIFICATIONS 120.00
 12-0G950_PREP DRAFT STRUC PS&E 15.00
 12-0G950_CIRCULATE/REV & PREP FNL DISTRICT PS&E PKG 379.00
 12-0G950_PREP & ADMINISTER CONTRACT CHANGE ORDERS 304.00
 12-0G950_PERF CONSTR ENGRG & GENERAL CONTRACT ADMIN 310
 Sub-Total

12/31/2005 08/09/2006 10
 12/07/2007 03/04/2008 120
 01/07/2009 05/19/2009 50
 03/31/2009 07/29/2009 20
 08/16/2009 08/31/2009 50
 07/01/2010 07/15/2011 30
 07/01/2010 05/01/2011 30

CT.12.CO.0G950_3.185.05
 CT.12.CO.0G950_3.235.15
 CT.12.CO.0G950_3.230.35
 CT.12.CO.0G950_3.240
 CT.12.CO.0G950_3.255
 CT.12.CO.0G950_5.285
 CT.12.CO.0G950_5.270

12.391-ELEC_SYS-ELEC_SYS 265.00
 12-0G950_PREP DRAFT TRAFFIC PLANS 177.00
 12-0G950_PREP DRAFT PS&E QUANTITIES & ESTS 88.00
 Sub-Total

05/14/2008 02/03/2009 240
 11/24/2008 05/20/2009 100

CT.12.CO.0G950_3.230.15
 CT.12.CO.0G950_3.230.40

12.391-ELEC_SYS-ELEC_SYS 265.00
 12-0G950_PREP DRAFT TRAFFIC PLANS 177.00
 12-0G950_PREP DRAFT PS&E QUANTITIES & ESTS 88.00
 Sub-Total

12-06950_PREP DRAFT SPECIFICATIONS	01/07/2009	05/19/2009	150	132.00
12-06950_CIRCULATE/REV & PREP FNL DISTRICT PS&E PKG	08/16/2009	08/31/2009	80	15.00
12-06950_PREP & ADMINISTER CONTRACT CHANGE ORDERS	07/01/2010	07/15/2011	500	379.00
Sub-Total			1070	
12.285-PS&E/OE				
12-06950_PREP DRAFT ROADWAY PLANS	03/17/2007	08/28/2008	24	530.00
12-06950_PREP DRAFT HIGHWAY PLANTING PLANS	02/24/2008	10/02/2008	24	221.00
12-06950_PREP TRANSPORTATION MGMT PLAN [TMP]	03/22/2008	10/29/2008	24	221.00
12-06950_PREP DRAINAGE PLANS	04/17/2008	04/05/2009	24	353.00
12-06950_PREP DRAFT TRAFFIC PLANS	05/14/2008	02/03/2009	24	265.00
12-06950_PREP DRAFT PS&E QUANTITIES & ESTS	11/24/2008	05/20/2009	24	177.00
12-06950_PREP DRAFT SPECIFICATIONS	01/07/2009	05/19/2009	24	132.00
12-06950_CIRCULATE/REV & PREP FNL DISTRICT PS&E PKG	08/16/2009	08/31/2009	336	15.00
12-06950_PREP CONTRACT DOCS	09/01/2009	12/01/2009	80	91.00
12-06950_ADVERTISE/OPEN BIDS/AWARD & APPROVE CONTRAC	01/02/2010	07/01/2010	24	180.00
Sub-Total			608	
12.302-DRAFTING_SVCS				
12-06950_PREP ENGRG RPTS	05/27/2006	03/17/2007	121	294.00
12-06950_PREP DRAFT ROADWAY PLANS	03/17/2007	08/28/2008	152	530.00
12-06950_PROCESS EST AFTER ACPTANCE	03/01/2011	12/27/2011	82	301.00
12-06950_PREP PROPOSED FNL CONTRACT EST	03/01/2011	12/27/2011	82	301.00
12-06950_PREP AS-BUILT PLANS	03/01/2011	12/27/2011	82	301.00
12-06950_PREP PROJ HISTORY FILE	03/01/2011	12/27/2011	82	301.00
12-06950_PREP FNL RPT	03/01/2011	12/27/2011	82	301.00
12-06950_PROCESS FNL EST	03/01/2011	12/27/2011	82	301.00
Sub-Total			765	
12.308-SURVEYS				
12-06950_PERF PRELIM ENGRG STUDIES & PREP DRAFT PROJ	07/01/2005	11/25/2005	709	147.00
12-06950_PERF DSGN SURVEYS & PHOTOG MAPPING	12/31/2005	08/09/2006	812	221.00
12-06950_PERF R/W ENGRG	03/01/2006	03/02/2006	490	1.00
12-06950_COORDINATE UTIL	09/01/2006	06/23/2009	109	1026.00
12-06950_PREP & ADMINISTER CONTRACT CHANGE ORDERS	07/01/2010	07/15/2011	218	379.00
12-06950_PERF CONSTR ENGRG & GENERAL CONTRACT ADMIN	07/01/2010	05/01/2011	1445	304.00
12-06950_MONUMENT THE R/W & PREP MONUMENTATION MAPS	10/30/2010	10/30/2011	698	365.00
Sub-Total			4481	
12.309-SURVEYS-R/W_ENGR				
12-06950_PROJ MGMT - PID COMPONENT	07/01/2004	06/01/2005	16	335.00
12-06950_PROJ MGMT - PA&E COMPONENT	07/01/2005	01/01/2006	10	184.00
12-06950_PROJ MGMT - PS&E COMPONENT	01/01/2006	06/13/2010	13	1624.00
12-06950_PERF R/W ENGRG	03/01/2006	03/02/2006	122	1.00
12-06950_COORDINATE UTIL	09/01/2006	06/23/2009	19	1026.00
12-06950_PROJ MGMT - CONSTR COMPONENT	07/01/2010	11/28/2011	13	515.00
12-06950_MONUMENT THE R/W & PREP MONUMENTATION MAPS	10/30/2010	10/30/2011	188	365.00
12-06950_PERF CLOSE OUT	10/30/2010	10/30/2011	188	365.00
12-06950_PREP RELINQUISHMENT & VACATION MAPS	10/30/2010	10/30/2011	188	365.00
12-06950_PREP DRED PKG FOR EXCESS LAND TRANSACTIONS	10/30/2010	10/30/2011	188	365.00
12-06950_PREP R/W RECORD MAP	10/30/2010	10/30/2011	188	365.00
12-06950_EXCESS LAND	05/01/2011	04/30/2014	10	1095.00
Sub-Total			1143	
12.312-HYDRAULICS				

12-0G950_PROJ_MGMT - PID COMPONENT	07/01/2004	06/01/2005	37	335.00
12-0G950_PROJ_MGMT - PA&ED COMPONENT	07/01/2005	01/01/2006	37	184.00
12-0G950_PERF_PRELIM_ENGRG_STUDIES & PREP DRAFT PROJ	07/01/2005	11/25/2005	111	147.00
12-0G950_PERF_ENVIRO_STUDIES & PREP DED	07/01/2005	11/25/2005	74	147.00
12-0G950_PREP & APPROVE PROJ RPT	11/25/2005	12/21/2005	37	26.00
12-0G950_PROJ_MGMT - PS&E COMPONENT	01/01/2006	06/13/2010	37	1624.00
12-0G950_PREP_ENGRG_RPTS	05/27/2006	03/17/2007	37	294.00
12-0G950_COORDINATE_UTIL	09/01/2006	06/23/2009	37	1026.00
12-0G950_OBT_PERMITS	12/08/2007	08/17/2009	37	618.00
12-0G950_PREP_DRAFT_DRAINAGE_PLANS	04/17/2008	04/05/2009	867	353.00
12-0G950_PREP_DRAFT_PS&E_QUANTITIES & ESTS	11/24/2008	05/20/2009	37	177.00
12-0G950_PREP_DRAFT_SPECIFICATIONS	01/07/2009	05/19/2009	74	132.00
12-0G950_PREP_DRAFT_STRUC_PS&E	03/31/2009	07/29/2009	74	120.00
12-0G950_CIRCULATE/REV & PREP FNL DISTRICT PS&E PKG	08/16/2009	08/31/2009	37	15.00
12-0G950_PREP & ADMINISTER CONTRACT CHANGE ORDERS	07/01/2010	07/15/2011	37	379.00
Sub-Total			1570	
12.317-MATLS_LAB				
12-0G950_PERF_PRELIM_ENGRG_STUDIES & PREP DRAFT PROJ	07/01/2005	11/25/2005	125	147.00
12-0G950_PREP & APPROVE PROJ RPT	11/25/2005	12/21/2005	22	26.00
12-0G950_PREP_ENGRG_RPTS	05/27/2006	03/17/2007	112	294.00
12-0G950_CIRCULATE/REV & PREP FNL DISTRICT PS&E PKG	08/16/2009	08/31/2009	20	15.00
12-0G950_PERF_CONSTR_ENGRG & GENERAL CONTRACT ADMIN	07/01/2010	05/01/2011	53	304.00
Sub-Total			332	
12.326-IND_ASSUR_TSTNG				
12-0G950_PERF_CONSTR_ENGRG & GENERAL CONTRACT ADMIN	07/01/2010	05/01/2011	21	304.00
Sub-Total			21	
12.340-LNDSCP_ARCH				
12-0G950_PERF_PRELIM_ENGRG_STUDIES & PREP DRAFT PROJ	07/01/2005	11/25/2005	10	147.00
12-0G950_PREP & APPROVE PROJ RPT	11/25/2005	12/21/2005	10	26.00
12-0G950_PREP_DRAFT_HIGHWAY_PLANTING_PLANS	02/24/2008	10/02/2008	80	221.00
12-0G950_CIRCULATE/REV & PREP FNL DISTRICT PS&E PKG	08/16/2009	08/31/2009	20	15.00
12-0G950_PERF_CONSTR_ENGRG & GENERAL CONTRACT ADMIN	07/01/2010	05/01/2011	20	304.00
Sub-Total			140	
12.349-HAZ_WASTE				
12-0G950_PROJ_MGMT - PID COMPONENT	07/01/2004	06/01/2005	15	335.00
12-0G950_PROJ_MGMT - PA&ED COMPONENT	07/01/2005	01/01/2006	15	184.00
12-0G950_PERF_PRELIM_ENGRG_STUDIES & PREP DRAFT PROJ	07/01/2005	11/25/2005	89	147.00
12-0G950_PERF_ENVIRO_STUDIES & PREP DED	07/01/2005	11/25/2005	520	147.00
12-0G950_PREP & APPROVE PROJ RPT	11/25/2005	12/21/2005	20	26.00
12-0G950_PERF_DSGN_SURVEYS & PHOTOG_MAPPING	12/31/2005	08/09/2006	40	221.00
12-0G950_PROJ_MGMT - PS&E COMPONENT	01/01/2006	06/13/2010	15	1624.00
12-0G950_PREP_ENGRG_RPTS	05/27/2006	03/17/2007	20	294.00
12-0G950_PERF_DETAILED_SITE_INVESTIGATION_FOR_HAZ_WA	03/17/2007	12/07/2007	100	265.00
12-0G950_OBT_PERMITS	12/08/2007	08/17/2009	20	618.00
12-0G950_PREP_HAZ_WASTE_PS&E	03/04/2008	10/11/2008	20	221.00
12-0G950_PERF_HAZ_WASTE_CLEAN-UP	10/11/2008	07/20/2009	20	282.00
12-0G950_CIRCULATE/REV & PREP FNL DISTRICT PS&E PKG	08/16/2009	08/31/2009	20	15.00
12-0G950_PREP CONTRACT DOCS	09/01/2009	12/01/2009	10	91.00
12-0G950_PROJ_MGMT - CONSTR COMPONENT	07/01/2010	11/28/2011	4	515.00
12-0G950_PREP & ADMINISTER CONTRACT CHANGE ORDERS	07/01/2010	07/15/2011	20	379.00
12-0G950_PERF_CONSTR_ENGRG & GENERAL CONTRACT ADMIN	07/01/2010	05/01/2011	36	304.00

Sub-Total					984	
12.223-DESIGN-BR_D						
12-0G950_PERF PRELIM ENGRG STUDIES & PREP DRAFT PROJ	CT.12.CO.0G950_2.160	07/01/2005	11/25/2005	147.00	228	
12-0G950_PERF & APPROVE PROJ RPT	CT.12.CO.0G950_2.180.05	11/25/2005	12/21/2005	26.00	48	
12-0G950_REV & UPDATE PROJ INFO	CT.12.CO.0G950_3.185.05	12/31/2005	08/09/2006	221.00	40	
12-0G950_PERF PRELIM DSGN	CT.12.CO.0G950_3.185.15	12/31/2005	08/09/2006	221.00	184	
12-0G950_PERF ENGRG RPTS	CT.12.CO.0G950_3.185.20	05/27/2006	03/17/2007	294.00	32	
12-0G950_PERF DRAFT ROADWAY PLANS	CT.12.CO.0G950_3.230.05	03/17/2007	08/28/2008	530.00	500	
12-0G950_PERF DRAFT TRAFFIC PLANS	CT.12.CO.0G950_3.230.15	05/14/2008	02/03/2009	265.00	88	
12-0G950_PERF DRAFT PS&E QUANTITIES & ESTS	CT.12.CO.0G950_3.230.40	11/24/2008	05/20/2009	177.00	56	
12-0G950_PERF DRAFT SPECIFICATIONS	CT.12.CO.0G950_3.230.35	01/07/2009	05/19/2009	132.00	56	
12-0G950_CIRCULATE/REV & PREP FNL DISTRICT PS&E PKG	CT.12.CO.0G950_3.255	08/16/2009	08/31/2009	15.00	48	
12-0G950_PERF & ADMINISTER CONTRACT CHANGE ORDERS	CT.12.CO.0G950_5.285	07/01/2010	07/15/2011	379.00	120	
Sub-Total					1400	
12.232-DESIGN-BR_3						
12-0G950_CIRCULATE/REV & PREP FNL DISTRICT PS&E PKG	CT.12.CO.0G950_3.255	08/16/2009	08/31/2009	15.00	40	
12-0G950_PERF CONSTR ENGRG & GENERAL CONTRACT ADMIN	CT.12.CO.0G950_5.270	07/01/2010	05/01/2011	304.00	40	
Sub-Total					80	
12.168-ENV_PLNG-GENERAL						
12-0G950_PROJ MGMT - PID COMPONENT	CT.12.CO.0G950_0.100.05	07/01/2004	06/01/2005	335.00	31	
12-0G950_PROJ MGMT - PA&ED COMPONENT	CT.12.CO.0G950_0.100.10	07/01/2005	01/01/2006	184.00	21	
12-0G950_PERF PRELIM ENGRG STUDIES & PREP DRAFT PROJ	CT.12.CO.0G950_2.160	07/01/2005	11/25/2005	147.00	116	
12-0G950_PERF ENVIRO STUDIES & PREP DED	CT.12.CO.0G950_2.165	07/01/2005	11/25/2005	147.00	33	
12-0G950_PERF & APPROVE FNL ENVIRO DOC [FED]	CT.12.CO.0G950_2.180.10	11/25/2005	12/21/2005	26.00	26	
12-0G950_PROJ MGMT - PS&E COMPONENT	CT.12.CO.0G950_0.100.15	01/01/2006	06/13/2010	1624.00	26	
12-0G950_DETER REQUIRED PERMITS	CT.12.CO.0G950_2.205.05	01/01/2006	01/31/2006	30.00	4	
12-0G950_PERF DETAILED SITE INVESTIGATION FOR HAZ WA	CT.12.CO.0G950_3.235.10	03/17/2007	12/07/2007	265.00	24	
12-0G950_PERF & EXECUTE COOP AGREEMNT	CT.12.CO.0G950_2.205.35	03/18/2007	09/01/2009	898.00	12	
12-0G950_OBT PERMITS	CT.12.CO.0G950_2.205.10	12/08/2007	08/17/2009	618.00	12	
12-0G950_CERTIFY FREEDOM OF HAZ WASTE	CT.12.CO.0G950_3.235.30	07/20/2009	08/15/2009	26.00	12	
12-0G950_PROJ MGMT - CONSTR COMPONENT	CT.12.CO.0G950_0.100.20	07/01/2010	11/28/2011	515.00	16	
12-0G950_PERF CONSTR ENGRG & GENERAL CONTRACT ADMIN	CT.12.CO.0G950_5.270	07/01/2010	05/01/2011	304.00	106	
Sub-Total					439	
12.169-ENV_PLNG-GENERAL						
12-0G950_PERF PRELIM ENGRG STUDIES & PREP DRAFT PROJ	CT.12.CO.0G950_2.160	07/01/2005	11/25/2005	147.00	233	
12-0G950_PERF ENVIRO STUDIES & PREP DED	CT.12.CO.0G950_2.165	07/01/2005	11/25/2005	147.00	67	
12-0G950_PERF & APPROVE FNL ENVIRO DOC [FED]	CT.12.CO.0G950_2.180.10	11/25/2005	12/21/2005	26.00	52	
12-0G950_PERF PRELIM DSGN	CT.12.CO.0G950_3.185.15	12/31/2005	08/09/2006	221.00	6	
12-0G950_DETER REQUIRED PERMITS	CT.12.CO.0G950_2.205.05	01/01/2006	01/31/2006	30.00	7	
12-0G950_PERF DETAILED SITE INVESTIGATION FOR HAZ WA	CT.12.CO.0G950_3.235.10	03/17/2007	12/07/2007	265.00	49	
12-0G950_PERF & EXECUTE COOP AGREEMNT	CT.12.CO.0G950_2.205.35	03/18/2007	09/01/2009	898.00	24	
12-0G950_OBT PERMITS	CT.12.CO.0G950_2.205.10	12/08/2007	08/17/2009	618.00	24	
12-0G950_CERTIFY FREEDOM OF HAZ WASTE	CT.12.CO.0G950_3.235.30	07/20/2009	08/15/2009	26.00	24	
Sub-Total					486	
12.171-ENV_PLNG-ARCHITECT						
12-0G950_PERF ENVIRO STUDIES & PREP DED	CT.12.CO.0G950_2.165	07/01/2005	11/25/2005	147.00	68	
12-0G950_OBT PERMITS	CT.12.CO.0G950_2.205.10	12/08/2007	08/17/2009	618.00	72	
12-0G950_REV & UPDATE PROJ INFO FOR PS & E PKG	CT.12.CO.0G950_3.230.60	07/02/2009	08/15/2009	44.00	3	
12-0G950_CIRCULATE/REV & PREP FNL DISTRICT PS&E PKG	CT.12.CO.0G950_3.255	08/16/2009	08/31/2009	15.00	21	
Sub-Total					164	

12-0G950_PREP DRAFT STRUC PS&E	03/31/2009	07/29/2009	16	120.00
12-0G950_PREP FNL STRUC PS&E PKG	03/31/2009	05/30/2009	32	60.00
12-0G950_CIRCULATE/REV & PREP FNL DISTRICT PS&E PKG	08/16/2009	08/31/2009	8	15.00
12-0G950_PROJ MGMT - CONSTR COMPONENT	07/01/2010	11/28/2011	16	515.00
12-0G950_PREP & ADMINISTER CONTRACT CHANGE ORDERS	07/01/2010	07/15/2011	16	379.00
12-0G950_RESOLVE CONTRACT CLAIMS	07/01/2010	12/27/2011	32	544.00
12-0G950_PERF CONSTR ENGRG & GENERAL CONTRACT ADMIN	07/01/2010	05/01/2011	56	304.00
Sub-Total			904	
59.285-ESC_PS&E/OE-PS&E-OE01.285	09/01/2009	12/01/2009	235	91.00
12-0G950_PREP CONTRACT DOCS	01/02/2010	07/01/2010	61	180.00
12-0G950_ADVERTISE/OPEN BIDS/AWARD & APPROVE CONTRAC			296	
Sub-Total			70	180.00
59.286-ESC_PS&E/OE-CONT_PROG_&_SVS-OE02.286	01/02/2010	07/01/2010	70	180.00
12-0G950_ADVERTISE/OPEN BIDS/AWARD & APPROVE CONTRAC			70	
Sub-Total			70	180.00
59.291-ESC_PS&E/OE-PROJECT_CONTROL_&_SUPPT-OE03.291	01/02/2010	07/01/2010	26	180.00
12-0G950_ADVERTISE/OPEN BIDS/AWARD & APPROVE CONTRAC			26	
Sub-Total			26	180.00
59.302-DRAFTING SVCS-PROJ_PLANS-OE06.302	01/02/2010	07/01/2010	96	180.00
12-0G950_ADVERTISE/OPEN BIDS/AWARD & APPROVE CONTRAC			96	
Sub-Total			96	180.00
23.412-R/W_TEAMS	07/01/2004	06/01/2005	44	335.00
12-0G950_PROJ MGMT - PID COMPONENT	07/01/2005	01/01/2006	29	184.00
12-0G950_PERF PRELIM ENGRG STUDIES & PREP DRAFT PROJ	07/01/2005	11/25/2005	97	147.00
12-0G950_PERF ENVIRO STUDIES & PREP DED	07/01/2005	11/25/2005	28	147.00
12-0G950_PREP & APPROVE PROJ RPT	11/25/2005	12/21/2005	11	26.00
12-0G950_PREP & APPROVE FNL ENVIRO DOC [FED]	11/25/2005	12/21/2005	11	26.00
12-0G950_PROJ MGMT - PS&E COMPONENT	01/01/2006	06/13/2010	36	1624.00
12-0G950_DETER REQUIRED PERMITS	03/01/2006	11/01/2009	7	30.00
12-0G950_OBT R/W INTERESTS FOR PROJ R/W CERTIFICATIO	05/27/2006	03/17/2007	49	294.00
12-0G950_PREP ENGRG RPTS	09/01/2006	06/23/2009	109	1026.00
12-0G950_COORDINATE UTIL	03/17/2007	12/07/2007	49	265.00
12-0G950_PERF DETAILED SITE INVESTIGATION FOR HAZ WA	12/08/2007	08/17/2009	24	618.00
12-0G950_PERF PERMITS	04/17/2008	04/05/2009	24	353.00
12-0G950_PREP DRAFT DRAINAGE PLANS	11/24/2008	05/20/2009	24	177.00
12-0G950_PREP DRAFT PS&E QUANTITIES & ESTS	08/16/2009	08/31/2009	49	15.00
12-0G950_CIRCULATE/REV & PREP FNL DISTRICT PS&E PKG	11/01/2009	10/31/2013	55	1460.00
12-0G950_PROP MGMT	11/01/2009	05/01/2011	158	546.00
12-0G950_POST R/W CERTIFICATION WORK	11/01/2009	05/01/2011	22	515.00
12-0G950_PROJ MGMT - CONSTR COMPONENT	07/01/2010	11/28/2011	1506	
Sub-Total			31000	
Total				

EXHIBIT E

**COST ESTIMATE SUMMARY
ALTERNATIVE 1**

PROJECT COST ESTIMATE SUMMARY, ALTERNATIVE 1



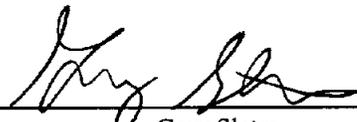
12-ORA-055
KP 12.63/14.81
NB SR-55 Between West Dyer
Road On-Ramp and Edinger
Avenue Off-Ramp
12840 - 0G950K

PROJECT DESCRIPTION:

Project Location: Northbound SR- 55 Between West Dyer Road On-Ramp and Edinger Avenue Off-Ramp
Proposed: Ultimate widening to full standard and add an auxiliary lane
Improvement (Scope)

ROADWAY ITEMS	\$9,320,000
STRUCTURE ITEMS (Exhibit I)	\$208,000
SUBTOTAL CONSTRUCTION	\$9,528,000
RIGHT OF WAY (Current Value)	\$20,466,500
TOTAL PROJECT COST	\$29,994,500

Reviewed by
Branch Chief

Signature 
Gary Slater

Date 8/30/05

Reviewed by
District Program Advisor

Signature 
Isaac Alonso Rice

Date 11/15/05

Approved by
Project Manager

Signature 
Leo Chen

Date 11/15/05

ALTERNATIVE 1

I. ROADWAY ITEMS

SECTION 1 Earthwork

<u>Item No</u>	<u>Earthwork</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
153214	Remove Curb & Gutter/ AC Dike	670	m	\$20	\$13,400	
160101	Clearing and Grubbing	1	LS	\$30,000	\$30,000	
190101	Roadway Excavation	12,000	m3	\$34	\$408,000	
	Unsuitable Material (10% of excavation quantity)	1,200	m3	\$34	\$40,800	
<u>Total Earthwork</u>						<u>\$492,200</u>

SECTION 2 Structural Section

<u>Item No</u>	<u>Structural Section</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
250401	Aggregate Subbase (AS) Class 2	9,594	m3	\$75	\$719,531	
260201	Asphalt Concrete Base (Type A)	4,152	m3	\$75	\$311,368	
290301	Cement Treated Permeable Base	885	m3	\$100	\$88,463	
390103	Asphalt Concrete (Type A)	10,401	tonne	\$115	\$1,196,061	
<u>Total Structural Items</u>						<u>\$2,315,424</u>

SECTION 3 Drainage

<u>Item No</u>	<u>Drainage</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
	Drainage System	1	LS	\$450,000	\$450,000	
<u>Total Drainage</u>						<u>\$450,000</u>

SECTION 4 Specialty Items

<u>Item No</u>	<u>Specialty</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
	Retaining Wall Type 1 (H=1.8 M)	40	M	\$ 1,200.00	\$ 48,000	
074019	Prepare SWPPP	1	LS	\$ 7,500.00	\$ 7,500	
074020	Water Pollution Control & Permanent Treatment F	1	LS	\$100,000.00	\$ 100,000	
150662	Remove MBGR	20	M	\$ 100.00	\$ 2,000	
153221	Remove Concrete Barrier	1,170	M	\$ 50.00	\$ 58,500	
160101	Environmental Mitigation	1	LS	\$ 30,000.00	\$ 30,000	
200001	Highway Planting	1	LS	\$240,000.00	\$ 240,000	
203002	Erosion Control	1	LS	\$ 15,000.00	\$ 15,000	
394049	Place AC Dike	840	M	\$ 20.00	\$ 16,800	
510501	Minor Concrete for Pullman's Sidewalk	120	M3	\$ 400.00	\$ 48,000	
517960	Sound Wall	1	LS	\$600,000.00	\$ 600,000	
800300	Chain Link Fence	1,280	M	\$ 55.00	\$ 70,400	
839701	Concrete Barrier (Type 742)	1,280	M	\$ 400.00	\$ 512,000	
	Upgraded All Existing Signs to Standards	1	LS	\$ 50,000.00	\$ 50,000	
	Maintenance Vehicle Pullout	1	LS	\$ 20,000.00	\$ 20,000	
	Lead Investigation	1	LS	\$ 10,000.00	\$ 10,000	
	Modify Traffic Monitoring Stations, Ramp and Lighting & Sign Illumination	1	LS	\$ 48,000.00	\$ 48,000	
	Modify Changeable Message Sign System and	1	LS	\$160,000.00	\$ 160,000	
	Modify Fiber Optic Communication System	1	LS	\$363,000.00	\$ 363,000	
	Lighting and signing (Pullman Street)	1	LS	\$ 10,000.00	\$ 10,000	
<u>Total Specialty Items</u>						<u>\$ 2,409,200</u>

SECTION 7 Roadway Mobilization

Subtotal Sections 1 to 5	\$6,538,265			
Minor Items	\$326,913			
Sum	\$6,865,178	x	5% =	\$343,259

Total Roadway Mobilization \$343,259

SECTION 8 Roadway Additions

Supplemental

Subtotal Sections 1 to 5	\$6,538,265			
Minor Items	\$326,913			
Sum	\$6,865,178	x	10% =	\$686,518

Contingencies

Subtotal Sections 1 to 5	\$6,538,265			
Minor Items	\$326,913			
Sum	\$6,865,178	x	20% =	\$1,373,036

Supplemental Work

RE Office	1	LS	\$27,000
COZEPP	1	LS	\$15,000
Sampling & Analysis Plan (SAP) for SWPPP	1	LS	\$10,000

Total Roadway Additions \$2,111,554

TOTAL ROADWAY ITEMS \$9,320,000

(Sections 1 to 8)

II. STRUCTURE ITEMS

STRUCTURES ITEMS

STRUCTURE

	No. 1	No. 2	No. 3
Bridge Name	_____	_____	_____
Structure Type	1	_____	_____
Width Ft. (out to out)	_____	_____	_____
Span Lengths Ft.	_____	_____	_____
Total Area Sq. Ft.	_____	_____	_____
Footing Type (Pile/Spread)	_____	_____	_____
Cost Per square feet (include 10% mobilization and 20% contingency)	\$208,000	_____	_____
Total Cost for Structure	_____	_____	_____
SUBTOTAL STRUCTURES ITEMS			\$208,000
Railroad Related Costs	_____	_____	_____
			SUBTOTAL RAILROAD ITEMS \$0
			TOTAL STRUCTURES ITEMS _____
			USE \$208,000

COMMENTS

Estimate Prepared By MOHAMMAD RAVANIPOUR Phone # 909-598-5421 Date 04/18/2005
 Print Name

(If appropriate, attach additional pages and backup)

III. RIGHT OF WAY

	Current Values (Future Use)	Escalation Rates	Escalated Values
Acquisition, including excess Lands, Damages, and Goodwill	\$9,500,000.00	10%	\$12,644,500
Utility Relocation (State share)	\$5,144,000	10%	\$7,530,000
Relocation Assistance	\$125,000	10%	\$166,000
Clearance/ Demolition	\$75,000	10%	\$100,000
Title and Escrow Fees	\$22,500.00	50%	\$26,000
Total Estimated Cost	\$14,866,500.00		\$20,466,500
Title and Escrow Fees			\$0

TOTAL RIGHT OF WAY (CURRENT VALUE)**

\$20,466,500

Anticipated Date of Right of Way Certification
(Date to which Values are Escalated)

11/09T

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 Harry Pantoja Phone # (949) 724-2388 Date 08/17/05
(Print Name)

EXHIBIT F

**COST ESTIMATE SUMMARY
ALTERNATIVE 2**

PROJECT COST ESTIMATE SUMMARY, ALTERNATIVE 2



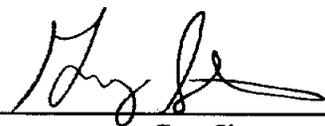
12-ORA-055
 KP 12.63/14.81
 NB SR-55 Between East Dyer
 Road On-Ramp and Edinger
 Avenue Off-Ramp
 12840 - 0G950K

PROJECT DESCRIPTION:

Project Location: Northbound NR- 55 Between East Dyer Road On-Ramp and Edinger Avenue Off-Ramp
Proposed: Ultimate widening to full standard and add an auxiliary lane
Improvement (Scope)

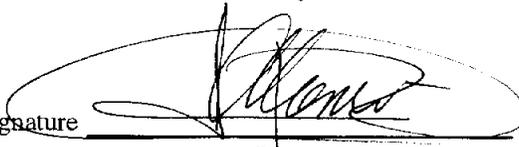
ROADWAY ITEMS	\$11,175,000
STRUCTURE ITEMS (Exhibit I)	\$1,911,000
SUBTOTAL CONSTRUCTION	\$13,086,000
RIGHT OF WAY (Current Value)	\$21,069,600
TOTAL PROJECT COST	\$34,155,600

Reviewed by
 Branch Chief

Signature 
 Gary Slater

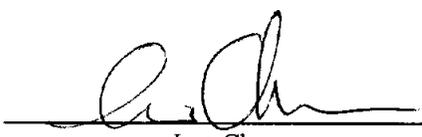
Date 8/30/05

Reviewed by
 District Program Advisor

Signature 
 Isaac Alonso Rice

Date 11/15/05

Approved by
 Project Manager

Signature 
 Leo Chen

Date 11/15/05

ALTERNATIVE 2

I. ROADWAY ITEMS

SECTION 1 Earthwork

<u>Item No</u>	<u>Earthwork</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
153214	Remove Curb & Gutter/ AC Dike	900	m	\$20	\$18,000	
160101	Clearing and Grubbing	1	LS	\$40,000	\$40,000	
190101	Roadway Excavation	17,000	m3	\$34	\$578,000	
198002	Imported Borrow	250	m3	\$50	\$12,500	
	Unsuitable Material (10% of excavation quantit	1,700	m3	\$34	\$57,800	
<u>Total Earthwork</u>						<u>\$706,300</u>

SECTION 2 Structural Section

<u>Item No</u>	<u>Structural Section</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
250401	Aggregate Subbase (AS) Class 2	12018	m3	\$75	\$901,333	
260201	Asphalt Concrete Base (Type A)	5130	m3	\$75	\$384,786	
290301	Cement Treated Permeable Base	1045	m3	\$100	\$104,513	
390103	Asphalt Concrete (Type A)	12,908	tonne	\$115	\$1,484,446	
<u>Total Structural Items</u>						<u>\$2,875,077</u>

SECTION 3 Drainage

<u>Item No</u>	<u>Drainage</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
	Drainage System	1	LS	\$521,000	\$521,000	
<u>Total Drainage</u>						<u>\$521,000</u>

SECTION 4 Specialty Items

<u>Item No</u>	<u>Specialty</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
	Retaining Wall Type 1 (H=1.8 M)	40	M	\$ 1,200.00	\$ 48,000	
074019	Prepare SWPPP	1	LS	\$ 8,500.00	\$ 8,500	
074020	Water Pollution Control & Permanent Treatment	1	LS	\$ 110,000.00	\$ 110,000	
150662	Remove MBGR	20	M	\$ 100.00	\$ 2,000	
153221	Remove Concrete Barrier	1,170	M	\$ 50.00	\$ 58,500	
160101	Environmental Mitigation	1	LS	\$ 30,000.00	\$ 30,000	
200001	Highway Planting	1	LS	\$ 240,000.00	\$ 240,000	
203002	Erosion Control	1	LS	\$ 15,000.00	\$ 15,000	
394049	Place AC Dike	900	M	\$ 20.00	\$ 18,000	
510501	Minor Concrete for Pullman's Sidewalk	120	M3	\$ 400.00	\$ 48,000	
517960	Sound Wall	1	LS	\$ 600,000.00	\$ 600,000	
800300	Chain Link Fence	1,410	M	\$ 55.00	\$ 77,550	
839701	Concrete Barrier (Type 742)	1,410	M	\$ 400.00	\$ 564,000	
	Upgraded All Existing Signs to Standards	1	LS	\$ 60,000.00	\$ 60,000	
	Maintenance Vehicle Pullout	1	LS	\$ 50,000.00	\$ 50,000	
	Lead Investigation	1	LS	\$ 10,000.00	\$ 10,000	
	Modify Traffic Monitoring Stations, Ramp and Lighting & Sign Illumination	1	LS	\$ 85,000.00	\$ 85,000	
	Modify Changeable Message Sign System and	1	LS	\$ 160,000.00	\$ 160,000	
	Modify Fiber Optic Communication System	1	LS	\$ 450,500.00	\$ 450,500	
	Lighting and signing (Pullman Street)	1	LS	\$ 10,000.00	\$ 10,000	
<u>Total Specialty Items</u>						<u>\$ 2,645,050</u>

SECTION 7 Roadway Mobilization

Subtotal Sections 1 to 5	\$7,846,696			
Minor Items	\$392,335			
Sum	\$8,239,031	x	5% =	\$411,952

Total Roadway Mobilization \$411,952

SECTION 8 Roadway Additions

Supplemental

Subtotal Sections 1 to 5	\$7,846,696			
Minor Items	\$392,335			
Sum	\$8,239,031	x	10% =	\$823,903

Contingencies

Subtotal Sections 1 to 5	\$7,846,696			
Minor Items	\$392,335			
Sum	\$8,239,031	x	20% =	\$1,647,806

Supplemental Work

RE Office	1	LS	\$27,000
COZEEP	1	LS	\$15,000
Sampling & Analysis Plan (SAP) for SWPPP	1	LS	\$10,000

Total Roadway Additions \$2,523,709

TOTAL ROADWAY ITEMS \$11,175,000

(Sections 1 to 8)

II. STRUCTURE ITEMS

STRUCTURES ITEMS

STRUCTURE

	<u>No. 1</u>	<u>No. 2</u>	<u>No. 3</u>
Bridge Name	_____	_____	_____
Structure Type	_____	_____	_____
Width Ft. (out to out)	_____	_____	_____
Span Lengths Ft.	_____	_____	_____
Total Area Sq. Ft.	_____	_____	_____
Footing Type (Pile/Spread)	_____	_____	_____
Cost Per square feet (include 10% mobilization and 20% contingency)	_____	_____	_____
	\$208,000	\$1,703,000	
Total Cost for Structure	_____	_____	_____

SUBTOTAL STRUCTURES ITEMS \$1,911,000

Railroad Related Costs _____

SUBTOTAL RAILROAD ITEMS \$0
TOTAL STRUCTURES ITEMS \$1,911,000

USE \$1,911,000

COMMENTS

Estimate Prepared By MOHAMMAD RAVANIPOUR Phone # 909-598-5421 Date 04/18/2005
 Print Name

(If appropriate, attach additional pages and backup)

III. RIGHT OF WAY

	Current Values (Future Use)	Escalation Rates	Escalated Values
Acquisition, including excess Lands, Damages, and Good	\$9,600,000.00	10%	\$12,777,600
Utility Relocation (State share)	\$5,444,000	10%	\$8,000,000
Relocation Assistance	\$125,000	10%	\$166,000
Clearance/ Demolition	\$75,000	10%	\$100,000
Title and Escrow Fees	\$22,500.00	50%	\$26,000
Total Estimated Cost	\$15,266,500.00		\$21,069,600
Title and Escrow Fees			\$0

TOTAL RIGHT OF WAY (CURRENT VALUE)**

\$21,069,600

Anticipated Date of Right of Way Certification
(Date to which Values are Escalated)

11/09T

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 Harry Pantoja Phone # (949) 724-2388 Date 08/17/05
(Print Name)

EXHIBIT G

**COST ESTIMATE SUMMARY
ALTERNATIVE 1A**

PROJECT COST ESTIMATE SUMMARY, ALTERNATIVE 1A



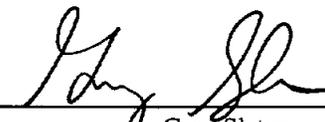
12-ORA-055
KP 12.63/14.81
NB SR-55 Between West Dyer
Road On-Ramp and Edinger
Avenue Off-Ramp
12840 - 0G950K

PROJECT DESCRIPTION:

Project Location: Northbound NR- 55 Between West Dyer Road On-Ramp and Edinger Avenue Off-Ramp
Proposed: Widen to full standard and add an auxiliary lane
Improvement (Scope)

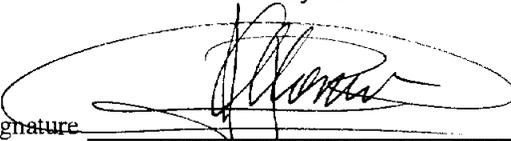
ROADWAY ITEMS	\$9,035,000
STRUCTURE ITEMS (Exhibit I)	\$208,000
SUBTOTAL CONSTRUCTION	\$9,243,000
RIGHT OF WAY (Current Value)	\$20,466,500
TOTAL PROJECT COST	\$29,709,500

Reviewed by
Branch Chief

Signature 
Gary Slater

Date 8/30/05

Reviewed by
District Program Advisor

Signature 
Isaac Alonso Rice

Date 11/15/05

Approved by
Project Manager

Signature 
Leo Chen

Date 11/15/05

ALTERNATIVE 1A

I. ROADWAY ITEMS

SECTION 1 Earthwork

<u>Item No</u>	<u>Earthwork</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
153214	Remove Curb & Gutter/ AC Dike	670	m	\$20	\$13,400	
160101	Clearing and Grubbing	1	LS	\$25,000	\$25,000	
190101	Roadway Excavation	10,000	m3	\$34	\$340,000	
	Unsuitable Material (10% of excavation quantity)	1,000	m3	\$34	\$34,000	
<u>Total Earthwork</u>						<u>\$412,400</u>

SECTION 2 Structural Section

<u>Item No</u>	<u>Structural Section</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
250401	Aggregate Subbase (AS) Class 2	9,127	m3	\$75	\$684,551	
260201	Asphalt Concrete Base (Type A)	3,940	m3	\$75	\$295,528	
290301	Cement Treated Permeable Base	885	m3	\$100	\$88,463	
390103	Asphalt Concrete (Type A)	9,910	tonne	\$115	\$1,139,690	
<u>Total Structural Items</u>						<u>\$2,208,232</u>

SECTION 3 Drainage

<u>Item No</u>	<u>Drainage</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
	Drainage System	1	LS	\$450,000	\$450,000	
<u>Total Drainage</u>						<u>\$450,000</u>

SECTION 4 Specialty Items

<u>Item No</u>	<u>Specialty</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
	Retaining Wall Type 1 (H=1.8 M)	40	M	\$ 1,200.00	\$ 48,000	
074019	Prepare SWPPP	1	LS	\$ 7,000.00	\$ 7,000	
074020	Water Pollution Control & Permanent Treatment I	1	LS	\$ 90,000.00	\$ 90,000	
150662	Remove MBGR	20	M	\$ 100.00	\$ 2,000	
153221	Remove Concrete Barrier	1,170	M	\$ 50.00	\$ 58,500	
160101	Environmental Mitigation	1	LS	\$ 30,000.00	\$ 30,000	
200001	Highway Planting	1	LS	\$ 240,000.00	\$ 240,000	
203002	Erosion Control	1	LS	\$ 15,000.00	\$ 15,000	
394049	Place AC Dike	740	M	\$ 20.00	\$ 14,800	
510501	Minor Concrete for Pullman's Sidewalk	120	M3	\$ 400.00	\$ 48,000	
517960	Sound Wall	1	LS	\$ 600,000.00	\$ 600,000	
800300	Chain Link Fence	1,280	M	\$ 55.00	\$ 70,400	
839701	Concrete Barrier (Type 742)	1,280	M	\$ 400.00	\$ 512,000	
	Upgraded All Existing Signs to Standards	1	LS	\$ 50,000.00	\$ 50,000	
	Maintenance Vehicle Pullout	1	LS	\$ 20,000.00	\$ 20,000	
	Lead Investigation	1	LS	\$ 10,000.00	\$ 10,000	
	Modify Traffic Monitoring Stations, Ramp and Lighting & Sign Illumination	1	LS	\$ 48,000.00	\$ 48,000	
	Modify Changeable Message Sign System and	1	LS	\$ 160,000.00	\$ 160,000	
	Modify Fiber Optic Communication System	1	LS	\$ 363,000.00	\$ 363,000	
	Lighting and signing (Pullman Street)	1	LS	\$ 10,000.00	\$ 10,000	
Total Specialty Items						\$ 2,396,700

SECTION 7 Roadway Mobilization

Subtotal Sections 1 to 5	\$6,337,274			
Minor Items	\$316,864			
Sum	\$6,654,138	x	5% =	\$332,707

Total Roadway Mobilization **\$332,707**

SECTION 8 Roadway Additions

Supplemental

Subtotal Sections 1 to 5	\$6,337,274			
Minor Items	\$316,864			
Sum	\$6,654,138	x	10% =	\$665,414

Contingencies

Subtotal Sections 1 to 5	\$6,337,274			
Minor Items	\$316,864			
Sum	\$6,654,138	x	20% =	\$1,330,828

Supplemental Work

RE Office	1	LS	\$27,000
COZEEP	1	LS	\$15,000
Sampling & Analysis Plan (SAP) for SWPPP	1	LS	\$10,000

Total Roadway Additions **\$2,048,241**

TOTAL ROADWAY ITEMS **\$9,035,000**

(Sections 1 to 8)

II. STRUCTURE ITEMS

STRUCTURES ITEMS

STRUCTURE

	No. 1	No. 2	No. 3
Bridge Name	_____	_____	_____
Structure Type	1	_____	_____
Width Ft. (out to out)	_____	_____	_____
Span Lengths Ft.	_____	_____	_____
Total Area Sq. Ft.	_____	_____	_____
Footing Type (Pile/Spread)	_____	_____	_____
Cost Per square feet (include 10% mobilization and 20% contingency)	\$208,000	_____	_____
Total Cost for Structure	_____	_____	_____
		SUBTOTAL STRUCTURES ITEMS \$208,000	
Railroad Related Costs	_____	_____	_____
		SUBTOTAL RAILROAD ITEMS \$0	
		TOTAL STRUCTURES ITEMS \$208,000	
			USE \$208,000

COMMENTS

Estimate Prepared By MOHAMMAD RAVANIPOUR Phone # 909-598-5421 Date 04/18/2005
 Print Name

(If appropriate, attach additional pages and backup)

III. RIGHT OF WAY

	Current Values (Future Use)	Escalation Rates	Escalated Values
Acquisition, including excess Lands, Damages, and Goodwil	\$9,500,000.00	10%	\$12,644,500
Utility Relocation (State share)	\$5,144,000	10%	\$7,530,000
Relocation Assistance	\$125,000	10%	\$166,000
Clearance/ Demolition	\$75,000	10%	\$100,000
Title and Escrow Fees	\$22,500.00	50%	\$26,000
Total Estimated Cost	\$14,866,500.00		\$20,466,500
Title and Escrow Fees			\$0

TOTAL RIGHT OF WAY (CURRENT VALUE)**

\$20,466,500

Anticipated Date of Right of Way Certification
(Date to which Values are Escalated)

11/09T

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 Harry Pantoja Phone # (949) 724-2388 Date 08/17/05
(Print Name)

EXHIBIT H

**COST ESTIMATE SUMMARY
ALTERNATIVE 2A**

PROJECT COST ESTIMATE SUMMARY, ALTERNATIVE 2A



12-ORA-055
KP 12.63/14.81
NB SR-55 Between East Dyer
Road On-Ramp and Edinger
Avenue Off-Ramp
12840 - 0G950K

PROJECT DESCRIPTION:

Project Location: Northbound NR- 55 Between East Dyer Road On-Ramp and Edinger Avenue Off-Ramp
Proposed: Widen to full standard and add an auxiliary lane
Improvement (Scope)

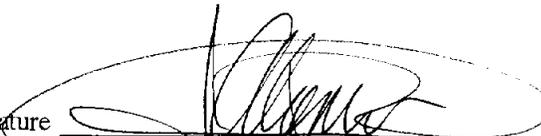
ROADWAY ITEMS	\$10,896,000
STRUCTURE ITEMS (Exhibit I)	\$1,911,000
SUBTOTAL CONSTRUCTION	\$12,807,000
RIGHT OF WAY (Current Value)	\$21,069,600
TOTAL PROJECT COST	\$33,876,600

Reviewed by
Branch Chief

Signature 
Gary Slater

Date 8/30/05

Reviewed by
District Program Advisor

Signature 
Isaac Alonso Rice

Date 11/15/05

Approved by
Project Manager

Signature 
Leo Chen

Date 11/15/05

ALTERNATIVE 2A

I. ROADWAY ITEMS

SECTION 1 Earthwork

<u>Item No</u>	<u>Earthwork</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
153214	Remove Curb & Gutter/ AC Dike	900	m	\$20	\$18,000	
160101	Clearing and Grubbing	1	LS	\$40,000	\$40,000	
190101	Roadway Excavation	15,000	m3	\$34	\$510,000	
198002	Imported Borrow	250	m3	\$50	\$12,500	
	Unsuitable Material (10% of excavation quantity)	1,500	m3	\$34	\$51,000	
<u>Total Earthwork</u>						<u>\$631,500</u>

SECTION 2 Structural Section

<u>Item No</u>	<u>Structural Section</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
250401	Aggregate Subbase (AS) Class 2	11551	m3	\$75	\$866,353	
260201	Asphalt Concrete Base (Type A)	4919	m3	\$75	\$368,946	
290301	Cement Treated Permeable Base	1045	m3	\$100	\$104,513	
390103	Asphalt Concrete (Type A)	12,418	tonne	\$115	\$1,428,075	
<u>Total Structural Items</u>						<u>\$2,767,886</u>

SECTION 3 Drainage

<u>Item No</u>	<u>Drainage</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
	Drainage System	1	LS	\$521,000	\$521,000	
<u>Total Drainage</u>						<u>\$521,000</u>

SECTION 4 Specialty Items

<u>Item No</u>	<u>Specialty</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
	Retaining Wall Type 1 (H=1.8 M)	40	M	\$ 1,200.00	\$ 48,000	
074019	Prepare SWPPP	1	LS	\$ 8,000.00	\$ 8,000	
074020	Water Pollution Control & Permanent Treatment	1	LS	\$ 100,000.00	\$ 100,000	
150662	Remove MBGR	20	M	\$ 100.00	\$ 2,000	
153221	Remove Concrete Barrier	1,170	M	\$ 50.00	\$ 58,500	
160101	Environmental Mitigation	1	LS	\$ 30,000.00	\$ 30,000	
200001	Highway Planting	1	LS	\$ 240,000.00	\$ 240,000	
203002	Erosion Control	1	LS	\$ 15,000.00	\$ 15,000	
394049	Place AC Dike	800	M	\$ 20.00	\$ 16,000	
510501	Minor Concrete for Pullman's Sidewalk	120	M3	\$ 400.00	\$ 48,000	
517960	Sound Wall	1	LS	\$ 600,000.00	\$ 600,000	
800300	Chain Link Fence	1,410	M	\$ 55.00	\$ 77,550	
839701	Concrete Barrier (Type 742)	1,410	M	\$ 400.00	\$ 564,000	
	Upgraded All Existing Signs to Standards	1	LS	\$ 60,000.00	\$ 60,000	
	Maintenance Vehicle Pullout	1	LS	\$ 50,000.00	\$ 50,000	
	Lead Investigation	1	LS	\$ 10,000.00	\$ 10,000	
	Modify Traffic Monitoring Stations, Ramp and Lighting & Sign Illumination	1	LS	\$ 85,000.00	\$ 85,000	
	Modify Changeable Message Sign System and	1	LS	\$ 160,000.00	\$ 160,000	
	Modify Fiber Optic Communication System	1	LS	\$ 450,500.00	\$ 450,500	
	Lighting and signing (Pullman Street)	1	LS	\$ 10,000.00	\$ 10,000	
Total Specialty Items						\$ 2,632,550

SECTION 7 Roadway Mobilization

Subtotal Sections 1 to 5	\$7,649,905			
Minor Items	\$382,495			
Sum	\$8,032,400	x	5% =	\$401,620

Total Roadway Mobilization **\$401,620**

SECTION 8 Roadway Additions

Supplemental

Subtotal Sections 1 to 5	\$7,649,905			
Minor Items	\$382,495			
Sum	\$8,032,400	x	10% =	\$803,240

Contingencies

Subtotal Sections 1 to 5	\$7,649,905			
Minor Items	\$382,495			
Sum	\$8,032,400	x	20% =	\$1,606,480

Supplemental Work

RE Office	1	LS	\$27,000
COZEEP	1	LS	\$15,000
Sampling & Analysis Plan (SAP) for SWPPP	1	LS	\$10,000

Total Roadway Additions **\$2,461,720**

TOTAL ROADWAY ITEMS **\$10,896,000**

(Sections 1 to 8)

II. STRUCTURE ITEMS

STRUCTURES ITEMS

STRUCTURE

	No. 1	No. 2	No. 3
Bridge Name	_____	_____	_____
Structure Type	_____ 1 _____	_____ 1 _____	_____
Width Ft. (out to out)	_____	_____	_____
Span Lengths Ft.	_____	_____	_____
Total Area Sq. Ft.	_____	_____	_____
Footing Type (Pile/Spread)	_____	_____	_____
Cost Per square feet (include 10% mobilization and 20% contingency)	_____ \$208,000 _____	_____ \$1,703,000 _____	_____
Total Cost for Structure	_____	_____	_____

SUBTOTAL STRUCTURES ITEMS \$1,911,000

Railroad Related Costs _____

SUBTOTAL RAILROAD ITEMS \$0
TOTAL STRUCTURES ITEMS \$1,911,000

USE \$1,911,000

COMMENTS

Estimate Prepared By MOHAMMAD RAVANIPOUR Phone # 909-598-5421 Date 04/18/2005
 Print Name

(If appropriate, attach additional pages and backup)

III. RIGHT OF WAY

	Current Values (Future Use)	Escalation Rates	Escalated Values
Acquisition, including excess Lands, Damages, and Goodwi	\$9,600,000.00	10%	\$12,777,600
Utility Relocation (State share)	\$5,444,000	10%	\$8,000,000
Relocation Assistance	\$125,000	10%	\$166,000
Clearance/ Demolition	\$75,000	10%	\$100,000
Title and Escrow Fees	\$22,500.00	50%	\$26,000
Total Estimated Cost	\$15,266,500.00		\$21,069,600
Title and Escrow Fees			\$0

TOTAL RIGHT OF WAY (CURRENT VALUE)**

\$21,069,600

Anticipated Date of Right of Way Certification
(Date to which Values are Escalated)

11/09T

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 Harry Pantoja Phone # (949) 724-2388 Date 08/17/05
(Print Name)

EXHIBIT I

STRUCTURE COST ESTIMATE

Memorandum

*Flex your power!
Be energy efficient!*

To: GARY SLATER
BRANCH CHIEF
PROJECT STUDIES UNIT

Date: April 18, 2005

File: 12-Ora- 55
KP 12.67/13.68
EA 12-0G950K

From: MOHAMMAD RAVANIPOUR *M.A.R.*
Senior Bridge Engineer
Division of Engineering Services
Office of Bridge Design-Southern California
21073 Pathfinder Road, Suite 200
Diamond Bar, CA 91765

Subject: Advanced Planning Study, Route 55 Northbound

Enclosed please find two copies of Advance Planning Study for Dyer Road UC widening (Bridge no. 55-0409), and Retaining wall Type 1 at Warner Ave. OC (Bridge no. 55-0394) as was submitted to Division of Engineering Services by Request Memo dated Dec. 29, 2004.

These studies were prepared based on the following assumptions.

1. One stage construction was assumed for this advanced planning study.
2. The risk of Liquefaction and lateral spreading is low.

Dyer Road UC widening (Bridge no. 55-0409), cost estimate for widening this bridge is \$1,310,000.

Cost estimate for Retaining wall Type 1 at Warner Ave. OC (Bridge no. 55-0394) is \$160,000.

The estimated construction cost includes 10% mobilization and 25% contingencies. Please see attached sheets for details.

Please call me at (909) 598-5421 or Faisal Zahlout at (909)595-4506 if you have any questions?

Attachment/Enclosure

c: R. Wolfe
Dave Pajouhesh-PCE
Mina Pezeshpour
File

Checklist for Preliminary Bridge Cost Estimate

- PSR/PDS Estimate
- Ballpark Estimate
- Feasibility Study Estimate

Date: 04-06-05
 District Project Engineer Gary Slater Telephone (949) 756-7685
 EA 0G950K District-Co-Rte-PM 12-Ora-55-KP 12.67/13.638
 Bridge Name/ Number Dyer Road UC (Br. # 55-0409)
 Bridge Length 67.99 m Longest Span 26.488 m New Bridge Deck Area 422.22 m²
 Width 60.42 Height 6.142 m Proposed Structure Type PS/PC I Girders

1. New Bridge Widening 1 Side 2 Sides Median
2. Support: Single Column Multi-Column
3. Bridge Location: Overcrossing Undercrossing Over water Over railroad
4. Stage Construction: How many stages? one
5. Traffic Control Falsework New Alignment Existing Alignment
6. Remove Existing Bridge Bridge Deck Area to be removed (m²) 75 m²
7. Seasonal Construction Windows (months) 12
8. Foundation Type: Spread Footing Pile Footing Pile Type Driven Pile Length 16 m
9. Site Location: Urban Rural
10. Site Accessibility Excellent
11. Retaining Wall Type-Location of wall None
 Avg. Height _____ Length _____ Area _____
12. Sound Wall on Bridge
13. Provide District-EA and Bridge Number of similar projects in the vicinity None

Comments:

See attached excel sheet

Technical Liaison Engineer Mina Pezeshpour Telephone (909) 598-3219

Design Branch Chief Mohammad Ravanipour

Estimate By: PGA Date of Estimate 4/11/05
 Cost Range / m² \$ _____ to _____
 10% Mobilization \$ _____ to _____
 25 % Contingency \$ 3100 to 3500

Preliminary Cost Range = \$ 1,160,000 to 1,310,000
 (NOT TO BE USED FOR PROGRAMMING CAPITAL COSTS)

LW = 67.99 m
 W_N = 5.5 m
 Area_N = 374 m²

RET WALL COST AT WARNER AVE UC
 = \$ 160,000

APS-PSR(PDS), BRIDGE INFORMATION SUMMARY

12-0G950K

12-ORA-55

KP R12.55/R14.81

KM F7.80/R9.20

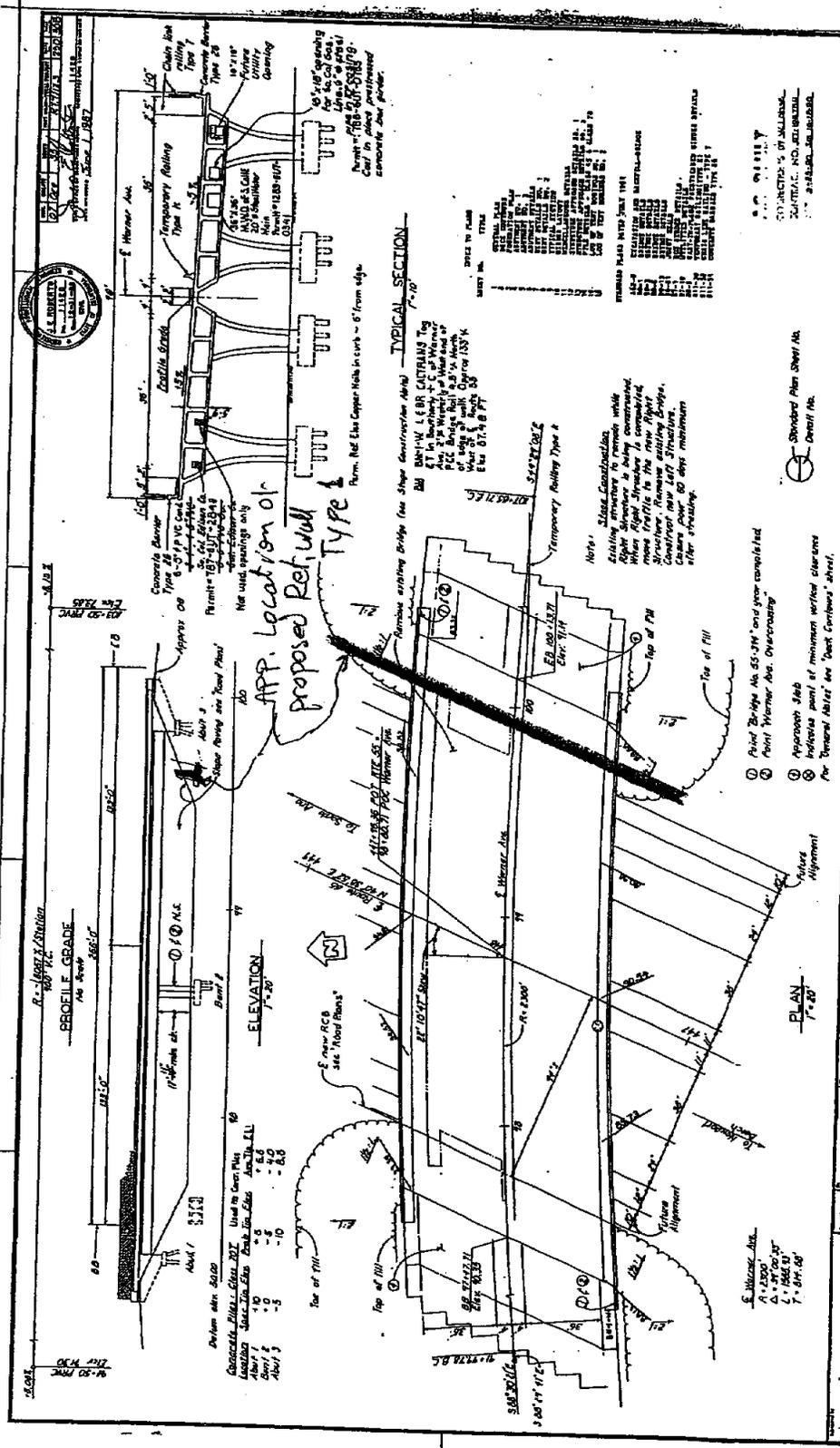
12B40-0G950K

BRIDGE WORK

Bridge	HWY Alt.	Bridge Name	Proposed Current Work	Previous Widened	Type	Spans	Abutment Type	Foundation Type	Sup. Str. Depth (m)	Approach Slabs Type	Slope Paving	Strain Report	Seismic Screen	Maint. Issues	BB to EB Total Length (m)	Deck width (m)	Widened Deck Area (sq-m)	Cost Range/m2 \$	10% Mobilization \$	25% Contingency \$	Final Cost Range Per Area (\$/sq-m)	Final Total Cost Range (\$)
55-0409	2	Dyer Rd LC	Widen NB	Yes	PS/PC I Girders	4	Closed End-Cellular	spread flg w/piles	1.320	NONE	No	None	Removed In 1991	None	67.99	50.42	422					

RETAINING WALL WORK

Retainig Wall Type 1	HWY Alt.	Bridge Name and Number	Proposed Current Work	Height (m)	Length (m)	Str. Excavation m3	Str. Backfill m3	Final Cost \$
at Abut. # 3 for Warner Ave OC.	2	Warner Ave. OC 55-0394	Add Ret. Wall Type 1 under exist. Br. At abut. 3 for widening SR 55 NB	2.4	45	150	125	



WARNER AVENUE OVERCROSSING
GENERAL PLAN

STRUCTURES - DESIGN 7
 CONTRACT NO. 67-102754
 DATE COMPLETED 1-2-56

AS BUILT PLANS
 CONTRACT NO. 67-102754
 DATE COMPLETED 1-2-56
 DOCUMENT NO.

State of CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

Division of Highways
 District Office, San Francisco

Project No. 67-102754
 Sheet No. 155

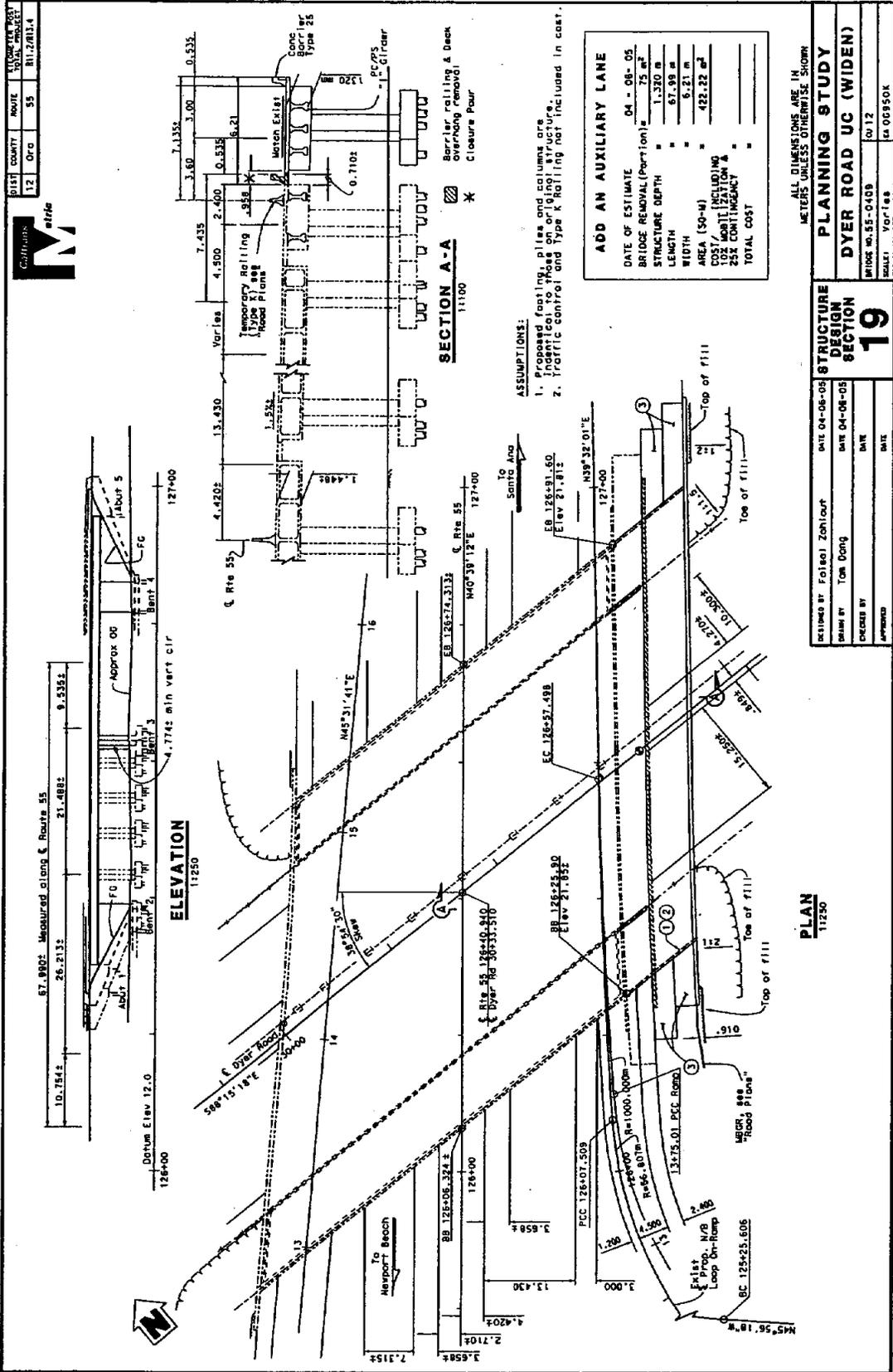
Scale: 1" = 20'

Vertical Curve Data:
 PVI: 10+00, Elev. 100.00
 BVC: 8+00, Elev. 95.00
 EVC: 12+00, Elev. 105.00
 L: 400'

Horizontal Curve Data:
 P.C.: 10+00, Elev. 100.00
 P.T.: 10+50, Elev. 100.00
 R: 1000'

Notes:
 1. Bridge No. 65-34 and year completed.
 2. Point Warner Abut. Overcrossing.
 3. Approx. Job.
 4. Indicate point of minimum vertical clearance.
 5. General Notes see "Deck Concrete" sheet.

REVISIONS:
 1. 1-2-56
 2. 1-2-56
 3. 1-2-56



DIST	COUNTY	ROUTE	PROJECT NO.
12	Ora	55	RI.2012.4



ATTACHMENT 1

**ACCIDENT HISTORY SUMMARY
TASAS TABLE B - DISTRICT 12**

ATTACHMENT 2

TRAFFIC ANALYSIS

YEAR 2005	SEGMENTS	PHV		# OF LANES	LOS (DENSITY)		PIN Number	Performance measure
		AM	PM		AM	PM		
NO PROJECT	ON RAMP FROM EB DYER/ON RAMP FROM WB DYER	7878	7162	4	E (40.6)	D (33.8)		
	ON RAMP FROM WB DYER/OFF RAMP TO EDINGER	8280	8381	4	F	F		
ALTERNATIVE 1	ON RAMP FROM EB DYER/ON RAMP FROM WB DYER	7878	7162	4	E (40.6)	D (33.8)	1583	683,390
	ON RAMP FROM WB DYER/OFF RAMP TO EDINGER	8280	8381	5	D (30.1)	D (30.6)		
ALTERNATIVE 2	ON RAMP FROM EB DYER/ON RAMP FROM WB DYER	7878	7162	5	D (28.2)	C (25.3)	1112	709,676
	ON RAMP FROM WB DYER/OFF RAMP TO EDINGER	8280	8381	5	D (30.1)	D (30.6)		
ALTERNATIVE 3	ON RAMP FROM EB DYER/ON RAMP FROM WB DYER	7878	7162	4	E (40.6)	D (33.8)	1653	683,390
	ON RAMP FROM WB DYER/OFF RAMP TO EDINGER	8280	8381	5	D (30.1)	D (30.6)		
ALTERNATIVE 4	ON RAMP FROM EB DYER/ON RAMP FROM WB DYER	7878	7162	5	D (28.2)	C (25.3)	1150	709,676
	ON RAMP FROM WB DYER/OFF RAMP TO EDINGER	8280	8381	5	D (30.1)	D (30.6)		

YEAR 2030	SEGMENTS	PHV		# OF LANES	LOS (DENSITY)	
		AM	PM		AM	PM
NO PROJECT	ON RAMP FROM EB DYER/ON RAMP FROM WB DYER	9769	8881	4	F	F
	ON RAMP FROM WB DYER/OFF RAMP TO EDINGER	10268	10393	4	F	F
ALTERNATIVE 1	ON RAMP FROM EB DYER/ON RAMP FROM WB DYER	9769	8881	4	F	F
	ON RAMP FROM WB DYER/OFF RAMP TO EDINGER	10268	10393	5	E (45.0)	F
ALTERNATIVE 2	ON RAMP FROM EB DYER/ON RAMP FROM WB DYER	9769	8881	5	E (39.9)	D (33.4)
	ON RAMP FROM WB DYER/OFF RAMP TO EDINGER	10268	10393	5	E (45.0)	F
ALTERNATIVE 3	ON RAMP FROM EB DYER/ON RAMP FROM WB DYER	9769	8881	4	F	F
	ON RAMP FROM WB DYER/OFF RAMP TO EDINGER	10268	10393	5	E (45.0)	F
ALTERNATIVE 4	ON RAMP FROM EB DYER/ON RAMP FROM WB DYER	9769	8881	5	E (39.9)	D (33.4)
	ON RAMP FROM WB DYER/OFF RAMP TO EDINGER	10268	10393	5	E (45.0)	F

NB 55 Mainline Segments	Current AM PHV	Current PM PHV	2030 AM PHV	2030 PM PHV	Current AADT	2030 AADT
Between NB OFF and NB ON from EB Dyer	7218	6147	8951	7623	103500	128400
Between NB ON from EB Dyer & ON from WB Dyer	7878	7162	9769	8881	109200	135500
Between NB ON from WB Dyer & OFF to Edinger	8280	8381	10268	10393	118600	147100
Right after Edinger OFF	7642	7975	9477	9889	110300	136800

Ramp	Current AM PHV	Current PM PHV	2030 AM PHV	2030 PM PHV	Current AADT	2030 AADT
NB ON FROM EB DYER ROAD	660	1015	819	1259	9500	11800
NB ON FROM WB DYER ROAD	402	1219	499	1512	5700	7100
NB OFF TO EDINGER STREET	638	406	792	504	8300	10300

AM(PM)
7642(7975) - 2005
9477(9889) - 2030

AM(PM)
638(406) - 2005
792(504) - 2030

**OFF RAMP
TO
EDINGER ST**

AM(PM)
8280(8381) - 2005
10268(10393) - 2030

NB SR-55



AM(PM)
7878(7162) - 2005
9769(8881) - 2030

AM(PM)
402(1219) - 2005
499(1512) - 2030

**ON RAMP
FROM
WB DYER RD**

AM(PM)
7218(6147) - 2005
8951(7623) - 2030

AM(PM)
660(1015) - 2005
819(1259) - 2030

**ON RAMP
FROM
EB DYER RD**

PRIORITY INDEX NUMBER CALCULATION WORK SHEET

SHEET 1 OF 2

LOCATION /PROJECT DESCRIPTION: **SR-55 Adding Aux Lane on NB between Edinger & Dyer Alternative # 1**

INSTRUCTIONS: FILL IN AREAS THAT ARE MARKED IN BLUE OR WITH AN ASTERISK.

INPUT

INPUT		
"L1" BEFORE MILES	*	1.40
"L2" AFTER MILES	*	1.40
"S1" BEFORE MPH	*	45
"S2" AFTER MPH	*	58
PRESENT AADT	*	147724
FUTURE AADT	*	183178
AVERAGE AADT		165451
% TRAFFIC BENEFITED	*	100
AVE. AADT BENEFITED		165451
% TRUCKS	*	5.8

COUNTY-RTE :	*	
P.M. LIMITS :	*	
EA :	*	
R/W+CONST \$:	*	\$ 4,394,000
CALC. BY :	*	
DATE:	*	
PHONE NO. :	*	

CALCULATIONS

WEIGHTED AVERAGE COST PER VEHICLE MINUTE (TRUCKS & AUTOS)

TRUCK		CONVERT		AUTO		CONVERT		COST PER				
TIME VALUE		TO		TIME VALUE		TO		VEH. MIN.				
(\$ PER		DECIMAL		(\$ PER		DECIMAL		(\$ PER				
VEH. MIN.)				VEH. MIN.)				VEH. MIN.)				
%			%				%					
TRUCKS	X	0.4	/	100	+	AUTOS	X	0.15	/	100	=	A
5.8		0.4		100		94.2		0.15		100	=	0.165

DAILY DELAY SAVINGS (VEHICLE MINUTES PER DAY)

BEFORE CONDITIONS				AFTER CONDITIONS				CONVERSION		DAILY		
LENGTH		SPEED		LENGTH		SPEED		FACTOR		DELAY		
(MILES)		(MPH)		(MILES)		(MPH)		(VEH. PER DAY)		SAVINGS		
(L ₁)		(S ₁)		(L ₂)		(S ₂)		AVERAGE		(VEH. MINS. PER DAY)		
/		-		/		X		AADT BENEFITED		=		
								B		=		
1.40		45		1.40		58		60		165451		69223

DELAY INDEX

DAILY		COST		DAYS		PRESENT		CONVERSION		TOTAL		DELAY	
DELAY		PER VEH MIN		PER YEAR		WORTH		FACTOR		PROJECT		INDEX	
SAVINGS		(\$ PER		APPLIED		FACTOR				COST ⁽¹⁾			
(VEH-MIN. PER DAY)		VEH. MIN.)		(DAYS PER YEAR)						(\$)		D.I.	
B	X	A	X	D	X	P _L	X	100	/	C	=	D.I.	
69223		0.165		365		12.6		100		4394000		1192	

NOTES:

1. For "Total Project Cost", use current Construction Cost + R/W Cost

DISCOUNTED SAFETY INDEX

SAFETY		PRESENT		PROJECT		DISCOUNTED	
INDEX ⁽¹⁾		WORTH		LIFE		SAFETY	
		FACTOR		(YEARS)		INDEX	
S.I.	X	P _L	/	L	=	S.I. ₍₁₉₉₎	
0		12.6		20	=	0	

NOTES:

1. For Safety Index Calculation, see District Traffic Safety Personnel

PRIORITY INDEX NUMBER CALCULATION WORK SHEET

SHEET 2 OF 2

PRIORITY INDEX NUMBER (PIN)

DELAY INDEX		DISCOUNTED SAFETY INDEX			
D.I.	+	S.I. (018)	=		PIN
1192		0	=		1192

PERFORMANCE MEASURE

DAILY DELAY SAVINGS (VEH. MINS. PER DAY)	DAYS PER YEAR APPLIED	CONVERSION FACTORS		PERFORMANCE MEASURE (THOUSAND VEH. HOURS PER YEAR)
B	D	(MIN. PER HOUR)	(TO THOUSANDS)	
89223	365	60	1000	421

PRIORITY INDEX NUMBER CALCULATION WORK SHEET

SHEET 1 OF 2

LOCATION /PROJECT DESCRIPTION: **SR-55 Adding Aux Lane on NB between EB Dyer to Edinger+ 2 lane off Alternative # 2**

INSTRUCTIONS: FILL IN AREAS THAT ARE MARKED IN BLUE OR WITH AN ASTERISK.

INPUT

INPUT		
"L1" BEFORE MILES	*	1.11
"L2" AFTER MILES	*	1.11
"S1" BEFORE MPH	*	35
"S2" AFTER MPH	*	65
PRESENT AADT	*	116600
FUTURE AADT	*	147064
AVERAGE AADT		132832
% TRAFFIC BENEFITED	*	100
AVE. AADT BENEFITED		132832
% TRUCKS	*	6.2

COUNTY-RTE :	*	
P.M. LIMITS :	*	
EA :	*	
R/W+CONST \$:	*	\$ 7,983,000
CALC. BY :	*	
DATE:	*	
PHONE NO. :	*	

CALCULATIONS

WEIGHTED AVERAGE COST PER VEHICLE MINUTE (TRUCKS & AUTOS)												
		TRUCK			CONVERT		AUTO			CONVERT		COST PER
		TIME VALUE			TO		TIME VALUE			TO		VEH. MIN.
		(\$ PER			DECIMAL		(\$ PER			DECIMAL		(\$ PER
		VEH. MIN.)					VEH. MIN.)					VEH. MIN.)
%		X	/	+	%	X	/	=				
TRUCKS	6.2		0.4	100	AUTOS	93.8	0.15	100			A	
			0.4	100			0.15	100			0.166	

DAILY DELAY SAVINGS (VEHICLE MINUTES PER DAY)										
BEFORE CONDITIONS				AFTER CONDITIONS				CONVERSION		DAILY
LENGTH		SPEED		LENGTH		SPEED		FACTOR		DELAY
(MILES)		(MPH)		(MILES)		(MPH)		(VEH. PER DAY)		SAVINGS
(L ₁)		(S ₁)		(L ₂)		(S ₂)		AVERAGE		(VEH. MINS. PER DAY)
/		-		/		X		X		=
		B						AADT BENEFITED		B
1.11		35		1.11		65		60	132832	116659

DELAY INDEX												
DAILY DELAY SAVINGS		COST PER VEH MIN		DAYS PER YEAR APPLIED		PRESENT WORTH FACTOR		CONVERSION FACTOR		TOTAL PROJECT COST ¹⁰	DELAY INDEX	
(VEH-MIN. PER DAY)		(\$ PER VEH. MIN.)		(DAYS PER YEAR)						(\$)		
B	X	A	X	D	X	P _L	X	100	/	C	=	D.I.
116659		0.166		365		12.6		100		7983000		1112

NOTES:
1. For "Total Project Cost", use current Construction Cost + R/W Cost

DISCOUNTED SAFETY INDEX							
SAFETY INDEX ¹¹		PRESENT WORTH FACTOR		PROJECT LIFE (YEARS)		DISCOUNTED SAFETY INDEX	
S.I.	X	P _L	/	L	=	S.I. (DIS)	
0		12.6		20		0	

NOTES:
1. For Safety Index Calculation, see District Traffic Safety Personnel

PRIORITY INDEX NUMBER CALCULATION WORK SHEET

PRIORITY INDEX NUMBER (PIN)

DELAY INDEX		DISCOUNTED SAFETY INDEX	=	PIN
D.I.	+	S.I. (D.S.)	=	
1112		0	=	1112

PERFORMANCE MEASURE

DAILY DELAY SAVINGS (VEH. MINS. PER DAY)		DAYS PER YEAR APPLIED		CONVERSION FACTORS (MIN. PER HOUR) / (TO THOUSANDS)		PERFORMANCE MEASURE (THOUSAND VEH. HOURS PER YEAR)
B	X	D	/	60 / 1000	=	
116659		365		60		710

PRIORITY INDEX NUMBER CALCULATION WORK SHEET

LOCATION /PROJECT DESCRIPTION: **SR-55 Adding Aux Lane on NB between WB Dyer to Edinger+ 1 lane off Alternative # 3**

INSTRUCTIONS: FILL IN AREAS THAT ARE MARKED IN BLUE OR WITH AN ASTERISK.

INPUT

INPUT		
"L1" BEFORE MILES	*	1.11
"L2" AFTER MILES	*	1.11
"S1" BEFORE MPH	*	35
"S2" AFTER MPH	*	63
PRESENT AADT	*	118800
FUTURE AADT	*	147064
AVERAGE AADT		132832
% TRAFFIC BENEFITED	*	100
AVE. AADT BENEFITED		132832
% TRUCKS	*	6.2

COUNTY-RTE :	*	
P.M. LIMITS :	*	
EA :	*	
R/W+CONST \$:	*	\$ 5,174,000
CALC. BY :	*	
DATE:	*	
PHONE NO. :	*	

CALCULATIONS

WEIGHTED AVERAGE COST PER VEHICLE MINUTE (TRUCKS & AUTOS)

		TRUCK	CONVERT				AUTO	CONVERT		COST PER		
		TIME VALUE	TO				TIME VALUE	TO		VEH. MIN.		
		(\$ PER	DECIMAL				(\$ PER	DECIMAL		(\$ PER		
		VEH. MIN.)					VEH. MIN.)			VEH. MIN.)		
%					%							
TRUCKS	X	0.4	/	100	+	AUTOS	X	0.15	/	100	=	A
6.2		0.4		100		93.8		0.15		100	=	0.166

DAILY DELAY SAVINGS (VEHICLE MINUTES PER DAY)

BEFORE CONDITIONS				AFTER CONDITIONS				CONVERSION		DAILY		
								FACTOR		DELAY		
LENGTH	SPEED			LENGTH	SPEED			(VEH. PER DAY)		SAVINGS		
(MILES)	(MPH)			(MILES)	(MPH)			(MIN. PER HOUR)	AVERAGE		(VEH. MINS. PER DAY)	
(L ₁)	/	S ₁	-	L ₂	/	S ₂	X	60	X	AADT BENEFITED	=	B
1.11		35		1.11		63		60		132832	=	112338

DELAY INDEX

DAILY	COST		DAYS		PRESENT		CONVERSION		TOTAL		DELAY	
DELAY	PER VEH MIN		PER YEAR		WORTH		FACTOR		PROJECT		INDEX	
SAVINGS	(\$ PER		APPLIED		FACTOR				COST ⁽¹⁾		INDEX	
(VEH-MIN. PER DAY)	VEH. MIN.)		(DAYS PER YEAR)						(\$)		D.I.	
B	X	A	X	D	X	P _L	X	100	/	C	=	
112338		0.166		365		12.8		100		5174000	=	1853

NOTES:

1. For "Total Project Cost", use current Construction Cost + R/W Cost

DISCOUNTED SAFETY INDEX

SAFETY	PRESENT		PROJECT		DISCOUNTED	
INDEX ⁽¹⁾	WORTH		LIFE		SAFETY	
	FACTOR		(YEARS)		INDEX	
S.I.	X	P _L	/	L	=	S.I. ₍₂₀₁₆₎
0		12.8		20	=	0

NOTES:

1. For Safety Index Calculation, see District Traffic Safety Personnel

PRIORITY INDEX NUMBER CALCULATION WORK SHEET

PRIORITY INDEX NUMBER (PIN)				
DELAY INDEX		DISCOUNTED SAFETY INDEX		PIN
D.I.	+	S.I. (DIB)	=	
1653		0	=	1653

PERFORMANCE MEASURE					
DAILY DELAY SAVINGS (VEH. MINS. PER DAY)		DAYS PER YEAR APPLIED	CONVERSION FACTORS		PERFORMANCE MEASURE (THOUSAND VEH. HOURS PER YEAR)
B	X	D	/	(MIN. PER HOUR) 60 / (TO THOUSANDS) 1000	
112338		365	/	60	= 683

PRIORITY INDEX NUMBER CALCULATION WORK SHEET

PRIORITY INDEX NUMBER (PIN)				
DELAY INDEX		DISCOUNTED SAFETY INDEX	=	PIN
D.I.	+	S.I. (DIS)	=	PIN
1150		0	=	1150

PERFORMANCE MEASURE					
DAILY DELAY SAVINGS (VEH. MINS. PER DAY)		DAYS PER YEAR APPLIED (DAYS PER YEAR)	CONVERSION FACTORS (MIN. PER HOUR)		PERFORMANCE MEASURE (THOUSAND VEH. HOURS PER YEAR)
B	x	D	/	(TO THOUSANDS)	
116659		365	/	60	710
				1000	
					=

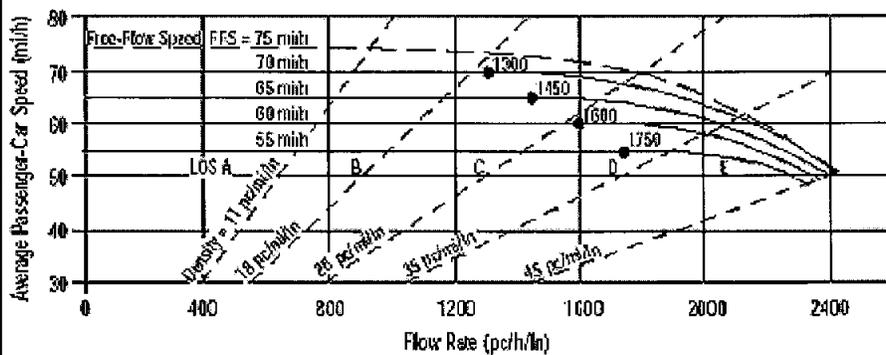
RAMP AADT

	2000 AADT (ATTACHED)	GROWTH FACTOR	2005 AADT	USE
NB ON FROM WB DYER ROAD	5300	1.2%/YR GROWTH SINCE YEAR 2000	5626	5700
NB ON FROM EB DYER ROAD	8900		9447	9500
NB OFF TO EDINGER STREET	7800		8279	8300

NOTE: 1.2% GROWTH RATE WAS ESTIMATED ASSUMING THAT THE GROWTH RATE OF MAINLINE AADT WAS THE SAME AS THE RAMPS (YR 2000: AADT 250,000, YR 2004: AADT 262,000)

**EXISTING
FOR 2005**

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information

Analyst: MKIM
 Agency or Company: Caltrans
 Date Performed: 05/17/2005
 Analysis Time Period: AM

Site Information

Highway/Direction of Travel: NB SR-55
 From/To: EB DYER ON / WE
 Jurisdiction:
 Analysis Year: 2005

Project Description: EXISTING CONDITION

Oper.(LOS) Des.(N) Planning Dat

Flow Inputs

Volume, V	7878 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	1/mi
Number of Lanes, N	4	
FFS (measured)	65.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}	
f_{LC}	
f_{ID}	
f_N	
FFS	65.0

LOS and Performance Measures

Operational (LOS)

$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	2254	pc/h/ln
S	55.5	mi/h
$D = v_p / S$	40.6	pc/mi/ln
LOS	E	

Design (N)

Design (N)

Design LOS	
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
S	
$D = v_p / S$	
Required Number of Lanes, N	

Glossary

N - Number of lanes S - Speed

Factor Location

E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

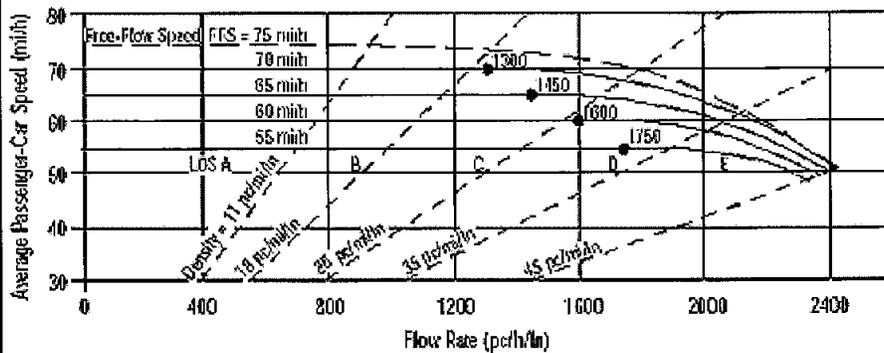
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

HCS2000™

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Version 4.1d

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information

Analyst: MKIM
 Agency or Company: Caltrans
 Date Performed: 05/17/2005
 Analysis Time Period: PM

Site Information

Highway/Direction of Travel: NB SR-55
 From/To: EB DYER ON / WE
 Jurisdiction:
 Analysis Year: 2005

Project Description: EXISTING CONDITION

Oper.(LOS) Des.(N) Planning Dat

Flow Inputs

Volume, V	7162 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	1/mi
Number of Lanes, N	4	
FFS (measured)	65.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}	
f_{LC}	
f_{ID}	
f_N	
FFS	65.0

LOS and Performance Measures

Operational (LOS)		
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	2049	pc/h/ln
S	60.6	mi/h
$D = v_p / S$	33.8	pc/mi/ln
LOS	D	

Design (N)

Design (N)		
Design LOS		
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$		
S		
$D = v_p / S$		
Required Number of Lanes, N		

Glossary

N - Number of lanes S - Speed

Factor Location

E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

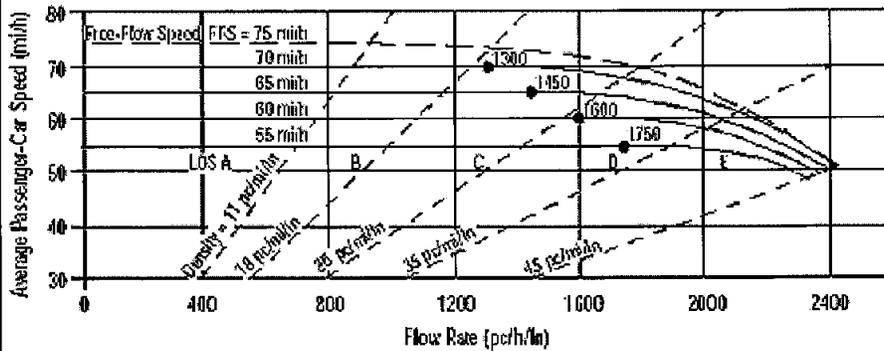
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information

Analyst: MKIM
 Agency or Company: Caltrans
 Date Performed: 05/17/2005
 Analysis Time Period: AM

Site Information

Highway/Direction of Travel: NB SR-55
 From/To: WB DYER ON / EI
 Jurisdiction:
 Analysis Year: 2005

Project Description: EXISTING CONDITION

Oper.(LOS)

Des.(N)

Planning Dat

Flow Inputs

Volume, V	8280 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	l/mi
Number of Lanes, N	4	
FFS (measured)	65.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}	
f_{LC}	
f_{ID}	
f_N	
FFS	65.0

LOS and Performance Measures

Operational (LOS)
 $v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$
 2369 pc/h/ln
 S mi/h
 $D = v_p / S$ pc/mi/ln
 LOS F

Design (N)

Design (N)
 Design LOS
 $v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$
 S
 $D = v_p / S$
 Required Number of Lanes, N

Glossary

N - Number of lanes S - Speed

Factor Location

E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

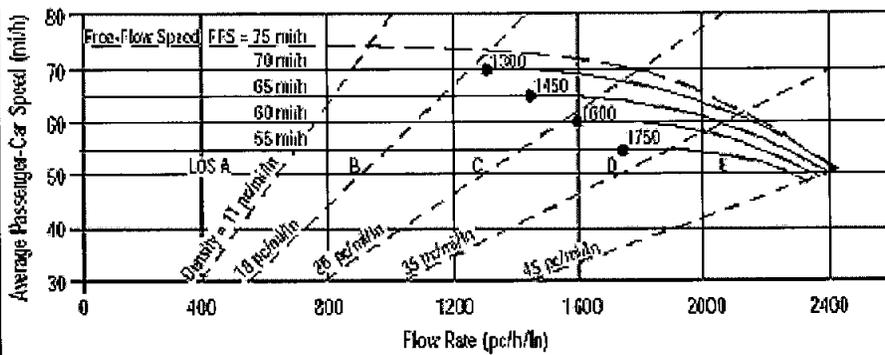
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exh
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information

Analyst: MKIM
 Agency or Company: Caltrans
 Date Performed: 05/17/2005
 Analysis Time Period: PM

Site Information

Highway/Direction of Travel: NB SR-55
 From/To: WB DYER ON / EI
 Jurisdiction:
 Analysis Year: 2005

Project Description: EXISTING CONDITION

Oper.(LOS) Des.(N) Planning Dat

Flow Inputs

Volume, V	8381 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	l/mi
Number of Lanes, N	4	
FFS (measured)	65.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}	
f_{LC}	
f_{ID}	
f_N	
FFS	65.0

LOS and Performance Measures

Operational (LOS)
 $v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$ 2398 pc/h/ln
 S mi/h
 $D = v_p / S$ pc/mi/ln
 LOS F

Design (N)

Design (N)
 Design LOS
 $v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$
 S
 $D = v_p / S$
 Required Number of Lanes, N

Glossary

N - Number of lanes S - Speed

Factor Location

E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

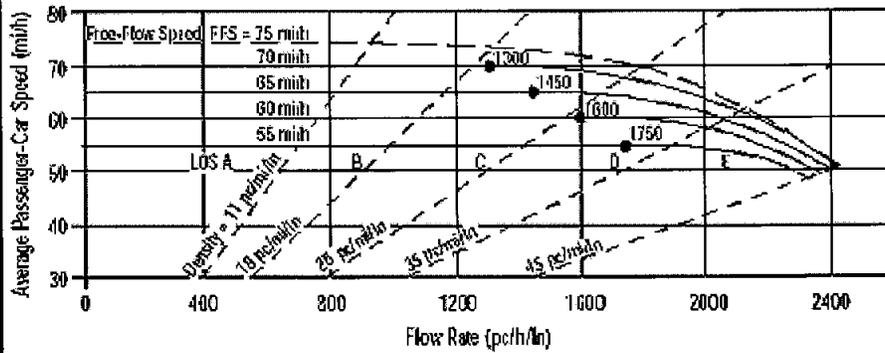
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**ALTERNATIVE #1
FOR 2005**

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information

Analyst: MKIM
 Agency or Company: Caltrans
 Date Performed: 05/17/2005
 Analysis Time Period: PM

Site Information

Highway/Direction of Travel: NB SR-55
 From/To: WB DYER ON / EI
 Jurisdiction:
 Analysis Year: 2005

Project Description: ALTERNATIVE 1

Oper. (LOS)

Des. (N)

Planning Dat

Flow Inputs

Volume, V	8381 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	% Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		% RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	1/mi
Number of Lanes, N	5	
FFS (measured)	65.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}	
f_{LC}	
f_{ID}	
f_N	
FFS	65.0

LOS and Performance Measures

Operational (LOS)

$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	1918	pc/h/ln
S	62.7	mi/h
$D = v_p / S$	30.6	pc/mi/ln
LOS	D	

Design (N)

Design (N)

Design LOS	
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
S	
$D = v_p / S$	
Required Number of Lanes, N	

Glossary

N - Number of lanes S - Speed

Factor Location

E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

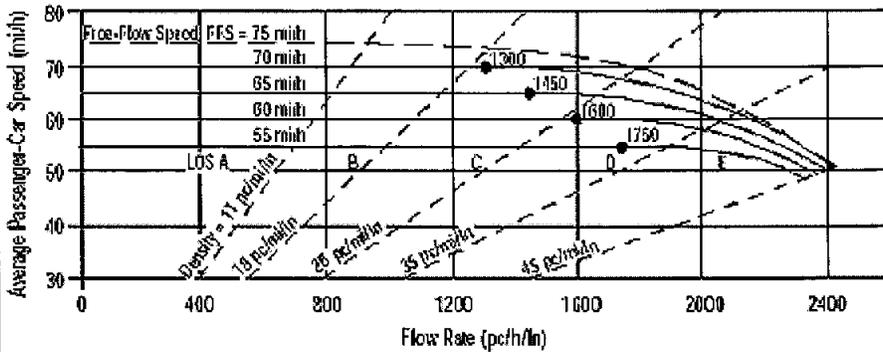
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information

Analyst: MKIM
 Agency or Company: Caltrans
 Date Performed: 05/17/2005
 Analysis Time Period: AM

Site Information

Highway/Direction of Travel: NB SR-55
 From/To: WB DYER ON / EI
 Jurisdiction:
 Analysis Year: 2005

Project Description: ALTERNATIVE 1

Oper. (LOS)

Des. (N)

Planning Dat

Flow Inputs

Volume, V	8280 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade %	Length mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	1/mi
Number of Lanes, N	5	
FFS (measured)	65.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}	
f_{LC}	
f_{ID}	
f_N	
FFS	65.0

LOS and Performance Measures

Operational (LOS)

$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	1895	pc/h/ln
S	63.0	mi/h
$D = v_p / S$	30.1	pc/mi/ln
LOS	D	

Design (N)

Design (N)

Design LOS

$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
S	
$D = v_p / S$	
Required Number of Lanes, N	

Glossary

N - Number of lanes S - Speed

Factor Location

E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

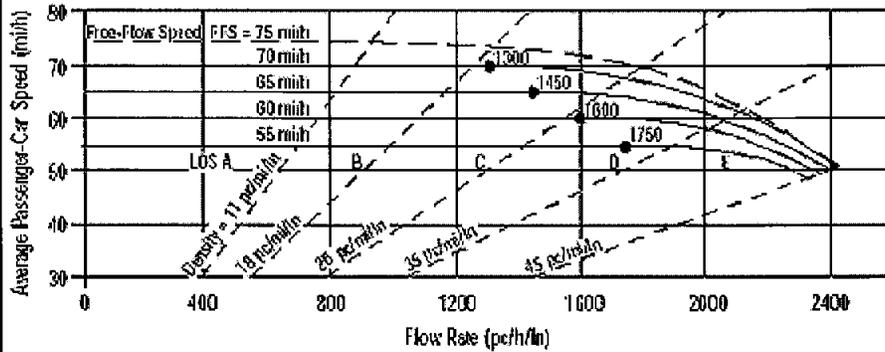
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	MKIM	Highway/Direction of Travel	NB SR-55
Agency or Company	Caltrans	From/To	EB DYER ON / WI
Date Performed	05/17/2005	Jurisdiction	
Analysis Time Period	PM	Analysis Year	2005

Project Description ALTERNATIVE 1

Oper. (LOS) Des. (N) Planning Dat

Flow Inputs			
Volume, V	7162 veh/h	Peak-Hour Factor, PHF	0.90
AAADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AAADT, K		%RVs, P_R	0
Peak-Hr Direction Prop., D		General Terrain:	Level
DDHV = AAADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs		Calc Speed Adj and FFS	
Lane Width	12.0 ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0 ft	f_{LC}	
Interchange Density	0.50 /mi	f_{ID}	
Number of Lanes, N	4	f_N	
FFS (measured)	65.0 mi/h	FFS	65.0
Base free-flow Speed, BFFS	mi/h		

LOS and Performance Measures		Design (N)	
Operational (LOS)		Design (N)	
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	2049 pc/h/ln	Design LOS	
S	60.6 mi/h	$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
$D = v_p / S$	33.8 pc/mi/ln	S	
LOS	D	$D = v_p / S$	
		Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 23-8, 23-10	f_{LW} - Ex

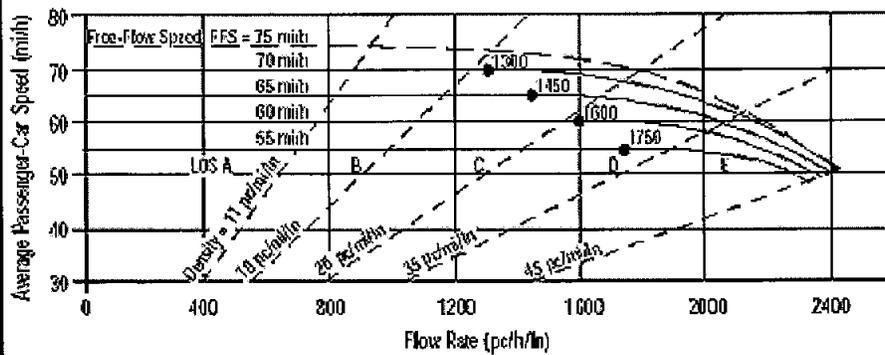
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exh
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information

Analyst: MKIM
 Agency or Company: Caltrans
 Date Performed: 05/17/2005
 Analysis Time Period: AM

Site Information

Highway/Direction of Travel: NB SR-55
 From/To: EB DYER ON / WI
 Jurisdiction:
 Analysis Year: 2005

Project Description: ALTERNATIVE 1

Oper. (LOS)

Des. (N)

Planning Dat

Flow Inputs

Volume, V	7878 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	% Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		% RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$	0.971

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	1/mi
Number of Lanes, N	4	
FFS (measured)	65.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}	
f_{LC}	
f_{ID}	
f_N	
FFS	65.0

LOS and Performance Measures

Operational (LOS)	
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	2254 pc/h/ln
S	55.5 mi/h
$D = v_p / S$	40.6 pc/mi/ln
LOS	E

Design (N)

Design (N)	
Design LOS	
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
S	
$D = v_p / S$	
Required Number of Lanes, N	

Glossary

N - Number of lanes S - Speed

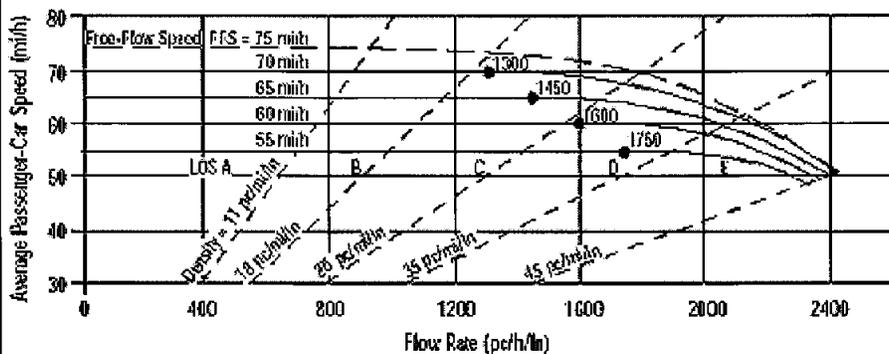
Factor Location

E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

**ALTERNATIVE #2
FOR 2005**

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information

Analyst: MKIM
 Agency or Company: Caltrans
 Date Performed: 05/17/2005
 Analysis Time Period: AM

Site Information

Highway/Direction of Travel: NB SR-55
 From/To: EB DYER ON / WE
 Jurisdiction:
 Analysis Year: 2005

Project Description: ALTERNATIVE 2

Oper. (LOS)

Des. (N)

Planning Dat

Flow Inputs

Volume, V	7878 veh/h	Peak-Hour Factor, PHF	0.90
AAADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AAADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AAADT x K x D	veh/h	Grade %	Length mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	l/mi
Number of Lanes, N	5	
FFS (measured)	65.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}	
f_{LC}	
f_{ID}	
f_N	
FFS	65.0

LOS and Performance Measures

Operational (LOS)		
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	1803	pc/h/ln
S	63.9	mi/h
$D = v_p / S$	28.2	pc/mi/ln
LOS	D	

Design (N)

Design (N)		
Design LOS		
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$		
S		
$D = v_p / S$		
Required Number of Lanes, N		

Glossary

N - Number of lanes S - Speed

Factor Location

E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

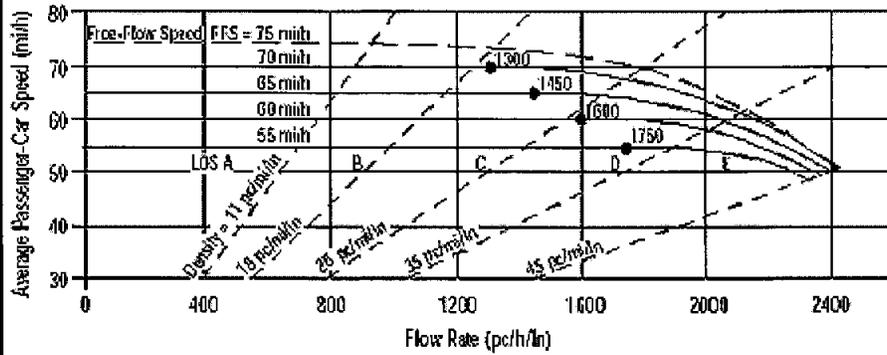
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information

Analyst: MKIM
 Agency or Company: Caltrans
 Date Performed: 05/17/2005
 Analysis Time Period: PM

Site Information

Highway/Direction of Travel: NB SR-55
 From/To: EB DYER ON / WE
 Jurisdiction:
 Analysis Year: 2005

Project Description: ALTERNATIVE 2

Oper. (LOS)

Des. (N)

Planning Dat

Flow Inputs

Volume, V	7162 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade %	Length mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	1/mi
Number of Lanes, N	5	
FFS (measured)	65.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}	
f_{LC}	
f_{ID}	
f_N	
FFS	65.0

LOS and Performance Measures

Operational (LOS)		
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	1639	pc/h/ln
S	64.8	mi/h
$D = v_p / S$	25.3	pc/mi/ln
LOS	C	

Design (N)

Design (N)		
Design LOS		
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$		
S		
$D = v_p / S$		
Required Number of Lanes, N		

Glossary

N - Number of lanes S - Speed

Factor Location

E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

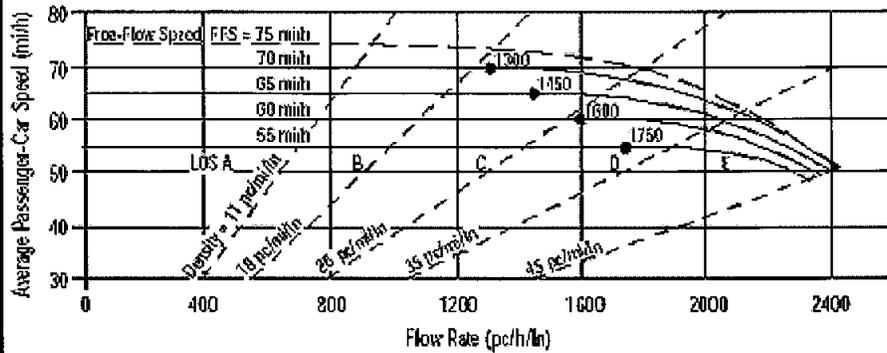
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information

Analyst: MKIM
 Agency or Company: Caltrans
 Date Performed: 05/17/2005
 Analysis Time Period: AM

Site Information

Highway/Direction of Travel: NB SR-55
 From/To: WB DYER ON / EI
 Jurisdiction:
 Analysis Year: 2005

Project Description: ALTERNATIVE 2

Oper. (LOS)

Des. (N)

Planning Dat

Flow Inputs

Volume, V	8280 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	% Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		% RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade %	Length mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	I/mi
Number of Lanes, N	5	
FFS (measured)	65.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}	
f_{LC}	
f_{ID}	
f_N	
FFS	65.0

LOS and Performance Measures

Operational (LOS)

$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	1895	pc/h/ln
S	63.0	mi/h
$D = v_p / S$	30.1	pc/mi/ln
LOS	D	

Design (N)

Design (N)

Design LOS

$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
S	
$D = v_p / S$	
Required Number of Lanes, N	

Glossary

N - Number of lanes S - Speed

Factor Location

E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

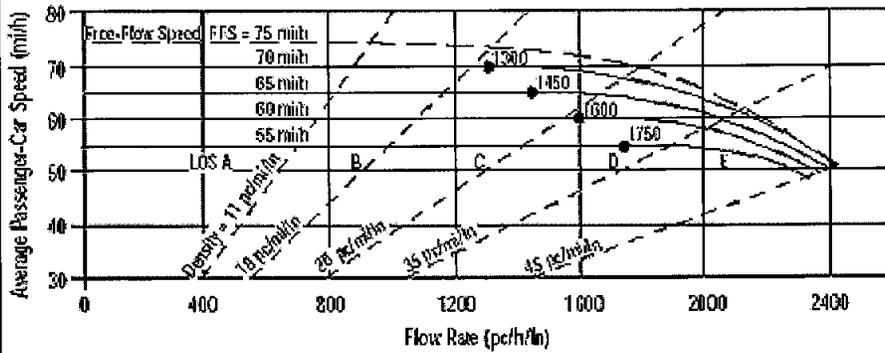
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Ext
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	MKIM	Highway/Direction of Travel	NB SR-55
Agency or Company	Caltrans	From/To	WB DYER ON / EI
Date Performed	05/17/2005	Jurisdiction	
Analysis Time Period	PM	Analysis Year	2005

Project Description ALTERNATIVE 2

Oper.(LOS) Des.(N) Planning Dat

Flow Inputs			
Volume, V	8381 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade %	Length mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs			Calc Speed Adj and FFS	
Lane Width	12.0	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0	ft	f_{LC}	
Interchange Density	0.50	I/mi	f_{ID}	
Number of Lanes, N	5		f_N	
FFS (measured)	65.0	mi/h	FFS	65.0
Base free-flow Speed, BFFS		mi/h		

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	1918	pc/h/ln	Design LOS	
S	62.7	mi/h	$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
$D = v_p / S$	30.6	pc/mi/ln	S	
LOS	D		$D = v_p / S$	
			Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 23-8, 23-10	f_{LW} - Ex

V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Ext
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

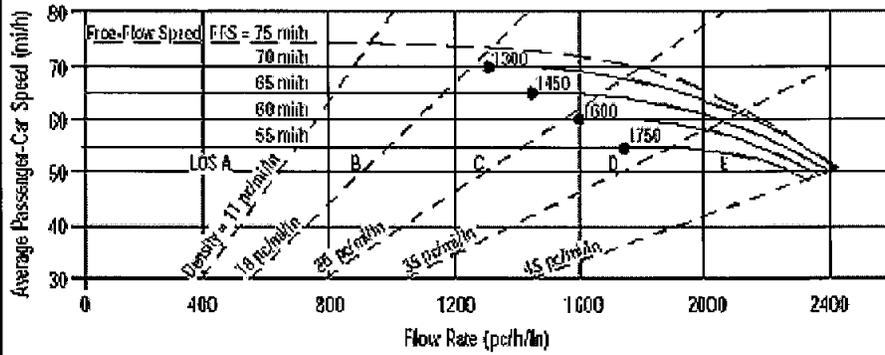
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**ALTERNATIVE 1A
FOR 2005**

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	MKIM	Highway/Direction of Travel	NB SR-55
Agency or Company	Caltrans	From/To	WB DYER ON / EI
Date Performed	05/17/2005	Jurisdiction	
Analysis Time Period	PM	Analysis Year	2005

Project Description ALTERNATIVE 3

Oper. (LOS) Des. (N) Planning Dat

Flow Inputs			
Volume, V	8381 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs		Calc Speed Adj and FFS	
Lane Width	12.0 ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0 ft	f_{LC}	
Interchange Density	0.50 /mi	f_{ID}	
Number of Lanes, N	5	f_N	
FFS (measured)	65.0 mi/h	FFS	65.0
Base free-flow Speed, BFFS	mi/h		

LOS and Performance Measures		Design (N)	
Operational (LOS)		Design (N)	
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	1918 pc/h/ln	Design LOS	
S	62.7 mi/h	$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
$D = v_p / S$	30.6 pc/mi/ln	S	
LOS	D	$D = v_p / S$	
		Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 23-8, 23-10	f_{LW} - Ex

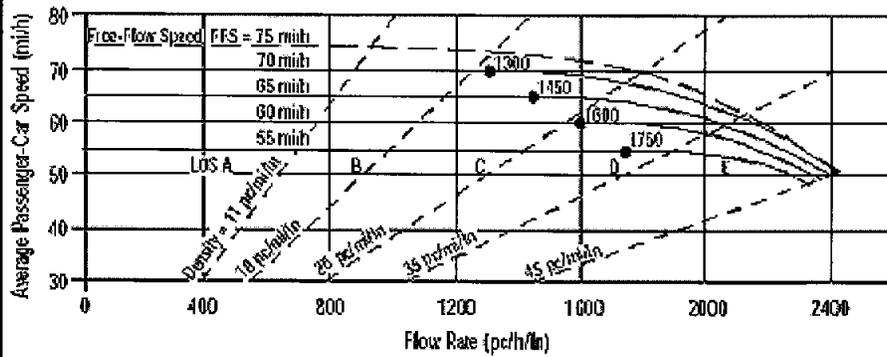
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information

Analyst: MKIM
 Agency or Company: Caltrans
 Date Performed: 05/17/2005
 Analysis Time Period: AM

Site Information

Highway/Direction of Travel: NB SR-55
 From/To: WB DYER ON / EI
 Jurisdiction:
 Analysis Year: 2005

Project Description: ALTERNATIVE 3

Oper. (LOS)

Des. (N)

Planning Dat

Flow Inputs

Volume, V	8280 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	% Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		% RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade %	Length mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	1/mi
Number of Lanes, N	5	
FFS (measured)	65.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}	
f_{LC}	
f_{ID}	
f_N	
FFS	65.0

LOS and Performance Measures

Operational (LOS)

$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	1895	pc/h/ln
S	63.0	mi/h
$D = v_p / S$	30.1	pc/mi/ln
LOS	D	

Design (N)

Design (N)

Design LOS

$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
S	
$D = v_p / S$	
Required Number of Lanes, N	

Glossary

N - Number of lanes S - Speed

Factor Location

E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

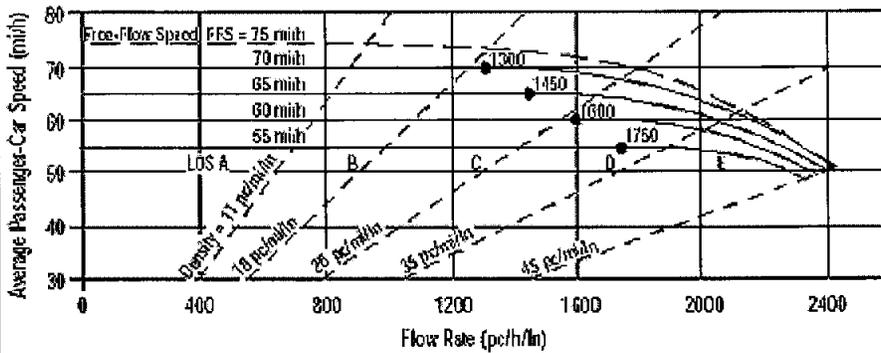
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exh
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (ME)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	MKIM	Highway/Direction of Travel	NB SR-55
Agency or Company	Caltrans	From/To	EB DYER ON / WE
Date Performed	05/17/2005	Jurisdiction	
Analysis Time Period	PM	Analysis Year	2005

Project Description ALTERNATIVE 3

Oper.(LOS) Des.(N) Planning Dat

Flow Inputs			
Volume, V	7162 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs			Calc Speed Adj and FFS	
Lane Width	12.0	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0	ft	f_{LC}	
Interchange Density	0.50	l/mi	f_{ID}	
Number of Lanes, N	4		f_N	
FFS (measured)	65.0	mi/h	FFS	65.0
Base free-flow Speed, BFFS		mi/h		

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	2049	pc/h/ln	Design LOS	
S	60.6	mi/h	$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
$D = v_p / S$	33.8	pc/mi/ln	S	
LOS	D		$D = v_p / S$	
			Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 23-8, 23-10	f_{LW} - Ex

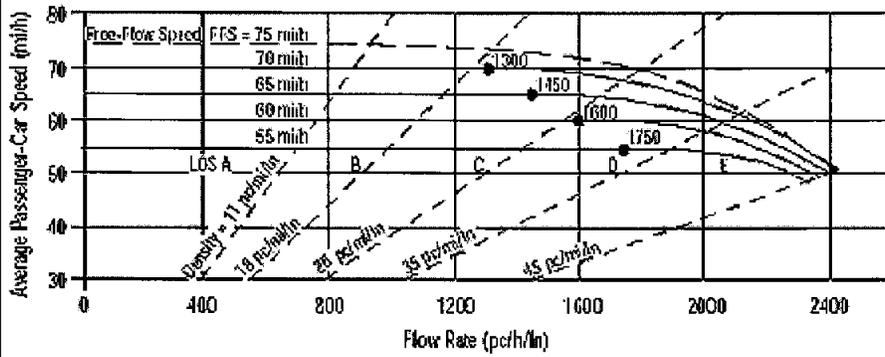
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exh
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information

Analyst: MKIM
 Agency or Company: Caltrans
 Date Performed: 05/17/2005
 Analysis Time Period: AM

Site Information

Highway/Direction of Travel: NB SR-55
 From/To: EB DYER ON / WE
 Jurisdiction:
 Analysis Year: 2005

Project Description: ALTERNATIVE 3

Oper. (LOS)

Des. (N)

Planning Dat

Flow Inputs

Volume, V	7878 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	% Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		% RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade %	Length mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1 + P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	1/mi
Number of Lanes, N	4	
FFS (measured)	65.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}	
f_{LC}	
f_{ID}	
f_N	
FFS	65.0

LOS and Performance Measures

Operational (LOS)

$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	2254	pc/h/ln
S	55.5	mi/h
$D = v_p / S$	40.6	pc/mi/ln
LOS	E	

Design (N)

Design (N)

Design LOS

$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
S	
$D = v_p / S$	
Required Number of Lanes, N	

Glossary

N - Number of lanes S - Speed

Factor Location

E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

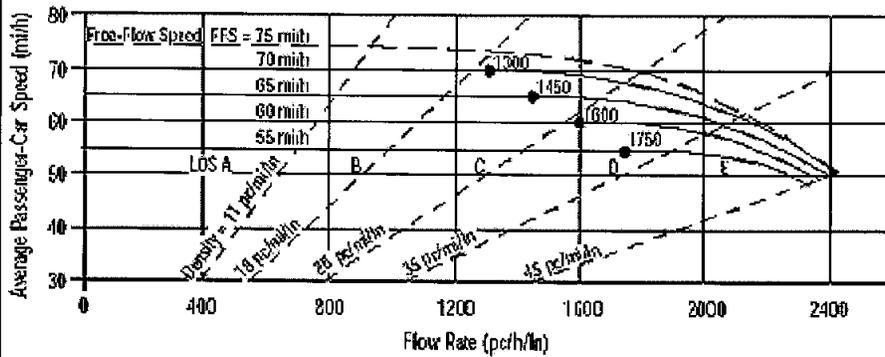
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**ALTERNATIVE 2A
FOR 2005**

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information

Analyst: MKIM
 Agency or Company: Caltrans
 Date Performed: 05/17/2005
 Analysis Time Period: AM

Site Information

Highway/Direction of Travel: NB SR-55
 From/To: WB DYER ON / EI
 Jurisdiction:
 Analysis Year: 2005

Project Description: ALTERNATIVE 2

Oper. (LOS)

Des. (N)

Planning Dat

Flow Inputs

Volume, V	8280 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade %	Length mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	1/mi
Number of Lanes, N	5	
FFS (measured)	65.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}	
f_{LC}	
f_{ID}	
f_N	
FFS	65.0

LOS and Performance Measures

Operational (LOS)

$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	1895	pc/h/ln
S	63.0	mi/h
$D = v_p / S$	30.1	pc/mi/ln
LOS	D	

Design (N)

Design (N)

Design LOS

$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
S	
$D = v_p / S$	
Required Number of Lanes, N	

Glossary

N - Number of lanes S - Speed

Factor Location

E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

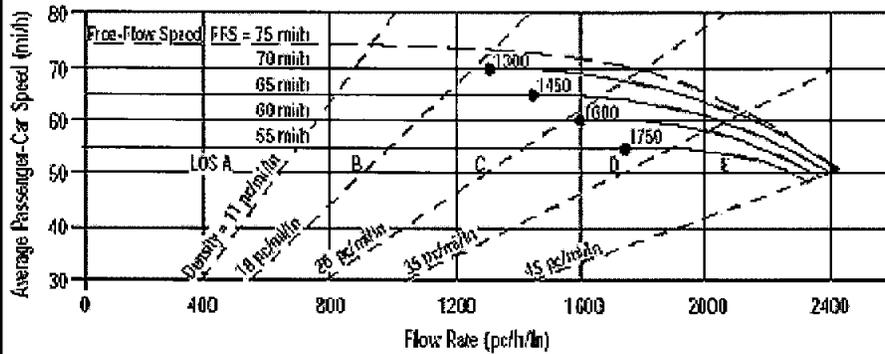
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Ext
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information

Analyst: MKIM
 Agency or Company: Caltrans
 Date Performed: 05/17/2005
 Analysis Time Period: PM

Site Information

Highway/Direction of Travel: NB SR-55
 From/To: WB DYER ON / EI
 Jurisdiction:
 Analysis Year: 2005

Project Description: ALTERNATIVE 2

Oper. (LOS)

Des. (N)

Planning Dat

Flow Inputs

Volume, V	8381 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	1/mi
Number of Lanes, N	5	
FFS (measured)	65.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}	
f_{LC}	
f_{ID}	
f_N	
FFS	65.0

LOS and Performance Measures

Operational (LOS)

$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	1918	pc/h/ln
S	62.7	mi/h
$D = v_p / S$	30.6	pc/mi/ln
LOS	D	

Design (N)

Design (N)

Design LOS	
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
S	
$D = v_p / S$	
Required Number of Lanes, N	

Glossary

N - Number of lanes S - Speed

Factor Location

E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

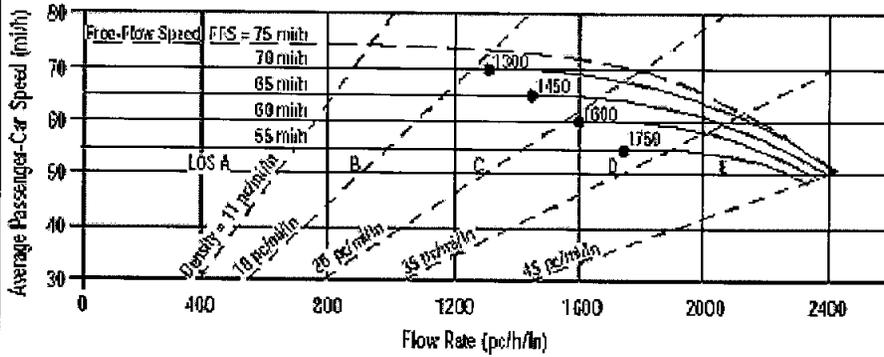
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	MKIM	Highway/Direction of Travel	NB SR-55
Agency or Company	Caltrans	From/To	EB DYER ON / WE
Date Performed	05/17/2005	Jurisdiction	
Analysis Time Period	AM	Analysis Year	2005

Project Description ALTERNATIVE 4

Oper.(LOS) Des.(N) Planning Dat

Flow Inputs			
Volume, V	7878 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade %	Length mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs		Calc Speed Adj and FFS	
Lane Width	12.0 ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0 ft	f_{LC}	
Interchange Density	0.50 1/mi	f_{ID}	
Number of Lanes, N	5	f_N	
FFS (measured)	65.0 mi/h	FFS	65.0
Base free-flow Speed, BFFS	mi/h		

LOS and Performance Measures		Design (N)	
Operational (LOS)		Design (N)	
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	1803 pc/h/ln	Design LOS	
S	63.9 mi/h	$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
$D = v_p / S$	28.2 pc/mi/ln	S	
LOS	D	$D = v_p / S$	
		Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 23-8, 23-10	f_{LW} - Ex

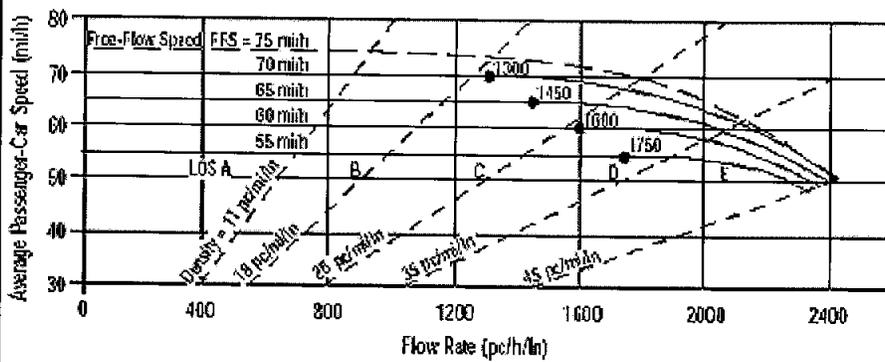
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	MKIM	Highway/Direction of Travel	NB SR-55
Agency or Company	Caltrans	From/To	EB DYER ON / WI
Date Performed	05/17/2005	Jurisdiction	
Analysis Time Period	PM	Analysis Year	2005

Project Description ALTERNATIVE 4

Oper. (LOS) Des. (N) Planning Dat

Flow Inputs			
Volume, V	7162 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs		Calc Speed Adj and FFS	
Lane Width	12.0 ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0 ft	f_{LC}	
Interchange Density	0.50 1/mi	f_{ID}	
Number of Lanes, N	5	f_N	
FFS (measured)	65.0 mi/h	FFS	65.0
Base free-flow Speed, BFFS	mi/h		

LOS and Performance Measures		Design (N)	
Operational (LOS)		Design (N)	
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	1639 pc/h/ln	Design LOS	
S	64.8 mi/h	$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
$D = v_p / S$	25.3 pc/mi/ln	S	
LOS	C	$D = v_p / S$	
		Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 23-8, 23-10	f_{LW} - Ex

V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Ext
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

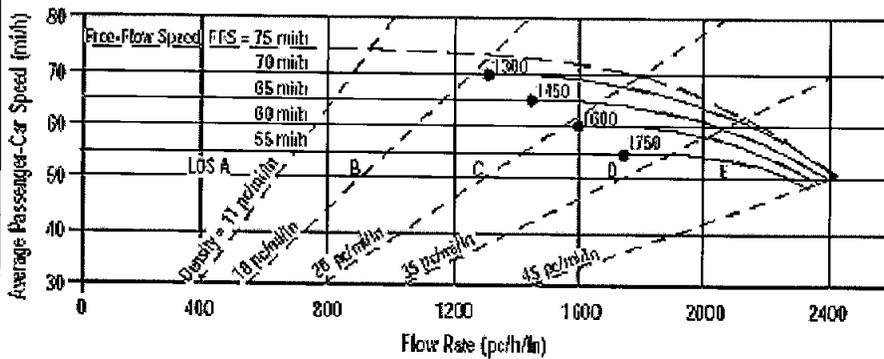
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**EXISTING
FOR 2030**

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	MKIM	Highway/Direction of Travel	NB SR-55
Agency or Company	Caltrans	From/To	WB DYER ON / EI
Date Performed	05/17/2005	Jurisdiction	
Analysis Time Period	AM	Analysis Year	2030
Project Description EXISTING CONDITION			

Oper. (LOS)
 Des. (N)
 Planning Dat

Flow Inputs			
Volume, V	10268 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs		Calc Speed Adj and FFS	
Lane Width	12.0 ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0 ft	f_{LC}	
Interchange Density	0.50 l/mi	f_{ID}	
Number of Lanes, N	4	f_N	
FFS (measured)	65.0 mi/h	FFS	65.0
Base free-flow Speed, BFFS	mi/h		

LOS and Performance Measures		Design (N)	
Operational (LOS)		Design (N)	
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	2938 pc/h/ln	Design LOS	
S	mi/h	$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
$D = v_p / S$	pc/mi/ln	S	
LOS	F	$D = v_p / S$	
		Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 23-8, 23-10	f_{LW} - Ex

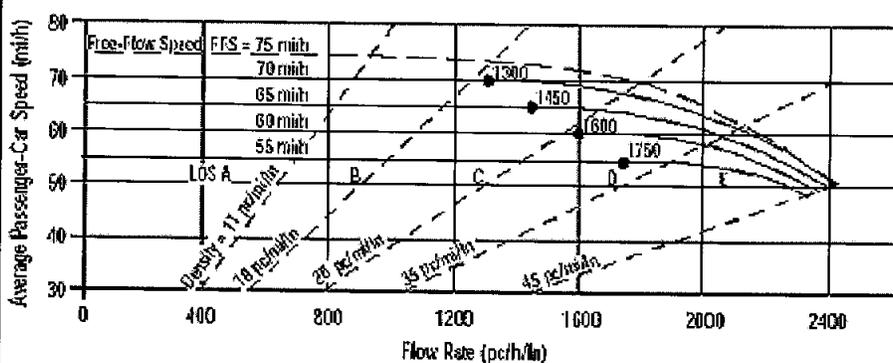
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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Application	Input
Operational (LOS)	FFS, N, v _p
Design (N)	FFS, LOS, v _p
Design (v _p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v _p)	FFS, LOS, N

General Information		Site Information	
Analyst	MKIM	Highway/Direction of Travel	NB SR-55
Agency or Company	Caltrans	From/To	WB DYER ON / EI
Date Performed	05/17/2005	Jurisdiction	
Analysis Time Period	PM	Analysis Year	2030

Project Description **EXISTING CONDITION**

Oper.(LOS) Des.(N) Planning Dat

Flow Inputs			
Volume, V	10393 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P _T	6
Peak-Hr Prop. of AADT, K		%RVs, P _R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments			
f _p	1.00	E _R	1.2
E _T	1.5	f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)]	0.971

Speed Inputs			Calc Speed Adj and FFS	
Lane Width	12.0	ft	f _{LW}	
Rt-Shoulder Lat. Clearance	6.0	ft	f _{LC}	
Interchange Density	0.50	I/mi	f _{ID}	
Number of Lanes, N	4		f _N	
FFS (measured)	65.0	mi/h	FFS	65.0
Base free-flow Speed, BFFS		mi/h		

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)	2974	pc/h/ln	Design LOS	
S		mi/h	v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)	
D = v _p / S		pc/mi/ln	S	
LOS	F		D = v _p / S	
			Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E _R - Exhibits23-8, 23-10	f _{LW} - Ex

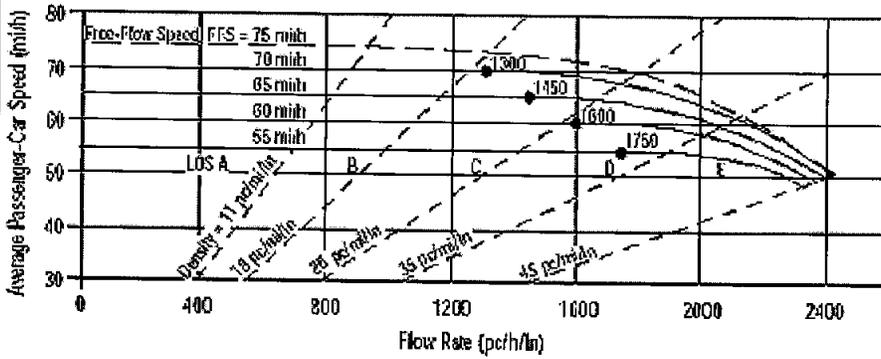
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exh
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	MKIM	Highway/Direction of Travel	NB SR-55
Agency or Company	Caltrans	From/To	EB DYER ON / WB
Date Performed	05/17/2005	Jurisdiction	
Analysis Time Period	AM	Analysis Year	2030

Project Description **EXISTING CONDITION**

Oper.(LOS) Des.(N) Planning Dat

Flow Inputs			
Volume, V	9769 veh/h	Peak-Hour Factor, PHF	0.90
AAADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AAADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AAADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs		Calc Speed Adj and FFS	
Lane Width	12.0 ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0 ft	f_{LC}	
Interchange Density	0.50 1/mi	f_{ID}	
Number of Lanes, N	4	f_N	
FFS (measured)	65.0 mi/h	FFS	65.0
Base free-flow Speed, BFFS	mi/h		

LOS and Performance Measures	Design (N)
Operational (LOS)	Design (N)
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	Design LOS
2795 pc/h/ln	$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$
S mi/h	S
$D = v_p / S$	$D = v_p / S$
LOS F	Required Number of Lanes, N

Glossary	Factor Location
N - Number of lanes S - Speed	E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

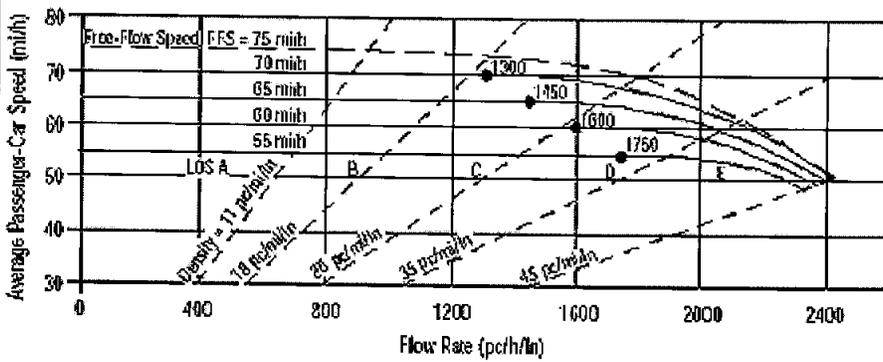
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	MKIM	Highway/Direction of Travel	NB SR-55
Agency or Company	Caltrans	From/To	EB DYER ON / WI
Date Performed	05/17/2005	Jurisdiction	
Analysis Time Period	PM	Analysis Year	2030
Project Description EXISTING CONDITION			

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Flow Inputs			
Volume, V	8881 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs		Calc Speed Adj and FFS	
Lane Width	12.0 ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0 ft	f_{LC}	
Interchange Density	0.50 l/mi	f_{ID}	
Number of Lanes, N	4	f_N	
FFS (measured)	65.0 mi/h	FFS	65.0
Base free-flow Speed, BFFS	mi/h		

LOS and Performance Measures		Design (N)	
Operational (LOS)		Design (N)	
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	2541 pc/h/ln	Design LOS	
S	mi/h	$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
$D = v_p / S$	pc/mi/ln	S	
LOS	F	$D = v_p / S$	
		Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 23-8, 23-10	f_{LW} - Ex

V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

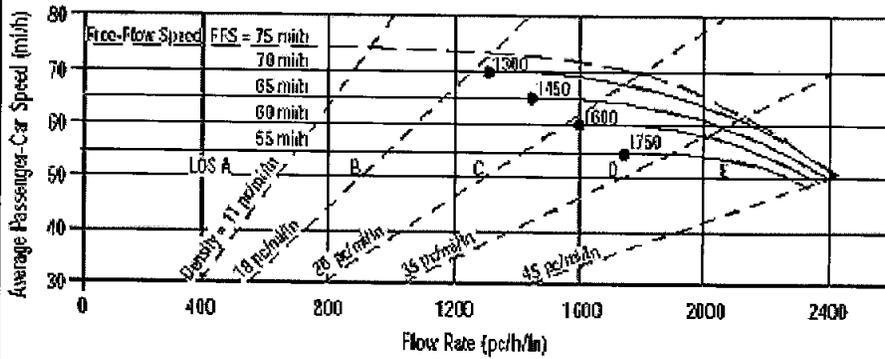
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**ALTERNATIVE #1
FOR 2030**

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	MKIM	Highway/Direction of Travel	NB SR-55
Agency or Company	Caltrans	From/To	EB DYER ON / WE
Date Performed	05/17/2005	Jurisdiction	
Analysis Time Period	AM	Analysis Year	2030
Project Description ALTERNATIVE 1			

Oper.(LOS)
 Des.(N)
 Planning Dat

Flow Inputs			
Volume, V	9769 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs		Calc Speed Adj and FFS	
Lane Width	12.0 ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0 ft	f_{LC}	
Interchange Density	0.50 I/mi	f_{ID}	
Number of Lanes, N	4	f_N	
FFS (measured)	65.0 mi/h	FFS	65.0
Base free-flow Speed, BFFS	mi/h		

LOS and Performance Measures	Design (N)
Operational (LOS)	Design (N)
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	Design LOS
2795 pc/h/ln	$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$
S mi/h	S
$D = v_p / S$	$D = v_p / S$
LOS F	Required Number of Lanes, N

Glossary	Factor Location
N - Number of lanes	E_R - Exhibits 23-8, 23-10
S - Speed	f_{LW} - Ex

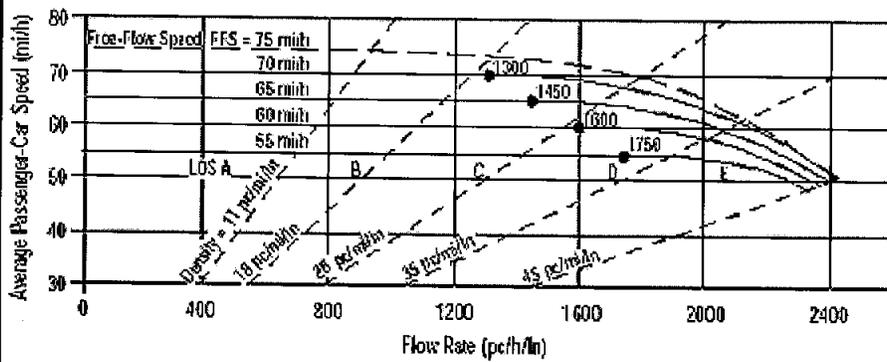
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information

Analyst: MKIM
 Agency or Company: Caltrans
 Date Performed: 05/17/2005
 Analysis Time Period: PM

Site Information

Highway/Direction of Travel: NB SR-55
 From/To: EB DYER ON / WE
 Jurisdiction:
 Analysis Year: 2030

Project Description: ALTERNATIVE 1

Oper.(LOS)

Des.(N)

Planning Dat

Flow Inputs

Volume, V	8881 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade %	Length mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	1/mi
Number of Lanes, N	4	
FFS (measured)	65.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}	
f_{LC}	
f_{ID}	
f_N	
FFS	65.0

LOS and Performance Measures

Operational (LOS)	
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	2541 pc/h/ln
S	mi/h
$D = v_p / S$	pc/mi/ln
LOS	F

Design (N)

Design (N)	
Design LOS	
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
S	
$D = v_p / S$	
Required Number of Lanes, N	

Glossary

N - Number of lanes S - Speed

Factor Location

E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

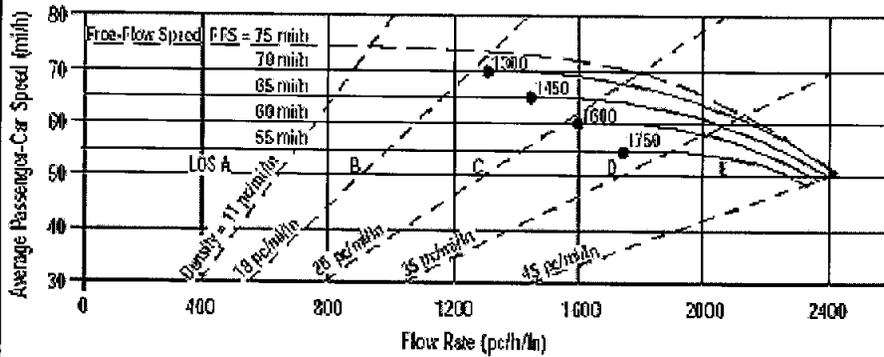
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exh
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	MKIM	Highway/Direction of Travel	NB SR-55
Agency or Company	Caltrans	From/To	WB DYER ON / EI
Date Performed	05/17/2005	Jurisdiction	
Analysis Time Period	AM	Analysis Year	2030

Project Description ALTERNATIVE 1

Oper.(LOS) Des.(N) Planning Dat

Flow Inputs			
Volume, V	10268 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs		Calc Speed Adj and FFS	
Lane Width	12.0 ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0 ft	f_{LC}	
Interchange Density	0.50 1/mi	f_{ID}	
Number of Lanes, N	5	f_N	
FFS (measured)	65.0 mi/h	FFS	65.0
Base free-flow Speed, BFFS	mi/h		

LOS and Performance Measures		Design (N)	
Operational (LOS)		Design (N)	
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	2350 pc/h/ln	Design LOS	$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$
S	52.2 mi/h	S	S
$D = v_p / S$	45.0 pc/mi/ln	$D = v_p / S$	
LOS	E	Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 23-8, 23-10	f_{LW} - Ex

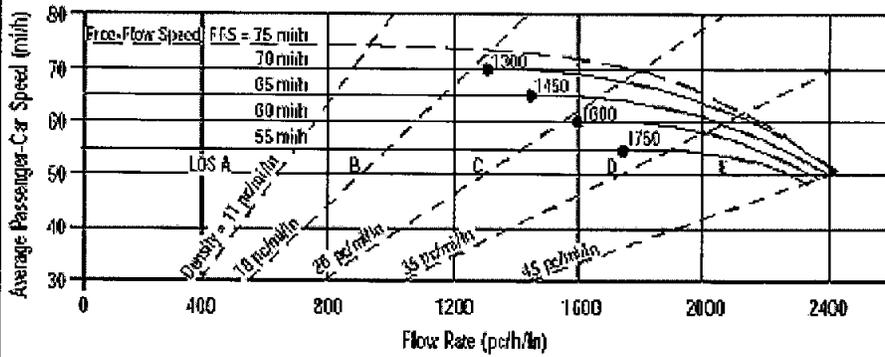
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Ext
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	MKIM	Highway/Direction of Travel	NB SR-55
Agency or Company	Caltrans	From/To	WB DYER ON / EI
Date Performed	05/17/2005	Jurisdiction	
Analysis Time Period	PM	Analysis Year	2030

Project Description ALTERNATIVE 1

Oper. (LOS) Des. (N) Planning Dat

Flow Inputs			
Volume, V	10393 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade %	Length mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs		Calc Speed Adj and FFS	
Lane Width	12.0 ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0 ft	f_{LC}	
Interchange Density	0.50 1/mi	f_{ID}	
Number of Lanes, N	5	f_N	
FFS (measured)	65.0 mi/h	FFS	65.0
Base free-flow Speed, BFFS	mi/h		

LOS and Performance Measures	Design (N)
Operational (LOS)	Design (N)
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	Design LOS
3739 pc/h/ln	$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$
S mi/h	S
$D = v_p / S$	$D = v_p / S$
LOS F	Required Number of Lanes, N

Glossary	Factor Location
N - Number of lanes S - Speed	E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

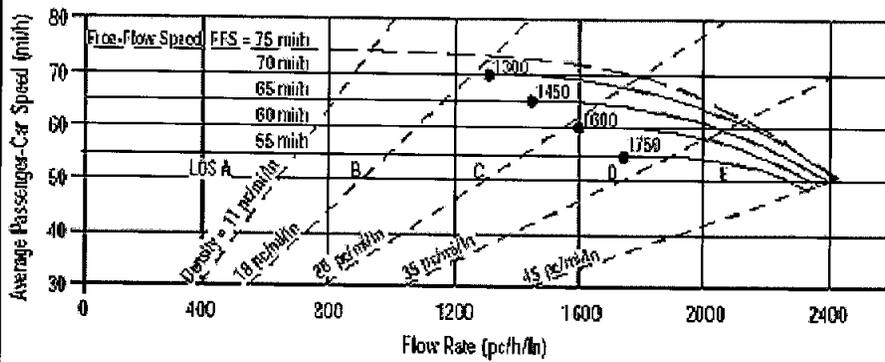
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**ALTERNATIVE #2
FOR 2030**

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	MKIM	Highway/Direction of Travel	NB SR-55
Agency or Company	Caltrans	From/To	EB DYER ON / WE
Date Performed	05/17/2005	Jurisdiction	
Analysis Time Period	AM	Analysis Year	2030

Project Description ALTERNATIVE 2

Oper.(LOS) Des.(N) Planning Dat

Flow Inputs			
Volume, V	9769 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs		Calc Speed Adj and FFS	
Lane Width	12.0 ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0 ft	f_{LC}	
Interchange Density	0.50 I/mi	f_{ID}	
Number of Lanes, N	5	f_N	
FFS (measured)	65.0 mi/h	FFS	65.0
Base free-flow Speed, BFFS	mi/h		

LOS and Performance Measures		Design (N)	
Operational (LOS)		Design (N)	
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	2236 pc/h/ln	Design LOS	
S	56.0 mi/h	$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
$D = v_p / S$	39.9 pc/mi/ln	S	
LOS	E	$D = v_p / S$	
		Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 23-8, 23-10	f_{LW} - Ex

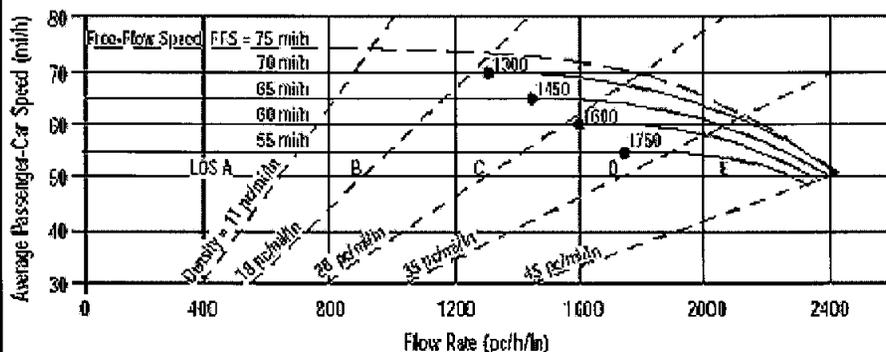
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Extr
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information

Analyst: MKIM
 Agency or Company: Caltrans
 Date Performed: 05/17/2005
 Analysis Time Period: PM

Site Information

Highway/Direction of Travel: NB SR-55
 From/To: EB DYER ON / WE
 Jurisdiction:
 Analysis Year: 2030

Project Description: ALTERNATIVE 2

Oper. (LOS) Des. (N) Planning Dat

Flow Inputs

Volume, V	8881 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	1/mi
Number of Lanes, N	5	
FFS (measured)	65.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}	
f_{LC}	
f_{ID}	
f_N	
FFS	65.0

LOS and Performance Measures

Operational (LOS)
 $v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$ 2033 pc/h/ln
 S 60.9 mi/h
 $D = v_p / S$ 33.4 pc/mi/ln
 LOS D

Design (N)

Design (N)
 Design LOS
 $v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$
 S
 $D = v_p / S$
 Required Number of Lanes, N

Glossary

N - Number of lanes S - Speed

Factor Location

E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

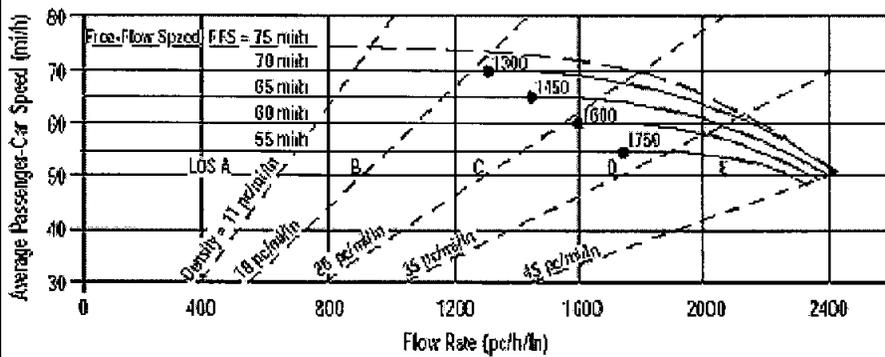
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	MKIM	Highway/Direction of Travel	NB SR-55
Agency or Company	Caltrans	From/To	WB DYER ON / EI
Date Performed	05/17/2005	Jurisdiction	
Analysis Time Period	AM	Analysis Year	2030

Project Description ALTERNATIVE 2

Oper. (LOS) Des. (N) Planning Dat

Flow Inputs			
Volume, V	10268 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	% Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		% RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs		Calc Speed Adj and FFS	
Lane Width	12.0 ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0 ft	f_{LC}	
Interchange Density	0.50 /mi	f_{ID}	
Number of Lanes, N	5	f_N	
FFS (measured)	65.0 mi/h	FFS	65.0
Base free-flow Speed, BFFS	mi/h		

LOS and Performance Measures		Design (N)	
Operational (LOS)		Design (N)	
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	2350 pc/h/ln	Design LOS	
S	52.2 mi/h	$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
$D = v_p / S$	45.0 pc/mi/ln	S	
LOS	E	$D = v_p / S$	
		Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 23-8, 23-10	f_{LW} - Ex

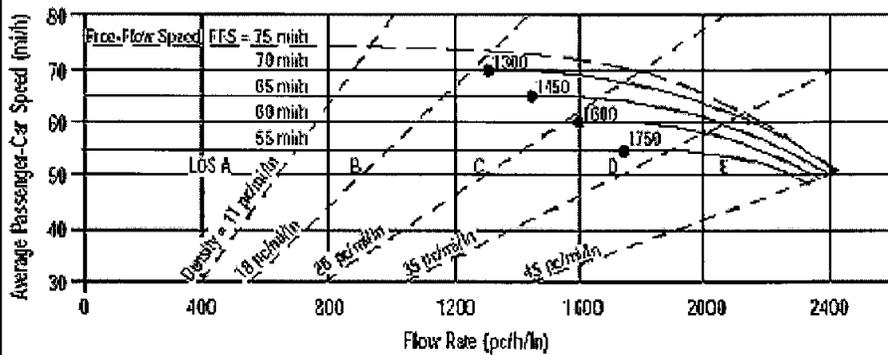
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	MKIM	Highway/Direction of Travel	NB SR-55
Agency or Company	Caltrans	From/To	WB DYER ON / EI
Date Performed	05/17/2005	Jurisdiction	
Analysis Time Period	PM	Analysis Year	2030

Project Description ALTERNATIVE 2

Oper. (LOS) Des. (N) Planning Dat

Flow Inputs			
Volume, V	10393 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	% Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		% RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade %	Length mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs		Calc Speed Adj and FFS	
Lane Width	12.0 ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0 ft	f_{LC}	
Interchange Density	0.50 1/mi	f_{ID}	
Number of Lanes, N	5	f_N	
FFS (measured)	65.0 mi/h	FFS	65.0
Base free-flow Speed, BFFS	mi/h		

LOS and Performance Measures	Design (N)
Operational (LOS)	Design (N)
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	Design LOS
$v_p = 2379$ pc/h/ln	$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$
S mi/h	f_p
$D = v_p / S$ pc/mi/ln	S
LOS F	$D = v_p / S$
	Required Number of Lanes, N

Glossary	Factor Location
N - Number of lanes S - Speed	E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

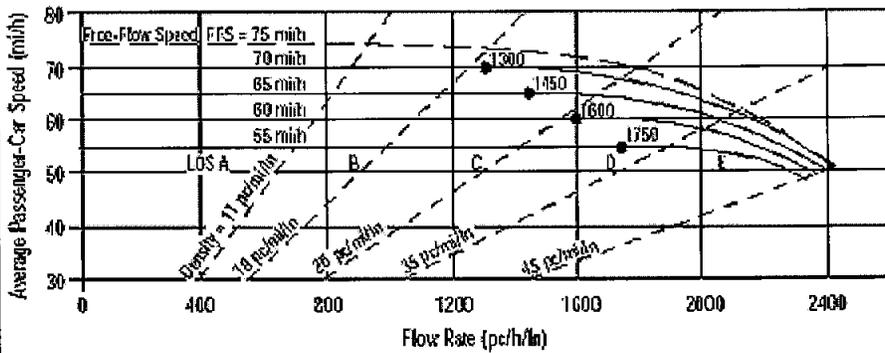
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**ALTERNATIVE 1A
FOR 2030**

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	MKIM	Highway/Direction of Travel	NB SR-55
Agency or Company	Caltrans	From/To	EB DYER ON / WI
Date Performed	05/17/2005	Jurisdiction	
Analysis Time Period	AM	Analysis Year	2030

Project Description ALTERNATIVE 3

Oper.(LOS) Des.(N) Planning Dat

Flow Inputs			
Volume, V	9769 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs		Calc Speed Adj and FFS	
Lane Width	12.0 ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0 ft	f_{LC}	
Interchange Density	0.50 I/mi	f_{ID}	
Number of Lanes, N	4	f_N	
FFS (measured)	65.0 mi/h	FFS	65.0
Base free-flow Speed, BFFS	mi/h		

LOS and Performance Measures	Design (N)
Operational (LOS)	Design (N)
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	Design LOS
2795 pc/h/ln	$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$
S mi/h	S
$D = v_p / S$	$D = v_p / S$
LOS F	Required Number of Lanes, N

Glossary	Factor Location
N - Number of lanes S - Speed	E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

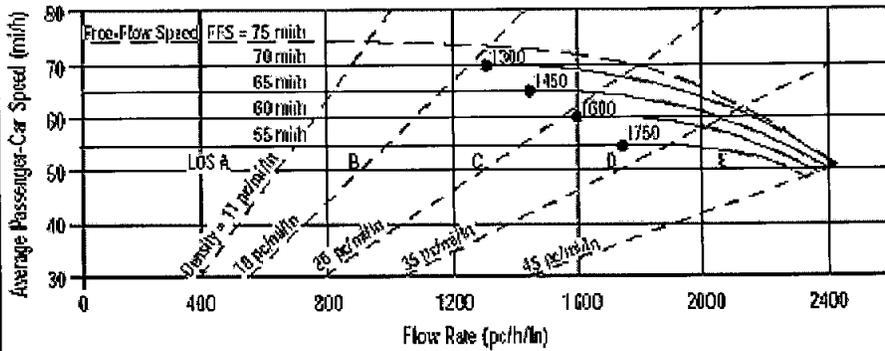
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exh
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (ff)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information

Analyst: MKIM
 Agency or Company: Caltrans
 Date Performed: 05/17/2005
 Analysis Time Period: PM

Site Information

Highway/Direction of Travel: NB SR-55
 From/To: EB DYER ON / WE
 Jurisdiction:
 Analysis Year: 2030

Project Description: ALTERNATIVE 3

Oper. (LOS)

Des. (N)

Planning Dat

Flow Inputs

Volume, V	8881 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	% Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		% RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	l/mi
Number of Lanes, N	4	
FFS (measured)	65.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}	
f_{LC}	
f_{ID}	
f_N	
FFS	65.0

LOS and Performance Measures

Operational (LOS)

$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	2541	pc/h/ln
S		mi/h
$D = v_p / S$		pc/mi/ln
LOS	F	

Design (N)

Design (N)

Design LOS

$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
S	
$D = v_p / S$	
Required Number of Lanes, N	

Glossary

N - Number of lanes S - Speed

Factor Location

E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

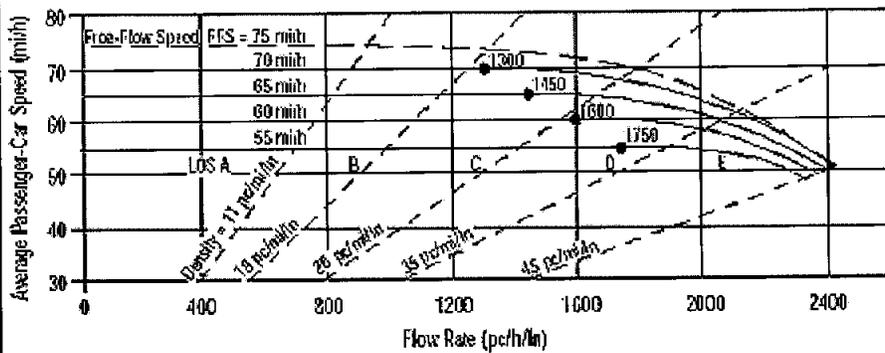
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exl
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v _p
Design (N)	FFS, LOS, v _p
Design (v _p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v _p)	FFS, LOS, N

General Information

Analyst: MKIM
 Agency or Company: Caltrans
 Date Performed: 05/17/2005
 Analysis Time Period: AM
 Project Description: ALTERNATIVE 3

Site Information

Highway/Direction of Travel: NB SR-55
 From/To: WB DYER ON / EI
 Jurisdiction:
 Analysis Year: 2030

Oper. (LOS)

Des. (N)

Planning Dat

Flow Inputs

Volume, V	10268 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P _T	6
Peak-Hr Prop. of AADT, K		%RVs, P _R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade %	Length mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments

f _p	1.00	E _R	1.2
E _T	1.5	f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)]	0.971

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	1/mi
Number of Lanes, N	5	
FFS (measured)	65.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f _{LW}	
f _{LC}	
f _{ID}	
f _N	
FFS	65.0

LOS and Performance Measures

Operational (LOS)	
v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)	2350 pc/h/ln
S	52.2 mi/h
D = v _p / S	45.0 pc/mi/ln
LOS	E

Design (N)

Design (N)	
Design LOS	
v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)	
S	
D = v _p / S	
Required Number of Lanes, N	

Glossary

N - Number of lanes S - Speed

Factor Location

E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

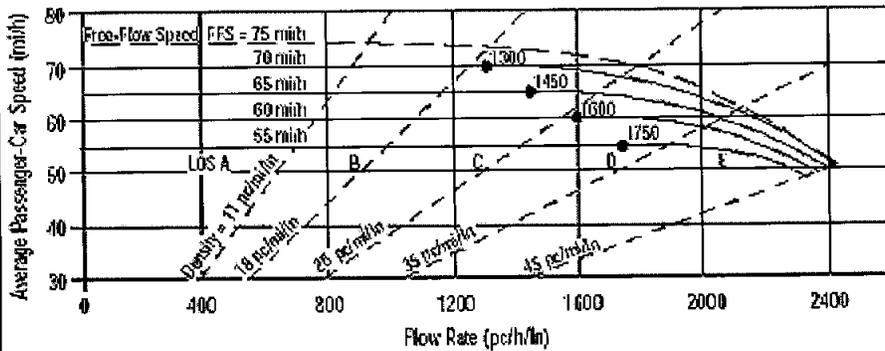
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Ext
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information

Analyst: MKIM
 Agency or Company: Caltrans
 Date Performed: 05/17/2005
 Analysis Time Period: PM

Site Information

Highway/Direction of Travel: NB SR-55
 From/To: WB DYER ON / EI
 Jurisdiction:
 Analysis Year: 2030

Project Description: ALTERNATIVE 3

Oper.(LOS)

Des.(N)

Planning Dat

Flow Inputs

Volume, V	10393 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	l/mi
Number of Lanes, N	5	
FFS (measured)	65.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}	
f_{LC}	
f_{ID}	
f_N	
FFS	65.0

LOS and Performance Measures

Operational (LOS)
 $v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$ 2379 pc/h/ln
 S mi/h
 $D = v_p / S$ pc/mi/ln
 LOS F

Design (N)

Design (N)
 Design LOS
 $v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$
 f_p
 S
 $D = v_p / S$
 Required Number of Lanes, N

Glossary

N - Number of lanes S - Speed

Factor Location

E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

V	- Hourly volume	D	- Density	E _T	- Exhibits 23-8, 23-10, 23-11	f _{LC}	- Ext
v _p	- Flow rate	FFS	- Free-flow speed	f _p	- Page 23-12	f _N	- Exh
LOS	- Level of service	BFFS	- Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3		f _{ID}	- Ext
DDHV	- Directional design hour volume						

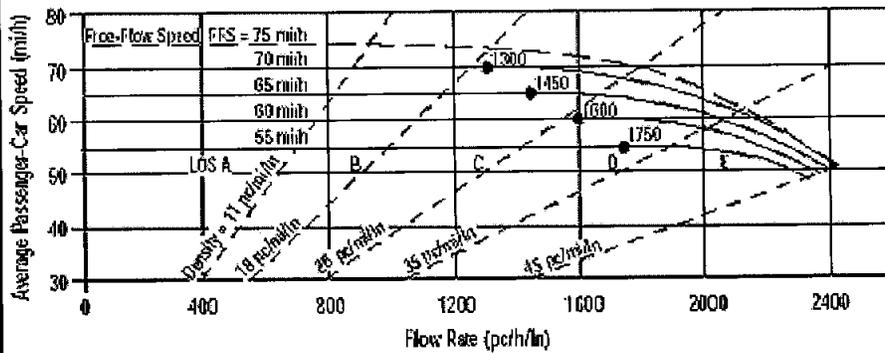
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**ALTERNATIVE 2A
FOR 2030**

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information

Analyst: MKIM
 Agency or Company: Caltrans
 Date Performed: 05/17/2005
 Analysis Time Period: AM

Site Information

Highway/Direction of Travel: NB SR-55
 From/To: EB DYER ON / WE
 Jurisdiction:
 Analysis Year: 2030

Project Description: ALTERNATIVE 4

Oper. (LOS)

Des. (N)

Planning Dat

Flow Inputs

Volume, V	9769 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	% Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		% RVs, P_R	0
Peak-Hr Direction Prop., D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T-1) + P_R(E_R-1)]$	0.971

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	1/mi
Number of Lanes, N	5	
FFS (measured)	65.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}	
f_{LC}	
f_{ID}	
f_N	
FFS	65.0

LOS and Performance Measures

Operational (LOS)		
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	2236	pc/h/ln
S	56.0	mi/h
$D = v_p / S$	39.9	pc/mi/ln
LOS	E	

Design (N)

Design (N)		
Design LOS		
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$		
S		
$D = v_p / S$		
Required Number of Lanes, N		

Glossary

N - Number of lanes S - Speed

Factor Location

E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

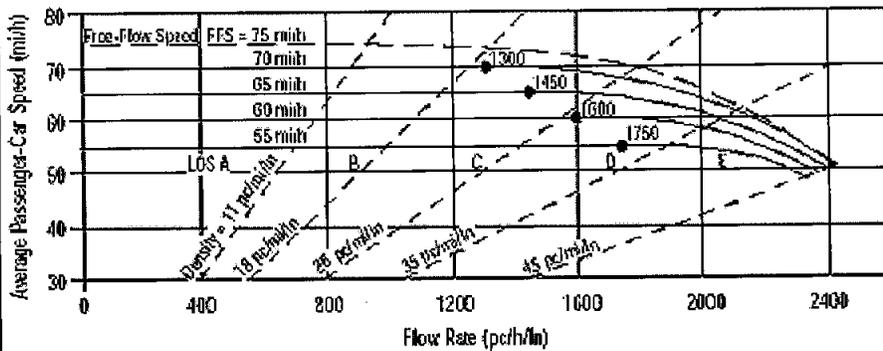
V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Ext
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information

Analyst: MKIM
 Agency or Company: Caltrans
 Date Performed: 05/17/2005
 Analysis Time Period: PM

Site Information

Highway/Direction of Travel: NB SR-55
 From/To: EB DYER ON / WE
 Jurisdiction:
 Analysis Year: 2030

Project Description: ALTERNATIVE 4

Oper. (LOS)

Des. (N)

Planning Dat

Flow Inputs

Volume, V	8881 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	% Trucks and Buses, P_T	6
Peak-Hr Prop. of AADT, K		% RVs, P_R	0
Peak-Hr Direction Prop., D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade %	Length mi
Driver type adjustment	1.00	Up/Down %	

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1 / [1 + P_T(E_T - 1) + P_R(E_R - 1)]$	0.971

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	l/mi
Number of Lanes, N	5	
FFS (measured)	65.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}	
f_{LC}	
f_{ID}	
f_N	
FFS	65.0

LOS and Performance Measures

Operational (LOS)	
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	2033 pc/h/ln
S	60.9 mi/h
$D = v_p / S$	33.4 pc/mi/ln
LOS	D

Design (N)

Design (N)	
Design LOS	
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	
f_p	
S	
$D = v_p / S$	
Required Number of Lanes, N	

Glossary

N - Number of lanes S - Speed

Factor Location

E_R - Exhibits 23-8, 23-10 f_{LW} - Ex

V - Hourly volume	D - Density	E _T - Exhibits 23-8, 23-10, 23-11	f _{LC} - Exh
v _p - Flow rate	FFS - Free-flow speed	f _p - Page 23-12	f _N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v _p - Exhibits 23-2, 23-3	f _{ID} - Exh
DDHV - Directional design hour volume			

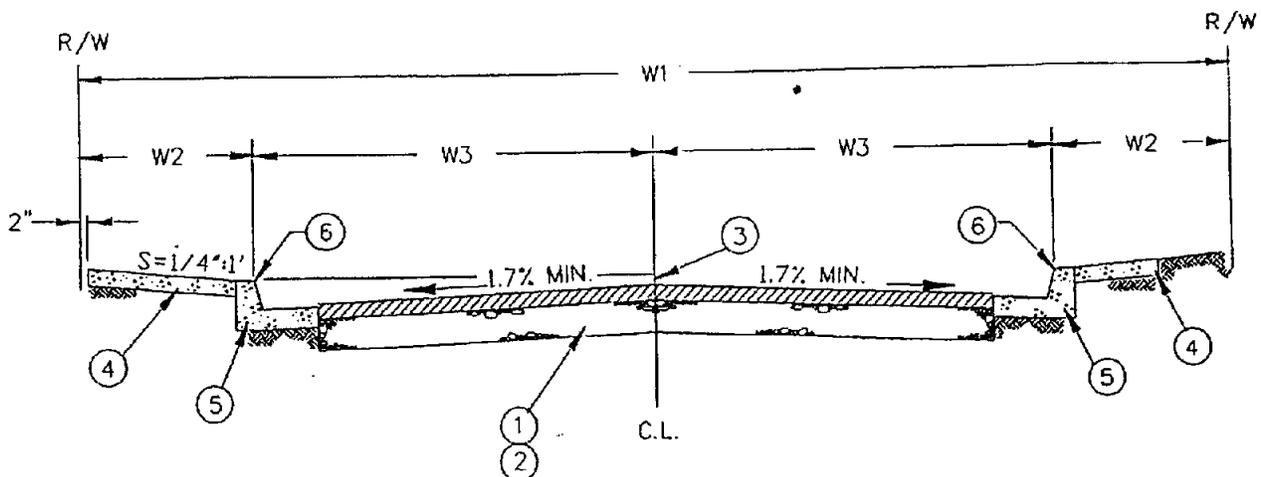
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ATTACHMENT 3

City Of Santa Ana Standard Plans



STREET TYPE	W1	W2	W3
LOCAL STREET	60'	12'	18'
LOCAL STREET	56'	10'	18'
LOCAL COLLECTOR STREET	60'	10'	20'
LOCAL COLLECTOR STREET	56'	8'	20'

- ① THICKNESS OF STRUCTURAL SECTION SHALL BE BASED ON TRAFFIC INDEX AND SOIL "R" VALUE DETERMINATIONS, BUT IN NO CASE SHALL BE LESS THAN 3" OF ASPHALT CONCRETE OVER 6" OF AGGREGATE BASE, OR 6" THICK CLASS 560-A-3250 PCC.
- ② A FULL DEPTH ASPHALT CONCRETE PAVEMENT DESIGN IN LIEU OF AGGREGATE BASE MAY BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL.
- ③ WHERE TRANSVERSE ROADWAY SLOPE IS USED, THE CROWN HEIGHT SHALL BE NOT LESS THAN 0.40' ABOVE THE GUTTER FLOW LINE ON THE HIGH SIDE.
- ④ SEE STD. PLAN NO. 1104 FOR SIDEWALK DETAIL.
- ⑤ SEE STD. PLAN NO. 1101 FOR CURB AND GUTTER DETAIL.
- ⑥ MAXIMUM STREET GRADE BREAK SHALL BE 0.5%, OTHERWISE VERTICAL CURVE SHALL BE USED.

REPLACES STD. PLAN NUMBER 102.

APPROVED:

DATE: 8-10-88

George Alvarez
CITY ENGINEER

• CITY OF SANTA ANA •

PUBLIC WORKS AGENCY



DATE

REVISION

DATE	REVISION

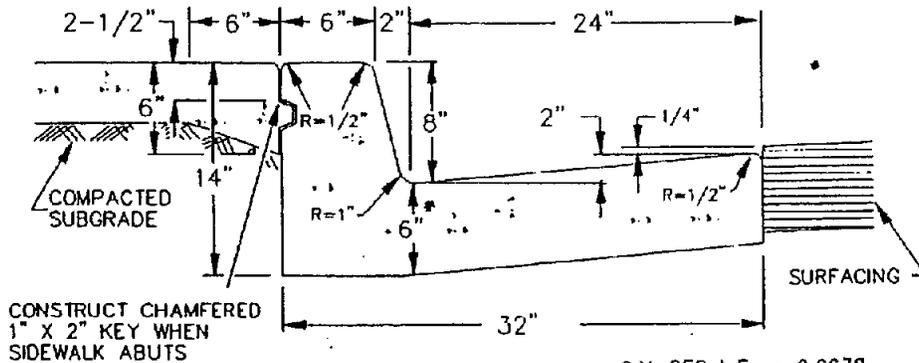
TYPICAL SECTION
LOCAL STREETS

STD. PLAN
NUMBER

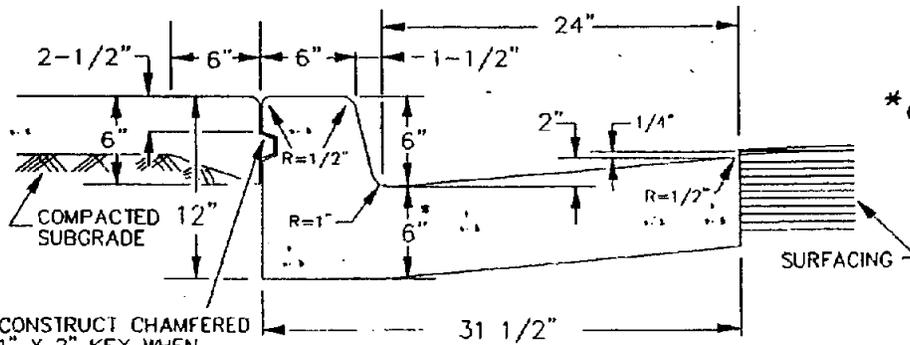
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NOTES:

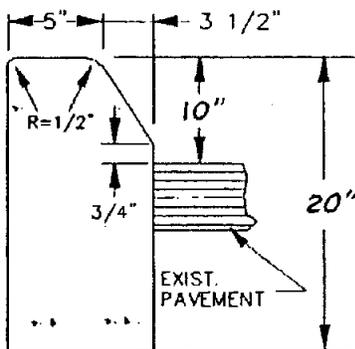
1. WEAKENED PLANE JOINTS SHALL BE PLACED AT 20' INTERVALS AND EXPANSION JOINTS SHALL BE PLACED AT ALL CURB RETURNS.
2. B-3 CURB SHALL BE DOWELED AND BONDED TO EXISTING PAVEMENT SURFACE WITH APPROVED EPOXY ADHESIVE.
3. TYPE A-2-6 TO BE USED ONLY ON INTERIOR STREETS OF TRACTS WHEN APPROVED BY CITY ENGINEER.
4. WHEN TYPE B-1 OR B-3 IS USED FOR PLANTER CURB, BACK OF CURB SHALL BE FINISHED TO 6" BELOW TOP OF CURB.
5. SAW CUT, REMOVE, AND REPLACE MINIMUM 1.0' A.C. PAVEMENT WHEN REPLACING CURB AND GUTTER.
- * 6. CONSTRUCT 12" THICK GUTTER PLATE WHEN CURB IS TO BE INSTALLED IN BUS STOP LIMITS.



A-2-8 C.Y. PER L.F. = 0.0638
L.F. PER C.Y. = 15.7

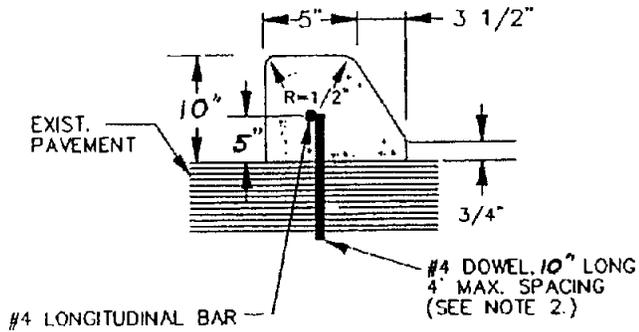


A-2-6 C.Y. PER L.F. = 0.0597
L.F. PER C.Y. = 16.7



B-1

C.Y. PER L.F. = 0.0395
L.F. PER C.Y. = 25.3



B-3

C.Y. PER L.F. = 0.0177
L.F. PER C.Y. = 56.56

REPLACES STD. PLAN NUMBER 101.

APPROVED: DATE: 12-22-88

George Alway
CITY ENGINEER

○ CITY OF SANTA ANA ○
PUBLIC WORKS AGENCY



DATE	REVISION
B-23-91 SA	ADD NOTE *6
10/21/96 LJA	CHANGE B-183 TO 10" C.F.

CONCRETE CURB AND GUTTER

STD. PLAN NUMBER
1101