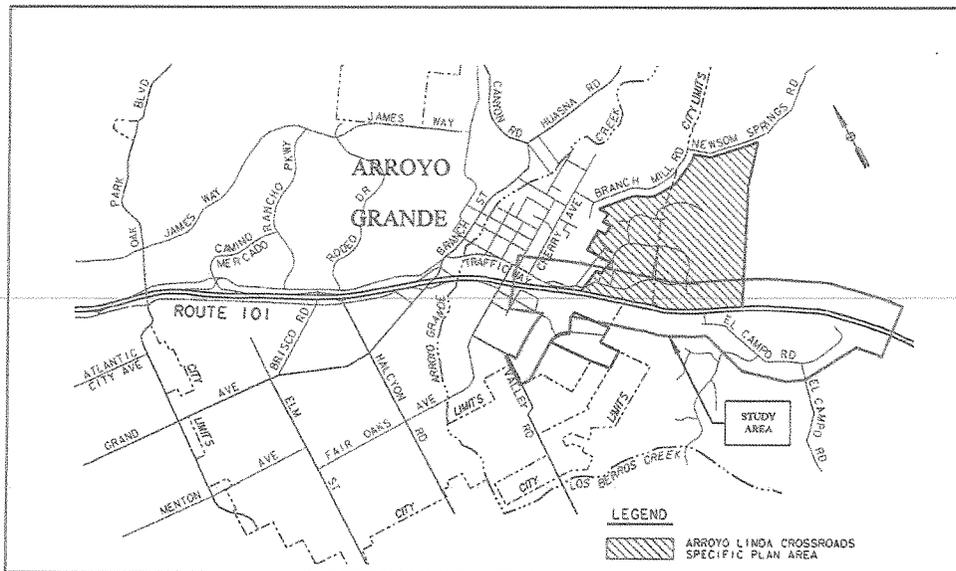


PROJECT STUDY REPORT (Project Development Support)

This document can be used to program only the Engineering and Environmental Support for Project Approval and Environmental Document component. The remaining support and capital components of the project are preliminary estimates and are not suitable for programming purposes. Either a Supplement PSR or a Project Report will serve as the programming document for the remaining support and capital components of the project.



New Interchange on U.S. Hwy 101 in the Vicinity of El Campo Road Between Deutz Road and Grand Avenue

APPROVAL RECOMMENDED BY:

Thomas E. Houston

THOMAS E. HOUSTON, Project Manager

APPROVED BY:

R. Gregg Albright
R. GREGG ALBRIGHT, District 5 Director

9/5/03

Date

CONCURRED BY:

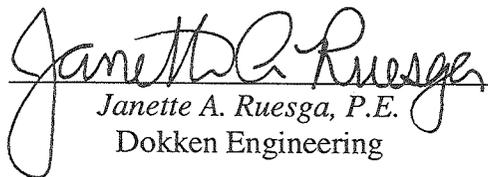
Joseph M. Leonardo
JOSEPH M. LEONARDO,
District 6 Director – Central Region

PROJECT STUDY REPORT / PROJECT DEVELOPMENT SUPPORT

NEW INTERCHANGE

ON US-101 IN THE VICINITY OF EL CAMPO ROAD IN THE CITY OF ARROYO GRANDE IN SAN LUIS OBISPO COUNTY

This Project Study Report/Project Development Support was 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.


Janette A. Ruesga, P.E.
Dokken Engineering

9/1/03
DATE



**PROJECT STUDY REPORT /
PROJECT DEVELOPMENT SUPPORT**

FOR

**NEW INTERCHANGE ON US-101
IN THE VICINITY OF EL CAMPO ROAD
IN THE CITY OF ARROYO GRANDE
IN SAN LUIS OBISPO COUNTY**

Prepared for:
**THE CITY OF ARROYO GRANDE
208 E. Branch Street
Arroyo Grande, CA 93421**



11171 Sun Center Drive, Suite 250
Rancho Cordova, CA 95670

February 2003

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PROJECT STUDY REPORT / PROJECT DEVELOPMENT SUPPORT

1. INTRODUCTION

This Project Study Report/Project Development Support (PSR (PDS)) addresses the construction of a new interchange to replace the existing at-grade intersection of El Campo Road and US-101 in the City of Arroyo Grande in San Luis Obispo County (See Attachment A, Vicinity Map).

This PSR (PDS) presents six alternatives, including five alternatives that have been studied in depth, and the no-build alternative. The estimated cost ranges are \$ 18.3 - \$ 22.0 Million for Alternative 1, \$ 26.6 - \$ 31.9 Million for Alternative 2, \$ 38.6- \$ 46.3 Million for Alternative 3, \$ 53.1 - \$ 63.8 Million for Alternative 4 and \$ 27.8 - \$ 33.3 Million for Alternative 5. These cost estimates include project development, environmental documentation, design, right-of-way engineering and acquisition, construction and construction management. The Project Approval and Environmental Document (PA&ED) phase of project development is expected to begin in early 2004 and be completed in 2005. The PA/ED phase is budgeted to cost \$1,800,000 with funding anticipated to come from the City of Arroyo Grande.

Funding for design and construction of the proposed project will be identified in the Project Report stage of the project development process. The PSR (PDS) will provide the opportunity for the City to submit the project to the Regional Transportation Planning Agency (San Luis Obispo Council of Governments) for consideration as a candidate for regional transportation improvement funding. The percentage of funding from various sources will be identified as part of the Project Report development for this project. The project is a Category 3 project, which will be funded from a combination of City funds and STIP 20.10.075.600 Regional Improvement Program funds.

2. BACKGROUND

The City of Arroyo Grande initiated this project for the following main reasons:

- To provide access to US-101 for the proposed Arroyo Linda Crossroads development
- To improve capacity, safety, and traffic operations at the El Campo Road/US-101 at-grade intersection

US-101 – Between KP 13.75 (PM 8.54) to KP 19.62 (PM 12.1) US-101 is a four-lane expressway. It is a four-lane freeway to the north and south of this area. This portion of US-101 is a four-lane expressway with 3.6-meter (12-foot) lanes, 2.4-meter (8-foot) right shoulders, and a median width of 12.2 meters (40 feet). The original two-lane roadway was built in 1933 and was replaced with a four-lane facility in 1954. The functional classification of this segment of US-101 is a Principal Arterial and is included in the National Highway System. Additionally, US-101 is a Focus Route on the Interregional Road System, a SHELL (State Highway Extra Legal Load) route and an oversize truck route. Commute traffic is the primary use through this portion of US-101, but a large percentage of travel through the study area is interregional.

The existing El Campo Road/US-101 at-grade intersection has recently been improved by adding acceleration lanes for vehicles entering US-101 from El Campo Road and deceleration lanes for vehicles exiting US-101 at El Campo Road. However, the intersection frequently experiences congestion and vehicles performing critical movements experience significant delays. As shown in the Traffic Report (Attachment I) future traffic demands are expected to increase along US-101 and the development of future land uses within the City of Arroyo Grande and San Luis Obispo County will continue to impact operations during periods of peak travel demand.

Proposed development in the project area includes the Arroyo Linda Crossroads development for which the Specific Plan is currently being considered for approval by the City of Arroyo Grande. The development is located on the southeastern side of the City of Arroyo Grande. Approximately 107 acres of the Specific Plan area is within existing City limits. An additional 185 acres is outside the City limits, but within the City's sphere of influence. The Specific Plan recommends annexation of the 185 acres outside the City boundaries. The specific plan area boundary is shown on the Vicinity Map in Attachment A. The proposed development is to be constructed in two phases, with phase two of the development requiring a new interchange at El Campo Road and US-101 to accommodate projected traffic volumes for the development and cumulative growth in the surrounding area. Based on a December 21, 1999 letter from RRM Design Group, representing the Arroyo Linda Planning Team, the Arroyo Linda Crossroads project will contribute funds to the proposed interchange. Funding for the proposed project will be developed in the Project Report.

Traffic Way – This facility currently extends between Grand Avenue, East Branch Street and US-101. Traffic Way in the vicinity of Fair Oaks Avenue is striped for two travel lanes in each direction, with on-street parking. Located immediately south of the existing Traffic Way/Traffic Way Extension intersection is a single lane northbound off-ramp and a single lane southbound on-ramp to US-101. Currently the Traffic Way southbound on-ramp passes underneath the northbound US-101 travel lanes, with the on-ramp traffic entering the US-101 southbound travel lanes on the left. The Fair Oaks Avenue/Traffic Way intersection is currently controlled with all-way stop signs. Both the northbound and southbound approaches at this intersection are striped for an optional left-through lane and an optional through-right lane. The Traffic Way/Traffic Way Extension intersection is stop sign controlled on the westbound approach, with the northbound off-ramp and southbound on-ramp providing access to US-101. The southbound approach at this intersection is striped for a left turn only lane and one through lane, while the northbound and westbound traffic is confined to a single approach lane.

El Campo Road – This facility is a rural two-lane County collector road extending between Fowler Lane and US-101. El Campo Road provides a circuitous route between US-101 and the unincorporated residential areas west of US-101. The eastbound approach of the existing "at-grade" El Campo Road/US-101 intersection is stop sign controlled, with a single approach lane. Recent improvements constructed at the existing US-101/El Campo Road intersection include the addition of an acceleration lane for the eastbound left-turn movement. The existing El Campo Road/Los Berros Road intersection is an offset "T" intersection.

Project Development Team Meetings and Public Workshops - Several Project Development Team (PDT) meetings have been held during the preparation of the PSR. The PDT has been involved in providing input for the development of the traffic forecasting and analysis as well as in developing and evaluating project alternatives. Public Informational Workshops to present preliminary studies and project alternatives have been held as part of the first four PDT meetings, with local citizens invited to attend those meetings. The following is a brief summary of the results of the PDT meetings:

Kick-off Meeting (November 10, 1998)

Representatives of City of Arroyo Grande, County of San Luis Obispo, San Luis Obispo Council of Governments, Caltrans and local citizens attended this meeting. The main purpose of the meeting was to present the project alternatives and discuss the scope and schedule for the PSR. Alternatives presented at the meeting included:

- 1) An Alternative to construct a new interchange at approximately the same location as the existing at-grade intersection (Alternative 1)
- 2) An Alternative to construct a new interchange approximately 500 meters south of the existing at-grade intersection (Alternative 2)
- 3) An Alternative to modify the existing Traffic Way / US-101 interchange by removing the existing ramps and constructing new "hook" ramps (northbound and southbound) immediately to the south.

These alternatives were selected as a result of a study entitled "El Campo Road / US-101 Interchange Alternatives Analysis" dated March 1998. Using input received from a project team consisting of public agencies (City of Arroyo Grande, San Luis Obispo County, San Luis Obispo Council of Governments, and Caltrans District 5) and a local citizens committee, six conceptual interchange alternatives were developed. A review of these alternatives by the project team resulted in selection of the above listed three alternatives for additional analysis in the Project Study Report.

Project Development Team Meeting (2/9/99 at City of Arroyo Grande City Council Chambers)

Representatives of City of Arroyo Grande, County of San Luis Obispo, San Luis Obispo Council of Governments, Caltrans and local citizens attended this meeting. The main purpose of the meeting was to discuss traffic forecasting and analysis and to provide a status update for the PSR development. Concerns were voiced by local citizens and the Arroyo Grande Traffic commission regarding local traffic circulation patterns. It was agreed at the meeting that if certain strategic locations were chosen for traffic counts, then local traffic circulation could be more accurately represented in the traffic model. The locations were the ones used for traffic counts.

Concerns were also voiced by local citizens regarding the need for the project. Consequently, a draft 'Need and Purpose Statement' was prepared for review by the PDT and local citizens.

Project Development Team Meeting (3/16/99 at City of Arroyo Grande City Council Chambers)

Representatives of City of Arroyo Grande, County of San Luis Obispo, San Luis Obispo Council of Governments, Caltrans and local citizens attended this meeting. The focus of the meeting was discussion of the draft 'Need & Purpose Statement' and results of the Traffic Counts and preliminary traffic projections. Written comments were received from PDT members and local citizens regarding the draft 'Need and Purpose Statement'. One of the major concerns voiced by local citizens at the meeting was the availability of funding for the project. Many felt that the Need and Purpose should show a greater need for the project so that it would be a higher priority for funding. It was agreed that the first draft of the Traffic Analysis Report would be completed and distributed to the PDT prior to the next meeting. It was agreed that comments received would be addressed and a revised "Need and purpose Statement" would be included in the Draft PSR.

Project Development Team Meeting (7/27/99 at City of Arroyo Grande City Council Chambers)

Representatives of City of Arroyo Grande, County of San Luis Obispo, San Luis Obispo Council of Governments, Caltrans and local citizens attended this meeting. The focus of the meeting was discussion of the first draft Traffic Analysis Report. The Draft Traffic Analysis Report had also been presented to the City Council and the City Planning Commission and Traffic Commission at their regularly scheduled meetings. Local development issues were discussed at length, and since significant comments had been received on the first draft, it was agreed that a second draft of the Traffic Analysis Report would be needed to ensure that comments received on the first draft were adequately addressed.

Project Development Team Meeting (11/29/01 at Caltrans Atoll Office)

Representatives of City of Arroyo Grande, County of San Luis Obispo, San Luis Obispo Council of Governments and Caltrans attended this meeting. The focus of the meeting was discussion of the addition of a fourth geometric alternative to the PSR, described briefly as follows:

An Alternative to construct a new interchange approximately 370 meters north of the existing at-grade intersection having "hook" ramps in the southbound direction and a diagonal off-ramp and a loop on-ramp in the northbound direction. The interchange would also include the extension of El Campo Road northerly to terminate at Valley Road near Fair Oaks Avenue and the closure of the US-101 northbound off- and southbound on-ramps at Traffic Way.

Other discussion included the need to convert this PSR to a PSR (PDS) to comply with the recently revised Caltrans project development requirements.

3. NEED & PURPOSE

The purpose and the need for this project is to provide for access to the proposed Arroyo Linda Crossroads development from US-101, to improve capacity, safety, and traffic operations at the El Campo Road/US-101 at-grade intersection, and to provide for regional circulation needs. In general, accessibility will improve for persons wanting access to US-101. Additionally, the project is to include provision for Express Bus Stops and Park and Ride lots where feasible.

The Project Development Team asserts that the need for the project is due to continued growth within the City of Arroyo Grande's sphere of influence and the surrounding communities and the need for US-101 access to the Arroyo Linda Crossroads development.

The City's General Plan was updated and adopted on October 9, 2001. At build-out of the City's General Plan, traffic demand volumes in the project area are projected to increase significantly. The South County model was recently updated for the City of Arroyo Grande General Plan update study. Traffic projections from the updated model indicate that traffic volumes on El Campo Road are projected to increase from the existing 1800-1900 ADT (year 1999) to 5300 ADT (year 2030) due to development in the surrounding area, other than the Arroyo Linda Crossroads development. The 2030 traffic volumes on El Campo Road with build-out of the Arroyo Linda Crossroads development in place is expected to increase to up to 15000 vehicles per day depending on which interchange alternative is in place.

With projected traffic volumes, El Campo Road intersection operations will continue to deteriorate. Operational improvements are needed to maintain acceptable LOS on US-101 in the study area and at the El Campo Road/US-101 intersection within the 20-year design period. To be consistent with future proposed 6-lane freeway, access at El Campo Road would have to be upgraded to an interchange. The El Campo Road/US-101 intersection currently operates at LOS F.

With the proposed development of Arroyo Linda Crossroads, there will be additional traffic demand from the east side of US-101 where limited points of access are currently provided. To achieve and maintain acceptable LOS at existing access points to US-101, it will be necessary to either upgrade those access points to meet increased demand or to add an access point that will take the demand load off existing access points.

Traffic accident data from Caltrans District 5 for the intersection indicates that the accident rate is slightly lower than the average rate for this type of facility. County accident data for El Campo road indicates that the accident rate on this facility is above average and requires additional study. Upgrading the intersection to an interchange is expected to improve safety by reducing accident rates.

Intersection/Ramp/US-101. Segment	Total Accidents	Actual Rates			Average Rates		
		F	F+I	Total	F	F+I	Total
US-101 / El Campo Road	10	0.000	0.05	0.18	0.011	0.17	0.34

4. ALTERNATIVES

Six alternatives are being studied, including five (5) build alternatives and the no-build alternative. All of the build alternatives replace the "at-grade" El Campo Road/US-101 intersection with complete interchanges and provide access to US-101 for the Arroyo Linda Crossroads development. Additionally, the alternatives have been designed to accommodate a six-lane configuration for US-101. Concurrence by the Project Development Coordinator for further study of the viable alternatives included in this PSR(PDS) does not constitute approval of any non-standard features identified currently or in the future. Separate documentation and approval(s) will be required as per Chapter 21 of the PDPM

The No Build and five proposed project build Alternatives are described in the following discussion.

No Build Alternative

The no-build alternative would leave the project in its existing condition, with no improvements to US-101 or US-101.

Alternative 1 (Attachment B)

Alternative 1 includes the construction of a new spread diamond interchange (which will allow for future loop on-ramps northbound and southbound) immediately adjacent to the existing at-grade intersection of El Campo Road and US-101. This Alternative requires the construction of a new US-101 overcrossing structure with ramps, realignment of El Campo Road for approximately 90-120 meters, and the construction of the Arroyo Linda project street system. The traffic modeling for this Alternative was evaluated with two variations, 1A and 1B. Option 1A leaves the southbound on-ramp at Traffic Way open, and Option 1B closes the southbound on-ramp at Traffic Way. Whereas this alternative does not include closing the southbound on-ramp from Traffic Way, a comparison of the traffic analyses indicates that traffic operations for this alternative would be greatly improved with the closure of this ramp.

The alternative may significantly impact the residence and property located just east of the present El Campo/Route 101 intersection, on the south side of Route 101. Relocation or removal may be required to achieve the necessary right of way through this area. Ranch property located on the north side of Route 101 will become part of the interchange right of way.

The interchange spacing between the nearest interchange to the north and the proposed interchange at El Campo Road is approximately 1.7 km (1.1 miles). The current standard for interchange spacing in an urban area is 1.5 km (0.9 miles). Therefore, this alternative will not require a design exception to Caltrans Highway Design Manual (HDM), Topic 501.3, mandatory standard for interchange spacing. This alternative will require exceptions to Mandatory Design Standards for the following condition:

- Non-standard superelevation rates at ramp termini (HDM 202.2)

This alternative will require exceptions to Advisory Design Standards for the following conditions:

- Non-standard side slope (HDM 304.1)
- Non-standard of super transition (HDM 202.5)
- Non-standard design speed on local facilities (HDM 101.1)

The following are the proposed ramp intersection configurations.

El Campo Road/US-101 Northbound Ramp Intersection:

Northbound (off-ramp) - 1 Optional Left-Through & 1 Free Flowing Right Turn Lane

Eastbound - 1 Left Turn Lane and 1 Through Lane

Westbound - 1 Through Lane and 1 Free-Flowing Right Turn Lane

El Campo Road/US-101 Southbound Ramp Intersection:

Southbound (off-ramp) - 1 Left Turn Lane and 1 Optional Left-Through-Right Turn Lane

Eastbound - 1 Optional Through-Right Turn Lane

Westbound - 1 Left Turn Lane and 1 Through Lane

Estimated construction and right-of-way acquisition cost for Alternative 1 is as follows:

Construction Cost:

Roadway:	\$ 9,826,400
Structures:	\$ 3,042,000
Subtotal:	\$ 12,868,400

<u>Right of Way Cost</u>	
Right-of-Way:	\$ 1,801,600
Subtotal:	\$ 1,801,600
<u>Engineering and Construction Administration</u>	
Engineering (PA&ED, PS&E) @ 13%	\$ 1,907,100
Construction Administration @ 12%	\$ 1,760,400
Subtotal:	\$ 3667,500
Total:	\$ 18,337,500

Alternative 2 (Attachment C)

Alternative 2 includes the construction of a new spread diamond interchange approximately 488 meters south of the existing at-grade intersection of El Campo Road and US-101. This Alternative requires the construction of a new US-101 overcrossing structure with ramps and a new frontage road connecting to the Arroyo Linda project street system on the east side of US-101. Additionally, El Campo Road would require extension between Brady Lane and the new interchange. Traffic modeling for this Alternative was evaluated with two variations, 2A and 2B. Option 2A leaves the southbound on-ramp at Traffic Way open, and Option 2B closes the southbound on-ramp at Traffic Way. Whereas this alternative does not include the closure of the southbound on-ramp from Traffic Way, a comparison of the traffic analyses indicates that traffic operations for this alternative would be greatly improved by closing this ramp.

Construction of the interchange will not affect any residences, but several dilapidated farm buildings may require removal. The yard of a house south of the on-ramp heading south on Route 101 could be significantly impacted. There appears to be minimal impacts to the adjoining residences because of the straight-line approach from El Campo to Route 101.

This alternative will require exceptions to Mandatory Design Standards for the following condition:

- Non-standard superelevation rates at ramp termini (HDM 202.2)

This alternative will require exceptions to Advisory Design Standards for the following conditions:

- Non-standard design speeds on ramp termini (HDM 504.3(1)(a))
- Non-standard side slope (HDM 304.1)
- Non-standard design speed at freeway exit (HDM 504.2(4)(a))
- Non-standard vertical curve at freeway exits (HDM 504.2(5)(a))
- Non-standard of super transition (HDM 202.5)

The following are the proposed ramp intersection configurations.

El Campo Road/US-101 Northbound Ramp Intersection:

Northbound (off-ramp) - 1 Optional Left-Through & 1 Free Flowing Right Turn Lane

Eastbound - 1 Left Turn Lane and 1 Through Lane

Westbound - 1 Through Lane and 1 Free-Flowing Right Turn Lane

El Campo Road/US-101 Southbound Ramp Intersection:

Southbound (off-ramp) - 1 Left Turn Lane and 1 Optional Left-Through-Right Turn Lane

Eastbound - 1 Optional Through-Right Turn Lane

Westbound - 1 Left Turn Lane and 1 Through Lane

Estimated construction and right-of-way acquisition cost for Alternative 2 is as follows:

<u>Construction Cost:</u>	
Roadway:	\$ 16,612,500
Structures:	\$ 3,120,000
Subtotal:	\$ 19,732,500

<u>Right of Way Cost</u>	
Right-of-Way:	\$ 1,519,300
Subtotal:	\$ 1,519,300
<u>Engineering and Construction Administration</u>	
Engineering (PA&ED, PS&E) @ 13%	\$ 2,762,700
Construction Administration @ 12%	\$ 2,550,200
Subtotal:	\$ 5,312,900
Total:	\$ 26,564,700

Alternative 3 (Attachment D)

Alternative 3 includes the construction of a new interchange near the existing Traffic Way/US-101 ramps intersection. The installation of a new interchange at this location requires the closure of the existing Traffic Way/US-101 ramps intersection and the realignment of the northbound and southbound lanes on US-101 with the construction of two new overcrossing structures. Temporary detours will be needed for these construction activities. In addition, this Alternative requires construction of the Traffic Way/Traffic Way Extension intersection; new hook ramps for both northbound and southbound US-101 traffic, the Arroyo Linda project street system, and the extension of Traffic Way under US-101. The Arroyo Linda project street system also includes the construction of the Traffic Way Extension to 4-lane collector/arterial standards.

Construction of this alternative could have significant impacts on residential neighborhoods, a school, two churches, and commercial properties. The degree of these impacts on individual properties is dependent on ramp and access road width, location, and amount of cut and fill slopes. Several houses would be impacted by changes in noise levels and visual resources. Some residents may lose yard depth or may require complete removal for the Traffic Way Extension. The hook ramp construction and the traffic increase associated with the hook ramp could significantly impact a church/daycare center on the south side of the highway.

The interchange spacing between the nearest interchange to the north and the proposed interchange at El Campo Road is approximately 0.5 km (0.3 miles). The current standard for interchange spacing in an urban area is 1.5 km (0.9 miles). Therefore, this alternative will require a design exception to Caltrans Highway Design Manual (HDM), Topic 501.3, mandatory standard for interchange spacing. This design exception is documented in the PDS Design Scoping Checklist that is included as Attachment N.

This alternative will require exceptions for Mandatory Design Standards for the following conditions:

- Non-standard interchange spacing (HDM 501.3)
- Non-standard superelevation rates at ramp termini (HDM 202.2)

The alternative will require exceptions for Advisory Design standards for the following conditions:

- Non-standard design speed on local facilities (HDM 101.1)
- Non-standard side slope (HDM 304.1)
- Non-standard design speed at freeway exits (HDM 504.2(4)(a))
- Non-standard design speed at freeway entrance (HDM 504.2(4)(b))
- Non-standard vertical curve at freeway exits (HDM 504.2(5)(a))
- Non-standard of super transition (HDM 202.5)

The following are the proposed ramp intersection configurations.

Traffic Way Extension/US-101 Northbound Ramp Intersection:

Northbound - 2 Left Turn Lanes and 1 Through Lane
Eastbound (off-ramp) - 2 Left Turn Lanes and 1 Right Turn Lane
Southbound - 1 Through Lane and 1 Right Turn Lane

Traffic Way/US-101 Southbound Ramp Intersection:

Northbound - 1 Through Lane and 1 Right Turn Lane

Southbound - 2 Left Turn Lanes and 1 Through Lane

Westbound (off-ramp) - 1 Left Turn Lane and 1 Right Turn Lane

Estimated construction and right-of-way acquisition cost for Alternative 3 is as follows:

Construction Cost:

Roadway:	\$ 14,609,800
Structures:	<u>\$ 7,720,000</u>
Subtotal:	\$ 22,329,800

Right of Way Cost

Right-of-Way:	<u>\$ 8,563,200</u>
Subtotal:	\$ 8,563,200

Engineering and Construction Administration

Engineering (PA&ED, PS&E) @ 13%	\$ 4,016,100
Construction Administration @ 12%	<u>\$ 3,707,200</u>
Subtotal:	\$ 7,723,300
Total:	\$ 38,616,300

Alternative 4 (Attachment E)

Alternative 4 includes the construction of a new interchange approximately 370 meters north of the existing El Campo Road / US-101 intersection. The installation of a new interchange at this location requires the closure of the existing Traffic Way/US-101 ramps. In addition, this Alternative requires construction of new hook ramps for southbound US-101 traffic, a new diagonal off-ramp and a new loop on-ramp for northbound US-101 traffic, the extension of El Campo Road north to connect with Valley Road, the extension of Traffic Way/Traffic Way Extension to the northbound ramps intersection, the extension of Orchard Street to El Campo Road, the re-alignment of Castillo del Mar to intersect El Campo Road, and the Arroyo Linda project street system. These improvements include the construction of the Traffic Way Extension to 4-lane collector/arterial standards.

Construction of this alternative has the same impacts as Alternative 3 with the addition of recreation impacts on the North El Campo extension area. A playing field for a private school would be removed with implementation of this alternative.

The interchange spacing between the nearest interchange to the north and the proposed interchange at El Campo Road is approximately 1.3 km (0.8 miles). The current standard for interchange spacing in an urban area is 1.5 km (0.9 miles). Therefore, this alternative will require a design exception to Caltrans Highway Design Manual (HDM), Topic 501.3, mandatory standard for interchange spacing. This design exception is documented in the PDS Design Scoping Checklist that is included as Attachment N.

This alternative will require exceptions for Mandatory Design Standards for the following conditions:

- Non-standard interchange spacing (HDM 501.3)
- Non-standard design speed on local facilities (HDM 101.2)
- Non-standard superelevation rates at ramp termini (HDM 202.2)

This alternative will require exceptions for Advisory Design Standards for the following conditions:

- Non-standard side slope (HDM 304.1)
- Non-standard of super transition (HDM 202.5)

The following are the proposed ramp intersection configurations.

Traffic Way Extension/US-101 Northbound Ramp Intersection:

Northbound - 1 Left Turn Lane, 1 Through Lane and 1 Optional Through-Right Turn Lane
Eastbound (off-ramp) - 1 Optional Left Turn-Through Lane, 1 Through Lane and 1 Free Flowing
Right Turn Lane

Southbound - 2 Left Turn Lanes, 1 Through Lane and 1 Optional Through-Right Turn Lane
Westbound - 1 Left Turn Lane, 1 Through Lane and 1 Optional Through-Right Turn Lane

El Campo Frontage Road/US-101 Southbound Ramp Intersection:

Northbound - 1 Through Lane and 1 Right Turn Lane
Southbound - 1 Left Turn Lane and 2 Through Lanes
Westbound (off-ramp) - 2 Left Turn Lanes and 1 Right Turn Lane

Estimated construction and right-of-way acquisition cost for Alternative 4 is as follows:

Construction Cost:

Roadway:	\$ 34,658,700
Structures:	<u>\$ 1,826,000</u>
Subtotal:	\$ 36,484,700

Right of Way Cost

Right-of-Way:	<u>\$ 6,020,900</u>
Subtotal:	\$ 6,020,900

Engineering and Construction Administration

Engineering (PA&ED, PS&E) @ 13%	\$ 5,525,700
Construction Administration @ 12%	<u>\$ 5,100,700</u>
Subtotal:	\$ 10,626,400
Total:	\$ 53,132,000

A significant portion of the roadway construction cost reported above can be attributed to the proposed retaining walls along El Campo Frontage Road between the 'D' Street intersection and the US-101 southbound ramps intersection (See Attachment E). During the PA/ED phase of this project, other, less expensive solutions at this location may be possible based on the findings of the environmental mitigation and geotechnical analyses.

Alternative 5 (Attachment F)

Alternative 5 includes the construction of a new spread diamond interchange approximately 488 meters south of the existing at-grade intersection of El Campo Road and US-101. This Alternative requires the construction of a new US-101 overcrossing structure with ramps and a new frontage road connecting to the Arroyo Linda project street system on the east side of US-101. Additionally, El Campo Road would require extension between Brady Lane and the new interchange. The traffic operations for this alternative are identical to Alternative 2.

Construction of the interchange will not affect any residences, but several dilapidated farm buildings may require removal. The yard of a house south of the on-ramp heading south on Route 101 could be significantly affected. There appears to be minimal impacts to the adjoining residences because of the straight-line approach from El Campo to Route 101.

This alternative meets all Mandatory and Advisory Design Standards.

The following are the proposed ramp intersection configurations.

El Campo Road/US-101 Northbound Ramp Intersection:

Northbound (off-ramp) - 1 Optional Left-Through & 1 Free Flowing Right Turn Lane

Eastbound - 1 Left Turn Lane and 1 Through Lane

Westbound - 1 Through Lane and 1 Free-Flowing Right Turn Lane

El Campo Road/US-101 Southbound Ramp Intersection:

Southbound (off-ramp) - 1 Left Turn Lane and 1 Optional Left-Through-Right Turn Lane

Eastbound - 1 Optional Through-Right Turn Lane

Westbound - 1 Left Turn Lane and 1 Through Lane

Estimated construction and right-of-way acquisition cost for Alternative 5 is as follows:

Construction Cost:

Roadway: \$ 17,126,000

Structures: \$ 3,120,000

Subtotal: \$ 20,246,000

Right of Way Cost

Right-of-Way: \$ 1,962,600

Subtotal: \$ 1,962,600

Engineering and Construction Administration

Engineering (PA&ED, PS&E) @ 13% \$ 2,887,100

Construction Administration @ 12% \$ 2,665,000

Subtotal: \$ 5,552,100

Total: \$ 27,760,700

Traffic Analysis –A Traffic Analysis report was prepared to evaluate the traffic operations of proposed project alternatives. The traffic analysis established existing traffic volumes by performing new traffic counts at the following study area intersections in February 1999.

- US-101 SB Ramps / Grand Avenue
- US-101 NB Ramps / Grand Avenue
- US-101 SB Off-Ramp / Fair Oaks Avenue
- Traffic Way / Fair Oaks Avenue Intersection
- US-101 NB Off-ramp, SB On-ramp / Traffic Way
- US-101 / El Campo Road
- Valley Road / Fair Oaks Avenue

Since February traffic volumes are typically low, seasonal adjustment factors were applied to the counts to reflect peak, summer weekday, traffic counts. The adjustment factors were based on a review of historical regional and local traffic circulation data. The existing Average Daily Trips (ADT) on the study area roadway segments were estimated using the new peak hour count data and historical peak hour-to-daily traffic volume ratio. Adjusted traffic volumes were compared to counts taken in July 1999 and found to be higher than the new traffic count data. Therefore, the utilization of seasonal adjustment factors results in a very conservative estimate of existing traffic volumes.

Existing Levels of Service for the roadway segments were estimated based on comparison of estimated average daily trips (ADT) and standard daily LOS threshold volume criteria. Existing LOS for intersections were estimated based on various guidelines from the 2000 Highway Capacity Manual (HCM). Existing conditions LOS values are summarized in Tables 1, 2 and 3, below:

Table 1
 Existing Roadway Segment LOS

Study Street Segment	Number of Lanes	Theoretical Capacity	Existing ADT	LOS
El Campo Road, West of US-101	2	12,000	1,600	A
US-101, El Campo Road – Traffic Way Ramps	4	74,000	51,000	C
Fair Oaks Avenue, Traffic Way – SB Off Ramp	4	27,000	12,000	A
Grand Avenue, NB Ramps – SB Ramps	4(a)	31,500	19,300	B

(a) Four lane arterial with left-turn lanes

The data contained in Table 1 indicates that all of the study street segments currently operate within acceptable limits (LOS C or better). Based on field observations during peak commuter time periods the existing roadway network operates within acceptable limits. However, the segment of Grand Avenue east of the US-101 northbound ramps occasionally experiences some congestion, as vehicles traveling in the westbound direction back up between the US-101 northbound ramps and the East Branch/Traffic Way intersections.

Table 2
 Existing Intersection LOS

Study Intersections	Delay (Sec.) / LOS Value	
	AM Pk. Hr.	PM Pk. Hr.
Grand Avenue / US-101 SB Ramps	10.7 / B	14.8 / B
Grand Avenue / US-101 NB Ramps	12.8 / B	12.1 / B
Fair Oaks Ave / US-101 SB Off-Ramp	12.3 / B	12.7 / B
Fair Oaks Avenue / Traffic Way	19.4 / C	17.6 / C
Traffic Way / US-101 Ramps	10.7 / B	11.7 / B
El Campo Road / US-101	* / F	* / F

Notes: * - control delay exceeds 1,000 seconds per vehicle.

The data summarized in Table 2 indicates that all six (6) of the study intersections currently operate within acceptable limits (LOS C or better), except the US-101/El Campo Road intersection. At this intersection, the traffic on the El Campo Road approach to US-101 experience significant delay. These adverse LOS values for critical movements from the side street approach at this location are fairly typical for the analysis of a stop-signed controlled “at-grade” intersection along US-101. Based on this analysis, it is apparent that future traffic demand increases along US-101 and within this portion of the County will eventually warrant the implementation of future improvements (i.e.: the installation of a future “grade separated” interchange south of the Fair Oaks Avenue interchange).

LOS values for ramp operations were evaluated using guidelines in the 2000 HCM. A review of the existing peak hour, ramp volumes within the study area indicates that these volumes are well below the 1,500 vehicles per hour (vph) threshold required for a (2) lane entrance or exit ramp. The results of the ramp LOS analysis are presented in Table 3, below:

Table 3
 Existing Ramp Levels of Service

Study Ramp	LOS Value	
	AM Pk Hr	PM Pk Hr
Grand Avenue SB Off-Ramp	B	C
Grand Avenue SB On-Ramp	C	C
Grand Avenue NB Off-Ramp	B	B
Grand Avenue NB On-Ramp	B	B
Fair Oaks Ave SB Off-Ramp	C	C
Traffic Way SB On-Ramp	B	C
Traffic Way NB Off-Ramp	B	B

Weaving segment operations along US-101 were evaluated using guidelines contained in the Design Curve for Freeway and Collector Weaving Sections (Figure 504.7A) of the Caltrans Highway Design Manual. The analysis of existing weaving operations is limited to the US-101/Grand Avenue Southbound On-Ramp and US-101/FairOaks Avenue Southbound Off-Ramp weaving section. The results of the weaving LOS analysis indicated that LOS B operations are experienced during both the AM and PM peak hour periods.

Accident Data - Accident Rates and Accidents are shown in Table 4. Accident data for this traffic analysis was obtained from Caltrans (TASAS Selective Record Retrieval) for the thirty-six (36) month time period from 8-1-95 to 7-31-98.

Table 4
 Summary of Accident Rate Data

Intersection/Ramp/US-101 Segment	Total Accidents	Actual Rates			Average Rates		
		F	F+I	Total	F	F+I	Total
US-101 / El Campo Road	10	0.000	0.05	0.18	0.011	0.17	0.34
Traffic Way SB On-Ramp	1	0.000	0.00	0.35	0.006	0.16	0.50
Traffic Way NB Off-Ramp	1	0.000	0.00	0.29	0.006	0.34	0.90
Fair Oaks Avenue SB Off-Ramp	3	0.000	0.00	1.19	0.005	0.59	1.50
Grand Avenue NB Off-Ramp	3	0.000	0.33	0.99	0.004	0.33	0.90
Grand Avenue SB On-Ramp	5	0.000	0.64	1.07	0.002	0.32	0.80
Grand Avenue SB Off-Ramp	11	0.000	0.62	3.40	0.005	0.59	1.50
Grand Avenue NB On-Ramp	1	0.000	0.00	0.18	0.004	0.17	0.45
US-101 - Northbound	12	0.000	0.05	0.14	0.012	0.37	0.91
US-101 - Southbound	18	0.000	0.03	0.20	0.012	0.37	0.91

F = Fatality ; I = Injury & F+I = Fatality plus Injury

The data summarized in Table 4 indicates there were a total of sixty-five (65) reported accidents for the thirty-six (36) month time period for which data was provided. A review of this accident rate information indicated that approximately 54% (35 accidents) of the reported accidents occurred on a ramp or at a ramp intersection, while the remaining 46% (30 accidents) occurred on US-101 within the study area. The data in Table 4 also indicates that actual accident rates exceed the State average accident rates at three (3) of the study ramp locations. All three (3) ramp locations are at the US-101/Grand Avenue interchange.

The existing US-101/Grand Avenue Southbound ramps intersection is comprised of two (2) off-set "T" intersections, controlled by a single traffic signal. The existing configuration of this intersection can create confusion for drivers that are not familiar with local conditions, and therefore, possibly contributing to the higher than average accident rates. Though the actual accident rates at the US-101/Grand Avenue Northbound Off-Ramp are higher than the State average, three (3) accidents during a thirty-six (36) month time period should not be considered "abnormally" high, due to the amount of traffic utilizing this ramp location on a daily basis.

Traffic accident data for El Campo Road was obtained from the County of San Luis Obispo. A review of this accident data indicated that there were thirteen (13) reported accidents during the four (4) year time period for which data was provided. A memo provided by the County stated that this segment of El Campo Road has an above-average collision rate and is one (1) of ten (10) rural road segments, which have been identified for further analysis.

Projected Traffic Operations – The year 2030 Base-Line traffic conditions were developed to reflect continued development in the City of Arroyo Grande and the southerly portion of the San Luis Obispo County. The South County traffic demand, forecasting model was utilized to estimate traffic volumes for the 2030 Base-Line condition. For the 2030 baseline scenario, traffic generated by the Arroyo Linda Crossroads development project was not included in the road network volumes.

The roadway network utilized for the analysis of Year 2030 Base-Line traffic conditions is comprised of the existing street network, plus operational improvements associated with the development of future projects within the City and County. Improvements associated with the development of future projects include the installation of traffic signals at the Fair Oaks Avenue/US-101 Southbound Off-Ramp, Fair Oaks Avenue/Traffic Way and Traffic Way/Traffic Way Extension intersections. Additional intersection improvements would also be required to accommodate the installation of traffic signal control and future traffic demand increases at these locations. These improvements include the following:

- Fair Oaks/Southbound US-101 off-ramp/Orchard Avenue – add a westbound left turn lane on Fair Oaks Avenue on the approach to Orchard Avenue/southbound US-101 off-ramp;
- Fair Oaks/Traffic Way – add left turn lanes on the northbound and southbound intersection approaches and provide one exclusive left turn and one shared left turn/through/right turn lane on the eastbound approach;
- Traffic Way/Northbound US-101 Off-ramp – provide left turn lanes on the southbound and westbound intersection approaches.

The following tables summarize the year 2030 projected traffic operations within the study area for the base-line (no-build) and Alternatives 1, 2, 3, 4 and 5. Traffic operations for Alternative 5 are identical to Alternative 2.

Table 5
Year 2030 Roadway Segment LOS

Study Street Segment	No. of Lanes	Capacity (a)	Alternative ADT (1000 ADT) - LOS Value (b)								
			Exist.	2030 Base-Line	2030 Alt. 1A	2030 Alt. 1B	2030 Alt. 2A or Alt 5A	2030 Alt. 2B or Alt 5B	2030 Alt. 3A	2030 Alt. 3B	2030 Alt. 4
El Campo Rd, West of US-101	2	12	1.6-A	5.3-A	12.1-F	11.8-E	15.1-F	14.8-F	4.6-A	6.7-B	5.7-A
US-101, El Campo Rd-Traffic Way	4	74	51.0-C	92.3-F	105.0-F	103.9-F	10.3-F	91.7-F	75.6-F	87.9-F	92.2-F
Fair Oaks Ave, Traffic Way-SB Ramp	4	27	12.0-A	18.7-B	18.2-B	18.4-B	19.9-C	27.9-F	21.9-C	24.1-E	17.7-B
Grand Ave, NB Ramps-SB Ramps	4 (b)	31.5	19.3-B	30.0-E	32.9-F	35.9-F	36.0-F	30.1-F	26.8-D	31.3-E	31.7-F

(a) Maximum volume for LOS E operation (b) Four lane arterial with left-turn lanes

(b) A after Alt. # indicates S/B Traffic Way on ramp to 101 remains open, B indicates S/B Traffic Way on ramp to 101 is closed.

The data presented in Table 5 indicates that with Alternatives 1 and 2, traffic volumes will increase on El Campo Road west of US-101 to levels that are not appropriate for a roadway that is functionally classified as a rural collector road. The results indicate that with Alternatives 1 and 2, the geometrics of El Campo Road west of US-101 and the El Campo Road/Los Berros Road intersection should be improved to accommodate future traffic demand increases associated with the continued development in the City and County, as well as the addition of a new US-101 interchange (Alternatives 1, 2 and 5).

In order to evaluate the potential impacts to adjacent interchanges (i.e.: Grand Avenue and Fair Oaks Avenue) a brief comparison of future daily traffic demands was performed. This evaluation provides information regarding the potential diversions of traffic that would be associated with the various interchange improvement alternatives. The traffic associated with the Arroyo Linda Crossroads project is not included in the Base-Line volumes, but is included in the volumes for each of the interchange alternatives. The results of this evaluation are presented in Table 6.

Table 6
Year 2030 Alternative Traffic Diversions

Study Scenario (See Note 1)	Potential Traffic Diversion (Percentage)	
	Grand Avenue	Fair Oaks Avenue
Alternative 1A	+ 10 %	- 3 %
Alternative 1B	+ 20 %	- 2 %
Alternative 2A	+ 9 %	+ 10 %
Alternative 2B	+ 20 %	+ 6 %
Alternative 3A	+ 0 %	+ 49 %
Alternative 3B	+ 4 %	+ 28 %
Alternative 4	+ 6 %	- 5 %

Note 1: A after Alt. # indicates S/B Traffic Way on ramp to 101 remains open,
 B indicates S/B Traffic Way on ramp to 101 is closed.

The data displayed in Table 6 indicates that all improvement options will increase future traffic demands on Grand Avenue; except Alternative 3A, which is unchanged for the base-line condition. Traffic projections from the South County traffic model, indicate that closing the southbound US-101 on-ramp from Traffic Way would result in a doubling of the increase in traffic forecast on Grand Avenue at US-101 versus similar conditions with the ramp open (1A versus 1B and 2A versus 2B). The improvements associated with Alternatives 1B and 2B include the closure of the US-101/Traffic Way Southbound On-Ramp, which will result in traffic being diverted to the Grand Avenue interchange, and to the southbound US-101 on-ramp at Grand Avenue in particular. The data in Table 6 also indicates that future traffic demands along Fair Oaks Avenue will remain about the same or slightly increase with interchange improvements associated with Alternatives 1A, 1B, 2A and 2B; but will increase fairly significantly with improvements associated with Alternatives 3A and 3B. Increases in traffic associated with 3A and 3B is very likely attributable to the new on/off ramps provided south of Traffic Way for northbound US-101 traffic and the new off-ramp provided at the same location for southbound US-101 traffic. Alternative 4 results in slightly higher volumes on Grand at US-101 and slightly less traffic volumes on Fair Oaks at US-101.

The results presented in Table 7, below, indicates that four (4) of the six (6) study intersections included in the Year 2030 Base-Line traffic conditions will operate within acceptable limits (LOS C or better), provided that the infrastructure improvements previously discussed are implemented in conjunction with construction of future developments in the City and County. Future peak hour LOS values at the Traffic Way ramps and at the El Campo Road/US-101 intersection are projected to be within the LOS D-F range during one (1) or both of the peak hour periods for the Year 2030 Base-Line traffic conditions.

The LOS analysis of the interchange alternatives (i.e.: Alternatives 1A, 1B, 2A, and 2B) indicates that the Grand Avenue ramps (northbound and southbound), will operate outside of acceptable limits for the Year 2030 study scenarios. Levels of service with Alternative 3a and 3b are better than the levels of service for Alternatives 1A and 1b, although deficient operations are forecast at the northbound US-101/Grand Avenue intersection during the PM peak hour under Alternative 3B. Operations at the Fair Oaks/US-101 southbound ramps intersection is acceptable under Alternatives 1A, 1B, 2A and 2B, but is deficient under 3A and 3B.

A review of the Year 2030 traffic volumes and the LOS analysis data indicate that the closure of the Traffic Way southbound on-ramp will divert traffic (with a destination to the south on US-101) to the Grand Avenue and new El Campo Road southbound on-ramps. These diversions will increase the westbound left-turn movements at both of these intersections. The results of this analysis support the recommendation to provide additional room under the new El Campo Road bridge structure (Alternatives 1A, 1B, 2A & 2B) for the future (long range) addition of loop on-ramps.

Table 7
Intersection Level of Service Summary

Study Intersection	Peak Hour	Alternative - LOS Value (See Note 1)								
		Exist.	2030 Base-Line	2030 Alt. 1A	2030 Alt. 1B	2030 Alt. 2A or Alt 5A	2030 Alt. 2B or Alt 5B	2030 Alt. 3A	2030 Alt. 3B	2030 Alt. 4
Grand Ave and US-101 SB Ramps	AM	B	B	C	C	B	D	B	B	C
	PM	B	C	D	F	C	F	C	C	E
Grand Ave and US-101 NB Ramps	AM	B	B	D	E	D	D	C	C	D
	PM	B	B	E	E	D	D	C	D	D
Fair Oaks Ave and US-101 SB Off Ramp	AM	B*	B	B	B	B	B	C	C	B
	PM	B*	B	B	B	B	B	D	D	B
Fair Oaks Ave and Traffic Way	AM	C*	E	D	D	E	E	F	F	D
	PM	C*	E	E	E	F	F	F	F	E
Traffic Way and US-101 NB Ramps	AM	B**	A	C	C	E	F	F	F	-
	PM	B**	B	E	D	F	F	F	F	-
El Campo Rd and US-101	AM	F**	F	-	-	-	-	-	-	-
	PM	F**	F	-	-	-	-	-	-	-
El Campo Rd and US-101 NB Ramps	AM	-	-	B	B	C	C	-	-	-
	PM	-	-	B	B	C	C	-	-	-
El Campo Rd and US-101 SB Ramps	AM	-	-	C	C	C	C	-	-	-
	PM	-	-	C	D	C	C	-	-	-
Traffic Way Ext and US-101 NB Ramps	AM	-	-	-	-	-	-	B	B	C
	PM	-	-	-	-	-	-	B	B	C
El Campo Frontage Rd and US-101 SB Ramps	AM	-	-	-	-	-	-	-	C	B
	PM	-	-	-	-	-	-	-	C	B
El Campo Rd and 'D' Street	AM	-	-	-	-	-	-	-	-	C
	PM	-	-	-	-	-	-	-	-	D
Valley Rd and El Campo Frontage Rd	AM	-	-	-	-	-	-	-	-	B
	PM	-	-	-	-	-	-	-	-	B

Note 1: A after Alt. # indicates S/B Traffic Way on ramp to 101 remains open, B indicates S/B Traffic Way on ramp to 101 is closed

*- All-way stop controlled intersection ** - Two-way stop controlled intersection

The data presented in Table 8 indicates that 2030 ramp operations will be unacceptable at all analysis locations with US-101 maintained as a four-lane freeway through the study section. Table 9 provides ramp level of service results with US-101 widened to a six lane facility through the study area. With the freeway widened to 6 lanes, LOS F ramp operations would occur on the southbound US-101 approach to Grand Avenue under base-line and Alternatives 1A and 1B; and at the northbound off-ramp to Traffic Way under Alternatives 1A, 1B, 2A and 2B. LOS E operations are forecast for the Grand Avenue southbound off-ramp under Alternative 3B. LOS D operations are forecast at several other ramp locations in the corridor.

Typical improvements for unacceptable levels of service (LOS D-F) would include the provision to two (2) lane ramps and/or the provision of freeway auxiliary lanes. Future ramp volumes for these locations are below that which would require the provision of two (2) lane ramps although at some locations dual left turn lanes for movements from the intersecting street to the on-ramp will be required to serve future traffic demand and will necessitate widening the ramp to two lanes. These locations are identified in subsequent sections of this report. Currently there is a freeway auxiliary lane between the Grand Avenue Southbound On-Ramp and the Fair Oaks Avenue Southbound Off-Ramp. Future operational improvements to the Grand Avenue Southbound Off-Ramp are currently being studied and will include the addition of a freeway auxiliary lane between the Halcyon Road on-ramp and this off ramp. The evaluation of future Year 2030 weaving conditions is presented in the following subsection, along with a discussion regarding typical weaving maneuvers.

Table 8
Year 2030 Ramp Levels of Service Analysis (4-Lane US-101)

Study Ramp	Peak Hour	Alternative - LOS Value (See Note 1)								
		Exist.	2030 Base-Line	2030 Alt. 1A	2030 Alt. 1B	2030 Alt. 2A or Alt. 5A	2030 Alt. 2B or Alt. 5B	2030 Alt. 3A	2030 Alt. 3B	2030 Alt. 4
Grand Avenue SB Off-Ramp	AM	B	E	F	F	F	F	F	F	F
	PM	C	F	F	F	F	F	F	F	F
Grand Avenue SB On-Ramp	AM	C	E	F	F	F	F	F	F	F
	PM	C	F	F	F	F	F	F	F	F
Grand Avenue NB Off-Ramp	AM	B	E	F	F	F	F	F	F	F
	PM	B	D	F	F	E	E	E	E	F
Grand Avenue NB On-Ramp	AM	B	E	F	F	F	F	D	D	F
	PM	B	D	F	E	E	D	D	D	F
Fair Oaks Ave SB Off-Ramp	AM	C	E	F	F	F	F	F	F	F
	PM	C	F	F	F	F	F	F	F	F
Traffic Way SB On-Ramp	AM	B	E	F	-	F	-	-	-	-
	PM	C	F	F	-	F	-	-	-	-
Traffic Way NB Off-Ramp	AM	B	F	F	F	F	F	-	-	-
	PM	B	D	F	F	F	F	-	-	-
El Campo Road SB Off-Ramp	AM	-	-	F	F	F	F	-	-	-
	PM	-	-	F	F	F	F	-	-	-
El Campo Road SB On-Ramp	AM	-	-	D	D	D	D	-	-	-
	PM	-	-	F	F	F	F	-	-	-
El Campo Road NB Off-Ramp	AM	-	-	F	F	F	F	F	F	-
	PM	-	-	F	F	F	F	F	F	-
El Campo Road NB On-Ramp	AM	-	-	F	F	F	F	-	-	-
	PM	-	-	F	F	F	F	-	-	-
Traffic Way Ext. NB Off-Ramp	AM	-	-	-	-	-	-	F	D	F
	PM	-	-	-	-	-	-	D	D	F
Traffic Way Ext. NB On-Ramp	AM	-	-	-	-	-	-	E	E	F
	PM	-	-	-	-	-	-	D	D	F
Traffic Way (new) SB Off-Ramp	AM	-	-	-	-	-	-	F	D	F
	PM	-	-	-	-	-	-	F	F	F
Traffic Way (new) SB On-Ramp	AM	-	-	-	-	-	-	F	F	F
	PM	-	-	-	-	-	-	F	F	F

Note 1: A after Alt. # indicates S/B Traffic Way on ramp to 101 remains open, B indicates S/B Traffic Way on ramp to 101 is closed.

Table 9
 Year 2030 Ramp Levels of Service Analysis (6-Lane US-101)

Study Ramp	Peak Hour	Alternative - LOS Value (See Note 1)								
		Exist.	2030 Base-Line	2030 Alt. 1A	2030 Alt. 1B	2030 Alt. 2A or Alt 5A	2030 Alt. 2B or Alt 5B	2030 Alt. 3A	2030 Alt. 3B	2030 Alt. 4
Grand Avenue SB Off-Ramp	AM	-	E	F	F	C	C	D	D	C
	PM	-	F	F	F	D	D	D	E	D
Grand Avenue NB Off-Ramp	AM	-	C	D	D	D	D	C	C	D
	PM	-	C	C	C	C	C	C	C	D
Grand Avenue NB On-Ramp	AM	-	C	C	C	C	C	C	C	C
	PM	-	C	C	F	C	F	C	C	C
Fair Oaks Ave SB Off-Ramp	AM	-	C	C	D	C	D	C	D	C
	PM	-	C	C	D	D	D	D	D	D
Traffic Way SB On-Ramp	AM	-	C	C	-	C	-	-	-	-
	PM	-	C	D	-	D	-	-	-	-
Traffic Way NB Off-Ramp	AM	-	C	F	F	F	F	-	-	-
	PM	-	C	F	F	F	F	-	-	-
El Campo Road SB Off-Ramp	AM	-	-	C	C	C	C	-	-	-
	PM	-	-	C	C	C	C	-	-	-
El Campo Road SB On-Ramp	AM	-	-	C	C	C	C	-	-	-
	PM	-	-	C	C	C	C	-	-	-
El Campo Road NB Off-Ramp	AM	-	-	C	B	C	C	C	C	-
	PM	-	-	C	C	C	C	C	C	-
El Campo Road NB On-Ramp	AM	-	-	C	C	C	C	-	-	-
	PM	-	-	C	C	C	C	-	-	-
Traffic Way Ext. NB Off-Ramp	AM	-	-	-	-	-	-	C	C	C
	PM	-	-	-	-	-	-	C	C	C
Traffic Way Ext. NB On-Ramp	AM	-	-	-	-	-	-	C	C	C
	PM	-	-	-	-	-	-	C	C	C
Traffic Way (new) SB Off-Ramp	AM	-	-	-	-	-	-	C	C	C
	PM	-	-	-	-	-	-	C	C	C
Traffic Way (new) SB On-Ramp	AM	-	-	-	-	-	-	C	C	C
	PM	-	-	-	-	-	-	C	C	C

Note 1: A after Alt. # indicates S/B Traffic Way on ramp to 101 remains open, B indicates S/B Traffic Way on ramp to 101 is closed.

The data presented in Table 10 indicates that weaving segment between the Grand Avenue Southbound On-Ramp and the Fair Oaks Avenue Southbound Off-Ramp will degrade to the LOS E-F range for all analysis scenarios with US-101 as a four-lane freeway. Widening to 6 lanes will improve the weaving operation to LOS D except with Alternatives 1B, 2B, 3B and 4.

The weaving operation between the northbound on-ramp from the El Campo interchange and the Traffic Way northbound off-ramp was also evaluated. With a six lane US-101, this weaving operation (assuming an auxiliary lane on this segment) would operate at LOS D. Traffic volumes on the Traffic Way Southbound On-Ramp to El Campo Road Southbound Off-Ramp weaving segment are outside of the boundaries of the weaving analysis chart. The existing Traffic Way Southbound On-Ramp traffic enters US-101 on from the left, and as future traffic demands increase along US-101 the removal of this on-ramp may be required to maintain safe access conditions. Further analysis of traffic impact at Grand Avenue and Fair Oaks of off-site development will be made during PA&ED

Table 10
 Year 2030 Weaving Segment LOS (With Auxiliary Lanes)

Ramp / Weaving Segment	Peak Hour	Alternative - LOS Value (See Note 1)								
		Exist.	2020 Base-Line	2020 Alt. 1A	2020 Alt. 1B	2020 Alt. 2A or Alt 5A	2020 Alt. 2B or Alt 5B	2020 Alt. 3A	2020 Alt. 3B	
Grand Ave SB On-Ramp - Fair Oaks Ave Off-Ramp	AM PM	B B	E (C) F (D)	E (D) F (D)	F (D) F (E)	E (D) F (D)	F (D) F (E)	F (D) F (D)	F (D) F (E)	F (D) F (E)
El Campo Rd NB On-Ramp - Traffic Way NB Off-Ramp	AM PM	- -	- -	F (D) F (D)	F (D) F (D)	- -	- -	- -	- -	- -
Traffic Way SB On-Ramp - El Campo Rd SB Off-Ramp	AM PM	- -	- -	E (D) *	- -	- -	- -	- -	- -	- -
Traffic Way SB On-Ramp - El Campo Road	AM PM	- -	- -	- -	- -	- -	- -	E (C) E (D)	- -	- -

Note 1: A after Alt. # indicates S/B Traffic Way on ramp to 101 remains open, B indicates S/B Traffic Way on ramp to 101 is closed.
 E(D) - LOS with four lane US-101 (LOS with six lane US-101) * - Out of range

5. SYSTEM AND REGIONAL PLANNING

The Transportation Concept Report (TCR), dated 2001, identifies the concept level of service for this sub-segment of Segment 4 of US-101 as LOS D for the year 2020. The TCR recommends that US-101 be expanded to a six-lane freeway through this segment to provide for the concept LOS. This project is consistent with the route concept in accommodating an ultimate six-lane freeway with each of the project alternatives.

The City General Plan designates US-101 as a freeway providing access to the region and absorbing some of the trips in the community. El Campo Road does not fall within City limits, but is designated by the County of San Luis Obispo as a rural arterial with concept LOS of C. The proposed project is consistent with General Plan requirements for El Campo Road.

Conceptual geometrics and an estimate of cost for improvements to El Campo Road between Los Berros Road and US-101 are included as an attachment to this PSR (PDS) (Attachment L). This information is provided to demonstrate the scope and cost of additional improvements to the local road network that are needed to augment the benefits, in terms of traffic congestion relief, of the proposed interchange at El Campo Road. Currently, the County has no plans to undertake these improvements.

It is anticipated that Park and Ride facilities will be provided in the future as part of developer funded improvements. The issue of providing Express Bus Service facilities as part of the proposed alternatives cannot be adequately addressed at this time. At such time when a design standard becomes available for these types of facilities, which is acceptable to both Caltrans and SLOCOG, further studies will need to be performed to determine where Express Bus Service facilities can be incorporated into the proposed project.

6. ENVIRONMENTAL DETERMINATIONS AND ENVIRONMENTAL ISSUES

An Initial Site Assessment (ISA) was prepared for this project. The ISA did not result in the identification of any significant hazardous waste contamination that would affect or be affected by project implementation.

The governmental record search conducted for the proposed project found no unremediated hazardous wastes sites within the alternative sites.

The site survey, however, indicated the presence of several existing old gas stations that have been converted to shops and an existing gas station with tanks along Traffic Way. In addition, there are several residences with barrels and drums, which could potentially store hazardous waste and require special handling. These can be easily removed and are not considered significant.

It is not expected that hazardous materials that would adversely impact project implementation are present within the alternative sites. Asbestos surveys are required for any buildings to be displaced by the project.

A Preliminary Environmental Assessment Report (PEAR) has been prepared for the proposed project and is included as Attachment H. The PEAR concluded that the proposed project is not expected to result in significant adverse environmental impacts to the issue area of Hazardous waste.

The PEAR recommends, however, that additional analysis be performed to determine whether there are significant adverse environmental impacts and, if so, whether mitigation measures will reduce their impact to below significant for the following issue areas:

- Biological Resources
- Socioeconomic
- Hydrology
- Right-of-Way
- Cultural Resources
- Water Quality
- Floodplain Encroachment
- Noise
- Air Quality
- Visual Resources

These issues will require a technical study to determine whether impacts are significant, and whether mitigation measures can be implemented that will reduce the impact to a level below significance.

During the project report an Initial Study (IS) to a Mitigated Negative Declaration is the probable environmental document that will be necessary for this project because the significant resources that may be impacted appear to be mitigable; however, more detailed studies may change this conclusion. If this occurs, it is possible that an Environmental Impact Report (EIR) would be required. Federal funding may be utilized for a project implementation and, in that case, an Environmental Assessment (EA) leading to a Finding of No Significant Impact (FONSI) is the probable environmental document necessary for the National Environmental Policy Act (NEPA) compliance. However, if impacts are unavoidable and can not be mitigated below the level of significance then an Environmental Impact Statement (EIS) would be necessary.

The time necessary to prepare the environmental document will be affected by the required technical studies, including Investigation of the Waters of the U.S. (Wetland Delineation) and special-status species survey if the existing creeks have the potential to be impacted. Right-of-way, cultural resource surveys, noise, visual, and air quality studies may also be required. These studies are not expected to be overly complex or time consuming. It is estimated that the total preparation time for the CEQA environmental document would be approximately 12-18 months and the preparation time for the NEPA document would be approximately 18-24 months.

Responsibility for compliance with the California Environmental Quality Act (CEQA) rests with the Lead Agency, the City of Arroyo Grande Public Works Department. The California Department of Transportation (Caltrans) will participate in the environmental review process as a Responsible Agency.

The following permits will be required prior to construction of the proposed project:

- Section 1601 Streambed Alteration Agreement (California Department of Fish & Game)
- Individual Section 404 Permit (U.S. Army Corps of Engineers)
- Section 401 Water Quality Certification (Regional Water Quality Control Board (RWQCB))
- Encroachment Permit (Caltrans)

7. TRANSPORTATION MANAGEMENT PLAN (TMP)

Significant traffic delays are not anticipated. The majority of construction can be accomplished using conventional traffic controls and planned detours, as necessary to minimize traffic delays and inconvenience caused by construction activities. A construction alert should be sent to area residents and commuters who use El Campo Road and ramp intersections.

All alternatives will require preparation of Stage Construction Plans showing that all lanes will be open to traffic during daytime hours. Nighttime detours will be needed during bridge formwork erection and removal. Additional nighttime detours may be required when selected ramps are closed for construction. The TMP will address need for CHP enhanced enforcement during various phases of construction to provide additional safety to traveling public.

Alternative 3 will require a more detailed TMP due to scope of Route 101 realignment and construction of new structures. Temporary detours will be provided to ensure that all Route 101 travel lanes will be open during daytime hours.

The Cost of the TMP is shown in Preliminary Estimate of Project Cost for each alternative (Attachment J).

8. RIGHT OF WAY

All of the proposed alternatives will require the acquisition of additional State right-of-way. The potentially affected properties for Alternatives 1, 2, 3 and 5 are considered mostly rural and open space. For Alternative 4, the potentially affected properties are considered semi-rural and rural with potential for future residential development. There are three (3) residences and a private school adjacent to the Alternative 4 proposed improvements.

The right-of-way impacts for each alternative are as follows:

- Alternative 1 would require approximately 7.5 hectares (18.6 acres) of additional right-of-way, affecting 14 parcels. One single family residence (SFR) would have to be removed in order to facilitate construction.
- Alternative 2 would require approximately 10.3 hectares (25.6 acres) of additional right-of-way, affecting 9 parcels. The construction of this alternative will affect at least 1 out building.
- Alternative 3 would require approximately 7.5 hectares (18.6 acres) of additional right-of-way, affecting 25 parcels. The construction of this alternative will affect at least six SFR's.
- Alternative 4 would require approximately 13.6 hectares (33.6 acres) of additional right-of-way, affecting 38 parcels. The construction of this alternative will affect at least five SFR's.
- Alternative 5 would require approximately 13.7 hectares (33.8 Acres) of additional right-of-way, affecting 10 parcels. The construction of this alternative will affect at least 2 SFR's..

Utilities - Existing utilities in the project area are shown on the attached Conceptual Geometrics (Attachments B, C, D, E and F) and include the following:

- Charter Communications - (Cable)
- City of Arroyo Grande - (Water Lines)
- Pacific Bell (SBC) - (Telephone)
- PG&E - (Electrical facilities)
- Southern California Gas Company - (Gas Lines)
- Tosco - (fuel lines)

The following is a list of anticipated utility involvement for the proposed interchange alternatives:

Alternative 1

- PG&E: Relocate 3 joint poles @ \$15,000 each = \$45,000. Relocate 2 service poles @ \$7,000 each = \$14,000.
- Pacific Bell (SBC): Relocate 2 poles @ \$10,000 each = \$20,000.

Alternative 2

- PG&E: Relocate 4 poles @ \$13,000 each = \$52,000. Relocate 1 service pole @ \$7,000 each = \$7,000.
- Pacific Bell (SBC): Relocate 3 poles @ \$10,000 each = \$30,000.

Alternative 3

- Charter Communications: Adjust/Relocate facilities at the northerly end of the project at the Traffic Way extension and the westerly side of US-101. No Agency cost as these facilities are generally in place under permit or lease with specific provisions to relocate at Company cost.
- Southern Calif. Gas Company: Distribution -2" C.P. Line in 10' easement on easterly side of Traffic Way extension. No relocation expected but depth should be electronically determined by Gas Company personnel. Transmission - No transmission lines apparent in project area.
- City of Arroyo Grande: Relocate 7 sewer manhole covers = \$7,000. Relocate 6 water valves and covers = \$4,500. Relocate 3 fire hydrants & valves = \$4,500.
- PG&E: Relocate 8 joint poles @ \$15,000 each = \$120,000.
- Pacific Bell (SBC): Relocate 6 poles and under ground line = \$50,000. Relocate various underground lines and service boxes on the easterly side of Traffic Way extension @ \$5,000. Relocate 8 poles on the westerly side of US-101 @ \$3,000. = \$24,000.

Alternative 4

- Charter Communications: Adjust/Relocate facilities at the northerly end of the project at the Traffic Way extension and the westerly side of US-101. No Agency cost as these facilities are generally in place under permit or lease with specific provisions to relocate at Company cost.
- Southern Calif. Gas Company: - Distribution -2" C.P. Line in 10' easement on easterly side of Traffic Way extension. No relocation expected but depth should be electronically determined by Gas Company personnel. Transmission - No transmission lines apparent in project area.
- City of Arroyo Grande: Relocate 8 sewer manhole covers = \$8,000. Relocate 6 water valves and covers = \$4,500. Relocate 4 fire hydrants and valves = \$4,000.
- PG&E: Relocate 9 joint poles @ \$15,000. each = \$135,000.
- Pacific Bell (SBC): Relocate 6 poles and under ground line = \$50,000.

Alternative 5

- PG&E: Relocate 4 poles @ \$13,000 each = \$52,000. Relocate 1 service pole @ \$7,000 each = \$7,000.
- Pacific Bell (SBC): Relocate 3 poles @ \$10,000 each = \$30,000.

It appears that both PG&E and Pacific Bell have rights going back to the 1940's, superior and prior to the 1954 Division of Highways Freeway Agreement. As such, the relocation cost would be 100% Agency. If the utility companies cannot show prior rights then Agency cost would be in accordance with Master Utility Agreements with Caltrans. Right of Way was acquired by the Division of

Highways in 1955/56 for a future frontage road easterly of and adjacent to US-101, which was never built.

9. FUNDING, SCHEDULING, & COOPERATIVE AGREEMENTS

A. Funding and Scheduling

The project is expected to be funded through a combination of local, state and federal funding, including STIP funds. The City of Arroyo Grande anticipates funding a portion of the Capital Outlay costs for PS&E and Construction, as indicated in Table 12. City funding sources are expected to be in place to supplement anticipated 2004 STIP funding for the PA/ED phase. However, because of current budget constraints, STIP funds programmed in the 2004 STIP will not be available until 2008 and STIP funds programmed in the 2006 STIP will be not available until 2010. If the City desires to move this project into PA&ED in 2004 (as shown in Table 13) then the City will have to fund 100% of the PA&ED support costs.

Table 11
 Capital Outlay Support Estimate for PA/ED

Fiscal Year	STIP	City of Arroyo Grande (Developer Fees, etc)
03/04		
04/05	\$0	\$1,800,000
05/06		
Total Support Cost	\$0	\$1,800,000

Support Costs are escalated 2.3% per year. STIP funding includes the 10% for Caltrans Quality Assurance costs.

Table 12
 Capital Outlay Estimate (in millions)

	Range for Total Cost	STIP Funds	City Funds
Alternative 1	\$18.3 - \$22.0	\$4.6 - \$5.5	\$3.7 - \$16.5
Alternative 2	\$26.6 - \$31.9	\$6.7 - \$8.0	\$19.9 - \$23.9
Alternative 3**	\$38.6 - \$46.3	\$0	\$38.6-\$43.3
Alternative 4**	\$53.1 - \$63.8	\$0	\$53.1-63.8
Alternative 5	\$27.8 - \$33.3	\$7.0 - \$8.3	\$20.8 - \$25.3

**At this time SLOCOG has determined there are not substantial regional benefits to Alternative 3 and 4 and will not contribute any STIP funding for the construction of those alternatives. However if future traffic analysis identifies substantial regional benefit then SLOCOG may reconsider the contribution of STIP Funding.

The level of detail available to develop these Capital Cost Estimates is only accurate to within the above ranges and is useful for long range planning purposes only. The capital costs should not be used to program or commit capital funds. The Project Report will serve as the appropriate document from which the remaining support and capital components of the project will be considered for programming. STIP funding subject to overall regional benefit as determined in PA&ED and funding availability.

**Table 13
 Tentative Project Schedule**

Milestone	City Funds 100% of PA&ED	2004 STIP Funds part of PA&ED	2006 STIP Funds part of PA&ED
	Fiscal Year	Fiscal Year	Fiscal Year
Begin Project Report/ Draft ED	09/2004	09/2008	09/2010
Circulate Draft Project Report/ Draft ED	09/2006	09/2010	09/2012
Public Hearing	12/2006	12/2010	12/2012
PA/ED	06/2007	06/2011	06/2013
PS&E	09/2007	09/2011	09/2013
Construction Completion	09/2010	09/2014	09/2016

See Section 9A

B. Cooperative Agreement

Only the "PA/ED" milestone is to be used for programming commitments. All other milestones are used to indicate relative time frames for planning purposes.

The PA/ED support costs and the schedule shown for the approval of the environmental document is based on the City of Arroyo Grande and its consultant being the lead agency for the PA/ED phase of this project.

The City will be the Lead Agency for CEQA and the State will be the State Lead Agency for NEPA and a CEQA Responsible Agency. The Federal Highway Administration (FHWA) will be the Federal Lead Agency for NEPA. The City will assess impacts of the project on the environment and, if necessary, the City will prepare the Environmental Document(s) (ED) to meet the requirements of CEQA and NEPA. The draft and final ED will require the State's review and approval prior to public circulation. The City will provide all data for and prepare drafts of the Draft Project Report (DPR) and the Project Report (PR). The State will review and process the reports and request approval of the project and ED by the FHWA. The City will be responsible for the public hearing process.

If it is later requested that Caltrans be the lead agency for the PA/ED phase, the PA/ED support costs and the schedule will have to be revised based upon the availability of the Caltrans resources.

A Cooperative Agreement will be prepared for the PA/ED phase. Responsibility for future phases of the project will be determined during the PA/ED phase and appropriate Cooperative Agreements will be executed prior to the PS&E and R/W Phase and prior to the Construction phase.

10. PROGRAMMING RECOMMENDATION

This PSR (PDS) recommends the city fund 100% of the Project Approval/Environmental Document support component. It is also recommended that all the alternatives discussed in this report be carried forward for further study in the PA/ED phase of the project. Alternatives may be added or revised during the PA/ED phase as more information becomes available. Final determination of the preferred alternative will be made during the Project Approval/Environmental Document (PA/ED) phase of project development. The remaining support and capital components for PS&E, R/W and Construction for the project are preliminary estimates and are not suitable for programming purposes. Either an approved Supplement PSR or an approved Project Report will be required as the programming document for those components in either 2006 or 2007 STIP.

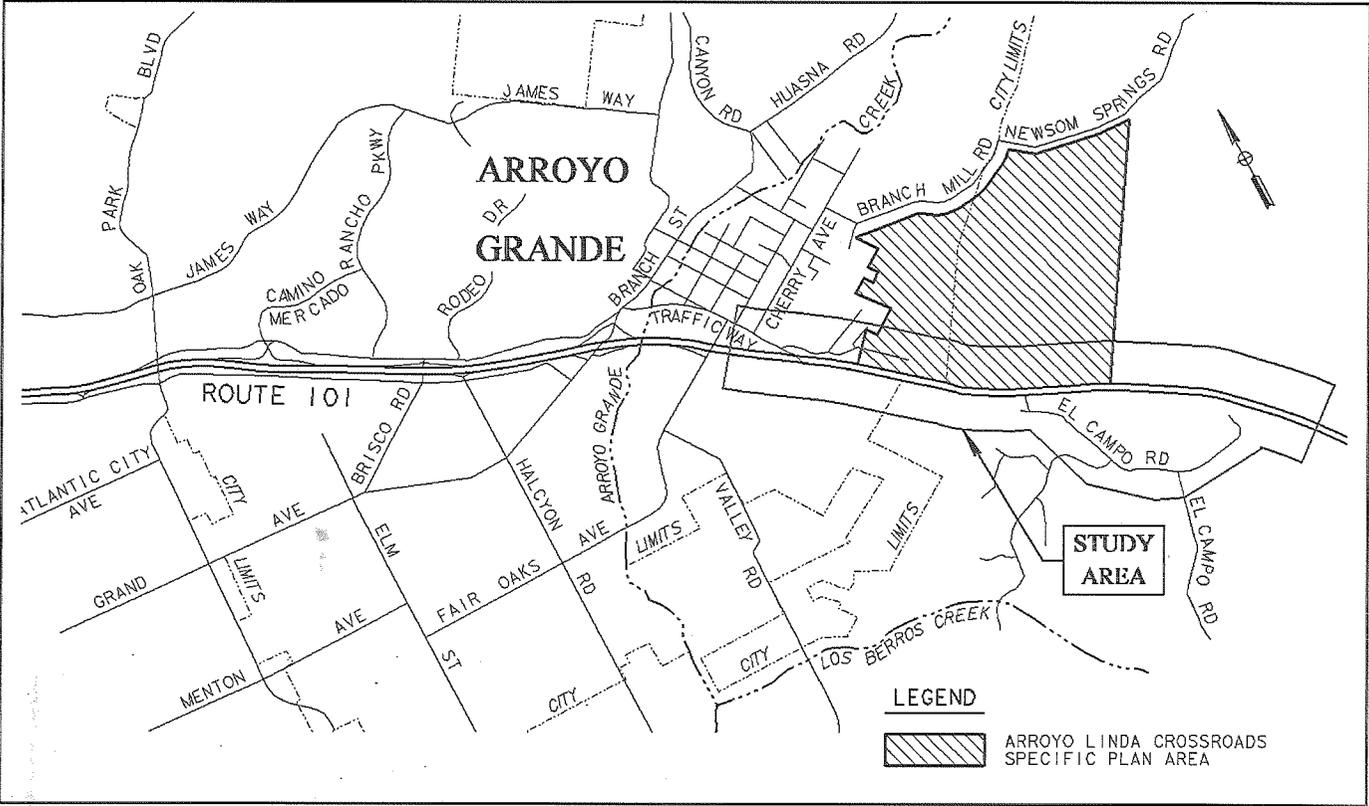
11. PROJECT PERSONNEL

Tom Houston Project Manager Caltrans District 5 Special Funded Projects 1150 Laurel Lane, Room 1-105 San Luis Obispo, CA 93401-8616	(805) 549-3016
Don Spagnolo Director of Public Works City of Arroyo Grande 208 E. Branch Street Arroyo Grande, CA 93421	(805) 473-5440
Jill Peterson Project Manager City of Arroyo Grande 4115 Broad Street, Suite B-5 San Luis Obispo, CA 93401	(805) 544-4011
Matthew Griggs Project Manager Dokken Engineering 11171 Sun Center Drive, Suite 250 Rancho Cordova, CA 95670	(916) 858-0642
Janette A. Ruesga Project Engineer (PSR (PDS) Preparation) Dokken Engineering 11171 Sun Center Drive, Suite 250 Rancho Cordova, CA 95670	(916) 858-0642
J. Daniel Takacs Traffic Analysis Higgins Associates 1355 First Street, Suite A Gilroy, CA 95020	(408) 848-3122
Mary Reents Environmental Analysis Morro Group, Inc. 1422 Monterey Street, Suite C200 San Luis Obispo, CA 93401	(805) 543-7095
Michael Stanton Topographic Mapping RRM Design Group 3765 South Higuera Street, Suite 102 San Luis Obispo, CA 93401	(805) 543-1794
Bob Tarvin R/W Estimates Tarvin & Associates 229 Miller Way Arroyo Grande, CA 93420	(805) 489-0147

12. ATTACHMENTS

- A. Vicinity Map
- B. Conceptual Geometric Drawing and Typical Cross Sections – Alternative 1
- C. Conceptual Geometric Drawing and Typical Cross Sections – Alternative 2
- D. Conceptual Geometric Drawing and Typical Cross Sections – Alternative 3
- E. Conceptual Geometric Drawing and Typical Cross Sections – Alternative 4
- F. Conceptual Geometric Drawing – Alternative 5
- G. Bridge Planning Studies
- H. Preliminary Environmental Assessment Report (PEAR)
- I. PDS Traffic Scoping Checklist
- J. Preliminary Estimate of Project Cost
- K. Right-of-Way Data & Utility Information Sheets
- L. El Campo Road Improvements – Conceptual Geometrics and Cost Estimate
- M. Storm Water Data Report Approval Sheet
- N. PDS Design Scoping Checklist

ATTACHMENT A - Vicinity Map



VICINITY MAP

**INTERCHANGE IMPROVEMENTS ON ROUTE 101 IN THE VICINITY
OF EL CAMPO ROAD AND NEAR THE CITY OF ARROYO GRANDE
IN SAN LUIS OBISPO COUNTY**

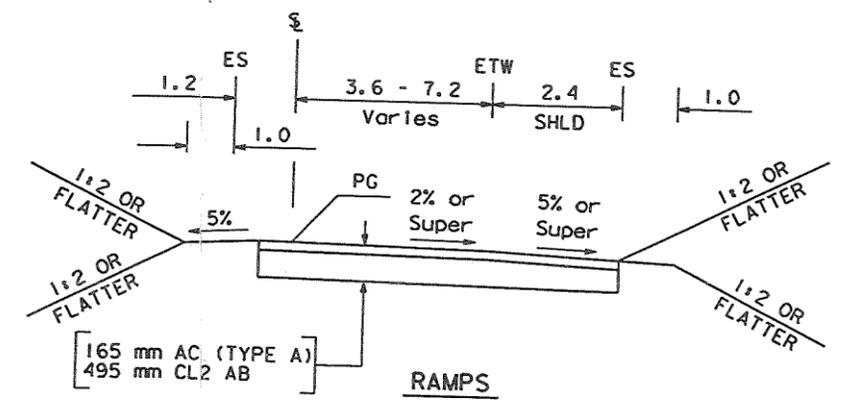
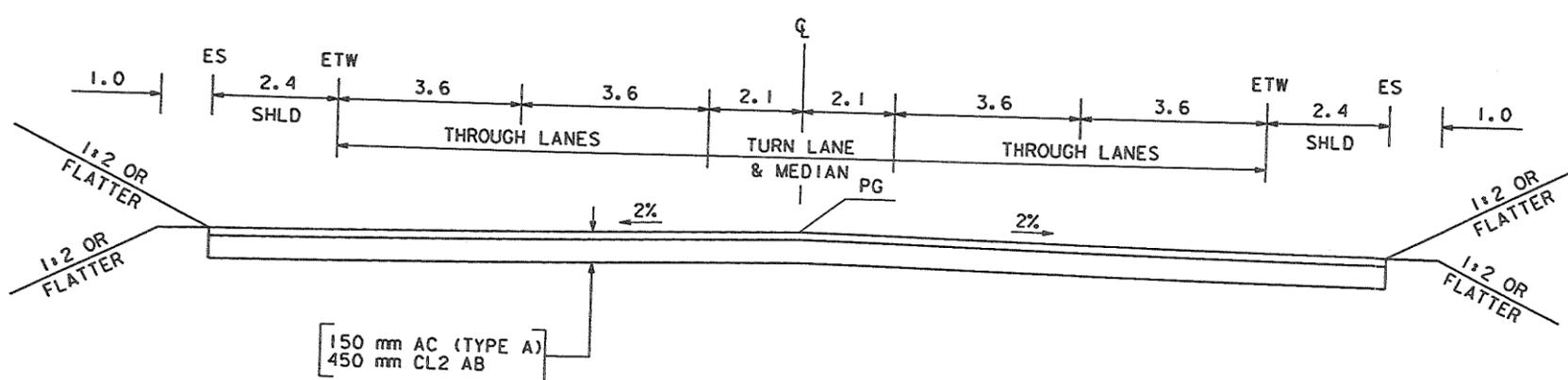
**ATTACHMENT B - Conceptual Geometric Drawing and
Typical Cross Sections - Alternative 1**



**PROPOSED
EL CAMPO RD
OVERCROSSING**

UTILITIES LEGEND

- X ——— Pacific Bell Telephone
- W— City of Arroyo Grande, Water
- E— PG&E, Electrical



150 mm AC (TYPE A)
450 mm CL2 AB

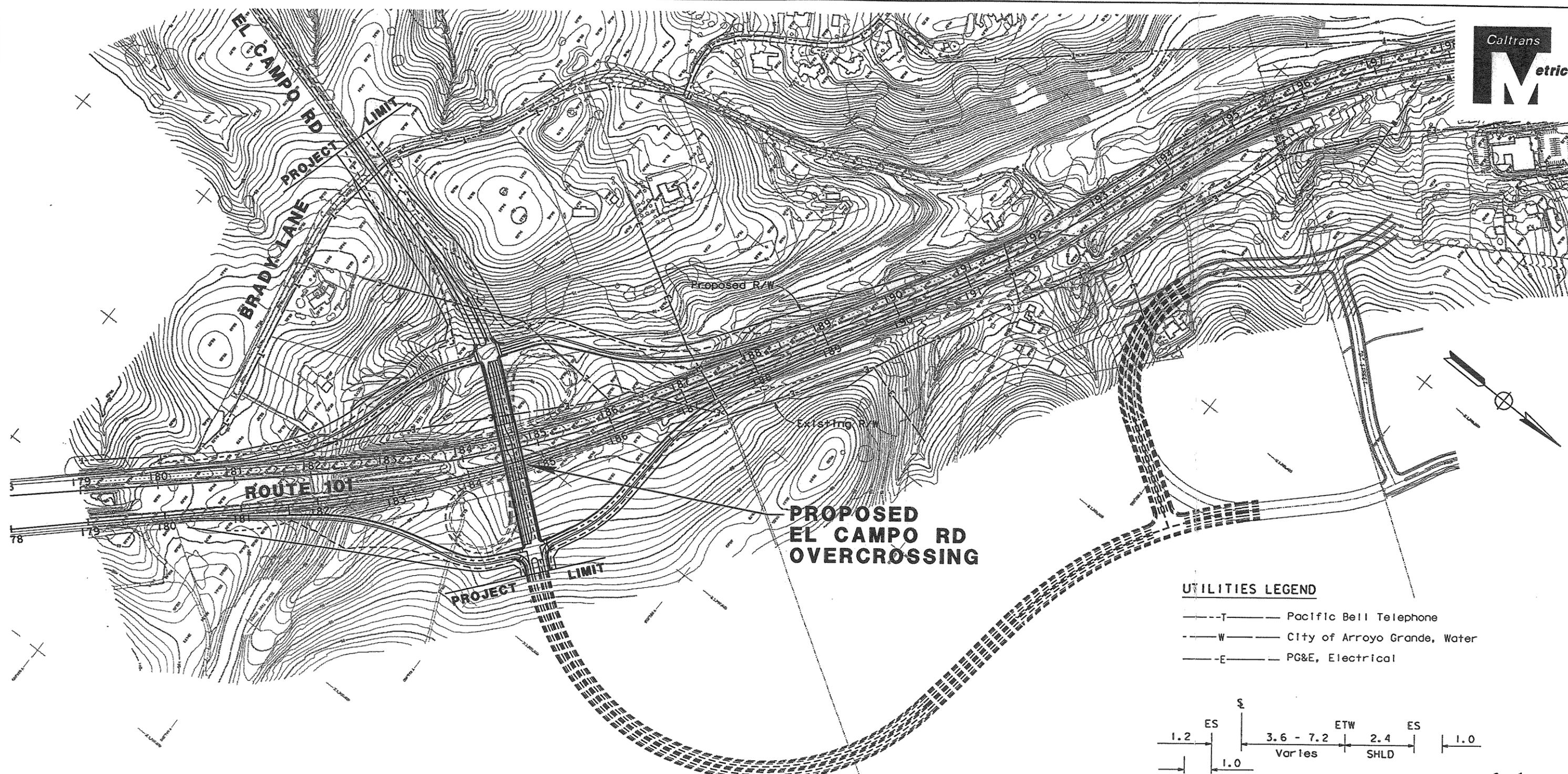
**EL CAMPO ROAD
AT OVERCROSSING**

DEDOKKEN
ENGINEERING
www.dokkenengineering.com
140 Central Avenue
Salinas, CA 93901
(831) 751-1701

PROJECT MANAGER	Matthew N. Griggs
PROJECT ENGINEER	Janette A. Ruesga
DETAILS	J. Cern
DATE	January 2003
SCALE	1:2500

PROJECT	EL CAMPO RD/ROUTE 101 INTERCHANGE ALTERNATIVE 1
SCALE	CONCEPTUAL DRAWING

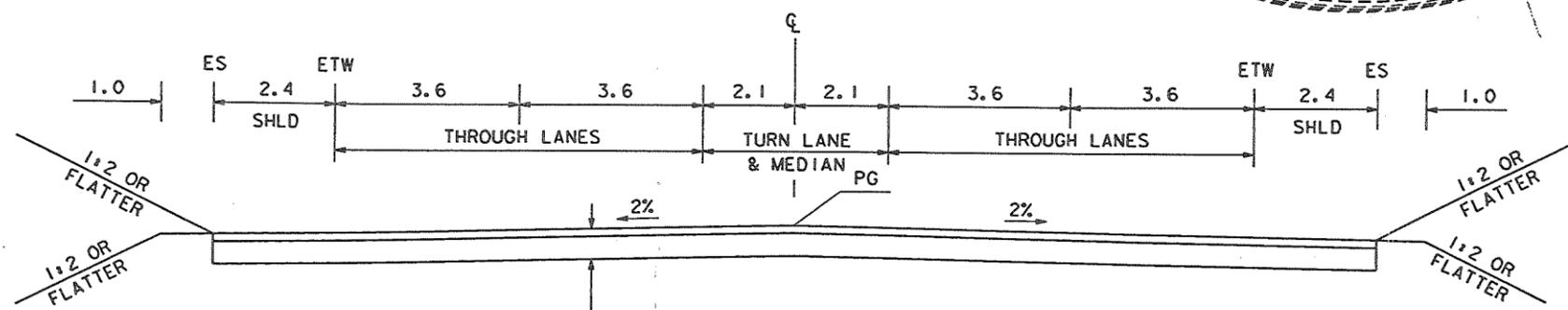
**ATTACHMENT C - Conceptual Geometric Drawing and
Typical Cross Sections - Alternative 2**



**PROPOSED
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OVERCROSSING**

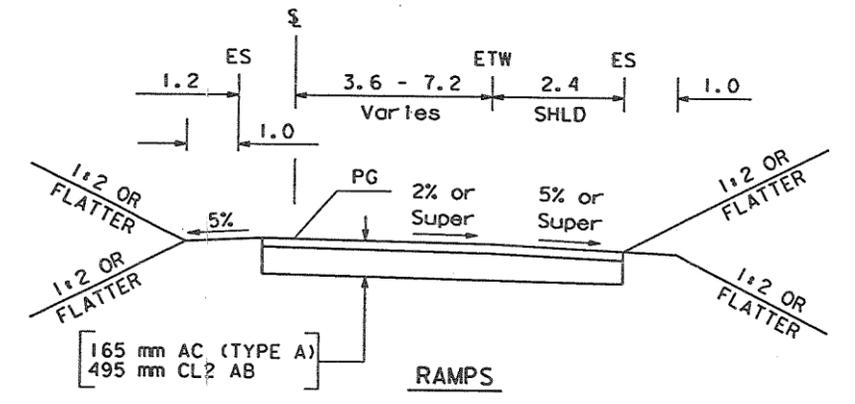
UTILITIES LEGEND

- T--- Pacific Bell Telephone
- W--- City of Arroyo Grande, Water
- E--- PG&E, Electrical



[150 mm AC (TYPE A)
450 mm CL2 AB]

**EL CAMPO ROAD
AT OVERCROSSING**



[165 mm AC (TYPE A)
495 mm CL2 AB]

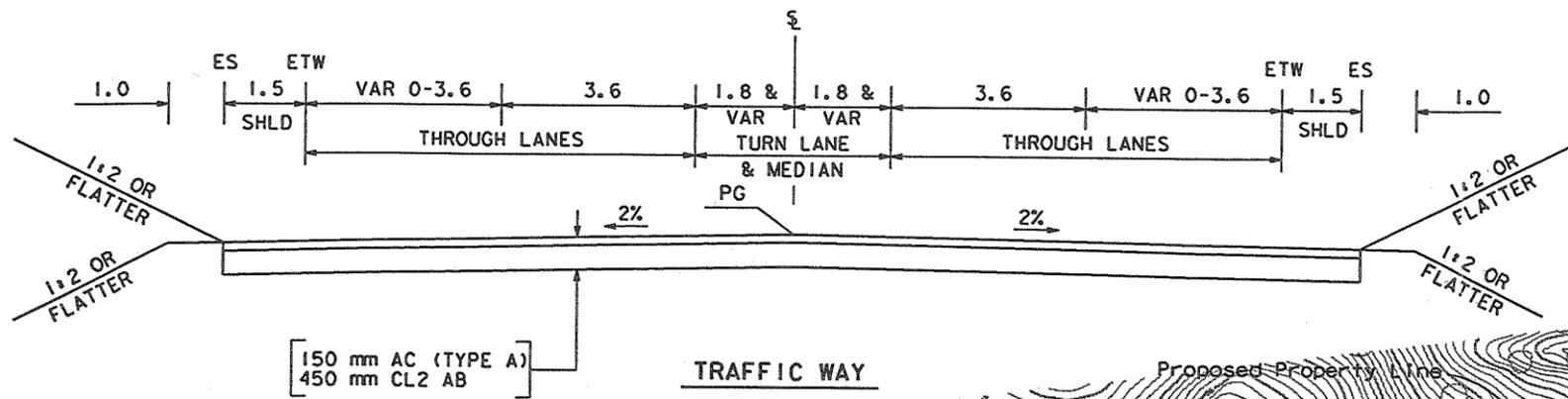
RAMPS

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140 Central Avenue
Salinas, CA 93901
(831) 751-1701

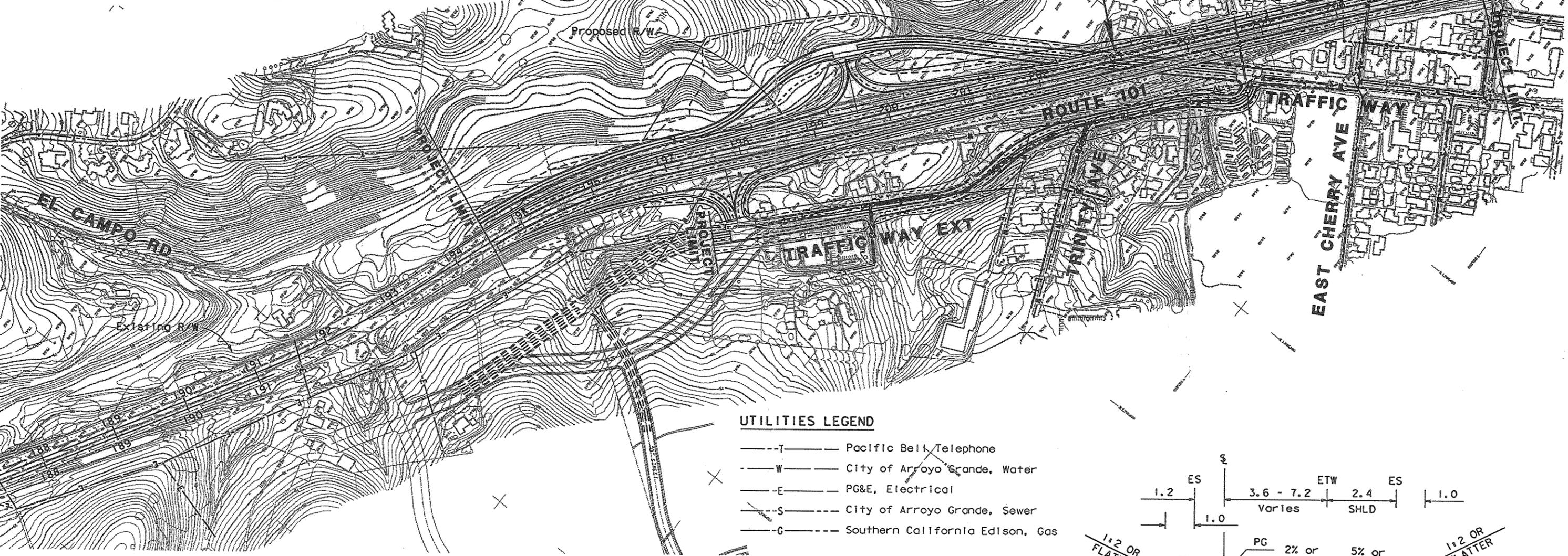
PROJECT MANAGER	Matthew N. Griggs
PROJECT ENGINEER	Janette A. Ruesga
DETAILS	J. Cern
DATE	January 2003
SCALE	1:2500

PROJECT	EL CAMPO RD/ROUTE 101 INTERCHANGE ALTERNATIVE 2
	CONCEPTUAL DRAWING

**ATTACHMENT D - Conceptual Geometric Drawing and
Typical Cross Sections - Alternative 3**

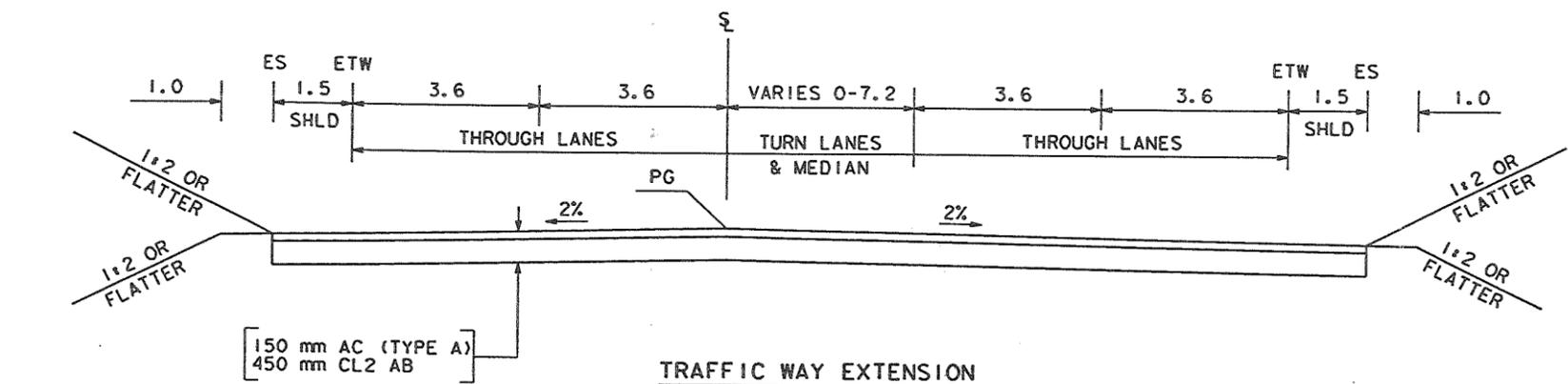


PROPOSED TRAFFIC WAY UNDERCROSSING

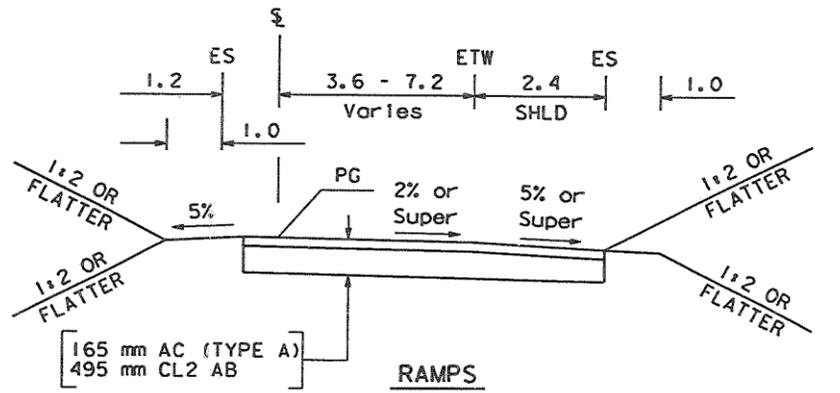


UTILITIES LEGEND

- T--- Pacific Bell Telephone
- W--- City of Arroyo Grande, Water
- E--- PG&E, Electrical
- S--- City of Arroyo Grande, Sewer
- G--- Southern California Edison, Gas



TRAFFIC WAY EXTENSION



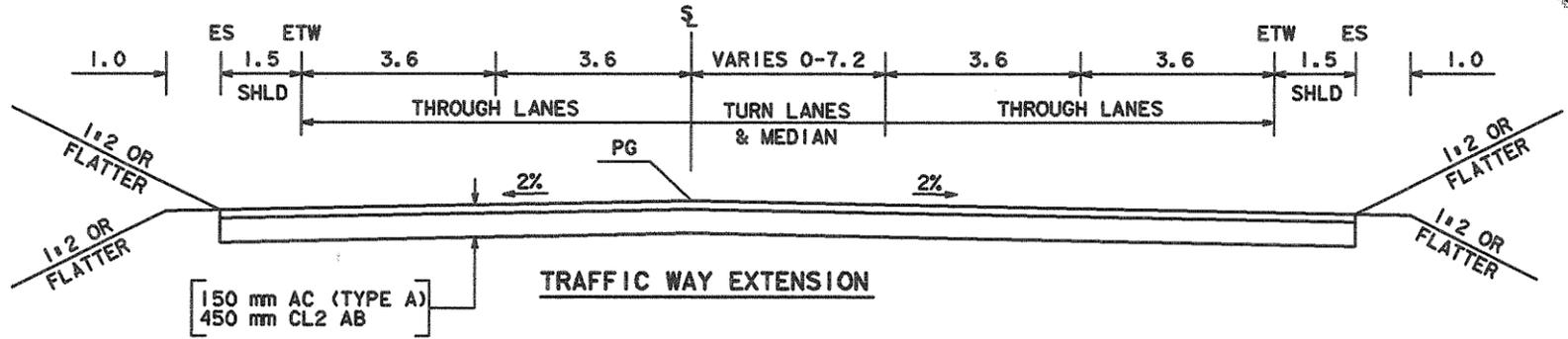
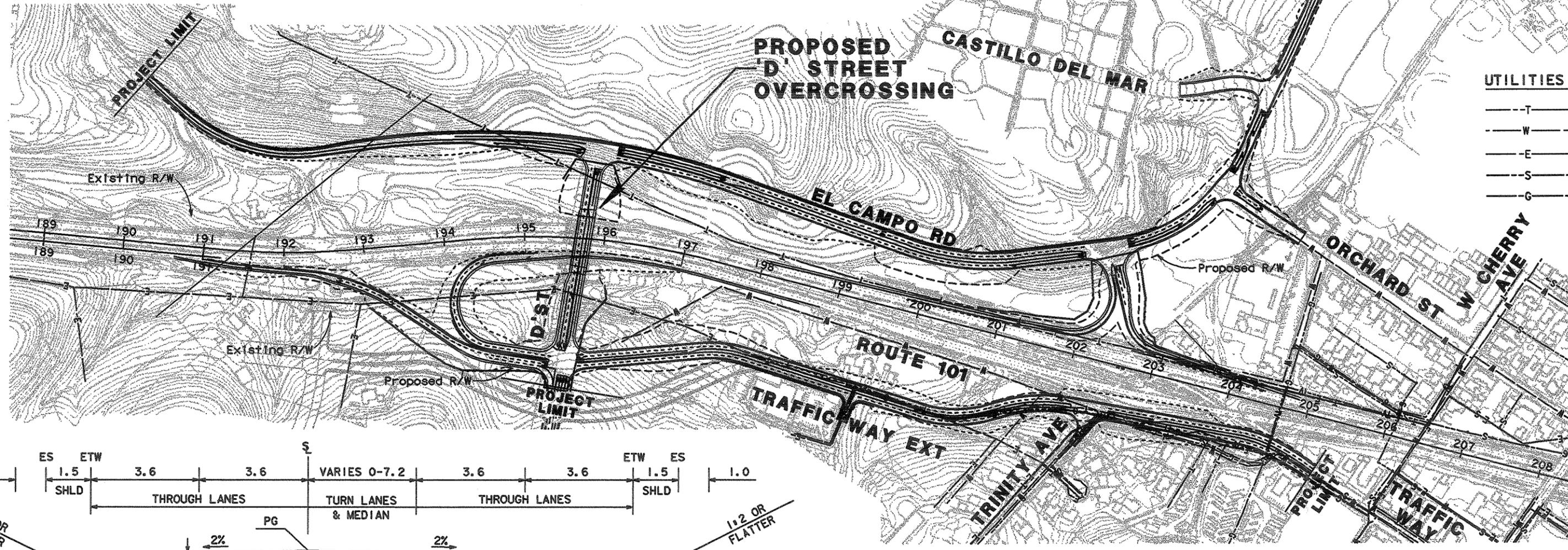
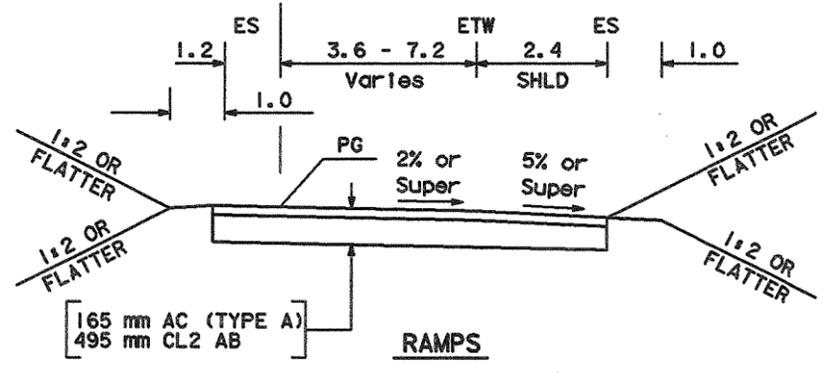
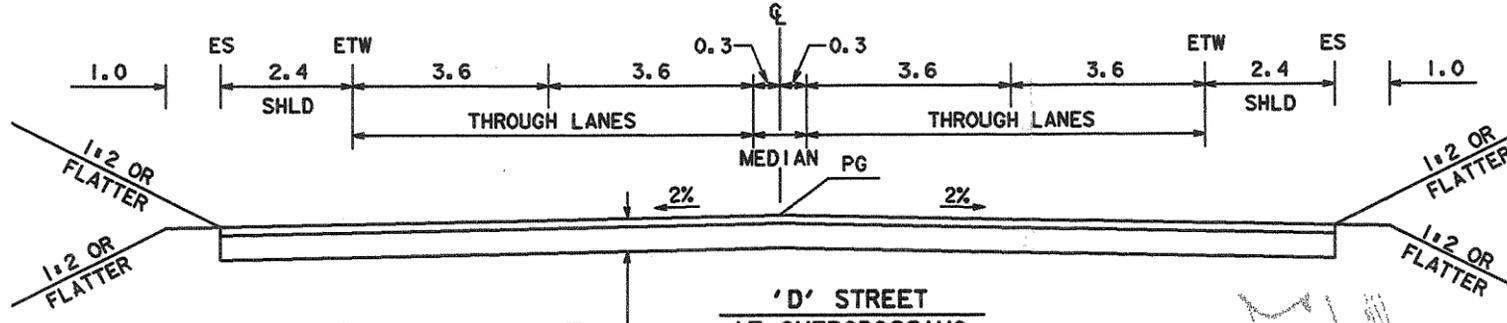
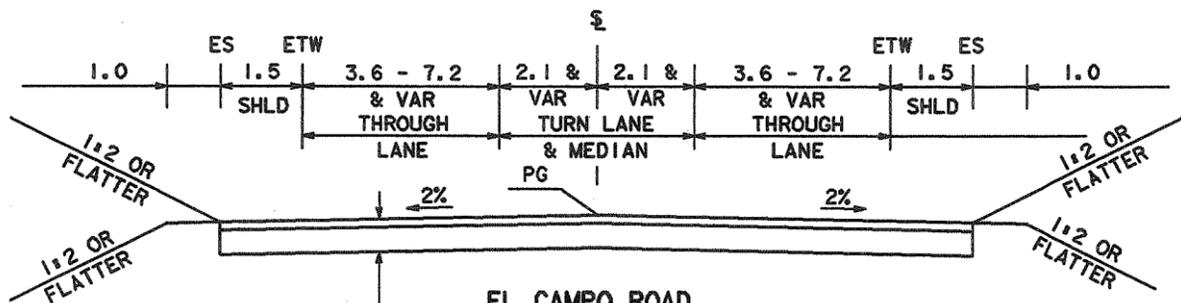
RAMPS

DOKKEN ENGINEERING
 140 Central Avenue
 Salinas, CA 93901
 www.dokkenengineering.com
 (831) 751-1701

PROJECT MANAGER	Matthew N. Griggs
PROJECT ENGINEER	Janette A. Ruesga
DETAILS	J. Cern
DATE	January 2003
SCALE	1:2500

PROJECT	TRAFFIC WAY/ROUTE 101 INTERCHANGE ALTERNATIVE 3
	CONCEPTUAL DRAWING

**ATTACHMENT E - Conceptual Geometric Drawing and
Typical Cross Sections - Alternative 4**

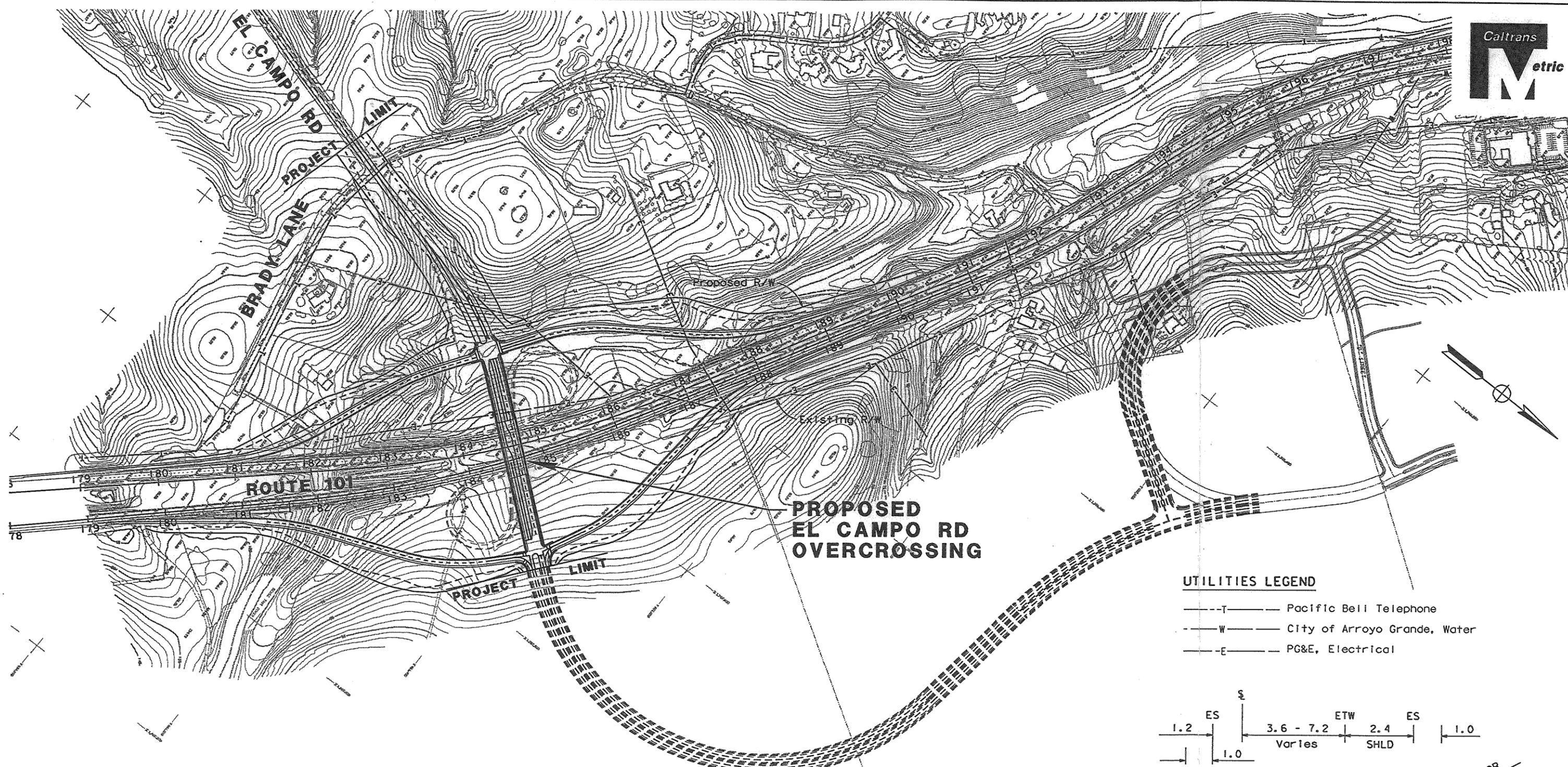


DOKKEN ENGINEERING

140 Central Avenue
Salinas, CA 93901
(831) 751-1701
www.dokkenengineering.com

PROJECT MANAGER	Matthew N. G
PROJECT ENGINEER	Janette A. R
DETAILS	J. Cern
DATE	January 2003
SCALE	1:2500

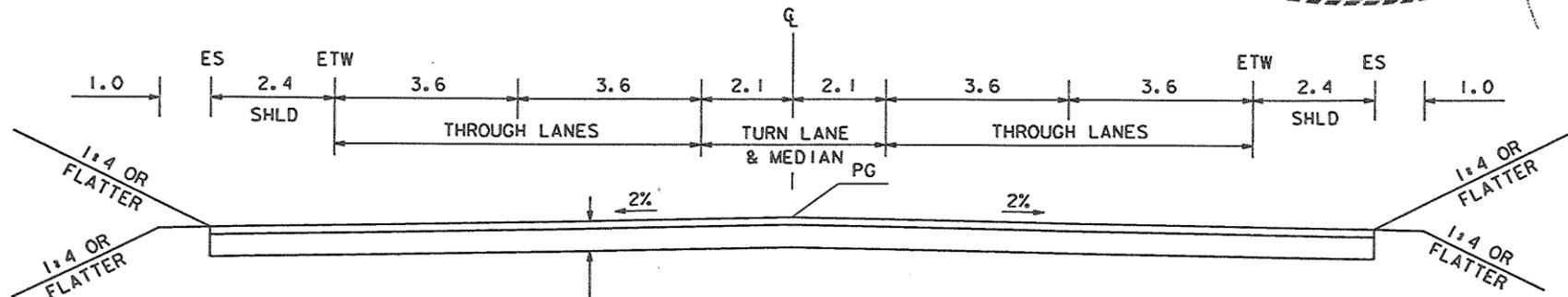
**ATTACHMENT F - Conceptual Geometric Drawing -
Alternative 5**



**PROPOSED
EL CAMPO RD
OVERCROSSING**

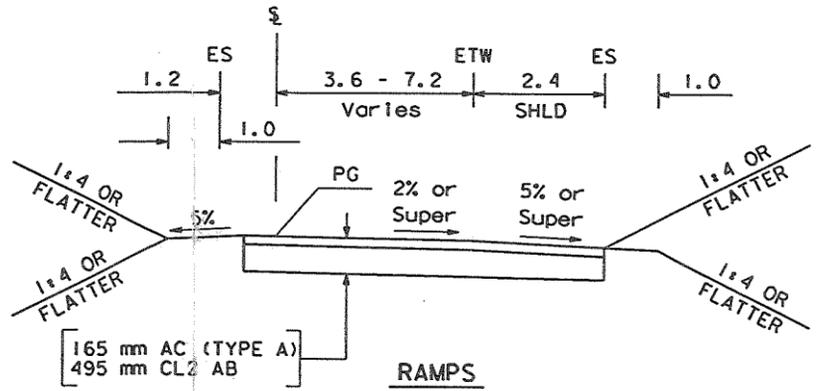
UTILITIES LEGEND

- T--- Pacific Bell Telephone
- W--- City of Arroyo Grande, Water
- E--- PG&E, Electrical



[150 mm AC (TYPE A)
450 mm CL2 AB]

**EL CAMPO ROAD
AT OVERCROSSING**



[165 mm AC (TYPE A)
495 mm CL2 AB]

RAMPS

DEDOKKEN
ENGINEERING
www.dokkenengineering.com

140 Central Avenue
Salinas, CA 93901

(831) 751-1701

PROJECT MANAGER	Matthew N. Griggs
PROJECT ENGINEER	Janette A. Ruesga
DETAILS	J. Cern
DATE	January 2003
SCALE	1:2500

**EL CAMPO RD/ROUTE 101
INTERCHANGE
ALTERNATIVE 5**

CONCEPTUAL DRAWING

ATTACHMENT G - Bridge Planning Studies

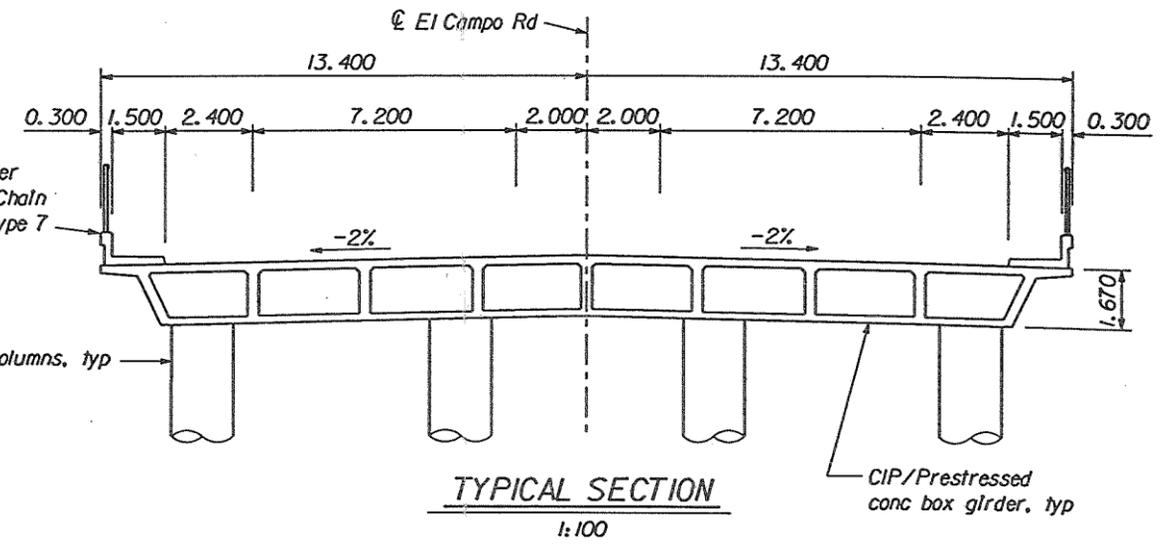
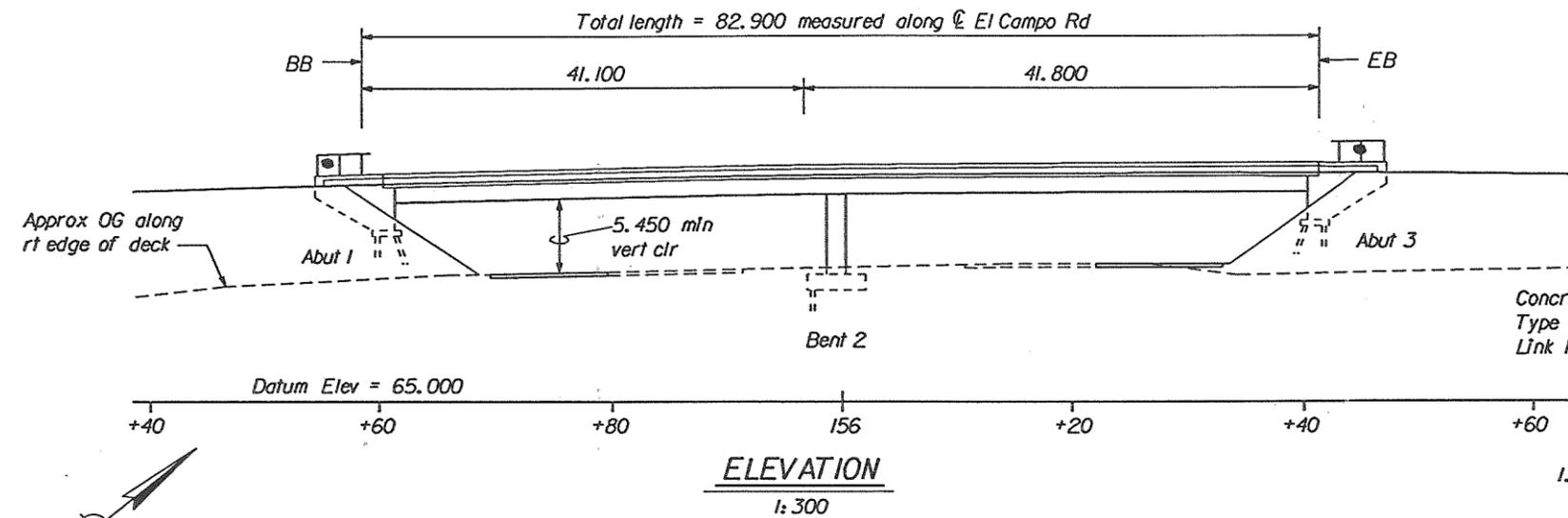
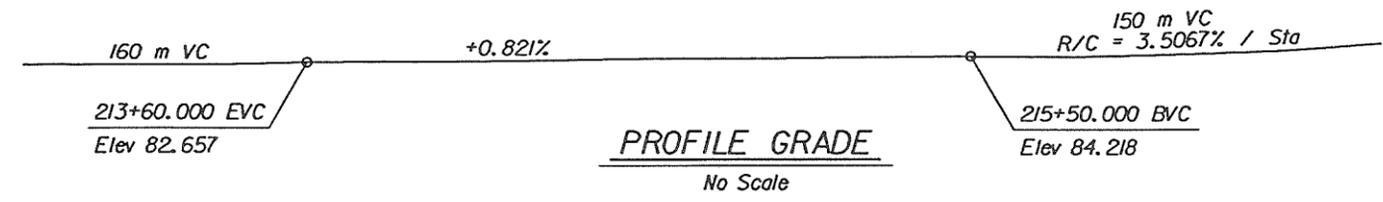
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05	SLO	101			



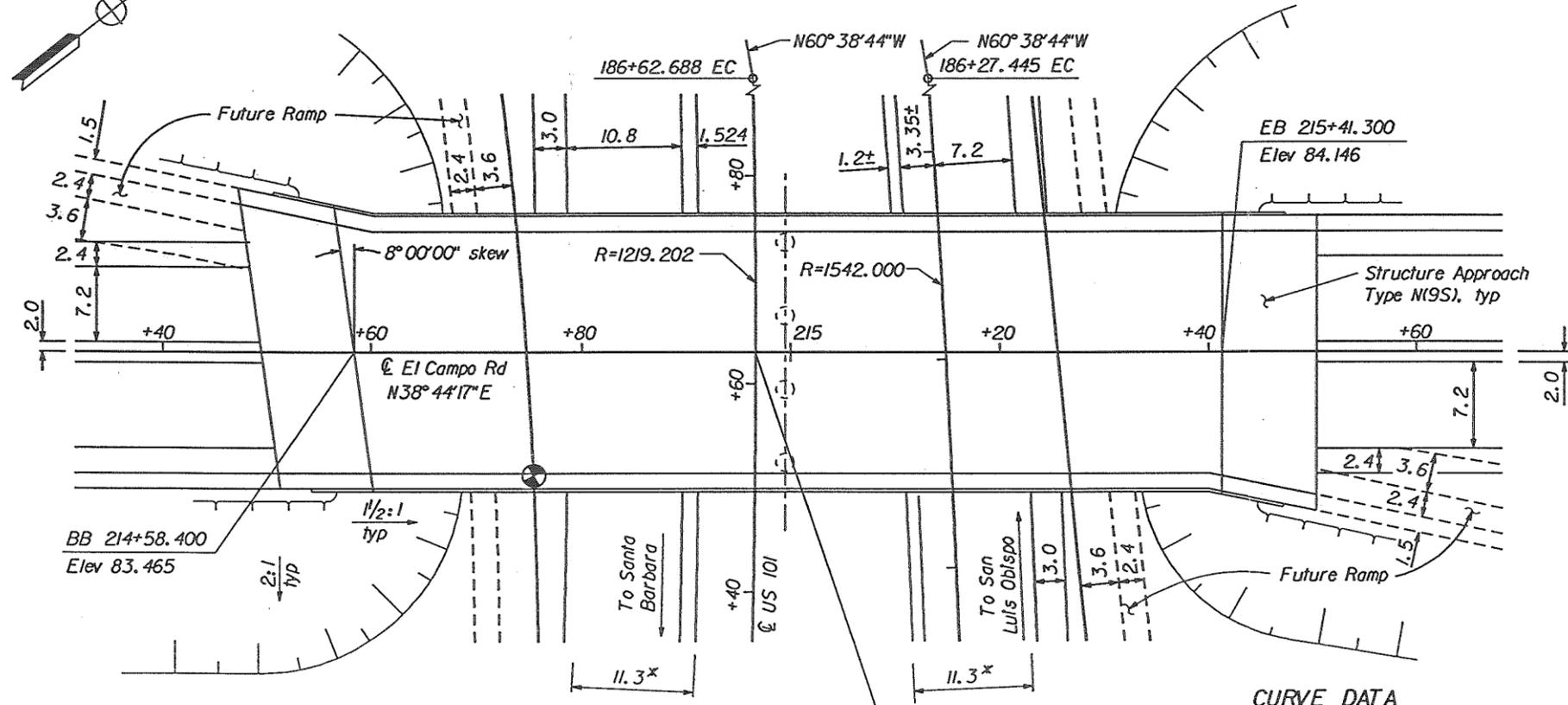
REGISTERED CIVIL ENGINEER
M G MAECHLER
 No. 42513
 Exp. 3-31-04
 CIVIL
 STATE OF CALIFORNIA

PLANS APPROVAL DATE
Dokken Engineering
 11171 Sun Center Drive
 Rancho Cordova, CA 95670

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



Note:
 Traffic will pass through construction. 4.6 M min vert clearance required under falsework.



CURVE DATA

R = 1219.202	R = 1542.000
Δ = 18°18'20"	Δ = 17°13'30"
T = 196.437	T = 233.550
L = 389.526	L = 463.576

LEGEND

- ⊕ Point of min vert clearance
- Denotes exist structure

Date of estimate	=	2/27/02
Structure depth	=	1.670
Length	=	82.900
Width	=	26.800
Area cost/m including 10% mobilization & 25% contingency	=	\$1,400
Total Cost	=	\$3,110,000

Traffic will pass through construction site (4.6 m min vert clearance required under falsework for vehicular traffic opening).

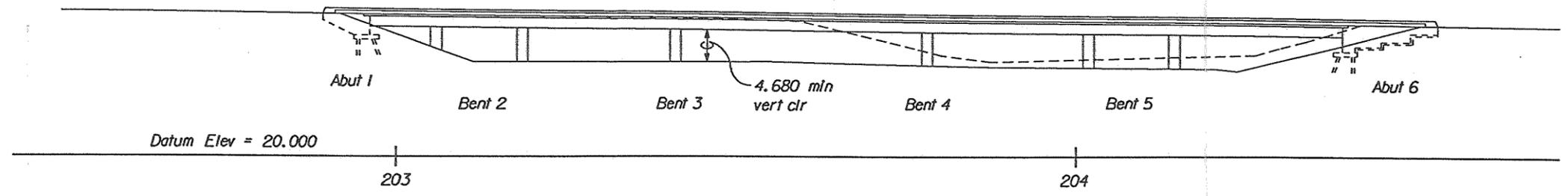
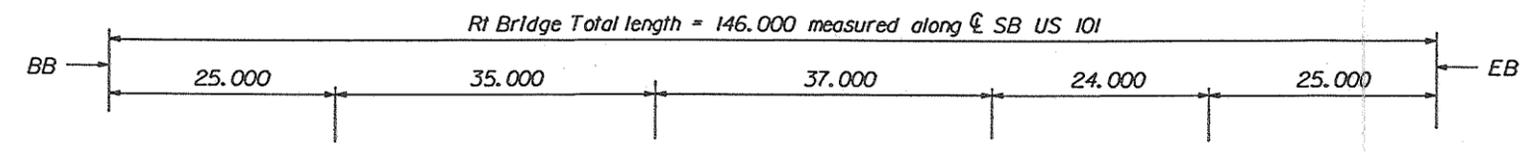
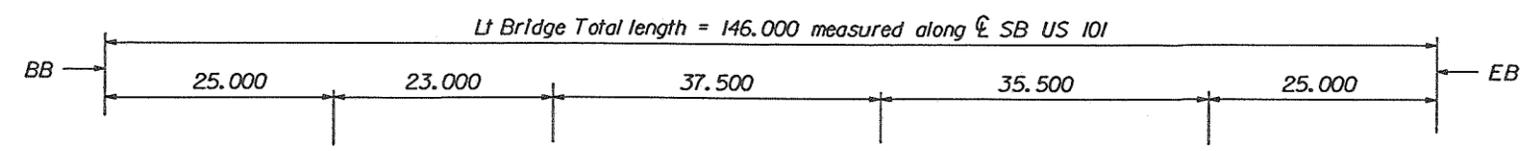
Note:
 All dimensions are in meters unless otherwise shown.

* Assumed falsework openings

DESIGN OVERSIGHT	DESIGN BY M. Maechler	CHECKED	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD	PREPARED FOR THE CITY OF ARROYO GRANDE	BRIDGE NO.	EL CAMPO ROAD OC - ALTERNATIVE 2
DETAILS	BY	CHECKED	LAYOUT	BY	PROJECT ENGINEER	KILOMETER POST	PLANNING STUDY
QUANTITIES	BY	CHECKED	SPECIFICATIONS	BY	PLANS AND SPECS COMPARED		
SIGNOFF DATE							
1090CGP.DGN			ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS	0 10 20 30 40 50 60 70 80 90 100	CU 05 EA 0A370K	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES (PRELIMINARY STAGE ONLY)

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SLO	101			

REGISTERED CIVIL ENGINEER	
PLANS APPROVAL DATE	
Dokken Engineering 11171 Sun Center Drive Rancho Cordova, CA 95670	

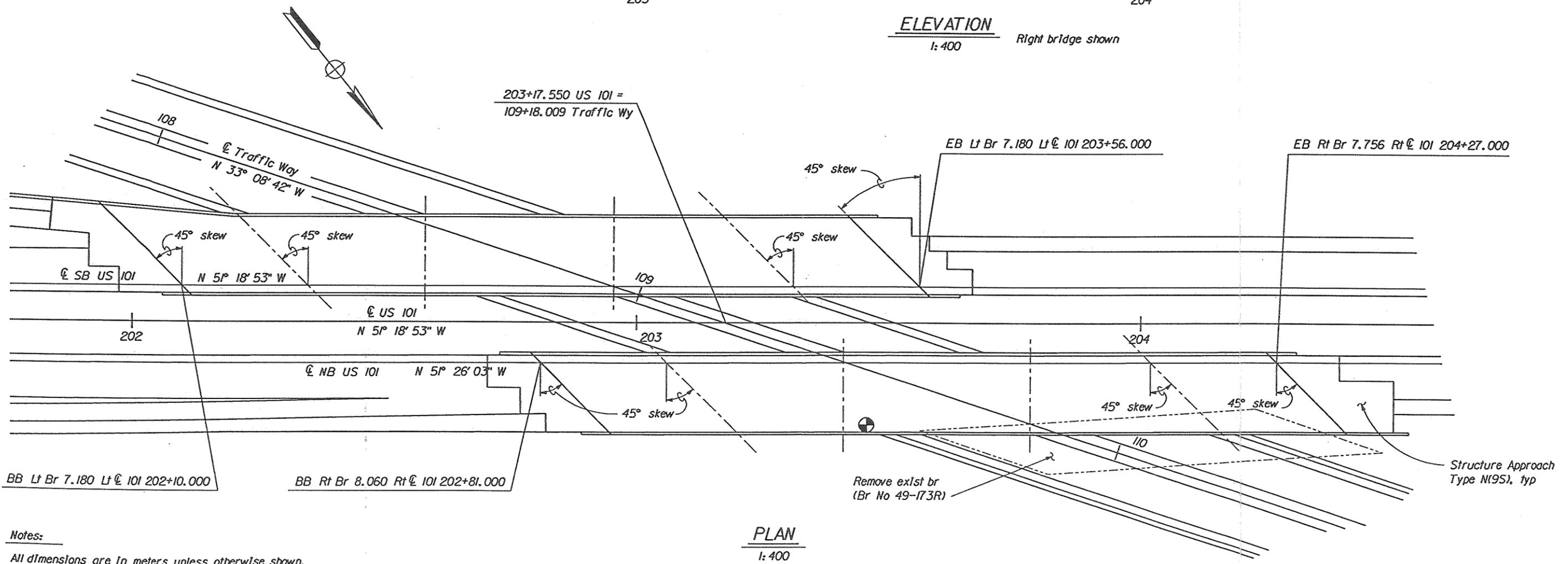


LEGEND

⊕ Point of min vert clearance

----- Denotes exist structure

ELEVATION
1:400 Right bridge shown

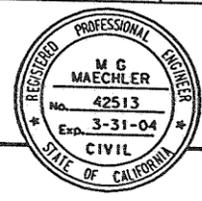
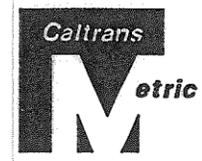


PLAN
1:400

Notes:
All dimensions are in meters unless otherwise shown.

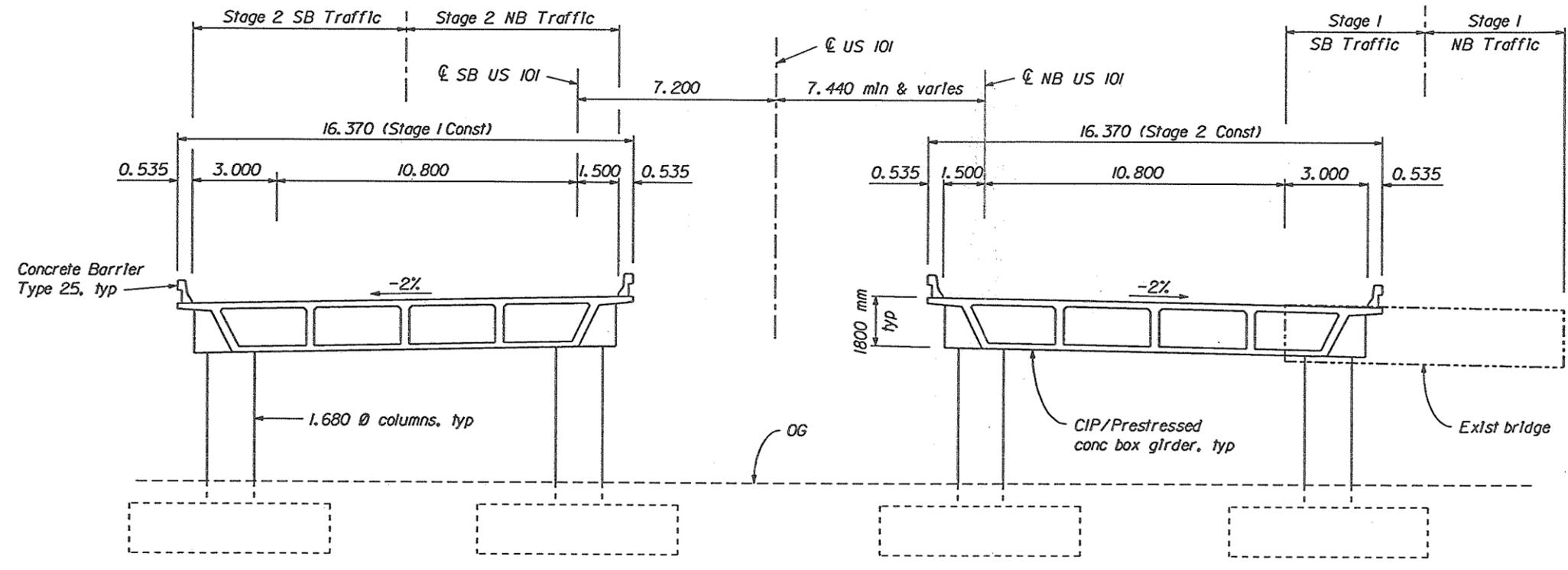
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SIGNOFF DATE	DETAILS BY	CHECKED	LAYOUT BY	PLANS AND SPECS COMPARED	PROJECT ENGINEER	KILOMETER POST	
1090AGPI.DGN	QUANTITIES BY	CHECKED	SPECIFICATIONS BY		CU 05 EA 0A370K	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES (PRELIMINARY STAGE ONLY)
ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS						SHEET 1 OF 2	

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SLO	101			



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 PLANS APPROVAL DATE
Dokken Engineering
 11171 Sun Center Drive
 Rancho Cordova, CA 95670

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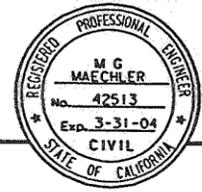
TYPICAL SECTION
1:100

Notes:
 All dimensions are in meters unless otherwise shown.

Date of estimate	=	4/16/02
Structure depth	=	1.800
Length	=	146.000
Width	=	32.740
Area cost/m including 10% mobilization & 25% contingency	=	\$1,615
Remove exist bridge	=	\$150,000
Total Cost	=	\$7,720,000

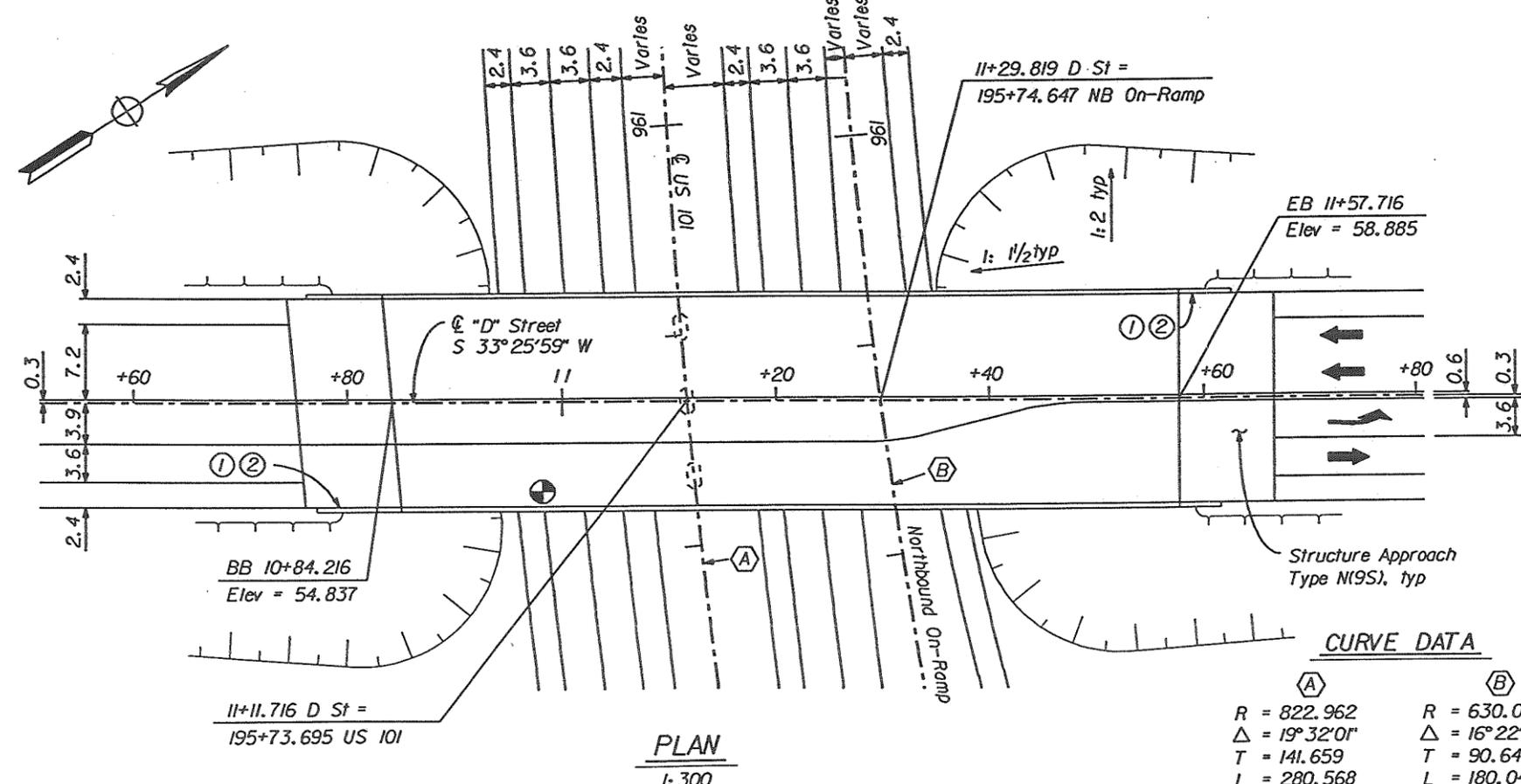
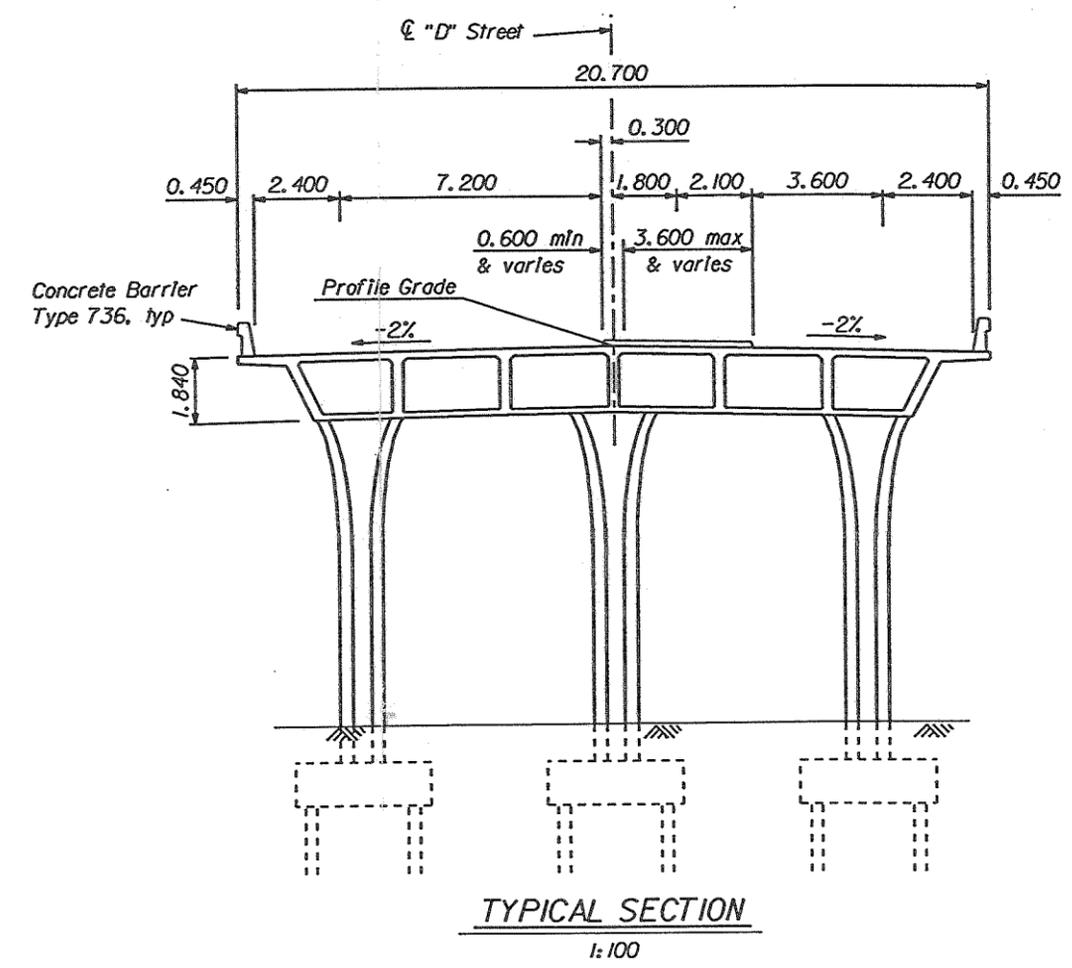
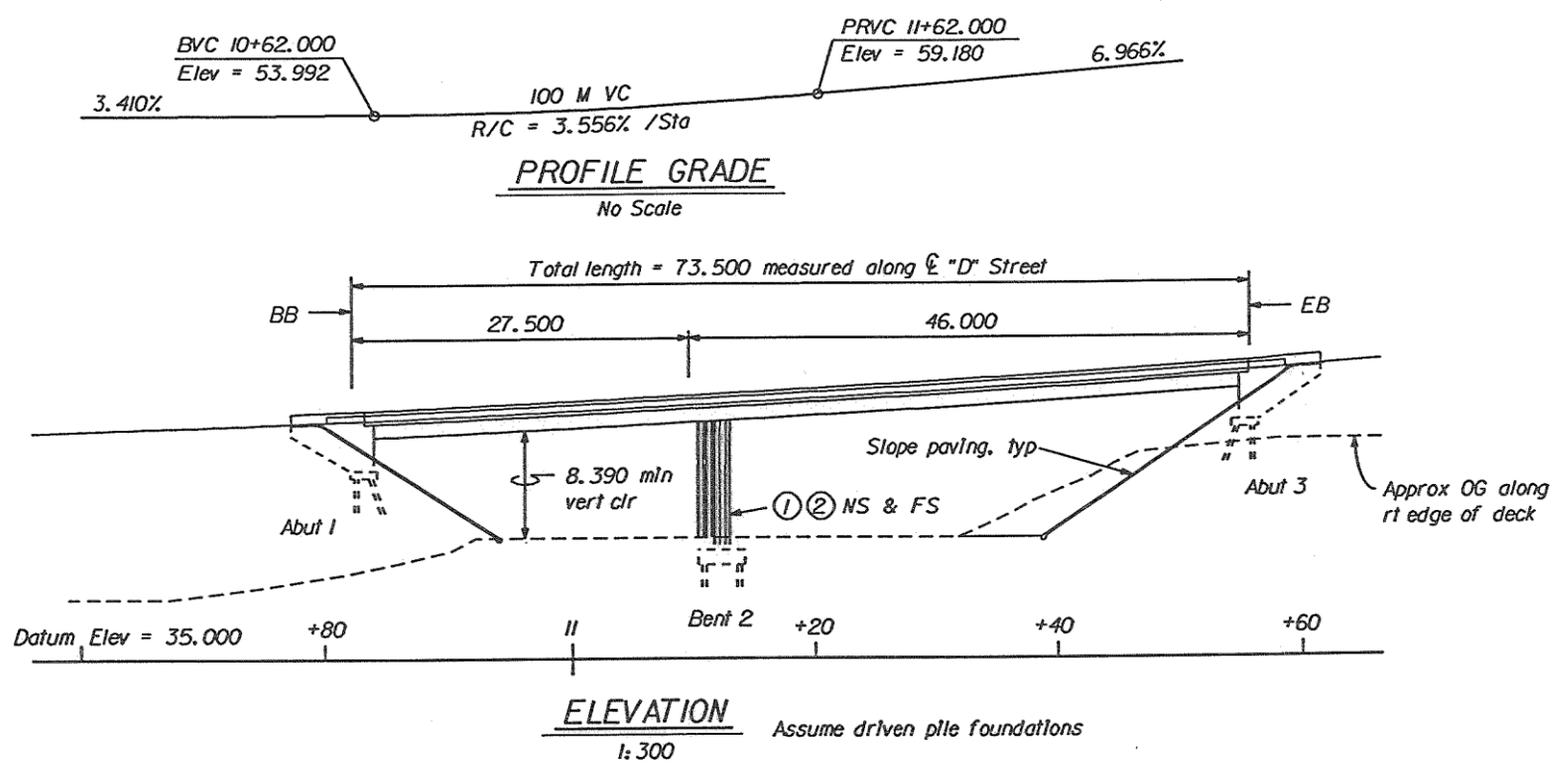
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SIGNOFF DATE	DETAILS BY	CHECKED	LAYOUT BY	PLANS AND SPECS COMPARED	PROJECT ENGINEER	KILOMETER POST			
1090AGPI.DGN	QUANTITIES BY	CHECKED	SPECIFICATIONS BY						
ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS					0 10 20 30 40 50 60 70 80 90 100	CU 05 EA 0A370K	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET 2 OF 2

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SLO	101			



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 PLANS APPROVAL DATE
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 11171 Sun Center Drive
 Rancho Cordova, CA 95670

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CURVE DATA

Ⓐ	R = 822.962	Ⓑ	R = 630.000
	Δ = 19° 32' 01"		Δ = 16° 22' 27"
	T = 141.659		T = 90.640
	L = 280.568		L = 180.044

LEGEND

- ① Point "Bridge No. ___"
- ② Point "D Street O.C." & year completed
- ⊙ Point of min vert clearance

Date of estimate	=	4/14/02
Structure depth	=	1.840
Length	=	73.500
Width	=	20.700
Area cost/m including 10% mobilization & 25% contingency	=	\$1,200
Total Cost	=	\$1,826,000

DESIGN OVERSIGHT	DESIGN BY J. Bishop	CHECKED	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD	PREPARED FOR THE CITY OF ARROYO GRANDE	BRIDGE NO. 49-173R/L	D STREET OVERCROSSING - ALTERNATIVE 4
DETAILS	BY	CHECKED	LAYOUT	CHECKED	PROJECT ENGINEER	KILOMETER POST	
QUANTITIES	BY	CHECKED	SPECIFICATIONS	PLANS AND SPECS COMPARED	CU 05 EA 0A370K	PLANNING STUDY	
STAMPOFF DATE	ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS			DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET 1 OF 1

1090DGPI.DGN

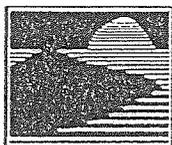
**ATTACHMENT H - Preliminary Environmental
Assessment Report (PEAR)**

**Preliminary Environmental
Analysis Report
for the proposed
El Campo Road/Route 101
Interchange**

Prepared for:

**Dokken Engineering
140 Central Avenue
Salinas, CA 93901**

April 8, 2002



**MORRO
GROUP, INC.**
Environmental Services

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APPENDICIES

Appendix A:	Special-Status Plant Species
Appendix B:	Phase 1 Archaeological Surveys

I. INTRODUCTION AND PROJECT DESCRIPTION

The proposed project is located in the southern portion of San Luis Obispo County, along U.S. 101, in the vicinity of the El Campo Road/Route 101 intersection. Figure 1 shows the project's regional vicinity, and a project location map is provided as Figure 2. The proposed project involves the construction of a diamond interchange at or near El Campo Road, and possible additions or improvements to freeway access ramps at Traffic Way or road improvements and extensions on El Campo Road. Four alternative locations and configurations have been presented for study. Maps of these alternatives are included as Figures 3, 4, 5, and 6.

This project is intended to eliminate the present at-grade intersection at El Campo Road and facilitate traffic flow in response to increases in traffic volumes through the area. Under the existing conditions, traffic enters and exits Route 101 at El Campo Road via turn lanes, and vehicles crossing Route 101 are regulated by stop signs. Improvements are necessary to reduce traffic congestion and improve traffic safety conditions in this area. Construction of an interchange will eliminate dangerous cross-highway traffic in this area and provide restricted access to this section of Route 101.

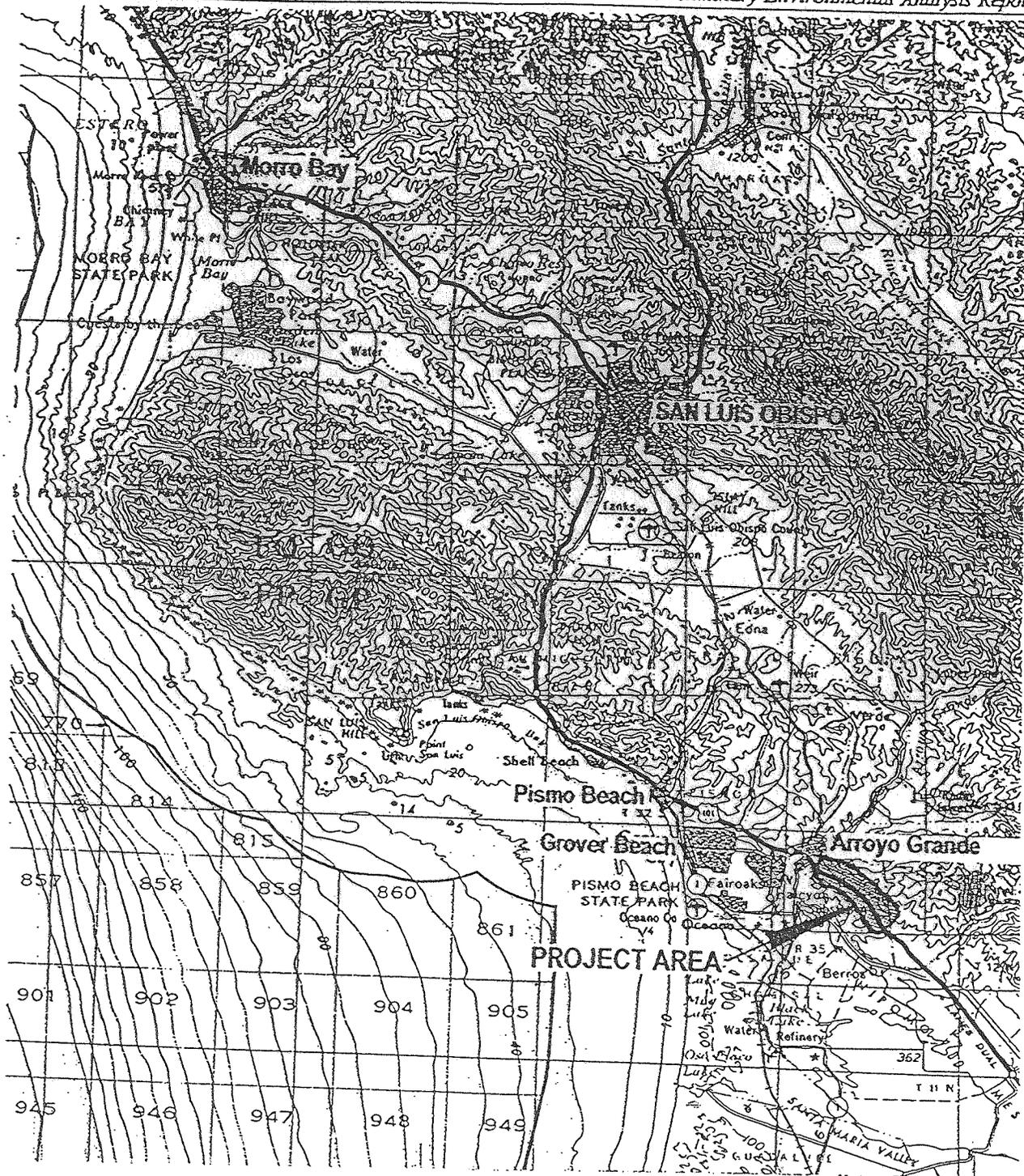
The selected alternatives for this project are summarized below:

- Alternative 1 includes the construction of a new diamond interchange immediately adjacent to the existing at-grade intersection of El Campo Road and US 101. This Alternative requires the construction of a new US 101 overcrossing structure with ramps, realignment of El Campo Road for approximately 90-120 meters, and the construction of the Arroyo Linda project street system. This alternative would require approximately 10 acres of additional right-of way and the relocation of various overhead utilities. Two buildings would be removed in order to facilitate construction.
- Alternative 2 includes the construction of a new diamond interchange approximately 488 meters south of the existing at-grade intersection of El Campo Road and US 101. This Alternative requires the construction of a new US 101 overcrossing structure with ramps and a new frontage road connecting to the Arroyo Linda project street system on the east side of US 101. Additionally, El Campo Road would require extension between Brady Lane and the new interchange. This alternative would require approximately 12 acres of additional right-of-way and the relocation of various overhead utilities.
- Alternative 3 includes the construction of a new interchange near the existing Traffic Way/US 101 intersection. The installation of a new interchange at this location requires the closure of the existing Traffic Way/US 101 north and south bound ramps and intersection and the realignment of the northbound and southbound lanes on US 101 with the construction of one new overcrossing structure. In addition, this Alternative requires construction of the Traffic Way/Traffic Way Extension intersection, new hook ramps for both northbound and southbound US 101 traffic and the Arroyo Linda project street system, and

the extension of Traffic Way under US 101. The Arroyo Linda project street system also includes the construction of the Traffic Way Extension to 4-lane collector/arterial standards. Approximately 4 acres of additional right-of-way is required by this alternative. The construction of the alternative will affect at least three buildings.

- Alternative 4 includes construction of hook ramps for southbound Route 101 traffic, a diagonal off-ramp, and a loop on-ramp for northbound traffic approximately 370 meters north of the existing El Campo Road/Route 101 intersection. Road extensions include El Campo Road north to connect with Valley Road, TrafficWay/Traffic Way Extension to the northbound ramps intersection, Orchard Street to El Campo Road, and the re-alignment of Castillo del Mar to intersect El Campo Road and the Arroyo Linda project street system. These improvements include the construction of the Traffic Way Extension to 4-lane collector/arterial standards. This alternative will require closure of the existing Traffic Way/Route 101 ramps. Approximately 3 hectares of additional right-of-way is required by this alternative.

Land usage in the vicinity of the proposed sites consists of a combination of urban, commercial, residential, and agricultural uses. The selected alternatives require much additional study before final determination of the preferred alternative can be made. Implementation of any of these project alternatives could be constrained by several environmental and cultural resource issues. The following sections provide a summary of these potential constraints and their possible effect on the proposed project.



No Scale
Source: Compass Maps

VICINITY MAP
FIGURE 1

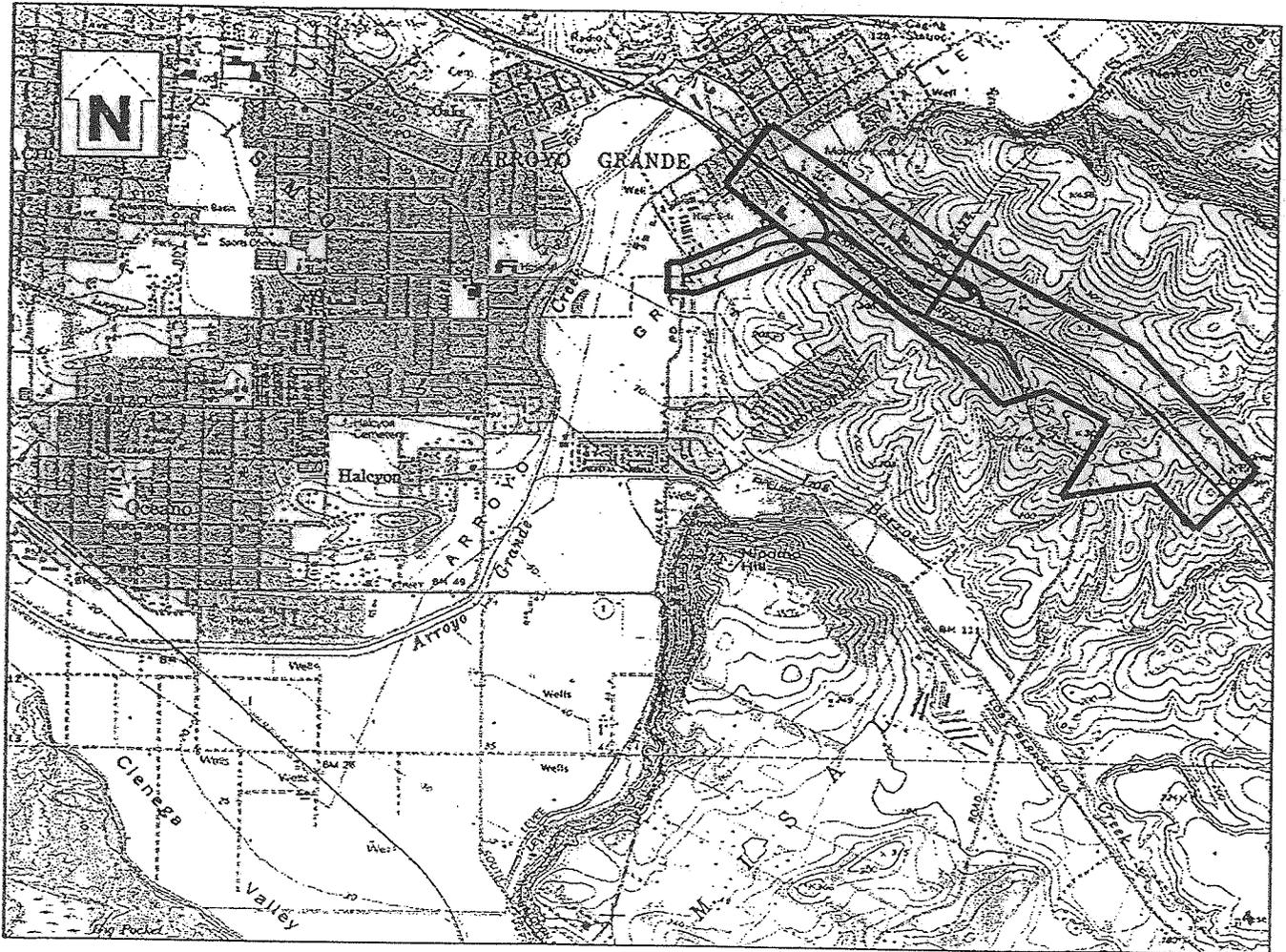
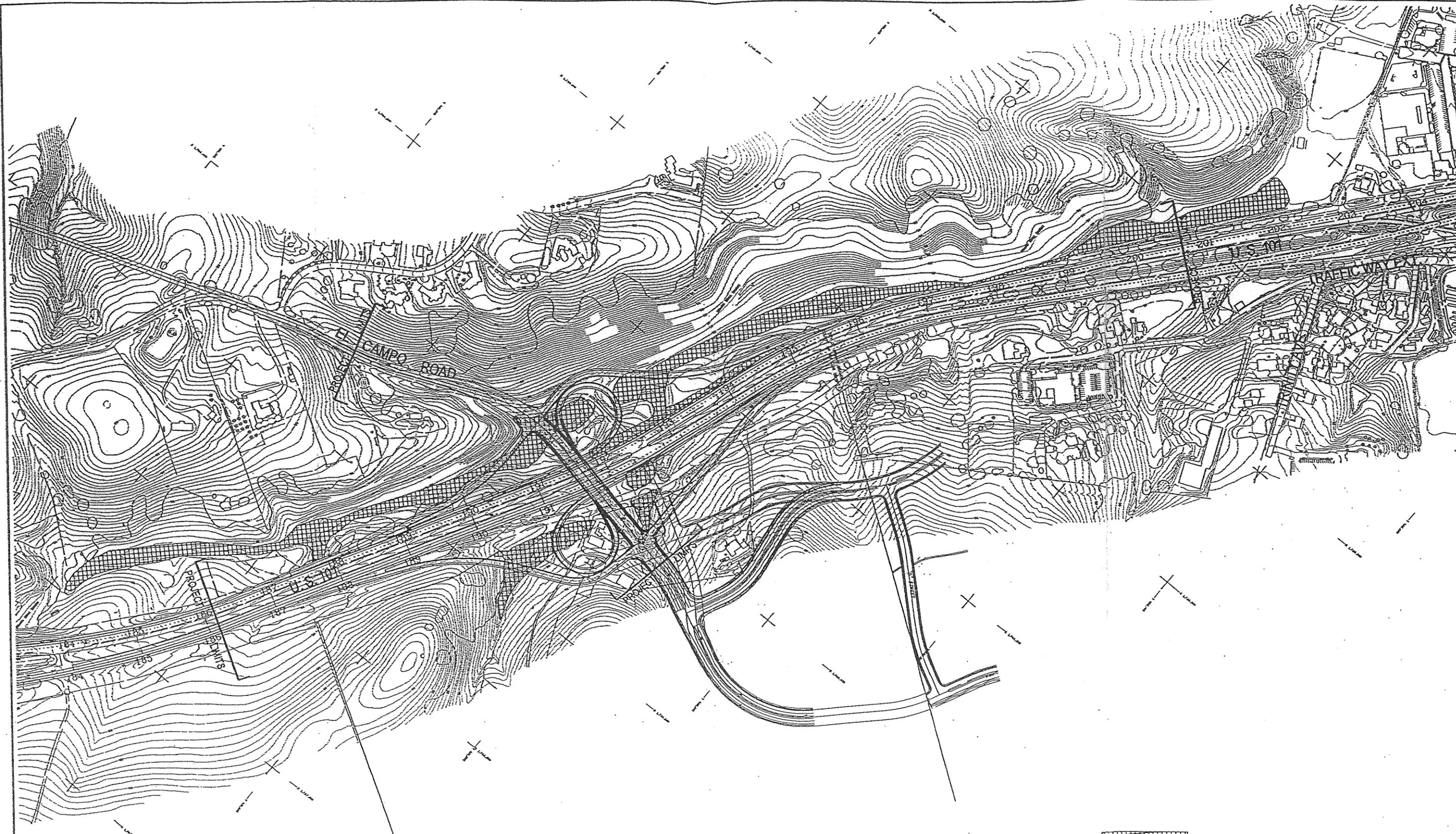


FIGURE 2
LOCATION MAP



 RIPARIAN CORRIDOR WITH
POTENTIAL WETLAND/ POTENTIAL RED-LEGGED FROGS

 NORTH
BASE MAP INTERCHANGE DESIGN PROVIDED BY DOKKEN ENGINEERING

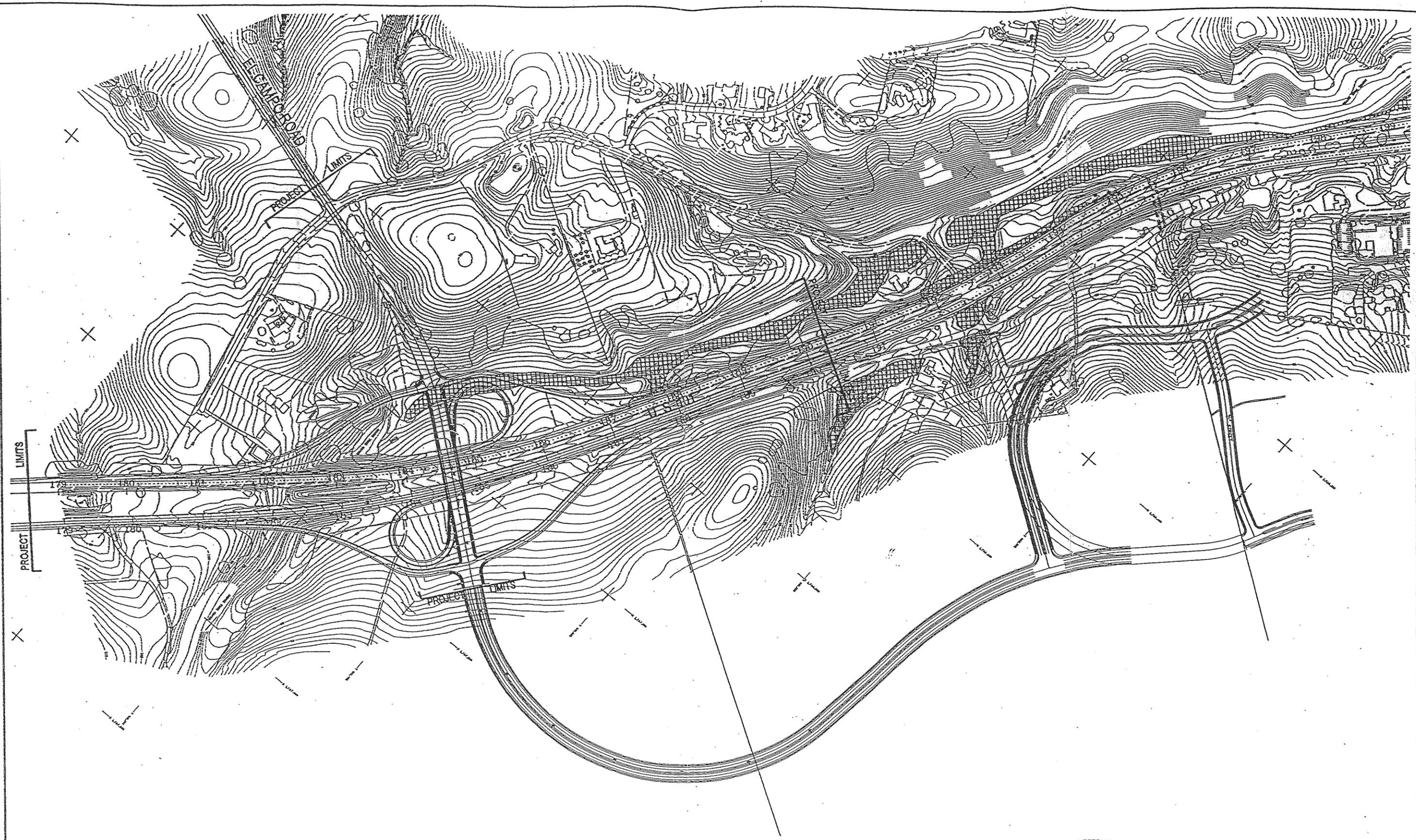
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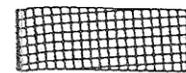
PRELIMINARY ENVIRONMENTAL ANALYSIS REPORT
 ELCAMPO / U.S. 101 INTERCHANGE

ALTERNATIVE 1
 RIPARIAN CORRIDOR AREAS

FIGURE 3



BASE MAP INTERCHANGE DESIGN PROVIDED BY DORRICK ENGINEERING



RIPARIAN CORRIDOR WITH
POTENTIAL WETLAND/ POTENTIAL RED-LEGGED FROGS

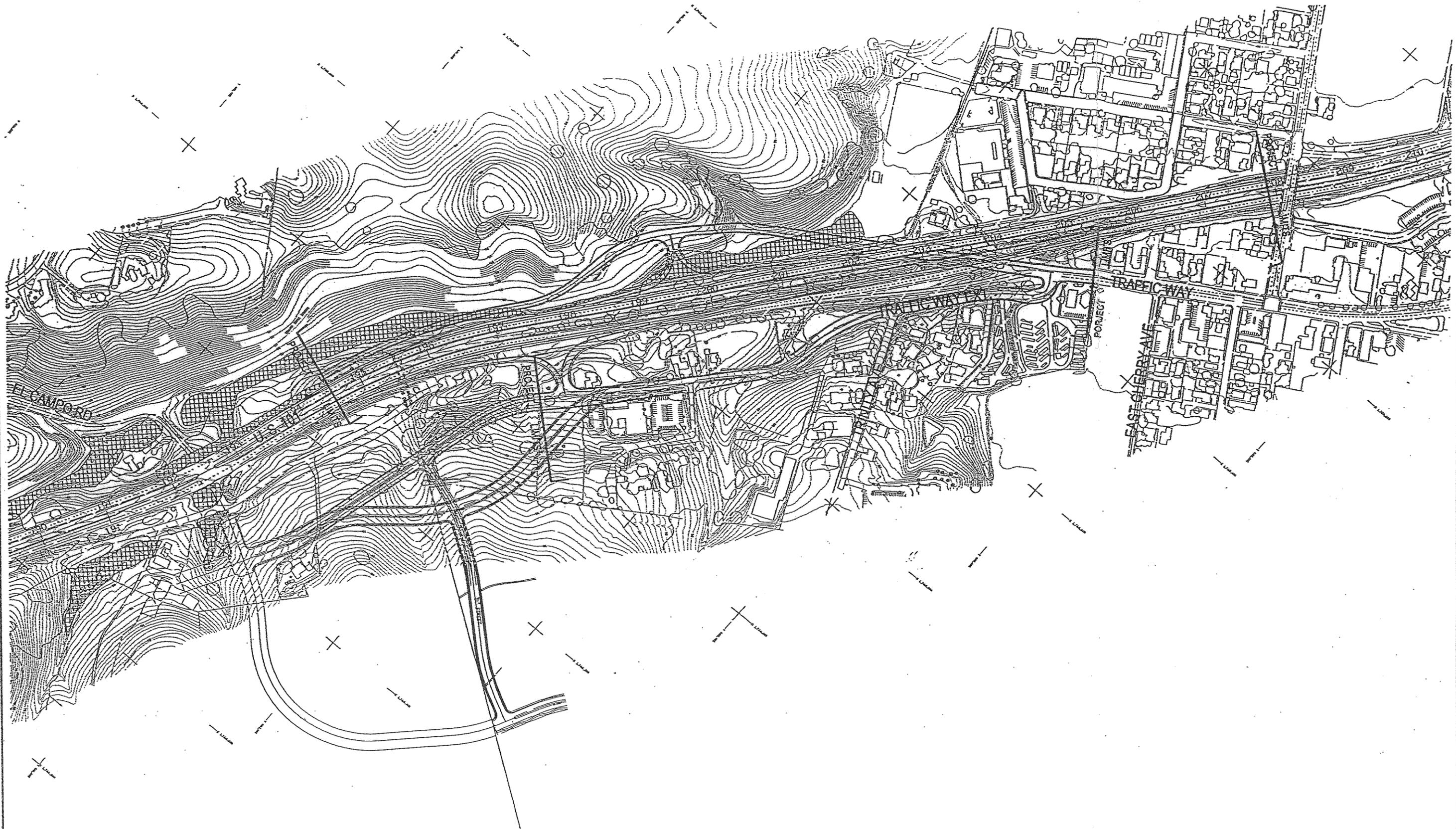
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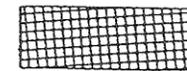
PRELIMINARY ENVIRONMENTAL ANALYSIS REPORT
 ELCAMPO / U.S. 101 INTERCHANGE

ALTERNATIVE 2
 RIPARIAN CORRIDOR AREAS

FIGURE 4



BASE MAP INTERCHANGE DESIGN PROVIDED BY DOKKEN ENGINEERING



RIPARIAN CORRIDOR WITH
POTENTIAL WETLAND/ POTENTIAL RED-LEGGED FROGS

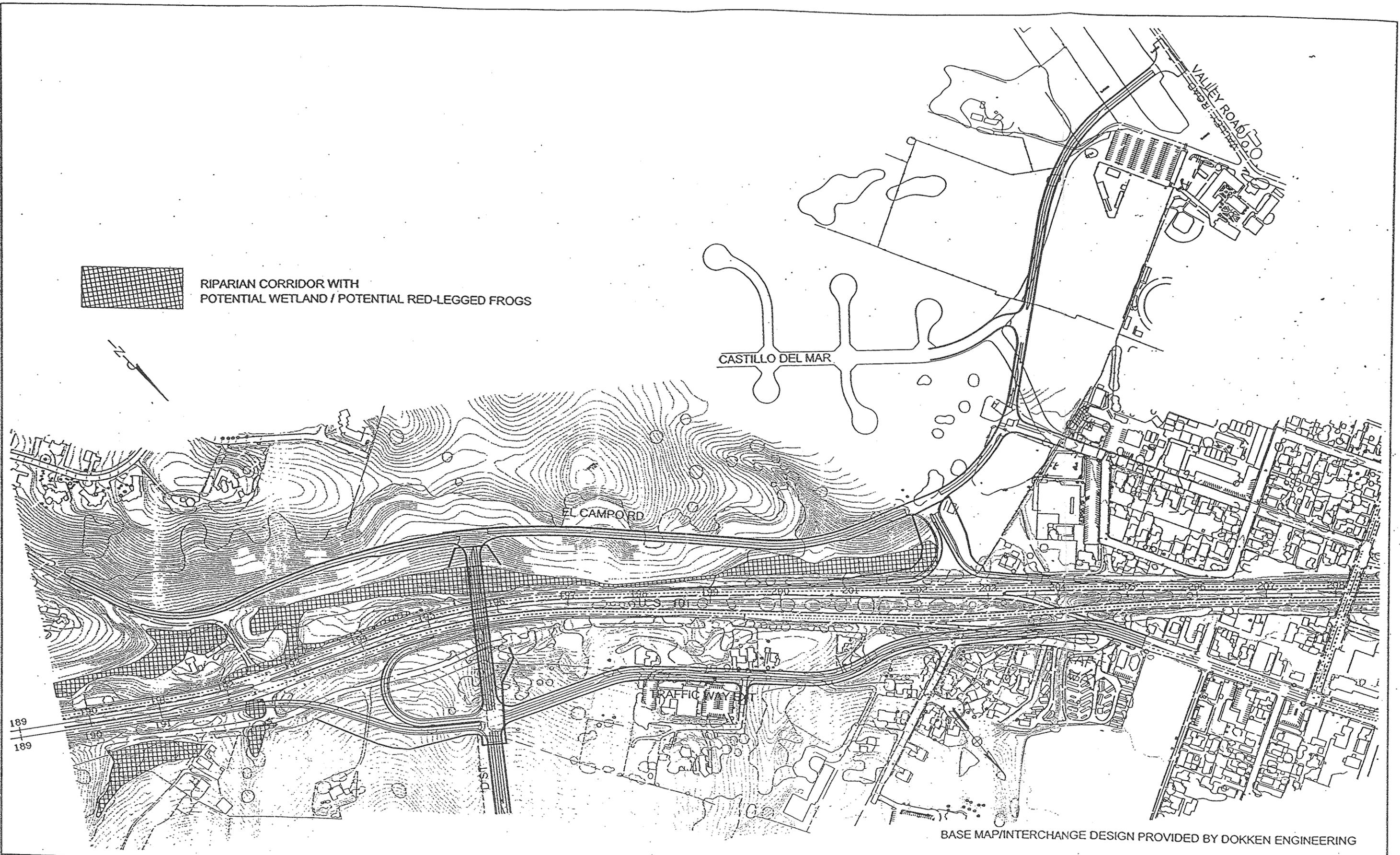
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PRELIMINARY ENVIRONMENTAL ANALYSIS REPORT
 ELCAMPO / U.S. 101 INTERCHANGE

ALTERNATIVE 3
 RIPARIAN CORRIDOR AREAS

FIGURE 5



BASE MAP/INTERCHANGE DESIGN PROVIDED BY DOKKEN ENGINEERING

SHEET: 4 OF 4
 SCALE: 1:2500
 CADD FILE: 01-612 El Campo PEAR\elcampo4.dwg
 DATE: 4-5-02 BY: DH REV.



PRELIMINARY ENVIRONMENTAL ANALYSIS REPORT
 EL CAMPO / U.S. 101 INTERCHANGE

ALTERNATIVE 4
 RIPARIAN CORRIDOR AREAS

FIGURE 6

II. SUMMARY OF FINDINGS

A. ENVIRONMENTAL DOCUMENTS

An Initial Study (IS) leading to a Mitigated Negative Declaration is the probable environmental document that will be necessary for this project because the significant resources that may be impacted appear to be mitigable; however, more detailed studies may change this conclusion. If this occurs, it is possible that an Environmental Impact Report (EIR) would be required. Federal funding may be utilized for project implementation and, in that case, an Environmental Assessment (EA) leading to a Finding of No Significant Impact (FONSI) is the probable environmental document necessary for National Environmental Policy Act (NEPA) compliance. However, if impacts are unavoidable and cannot be mitigated to a level of insignificance, an Environmental Impact Statement would be necessary. Caltrans will consider this PEAR during approval of a Project Study Report (PSR). Potentially significant impacts, which could affect project schedule and design include:

- Right-of-way acquisition
- Possible wetland impacts
- Potential presence of species of special concern
- Cultural resources
- Noise impacts
- Visual resources

Responsibility for compliance with the California Environmental Quality Act (CEQA) rests with the Lead Agency, the City of Arroyo Grande Public Works Department. The California Department of Transportation (Caltrans) will participate in the environmental review process as a Responsible Agency.

Environmental concerns associated with this project are presented in Table 1, which provides a summary of the environmental issues that are relevant to each alternative of the project and will need to be addressed in the IS/EA document. Items marked as "yes" or "maybe" will require a technical study to determine whether impacts are significant and, if significant, whether mitigation measures can be implemented that will reduce the impact to a level below significance. Detailed evaluations of these concerns are listed in the appropriate sections of this report.

TABLE 1
Environmental Impacts and Significance for the proposed El Campo Alternatives

Environmental Issues	Impact				Significance			
	Alt. 1	Alt 2	Alt 3	Alt 4	Alt 1	Alt 2	Alt 3	Alt 4
Biological	Yes	Yes	Yes	Yes	Maybe	Maybe	Maybe	Maybe
Hazardous Waste	No	No	No	No	No	No	No	No
Socioeconomic	Yes	Yes	Yes	Yes	Maybe	Maybe	Maybe	Maybe
Hydrology	Yes	Yes	Yes	Yes	Maybe	Maybe	Maybe	Maybe
Right-of-way	Maybe	Maybe	Maybe	Maybe	Maybe	Maybe	Maybe	Maybe
Cultural Resources	Maybe	Maybe	Maybe	Maybe	Maybe	Maybe	Maybe	Maybe
Noise	No	No	No	No	No	No	No	No
Air Quality	No	No	No	No	No	No	No	No
Visual Resources	Maybe	Maybe	Maybe	Maybe	No	No	No	No

Based on the preliminary analysis included in this document, Alternative 2 appears to be the best avoidance alternative. Refer to the following analyses and Table 3 for supporting information.

B. TIMING OF DOCUMENT PREPARATION

The time necessary to prepare the environmental document will be affected by the required technical studies, including Investigation of the Waters of the U.S. (Wetland Delineation) and special-status species surveys if the existing creeks have the potential to be impacted. Right-of-way, cultural resource surveys, noise, visual, and air quality studies may also be required. These studies are not expected to be overly complex or time consuming. It is estimated that the total preparation time for the CEQA environmental document will be approximately 12-18 months, and the preparation time for the NEPA document would be approximately 18-24 months. If the project is required to file for Section 106 Eligibility determination, the document preparation time would be approximately 24 to 30 months.

C. PERMITS AND APPROVALS

The following permits, approvals, and coordination efforts will be required prior to construction of the proposed improvements.

Permits:

- Section 1601 Streambed Alteration Agreement: All alternatives will require a Section 1601 Agreement, since implementation will affect drainages under the jurisdiction of the California Department of Fish and Game.

- Section 404 Permit: Depending on the area affected, project implementation may exceed the maximum limitations for Nationwide Permit use. If this occurs, an individual 404 Permit will be necessary.
- Section 401 Water Quality Certification: This certification will be required for all alternatives and are issued by the Regional Water Quality Control Board (RWQCB).
- Prior to construction, the City/County must obtain an Encroachment Permit from Caltrans for construction within State highway right-of-way.

Approvals and Coordination:

- A Project Study Report (PSR) must be approved by Caltrans. This preliminary Environmental Assessment Report will be considered by Caltrans prior to PSR approval.
- A Draft Project Report (PR) must be approved by Caltrans. An Initial Study (IS) will be prepared, followed by the preparation of a Draft Environmental Document (DED) for approval by the City/County and Caltrans. Given the existing conditions and proposed project locations, it is expected that either a Mitigated Negative Declaration or an Environmental Impact Report will be required by the County and Caltrans. The DED will follow the procedures outlined in the Caltrans Environmental Handbook. Once the DED is completed, it will be circulated for a 30-day public review and comment period. Responses to comments will be prepared and combined with the DED.
- A Final Project Report will be prepared for approval by Caltrans concurrent with the Final Environmental Document (FED). Approval of the Final Project Report will authorize final design (preparation of plans, specifications, and cost estimates for bidding purposes).
- Coordination with various utility providers will be required where utilities may be upgraded, relocated, or otherwise affected by proposed construction.
- Because the project involves right-of-way acquisition, the City/County must approve the area to be acquired. Property acquisition activities can be initiated and negotiated with individual property owners once the FED is approved.
- Prior to construction, local construction approvals will be necessary from the City/County, including the issuance of construction permits, grading permits, and other engineering related approvals.
- Oak trees removed or impacted within County limits are subject to the County's oak tree standards and mitigation measures. Oak trees removed or impacted within City of Arroyo Grande limits are subject to the oak tree regulations in the City General

Plan. This project may potentially impact heritage oak trees and would be subject to the related City policies.

- Additional surface and subsurface archaeological testing may be required to determine if there are any significant cultural resources within the chosen right-of-way. This area is highly sensitive to cultural resources. The appropriate historic resources reports will be required to be filed with the State Office of Historic Preservation.

III. METHODS AND FINDINGS

Site visits were conducted by Morro Group staff between the dates of September 22 and October 3, 1997, January 1999, June 1999, and March 2001. Records searches and contacts with Federal, State, and local agency experts were also conducted as needed to collect data and confirm existing information. Information contained in the City of Arroyo Grande and County of San Luis Obispo General Plans was used to assist in characterizing the project issues and conditions and ensure project consistency with the General Plans. This assessment details the environmental resources present in and near Alternatives 1 and 2 (El Campo Road area), Alternative 3 (Traffic Way), and Alternative 4 (North El Campo Road area).

A. BIOLOGICAL RESOURCES

1. Botanical

Assessment of the botanical resources associated with the alternate sites was based on a search of the California Natural Diversity Data Base (CNDDDB) windshield surveys, and reconnaissance level walkovers of the project areas on October 3, 1997 and March 16, 2001. The CNDDDB search was conducted on the Oceano 7.5 Minute Quadrangle. CNDDDB records indicate the potential presence of three Special-Status plant species in the immediate area of the proposed sites. The walkovers produced no sightings of Special-Status plant species, however, the environmental conditions observed on site indicated that suitable habitat for these species is present within the proposed project areas. The following is a list of the Special-Status plant species recorded in the CNDDDB as potentially occurring within the vicinity of the four alternate site locations:

- Pismo Clarkia (*Clarkia speciosa, ssp. immaculata*)
- Dune Larkspur (*Delphinium parryi, ssp. blochmaniae*)
- Wells Manzanita (*Arctostaphylos wellsii*)

Due to seasonal conditions, presence or absence of Pismo clarkia and dune larkspur could not be determined during the walkovers of the proposed interchange sites. These species are herbaceous plants that are identifiable only during their active growth phases. Additional field survey work will be necessary to determine whether these species are present in the area. Wells

manzanita was not present in the survey area. Refer to Appendix A for a description of the plants listed above.

Alternatives 1 and 2

Potential impacts associated with implementation of the proposed El Campo Road project sites will require the removal of an undetermined portion of existing oak woodland and the adjoining riparian corridor/wetland area along the south side of Route 101. Alternative 1 would disturb more of the riparian corridor/wetland area than Alternative 2. Construction on the north side of these alternate sites will result in loss of existing rangeland and chaparral areas, removal of individual oak trees, and some disruption of the existing riparian corridor. The proposed project could negatively affect potential habitat areas for Pismo clarkia and dune larkspur. No evidence was found to indicate that the third botanical species of concern, Wells manzanita, is present in the immediate project area. Any loss of trees for road expansion projects must be mitigated in conformance with the County General Plan policies.

Alternative 3

Potential impacts associated with implementation of the proposed Traffic Way interchange include the removal of a small amount of grassland/oak woodland and riparian corridor in the vicinity of the Traffic Way undercrossing and associated on and off ramps (west side of Highway 101). On the east side of Highway 101, botanical impacts are limited, as much of the proposed project footprint is in a rural residential area. A dune larkspur and Pismo clarkia survey would be necessary before project construction. The site is not suited for Wells manzanita and a survey for this plant would not be necessary.

Alternative 4

Potential impacts associated with the implementation of the proposed North El Campo interchange include removal of grassland/oak woodland impacts to the riparian corridor in the vicinity of the Traffic Way extension on the east side of 101. On the west side of Highway 101, oak woodland and riparian corridor exist along the proposed El Campo extension and a playing field exists in the North El Campo Road extension area. Several Coast live oaks (*Quercus agrifolia*) are present in this impact area and extensive cutting into the existing hillside would be required for the proposed El Campo frontage road. Dune larkspur and Pismo clarkia surveys would be necessary before project construction. The site is not suited for Wells manzanita and a survey for this plant would not be necessary.

2. Wildlife

Wildlife field surveys of the proposed project sites were made on October 1 and 2, 1997, January 21, 1999, January 29, 1999, and March 16, 2001. The objective of these surveys was to determine the potential of any special-status wildlife species to occur at the proposed project sites (Figures 3-6). Definitions of special-status wildlife species are presented below:

- Animals listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act

- Animals listed or proposed for listing as threatened or endangered under the California Endangered Species Act
- Animals of special concern to the California Department of Fish and Game

In addition to the field survey of the proposed sites, a search of the California Department of Fish and Game's Natural Diversity Data Base (CNDDDB) was conducted. The results of this survey indicate that a number of special-status species could be present in the project area. These species and their federal and state status are listed on the table below:

TABLE 2
Special-status Animal Species Potentially Present in the El Campo Project Area

Common Name	Scientific Name	Federal Status	State Status
Cooper's Hawk	<i>Accipiter cooperii</i>	NS*	Special Concern
Prairie falcon	<i>Falco mexicanus</i>	NS	Special Concern
Sharp-shinned hawk	<i>Accipiter striatus</i>	NS	Special Concern
Golden eagle	<i>Aquila chrysaetos</i>	NS	Special Concern
Peregrine falcon	<i>Falco peregrinus</i>	Endangered	Endangered
Burrowing Owl	<i>Athene cunicularia</i>	Special Concern	Special Concern
Silvery legless lizard	<i>Anniella pulchra pulchra</i>	NS	Special Concern
Southwestern pond turtle	<i>Clemmys marmorata pallida</i>	NS	Special Concern
California red-legged frog	<i>Rana aurora draytonii</i>	Threatened	NS
California tiger salamander	<i>Ambystoma californiense</i>	NS	Special Concern
Western spadefoot toad	<i>Spea hammondi</i>	NS	Special Concern

*NS= No Status

No special-status wildlife species were observed during the field surveys of the selected alternative sites, although suitable habitat is present in the immediate area of each site.

Alternative 1

The existing riparian corridor on the west side of Route 101 in the vicinity of the El Campo Road/Route 101 intersection contained standing water that averaged 0.4 meters in depth. Additionally, the stream channel contained small, intermittent pools of stagnant water that averaged approximately 1 meter in depth. This riparian corridor has a fully established canopy and provides potential habitat for California red-legged frogs, California tiger salamanders, Cooper's hawks, and western spadefoot toads. The CNDDDB search resulted in two confirmed California red-legged frog sightings near the Alternative 1 & 2 sites. The east side of Route 101 contains two small riparian corridors, rangeland, and scattered oak trees. This area contains suitable habitat for the aquatic species listed above, and also is potential habitat for burrowing owls which are found along man-made berms and slopes in agriculturally disturbed areas.

Alternative 2

This site contains a small riparian corridor on the west side of Route 101, with flowing water ranging in depth from several inches to one foot. Canopy cover is relatively thick along this section of the creek, but corridor width and channel features are less developed than the

corresponding stream section in Alternative 1. The El Campo Road extension contains several old trees suitable for use by raptors, and numerous ground squirrel burrows were observed in the surrounding area. The east side of this site is primarily rangeland, with some intergradation to coastal scrub. This area could provide foraging habitat for some of the raptors listed above, but it does not appear to contain significant habitat for any special-status species. The small tributary stream near this site contains potential red-legged frog and southwestern pond turtle habitat. CNDDDB records contain a red-legged frog sighting upstream of the project site.

Alternative 3

The proposed site near Traffic Way and west of Route 101 contained no standing water but did contain a dry drainage ditch on the west side of the highway. This channel contains a riparian canopy, which increases in quality towards the southern end of the project footprint, and may provide acceptable habitat species of concern. Alternative 3 would impact a greater amount of riparian habitat than proposed Alternatives 1 and 2 by extending Traffic Way across the drainage and the need for cut into the existing riparian corridor for the access ramp. The rangeland area contained numerous ground squirrel burrows, and is overlooked by a north-facing slope containing rock outcrops and oak woodlands. These conditions could provide suitable habitat for prairie falcons and burrowing owls. The area to the east of Route 101 is primarily residential, and does not provide suitable habitat for the species listed above.

Alternative 4

This proposed site contained no standing water but does contain a riparian corridor on the west side of the highway. This channel contains an extensive canopy, which increases in quality towards the southern end of the project footprint, and may provide acceptable habitat for species of concern. This Alternative would impact a far greater amount of riparian habitat than proposed Alternatives 1 and 2 by extending Traffic Way across the drainage, the extension of El Campo Road through the riparian corridor, and the need for cut into the hillside to create this road extension. The rangeland area contained numerous ground squirrel burrows, and is overlooked by a north-facing slope containing rock outcrops and oak woodlands. These conditions could provide suitable habitat for prairie falcons and burrowing owls. The project area to the east of Route 101 is primarily residential, and does not provide suitable habitat for the species listed above.

B. HAZARDOUS WASTE

Phase I Initial Site Assessments (ISA) were prepared by David Irwin of DMI (refer to the Initial Site Assessment Report by DMI) for the entire project and by GeoSolutions for the expanded study area in Alternative 4 (refer to the Phase I Environmental Site Assessment by GeoSolutions) to determine whether the proposed project could be affected by any recorded or visible hazardous waste problems. These studies were also needed to determine whether recommendations for additional site assessment work were necessary prior to completion of the Draft Environmental Document for the proposed project. Subsurface investigations, soil and groundwater sampling, chemical testing, and a detailed geologic mapping study were not a part

of the DMI investigation. Geosolutions performed an aerial photography review of the North El Campo Road extension included in Alternative 4.

DMI consulted with San Luis Obispo County Environmental Health Services (EHS), the California Regional Water Quality Control Board (RWQCB), and Environmental Data Resources (EDR), to obtain government records searches of any known hazardous wastes sites, hazardous waste incidents, or hazardous waste generators within a 2-mile radius from the project sites. GeoSolutions' record search consisted of consultation with the Department of Conservation, Division of Oil, Gas, and Geothermal Resources, Vista Information Solutions, Inc., and San Luis Obispo County EHS. The four sites were also surveyed on foot to identify any conditions not listed in the literature.

The literature search did not reveal any tanks or other hazardous materials within the study areas; however, the surface examination indicated that there were several old gas stations that have been converted to shops along Traffic Way and an existing gas station with tanks. These were not in the literature. In addition there are several houses within the study areas with barrels and drums (a barn may have an above ground tank). These barrels have the potential to store hazardous materials (such as fuel oil) and would require special handling. These can be easily removed and are not considered a significant source.

DMI contacted Caltrans and learned of three reported spills within the project area. Two spills occurred at El Campo and Highway 101 involving pesticide(s) on February 2, 1987 and paint thinner on October 8, 1987. Caltrans reportedly cleaned up both spills. The third spill occurred at the Bridge Street undercrossing (near Traffic Way) on May 16, 1995 involving approximately 50 gallons of diesel fuel. This spill was reportedly cleaned up by A.J. Diani Company (DMI 1999). Geosolutions research found groundwater contamination from leaking storage underground tanks at gasoline stations located 1/8 and 1/2 miles northwest of Alternative 4 North El Campo extension. The potential for petroleum products from those sites to migrate into the groundwater to the subject property is considered to be low (Geosolutions 2001). Generally, there does not appear to be any significant hazardous materials constraints within any of the alternative sites and no further studies would be required.

C. CULTURAL RESOURCES

Two Phase I surveys and visual field inspections were conducted by Thor Conway of Heritage Discoveries, Inc. in July 1999 and February 2002. The full reports are included in Appendix C. The results of these preliminary studies indicate that the selected alternative adjacent to a number of prehistoric sites which are part of an upland settlement pattern. No detailed surveys have been performed within the proposed project area; however, there is a moderate potential for the study areas to contain sensitive archaeological sites. The west side of the highway has a lower potential for heritage resources than the east side because of topographical differences. The east side of the highway consists of mostly private property and for this reason, only a small amount of the project area was surveyed. There is a moderate potential for prehistoric sites to be present on the east side of the highway.

Alternative 1

This alternative has low potential to impact cultural resources on the west side of the highway and no further studies would be required. However, construction of the overpass and ramps on the east side of the highway may impact unrecorded cultural resources and, therefore, additional surveys with a possibility of Phase II sub-surface testing would be necessary.

Alternative 2

This alternative would have the same cultural resource constraints on the project as Alternative 1, but this alternative has slightly less potential for unrecorded sites to be present.

Alternative 3

Alternative 3 has a substantially higher chance of impacting cultural resources than Alternative 1 or 2. Additional surveys with a possibility of Phase II sub-surface testing would be necessary for the entire project footprint.

Alternative 4

Alternative 4 has a high chance of impacting cultural resources similar to in Alternative 3. An extended Phase 1 surface survey would be needed if this alternative were chosen for development.

D. PALEONTOLOGICAL RESOURCES

Paleontology is a biologic and geologic scientific discipline involving the study of fossils. Despite the tremendous volume of sedimentary rock deposits preserved world-wide, and the enormous number of organisms that have lived through time, preservation of plant or animal remains as fossils is an extremely rare occurrence.

The Central Region of California is considered to be a sensitive area for paleontological resources. The project area potentially includes Franciscan Formation, locally known as the San Luis Formation, Recent Deposits of alluvium and sand, including sand dunes, underlain by Older Alluvium and Quaternary Terraces, both composed of Pleistocene river and stream deposits. In addition, marine Quaternary Terraces may be encountered and Miocene marine sedimentary rocks may be encountered at varying depths. These sediments are the lower Miocene Santa Margarita Formation and the Miocene Monterey Formation.

Determination of the scientific significance of paleontological resources can only be made by qualified, trained paleontologists, preferably those expert with the fossils under consideration. A paleontological resources assessment would be necessary for any alternative chosen.

E. SOCIOECONOMIC ISSUES

Project construction at any of the selected alternatives would result in socioeconomic impacts to persons residing on parcels subject to right-of-way takes. The significance of these impacts ranges from major to minor, depending on which alternative is finally selected.

Alternative 1

Construction of this alternative may significantly impact the residence and property located just east of the present El Campo Road/Route 101 intersection, on the south side of Route 101. Relocation or removal may be required to achieve the necessary right-of way through this area. The property owner has indicated that this residence will be removed. The ranch property located on the north side of Route 101 will also be affected, as the property would become part of the interchange right-of-way. The house, several barns, and other associated structures would require removal or relocation.

Alternative 2

Construction of the interchange in this area will not affect any residences; however, several dilapidated farm buildings may require removal. A house just south of the on-ramp heading south on Route 101 could have its yard significantly impacted. The straight-line approach from El Campo to Route 101 would appear to cause minimal impacts to the adjoining residences.

Alternative 3

Construction of this alternative could have significant impacts on residential neighborhoods, a school, two churches, and commercial properties. The degree of these impacts on individual properties is dependent on ramp and access road width, location, and amount of cut and fill slopes. Several houses would be impacted by changes in noise levels and visual resources. Some residents may lose yard depth or may require complete removal for the Traffic Way Extension. Hook ramp construction and the traffic increase associated with the hook ramp could significantly impact a church/daycare center on the south side of the highway.

Alternative 4

Alternative 4 has the same impacts as Alternative 3 with the addition of recreation impacts on the North El Campo extension area. A playing field for a private school would be removed with implementation of this alternative. Section 4(f) would not apply as this is a privately owned area.

F. WATER QUALITY

No appreciable differences in long-term water quality impacts have been identified between the four selected alternatives. Construction of the proposed project will increase runoff from hardscape areas, and may require alteration of sections of stream channel. Because of the presence of potential wetlands within the selected alternative areas, this issue may be significant but mitigable. Standard erosion control practices administered by San Luis Obispo County, City of Arroyo Grande and Caltrans should be implemented to control the discharge of sediments into the local drainage system. A Storm Water Pollution Prevention Plan (SWPPP) would be required for any of the selected alternatives because each impacts greater than one acre of land.

Over the short term, it is reasonable to expect a greater degree of water quality impacts from the project with the largest footprint and closest proximity to stream channels. Alternatives 3 and 4 appear to have the greatest possibility of having exposed cut and fill slopes during construction and have the greatest impacts to water quality during the construction process. Standard erosion

control practices during and after construction may mitigate this impact to a level of insignificance.

G. FLOODPLAIN ENCROACHMENT

A hydrology study should be prepared in conjunction with the engineering designs of the selected alternatives to ensure that additional runoff generated by the increase in paved surfaces will be adequately contained. The runoff capacity of the existing stream channels and culverts should be examined to determine their ability to accommodate the incremental increases in runoff.

Alternative 1

This area is not subject to flooding hazards according to the 1989 Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Map for the City of Arroyo Grande.

Alternative 2

This area is not subject to flooding hazards according to the FEMA National Flood Insurance Rate Map for the City of Arroyo Grande.

Alternative 3 and 4

A portion of these alternative sites are subject to flooding hazards as defined in the San Luis Obispo County General Plan. A dry stream channel parallels the west side of Route 101 at the proposed Traffic Way site and exists where the El Campo Extension is proposed. The stream channel flows northwest and joins the runoff from Newsom Canyon Creek forming an immediate floodplain area. Sediment deposition patterns and presence of debris along the top of streambank indicate that the channel occasionally experiences large flow events. Additionally, evidence of recent streambank stabilization (i.e., sandbags) suggests that the drainage way has caused some flood damage to the adjacent Lucia Mar School and surrounding residences in previous years. The stream channel and respective floodplain are designated as 100 year flood hazard areas, based on cartographic data from the 1989 FEMA National Flood Insurance Rate Maps. The floodplain is approximately 500 to 750 feet in width and encompasses portions of Orchard Avenue, Arroyo Avenue, and Pilgrim Way.

H. NOISE

The proposed project will improve traffic flow and increase traffic capacity in the El Campo/Route 101 area. The increase in capacity will accommodate increasing average daily traffic volumes resulting from residential development of the surrounding area. The roadway height increase from ramp and overpass construction may incrementally raise noise levels associated with mobile sources. The potential impact zone for residential receptors may be increased slightly by the elevation of traffic flow caused by this project. These residential receptors are currently in full view of the highway, and road noise is very audible.

An acoustical analysis of the selected alternatives should be conducted to determine the extent of potential noise increases. This analysis will provide data regarding whether the increase in noise will exceed 3dB, which is considered a barely perceptible change, or whether cumulatively, the change is significant. It is expected that the County's exterior noise standard for residential receptors will not be exceeded with project implementation. Noise barriers may be required to attenuate noise to acceptable levels as part of noise and visual impact mitigation for Alternatives 3 and 4. According to the San Luis Obispo County Noise Element, if mobile noise mitigation cannot reduce outdoor noise to within the 60dB to 65dB Ldn/CNEL range, and 45 dB Ldn/CNEL in indoor areas for school, church, and residential uses, a project would be considered inconsistent with County policy.

Alternative 1

The two residences most closely associated with this alternative would be relocated/removed as part of the project. An additional residence, on the northwest corner of the northbound onramp onto Highway 101, may experience significant increases in noise levels associated with the construction of this project. Several other private residences on the west side of the highway may experience increased noise levels. Further study will be necessary to determine the extent of this impact.

Alternative 2

At this limited study phase, it would appear that this alternative would have the fewest number of sensitive noise receptors affected by this project, and therefore, would be the preferred alternative.

Alternatives 3 and 4

These alternative will increase traffic volume and noise near a school, daycare center, two churches, and residential areas. Further studies are required to determine the extent of project related decibel increase over the existing traffic noise levels in this area. A combined mitigation plan for noise and visual impacts may propose noise barriers in this area.

I. AIR QUALITY

No appreciable differences in air quality impacts have been identified between the four selected alternatives. The following paragraphs will discuss general conditions present in the project area. The extent of project impacts on the air quality of the Nipomo Mesa cannot be determined until project location and traffic impacts have been estimated.

The proposed project falls under the jurisdiction of the San Luis Obispo Air Pollution Control District (APCD). The San Luis Obispo County District is in attainment for all National Ambient Air Quality Standards (NAAQS), as designated by the EPA. The San Luis Obispo APCD has been designated a nonattainment area for state ozone and PM₁₀ standards and is required to reduce emissions of nonattainment pollutants (or their precursors) by at least 5% per year until the standards are achieved. State law requires that emissions of nonattainment pollutants countywide be decreased by at least 40% from the 1987 levels in order to meet clean air

standards. Implementation of any of these alternatives is not expected to increase ozone levels in the surrounding area.

It appears that Alternatives 3 and 4 may have the most direct impact on the air quality of sensitive receptors due to the proximity of the project to the receptors and the more elaborate project design. Further studies will be required to determine if this impact will be significant.

J. VISUAL RESOURCES

There is potential for this project to create an impact to the visual character of Route 101 as seen from public roadways. These impacts will also be noticeable from business and residential areas. Impacts cannot be addressed fully until features such as overpass height, cut and fill slope areas, and vegetation impacts are determined. Highway 101 is not designated as a Scenic Highway.

Alternatives 1 & 2

Given the current level of information, Alternative 1 appears to be the least obtrusive when viewing from sensitive view corridors (e.g. Highway 101 north- and southbound lanes) because of its location on the hill and its incorporation of the existing El Campo Road. Alternative 2 would have similar visual impacts but could be viewed as more significant due to the new El Campo Road construction. Mitigation through tree replacement, landscaping, and project design may reduce impacts to a level of insignificance.

Alternative 3 and 4

Construction of these alternatives would create a visual extension of urban development on the south side of the City of Arroyo Grande. Removal of riparian vegetation in the creation of the El Campo Road extension and residential proximity to the highway in this area would make the on/off ramps quite visible. This end of Arroyo Grande is the "gateway to the City" as viewed from northbound travelers on Route 101. A detailed visual analysis would be necessary to determine the degree of impact the project would have on visual resources with these Alternatives.

IV. RECOMMENDATIONS

The following recommendations are based on a preliminary analysis of published and unpublished literature and field surveys of the proposed sites. The primary issues associated with this project involve traffic capacity and safety. By implementing the proposed improvements, the level of service for the El Campo/Route 101 intersection will improve markedly, as this intersection currently operates at LOS F. The level of safety due to improved traffic flow and movement is also expected to improve due to interchange construction.

A. Biological Concerns

Biological resources present within the project area are potentially significant. Additional studies will be necessary to accurately determine presence or absence of special-status plant

species. Mitigation will be required for loss of wetland and oak woodland habitats. Construction in riparian zones will require presence of a biologist/red-legged frog monitor.

The term wetland as used in this report refers to areas supporting wetland vegetation and occurring in topographic positions characteristic of wetland areas. A formal wetland delineation using USACE criteria to determine the extent of potential wetland areas within the proposed project site was not performed. However, the riparian areas surveyed appeared to meet the basic parameters (i.e., hydrology, vegetation, soils) to fall under the jurisdiction of the USACE, under Section 404 of the Clean Water Act. Additionally, disturbance of these riparian corridors is likely to fall under the jurisdiction of the California Department of Fish and Game, under Sections 1601-1607 of the California Fish and Game Code, necessitating a Streambed Alteration Agreement.

B. Hazardous Waste

Based on the records search and the visual site survey evidence, the potential for environmental impacts from hazardous waste is low for all four alternatives. No further studies will be required before approval of a project.

C. Cultural Resources

The study area has a moderate potential for the presence of unrecorded cultural resources. Further study with a possibility of Phase II sub-surface testing should be completed in compliance with Caltrans guidelines prior to any ground disturbing activities.

D. Cultural Resources

A paleontological resources assessment should be completed by a qualified, trained paleontologist prior to any ground disturbing activities

E. Socioeconomic Issues

A right-of-way impact study will be necessary as a result of the need for right-of-way acquisition. The acquisition of additional right-of-way will be required from residential and commercial uses in conjunction with ramp and overpass construction. Several residences may be displaced by the proposed improvements.

F. Water Quality

Coordination between the City, Caltrans, and the Regional Water Quality Control Board would be necessary during the planning phase of the project. A SWPP will be required for any of the four alternatives.

G. Hydrology

A hydrology study should be prepared in conjunction with the engineering designs of the selected alternatives to ensure that additional runoff generated by the increase in paved surfaces will be adequately contained and relatively free of contaminants. The runoff capacity of the

existing stream channels and culverts should be examined to determine their ability to accommodate the incremental increases in runoff. The study should include an analysis of potential flooding as determined by the FEMA map for Alternatives 3 and 4.

H. Noise

A noise study will be necessary to determine the noise impacts from the increase in roadway height and projected traffic use. In addition, this study will be used to determine the potential mitigation requirements for adjacent sensitive receptors (i.e., residential uses), should the interior or exterior noise standards be exceeded from highway noise and from the construction process itself.

I. Air Quality

Conformity with the State Implementation Plan for air quality should be investigated through an analysis of air quality impacts, consistent with Caltrans Transportation Project Level Protocol (May, 1996). This analysis will determine the project's benefit or detriment to local air quality conditions, including contributions to an existing or projected air quality violation.

J. Visual Resources

A visual resource study should be performed once more details about the project are available regarding lengths of ramps, sizes of cut and fill slopes, elevation of over-crossings, and amount of vegetation to be removed.

V. CONCLUSIONS

Completion of this Preliminary Environmental Analysis Report indicates that most impacts to significant resources appear to be mitigable; however, due to the conceptual nature of the proposed alternatives, it is difficult to determine the extent of impacts as a result of project construction. Identification of the preferred alternative site will facilitate future study efforts. The likely environmental documentation required for this project will consist of an IS leading to a Mitigated Negative Declaration. However, if unavoidable impacts are identified during more detailed studies, and EIR would be prepared. If federal funds are utilized for this project, an EA leading to a FONSI is the likely outcome. Again, if unavoidable impacts were discovered, an EIS would be necessary.

The time necessary to prepare the environmental document will be affected by the required technical studies, including Investigation of the Waters of the U.S. (Wetland Delineation) if the existing creeks have the potential to be impacted, special-status species surveys, right-of-way, cultural resource surveys, noise, visual, and air quality studies. These studies are not expected to be overly complex or time consuming. It is estimated that the total preparation time for the environmental document will be approximately 12-18 months for a CEQA document and 18-24 months for a NEPA document.

The following table lists the alternative preferences based on the preliminary studies provided by the project team.

TABLE 3
Preferred Alternatives based on Preliminary Findings

Impact Issue	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Biological *	3	1	2	4
Hazardous Waste	No	No	No	No
Cultural Resources*	2	1	3	3
Paleontological*	Unknown	Unknown	Unknown	Unknown
Socioeconomic Impacts*	2	1	3	3
Hydrology*	No	No	3	3
Water Quality*	No	No	No	No
Noise*	No	No	3	3
Air Quality*	No	No	3	3
Visual Resources*	1	2	3	4

*Further studies required before final environmental determination

VI. REFERENCES AND DOCUMENT PREPARERS

A. LIST OF REFERENCES

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B. LIST OF PREPARERS/SPECIALISTS

Mary Reents, Principal Principal for PEAR	Morro Group, Inc.
Kate Ballantyne, Resource Specialist Responsible for preparing PEAR	Morro Group, Inc.
Lisa Phillip, Resource Specialist Responsible for preparing PEAR additional analysis	Morro Group, Inc.
Margie Harker, Wildlife Biologist Responsible for reconnaissance level wildlife biological survey and analysis	Morro Group, Inc.
Bob Sloan, Resource Specialist Responsible for vegetation	Morro Group, Inc.
David Irwin Responsible for Hazardous Waste/ISA Responsible for preparing ISA	DMI
Patrick McNeill Responsible for Hazardous Waste/ISA Responsible for preparing ISA	GeoSolutions
Thor Conway Responsible for field research and Phase I Cultural and Historical Survey	Heritage Discoveries, Inc.

Appendix A
Special-Status Plant Species

Special-Status Plant Species Potentially in the Project Area

Pismo clarkia (*Clarkia speciosa* ssp. *immaculata*): This species is listed as a Federal endangered species, as a rare species by the State, and is categorized on California Native Plant Society (CNPS) list 1B. It has an R-E-D code of 3-3-3. This annual herb occurs on sandy hills, from Pismo to Edna Valley, in southern San Luis Obispo County. Most populations are found in valley and foothill grasslands, and in the margins between chaparral and oak woodland communities near the coast. A recovery plan for Pismo clarkia has recently been drafted by the USFWS (Sept. 1997), which documents distribution patterns, principal threats, conservation efforts, habitat management, and recovery strategies for the species. The principal threat to the Pismo clarkia is habitat destruction and degradation due to development. Efforts to establish new populations for mitigation purposes have been attempted, but more time is needed to evaluate the success of these projects.

Dune larkspur (*Delphinium parryi* ssp. *blochmaniae*): This species is categorized on CNPS list 1B. (plants rare, threatened, or endangered in California and elsewhere) but does not currently have any state or federal status. It has an R-E-D code of 3-2-3. This perennial herb occurs on sandy soils in association with coastal chaparral in the Nipomo Mesa area. The principal threats to the dune larkspur are habitat loss or degradation resulting from development.

Wells manzanita (*Arctostaphylos wellsii*): This species is categorized on CNPS list 1B (plants rare, threatened, or endangered in California and elsewhere) but does not have any state or federal status. It has an R-E-D code of 2-3-3. This shrub occurs in the San Luis Range from upper Coon Creek in Montana de Oro State Park to Arroyo Grande and Nipomo. The main populations of this species are found in the sandstone hills between the San Luis Valley and the ocean. The range of this species is restricted; however, it can form well-developed stands in chaparral areas where it may even be the dominant shrub.

Appendix B
Phase I Archaeological Survey

An Archaeological Survey For The El Campo/Highway 101 Interchange
San Luis Obispo County

Prepared By: Thor Conway
Heritage Discoveries Inc.
793A Foothill Blvd., Suite #108
San Luis Obispo, CA 93405
(805) 545-0724

Prepared For: The Morro Group, Inc.
1422 Monterey Street, Suite C200
San Luis Obispo, CA 93401

July 12, 1999

Abstract

A literature search and archaeological surface survey was done for the El Campo Road/Highway 101 interchange study area in southern San Luis Obispo County. It resulted in identification of areas with various sensitivity for cultural resources. The general region of the study area shows overall high to moderate sensitivity for prehistoric archaeological sites. Several sites have been recorded near the study area. The background analysis reinforces the need for a more detailed archaeological survey of the selected interchange as this project proceeds.

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Introduction

The Merro Group Inc. of San Luis Obispo authorized Heritage Discoveries Inc. to complete a literature search and archaeological site survey for the El Campo Road/Highway 101 Interchange study area. The study area is located in southern San Luis Obispo County southeast of the city of Arroyo Grande. The proposed project involves the construction of a diamond interchange at or near El Campo Road, and possible additions or improvements to the freeway access ramps at Traffic Way. Several alternate locations and configurations have been presented for this study.

The selected alternatives for this project are:

1. Alternative 1 (A&B)—Construction of a Diamond Interchange at the existing El Campo Road/Route 101 intersection.
2. Alternative 2 (A&B)—Construction of a Diamond Interchange located south of the existing El Campo Road/Route 101 intersection. This alternative will assume an extension of El Campo Road east from Brady Lane to Route 101. A frontage road along the west side of Route 101 will also be included.
3. Alternative 3 (A&B)—Construction of hook ramps for north and south bound Route 101 traffic located between Traffic Way and El Campo Road/Route 101 intersection. This requires over-crossings of Route 101. A frontage road will also be considered.

Cultural Background

San Luis Obispo County was home to the Northern Chumash, or Obispeno, for over 9,000 years. Archaeologists have established a detailed cultural chronology based upon excavations and site surveys across the county (Greenwood, 1972). Over 1,900 archaeological sites have been recorded in San Luis Obispo County, although many of these heritage resources have been destroyed or damaged by development. The earliest known archaeological investigations of the Arroyo Grande to Nipomo Mesa area took place in 1874 when Paul Schumacher excavated aboriginal graves at a village, most likely the historic Chumash settlement of *Nipumu'*, located near the present town of Nipomo. Schumacher worked as an agent of the Smithsonian Institution.

In the world of the Chumash, the long years of prehistory have been divided into several periods which have been sub-divided into chronologically successive phases (King, 1981). The earliest aboriginal settlement in the area historically occupied by the Chumash is a poorly known time period between 12,000 years ago and 9,500 years ago. A Palaeo-Period fluted point was found in the coastal

area east of Point Conception (Erlandson et al., 1987); and more recently, a fluted point site was discovered near Santa Margarita.

The prehistory of the Chumash follows a chronological outline of three basic periods sub-divided into numerous phases established for the Santa Barbara region (King, 1981). The main periods—Early, Middle, and Late—cover over 11,000 years of social, economic, and technological adaptations to central and southern California's climate and resources.

The archaeological record is more firmly established for the Early Period which covers several thousand years. The Early Period generally dates between 7,500 B.C. and 500 B.C. For the Northern Chumash, a site at Diablo Canyon, SLO-2, was dated to the era between 8,900 and 9,300 years ago (Greenwood, 1972). The important Lodge Hill site in Cambria also has a substantial Early Period component which has been radio-carbon dated to 8,000 years ago. It shows extensive use of local raw materials and coastal marine food resources.

Early Period sites often contain milling stones and manos which indicate use of seed plants in addition to shell middens left from intensive harvesting of shellfish (Erlandson, 1994). A basic array of rectangular shell bead ornaments also occurs throughout the Early Period. Village life was well organized with formal cemeteries and specialized resource sites being used. Interior areas were also settled during the Early Period.

The Middle Period of Chumash prehistory spans the centuries between 500 B.C. and 1,150 A.D. At this point in time, Chumash society shifted into a very organized state with hereditary rights to political and religious power. Artifact types change in the Middle Period and shell ornaments become more diverse. An important economic adaptation, the use of acorns, is indicated by the decline in milling stones and the increased use of mortars and pestles. Population size increases and trade networks become very well established in the Middle Period. Some cemeteries show evidence of warfare.

The Late Period covers the years between 1150 A.D. and 1805 A.D. Economic changes continued within the Chumash world. Bead jewelry indicates that there were divisions in wealth between family lines. Money was invented and extensively used as an indication of political as well as economic power. The long process of localized adaptation evident throughout Chumash prehistory became even more established. With the arrival of the Spanish, especially after 1769 A.D., rapid changes altered Chumash political and economic achievements as well as reducing the size of the population. By the end of the Mission era, the Chumash continued to live on their ancestral lands; but their former cultural

achievements were largely changed forever. Many contemporary Chumash maintain spiritual and cultural links to their rich heritage as the end of the 20th century approaches.

Prehistory has been defined by several important archaeological sites in the Arroyo Grande area. An archaeological survey of the greater Arroyo Grande Creek watershed in the 1950's revealed the presence of numerous prehistoric sites including the current study area and throughout Oceano as well as several sites in the Los Berros Creek drainage basin and along the edge of the Nipomo Mesa overlooking the mouth of Arroyo Grande Creek (Wallace & Taylor, 1958). Test excavations were made at the Grieb site situated beside Arroyo Grande Creek, then recorded as site AGW-1, now registered as SLO-393. Archaeologists uncovered a rich prehistoric village containing numerous artifacts and food remains. A burial of a child was uncovered in 1958. The grave goods found in the grave suggest that it dates to about 500 A.D. The Grieb site has been characterized as a "major Middle Period Chumash occupation" (Gibson, 1987: 6). The Middle Period of Chumash prehistory dates between 1,400 B.C. and 1,150 A.D.

In addition to the Grieb site, another Middle Period Chumash settlement is located on the elevated terrace above present day Arroyo Grande Creek. The Fowler site, SLO-406, was first noted during a site survey in 1958 (Wallace, 1962), and then salvaged in 1970 during the development of a trailer park in Halcyon (Tainter, 1971: 2). More recent surveys have documented a variety of sites in the Arroyo Grande area (Conway, 1994 a & b).

Survey Results

The records search made at the Central Coast Information Center at U.C.S.B. indicated the presence of several prehistoric sites within and near the study area. The study area has urban, residential and agricultural land use. Much of the study area is undeveloped which increases the potential for the presence of undisturbed archaeological sites.

At least three previous archaeological studies have included the southwestern portion of the study area immediately south of Highway 101 in the vicinity of El Campo Road (Dills, 1990; Gibson, 1981; Singer & Atwood, 1990). These studies produced negative results. This finding requires further verification, but does identify an area potentially free of cultural resources.

A number of archaeological sites have been recorded within or adjacent to the study area including CA-SLO-1413, CA-SLO-1206, and CA-SLO-1382 which were discovered near Traffic Way north of Highway 101 on the highlands above the Arroyo Grande Valley. Several archaeological sites occur on the northeast side of Highway 101 on the slopes of Picacho Hill including CA-SLO-411, CA-SLO-412

and CA-SLO-1701H. A prehistoric site, CA-SLO-446, is situated adjacent to the south side of Highway 101 below Picacho Hill.

Archaeological work done immediately beyond the south end of the study area has resulted in the discovery of several large and small prehistoric sites along Los Berros Creek.

The present surface survey did not completely cover all of the study area shown in Figure 1 and Figure 2. This was due to the fact that a considerable portion of the study area remains private property and access was not available. The surface survey reported here is limited to Highway 101 and its right of way, the frontage roads, Traffic Way and its right of way, and a portion of the private property on both sides of Brisco Road near Highway 101 (Figure 3).

Cultural materials were not found in the areas surveyed for this report. However, it must be noted that prehistoric sites, such as CA-SLO-1206 beside Traffic Way, do exist immediately outside of the area surveyed and within the study area (Figure 4).

Conclusion & Recommendations

The presence of several prehistoric sites within the overall study area defined by the interchange alternatives, and more sites close to the study area, combined with a lack of previous archaeological surveys for much of the study area, leads to the conclusion that the study area is sensitive for the presence of heritage resources.

Each of the three selected alternatives requires additional archaeological studies when access can be gained to private property and prior to a final determination of the preferred alternative being made. The literature and archaeological site records search indicated that any of the three project alternatives could be constrained by the presence of cultural resources.

Recommendation—Alternative 1 (A&B)—Construction of a Diamond Interchange at the existing El Campo Road/Route 101 intersection. This alternative has the least sensitivity for cultural resources on the west side of Highway 101, but does show potential sensitivity on the east side of Highway 101.

Recommendation—Alternative 2 (A&B)—Construction of a Diamond Interchange located south of the existing El Campo Road/Route 101 intersection. This alternative will assume an extension of El Campo Road east from Brady Lane to Route 101. A frontage road along the west side of Route 101 will also be included. This alternative has the sensitivity for cultural resources and it represents the least surveyed part of the study area.

Recommendation—Alternative 3 (A&B)—Construction of hook ramps for north and south bound Route 101 traffic located between Traffic Way and El Campo Road/Route 101 intersection. This requires over-crossings of Route 101. This alternative had the most sensitivity for the presence of cultural resources with recorded sites occurring there and strong potential for additional sites on private land that would comprise the alternative interchange.

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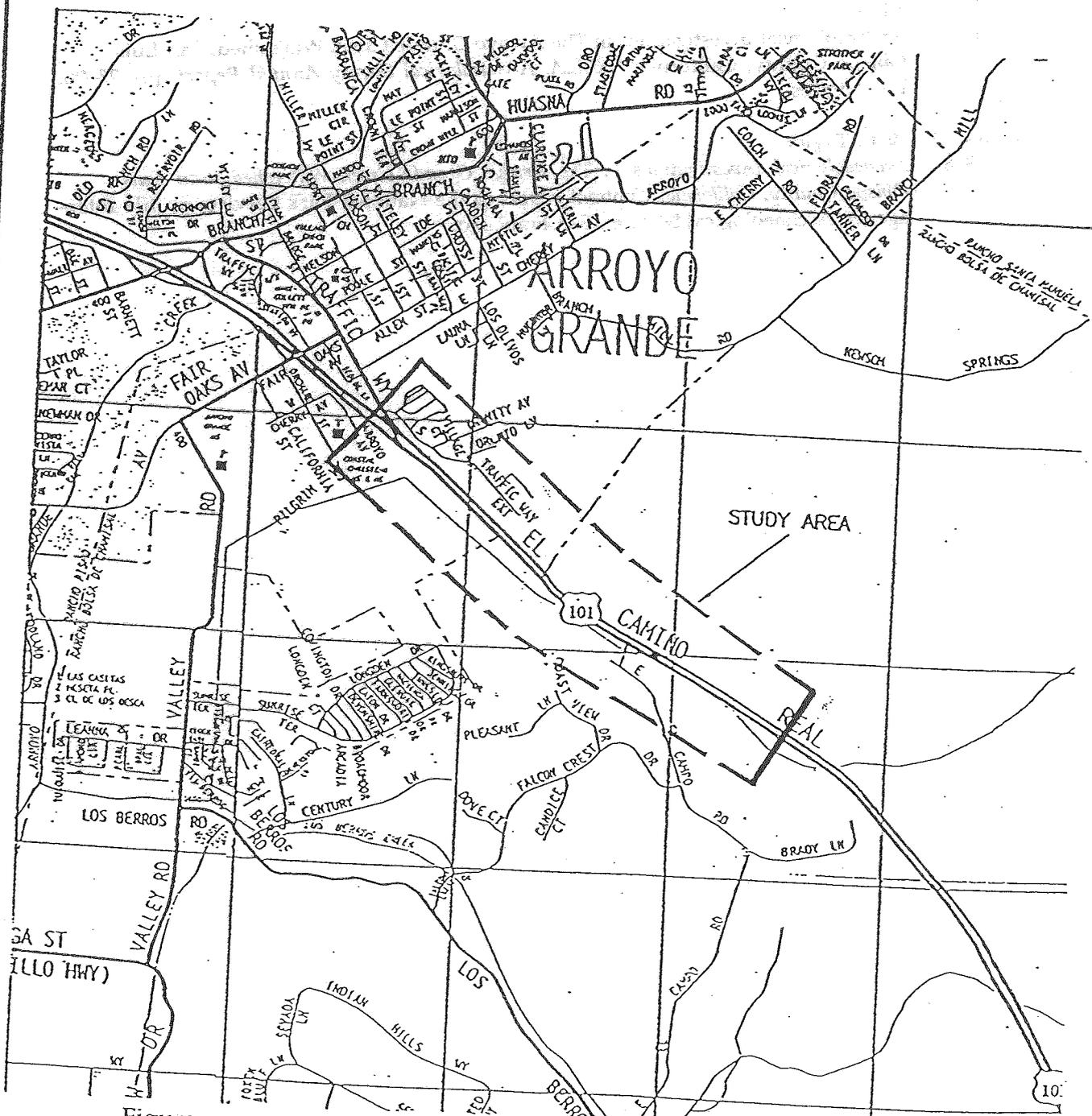


Figure 1—General location of the study area near Arroyo Grande.

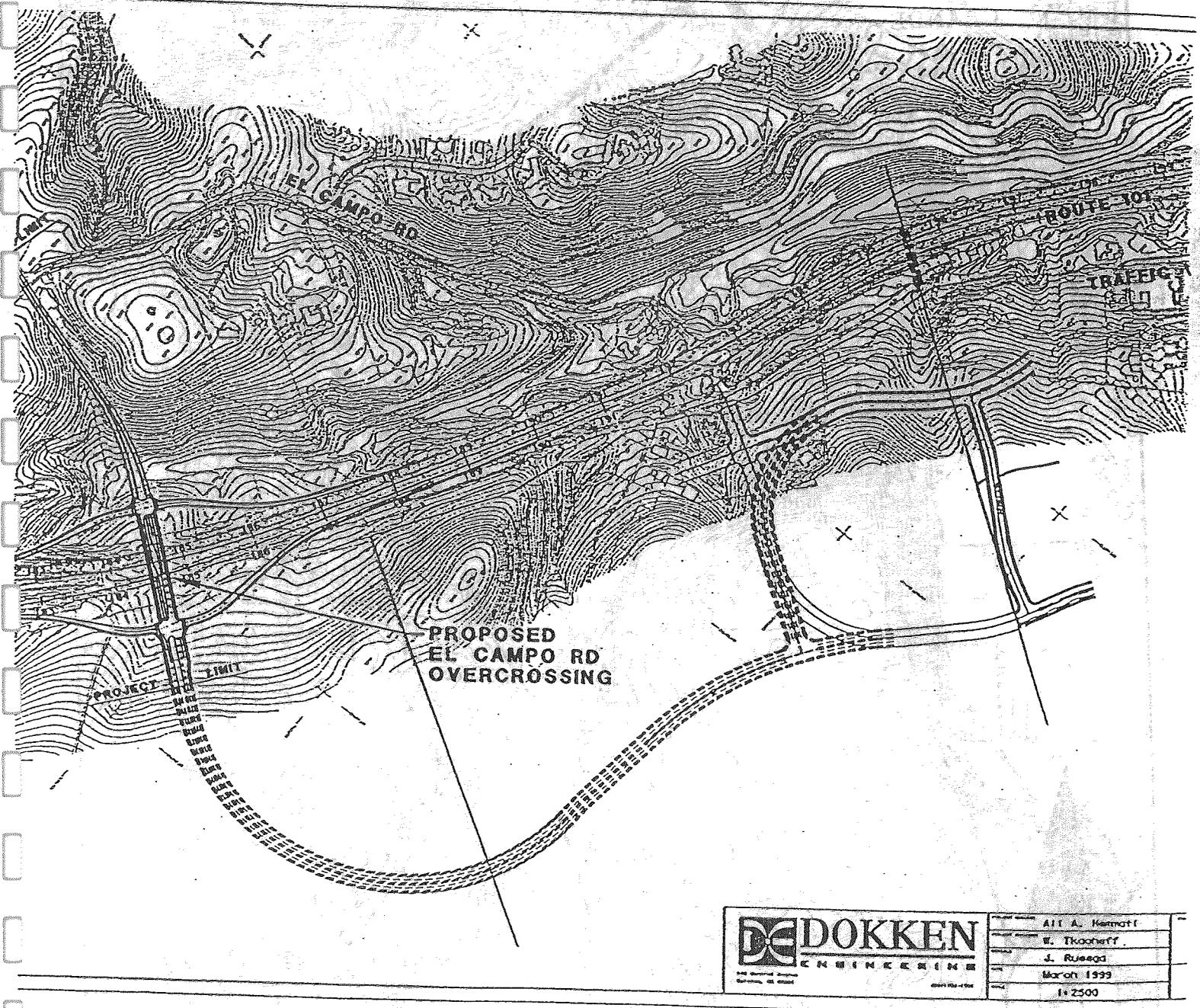


Figure 2—Project alternatives in the El Campo/Highway 101 study area.

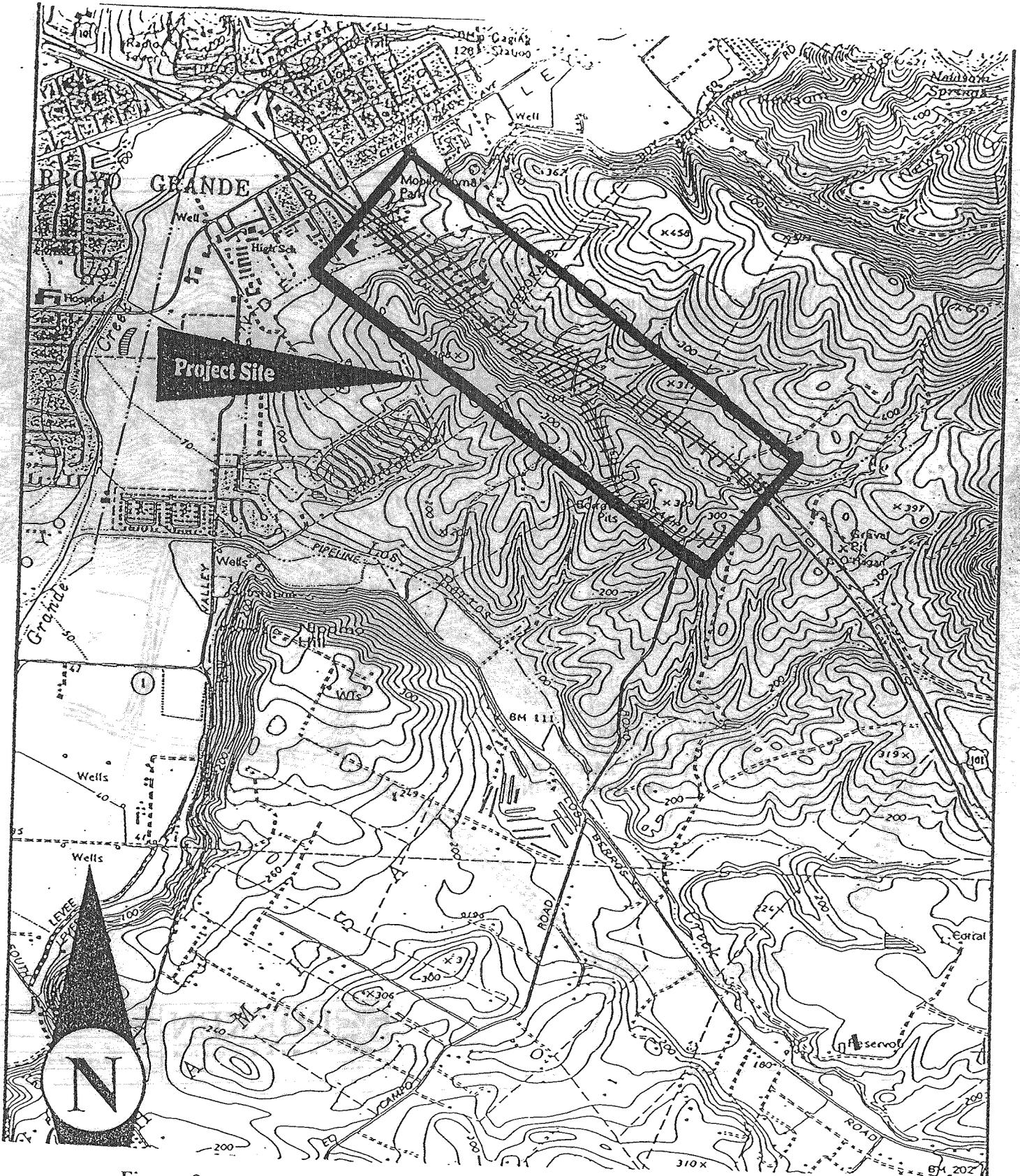


Figure 3—Areas with completed Phase 1 surface survey.

Archaeological Survey For The Expanded Study Area, El Campo/Highway 101 Interchange,
Arroyo Grande, San Luis Obispo County, California

Prepared for:

The Morro Group, Inc.
1422 Monterey Street, Suite C200
San Luis Obispo, CA 93401

Prepared by:

Thor Conway _____

Heritage Discoveries Inc.
PMB 108
793A Foothill Blvd.
San Luis Obispo, CA 93405

Feb. 13, 2002

Summary Of Findings

Plans are being prepared to examine a corridor at the edge of Arroyo Grande southwest of Highway 101 as an alternative interchange for the El Campo Road exit. This project, the El Campo/Highway 101 Interchange Expanded Study, required an archaeological surface survey and records search which are described in this report.

The Central Coast Information Center database of archaeological resources includes at least twelve archaeological sites within a one mile radius of the El Campo/Highway 101 Interchange Expanded study area. Twenty-two previous archaeological surveys have been completed in the vicinity of the study area.

While several prehistoric Chumash settlements were previously identified in the vicinity of the El Campo/Highway 101 Interchange Expanded Study, none were located during the present survey. Two portions of the study area had poor surface visibility in settings with archaeological site potential. These will require an expanded Phase I surface survey if the alternative is developed. Other parts of the study area had negative findings and previous development impacts.

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Introduction

This report describes an archaeological surface survey completed on February 13, 2002 at the El Campo/Highway 101 Interchange Expanded study area southwest of Highway 101 in Arroyo Grande, San Luis Obispo County (Figures 1 & 2). The study was completed to determine whether prehistoric or historic cultural resources occurred within the project area in compliance with Section 106 of the National Historic Preservation Act.

The study was completed by Thor Conway, Heritage Discoveries Inc. of San Luis Obispo, California. Thor Conway, M.A. Anthropology with thirty-two years archaeological experience across North America including fourteen years in California, did the fieldwork and reporting.

Project Description

This report describes an archaeological surface survey completed as part of the El Campo/Highway 101 Interchange Expanded Study project located southwest of Highway 101 in the City of Arroyo Grande (Figure 1). The study area starts at the west side of Highway 101 and follows a corridor two hundred meters northwest to southeast by one thousand meters northeast to southwest (Figure 2).

The study area lies at the eastern edge of the Arroyo Grande Creek valley in an area where gently sloped foothills occur. The Los Berros Creek Valley drains into Arroyo Grande Creek a short distance south of the study area. The study area has an elevation ranging between 100 feet above sea level to approximately 140 feet above sea level.

The El Campo/Highway 101 Interchange Expanded Study is part of the environmental planning provided by the Morro Group Inc. of San Luis Obispo. Heritage Discoveries Inc. was retained to provide a Phase I archaeological surface survey of the study area.

Sources Consulted

A search was made for pertinent background information relating to prehistoric and historic land use in the project area. An archaeological sites record search from the Central Coast Information Center of the California Historical Resources Information System at the University of California at Santa Barbara included recorded archaeological sites and surveys within a one mile radius of the El Campo/Highway 101 Interchange Expanded Study area. Twelve archaeological sites and twenty-two cultural resource studies have been completed in the records search area. No historic properties were listed within the search area.

The results showed that the specific study area had been partially subjected to an archaeological survey; but several surveys and Phase 2 sub-surface evaluations have taken place on adjoining properties.

A number of prehistoric archaeological sites have been recorded along Arroyo Grande Creek and the edge of the foothills along the study area. Four prehistoric sites, CA-SLO-238, CA-SLO-413, CA-SLO-445 and CA-SLO-1206, have been recorded on the foothills directly above the Arroyo Grande Creek floodplain. There is a cluster of prehistoric sites on the terraces above Arroyo Grande Creek directly across from the study area such as CA-SLO-393, CA-SLO-406, CA-SLO-407 and CA-SLO-408 (Figure 3).

An archaeological survey of the Vista Del Mar project in Arroyo Grande included a portion of the present El Campo/Highway 101 Interchange Expanded Study area (Singer & Atwood, 1990). This 1990 survey produced negative results for cultural resources. A short distance northeast of Highway 101 and the study area, the St. Barnabas site (CA-SLO-413) was sampled through sub-surface testing (Sawyer, 1988a). Sites CA-SLO-413 and CA-SLO-1206 were treated during two studies in 1988 (Sawyer, 1988b & 1988c).

Background

The El Campo/Highway 101 Interchange Expanded Study occurs in an environmental setting with well documented archaeological and ethnographic sensitivity. The lower portion of Arroyo Grande Creek saw intensive prehistoric settlement for several thousand years. Archaeological sites are located above the floodplain along terraces and foothills.

Present Environment

The present study area is a partially developed corridor leading southwest from Highway 101 to Valley Road in Arroyo Grande (Figure 2). The area between Highway 101 and Orchard Street is an open field with grass cover. It is bordered by hills with scattered oaks on the south. A seasonal drainage, now channelized, lies north of the study area. The study area between Orchard Street and Valley Road is a highly developed zone mainly occupied by Coast Union High School. Almost no native vegetation remains in this half of the study area.

Ethnography

The entire San Luis Obispo County area, including all of the project area, was home to the Northern Chumash, or Obispeno, for over 9,000 years. The earliest recorded visit to an Obispeno village took place in 1595 when the Spanish sailed into San Luis Obispo Bay under the command of Cermeno. He anchored in front of the premiere village named *Sejato* which was located at the mouth of San Luis Obispo Creek on the hill now occupied by the San Luis Bay Inn. The Spanish account noted that these Indians "... are fishermen and there is fish and some shell-fish with which they sustain themselves"—a statement which applied to the descendants of this village who

By the time of the Spanish expansion into California at the end of the 1700's, Chief Buchon lived at *Sejato* and held the status of a grand-chief leader of several villages in the greater San Luis Obispo area from Avila to Pismo Beach to Morro Bay.

The area that became the community San Luis Obispo re-entered the historic era on September 1st, 1772 when the first mission was founded beside San Luis Obispo Creek. This first mission within Chumash territory gradually expanded in size and importance. In its first decade, some Obispeno Chumash were dissatisfied with the mission and attempted to burn it down (Kocher, 1972). The influence of the mission increased in the 1780's when Pedro Fages reported that the Indians at the San Luis Obispo mission "...have readily adapted themselves to what it was sought to teach them" (Englehardt, 1933: 39). Judging from the mission records listing the number of Indians recruited by this mission, in 1803 most of the numerous Obispeno Chumash groups had moved away from their traditional villages, including the Pismo Beach and Arroyo Grande areas, to the vicinity of the mission (King, 1984: 14).

Archaeology

Archaeologists have established detailed cultural chronologies based upon excavations and site surveys across the county (Greenwood, 1972; Gibson, 1979). Over 2,100 archaeological sites have been recorded in San Luis Obispo County, although many of these heritage resources have been destroyed or damaged by development.

The study of Chumash prehistory has become increasingly divided into chronological and regional divisions starting with earlier syntheses (Greenwood, 1972; Gibson, 1994) and continuing with comprehensive recent studies (Bouey & Basgall, 1991). While archaeological surveys are commonly made throughout the Northern Chumash territory, sizeable excavations had been more limited and generally located at coastal sites (Clemmer, 1962). More recent studies have identified regional trends and adaptations such as work at Pico Creek and Little Pico Creek (Jones & Waugh, 1995), a series of sites at Morro Bay (Jones et al., 1994), and early settlement inland at Cross Creek (Fitzgerald & Jones, 1999).

The prehistory of the Northern Chumash follows the same chronological outline of three basic periods subdivided into numerous phases established for the Santa Barbara region (King, 1981). The main periods-Early, Middle, and Late-cover over 9,000 years of social, economic, and technological adaptations to central and southern California's climate and resources.

The Early Period generally dates between 7,500 B.C. for the Northern Chumash, a site at Diablo canyon, SLO-2, was dated to the era between 8,900 and 9,300 years ago (Greenwood, 1972). The important Lodge Hill site in Cambria also has a substantial Early Period component which has been radio-carbon dated to 8,000 years ago. Is

shows extensive use of local raw materials and coastal marine food resources (Pierce, 1979; Gibson, 1979b; Conway, 1995). At least 37 Early Period sites have been recorded in San Luis Obispo County (Gibson, 1994).

Early Period sites often contain milling stones and manos indicating extensive use of seed plants. A basic array of rectangular shell bead ornaments also occurs throughout the Early Period. Village life was organized with formal cemeteries and specialized resource sites being used.

The Middle Period of Chumash prehistory spans the centuries between 500 B.C. and 1150 A.D. At this point in time, Chumash society shifted into a very organized state with hereditary rights to political and religious power. Artifact types change in the Middle Period and shell ornaments become more diverse. An important economic adaptation, the use of acorns, is indicated by the decline in milling stones and the increased use of mortars and pestles. Populations in size and trade networks become very well established.

The Late Period covers the years between 1150 A.D. and 1805 A.D. Economic changes continued within the Chumash world. Bead jewelry indicates that there were divisions in wealth between family lines. Money was invented and extensively used as an indication of political as well as economic power. The long process of localized adaptation evident throughout Chumash prehistory became even more established. With the arrival of the Spanish, especially after 1769 A.D., rapid changes altered Chumash political and economic achievements as well as reducing the size of the population. By the end of the Mission era, the Chumash continued to live on their ancestral lands; but their former cultural achievements were largely changed forever. Many contemporary Chumash maintain spiritual and cultural links to their rich heritage.

History

As well as being one of the main centers of settlement and commerce along the central coast of California, several archaeological studies have taken place in Arroyo Grande. The rich prehistory of Arroyo Grande has begun to emerge through archaeological research in the past several decades. A series of Middle Period villages, such as the Grieb site (CA-SLO-393) (Gibson, 1987), line the mouth of Arroyo Grande Creek. Large cemeteries have been documented in association with the Middle Period villages beside Arroyo Grande Creek (Tainter, 1971).

Some of earliest archaeological investigations along the central coast of California took place near Arroyo Grande (Schumacher, 1875). A survey of the Arroyo Grande Creek watershed lead to the discovery of dozens of sites (Wallace, 1962; Wallace & Taylor, 1958).

The community of Arroyo Grande has its origins with an early settler, Francisco Zeba Branch, who visited the area while bear hunting in 1832. He established a large ranch in the area. When drought in the late 1880's ruined his operation, Branch sold parcels which lead to the development of the community of Arroyo Grande. Agriculture

quickly became a part of the local economy. Historians have studied the growth and development of communities across San Luis Obispo County (Angel, 1883; Krieger, 1988). In addition, local histories concerning the economic development and the importance of the Southern Pacific Railway in the expansion of the community and California were consulted (Best, 1964; Nicholson, 1980; Wilson & Taylor, 1952).

Field Methods

A detailed archaeological surface survey was made of the El Campo/Highway 101 Interchange Expanded Study Area on February 13, 2002 by walking the project area at two meter intervals. The project area was defined as a corridor starting at the west side of Highway 101 and following a corridor two hundred meters northwest to southeast by one thousand meters northeast to southwest past Union High School to Valley Road (Figure 2).

The archaeological survey was done by Thor Conway of Heritage Discoveries Inc. Surface visibility for the eastern part of the study area east of Orchard Street was poor due to thick grass cover. There were negative results with about 5% surface visibility. This field holds moderate potential for the presence of cultural resources since it could not be adequately studied without removal of surface vegetation.

With the exception of the agricultural fields beside Valley Road, surface visibility was nearly non-existent in the high school area due to paving, landscaping and previous grading. This area hold very low potential for the presence of cultural resources. Access was not available to closely inspect some areas, but grading cuts are obvious.

The agricultural fields along the Valley Road portion of the study area will require additional Phase 1 surface studies if this alternative is chosen for development. The margins of the fields along Valley Road were examined, but permission to enter the fields could not be obtained due to recent planting.

Findings & Conclusion

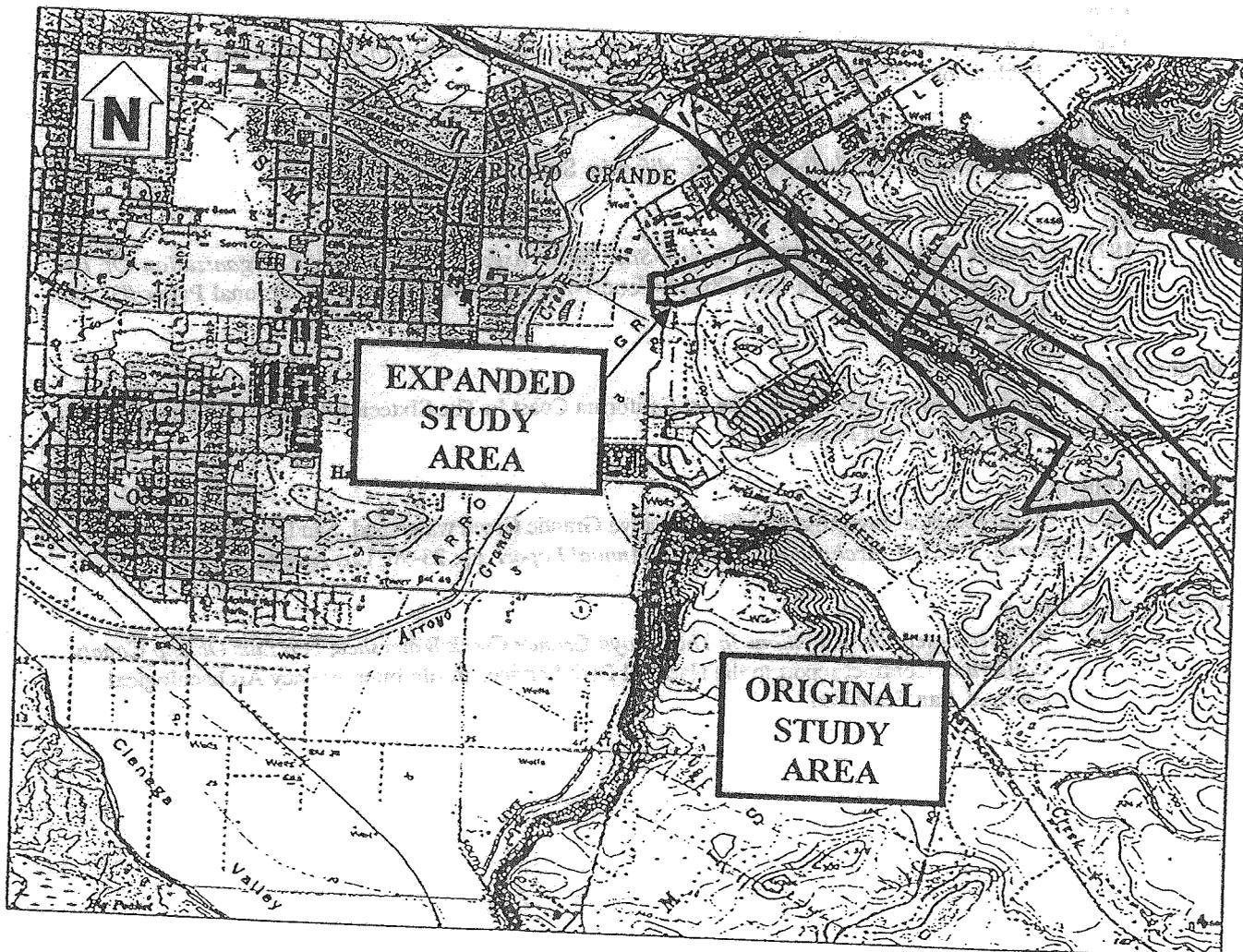
While the surface survey of the El Campo/Highway 101 Interchange Expanded Study Area did not find archaeological remains, the literature search and records search indicate the presence of prehistoric sites in the vicinity of the project. These sites are located on more elevated areas, but a lack of previous surveys closer to the Arroyo Grande Creek floodplain leaves the cultural resource sensitivity unknown.

El Campo/Highway 101 Interchange Expanded Study project remains an area with some potential sensitivity for the presence of cultural resources due to inadequate surface visibility in two areas. Therefore, it is recommended that an extended Phase 1 surface survey be completed in the field beside Highway 101 and in the agricultural fields along Valley Road if this alternative is chosen for development.

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VICINITY MAP

NEW INTERCHANGE ON ROUTE 101
IN THE CITY OF ARROYO GRANDE
AND SAN LUIS OBISPO COUNTY

Figure 1. Vicinity Map Of Project Area At Arroyo Grande.

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

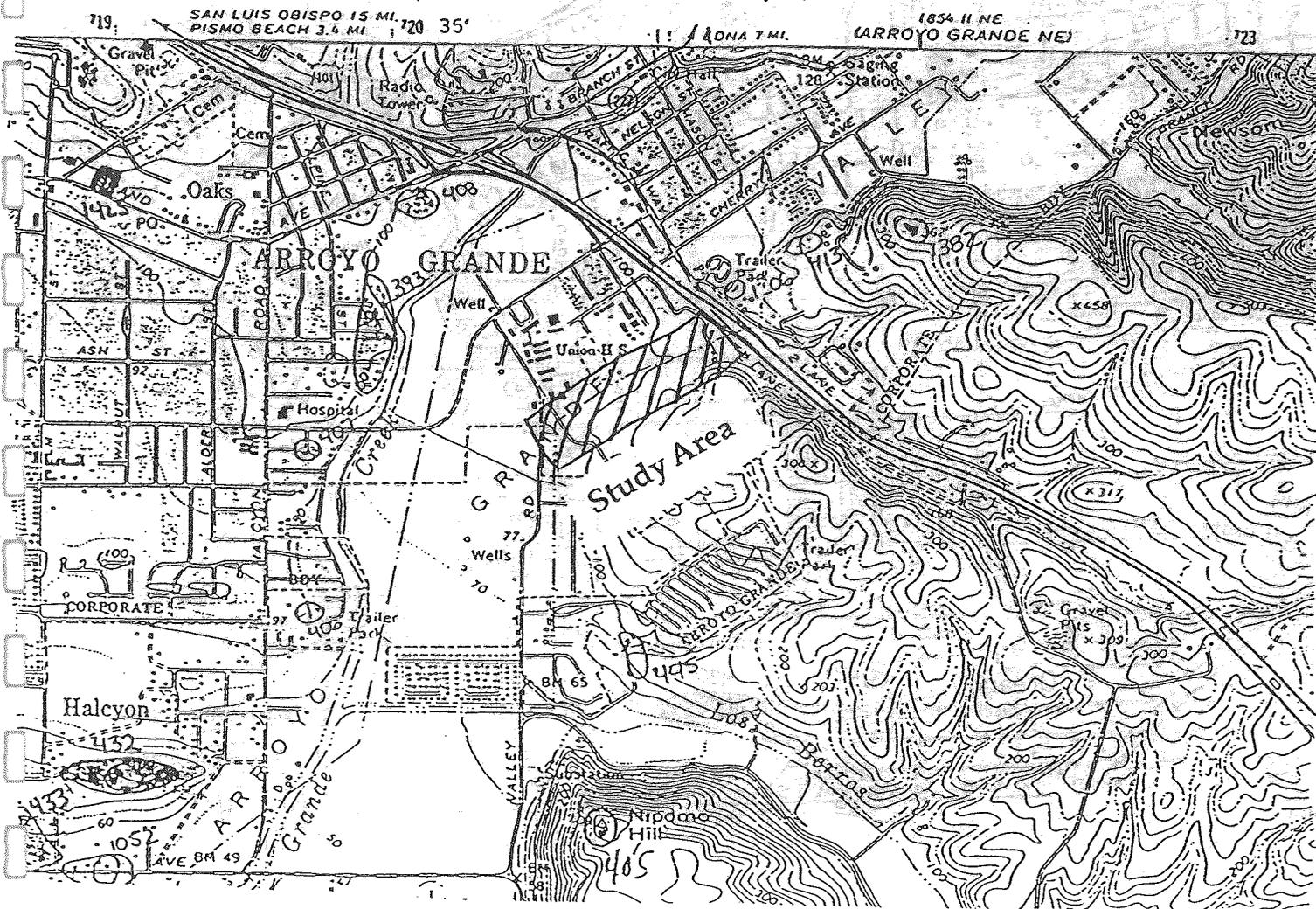


Figure 2—El Campo/Highway 101 Interchange Expanded Study Area Map.

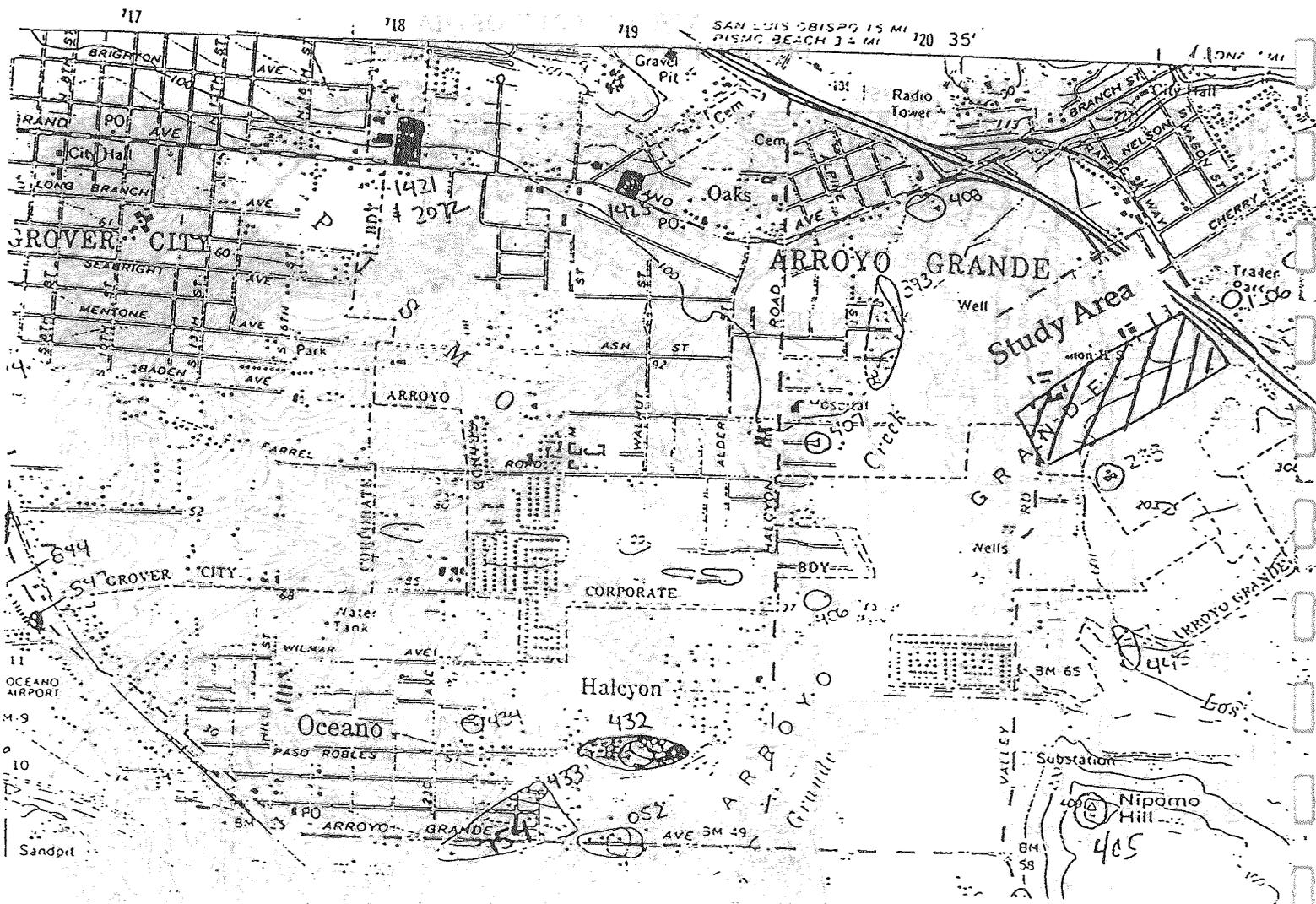


Figure 3—Archaeological Site Map For The Project Area & Vicinity In Arroyo Grande.

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

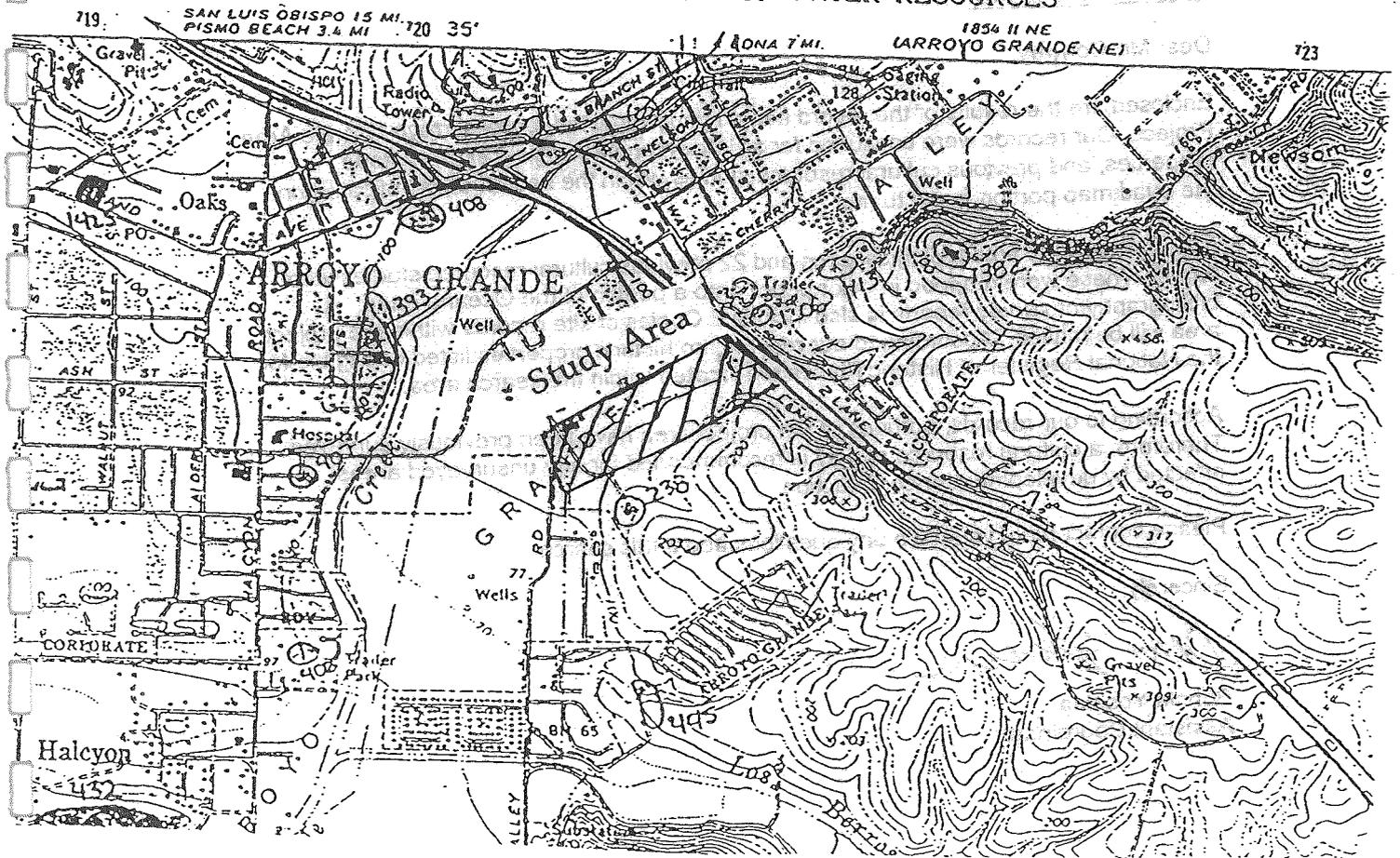


Figure 4--Archaeological Survey Area For The El Campo/Highway 101 Interchange Expanded Study Area

California
Archaeological
Inventory

Information
Center



SAN LUIS OBISPO AND
SANTA BARBARA COUNTIES

Department of Anthropology
University of California, Santa Barbara
Santa Barbara, CA 93106-3210
(805) 893-2474

February 13, 2002

Thor Conway
Heritage Discoveries, Inc.
PMB 109, 793A Foothill Blvd
San Luis Obispo, Ca 93405

Via Fax and U.S. Mail

Dear Mr. Conway:

Enclosed are the results of the record search you requested for the Arroyo Grande Area Project. Our records were consulted for all known archaeological sites, historic properties, and previous cultural resource studies within the search area indicated on the quad map portion faxed to me.

In this search, 12 archaeological sites and 22 previous cultural resource studies were found. These were mapped in color pencil onto a portion of the Oceano quad. A bibliography of survey reports is also included. Copies of site records within the project area will be mailed. According to our records, no historic properties listed or eligible for the National Register of Historic Places are located within the search area.

According to our records, portions of the project area have been previously surveyed. Therefore, a cultural resource survey is recommended for any unsurveyed areas affected by development or construction.

Please contact me if you have any questions about this search.

Sincerely,

Bonnie Yoshida
Assistant Coordinator

II. SUMMARY OF FINDINGS

A. ENVIRONMENTAL DOCUMENTS

An Initial Study (IS) leading to a Mitigated Negative Declaration is the probable environmental document that will be necessary for this project because the significant resources that may be impacted appear to be mitigable; however, more detailed studies may change this conclusion. If this occurs, it is possible that an Environmental Impact Report (EIR) would be required. Federal funding may be utilized for project implementation and, in that case, an Environmental Assessment (EA) leading to a Finding of No Significant Impact (FONSI) is the probable environmental document necessary for National Environmental Policy Act (NEPA) compliance. However, if unavoidable impacts are found during the EA process, an Environmental Impact Statement (EIS) would be necessary. Caltrans will consider this PEAR during approval of a Project Study Report (PSR). Potentially significant impacts, which could affect project schedule and design include:

- Right-of-way acquisition
- Possible wetland impacts
- Potential presence of species of special concern
- Cultural resources
- Noise impacts
- Visual resources

Responsibility for compliance with the California Environmental Quality Act (CEQA) rests with the Lead Agency, the City of Arroyo Grande Public Works Department. The California Department of Transportation (Caltrans) will participate in the environmental review process as a Responsible Agency.

Environmental concerns associated with this project are presented in Table 1, which provides a summary of the environmental issues that are relevant to each alternative of the project and will need to be addressed in the IS/EA document. Items marked as "yes" or "maybe" will require a technical study to determine whether impacts are significant and, if significant, whether mitigation measures can be implemented that will reduce the impact to a level below significance. Detailed evaluations of these concerns are listed in the appropriate sections of this report.

TABLE 1
Environmental Impacts and Significance for the proposed El Campo Alternatives

Environmental Issues	Impact				Significance			
	Alt. 1	Alt 2	Alt 3	Alt 4	Alt 1	Alt 2	Alt 3	Alt 4
Biological	Yes	Yes	Yes	Yes	Maybe	Maybe	Maybe	Maybe
Hazardous Waste	No	No	No	No	No	No	No	No
Socioeconomic	Yes	Yes	Yes	Yes	Maybe	Maybe	Maybe	Maybe
Hydrology	Yes	Yes	Yes	Yes	Maybe	Maybe	Maybe	Maybe
Right-of-way	Maybe	Maybe	Maybe	Maybe	Maybe	Maybe	Maybe	Maybe
Cultural Resources	Maybe	Maybe	Maybe	Maybe	Maybe	Maybe	Maybe	Maybe
Noise	No	No	No	No	No	No	No	No
Air Quality	No	No	No	No	No	No	No	No
Visual Resources	Maybe	Maybe	Maybe	Maybe	No	No	No	No

Based on the preliminary analysis included in this document, Alternative 2 appears to be the best avoidance alternative. Refer to the following analyses and Table 3 for supporting information.

B. TIMING OF DOCUMENT PREPARATION

The time necessary to prepare the environmental document will be affected by the required technical studies, including Investigation of the Waters of the U.S. (Wetland Delineation) and special-status species surveys if the existing creeks have the potential to be impacted. Right-of-way, cultural resource surveys, noise, visual, and air quality studies may also be required. These studies are not expected to be overly complex or time consuming. It is estimated that the total preparation time for the CEQA environmental document will be approximately 12-18 months, and the preparation time for the NEAP document would be approximately 18-24 months.

C. PERMITS AND APPROVALS

The following permits, approvals, and coordination efforts will be required prior to construction of the proposed improvements.

Permits:

- Section 1601 Streambed Alteration Agreement: All alternatives will require a Section 1601 Agreement, since implementation will affect drainages under the jurisdiction of the California Department of Fish and Game.
- Section 404 Permit: Depending on the area affected, project implementation may exceed the maximum limitations for Nationwide Permit use. If this occurs, an individual 404 Permit will be necessary.

- Section 401 Water Quality Certification: This certification will be required for all alternatives and are issued by the Regional Water Quality Control Board (RWQCB).
- Prior to construction, the City/County must obtain an Encroachment Permit from Caltrans for construction within State highway right-of-way.

Approvals and Coordination:

- A Project Study Report (PSR) must be approved by Caltrans. This preliminary Environmental Assessment Report will be considered by Caltrans prior to PSR approval.
- A Draft Project Report (PR) must be approved by Caltrans. An Initial Study (IS) will be prepared, followed by the preparation of a Draft Environmental Document (DED) for approval by the City/County and Caltrans. Given the existing conditions and proposed project locations, it is expected that either a Mitigated Negative Declaration or an Environmental Impact Report will be required by the County and Caltrans. The DED will follow the procedures outlined in the Caltrans Environmental Handbook. Once the DED is completed, it will be circulated for a 30-day public review and comment period. Responses to comments will be prepared and combined with the DED.
- A Final Project Report will be prepared for approval by Caltrans concurrent with the Final Environmental Document (FED). Approval of the Final Project Report will authorize final design (preparation of plans, specifications, and cost estimates for bidding purposes).
- Coordination with various utility providers will be required where utilities may be upgraded, relocated, or otherwise affected by proposed construction.
- Because the project involves right-of-way acquisition, the City/County must approve the area to be acquired. Property acquisition activities can be initiated and negotiated with individual property owners once the FED is approved.
- Prior to construction, local construction approvals will be necessary from the City/County, including the issuance of construction permits, grading permits, and other engineering related approvals.
- Oak trees removed or impacted within County limits are subject to the County's oak tree standards and mitigation measures. Oak trees removed or impacted within City of Arroyo Grande limits are subject to the oak tree regulations in the City General Plan. This project may potentially impact heritage oak trees and would be subject to the related City policies.
- Additional surface and subsurface archaeological testing may be required to determine if there are any significant cultural resources within the chosen right-of-

way. This area is highly sensitive to cultural resources. The appropriate historic resources reports will be required to be filed with the State Office of Historic Preservation.

III. METHODS AND FINDINGS

Site visits were conducted by Morro Group staff between the dates of September 22 and October 3, 1997, January 1999, June 1999, and March 2001. Records searches and contacts with Federal, State, and local agency experts were also conducted as needed to collect data and confirm existing information. Information contained in the City of Arroyo Grande and County of San Luis Obispo General Plans was used to assist in characterizing the project issues and conditions and ensure project consistency with the General Plans. This assessment details the environmental resources present in and near Alternatives 1 and 2 (El Campo Road area), Alternative 3 (Traffic Way), and Alternative 4 (North El Campo Road area).

A. BIOLOGICAL RESOURCES

1. Botanical

Assessment of the botanical resources associated with the alternate sites was based on a search of the California Natural Diversity Data Base (CNDDDB) windshield surveys, and reconnaissance level walkovers of the project areas on October 3, 1997 and March 16, 2001. The CNDDDB search was conducted on the Oceano 7.5 Minute Quadrangle. CNDDDB records indicate the potential presence of three Special-Status plant species in the immediate area of the proposed sites. The walkovers produced no sightings of Special-Status plant species, however, the environmental conditions observed on site indicated that suitable habitat for these species is present within the proposed project areas. The following is a list of the Special-Status plant species recorded in the CNDDDB as potentially occurring within the vicinity of the four alternate site locations:

- Pismo Clarkia (*Clarkia speciosa, ssp. immaculata*)
- Dune Larkspur (*Delphinium parryi, ssp. blochmaniae*)
- Wells Manzanita (*Arctostaphylos wellsii*)

Due to seasonal conditions, presence or absence of Pismo clarkia and dune larkspur could not be determined during the walkovers of the proposed interchange sites. These species are herbaceous plants that are identifiable only during their active growth phases. Additional field survey work will be necessary to determine whether these species are present in the area. Wells manzanita was not present in the survey area. Refer to Appendix A for a description of the plants listed above.

Alternatives 1 and 2

Potential impacts associated with implementation of the proposed El Campo Road project sites will require the removal of an undetermined portion of existing oak woodland and the adjoining riparian corridor/wetland area along the south side of Route 101. Alternative 1 would disturb more of the riparian corridor/wetland area than Alternative 2. Construction on the north side of these alternate sites will result in loss of existing rangeland and chaparral areas, removal of individual oak trees, and some disruption of the existing riparian corridor. The proposed project could negatively affect potential habitat areas for Pismo clarkia and dune larkspur. No evidence was found to indicate that the third botanical species of concern, Wells manzanita, is present in the immediate project area. Any loss of trees for road expansion projects must be mitigated in conformance with the County General Plan policies.

Alternative 3

Potential impacts associated with implementation of the proposed Traffic Way interchange include the removal of a small amount of grassland/oak woodland and riparian corridor in the vicinity of the Traffic Way undercrossing and associated on and off ramps (west side of Highway 101). On the east side of Highway 101, botanical impacts are limited, as much of the proposed project footprint is in a rural residential area. A dune larkspur and Pismo clarkia survey would be necessary before project construction. The site is not suited for Wells manzanita and a survey for this plant would not be necessary.

Alternative 4

Potential impacts associated with the implementation of the proposed North El Campo interchange include removal of grassland/oak woodland impacts to the riparian corridor in the vicinity of the Traffic Way extension on the east side of 101. On the west side of Highway 101, oak woodland and riparian corridor exist along the proposed El Campo extension and a playing field exists in the North El Campo Road extension area. Several Coast live oaks (*Quercus agrifolia*) are present in this impact area and extensive cutting into the existing hillside would be required for the proposed El Campo frontage road. Dune larkspur and Pismo clarkia surveys would be necessary before project construction. The site is not suited for Wells manzanita and a survey for this plant would not be necessary.

2. Wildlife

Wildlife field surveys of the proposed project sites were made on October 1 and 2, 1997, January 21, 1999, January 29, 1999, and March 16, 2001. The objective of these surveys was to determine the potential of any special-status wildlife species to occur at the proposed project sites (Figures 3-6). Definitions of special-status wildlife species are presented below:

- Animals listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act
- Animals listed or proposed for listing as threatened or endangered under the California Endangered Species Act
- Animals of special concern to the California Department of Fish and Game

In addition to the field survey of the proposed sites, a search of the California Department of Fish and Game's Natural Diversity Data Base (CNDDDB) was conducted. The results of this survey indicate that a number of special-status species could be present in the project area. These species and their federal and state status are listed on the table below:

TABLE 2
Special-status Animal Species Potentially Present in the El Campo Project Area

Common Name	Scientific Name	Federal Status	State Status
Cooper's Hawk	<i>Accipiter cooperii</i>	NS*	Special Concern
Prairie falcon	<i>Falco mexicanus</i>	NS	Special Concern
Sharp-shinned hawk	<i>Accipiter striatus</i>	NS	Special Concern
Golden eagle	<i>Aquila chrysaetos</i>	NS	Special Concern
Peregrine falcon	<i>Falco peregrinus</i>	Endangered	Endangered
Burrowing Owl	<i>Athene cunicularia</i>	Special Concern	Special Concern
Silvery legless lizard	<i>Anniella pulchra pulchra</i>	NS	Special Concern
Southwestern pond turtle	<i>Clemmys marmorata pallida</i>	NS	Special Concern
California red-legged frog	<i>Rana aurora draytonii</i>	Threatened	NS
California tiger salamander	<i>Ambystoma californiense</i>	NS	Special Concern
Western spadefoot toad	<i>Spea hammondi</i>	NS	Special Concern

*NS= No Status

No special-status wildlife species were observed during the field surveys of the selected alternative sites, although suitable habitat is present in the immediate area of each site.

Alternative 1

The existing riparian corridor on the west side of Route 101 in the vicinity of the El Campo Road/Route 101 intersection contained standing water that averaged 0.4 meters in depth. Additionally, the stream channel contained small, intermittent pools of stagnant water that averaged approximately 1 meter in depth. This riparian corridor has a fully established canopy and provides potential habitat for California red-legged frogs, California tiger salamanders, Cooper's hawks, and western spadefoot toads. The CNDDDB search resulted in two confirmed California red-legged frog sightings near the Alternative 1 & 2 sites. The east side of Route 101 contains two small riparian corridors, rangeland, and scattered oak trees. This area contains suitable habitat for the aquatic species listed above, and also is potential habitat for burrowing owls which are found along man-made berms and slopes in agriculturally disturbed areas.

Alternative 2

This site contains a small riparian corridor on the west side of Route 101, with flowing water ranging in depth from several inches to one foot. Canopy cover is relatively thick along this section of the creek, but corridor width and channel features are less developed than the corresponding stream section in Alternative 1. The El Campo Road extension contains several old trees suitable for use by raptors, and numerous ground squirrel burrows were observed in the surrounding area. The east side of this site is primarily rangeland, with some intergradation to coastal scrub. This area could provide foraging habitat for some of the raptors listed above, but

it does not appear to contain significant habitat for any special-status species. The small tributary stream near this site contains potential red-legged frog and southwestern pond turtle habitat. CNDDDB records contain a red-legged frog sighting upstream of the project site.

Alternative 3

The proposed site near Traffic Way and west of Route 101 contained no standing water but did contain a dry drainage ditch on the west side of the highway. This channel contains a riparian canopy, which increases in quality towards the southern end of the project footprint, and may provide acceptable habitat species of concern. Alternative 3 would impact a greater amount of riparian habitat than proposed Alternatives 1 and 2 by extending Traffic Way across the drainage and the need for cut into the existing riparian corridor for the access ramp. The rangeland area contained numerous ground squirrel burrows, and is overlooked by a north-facing slope containing rock outcrops and oak woodlands. These conditions could provide suitable habitat for prairie falcons and burrowing owls. The area to the east of Route 101 is primarily residential, and does not provide suitable habitat for the species listed above.

Alternative 4

This proposed site contained no standing water but does contain a riparian corridor on the west side of the highway. This channel contains an extensive canopy, which increases in quality towards the southern end of the project footprint, and may provide acceptable habitat for species of concern. This Alternative would impact a far greater amount of riparian habitat than proposed Alternatives 1 and 2 by extending Traffic Way across the drainage, the extension of El Campo Road through the riparian corridor, and the need for cut into the hillside to create this road extension. The rangeland area contained numerous ground squirrel burrows, and is overlooked by a north-facing slope containing rock outcrops and oak woodlands. These conditions could provide suitable habitat for prairie falcons and burrowing owls. The project area to the east of Route 101 is primarily residential, and does not provide suitable habitat for the species listed above.

B. HAZARDOUS WASTE

Phase I Initial Site Assessments (ISA) were prepared by David Irwin of DMI (refer to the Initial Site Assessment Report by DMI) for the entire project and by GeoSolutions for the expanded study area in Alternative 4 (refer to the Phase I Environmental Site Assessment by GeoSolutions) to determine whether the proposed project could be affected by any recorded or visible hazardous waste problems. These studies were also needed to determine whether recommendations for additional site assessment work were necessary prior to completion of the Draft Environmental Document for the proposed project. Subsurface investigations, soil and groundwater sampling, chemical testing, and a detailed geologic mapping study were not a part of the DMI investigation. Geosolutions performed an aerial photography review of the North El Campo Road extension included in Alternative 4.

DMI consulted with San Luis Obispo County Environmental Health Services (EHS), the California Regional Water Quality Control Board (RWQCB), and Environmental Data

Resources (EDR), to obtain government records searches of any known hazardous wastes sites, hazardous waste incidents, or hazardous waste generators within a 2-mile radius from the project sites. GeoSolutions' record search consisted of consultation with the Department of Conservation, Division of Oil, Gas, and Geothermal Resources, Vista Information Solutions, Inc., and San Luis Obispo County EHS. The four sites were also surveyed on foot to identify any conditions not listed in the literature.

The literature search did not reveal any tanks or other hazardous materials within the study areas; however, the surface examination indicated that there were several old gas stations that have been converted to shops along Traffic Way and an existing gas station with tanks. These were not in the literature. In addition there are several houses within the study areas with barrels and drums (a barn may have an above ground tank). These barrels have the potential to store hazardous materials (such as fuel oil) and would require special handling. These can be easily removed and are not considered a significant source.

DMI contacted Caltrans and learned of three reported spills within the project area. Two spills occurred at El Campo and Highway 101 involving pesticide(s) on February 2, 1987 and paint thinner on October 8, 1987. Caltrans reportedly cleaned up both spills. The third spill occurred at the Bridge Street undercrossing (near Traffic Way) on May 16, 1995 involving approximately 50 gallons of diesel fuel. This spill was reportedly cleaned up by A.J. Diani Company (DMI 1999). Geosolutions research found groundwater contamination from leaking storage underground tanks at gasoline stations located 1/8 and 1/2 miles northwest of Alternative 4 North El Campo extension. The potential for petroleum products from those sites to migrate into the groundwater to the subject property is considered to be low (Geosolutions 2001). Generally, there does not appear to be any significant hazardous materials constraints within any of the alternative sites and no further studies would be required.

C. CULTURAL RESOURCES

Two Phase I surveys and visual field inspections were conducted by Thor Conway of Heritage Discoveries, Inc. in July 1999 and February 2002. The full reports are included in Appendix C. The results of these preliminary studies indicate that the selected alternative adjacent to a number of prehistoric sites which are part of an upland settlement pattern. No detailed surveys have been performed within the proposed project area; however, there is a moderate potential for the study areas to contain sensitive archaeological sites. The west side of the highway has a lower potential for heritage resources than the east side because of topographical differences. The east side of the highway consists of mostly private property and for this reason, only a small amount of the project area was surveyed. There is a moderate potential for prehistoric sites to be present on the east side of the highway.

Alternative 1

This alternative has low potential to impact cultural resources on the west side of the highway and no further studies would be required. However, construction of the overpass and ramps on the east side of the highway may impact unrecorded cultural resources and, therefore, additional surveys with a possibility of Phase II sub-surface testing would be necessary.

Alternative 2

This alternative would have the same cultural resource constraints on the project as Alternative 1, but this alternative has slightly less potential for unrecorded sites to be present.

Alternative 3

Alternative 3 has a substantially higher chance of impacting cultural resources than Alternative 1 or 2. Additional surveys with a possibility of Phase II sub-surface testing would be necessary for the entire project footprint.

Alternative 4

Alternative 4 has a high chance of impacting cultural resources similar to in Alternative 3. An extended Phase 1 surface survey would be needed if this alternative were chosen for development.

D. SOCIOECONOMIC ISSUES

Project construction at any of the selected alternatives would result in socioeconomic impacts to persons residing on parcels subject to right-of-way takes. The significance of these impacts ranges from major to minor, depending on which alternative is finally selected.

Alternative 1

Construction of this alternative may significantly impact the residence and property located just east of the present El Campo Road/Route 101 intersection, on the south side of Route 101. Relocation or removal may be required to achieve the necessary right-of way through this area. The property owner has indicated that this residence will be removed. The ranch property located on the north side of Route 101 will also be affected, as the property would become part of the interchange right-of-way. The house, several barns, and other associated structures would require removal or relocation.

Alternative 2

Construction of the interchange in this area will not affect any residences; however, several dilapidated farm buildings may require removal. A house just south of the on-ramp heading south on Route 101 could have its yard significantly impacted. The straight-line approach from El Campo to Route 101 would appear to cause minimal impacts to the adjoining residences.

Alternative 3

Construction of this alternative could have significant impacts on residential neighborhoods, a school, two churches, and commercial properties. The degree of these impacts on individual properties is dependent on ramp and access road width, location, and amount of cut and fill slopes. Several houses would be impacted by changes in noise levels and visual resources. Some residents may lose yard depth or may require complete removal for the Traffic Way Extension. Hook ramp construction and the traffic increase associated with the hook ramp could significantly impact a church/daycare center on the south side of the highway.

Alternative 4

Alternative 4 has the same impacts as Alternative 3 with the addition of recreation impacts on the North El Campo extension area. A playing field for a private school would be removed with implementation of this alternative. Section 4(f) would not apply as this is a privately owned area.

E. WATER QUALITY

No appreciable differences in long-term water quality impacts have been identified between the four selected alternatives. Construction of the proposed project will increase runoff from hardscape areas, and may require alteration of sections of stream channel. Because of the presence of potential wetlands within the selected alternative areas, this issue may be significant but mitigable. Standard erosion control practices administered by San Luis Obispo County, City of Arroyo Grande and Caltrans should be implemented to control the discharge of sediments into the local drainage system. A Storm Water Pollution Prevention Plan (SWPPP) would be required for any of the selected alternatives because each impacts greater than one acre of land.

Over the short term, it is reasonable to expect a greater degree of water quality impacts from the project with the largest footprint and closest proximity to stream channels. Alternatives 3 and 4 appear to have the greatest possibility of having exposed cut and fill slopes during construction and have the greatest impacts to water quality during the construction process. Standard erosion control practices during and after construction may mitigate this impact to a level of insignificance.

F. FLOODPLAIN ENCROACHMENT

A hydrology study should be prepared in conjunction with the engineering designs of the selected alternatives to ensure that additional runoff generated by the increase in paved surfaces will be adequately contained. The runoff capacity of the existing stream channels and culverts should be examined to determine their ability to accommodate the incremental increases in runoff.

Alternative 1

This area is not subject to flooding hazards according to the 1989 Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Map for the City of Arroyo Grande.

Alternative 2

This area is not subject to flooding hazards according to the FEMA National Flood Insurance Rate Map for the City of Arroyo Grande.

Alternative 3 and 4

A portion of these alternative sites are subject to flooding hazards as defined in the San Luis Obispo County General Plan. A dry stream channel parallels the west side of Route 101 at the proposed Traffic Way site and exists where the El Campo Extension is proposed. The stream

channel flows northwest and joins the runoff from Newsom Canyon Creek forming an immediate floodplain area. Sediment deposition patterns and presence of debris along the top of streambank indicate that the channel occasionally experiences large flow events. Additionally, evidence of recent streambank stabilization (i.e., sandbags) suggests that the drainage way has caused some flood damage to the adjacent Lucia Mar School and surrounding residences in previous years. The stream channel and respective floodplain are designated as 100 year flood hazard areas, based on cartographic data from the 1989 FEMA National Flood Insurance Rate Maps. The floodplain is approximately 500 to 750 feet in width and encompasses portions of Orchard Avenue, Arroyo Avenue, and Pilgrim Way.

G. NOISE

The proposed project will improve traffic flow and increase traffic capacity in the El Campo/Route 101 area. The increase in capacity will accommodate increasing average daily traffic volumes resulting from residential development of the surrounding area. The roadway height increase from ramp and overpass construction may incrementally raise noise levels associated with mobile sources. The potential impact zone for residential receptors may be increased slightly by the elevation of traffic flow caused by this project. These residential receptors are currently in full view of the highway, and road noise is very audible.

An acoustical analysis of the selected alternatives should be conducted to determine the extent of potential noise increases. This analysis will provide data regarding whether the increase in noise will exceed 3dB, which is considered a barely perceptible change, or whether cumulatively, the change is significant. It is expected that the County's exterior noise standard for residential receptors will not be exceeded with project implementation. Noise barriers may be required to attenuate noise to acceptable levels as part of noise and visual impact mitigation for Alternatives 3 and 4. According to the San Luis Obispo County Noise Element, if mobile noise mitigation cannot reduce outdoor noise to within the 60dB to 65dB Ldn/CNEL range, and 45 dB Ldn/CNEL in indoor areas for school, church, and residential uses, a project would be considered inconsistent with County policy.

Alternative 1

The two residences most closely associated with this alternative would be relocated/removed as part of the project. An additional residence, on the northwest corner of the northbound onramp onto Highway 101, may experience significant increases in noise levels associated with the construction of this project. Several other private residences on the west side of the highway may experience increased noise levels. Further study will be necessary to determine the extent of this impact.

Alternative 2

At this limited study phase, it would appear that this alternative would have the fewest number of sensitive noise receptors affected by this project, and therefore, would be the preferred alternative.

Alternatives 3 and 4

These alternative will increase traffic volume and noise near a school, daycare center, two churches, and residential areas. Further studies are required to determine the extent of project related decibel increase over the existing traffic noise levels in this area. A combined mitigation plan for noise and visual impacts may propose noise barriers in this area.

H. AIR QUALITY

No appreciable differences in air quality impacts have been identified between the four selected alternatives. The following paragraphs will discuss general conditions present in the project area. The extent of project impacts on the air quality of the Nipomo Mesa cannot be determined until project location and traffic impacts have been estimated.

The proposed project falls under the jurisdiction of the San Luis Obispo Air Pollution Control District (APCD). The San Luis Obispo County District is in attainment for all National Ambient Air Quality Standards (NAAQS), as designated by the EPA. The San Luis Obispo APCD has been designated a nonattainment area for state ozone and PM₁₀ standards and is required to reduce emissions of nonattainment pollutants (or their precursors) by at least 5% per year until the standards are achieved. State law requires that emissions of nonattainment pollutants countywide be decreased by at least 40% from the 1987 levels in order to meet clean air standards. Implementation of any of these alternatives is not expected to increase ozone levels in the surrounding area.

It appears that Alternatives 3 and 4 may have the most direct impact on the air quality of sensitive receptors due to the proximity of the project to the receptors and the more elaborate project design. Further studies will be required to determine if this impact will be significant.

I. VISUAL RESOURCES

There is potential for this project to create an impact to the visual character of Route 101 as seen from public roadways. These impacts will also be noticeable from business and residential areas. Impacts cannot be addressed fully until features such as overpass height, cut and fill slope areas, and vegetation impacts are determined. Highway 101 is not designated as a Scenic Highway.

Alternatives 1 & 2

Given the current level of information, Alternative 1 appears to be the least obtrusive when viewing from sensitive view corridors (e.g. Highway 101 north- and southbound lanes) because of its location on the hill and its incorporation of the existing El Campo Road. Alternative 2 would have similar visual impacts but could be viewed as more significant due to the new El Campo Road construction. Mitigation through tree replacement, landscaping, and project design may reduce impacts to a level of insignificance.

Alternative 3 and 4

Construction of these alternatives would create a visual extension of urban development on the south side of the City of Arroyo Grande. Removal of riparian vegetation in the creation of the El Campo Road extension and residential proximity to the highway in this area would make the on/off ramps quite visible. This end of Arroyo Grande is the "gateway to the City" as viewed from northbound travelers on Route 101. A detailed visual analysis would be necessary to determine the degree of impact the project would have on visual resources with these Alternatives.

IV. RECOMMENDATIONS

The following recommendations are based on a preliminary analysis of published and unpublished literature and field surveys of the proposed sites. The primary issues associated with this project involve traffic capacity and safety. By implementing the proposed improvements, the level of service for the El Campo/Route 101 intersection will improve markedly, as this intersection currently operates at LOS F. The level of safety due to improved traffic flow and movement is also expected to improve due to interchange construction.

A. Biological Concerns

Biological resources present within the project area are potentially significant. Additional studies will be necessary to accurately determine presence or absence of special-status plant species. Mitigation will be required for loss of wetland and oak woodland habitats. Construction in riparian zones will require presence of a biologist/red-legged frog monitor.

The term wetland as used in this report refers to areas supporting wetland vegetation and occurring in topographic positions characteristic of wetland areas. A formal wetland delineation using USACE criteria to determine the extent of potential wetland areas within the proposed project site was not performed. However, the riparian areas surveyed appeared to meet the basic parameters (i.e., hydrology, vegetation, soils) to fall under the jurisdiction of the USACE, under Section 404 of the Clean Water Act. Additionally, disturbance of these riparian corridors is likely to fall under the jurisdiction of the California Department of Fish and Game, under Sections 1601-1607 of the California Fish and Game Code, necessitating a Streambed Alteration Agreement.

B. Hazardous Waste

Based on the records search and the visual site survey evidence, the potential for environmental impacts from hazardous waste is low for all four alternatives. No further studies will be required before approval of a project.

C. Cultural Resources

The study area has a moderate potential for the presence of unrecorded cultural resources. Further study with a possibility of Phase II sub-surface testing should be completed in compliance with Caltrans guidelines prior to any ground disturbing activities.

D. Socioeconomic Issues

A right-of-way impact study will be necessary as a result of the need for right-of-way acquisition. The acquisition of additional right-of-way will be required from residential and commercial uses in conjunction with ramp and overpass construction. Several residences may be displaced by the proposed improvements.

E. Water Quality

Coordination between the City, Caltrans, and the Regional Water Quality Control Board would be necessary during the planning phase of the project. A SWPP will be required for any of the four alternatives.

F. Hydrology

A hydrology study should be prepared in conjunction with the engineering designs of the selected alternatives to ensure that additional runoff generated by the increase in paved surfaces will be adequately contained and relatively free of contaminants. The runoff capacity of the existing stream channels and culverts should be examined to determine their ability to accommodate the incremental increases in runoff. The study should include an analysis of potential flooding as determined by the FEMA map for Alternatives 3 and 4.

G. Noise

A noise study will be necessary to determine the noise impacts from the increase in roadway height and projected traffic use. In addition, this study will be used to determine the potential mitigation requirements for adjacent sensitive receptors (i.e., residential uses), should the interior or exterior noise standards be exceeded from highway noise and from the construction process itself.

H. Air Quality

Conformity with the State Implementation Plan for air quality should be investigated through an analysis of air quality impacts, consistent with Caltrans Transportation Project Level Protocol (May, 1996). This analysis will determine the project's benefit or detriment to local air quality conditions, including contributions to an existing or projected air quality violation.

I. Visual Resources

A visual resource study should be performed once more details about the project are available regarding lengths of ramps, sizes of cut and fill slopes, elevation of over-crossings, and amount of vegetation to be removed.

V. CONCLUSIONS

Completion of this Preliminary Environmental Analysis Report indicates that most impacts to significant resources appear to be mitigable; however, due to the conceptual nature of the proposed alternatives, it is difficult to determine the extent of impacts as a result of project construction. Identification of the preferred alternative site will facilitate future study efforts. The likely environmental documentation required for this project will consist of an IS leading to a Mitigated Negative Declaration. However, if unavoidable impacts are identified during more detailed studies, and EIR would be prepared. If federal funds are utilized for this project, an EA leading to a FONSI is the likely outcome. Again, if unavoidable impacts were discovered, an EIS would be necessary.

The time necessary to prepare the environmental document will be affected by the required technical studies, including Investigation of the Waters of the U.S. (Wetland Delineation) if the existing creeks have the potential to be impacted, special-status species surveys, right-of-way, cultural resource surveys, noise, visual, and air quality studies. These studies are not expected to be overly complex or time consuming. It is estimated that the total preparation time for the environmental document will be approximately 12-18 months for a CEQA document and 18-24 months for a NEPA document.

The following table lists the alternative preferences based on the preliminary studies provided by the project team.

TABLE 3
Preferred Alternatives based on Preliminary Findings

Impact Issue	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Biological*	3	1	2	4
Hazardous Waste	No	No	No	No
Cultural Resources*	2	1	3	3
Socioeconomic Impacts*	2	1	3	3
Hydrology*	No	No	3	3
Water Quality*	No	No	No	No
Noise*	No	No	3	3
Air Quality*	No	No	3	3
Visual Resources*	1	2	3	4

*Further studies required before final environmental determination

VI. REFERENCES AND DOCUMENT PREPARERS

A. LIST OF REFERENCES

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B. LIST OF PREPARERS/SPECIALISTS

Mary Reents, Principal Principal for PEAR	Morro Group, Inc.
Kate Ballantyne, Resource Specialist Responsible for preparing PEAR	Morro Group, Inc.
Lisa Phillip, Resource Specialist Responsible for preparing PEAR additional analysis	Morro Group, Inc.
Margie Harker, Wildlife Biologist Responsible for reconnaissance level wildlife biological survey and analysis	Morro Group, Inc.
Bob Sloan, Resource Specialist Responsible for vegetation	Morro Group, Inc.
David Irwin Responsible for Hazardous Waste/ISA Responsible for preparing ISA	DMI
Patrick McNeill Responsible for Hazardous Waste/ISA Responsible for preparing ISA	GeoSolutions
Thor Conway Responsible for field research and Phase I Cultural and Historical Survey	Heritage Discoveries, Inc.

Appendix A

Special-Status Plant Species

Special-Status Plant Species Potentially in the Project Area

Pismo clarkia (*Clarkia speciosa* ssp. *immaculata*): This species is listed as a Federal endangered species, as a rare species by the State, and is categorized on California Native Plant Society (CNPS) list 1B. It has an R-E-D code of 3-3-3. This annual herb occurs on sandy hills, from Pismo to Edna Valley, in southern San Luis Obispo County. Most populations are found in valley and foothill grasslands, and in the margins between chaparral and oak woodland communities near the coast. A recovery plan for Pismo clarkia has recently been drafted by the USFWS (Sept. 1997), which documents distribution patterns, principal threats, conservation efforts, habitat management, and recovery strategies for the species. The principal threat to the Pismo clarkia is habitat destruction and degradation due to development. Efforts to establish new populations for mitigation purposes have been attempted, but more time is needed to evaluate the success of these projects.

Dune larkspur (*Delphinium parryi* ssp. *blochmaniae*): This species is categorized on CNPS list 1B (plants rare, threatened, or endangered in California and elsewhere) but does not currently have any state or federal status. It has an R-E-D code of 3-2-3. This perennial herb occurs on sandy soils in association with coastal chaparral in the Nipomo Mesa area. The principal threats to the dune larkspur are habitat loss or degradation resulting from development.

Wells manzanita (*Arctostaphylos wellsii*): This species is categorized on CNPS list 1B (plants rare, threatened, or endangered in California and elsewhere) but does not have any state or federal status. It has an R-E-D code of 2-3-3. This shrub occurs in the San Luis Range from upper Coon Creek in Montana de Oro State Park to Arroyo Grande and Nipomo. The main populations of this species are found in the sandstone hills between the San Luis Valley and the ocean. The range of this species is restricted; however, it can form well-developed stands in chaparral areas where it may even be the dominant shrub.

Appendix B

Phase I Archaeological Survey

An Archaeological Survey For The El Campo/Highway 101 Interchange
San Luis Obispo County

Prepared By: Thor Conway
Heritage Discoveries Inc.
793A Foothill Blvd., Suite #108
San Luis Obispo, CA 93405
(805) 545-0724

Prepared For: The Morro Group, Inc.
1422 Monterey Street, Suite C200
San Luis Obispo, CA 93401

July 12, 1999

Abstract

A literature search and archaeological surface survey was done for the El Campo Road/Highway 101 interchange study area in southern San Luis Obispo County. It resulted in identification of areas with various sensitivity for cultural resources. The general region of the study area shows overall high to moderate sensitivity for prehistoric archaeological sites. Several sites have been recorded near the study area. The background analysis reinforces the need for a more detailed archaeological survey of the selected interchange as this project proceeds.

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Introduction

The Morro Group Inc. of San Luis Obispo authorized Heritage Discoveries Inc. to complete a literature search and archaeological site survey for the El Campo Road/Highway 101 Interchange study area. The study area is located in southern San Luis Obispo County southeast of the city of Arroyo Grande. The proposed project involves the construction of a diamond interchange at or near El Campo Road, and possible additions or improvements to the freeway access ramps at Traffic Way. Several alternate locations and configurations have been presented for this study.

The selected alternatives for this project are:

1. Alternative 1 (A&B)—Construction of a Diamond Interchange at the existing El Campo Road/Route 101 intersection.
2. Alternative 2 (A&B)—Construction of a Diamond Interchange located south of the existing El Campo Road/Route 101 intersection. This alternative will assume an extension of El Campo Road east from Brady Lane to Route 101. A frontage road along the west side of Route 101 will also be included.
3. Alternative 3 (A&B)—Construction of hook ramps for north and south bound Route 101 traffic located between Traffic Way and El Campo Road/Route 101 intersection. This requires over-crossings of Route 101. A frontage road will also be considered.

Cultural Background

San Luis Obispo County was home to the Northern Chumash, or Obispeno, for over 9,000 years. Archaeologists have established a detailed cultural chronology based upon excavations and site surveys across the county (Greenwood, 1972). Over 1,900 archaeological sites have been recorded in San Luis Obispo County, although many of these heritage resources have been destroyed or damaged by development. The earliest known archaeological investigations of the Arroyo Grande to Nipomo Mesa area took place in 1874 when Paul Schumacher excavated aboriginal graves at a village, most likely the historic Chumash settlement of *Nipumiu'*, located near the present town of Nipomo. Schumacher worked as an agent of the Smithsonian Institution.

In the world of the Chumash, the long years of prehistory have been divided into several periods which have been sub-divided into chronologically successive phases (King, 1981). The earliest aboriginal settlement in the area historically occupied by the Chumash is a poorly known time period between 12,000 years ago and 9,500 years ago. A Palaeo-Period fluted point was found in the coastal

area east of Point Conception (Erlandson et al., 1987); and more recently, a fluted point site was discovered near Santa Margarita.

The prehistory of the Chumash follows a chronological outline of three basic periods sub-divided into numerous phases established for the Santa Barbara region (King, 1981). The main periods—Early, Middle, and Late—cover over 11,000 years of social, economic, and technological adaptations to central and southern California's climate and resources.

The archaeological record is more firmly established for the Early Period which covers several thousand years. The Early Period generally dates between 7,500 B.C. and 500 B.C. For the Northern Chumash, a site at Diablo Canyon, SLO-2, was dated to the era between 8,900 and 9,300 years ago (Greenwood, 1972). The important Lodge Hill site in Cambria also has a substantial Early Period component which has been radio-carbon dated to 8,000 years ago. It shows extensive use of local raw materials and coastal marine food resources.

Early Period sites often contain milling stones and manos which indicate use of seed plants in addition to shell middens left from intensive harvesting of shellfish (Erlandson, 1994). A basic array of rectangular shell bead ornaments also occurs throughout the Early Period. Village life was well organized with formal cemeteries and specialized resource sites being used. Interior areas were also settled during the Early Period.

The Middle Period of Chumash prehistory spans the centuries between 500 B.C. and 1,150 A.D. At this point in time, Chumash society shifted into a very organized state with hereditary rights to political and religious power. Artifact types change in the Middle Period and shell ornaments become more diverse. An important economic adaptation, the use of acorns, is indicated by the decline in milling stones and the increased use of mortars and pestles. Population size increases and trade networks become very well established in the Middle Period. Some cemeteries show evidence of warfare.

The Late Period covers the years between 1150 A.D. and 1805 A.D. Economic changes continued within the Chumash world. Bead jewelry indicates that there were divisions in wealth between family lines. Money was invented and extensively used as an indication of political as well as economic power. The long process of localized adaptation evident throughout Chumash prehistory became even more established. With the arrival of the Spanish, especially after 1769 A.D., rapid changes altered Chumash political and economic achievements as well as reducing the size of the population. By the end of the Mission era, the Chumash continued to live on their ancestral lands; but their former cultural

achievements were largely changed forever. Many contemporary Chumash maintain spiritual and cultural links to their rich heritage as the end of the 20th century approaches.

Prehistory has been defined by several important archaeological sites in the Arroyo Grande area. An archaeological survey of the greater Arroyo Grande Creek watershed in the 1950's revealed the presence of numerous prehistoric sites including the current study area and throughout Oceano as well as several sites in the Los Berros Creek drainage basin and along the edge of the Nipomo Mesa overlooking the mouth of Arroyo Grande Creek (Wallace & Taylor, 1958). Test excavations were made at the Grieb site situated beside Arroyo Grande Creek, then recorded as site AGW-1, now registered as SLO-393. Archaeologists uncovered a rich prehistoric village containing numerous artifacts and food remains. A burial of a child was uncovered in 1958. The grave goods found in the grave suggest that it dates to about 500 A.D. The Grieb site has been characterized as a "major Middle Period Chumash occupation" (Gibson, 1987: 6). The Middle Period of Chumash prehistory dates between 1,400 B.C. and 1,150 A.D.

In addition to the Grieb site, another Middle Period Chumash settlement is located on the elevated terrace above present day Arroyo Grande Creek. The Fowler site, SLO-406, was first noted during a site survey in 1958 (Wallace, 1962), and then salvaged in 1970 during the development of a trailer park in Halcyon (Tainter, 1971: 2). More recent surveys have documented a variety of sites in the Arroyo Grande area (Conway, 1994 a & b).

Survey Results

The records search made at the Central Coast Information Center at U.C.S.B. indicated the presence of several prehistoric sites within and near the study area. The study area has urban, residential and agricultural land use. Much of the study area is undeveloped which increases the potential for the presence of undisturbed archaeological sites.

At least three previous archaeological studies have included the southwestern portion of the study area immediately south of Highway 101 in the vicinity of El Campo Road (Dills, 1990; Gibson, 1981; Singer & Atwood, 1990). These studies produced negative results. This finding requires further verification, but does identify an area potentially free of cultural resources.

A number of archaeological sites have been recorded within or adjacent to the study area including CA-SLO-1413, CA-SLO-1206, and CA-SLO-1382 which were discovered near Traffic Way north of Highway 101 on the highlands above the Arroyo Grande Valley. Several archaeological sites occur on the northeast side of Highway 101 on the slopes of Picacho Hill including CA-SLO-411, CA-SLO-412

and CA-SLO-1701H. A prehistoric site, CA-SLO-446, is situated adjacent to the south side of Highway 101 below Picacho Hill.

Archaeological work done immediately beyond the south end of the study area has resulted in the discovery of several large and small prehistoric sites along Los Berros Creek.

The present surface survey did not completely cover all of the study area shown in Figure 1 and Figure 2. This was due to the fact that a considerable portion of the study area remains private property and access was not available. The surface survey reported here is limited to Highway 101 and its right of way, the frontage roads, Traffic Way and its right of way, and a portion of the private property on both sides of Brisco Road near Highway 101 (Figure 3).

Cultural materials were not found in the areas surveyed for this report. However, it must be noted that prehistoric sites, such as CA-SLO-1206 beside Traffic Way, do exist immediately outside of the area surveyed and within the study area (Figure 4).

Conclusion & Recommendations

The presence of several prehistoric sites within the overall study area defined by the interchange alternatives, and more sites close to the study area, combined with a lack of previous archaeological surveys for much of the study area, leads to the conclusion that the study area is sensitive for the presence of heritage resources.

Each of the three selected alternatives requires additional archaeological studies when access can be gained to private property and prior to a final determination of the preferred alternative being made. The literature and archaeological site records search indicated that any of the three project alternatives could be constrained by the presence of cultural resources.

Recommendation—Alternative 1 (A&B)—Construction of a Diamond Interchange at the existing El Campo Road/Route 101 intersection. This alternative has the least sensitivity for cultural resources on the west side of Highway 101, but does show potential sensitivity on the east side of Highway 101.

Recommendation—Alternative 2 (A&B)—Construction of a Diamond Interchange located south of the existing El Campo Road/Route 101 intersection. This alternative will assume an extension of El Campo Road east from Brady Lane to Route 101. A frontage road along the west side of Route 101 will also be included. This alternative has the sensitivity for cultural resources and it represents the least surveyed part of the study area.

Recommendation—Alternative 3 (A&B)—Construction of hook ramps for north and south bound Route 101 traffic located between Traffic Way and El Campo Road/Route 101 intersection. This requires over-crossings of Route 101. This alternative had the most sensitivity for the presence of cultural resources with recorded sites occurring there and strong potential for additional sites on private land that would comprise the alternative interchange.

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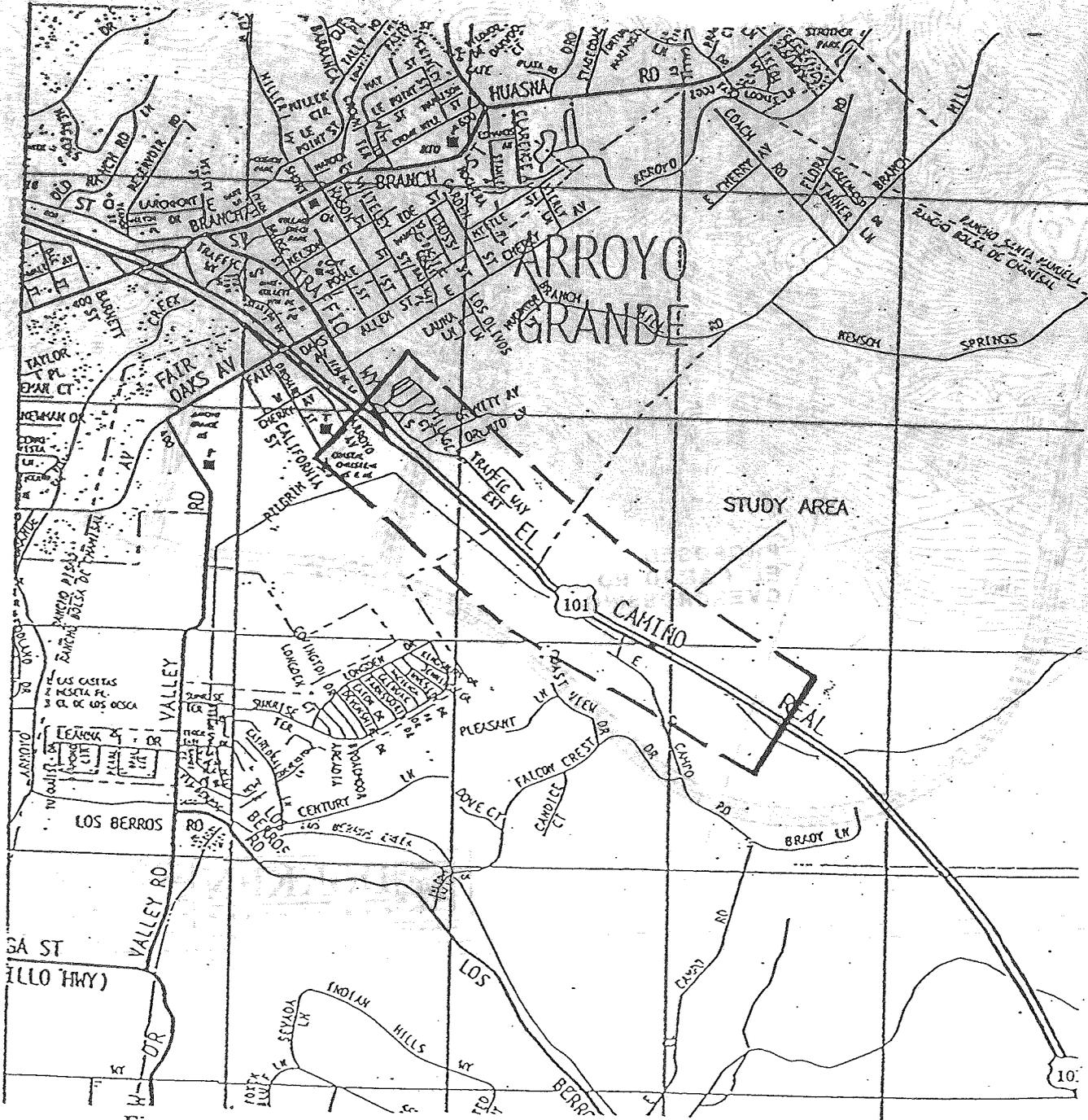


Figure 1—General location of the study area near Arroyo Grande, California.

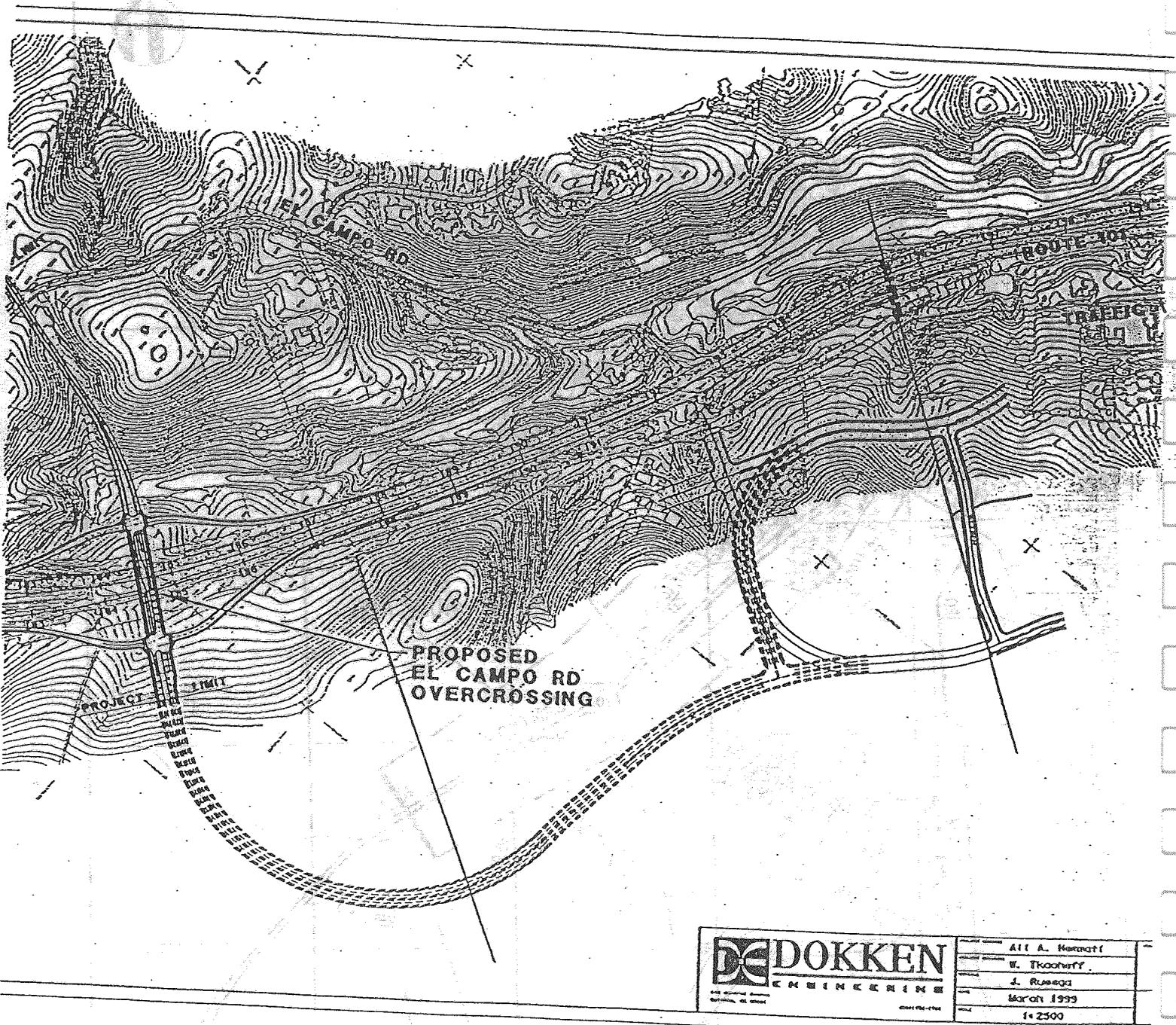


Figure 2—Project alternatives in the El Campo/Highway 101 study area.

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES



Figure 4—Recorded archaeological sites in the vicinity of the study area.

Archaeological Survey For The Expanded Study Area, El Campo/Highway 101 Interchange,

Arroyo Grande, San Luis Obispo County, California

Prepared for:

**The Morro Group, Inc.
1422 Monterey Street, Suite C200
San Luis Obispo, CA 93401**

Prepared by:

Thor Conway_____

**Heritage Discoveries Inc.
PMB 108
793A Foothill Blvd.
San Luis Obispo, CA 93405**

Feb. 13, 2002

Summary Of Findings

Plans are being prepared to examine a corridor at the edge of Arroyo Grande southwest of Highway 101 as an alternative interchange for the El Campo Road exit. This project, the El Campo/Highway 101 Interchange Expanded Study, required an archaeological surface survey and records search which are described in this report.

The Central Coast Information Center database of archaeological resources includes at least twelve archaeological sites within a one mile radius of the El Campo/Highway 101 Interchange Expanded study area. Twenty-two previous archaeological surveys have been completed in the vicinity of the study area.

While several prehistoric Chumash settlements were previously identified in the vicinity of the El Campo/Highway 101 Interchange Expanded Study, none were located during the present survey. Two portions of the study area had poor surface visibility in settings with archaeological site potential. These will require an expanded Phase I surface survey if the alternative is developed. Other parts of the study area had negative findings and previous development impacts.

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Introduction

This report describes an archaeological surface survey completed on February 13, 2002 at the El Campo/Highway 101 Interchange Expanded study area southwest of Highway 101 in Arroyo Grande, San Luis Obispo County (Figures 1 & 2). The study was completed to determine whether prehistoric or historic cultural resources occurred within the project area in compliance with Section 106 of the National Historic Preservation Act.

The study was completed by Thor Conway, Heritage Discoveries Inc. of San Luis Obispo, California. Thor Conway, M.A. Anthropology with thirty-two years archaeological experience across North America including fourteen years in California, did the fieldwork and reporting.

Project Description

This report describes an archaeological surface survey completed as part of the El Campo/Highway 101 Interchange Expanded Study project located southwest of Highway 101 in the City of Arroyo Grande (Figure 1). The study area starts at the west side of Highway 101 and follows a corridor two hundred meters northwest to southeast by one thousand meters northeast to southwest (Figure 2).

The study area lies at the eastern edge of the Arroyo Grande Creek valley in an area where gently sloped foothills occur. The Los Berros Creek Valley drains into Arroyo Grande Creek a short distance south of the study area. The study area has an elevation ranging between 100 feet above sea level to approximately 140 feet above sea level.

The El Campo/Highway 101 Interchange Expanded Study is part of the environmental planning provided by the Morro Group Inc. of San Luis Obispo. Heritage Discoveries Inc. was retained to provide a Phase I archaeological surface survey of the study area.

Sources Consulted

A search was made for pertinent background information relating to prehistoric and historic land use in the project area. An archaeological sites record search from the Central Coast Information Center of the California Historical Resources Information System at the University of California at Santa Barbara included recorded archaeological sites and surveys within a one mile radius of the El Campo/Highway 101 Interchange Expanded Study area. Twelve archaeological sites and twenty-two cultural resource studies have been completed in the records search area. No historic properties were listed within the search area.

The results showed that the specific study area had been partially subjected to an archaeological survey, but several surveys and Phase 2 sub-surface evaluations have taken place on adjoining properties.

A number of prehistoric archaeological sites have been recorded along Arroyo Grande Creek and the edge of the foothills along the study area. Four prehistoric sites, CA-SLO-238, CA-SLO-413, CA-SLO-445 and CA-SLO-1206, have been recorded on the foothills directly above the Arroyo Grande Creek floodplain. There is a cluster of prehistoric sites on the terraces above Arroyo Grande Creek directly across from the study area such as CA-SLO-393, CA-SLO-406, CA-SLO-407 and CA-SLO-408 (Figure 3).

An archaeological survey of the Vista Del Mar project in Arroyo Grande included a portion of the present El Campo/Highway 101 Interchange Expanded Study area (Singer & Atwood, 1990). This 1990 survey produced negative results for cultural resources. A short distance northeast of Highway 101 and the study area, the St. Barnabas site (CA-SLO-413) was sampled through sub-surface testing (Sawyer, 1988a). Sites CA-SLO-413 and CA-SLO-1206 were treated during two studies in 1988 (Sawyer, 1988b & 1988c).

Background

The El Campo/Highway 101 Interchange Expanded Study occurs in an environmental setting with well documented archaeological and ethnographic sensitivity. The lower portion of Arroyo Grande Creek saw intensive prehistoric settlement for several thousand years. Archaeological sites are located above the floodplain along terraces and foothills.

Present Environment

The present study area is a partially developed corridor leading southwest from Highway 101 to Valley Road in Arroyo Grande (Figure 2). The area between Highway 101 and Orchard Street is an open field with grass cover. It is bordered by hills with scattered oaks on the south. A seasonal drainage, now channelized, lies north of the study area. The study area between Orchard Street and Valley Road is a highly developed zone mainly occupied by Coast Union High School. Almost no native vegetation remains in this half of the study area.

Ethnography

The entire San Luis Obispo County area, including all of the project area, was home to the Northern Chumash, or Obispeno, for over 9,000 years. The earliest recorded visit to an Obispeno village took place in 1595 when the Spanish sailed into San Luis Obispo Bay under the command of Cermeño. He anchored in front of the premiere village named *Sejato* which was located at the mouth of San Luis Obispo Creek on the hill now occupied by the San Luis Bay Inn. The Spanish account noted that these Indians "... are fishermen and there is fish and some shell-fish with which they sustain themselves"—a statement which applied to the descendants of this village who

By the time of the Spanish expansion into California at the end of the 1700's, Chief Buchon lived at *Sejato* and held the status of a grand-chief leader of several villages in the greater San Luis Obispo area from Avila to Pismo Beach to Morro Bay.

The area that became the community San Luis Obispo re-entered the historic era on September 1st, 1772 when the first mission was founded beside San Luis Obispo Creek. This first mission within Chumash territory gradually expanded in size and importance. In its first decade, some Obispeno Chumash were dissatisfied with the mission and attempted to burn it down (Kocher, 1972). The influence of the mission increased in the 1780's when Pedro Fages reported that the Indians at the San Luis Obispo mission "...have readily adapted themselves to what it was sought to teach them" (Englehardt, 1933: 39). Judging from the mission records listing the number of Indians recruited by this mission, in 1803 most of the numerous Obispeno Chumash groups had moved away from their traditional villages, including the Pismo Beach and Arroyo Grande areas, to the vicinity of the mission (King, 1984: 14).

Archaeology

Archaeologists have established detailed cultural chronologies based upon excavations and site surveys across the county (Greenwood, 1972; Gibson, 1979). Over 2,100 archaeological sites have been recorded in San Luis Obispo County, although many of these heritage resources have been destroyed or damaged by development.

The study of Chumash prehistory has become increasingly divided into chronological and regional divisions starting with earlier syntheses (Greenwood, 1972; Gibson, 1994) and continuing with comprehensive recent studies (Bouey & Basgall, 1991). While archaeological surveys are commonly made throughout the Northern Chumash territory, sizeable excavations had been more limited and generally located at coastal sites (Clemmer, 1962). More recent studies have identified regional trends and adaptations such as work at Pico Creek and Little Pico Creek (Jones & Waugh, 1995), a series of sites at Morro Bay (Jones et al., 1994), and early settlement inland at Cross Creek (Fitzgerald & Jones, 1999).

The prehistory of the Northern Chumash follows the same chronological outline of three basic periods subdivided into numerous phases established for the Santa Barbara region (King, 1981). The main periods-Early, Middle, and Late-cover over 9,000 years of social, economic, and technological adaptations to central and southern California's climate and resources.

The Early Period generally dates between 7,500 B.C. for the Northern Chumash, a site at Diablo canyon, SLO-2, was dated to the era between 8,900 and 9,300 years ago (Greenwood, 1972). The important Lodge Hill site in Cambria also has a substantial Early Period component which has been radio-carbon dated to 8,000 years ago. Is

shows extensive use of local raw materials and coastal marine food resources (Pierce, 1979; Gibson, 1979b; Conway, 1995). At least 37 Early Period sites have been recorded in San Luis Obispo County (Gibson, 1994).

Early Period sites often contain milling stones and manos indicating extensive use of seed plants. A basic array of rectangular shell bead ornaments also occurs throughout the Early Period. Village life was organized with formal cemeteries and specialized resource sites being used.

The Middle Period of Chumash prehistory spans the centuries between 500 B.C. and 1150 A.D. At this point in time, Chumash society shifted into a very organized state with hereditary rights to political and religious power. Artifact types change in the Middle Period and shell ornaments become more diverse. An important economic adaptation, the use of acorns, is indicated by the decline in milling stones and the increased use of mortars and pestles. Populations in size and trade networks become very well established.

The Late Period covers the years between 1150 A.D. and 1805 A.D. Economic changes continued within the Chumash world. Bead jewelry indicates that there were divisions in wealth between family lines. Money was invented and extensively used as an indication of political as well as economic power. The long process of localized adaptation evident throughout Chumash prehistory became even more established. With the arrival of the Spanish, especially after 1769 A.D., rapid changes altered Chumash political and economic achievements as well as reducing the size of the population. By the end of the Mission era, the Chumash continued to live on their ancestral lands; but their former cultural achievements were largely changed forever. Many contemporary Chumash maintain spiritual and cultural links to their rich heritage.

History

As well as being one of the main centers of settlement and commerce along the central coast of California, several archaeological studies have taken place in Arroyo Grande. The rich prehistory of Arroyo Grande has begun to emerge through archaeological research in the past several decades. A series of Middle Period villages, such as the Grieb site (CA-SLO-393) (Gibson, 1987), line the mouth of Arroyo Grande Creek. Large cemeteries have been documented in association with the Middle Period villages beside Arroyo Grande Creek (Tainter, 1971).

Some of earliest archaeological investigations along the central coast of California took place near Arroyo Grande (Schumacher, 1875). A survey of the Arroyo Grande Creek watershed led to the discovery of dozens of sites (Wallace, 1962; Wallace & Taylor, 1958).

The community of Arroyo Grande has its origins with an early settler, Francisco Zeba Branch, who visited the area while bear hunting in 1832. He established a large ranch in the area. When drought in the late 1880's ruined his operation, Branch sold parcels which led to the development of the community of Arroyo Grande. Agriculture

quickly became a part of the local economy. Historians have studied the growth and development of communities across San Luis Obispo County (Angel, 1883; Krieger, 1988). In addition, local histories concerning the economic development and the importance of the Southern Pacific Railway in the expansion of the community and California were consulted (Best, 1964; Nicholson, 1980; Wilson & Taylor, 1952).

Field Methods

A detailed archaeological surface survey was made of the El Campo/Highway 101 Interchange Expanded Study Area on February 13, 2002 by walking the project area at two meter intervals. The project area was defined as a corridor starting at the west side of Highway 101 and following a corridor two hundred meters northwest to southeast by one thousand meters northeast to southwest past Union High School to Valley Road (Figure 2).

The archaeological survey was done by Thor Conway of Heritage Discoveries Inc. Surface visibility for the eastern part of the study area east of Orchard Street was poor due to thick grass cover. There were negative results with about 5% surface visibility. This field holds moderate potential for the presence of cultural resources since it could not be adequately studied without removal of surface vegetation.

With the exception of the agricultural fields beside Valley Road, surface visibility was nearly non-existent in the high school area due to paving, landscaping and previous grading. This area hold very low potential for the presence of cultural resources. Access was not available to closely inspect some areas, but grading cuts are obvious.

The agricultural fields along the Valley Road portion of the study area will require additional Phase 1 surface studies if this alternative is chosen for development. The margins of the fields along Valley Road were examined, but permission to enter the fields could not be obtained due to recent planting.

Findings & Conclusion

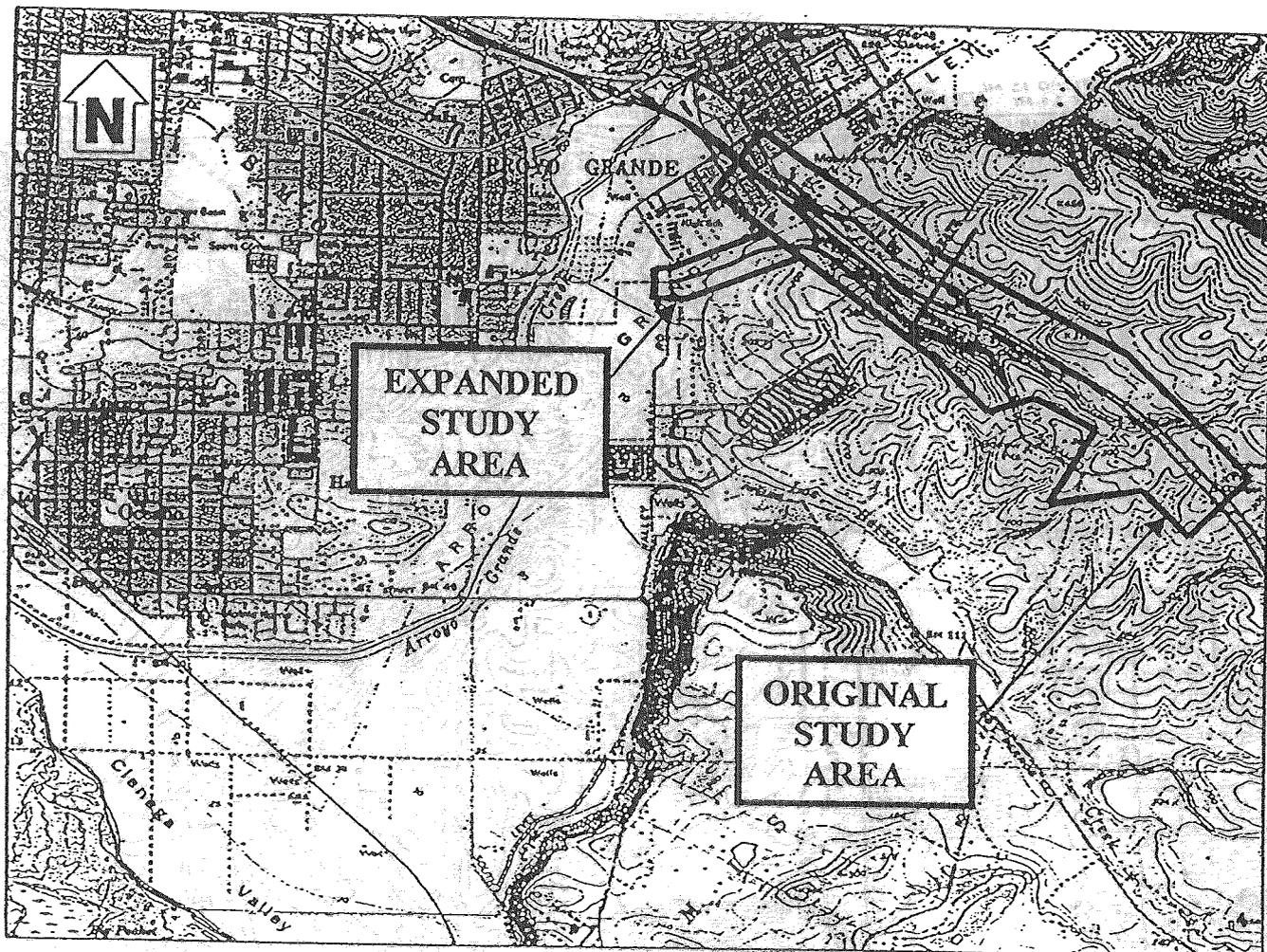
While the surface survey of the El Campo/Highway 101 Interchange Expanded Study Area did not find archaeological remains, the literature search and records search indicate the presence of prehistoric sites in the vicinity of the project. These sites are located on more elevated areas, but a lack of previous surveys closer to the Arroyo Grande Creek floodplain leaves the cultural resource sensitivity unknown.

El Campo/Highway 101 Interchange Expanded Study project remains an area with some potential sensitivity for the presence of cultural resources due to inadequate surface visibility in two areas. Therefore, it is recommended that an extended Phase 1 surface survey be completed in the field beside Highway 101 and in the agricultural fields along Valley Road if this alternative is chosen for development.

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1994 *Toward A prehistory Of Morro Bay: Phase II Archaeological Investigations For The Highway 41 Widening Project, San Luis Obispo County, California*. California Dept. of Transportation. San Luis Obispo.
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-
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1962 *Archaeological investigations in the Arroyo Grande Creek watershed, San Luis Obispo County, California*. U.C.L.A. *Archaeological Survey Annual Report*, pp. 23-90. Los Angeles.
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1958 *Archaeological Investigations In The Arroyo Grande Creek Watershed, San Luis Obispo County, California*. Contract report to the National Park Service, on file Inter-Agency Archaeological Services. San Francisco.



VICINITY MAP

**NEW INTERCHANGE ON ROUTE 101
IN THE CITY OF ARROYO GRANDE
AND SAN LUIS OBISPO COUNTY**

Figure 1. Vicinity Map Of Project Area At Arroyo Grande.

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

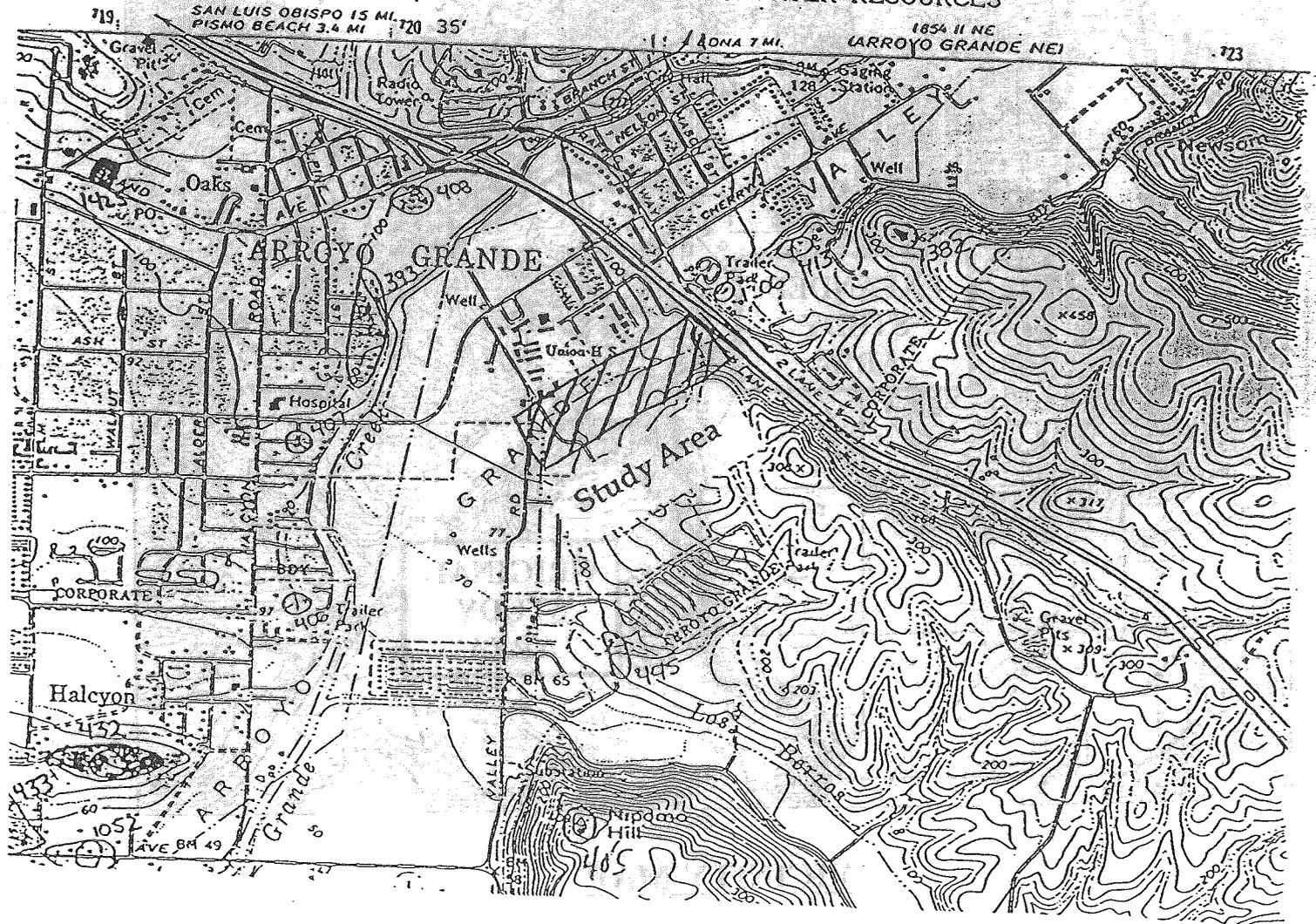


Figure 2—El Campo/Highway 101 Interchange Expanded Study Area Map.

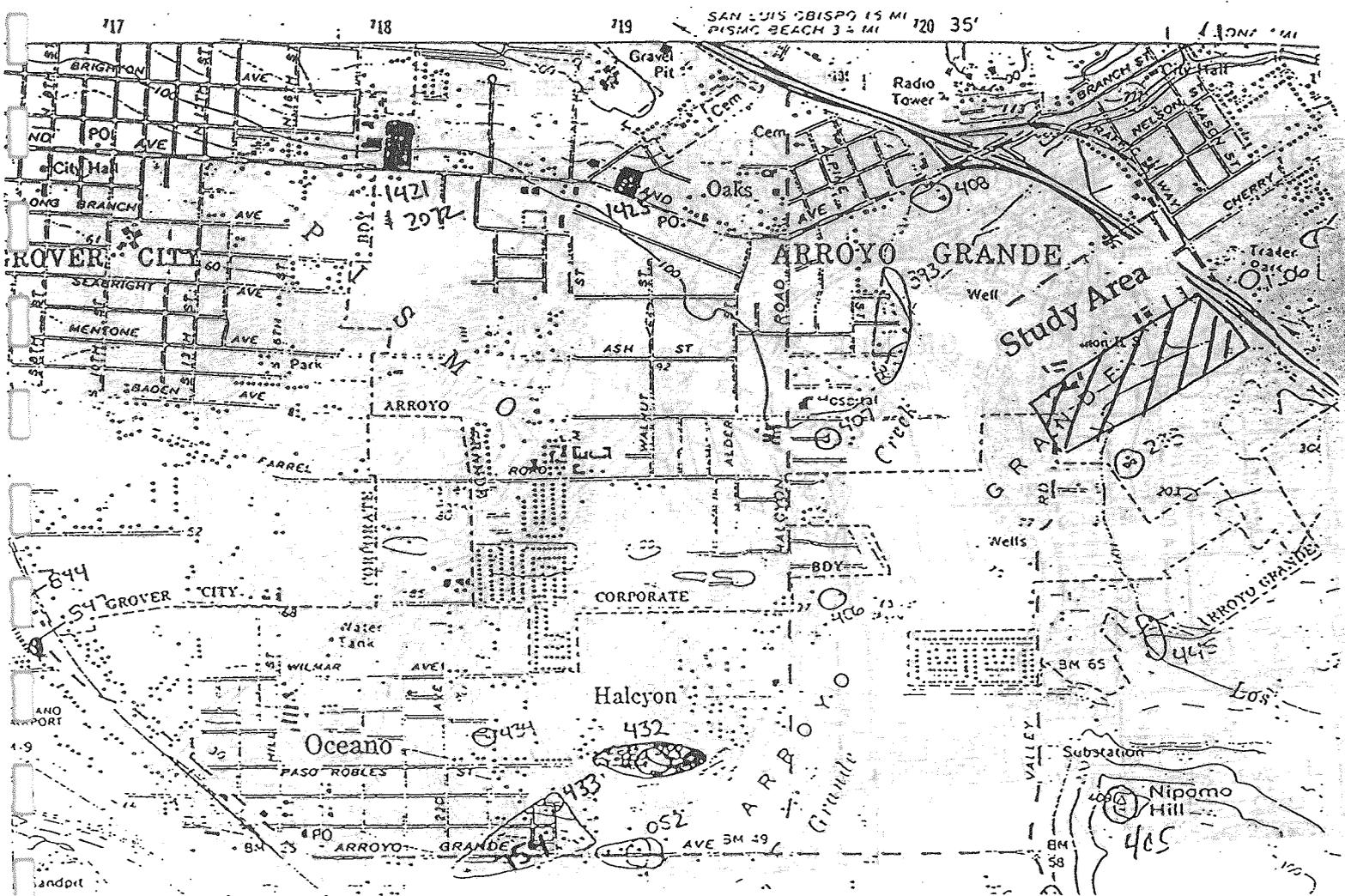


Figure 3—Archaeological Site Map For The Project Area & Vicinity In Arroyo Grande.

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

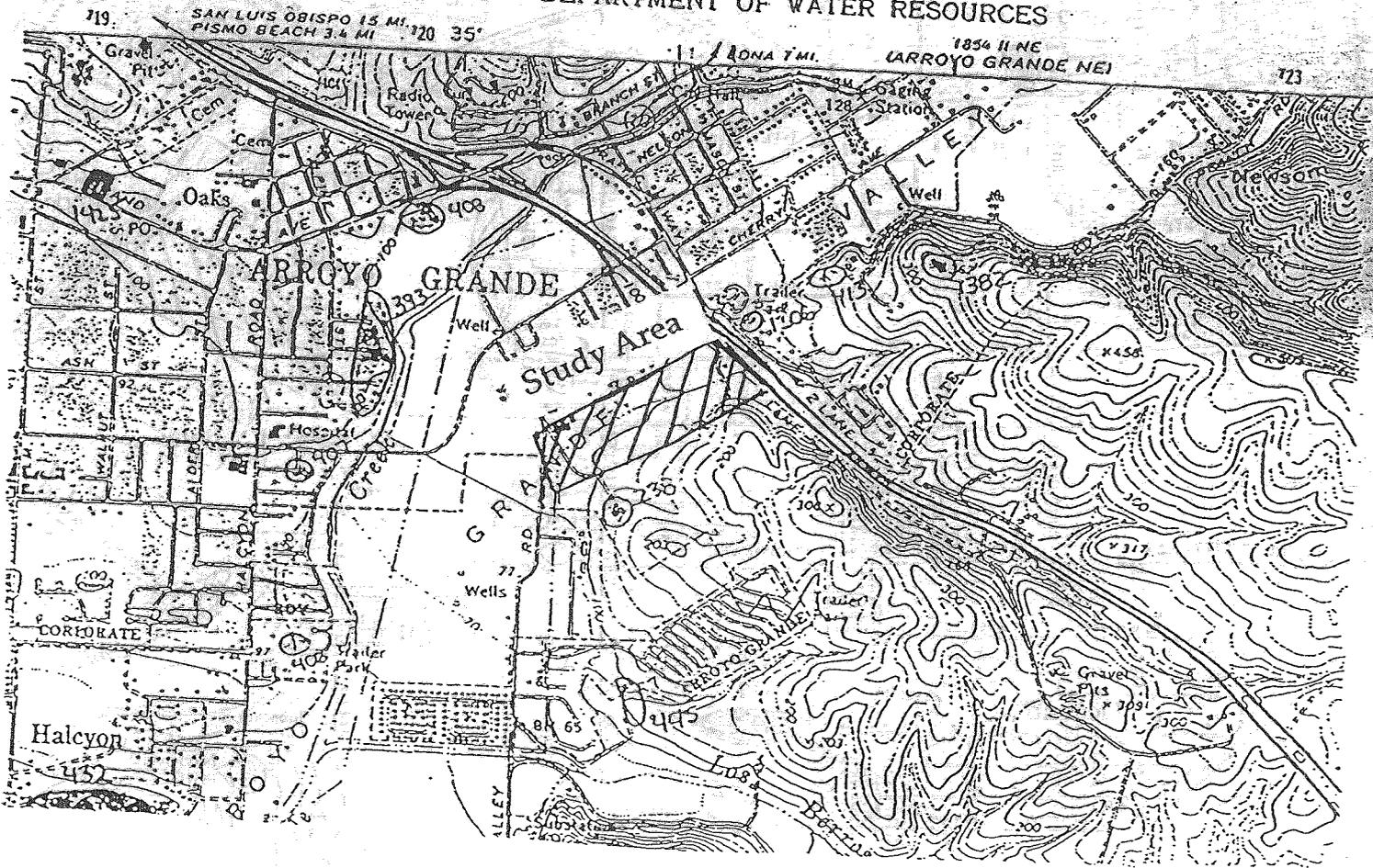


Figure 4--Archaeological Survey Area For The El Campo/Highway 101 Interchange Expanded Study Area

California
Archaeological
Inventory

Information Center



SAN LUIS OBISPO AND
SANTA BARBARA COUNTIES

Department of Anthropology
University of California, Santa Barbara
Santa Barbara, CA 93106-3210
(805) 893-2474

February 13, 2002

Thor Conway
Heritage Discoveries, Inc.
PMB 109, 793A Foothill Blvd
San Luis Obispo, Ca 93405

Via Fax and U.S. Mail

Dear Mr. Conway:

Enclosed are the results of the record search you requested for the Arroyo Grande Area Project. Our records were consulted for all known archaeological sites, historic properties, and previous cultural resource studies within the search area indicated on the quad map portion faxed to me.

In this search, 12 archaeological sites and 22 previous cultural resource studies were found. These were mapped in color pencil onto a portion of the Oceano quad. A bibliography of survey reports is also included. Copies of site records within the project area will be mailed. According to our records, no historic properties listed or eligible for the National Register of Historic Places are located within the search area.

According to our records, portions of the project area have been previously surveyed. Therefore, a cultural resource survey is recommended for any unsurveyed areas affected by development or construction.

Please contact me if you have any questions about this search.

Sincerely,

Bonnie Yoshida
Assistant Coordinator

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OFFICE OF THE ASSISTANT SECRETARY
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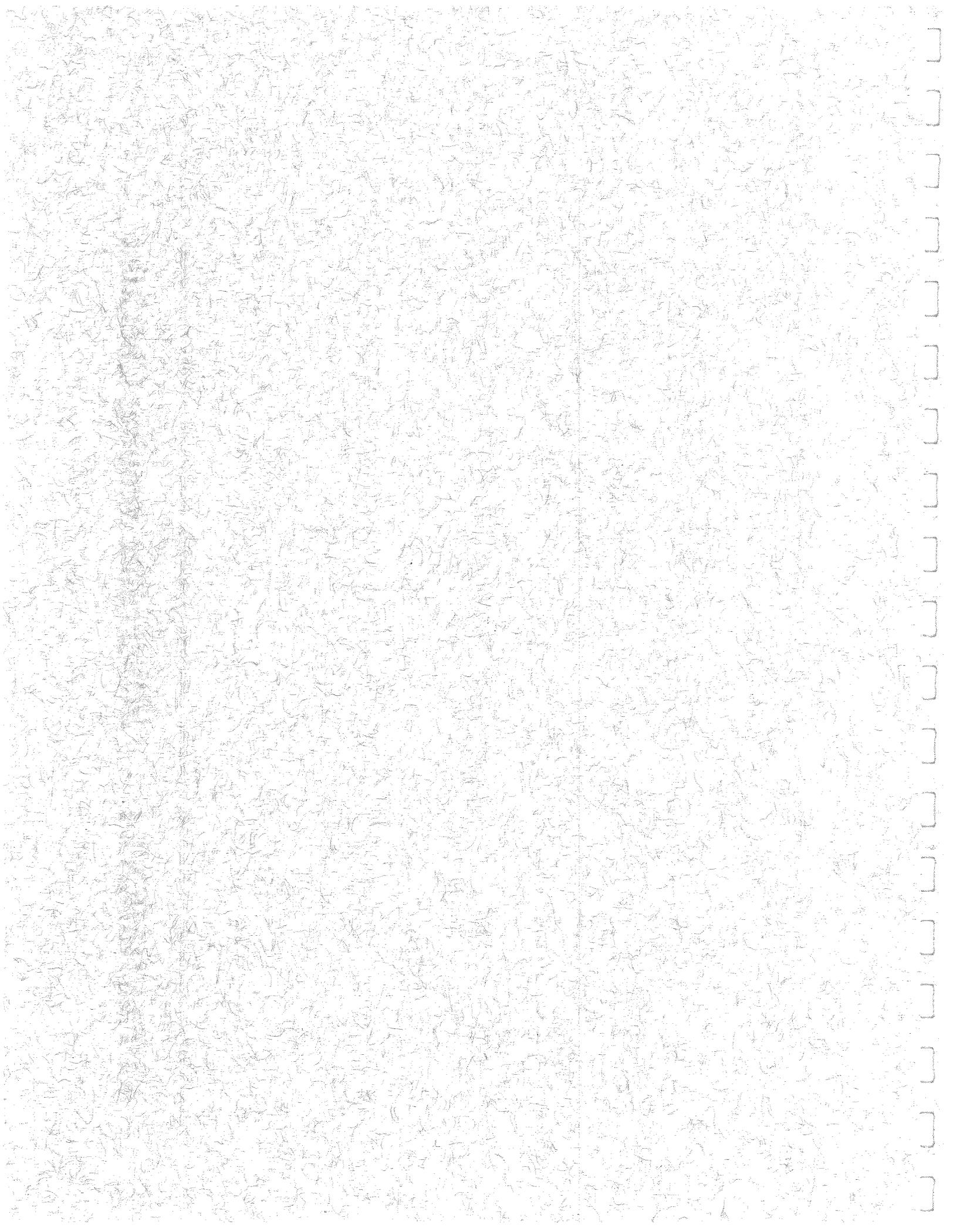
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FOR PUBLIC AFFAIRS

ATTACHMENT I - PDS Traffic Scoping Checklist





PDS Traffic Forecasting, Analysis and Operations Scoping Checklist

Project Information

District 05 County SLO Route 101 Kilometer Post (Post Mile) 18.2-19.8 EA 0A360K

Description (include how project was identified: system planning, safety investigation, highway and freeway surveillance, etc.)

The intersection of State Route 101 and El Campo Road is currently configured as an at-grade intersection with stop controls on the northbound and southbound approaches of El Campo Road to SR 101. Vehicles on the minor street approaches to SR 101 at this location currently experience LOS F levels of delay during the morning and evening peak commute periods. Congestion at the intersection is expected to intensify in the future as anticipated new development north and south of SR 101 is constructed. A PSR(PDS) has been initiated by the City of Arroyo Grande to identify improvements necessary to provide efficient and safe access between SR 101 and El Campo Road. The PSR(PDS) evaluates four basic alternative interchange configurations. Because construction of an interchange at the SR 101/El Campo Road intersection will impact travel patterns on the surrounding road network and alter volumes at other nearby interchanges, the traffic analysis included analyses of the SR 101 interchanges at Grande Avenue, Fair Oaks Avenue and Traffic Way.

Caltrans Project Manager Tom Houston Phone # (805) 549-3016

Consultant Project Manager Ali Hemmati Phone # (916) 858-0642

Traffic Forecasting Functional Manager _____ Phone # (805) 549-

Traffic Operations Functional Manager _____ Phone # (805) 549-

Traffic Forecasting, Traffic Analysis Scoping

Describe and identify in the following sections a general description of the existing traffic and forecasted traffic (using existing data and transportation concept reports). Analyze traffic data and determine what traffic operational conditions are anticipated. Identify any additional studies needed to accurately forecast and fully analyze the traffic operations as part of the preparation of the environmental document. Consult with the District Intergovernmental Review/California Environmental Quality Act Coordinator for applicable local agency studies of land development proposals.

Under traffic modeling assumptions, traffic models should be validated and calibrated. The general plan buildout should be used to incorporate potential land use changes that are probable in the future. An interim year may be selected to incorporate a significant land use change or development.

At the PSR (PDS) stage, the traffic forecasting and analysis tasks are intended to utilize readily available information and traffic models. At this stage of the project development process, it is not intended that extensive effort be devoted to the generation of traffic data and to the significant updating of traffic models. If necessary, these tasks will occur at later stages of the process. However, exceptions may be necessary in cases where the traffic data or models are highly suspect.

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY



1954

MEMORANDUM FOR THE RECORD
SUBJECT: [Illegible]

[Illegible text]

[Illegible text]

[Illegible text]

[Illegible text]

[Illegible text]

Traffic Operations Scoping

Based on the traffic analysis, describe and identify in the following sections a general description of the traffic operational improvements required (auxiliary lanes, signalized intersections, etc.) to address the traffic operational conditions and applicable warrants. The traffic operation improvements should be discussed in sufficient detail to identify the project's major geometric features and operations issues. Also discuss in detail traffic management system improvements (ramp metering, CMS, HOV lanes, etc.) to be incorporated. Discuss any components of the traffic management system that may be controversial during development of the environmental document.

Project Screening

1. Project Features: New R/W? Yes Excavation or fill? Yes

2. Project Setting

The SR 101/El Campo Road intersection is located in San Luis Obispo County, just south of the City of Arroyo Grande. Low-density residential development is located south of the study intersection. The land north of SR 101 at El Campo Road is undeveloped and is the site of the planned Arroyo Linda project.

Rural or Urban The characteristics of the area in the immediate vicinity of the SR 101/El Campo Road intersection are rural. However, the intersection is located immediately adjacent to urban development in the City of Arroyo Grande. Additional development is anticipated in the future north of the subject intersection as well as to the south of the intersection.

Current land uses State Highway, undeveloped

Adjacent land uses Residential, Undeveloped
(industrial, light industry, commercial, agricultural, residential, etc.)

Existing Traffic Operational Conditions and Warrants Supporting the Need for the Improvement

Mainline highway Based on planning level threshold volumes, Highway 101 currently operates at LOS C in the vicinity of the El Campo Road intersection.

Ramp intersection N/A

Merge / diverge N/A

Street intersections

SR 101/El Campo Road: Side street approaches operate at LOS F during the AM and PM peak commute hours.

Other intersections in the vicinity of the SR 101/El Campo Road intersection that were analyzed currently operate at acceptable levels.

Weaving / merging (spacing)

Fair Oaks Avenue is located approximately 0.34 miles (0.55 km) south of Grand Avenue. The existing distance between the southbound Grande Avenue on-ramp and the Fair Oaks Avenue off-ramp is less than current Caltrans standards, but weaving maneuvers between the two ramps do not appear to be a significant operational issue at this time. The weaving maneuver LOS values are anticipated to degrade as future traffic demands increase on SR 101 and the SR 101 ramps.

Other

Traffic Study and Analysis Anticipated

Traffic Modeling Assumptions

- o Use Local Model Yes.
 - o Update Local Model Already done.
 - o New Model N/A
- o Existing Traffic Counts Yes. (1999)
 - o New Traffic Counts N/A
 - o Historical Growth Assumed 1.22 times 2020 forecast for 2030 demand.
- o General Plan (GP) Buildout Yes.
 - o Pro-Rate GP Growth No.
- o Existing Year (1999) Complete.
 - o Design Year (2030) Complete.
 - o Interim Year (2020) N/A.

Other

The South County travel demand model was updated during the preparation of the Arroyo Grande General Plan study and was used to generate the traffic forecasts for the PSR-PDS. The travel forecasts as well as the operational analyses are described in the report "Traffic Analysis for the El Campo Road/Highway 101 Interchange Project Study Report" prepared by Higgins Associates and dated April 12, 2002. The 2020 model forecast was factored up by 22% to obtain 2030 volumes.

Traffic Analysis

- o Mainline LOS Required, but already done using planning level threshold volumes
 - o Merge/Diverge LOS Complete.
 - o Ramp Int. LOS Complete.
- o Adjacent IC LOS Complete,
 - o Ramp Metering (open) N/A
 - o Ramp Metering (later) N/A
- o Left/Right Turn Storage Required, but already done

- o Accident / Safety Analysis Required, but already done
- o Intersection Queues Required, but already done
- o Construction Staging Required for alternatives involving grade separations
- o Project Staging Required if project is to be phased

Other

The "Traffic Analysis for the El Campo Road/Highway 101 Interchange Project Study Report" prepared by Higgins Associates includes Mainline LOS analysis, Ramp Intersection LOS and Accident Analysis.

References: Guide for the Preparation of Traffic Impact Studies, Caltrans January 2001;
Highway Capacity Manual: Transportation Research Board

Traffic Operations Scoping

Traffic Operational Improvements

Attach the project location map to this checklist to show location of all traffic operations improvements anticipated.

o Auxiliary Lanes Recommended between the El Campo NB on-ramp and the Traffic Way NB off-ramp with Alternatives 1A and 1B. Also, recommended with SR 101 as a four-lane facility with Alternative 3A and 3B in the northbound direction between the new Traffic Way extended hook ramps and the existing Traffic Way off-ramp and with Alternative 3A in the southbound direction between the new El Campo Road frontage road hook ramps and the existing El Campo Road intersection.

o Intersection Improvements: See Table 10 attached for a description of the intersection improvements for each design alternative.

o Truck Climbing Lane N/A.

o New Signals Traffic signals would be required at the intersections of the northbound and southbound SR 101 ramps and El Campo Road with design Alternatives 1A, 1B, 2A and 2B. Traffic signals would also be required with Alternatives 3A, 3B and 4 at the new SR 101 ramp intersections with El Campo Road frontage road and Traffic Way Extended. New signals will be required at other intersections on the local road network in conjunction with traffic from new development and not necessarily as a result of the interchange project.

o Modify Signals None as a direct result of construction of a new interchange. Existing signals at nearby intersections will require modification in conjunction with improvements related to providing for future traffic growth and .

o Merging Improvements N/A

- o Weaving Improvements Auxiliary lanes as previously described.
- o Deceleration / Acceleration Lanes As described for the intersection improvements.

Other

Traffic Management Systems

Attach the project location map to this checklist to show location of all traffic management systems identified.

- o Ramp Meters None
- o HOV Ramp Bypass None
- o Mainline HOV Lanes None
- o Detector Loops
- o Communication Networks (fiber optic, telephone, etc.) None
- o Closed Circuit Television None
- o Changeable Message Sign None
- o Highway Advisory Radio None

Other

Discuss strategies (technical analysis, public outreach, etc.) to secure local agency and public support to implement HOV lanes and ramp metering: N/A

Preliminary Traffic Forecasting and Operations Evaluation provided by:

Traffic Forecasting & Operational Analysis J. Daniel Takacs, Higgins Associates
Phone # (408) 848-3122 Date 5/03/02

**ATTACHMENT J - Preliminary Estimate of
Project Cost**

PROJECT STUDY REPORT COST ESTIMATE

District-County-Route	05-SLO-101
KP(PM)	19.0 (11.8)
EA	OA360K
Program Code	HE 11

PROJECT DESCRIPTION: Alternative 1 - Construct new interchange adjacent to the existing at-grade El Campo Road/US 101 intersection

Limits: On U.S. Hwy 101 at El Campo Road

Proposed Improvement (Scope): Construct new US 101 overcrossing structure with ramps, realign El Campo Road, and construct the Arroyo Linda project street system.

Alternate: Alternative 1

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	\$ 9,826,400
TOTAL STRUCTURE ITEMS	\$ 3,042,000
SUBTOTAL CONSTRUCTION COSTS	\$ 12,868,400
TOTAL RIGHT OF WAY ITEMS	\$ 1,801,600
TOTAL PROJECT CAPITAL OUTLAY COSTS	\$ 14,670,000

Reviewed by Project Manager
Dokken Engineering

Matthew N. Dinn
Signature

Approved by Project Engineer
Dokken Engineering

Janeth A. Ruesga
Signature

Phone No. (916) 858-0642

Date January 28, 2003

KP(PM)	<u>19.0 (11.8)</u>
EA	<u>OA360K</u>
Program Code	<u>HE 11</u>

Section 6 Minor Items

Subtotal Sections 1-5 \$6,454,100 x 5% \$322,705

TOTAL MINOR ITEMS \$322,700

Section 7 Roadway Mobilization

Subtotal Sections 1-5 \$6,454,100

Minor Items \$322,700

Sum \$6,776,800 x 10% \$677,680

TOTAL ROADWAY MOBILIZATION \$677,700

Section 8 Road Additions

Supplemental

Subtotal Sections 1-5 \$6,454,100

Minor Items \$322,700

Sum \$6,776,800 x 10% \$677,680

Contingencies *

Subtotal Sections 1-5 \$6,454,100

Minor Items \$322,700

Sum \$6,776,800 x 25% \$1,694,200

TOTAL ROADWAY ADDITIONS \$2,371,900

TOTAL ROADWAY ITEMS \$9,826,400

(Total of Sections 1-8)

ESTIMATE PREPARED BY
DOKKEN ENGINEERING

Janette A. Ruesga
(Print Name)

PHONE # (916) 858-0642

DATE January 28, 2003

* Use appropriate percentage per Chapter 3-50 of Project Development Procedures Manual: PSR 25%, Draft PR 20%, PR 15%.

District-County-Route 05-SLO-101

KP(PM) 19.0 (11.8)

EA OA360K

Program Code HE 11

II. STRUCTURES ITEMS

Bridge Name	<u>El Campo Rd OC</u>	_____	_____	_____
Structure Type	<u>CIP P/S Box Girder</u>	_____	_____	_____
Width (out to out) - (m)	<u>27</u>	_____	_____	_____
Span Length - (m)	<u>79.9</u>	_____	_____	_____
Total Area - (m^2)	<u>2,157</u>	_____	_____	_____
Footing Type (pile/spread)	_____	_____	_____	_____
Cost Per m^2	_____	_____	_____	_____
(incl. 10% mobilization and 25% contingency)	<u>\$1,410.00</u>	_____	_____	_____
Total Cost for Structure	<u>\$3,042,000</u>	_____	_____	_____

SUBTOTAL STRUCTURES ITEMS \$3,042,000

Railroad Related Costs:

SUBTOTAL RAILROAD ITEMS

TOTAL STRUCTURES ITEMS \$3,042,000

COMMENTS:

Includes cost of replacing barriers on existing structure to remain

ESTIMATE PREPARED BY

DOKKEN ENGRNG Martin Maechler, P. E.
(Print Name)

PHONE # (916) 858-0642

DATE January 24, 2003

(If appropriate, attach additional pages and backup)

District-County-Route 05-SLO-101

KP(PM) 19.0 (11.8)

EA OA360K

Program Code HE 11

III. RIGHT OF WAY

Acquisition, including excess lands and damages to remainder	<u>\$1,585,582</u>
Utility Relocation (Project share)	<u>\$106,650</u>
Clearance/Demolition	<u>\$27,000</u>
RAP	<u>\$54,000</u>
Title and Escrow Fees	<u>\$28,350</u>

TOTAL RIGHT OF WAY \$1,801,600

CONSTRUCTION CONTRACT WORK _____

COMMENTS

ESTIMATE PREPARED BY
DOKKEN ENGINEERING Janette A. Ruesga
(Print Name)

PHONE # (916) 858-0642

DATE January 28, 2003

(If appropriate, attach additional pages and backup.)

PROJECT STUDY REPORT COST ESTIMATE

District-County-Route	<u>05-SLO-101</u>
KP(PM)	<u>19.0 (11.8)</u>
EA	<u>OA360K</u>
Program Code	<u>HE 11</u>

PROJECT DESCRIPTION: Alternative 2 - Construct new interchange approximately 490 meters south of the existing El Campo Road/US 101 intersection

Limits: On U.S. Hwy 101 at El Campo Road

Proposed Improvement (Scope): Construct new US 101 overcrossing structure with ramps, extend El Campo Road Between Brady Lane and the new interchange, and construct a new frontage road on the east side of US 101 connecting to the Arroyo Linda project.

Alternate: Alternative 2

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	\$	<u>\$16,612,500</u>
TOTAL STRUCTURE ITEMS	\$	<u>\$3,120,000</u>
SUBTOTAL CONSTRUCTION COSTS	\$	<u>\$19,732,500</u>
TOTAL RIGHT OF WAY ITEMS	\$	<u>\$1,519,300</u>
TOTAL PROJECT CAPITAL OUTLAY COSTS	\$	<u>\$21,251,800</u>

Reviewed by Project Manager
Dokken Engineering

Matthew N. Harris
Signature

Approved by Project Engineer
Dokken Engineering

Janette Ruesga
Signature

Phone No. (916) 858-0642

Date January 04, 2003

KP(PM) 19.0 (11.8)
 EA OA360K
 Program Code HE 11

<u>Section 4 Specialty Items</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
Retaining Walls					
Barriers					
Guardrails					
Noise Barriers					
Highway Planting	1	LS	\$325,000.00	\$325,000	
Replacement Planting					
Irrigation Modification	1	LS	\$325,000.00	\$325,000	
Relocate Private Irrigation Facilities					
Erosion Control	53,570	m^2	\$4.50	\$241,065	
Slope Protection					
Water Pollution Control	1	LS	\$25,000.00	\$25,000	
Hazardous Waste Mitigation Work					
Environmental Mitigation	1	LS	\$50,000.00	\$50,000	
250 mm Welded Steel Pipe	48	M	\$300.00	\$14,400	
Resident Engineer Office Space	1	LS	\$15,000.00	\$15,000	
Construction Staking	1	LS	\$20,000.00	\$20,000	
Temporary Railing (Type K)	600	M	\$25.00	\$15,000	
Crash Cushion Modules	20	EA	\$2,500.00	\$50,000	
			<u>Subtotal Specialty Items</u>		<u>1,080,500</u>
<u>Section 5 Traffic Items</u>					
Lighting	1	LS	\$100,000.00	\$100,000	
Traffic Delineation Items	1	LS	\$30,000.00	\$30,000	
Traffic Signals	1	LS	\$300,000.00	\$300,000	
Overhead Sign Structures	1	LS	\$50,000.00	\$50,000	
Roadside Signs	1	LS	\$20,000.00	\$20,000	
Ramp Metering System					
Traffic Control Systems	1	LS	\$50,000.00	\$50,000	
Traffic Management Plan	1	LS	\$100,000.00	\$100,000	
			<u>Subtotal Traffic Items</u>		<u>\$650,000</u>
SUBTOTAL SECTIONS 1-5					<u>\$10,911,300</u>

KP(PM)	<u>19.0 (11.8)</u>
EA	<u>OA360K</u>
Program Code	<u>HE 11</u>

Section 6 Minor Items

Subtotal Sections 1-5	<u>\$10,911,300</u>	x	5%	<u>\$545,565</u>
-----------------------	---------------------	---	----	------------------

TOTAL MINOR ITEMS	<u>\$545,600</u>
--------------------------	------------------

Section 7 Roadway Mobilization

Subtotal Sections 1-5	<u>\$10,911,300</u>
-----------------------	---------------------

Minor Items	<u>\$545,600</u>
-------------	------------------

Sum	<u>\$11,456,900</u>	x	10%	<u>\$1,145,690</u>
-----	---------------------	---	-----	--------------------

TOTAL ROADWAY MOBILIZATION	<u>\$1,145,700</u>
-----------------------------------	--------------------

Section 8 Road Additions

Supplemental

Subtotal Sections 1-5	<u>\$10,911,300</u>
-----------------------	---------------------

Minor Items	<u>\$545,600</u>
-------------	------------------

Sum	<u>\$11,456,900</u>	x	10%	<u>\$1,145,690</u>
-----	---------------------	---	-----	--------------------

Contingencies *

Subtotal Sections 1-5	<u>\$10,911,300</u>
-----------------------	---------------------

Minor Items	<u>\$545,600</u>
-------------	------------------

Sum	<u>\$11,456,900</u>	x	25%	<u>\$2,864,225</u>
-----	---------------------	---	-----	--------------------

TOTAL ROADWAY ADDITIONS	<u>\$4,009,900</u>
--------------------------------	--------------------

TOTAL ROADWAY ITEMS	<u>\$16,612,500</u>
----------------------------	---------------------

(Total of Sections 1-8)

ESTIMATE PREPARED BY
DOKKEN ENGINEERING

Janette A. Ruesga
(Print Name)

PHONE # (916) 858-0642

DATE January 04, 2003

* Use appropriate percentage per Chapter 3-50 of Project Development Procedures Manual: PSR 25%, Draft PR 20%, PR 15%.

District-County-Route 05-SLO-101

KP(PM) 19.0 (11.8)

EA OA360K

Program Code HE 11

II. STRUCTURES ITEMS

Bridge Name	<u>El Campo Road OC</u>			
Structure Type	<u>CIP P/S Box Girder</u>			
Width (out to out) - (m)	<u>26.8</u>			
Span Length - (m)	<u>82.9</u>			
Total Area - (m^2)	<u>2,222</u>			
Footing Type (pile/spread)	<u>Pile</u>			
Cost Per m^2 (incl. 10% mobilization and 25% contingency)	<u>\$1,400.00</u>			
Total Cost for Structure	<u>\$3,120,000</u>			

SUBTOTAL STRUCTURES ITEMS \$3,120,000

Railroad Related Costs:

SUBTOTAL RAILROAD ITEM _____

TOTAL STRUCTURES ITEMS \$3,120,000

COMMENTS:

Includes cost of replacing barriers on existing structure to remain

ESTIMATE PREPARED BY
DOKKEN ENGRNG Martin Maechler, P. E.
(Print Name)

PHONE # (916) 858-0642

DATE January 24, 2003

(If appropriate, attach additional pages and backup)

Dokken Engineering

District-County-Route 05-SLO-101

KP(PM) 19.0 (11.8)

EA OA360K

Program Code HE 11

III. RIGHT OF WAY

Acquisition, including excess lands and damages to remainder	<u>\$1,384,976</u>
Utility Relocation (Project share)	<u>\$120,150</u>
Clearance/Demolition	<u> </u>
RAP	<u> </u>
Title and Escrow Fees	<u>\$14,175</u>

TOTAL RIGHT OF WAY \$1,519,300

CONSTRUCTION CONTRACT WORK

COMMENTS

ESTIMATE PREPARED BY
DOKKEN ENGINEERI Janette A. Ruesga PHONE # (916) 858-0642 DATE January 04, 2003
(Print Name)

(If appropriate, attach additional pages and backup.)

Dokken Engineering

PROJECT STUDY REPORT COST ESTIMATE

District-County-Route	05-SLO-101
KP(PM)	19.0 (11.8)
EA	OA360K
Program Code	HE 11

PROJECT DESCRIPTION: Alternative 3 - Construct new interchange near existing Traffic Way/US 101 ramps intersection.

Limits: On U.S. Hwy 101 near Traffic Way

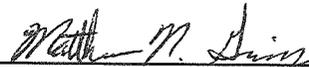
Proposed Improvement (Scope): Close existing Traffic Way/US 101 ramps intersection, realign north and southbound lanes on US 101 and construct two new US 101 overcrossing structures. Additionally, construct the Traffic Way/Traffic Way Extension intersection, new hook ramps for north and southbound traffic extend Traffic Way under US 101, and construct the Arroyo Linda project street system.

Alternate: Alternative 3

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	\$ \$14,609,800
TOTAL STRUCTURE ITEMS	\$ \$7,720,000
SUBTOTAL CONSTRUCTION COSTS	\$ \$22,329,800
TOTAL RIGHT OF WAY ITEMS	\$ \$8,563,200
TOTAL PROJECT CAPITAL OUTLAY COSTS	\$ \$30,893,000

Reviewed by Project Manager
Dokken Engineering



Signature

Approved by Project Engineer
Dokken Engineering



Signature

Phone No. (916) 858-0642

Date January 28, 2003

KP(PM) 19.0 (11.8)
 EA OA360K
 Program Code HE 11

Section 6 Minor Items

Subtotal Sections 1-5 \$9,595,900 x 5% \$479,800

TOTAL MINOR ITEMS \$479,800

Section 7 Roadway Mobilization

Subtotal Sections 1-5 \$9,595,900

Minor Items \$479,800

Sum \$10,075,700 x 10% \$1,007,600

TOTAL ROADWAY MOBILIZATION \$1,007,600

Section 8 Road Additions

Supplemental

Subtotal Sections 1-5 \$9,595,900

Minor Items \$479,800

Sum \$10,075,700 x 10% \$1,007,600

Contingencies *

Subtotal Sections 1-5 \$9,595,900

Minor Items \$479,800

Sum \$10,075,700 x 25% \$2,518,900

TOTAL ROADWAY ADDITIONS \$3,526,500

TOTAL ROADWAY ITEMS \$14,609,800

(Total of Sections 1-8)

ESTIMATE PREPARED BY

DOKKEN ENGINEERING

Janette A. Ruesga

(Print Name)

PHONE # (916) 858-0642

DATE January 28, 2003

* Use appropriate percentage per Chapter 3-50 of Project Development Procedures Manual: PSR 25%, Draft PR 20%, PR 15%.

District-County-Route 05-SLO-101

KP(PM) 19.0 (11.8)

EA OA360K

Program Code HE 11

II. STRUCTURES ITEMS

Bridge Name	<u>Traffic Way UC</u>	_____	_____	_____
Structure Type	<u>CIP P/S Box Girder</u>	_____	_____	_____
Width (out to out) - (m)	<u>32.74</u>	_____	_____	_____
Span Length - (m)	<u>146</u>	_____	_____	_____
Total Area - (m^2)	<u>4,780</u>	_____	_____	_____
Footing Type (pile/spread)	<u>Pile</u>	_____	_____	_____
Cost Per m^2		_____	_____	_____
(incl. 10% mobilization and		_____	_____	_____
25% contingency)	<u>\$1,615.00</u>	_____	_____	_____
Total Cost for Structure	<u>\$7,720,000</u>	_____	_____	_____

SUBTOTAL STRUCTURES ITEMS \$7,720,000

Railroad Related Costs: _____

SUBTOTAL RAILROAD ITEMS _____

TOTAL STRUCTURES ITEMS \$7,720,000

COMMENTS:

Includes cost of replacing barriers on existing structure to remain

ESTIMATE PREPARED BY

DOKKEN ENGRNG Martin Maechler, P. E.
(Print Name)

PHONE # (916) 858-0642

DATE January 24, 2003

(If appropriate, attach additional pages and backup)

Dokken Engineering

District-County-Route 05-SLO-101

KP(PM) 19.0 (11.8)

EA OA360K

Program Code HE 11

III. RIGHT OF WAY

Acquisition, including excess lands and damages to remainde	<u>\$7,546,612</u>
Utility Relocation (Project share)	<u>\$251,100</u>
Clearance/Demolition	<u>\$229,500</u>
RAP	<u>\$507,600</u>
Title and Escrow Fees	<u>\$28,350</u>

TOTAL RIGHT OF WAY \$8,563,200

CONSTRUCTION CONTRACT WORK _____

COMMENTS

ESTIMATE PREPARED BY

DOKKEN ENGINEER Janette A. Ruesga
(Print Name)

PHONE # (916) 858-0642

DATE January 28, 2003

(If appropriate, attach additional pages and backup.)

Dokken Engineering

PROJECT STUDY REPORT COST ESTIMATE

District-County-Route	05-SLO-101
KP(PM)	19.0 (11.8)
EA	OA360K
Program Code	HE 11

PROJECT DESCRIPTION: Alternative 4 - Construct new interchange approximately 370 meters north of the El Campo Road/US-101 intersection

Limits: On U.S. Hwy 101 near Traffic Way

Proposed Improvement (Scope): Construct new US 101 overcrossing structure and NB off- and loop on-ramps at 'D' Street. Extend El Campo Road north to connect with Valley Road.
Construct SB hook ramps to intersect El Campo Road near Orchard Road.
Close existing Traffic Way/US 101 ramps and extend Traffic Way south to the ramps intersection at 'D' Street. Additionally, construct the Arroyo Linda project street system.

Alternate: Alternative 4

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	\$ 34,658,700
TOTAL STRUCTURE ITEMS	\$ 1,826,000
SUBTOTAL CONSTRUCTION COSTS	\$ 36,484,700
TOTAL RIGHT OF WAY ITEMS	\$ 6,020,900
TOTAL PROJECT CAPITAL OUTLAY COSTS	\$ 42,505,600

Reviewed by Project Manager
Dokken Engineering

Matthew N. Hight
Signature

Approved by Project Engineer
Dokken Engineering

Janeth A. Ruesga
Signature

Phone No. (916) 858-0642

Date January 28, 2003

KP(PM)	<u>19.0 (11.8)</u>
EA	<u>OA360K</u>
Program Code	<u>HE 11</u>

Section 6 Minor Items

Subtotal Sections 1-5 \$22,764,300 x 5% \$1,138,200

TOTAL MINOR ITEMS \$1,138,200

Section 7 Roadway Mobilization

Subtotal Sections 1-5 \$22,764,300

Minor Items \$1,138,200

Sum \$23,902,500 x 10% \$2,390,300

TOTAL ROADWAY MOBILIZATION \$2,390,300

Section 8 Road Additions

Supplemental

Subtotal Sections 1-5 \$22,764,300

Minor Items \$1,138,200

Sum \$23,902,500 x 10% \$2,390,300

Contingencies *

Subtotal Sections 1-5 \$22,764,300

Minor Items \$1,138,200

Sum \$23,902,500 x 25% \$5,975,600

TOTAL ROADWAY ADDITIONS \$8,365,900

TOTAL ROADWAY ITEMS \$34,658,700

(Total of Sections 1-8)

ESTIMATE PREPARED BY

DOKKEN ENGINEERING

Janette A. Ruesga

(Print Name)

PHONE # (916) 858-0642

DATE January 28, 2003

* Use appropriate percentage per Chapter 3-50 of Project Development Procedures Manual: PSR 25%, Draft PR 20%, PR 15%.

District-County-Route 05-SLO-101

KP(PM) 19.0 (11.8)

EA OA360K

Program Code HE 11

II. STRUCTURES ITEMS

Bridge Name	<u>D' St. OC</u>	_____	_____	_____
Structure Type	<u>CIP P/S Box Girder</u>	_____	_____	_____
Width (out to out) - (m)	<u>20.7</u>	_____	_____	_____
Span Length - (m)	<u>73.5</u>	_____	_____	_____
Total Area - (m^2)	<u>1,521</u>	_____	_____	_____
Footing Type (pile/spread)	<u>Pile</u>	_____	_____	_____
Cost Per m^2 (incl. 10% mobilization and 25% contingency)	<u>\$1,200.00</u>	_____	_____	_____
Total Cost for Structure	<u>\$1,826,000</u>	_____	_____	_____

SUBTOTAL STRUCTURES ITEMS \$1,826,000

Railroad Related Costs: _____

SUBTOTAL RAILROAD ITEMS _____

TOTAL STRUCTURES ITEMS \$1,826,000

COMMENTS:

Includes cost of replacing barriers on existing structure to remain

ESTIMATE PREPARED BY

DOKKEN ENGRNG John Bishop, P. E.
(Print Name)

PHONE # (916) 858-0642

DATE January 28, 2003

(If appropriate, attach additional pages and backup)

Dokken Engineering

District-County-Route 05-SLO-101

KP(PM) 19.0 (11.8)

EA OA360K

Program Code HE 11

III. RIGHT OF WAY

Acquisition, including excess lands and damages to remainde	<u>\$5,132,637</u>
Utility Relocation (Project share)	<u>\$272,025</u>
Clearance/Demolition	<u>\$113,400</u>
RAP	<u>\$452,250</u>
Title and Escrow Fees	<u>\$50,625</u>

TOTAL RIGHT OF WAY \$6,020,900

CONSTRUCTION CONTRACT WORK _____

COMMENTS

ESTIMATE PREPARED BY

DOKKEN ENGINEER Janette A. Ruesga PHONE # (916) 858-0642

(Print Name)

DATE January 28, 2003

(If appropriate, attach additional pages and backup.)

Dokken Engineering



PROJECT STUDY REPORT COST ESTIMATE

District-County-Route	<u>05-SLO-101</u>
KP(PM)	<u>19.0 (11.8)</u>
EA	<u>OA360K</u>
Program Code	<u>HE 11</u>

PROJECT DESCRIPTION: Alternative 5 - Construct new interchange approximately 490 meters south of the existing El Campo Road/US 101 intersection

Limits: On U.S. Hwy 101 at El Campo Road

Proposed Improvement (Scope): Construct new US 101 overcrossing structure with ramps, extend El Campo Road Between Brady Lane and the new interchange, and construct a new frontage road on the east side of US 101 connecting to the Arroyo Linda project.

Alternate: Alternative 5 - No Exceptions to Design Standards

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	\$	<u>\$17,126,000</u>
TOTAL STRUCTURE ITEMS	\$	<u>\$3,120,000</u>
SUBTOTAL CONSTRUCTION COSTS	\$	<u>\$20,246,000</u>
TOTAL RIGHT OF WAY ITEMS	\$	<u>\$1,962,600</u>
TOTAL PROJECT CAPITAL OUTLAY COSTS	\$	<u>\$22,208,600</u>

Reviewed by Project Manager
Dokken Engineering

Matthew N. Duggan
Signature

Approved by Project Engineer
Dokken Engineering

Janeth C. Ruesga
Signature

Phone No. (916) 858-0642

Date February 03, 2003

District-County-Route 05-SLO-101

KP(PM) 19.0 (11.8)

EA OA360K

Program Code HE 11

II. STRUCTURES ITEMS

Bridge Name	<u>El Campo Road OC</u>	_____	_____	_____
Structure Type	<u>CIP P/S Box Girder</u>	_____	_____	_____
Width (out to out) - (m)	<u>26.8</u>	_____	_____	_____
Span Length - (m)	<u>82.9</u>	_____	_____	_____
Total Area - (m ²)	<u>2,222</u>	_____	_____	_____
Footing Type (pile/spread)	<u>Pile</u>	_____	_____	_____
Cost Per m ²				
(incl. 10% mobilization and				
25% contingency)	<u>\$1,400.00</u>	_____	_____	_____
Total Cost for Structure	<u>\$3,120,000</u>	_____	_____	_____

SUBTOTAL STRUCTURES ITEMS \$3,120,000

Railroad Related Costs: _____

SUBTOTAL RAILROAD ITEM: _____

TOTAL STRUCTURES ITEMS \$3,120,000

COMMENTS:

Includes cost of replacing barriers on existing structure to remain

ESTIMATE PREPARED BY
 DOKKEN ENGRNG Martin Maechler, P. E.
 (Print Name)

PHONE # (916) 858-0642

DATE January 24, 2003

(If appropriate, attach additional pages and backup)

District-County-Route 05-SLO-101

KP(PM) 19.0 (11.8)

EA OA360K

Program Code HE 11

III. RIGHT OF WAY

Acquisition, including excess lands and damages to remainder	<u>\$1,828,288</u>
Utility Relocation (Project share)	<u>\$120,150</u>
Clearance/Demolition	<u> </u>
RAP	<u> </u>
Title and Escrow Fees	<u>\$14,175</u>

TOTAL RIGHT OF WAY \$1,962,600

CONSTRUCTION CONTRACT WORK

COMMENTS

ESTIMATE PREPARED BY
DOKKEN ENGINEERII Janette A. Ruesga PHONE # (916) 858-0642 DATE February 03, 2003
(Print Name)

(If appropriate, attach additional pages and backup.)

**ATTACHMENT K - Right-of-Way Data Sheets and
Utility Information Sheets**

RIGHT OF WAY DATA SHEET

TO: DOKKEN Engineering

Date: January 21, 2003

Dist. San Luis Obispo County

KP: 18.2 - 19.8

ATTN.: John Klemunes
Project Manager

EA: OA370K

Project Desc: El Campo Road/US 101
Interchange

SUBJECT: Right of Way Data - El Campo Road / US 101 Interchange- Alternate 1

1. Right of Way Cost Estimate:

	Current Value (Future use)	Escalation Rate	Escalated Value
A. Acquisition, including Excess Lands, Damages and Goodwill	\$1,174,505	35%	\$1,585,582
B. Utility Relocation (Agency Share)	\$79,000	35%	\$106,650
C. Relocation Assistance	\$40,000	35%	\$54,000
D. Clearance / Demolition	\$20,000	35%	\$27,000
E. Title and Escrow Fees	\$21,000	35%	\$28,350
F. Total Current Value	\$1,334,505		
G. Total Escalated Value			\$1,801,582
H. Construction Contract Work	\$5,000		

2. Anticipated Date of Right of Way Certification: 2010

3. Parcel Data:

<u>Type</u>	<u>Dual /Appr</u>	<u>Utilities</u>	<u>RR Involvements</u>
X		U4-1	None X
A		-2	C&M Agrmt
B 14		-3 4	Svc Contract
C		-4	Lic/RE/Clause
D		U5-7	
E XXXX		-8	<u>Misc. R/W Work</u>
F XXXX		-9 4	RAP Displ 1
			Clear/Demo 1
			Const Permits 0
			Condemnation 0
Total Parcels - 14			

Areas: Right of Way: 18.686 Ac.

No. Excess Parcels: 0 Excess: 0

Enter PMCS Screens NA

by NA

Enter AGRE Screens NA (Railroad data only)

by NA

4. Are there any items of construction contract work? Yes. It will be necessary to reconstruct driveways, some property fencing and relocate several mail boxes.
5. Provide a general description of the right of way and excess lands required (zoning, use major improvements, critical or sensitive parcels, etc.) Mostly rural and open space part take acquisitions with one residential displacement.
6. Is there an effect on assessed valuation? Minimal impact.
7. Are utility facilities or rights of way affected? (If yes, attach Utility Information Sheet Exhibit 01-01-05). Yes
8. Are Railroad facilities or rights of way affected? (If yes, attach Railroad Information Sheet Exhibit 01-01-06) No Railroad facilities are involved in this project.
9. Were any previously unidentified sites with hazardous waste and/or material found? (If yes, attach memorandum per Procedural handbook Volume 1, Section 101.011) No hazardous waste or similar materials were discovered.
10. Are RAP displacements required? Yes (If yes, provide the following information)

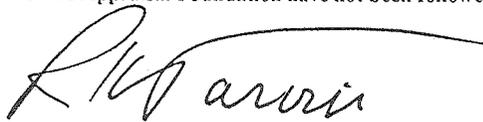
No. of single family	1	No. of business/nonprofit	0
No. of multi-family	0	No. of farms	0

Based on Draft/final Relocation Impact Statement/Study dated - None. Sufficient replacement housing is available without Last Resort Housing.

11. Are there material borrow and /or disposal sites required? (If yes, explain) No
12. Are there potential relinquishments and/or abandonments? (If yes, explain) No
13. Are there any existing and or potential Airspace sites? (If yes, explain) No
14. Indicate the anticipated Right of Way schedule and lead time requirements. No less than 24 months right of way lead time should be allocated for this project.
15. Is it anticipated that all Right of Work will be performed by CALTRANS staff? It is anticipated that CALTRANS staff will provide only project oversight and assistance.

I personally prepared this Right of Way Data Sheet and supporting information. I certify that the probable Highest and Best Use, estimated values, escalation rates, and assumptions are reasonable and proper subject to the accuracy of the data provided, normal limiting conditions and that this Data Sheet is complete and current.

The above data has been prepared for the sole purpose of making a comparative market analysis and should not be considered to be an appraisal. In making any decision that relies upon the above data, it should be remembered that the guidelines for development of an appraisal or analysis as contained in the Uniform Standards of Professional Appraisal Practice of the Appraisal Foundation have not been followed.



By: R. H. Tarvin SR/WA, IFAS Date: January 21, 2003
Right of Way Agent and Certified General Real Estate Appraiser

UTILITY INFORMATION SHEET

1. Name of utility companies involved in project:

PG&E - Electrical
Pacific Bell (SBC) - Communications
Southern California Gas Company
City of Arroyo Grande

2. Types of facilities and agreements required:

PG&E: Relocate 3 joint poles @ \$15,000 each = \$45,000
Relocate 2 service poles @ \$7,000 each = \$14,000

Pacific Bell (SBC): Relocate 2 poles @ \$10,000 each = \$20,000

City of Arroyo Grande: Verify no relocations.

Southern California Gas: Verify no facilities within project area.

3. Additional information concerning utility involvement on the project:

It appears that both PG&E and Pacific Bell (SBC) have rights going back to the 1940's, superior and prior to the 1954 Division of Highways Freeway Agreement. As such, the relocation cost would be 100% Agency. If the utility companies can not show prior rights then Agency cost would be in accordance with Master Utility Agreements with Caltrans.

Right of Way was acquired by the Division of Highways in 1955/56 for a future frontage road easterly adjacent to SR101 which was never built.

Conflict Plans should be delivered to utility companies one year before Right of Way Certification.

4. PMCS Input Information; Not Applicable

Total estimated agency cost obligations for utility relocation
on this project: \$79,000

Prepared by: R.H. Tarvin, Right of Way Agent

RIGHT OF WAY DATA SHEET

Date: February 5, 2003
 Dist. 05 - San Luis Obispo County
 KP 18.2-19.8
 EA. OA370K
 Project Desc.: El Campo Road/US 101
 Interchange

SUBJECT: Right of Way Data - El Campo Road / US 101 Interchange - Alternative 2

1. Right of Way Cost Estimate:

	Current Value (Future use)	Escalation Rate	Escalated Value
A. Acquisition, including Excess Lands, Damages and Goodwill	\$1,025,908	35%	\$1,384,976
B. Utility Relocation (Agency Share)	\$89,000	35%	\$120,150
C. Relocation Assistance	\$ 0	0%	\$ 0
D. Clearance / Demolition	\$ 0	0%	\$ 0
E. Title and Escrow Fees	\$10,500	35%	\$14,175
F. Total Current Value	\$1,125,408		
G. Total Escalated Value			\$1,519,301
H. Construction Contract Work	\$5,000		

2. Anticipated Date of Right of Way Certification: 2010

3. Parcel Data:

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

Areas: Right of Way: State - 25.590 Ac.

No. Excess Parcels : 0 Excess 0

Enter PMCS Screens NA

by NA

Enter AGRE Screens NA (Railroad data only)

by NA

4. Are there any items of construction contract work? Yes. Restore driveways, fencing and relocate several mail boxes.
 5. Provide a general description of the right of way and excess lands required (zoning, use major improvements, critical or sensitive parcels, etc.) Mostly part take rural and open space acquisitions.
 6. Is there an effect on assessed valuation? Minimal impact.
 7. Are utility facilities or rights of way affected? (If yes, attach Utility Information Sheet Exhibit 01-01-05). Yes
 8. Are Railroad facilities or rights of way affected? (If yes, attach Railroad Information Sheet Exhibit 01-01-06) No Railroad facilities are involved in this project.
 9. Were any previously unidentified sites with hazardous waste and/or material found? (If yes, attach memorandum per Procedural handbook Volume 1, Section 101.011) No hazardous waste or similar materials were discovered.
 10. Are RAP displacements required? (If yes, provide the following information) No

No. of single family	0	No. of business/nonprofit	0
No. of multi-family	0	No. of farms	0
- Based on Draft/final Relocation Impact Statement/Study dated - None. Sufficient replacement housing is available without Last Resort Housing.
11. Are there material borrow and /or disposal sites required? (If yes, explain) No
 12. Are there potential relinquishments and/or abandonments? (If yes, explain) No
 13. Are there any existing and or potential Airspace sites? (If yes, explain) No
 14. Indicate the anticipated Right of Way schedule and lead time requirements. No less than 24 months right of way lead time should be allocated for this project.
 15. Is it anticipated that all Right of Work will be performed by CALTRANS staff? It is anticipated that CALTRANS staff will provide only project oversight and assistance.

I personally prepared this Right of Way Data Sheet and supporting information. I certify that the probable Highest and Best Use, estimated values, escalation rates, and assumptions are reasonable and proper subject to the accuracy of the data provided, normal limiting conditions and that this Data Sheet is complete and current.

The above data has been prepared for the sole purpose of making a comparative market analysis and should not be considered to be an appraisal. In making any decision that relies upon the above data, it should be remembered that the guidelines for development of an appraisal or analysis as contained in the Uniform Standards of Professional Appraisal Practice of the Appraisal Foundation have not been followed.



By: Janette A. Ruesga, PE

Date: February 5, 2003

UTILITY INFORMATION SHEET

1. Name of utility companies involved in project:

PG&E - Electrical
Pacific Bell (SBC) - Communications
Southern California Gas Company
City of Arroyo Grande

2. Types of facilities and agreements required:

<u>PG&E:</u> Relocate 4 poles @ \$13,000 each =	\$52,000
Relocate 1 service pole @ \$7,000 each =	\$ 7,000

<u>Pacific Bell (SBC):</u> Relocate 3 poles @ \$10,000 each =	\$30,000
---	----------

City of Arroyo Grande: Verify no relocations.

Southern California Gas: Verify no facilities within project area.

3. Additional information concerning utility involvement on the project:

It appears that both PG&E and Pacific Bell (SBC) have rights going back to the 1940's, superior and prior to the 1954 Division of Highways Freeway Agreement. As such, the relocation cost would be 100% Agency. If the utility companies can not show prior rights then Agency cost would be in accordance with Master Utility Agreements with Caltrans.

Right of Way was acquired by the Division of Highways in 1955/56 for a future frontage road easterly adjacent to SR101 which was never built.

Conflict Plans should be delivered to utility companies one year before Right of Way Cerification.

4. PMCS Input Information; Not Applicable

Total estimated agency cost obligations for utility relocation on this project:	\$89,000
---	----------

Prepared by Janette A. Ruesga, PE

RIGHT OF WAY DATA SHEET

TO: DOKKEN Engineering

Date: January 21, 2003
 Dist. San Luis Obispo County
 KP: 18.2 - 19.8
 EA: OA370K
 Project Desc: El Campo Road/US 101
 Interchange

ATTN.: John Klemunes
 Project Manager

SUBJECT: Right of Way Data - El Campo Road / US 101 Interchange- Alternate 3

1. Right of Way Cost Estimate:

	Current Value (Future use)	Escalation Rate	Escalated Value
A. Acquisition, including Excess Lands, Damages and Goodwill	\$5,590,083	35%	\$7,546,612
B. Utility Relocation (Agency Share)	\$186,000	35%	\$251,100
C. Relocation Assistance	\$376,000	35%	\$507,600
D. Clearance / Demolition	\$170,000	35%	\$229,500
E. Title and Escrow Fees	\$ 21,000	35%	\$28,350
F. Total Current Value	\$6,343,083		
G. Total Escalated Value			\$8,563,062
H. Construction Contract Work	\$13,000		

2. Anticipated Date of Right of Way Certification: 2010

3. Parcel Data:

Type	Dual /Appr	Utilities	RR Involvements
X		U4-1	None X
A		-2	C&M Agrmt
B 25		-3 4	Svc Contract
C		-4	Lic/RE/Clause
D		U5-7	
E XXXX		-8	<u>Misc. R/W Work</u>
F XXXX		-9 4	RAP Displ 6
Total Parcels - 7 parcels State			Clear/Demo 6
18 parcel Agency			Const Permits 0
			Condemnation 3

Areas: Right of Way: State - 4.048 Ac. No. Excess Parcels: 1 Excess: 0.136 AC.
 Agency -14.585 Ac.

Enter PMCS Screens NA by NA

Enter AGRE Screens NA (Railroad data only) by NA

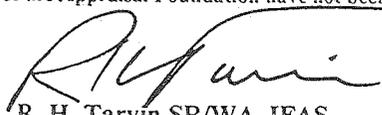
4. Are there any items of construction contract work? Yes. Restoration of driveways, fencing and relocation of several mail boxes.
5. Provide a general description of the right of way and excess lands required (zoning, use major improvements, critical or sensitive parcels, etc.) Mostly rural and open space part take acquisitions with several residential displacements.
6. Is there an effect on assessed valuation? Minimal impact.
7. Are utility facilities or rights of way affected? (If yes, attach Utility Information Sheet Exhibit 01-01-05). Yes
8. Are Railroad facilities or rights of way affected? (If yes, attach Railroad Information Sheet Exhibit 01-01-06) No Railroad facilities are involved in this project.
9. Were any previously unidentified sites with hazardous waste and/or material found? (If yes, attach memorandum per Procedural handbook Volume 1, Section 101.011) No hazardous waste or similar materials were discovered.
10. Are RAP displacements required? Yes (If yes, provide the following information)

No. of single family	6	No. of business/nonprofit	0
No. of multi-family	0	No. of farms	0

Based on Draft/final Relocation Impact Statement/Study dated - None. Sufficient replacement housing is available without Last Resort Housing.
11. Are there material borrow and /or disposal sites required? (If yes, explain) No
12. Are there potential relinquishments and/or abandonments? (If yes, explain) No
13. Are there any existing and or potential Airspace sites? (If yes, explain) No
14. Indicate the anticipated Right of Way schedule and lead time requirements. No less than 24 months right of way lead time should be allocated for this project.
15. Is it anticipated that all Right of Work will be performed by CALTRANS staff? It is anticipated that CALTRANS staff will provide only project oversight and assistance.

I personally prepared this Right of Way Data Sheet and supporting information. I certify that the probable Highest and Best Use, estimated values, escalation rates, and assumptions are reasonable and proper subject to the accuracy of the data provided, normal limiting conditions and that this Data Sheet is complete and current.

The above data has been prepared for the sole purpose of making a comparative market analysis and should not be considered to be an appraisal. In making any decision that relies upon the above data, it should be remembered that the guidelines for development of an appraisal or analysis as contained in the Uniform Standards of Professional Appraisal Practice of the Appraisal Foundation have not been followed.

By: 
R. H. Tarvin SR/WA, IFAS Date: January 21, 2003
Right of Way Agent and Certified General Real Estate Appraiser

UTILITY INFORMATION SHEET

1. Name of utility companies involved in project:

PG&E - Electrical
Pacific Bell (SBC) - Communications
Southern California Gas Company
City of Arroyo Grande

2. Types of facilities and agreements required:

<u>PG&E</u> : Relocate 8 joint poles @ \$15,000 each =	\$120,000
<u>Pacific Bell (SBC)</u> : Relocate 6 poles and under ground line	\$ 50,000
<u>City of Arroyo Grande</u> : Relocate:	
7 sewer manhole covers	\$ 7,000
6 water valves and covers	\$ 4,500
3 fire hydrants & valves	\$ 4,500

Southern California Gas: Verify no facilities within project area.

3. Additional information concerning utility involvement on the project:

It appears that both PG&E and Pacific Bell (SBC) have rights going back to the 1940's, superior and prior to the 1954 Division of Highways Freeway Agreement. As such, the relocation cost would be 100% Agency. If the utility companies can not show prior rights then Agency cost would be in accordance with Master Utility Agreements with Caltrans.

Right of Way was acquired by the Division of Highways in 1955/56 for a future frontage road easterly adjacent to SR101 which was never built.

Conflict Plans should be delivered to utility companies one year before Right of Way Certification.

4. PMCS Input Information; Not Applicable

Total estimated agency cost obligations for utility relocation on this project:	\$186,000
---	-----------

Prepared by: R.H. Tarvin, Right of Way Agent

RIGHT OF WAY DATA SHEET

TO: DOKKEN Engineering

Date: January 21, 2003
 Dist. San Luis Obispo County
 KP: 18.2 - 19.8
 EA: OA370K
 Project Desc: El Campo Road/US 101 Interchange

ATTN.: John Klemunes
 Project Manager

SUBJECT: Right of Way Data - El Campo Road / US 101 Interchange- Alternate 4

1. Right of Way Cost Estimate:

	Current Value (Future use)	Escalation Rate	Escalated Value
A. Acquisition, including Excess Lands, Damages and Goodwill	\$3,801,953	35%	\$5,132,637
B. Utility Relocation (Agency Share)	\$ 201,500	35%	\$272,025
C. Relocation Assistance	\$ 335,000	35%	\$452,250
D. Clearance / Demolition	\$ 84,000	35%	\$113,400
E. Title and Escrow Fees	\$ 37,500	35%	\$50,625
F. Total Current Value	\$4,459,953		
G. Total Escalated Value			\$6,020,937
H. Construction Contract Work	\$26,000		

2. Anticipated Date of Right of Way Certification: 2010

3. Parcel Data:

Type	Dual /Appr	Utilities	RR Involvements
X		U4-1	None X
A		-2	C&M Agrmt
B 38		-3 4	Svc Contract
C		-4	Lic/RE/Clause
D		U5-7	
E XXXX		-8	<u>Misc. R/W Work</u>
F XXXX		-9 4	RAP Displ 5
Total Parcels - 8 State Parcels			Clear/Demo 5
30 Agency Parcel			Const Permits 0
			Condemnation 3

Areas: Right of Way: State - 7.767 Ac. No. Excess Parcels: 1 Excess: 0.136 Ac.
 Agency - 25.838 Ac.

Enter PMCS Screens NA by NA

Enter AGRE Screens NA (Railroad data only) by NA

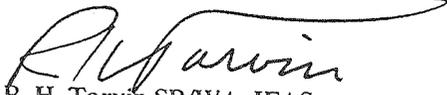
4. Are there any items of construction contract work? Yes. Restoration of driveways, fencing and relocation of mail boxes.
5. Provide a general description of the right of way and excess lands required (zoning, use major improvements, critical or sensitive parcels, etc.) Mostly rural and open space part take acquisitions with several residential displacements.
6. Is there an effect on assessed valuation? Minimal impact.
7. Are utility facilities or rights of way affected? (If yes, attach Utility Information Sheet Exhibit 01-01-05). Yes
8. Are Railroad facilities or rights of way affected? (If yes, attach Railroad Information Sheet Exhibit 01-01-06) No Railroad facilities are involved in this project.
9. Were any previously unidentified sites with hazardous waste and/or material found? (If yes, attach memorandum per Procedural handbook Volume 1, Section 101.011) No hazardous waste or similar materials were discovered.
10. Are RAP displacements required? Yes (If yes, provide the following information)

No. of single family	5	No. of business/nonprofit	0
No. of multi-family	0	No. of farms	0

Based on Draft/final Relocation Impact Statement/Study dated - None. Sufficient replacement housing is available without Last Resort Housing.
11. Are there material borrow and /or disposal sites required? (If yes, explain) No
12. Are there potential relinquishments and/or abandonments? (If yes, explain) No
13. Are there any existing and or potential Airspace sites? (If yes, explain) No
14. Indicate the anticipated Right of Way schedule and lead time requirements. No less than 24 months right of way lead time should be allocated for this project.
15. Is it anticipated that all Right of Work will be performed by CALTRANS staff? It is anticipated that CALTRANS staff will provide only project oversight and assistance.

I personally prepared this Right of Way Data Sheet and supporting information. I certify that the probable Highest and Best Use, estimated values, escalation rates, and assumptions are reasonable and proper subject to the accuracy of the data provided, normal limiting conditions and that this Data Sheet is complete and current.

The above data has been prepared for the sole purpose of making a comparative market analysis and should not be considered to be an appraisal. In making any decision that relies upon the above data, it should be remembered that the guidelines for development of an appraisal or analysis as contained in the Uniform Standards of Professional Appraisal Practice of the Appraisal Foundation have not been followed.

By: 
R. H. Tarvin SR/WA, IFAS
Right of Way Agent and Certified General Real Estate Appraiser

Date: January 21, 2003

UTILITY INFORMATION SHEET

1. Name of utility companies involved in project:

PG&E - Electrical
Pacific Bell (SBC) - Communications
Southern California Gas Company
City of Arroyo Grande

2. Types of facilities and agreements required:

<u>PG&E:</u> Relocate 9 joint poles @ \$15,000 each =	\$135,000
<u>Pacific Bell (SBC):</u> Relocate 6 poles and under ground line	\$ 50,000
<u>City of Arroyo Grande:</u> Relocate:	
8 sewer manhole covers	\$ 8,000
6 water valves and covers	\$ 4,500
4 fire hydrants & valves	\$ 4,000

Southern California Gas: Verify no facilities within project area.

3. Additional information concerning utility involvement on the project:

It appears that both PG&E and Pacific Bell (SBC) have rights going back to the 1940's, superior and prior to the 1954 Division of Highways Freeway Agreement. As such, the relocation cost would be 100% Agency. If the utility companies can not show prior rights then Agency cost would be in accordance with Master Utility Agreements with Caltrans.

Right of Way was acquired by the Division of Highways in 1955/56 for a future frontage road easterly adjacent to SR101 which was never built.

Conflict Plans should be delivered to utility companies one year before Right of Way Certification.

4. PMCS Input Information; Not Applicable

Total estimated agency cost obligations for utility relocation
on this project: \$201,500

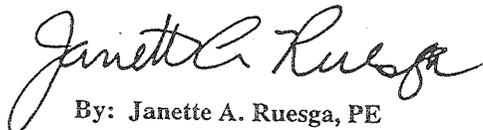
Prepared by: R.H. Tarvin, Right of Way Agent

4. Are there any items of construction contract work? Yes. Restore driveways, fencing and relocate several mail boxes.
 5. Provide a general description of the right of way and excess lands required (zoning, use major improvements, critical or sensitive parcels, etc.) Mostly rural and open space part take acquisitions.
 6. Is there an effect on assessed valuation? Minimal impact.
 7. Are utility facilities or rights of way affected? (If yes, attach Utility Information Sheet Exhibit 01-01-05). Yes
 8. Are Railroad facilities or rights of way affected? (If yes, attach Railroad Information Sheet Exhibit 01-01-06) No Railroad facilities are involved in this project.
 9. Were any previously unidentified sites with hazardous waste and/or material found? (If yes, attach memorandum per Procedural handbook Volume 1, Section 101.011) No hazardous waste or similar materials were discovered.
 10. Are RAP displacements required? (If yes, provide the following information) No

No. of single family	0	No. of business/nonprofit	0
No. of multi-family	0	No. of farms	0
- Based on Draft/final Relocation Impact Statement/Study dated - None - Sufficient replacement housing is available without Last Resort Housing.
11. Are there material borrow and /or disposal sites required? (If yes, explain) No
 12. Are there potential relinquishments and/or abandonments? (If yes, explain) No
 13. Are there any existing and or potential Airspace sites? (If yes, explain) No
 14. Indicate the anticipated Right of Way schedule and lead time requirements. No less than 24 months right of way lead time should be allocated for this project.
 15. Is it anticipated that all Right of Work will be performed by CALTRANS staff? It is anticipated that CALTRANS staff will provide only project oversight and assistance.

I personally prepared this Right of Way Data Sheet and supporting information. I certify that the probable Highest and Best Use, estimated values, escalation rates, and assumptions are reasonable and proper subject to the accuracy of the data provided, normal limiting conditions and that this Data Sheet is complete and current.

The above data has been prepared for the sole purpose of making a comparative market analysis and should not be considered to be an appraisal. In making any decision that relies upon the above data, it should be remembered that the guidelines for development of an appraisal or analysis as contained in the Uniform Standards of Professional Appraisal Practice of the Appraisal Foundation have not been followed.



By: Janette A. Ruesga, PE

Date: February 5, 2003

UTILITY INFORMATION SHEET

1. Name of utility companies involved in project:

PG&E - Electrical
Pacific Bell (SBC) - Communications
Southern California Gas Company
City of Arroyo Grande

2. Types of facilities and agreements required:

PG&E: Relocate 4 poles @ \$13,000 each = \$52,000
Relocate 1 service pole @ \$7,000 each = \$ 7,000

Pacific Bell (SBC): Relocate 3 poles @ \$10,000 each = \$30,000

City of Arroyo Grande: Verify no relocations.

Southern California Gas: Verify no facilities within project area.

3. Additional information concerning utility involvement on the project:

It appears that both PG&E and Pacific Bell (SBC) have rights going back to the 1940's, superior and prior to the 1954 Division of Highways Freeway Agreement. As such, the relocation cost would be 100% Agency. If the utility companies can not show prior rights then Agency cost would be in accordance with Master Utility Agreements with Caltrans.

Right of Way was acquired by the Division of Highways in 1955/56 for a future frontage road easterly adjacent to SR101 which was never built.

Conflict Plans should be delivered to utility companies one year before Right of Way Certification.

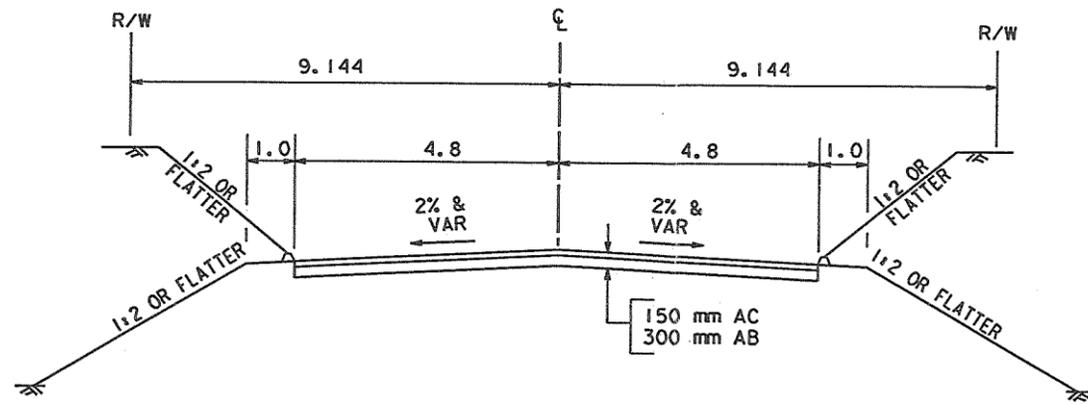
4. PMCS Input Information; Not Applicable

Total estimated agency cost obligations for utility relocation on this project:

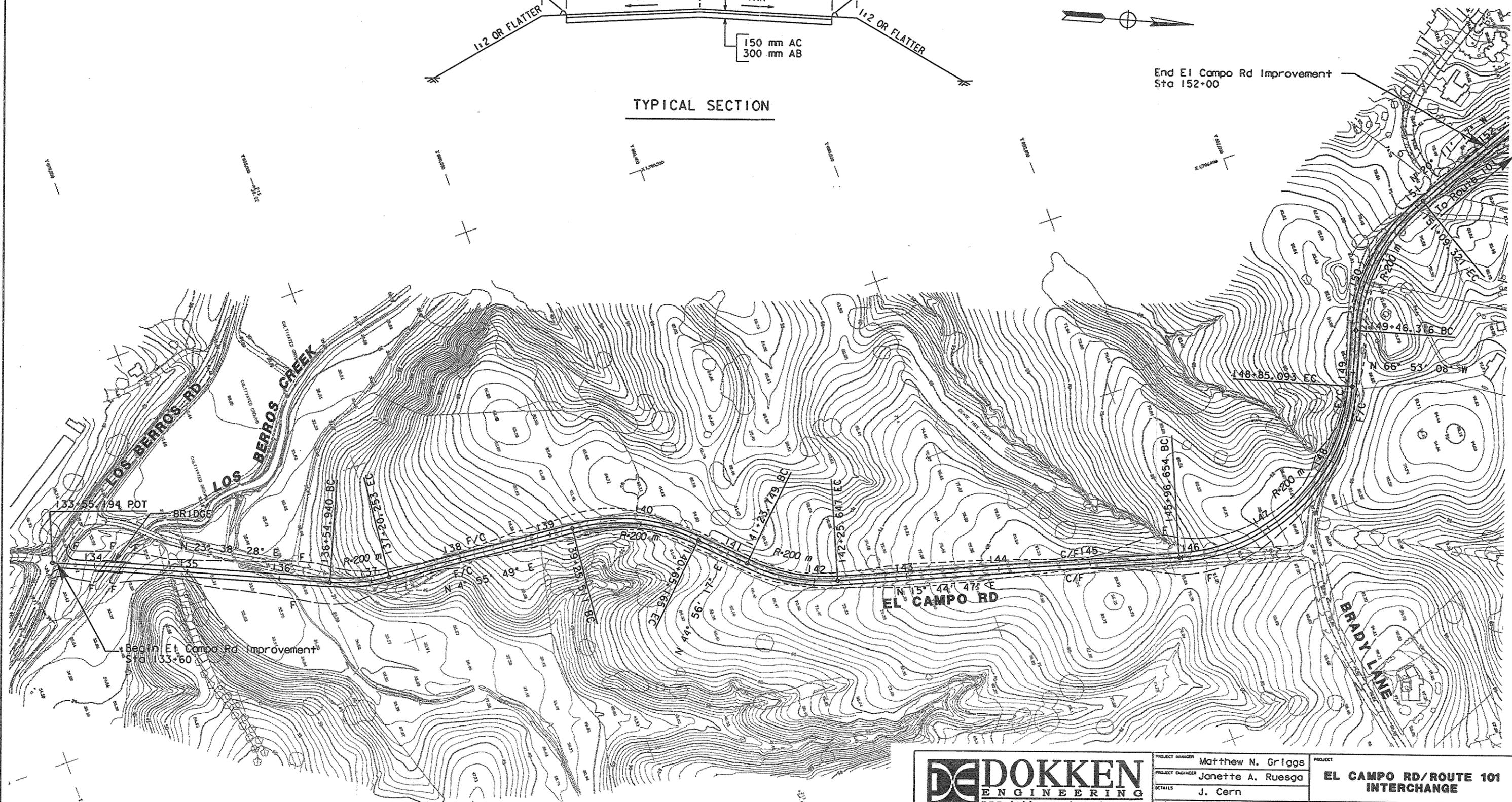
\$89,000

Prepared by: Janette A. Ruesga, PE

**ATTACHMENT L - El Campo Road Improvements -
Conceptual Geometrics and Cost Estimate**



End El Campo Rd Improvement
Sta 152+00



DOKKEN
ENGINEERING

140 Central Avenue
San Jose, CA 95001

(408) 251-1704

PROJECT MANAGER	Matthew N. Griggs
PROJECT ENGINEER	Janette A. Ruesga
DETAILS	J. Cern
DATE	January 2003
SCALE	1:2000

PROJECT	EL CAMPO RD/ROUTE 101 INTERCHANGE
PROJECT DESCRIPTION	EL CAMPO RD IMPROVEMENT (LOS BERROS RD TO ROUTE 101)

PROJECT STUDY REPORT COST ESTIMATE

District-County-Route 05-SLO-101
KP(PM) _____
EA OA370K
Program Code HE 11

PROJECT DESCRIPTION: El Campo Road Improvement

Limits: Between Los Berros Rd and Route 101

Proposed Improvement (Scope): Improvement to El Campo Road From Los Berros Rd to Route 101
Roadway - Length = 1840 m, Wide = 9.6 m
Bridge - Los Berros Creek Bridge, Length = 20 m , Width =12 m

Alternate: Connecting to the Proposed El Campo Rd Interchange Alternative 1

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	\$	<u>2,912,900</u>
TOTAL STRUCTURE ITEMS	\$	<u>300,000</u>
SUBTOTAL CONSTRUCTION COSTS	\$	<u>3,212,900</u>
TOTAL RIGHT OF WAY ITEMS	\$	<u>250,000</u>
TOTAL PROJECT CAPITAL OUTLAY COSTS	\$	<u>3,462,900</u>

Reviewed by Project Manager
Dokken Engineering

Matthew N. Quinn
Signature

Approved by Project Engineer
Dokken Engineering

Janette A. Ruesz
Signature

Phone No. (916) 858-0642

Date January 28, 2003

<u>Section 4 Specialty Items</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
Retaining Walls					
Barriers					
Guardrail					
Noise Barriers					
Highway Planting					
Replacement Planting					
Irrigation Modification					
Relocate Private Irrigation Facilities					
Erosion Control	1	LS	\$50,000.00	\$50,000	
Slope Protection					
Water Pollution Control	1	LS	\$25,000.00	\$25,000	
Hazardous Waste Mitigation Work					
Environmental Mitigation	1	LS	\$100,000.00	\$100,000	
Resident Engineer Office Space	1	LS	\$20,000.00	\$20,000	
			<u>Subtotal Specialty Items</u>		<u>\$195,000</u>

<u>Section 5 Traffic Items</u>					
Lighting	1	LS	\$10,000.00	\$10,000	
Traffic Delineation Items	1	LS	\$2,000.00	\$2,000	
Traffic Signals	1	LS	\$50,000.00	\$50,000	
Overhead Sign Structures					
Roadside Signs	1	LS	\$1,000.00	\$1,000	
Ramp Metering System					
Traffic Control Systems					
Traffic Management Plan					
			<u>Subtotal Traffic Items</u>		<u>\$63,000</u>

SUBTOTAL SECTIONS 1-5 \$1,913,200

KP(PM) _____
 EA OA370K
 Program Code HE 11

Section 6 Minor Items

Subtotal Sections 1-5 \$1,913,200 x 5% \$95,660

TOTAL MINOR ITEMS \$95,700

Section 7 Roadway Mobilization

Subtotal Sections 1-5 \$1,913,200

Minor Items \$95,700

Sum \$2,008,900 x 10% \$200,890

TOTAL ROADWAY MOBILIZATION \$200,900

Section 8 Road Additions

Supplemental

Subtotal Sections 1-5 \$1,913,200

Minor Items \$95,700

Sum \$2,008,900 x 10% \$200,890

Contingencies *

Subtotal Sections 1-5 \$1,913,200

Minor Items \$95,700

Sum \$2,008,900 x 25% \$502,225

TOTAL ROADWAY ADDITIONS \$703,100

TOTAL ROADWAY ITEMS \$2,912,900

(Total of Sections 1-8)

ESTIMATE PREPARED BY
 DOKKEN ENGINEERING

Jerry V. Cern
 (Print Name)

PHONE # (916) 858-0642

DATE January 28, 2003

* Use appropriate percentage per Chapter 3-50 of Project Development Procedures Manual: PSR 25%, Draft PR 20%, PR 15%.

District-County-Route 05-SLO-101

KP(PM) _____

EA OA370K

Program Code HE 11

II. STRUCTURES ITEMS

Bridge Name	<u>Los Berros Creek</u>	_____	_____	_____
Structure Type	<u>CIP Slab</u>	_____	_____	_____
Width (out to out) - (m)	<u>12</u>	_____	_____	_____
Span Length - (m)	<u>20</u>	_____	_____	_____
Total Area - (m^2)	<u>240</u>	_____	_____	_____
Footing Type (pile/spread)	_____	_____	_____	_____
Cost Per m^2	_____	_____	_____	_____
(incl. 10% mobilization and 25% contingency)	<u>\$1,250.00</u>	_____	_____	_____
Total Cost for Structure	<u>\$300,000</u>	_____	_____	_____

SUBTOTAL STRUCTURES ITEMS \$300,000

Railroad Related Costs:

SUBTOTAL RAILROAD ITEMS _____

TOTAL STRUCTURES ITEMS \$300,000

COMMENTS:

Includes cost of replacing barriers on existing structure to remain

ESTIMATE PREPARED BY

DOKKEN ENGRNG Jerry V. Cern
(Print Name)

PHONE # (916) 858-0642

DATE January 28, 2003

(If appropriate, attach additional pages and backup)

District-County-Route 05-SLO-101

KP(PM) _____

EA OA370K

Program Code HE 11

III. RIGHT OF WAY

Acquisition, including excess lands and damages to remainder	<u>\$250,000</u>
Utility Relocation (Project share)	_____
Clearance/Demolition	_____
RAP	_____
Title and Escrow Fees	_____

TOTAL RIGHT OF WAY \$250,000

CONSTRUCTION CONTRACT WORK _____

COMMENTS

ESTIMATE PREPARED BY

DOKKEN ENGINEERING Jerry V. Cern
(Print Name)

PHONE # (916) 858-0642

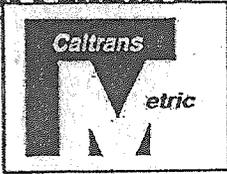
DATE January 28, 2003

(If appropriate, attach additional pages and backup.)

**ATTACHMENT M - Storm Water Data Report
Approval Sheet**

APPENDIX E

Storm Water Data Report



05-SLO-101
 KP 18.2-19.8(PM 11.2-12.2)
 New Interchange
 EA: 05-0A360
 RU: _____
 Program Identification: HE11
 Phases: PID
 PA/ED
 PS&E

Regional Water Quality Control Board(s): Central Coast Region 3

Project Manager: Tom Houston

Is the Project exempt from incorporating Treatment BMPs? Yes No N/A
 If yes, attach the Exemption Documentation Form

Estimated Construction Start Date: _____

Notification of Construction (NOC) Date to be Submitted: October 2007

Notification of ADL reuse (if yes, provide date) Yes Date _____ No N/A

Separate Dewatering Permit (if yes, permit no.) Yes Permit # _____ No N/A

I have reviewed the storm water quality design issues contained in the Storm Water Data Report and Attachments attached hereto, and find the data to be complete, current, and accurate:

This Storm Water Data Report has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based. PE stamp required at PS&E.

Matthew Griggs 2/19/03
 Registered Project Engineer Date

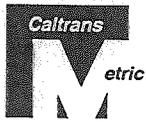
Matthew Griggs
[Signature] 2/20/03
 Design District/Regional Storm Water Coordinator or Designee Date

Marc Boswell/Jennifer O'Neal
[Signature] 2/21/03
 Designated Landscape Representative Date

Dennis Reeves/Laurie Cummings
[Signature] 2-24-03
 Designated Maintenance Representative Date

APPROVAL RECOMMENDED: Thomas C Houston 2-24-03
 Project Manager Date
Tom Houston

ATTACHMENT N - PDS Design Scoping Checklist



PDS Design Scoping Checklist

Project Information

District 05 County SLO Route 101 Kilometer Post (Post Mile) 18.2-19.8 EA 0A360K

Description:

The El Campo Road Interchange Project proposes the construction of a new interchange to replace the existing at-grade intersection of El Campo Road and Route 101 in the City of Arroyo Grande in San Luis Obispo County. Six alternatives are being studied, including five (5) build alternatives and the no-build alternative. The project alternatives vary in the locations of the overcrossings, combinations of ramps and local road improvements.

Caltrans Project Manager	<u>Tom Houston</u>	Phone #	<u>(805) 549-3016</u>
Consultant Project Manager	<u>Matt Griggs</u>	Phone #	<u>(916) 858-0642</u>
Consultant Project Engineer	<u>Janette Ruesga</u>	Phone #	<u>(916) 858-0642</u>
Caltrans Design Oversight Manager	<u>Dave Fapp</u>	Phone #	<u>(805) 549-3249</u>
Project Development Coordinator	<u>Ken Cozad</u>	Phone #	<u>(916) 653-0971</u>

Project Screening

- Project Description as Noted in Regional Transportation Plan: _____
- Project Setting The City of Arroyo Grande, in San Luis Obispo County
Rural or Urban Urban
Current land uses light industry, commercial, agricultural, and residential
Adjacent land uses light industry, commercial, agricultural, and residential
(industrial, light industry, commercial, agricultural, residential, etc.)
Existing landscaping/planting _____
- Route Adoption: Date 1933 Type of Facility (Freeway, Controlled Access Highway, or Conventional Highway) Freeway
Freeway Agreement: Date 1954

Description of the Transportation Problem

The El Campo Road/Route 101 at-grade intersection frequently experiences congestion and vehicles performing critical movements experience significant delays. The Traffic Report indicates that future traffic demands are expected to increase along Route 101 and the development of future land uses with the City of Arroyo Grande and San Luis Obispo County will continue to impact operations during periods of peak travel demand.

Proposed Scope of Work

The primary objectives of the El Campo Road Interchange project are to provide access from Route 101 to the proposed Arroyo Linda Crossroads development, relieve traffic demand on adjacent interchanges and improve capacity, safety, and traffic operations at the existing at-grade intersection of El Campo Road and Route 101. The five proposed project build Alternatives are described in the following

discussion:

Alternative 1: Alternative 1 includes the construction of a new spread diamond interchange (which will allow for future loop on-ramps northbound and southbound) immediately adjacent to the existing at-grade intersection of El Campo Road and US-101. This Alternative requires the construction of a new US-101 overcrossing structure with ramps, realignment of El Campo Road for approximately 90-120 meters, and the construction of the Arroyo Linda project street system. The traffic modeling for this Alternative was evaluated with two variations, 1A and 1B. Option 1A leaves the southbound on-ramp at Traffic Way open, and Option 1B closes the southbound on-ramp at Traffic Way. Whereas this alternative does not include closing the southbound on-ramp from Traffic Way, a comparison of the traffic analyses indicates that traffic operations for this alternative would be greatly improved with the closure of this ramp.

The alternative may significantly impact the residence and property located just east of the present El Campo/Route 101 intersection, on the south side of Route 101. Relocation or removal may be required to achieve the necessary right of way through this area. Ranch property located on the north side of Route 101 will become part of the interchange right of way.

The interchange spacing between the nearest interchange to the north and the proposed interchange at El Campo Road is approximately 1.7 km (1.1 miles). The current standard for interchange spacing in an urban area is 1.5 km (0.9 miles). Therefore, this alternative will not require a design exception to Caltrans Highway Design Manual (HDM), Topic 501.3, mandatory standard for interchange spacing.

This alternative will require exceptions to Mandatory Design Standards for the following condition:

- Non-standard superelevation rates at ramp termini (HDM 202.2)

This alternative will require exceptions to Advisory Design Standards for the following conditions:

- Non-standard side slope (HDM 304.1)
- Non-standard of super transition (HDM 202.5)
- Non-standard design speed on local facilities (HDM 101.1)

Alternative 2: Alternative 2 includes the construction of a new spread diamond interchange approximately 488 meters south of the existing at-grade intersection of El Campo Road and US-101. This Alternative requires the construction of a new US-101 overcrossing structure with ramps and a new frontage road connecting to the Arroyo Linda project street system on the east side of US-101. Additionally, El Campo Road would require extension between Brady Lane and the new interchange. Traffic modeling for this Alternative was evaluated with two variations, 2A and 2B. Option 2A leaves the southbound on-ramp at Traffic Way open, and Option 2B closes the southbound on-ramp at Traffic Way. Whereas this alternative does not include the closure of the southbound on-ramp from Traffic Way, a comparison of the traffic analyses indicates that traffic operations for this alternative would be greatly improved by closing this ramp.

This alternative will require exceptions to Mandatory Design Standards for the following condition:

- Non-standard superelevation rates at ramp termini (HDM 202.2)

This alternative will require exceptions to Advisory Design Standards for the following conditions:

- Non-standard design speeds on ramp termini (HDM 504.3(1)(a))
- Non-standard side slope (HDM 304.1)
- Non-standard design speed at freeway exit (HDM 504.2(4)(a))
- Non-standard vertical curve at freeway exits (HDM 504.2(5)(a))
- Non-standard of super transition (HDM 202.5)

Alternative 3: Alternative 3 includes the construction of a new interchange near the existing Traffic Way/US-101 ramps intersection. The installation of a new interchange at this location requires the closure of the existing Traffic Way/US-101 ramps intersection and the realignment of the northbound and southbound lanes on US-101 with the construction of two new overcrossing structures. Temporary detours will be needed for these construction activities. In addition, this Alternative requires construction of the Traffic Way/Traffic Way Extension intersection; new hook ramps for both northbound and

southbound US-101 traffic, the Arroyo Linda project street system, and the extension of Traffic Way under US-101. The Arroyo Linda project street system also includes the construction of the Traffic Way Extension to 4-lane collector/arterial standards.

The interchange spacing between the nearest interchange to the north and the proposed interchange at El Campo Road is approximately 0.5 km (0.3 miles). The current standard for interchange spacing in an urban area is 1.5 km (0.9 miles). Therefore, this alternative will require a design exception to Caltrans Highway Design Manual (HDM), Topic 501.3, mandatory standard for interchange spacing. This design exception is documented in the PDS Design Scoping Checklist that is included as Attachment N.

This alternative will require exceptions for Mandatory Design Standards for the following conditions:

- Non-standard interchange spacing (HDM 501.3)
- Non-standard superelevation rates at ramp termini (HDM 202.2)

The alternative will require exceptions for Advisory Design standards for the following conditions:

- Non-standard design speed on local facilities (HDM 101.1)
- Non-standard side slope (HDM 304.1)
- Non-standard design speed at freeway exits (HDM 504.2(4)(a))
- Non-standard design speed at freeway entrance (HDM 504.2(4)(b))
- Non-standard vertical curve at freeway exits (HDM 504.2(5)(a))
- Non-standard of super transition (HDM 202.5)

Alternative 4: Alternative 4 includes the construction of a new interchange approximately 370 meters north of the existing El Campo Road / US-101 intersection. The installation of a new interchange at this location requires the closure of the existing Traffic Way/US-101 ramps. In addition, this Alternative requires construction of new hook ramps for southbound US-101 traffic, a new diagonal off-ramp and a new loop on-ramp for northbound US-101 traffic, the extension of El Campo Road north to connect with Valley Road, the extension of Traffic Way/Traffic Way Extension to the northbound ramps intersection, the extension of Orchard Street to El Campo Road, the re-alignment of Castillo del Mar to intersect El Campo Road, and the Arroyo Linda project street system. These improvements include the construction of the Traffic Way Extension to 4-lane collector/arterial standards.

The interchange spacing between the nearest interchange to the north and the proposed interchange at El Campo Road is approximately 1.3 km (0.8 miles). The current standard for interchange spacing in an urban area is 1.5 km (0.9 miles). Therefore, this alternative will require a design exception to Caltrans Highway Design Manual (HDM), Topic 501.3, mandatory standard for interchange spacing. This design exception is documented in the PDS Design Scoping Checklist that is included as Attachment N.

This alternative will require exceptions for Mandatory Design Standards for the following conditions:

- Non-standard interchange spacing (HDM 501.3)
- Non-standard design speed on local facilities (HDM 101.2)
- Non-standard superelevation rates at ramp termini (HDM 202.2)

This alternative will require exceptions for Advisory Design Standards for the following conditions:

- Non-standard side slope (HDM 304.1)
- Non-standard of super transition (HDM 202.5)

Alternative 5: Alternative 5 includes the construction of a new spread diamond interchange approximately 488 meters south of the existing at-grade intersection of El Campo Road and Route 101. This Alternative requires the construction of a new Route 101 overcrossing structure with ramps and a new frontage road connecting to the Arroyo Linda project street system on the east side of Route 101. Additionally, El Campo Road would require extension between Brady Lane and the new interchange. Traffic operations for this are identical to Alternative 2.

This alternative meets all Mandatory and Advisory Design Standards.

ALTERNATIVE 1

Design Criteria

Type of facility to be considered? (more than one may apply)

Freeway Expressway Conventional Highway Urban Street

Other (specify) New Interchange

Design Speed for highway facilities within the project limit? 70 km/hr

Design Period: Construction Year is? 2008 Design Year is? 2028

Design Capacity: Level of Service to be maintained over the design period is?

Mainline F Ramp F Local Street C Weaving Sections N/A

Design Vehicle Selection?

STAA X California _____ Bus _____

Proposed Roadbed and Structure Widths

Forecasted Average Daily Traffic Volumes 18,500

Percent Truck Volume 8.30 %

	Roadbed Width			Structure Width		
	Existing	Proposed	Standard	Existing	Proposed	Standard
State highway						
Lane Widths	---	---	---	---	---	---
Left Shoulder	---	---	---	---	---	---
Right Shoulder	---	---	---	---	---	---
Median Width	---	---	---	---	---	---
Bicycle Lane	---	---	---	---	---	---
Local Street						
Lane Widths	<u>3.6</u>	<u>3.6</u>	<u>3.6</u>	---	<u>3.6</u>	<u>3.6</u>
Left Shoulder	---	---	---	---	---	---
Right Shoulder	<u>1.2</u>	<u>1.2</u>	<u>1.2</u>	---	<u>2.4</u>	<u>2.4</u>
Median Width	---	---	---	---	<u>4.2</u>	---
Bicycle Lane	---	---	---	---	---	---
Median Barrier	Existing <u>None</u>			Proposed (Concrete Barrier / Thrie Beam / Other) <u>No Change</u>		

Roadway Design Scoping

Mainline Operations

Mainline Highway Widening

Existing pavement to be rehabilitated with Asphalt Concrete / Rubberized AC / PCC.

Widen existing _____ lane facility to _____ lanes. R/W acquisition for _____ lanes.

Local street structures to span 6 lanes of highway (for future requirements).

Upgrade existing facility to:

- | | |
|---|---|
| <input type="checkbox"/> Expressway Standards | <input checked="" type="checkbox"/> Freeway Standards |
| <input type="checkbox"/> Controlled Access Highway | <input type="checkbox"/> Traversable Highway |
| <input type="checkbox"/> Improve Vertical Clearance | <input type="checkbox"/> Adequate Falsework Clearance |

Ramp / Street Intersection Improvements

- New Signals
- Right Turn Lanes
- Merging Lanes
- Left Turn Lanes
- Interchange Spacing
- Intersection Spacing
- Single Lane Ramps Exceeding 300 M Widened To Two Lanes
- Other _____
- Modify Signals
- Widening For Localized Through Lanes
- Deceleration / Acceleration Lanes
- > 300 VPH Left Turn (Requires Double Left Turn)
- Ramps Intersect Local Street < 4 % Grade
- Exit Ramps > 1,500 VPH Designed As Two Lane Exit

Operational Improvements

Truck Climbing Lane

- Sustained Grade Exceeding 2% And Total Rise Exceeds 15 M.
- Other _____

Auxiliary Lanes

- When 600 M Between Successive On-Ramps.
- Two Lane Exit Ramps Have 400 M Auxiliary Lane.
- Weaving < 500 M between Off-Ramp and On-Ramp.
- Other _____

Right of Way Access Control

- Existing access control extends at least 15 m beyond end of curb return, radius or taper.
- New construction access control extends at least 30 m (urban areas) or 100 m (rural areas) beyond end of curb returns, radius or taper.
- Other _____

Highway Planting

- Replacement
- Median
- Mitigation

Safety

- Off-Freeway Access
- Maintenance Vehicle Pull-Out

Roadside Management

- Slope paving
- Gore paving
- Roadside paving

Stormwater

- Erosion control
- Drainage
- Slope design

Structures

- New Bridge
- Bridge Rehab
- Retaining Wall
- Other _____
- On STRAIN list for _____

ALTERNATIVE 2

Design Criteria

Type of facility to be considered? (more than one may apply)

Freeway Expressway Conventional Highway Urban Street

Other (specify) New Interchange

Design Speed for highway facilities within the project limit? 70 km/hr

Design Period: Construction Year is? 2008 Design Year is? 2028

Design Capacity: Level of Service to be maintained over the design period is?

Mainline F Ramp F Local Street C Weaving Sections N/A

Design Vehicle Selection?

STAA X California _____ Bus _____

Proposed Roadbed and Structure Widths

Forecasted Average Daily Traffic Volumes 19,200

Percent Truck Volume 2%

	Roadbed Width			Structure Width		
	Existing	Proposed	Standard	Existing	Proposed	Standard
State highway						
Lane Widths	---	---	---	---	---	---
Left Shoulder	---	---	---	---	---	---
Right Shoulder	---	---	---	---	---	---
Median Width	---	---	---	---	---	---
Bicycle Lane	---	---	---	---	---	---
Local Street						
Lane Widths	<u>3.6</u>	<u>3.6</u>	<u>3.6</u>	---	<u>3.6</u>	<u>3.6</u>
Left Shoulder	---	---	---	---	---	---
Right Shoulder	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>	---	<u>2.4</u>	<u>2.4</u>
Median Width	---	---	---	---	<u>4.2</u>	---
Bicycle Lane	---	---	---	---	---	---
Median Barrier	Existing	None		No Change		
	Proposed (Concrete Barrier / Thrie Beam / Other)					

Roadway Design Scoping

Mainline Operations

Mainline Highway Widening

Existing pavement to be rehabilitated with Asphalt Concrete / Rubberized AC / PCC.

Widen existing _____ lane facility to _____ lanes. R/W acquisition for _____ lanes.

Local street structures to span 6 lanes of highway (for future requirements).

Upgrade existing facility to:

- | | |
|---|---|
| <input type="checkbox"/> Expressway Standards | <input checked="" type="checkbox"/> Freeway Standards |
| <input type="checkbox"/> Controlled Access Highway | <input type="checkbox"/> Traversable Highway |
| <input type="checkbox"/> Improve Vertical Clearance | <input type="checkbox"/> Adequate Falsework Clearance |

Ramp / Street Intersection Improvements

- New Signals
- Right Turn Lanes
- Merging Lanes
- Left Turn Lanes
- Interchange Spacing
- Intersection Spacing
- Single Lane Ramps Exceeding 300 M Widened To Two Lanes
- Other _____
- Modify Signals
- Widening For Localized Through Lanes
- Deceleration / Acceleration Lanes
- > 300 VPH Left Turn (Requires Double Left Turn)
- Ramps Intersect Local Street < 4 % Grade
- Exit Ramps > 1,500 VPH Designed As Two Lane Exit

Operational Improvements

Truck Climbing Lane

- Sustained Grade Exceeding 2% And Total Rise Exceeds 15 M.
- Other _____

Auxiliary Lanes

- When 600 M Between Successive On-Ramps.
- Two Lane Exit Ramps Have 400 M Auxiliary Lane.
- Weaving < 500 M between Off-Ramp and On-Ramp.
- Other _____

Right of Way Access Control

- Existing access control extends at least 15 m beyond end of curb return, radius or taper.
- New construction access control extends at least 30 m (urban areas) or 100 m (rural areas) beyond end of curb returns, radius or taper.
- Other _____

Highway Planting

- Replacement
- Median
- Mitigation

Safety

- Off-Freeway Access
- Maintenance Vehicle Pull-Out

Roadside Management

- Slope paving
- Gore paving
- Roadside paving

Stormwater

- Erosion control
- Drainage
- Slope design

Structures

- New Bridge
- Bridge Rehab
- Retaining Wall
- Other _____
- On STRAIN list for _____

ALTERNATIVE 3

Design Criteria

Type of facility to be considered? (more than one may apply)

Freeway Expressway Conventional Highway Urban Street

Other (specify) New Interchange

Design Speed for highway facilities within the project limit? 130 km/hr

Design Period: Construction Year is? 2007 Design Year is? 2027

Design Capacity: Level of Service to be maintained over the design period is?

Mainline F Ramp F Local Street C Weaving Sections N/A

Design Vehicle Selection?

STAA X California _____ Bus _____

Proposed Roadbed and Structure Widths

Forecasted Average Daily Traffic Volumes 15,900

Percent Truck Volume 2%

	Roadbed Width			Structure Width		
	Existing	Proposed	Standard	Existing	Proposed	Standard
State highway						
Lane Widths	<u>3.6</u>	<u>3.6</u>	<u>3.6</u>	<u>3.6</u>	<u>3.6</u>	<u>3.6</u>
Left Shoulder	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>
Right Shoulder	<u>2.4</u>	<u>3.0</u>	<u>3.0</u>	<u>3.0</u>	<u>3.0</u>	<u>3.0</u>
Median Width	<u>12.2</u>	<u>12.2</u>	<u>10.8</u>	<u>20</u>	<u>11.4</u>	<u>10.8</u>
Bicycle Lane	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>
Local Street						
Lane Widths	<u>3.6</u>	<u>3.6</u>	<u>3.6</u>	<u>---</u>	<u>---</u>	<u>---</u>
Left Shoulder	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>
Right Shoulder	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>	<u>---</u>	<u>---</u>	<u>---</u>
Median Width	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>
Bicycle Lane	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>
Median Barrier	Existing <u>None</u>			Proposed (Concrete Barrier / Thrie Beam / Other) <u>No Change</u>		

Roadway Design Scoping

Mainline Operations

Mainline Highway Widening

Existing pavement to be rehabilitated with Asphalt Concrete / Rubberized AC / PCC.

Widen existing _____ lane facility to _____ lanes. R/W acquisition for _____ lanes.

Local street structures to span _____ lanes of highway (for future requirements).

Upgrade existing facility to:

- Expressway Standards
- Controlled Access Highway
- Improve Vertical Clearance
- Freeway Standards
- Traversable Highway
- Adequate Falsework Clearance

Ramp / Street Intersection Improvements

- New Signals
- Right Turn Lanes
- Merging Lanes
- Left Turn Lanes
- Interchange Spacing
- Intersection Spacing
- Single Lane Ramps Exceeding 300 M Widened To Two Lanes
- Other _____
- Modify Signals
- Widening For Localized Through Lanes
- Deceleration / Acceleration Lanes
- > 300 VPH Left Turn (Requires Double Left Turn)
- Ramps Intersect Local Street < 4 % Grade
- Exit Ramps > 1,500 VPH Designed As Two Lane Exit

Operational Improvements

Truck Climbing Lane

- Sustained Grade Exceeding 2% And Total Rise Exceeds 15 M.
- Other _____

Auxiliary Lanes

- When 600 M Between Successive On-Ramps.
- Two Lane Exit Ramps Have 400 M Auxiliary Lane.
- Weaving < 500 M between Off-Ramp and On-Ramp.
- Other _____

Right of Way Access Control

- Existing access control extends at least 15 m beyond end of curb return, radius or taper.
- New construction access control extends at least 30 m (urban areas) or 100 m (rural areas) beyond end of curb returns, radius or taper.
- Other _____

Highway Planting

- Replacement
- Median
- Mitigation

Safety

- Off-Freeway Access
- Maintenance Vehicle Pull-Out

Roadside Management

- Slope paving
- Gore paving
- Roadside paving

Stormwater

- Erosion control
- Drainage
- Slope design

Structures

- New Bridge
- Bridge Rehab
- Retaining Wall
- Other _____
- On STRAIN list for _____

ALTERNATIVE 4

Design Criteria

Type of facility to be considered? (more than one may apply)

Freeway Expressway Conventional Highway Urban Street

Other (specify) New Interchange

Design Speed for highway facilities within the project limit? 70 km/hr

Design Period: Construction Year is? 2008 Design Year is? 2028

Design Capacity: Level of Service to be maintained over the design period is?
Mainline F Ramp F Local Street C Weaving Sections N/A

Design Vehicle Selection?

STAA X California _____ Bus _____

Proposed Roadbed and Structure Widths

Forecasted Average Daily Traffic Volumes 17,000

Percent Truck Volume 2%

	Roadbed Width			Structure Width		
	Existing	Proposed	Standard	Existing	Proposed	Standard
State highway						
Lane Widths	---	---	---	---	---	---
Left Shoulder	---	---	---	---	---	---
Right Shoulder	---	---	---	---	---	---
Median Width	---	---	---	---	---	---
Bicycle Lane	---	---	---	---	---	---
Local Street						
Lane Widths	3.6	3.6	3.6	---	3.6	3.6
Left Shoulder	---	---	---	---	---	---
Right Shoulder	1.5	1.5	1.5	---	2.4	2.4
Median Width	---	4.2	---	---	4.2	---
Bicycle Lane	---	---	---	---	---	---
Median Barrier	Existing <u>None</u>			Proposed (Concrete Barrier / Thrie Beam / Other) <u>No Change</u>		

Roadway Design Scoping

Mainline Operations

Mainline Highway Widening

Existing pavement to be rehabilitated with Asphalt Concrete / Rubberized AC / PCC.

Widen existing _____ lane facility to _____ lanes. R/W acquisition for _____ lanes.

Local street structures to span 6 lanes of highway (for future requirements).

Upgrade existing facility to:

- | | |
|---|---|
| <input type="checkbox"/> Expressway Standards | <input checked="" type="checkbox"/> Freeway Standards |
| <input type="checkbox"/> Controlled Access Highway | <input type="checkbox"/> Traversable Highway |
| <input type="checkbox"/> Improve Vertical Clearance | <input type="checkbox"/> Adequate Falsework Clearance |

Ramp / Street Intersection Improvements

- New Signals
- Right Turn Lanes
- Merging Lanes
- Left Turn Lanes
- Interchange Spacing
- Intersection Spacing
- Single Lane Ramps Exceeding 300 M Widened To Two Lanes
- Other _____
- Modify Signals
- Widening For Localized Through Lanes
- Deceleration / Acceleration Lanes
- > 300 VPH Left Turn (Requires Double Left Turn)
- Ramps Intersect Local Street < 4 % Grade
- Exit Ramps > 1,500 VPH Designed As Two Lane Exit

Operational Improvements

Truck Climbing Lane

- Sustained Grade Exceeding 2% And Total Rise Exceeds 15 M.
- Other _____

Auxiliary Lanes

- When 600 M Between Successive On-Ramps.
- Two Lane Exit Ramps Have 400 M Auxiliary Lane.
- Weaving < 500 M between Off-Ramp and On-Ramp.
- Other _____

Right of Way Access Control

- Existing access control extends at least 15 m beyond end of curb return, radius or taper.
- New construction access control extends at least 30 m (urban areas) or 100 m (rural areas) beyond end of curb returns, radius or taper.
- Other _____

Highway Planting

- Replacement
- Median
- Mitigation

Safety

- Off-Freeway Access
- Maintenance Vehicle Pull-Out

Roadside Management

- Slope paving
- Gore paving
- Roadside paving

Stormwater

- Erosion control
- Drainage
- Slope design

Structures

- New Bridge
- Bridge Rehab
- Retaining Wall
- Other _____
- On STRAIN list for _____

ALTERNATIVE 5

Design Criteria

Type of facility to be considered? (more than one may apply)

Freeway Expressway Conventional Highway Urban Street

Other (specify) New Interchange

Design Speed for highway facilities within the project limit? 70 km/hr

Design Period: Construction Year is? 2008 Design Year is? 2028

Design Capacity: Level of Service to be maintained over the design period is?
Mainline F Ramp F Local Street C Weaving Sections N/A

Design Vehicle Selection?

STAA X California _____ Bus _____

Proposed Roadbed and Structure Widths

Forecasted Average Daily Traffic Volumes 19,200

Percent Truck Volume 2%

	Roadbed Width			Structure Width		
	Existing	Proposed	Standard	Existing	Proposed	Standard
State highway						
Lane Widths	---	---	---	---	---	---
Left Shoulder	---	---	---	---	---	---
Right Shoulder	---	---	---	---	---	---
Median Width	---	---	---	---	---	---
Bicycle Lane	---	---	---	---	---	---
Local Street						
Lane Widths	<u>3.6</u>	<u>3.6</u>	<u>3.6</u>	---	<u>3.6</u>	<u>3.6</u>
Left Shoulder	---	---	---	---	---	---
Right Shoulder	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>	---	<u>2.4</u>	<u>2.4</u>
Median Width	---	---	---	---	<u>4.2</u>	---
Bicycle Lane	---	---	---	---	---	---
Median Barrier	Existing <u>None</u>			Proposed (Concrete Barrier / Thrie Beam / Other) <u>No Change</u>		

Roadway Design Scoping

Mainline Operations

Mainline Highway Widening

Existing pavement to be rehabilitated with Asphalt Concrete / Rubberized AC / PCC.

Widen existing _____ lane facility to _____ lanes. R/W acquisition for _____ lanes.

Local street structures to span 6 lanes of highway (for future requirements).

Upgrade existing facility to:

- | | |
|---|---|
| <input type="checkbox"/> Expressway Standards | <input checked="" type="checkbox"/> Freeway Standards |
| <input type="checkbox"/> Controlled Access Highway | <input type="checkbox"/> Traversable Highway |
| <input type="checkbox"/> Improve Vertical Clearance | <input type="checkbox"/> Adequate Falsework Clearance |

Ramp / Street Intersection Improvements

- New Signals
- Right Turn Lanes
- Merging Lanes
- Left Turn Lanes
- Interchange Spacing
- Intersection Spacing
- Single Lane Ramps Exceeding 300 M Widened To Two Lanes
- Other _____
- Modify Signals
- Widening For Localized Through Lanes
- Deceleration / Acceleration Lanes
- > 300 VPH Left Turn (Requires Double Left Turn)
- Ramps Intersect Local Street < 4 % Grade
- Exit Ramps > 1,500 VPH Designed As Two Lane Exit

Operational Improvements

Truck Climbing Lane

- Sustained Grade Exceeding 2% And Total Rise Exceeds 15 M.
- Other _____

Auxiliary Lanes

- When 600 M Between Successive On-Ramps.
- Two Lane Exit Ramps Have 400 M Auxiliary Lane.
- Weaving < 500 M between Off-Ramp and On-Ramp.
- Other _____

Right of Way Access Control

- Existing access control extends at least 15 m beyond end of curb return, radius or taper.
- New construction access control extends at least 30 m (urban areas) or 100 m (rural areas) beyond end of curb returns, radius or taper.
- Other _____

Highway Planting

- Replacement
- Median
- Mitigation

Safety

- Off-Freeway Access
- Maintenance Vehicle Pull-Out

Roadside Management

- Slope paving
- Gore paving
- Roadside paving

Stormwater

- Erosion control
- Drainage
- Slope design

Structures

- New Bridge
- Bridge Rehab
- Retaining Wall
- Other _____
- On STRAIN list for _____

Additional Studies

Preliminary Evaluation provided by:

Project Engineer Janette A. Ruesga Date 23 May '03
Janette A. Ruesga

Design Oversight Manager David Fapp Date 5-30-03
David Fapp

Design Concept approved by:

Full standards included in ALT - NO PD COORD Sig Required
Project Development Coordinator _____ Date _____
Ken Cozad

Conceptual approval in no way implies that any non-standard features currently identified or identified in the future will be approved. Non-standard features will need to be identified, fully analyzed and justified prior to approval (via a design exception fact sheet) of the selected alternative.

Reviewed by:

Caltrans Project Manager Thomas E. Houston Date 6/26/03
Thomas E. Houston