

***RIVERSIDE COUNTY TRANSPORTATION COMMISSION***

<b>DATE:</b>	December 10, 2008
<b>TO:</b>	Riverside County Transportation Commission
<b>FROM:</b>	Budget and Implementation "Committee of the Whole" Lisa DaSilva, Capital Projects Manager Mark Massman, Bechtel Project Manager Robert Wunderlich, Bechtel Project Coordinator
<b>THROUGH:</b>	Anne Mayer, Executive Director
<b>SUBJECT:</b>	Agreement with URS Corporation for the Development of Plans, Specifications, and Cost Estimate for the Interstate 215 Widening Project from Murrieta Hot Springs Road to Scott Road, North of the City of Murrieta

**BUDGET AND IMPLEMENTATION "COMMITTEE OF THE WHOLE" AND STAFF RECOMMENDATION:**

This item is for the Commission to:

- 1) Award Agreement No. 09-31-045-00 to URS Corporation to perform final engineering services and prepare plans, specifications, and cost estimates (PS&E) for the I-215 widening project from Murrieta Hot Springs Road to Scott Road, north of the city of Murrieta, based on the attached project scope and cost for the base amount of \$3,372,139 plus a contingency amount of \$377,861 to cover potential changes in scope for a total not to exceed amount of \$3.75 million;
- 2) Authorize the Chair, pursuant to legal counsel review, to execute the agreement on behalf of the Commission;
- 3) Authorize the Executive Director or designee to approve contingency work as may be required for the project; and
- 4) Authorize the Executive Director the option to request a proposal from URS Corporation to provide PS&E services for the I-215 widening project from Scott Road to Nuevo Road in the city of Perris, if URS Corporation's performance is acceptable in completing the PS&E work for the I-215 widening project from Murrieta Hot Springs Road to Scott Road, and to bring back a recommendation to the Commission for PS&E contract award.

## **BACKGROUND INFORMATION:**

At its July 11, 2007 meeting, the Commission awarded Agreement No. 08-31-006-00 to Post Buckley, Schuh and Jerrigan, Inc. (PBS&J) to provide preliminary engineering services for the preparation of Caltrans project reports and environmental documents (PR/ED) for the proposed improvements to the I-215 corridor, from the I-215/I-15 interchange to Nuevo Road in the city of Perris.

The I-215 widening project from Murrieta Hot Springs Road to Scott Road is partially funded with Corridor Mobility Improvement Account (CMIA) funding, which requires that the project must be awarded for construction prior to 2011. This project is part of a larger segment of the I-215 widening project from the I-15/I-215 interchange to Nuevo Road. To expedite the completion of the CMIA funded I-215 project from Murrieta Hot Springs Road to Scott Road, the I-215 project from Scott Road to Nuevo Road is being executed as a separate project. PBS&J is providing separate PR/ED for each project. The PR/ED for the I-215 project from Murrieta Hot Springs Road to Scott Road is proceeding on schedule and is scheduled to be completed by December 1, 2008.

## **Selection Process**

At its October 8, 2008 meeting, the Commission approved a ranked list of consultant firms for placement on the on-call list for engineering and environmental services for Measure A highway projects. The Commission also authorized staff to enter into negotiations with the firms on the list as new consultant services are required, with the condition that final contracts will be individually returned to the Commission for approval. The first ranked firm on the approved on-call list is URS Corporation.

Commission staff requested that URS Corporation submit a scope, cost, and schedule proposal for the PS&E work for the I-215 widening project from Murrieta Hot Springs Road to Scott Road. Staff has reviewed the scope of work and cost proposal and has completed negotiations with URS Corporation. The final scope, cost, and schedule documents are attached. The PS&E schedule duration is 18 months.

Staff recommends that Agreement No. 09-31-045-00 be awarded to URS Corporation to perform final engineering services and prepare PS&E for the I-215 widening project from Murrieta Hot Springs Road to Scott Road, based on the attached project scope and cost, for the base amount of \$3,372,139 plus a contingency amount of \$377,861 to cover potential changes in scope for a total not to exceed amount of \$3.75 million.

Staff further recommends that the Commission authorize the Executive Director the option to request a proposal from URS Corporation to provide PS&E for the I-215 widening project from Scott Road to Nuevo Road in the city of Perris and to bring back a recommendation to the Commission for PS&E contract award, should URS Corporation's performance be acceptable in completing the PS&E work for the I-215 widening project from Murrieta Hot Springs Road to Scott Road.

While a budget amendment is not required for this contract, staff intends to transfer \$1.5 million from the preliminary engineering expenditures included in the FY 2008/09 budget for this project to final design expenditures.

Financial Information					
In Fiscal Year Budget:	Yes N/A	Year:	FY 2008/09 FY 2009/10	Amount:	\$1,500,000 \$2,250,000
Source of Funds:	STIP-RIP & FY 2009/2010 Measure A (commercial paper)			Budget Adjustment:	Yes N/A
GLA No.:	262 31 81102 P3022 \$1,500,000 262 31 81101 P3022 <\$1,500,000>				
Fiscal Procedures Approved:	<i>Theresa Trevino</i>			Date:	11/14/2008

Attachments:

- 1) Scope of Work
- 2) Cost Proposal
- 3) PS&E Schedule

**EXHIBIT A  
PS&E SCOPE OF WORK**

**I-215 WIDENING PROJECT  
FROM MURRIETA HOT SPRINGS ROAD TO SCOTT  
ROAD  
ADD ONE MIXED FLOW LANE IN EACH  
DIRECTION  
RIVERSIDE COUNTY, CALIFORNIA  
PROJECT 0F161**

Prepared for



Riverside County Transportation Commission  
4080 Lemon Street, 3rd Floor  
Riverside, California 92501

November 2008

Prepared by



URS Corporation  
2020 East First Street, Suite 400  
Santa Ana, CA 92705  
(714) 835-6886 Fax: (714) 433-7701



**TABLE OF CONTENTS**

<u>SECTION</u>	<u>PAGE</u>
<b>1. PROJECT DESCRIPTION AND ASSUMPTIONS.....</b>	<b>1</b>
<b>2. PROJECT SCOPE.....</b>	<b>2</b>
<b>3. NON-STANDARD MANDATORY AND ADVISORY DESIGN FEATURES.....</b>	<b>3</b>
<b>4. ASSUMPTIONS IN ADDITION TO THE PROJECT DESCRIPTION .....</b>	<b>4</b>
FIELD INVESTIGATIONS:.....	<b>ERROR! BOOKMARK NOT DEFINED.</b>
GEOTECHNICAL ENGINEERING DESIGN SERVICES .....	<b>ERROR! BOOKMARK NOT DEFINED.</b>
PROJECT DELIVERY: .....	6
GENERAL REQUIREMENT: .....	6
DATA COLLECTION:.....	6
<b>57. DETAILED SCOPE OF WORK.....</b>	<b>7</b>
5.1 100. PROJECT MANAGEMENT .....	7
5.2 185 PLANS, SPECIFICATIONS, & ESTIMATE (PS&E) AND CONTRACT SUPPORT .....	9
5.3 230 ROADWAY PLANS .....	13
5.4 240 STRUCTURES PS&E ELEMENTS .....	19
5.5 250-255 FINAL STRUCTURES AND ROADWAY PS&E PACKAGE .....	22
5.6 265 CONTRACT AWARD SUPPORT.....	25
5.7 270 CONSTRUCTION SUPPORT.....	25



## 1. PROJECT DESCRIPTION AND ASSUMPTIONS

The following scope of work is our planned effort to prepare the Plans Specifications and Cost Estimate (PS&E) for the addition of one Mixed Flow (MF) lane in each direction between Murrieta Hot Springs Road and Scott Road (Caltrans Project EA 0F161) (the Project). The California Department of Transportation (Caltrans) Work Breakdown Structure (WBS) is the basis for most project tasks and will be used to link the scope, cost, and schedule components of the work effort. The work will be performed using the current Caltrans guidance provided in documentation such as the PDPM, HDM, CADD Manual, RTL Guide, PS&E Guide, Bridge Design documents, Standard Plans, Standard Specifications, TMP Guide, etc. It is noted that, due to the nature of the project scope, that the Client has requested that several Sheet types be combined on a single set of sheets. These combinations are noted in the following scope of services. The activities listed in this scope of work are intended to be delivered to support the 30%, 60%, 90%, and 100% reviews that are typically used by Caltrans to review Agency lead PS&E packages. The delivery approach is summarized in Table 1, Deliverables.

Table 1. Deliverables

WBS	Deliverable	Sheet Count	Milestone Delivery Points			
			30%	60%	90%	100%
<b>Roadway Plan Sheets:</b>						
230.05.05	Title Sheet		x	x	x	x
230.05.10	Typical Cross Sections		x	x	x	x
230.05.15	Key Map and Index		x	x	x	x
230.05.20	Layouts, Profiles, Superelevation, and utility		x	x	x	x
230.05.30	Construction Details			x	x	x
230.05.40	Summary of Quantity Sheets			x	x	x
230.05.55	Select Standard Plans				x	x
230.05.60	Stage Construction, Traffic Handling and Detour Plans			x	x	x
230.05.65	Water Pollution Control Plans			x	x	x
230.15.05	Signing and Pavement Delineation Plans and Details			x	x	x
230.15.10	Construction Area Signs			x	x	x
230.15.15	Keller Lighting Illumination			x	x	x
230.15.20	MHS Ramp Metering Plans			x	x	x
230.25.05	Storm Water Pollution Prevention Plan (SWPPP)			x	x	x
230.30	Drainage Plans, grading plans, Drainage Profiles and			x	x	x
<b>Specification &amp; Cost Estimate</b>						
230.35	Standard Special Provisions (SSPs)			x	x	x
230.40	Quantities & Cost Estimate			x	x	x
<b>Structure Plans</b>						
240.50	Draft Structure PS&E				x	
240.55	Foundation Plan				x	x
240.75	General Plan (Type Selection)		x		x	x
240.85	Structure Plans				x	x
240.90	Structures Cost Estimate and Special Provisions				x	x
<b>Final Reports</b>						
185.20.10	Hydrology and Final Hydraulic Reports			Draft	Final	
185.20.15	Geotechnical Design Report			Draft	Final	
185.20.20	Pavement Design Report			Draft	Final	
185.20.25	Materials Report & Structural Section Recommendation			Draft	Final	
230.20	Traffic Management Plan (TMP)			Draft	Final	
230.60.05	Storm Water Data Report			Draft	Final	
230.65	Resource Agency Permits				Final	
235.10	Site Investigation for Hazardous Waste					
235.10	ADL Report					
240.80	Foundation Report		Draft		Final	
<b>Final PS&amp;E</b>						
250	Final Structures PS&E					x
255	Final Roadway PS&E					x
260	Environmental Certification				x	

## 2. PROJECT SCOPE

The PS&E Estimate is based on the following elements for project 0F161 (from Murrieta Hot Springs Road to Scott Road):

- The existing segment of I-215, from approximately 950 feet south of Murrieta Hot Springs Road to Scott Road, will be widened from four MF lanes (two lanes in each direction) to six MF lanes (three lanes in each direction). The additional MF lane in each direction will be constructed in the existing median. All six lanes will be 12 feet in width. Both directions of flow (northbound and southbound) will typically have ten-foot wide inside and outside shoulders. The shoulders will be reduced to an eight foot shoulder at bridge locations (see non standard mandatory and advisory design features discussion below for details).
- Drop lanes at both the north and south ends of the project will be necessary in order to transition from the proposed three lanes to the existing two lanes at each end of the project. The lanes will transition away from the median to tie into the existing facility. On the north end, the outside lane will be aligned with the existing Scott Road northbound off-ramp. On the south end, the outside lane will be aligned with the existing Murrieta Hot Springs Road southbound off-ramp.
- The existing lanes of I-215 within the project limits, including the shoulders, will be overlaid with HMA pavement.
- In areas where there is an existing crown on the roadway, the number one lane (lane closest to the median) will be re-contoured to provide a consistent cross fall from the inside to the outside. This extends along northbound I-215 from approximately stations 89+00 to 121 +00 and 247+00 to 270+00. In the southbound direction these areas will extend from approximately stations 89+00 to 102+00 and 246+00 to 281+00.
- Best Management Practice (BMP) features that include modifications to the existing, or the installation of new water quality control features, will also be included as part of the project at select locations where identified benefits outweigh impacts.
- At the existing Keller Road undercrossing (UC) the bridges will be widened into the median to support the new MF lanes.
- A concrete center median barrier will be installed.
- Drainage inlets within the median will be abandoned and interfering portions will be removed. The roadside swales (BMPs) will be utilized to convey both stormwater quality flows and peak flows, and existing flow patterns will not be altered. In the limited areas where superelevated sections will be applicable, Department requirements for the flow, spread and inlet spacing will be followed. These areas are limited to three locations just north of Clinton Keith Road.

### 3. NON-STANDARD MANDATORY AND ADVISORY DESIGN FEATURES

At the time of the Draft Project Report (DPR) there are two advisory nonstandard features associated with this alternative that are described in Table 2. These nonstandard features are being documented for approval in a Fact Sheet for Exceptions to Advisory Design Standards.

Table 2. Advisory Design Standards

Advisory Design Exception	Standard	Proposed Condition	Reason for Requesting Exception
Minimum grades <i>HDM Section 204.3</i>	0.3%	From "A" Station 70+25 to Station 72+75: 0.29% From "A" Station 258+00 to Station 273+00: 0.125%	Project will maintain existing vertical alignment
Minimum median width <i>HDM Section 305. 1(1)(a)</i>	36 feet	Throughout project limits: 22 feet	Project scope involves inside widening only and no outside widening

At the time of the DPR there are six mandatory nonstandard features associated with this alternative that are described in Table 3. These nonstandard features are being documented for approval in a Fact Sheet for Exceptions to Mandatory Design Standards.

Table 3. Mandatory Design Exceptions

Mandatory Design Exception	Standard	Proposed Condition	Reason for Requesting Exception
Horizontal Stopping Sight Distance <i>HDM Section 201. 1</i>	930'	For R=6037', "A" Sta. 148+36.84 to Sta. 183+51.54 southbound, clearance = 10' and will not meet SSD For R=2963', "A" Sta. 208+70.92 to Sta. 224+64.86 northbound, clearance = 10' and will not meet SSD	Project will maintain existing horizontal alignment and includes inside widening only
Curve Radius <i>HDM Section 203.2</i>	3900'	R=2963', "A" Sta. 208+70.92 to Sta. 224+64.86	Project will maintain existing horizontal alignment
Shoulder Width <i>HDM Section 302. 1</i>	10'	7'-1" to 10' left shoulders at Murrieta Hot Springs Road, Los Alamos Road, Clinton Keith Road, and Scott Road OCs; 9'-3" right shoulders at Keller Road UC	Project scope involves inside widening only and no outside widening
Horizontal clearances <i>HDM Section 309. 1(3)(a)</i>	Equal to standard shoulder width, = 10'	7'-1" to 10' to concrete barrier protecting median bridge columns at Murrieta Hot Springs Road, Los Alamos Road, Clinton Keith Road, and Scott Road OCs; 9'-3" to right bridge railings at Keller Road UC	Project scope involves inside widening only and no outside widening
Vertical clearances for local facilities <i>HDM Section 309.2(1)(c)</i>	15' over traveled way	14'-11" over Keller Road (at Keller Road UC)	Project scope does not include bridge replacement for local street improvements



#### 4. ASSUMPTIONS IN ADDITION TO THE PROJECT DESCRIPTION

The following additional assumptions have been made with regard to the proposed project.

1. The Duration of the project to deliver the completed PS&E package is assumed to be 18 months. One PDT meeting and one status meeting between PDT meetings is provided within the Project Management budget for each of the 18 months of service provided. Support for technical meetings will be provided as required.
2. GAD and Fact Sheet (Advisory and Mandatory) approvals and any needed modifications will be addressed under the PA/ED scope of work. The scope of work included in this estimate assumes that the 1st draft GAD and Fact Sheet submittal will remain the project approach and that the GAD will be approved no later than two months after NTP for the PS&E.
3. All roadway improvements will be constructed within the existing median.
4. There are no noise walls or retaining walls required.
5. No utility work or right of way acquisition is anticipated under the Proposed Build Alternative and no utility coordination or separate utility sheets will be required. Utility locations will be shown on the layout sheets. At this time we believe that the utilities are sufficiently removed from the work area such that potholing should not be required.
6. The Keller Road Undercrossing is the only structure to be modified and the only modification is a widening of the structure to fill the current gap between the left and right bridges. It is further assumed that seismic retrofit will not be required for the existing structure.
7. There are no modifications or improvements of the ramps and structures for the interchanges within the project limits.
8. Additional typical cross sections will only be required where changes to the structural section occur.
9. It is assumed that the Project Report (PR) and Environmental Document (ED) will be approved by December 2008 and that no major modifications will be required during PS&E.
10. The BMP approach discussed and shown in the set of project documentation approved with the April DPR and May IS/MND will be the approved BMP approach.
11. The existing drainage system will be maintained with the exception of the removal of any drainage systems in the median.
12. No planting, landscape or irrigation plans will be required.
13. No material sites will be required for the project.

14. No electrical modifications or improvements for signals, ramp meters, loops, etc. will be required with the exception that pedestrian lighting is assumed to be required for the Keller Road UC after it is widened, and ramp meters are proposed at Murrieta Hot Springs Road.
15. The current mapping developed under the current contract will be adequate.
16. Plans will be in English units.
17. There are no hazardous waste issues that will have to be addressed or worked around.
18. No costs are currently included for any permit fees or utility or agency processing fees.
19. Any costs requested by the utility companies for their involvement with the project or utility location work requested to support the project is unknown and not included in this estimate.
20. US Fish and Wildlife approval will be obtained as part of the PA&ED activities and no additional work is anticipated.
21. Allowable period for lane and shoulder closures (for drilling operations) on I-215 mainline is 9:00 am to 3:00 pm.
22. This scope and cost assumes that, if required, no difficulties in identifying appropriate mitigation sites and/or banks will occur during the permit processing.
23. No Consultation for special status species will be required.
24. Any wetland impacts identified will remain at less than 0.5-acre and that a Nationwide 404 permit will be appropriate.
25. The jurisdictional waters will remain primarily as shown in the Natural Environment Study (NES) that was prepared for the proposed project and those discrepancies will result in a change in acreage of no more than ten percent for federal and state waters.
26. Based upon the information in the NES, it is assumed that the project would be processed under the USACE Nationwide Permit Program (NWP). This approach is expected to involve authorization of NWP 14 – Linear Transportation Projects. NWP 14 authorizes the improvement of linear transportation projects, provided that the impacts to jurisdictional waters do not exceed 0.5-acre.
27. If project impacts to jurisdictional waters exceed the USACE NWP thresholds, or if the District Engineer determines that the project would result in a significant adverse impact to the aquatic environment, then an Individual Permit (IP) would be required. Preparation of an IP is not included in this scope of work.
28. InRoads cross sections, as generated by the program, will be provided for the Resident Engineer File. These cross sections will be cut every 50 feet and will show a rough OG line and proposed surface. It is assumed that no improvements or betterments to the output files of the InRoads generated cross sections will be required.



29. It is assumed that any grading information can be shown on the drainage sheets and that separate grading sheets will not be required.
30. Stage construction and traffic handling can be combined and can be shown with one set of layout sheets with appropriate typical sections.
31. It is assumed that the roadside signs, signing and striping can be shown on the pavement delineation sheets.
32. Ramp meters will be required at the Murrieta Hot Springs Road On Ramps (4 locations). Two electrical sheets will be assumed for each location required.
33. No RCTC bid period or construction support is assumed with this scope of work.
34. RCTC will provide a clear description and project/property (i.e., study area) boundaries. The Project "Study Area" includes no more than 300-acres.
35. If possible, RCTC will provide a conceptual site plan on an aerial base that is geographically referenced.
36. RCTC will provide authorization and assist URS in arranging access for site reconnaissance, if necessary.
37. This scope does not include any formal Federal or California Endangered Species Act consultation or special status species focused/protocol level surveys.
38. This scope does not include creation of a compensatory mitigation plan for the Project.
39. If needed, RCTC can provide a current National Pollution Discharge Elimination System Permit and Storm Water Pollution Prevention Plan that details water quality management measures that ensure that authorized work does not result in water quality degradation.

#### **PROJECT DELIVERY:**

The proposed schedule is attached as Exhibit X and includes a 16 month duration for project completion.

#### **GENERAL REQUIREMENT:**

The consultant is expected to prepare all reports, studies and plans to meet all requirements of all oversight agencies, including, but not limited to Caltrans. RCTC staff will provide overall project coordination, and will handle administrative and policy matters. Caltrans and the County of Riverside will provide oversight, guidance and interpretation on matters relating to State, County and City policies and regulations.

#### **DATA COLLECTION:**

The project will involve the review and assimilation of a large amount of existing data, and the generation of new data. The consultant will determine what data sources are necessary to gather,

and by what date and to prioritize the gathering of that data. RCTC expects that the consultant will make the best use of existing data to minimize waste and duplication of work efforts.

## 40. DETAILED SCOPE OF WORK

This section provides our assessment of the work tasks outlined in the Statement of Work and illustrates our understanding of the relationship between the work task items and the role the individual tasks play with respect to achieving the projects goals, meeting the client’s expectations, and the methodology proposed for accomplishing the work. No tasks have been deleted from the Statement of Work provided by RCTC. In addition, where any “Guidance” has been identified, these documents will be followed in the performance of our work.

### 5.1 100. PROJECT MANAGEMENT

#### 100.15.05 PROJECT INITIATION

The Project Initiation activities will be performed under this activity. This will be a follow-on to the previous contract to prepare the PA/ED for the Project. The team members will be assembled and briefed on the project goals and objectives and the work plan will be fine tuned.

#### 100.15.10 PROJECT MANAGEMENT EXECUTION AND CONTROL

This process includes coordinating people and other resources to carry out the plan, and ensuring that the PS&E component objectives are being met by monitoring progress and taking corrective action, when necessary. In addition, this activity will address the planning of and attendance at the monthly Project Development Team (PDT) meetings, trend meetings, technical meetings, and agency coordination meetings.

The Consultant will maintain ongoing liaison with the RCTC Project Manager and other affected agencies to promote effective coordination during the course of project development. The Consultant will hold a kick-off meeting with RCTC to confirm the project scope, establish the lines of communications, and set a schedule for project coordination meetings and technical reviews. The kick-off meeting will address the start-up activities to initiate the elements of work. Eighteen (18) monthly PDT meetings will be held to review progress of the project development and to resolve any issues and concerns for Project 0F161. In addition to the PDT meetings, eighteen (18) trend meetings are assumed to cover the duration of the project.

Additional coordination meetings with RCTC and other representatives from affected agencies will be held throughout the 18 months. The Consultant will prepare a meeting agenda and minutes for each significant meeting and have these available for review within five (5) working days following the meeting.

The Consultant will ensure that all work products conform to all applicable standards and policies. The Consultant will prepare and monitor the project budget and schedule. Monthly progress reports with an updated Critical Path Method (CPM) schedule will be prepared.

This task also includes the oversight and monitoring of the subconsultants included in the contract as an extension of the URS staff.

**SUBTASKS:**

- Status of the project including reporting work results and updating project information. This task includes updating and revising the work plan during PS&E component execution.
- Communication and distribution of project records and information including responses to all internal and external requests for information about the project.
- Performing Quality Assurance/Quality Control (QA/QC)
- Executing Quality Management Plan
- Executing Communication Management Plan
- Monitoring Risk Management Plan
- Executing Change Control as required
- Subconsultant Administration

Deliverables:

- Project records, using Caltrans Uniform File System
- Preparation of meeting agenda
- Preparation of meeting minutes
- Project management for 18 months for Project 0F1 61
- CPM master schedule
- Monthly schedule updates and progress reports
- Monthly invoices

**100.15.12 PROJECT MEETINGS**

This task includes support for the Project Development Team meetings, the Project Status Meetings, and Technical Meetings up to the funding levels provided.

Deliverables:

- Up to 18 PDT meetings along with agenda, meeting minutes and support
- Up to 18 Project status meetings along with agenda, meeting minutes and support
- Technical meetings as required

**100.15.15 PROJECT CLOSEOUT**

This task includes the process of formally bringing the PS&E component to an end.

- Finalize any open action items
- Closeout project filing system
- Sponsor, team, and stakeholder evaluations of the PS&E component
- Document lessons learned
- PS&E component closeout report Deliverables:
- Lessons learned memorandum
- Archived records

### 100.15.20 QA/QC PROGRAM

This activity will include all of the labor related to execution of the project QA/QC program that will be established to support the Project QA/QC activities.

#### Deliverables:

- Checklists and report forms consistent with the project QA/QC program
- Corrective action recommendations, if appropriate

## 5.2 185 PLANS, SPECIFICATIONS, & ESTIMATE (PS&E) AND CONTRACT SUPPORT

### 185.10 ENGINEERING SURVEYS

Produce the mapping and survey control necessary for PS&E. This supplements the mapping and control surveys that was produced for the Project Report stage.

The following scope of work is for surveying services along I-215 between Murrieta Hot Springs Road and Scott Road (approx. 7.8 miles) in support of the inside widening project you are pursuing. This proposal is based upon all tasks being authorized at the same time for the same mobilization period.

#### 185.10.50 CONTROL SURVEYS

Horizontal and Vertical corridor control will be established along the 6-mile corridor and will be tied into the North American Datum of 1983 (NAD83 NSRS 2007) and the North American Vertical Datum of 1988 (NAVD88). Existing monuments will be utilized where available and brass cap monuments will be set where no suitable monuments exist. Approximately two to three monuments per mile will be established with Caltrans 2nd order GPS methods, digital levels will be utilized to establish the vertical component.

The GPS and digital level data will be downloaded, processed and adjusted. A final report will be prepared which will include a written report, the final adjusted coordinates, calculations and adjustment listings, and copies of the survey field notes.

It is assumed that the survey control for this project was performed by David Evans & Associates (DEA) and will be provided by either DEA or the client. Psomas will verify the existing control and densify the control network using a combination of GPS and conventional methods. We will report the results of the verification survey prior to commencing any further survey work.

#### Deliverables:

- Draft Survey Control Report
- Final Survey Control Report



**185.10.60 ENGINEERING SURVEYS (INCLUDES DRAINAGE INLETS/OUTLETS, ETC.)**

Design topographic surveys will be performed as requested by the engineering team. Drainage features, bridge structures, walls, surface visible utilities and other surface visible structures will be located with field survey methods.

The engineering surveys will utilize both conventional survey methods and 3D Laser Scanning (HDS) as described in 185.10.70. The method to be used will be determined by the survey team based on field conditions and the type of information requested from the engineering team.

The topographic survey information will be downloaded, processed and plotted at a scale of 1"=50' and will be incorporated with the aerial mapping obtained during the PA/ED phase. The final data will be delivered in a Microstation v8 format.

Field surveys will be performed along the inside shoulders of the north and southbound I-215 freeway at 50-foot intervals to locate the existing edge of travelled way (ETW) at 1,500 feet/day. We will utilize reflectorless technology to perform this work in order to maintain safety and efficiency. If other methods are required, shoulder or lane closures may be required. However, it is our goal to perform this work without any closures.

Psomas will survey and locate existing drainage structures within the existing freeway median. Such features may include drop inlets, catch basins, ditches, headwalls, storm drain lines, etc. This proposal assumes that there will be one feature every 1000 feet along the 7.8 mile alignment, or 40 features total.

Psomas will survey and locate the existing inside ETW on each existing bridge at Keller Road. Points will be measured at 10-foot intervals.

As the fieldwork is completed, we will process the field work and prepare a point plot of the survey data. Features will be shown and labeled with their respective elevation and description. Deliverables include the related CADD and ASCII point files in digital format.

Deliverables:

- Engineering Surveys in Microstation V8 format

**185.10.70 PAVEMENT ELEVATION SURVEYS USING MOBILE HDS SCANNING**

This work is now assumed to be done under the PA&ED scope of services.

**185.20 ENGINEERING REPORTS**

The following reports will be prepared for the design phase of work.

**185.20.10 HYDROLOGY AND HYDRAULIC REPORT**

Based on the final drainage design, the Hydrology and Hydraulic Report will be updated.



Deliverables:

- Draft Hydrology and Hydraulic Report
- Final Hydrology and Hydraulic Report

**185.20.15 GEOTECHNICAL DESIGN REPORT**

A Geotechnical Design Report (GDR) will be prepared to describe the project setting and describe any design features that involve geotechnical investigations and engineering geology. The GDR will be prepared in accordance with the Caltrans Guidelines for Preparing Geotechnical Design Reports (2006).

The Engineer will conduct a site specific geotechnical investigation and prepare a report to present recommendations with respect to bridge foundations, pavement structural sections and earthwork. Engineer will perform the following tasks:

- a. Review existing data and any monitoring well data from adjacent areas. Reconnoiter the site to observe existing conditions and determine proposed exploration locations.
- b. We will prepare a Health and Safety plan for use by field personnel during site investigation activities. The plan will include a map identifying the approximate boring location, boring depth, existing facilities, underground and above ground utilities. The plan will include a tabulation of borings by type, number of samples, sample depths, and summation of borings by type.
- c. Drill, log, and sample approximately 68 hollow-stem auger borings with depths ranging from 5 to 70 feet. Two borings for the bridge will be advanced to 70 feet, or until refusal, at the support location. Six borings used for potential sign structures will be drilled to an average depth of 40 feet. The remaining 60 borings for pavement subgrade investigation will be drilled to a depth of 5 feet and spaced at 500 feet intervals at the median along the project alignment. Specific locations and sample depths of proposed borings will be finalized during the field investigation. Typically, samples will be collected at 5 feet intervals using either a Standard Penetration Test (SPT) Sampler or a Modified California Sampler. We assumed that the on-site soils are not contaminated and the borings can be backfilled with soil cuttings. The upper five feet of the borings will be backfilled with grout and surfaced with cold-patched asphalt. Excess cuttings will be spread thinly at the site. Obtaining County encroachment permits and coordination with County inspection staff is assumed. It is assumed that this is a prevailing wage project. It is assumed that traffic control will be needed for the field exploration. Obtaining other permits, or insurance is not considered in the geotechnical scope.
- d. Deflection study of the existing pavement sections will be performed.
- e. Test soil samples in the laboratory to evaluate index, strength, consolidation, and corrosive properties of the site soils.
- f. Preliminary design memorandum to be included with the bridge type selection package.

At each milestone all elements of a project will be addressed at an appropriate level. Generally, the reports will summarize soil and groundwater conditions including boring logs and laboratory test results, recommendations for earthwork, pavement structure sections, temporary shoring, seismic





parameters, and construction considerations. Foundation type and capacities and Log of Test Boring Sheets for the bridge widening will be included in the Draft and Final Foundation Reports.

Seismic criteria for the project will be based on current Caltrans Seismic Design Criteria (2006).

Deliverables:

- Draft GDR
- Final GDR

### **185.20.20 MATERIALS REPORT**

Materials Report will provide recommendations for new pavement structural sections and address soil corrosivity. The Materials Report will be prepared in accordance with Topic 114 of the Caltrans Highway Design Manual and CT 130.

1. Draft Materials Report in accordance with Highway Design Manual Topic 114 (2008), Draft Geotechnical Design Report in accordance with Caltrans Guidelines for Preparing Geotechnical Design Report (2006) and Draft Foundation Report in accordance with Caltrans Guidelines for Structures Foundation Reports (2006) to be completed during the Intermediate Design Milestone and submitted with the 65% design package.
2. Final Materials Report, Final Geotechnical Design Report and Final Foundation Report to be completed during the Final Design Milestone and submitted with the 100% design package.

Deliverables:

- Draft Materials Report
- Final Materials Report

### **185.25.30 UTILITY COORDINATION**

No utility conflicts have been identified. No utility related activities are included in this scope of work. The utility locations obtained from the PA&ED phase will be shown on the layout sheets only.

Deliverables:

- Utility locations shown on the layout sheets.

### **185 .30.10 SITE PLANS FOR BRIDGES**

This task includes the completion of the Bridge Site Data Submittal form and attaching all required background information with the form. In addition to the requested information, any special circumstance or important information will be noted and included.

**SUBTASKS:**

- Collect and calculate required information
- Prepare site plan drawings
- Prepare Bridge Site Data Submittal form



- Complete, when necessary, the “special circumstance/important information” section of the bridge site submittal form.

Deliverables:

Draft and Final Bridge Site Data Submittal form.

**200.10 UTILITY AND MONUMENTATION**

**200.10.05 UTILITY LOCATIONS (POTHOLING)**

Currently assumed not to be required. No utility coordination including potholing for high risk utilities is included with this scope of services.

Deliverables:

- None at this time

**220.05.25 MONUMENT PERPETUATION & RECORD OF SURVEY**

A Record of Survey will be prepared for the control established under section 185.10.50 described above. The purpose of this record of survey will be to document and the newly established corridor control for future engineering and construction activities. The record of survey will be prepared in accordance with the California Land Surveyor’s Act and recorded with the County of Riverside. The agency fees associated with this map have been estimated at \$5,000 and have been included in this proposal as a reimbursable expense.

Deliverables:

- Record of Survey submitted to the County of Riverside for recordation.

**5.3 230 ROADWAY PLANS**

Includes all activities, from the base maps (skeletons), such as design, delineation, field reviews, and internal/external coordination (see sub-tasks) necessary to develop draft roadway plan sheets for the construction contract. Each of the Subtasks listed below will be prepared, checked, and assembled for the 30%, 60%, 90%, and 100% submittals pursuant to the schedule shown in Table 1.

**SUBTASKS:**

- Title Sheet
- Typical Cross Sections
- Key Map and Line Index
- Roadway Layouts, utility locations, Profile and Superelevation Sheets (combined on one set of sheets)
- Construction Details
- Summary of Quantities Sheets
- Standard Plans Selection
- Stage Construction and Traffic Handling Plans combined on one set of sheets



- Water Pollution & Erosion Control Plan
- Signing and Pavement Delineation Plans combined on one set of sheets
- Construction Area Signs
- Electrical Plans (Keller pedestrian lighting)
- Murrieta Hot Springs Road Ramp Meters (4 locations)
- Drainage Plans & Contour Grading Plans combined on one set of sheets
- Draft Specifications
- Draft PS&E Quantities and Estimates

The above deliverables will be submitted as shown in Table 1 at the following milestones:

- 30% PS&E Submittal
- 60% PS&E Submittal
- 90% PS&E Submittal
- 100% PS&E Submittal

### **230.20 TRANSPORTATION MANAGEMENT PLAN**

This effort includes all activities necessary to update and develop the project's Transportation Management Plan to accompany the project PS&E. The consultant will utilize the TMP data sheet developed for the Final PR to perform all TMP of the construction project and provide recommendations on how construction staging and MOT should be performed as well as the cost associated with recommended strategies. Our work effort will insure that the facility proposed will provide adequate operations during construction with a minimal disruption of traffic in the work zone.

#### **SUBTASKS:**

- Itemize capital outlay costs
- Identify SSPs to be included in contract document
- Coordinate major closures with local agencies to determine impact on this project
- Refine/finalize traffic contingency plan pending contractor's contingency plan
- Update TMP/lane closure database

#### Deliverables:

- Draft and Final Transportation Management Plan (including its plans, specs, and estimates)

### **230.25 UTILITY PLANS**

A separate set of utility plans is not included in this scope of work. The utility locations will be shown on the layout sheets.

#### Deliverables:

- None



### **230.30 DRAINAGE PLANS**

All activities, (such as design, delineation, field reviews, and internal/external coordination) (see sub-tasks) necessary to develop draft drainage plan sheets for construction contract.

#### Deliverables:

- Drainage Plans for PS&E delivered per Table 1

### **230.35 DRAFT SPECIFICATIONS**

Activities necessary to develop the project draft Special Provisions.

#### Deliverables:

- Specifications ready for PS&E delivered per Table 1

### **230.40 DRAFT PS&E QUANTITIES AND ESTIMATES**

Includes all activities necessary to develop project quantities and estimates.

#### Deliverables:

- Draft Quantities and Estimates ready for PS&E delivered per Table 1.

### **230.60.05 UPDATED STORM WATER DATA REPORT**

The Storm Water Data Report prepared for the PA&ED phase of work will be updated pursuant to Project Planning and Design Guide (PPDG); Section 7; Appendix E.

#### DELIVERABLES:

- Draft Storm Water Data Report
- Final Storm Water Data Report

### **230.65 PERMITS**

This scope of work (SOW) was developed to disclose and evaluate biological resources , common and special status species , and prepare a discrete suite of discretionary permit applications to facilitate Project implementation (e.g. Clean Water Act [CWA] Section 401, 404 and California Department of Fish and Game Code [CDFC] 1600 permitting). For the purposes of this SOW, the Project's study area is assumed to include no more than 300 acres.

#### **230.65.05 401, 404, 1602 PERMITS**

All work during PS&E Development involved in obtaining permits, including: Discussions and negotiations with the permitting agency. Preparation of the permit and attachments such as exhibits, maps, etc.. Submittal of the permit application. The permits anticipated to be needed for this project and covered under this scope of work are:

1. Regional Water Quality Control Board 401 Permit
2. ACE 404 Permit

### 3. Department of Fish & Game 1602 Permits

Literature Review - Rapid informal review of resource databases, local resource management plans, aerial photos, and any other readily available commercial data to determine the locations and types of biological resources that have the potential to exist in the Projects 300-acre study area. The above referenced literature review will support the development of all written deliverables within this SOW.

Special Aquatic Resource Area Preliminary Jurisdictional Determination And Update Report - The 300-acre study area will need to be delineated pursuant to the substantive provisions of the: United States Army Corps of Engineers (USACE) Wetland Delineation Manual (Environmental Laboratory, 1987); Lichvar and Wakeley's (2006) Interim regional supplement to the USACE Wetland Delineation Manual Arid West Region Direction on Delineating Arid Streams; the USACE and Environmental Protection Agency's (EPA) June 2007 issued CWA Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States guidance document; and those analysis tools detailed in A Field Guide to Lake and Streambed Alteration Agreements Sections 1600-1607 (Environmental Services Division, 1994). As such, a pedestrian-based field survey will be conducted and available data (including aerial photographs and United States Geological Survey [USGS] maps) will be reviewed. It is anticipated that differences in terrain, vegetation density, private property, topographic relief, and so forth will allow two biologists to complete the field determinations in five (5) calendar days.

The study area is assumed to include no more than ten (10) unique special aquatic resource areas. Additionally, the field survey results will be synthesized into a technical report. The report will be suitable for submittal to the USACE, CDFG and the RWQCB, for discretionary permitting purposes. The report will quantify and enumerate a breakdown of wetlands, non-wetland waters of the U.S., waters of the State, and other sensitive riparian areas within the study area boundaries. The report will include: a description of study methods; background information on discretionary permitting of special aquatic resource areas; a description of vegetation, soils, and hydrology within the study area pursuant to aforementioned methodologies; maps depicting the field survey results; and USACE field data sheets from sampling locations.

#### **RWQCB SECTION 401 WATER QUALITY CERTIFICATION NOTIFICATION:**

A written request for 401 notification water quality certification will be prepared and submitted to the RWQCB for review. Upon formal notification, an agreement should be forthcoming within 60-90 days of completion of the CEQA process or application submittal, whichever occurs later. The request will include a detailed project description, a description of proposed impacts, and identification of project-specific BMPs, the CEQA Notice of Determination, the conceptual mitigation plan, and a completed notification form.  
ACE 404 Permit:

#### **JURISDICTIONAL DELINEATION UPDATE**

URS will conduct a field visit to compare existing field conditions with the maps provided in the delineation report and document any changes to jurisdictional features within the project boundary since the wetland delineation was prepared for the project. During the field visit, we will determine the U.S. Army Corps of Engineers (USACE) jurisdiction using the presence of an ordinary high

water mark and the methodology in the USACE 1987 wetland delineation manual. This methodology requires that a jurisdictional wetland must contain hydrophytic vegetation, hydric soils, and appropriate hydrology. California Department of Fish and Game (CDFG) jurisdiction will be determined by the presence of hydrophytic vegetation, the location of a definable bed and bank, and the presence of associated wildlife or fish resources. The limits of jurisdiction will be mapped at an appropriate scale (1 inch = 200 feet) if there are any differences found. Civil surveys of any delineated areas are not covered in this scope of work.

URS will prepare a jurisdictional delineation update letter report to describe any changes in existing conditions and provide analysis of potential project impacts on jurisdictional features based upon the preliminary design plans, if any such differences are noted.

#### Pre-Application Consultation with Agencies

Following the jurisdictional delineation update, URS will initiate contact with the concerned agencies (USACE, CDFG, and the Regional Water Quality Control Board) to provide preliminary project information, solicit concerns, and discuss the requirements and timing associated with the regulatory permits. All effort will be made to conduct the pre-application consultation at a project site meeting. However, depending upon resource agency staff workload and availability, such contact may consist of a project team conference call or written communication.

The request for Nationwide Permit (NWP) generally includes:

1. Detailed description of the proposed project, including grading plans provided by the Applicant.
2. Detailed description of the jurisdictional areas to be impacted by the proposed project. (This is generally accomplished by submittal of the delineation report.)
3. Discussion of approvals and certifications being obtained from other federal, state, or local agencies.
4. Conceptual Restoration plan, if required (assumed not required for the proposed project).
5. The Streambed Alteration Notification package submitted to the California Department of Fish and Game (CDFG).
6. The request to the Regional Water Quality Control Board (RWQCB) for water quality certification (or a waiver thereof).
7. The request to the State Historical Preservation Office (SHPO) for information regarding the potential presence of historical properties and the cultural resource report submitted to the Applicant in response.
8. The request to the USFWS for a list of all sensitive species potentially present in the project site and the special-status species survey report submitted to the Applicant in response.

#### CDFG 1602 Streambed Alteration Agreement:

A § 1602 Streambed Alteration Notification will be prepared and submitted to the CDFG for review. The request will include a detailed project description, a description of proposed impacts, the CEQA Notice of Determination, and completed notification forms. CDFG will be able to complete the draft agreement within 60-90 days.

## COORDINATION OF PROCESSING

The resource agency notifications will be coordinated with the USACE, RWQCB, and CDFG throughout processing to ensure that any potential issues are made known to the project team and resolved at the earliest possible opportunity. Coordination may include telephone, email, or written correspondence, or meetings with the agencies.

## CWA SECTION 401, 404 AND CDFC 1600 (*ET SEQ*) PERMIT APPLICATIONS

Since special aquatic resource areas are assumed to exist within the 300-acre study area, and Project implementation will likely adversely impact them, accordingly, the completion of CWA Section 401, 404 and CDFC 1600 (*et seq*) discretionary permit applications and approvals will be needed.

URS will prepare and submit a USACE CWA Section 404 NWP application package (pending review of final design specifications and applicant's willingness to implement specific programs to avoid, or minimize adverse effects to special aquatic resource areas). The NWP Program provides applicants with a streamlined USACE evaluation and approval process for certain types of activities that have minimal impacts to jurisdictional aquatic environments. URS will seek to facilitate authorization of intrusive activities within USACE jurisdictional aquatic environments pursuant to NWP terms and conditions. If this permitting strategy is feasible, it will significantly reduce the federal permit processing time and expense. Furthermore, with the issuance of the NWPs, the California RWQCB has determined that individual 401 water quality certifications are required for most nationwide permits. To that end, URS will submit a CWA Section 401 Water Quality Certification Application to the RWQCB (if needed). The USACE will not grant authorization until the water quality certification has been obtained or has been waived. A water quality certification is issued by the RWQCB that states that the applicant will comply with all pertinent water quality standards (both federal and state).

Additionally, Pursuant to Division 2, Chapter 6, Sections 1600-1602 of the CFGC, CDFG regulates any proposed activity that may substantially modify, divert, obstruct, or changes to the flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife (see also <http://www.dfg.ca.gov/1600/>). Pursuant to the California Code of Regulations (CCR), CDFG defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFG's definition of "lake" includes "natural lakes or man-made reservoirs." CDFG jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and wildlife. As such, a CDFG streambed alteration agreement will be required for Project implementation. URS will prepare and submit a notification and application package to CDFG, for CFGC 1600 (*et seq*) compliance. The CFGC 1600 compliance package will include a project description, maps showing project location, construction plans and drawings pertaining to the Project.

Agency Coordination - Project staff will informally consult/correspond with the applicable regulatory agencies as needed (e.g., CDFG, USACE, and RWQCB) to identify potential data requirements, mitigation, minimization, and avoidance measures that may be needed to implement the Project. The development of this shared vision between the Applicant and the regulatory agencies will assure that this Project is implemented with efficient regulatory collaboration.



At present, the extent of discretionary permitting are not completely certain because final design specifications and the Applicant's willingness to implement specific programs to avoid, or minimize adverse effects to biological resources have not yet been thoroughly developed. As a result, the extent of discretionary permitting and mitigation is still somewhat ambiguous. Nonetheless, it will undoubtedly remain necessary for the Applicant. Additionally, this informal consultation will foster and maintain successful working relationships as the Project moves ahead.

Deliverables:

- Attendance at four (4) permit related meetings by the project delineator and biologist.
- Draft, Revised Draft and Final 404 Permit application, Section 1602 Streambed Alteration Agreement application, and Section 401 Water Quality Certification application.

**230.65.35 WATER DISCHARGE (NPDES) PERMITS**

URS will prepare the Notice of Intent (NOI) for RCTC's submittal to the State Water Resources Control Board (SWRCB) to request the NPDES permit for project construction. It is anticipated that two separate NOIs will be required for submittal to the SWRCB since the project is located within the Santa Ana Regional Water Quality Control Board and the San Diego Regional Water Quality Control Board. This scope of work does not include any required permit (NOI) application fees. Further, this scope of work does not include efforts associated with preparation of a Storm Water Pollution Prevention Plan (SWPPP) - it is assumed that the selected project construction contractor will prepare the SWPPP.

Deliverables:

- NPDES support as requested

**235.40 UPDATED ENVIRONMENTAL COMMITMENTS RECORD**

It is assumed that minor updates will be required to the Environmental Commitments Record (ECR) during PS&E. Time included assumes that any updates would be minor and could be completed within the timeframe shown.

Deliverables:

- Minor updates to the Environmental Commitments Record

**5.4 240 STRUCTURES PS&E ELEMENTS**

Work involved in the development of draft structures plans, specifications, and estimate.

**240.50 OVERALL STRUCTURE PS&E**

This task includes all efforts involved in the development of the overall projects' plans. Activities under this task include technical coordination of the project, technical meetings, and other directly related coordination activities.





Deliverables:

- Technical coordination and meetings

**240.55 FOUNDATION PLAN**

This task includes the creation of the foundation plan.

Subtasks:

- Coordination with Caltrans for approval of the foundation plan
- Structure Site Investigations
- Preliminary Investigation Report

Deliverables:

- Draft Foundation Plan

**240.65 PRELIMINARY FOUNDATION REPORT**

This task includes the effort to prepare a preliminary Foundation Report (PFR). This document is used as part of the Type Selection process. The PFR is used to document existing foundation conditions, make preliminary foundation recommendations, and identify the need for additional investigations and studies.

Subtasks:

- Project Location
- Summary of site geology and subsurface conditions.
- Corrosion evaluation
- Preliminary Seismic Study
- Preliminary Foundation Recommendations
- Additional Field Work and Laboratory Testing

Deliverables:

- Preliminary Foundation Report

**240.75 DRAFT GENERAL PLAN (TYPE SELECTION)**

This task includes all efforts required to develop, review, approve and distribute draft Structures General Plans. The Preliminary Plan Approval process is part of this task and generally includes Type Selection Meetings. Approved preliminary plans are the approved General Plans.

Subtasks:

- Prepare Preliminary Design
- Prepare Preliminary Plan Sheets
- Prepare Preliminary Quantities



- Prepare Preliminary Estimates
- Prepare Preliminary Specifications
- Prepare Type Selection Report
- Perform a Constructability Review
- Conduct Type Selection Meeting
- Update General Plans and General Plan Estimate
- Obtain Preliminary Plan Approval
- Distribute approved General Plans Deliverables:
- Type Selection Report
- Approved General Plans

#### **240.80 PREPARE FOUNDATION REPORT**

This task includes all efforts required to produce Foundation Reports (FR). Foundation Reports are required for all structures when new or widening to existing structures is proposed. The FR requires sufficient subsurface exploration to characterize geologic and geotechnical conditions for the structure. Foundation Reports utilize information collected during subsurface exploration to provide recommendations that support both the design and construction of the structure. The Foundation Report will be prepared in accordance with the Caltrans Guidelines for Structures Foundation Reports Manual (2006).

The FR shall provide, but not be limited to, the following:

- Project Location
- Summary of Site Geology and Subsurface Conditions
- Ground Water
- Scour Evaluation
- Corrosion Evaluation
- Seismic Study
- As-Built Foundation Data
- Foundation Recommendations
- Slope Stability Analyses
- General Notes to the Designer
- Construction Considerations

In addition to the FR, the Log of Test Borings (LOTB), which presents the description, in graphic and text format, of the types of soil and rock encountered during the subsurface exploration, is produced for inclusion in contract plans.

#### **Deliverables:**

- Draft Foundation Report
- Final Foundation Report
- Log of Test Borings

#### **240.85 DRAFT STRUCTURE PLANS**



This task includes all efforts required to prepare draft Structures Plans and Quantities (P&Q). The final product is a draft set of designed, detailed and checked structural plans along with checked quantity calculations for identified contract bid items. The activities include, but are not limited to:

Subtasks:

- Perform structural analysis and develop draft Design
- Prepare draft Structure Plan Sheets
- Perform an independent structural analysis
- Check the Design and Plan Sheets
- Perform a Constructability Review (CR) of Unchecked Details
- Prepare draft Quantities
- Perform an independent check of the draft Quantities
- Prepare Specification
- Prepare Type Selection Report
- Transmit P&Q package to Structure Office Engineer

Deliverables:

- Draft Structures Plans

## **240.90 STRUCTURES SPECIAL PROVISIONS AND COST ESTIMATE**

This task includes efforts required to prepare the draft Structures Specifications and Cost Estimate. The final product is a draft set of Structure Special Provisions, and the Structure Cost Estimate. The activities include, but are not limited to:

- Generate Structure Contract Item list
- Prepare draft special provisions
- Prepare cost estimate for Structure Contract Items Deliverables:
- Structures Special Provisions
- Structures Cost Estimate

## **5.5 250-255 FINAL STRUCTURES AND ROADWAY PS&E PACKAGE**

### **250.55 FINAL STRUCTURES PS&E PACKAGE**

This task includes efforts required to prepare final Structures Plans for incorporation into the final PS&E package. The activities include, but are not limited to:

- Update plan sheets based on final Project Review (90% Constructability Review)
- Review and incorporate District and Structure Office Engineer comments into Final Structure Plans and Quantity calculations
- Update Specification and other items for RE Pending File
- Update Type Selection Report
- Update quantities for contract bid items

Deliverables:

- Final Structures Plans
- Final Structures Specifications



- Final Structures cost estimate
- Type Selection Report

#### **255.10.05 SUMMARY CONSTRUCTION SCHEDULE**

An estimate to construct the planned structure improvements will be assembled for this activity.

##### Deliverables:

- Structure Construction Schedule and working day summary.

#### **255.10 UPDATED PS&E PACKAGE**

Under this activity all of the various Roadway PS&E components will be updated with all comments received.

##### **DELIVERABLES:**

- Updated Roadway PS&E
- Updated Traffic PS&E
- Updated Hydraulics PS&E
- Updated Specification
- Updated Cost Estimate

#### **255.15 PERFORM ENVIRONMENTAL RE-EVALUATION**

At each major milestone of the project an Environmental Revalidation/Reevaluation will need to be performed. This scope and cost assumes that this will occur four (4) times. It is assumed that no substantial changes or substantial new information will be present since approval of the environmental document and that the Environmental Revalidation form is all that will be required. No analyses or evaluations are assumed to be required or included in this task; this task assumes that

only filling out the form with all negative responses and no supporting documentation will be sufficient.

##### Deliverables:

- Preparation of Revalidation form four times (assumes no substantial changes or information will be identified and that no new analyses or information will be required to complete the form)

#### **255.20.05 REVIEW PLANS FOR DRAFTING STANDARDS COMPLIANCE**

The plans will be reviewed to assure compliance with Caltrans Drafting Standards except as noted where several sheet types have been combined at the request of the Client.

##### Deliverables:

- Consistent set of plans conforming to Caltrans drafting standards



### **255.20.10 INCORPORATE FINAL STRUCTURES PS&E**

The structures PS&E and the roadway PS&E will be combined into one cohesive and complete PS&E package.

#### Deliverables:

- Combined plans including both roadway and structure elements
- Combined specification
- Combined Cost Estimate

### **255.25 GEOTECHNICAL INFORMATION HANDOUT**

This task includes reviewing the Geotechnical Design Report (GDR), Foundation Report (FR), geophysical data, geotechnical instrumentation data, laboratory test data and rock core and soil samples available for viewing that were prepared earlier during the design phase and selecting the necessary sections and information to be included in the Geotechnical Information Handout. The GDR and FR include information such as existing physical setting, geophysical studies, geotechnical conditions, geotechnical analysis and design, construction considerations, and recommendations and specifications.

#### Deliverables:

- Geotechnical Information Handout, for the prospective bidders to review.

### **255.30 MATERIALS INFORMATION HANDOUT**

The Materials Information Handout (MIH) is prepared for the use of prospective bidders. The handout includes test data on local materials sources; soil survey sheets showing borings, tests, and seismic information (if required).

#### Deliverables:

- Material Information Handout for the prospective bidders to review.

### **255.40 RESIDENT ENGINEER'S PENDING FILE**

Work involved in preparing the RE Pending File/Structures RE Pending File. Includes preparation of an Environmental Commitments Record (or similar document), contacts with construction to transmit the file and determine what additional information may be required. Also includes preparing and forwarding additional information (such as cross sections/as-builts/slope staking notes/grid grades/structures 4-scales) as requested by construction. In terms of the environmental component of the RE Pending file, the input is a "snapshot" of the Environmental Commitments Record (ECR), or similar document (e.g., Mitigation Monitoring and Reporting Record).

#### Deliverables:

- RE Pending File and Structures RE Pending File
- Contract special provisions for all items of work
- Engineer's Estimate consistent with the plans and special provisions



- Spreadsheet of estimated quantities
- Final set of Plans
- Contract (from RCTC)

### **5.6 265 CONTRACT AWARD SUPPORT**

No activities are assumed to be included in this scope of work

### **5.7 270 CONSTRUCTION SUPPORT**

No activities are assumed to be included in this scope of work.

### FEE PROPOSAL WORKSHEET

<b>COMPANY:</b> URS Corporation	<b>SCOPE OF WORK</b> Project Summary	<b>DATE:</b> 11/13/2008	<b>REV:</b>
<b>PROJECT:</b> I-215 PS&E (Add One Mixed Flow Lane in Each Direction)		<b>MILESTONE/PHASE/PROJECT SUMMARY:</b> All Phases	

**DIRECT LABOR**

I	FUNCTION	HOURS	RATE	AMOUNT
	Project Manager	1382	@ \$88.00	\$121,616.00
	Task Managers	412	@ \$72.00	\$29,664.00
	Sr. Project Engineer	2420	@ \$58.00	\$140,331.00
	Project Engineer	6617	@ \$47.00	\$310,999.00
	Staff Engineer	8725	@ \$35.00	\$305,375.00
	Technician/CADD	8859	@ \$30.00	\$265,770.00
	Project Administrator	528	@ \$30.00	\$15,840.00
	Clerical	454	@ \$25.00	\$11,350.00
<b>TOTAL HOURS</b>		29396.5		<b>TOTAL DIRECT LABOR</b>
				\$1,200,945

**MULTIPLIERS**

ESCALATION @	4.00% (Rate)	\$48,037.80
FRINGE @	(of Total Direct Labor + Escalation)	
OVERHEAD @	124.44% (of Total Direct Labor + Escalation)	\$1,554,234.20
<b>TOTAL MULTIPLIERS</b>		<b>\$1,602,272</b>

**OTHER DIRECT EXPENSES    \*\*\* Billed at Actual Cost \*\*\***

ITEM	QUANTITY	UNIT	UNIT COST	AMOUNT
Mileage	13500	Mile	@ \$0.585	\$7,897.50
Air Fare	18	Roundtrip	@ \$450.00	\$8,100.00
Reproduction - B&W	21000	Page	@ \$0.10	\$2,100.00
Color Copies	2200	Page	@ \$2.00	\$4,400.00
CADD Plots	8400	Sheet	@ \$7.00	\$58,800.00
Overnight Mail, Communication, Etc.	64	Each	@ \$9.50	\$608.00
ADL Testing Expenses		Lump Sum	\$35,000.00	
Foundations Report	1	Lump Sum	@ \$55,550.00	\$55,550.00
Presentation Boards	25	Each	@ \$75.00	\$1,875.00
Public Involvement Expenses		Lump Sum	\$33,093.00	
Traffic Counts and Expenses		Per Location	@ \$500.00	
Environmental Expenses	1	Lump Sum	@ \$10,000.00	\$10,000.00
<b>TOTAL OTHER DIRECT EXPENSES</b>				<b>\$149,331</b>

**OUTSIDE SERVICES (w/fee)**

COMPANY	LABOR	MULTIPLIER	EXPENSES	TOTAL
Psomas Associates	\$32,030.06	\$70,145.83	\$500.00	\$102,675.89
<b>TOTAL OUTSIDE SERVICES</b>				<b>\$132,638</b>

**FEES**

OUTSIDE SERVICES ADMIN FEE	005.00% (of Total Outside Services & Outside Services Fees)	\$6,631.89
URS CORPORATION @	010.00% (of Total Direct Labor + Total Multipliers)	\$280,321.70
OUTSIDE SERVICES @	(of Total Labor + Total Multiplier for Outside Services)	
<b>TOTAL FEES</b>		<b>\$286,954</b>
<b>TOTAL COST</b>		<b>\$3,372,139</b>

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	RESP	2009	2010
01.100	Notice To Proceed	0	05JAN09		RCTC		
02.100	30% Plans	50	05JAN09	13MAR09	URS		
02.200	QC 30% Plans	10	16MAR09	27MAR09	URS		
02.300	Review 30% Plan	30	30MAR09	08MAY09	CT08		
03.100	60% PS&E	110	30MAR09	28AUG09	URS		
03.200	QC 60% PS&E	20	31AUG09	25SEP09	URS		
03.300	Review 60% PS&E	30	28SEP09	06NOV09	CT08		
04.100	90% PS&E	70	09NOV09	12FEB10	URS		
04.200	QC 90% PS&E	10	15FEB10	26FEB10	URS		
04.300	Review 90% PS&E	30	01MAR10	09APR10	CT08		
05.100	100% PS&E	30	12APR10	21MAY10	URS		
05.200	QC 100% PS&E	10	24MAY10	04JUN10	URS		
05.300	Review 100% PS&E	10	07JUN10	18JUN10	CT08		
06.100	PS&E Ready To List	10	21JUN10	02JUL10	URS		

Start Date: 05JAN09      Finish Date: 02JUL10      Early Bar

Data Date: 05JAN09      Run Date: 13NOV08 10:53      Progress Bar

MHSR1      Riverside County Transportation Comm      Sheet 1 of 1

I-215 Widening (MHSR to SR)      Proposal Schedule Layout

© Primavera Systems, Inc.

Date	Revision	Checked	Approved