

**SUBMITTAL TO THE BOARD OF SUPERVISORS  
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA**

636  
A



**FROM:** TLMA - Transportation Department

**SUBMITTAL DATE:**  
July 19, 2012

**SUBJECT:** Amendment No. 1 to the Engineering Services Agreement between the County of Riverside and RBF Consulting for improvements to the existing interchange at Jefferson Street and Interstate 10

**RECOMMENDED MOTION:** That the Board of Supervisors:

1. Approve Amendment Number 1 to the Engineering Services Agreement between the County of Riverside and RBF Consulting (Contract No. 10-09-008 A1), and;
2. Authorize the Chairman of the Board to execute the same.

**BACKGROUND:** On October 5, 2010, the Board of Supervisors executed an engineering services agreement between Riverside County Transportation Department and RBF Consulting

  
\_\_\_\_\_  
Juan C. Perez  
Director of Transportation and Land Management

(Continued On Attached Page)

<b>FINANCIAL DATA</b>	Current F.Y. Total Cost:	\$ 4,026,140	In Current Year Budget:	Yes
	Current F.Y. Net County Cost:	\$ 0	Budget Adjustment:	No
	Annual Net County Cost:	\$ 0	For Fiscal Year:	2012/13

**SOURCE OF FUNDS:** CVAG TUMF (100%)

Positions To Be Deleted Per A-30

There are no General Funds used on this project

Requires 4/5 Vote

**C.E.O. RECOMMENDATION:**

APPROVE  
BY:   
Tina Grande

**County Executive Office Signature**

FORM APPROVED COUNTY COUNSEL  
BY:   
MARSHAL VICTOR  
DATE: 7/19/12

Departmental Concurrence

Dept't Recomm.:  Policy  Consent  
Per Exec. Ofc.:  Policy  Consent

Prev. Agn. Ref. 10/05/10 (3.32) | District: 4/4 | Agenda Number:

ATTACHMENTS FILED  
WITH THE CLERK OF THE BOARD

3.74

The Honorable Board of Supervisors

RE: Amendment No. 1 to the Engineering Services Agreement between the County of Riverside and RBF Consulting for improvements to the existing interchange at Jefferson Street and Interstate 10

July 19, 2012

Page 2 of 3

for the Jefferson Street/I-10 Interchange project to prepare an environmental document. The environmental document is nearly complete and it is now desired to begin the design phase of the project.

The Jefferson Street/I-10 Interchange project is one of Coachella Valley Association of Governments (CVAG) and the City of Indio's priority projects. In order to expedite project delivery and try to take advantage of the historically low construction bid climate that we see currently, it became necessary to have the final design phase of the project commence prior to the completion of the preliminary engineering and environmental phases. Based upon consultant's knowledge of the project, the work they have done during the environmental and preliminary engineering phases and the overlapping of the final design phase, it is recommended that RBF perform final design for this project rather than bringing in another firm to get up to speed at increased costs and schedule delays.

Amendment 1 to the Engineering Services Agreement is now required to: complete and include scope changes to the preliminary engineering and environmental documents; extend the term of the agreement to December 31, 2017; and to add the tasks and budget required to prepare the final design and provide bid support and construction support for the construction of the project.

Additional services for the preliminary engineering and environmental phases of the project include:

- Revision to the Traffic Impact Analysis using an alternate methodology for traffic forecasting that better reflects the detailed land use plans and developments within the cities of La Quinta and Indio, as required by Caltrans.
- Preparation of Geometric Approval Drawings (GAD's) which was not anticipated in the PA/ED phase of the original scope, are now required by Caltrans
- Preparation of Supplemental Fact Sheets for Exceptions to Design Standards as identified through the GAD development.
- Cultural Field work and Data Recovery

A more detailed scope of services for the PA/ED phase as well as the scope and budget for new services for the PS&E, Bid and Construction Support phases is provided in Attachment A.

Amendment 1, as negotiated by the Transportation Department, increases the budget for the described services and also includes a \$375,000 contingency amount to be used only with prior written approval from the Director of Transportation. The project budget is summarized below:

**Budget Summary:**

Original Contract	\$ 951,659 (incl. \$125,000 contingency)
Amendment 1	
Preliminary Engineering & Environmental	\$ 768,072
Final Design and Construction Support	\$ 3,008,067
Contingency	\$ 250,000
<u>Total Amendment</u>	<u>\$ 4,977,798</u>

**AMENDMENT NO. 1**

**AMENDMENT TO AGREEMENT BETWEEN**

**THE COUNTY OF RIVERSIDE**

**and RBF CONSULTING Contract No. 10-09-008-A1  
Riverside Co. Transportation**

THIS AMENDMENT NO. 1 (hereinafter the "Amendment") to an agreement is made and entered into as of this \_\_\_\_\_ day of \_\_\_\_\_, 2012, by and between the County of Riverside, a political subdivision of the State of California (hereinafter the "COUNTY"); and RBF Consulting (hereinafter "ENGINEER").

**RECITALS**

- A. COUNTY and ENGINEER have entered into an agreement entitled "Engineering Services Agreement for Jefferson Street Interchange Project between County of Riverside Transportation Department and RBF Consulting" that is dated October 5, 2010 (hereinafter the "Agreement"). The Agreement provides the terms and conditions, scope of work, schedule, and budget for the performance of professional and technical services necessary to prepare a Project Approval/Environmental Document (PA/ED).
- B. It is now desired to amend the scope and increase the contract budget of the Agreement to include: additional services for the PA/ED phase; preparation of Plans, Specification, and Estimates (PS&E); Bid support; and Construction support services. The term of the agreement is also modified in order to provide these additional services.

**AGREEMENT**

NOW, THEREFORE, in consideration of the mutual covenants hereinafter contained, the parties agree as follows:

1. Article VI, Subsection B is modified to reflect a new contract total amount of \$4,977,798.20 and is modified for the following consultants as follows:

• RBF Consulting	\$ 3,596,536.21
• POWER Engineers	\$ 180,592.93
• LSA Associates, Inc.	\$ 43,604.25
• Earth Mechanics, Inc.	\$ 225,969.18
• Applied Earthworks	\$ 485,021.39
• Bonterra	\$ 24,494.24
• Green Communications	\$ 46,580.00

- Contingency \$ 375,000.00

2. Appendix A is amended to provide the additional services as described in Attachment "A" (Scope of Services) attached hereto and incorporated herein.

3. Appendix B • Article B1 is amended to extend the agreement duration to December 31, 2017.

4. Appendix C • Article CI is amended by increasing the Total Fixed Fee payable to ENGINEER by \$271,401.34 from \$41,806 to \$313,207.34.

5. Appendix C • Article CV is amended by increasing the current total contract budget by \$4,026,139.60 (including contingency) from \$951,658.60 (including contingency) to \$4,977,798.20 as shown in Attachment "B" and as provided below:

- Phase I (A & B) budget is amended by increasing the amount by \$768,071.66 from \$826,658.60 to \$1,594,730.26.
- Phase II budget is added in the amount of \$2,777,586.64. The current Phase II contingency of \$125,000 is moved to an overall project contingency
- Phase III budget is added in the amount of \$24,828.28
- Phase IV budget is added in the amount of \$205,653.02
- The contingency budget is amended by increasing the current budget by \$250,000 from \$125,000 to \$375,000

6. Except to the extent specifically modified or amended hereunder, all of the terms, covenants, and conditions of the Agreement shall remain in full force and effect between the parties hereto.

IN WITNESS HEREOF, the parties hereto have caused this Amendment to the Agreement to be duly executed this day and year first written above.

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**APPROVALS**

**COUNTY** Approvals

RECOMMENDED FOR APPROVAL:

 Dated: 7/12/12

JUAN C. PEREZ

Director of Transportation

APPROVED AS TO FORM:

PAMELA J. WALLS

 Dated: 7/16/12

By Deputy

APPROVAL BY THE BOARD OF SUPERVISORS

\_\_\_\_\_ Dated: \_\_\_\_\_

PRINTED NAME

Chairman, Riverside County Board of Supervisors

ATTEST:

\_\_\_\_\_ Dated: \_\_\_\_\_

KECIA HARPER-IHEM

Clerk of the Board

**ENGINEER** Approvals

ENGINEER:

 Dated: 5/7/2012

Ronald B. Craig  
PRINTED NAME

Senior Vice President  
TITLE

ENGINEER:

\_\_\_\_\_ Dated: \_\_\_\_\_

PRINTED NAME

TITLE

**ATTACHMENT A – SCOPE OF SERVICES**

**PHASE 1A – PRELIMINARY ENGINEERING**

**2.0 Traffic Analysis and Study**

The original agreement included the preparation of a Traffic Study utilizing the Riverside Traffic Analysis Model (RIVTAM) output data for the long-range volumes. Following the initial data runs of the RIVTAM model, the output information did not exhibit reasonable growth in the area for the given forecast population, household and employment input data. COUNTY and California Department of Transportation (Caltrans) staff decided that the volumes generated by the model in this area would be not used, and the Engineer shall develop future volumes based on land use growth and other socio-economic data utilized by the RIVTAM model.

ENGINEER shall develop the future long-range traffic volumes for each of the project study scenarios for use in the originally scoped Traffic Study in accordance with the following:

- Coordinate with COUNTY, City of Indio and City of La Quinta staff to identify likely developments between the current condition and the year 2036.
- ENGINEER will review the applicable General Plan Land Use documents, Conceptual Specific Plans, Specific Plans, Master Plans, etc. for land use information in both the City of Indio and La Quinta to identify all vacant or underutilized land in the influence area.
- ENGINEER will prepare a summary of likely development within the influence area for agency review and concurrence.
- Following concurrence of the underlying land use assumptions and development potential with prior to the year 2036, ENGINEER shall prepare a forecasted traffic generation of the land uses and assignments to the local roadway system for the morning and afternoon peak hours and for daily traffic conditions.
- ENGINEER will also provide the traffic assignment associated with likely land development to be added to existing conditions traffic volumes to derive year 2036 traffic volumes.
- ENGINEER will derive the Year 2016 traffic volumes through an interpolation between year 2010 and year 2036 traffic volumes.
- Following the above mentioned tasks, ENGINEER will summarize the results and distribute a Traffic Volume Derivation Memorandum to Caltrans, COUNTY, and City of Indio staff for review and concurrence. One round of revisions to the traffic volume memorandum is anticipated.

1 ENGINEER prepared an Adjacent Interchange Memorandum to justify performing operational analysis of the  
2 adjacent interchange is not necessary. This effort developed a qualitative approach to justifying operational  
3 analysis of the intersections at the Washington Avenue and Monroe interchanges. ENGINEER coordinated with  
4 Caltrans Traffic Operations, Design Oversight, FHWA Liaison, and FHWA to obtain approvals of the  
5 memorandum. ENGINEER analyzed available data and qualitatively concluded the operational analysis is not  
6 necessary due to the existing interchange spacing, and existing and proposed improvements at Washington  
7 Avenue and Monroe interchanges, respectively.

8  
9 **5.19 Geometric Approval Drawings**

10 ENGINEER will prepare the Geometric Approval Drawings (GAD) at a scale of 1" = 50'. The GADs will be  
11 prepared according to Caltrans District 8 GAD guidelines to establish the approved scope relative to the  
12 geometric project features identified in the selected alternative from the Final Project Report. This effort provides  
13 equivalent detail to PS&E requirements for Cross Sections, Layouts, Profiles, and Superelevation Diagrams.  
14 Approval will be obtained from Caltrans Offices of Traffic Operations and Design, and HQ Geometric Reviewer.  
15 Up to three submittals (two review cycles) of the GADs is anticipated for Caltrans approval.

16  
17 The GAD will include existing topographic and planimetric mapping, approximate right-of-way acquisition lines,  
18 center lines, calculated geometric layouts, typical sections, and a preliminary Title Sheet. ENGINEER will design  
19 roadway geometry including horizontal and vertical geometry for ramps, connectors and cross streets, including  
20 profile and superelevation diagrams. Profiles and superelevation diagrams will be provided for the areas of  
21 mainline widening based on aerial topographic mapping and record drawing information. Conceptual grading  
22 utilizing 1:2 or 1:4 slopes will be developed to establish preliminary right-of-way limits. Typical cross sections will  
23 be prepared to illustrate lane and shoulders in the lane configurations and other basic cross sectional data. The  
24 GAD will also provide detail indicating pavement delineation, truck turning radii, and traffic volumes.

25  
26 **5.20 Supplemental Fact Sheets for Exception to Design Standards**

27 Exceptions to advisory and mandatory design standards were prepared during the PA/ ED phase of this project  
28 for design exceptions common to all of the build alternatives. During GAD development, refined design elements  
29 will highlight additional non-standard design elements. ENGINEER will prepare Supplemental Fact Sheets



1 detailing nonstandard design elements of the preferred alternative. These will be prepared in close coordination  
2 with and reviewed by Caltrans. Revisions will be made as appropriate and the final design exception  
3 documentation will be prepared. This task assumes the Fact Sheet preparation for five (5) design exceptions.  
4

5 **PHASE 1B – ENVIRONMENTAL DOCUMENT**

6 **4.5 Noise Impact Analysis**

7 ENGINEER will prepare a work plan for the Caltrans District for their review and approval by outlining the  
8 methods and procedures in preparing the Noise Impact Analysis (NIA). An exhibit will be prepared to show the  
9 proposed monitoring and receptor locations in the project area. In addition, one field meeting or work plan  
10 meeting is anticipated.  
11

12 ENGINEER will also revise the NIA consistent with the Caltrans Traffic Noise Analysis Protocol (May 2011),  
13 Technical Noise Supplement (TeNS), and the report format provided in the Standard Environmental Reference  
14 (SER) website.  
15

16 Ambient noise level measurements will be re-conducted to establish the existing noise environment at  
17 representative outdoor frequent human use areas within the project area. Short-term (15-minute) noise level  
18 measurements will be made at up to 9 locations with concurrent traffic counts to document the existing noise  
19 environment and to calibrate the traffic noise model. Observations of other noise sources, barriers, terrains,  
20 building heights, and other site specific information will be noted during each measurement period.  
21

22 Noise impacts from construction sources will be reevaluated for the closest noise-sensitive receptor. The  
23 construction noise impact will be evaluated in terms of hourly equivalent sound level (Leq) and the frequency of  
24 occurrence at adjacent sensitive locations. Analysis requirements will be based on the sensitivity of the area and  
25 the Noise Ordinance specifications of the City and Caltrans.  
26

27 The Federal Highway Administration (FHWA) Traffic Noise Model (TNM) Version 2.5 will be used to incorporate  
28 the latest traffic volumes projected in the traffic study to evaluate potential traffic noise impacts associated with  
29 Existing, Future No Build, and two build Alternatives. It is anticipated that Caltrans will review and approve the



1 TNM files prior to the submittal of the first draft NIA. Traffic noise impacts and noise abatement measures (sound  
2 barriers) will be reevaluated to achieve traffic noise reductions by 5 A-weighted decibels (dBA) or more and must  
3 achieve a design goal that would provide at least a 7 dBA noise level reduction at one or more receptors, as  
4 required to be feasible. The total reasonable allowance for each sound barrier will be recalculated based on  
5 \$55,000 per benefited receptor.

6  
7 **4.26 Public Outreach and Communication**

8 ENGINEER will provide public outreach and communication during the design phase of the project.  
9

10 **4.27 Cultural Field Work/Data Recovery**

11 Except as provided herein, all tasks, work rates, levels of effort, and job performance standards shall be as set  
12 forth in the Project's Data Recovery Plan and Phase III Proposal (DRP/PIII; Moratto 2008a, as revised in  
13 December 2011). In brief, the DRP/PIII describes how FHWA will resolve the undertaking's adverse effects on  
14 the identified historic property by recovering an adequate sample of archaeological data and realizing the  
15 information potential of those data that otherwise would be lost. This will be accomplished by the program of field  
16 excavations, laboratory studies, analytic work, and reporting specified in the DRP/PIII.

17  
18 The DRP/PIII identifies many tasks that must be performed to implement Stipulations XI-XVI of the PA and,  
19 concomitantly, to comply with CEQA/NEPA by mitigating the Project's impacts on historical resources. These  
20 tasks are to be done either during the pre-construction phase or the construction phase (Phases III.A and III.B,  
21 respectively) of Project development. Within each of these phases, tasks are assigned variously to one of six  
22 sub-phases: (1) pre-field work; (2) field investigations; (3) laboratory work; (4) special studies and data analysis;  
23 (5) preparation of the Data Recovery Report; and (6) completion of other deliverables (Moratto 2008a:110-116).

- 24
- All Phase III.A pre-field work related to CA-RIV-6896;
  - 25 • All other Phase III.A tasks, as described in the DRP/PIII, including field investigations, laboratory work,  
26 special studies and data analysis, and preparation of a Data Recovery Report for CA-RIV-6896; and
  - 27 • Consultation with Native Americans throughout Phase III.A.
- 28  
29

1 Cost estimates for the Phase III.B services—most notably, tasks related to construction monitoring and treatment  
2 of unanticipated discoveries, if any, during construction—are excluded from this Cost Proposal. It is anticipated  
3 that those services would be budgeted and performed at a later time.

4  
5 Phase III.A tasks are grouped into three broad categories: Pre-Field Work; Field Work; and Post-Field Work.

6  
7 **4.27.1 Pre-Field Tasks**

8 Included in this category are: (1) all of the pre-field tasks related to CA-RIV-6896 that are itemized in the DRP/PIII  
9 (Moratto 2008a: Items 9.3.1.1.); and (2) consultation and coordination with the COUNTY, City, ENGINEER,  
10 Caltrans, the SHPO, Native American tribes/bands, and other entities, as necessary and appropriate, prior to and  
11 in preparation for the Phase III archaeological field investigations.

12  
13 **4.27.2 Field Tasks**

14 Included in this category are all of the Phase III.A field tasks related to CA-RIV-6896 that are itemized in the  
15 DRP/PIII (Moratto 2008a: Item 9.3.1.2).

16  
17 **4.27.3 Post-Field Tasks**

18 This category encompasses all of the Phase III.A post-field tasks related to CA-RIV-6896 that are itemized in the  
19 DRP/PIII (Moratto 2008a: Items 9.3.1.3-9.3.1.5 and 9.3.2.3-9.3.2.5). The following tasks are included:

20 **4.27.3.1 Laboratory Work**

21 **4.27.3.2 Special Studies and Data Analysis**

22 **4.27.3.3 Data Recovery Report.**

23 **4.27.3.4 Deliverables**

24 Excluded is the production of other deliverables (Moratto 2008a: Item 9.3.3) that will follow completion of all  
25 Phase III work.

**PHASE 2 – PLANS, SPECIFICATIONS AND ESTIMATE (PS&E)**

**1.0 Existing Data Research and Investigation**

ENGINEER will research, obtain, and input existing data into the project’s CADD database as appropriate. For the PS&E phase of the project, updated existing conditions, As-Builts, and Utility information will be required. Updated information pertaining to the Varner Road relocations and improvements will be included. Information gathered during the PA/ED phase of the project will be translated from Metric to English units and included in the project base maps.

**2.0 Utility Coordination**

**2.1 Utility Research and Investigation**

ENGINEER will coordinate with the utility companies identified in the approved Project Report to obtain record copies of utility maps from each utility owner within the project limits for existing and/or proposed utility facilities. ENGINEER shall include mapping and/or exhibits that clearly define the project limits as part of the requests for utility information. ENGINEER will plot available as-built/record drawing information and data compiled for the Project Report on standard Caltrans formatted Utility Location Plans. Additional utility company contacts and requests for as-built/record drawing information will be made, as necessary. Utility owners will be asked to verify the status of their facilities within the project limits. Locations of relocated utilities will be added to the Utility Location Plans upon receipt from the utility companies.

**2.2 Utility Location Plans**

ENGINEER will prepare utility plans using base layout sheets, showing the location of existing utilities (identified by location, size, type, and owner, as appropriate), delineating those that will require relocation/adjustment, and designating who will be responsible for any required adjustment/relocation. ENGINEER shall check horizontal and vertical clearances for utilities and coordinate design with the various utility companies to address conflicts. In addition to information provided by the owning utility companies and through research of other record maps, field surveys shall be used to locate utility features such as manholes, valves, fire hydrants, poles, risers, etc., which shall be reflected on the plans. Plans will be sent to utility companies to confirm existing facilities locations and relocation limits. This Scope of Work excludes utility relocation design. Utility companies will perform design

1 work with their own forces in preparing final utility relocation plans. No design fees have been included for the  
2 preparation of final signed plans, specifications, and cost estimates for any interim or permanent utility relocation.

3  
4 **2.3 Utility Potholing Maps**

5 ENGINEER will prepare a Potholing Location Map and perform potholing of existing utilities that are anticipated to  
6 be impacted by construction. If it is necessary to pothole existing utilities at critical locations, ENGINEER shall  
7 coordinate with COUNTY and Caltrans staff to arrange with the respective utility owner to pothole its facility. .

8 ENGINEER shall coordinate the use field survey crews to locate potholed utilities by coordinates and elevations  
9 based on the project's survey controls. Pothole locations will be surveyed in accordance with Caltrans procedures

10 The ENGINEER shall evaluate the potholing data, and shall include the information on the utility plans in table  
11 format, with numbered or letter references to the location of the location of the potholes. A total of five (5)  
12 potholes have been assumed based on current available data. It is assumed that no underground "high risk"  
13 utilities, as defined in the Caltrans Right of Way Manual, are located within the project limits, which precludes the  
14 requirement for a 100-ft potholing interval for such facilities.

15  
16 ENGINEER has assumed that potholing of five (5) utility locations will be required for the project in accordance  
17 with Caltrans High Risk Utilities manual. If more than five (5) locations are deemed necessary for the project,  
18 additional compensation will be required.

19  
20 Encroachment permits from Caltrans and the City will be obtained for potholing activities. Traffic control plans will  
21 be submitted to Caltrans and the City for each location as part of the encroachment permit process.

22  
23 The contract between the ENGINEER and the potholing contractor shall require that the Contractor's insurance  
24 policies name the ENGINEER, the COUNTY, and any other affected jurisdictions as additionally insured with  
25 respect to the contractor's general liability, excess liability and automobile liability policy. The contractor shall  
26 meet the insurance requirements, as set forth elsewhere in this agreement, except that the contractor will not be  
27 required to provide professional liability coverage. Review and approval of the Contractor's insurance certificate  
28 and endorsements by the COUNTY's representative shall be obtained prior to the start of potholing work.

29 **2.4 Utility Conflict Maps**

1 Once pothole data is made available, ENGINEER will identify potential conflicts to utility facilities. ENGINEER will  
2 prepare utility conflict maps at 1"=50' scale per Caltrans requirements. The ENGINEER shall determine whether  
3 or not the facilities are in conflict, and the limits of the conflict, both of which shall be shown on the utility plans  
4 with construction notes. ENGINEER shall send preliminary design plans to owning utility companies within the  
5 project limits with request for review and comments on the plans relevant to their respective facilities, and other  
6 project specific information. ENGINEER will coordinate and work closely with the COUNTY and utility companies  
7 to determine the need to relocate impacted lines, using Caltrans policy for high- and low-risk utilities. Known utility  
8 conflicts shall be shown on the plans with construction notes indicating action to be taken and by whom.  
9 Inventory numbers of poles, vaults and other surface facilities shall be shown on the plans for those facilities that  
10 have such numbers attached to the facility and as provided on the owner's inventory maps.  
11

12 **2.5 Utility Relocation Coordination**

13 ENGINEER shall coordinate with utility owners and COUNTY and Caltrans utility coordination staff with respect to  
14 all utility related matters, including but not limited to:

- 15 a. Requests for utility as-built plans and inventory maps.
- 16 b. Request for property rights information.
- 17 c. Design coordination meetings and communications.
- 18 d. Notices to owner to initiate design.
- 19 e. Notices to owner and agreements to pothole including submissions to Caltrans for encroachment permits.
- 20 f. Inclusion of utility information, including sub-surface engineering data, on improvement plans.
- 21 g. Notices to owner to relocate conflicting utilities.
- 22 h. Coordination and communication with respect to utility facilities that are to be installed within planned  
23 bridge structures including preparation of agreements as required.
- 24 i. Coordination and communication with respect to utility facilities that are to be installed prior to or  
25 concurrent with COUNTY's construction project, including preparation of agreements as required.
- 26 j. No conflict letters.
- 27 k. Other procedures and communications as required.

28 ENGINEER shall provide copies of all correspondence with utility companies and other utility related  
29 information to the COUNTY and Caltrans as required.

1  
2 ENGINEER shall act as extension of staff to implement utility coordination and relocation in accordance with  
3 Caltrans Right of Way Manual, Chapter 13 and necessary COUNTY procedures, including but not limited to:

4 a. Preparation of letters to owners of utilities

5 Many letters will require signature by COUNTY's utility coordination or project management staff.

6 ENGINEER shall prepare letters for COUNTY signature as required. ENGINEER shall prepare and send  
7 correspondence under ENGINEER's signature when feasible and appropriate.

8 b. Phone, email and office communication

9 ENGINEER shall communicate effectively as needed to achieve necessary and required utility  
10 coordination and relocations via all communication methods.

11 c. Meetings

12 ENGINEER shall set up utility coordination meetings as needed. ENGINEER shall conduct utility  
13 coordination meetings, as needed, regarding adjustments and relocations, to resolve conflict issues.

14 d. Agreements

15 ENGINEER shall prepare Agreements utilizing Caltrans format and language, modified as necessary for  
16 execution by the COUNTY.

17 e. Submittals

18 ENGINEER shall submit letters, notices to owner, agreements, and other documents to COUNTY and  
19 Caltrans for reviews and approvals.

20 f. Caltrans procedures, general

21 ENGINEER shall comply fully with Caltrans utility coordination procedures, as outlined in Chapter 13 of  
22 the Caltrans Right of Way manual. ENGINEER shall be knowledgeable in the required procedures, and  
23 shall coordinate with COUNTY and Caltrans as required. ENGINEER shall maintain files in accordance  
24 with Caltrans filing requirements, and shall provide Caltrans with duplicate files and shall provide  
25 COUNTY with original files upon completion of construction.

26  
27 ENGINEER shall monitor responses of utility notices received and make recommendations for mitigating conflicts.  
28 ENGINEER shall provide written responses to utility companies with regard to stated concerns and conduct  
29 design coordination meetings with utility companies as needed. Unresolved issues shall be brought to the

1 attention of the COUNTY PROJECT MANAGER as early as practical. Utility conflict issues shall be resolved prior  
2 to the completion of the final design plans as follows:

- 3 • ENGINEER, through COUNTY staff, shall request and obtain a written acknowledgement of any conflicts  
4 from the respective utility owners.
- 5 • Reasonable efforts shall be taken to accommodate utility company requests for minor design changes to  
6 accommodate their facilities. ENGINEER understands that the utility companies are generally operating  
7 within the COUNTY or Caltrans right-of-way, but may have prior rights to that of the COUNTY / Caltrans  
8 or may have rights prescribed by Master Utility Agreements between Caltrans and utility companies.
- 9 • ENGINEER shall coordinate inclusion of special provisions in COUNTY's bid documents for adjustments  
10 and relocations of utility facilities as alternate bid items, if requested by the owning utility. Said work may  
11 require that cooperative agreements be prepared between the COUNTY and the owning utility  
12 companies. Engineer shall prepare agreements and shall provide information and exhibits as required to  
13 support the preparation of cooperative agreements, if needed.

14  
15 If new electrical service will be needed, ENGINEER shall provide support as directed by COUNTY. Such support  
16 includes, but is not limited to, the following responsibilities:

- 17 • Obtain approved electrical service point from the serving electric company for each service equipment  
18 enclosure to be installed, and identify requirements that the serving electric company has for the provision  
19 of service. Coordinate with electric company with respect to design issues associated with the provision  
20 of service. Coordinate with serving electric company to fulfill serving electric company requirements as  
21 appropriate, including preparation of all utility company forms and submission to COUNTY or Caltrans for  
22 execution. Advise COUNTY of requirements that are beyond the scope of the ENGINEER (e.g.:  
23 execution of applications for service). However, ENGINEER is expected to provide turn-key service.
- 24 • Serving electric company shall be notified that Electrical Safety Orders clearance requirements must be  
25 met (10' radial clearance between 12kv overhead electrical facilities and signal poles and mast arms, and  
26 greater clearance for higher voltage electrical facilities). Show such clearance conflicts on the plans with  
27 construction notes.



- Submit plans indicating proposed service connection locations to serving electric company for approval (service equipment enclosure, conduit runs, riser quadrant, pole number, and connections to vaults as appropriate).
- Provide detailed load calculations to serving electric company, with a copy to the COUNTY, which provides calculations of the normal and maximum expected loads.
- Preparation of any plan required to extend utility services to the designated service point connection is assumed to be provided by the utility company.

For utility conflicts that require relocating, ENGINEER shall prepare notices to owner relocate conflicting facilities. However, it is expected that COUNTY staff will sign the orders.

ENGINEER shall make recommendations for special provision language with regard to utility issues, recommendations for construction windows of time for utility relocation activities, recommendations for inclusion of utility bid items, etc.

This task assumes all other existing utilities will remain in place and will not require a longitudinal encroachment from Caltrans. If additional utility coordination effort or utility location design work is needed due to a required relocation of a utility, additional compensation will be required to complete this work.

**3.0 Right of Way Mapping / Acquisition**

**3.1 Right of Way Requirements Maps**

ENGINEER will determine right of way needs and prepare preliminary right of way requirements maps. Right of way requirements may include the need for new right of way, permanent easements, slope easements, and temporary construction easements. ENGINEER will coordinate with the COUNTY, City, Caltrans, railroad and other affected agencies, as appropriate.

**3.2 Right of Way Coordination**

1 ENGINEER will coordinate with the COUNTY on preparation of the existing right of way mapping, record of  
2 survey, right of way maps, right of way appraisal maps, legal descriptions, appraisals, and acquisitions. The  
3 COUNTY intends to pursue early acquisition of adjacent right of way for the project per Caltrans guidelines.  
4 ENGINEER will coordinate with the COUNTY relative to the early acquisitions process.

5  
6 **4.0 Storm Water Data Report**

7 In accordance with current Caltrans Project Planning and Design Guide (July 2010), a Storm Water Data Report  
8 (SWDR) shall be prepared for this phase of the project. The SWDR prepared for the PA/ED phase of the project  
9 will be updated for the PS&E Phase. The SWDR will be prepared as a second order of work during the PS&E  
10 Phase based on the approved Geometric Approval Drawings. Specific objectives of the SWDR include:

- 11 • Define storm water quality issues and pollutants of concern.
- 12 • Form the Project Development Team (PDT), including the District/Regional National Pollutant Discharge  
13 Elimination System (NPDES) Storm Water Coordinator.
- 14 • Evaluate potential storm water impacts.
- 15 • Develop a list of feasible permanent storm water Design Pollution Prevention and Treatment BMPs to be  
16 evaluated during project design.
- 17 • Document stormwater design decisions made regarding project compliance with the NPDES permit.
- 18 • Develop the preliminary costs up to four (4) infiltration type structural best management practices (BMPs).
- 19 • Discuss the project with the Regional Water Quality Control Board (RWQCB) and local agencies, if  
20 advised by the District/Regional NPDES Storm Water Coordinator or requested by the RWQCB.

21  
22 The SWDR will be signed by the Project Engineer, the District/Regional Design Storm Water Coordinator, the  
23 designated Landscape Representative, and the Project Manager. Up to two (2) rounds of Caltrans review and  
24 comment response are included to ensure that storm water quality design issues have been addressed, and the  
25 data is complete, current, and accurate.

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29 **5.0 Conceptual Landscape and Aesthetics Plan**

**5.1 Aesthetics Design Workshops**

ENGINEER, in coordination with the COUNTY and City, will develop an Aesthetics Technical Focus Group for the Project. ENGINEER shall facilitate three (3) design workshops with the Aesthetics Technical Focus Group at the beginning of the project to address issues, concerns, and priorities and to obtain input and ideas relative to the implementation of the themes and concepts for the Project within the GATEWAY TO THE DESERT COMMUNITIES REGIONAL DESIGN GUIDELINES AND HIGHWAY ART PROGRAM (Aesthetics Plan). ENGINEER shall introduce the project site and design objectives through the use of Power Point and large-scale exhibits and engage the Aesthetics Technical Focus Group in interactive feedback exercises to obtain their input. ENGINEER shall prepare up to two (2) graphic boards and one (1) Power Point presentation with ten (10) slides as visual reference for the aesthetics design workshop presentations.

The intent of the aesthetics design workshops is to engage the project participants and implement the Aesthetics Plan for the project. The three (3) meetings budgeted for the design workshop efforts are anticipated to cover the following:

Meeting No. 01 – ENGINEER shall introduce project to team members, outline design guidelines of the Aesthetics Plans, develop understanding of where aesthetic treatments can be applied and where they will not be able to be applied, and review the next steps.

Meeting No. 02 – ENGINEER shall review research and materials gathered since first meeting, gather ideas and input from team members, focus on specific aesthetic treatments for specific structural components, and document understanding of final concept and implementation of the Aesthetics Plan.

Meeting No. 03 – ENGINEER shall present final concept for specific aesthetic treatments for specific structural components. The goal of this final Aesthetic Technical Focus Group workshop is to obtain final acceptance and approval of the implementation of the Aesthetics Plan by Caltrans, the COUNTY, and City.

ENGINEER shall prepare meeting minutes for each meeting that will document decisions and that will be distributed to all appropriate project team and Aesthetics Committee members.

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**5.2 Conceptual Landscaping and Aesthetics Implementation and Coordination**

ENGINEER shall implement the Aesthetics Plan and coordinate the structural and landscape aesthetic treatment concept with the design team and distribute final design-developed working sketches and exhibits in strip map, 8½ x 11, and 11 x 17 format. No draft, final or formal bound written document, thematic explanation, or defined concept aesthetic treatment report will be provided.

ENGINEER shall develop one (1) structural and landscape aesthetic treatment concept option consistent with the Aesthetics Plan for the following elements of the Project:

- Bridge Structure Outside Railing and Fence Finish
- Bridge Columns Finish
- Crosswalks Finish
- Retaining Wall Finish
- Slope Paving Finish
- Landscape Areas

All working sketches and exhibits in strip map, 8½ x 11, and 11 x 17 formats will illustrate general dimensions and proportions of the aesthetic treatments. All final design elements and aesthetics construction details will be prepared by the individual design functional discipline and incorporated into their respective plans and specifications.

No 3-D renderings, models, or visual graphics are assumed as a part of this scope of work. All existing bridge structures remaining, existing bridge structures to be widened, existing retaining walls, and existing soundwalls will not incorporate any new aesthetic treatments.

ENGINEER shall back-check the final details, dimensions, and constructed design elements prepared by the individual design functional discipline and incorporated into their respective plans and specifications for consistency and conformity to the intent of the approved Aesthetics Concept Plan. One (1) set of redlined comments will be returned to the individual design functional discipline to be incorporated into their respective plans and specifications.

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**6.0 Drainage Report**

ENGINEER will conduct an analysis to determine the impacts this project has on the natural drainage patterns. This analysis will incorporate the use of available information from the City and Caltrans. ENGINEER will prepare a preliminary drainage report utilizing data from prior hydrology/drainage investigations in the area. ENGINEER will analyze existing drainage sub-basins and summarize changes in drainage patterns that will occur from the proposed improvements. Included in the report will be recommendations for on-site improvements such as structures needed at pipe culverts, inlet and outlet locations, erosion control measures and other storm drainage controls.

A hydrology map will be prepared using available aerial photography and mapping. The hydrology map will summarize the local drainage by indicating drainage subareas, existing and proposed storm drainage facilities, drainage patterns, times of concentration and preliminary design year flow rates.

It is assumed there are no major existing off-site and on-site cross culverts and drainage facilities that convey storm water away from the I-10/Jefferson interchange area through a continuous closed pipe or open channel drainage system. The scope of the drainage design will be to convey storm water run-off from the proposed and existing roadway, freeway and ramps through the use of overside drains and inlets that will be located within the interchange area, into BMPs, retention basins, etc, to hold the storm water “on-site”. A hydrology analysis will be performed for the proposed roadway improvements.

The Hydrology/Hydraulics Report will generally contain the following:

- Project Location Map
- Project Description
- Evaluation of Runoff Characteristics and Flow Patterns
- Description of Existing and Proposed Facilities
- Description of Unusual or Special Conditions
- Hydrology Map and Other Applicable Hydrologic Data and Calculations

**7.0 Storm Water Pollution Prevention Plan (SWPPP)**

1 ENGINEER will prepare a conceptual Storm Water Pollution Plan (SWPPP) for the project. The project is  
2 anticipated to result in more than 1 acre of disturbed soil area and will require a SWPPP and an erosion control  
3 plan layout sheet. It is assumed the SWPPP will be prepared assuming the project is a Risk Level 1 per the new  
4 2010 General Construction Permit. The storm water pollution prevention plan will be completed in conformance  
5 with the latest design, drafting, policy and procedure manuals of Caltrans.

6  
7 **8.0 Traffic Management Plan**

8 ENGINEER will prepare a traffic management plan (TMP) to quantitatively (based on traffic counts proposed  
9 herein) discuss anticipated traffic impacts resulting from the proposed project, utilizing existing and forecast traffic  
10 analysis data. The TMP will be developed based on the following:

11  
12 Documentation of Existing Traffic Conditions. Existing available traffic count data and spot survey information  
13 provided by cities and Caltrans for both the freeway and adjacent arterials shall be presented in graphical and  
14 tabular format as applicable. Freeway data shall include peak period values for mainline, weaving and ramp  
15 sections. Arterial data shall include through and turning movements. A total of 12 intersections (excluding vehicle  
16 classifications) are assumed to require new traffic counts for weekday and weekend peak hour periods.

17  
18 Documentation and Analysis of Staging and Phasing Plan Construction. The TMP will be based on the analysis  
19 of four (4) stages of construction and twelve (12) intersections. The analysis will include analysis of the Jefferson  
20 Street / I-10 Interchange, and associated impacts at the Washington Ave. / I-10 and Monroe Street / I-10  
21 Interchanges. Construction sequence and implementation schedules will be exhibited for the project. Existing  
22 available, and newly collected, traffic data will be utilized to forecast future anticipated traffic volume during each  
23 of the construction stages and phases in order to analyze peak period level of service. The latest available ramp  
24 and mainline volumes will be obtained from Caltrans for the TMP analysis. Analysis will be performed utilizing  
25 synchro software.

26 Analysis of Alternative Route Impacts. Alternative routes will be coordinated with cities and analyzed with regard  
27 to intersection capacities during the AM and PM peak periods. Channelization and signalization deficiencies will  
28 be noted.

1 Development of Mitigation Plans. Specific mitigation measures, if approved, will be suggested and described with  
 2 regard to signal phasing, channelization and signing on the alternative routes; media coverage and newspaper  
 3 inserts required to facilitate alternative travel times and modes; and, incident detection requirements such as  
 4 variable message signs, radio messages and tow trucks. Cost estimates will be prepared. Actual improvement  
 5 plans to implement potential mitigation measures are not included in the scope of work.

6  
 7 A total of 12 intersections will be analyzed within a total of 8 temporary facility closure scenarios (baseline  
 8 condition, mainline freeway closures and ramp closures).

9  
 10 **9.0 Geotechnical Engineering**

11 ENGINEER will provide geotechnical engineering design services for the following design elements:

- 12 • Jefferson Street Overcrossing: It is proposed to be a three-span CIP/PS concrete box girder structure  
 13 with two abutments and two 5-column bents. The bridge has a length of 521 feet and a maximum  
 14 width of 142 feet. The abutments will be supported on HP 14x89 steel piles for a design load of 100  
 15 tons. The bents will be supported on spread footings with an allowable bearing capacity of 3.0 tsf.
- 16 • MSE Wall for EB Off-ramp: The MSE wall is proposed to have an approximate length of 624 feet with  
 17 a maximum height of 40 feet.
- 18 • Caltrans Standard Type 1 Retaining Walls: Two Caltrans standard Type 1 retaining walls are  
 19 proposed to be located north of the I-10 along the auxiliary lane for the WB on-ramp and south of I-10  
 20 along the auxiliary lane for the EB off-ramp. The lengths are 1500 feet and 1250 feet, respectively.  
 21 The approximate maximum height of the retaining walls is 3.3 feet.
- 22 • Infiltration Basins: Three proposed infiltration basins. The locations of the infiltration basins will be  
 23 identified in the Storm Water Data Report.

24 The geotechnical field investigation plan includes excavating a total of forty-one (41) exploratory borings to  
 25 investigate subsurface conditions, as listed below.

<u>Design Element</u>	<u>Number of Boring</u>	<u># Borings &amp; Approx. Boring Depth</u>
Jefferson Street Overcrossing		2 borings for abutments: 75 feet
		2 borings for bents: 30 feet
MSE Wall		2 borings: 30 feet



1	Caltrans Standard Type 1 Retaining Walls	4 borings: 30 feet
2	Ramps and Embankments	4 borings: 30 feet
3	Pavements	27 borings: 10 feet

4  
5 The borings for the overcrossing bridge will be drilled at the locations of the proposed abutments and bents. The  
6 fourteen borings for the proposed MSE wall, retaining walls, and ramps and embankments will be located near  
7 the existing ramps and freeway shoulders along the proposed ramp alignment. The remaining 27 shallow  
8 pavement borings will be located along the proposed roadway alignments at an approximate spacing of one  
9 boring per every 650 feet of new roadway.

10  
11 The borings will be excavated using a truck-mounted drill rig equipped with 8-inch diameter hollow-stem augers.  
12 Spoils generated from the boring excavations will be mixed with cement and water and used to backfill the  
13 boreholes; spoils will not be stored in drums, tested for contaminants, or disposed of off-site by ENGINEER.  
14 Asphalt concrete hot-mix will be used to replace asphalt that is removed by excavations. The boring locations and  
15 ground elevations at those locations will be surveyed by others and the information provided to ENGINEER.

16  
17 ENGINEER will prepare a boring location map prior to the actual field exploration. This map will be used to apply  
18 for Caltrans encroachment permit(s). It is anticipated that encroachment permits will be required from Caltrans for  
19 all the borings located on or near freeway lanes and freeway entrance/exit ramps.

20  
21 ENGINEER field personnel will collect soil samples for laboratory testing, including bulk samples of near-surface  
22 soils and small disturbed and relatively undisturbed ring samples of deeper soils. The small disturbed and  
23 relatively undisturbed soil samples will be collected using split-spoon samplers at a vertical interval of 5 feet,  
24 alternating between the Standard Penetration Test (SPT) sampler and the Modified California Drive (MCD)  
25 sampler. Samples of subsurface soils will be logged during the field investigation, secured in their containers or  
26 collected in plastic bags, and transported to the ENGINEER laboratory.

27  
28 Traffic control will be established in accordance with City of Indio requirements, Caltrans requirements, or the  
29 W.A.T.C.H. Manual, for all borings performed on or near existing roadway and freeway lanes.

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No investigation of hazardous materials is included in this scope of work. If hazardous materials are encountered during field investigations, work will immediately be terminated and the COUNTY and Caltrans will be notified.

Soil cuttings are assumed to be non-hazardous for disposal purposes. Remedial mitigation plans for any removal of hazardous waste are not included in the scope of work.

No construction of groundwater monitoring wells and no investigation of borrow sites are assumed as a part of this scope of work.

Soil cuttings mixed with cement will be used for backfilling boreholes and cold patch asphalt will be used to cover the boreholes at existing traffic lanes.

It is assumed that the pending approved environmental document will suffice for reference for cultural resource, biology and archeology elements in securing the encroachment permit for borings, thus no fee has been included for performing these services for the boring program.

As a result of the close proximity of the north bridge abutment to the existing cultural site (CA-RIV-6896), two field mobilizations by ENGINEER will be required to complete the borings for the bridge.

The soil cuttings are assumed to be non-hazardous. If the soil cuttings are tested to be hazardous, they must be disposed of off-site to a hazardous landfill at additional cost.

**Laboratory Testing.** ENGINEER will select representative soil samples for laboratory testing. Various laboratory tests will be performed to determine or derive physical and engineering characteristics of soils. Anticipated laboratory soil tests include: in-place moisture and density, grain size distribution, direct shear, R-value, maximum density and optimum moisture content, and soil corrosion tests. Tests will be conducted in general accordance with California Test methods or ASTM standards.

1 **Geotechnical Engineering Analyses.** Results obtained from the field investigation and laboratory testing will be  
2 used to characterize subsurface soils and conditions and create idealized profiles for design purposes. The  
3 following analyses will be performed for the project:

- 4 • Evaluation of seismicity, estimation of Peak Bedrock Acceleration based on the Caltrans Seismic Hazard  
5 Map, and recommendations of ARS curves for the bridge structure design.
- 6 • Foundation analysis for proposed bridge structure, MSE wall, and retaining walls.
- 7 • Assessment of global stability and settlement of ramps and embankments.
- 8 • Evaluation of soil corrosivity conditions and recommendations for mitigation measures.
- 9 • Pavement structural section design in accordance with the Caltrans method.

10  
11 ENGINEER will document and prepare the geotechnical engineering analyses and earthwork recommendations  
12 for proposed improvements in the following reports.

13  
14 **9.1 Geotechnical Design Report (GDR)**

15 The GDR will be prepared in accordance with the Caltrans GDR guidelines dated December 2006. The GDR will  
16 include letter-size boring logs for soil borings performed for retaining walls, ramps, and embankments, and  
17 structural pavement sections. Copies of the report will be provided for distribution and review. Review comments  
18 related to geotechnical issues will be addressed by ENGINEER in letter responses. Upon approval of all  
19 responses, ENGINEER will incorporate responses and comments into final reports. Copies of each final report  
20 will be provided for distribution.

21  
22 **9.2 Materials Report (MR)**

23 The MR will be prepared in accordance with Topic 114 of the Caltrans Highway Design Manual and CT 130. The  
24 GDR and MR will include letter-size boring logs for soil borings performed for retaining walls, ramps, and  
25 embankments, and structural pavement sections. Copies of the report will be provided for distribution and review.  
26 Review comments related to geotechnical issues will be addressed by ENGINEER in letter responses. Upon  
27 approval of all responses, ENGINEER will incorporate responses and comments into final reports. Copies of  
28 each final report will be provided for distribution.

1 A Life Cycle Cost Analysis will be prepared during PA/ED phase. In accordance with Caltrans guidelines, it is  
2 assumed that an update of the LCCA will not be required for PS&E. The results of the approved LCCA from the  
3 PA/ED phase will be incorporated into the development of the Materials Report.

4  
5 **9.3 Foundation Report (FR)**

6 The PFR and FR will be prepared in accordance with the Caltrans Guidelines for Structure Foundation Report  
7 dated March 2006. Copies of the report will be provided for distribution and review. Review comments related to  
8 geotechnical issues will be addressed by ENGINEER in letter responses. Upon approval of all responses,  
9 ENGINEER will incorporate responses and comments into final reports. Copies of each final report will be  
10 provided for distribution.

11  
12 **9.4 Infiltration Testing**

13 An infiltration test is proposed at each of the three proposed infiltration basins. The following work will be used to  
14 estimate the infiltration rates of onsite soils at each basin location.

15  
16 Field Investigation. ENGINEER will drill a boring and three temporary wells. Maximum target borehole depth is  
17 30 feet and approximately 10 feet for the wells. Sampling schedule will be at 5-foot intervals in the boring. The  
18 three wells will not be sampled, though the soil type will be observed for comparison and documented in well logs.  
19 Well testing will be performed following USBR 7300-89 method.

20  
21 Laboratory Testing. ENGINEER will obtain SPT split-spoon samples from the boreholes for laboratory testing and  
22 environmental prescreening. The following tests are planned on select samples:

- 23 • Grain Size,
- 24 • Chemical Testing (CCR Title 22 Metals, Total Petroleum Hydrocarbons gas & diesel, volatile and semi-  
25 volatile organic compound), and
- 26 • Soil pH-Value, Organic Content and Cation Exchange Capacity.

27 All tests will be conducted in general accordance with Caltrans Test Methods, or American Standard Test  
28 Methods (ASTM), and/or EPA.

1 Engineering Analyses & Report Preparation. ENGINEER will evaluate soil data and describe the subsurface  
2 conditions. ENGINEER will calculate soil infiltration (permeability) rates using the USBR 7300-89 method. The  
3 field data and infiltration rates will be presented in the Geotechnical Design Report.  
4

5 **9.5 Pavement Deflection Study (PDS)**

6 ENGINEER will conduct a Pavement Deflection Study (PDS) to evaluate the integrity of the following existing  
7 roadways:

8 I-10 Westbound and Eastbound Travel Lanes

9 Limits: Westbound Travel Lanes 800 meters / Eastbound Travel Lanes 600 Meters

- 10 • Pavement Coring and Soil Boring – Six (6) Locations  
11 • Deflection Testing – 50' Intervals

12 Pavement coring and soil boring of the in-situ roadway materials shall be performed to determine pavement  
13 thicknesses and to obtain samples of the asphalt concrete, aggregate base ( if present), and subgrade materials  
14 for further analysis. A coring location plan and a tabulated core log will be included within the final report.

15 Required traffic control will be provided by ENGINEER during sampling operations.  
16

17 Non-destructive pavement deflection data shall be gathered from each through traveled lane, specified within the  
18 project limits, at 50- foot intervals using the JILS Falling Weight Deflectometer, imposing a series of 9,000 pound  
19 loads per California Test Method 356.  
20

21 Using the traffic indices and existing pavement thickness information determined during coring operations, the  
22 80th percentile deflection response shall then be compared to known pavement models. This comparison shall  
23 produce overlay requirements for a select design period in accordance with Caltrans Test Method Number 356,  
24 and a service life reading (Nominal Service Life) for the roadways studied.  
25

26 ENGINEER will perform deflection testing and non-destructive pavement deflection data will be gathered from the  
27 through traveled lane such that three sensor readings are recorded at each test location at 50-foot intervals.  
28  
29

1 This task assumes that the findings in the PDS will not expand the scope of work beyond the improvements  
2 proposed by Alternative 1 in the Project Report. No pavement overlays or other pavement rehabilitation of  
3 existing mainline freeway along I-10 are included in this scope of work. Any additional layouts, profiles,  
4 superelevation, stage construction, traffic handling, and construction detail sheets required based on the findings  
5 of the PDS are excluded from this scope of work.

6  
7 **10.0 Bridge Site Data Submittal (BSDS)**

8 ENGINEER shall prepare Bridge Site Data Submittal (BSDS) Forms for (1) bridge structure in accordance with  
9 the Caltrans OSFP Information and Procedures Guide. The package includes material division of structures  
10 design to be approved by the District prior to the type selection process.

11  
12 **11.0 Structure Type Selection (Bridge and MSE Retaining Walls)**

13 ENGINEER will perform a Bridge Type Selection Study for the proposed Jefferson Street overcrossing to  
14 determine the optimal span arrangement and length for the proposed cast-in-place prestressed box girder bridge.  
15 Alternative 1 in the Project Report has been identified as the preferred alternative. Factors to be considered are  
16 site topography, roadway profile and alignment, vertical clearance, bridge length and bridge width, barrier rail,  
17 bridge aesthetics, geotechnical, utility accommodation, constructability and cost. ENGINEER will prepare a  
18 Bridge Type Selection Report consisting of a Bridge Type Selection Recommendation making note of all critical  
19 assumptions of the design, Bridge General Plan, preliminary construction cost estimate and preliminary  
20 foundation report. The General Plan will present plan, elevation and typical section views of the selected bridge  
21 type.

22  
23 The ENGINEER will also perform a Mechanically Stabilized Earth (MSE) Retaining Wall Type Selection Study  
24 and investigate the preferred alternative to determine the retaining wall type and dimensions. The MSE wall is  
25 located along the EB off-ramp, adjacent to the UP railroad right-of-way. The length of wall is estimated at 600  
26 feet.

27  
28 Factors to be considered are site topography, roadway profile and alignment, retaining wall length and cross  
29 section, aesthetics, geotechnical, utility accommodation, constructability, and cost. ENGINEER will prepare a

Retaining Wall Type Selection Report consisting of a Retaining Wall Type Selection Recommendation making note of all critical assumptions of the design, Retaining Wall General Plan, preliminary construction cost estimate and preliminary foundation report. The General Plan will present plan, elevation, and typical section views of the selected retaining wall type.

The Type Selection Reports will be submitted to the COUNTY and Caltrans for review and authorization to begin final design of the bridge and retaining wall. Attendance at one (1) Type Selection Meeting with Caltrans Structures in Sacramento is included in the fee.

**12.0 Draft Roadway Design Plans (65% Package)**

All plan types shall be completed in conformance with the latest available design, drafting, policy and procedure manuals of Caltrans. The following is a listing of plan sheets with corresponding English scale:

Plan Sheet	Anticipated # of Sheets	Plan Sheet Scale
Title Sheet	1	1:25,000
Typical Cross Sections	5	Varies
Key Map and Line Index	1	1:25,000
Layout Plans	8	1"=50'
Removal Plans	8	1"=50'
Profile and Superelevation Plans	18	1"=50'H, 1"=10'V
Construction Details	12	1"=20', Varies
Water Pollution Control Plans	9	1"=50'
Contour Grading Plans	8	1"=50'
Drainage Plans	8	1"=50'H, 1"=10'V
Drainage Profiles	6	1"=50'H, 1"=10'V
Drainage Details	4	1"=20', Varies
Drainage Quantities	5	1"=50'
Utility Location Plans	8	1"=50'
Stage Construction Plans	8	1"=50'
Traffic Handling Plans	50	1"=50'
Traffic Handling Details	6	1"=20', Varies
Traffic Handling Quantities	8	1"=50'
Construction Area Sign Plans	3	Varies
Detour (Temp. Roadway) Plans / Profiles	3	1"=50'
Detour (Construction Area Sign) Plans	12	1"=50'
Detour Details	2	1"=20', Varies
Detour Quantities	2	1"=50'
Pavement Delineation Plans	15	1"=50'



Plan Sheet	Anticipated # of Sheets	Plan Sheet Scale
Pavement Delineation Quantities	2	1"=50'
Summary of Quantities	6	N/A
Sign Plans	11	1"=50'
Sign Details	8	1"=20', Varies
Sign Quantities	9	1"=50'
Standard Retaining Wall Plans	4	1"=20'
Standard Retaining Wall Details	3	1"=20', Varies
Standard Retaining Wall Quantities	1	1"=50'
Planting Plans	5	1"=50'
Planting Details	1	1"=20', Varies
Planting Quantities	1	1"=50'
Irrigation Plans	5	1"=50'
Irrigation Details / Sprinkler Schedule	2	1"=50'
Irrigation Quantities	1	1"=50'
Electrical – Traffic Signals Plans	6	1"=50'
Electrical – Temporary Traffic Signal Plans	1	1"=50'
Electrical – Lighting & Sign Illumination	15	1"=50'
Electrical – Temporary Lighting Plans	8	1"=50'
Electrical – Ramp Metering Plans	5	1"=50'
Cross - Sections		
<b>Total Sheet Count</b>	<b>304</b>	

Note that the professional fees established for the various types of plans are based on the following:

- All plan types for all phases will be prepared in Caltrans plan format.
- All Plans will be prepared in English units
- Utility relocation plans, or new utility facilities required, will be provided by the respective utility company. ENGINEER has not included utility design in the Scope of Work.
- It is not anticipated that the project will require preparation of Edge Drain Plans, Fiber Optic Communication, Closed Circuit Television (CCTV), Changeable Message Sign (CMS), and Traffic Monitoring Station (TMS) plans. Preparation of improvement plans for these design elements are specifically excluded from the scope of work.
- Aerially Deposited Lead (ADL) handling plans will not be prepared for the project since the ADL report in the PA/ED phase did not determine mitigation or removal of contaminated soil is required.
- The Scope of Work includes the identification of existing deficient storm drain systems, but does not include design services for upgrading existing deficient storm drain systems.
- Project does not include widening or retrofitting the two existing UP Railroad Overpass Structures.

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Grading and Drainage Plans / Profiles and Details

ENGINEER will provide final engineering services for the preparation of construction plans for the drainage facilities associated with the project improvements. The plans will include the relocation of facilities, extension of local drainage cross culverts, and construction of new catch basins. The improvements include the relocation and/or modification of existing catch basins, parkway culverts, and appurtenant facilities resulting from the widened / realigned roadway.

Construction plans will be prepared utilizing the compiled base sheet information from research, utility investigation, survey data and aerial topography. Utilities within the proximity of the construction will be located on the utility location plan, and crossings shown in the drainage profile. It is assumed there are no major existing off-site and on-site cross culverts and drainage facilities that convey storm water away from the I-10/Jefferson interchange area through a continuous closed pipe or open channel drainage system. The scope of the drainage plans/profiles and details will be designed to convey storm water run-off from the proposed and existing roadway, freeway and ramps through the use of overside drains and inlets that will be located within the interchange area, into BMPs, retention basins, etc to hold the storm water "on-site".

Improvement plans for offsite upstream or downstream local facilities are specifically excluded from the scope of work. If during the course of design review it is determined that modifications are required to the original concepts, then this redesign will be accomplished through a separate addendum to the COUNTY.

Temporary drainage facilities are not anticipated, and not included in the scope of work.

Sign Plans

The Sign Plans will include roadside signs per Caltrans guidelines and MUTCD. It is assumed the two proposed off-ramps will each receive a lightweight overhead sign structures at the ramp termini. It is assumed four overhead sign foundations and signing will be modified in advance to the two proposed off-ramps. It is assumed two sign panels (excluding sign structure and foundations) on overhead freeway sign structures will be modified in the eastbound and westbound direction along the I-10.

1 Electrical – Traffic Signal Plans

2 ENGINEER will prepare three (3) traffic signal and intersection lighting modification plans for the following  
3 intersection(s):

- 4 • I-10 EB Ramps / Jefferson Street (New)
- 5 • I-10 WB Off Ramp / Jefferson Street (New)
- 6 • Jefferson Street / Varner Road (Modified)

7  
8 Traffic signal plans will include locations of traffic signal appurtenances, schedules, signal phasing and structural  
9 or foundation requirements in accordance with City and Caltrans standards and design criteria. Requirements for  
10 electrical service will be coordinated with the Imperial Irrigation District. Installation of traffic signal interconnect  
11 conduit and cable to the adjacent signalized intersections will be shown on the traffic signal and intersection  
12 lighting plans.

13  
14 Electrical – Temporary Traffic Signal Plans

15 The stage construction plan developed during PA/ED anticipates a temporary intersection of the WB off-ramp with  
16 Varner Road. It is assumed this intersection will be signalized and require a traffic signal. ENGINEER will  
17 prepare one (1) temporary traffic signal and intersection lighting modification plans for the I-10 WB Off-ramp at  
18 Varner Road.

19  
20 Electrical – Lighting and Sign Illumination Plans

21 ENGINEER will prepare lighting plans to relocate lighting along the on-ramps and off-ramps. The lighting plans  
22 will include proposed poles and fixtures, pull boxes, conduit, service locations, wiring, connection diagrams, panel  
23 schedules and meter pedestal details. Removal of existing lighting equipment will be shown on the Lighting Plans  
24 and no separate Lighting Removal Plans will be prepared.

25  
26  
27 Electrical – Temporary Lighting and Sign Illumination Plans

1 ENGINEER will prepare temporary lighting plans along the westbound off and on ramps. The lighting plans will  
2 include proposed poles and fixtures, pull boxes, conduit, service locations, wiring, connection diagrams, panel  
3 schedules and meter pedestal details.

4  
5 Electrical – Ramp Metering Plans

6 ENGINEER will prepare Ramp Metering plans for installation of ramp metering equipment at the 3 proposed on-  
7 ramp locations.

8  
9 Construction Staging and Traffic Handling Plans

10 ENGINEER will prepare Stage Construction/Traffic Handling Plans for the proposed roadway improvements that  
11 will provide the staging and traffic control necessary to construct the project. It is assumed that temporary detour  
12 roads will be required for connections from the existing westbound off ramp to Varner Road, and for the  
13 temporary connection from the existing overcrossing to Varner Road.

14  
15 The Stage Construction/Traffic Handling Plans will utilize accepted methods of lane closure delineation, signage  
16 and barricading. Specific work areas will be protected from traffic based on the construction phase, type of work  
17 and construction equipment required within the work area. The plans will be designed to maximize lane usage for  
18 all traffic movements, maintain accessible pedestrian access routes, and provide a workable area.

19  
20 ENGINEER will meet with City and Caltrans staff to discuss the proposed construction staging, minimum lane  
21 requirements, vehicle/pedestrian restrictions, driveways restrictions, lane closures, construction work hours,  
22 construction work area required, and potential constraints that may affect the proposed improvements. Four (4)  
23 stages of construction have been anticipated to complete construction.

24  
25 Retaining Wall Plans

26 ENGINEER will prepare 1"=20' scale plans for standard Caltrans, type 1 retaining walls required for the project.  
27 Two (2) standard retaining walls are anticipated. Total length of anticipated standard retaining walls is  
28 approximately 2,750 feet.

1 Two walls will be located adjacent to I-10, at the western limits of the project. Wall No. 1 will be located on the  
2 north side of I-10, between Varner Road and I-10, with an approximate length of 1500 feet. Wall No. 2 will be  
3 located on the south side of I-10, between UP Railroad and I-10, with an approximate length of 1250 feet. These  
4 walls are required to provide the location of WB on ramp and EB off ramp gores including auxiliary lanes.

5  
6 All retaining walls will receive aesthetic treatments per the Aesthetics Plan. One (1) aesthetic detail sheet will be  
7 prepared.

8  
9 It is assumed that the retaining walls will be a standard Type 1 wall on spread footings that does not require  
10 separate plan development and approval through the Caltrans Engineering Services Center.

11  
12 Planting / Irrigation Plans ENGINEER shall prepare one set of final site plans, specifications and estimates for  
13 landscape and irrigation improvements. The documents will be completed in sufficient form and detail to bid and  
14 construct the improvements. The plans shall be based on the approved landscape concept plan prepared by  
15 ENGINEER under a separate task and shall be prepared at an appropriate scale in Microstation on a base map of  
16 the project site prepared by ENGINEER under a separate task. The Planting / Irrigation Plans will be limited to  
17 the interchange within Caltrans right of way. It is assumed any landscaping within City limits will be prepared as a  
18 separate project.

19  
20 **13.0 Draft Structures PS&E**

21 **A. Bridge**

22 The bridge structures will be designed by a California-registered civil engineer in accordance with the applicable  
23 provisions of the latest editions of the following Caltrans manuals:

- 24 • AASHTO LRFD Bridge Design Specifications with Caltrans Amendments;
- 25 • Caltrans Seismic Design Criteria (SDC);
- 26 • Caltrans Bridge Memos to Designers; and
- 27 • Caltrans Bridge Design Aids

28 A complete structural analysis will be performed. The bridge design will utilize in-house structural analysis and  
29 design computer programs. A complete dynamic (seismic) analysis will be performed using in-house finite

1 element analysis computer programs for the new structure. A bound set of design calculations will be prepared  
2 for the bridge structure. The bridge plans will be prepared to Caltrans standards and formatted on Caltrans  
3 Structures Plan Sheets. In accordance with OSFP requirements, the unchecked structures details will be  
4 submitted to Caltrans for oversight review when 65% complete. Aesthetic details will be prepared in accordance  
5 with the Aesthetics Plan. Aesthetic details will include bridge columns, railing, fencing, and slope paving.  
6

7 **B. MSE Retaining Walls**

8 A MSE wall is designed along the EB off-ramp, adjacent to the UP railroad right-of-way line. The wall length is  
9 estimated at 600 feet. The MSE retaining wall structure will be designed by a California-registered civil engineer in  
10 accordance with the applicable provisions of the latest editions of the following Caltrans manuals:

- 11 • Caltrans Bridge Design Specifications;
- 12 • Caltrans Seismic Design Criteria (SDC);
- 13 • Caltrans Bridge Memos to Designers; and
- 14 • Caltrans Bridge Design Aids.

15 A bound set of design calculations will be prepared for the retaining walls. Unchecked structure details will be  
16 submitted to Caltrans for oversight review when 65% complete. It is assumed no aesthetic details will be  
17 prepared for the MSE retaining wall due to the proximity of the railroad.  
18

19 **Structure Independent Check Design Calculations.**

20 **A. Bridge Structure**

21 An independent bridge design check will be performed by a California-registered civil engineer experienced in  
22 bridge design. The process will be similar to, but independent of the initial design process. The independent  
23 check includes design calculations, review of bridge design details, review of bridge special provisions, and bridge  
24 quantity calculations.  
25

26 Any significant differences between the initial design and the independent check will immediately be resolved  
27 between the two licensed engineers until substantial agreement on the final design is achieved. Any required  
28 changes will be made to the design and construction documents.  
29

1 Bridge Quantity calculations and cost estimates will be prepared with the initial design and as part of the  
2 independent check. The two estimates will be reconciled to develop the final estimate.

3  
4 ENGINEER will complete the Caltrans OSFP Consultant Quality Control Statement and submit the completed  
5 PS&E documents (checked) for review. This submittal will include the independent bridge design calculations.

6  
7 **B. MSE Retaining Wall**

8 An independent design check will be performed by a California-registered civil engineer experienced in retaining  
9 wall design. The process will be similar to, but independent of the initial design process. The independent check  
10 includes design calculations, review of design details, review of special provisions, and quantity calculations.

11  
12 Any significant differences between the initial design and the independent check will immediately be resolved  
13 between the two licensed engineers until substantial agreement on the final design is achieved. Any required  
14 changes will be made to the design and construction documents.

15  
16 Quantity calculations and cost estimates will be prepared with the initial design and as part of the independent  
17 check. The two estimates will be reconciled to develop the final estimate.

18  
19 ENGINEER will complete the Caltrans OSFP Consultant Quality Control Statement and submit the completed  
20 PS&E documents (checked) for review. This submittal will include the independent retaining wall design  
21 calculations.

22  
23 **13.1 Bridge Structure Plans**

24 The assumed bridge baseline alternative based on advance planning studies prepared in the Project Report is a  
25 cast-in-place pre-stressed box girder bridge. The following plan sheets are anticipated.

- 26
- General Plan 1 sheet

27

  - Index to Plans 1 sheet

28

  - Deck Contours 2 sheet

29

  - Foundation Plan 2 sheets



1	• Abutment Layout	2 sheets
2	• Abutment Details	4 sheets
3	• Bent Layout	2 sheets
4	• Bent Details	3 sheets
5	• Typical Section	2 sheets
6	• Girder Layout	4 sheets
7	• Girder Reinforcement	3 sheets
8	• Aesthetic Details	1 sheet
9	• Bridge Mounted Sign Details	2 sheets
10	• Utility Details	1 sheet
11	• Miscellaneous Details	1 sheet
12	• Standard Details	4 sheets
13	• <u>Log of Test Boring (by Geotech)</u>	<u>2 sheets</u>
14	<b>Total Bridge Plans</b>	<b>37</b>

**13.2 MSE Retaining Wall Plans**

The assumed retaining wall baseline alternative is a MSE Wall. The following plan sheets are anticipated.

18	• General Plan	1 sheet
19	• Wall Layout	3 sheets
20	• Typical Section	1 sheet
21	• MSE Wall Details	5 sheets
22	• <u>Log of Test Boring (by Geotech)</u>	<u>2 sheets</u>
23	<b>Total MSE Wall Plans</b>	<b>12</b>

**14.0 Updated Draft PS&E (95% Plans Package)**

1 ENGINEER will incorporate review comments from the draft plan check from the COUNTY and Caltrans into the  
2 95% PS&E submittal package. Besides updating plans based on 65% comments, the plan sheets shall be  
3 completed to include all details necessary for construction.

4  
5 During preparation of 95% Plan submittal, Caltrans will schedule a safety review and a constructability review of  
6 the plans. ENGINEER will attend these review meetings, respond to comments, prepare and submit a response  
7 to comment disposition matrix.

8  
9 **15.0 Cost Estimate**

10 Prepare quantity calculations and final construction cost estimates in accordance with Caltrans requirements  
11 utilizing current edition of Caltrans Contract Cost Data book and recent construction bid data. Engineer's cost  
12 estimates will be prepared at each submittal stage. It is anticipated that three (3) engineer's cost estimates will be  
13 prepared.

14  
15 **16.0 Special Provisions**

16 ENGINEER will prepare special provisions for the construction of the roadway improvements through editing of  
17 the current Caltrans Standard Special Provisions (SSP's) in accordance with Caltrans' PS&E Guide. The  
18 technical special provisions will be prepared by a California licensed civil engineer for incorporation into the  
19 construction bid documents for the overall project by the COUNTY.

20  
21 **17.0 Prepare Final PS&E (100% Plans)**

22 ENGINEER will receive written comments from all participating agencies and review with the COUNTY.  
23 ENGINEER will draft a response to all agency comments at one time. ENGINEER will then meet collectively with  
24 all participating agencies to resolve outstanding issues relative to agency comments. ENGINEER will then  
25 prepare final dispositions for each review comment for submittal to the Agencies. ENGINEER will make revisions  
26 to PS&E and right-of-way documents following plan check and provide final revised quantity take-offs and cost  
27 estimates. When revisions have been made, ENGINEER will obtain signatures and provide the requested  
28 number of stamped plans to the COUNTY.

1 This project is anticipated to be advertised, and awarded by the COUNTY, therefore Caltrans District Office  
2 Engineer and Caltrans Headquarter Office Engineer reviews and approvals are not required. Additional  
3 compensation will be required if the project is be advertised, and awarded by Caltrans, which will require  
4 additional reviews by Caltrans District OE and HQ OE. These reviews are excluded from this scope of work.

5  
6 Plan sheet format will be per Caltrans plan sheet preparation guidelines. ENGINEER will supply Caltrans with an  
7 electronic version of final plans sheets for their records, however this work effort does not include meeting the  
8 strict requirements of an electronic submittal for a Caltrans advertised project.

9  
10 **18.0 Permit Applications / Environmental Commitments Record**

11 COUNTY will prepare and submit permit applications for surveying and construction. Possible permits required  
12 for this project not already noted in other tasks include:

- 13 • State encroachment permit for subsurface investigations (i.e. potholing, geotechnical)
- 14 • Waste Discharge (NPDES) Permit

15  
16 The COUNTY will pay for all permit, processing and plan review fees imposed by governing agencies, including  
17 the railroads. It is assumed that no Resource Agency permits (i.e. 404, 401, 1601, etc.) will be required;  
18 therefore, no design fees for procuring these type of permits have been included. It is assumed no permits,  
19 agreements, or insurance will be required from the railroad. The COUNTY will obtain the following permits:

- 20 • State encroachment permit for surveying and visual observation
- 21 • City permits for surveying and visual observations
- 22 • State's Encroachment Permit for Construction

23 Phase 2 hazardous waste assessments and implement of environmental mitigation measures are not included in  
24 this scope of work. It has been assumed that aerially deposited lead (ADL) handling plans will not be required for  
25 the project since it is anticipated that ADL will not be found in significant quantities with the project limits.

26  
27 ENGINEER will review the Environmental Commitments Record (ECR). The ECR will be used as part of the  
28 Environmental input for the Resident Engineer file.

1       **19.0           Resident Engineers File**

2       ENGINEER will prepare the Caltrans required Resident Engineer (RE) file of documents at the completion of the  
3       PS&E phase of the project. The RE file is a summary of project reports and pertinent information that would be  
4       useful to the resident engineer during the construction phase of the project.

5  
6       The following reports and data are prepared specifically for the RE file, and are not reviewed as part of the PS&E  
7       package. Information to be prepared and provide include the following:

- 8           • Back-up calculations of quantity take-off items
- 9           • 4 scale bridge deck contours
- 10          • Permits
- 11          • Engineering Calculations (horizontal and vertical alignments, earthwork calculations)

12  
13       Based on discussions with the COUNTY, ENGINEER will not prepare any grid grades or staking reports in  
14       support of construction. The COUNTY will prepare this information from the final plans and will not require any  
15       additional support. COUNTY will also provide survey control data.

16  
17       **20.0    Project Team Meetings**

18       ENGINEER will meet with COUNTY, Caltrans, staff, and other participating agencies to discuss work progress,  
19       schedule and related issues in order to exchange information, discuss and resolve issues and to maintain  
20       progress of the project. The fee has been established based on eighteen (18) monthly meetings and six (6)  
21       miscellaneous team meetings. ENGINEER will prepare meeting minutes with an action item matrix and agenda  
22       and distribute to the COUNTY, City, and other attendees or organizations, as required.

23  
24       **21.0    Project Management/ Project Coordination**

25       This task includes budget for overall project management, liaison with affected agencies, PDT leadership and  
26       project management.

1     **21.1           Agency Liaison**

2     An important consideration is to ensure liaison among the key players for the Project. ENGINEER will lead the  
3     PDT’s effort and interface with the COUNTY, City, Caltrans, and other affected agencies.

5     **21.2           Progress Reports**

6     Monthly progress reports will be prepared to document progress on the Project. The report will consist of the  
7     following:

- 8         • Work accomplished during the report period
- 9         • Work anticipated during the next reporting period
- 10        • Issues
- 11        • Impacts
- 12        • Progress Schedule/ Work Task Summary

14    **21.3           Project Fact Sheet Preparation**

15    ENGINEER will prepare a Project Fact Sheet per Caltrans District 8 requirements. The Project Fact Sheet  
16    provides a general outline of the project description, costs, and schedule.

18    **21.4           Project Charter Preparation**

19    ENGINEER will prepare a Project Charter per Caltrans District 8 requirements. The purpose of the Project  
20    Charter is to document key agreements between the Caltrans and the COUNTY on the essential elements of the  
21    project.

23    **21.5           Caltrans Risk Management Plan Preparation**

24    ENGINEER will prepare a Risk Management Plan per Caltrans District 8 requirements. The Risk Management  
25    Plan is a tool to manage potential risks that have been identified by the Project Development Team (PDT). The  
26    Risk Management Plan assesses the level of risk, the probability of the risk occurring, and strategies for avoiding  
27    the risk.

1       **21.6           Communication Plan Preparation**

2       ENGINEER will prepare a Communication Plan per Caltrans District 8 requirements. The purpose of the Project  
3       Communication Plan is to provide consistent and timely information to all project stakeholders. This plan will  
4       assist the project team in building an effective communication strategy to enhance communication throughout  
5       project delivery.

6  
7       **22.0    Prepare Quality Control / Quality Assurance Plan**

8       ENGINEER shall prepare and maintain a quality assurance plan that will be in effect during performance of the  
9       services under this Agreement to ensure that the reports, plans, studies, estimates, and other documents  
10      submitted under the Agreement are complete, accurate, checked and proofread to meet the standard of care for  
11      professional engineering practices in effect at the time of execution of the Agreement.

12  
13      **23.0    Perform Quality Control**

14      ENGINEER will supervise, coordinate, monitor and review the design process and deliverables for the Jefferson /  
15      I-10 Interchange Improvements, for conformance with COUNTY and Caltrans and other agency standards,  
16      policies and procedures as appropriate.

17  
18      ENGINEER will utilize an independent team to review major submittal packages prior to submittal to Caltrans.  
19      ENGINEER will build into the project schedule this independent review. The design team will incorporate any  
20      comments received by the independent review, and provide response to comments. In addition, for the final  
21      submittal, ENGINEER will utilize our construction management personnel to perform a constructability review of  
22      the project.

23  
24      **24.0    Project Scheduling**

25      ENGINEER will provide a project schedule with Caltrans approved WBS level 6 tasks. A baseline will be created  
26      at the start of the project. Each month, ENGINEER will update the schedule with actual percent complete for each  
27      task. Progress will be measured against the baseline to determine the status of each task.

1 **25.0 Expenses**

2 ENGINEER will provide reproduction services, and other related expenses for the project. This includes all  
3 reprographics and photocopying for submittals, all photocopying for progress plots, quality control check plots,  
4 and in-house reproductions.

5  
6 The submittals will include the following:

7 **Draft PS&E Submittal (65%)**

8 Thirty-five (35) sets of plans plotted on 11x17 sheets

9 Ten (10) sets of Design Reports

10 Thirty Five (35) sets of Special Provisions

11  
12 **Updated PS&E Submittal (95%)**

13 Thirty-five (35) sets of Roadway Plans plotted on 11x17 sheets

14 Ten (10) sets of Structure Plans on 11x17 sheets

15 Five (5) sets of Design Reports

16 One (1) set of Design Calculations and Check Calculations

17 Thirty Five (35) sets of Special Provisions

18  
19 **Final PS&E (100%)**

20 Thirty-Five (35) sets of plans plotted on 11x17 sheets

21 Four (4) sets of Structure Plans on 11x17 sheets

22 Three (3) sets of Design Reports

23 Thirty Five (35) sets of Special Provisions

24 One (1) set of Design Calculations and Check Calculations

25 Construction schedule – 2 copies

26 Electronic submittal of plans, special provisions, and estimates.

27  
28 **Final PS&E Package**

29 Thirty-Five (5) sets of plans plotted on 11x17 sheets



- 1 Four (5) sets of Structure Plans on 11x17 sheets
- 2 Three (2) sets of Design Reports
- 3 Five (5) sets of Special Provisions
- 4 Construction schedule – 2 copies
- 5 Electronic submittal of plans, special provisions, and estimates.

6

7 **Construction Bidding**

- 8 One (1) set of reproducible originals, plotted on full size sheets
- 9 One (1) set of original Special Provisions

10

11 COUNTY will reproduce plans and special provisions for bidding.

12

13 **PHASE 3 – BID SUPPORT**

14 Bidding procedures will be the responsibility of the COUNTY.

15 During bid advertisement of the project, ENGINEER will refer all questions concerning the intent to the COUNTY  
16 for resolution. In the event that items requiring interpretation of the drawings or specifications are discovered  
17 during the bidding period, the COUNTY will request assistance from the ENGINEER. The COUNTY will advise  
18 ENGINEER regarding the proper procedure required for analysis of said items.

19

20 **1.0 Pre-Bid Meeting**

21 Upon the request of the COUNTY, ENGINEER will attend the pre-bid meeting with the appropriate technical  
22 personnel.

23

24 **2.0 Respond to Inquiries**

25 ENGINEER will draft responses to bidders' inquiries as requested by the COUNTY. All such responses will be  
26 routed through the COUNTY. All direct contractor inquiries will be directed by the ENGINEER to the COUNTY.  
27 ENGINEER shall assist with the resolution of utility related issues that may arise during the bidding process,  
28 including design modifications as needed and as approved by the COUNTY PROJECT MANAGER.

29

1 **PHASE 4 – CONSTRUCTION SUPPORT**

2 Construction of the project will be the responsibility of the COUNTY. During the construction phase, ENGINEER  
3 shall work closely with Resident Engineer (RE) to assist and advise the RE in order to minimize construction  
4 conflicts and to expedite project completion.

5  
6 **1.0 Pre-Construction Meeting**

7 ENGINEER will attend the pre-construction meeting with the appropriate technical personnel.  
8

9 **2.0 Partnering Workshop**

10 ENGINEER will attend a partnering workshop as requested by the COUNTY.  
11

12 **3.0 Shop Drawing and Submittal Review**

13 When requested by COUNTY, ENGINEER will review submittals and shop drawings. The review of shop  
14 drawings shall include bridge working drawing submittals, construction contractor's submittals for substitutions,  
15 construction contractor's alternative construction approval, structural steel layout for structures, review of  
16 contractor provided falsework designs for conformance to the contract documents and others as required by the  
17 Resident Engineer. The shop drawing scope assumes one review of each submittal and one back check of re-  
18 submittals. Incomplete submittals will not be accepted for initial reviews. Multiple reviews of re-submittals that do  
19 not adequately address the initial review comments are not included.

20  
21 **4.0 Site Visits**

22 ENGINEER will visit the job site as requested by the COUNTY. This task does not include regular attendance to  
23 any construction meetings.  
24

25 **5.0 Respond to Inquiries / Requests for Information (RFIs)**

26 ENGINEER will draft responses to contractor inquiries and RFIs as requested by the Resident Engineer.  
27 ENGINEER shall assist with the resolution of utility related issues that may arise during construction, including  
28 design modifications as needed and as approved by the COUNTY PROJECT MANAGER.  
29

**6.0 Develop Final Record Drawing Plans**

While COUNTY is responsible for maintaining field as-built plans, ENGINEER shall keep a record of changes based solely on information provided by ENGINEER in response to RFI's and additional drawings prepared at the COUNTY request. These marked up plans from COUNTY will form the basis for the development of the Final Record Drawings. ENGINEER assumes no responsibility for the accuracy of the information provided by the Resident Engineer.

In developing the final record drawing PS&E, ENGINEER shall follow all requirements specified in Sections 5-104D (1) and (2) of the Caltrans Construction Manual and submit to the COUNTY no later than 60 days after construction contract acceptance by the COUNTY.

**7.0 Public Outreach and Communication**

ENGINEER will provide public outreach and communication during the construction phase of the project.

**Schedule**

<b>Milestone</b>	<b>Date</b>
<b>Approved Geometric Approval Drawings</b>	August 2012
<b>PA/ED</b>	November 2012
<b>Right of Way Appraisals</b>	November 2012
<b>65% PS&amp;E</b>	December 2012
<b>95% PS&amp;E</b>	May 2013
<b>100% PS&amp;E</b>	August 2013
<b>Right of Way Certification</b>	October 2013
<b>Approved PS&amp;E</b>	November 2013
<b>Contract Award</b>	March 2014
<b>Project Completion</b>	March 2016



## ATTACHMENT B - FEE PROPOSAL WORKSHEET

<b>COMPANY:</b>	<b>SCOPE OF WORK</b>	<b>DATE:</b>	<b>REV:</b>
RBF Consulting	PA/ED (additional), PS&E, Bid Support, and Construction Support	5/1/2012	1
<b>PROJECT:</b>		<b>PHASE:</b>	
Jefferson Street Interchange Project		Amendment 1	

PHASE I TASKS (PA/ED)	AMOUNT
A. Traffic Analysis and Study	\$102,031.64
B. Geometric Approval Drawings	\$152,853.00
C. Supplemental Fact Sheets for Exception to Design Standards	\$36,239.68
D. Cultural Field Work/Data Recovery	\$457,008.76
E. Noise Impact Analysis	\$9,158.59
F. Public Outreach and Communication	\$10,780.00

\$768,071.66

PHASE II TASKS (PS&E)	AMOUNT
G. Preparation of plans, specifications and estimates for construction of the I-10/Jefferson Street Interchange improvements. This effort includes data collection, research, pot holing, coordination with service providers and plans for relocation of conflicting utilities, right-of-way mapping, storm water and drainage report preparation, geotechnical engineering and design, geotechnical design reports, materials report, foundation report, bridge structure design, landscape and irrigation design and bid document preparation in accordance with Caltrans requirements.	\$2,777,586.64

\$2,777,586.64

PHASE III TASKS (BID SUPPORT)	AMOUNT
H. Provide support during the bidding process including responding to bidder inquiries, pre-bid meeting attendance and bid document modifications as needed	\$24,828.28

\$24,828.28

PHASE IV TASKS (CONSTRUCTION SUPPORT)	AMOUNT
H. Provide support during the project construction including coordination with the Resident Engineer, attendance at the pre-construction meeting, site visits, response to contractor inquiries, and preparation of final record drawings.	\$205,653.02

\$205,653.02

**TOTAL COST** **\$3,776,139.60**

**FEE PROPOSAL WORKSHEET**

COMPANY: <b>RBF Consulting</b>	SCOPE OF WORK: <b>Project Summary</b>	PHASE: <b>All Phases</b>
PROJECT: <b>Jefferson Street Interchange</b>		DATE: <b>May 1, 2012</b>

**DIRECT LABOR**

PERSONNEL	POSITION	HOURS		RATE	AMOUNT	
Steve Huff	Principal	64	@	\$80.05	\$5,123.20	
Brad Donais	Project Manager	182	@	\$59.14	\$10,763.48	
Tim Haile	Project Manager	1,358	@	\$59.14	\$80,312.12	
Tim Haile	Engineering Manager	160	@	\$50.01	\$8,001.60	
Romeo Firme	Structural Engineer	532	@	\$65.39	\$34,787.48	
Carlos Ortiz	Technical Manager	398	@	\$73.56	\$29,276.88	
Paul Martin	Senior Engineer	148	@	\$49.52	\$7,328.96	
	Senior Planner	442	@	\$43.03	\$19,019.26	
	Project Engineer	3,680	@	\$49.52	\$182,233.60	
	Design Engineer	5,005	@	\$43.53	\$217,867.65	
	Designer	8,514	@	\$38.87	\$330,939.18	
	Administration	336	@	\$29.00	\$9,744.00	
	License Surveyor	8	@	\$58.66	\$469.28	
		<b>TOTAL HOURS</b>		<b>20,827</b>	<b>TOTAL DIRECT LABOR</b>	<b>\$935,866.69</b>

**MULTIPLIERS**

ESCALATION @		(Rates Vary by Phase)	
OVERHEAD @	134.60%	(of Direct Labor + Escalation)	\$1,259,676.56
PAYROLL ADDITIVES @	55.40%	(of Direct Labor + Escalation)	\$518,470.15
PROFIT (FIXED FEE) @	10.0%	(of Direct Labor + Escalation + Overhead + Payroll Additives)	\$271,401.34
<b>TOTAL MULTIPLIERS</b>			<b>\$2,049,548.05</b>

**OTHER DIRECT COSTS**

\*\*\* Billed at Actual Cost \*\*\*

ITEM	QUANTITY	UNIT		UNIT COST	AMOUNT
Reprographics	13	Each	@	\$5,000.00	\$65,000.00
Postage/Mailing	5	Each	@	\$1,000.00	\$5,000.00
Milage	7000	Mile	@	\$0.50	\$3,500.00
Potholing	1	Each	@	\$6,000.00	\$6,000.00
<b>TOTAL ODC'S</b>					<b>\$79,500.00</b>

**SUB CONSULTANT SERVICES**

COMPANY	LABOR	MULTIPLIERS	ODC's	TOTAL
LSA Associates	\$2,709.98	\$5,268.61	\$1,180.00	\$9,158.59
Earth Mechanics, Inc.	\$49,454.30	\$94,704.98	\$65,975.00	\$210,134.28
Applied Earthworks	\$133,295.00	\$199,395.99	\$112,661.00	\$445,351.99
Green Communication	\$46,580.00			\$46,580.00

**TOTAL SUBCONSULTANT SERVICES \$711,224.86**

**TOTAL \$3,776,139.60**



**FEE PROPOSAL WORKSHEET**

COMPANY: <b>RBF Consulting</b>	SCOPE OF WORK: <b>Preliminary Engineering &amp; Environmental</b>	PHASE: <b>Phase I</b>
PROJECT: <b>Jefferson Street Interchange</b>		DATE: <b>May 1, 2012</b>

**DIRECT LABOR**

PERSONNEL	POSITION	HOURS	RATE	AMOUNT	
Steve Huff	Principal		\$80.05		
Brad Donais	Project Manager	12	@ \$59.14	\$709.68	
Tim Haile	Project Manager		\$59.14		
Tim Haile	Engineering Manager	160	@ \$50.01	\$8,001.60	
Romeo Firme	Structural Engineer		\$65.39		
Carlos Ortiz	Technical Manager		\$73.56		
Paul Martin	Senior Engineer	48	@ \$49.52	\$2,376.96	
	Senior Planner		\$43.03		
	Project Engineer	378	@ \$49.52	\$18,718.56	
	Design Engineer	560	@ \$43.53	\$24,376.80	
	Designer	1,030	@ \$38.87	\$40,036.10	
	Administration	24	@ \$29.00	\$696.00	
	License Surveyor		\$58.66		
		<b>TOTAL HOURS</b>	<b>2,212</b>	<b>TOTAL DIRECT LABOR</b>	<b>\$94,915.70</b>

**MULTIPLIERS**

ESCALATION @	(of Direct Labor)	
OVERHEAD @	134.60% (of Direct Labor + Escalation)	\$127,756.53
PAYROLL ADDITIVES @	55.40% (of Direct Labor + Escalation)	\$52,583.30
PROFIT (FIXED FEE) @	10.0% (of Direct Labor + Escalation + Overhead + Payroll Additives)	\$27,525.55
<b>TOTAL MULTIPLIERS</b>		<b>\$207,865.38</b>

**OTHER DIRECT COSTS**

\*\*\* Billed at Actual Cost \*\*\*

ITEM	QUANTITY	UNIT	UNIT COST	AMOUNT
Reprographics		Each	\$5,000.00	
Postage/Mailing		Each	\$1,000.00	
Milage		Mile	\$0.50	
Potholing		Each	\$6,000.00	
<b>TOTAL ODC'S</b>				

**SUB CONSULTANT SERVICES**

COMPANY	LABOR	MULTIPLIERS	ODC'S	TOTAL
LSA Associates	\$2,709.98	\$5,268.61	\$1,180.00	\$9,158.59
Earth Mechanics, Inc.				
Applied Earthworks	\$133,295.00	\$199,395.99	\$112,661.00	\$445,351.99
Green Communication	\$10,780.00			\$10,780.00
<b>TOTAL SUBCONSULTANT SERVICES</b>				<b>\$465,290.58</b>

**TOTAL \$768,071.66**



**FEE PROPOSAL WORKSHEET**

COMPANY: <b>RBF Consulting</b>	SCOPE OF WORK: <b>Plans, Specs &amp; Estimates</b>	PHASE: <b>Phase II</b>
PROJECT: <b>Jefferson Street Interchange</b>		DATE: <b>May 1, 2012</b>

**DIRECT LABOR**

PERSONNEL	POSITION	HOURS		RATE	AMOUNT
Steve Huff	Principal	64	@	\$80.05	\$5,123.20
Brad Donais	Project Manager	130	@	\$59.14	\$7,688.20
Tim Haile	Project Manager	1,226	@	\$59.14	\$72,505.64
Tim Haile	Engineering Manager			\$50.01	
Romeo Firme	Structural Engineer	380	@	\$65.39	\$24,848.20
Carlos Ortiz	Technical Manager	358	@	\$73.56	\$26,334.48
Paul Martin	Senior Engineer	100	@	\$49.52	\$4,952.00
	Senior Planner	370	@	\$43.03	\$15,921.10
	Project Engineer	3,034	@	\$49.52	\$150,243.68
	Design Engineer	4,323	@	\$43.53	\$188,180.19
	Designer	7,304	@	\$38.87	\$283,906.48
	Administration	304	@	\$29.00	\$8,816.00
	License Surveyor	8	@	\$58.66	\$469.28
		<b>TOTAL HOURS</b>			<b>17,601</b>
				<b>TOTAL DIRECT LABOR</b>	<b>\$788,988.45</b>

**MULTIPLIERS**

ESCALATION @		(of Direct Labor)	
OVERHEAD @	134.60%	(of Direct Labor + Escalation)	\$1,061,978.45
PAYROLL ADDITIVES @	55.40%	(of Direct Labor + Escalation)	\$437,099.60
PROFIT (FIXED FEE) @	10.0%	(of Direct Labor + Escalation + Overhead + Payroll Additives)	\$228,806.65
<b>TOTAL MULTIPLIERS</b>			<b>\$1,727,884.71</b>

**OTHER DIRECT COSTS**

\*\*\* Billed at Actual Cost \*\*\*

ITEM	QUANTITY	UNIT		UNIT COST	AMOUNT
Reprographics	12	Each	@	\$5,000.00	\$60,000.00
Postage/Mailing	4	Each	@	\$1,000.00	\$4,000.00
Milage	5000	Mile	@	\$0.50	\$2,500.00
Potholing	1	Each	@	\$6,000.00	\$6,000.00
<b>TOTAL ODC'S</b>					<b>\$72,500.00</b>

**SUB CONSULTANT SERVICES**

COMPANY	LABOR	MULTIPLIERS	ODC's	TOTAL
LSA Associates				
Earth Mechanics, Inc.	\$41,934.30	\$80,304.18	\$65,975.00	\$188,213.48
Applied Earthworks				
Green Communication				
<b>TOTAL SUBCONSULTANT SERVICES</b>				<b>\$188,213.48</b>
<b>TOTAL</b>				<b>\$2,777,586.64</b>

**FEE PROPOSAL WORKSHEET**

COMPANY: <b>RBF Consulting</b>	SCOPE OF WORK: <b>Bid Support</b>	PHASE: <b>Phase III</b>
PROJECT: <b>Jefferson Street Interchange</b>		DATE: <b>May 1, 2012</b>

**DIRECT LABOR**

PERSONNEL	POSITION	HOURS		RATE	AMOUNT
Steve Huff	Principal			\$80.05	
Brad Donais	Project Manager	12	@	\$59.14	\$709.68
Tim Haile	Project Manager	44	@	\$59.14	\$2,602.16
Tim Haile	Engineering Manager			\$50.01	
Romeo Firme	Structural Engineer	20	@	\$65.39	\$1,307.80
Carlos Ortiz	Technical Manager	8	@	\$73.56	\$588.48
Paul Martin	Senior Engineer			\$49.52	
	Senior Planner			\$43.03	
	Project Engineer	52	@	\$49.52	\$2,575.04
	Design Engineer			\$43.53	
	Designer			\$38.87	
	Administration			\$29.00	
	License Surveyor			\$58.66	
		<b>TOTAL HOURS</b>	<b>136</b>	<b>TOTAL DIRECT LABOR</b>	<b>\$7,783.16</b>

**MULTIPLIERS**

ESCALATION @		(of Direct Labor)	
OVERHEAD @	134.60%	(of Direct Labor + Escalation)	\$10,476.13
PAYROLL ADDITIVES @	55.40%	(of Direct Labor + Escalation)	\$4,311.87
PROFIT (FIXED FEE) @	10.0%	(of Direct Labor + Escalation + Overhead + Payroll Additives)	\$2,257.12
			<b>TOTAL MULTIPLIERS</b>
			<b>\$17,045.12</b>

**OTHER DIRECT COSTS**

\*\*\* Billed at Actual Cost \*\*\*

ITEM	QUANTITY	UNIT	UNIT COST	AMOUNT
Reprographics		Each	\$5,000.00	
Postage/Mailing		Each	\$1,000.00	
Milage		Mile	\$0.50	
Potholing		Each	\$6,000.00	
				<b>TOTAL ODC'S</b>

**SUB CONSULTANT SERVICES**

COMPANY	LABOR	MULTIPLIERS	ODC'S	TOTAL
LSA Associates				
Earth Mechanics, Inc.				
Applied Earthworks				
Green Communication				
				<b>TOTAL SUBCONSULTANT SERVICES</b>

**TOTAL** **\$24,828.28**



**MANHOUR WORKSHEET**

COMPANY: RBF Consulting  
 PROJECT: Jefferson Street Interchange

SCOPE OF WORK:  
 Manhour Summary

PHASE: All Phases  
 DATE: May 1, 2012

TASK	PRINCIPAL	PROJECT MANAGER	PROJECT MANAGER	ENGINEERING MANAGER	STRUCTURAL ENGINEER	TECHNICAL MANAGER	SENIOR ENGINEER	SENIOR PLANNER	PROJECT ENGINEER	DESIGN ENGINEER	DESIGNER	ADMINISTRATION	LICENSE SUPERVISOR	HOURS	(Top & Bottom) HOURS
	\$255.36	\$188.66	\$188.66	\$159.53	\$208.59	\$234.66	\$157.97	\$137.27	\$157.97	\$138.86	\$124.00	\$92.51	\$187.13		

PHASE TOTALS	64	182	1,358	160	532	398	148	442	3,680	5,005	8,514	336	8	20,827	20,827
PHASE I		12		160			48		378	560	1,030	24		2,212	2,212
PHASE II	64	130	1,226		380	358	100	370	3,034	4,323	7,304	304	8	17,601	17,601
PHASE III		12	44	20	20	8			52					136	136
PHASE IV		28	88		132	32	72	216	122	180	180	8		878	878





**MANHOOR WORKSHEET**

COMPANY: RBF Consulting  
 PROJECT: Jefferson Street Interchange  
 SCOPE OF WORK: Plans, Specs & Estimates  
 PHASE: Phase II  
 DATE: May 1, 2012

TASK	PRINCIPAL	PROJECT MANAGER	PROJECT MANAGER	ENGINEERING MANAGER	STRUCTURAL ENGINEER	TECHNICAL MANAGER	SENIOR ENGINEER	SENIOR ENGINEER	SENIOR PLANNER	PROJECT ENGINEER	DESIGN ENGINEER	DESIGNER	ADMINISTRATION	LICENSE SUPERVISOR	HOURS	COST
	\$265.06	\$168.66	\$189.66	\$150.63	\$208.59	\$234.86	\$167.97	\$137.27	\$157.97	\$138.86	\$124.00	\$92.51	\$187.40			

<b>Total Manhours</b>	<b>64</b>	<b>130</b>	<b>1,226</b>	<b>380</b>	<b>358</b>	<b>100</b>	<b>370</b>	<b>3,034</b>	<b>4,323</b>	<b>7,304</b>	<b>304</b>	<b>304</b>	<b>8</b>		<b>17,601</b>	
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1.0 Existing Data Research and Investigation			8					16	12			4			40	\$ 6,073
2.0 Utility Coordination																
2.1 Utility Research and Investigation			4					20	40	36					100	\$ 13,932
2.2 Utility Location Plans			8					28	44	80					160	\$ 21,962
2.3 Utility Pothele Maps			2					12	20	28			8		72	\$ 10,204
2.4 Utility Conflict Maps			2					12	20	28			2		64	\$ 8,707
2.5 Utility Relocation Coordination			8					40	40	80					168	\$ 23,302
3.0 Right of Way Mapping/Acquisition																
3.1 Right of Way Requirement Maps			4					24	60	40					128	\$ 17,837
3.2 Right of Way Coordination			20					100							120	\$ 19,570
4.0 Storm Water Data Report			4					32	42	86					164	\$ 22,305
5.0 Conceptual Landscape and Aesthetics Plan																
5.1 Aesthetics Design Workshops			4	4						46					86	\$ 11,851
5.2 Conceptual Landscape and Aesthetics Implementation			4	4				156	72	254					490	\$ 65,871
6.0 Drainage Report			32					80	140	150	18				420	\$ 58,379
7.0 Storm Water Pollution Plan (SWPPP)			2					24	40	32	4				102	\$ 14,061
8.0 Traffic Management Plan			32			100		32	72	120	24				380	\$ 53,987
10.0 Bridge Site Data Submittal			2	8				8	16	40	6				80	\$ 11,046
11.0 Structure Type Selection (Bridge and MSE Retaining Walls)			24	40				40	100	220	24				448	\$ 62,576
12.0 Draft Roadway Design Plan (65% Package)																
12.1 Title Sheet/Typical Cross Sections/Key Map			8					28	52	80					168	\$ 23,073
12.2 Layout Plans			40					40	64	176					320	\$ 44,575
12.3 Removal Plans			4					10	18	32					64	\$ 8,802
12.4 Profile and Superlevation Plans			8					28	32	76					144	\$ 19,800
12.5 Construction Details			12					80	112	216					420	\$ 57,237
12.6 Water Pollution Control Plans			4					40	40	96					180	\$ 24,531
12.7 Contour Grading Plans			8					60	100	152					320	\$ 43,721
12.8 Drainage Plans/Profiles/Details/Quantities			40					100	180	324					644	\$ 88,513
12.9 Stage Construction/Traffic Handling Plans/Details/Quantities			40	100				340	580	812					1,872	\$ 265,945
12.10 Construction Area Sign Plans			2	2				6	18	32					60	\$ 8,262
12.11 Detour Plans/Profiles/Details/Quantities			32	32				48	80	264					456	\$ 64,972
12.12 Pavement Delineation Plans/Quantities			2	12				60	100	166					340	\$ 47,141



MANHOOR WORKSHEET		SCOPE OF WORK:	PHASE:
COMPANY:	RBF Consulting	Plans, Specs & Estimates	Phase II
PROJECT:	Jefferson Street Interchange		DATE: May 1, 2012

TASK	PERSONNEL										HOURS	COST		
	PRINCIPAL	PROJECT MANAGER	PROJECT MANAGER	ENGINEERING MANAGER	STRUCTURAL ENGINEER	SENIOR ENGINEER	SENIOR PLANNER	PROJECT ENGINEER	DESIGN ENGINEER	DESIGNER			ADMINISTRATION	LICENSE SUPERVISOR
12.13 Sign Plans/Details/Quantities	16				32			64	120	328			560	\$ 77,971
12.14 Summary of Quantities	16							40	80	152			288	\$ 39,293
12.15 Standard Retaining Wall Plans/Details/Quantities	6							52	82	140			280	\$ 38,092
12.16 Planting Plans /Details/Quantities	2					40		20	24	60			146	\$ 19,800
12.17 Irrigation Plans/Details/Quantities	2					40		26	28	72			168	\$ 22,791
12.18 Electrical - Traffic Signal Plans	4				16			24	32	80			156	\$ 22,664
12.19 Electrical - Temporary Traffic Signal Plans	2							6	12	20			40	\$ 5,471
12.20 Electrical - Lighting and Sign Illumination Plans	4				40			80	200	126			450	\$ 66,174
12.21 Electrical - Temporary Lighting Plans	2							18	20	40			80	\$ 10,958
12.22 Electrical - Ramp Metering Plans	2							14	40	44			100	\$ 13,599
12.23 Cross-Sections	2							8	32	40			82	\$ 11,044
13.0 Draft Structure PS&E (65%)														
13.1 Bridge Structure Plan	40		200					200	500	542			1,482	\$ 217,495
13.2 MSE Wall Plans	20		40					80	120	204			464	\$ 66,713
14.0 Updated Draft PS&E (95% Plans Package)														
14.1 Updated Roadway PS&E	32							80	180	228	16		536	\$ 73,421
14.2 Updated Water Pollution Control PS&E	4							10	24	34			72	\$ 9,883
14.3 Updated Drainage PS&E	12							32	63	65	12		184	\$ 25,237
14.4 Updated Traffic PS&E	16				32			80	220	470	16		834	\$ 113,472
14.5 Updated Electrical PS&E	8				12			28	60	164	8		280	\$ 38,155
14.6 Updated Retaining Wall PS&E	4							10	28	38			80	\$ 10,934
14.7 Updated Landscape/Irrigation PS&E (Optional)	4					40		12	18	46			120	\$ 16,344
14.8 Updated Structures PS&E	8		24					32	110	258			432	\$ 58,836
15.0 Cost Estimate	4		4		4			4	72	120			208	\$ 31,114
16.0 Special Provision	32		24		24			20	100	80	60		340	\$ 51,877
17.0 Prepare Final PS&E (100% Plans Package)														
17.1 Final Roadway PS&E	16							28		90			134	\$ 18,601
17.2 Final Water Pollution Control PS&E	2							4		12			18	\$ 2,497
17.3 Final Drainage PS&E	4							12		30			46	\$ 6,370
17.4 Final Traffic PS&E	4				8			18		109			139	\$ 18,991
17.5 Final Electrical PS&E	2				4			10		54			70	\$ 9,591
17.6 Final Retaining Wall PS&E	2							4		14			20	\$ 2,745
17.7 Final Landscape/Irrigation PS&E (Optional)	2					6		6	6	16			30	\$ 4,133
17.8 Final Structures PS&E	4		8					14		82			108	\$ 14,803
18.0 Permit Applications/Environmental Commitments Record	8							16	36		8		68	\$ 9,776
19.0 Resident Engineer's File	4		4					20	72	80			180	\$ 24,666



**MANHOUR WORKSHEET**

COMPANY: **RBF Consulting**      SCOPE OF WORK: **Plans, Specs & Estimates**      PHASE: **Phase II**  
 PROJECT: **Jefferson Street Interchange**      DATE: **May 1, 2012**

TASK	PRINCIPAL	PROJECT MANAGER	PROJECT MANAGER	ENGINEERING MANAGER	STRUCTURAL ENGINEER	TECHNICAL ENGINEER	TECHNICAL MANAGER	SENIOR ENGINEER	SENIOR PLANNER	PROJECT ENGINEER	DESIGN ENGINEER	DESIGNER	ADMINISTRATOR	LICENSE SUPERVISOR	HOURS	COST
20.0 Project Team Meetings	30	60							106				20		216	\$ 35,574
21.0 Project Management/Project Coordination	64	80	400						80				80		704	\$ 126,936
22.0 Prepare Quality Control/Quality Assurance Plan		4	24						32						60	\$ 10,337
23.0 Perform Quality Control		12	80		20	40		40	128						320	\$ 56,625
24.0 Project Scheduling		4	12						80						96	\$ 15,656









**SUBCONSULTANT MANHOOUR WORKSHEET SUMMARY**

COMPANY: <b>LSA Associates</b>	SCOPE OF WORK: <b>Noise Report</b>	PHASE: <b>All Phases</b>
PROJECT: <b>Jefferson Street Interchange</b>		DATE: <b>May 1, 2012</b>

TASK	PRINCIPAL	SENIOR NOISE SPECIALIST	EDITING/WORD PROCESSOR	GIS	HOURS
	\$178.44	\$87.18	\$76.64	\$85.26	

<b>PHASE TOTALS</b>	<b>2</b>	<b>80</b>	<b>4</b>	<b>4</b>	<b>90</b>
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PHASE I	PHASE II	PHASE III	PHASE IV
2	80	4	4





















**SUBCONSULTANT FEE PROPOSAL WORKSHEET**

COMPANY: <b>Applied Earthworks</b>	SCOPE OF WORK: <b>Cultural Field Work/Data Recovery</b>	PHASE: <b>All Phases</b>
PROJECT: <b>Jefferson Street Interchange</b>		DATE: <b>May 1, 2012</b>

**DIRECT LABOR**

PERSONNEL	POSITION	HOURS	RATE	AMOUNT
Susan Goldenberg	Project Administrator	8	@ \$61.30	\$490.40
Michael Moratto	Principal Investigator	832	@ \$61.30	\$51,001.60
Dennis McDougall	Field Director	238	@ \$30.70	\$7,306.60
Cari Inoway	Assistant field Director	136	@ \$28.60	\$3,889.60
Michale Mirro	Cartographer/GPS/GIS Specialist	100	@ \$30.70	\$3,070.00
	Field Technicians	1,216	@ \$23.10	\$28,089.60
Kholood Abdo-Hintzma	Laboratory Director	224	@ \$26.80	\$6,003.20
	Laboratory Technicians	640	@ \$23.10	\$14,784.00
	Data-entry Specialist	80	@ \$17.00	\$1,360.00
Douglas Harro	Lithics Analyst	156	@ \$29.70	\$4,633.20
Rebecca McKim	Faunal Analyst	172	@ \$29.70	\$5,108.40
Susan Rapp	Publications Manager	128	@ \$32.10	\$4,108.80
Cari Inoway	Graphics Specialist	56	@ \$28.60	\$1,601.60
Suzanne Bircheff	Administrative Assistant	66	@ \$28.00	\$1,848.00
TOTAL HOURS		<b>4,052</b>	TOTAL DIRECT LABOR	<b>\$133,295.00</b>

**MULTIPLIERS**

ESCALATION @	(Rates Vary by Phase)	
OVERHEAD @	112.10% (of Direct Labor + Escalation)	\$149,423.70
PAYROLL ADDITIVES @	14.80% (of Direct Labor + Escalation)	\$19,727.66
PROFIT (FIXED FEE) @	10.0% (of Direct Labor + Escalation + Overhead + Payroll Additives)	\$30,244.64
TOTAL MULTIPLIERS		<b>\$199,395.99</b>

**OTHER DIRECT COSTS**

\*\*\* Billed at Actual Cost \*\*\*

ITEM	QUANTITY	UNIT	UNIT COST	AMOUNT
Mileage	6500	Mile @	\$0.50	\$3,250.00
Per Diem	170	Day @	\$110.00	\$18,700.00
Lodging	11	Day @	\$90.00	\$990.00
Meals	15	Day @	\$40.00	\$600.00
Trunk Rental	3	Week @	\$500.00	\$1,500.00
Fuel for Truck	120	Gallons @	\$3.25	\$390.00
Field Toilet Rental	2	Each @	\$450.00	\$900.00
Supplies including Curation Material	1	Lump Sum @	\$2,600.00	\$2,600.00
Printing and Shipping	1	Lump Sum @	\$5,400.00	\$5,400.00
Torres-Martinez - Native American Monitoring	1	Lump Sum @	\$14,311.00	\$14,311.00
Beta Analytical	1	Lump Sum @	\$5,280.00	\$5,280.00
SWCA (cremation analysis)	1	Lump Sum @	\$16,500.00	\$16,500.00
Statistical Research	1	Lump Sum @	\$9,350.00	\$9,350.00
Miscellaneous Technical Analysis and Special Studies	1	Lump Sum @	\$15,290.00	\$15,290.00
Western Science Center (permanent curation)	1	Lump Sum @	\$17,600.00	\$17,600.00
TOTAL ODC'S				<b>\$112,661.00</b>

**TOTAL \$445,351.99**

**SUBCONSULTANT FEE PROPOSAL WORKSHEET**

COMPANY: <b>Applied Earthworks</b>	SCOPE OF WORK: <b>Cultural Field Work/Data Recovery</b>	PHASE: <b>Phase I</b>
PROJECT: <b>Jefferson Street Interchange</b>		DATE: <b>May 1, 2012</b>

**DIRECT LABOR**

PERSONNEL	POSITION	HOURS	RATE	AMOUNT
Susan Goldenberg	Project Administrator	8	@ \$61.30	\$490.40
Michael Moratto	Principal Investigator	832	@ \$61.30	\$51,001.60
Dennis McDougall	Field Director	238	@ \$30.70	\$7,306.60
Cari Inoway	Assistant field Director	136	@ \$28.60	\$3,889.60
Michale Mirro	Cartographer/GPS/GIS Specialist	100	@ \$30.70	\$3,070.00
	Field Technicians	1,216	@ \$23.10	\$28,089.60
Kholood Abdo-Hintzma	Laboratory Director	224	@ \$26.80	\$6,003.20
	Laboratory Technicians	640	@ \$23.10	\$14,784.00
	Data-entry Specialist	80	@ \$17.00	\$1,360.00
Douglas Harro	Lithics Analyst	156	@ \$29.70	\$4,633.20
Rebecca McKim	Faunal Analyst	172	@ \$29.70	\$5,108.40
Susan Rapp	Publications Manager	128	@ \$32.10	\$4,108.80
Cari Inoway	Graphics Specialist	56	@ \$28.60	\$1,601.60
Suzanne Bircheff	Administrative Assistant	66	@ \$28.00	\$1,848.00
TOTAL HOURS		<b>4,052</b>	TOTAL DIRECT LABOR	<b>\$133,295.00</b>

**MULTIPLIERS**

ESCALATION @	(of Direct Labor)	
OVERHEAD @	112.10% (of Direct Labor + Escalation)	\$149,423.70
PAYROLL ADDITIVES @	14.80% (of Direct Labor + Escalation)	\$19,727.66
PROFIT (FIXED FEE) @	10.0% (of Direct Labor + Escalation + Overhead + Payroll Additives)	\$30,244.64
TOTAL MULTIPLIERS		<b>\$199,395.99</b>

**OTHER DIRECT COSTS**

\*\*\* Billed at Actual Cost \*\*\*

ITEM	QUANTITY	UNIT	UNIT COST	AMOUNT
Mileage	6500	Mile @	\$0.50	\$3,250.00
Per Diem	170	Day @	\$110.00	\$18,700.00
Lodging	11	Day @	\$90.00	\$990.00
Meals	15	Day @	\$40.00	\$600.00
Trunk Rental	3	Week @	\$500.00	\$1,500.00
Fuel for Truck	120	Gallons @	\$3.25	\$390.00
Field Toilet Rental	2	Each @	\$450.00	\$900.00
Supplies including Curation Material	1	Lump Sum @	\$2,600.00	\$2,600.00
Printing and Shipping	1	Lump Sum @	\$5,400.00	\$5,400.00
Torres-Martinez - Native American Monitoring	1	Lump Sum @	\$14,311.00	\$14,311.00
Beta Analytical	1	Lump Sum @	\$5,280.00	\$5,280.00
SWCA (cremation analysis)	1	Lump Sum @	\$16,500.00	\$16,500.00
Statistical Research	1	Lump Sum @	\$9,350.00	\$9,350.00
Miscellaneous Technical Analysis and Special Studies	1	Lump Sum @	\$15,290.00	\$15,290.00
Western Science Center (permanent curation)	1	Lump Sum @	\$17,600.00	\$17,600.00
TOTAL ODC'S				<b>\$112,661.00</b>

**TOTAL \$445,351.99**

<b>SUBCONSULTANT MANHOURLY WORKSHEET SUMMARY</b>	
COMPANY: <b>Applied Earthworks</b>	SCOPE OF WORK: <b>Cultural Field Work/Data Recovery</b>
PROJECT: <b>Jefferson Street Interchange</b>	PHASE: <b>All Phases</b>
	DATE: <b>May 1, 2012</b>

TASK	PROJECT ADMINISTRATOR	8	\$153.00	832	\$76.62	238	\$71.38	136	\$76.62	100	\$57.66	224	\$66.89	224	\$42.43	80	\$74.13	156	\$74.13	172	\$80.12	128	\$71.38	56	\$69.89	66	4,052
	PRINCIPAL INVESTIGATOR																										
	FIELD DIRECTOR																										
	ASSISTANT FIELD DIRECTOR																										
	CARTOGRAPHER/SPECIALIST																										
	FIELD TECHNICIANS																										
	LABORATORY DIRECTOR																										
	LABORATORY TECHNICIANS																										
	DATA ENTRY SPECIALIST																										
	LITHICS ANALYST																										
	FABRIL ANALYST																										
	PUBLICATIONS MANAGER																										
	GRAPHICS SPECIALIST																										
	ADMINISTRATIVE ASSISTANT																										

**PHASE TOTALS**

PHASE I	8	832	238	136	100	224	640	80	156	172	128	56	66	4,052
PHASE II														
PHASE III														
PHASE IV														

**SUBCONSULTANT MANHOUR WORKSHEET**

COMPANY: **Applied Earthworks**  
 PROJECT: **Jefferson Street Interchange**

SCOPE OF WORK: **Cultural Field Work/Data Recovery**

PHASE: **Phase I**  
 DATE: **May 1, 2012**

TAXA	PROJECT ADMINISTRATOR	PRINCIPAL INVESTIGATOR	FIELD DIRECTOR	ASSISTANT FIELD DIRECTOR	CARTOGRAPHER/SPECIALIST	LABORATORY DIRECTOR	LABORATORY TECHNICIANS	FIELD TECHNICIANS	DATA ENTRY SPECIALIST	LITHIC ANALYST	PAUNAL ANALYST	PUBLICATIONS MANAGER	GRAPHICS SPECIALIST	ADMINISTRATIVE ASSISTANT	HOURS	COST
	\$153.00	\$76.62	\$71.38	\$76.82	\$57.86	\$57.66	\$42.43	\$66.89	\$74.13	\$74.13	\$80.12	\$71.38	\$69.89			

	8	832	238	136	100	1,216	224	80	156	172	128	56	66	4,052		
<b>Total Manhours</b>	8	832	238	136	100	1,216	224	80	156	172	128	56	66	4,052		
4.27.1 Pre-Field Tasks	6	176	54	8	12	16	8							12	292	\$ 35,770
4.27.2 Field Tasks	2	80	120	120	40	1,200								12	1,574	\$ 103,397
4.27.3 Post Field Tasks																
4.27.3.1 Laboratory Work		32	16	8			160	80	4	4				8	952	\$ 58,841
4.27.3.2 Special Studies and Data Analysis		168					32		80	96		24		10	410	\$ 43,303
4.27.3.3 Data Recovery Report		296	48		48		24		72	72	96	32		16	704	\$ 76,017
4.27.3.4 Deliverables		80									32			8	120	\$ 15,363









**SUBCONSULTANT MANHOUR WORKSHEET SUMMARY**

COMPANY: Green Communication	SCOPE OF WORK: Public Outreach	PHASE: All Phases
PROJECT: Jefferson Street Interchange		DATE: May 1, 2012

TASK	PRESIDENT	GRAPHICS AND WEB SUPPORT	ADMINISTRATIVE SUPPORT	ADMINISTRATIVE SUPPORT	HOURS
	\$135.00	\$86.00	\$48.00	\$48.00	475

**PHASE TOTALS**      210      145      70      50      475

PHASE I	PHASE II	PHASE III	PHASE IV	TOTAL
60	20	20		100
150	125	50	50	375

**SUBCONSULTANT MANHOURLY WORKSHEET**

COMPANY:

Green Communication

PROJECT:

Jefferson Street Interchange

SCOPE OF WORK:

Public Outreach

PHASE:

Phase I

DATE:

May 1, 2012

TASK	HOURS	COST
PRESIDENT	60	\$96,000
GRAPHICS AND WEB SUPPORT	20	\$48,000
ADMINISTRATIVE SUPPORT	20	\$48,000
ADMINISTRATIVE SUPPORT	20	\$48,000

\$135,000 \$96,000 \$48,000 \$48,000

**Total Manhours**

**100**

4.26 Public Outreach and Communication

60

20

20

20

20

20

20

20

20

20

20

20

20

20

20

20

20

20

100

\$

10,780

