

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

530A



FROM: TLMA - Transportation Department

SUBMITTAL DATE:
April 14, 2011

SUBJECT: Amendment No. 1 to the Preliminary Engineering and Environmental Services Agreement with Kimley-Horn and Associates, Inc. to provide final engineering services for a proposed new grade separation at the intersection of Sunset Avenue and the Union Pacific Railroad.

RECOMMENDED MOTION: That the Board of Supervisors:

1. Approve the attached Amendment No. 1 to add final engineering services to the engineering and environmental services agreement between the County of Riverside and Kimley-Horn and Associates, Inc.; and
2. Authorize the Chairman of the Board to execute the same.

Juan C. Perez
Director of Transportation

(Continued On Attached Page)

FORM APPROVED COUNTY COUNSEL
 BY: Marsha L. Victor
 DATE: 4/28/11
 Departmental Concurrence

FINANCIAL DATA	Current F.Y. Total Cost:	\$ 2,095,404	In Current Year Budget:	Yes
	Current F.Y. Net County Cost:	\$ 0	Budget Adjustment:	No
	Annual Net County Cost:	\$ 0	For Fiscal Year:	2010/11
SOURCE OF FUNDS: City of Banning (TUMF) (100%) Project No. C0-0529				Positions To Be Deleted Per A-30 <input type="checkbox"/> Requires 4/5 Vote <input type="checkbox"/>

C.E.O. RECOMMENDATION:

APPROVE

BY: Tina Grande
Tina Grande

County Executive Office Signature

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

Prev. Agn. Ref. 6/8/2010 3.69,
6/8/2010 3.63

District: 5

Agenda Number:

The Honorable Board of Supervisors

RE: Amendment No. 1 to the Preliminary Engineering and Environmental Services Agreement with Kimley-Horn and Associates, Inc. to provide final engineering services for a proposed new grade separation at the intersection of Sunset Avenue and the Union Pacific Railroad.

April 14, 2011

Page 2 of 2

BACKGROUND: The Sunset Avenue railroad crossing is currently at street level and causes significant traffic delays. A grade separation project has been proposed to enhance traffic flows along Sunset Avenue and would provide a route for emergency services to access residents south of the railroad tracks, while improving overall safety in the area.

On June 8, 2010, the Board authorized and executed a Cooperative Funding Agreement with the City of Banning that designates the County as the lead agency for the development and delivery of the project and provides the funding needed for these services.

On June 8, 2010, the Board also authorized and executed an Engineering Services Agreement with Kimley-Horn and Associates, Inc. to provide preliminary engineering and environmental services for the project.

The preliminary engineering and environmental work effort is now complete and the project has attained environmental clearance.

Construction funding for the project is being provided in part from Trade Corridor Improvement Funds (TCIF). TCIF funding requirements include a stipulation that construction activities for the project must commence on or before December 31, 2013.

The firm of Kimley-Horn and Associate, inc. has performed very well and the Transportation Department along with the staff at the City of Banning; desire to continue the services provided by Kimley-Horn and Associates, inc. into the final design phase of the project.

The Transportation Department has negotiated a budget of \$2,095,404 to perform the final design services. This budget includes a \$250,000 contingency and cost savings of \$240,000 from the preliminary engineering and environmental phase.

The final design services will be funded 100% through the Western Riverside Transportation Uniform Mitigation Fee (TUMF) program.

AMENDMENT NO. 1 Contract No. 10-04-008A1
Riverside Co. Transportation

AMENDMENT TO AGREEMENT BETWEEN

THE COUNTY OF RIVERSIDE AND KIMLEY-HORN AND ASSOCIATES, INC

THIS AMENDMENT (hereinafter the "Amendment") to an agreement is made and entered into as of this _____ day of _____, 2011, by and between the County of Riverside, a political subdivision of the State of California (hereinafter the "COUNTY"), and Kimley-Horn and Associates, Inc. (hereinafter "ENGINEER").

RECITALS

- A. COUNTY and ENGINEER have entered in an agreement entitled "Engineering Services Agreement for Sunset Avenue Railroad Grade Separation Project between County of Riverside • Transportation Department and Kimley-Horn and Associates, Inc." that is dated June 8, 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 preliminary engineering plans, environmental technical studies and an environmental document.
- B. The above noted services are complete and the project has successfully obtained environmental clearance. The COUNTY is now prepared to proceed with the preparation of Plans, Specifications and Estimates (PS&E) that are needed in order to construct the proposed improvements.
- C. The parties desire to amend the Agreement to include the scope of work and budget needed to perform the PS&E and Construction Support services for the project.

AGREEMENT

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

- 1. Appendix A is amended to include the additional services as described in the attached Scope of Services entitled "AMENDMENT NO. 1 - PS&E AND CONSTRUCTION SUPPORT SCOPE OF SERVICES"
- 2. Appendix C • Article CV is amended by increasing the contract budget by \$2,060,405.00 as provided below and in accordance with the attached Fee Proposal.

Original Contract (Phase I) Fund Balance

Prelim Engineering and Environmental Budget	\$813,477
Spent to date	(\$426,477)
Projected Additional Expenses	<u>(\$147,000)</u>
Remaining Budget	\$240,000



Phase II, III & IV Proposed Budget

Phase II - PS&E	\$1,984,971
Phase III - Bidding Support	\$16,097
Phase IV - Construction Support	<u>\$84,336</u>
Phase II - IV Summary	\$2,085,404

Amendment 1

Phase II, III & IV Proposed Budget	\$2,085,404
Original Contract (Phase I) Fund Balance	(\$240,000)
Contingency *	<u>\$250,000</u>
Amendment 1 Summary	\$2,095,404

* Contingency funds are subject to the original contract requirements as defined in Article VI • Compensation.

Also note that overhead rates have been updated per this amendment.

3. 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.



ARTICLE VIII • APPROVALS

COUNTY Approvals

RECOMMENDED FOR APPROVAL:

[Signature] Dated: 4/27/11

JUAN C. PEREZ
Director of Transportation

APPROVED AS TO FORM:
PAMELA J. WALLS, COUNTY COUNSEL

[Signature] Dated: 4/28/11
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 (SEAL)

ENGINEER Approvals

ENGINEER:

[Signature] Dated: 3/24/2011

Dennis Landrum
PRINTED NAME

Vice President
TITLE

ENGINEER:

[Signature] Dated: 3/24/2011

JASON VALENCIA
PRINTED NAME

ASSISTANT SECRETARY
TITLE



Consulting Services Contract • Amendment Budget Summary

PROJECT: **Sunset Avenue Grade Separation**
 CONSULTANT: **Kimley-Horn and Associates, Inc.**

PROJECT NO.: **C0-0529**
 CONTRACT NO.: **10-04-008**

	PHASE 1 PA&E	PHASE 2 PS&E	PHASE 3 Bidding	PHASE 4 Con Support	PHASE 5	CONTINGENCY	TOTAL
Contract Budget	663,477					150,000	813,477
Prior Amendments							
Prior Administrative Changes							
Current Approved Budget	663,477					150,000	813,477
Proposed Contract Changes (Amend. No. 1)	(90,000)	1,984,971	16,097	84,336		100,000	2,095,405
Savings from Phase 1	(90,000)					(150,000)	(240,000)
PS&E & Construction Support Services		1,984,971	16,097	84,336		250,000	2,335,405
Proposed Budget	573,477	1,984,971	16,097	84,336		250,000	2,908,882

AMENDMENT NO. 1 - PS&E AND CONSTRUCTION SUPPORT SCOPE OF SERVICES

ADDITIONS TO APPENDIX A • ARTICLE AI • Introduction

A. PROJECT DESCRIPTION

This PROJECT will provide a railroad grade separation at Sunset Avenue and the I-10 Freeway in the City of Banning (CITY). The proposed improvements will improve safety, reduce local street congestion, and accommodate projected growth in the area. The PROJECT consists of lowering Sunset Avenue between Ramsey Street and Lincoln Street to create an underpass with the Union Pacific Railroad (UPRR) lines. The existing eastbound and westbound ramps for the interchange with the I-10 Freeway will be lowered to match the new grade of Sunset Avenue, and the existing undercrossing structure will require tie-back walls.

The ENGINEER shall perform professional and technical services to provide support to the COUNTY required to prepare the Plans, Specifications and Estimates (PS&E) through the Caltrans Permit Engineering Evaluation Report (PEER) process. It is assumed that this project is administered through Caltrans Streamlined Oversight Project Submittal.

B. LOCATION

This PROJECT is located in the City of Banning on Sunset Avenue between Ramsey Street and Lincoln Street where it crosses the I-10 Freeway and the Union Pacific Railroad (UPRR).

C. COORDINATION

ENGINEER shall coordinate with other involved agencies for compatible design and phasing of construction with existing conditions. Coordination may include, but will not necessarily be limited to the following:

- Union Pacific Railroad
- CALTRANS
- Federal Highway Administration
- California Dept. of Fish and Game
- U.S. Fish & Wildlife
- Regional Water Quality Control Board
- City of Banning
- Utility Companies

UPRR and CALTRANS will exercise review and approval function through the COUNTY PROJECT MANAGER at key points in the development process. All contacts with UPRR and CALTRANS will be directed through COUNTY. Milestone PROJECT design reviews will be performed for the specific products and deliverables listed herein. The COUNTY PROJECT MANAGER will conduct these reviews, in addition to the monthly project status reports and meetings. All meetings with other outside agencies will be scheduled by ENGINEER with approval of COUNTY.

1 UPRR Coordination

2 ENGINEER shall provide coordination with the Union Pacific Railroad (UPRR) during the design
3 phase of the project, (approximately 14 months). ENGINEER shall coordinate feedback from the
4 UPRR to the design team to verify that the design of the railroad structure and shoo-fly design will
5 meet the requirements of the UPRR. The coordination efforts shall include a series of meetings
6 including;

- 7 1) Kick-off meeting to discuss the project and identify the design criteria.
- 8 a) Key elements to discuss with UPRR are
- 9 i) Shoo-fly design speed, track centers & horizontal curvature,
- 10 ii) Clearances to active tracks during construction,
- 11 iii) Final vertical grades,
- 12 iv) Access roadways,
- 13 v) UPRR construction (track & signal) versus Contractor construction,
- 14 vi) Right-of-Entry requirements for both design and construction,
- 15 vii) Submittal review process including submittal delivery, review milestones and time
16 frames.
- 17 2) Design Review Meetings.
- 18 a) After each submittal, ENGINEER will conduct a submittal review meeting to discuss the
19 UPRR comments.
- 20 b) Comments and responses will be logged and tracked in spreadsheet format.
- 21 3) Roadway Worker Protection and Safety Training (RWP) – Coordination. All consultant team
22 members who will visit the UPRR right-of-way will need to take and pass the online RWP
23 training certification. ENGINEER will coordinate with site investigation team members to
24 convey that the RWP training has to be completed.
- 25 4) Right of Entry Permits – Coordination. An estimated four firms are anticipated to have
26 employees visit the UPRR right of way in order to conduct site surveys and investigations
27 required for design. ENGINEER will coordinate the execution of UPRR Right-of-entry
28 agreement to allow site investigation team members to enter the UPRR Right-of-way and to
29 perform site investigation work as approved by UPRR.

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- 5) Site Diagnostic Meetings. ENGINEER will schedule and participate in up to two CPUC Site Diagnostic meetings with representatives from UPRR, CPUC, the COUNTY and the design team. The site diagnostic process is required to gain concurrence between the parties for CPUC approval of the Formal Application and Scoping Memo for the proposed improvements.
 - 6) UPRR Design Review – Coordination. ENGINEER will coordinate with UPRR in order to obtain current editions of the UPRR Design Criteria Manual, UPRR Engineering Standard Plans, and the current reference criteria for UPRR design requirements for roadway underpass structures. ENGINEER will also coordinate with UPRR in order to obtain current requirements for temporary construction including shoring and falsework requirements. ENGINEER will also obtain information on current railroad operations in order to determine acceptable site access and work windows.
 - 7) UPRR may require an initial deposit from the COUNTY to perform design review, assemble and/or review agreements, and provide railroad flagging services. The COUNTY will directly incur these expenses. Funding not expended from the initial deposit will be reimbursed to the COUNTY; or if requested by the COUNTY, credited towards railroad inspection and flagging services during the construction phase of the project. ENGINEER will coordinate with UPRR and the COUNTY to get the initial deposit in place. ENGINEER will coordinate review of progress submittal packages by UPRR in order to facilitate timely review of submittals.
 - 8) CPUC Application and Scoping Memo – Application Preparation and Processing. ENGINEER will prepare CPUC applications for the Sunset Avenue bridge. Submittal of the applications must be made by the roadway owner. ENGINEER will coordinate with the CPUC as required during processing.
 - 9) Railroad Coordination Meetings. ENGINEER will attend up to six additional meetings in Southern California with the Project Development Team, the COUNTY, UPRR, CPUC or other parties in order to provide railroad technical design and/or railroad coordination input.

Assumptions

- Union Pacific Railroad shall have the final review and approval of the plans and specifications for all temporary and permanent facilities to be constructed on Union Pacific Railroad property.



- Review times and personnel for the Union Pacific Railroad shall be coordinated through the UPRR representative for this project.
- The CMA will include the UPRR costs associated with the Railroad work.

D. PHASES

The services performed by ENGINEER will be accomplished in the following Phases:

Phase II Plans, Specifications and Estimates

Phase III Construction Bid Support

Phase IV Construction Support

Each Phase will be authorized by written notice to proceed from COUNTY. Work shall not proceed without written notice to proceed.

E. STANDARDS

The Plans, specifications, and estimates shall be prepared in accordance with UPRR and CALTRANS' regulations, policies, procedures, manuals and standards including compliance with Federal Highway Administration (FHWA) requirements. Improvements of local roads may be prepared in accordance with COUNTY and CITY standards in effect at the time of contract, in lieu of CALTRANS standards. All Documents shall be prepared using imperial standards and dimensions.

1. Survey

COUNTY shall perform all field surveys, ground control, photogrammetric mapping and digital terrain modeling (DTM). All work will conform to CALTRANS and UPRR standards and requirements.

2. Design

Roadway design shall be in accordance with the current CALTRANS Highway Design Manual and its revisions, as well as, the current standards of the City of Banning.

3. PS&E

Plans and specifications shall be prepared in conformance with the current editions of the CALTRANS Guide for Submittal of Plans, Specifications and Estimates, Standard Plans, Standard Specifications and Standard Special Provisions. As part of the work involved in the preparation of the plans, specifications and estimates, the ENGINEER shall prepare and furnish to CALTRANS special provisions for items of work included in the plans which are not covered in the Standard Specifications and CALTRANS-approved standard special provisions.



Structures design within CALTRANS right-of-way shall be prepared in accordance with the Bridge Design Details Manual, Bridge Design Aids Manual and Bridge Memos to Designers, Bridge Design Specifications, California Department of Transportation, Division of Structures current editions.

Bridge design for the new UPRR underpass shall be prepared in accordance with The American Railway Engineering and Maintenance-of-Way Association (AREMA) standards.

Roadway plans shall be prepared electronically in conformance with the CALTRANS "Drafting and Plans Manual" and the CALTRANS "CADD Users Manual of Instructions". Roadway plans shall be prepared on MicroStation. Roadway plans shall be on single sheet files. Graphic files shall be two-dimensional and shall conform to the CALTRANS Data Format as defined in Section 7 of the CADD Users Manual of Instruction. One set of roadway plans on magnetic media and vellum shall be provided with PS&E submittal.

Special Provisions shall be prepared using Microsoft Word conforming to CALTRANS format and content.

4. Project Files

Project Files shall be indexed in accordance with CALTRANS' Project Development Uniform File System.

Items 1 through 6 are not all-inclusive but are intended only to illustrate types of sources.

F. KEY PERSONNEL

The ENGINEER has represented to the COUNTY that certain key personnel will perform the services and if one or more of such personnel should become unavailable, ENGINEER may substitute other personnel of at least equal competence only after prior written approval by the COUNTY PROJECT MANAGER has been secured. The key personnel for performance of this PROJECT are:

Principal	Mike Schiller
Project Manager	Dennis Landaal
Roadway Senior Engineer	Jason Valencia
QC Senior Engineer	Darren Adrian
Structures Senior Engineer	Andy Sanford
Environmental Team Leader	Ryan Birdseye

1 Expenditures include direct labor costs, other direct costs and subconsultant costs. These reports will be
2 prepared per COUNTY's guidelines and will be included as supporting data for invoices presented to the
3 COUNTY every month.

4 Assumptions:

- 5 ❖ Prior to sending out monthly reports, ENGINEER's Project Accounting staff will meet with the COUNTY
6 once to review COUNTY guidelines. ENGINEER to obtain example of an acceptable invoice format from
7 COUNTY website. ENGINEER to follow COUNTY accounting processes documented on COUNTY
8 website.

9 **D. SCHEDULING**

10 Within one month from the Notice to Proceed (NTP), the ENGINEER will provide a detailed project schedule,
11 which indicates milestones, major activities and deliverables, to the COUNTY for review and comments. This
12 schedule will reflect assumed review times necessary by the agencies involved. Review of the schedule will
13 occur at subsequent meetings. Adjustments will be made, if necessary, due to changing circumstances.

14 Assumptions:

- 15 ❖ The schedule will be prepared using Microsoft Project.
16 ❖ The schedule will be updated as necessary.
17 ❖ PS&E preparation (Phase II) duration is assumed to be 14 months. PS&E completion is therefore
18 anticipated no later than June 30, 2012 assuming ENGINEER is provided with NTP prior to the end of
19 April 2011.

20 **E. PROGRESS REPORTING**

21 Progress reports shall be prepared in accordance with COUNTY guidelines. Reports will be required monthly
22 and shall be accompanied by an invoice.

23 Assumptions:

- 24 ❖ ENGINEER to obtain example of an acceptable Progress Report from COUNTY website. ENGINEER to
25 follow COUNTY accounting processes documented on COUNTY website.

26 **F. CONTRACT ADMINISTRATION**

27 The ENGINEERING PROJECT MANAGER shall maintain ongoing liaison with the COUNTY PROJECT
28 MANAGER, CALTRANS Project Manager, AGENCY contacts and utility companies to promote effective
29 coordination during the course of project development.



1 Progress meetings with ENGINEER's staff, subconsultants and the COUNTY PROJECT MANAGER shall be
2 held regularly. Engineer is to provide project scope, schedule, budget, photos, and various project details to
3 the COUNTY web master for posting on the COUNTY website.

4 Assumptions:

- 5 ❖ Phone calls and unscheduled meetings are to be part of project management activities.
- 6 ❖ Meetings will be held with each utility agency/company. Up to five agencies/companies are assumed for
7 water, sewer, electric, gas, oil and communication lines.
- 8 ❖ PS&E close out will be part of this task. Activities associated with the close out include verification that
9 contract requirements have been completed, identify lesson learned (memorandum), update and archive
10 project hardcopy and electronic files and close the project.

11 **ARTICLE AIII • PLANNING AND PROJECT DEVELOPMENT**

12 **A. RESEARCH AND DATA GATHERING**

13 Existing topographic mapping, photos, bridge reports, maintenance reports, right of way maps, "as-built"
14 plans, record maps and surveys, study reports, assessor maps, contract documents, utility index maps, local
15 street improvement/development plans and other pertinent data were obtained from the City, County and
16 Caltrans and reviewed by the ENGINEER as part of previous project phase. No additional effort is assumed.

17 **B. PROJECT DEVELOPMENT TEAM**

18 A Project Development Team (PDT) including representatives from the COUNTY, CALTRANS, CALTRANS
19 Division of Structures (DOS), UPRR and other relevant agencies/stakeholders shall be established within
20 fifteen days after NTP. PDT meetings shall be held on average bi-monthly to resolve issues and to apprise
21 the affected agencies/stakeholders of the progress of the PROJECT. A kick off meeting with the PDT shall be
22 held within 30 days after the NTP.

23 Assumptions:

- 24 ❖ Up to 9 PDT meetings (bimonthly) are assumed.
- 25 ❖ ENGINEER to provide agendas, and if necessary discussion materials for each meeting. After each
26 meeting the ENGINEER will provide a meeting summary memorandum that will include an action item
27 matrix and documentation for project decisions. The meeting summaries will be distributed to meeting
28 attendees for review and comment.

1 **C. PERMITS**

2 Following the receipt of the NTP, the ENGINEER shall submit an Encroachment Permit application to the
3 COUNTY to be forwarded to CALTRANS on behalf of the COUNTY and the ENGINEER to allow field staff to
4 conduct geotechnical investigations and field surveys within the freeway right of way. Concurrently, the
5 ENGINEER shall identify additional locations outside the State right of way where it will be necessary to
6 obtain specific rights of entry from affected property owners. A listing of candidate right of entry locations shall
7 be furnished by the ENGINEER. The COUNTY with the assistance from the ENGINEER will obtain rights of
8 entry for properties outside the State right of way.

9 Assumptions:

- 10 ❖ Permit fees are not anticipated or included within our budget.

11 **D. DESIGN SURVEYS**

12 COUNTY shall perform all field surveys, ground control, photogrammetric mapping and digital terrain
13 modeling (DTM). All work will conform to CALTRANS and UPRR standards and requirements.
14 Deliverables to ENGINEER will be electronic files compatible with Microstation and InRoads software
15 (survey shots and DTM), hardcopy plots and electronic image file of rectified aerial photograph.
16 ENGINEER will rely on this information without independent review or confirmation. The design surveys
17 were provided by the County during the previous project phase. A budget is included in the fee to
18 incorporate one additional survey into the PS&E.

19 **E. DESIGN DRAINAGE REPORT**

20 A Drainage Report will be prepared to document hydrologic and hydraulic calculations necessary to identify
21 drainage improvement related to the grade separation project. Prior to developing hydrology calculations, a
22 field reconnaissance will be conducted. The ENGINEER shall obtain readily available documents pertinent to
23 this Drainage Report from the CITY, COUNTY and CALTRANS for review. The ENGINEER's analysis will be
24 coordinated with the affected agencies, including the Riverside County Flood Control & Water Conservation
25 District (RCFC&WCD). The Drainage Report will quantify the magnitude and frequency of design flows from
26 adjacent areas to the PROJECT area, as well as the volumes attributable to the proposed improvements.

27 Assumptions:

- 28 ❖ Meetings – up to 2 combined meetings with the following:

- 29 • CALTRANS District 8 Hydraulic Staff

- City of Banning
- Riverside COUNTY Flood Control and Water Conservation District (RCFCWCD)

❖ Field Reconnaissance

- Up to two site visits to assist in the preparation of the drainage plans.
- The purpose will be to document the current site conditions and determine if any drainage assumptions (direction of flow, new work along interstate) need to be updated.
- Prominent visible drainage features will be documented.
- Constraints will be noted for the proposed improvements.

❖ Drainage Report

- The Design Drainage Report will be prepared in general accordance with the CALTRANS Design Requirements, District 8 Project Development Policies, and the current CALTRANS Standard Plans in effect at the time of contract.
- Hydrologic modeling will be based on the latest CALTRANS District 8 standards.
- Detention basin analysis for reducing peak runoff to pre-project levels will be prepared. It is assumed that up to two storms will be analyzed for detention routing.
- Off-site flows that enter the project area will be determined as part of the drainage study but it is assumed that no off-site storm drain improvements north of Ramsey Street will be required.
- No flood inundation mapping is assumed to be needed for the existing and proposed condition.

❖ The analysis will include necessary calculations to be submitted with the Drainage Report that entails the following:

- Hydraulic calculations to verify proposed interchange drainage system culvert sizes
- Hydraulic calculations for inlets including spread calculations
- Headwater analysis at headwalls to determine ponded depth.
- Hydraulic calculations for downstream channel at the proposed storm drain outlet

❖ The Design Drainage Report calculations will be prepared in conjunction with preparing drainage improvement plans for the project.

❖ Document Retrieval and Review

- Readily available drainage documents for the area will be obtained and reviewed to confirm general conformance to the overall planning level drainage improvements for the area.

- These documents will consist of the following:

COUNTY/CALTRANS drainage studies

F. STORM WATER DATA REPORT (SWDR)

ENGINEER shall prepare a STORM WATER DATA REPORT per CALTRANS standards.

Assumptions:

- ❖ Assumes that only new impervious area will be required to be treated and that 100% treatment for the increased impervious area could be a combination of treatment of existing and proposed pavement to achieve 100% equivalent treatment for the project.

G. GEOTECHNICAL DESIGN REPORTS

ENGINEER shall develop a drilling program to explore existing subsurface conditions at the project site. Near surface soils will be evaluated to determine if supports for the proposed bridge structures can be provided by spread footings. If spread footings are determined to be inadequate, various types of deep foundations will be evaluated. Design and construction recommendations for shallow or deep foundations will be provided. Construction of embankments for the bridge approaches and entrance ramps and exit ramps will result in the creation of new slopes. Stability analysis of the new slopes will be conducted to address the gross and surficial stability. Embankment construction will also induce compression of the underlying soils which is manifested by ground surface settlement. The magnitude and time rate of settlement of underlying soils due to the weight of the proposed embankments will be determined.

Alternatives for flexible and rigid pavement structural sections shall be provided. Pavement sections will be designed in accordance with the procedures outlined in the September 2006 CALTRANS Highway Design Manual (Sixth Edition).

The following geotechnical tasks shall be performed by ENGINEER:

- Prepare a Geotechnical Design Report
- Prepare a Final Foundation Report
- Review of Foundation Plan for PS&E
- Prepare Log of Test Borings (LOTB) sheets for PS&E
- Pavement Life Cycle Cost Analysis

Geotechnical Design Report

A Geotechnical Design Report providing design and construction recommendations for embankments,

1 pavement structural sections and tie-back walls, if required, will be prepared in accordance with California
2 Test Method 130. The field investigation for the Geotechnical Design Report will consist of drilling exploratory
3 borings to depths of approximately 50 feet each for retaining walls. One boring at each end of the potential
4 retaining walls has been assumed. For pavement designs, borings will be drilled to depths of approximately
5 10 feet below the proposed pavement elevations at intervals of approximately 1000 feet, or as necessary.
6 Subsurface soil samples will be collected during the field investigation for laboratory testing.

7 Prior to the field investigation, ENGINEER shall prepare a plan showing the proposed boring locations. This
8 plan will be submitted to COUNTY/CALTRANS for approval and the ENGINEER shall obtain the necessary
9 encroachment permit to perform the borings. ENGINEER is to coordinate with COUNTY/CALTRANS and the
10 various property owners in obtaining right of entry permits for gaining access to private property to investigate
11 field conditions including the borings. Traffic control will be necessary when drilling some of these borings.
12 ENGINEER shall follow CALTRANS and COUNTY traffic control guidelines.

13 Assumptions:

- 14 ❖ Prepare a report of the findings in conformance with the current edition of the CALTRANS Transportation
15 Laboratory, California Test Method 130 and Highway Design manual.
- 16 ❖ Log of Test Borings (LOTB) sheets in CALTRANS format will also be provided.

17 Effort associated with the Foundation Report is contained in Article AIV – Structures Section B Geotechnical
18 Coordination and Foundation Report of this Agreement.

19 **H. RIGHT OF WAY MAPPING AND ACQUISITION**

20 ENGINEER shall prepare the Right of Way Requirement map based on the approved geometric approval
21 drawings. All other right-of way mappings and acquisition documents are assumed to be performed by the
22 COUNTY. Title investigation search, appraisals, preparation of plats and legals are assumed to be performed
23 by the COUNTY.

24 **I. AGREEMENTS**

25 The ENGINEER will provide technical support to the COUNTY/CALTRANS as required for obtaining
26 cooperative agreements, freeway agreements, development agreements, and escrow agreements, etc.

27 Assumptions:

- 28 ❖ COUNTY will be the lead on all of the agreements.

1 **J. UTILITY COORDINATION**

2 The intent of the COUNTY is that the services of the ENGINEER shall be complete and "turn-key" with
3 respects to utility coordination matters for Project Report level coordination, except for those procedures that
4 must be performed by COUNTY.

5 ENGINEER shall coordinate with utility owners and COUNTY and State of California Department of
6 Transportation (CALTRANS) utility coordination staff with respect to utility related matters, including but not
7 limited to:

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

22 ENGINEER shall provide copies of correspondence with utility companies and other utility related information
23 to the COUNTY and CALTRANS as required.

24 ENGINEER shall act as extension of staff to implement utility coordination and relocation in accordance with
25 CALTRANS Right of Way Manual, Chapter 13 and necessary COUNTY procedures, including but not limited
26 to:

- 27 a. Preparation of letters to owners of utilities

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

29 ENGINEER shall prepare letters for COUNTY signature as required. ENGINEER shall prepare and

1 send correspondence under ENGINEER's signature when feasible and appropriate.

2 b. Phone, email and office communication

3 ENGINEER shall communicate as needed to achieve necessary and required utility coordination and
4 relocations via communication methods.

5 c. Meetings

6 ENGINEER shall set up utility coordination meetings as needed.

7 d. Agreements

8 ENGINEER shall prepare Agreements utilizing CALTRANS format and language, modified as
9 necessary for execution by the COUNTY of Riverside.

10 e. Submittals

11 ENGINEER shall submit letters, notices to owner, and other documents to COUNTY and CALTRANS
12 for reviews and approvals.

13 f. CALTRANS procedures, general

14 ENGINEER shall comply with CALTRANS utility coordination procedures, as outlined in Chapter 13 of
15 the CALTRANS Right of Way manual. ENGINEER shall be knowledgeable in the required procedures,
16 and shall coordinate with COUNTY and CALTRANS as required. ENGINEER shall maintain files in
17 accordance with CALTRANS filing requirements, and shall provide CALTRANS with duplicate files and
18 shall provide COUNTY with original files upon completion of construction.

19 Other and related duties of ENGINEER are as follows:

20 ENGINEER shall obtain readily available record copies of utility maps from each utility owner within the
21 project limits for known existing and/or proposed utility facilities. ENGINEER shall include mapping and/or
22 exhibits that define the project limits as part of the requests for utility information. ENGINEER shall identify
23 utility companies affected by the project and delineate utilities within the project's sphere of influence on the
24 plans. ENGINEER shall prepare preliminary plans, which shall include known existing utilities (above
25 ground and below ground) identified by location, size, type, and owner, as appropriate. ENGINEER shall
26 check horizontal and vertical clearances for utilities and coordinate design with the various utility companies
27 to address conflicts. In addition to information provided by the owning utility companies and through
28 research of other record maps, field surveys shall be used to locate utility features such as manholes,
29 valves, fire hydrants, poles, risers, etc., which shall be reflected on the plans.

Sunset Avenue Railroad Grade Separation

1 If it is necessary to pothole existing utilities at critical locations, ENGINEER shall coordinate with COUNTY
2 and CALTRANS staff to arrange with the respective utility owner to pothole its facility. ENGINEER shall
3 coordinate the use field survey crews to locate potholed utilities by coordinates and elevations based on the
4 project's survey controls.

5 Known utility conflicts shall be shown on the plans with construction notes indicating action to be taken and
6 by whom. Inventory numbers of poles, vaults and other surface facilities shall be shown on the plans for
7 those facilities that have such numbers attached to the facility and as provided on the owner's inventory
8 maps.

9 ENGINEER shall send preliminary design plans to owning utility companies within the project limits with
10 request for review and comments on the plans relevant to their respective facilities, and other project
11 specific information.

12 ENGINEER shall monitor responses of utility notices received and make recommendations for mitigating
13 conflicts. ENGINEER shall provide written responses to utility companies with regard to stated concerns
14 and conduct design coordination meetings with utility companies as needed. Unresolved issues shall be
15 brought to the attention of the COUNTY PROJECT MANAGER as early as practical. Utility conflict issues
16 shall be resolved prior to the completion of the final design plans as follows:

- 17 • ENGINEER, through COUNTY staff, shall request and obtain a written acknowledgement of any
18 conflicts from the respective utility owners.
- 19 • Reasonable efforts shall be taken to accommodate utility company requests for minor design
20 changes to accommodate their facilities. ENGINEER understands that the utility companies are
21 generally operating within the COUNTY or CALTRANS right-of-way, but may have prior rights to that
22 of the COUNTY / CALTRANS or may have rights prescribed by Master Utility Agreements between
23 CALTRANS and utility companies.
- 24 • ENGINEER shall coordinate inclusion of special provisions in COUNTY's bid documents for
25 adjustments and relocations of utility facilities as alternate bid items, if requested by the owning utility.
26 Said work may require that cooperative agreements be prepared between the COUNTY of Riverside
27 and the owning utility companies. Engineer shall assist in preparation of agreements and shall
28 provide information and exhibits as required to support the preparation of cooperative agreements, if
29 needed.

Sunset Avenue Railroad Grade Separation

1 ENGINEER shall conduct utility coordination meetings, as needed, regarding adjustments and relocations,
2 to resolve conflict issues, and with respect to performing work for utility companies by COUNTY contractors.
3 For utility conflicts that require relocating, ENGINEER shall prepare notices to owner relocate conflicting
4 facilities. However, it is expected that COUNTY staff will sign the orders.

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

8 ENGINEER shall coordinate with COUNTY survey and utility companies as required with respect to prior
9 rights claims and determinations.

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

- 12 • Obtain approved electrical service point from the serving electric company for each service
13 equipment enclosure to be installed, and identify requirements that the serving electric company has
14 for the provision of service. Fulfill serving electric company requirements as appropriate, including
15 preparation of applications for service and other required documents, some of which may require
16 COUNTY or CALTRANS signatures.
- 17 • Serving electric company shall be notified that Electrical Safety Orders clearance requirements must
18 be met (10' radial clearance between 12kv overhead electrical facilities and signal poles and mast
19 arms, and greater clearance for higher voltage electrical facilities). Show such clearance conflicts on
20 the plans with construction notes.
- 21 • Submit plans indicating proposed service connection locations to serving electric company for
22 approval (service equipment enclosure, conduit runs, riser quadrant, pole number, and connections to
23 vaults as appropriate).
- 24 • Provide detailed load calculations to serving electric company, with a copy to the COUNTY, which
25 provides calculations of the normal and maximum expected loads.

26 ENGINEER shall assist with the resolution of utility related issues that may arise during the bidding process
27 and during construction, including design modifications as needed and as approved by the COUNTY
28 PROJECT MANAGER.

29 Specific issues, CALTRANS requirements and utility company requirements may result in deviation from

1 the procedures outlined herein.

2 Assumptions:

- 3 ❖ Up to 30 potholes are anticipated to locate utilities and existing footings.
- 4 ❖ Pothole surveys to be performed by the COUNTY.
- 5 ❖ Utility Easement Acquisition to be performed by the COUNTY with "Turn Key" support provided by the
- 6 ENGINEER.
- 7 ❖ High/Low risk assessment per CALTRANS requirements will be performed as part of this task.

8 **K. MISCELLANEOUS DESIGN SUPPORT**

9 ***Supplemental Design Exceptions***

10 If additional design exceptions beyond what were submitted in the previous project phase, are deemed

11 necessary, the ENGINEER will coordinate with CALTRANS to receive approval.

12 Assumptions:

- 13 ❖ Mandatory and Advisory design exception Fact Sheets will be prepared for up to eight additional non-
- 14 standard features and processed through CALTRANS. Up to one meeting with the CALTRANS
- 15 geometrician is assumed.

16 ***Updated Transportation Management Plan***

17 The ENGINEER shall prepare and submit an updated Transportation Management Plan for COUNTY and

18 CALTRANS review and approval.

- 19 ❖ Full closure of the freeway interchange at Sunset Avenue is assumed.
- 20 ❖ Transportation Management Plan shall comply with CALTRANS requirements.

21 ***Noise Abatement Decision Report***

22 The ENGINEER shall prepare and submit a Noise Abatement Decision Report (NADR) for COUNTY and

23 CALTRANS review and approval.

- 24 ❖ Assumes impacts are limited to a new sound wall adjacent to three properties along the westbound
- 25 entrance ramp.

26 ***Multi-Modal Study***

27 Not anticipated to be necessary and not included within this scope of work.

28 ***Modified Access Report***

29 Not anticipated to be necessary and not included within this scope of work.

- 1 • Drilling and Sampling – ENGINEER shall conduct field investigations consisting of borings to
2 approximately 100 feet deep. The precise locations will be selected to minimize impacts on traffic.
3 Subsurface investigations shall conform to the requirements in Section 4.3.5 of the Bridge Design
4 Specifications and for pile foundations shall provide for the utilization of Standard Class 45 piles (design
5 load of 45 tons) as a minimum, if appropriate.
- 6 • Laboratory Testing - Bulk and undisturbed samples will be selected for laboratory testing. Tests will be
7 conducted in accordance with CALTRANS Test Methods or ASTM Standards.
- 8 • Engineering Analyses - Results obtained from the field and laboratory investigation program will be
9 used to establish idealized soil profiles and design soil parameters for bridge foundation design. A
10 foundation type and related capacity will be recommended. Seismic parameters such as peak bedrock
11 acceleration and depth to bedrock-like materials will be provided. Other seismic hazards, if
12 encountered, will be addressed and recommendations will be given to mitigate these hazards.
- 13 • Report Preparation - The results obtained from the geotechnical investigation will be documented in
14 draft Foundation Reports (one for each bridge), which will include LOTB sheets. The draft Foundation
15 Report will be submitted to the COUNTY and CALTRANS for review. ENGINEER shall finalize the
16 report upon receipt of review comments.

17 **C. STRUCTURAL DESIGN AND CALCULATIONS**

18 Structural design calculations will be prepared in conformance with CALTRANS and UPRR design
19 specifications and procedures as appropriate.

20 Plans and calculations shall conform to CALTRANS' and UPRR requirements as appropriate and shall be
21 made available for review upon request.

22 The Bridge Design Specifications, California Department of Transportation, DOS current editions shall be
23 used as design criteria.

24 Bridge Plans shall be prepared in accordance with the Bridge Design Details Manual, Bridge Design Aids
25 Manual and Bridge Memos to Designers, California Department of Transportation, DOS current editions.

26 The scope of this work shall include but not be limited to:

- 27 • Construction details for each design shall be prepared on DOS format plan sheets. Blank reproducible
28 sample plan sheets will be provided. DOS will supply the COUNTY with the needed standard drawings
29 as shown in Section 20 of the Bridge Design Details Manual and the current Standard Plans. These

standard drawings and Standard Plans shall be incorporated into the Contract Plans where applicable.

- Each plan sheet shall be signed and stamped by the responsible design engineer who is registered in the State of California. Each design shall be independently checked by a Professional Engineer registered in the State of California.

Assumptions:

- ❖ Respond to comments and resubmit report.
- ❖ Prepare final bridge design for Sunset Ave Undercrossing based on AASHTO LRFD Bridge Design Specifications, Fourth Edition, with CALTRANS interims.
- ❖ Prepare final bridge strength and seismic design for Sunset Ave Underpass based on the AREMA Manual for Railway Engineering (Load Factor Design).
- ❖ Prepare seismic analysis and designs in accordance with CALTRANS Seismic Design Criteria Version 1.4 (ARS curves for the underpass will be determined by AREMA specifications).
- ❖ Prepare quantities, final engineer's estimate of probable cost, and bid item list.
- ❖ Perform an independent check of the bridge designs.
- ❖ Provide technical special provisions based on the 2010 CALTRANS Standard Specifications and the 2010 Standard Special Provisions (if available, otherwise 2006 standards will be used).
- ❖ Complete a senior level quality control review of the PS&E package.
- ❖ Submit PS&E package for processing and approval. In accordance with CALTRANS procedures, we will provide submittals at the 65%, 95% and 100% levels.
- ❖ Respond to comments, make necessary revisions, and resubmit as necessary.
- ❖ Prepare RE pending file (structural portions) and bridge 4-scale contour plots.

D. INDEPENDENT CHECK REVIEW AND QUALITY CONTROL

An Independent Check review shall be conducted at the 90% Structures PS&E stage. Checking shall include the preparation of an independent set of structural design check calculations and review of the plans and details. The checker and the designer will resolve disagreements and concur with revisions to the contract plans.

1 **E. STRUCTURE SPECIFICATIONS & ESTIMATES**

2 CALTRANS Standard Special Provisions (SSPs) shall be utilized to prepare a set of Structure Special
3 Provisions specific to the PROJECT which will be incorporated in the final PS&E. These Structure Special
4 Provisions shall be prepared, signed and stamped by a Professional Engineer registered in the State of
5 California.

6 The ENGINEER shall prepare quantity calculations for bid items and prepare the bridge cost estimate. All
7 contract items used shall be substantiated by calculations. Quantity calculations shall be neat and orderly and
8 shall show sketches, diagrams and dimensions necessary to allow them to be independently used by field
9 inspectors. All quantity calculations shall be independently checked and substantiated with calculations. The
10 Construction Cost Estimate will be prepared using the latest available CALTRANS cost data, COUNTY cost
11 data and actual recent construction costs in the PROJECT area.

12 **F. INITIAL STRUCTURE PS&E (65% UNCHECKED PLANS)**

13 The (65%) structure PS&E will be compiled and submitted for review to the COUNTY, CALTRANS DOS and
14 UPRR.

15 **G. INTERMEDIATE STRUCTURE PS&E (90% CHECKED PLANS)**

16 The (90%) structure PS&E will be compiled and submitted for review to the COUNTY, CALTRANS DOS and
17 UPRR.

18 **H. DRAFT FINAL STRUCTURE PS&E (95%)**

19 The draft (95%) structure PS&E shall be compiled and submitted for review to the COUNTY, CALTRANS
20 DOS and UPRR. This will include for each bridge:

21 One set of reproducible and seven sets of "blue-line" plans, two copies of design calculations and design
22 check calculations, three sets of quantity calculations and Marginal Estimates and three sets of edited
23 Structure Special Provisions. (One copy of each will be returned with comments). The package will be
24 accompanied by a Structures PS&E checklist.

25 **I. FINAL STRUCTURE PS&E**

26 The final structure PS&E will incorporate review comments from the COUNTY, CALTRANS DOS, UPRR and
27 other affected agencies. The ENGINEER will provide necessary documents in a bid-ready form. It is assumed
28 that the COUNTY will advertise, award and administer the construction contract for this PROJECT.

29 The ENGINEER shall deliver the following documents to COUNTY, CALTRANS and UPRR:

- 1 1 set of original tracings of final design plans
- 2 1 set of vellums of final design plans
- 3 1 set of "blue-lines" of final design plans
- 4 1 set of final Structure Special Provisions
- 5 1 copy of final quantity calculations and estimate
- 6 1 copy of final design calculations
- 7 1 copy of design check calculations (upon request)
- 8 1 vellum and 2 "blue-lines" of bridge full-scale plans in accordance with Memo to Designers 2-2.
- 9 2 Resident Engineer's Files (structures information)
- 10 2 copies of Environmental Constraint Areas (if required by Environmental Studies)

ARTICLE AV • ROADWAY

The title sheet for specifications and reports, and each sheet of plans, shall bear the professional seal, certificate number, registration classification, expiration date of the certificate and signature of the Professional Engineer responsible for their preparation. All roadway plans shall also use single sheet files.

The following is a description of activities and drawing types that shall be prepared as part of the roadway PS&E:

A. BASIC ROADWAY PLANS

- Title Sheet
- Typical Cross Sections
- Key Map and Line Index
- Layouts
- Profile and Superelevation Diagrams
- Construction and Intersection Details
- Erosion Control Plan
- Erosion Control Details and Quantities

Assumptions:

- ❖ The roadway design plans shall be based upon the preliminary Geometric Approval Drawings

B. CALCULATIONS

The following calculations will be provided:

- Grid Grades

- 1 • Slope Staking Notes
- 2 • Earthwork Quantities
- 3 • Other Quantities

4

5 Assumptions:

- 6 ❖ Cross sections and slope stake notes will be every 50 feet and will include key stations in between. The
- 7 cross-sections and slope stake notes will be prepared per CALTRANS standards.
- 8 ❖ Roadway cross sections, grid grades and slope staking notes will be submitted only at the 100%
- 9 complete submittal stage.

10 **C. RAILROAD SHOO-FLY PLANS**

11 ENGINEER shall provide shoo-fly alignment design for the UPRR tracks in order to construct the new railroad

12 bridge. The shoo-fly design shall include the relocation of the UPRR main and siding tracks, as well as the house

13 track. Design drawings shall include the division of work between UPRR forces and the COUNTY contractor.

14 Impacts to the UPRR signal system will be identified; however the UPRR will be responsible for design and

15 construction of any and all modifications to the wayside and crossing signal systems.

16 ENGINEER will also provide horizontal and vertical designs for the final UPRR alignments over the new

17 railroad bridge, No modifications to existing track horizontal and vertical alignments are assumed.

18 ENGINEER will provide cross sections, earthwork quantities, grid grades, and trackwork quantities.

19 Assumptions

- 20 • Union Pacific Railroad approved the temporary and final alignments during the previous
- 21 project phase.
- 22 • Bridge type, size and location were approved by UPRR during the previous phase.
- 23 Therefore, no type selection report is required for PS&E.
- 24 • All required railroad design criteria will be presented at the Kick-off meeting.
- 25 • COUNTY will provide top of rail survey, a surveyed railroad centerline and locations of
- 26 existing railroad features; such as railroad signal equipment, bridge abutments, points of
- 27 switch, hot-box and/or dragging equipment detectors, culverts, utility poles, etc.
- 28 • Railroad evaluation maps are available from the UPRR.
- 29

- Existing drainage patterns will not change.

D. DRAINAGE PLANS

ENGINEER shall perform hydrology and hydraulic studies to obtain and provide design solutions, which will remove surface runoff from the area of the improvements. Cross culverts that convey runoff flows across the freeway and through the interchange will be extended to the extent necessary required by the proposed improvements. Studies and designs shall be performed in accordance with Chapter 800 of the current Highway Design Manual, District 8 Project Development Policy Memos and the current CALTRANS Standard Plans.

The following drawings are included:

- Contour Grading
- Drainage Layouts
- Drainage Profiles
- Drainage Details
- Drainage Quantities
- Assumptions:
 - ❖ The following drainage facilities are assumed:
 - Replacing the existing culvert under I-10 and the railroad with a new culvert that drains the sump under the new railroad bridge. This storm drain will extend approximately 1,500 feet south of the railroad to daylight in the existing concrete channel.
 - New storm drain inlets will be constructed in sumps and on ramps as appropriate per the design standards.
 - Assume no off-site storm drain improvements north of Ramsey Street will be required.
 - Assume approximately 3,000 feet of bio swales
 - Assume no downstream channel improvements will be required.
 - Assume a single storm drain stub will be provided to easterly parcel.
 - Assume approximately 1,000 feet of storm drain in Ramsey Street.
 - ❖ Contour Grading will be performed using InRoads XM Software.
 - ❖ Drainage details

- 1 • Special details for non-standard facilities that may be needed such as headwall modifications,
- 2 inlet modifications, etc.
- 3 • Connection details for proposed pipes that connect to existing pipes
- 4 • Construction notes for these details

5 ❖ Drainage Plan and Profiles

- 6 • Profiles for each storm drain pipe will be prepared showing flowline elevations, size, slope, length,
- 7 material, cover and flow.
- 8 • Each storm drain and drainage element will be shown on the drainage sheets of the plans
- 9 identifying:
 - 10 ▪ Station location
 - 11 ▪ Size
 - 12 ▪ Pipe ID for reference to the profile

13 ❖ Drainage Quantities

- 14 • Linear footage of storm drain pipe
- 15 • Linear footage of channels
- 16 • Number and type of inlets, headwalls, overside drains, etc.
- 17 • Number of special drainage structures that will be needed.

18 **E. TRAFFIC PLANS**

- 19 ❖ Design plans shall reflect the Transportation Management Plan (TMP) developed during the PS&E
- 20 phase.

21 Traffic design plans encompass:

- 22 • Construction Area Signs
- 23 • Stage Construction and Traffic Handling
- 24 • Detours
- 25 • Pavement Delineation
- 26 • Roadside Sign Plan
- 27 • Highway Lighting and Sign Illumination
- 28 • Signal and Lighting

29 Assumptions:

- ❖ Detour Plans - These are provided to address the freeway interchange closure at Sunset Avenue. This entails an area-wide detour map that provides detours to other interchanges during construction. It is assumed that no freeway mainline detours or shifts will be required during construction.
- ❖ Sign Plans- An inventory of existing signs will be performed and shown on the sign plans along with the proposed new signs. Additionally, it is assumed that no new overhead sign structures will be required.
- ❖ Signal - There are two new traffic signals proposed for the interchange. Modification of the existing traffic signal at Sunset Avenue and Ramsey Street is also required.
- ❖ Staged Construction Plans – Stage construction plans will be consistent with the concept developed during the preliminary engineering studies. It is assumed a maximum of three stages will be required as a result of assumed closure of the Sunset Avenue interchange during construction.
- ❖ Traffic Handling- Traffic Handling sheets will be prepared for each stage of construction.
- ❖ Pavement delineation- Final pavement delineation sheets will be prepared for each layout sheet.
- ❖ Highway Lighting and Sign Illumination- It is assumed that no lighting will be provided along Sunset Avenue within the project limits, and that safety lighting will be provided at the two interchange ramp intersections.
- ❖ Quantities Plan Sheets - The following sheets will also be prepared for the following sets of plans:
 - Construction Area Sign Quantities
 - Detour Quantities
 - Sign Plan Quantities
 - Traffic Handling Quantities
 - Pavement Delineation Quantities
- ❖ Irrigation Electrical- A total of one irrigation electrical sheet is assumed for this project.

F. MISCELLANEOUS PLANS

ENGINEER shall also be responsible to prepare PS&E for aesthetic treatments proposed for the structures.

- Utility Plans
 - Composite plan view sheets
 - Water line plan for proposed extension of 24-inch line from Ramsey Street to Westward Avenue.
 - Reclaimed water line plan for proposed extension of 24-inch line from Lincoln Street (join design by others) to Ramsey Street.

- Sewer plan and profile for proposed 15-inch line from Lincoln Street to Ramsey Street.
- Summary of Quantities
- Caltrans Standard Type 1 Retaining Wall Plan and Elevation
- Retaining Wall Details and Quantities
- Landscaping/Irrigation

Assumptions:

- ❖ Utility plan sheets identifying existing, abandoned, relocated, etc utilities will be prepared from information gathered as a result of utility coordination performed as part of project development.
- ❖ All of the proposed retaining walls are assumed to be CALTRANS standard walls – Type 1. Each sheet will have a layout, elevation showing footing and top of wall elevations, and typical section.
- ❖ ENGINEER will prepare construction documents and cost projections for the highway planting and irrigation identified for the project. The construction documents will follow CALTRANS Highway Planting Policy and will include plans for 3 years of plant establishment. Effort for this task assumes a basic concept for erosion control that entails uniform groundcover or hydroseeding with accent hardscape such as grouted river rock. Trees with temporary irrigation will be included along the south side ramps.

G. INTERMEDIATE REVIEWS

Roadway, drainage, traffic and miscellaneous plans shall be submitted for review to the COUNTY, CALTRANS, UPRR and other affected agencies/stakeholders at the 65%, 95% and 100% complete stages. A pre-65% submittal will be prepared and submitted that consists of “skeletal” layouts at approximately 30% completion to confirm appropriate direction of the designs and plan set. The ENGINEER will submit up to 40 sets of plans reduced to 11” x 17” size and 4 full size sets of all plans as required. Roadway cross sections, grid grades and slope staking notes will be submitted only at the 100% complete submittal stage. Electronic samples of plan sheet groups will be provided to CALTRANS at intermediate reviews, as necessary.

Assumptions:

- ❖ The “skeletal” layouts will be based on the Geometric Approval Drawings.
- ❖ The 65% Submittal will include the following plan sheets:
 - Title Sheet
 - Key Map & Line Index
 - Typical Cross-Sections

Sunset Avenue Railroad Grade Separation

- 1 • Layouts
- 2 • Profiles & Superelevation
- 3 • Construction Details
- 4 • Temporary Water Pollution Control Plans, Details, and Quantities
- 5 • Erosion Control
- 6 • Contour Grading
- 7 • Drainage Plans
- 8 • Drainage Profiles
- 9 • Drainage Details
- 10 • Drainage Quantity
- 11 • Utility Plans
- 12 • Construction Area Signs
- 13 • Stage Construction Plans
- 14 • Detour Plans
- 15 • Traffic Handling Plans
- 16 • Traffic Handling Quantities
- 17 • Pavement Delineation Plans
- 18 • Pavement Delineation Quantities
- 19 • Summary of Roadway Quantities
- 20 • Signing Plans
- 21 • Sign Quantity
- 22 • Retaining Wall Plans
- 23 • Landscape & Irrigation Plans
- 24 • Traffic Signal Plans
- 25 • Sunset Avenue Undercrossing Foundation Plan
- 26 • Sunset Avenue Underpass General Plan & Foundation Plan
- 27 • Railroad Shoofly Plans

28 ❖ The submittals will follow CALTRANS District 8 Oversight Guidelines dated January 2008.

29

❖ Includes one review process. Focused meetings with specific functional units will be held to discuss review comments, as required.

❖ Comments to 65% submittal to be incorporated in the 95 % submittal.

H. SPECIFICATIONS AND ESTIMATE

Specifications and Special Provisions will be prepared for items not covered by the CALTRANS Standard Specifications or Standard Special Provisions.

The Roadway Construction Cost Estimate will be prepared using the latest available CALTRANS cost data, COUNTY cost data and readily available recent construction costs in the PROJECT area. Cost estimates are to be provided with the appropriate submittals and updated on a quarterly basis.

Assumptions:

❖ It is assumed that the construction contract will be administered by the COUNTY. As such, the front end "boilerplate" will be per COUNTY standards and will be provided by the COUNTY.

❖ Technical specifications will be prepared per CALTRANS' standards and format.

❖ CALTRANS requires that the latest version of their SSPs be utilized. As such, technical specifications will be updated as necessary, prior to the 95% and 100% submittals.

I. QUALITY CONTROL

The Plans, Specifications and Estimate (PS&E) will be subject to quality control reviews before submittal. These reviews will be in conformance with CALTRANS and COUNTY standards and criteria as well as minimize typographical omissions.

J. DRAFT PS&E (95% COMPLETE)

The roadway plans, revised to incorporate Quality Control and 65% review comments, will be submitted to the COUNTY, CALTRANS and other affected agencies/stakeholders for review and comments. These will include:

- Roadway Plans
- Special Provisions
- Design Calculations
- Roadway Quantities and Cost Estimate

One safety/constructability review meeting will be held at the 95% PS&E stage.

1 Assumptions:

- 2 ❖ Includes one review process. Focused meetings with specific functional units will be held to discuss
- 3 review comments, as required.
- 4 ❖ Comments to 95% submittal to be incorporated to the 100 % submittal.

5 **K. FINAL PS&E (100% COMPLETE)**

6 The final PS&E will incorporate applicable comments from the draft PS&E received from the COUNTY,
 7 CALTRANS and other affected agencies/stakeholders. The ENGINEER will provide the necessary final PS&E
 8 documents in a bid-ready form. PROJECT files and the Project Engineer's/Resident Engineer's file will also
 9 be submitted with the final PS&E. The entire PROJECT, which will be prepared in MicroStation format, will be
 10 submitted upon final approval of the PS&E.

11 Assumptions:

- 12 ❖ Up to 2 review cycles. Focused meetings with specific functional units will be held to discuss review
- 13 comments, as required.
- 14 ❖ It is assumed that the COUNTY will be the lead agency to Advertising, Awarding, and Administering the
- 15 contract.
- 16 ❖ Below is the assumed plan sheet count:

17		
18	Title Sheet	1
	Typical Sections	5
19	Key Map	1
	Layouts	5
20	Profiles & Super	7
21	Constr Details	15
	TWPC Layouts	5
22	TWPC Details	2
	TWPC Qtys	1
23	EC Layouts	5
24	EC Details	2
	EC Qtys	1
25	Contour Grading	5
26	Drainage Plans	5
	Drainage Profiles	5
27	Drainage Details	3
	Drainage Qtys	4
28	Composite Utility Plans	5
29	Water Line Plan & Details	4

1	Reclaimed Water Line Plan & Details	3
	Sewer Line Plan & Details	3
2	Constr Area Signs	3
	Constr Area Sign Qtys	1
3	SC & Traffic Handling	25
4	SC & Traffic Hand Qty	2
	Pvmt Delineation	5
5	Pvmt Delin Qty	2
	Signs	5
6	Sign Qty	1
7	Summary Of Qtys	4
	Retaining Wall Layout	8
8	Planting & Irrigation	10
	Signal Electrical	3
9	Structures	25
10	RR Shoofly	10
11	Total	198

ARTICLE AVI • CONSTRUCTION BIDDING PHASE

Bidding procedures will be the responsibility of the COUNTY. Although, the project will be administered by the COUNTY, electronic plan submittals meeting CALTRANS electronic bid requirements will be required for CALTRANS records. While the PROJECT is being advertised for bids, all questions concerning the intent shall be referred to COUNTY for resolution. In the event that the items requiring interpretation in the drawings or specifications are discovered during the bidding period, said items shall be analyzed by the ENGINEER for decision by COUNTY as to the proper procedure required. Corrective action taken will either be in the form of a memo prepared by the ENGINEER and issued by COUNTY or by covering change order after the award of the construction contract.

ARTICLE AVII • CONSTRUCTION SUPPORT PHASE

- A. ENGINEER shall attend the pre-construction meeting with the successful construction contractor upon notification by the COUNTY.
- B. Upon award of the construction contract, ENGINEER will proceed with the Construction Support Phase services required by this contract.
- C. During construction, the ENGINEER shall furnish necessary additional drawings for correcting and change orders required by errors and omissions of ENGINEER. Such drawings will be requested in writing from the ENGINEER by COUNTY and shall be at no additional cost to the COUNTY. The original tracing(s) of the drawings and contract wording for change orders shall be submitted to the COUNTY for duplication and

1 distribution.

2 D. ENGINEER shall review shop drawings and RFIs submitted by the construction contractor (falsework review
3 is not included) as requested by the COUNTY as determined necessary by the ENGINEER. ENGINEER shall
4 complete shop plan reviews within two weeks of receipt. Contract change order and RFI reviews shall be
5 completed within two working weeks of receipt.

6 E. Drawings and change orders required due to actions of the COUNTY, CALTRANS, or Contractor which are
7 beyond the scope of the ENGINEER's responsibilities, shall be considered extra services.

8 F. ENGINEER shall be available to visit to the jobsite for on-site review of construction and other visits to the
9 jobsite as requested by the COUNTY or CALTRANS to resolve any discrepancies in the contract documents.

10 ENGINEER shall bring to the attention of the COUNTY/CALTRANS Resident Engineer defects or deficiencies
11 in the work by the construction contractor, which the ENGINEER may observe. ENGINEER shall have no
12 authority to issue instructions on behalf of the COUNTY or to deputize another to do so. All agreements shall
13 be between the COUNTY and its construction contractor. These provisions shall not be construed as making
14 the ENGINEER responsible for failure of the construction contractor to carry out the work in accordance with
15 the contract documents nor the construction means or methods or techniques, sequences, procedures or
16 safety programs in connection with the work.

17 G. ENGINEER shall prepare and deliver to the COUNTY and CALTRANS the "As-Built" plans within two months
18 of completion of construction.

19 **ARTICLE AVIII • COMPUTER FACILITIES**

20 **A. CALCULATIONS**

21 All roadway calculations will be performed using COGO PC and InRoads or Road Calc. The structural
22 analyses and design will be performed by using STAADIII, GTSTRUDL, SEISAB, PCBRIDGE, PCYIELD,
23 PCFOOT, PCBENT and PCABUT programs. The data files and the results will be submitted electronically on
24 compact discs along with a hard copy.

25 **B. COMPUTER AIDED DRAFTING AND DESIGN (CADD)**

26 All plans will be prepared using MicroStation format in conformance with the latest CALTRANS CADD Users
27 Manual and the CALTRANS Drafting Manual to assure complete compatibility.
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ARTICLE AIX • QUALITY CONTROL PLAN

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A Quality Control Plan will be established for this PROJECT in accordance with the provisions of Article IV, Section H of the Agreement. It will be provided to the COUNTY within two (2) weeks after NTP for review and approval.

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FEE PROPOSAL WORKSHEET

COMPANY: Kimley-Horn and Associates, Inc.	SCOPE OF WORK: Project Summary	PHASE: All Phases
PROJECT: Sunset Avenue/UP Grade Separation		DATE: March 7, 2011

DIRECT LABOR

PERSONNEL	POSITION	HOURS		RATE	AMOUNT	
Dennis Landaal, PE	Project Manager	527	@	\$80.29	\$42,312.83	
Jason Valencia, PE	Senior Engineer	1,069	@	\$49.28	\$52,680.32	
Darren Adrian	QC/Senior Engineer	242	@	\$61.78	\$14,950.76	
Sam McWhorter, PE	Senior Drainage Engineer	255	@	\$47.21	\$12,038.55	
Jon Collins, PE	Senior Traffic Engineer	406	@	\$49.52	\$20,105.12	
	Project Engineer	2,250	@	\$45.20	\$101,700.00	
	Engineer	1,719	@	\$36.00	\$61,884.00	
	Assistant Engineer	1,425	@	\$32.00	\$45,600.00	
	CADD Designer	3,159	@	\$38.00	\$120,042.00	
	Admin Support	708	@	\$23.00	\$16,284.00	
Pat Hart	Sr LA	66	@	\$57.70	\$3,808.20	
Michael Madsen	LA	170	@	\$34.86	\$5,926.20	
Jeff Fuller	Sr. Noise Specialist	8	@	\$59.62	\$476.96	
		TOTAL HOURS		12,004	TOTAL DIRECT LABOR	\$497,808.94

MULTIPLIERS

ESCALATION @		(Rates Vary by Phase)	
OVERHEAD @	197.26%	(of Direct Labor + Escalation)	\$981,977.92
PAYROLL ADDITIVES @		(of Direct Labor + Escalation)	
PROFIT (FIXED FEE) @	10.0%	(of Direct Labor + Escalation + Overhead + Payroll Additives)	\$147,978.69
TOTAL MULTIPLIERS			\$1,129,956.60

OTHER DIRECT COSTS

*** Billed at Actual Cost ***

ITEM	QUANTITY	UNIT		UNIT COST	AMOUNT
Potholing	1	LS	@	\$30,000.00	\$30,000.00
Reproduction					
Drainage Report (2 submittals plus Final)	15	Report	@	\$100.00	\$1,500.00
TMP	15	Report	@	\$50.00	\$750.00
SWDR	15	Report	@	\$50.00	\$750.00
Specifications (300 pages)	120	SSP	@	\$30.00	\$3,600.00
PS&E (200 sheets - 11" x 17")	90	Set	@	\$50.00	\$4,500.00
PS&E (200 sheets - Mylar Full Size)	1	Set	@	\$1,500.00	\$1,500.00
Misc	1	LS	@	\$7,000.00	\$7,000.00
Deliveries	1	LS	@	\$4,000.00	\$4,000.00
Office Expense	1	LS	@	\$28,000.00	\$28,000.00
TOTAL ODC'S					\$81,600.00

SUB CONSULTANT SERVICES

COMPANY	LABOR	MULTIPLIERS	ODC'S	TOTAL
Geocon Consultants, Inc.	\$18,394.50	\$39,018.41	\$56,760.00	\$114,172.91
Simon Wong Engineering	\$94,913.20	\$146,653.04	\$3,600.00	\$245,166.24
Tait & Assoc.	\$11,900.00		\$4,800.00	\$16,700.00

TOTAL SUBCONSULTANT SERVICES \$376,039.16

TOTAL \$2,085,404.70

FEE PROPOSAL WORKSHEET		
COMPANY: Kimley-Horn and Associates, Inc.	SCOPE OF WORK: Plans, Specs & Estimates	PHASE: Phase II
PROJECT: Sunset Avenue/UP Grade Separation		DATE: March 7, 2011

DIRECT LABOR

PERSONNEL	POSITION	HOURS	RATE	AMOUNT	
Dennis Landaal, PE	Project Manager	515	@ \$80.29	\$41,349.35	
Jason Valencia, PE	Senior Engineer	965	@ \$49.28	\$47,555.20	
Darren Adrian	QC/Senior Engineer	242	@ \$61.78	\$14,950.76	
Sam McWhorter, PE	Senior Drainage Engineer	255	@ \$47.21	\$12,038.55	
Jon Collins, PE	Senior Traffic Engineer	406	@ \$49.52	\$20,105.12	
	Project Engineer	2,050	@ \$45.20	\$92,660.00	
	Engineer	1,679	@ \$36.00	\$60,444.00	
	Assistant Engineer	1,425	@ \$32.00	\$45,600.00	
	CADD Designer	2,999	@ \$38.00	\$113,962.00	
	Admin Support	676	@ \$23.00	\$15,548.00	
Pat Hart	Sr LA	66	@ \$57.70	\$3,808.20	
Michael Madsen	LA	170	@ \$34.86	\$5,926.20	
Jeff Fuller	Sr. Noise Specialist	8	@ \$59.62	\$476.96	
		TOTAL HOURS	11,456	TOTAL DIRECT LABOR	\$474,424.34

MULTIPLIERS

ESCALATION @	(of Direct Labor)		
OVERHEAD @	197.26%	(of Direct Labor + Escalation) \$935,849.45	
PAYROLL ADDITIVES @		(of Direct Labor + Escalation)	
PROFIT (FIXED FEE) @	10.0%	(of Direct Labor + Escalation + Overhead + Payroll Additives) \$141,027.38	
		TOTAL MULTIPLIERS	\$1,076,876.83

OTHER DIRECT COSTS

*** Billed at Actual Cost ***

ITEM	QUANTITY	UNIT	UNIT COST	AMOUNT	
Potholing	1	LS	@ \$30,000.00	\$30,000.00	
Reproduction					
Drainage Report (2 submittals plus Final)	15	Report	@ \$100.00	\$1,500.00	
TMP	15	Report	@ \$50.00	\$750.00	
SWDR	15	Report	@ \$50.00	\$750.00	
Specifications (300 pages)	120	SSP	@ \$30.00	\$3,600.00	
PS&E (200 sheets - 11" x 17")	90	Set	@ \$50.00	\$4,500.00	
PS&E (200 sheets - Mylar Full Size)	1	Set	@ \$1,500.00	\$1,500.00	
Misc	1	LS	@ \$7,000.00	\$7,000.00	
Deliveries	1	LS	@ \$4,000.00	\$4,000.00	
Office Expense	1	LS	@ \$28,000.00	\$28,000.00	
				TOTAL ODC'S	\$81,600.00

SUB CONSULTANT SERVICES

COMPANY	LABOR	MULTIPLIERS	ODC'S	TOTAL
Geocon Consultants, Inc.	\$18,394.50	\$39,018.41	\$58,760.00	\$114,172.91
Simon Wong Engineering	\$85,495.60	\$132,101.65	\$3,800.00	\$221,197.25
Tait & Assoc.	\$11,900.00		\$4,800.00	\$16,700.00

TOTAL SUBCONSULTANT SERVICES \$352,070.16

TOTAL \$1,984,971.33

FEE PROPOSAL WORKSHEET

COMPANY: Kimley-Horn and Associates, Inc.	SCOPE OF WORK: Bid Support	PHASE: Phase III
PROJECT: Sunset Avenue/UP Grade Separation		DATE: March 7, 2011

DIRECT LABOR

PERSONNEL	POSITION	HOURS		RATE	AMOUNT
Dennis Landaal, PE	Project Manager	4	@	\$80.29	\$321.16
Jason Valencia, PE	Senior Engineer	16	@	\$49.28	\$788.48
Darren Adrian	QC/Senior Engineer			\$61.78	
Sam McWhorter, PE	Senior Drainage Engineer			\$47.21	
Jon Collins, PE	Senior Traffic Engineer			\$49.52	
	Project Engineer	16	@	\$45.20	\$723.20
	Engineer	40	@	\$36.00	\$1,440.00
	Assistant Engineer			\$32.00	
	CADD Designer			\$38.00	
	Admin Support	8	@	\$23.00	\$184.00
Pat Hart	Sr LA			\$57.70	
Michael Madsen	LA			\$34.86	
Jeff Fuller	Sr. Noise Specialist			\$59.62	
		TOTAL HOURS	84	TOTAL DIRECT LABOR	\$3,456.84

MULTIPLIERS

ESCALATION @		(of Direct Labor)	
OVERHEAD @	197.26%	(of Direct Labor + Escalation)	\$6,818.96
PAYROLL ADDITIVES @		(of Direct Labor + Escalation)	
PROFIT (FIXED FEE) @	10.0%	(of Direct Labor + Escalation + Overhead + Payroll Additives)	\$1,027.58
			TOTAL MULTIPLIERS
			\$7,846.54

OTHER DIRECT COSTS

*** Billed at Actual Cost ***

ITEM	QUANTITY	UNIT	UNIT COST	AMOUNT
Potholing		LS	\$30,000.00	
Reproduction				
Drainage Report (2 submittals plus Final)		Report	\$100.00	
TMP		Report	\$50.00	
SWDR		Report	\$50.00	
Specifications (300 pages)		SSP	\$30.00	
PS&E (200 sheets - 11" x 17")		Set	\$50.00	
PS&E (200 sheets - Mylar Full Size)		Set	\$1,500.00	
Misc		LS	\$7,000.00	
Deliveries		LS	\$4,000.00	
Office Expense		LS	\$28,000.00	
				TOTAL ODC'S

SUB CONSULTANT SERVICES

COMPANY	LABOR	MULTIPLIERS	ODC'S	TOTAL
Geocon Consultants, Inc.				
Simon Wong Engineering	\$1,883.52	\$2,910.28		\$4,793.80
Tait & Assoc.				

TOTAL SUBCONSULTANT SERVICES **\$4,793.80**

TOTAL **\$16,097.18**

FEE PROPOSAL WORKSHEET		
COMPANY: Kimley-Horn and Associates, Inc.	SCOPE OF WORK: Construction Support	PHASE: Phase IV
PROJECT: Sunset Avenue/UP Grade Separation		DATE: March 7, 2011

DIRECT LABOR

PERSONNEL	POSITION	HOURS	RATE	AMOUNT	
Dennis Landaal, PE	Project Manager	8	@ \$80.29	\$642.32	
Jason Valencia, PE	Senior Engineer	88	@ \$49.28	\$4,336.64	
Darren Adrian	QC/Senior Engineer		\$61.78		
Sam McWhorter, PE	Senior Drainage Engineer		\$47.21		
Jon Collins, PE	Senior Traffic Engineer		\$49.52		
	Project Engineer	184	@ \$45.20	\$8,316.80	
	Engineer		\$36.00		
	Assistant Engineer		\$32.00		
	CADD Designer	160	@ \$38.00	\$6,080.00	
	Admin Support	24	@ \$23.00	\$552.00	
Pat Hart	Sr LA		\$57.70		
Michael Madsen	LA		\$34.86		
Jeff Fuller	Sr. Noise Specialist		\$59.62		
		TOTAL HOURS	464	TOTAL DIRECT LABOR	\$19,927.76

MULTIPLIERS

ESCALATION @	(of Direct Labor)			
OVERHEAD @	197.26%	(of Direct Labor + Escalation)	\$39,309.50	
PAYROLL ADDITIVES @		(of Direct Labor + Escalation)		
PROFIT (FIXED FEE) @	10.0%	(of Direct Labor + Escalation + Overhead + Payroll Additives)	\$5,923.73	
			TOTAL MULTIPLIERS	\$45,233.23

OTHER DIRECT COSTS

*** Billed at Actual Cost ***

ITEM	QUANTITY	UNIT	UNIT COST	AMOUNT
Potholing		LS	\$30,000.00	
Reproduction				
Drainage Report (2 submittals plus Final)		Report	\$100.00	
TMP		Report	\$50.00	
SWDR		Report	\$50.00	
Specifications (300 pages)		SSP	\$30.00	
PS&E (200 sheets - 11" x 17")		Set	\$50.00	
PS&E (200 sheets - Mylar Full Size)		Set	\$1,500.00	
Misc		LS	\$7,000.00	
Deliveries		LS	\$4,000.00	
Office Expense		LS	\$28,000.00	
				TOTAL ODC'S

SUB CONSULTANT SERVICES

COMPANY	LABOR	MULTIPLIERS	ODC'S	TOTAL
Geocon Consultants, Inc.				
Simon Wong Engineering	\$7,534.08	\$11,641.12		\$19,175.20
Tait & Assoc.				

TOTAL SUBCONSULTANT SERVICES **\$19,175.20**

TOTAL **\$84,336.18**

COMPANY: **Kimley-Horn and Associates, Inc.**

PROJECT: **Sunset Avenue/LUP Grade Separation**

SCOPE OF WORK:
Plans, Specs & Estimates

PHASE: **Phase II**
DATE: **March 9, 2011**

Site Preparation	1	1	2	15	19	\$ 2,510
Site Clearing	2	2	20	40	99	\$ 12,482
Site Grading	5	5	20	40	10	\$ 1,266
Site Erosion Control	5	5	15	30	115	\$ 14,799
Site Fencing	5	5	20	40	100	\$ 12,968
Site Lighting	1	1	15	30	125	\$ 15,779
Site Security	1	1	5	10	115	\$ 14,470
Site Safety	1	1	5	10	56	\$ 6,910
Site Maintenance	1	1	5	10	46	\$ 5,471
Site Restoration	5	5	8	15	33	\$ 4,882
Site Decommissioning	5	5	8	15	28	\$ 3,569
Site Relocation	5	5	8	15	28	\$ 3,667
Site Relocation	5	5	8	15	38	\$ 5,503
Site Relocation	8	8	10	20	98	\$ 12,352
Site Relocation	10	10	60	60	70	\$ 8,607
Site Relocation	10	10	60	60	70	\$ 8,607
Site Relocation	5	5	40	40	45	\$ 5,480
Site Relocation	20	20	20	20	20	\$ 2,354
Site Relocation	4	4	40	40	74	\$ 9,749
Site Relocation	10	10	40	40	146	\$ 19,869
Site Relocation	2	2	40	40	66	\$ 8,295
Site Relocation	4	4	8	8	16	\$ 2,640
Site Relocation	4	4	20	40	129	\$ 16,456
Site Relocation	4	4	10	40	56	\$ 7,822
Site Relocation	4	4	6	16	28	\$ 3,611

G. Final PS&E						
ARTICLE AV - ROADWAY						
Draft Final PS&E (~65% Complete)						
A. Basic Roadway Plans						
Title Sheet	1	1	2	15	19	\$ 2,510
Index of Sheets						
Typical Cross Sections	2	2	20	40	99	\$ 12,482
Key Map & Line Index				9	10	\$ 1,266
Layout	5	5	20	40	115	\$ 14,799
Profile and Superlevation Diagram	5	5	15	30	100	\$ 12,968
Construction Details	5	20	20	40	125	\$ 15,779
Temp Water Pollution Control Plan	1	1	15	30	115	\$ 14,470
Temp Water Pollution Control Details		1	5	10	56	\$ 6,910
Temp Water Pollution Control Quantities		1	5	20	46	\$ 5,471
B. Calculations						
Grid Grade Calculations	5	8	5	15	33	\$ 4,882
Earthwork Calculations		8	5	15	28	\$ 3,569
Slope Stake Notes		8		20	28	\$ 3,667
Other Quantities	5	8	5	20	38	\$ 5,503
C. Drainage Plans						
Countour Grading		8	10	80	98	\$ 12,352
Drainage Plan		10	60		70	\$ 8,607
Drainage Profiles		10	60		70	\$ 8,607
Drainage Details		5	40		45	\$ 5,480
Drainage Quantities			20		20	\$ 2,354
D. Traffic Plans						
Transportation Management Plan	4	20	40	10	74	\$ 9,749
Stage Construction and Traffic Handling Plan	10	20	40	60	146	\$ 19,869
Pavement Delineation Plan	2	16	40	8	66	\$ 8,295
Pavement Delineation Quantities	4	4	8		16	\$ 2,640
Sign Plans	4	5	20	60	129	\$ 16,456
Sign Details	4	2	10	40	56	\$ 7,822
Sign Quantities	4		6	16	28	\$ 3,611

COMPANY: Kimley-Horn and Associates, Inc. **PHASE:** Phase II
PROJECT: Sunset Avenue/UP Grade Separation **DATE:** March 9, 2011
SCOPE OF WORK: Plans, Specs & Estimates

DESCRIPTION	Quantity		Area		Volume		Length		Total	Cost
	Linear	Square	Square	Linear	Cubic	Linear	Linear			
Stage Construction and Traffic Handling Plan	5								5	\$ 15,716
Construction Area Signs	2								2	\$ 4,144
Pavement Delineation Plan	2								2	\$ 3,324
Pavement Delineation Quantities	2								2	\$ 1,158
Summary of Quantities	2	4							2	\$ 6,014
Sign Plans	2								2	\$ 2,832
Sign Details	2								2	\$ 1,766
Sign Quantities	2								2	\$ 1,239
Retaining Wall Plans	2								2	\$ 8,373
Retaining Wall Details									2	\$ 3,805
Retaining Wall Quantities									2	\$ 1,532
Plant List									5	\$ 943
Planting Plans	2								2	\$ 4,294
Irrigation Plan	2								2	\$ 4,294
Sprinkler Schedule and Details									10	\$ 1,243
Irrigation Quantities	2								2	\$ 2,108
Signal and Lighting	2								2	\$ 14,238
Communication Conduit	2								2	\$ 1,642
Electrical Service (Irrigation)	2								2	\$ 1,642
Electrical Details	2								2	\$ 1,083
Railroad Design/Coordination	8	5							8	\$ 26,753
Updated Specifications									24	\$ 4,253
Updated Construction Cost									8	\$ 9,012
Construction Staking Package									40	\$ 12,419
Resident Engineer's Pending File									15	\$ 10,177
SWPPP									40	\$ 13,239
Contract Documents Ready to Advertise	5								5	\$ 11,930

PHASE: **Phase III**
 DATE: **March 7, 2011**

SCOPE OF WORK:
Bid Support

COMPANY: **Kimley-Horn and Associates, Inc.**
 PROJECT: **Sunset Avenue/UP Grade Separation**

DATE	DESCRIPTION	MANHOURS	RATE	TOTAL
3/2/06	...	4	\$169.14	\$676.56
3/2/06	...	16	\$202.01	\$3232.16
3/2/06	...	16	\$154.37	\$2470.32
3/2/06	...	16	\$161.92	\$2590.72
3/2/06	...	16	\$147.80	\$2364.80
3/2/06	...	16	\$117.71	\$1883.36
3/2/06	...	40	\$164.84	\$6593.60
3/2/06	...	8	\$174.25	\$1394.00
3/2/06	...	8	\$188.57	\$1508.56
3/2/06	...	8	\$143.99	\$1151.92
3/2/06	...	84	\$134.56	\$11303.04

DATE	DESCRIPTION	MANHOURS	RATE	TOTAL
3/2/06	...	4	\$169.14	\$676.56
3/2/06	...	16	\$202.01	\$3232.16
3/2/06	...	16	\$154.37	\$2470.32
3/2/06	...	16	\$161.92	\$2590.72
3/2/06	...	16	\$147.80	\$2364.80
3/2/06	...	16	\$117.71	\$1883.36
3/2/06	...	40	\$164.84	\$6593.60
3/2/06	...	8	\$174.25	\$1394.00
3/2/06	...	8	\$188.57	\$1508.56
3/2/06	...	8	\$143.99	\$1151.92
3/2/06	...	84	\$134.56	\$11303.04

Total Manhours

ARTICLE AVI - CONSTRUCTION BIDDING

RFIs & Clarification

Addendums

SCOPE OF WORK:

Construction Support

PHASE: **Phase IV**

DATE: **March 7, 2011**

COMPANY: **Kimley-Horn and Associates, Inc.**

PROJECT: **Sunset Avenue/UP Grade Separation**

Site Preparation	8	88	184	160	24	464
Site Investigation						
Design						
Construction Administration						
Construction Management						
Construction Supervision						
Construction Inspection						
Construction Safety						
Construction Quality Control						
Construction Cost Control						
Construction Scheduling						
Construction Contract Administration						
Construction Risk Management						
Construction Claims Administration						
Construction Dispute Resolution						
Construction Project Closeout						
Construction Post-Construction Services						
Construction Training						
Construction Research						
Construction Consulting						
Construction Other						
TOTAL	8	88	184	160	24	464

\$161.14 \$302.01 \$154.37 \$161.92 \$47.89 \$117.71 \$134.54 \$124.25 \$75.21 \$168.67 \$13.09 \$134.55
 \$532.54 \$161.14 \$302.01 \$154.37 \$161.92 \$47.89 \$117.71 \$134.54 \$124.25 \$75.21 \$168.67 \$13.09 \$134.55

Total Manhours

ARTICLE AVII - CONSTRUCTION SUPPORT

Change Order Reviews	4	8	40		8	60	\$ 8,853
RFI Responses	4	24	40	80	8	156	\$ 21,371
Shop Drawing/Submittal Reviews		24	80		4	108	\$ 15,992
Field Visits/Meetings		24	24			48	\$ 7,414
Record Drawings		8		80	4	92	\$ 11,530

SUBCONSULTANT FEE PROPOSAL WORKSHEET

COMPANY: Geocon Consultants, Inc.	SCOPE OF WORK: Geotechnical	PHASE: Phase II
PROJECT: Sunset Avenue/UP Grade Separation		DATE: March 7, 2011

DIRECT LABOR

PERSONNEL	POSITION	HOURS		RATE	AMOUNT
Joe Vettel	Principal Engineer	44	@	\$53.00	\$2,332.00
Yong Wang	Senior Engineer	263	@	\$34.00	\$8,942.00
Paul Theriault	Senior Geologist	100	@	\$33.50	\$3,350.00
Ken Cox	Senior Engineer	32	@	\$30.75	\$984.00
Elizabeth Hartung	Staff Geologist	26	@	\$25.25	\$656.50
Rueben Aguilar	Draftsman	70	@	\$24.00	\$1,680.00
Dalene McConnel-Cram	Word Processor	20	@	\$22.50	\$450.00
TOTAL HOURS		555		TOTAL DIRECT LABOR	\$18,394.50

MULTIPLIERS

ESCALATION @		(of Direct Labor)	
OVERHEAD @	189.00%	(of Direct Labor + Escalation)	\$34,765.61
PAYROLL ADDITIVES @		(of Direct Labor + Escalation)	
PROFIT (FIXED FEE) @	8.0%	(of Direct Labor + Escalation + Overhead + Payroll Additives)	\$4,252.81
TOTAL MULTIPLIERS			\$39,018.41

OTHER DIRECT COSTS

--- Billed at Actual Cost ---

ITEM	QUANTITY	UNIT		UNIT COST	AMOUNT
GDR-lab testing	1	LS	@	\$7,350.00	\$7,350.00
FR-lab testing	1	LS	@	\$5,870.00	\$5,870.00
ATL-lab testing - ADL (Environmental)	1	LS	@	\$3,360.00	\$3,360.00
ATL-lab testing - Railroad (Environmental)	1	LS	@	\$11,800.00	\$11,800.00
ATL-lab testing - 3230 Ramsey (Environmental)	1	LS	@	\$4,380.00	\$4,380.00
GDR-driller	1	LS	@	\$11,000.00	\$11,000.00
FR-driller	1	LS	@	\$11,000.00	\$11,000.00
GDR-traffic control	1	LS	@	\$1,000.00	\$1,000.00
FR-traffic control	1	LS	@	\$1,000.00	\$1,000.00

TOTAL ODC'S \$56,760.00

TOTAL \$114,172.91

SUBCONSULTANT MANHOURLY WORKSHEET

COMPANY: **Geocon Consultants, Inc.** SCOPE OF WORK: **Geotechnical** PHASE: **Phase II**
 PROJECT: **Sunset Avenue/UP Grade Separation** DATE: **March 7, 2011**

PRINCIPAL ENGINEER	SENIOR ENGINEER	SENIOR ENGINEER	SENIOR ENGINEER	SENIOR GEOL. LGST	SENIOR ENGINEER	START GEOL. LGST	GRASSMAN	PROJ. PRCSOR
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\$165.42 \$106.12 \$104.56 \$96.96 \$76.81 \$74.91 \$70.23

	44	263	100	32	26	70	20	555	HOURS	COST
Total Manhours									555	
ARTICLE AII - PROJECT ADMINISTRATION										
A. Project Management	4	16							20	\$ 2,360
D. Scheduling	1	4							5	\$ 590
E. Progress Reporting	3	12							15	\$ 1,770
F. Contract Administration	2	18							20	\$ 2,241
ARTICLE AIII - PLANNING & PROJ DEV										
A. Research and Data Gathering	2	28	10						30	\$ 3,302
C. Permits	4	40	20			8	2		40	\$ 4,348
G. Preliminary Geotechnical Report	18	24		22	26	10	10		74	\$ 7,737
I. Environmental	3	50	40	5		24	2		110	\$ 11,136
L. Geotechnical Design Reports									124	\$ 12,403
ARTICLE AIV - STRUCTURES										
B. Geotechnical Coordination and Foundation Rpt	3	30	30	5		24	3		95	\$ 9,305
G. Final PS&E	1	9			2		2		14	\$ 1,411
Respond to Agency Review Comments	1	4			2		1		8	\$ 810

SUBCONSULTANT FEE PROPOSAL WORKSHEET

COMPANY: Simon Wong Engineering	SCOPE OF WORK: Structures (DBE)	PHASE: All Phases
PROJECT: Sunset Avenue/UP Grade Separation		DATE: March 7, 2011

DIRECT LABOR

PERSONNEL	POSITION	HOURS		RATE	AMOUNT	
Mark Creveling	Principal Engineer	16	@	\$90.16	\$1,442.56	
Craig Shannon	Sr Bridge / VE Eng			\$50.65		
Andrew Sanford	Project Manager	390	@	\$58.86	\$22,955.40	
Keith Gazaway	Sr Bridge Engineer	616	@	\$49.27	\$30,350.32	
Steve Hall	Sr Bridge Engineer	156	@	\$42.84	\$6,683.04	
Lise Muco	Asst Engineer	460	@	\$30.58	\$14,066.80	
Colby Cushing	Asst Engineer	80	@	\$30.80	\$2,464.00	
Ty Brittan	Sr Technician	282	@	\$52.94	\$14,929.08	
Kristina Donovan	CADD Technician	60	@	\$33.70	\$2,022.00	
Robin McLinden	Admin Support			\$29.39		
		TOTAL HOURS		2,060	TOTAL DIRECT LABOR	\$94,913.20

MULTIPLIERS

ESCALATION @		(Rates Vary by Phase)		
OVERHEAD @	135.66%	(of Direct Labor + Escalation)	\$128,759.25	
PAYROLL ADDITIVES @		(of Direct Labor + Escalation)		
PROFIT (FIXED FEE) @	8.0%	(of Direct Labor + Escalation + Overhead + Payroll Additives)	\$17,893.80	
			TOTAL MULTIPLIERS	\$146,653.04

OTHER DIRECT COSTS

*** Billed at Actual Cost ***

ITEM	QUANTITY	UNIT		UNIT COST	AMOUNT	
Reproduction & Delivery Costs	1	LS	@	\$3,000.00	\$3,000.00	
Mileage Costs	1200	Miles	@	\$0.50	\$600.00	
					TOTAL ODC'S	\$3,600.00

TOTAL **\$245,166.24**

SUBCONSULTANT FEE PROPOSAL WORKSHEET

COMPANY: Simon Wong Engineering	SCOPE OF WORK: Structures (DBE)	PHASE: Phase II
PROJECT: Sunset Avenue/UP Grade Separation		DATE: March 7, 2011

DIRECT LABOR

PERSONNEL	POSITION	HOURS		RATE	AMOUNT
Mark Creveling	Principal Engineer	16	@	\$90.16	\$1,442.56
Craig Shannon	Sr Bridge / VE Eng			\$50.65	
Andrew Sanford	Project Manager	230	@	\$58.86	\$13,537.80
Keith Gazaway	Sr Bridge Engineer	616	@	\$49.27	\$30,350.32
Steve Hall	Sr Bridge Engineer	156	@	\$42.84	\$6,683.04
Lise Muco	Asst Engineer	460	@	\$30.58	\$14,066.80
Colby Cushing	Asst Engineer	80	@	\$30.80	\$2,464.00
Ty Brittan	Sr Technician	282	@	\$52.94	\$14,929.08
Kristina Donovan	CADD Technician	60	@	\$33.70	\$2,022.00
Robin McLinden	Admin Support			\$29.39	
TOTAL HOURS		1,900		TOTAL DIRECT LABOR	\$85,495.60

MULTIPLIERS

ESCALATION @		(of Direct Labor)	
OVERHEAD @	135.66%	(of Direct Labor + Escalation)	\$115,983.33
PAYROLL ADDITIVES @		(of Direct Labor + Escalation)	
PROFIT (FIXED FEE) @	8.0%	(of Direct Labor + Escalation + Overhead + Payroll Additives)	\$16,118.31
TOTAL MULTIPLIERS			\$132,101.65

OTHER DIRECT COSTS

*** Billed at Actual Cost ***

ITEM	QUANTITY	UNIT		UNIT COST	AMOUNT
Reproduction & Delivery Costs	1	LS	@	\$3,000.00	\$3,000.00
Mileage Costs	1200	Miles	@	\$0.50	\$600.00
TOTAL ODC'S					\$3,600.00

TOTAL ODC'S \$3,600.00

TOTAL \$221,197.25

SUBCONSULTANT FEE PROPOSAL WORKSHEET

COMPANY: Simon Wong Engineering	SCOPE OF WORK: Structures (DBE)	PHASE: Phase III
PROJECT: Sunset Avenue/UP Grade Separation		DATE: March 7, 2011

DIRECT LABOR

PERSONNEL	POSITION	HOURS	RATE	AMOUNT
Mark Creveling	Principal Engineer		\$90.16	
Craig Shannon	Sr Bridge / VE Eng		\$50.65	
Andrew Sanford	Project Manager	32	@ \$58.86	\$1,883.52
Keith Gazaway	Sr Bridge Engineer		\$49.27	
Steve Hall	Sr Bridge Engineer		\$42.84	
Lise Muco	Asst Engineer		\$30.58	
Colby Cushing	Asst Engineer		\$30.80	
Ty Brittan	Sr Technician		\$52.94	
Kristina Donovan	CADD Technician		\$33.70	
Robin McLinden	Admin Support		\$29.39	
TOTAL HOURS		32	TOTAL DIRECT LABOR	\$1,883.52

MULTIPLIERS

ESCALATION @		(of Direct Labor)	
OVERHEAD @	135.66%	(of Direct Labor + Escalation)	\$2,555.18
PAYROLL ADDITIVES @		(of Direct Labor + Escalation)	
PROFIT (FIXED FEE) @	8.0%	(of Direct Labor + Escalation + Overhead + Payroll Additives)	\$355.10
TOTAL MULTIPLIERS			\$2,910.28

OTHER DIRECT COSTS

*** Billed at Actual Cost ***

ITEM	QUANTITY	UNIT	UNIT COST	AMOUNT
Reproduction & Delivery Costs		LS	\$3,000.00	
Mileage Costs		Miles	\$0.50	
TOTAL ODC'S				

TOTAL ODC'S

TOTAL \$4,793.80

SUBCONSULTANT FEE PROPOSAL WORKSHEET

COMPANY: Simon Wong Engineering	SCOPE OF WORK: Structures (DBE)	PHASE: Phase IV
PROJECT: Sunset Avenue/UP Grade Separation		DATE: March 7, 2011

DIRECT LABOR

PERSONNEL	POSITION	HOURS	RATE	AMOUNT	
Mark Creveling	Principal Engineer		\$90.16		
Craig Shannon	Sr Bridge / VE Eng		\$50.65		
Andrew Sanford	Project Manager	128	@ \$58.86	\$7,534.08	
Keith Gazaway	Sr Bridge Engineer		\$49.27		
Steve Hall	Sr Bridge Engineer		\$42.84		
Lise Muco	Asst Engineer		\$30.58		
Colby Cushing	Asst Engineer		\$30.80		
Ty Brittan	Sr Technician		\$52.94		
Kristina Donovan	CADD Technician		\$33.70		
Robin McLinden	Admin Support		\$29.39		
		TOTAL HOURS	128	TOTAL DIRECT LABOR	\$7,534.08

MULTIPLIERS

ESCALATION @		(of Direct Labor)		
OVERHEAD @	135.66%	(of Direct Labor + Escalation)	\$10,220.73	
PAYROLL ADDITIVES @		(of Direct Labor + Escalation)		
PROFIT (FIXED FEE) @	8.0%	(of Direct Labor + Escalation + Overhead + Payroll Additives)	\$1,420.39	
			TOTAL MULTIPLIERS	\$11,641.12

OTHER DIRECT COSTS

--- Billed at Actual Cost ---

ITEM	QUANTITY	UNIT	UNIT COST	AMOUNT
Reproduction & Delivery Costs		LS	\$3,000.00	
Mileage Costs		Miles	\$0.50	
				TOTAL ODC'S

TOTAL ODC'S

TOTAL **\$19,175.20**

SUBCONSULTANT MANHOURLY WORKSHEET

COMPANY: Simon Wong Engineering
 PROJECT: Sunset Avenue/UP Grade Separation
 SCOPE OF WORK: Structures (DBE)
 PHASE: Phase IV
 DATE: March 7, 2011

TASK	PRINCIPAL ENGINEER	SR BRIDGE / VP ENG	PROJECT MANAGER	SR BRIDGE ENGINEER	SR BRIDGE ENGINEER	ASST ENGINEER	ASST ENGINEER	SR ENGINEER	SR TECHNICIAN	CADD TECHNICIAN	ADMIN SUPPORT	HOURS	COST
	\$229.47	\$128.91	\$149.83	\$125.40	\$109.03	\$77.93	\$72.39	\$134.74	\$95.77	\$74.90			

Total Manhours: **128**

TASK	PRINCIPAL ENGINEER	SR BRIDGE / VP ENG	PROJECT MANAGER	SR BRIDGE ENGINEER	SR BRIDGE ENGINEER	ASST ENGINEER	ASST ENGINEER	SR ENGINEER	SR TECHNICIAN	CADD TECHNICIAN	ADMIN SUPPORT	HOURS	COST
ARTICLE AVII - CONSTRUCTION SUPPORT													
Change Order Reviews												16	\$ 2,397
RFI Responses												16	\$ 2,397
Shop Drawing/Submittal Reviews												40	\$ 5,992
Field Visits/Meetings												16	\$ 2,397
Record Drawings												40	\$ 5,992

SUBCONSULTANT FEE PROPOSAL WORKSHEET

COMPANY: Tait & Assoc.	SCOPE OF WORK: Caltrans Coordination	PHASE: Phase II
PROJECT: Sunset Avenue/UP Grade Separation		DATE: March 7, 2011

DIRECT LABOR

PERSONNEL	POSITION	HOURS	RATE	AMOUNT	
David Tait	Project Manager	50	@ \$238.00	\$11,900.00	
		TOTAL HOURS	50	TOTAL DIRECT LABOR	\$11,900.00

MULTIPLIERS

ESCALATION @	(of Direct Labor)
OVERHEAD @	(of Direct Labor + Escalation)
PAYROLL ADDITIVES @	(of Direct Labor + Escalation)
PROFIT (FIXED FEE) @	(of Direct Labor + Escalation + Overhead + Payroll Additives)
TOTAL MULTIPLIERS	

OTHER DIRECT COSTS

*** Billed at Actual Cost ***

ITEM	QUANTITY	UNIT	UNIT COST	AMOUNT	
Travel	12	EA @	\$400.00	\$4,800.00	
				TOTAL ODC'S	\$4,800.00

TOTAL **\$16,700.00**

