

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

532A



FROM: TLMA - Transportation Department

SUBMITTAL DATE:
April 28, 2011

SUBJECT: Amendment No. 1 to the Preliminary Engineering and Environmental Services Agreement with AECOM Technical Services, Inc., dba, Lim & Nascimento Engineering to provide final engineering services for the Magnolia Avenue Railroad Grade Separation Project.

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 AECOM Technical Services, Inc., dba, Lim & Nascimento Engineering, and;
2. Authorize the Chairman of the Board to execute the same.

Juan C. Perez
Director of Transportation

(Continued On Attached Page)

Departmental Concurrence

FORM APPROVED COUNTY COUNSEL
DATE 4/27/11
BY: MARSHA L. VICTOR

FINANCIAL DATA	Current F.Y. Total Cost:	\$ 2,253,684	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: Transportation Development Act (TDA)(63%), Proposition 1B (State bond funds-Local Roads) (37%) Project No. B7-0784				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

County Executive Office Signature

Dep't Recomm.: Consent Policy Policy

Per Exec. Ofc.: Consent Policy Policy

Prev. Agn. Ref. 6/16/09 3.45

District: 2

Agenda Number:

The Honorable Board of Supervisors

RE: Amendment No. 1 to the Preliminary Engineering and Environmental Services Agreement with AECOM Technical Services, Inc., dba, Lim & Nascimento Engineering to provide final engineering services for the Magnolia Avenue Railroad Grade Separation Project.

April 28, 2011

Page 2 of 2

BACKGROUND: Magnolia Avenue is a four-lane Arterial Highway that provides primary access to commercial, industrial and residential land uses in the Home Gardens Community of Riverside County, which neighbors the City of Riverside to the east and City of Corona to the north. A Burlington Northern Santa Fe (BNSF) at grade crossing currently exists on Magnolia Avenue between Lincoln Street and Buchanan Street. Vehicles, pedestrians and bicycles all traverse the crossing at the BNSF railroad tracks. At this crossing, there are two mainline tracks that service freight trains, as well as Metrolink and Amtrak commuter trains. The railroad crosses Magnolia Avenue at a sharp angle, which limits visibility and increases the potential for train-vehicle accidents. Currently, 41 freight and 27 passenger trains pass through Magnolia Avenue grade crossing on a daily basis which is projected to increase to 62 freight and 38 passenger trains by 2030. The increase in number of trains will cause more frequent interruptions in the normal flow of vehicle traffic creating additional congestion in the area.

The proposed project will grade separate Magnolia Avenue where it currently crosses the BNSF mainline tracks at grade providing the following benefits to the public:

- Improve vehicular traffic circulation, public safety, and provide uninterrupted and efficient access for motorists, residents, businesses, pedestrians and emergency vehicles in the area.
- Substantially reduce particulate matter from idling vehicles causing a reduction in greenhouse gas emissions.

On June 16, 2009, the Board approved an Engineering Services Agreement for Magnolia Avenue Railroad Grade Separation with the firm of Lim and Nascimento Engineering to provide preliminary engineering and environmental services. Subsequent to execution of the original agreement Lim & Nascimento Engineering changed it's name to AECOM Technical Services, Inc. and will henceforth be know as AECOM Technical Services, Inc..

The preliminary engineering and environmental services are now essentially complete and the project is in the final stages of obtaining environmental clearance. The Transportation Department desires to continue the services provided by AECOM Technical Services, Inc. into the final design phase of the project.

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.

On February 8, 2011, the Board of Supervisors approved Amendment No. 1 to Agreement for Transportation Development Act (TDA) Funding with the Riverside County Transportation Commission (RCTC) that in part distributes \$1,430,319 in funding to the Magnolia Avenue Grade Separation Project.

The Transportation Department has negotiated an additional budget of \$2,253,684 to perform the final design services. This budget includes cost savings of \$230,000 from the preliminary engineering and environmental phase.

AMENDMENT NO. 1

Amendment To Agreement Between

The County of Riverside and AECOM Technical Services, Inc., (dba, Lim & Nascimento Engineering)

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 AECOM Technical Services, Inc. (dba, Lim & Nascimento Engineering) (hereinafter "ENGINEER").

RECITALS

- A. COUNTY and ENGINEER have entered in an agreement entitled "Engineering Services Agreement for Magnolia Avenue Railroad Grade Separation between County of Riverside • Transportation Department and Lim and Nascimento Engineering" that is dated June 16, 2009 (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. Subsequent to execution of the original agreement, ENGINEER's name changed from Lim & Nascimento Engineering. to AECOM Technical Services, Inc. and will henceforth be know as AECOM Technical Services, Inc..
- B. The above noted services are essentially complete and the project is in the final stages of 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. Article VI (Compensation) and Appendix C • Article CV are amended by increasing the contract budget by \$2,253,684 as provided below and in accordance with the attached Fee Proposal.

Original Contract (Phase I) Fund Balance

Prelim Engineering and Environmental Budget	\$952,859 (includes contingency & optional work)
Spent to date	(\$671,457)
Projected Additional Expenses	(\$51,750)
Remaining Budget	\$229,652

Phase II, III & IV Proposed Budget

Phase II - PS&E	\$2,124,496
Phase III - Bidding Support	\$32,478
Phase IV - Construction Support	\$126,362
Phase II - IV Summary	\$2,283,336

Amendment 1

Phase II, III & IV Proposed Budget	\$2,283,336
Original Contract (Phase I) Fund Balance	(\$229,652)
Contingency *	\$200,000
Amendment 1 Summary	\$2,253,684

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

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: 4/21/11

JUAN C. PEREZ

Director of Transportation

APPROVED AS TO FORM:

PAMELA J. WALLS, COUNTY COUNSEL

[Signature] Dated: 4/27/11

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: 4/18/11

PATRICK L. SOMERVILLE

PRINTED NAME

VICE PRESIDENT

TITLE

ENGINEER:

[Signature] Dated: 4/8/11

JAMES M. FABER

PRINTED NAME

VICE PRESIDENT

TITLE



Consulting Services Contract • Amendment Budget Summary

PROJECT: **Magnolia Avenue Railroad Grade Separation**
 CONSULTANT: **AECOM Technical Services, Inc.**

PROJECT NO.: **B7-0784**
 CONTRACT NO.: **09-05-004**

	PHASE 1 PAVED	PHASE 2 P&SE	PHASE 3 Bidding	PHASE 4 Con Support	PHASE 5	CONTINGENCY	TOTAL
Contract Budgets	844,378					108,481	952,859
From Amendments							
From Administrative Changes							
General Approved Budget	844,378					108,481	952,859
Proposed Contract Changes (Amend. No. 1)		2,124,496	32,478	126,362		(29,652)	2,253,684
Carryover (General Contingency) from Phase 1						(108,481)	(108,481)
Carryover (NEPA Optional Work) from Phase 1						(121,171)	(121,171)
Plans, Specs & Estimate		2,124,496					2,124,496
Bid Support			32,478				32,478
Construction Support				126,362			126,362
Contingency						200,000	200,000
Proposed Budget	844,378	2,124,496	32,478	126,362		78,829	3,206,543

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

ADDITIONS TO APPENDIX A

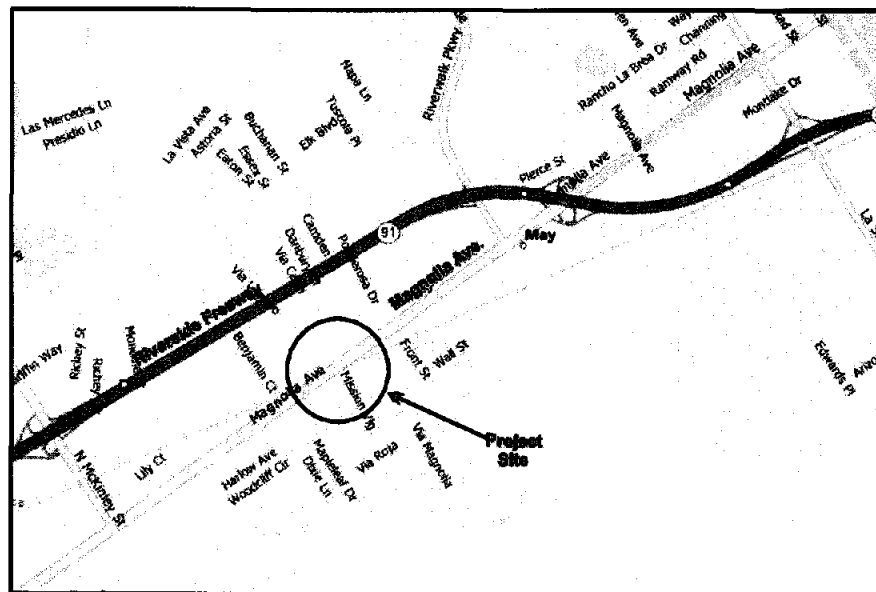
ARTICLE A1 INTRODUCTION

A. PROJECT DESCRIPTION

The proposed project will construct a Grade Separation at the intersection of Magnolia Avenue with the Burlington Northern Santa Fe (BNSF) railroad crossing. The proposed improvement will improve traffic and pedestrian safety, reduce traffic delays, improve air quality, and facilitate efficient rail freight and commuter rail service. The Engineer will perform engineering and design services and prepare plans, specifications and estimates (PS&E) necessary to complete construction.

B. LOCATION

The Magnolia Avenue crossing with the BNSF is located in the Home Gardens area of Riverside COUNTY (COUNTY) between the City of Riverside and the City of Corona.



C. COORDINATION

CONSULTANT Project Manager shall coordinate with other involved agencies for compatible design. Coordination may include, but will not necessarily be limited to the following:

- BNSF
- Metrolink (SCRRA)
- Public Utilities Commission (PUC)



- 1 • COUNTY Departments
- 2 • Caltrans
- 3 • California Department of Fish and Game (CDFG)
- 4 • Regional Water Quality Control Board (RWQCB)
- 5 • State Resource Agencies
- 6 • U.S. Fish and Wildlife Service (USFWS)
- 7 • Army Corps of Engineers (ACOE)
- 8 • Utility Companies
- 9 • RCTC
- 10 • Riverside County Flood Control and Water Conservation District (RCFC&WCD)
- 11 • City of Riverside
- 12 • City of Corona
- 13 • Property and Business Owners

14 CONSULTANT will schedule all meetings with other outside agencies with approval of COUNTY.

15 **D. PHASES**

16 The first phase of the project was initiated in the original contract for the project and covered services for
17 preliminary engineering and environmental documentation. The proposed work in this proposal is for
18 extension of engineering design services for the remaining phases of the project. The phases of the project
19 are::

- 20 • Phase I – Preliminary Engineering and Environmental Documentation
- 21 • Phase II - Plans, Specifications and Estimates (PS&E).
- 22 • Phase III – Construction Bidding and Award Support, Design Support during Construction.

23 The Phase I work is nearing completion and the remaining phases of work are needed for the project to
24 proceed to construction of the project. Phase II will proceed upon written notice to proceed, and the
25 remaining Phase III will not proceed until the commencement of the construction phase of the project and
26 authorized in writing by COUNTY.

27 **E. STANDARDS**

28 The final plans, specifications, and estimates shall be prepared in accordance with County's regulations,
29 policies, procedures, manuals and standards, State Department of Transportation (CALTRANS) latest



standards, City of Riverside Standards, and AASHTO Standards where applicable. Railroad standards shall be in accordance with BNSF design standards and policies. Bridge plans shall be prepared in accordance with the Bridge Design Details Manual, Bridge Design Aids Manual and Bridge Memos to Designers, California Department of Transportation, and Division of Structures current editions. Traffic signing, striping, and traffic markings shall be prepared in accordance with the California MUTCD. Water quality treatment shall be designed in accordance with RCFC&WCD Stormwater Quality BMP Practice Design Handbook. Landscape and irrigation design shall be in accordance with the 2010 California Green Building Code, "CalGreen", January 1, 2011. All Documents shall be prepared using Imperial standards and dimensions.

SURVEYS - All surveys will be completed in compliance with Riverside County Survey Manual. Aerial mapping will be in Microstation format and prepared to Caltrans standards.

PLANS, SPECIFICATIONS & ESTIMATES (PS&E) - Plans and specifications shall be prepared in accordance with the current COUNTY Road Improvement Standards and County Policies and Guidelines for Submittal of Plans, Specifications and Estimates. As part of the work involved in the preparation of the plans, specifications and estimates, the ENGINEER shall prepare and furnish to COUNTY special provisions for items of work included in the plans, which are not covered in the Standard Specifications produced by CALTRANS.

Roadway plans shall be prepared electronically on Microstation software. Special Provisions shall be prepared using Microsoft Word conforming to COUNTY format and content.

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:

- | | |
|--------------------|---------------------|
| Edward Ng, PE | Project Manager |
| Mohan Char, PE, SE | Structures Engineer |

ARTICLE AII • PROJECT ADMINISTRATION

A. PROJECT MANAGEMENT

The proposed work in this scope is a continuation of engineering design services for the PS&E phase of the project. The ENGINEER'S PROJECT MANAGER will continue ongoing liaison with the COUNTY PROJECT MANAGER and other affected agencies to promote effective coordination during the course of project .

ENGINEER will hold a PS&E phase kickoff meeting with the COUNTY to confirm the project scope, and establish a schedule for project coordination meetings and technical reviews for the PS&E phase. Monthly team meetings will be held to review progress of the project development and any issues and concerns.

Additional coordination meetings with the COUNTY PROJECT MANAGER and other representatives from affected agencies will be held on an as needed basis. The ENGINEER shall prepare meeting agenda and minutes for each meeting and have these available for review within five (5) working days following the meeting.

B. BUDGETING

The ENGINEER will prepare budgets for each task and milestone for the PROJECT. Such budgets will be entered in to the ENGINEER's Management Information System along with actual costs incurred and used as a basis for cost monitoring and control.

C. COST ACCOUNTING

The ENGINEER will prepare monthly reports of expenditures for the PROJECT by task and milestone. Expenditures include direct labor costs, overhead costs, other direct costs, and subconsultant costs. These reports will be included as supporting data for invoices presented to the COUNTY every month.

D. SCHEDULING

Within two (2) weeks from the Notice to Proceed (NTP) for the PS&E phase, the ENGINEER will provide a detailed project schedule for the PS&E comprised of milestones, major activities and deliverables, to the COUNTY for review and comment. This schedule will reflect assumed review times necessary by all of the agencies involved. Review of the schedule will occur and adjustments will be made, if necessary, due to changes in circumstances. It is assumed that preparation of the PS&E documents will require twelve months to complete. Assuming ENGINEER receives a Notice to Proceed in the month of May 2011, ENGINEER shall complete the PS&E package no later than May 2012.



1 **E. PROGRESS REPORTING**

2 Progress reports shall be prepared in accordance with COUNTY guidelines. Reports will be required monthly
3 and shall be accompanied by an invoice. The ENGINEER will assess physical percent complete and
4 compare it to the financial percent complete.

5 **F. QUALITY CONTROL PLAN**

6 A Quality Control Plan shall be established for this PROJECT in accordance with the provisions of Article IV,
7 Section H of the Engineering Services Agreement. The Quality Control Plan shall be provided to the
8 COUNTY within four (4) weeks after the Notice to Proceed.

9 **ARTICLE AIII • ENGINEERING SERVICES**

10 **A. GENERAL**

11 ENGINEER shall provide professional and technical engineering services necessary to complete the
12 construction plans, specifications, and bid schedule. Work will include, but not necessarily be limited to:
13 design engineering; conforming to BNSF design requirements, traffic signal and traffic handling, geometric
14 layouts, and right-of-way/easements requirements. ENGINEER shall assist the COUNTY in any public
15 meetings, presentations and meetings with area business owners.

16 The proposed project is to grade separate Magnolia Avenue with the BNSF, retiring the at-grade crossing, in
17 the Home Gardens area of Riverside County. This will be accomplished by the construction of: an overhead
18 bridge structure, road improvements, retaining walls, traffic signals, street lights, bridge aesthetics, and
19 landscaping. The improvements also include modifications to accesses to local businesses, and addition of a
20 left turn bay in the median west of Lincoln Street

21 The preliminary engineering and project report equivalent will serve as the basis for the work proposed in this
22 proposal. It will be considered as the "35% Level Plan of Development". The design development for the
23 proposed scope will be to develop the 65%, 95%, and final (100%) phase design plans. The plans will be
24 accompanied by an ENGINEER's estimate of project costs and technical specifications. The major work
25 elements of this proposal include:

- 26 • Roadway Design.
- 27 • Structural Design.
- 28 • Drainage and Water Quality.
- 29 • Traffic Signals, Signage & Striping



- 1 • Electrical and Lighting.
- 2 • Utility Coordination.
- 3 • Right of Way Engineering.
- 4 • Geotechnical and Foundation Investigations.
- 5 • Railroad Coordination.
- 6 • Bridge Aesthetics.
- 7 • Landscape Architecture.
- 8 • Construction Staging and Traffic Handling
- 9 • Bidding and Construction Support.

10 The Project improvement plan set is estimated to consist of the following:

Sheet Name	Sheet Count
Title Sheet, Index of Drawings, Notes	2
Typical Sections	5
Plan & Profile Sheets	9
Construction Details (Road, RR, walkway, median, driveways, offsite)	5
MSE & Retaining Wall Plan, Profile & Details	8
Drainage & Water Quality Plan & Profile, Details	10
Utility Pothole & Conflict Plans	8
Staging – Index, Stages 1, 2A, 2B, 3 and Details	16
Signing and Striping	5
Traffic Signal – Magnolia/Lincoln, Magnolia/Buchanan & Interconnect	4
Electrical and Lighting Plans, Details, & Notes	22
Landscape, irrigation, and Sign – Salvage, Layout, and Details	15
Bridge and Wall Aesthetics	5
Pollution & Erosion Control - Layout	4
Structural Plans and Details	62

28 The development of the plan sheets will be based on engineering design, calculations, investigations, and
 29 reports. Right of Way requirements maps will be prepared to identify the parcels needed for right of way



1 acquisitions, right of entries, and easements. The map will be utilized by the COUNTY Surveyor and Right of
2 way Agent to prepare the necessary documents to obtain the necessary right of way, right of entry and
3 easements. Railroad coordination will be provided to identify railroad and public utilities commission (PUC)
4 requirements and make necessary submittals to obtain the clearances to allow the project to proceed into
5 construction. Bid and Construction support services will be provided to the COUNTY to respond to bidder and
6 contractor inquiries for clarification and assist the COUNTY in preparation of the agenda and change orders.

7 **B. RESEARCH AND DATA GATHERING**

8 Collect and review the final environmental document and technical studies, utilities mapping, public outreach
9 comment cards, the project report, right-of-way maps, and preliminary plans. Identify critical issues that need
10 to be addressed in the final PS&E documents to meet environmental requirements or public comments.

11 **C. SURVEYING/TOPO/BASE/FIELD WORK**

12 The COUNTY will perform all survey services for the project, including field work, control surveys, base
13 mapping, and aerial topographic mapping. The COUNTY will provide R/W base mapping with GIS-level
14 parcel lines and parcel identification data. Title reports, if required, will be furnished by COUNTY. Survey
15 services are not included in the ENGINEER'S Scope of Services.

16 **D. ROADWAY DESIGN AND PLANS**

17 Roadway Plans/Profiles/Typical Sections

18 The alignment and geometry will be based on preliminary engineering drawings developed in the preliminary
19 engineering/environmental document phase, with detail plans, profiles, cross sections, and construction
20 details in accordance with the agency standards. The proposed improvements for this project will provide
21 for two lanes in each direction with left turn pockets at the intersections. The roadway will transition to meet
22 the existing road cross-sections at each end of the project.

23 The frontage road will be designed to provide serviceable driveway connections and adequate clearance to
24 the bridge, and retaining wall, structures, as well as access to the adjacent businesses and properties. The
25 road profile will account for the bridge structure depth and provide for vertical clearances over the railroad
26 tracks per BNSF requirements.

27 The roadway plans will include the geometric alignment and layout data for the roadway improvements, lane
28 configurations, pedestrian facilities, structures, and access to adjacent properties. The roadway plans will be
29



1 coordinated with the other work elements such as drainage, grading, structures, utilities, signals, and
2 landscaping.

3 Retaining Wall Improvement Plans

4 Retaining wall improvement plans will be prepared showing the plan layout and profile for the retaining wall
5 structures necessary to retain the road embankments. The walls are assumed to be both MSE (mechanically
6 stabilized embankment) and standard cantilevered concrete walls. The improvement plans will show wall
7 sections and wall details. Adjacent grading will be shown on the retaining wall plans.

8 Offsite Grading and Improvement Plans

9 Offsite grading and improvement plans will specify the reconstruction of the areas adjacent to the new
10 roadway to accommodate grade changes and transition improvements to the existing facilities and adjacent
11 sites. Plans will show reconstruction and new installations of offsite facilities such as driveway reconstruction,
12 parking lot modifications, walls, fences, gates, retaining walls, landscaping areas and slopes. Where work
13 occurs outside the right of way, the work shall be coordinated through the COUNTY with the property owner,
14 business, and or residents.

15 **Design Exception Fact Sheets** – Where engineering design requires non-standard design features or
16 design elements, the non-standard design features will be documented through Design Exception Fact
17 Sheets.

18 **E. STRUCTURAL ANALYSIS AND PLANS**

19 **Structural Task 1 - Draft Structural General Plans (35% P&Q)**

20 Task 1a– Structure Type Selection

21 This task includes all efforts required to develop, review, approve and distribute draft Structure General Plans.
22 The Preliminary Plan Approval process is part of this task and generally includes Bridge Type Selection
23 Meetings, or review of all structure related facilities as required. Approved preliminary plans are the approved
24 General Plans, and additional preliminary plans for walls, or any other miscellaneous details as required. The
25 activities include, but are not limited to:

- 26 • Prepare Preliminary Design.
- 27 • Prepare Preliminary Plan Sheets.
- 28 • Prepare Preliminary Quantities.
- 29 • Prepare Preliminary Estimates.



- 1 • Prepare Preliminary Specifications.
- 2 • Prepare Bridge Type Selection Report.
- 3 • Perform a Constructability Review (CR) of project General Plans.
- 4 • Conduct Bridge Type Selection Meeting.
- 5 • Update General Plans and General Plan Estimate.
- 6 • Obtain Preliminary Plan Approval.
- 7 • Distribute approved General Plans to stakeholders.

8 **Structural Task 2 - Structural Unchecked Details (65% P&Q)**

9 Task 2a – Plans

10 This task includes all efforts required to prepare draft Structures Plans. The final product is a draft set of
11 designed, detailed, and unchecked structural plans along with unchecked quantity calculations for identified
12 contract bid items. The activities include, but are not limited to:

- 13 • Prepare Unchecked Details (65%).
- 14 • Perform structural analysis and develop draft Design.
- 15 • Prepare draft Structure Plan Sheets.
- 16 • Perform a Constructability Review (CR) of the Unchecked Details.

17 Task 2b – Quantities

18 This task includes all efforts required to prepare draft Quantities. The final product is a draft set of unchecked
19 quantity calculations for identified contract bid items. The activities include, but are not limited to:

- 20 • Prepare updated quantities.
- 21 • Prepare Unchecked Detail Cost Estimate.
- 22 • Prepare Unchecked Detail Item List.
- 23 • Prepare Unchecked Detail Working Day Schedule.
- 24 • Distribute Unchecked Details package to COUNTY and other stakeholders, including plan sheets &
25 cost estimate.

26 **Structural Task 3 - Intermediate Structural PS&E (95% PS&E)**

27 Task 3a – Plans

28 This task includes all efforts required to prepare Checked Details. The final product is a draft set of designed,
29 detailed, and checked structural plans along with checked quantity calculations and specifications for

1 identified contract bid items. The activities include, but not limited to:

- 2 • Perform an independent structural analysis.
- 3 • Check the Design and Plan Sheets.
- 4 • Transmit Initial PS&E package to COUNTY and Stakeholders.

5 Task 3b – Specifications

6 This task includes all efforts required to prepare draft specifications for identified contract bid items. The
7 activities included, but are not limited to:

- 8 • Prepare draft Specifications.
- 9 • Perform comparison of plans and specifications.

10 Task 3c – Quantities

11 This task includes all efforts required to prepare checked quantity calculations for identified contract bid items.

12 The activities include, but are not limited to:

- 13 • Prepare draft Quantities.
- 14 • Perform an independent check of the draft Quantities.

15 Task 3d – Address COUNTY's Comments and Resubmit (Update Plans/Specifications/Estimates)

16 These tasks include efforts required to address COUNTY's comments on the draft Structures Plans,
17 Specifications, and Estimate (SPS&E). The final product is updated 95% complete draft set of Structure
18 Plans, Structure Special Provisions, and Structure Cost Estimate. The activities include, but are not limited
19 to:

- 20 • Review of the Structure Plans and Quantities.
- 21 • Update Design and Independent Check Calculations.
- 22 • Update Structure Contract Item list.
- 23 • Update draft special provisions.
- 24 • Update cost estimate for Structure Contract Items and working day summary.
- 25 • Transmit updated draft SPS&E package to COUNTY and Stakeholders.

26 **Structural Task 4 - Final Structural PS&E (100% PS&E)**

27 Task 4a – Plans/ Task 4b – Specifications/ Task 4c – Estimates

28 This task work involves addressing comments on the Intermediate Structures PS&E, incorporating them into
29 the final Structures PS&E package, and all efforts involved in the development of the overall final structures



1 PS&E package. Activities under this task are tracked on an overall project basis. Typically, the Structure
2 Project Engineer, Specifications Engineer, Cost Estimates Engineer, and other members of the project
3 development team do this work. Activities include, but are not limited to:

- 4 • Project Review by project development team - This task includes the final Project review of the draft
5 SPS&E package by applicable members of the DES project development team including, but not
6 limited to: Design Engineer, Specifications Engineer, Geotechnical Engineer, Engineering Geologist,
7 Hydraulic Engineers and the Construction Engineer. Activities include, but are not limited to:
 - 8 ➤ Review of draft SPS&E package.
 - 9 ➤ Final review of Foundation Report and any other project specific reports.
 - 10 ➤ Final review and updating of the Structure Type Selection Report.
 - 11 ➤ Constructability Review of all final documents.
 - 12 ➤ Concurrence by COUNTY and Stakeholders that recommendations have been properly
13 incorporated into the final SPS&E.
- 14 • Constructability Review Meeting of draft SPS&E package.
- 15 • Revisions to the Plans, Special Provisions, and Cost Estimates - Prepare draft Quantities Sheets,
16 Geotechnical Reports, and prepare plans. This task includes efforts required to prepare final
17 Structures Plans for incorporation into the final SPS&E package. The activities include, but are not
18 limited to:
 - 19 ➤ Update plan sheets based on final Project Review (95% Constructability Review).
 - 20 ➤ Review and incorporate COUNTY and Stakeholders comments into Final Structure Plans and
21 Quantity calculations.
- 22 • Update quantities and specifications for contract bid items - This task includes efforts required to
23 prepare the final Structure Special Provisions and Cost Estimate. The activities include, but are not
24 limited to:
 - 25 ➤ Update specifications based on final Project Review (95% Constructability Review).
 - 26 ➤ Update Engineering Estimate.
- 27 • Transmittal of final SPS&E package to COUNTY and stakeholders for an external review
- 28 • Other non-specific activities that are directly related to the development of the final SPS&E package.



1 **Task 5 Structural Bid Support**

2 Upon final resolution of comments and recommended revisions to the Final PS&E submittal, consultant will
3 proceed with finalizing the PS&E package. Other items required for the Bid Set are:

- 4 • Resident Engineers File: Consultant shall prepare a Resident Engineer's File, which shall include
5 any memos to the Resident Engineer.
- 6 • 4 Scale Plan: Consultant shall prepare a 4-Scale Deck Contours Plan for each bridge.

7 In addition, the RFIs and RFCs generated during the bid process shall be responded to by ENGINEER.

8 **F. DRAINAGE AND WATER QUALITY PLANS AND REPORTS**

9 It is anticipated that additional drainage inlets are needed along the new Magnolia Avenue grade separation
10 bridge and roadway as well as the frontage roads. The existing storm drain pipe west of the Magnolia
11 Avenue/BNSF Railroad crossing will be extended in order to collect surface run-off from the proposed
12 drainage inlets. Some storm drain laterals will be needed to catch the surface run-off near the existing
13 Magnolia Avenue/Buchanan Street intersection and will connect to the existing storm drain in place, where
14 the flows drain to the Arlington Channel.

15 To satisfy water quality requirements, water quality measures will be implemented where appropriate and in
16 accordance with the NPDES requirements. The new NPDES requirements are expected to be in effect during
17 the course of design and ENGINEER will design water quality measures to meet the new standards. It is
18 assumed that there will be a water quality basin at the east of Magnolia Avenue/BNSF Railroad crossing,
19 which will handle the first flush from a portion of the proposed east frontage road street flows, and a portion of
20 the bridge deck flows. Plan and profile design for proposed drainage facilities will be completed according to
21 the COUNTY drafting standards.

22 An Erosion Control Plan will also be prepared to address construction BMP needs during the construction
23 stage. *Cost Estimates and Special Provisions* for all proposed improvements will be provided.

24 A Drainage Report will be prepared to include delineation of tributary areas for each proposed drainage inlet,
25 RCFC&WCD Rational Method hydrology calculation, drainage inlet calculations by using LACFCD Hydraulic
26 Design Manual and Water Surface Pressure Gradient (WSPG by LACFCD) calculation for pipe systems to
27 support the design of all proposed drainage facilities.

28 A Water Quality Management Plan will be prepared to identify all post-construction BMP's to be used and
29 applicable BMP design calculations. A BMP exhibit will be included to identify all the BMP locations. The



ENGINEER will meet with COUNTY Road Department Maintenance Division to discuss any potential BMP device maintenance issue for the project as well.

The drainage scope above assumes the following:

- As-built drawings, where available, for existing public drainage facilities will be provided by the COUNTY.
- COUNTY will handle the R/W acquisition and provide topography surveys as needed.
- There are no as-built for any existing private drainage facilities.
- Crossings to all existing utilities will require potholing.
- Revisions or modifications of any Master Drainage Plan or any other offsite hydrology calculations will not be required. Master Drainage Plan and offsite hydrology is assumed to represent the actual and/or planned drainage conditions.
- Unit hydrographs calculations for any retention and detention sizing will not be required. Rational Method analysis shall be sufficient for design of local drainage facilities.
- Hydrologic and hydraulic data on any Master Drainage Plan facilities is assumed to be correct and no further verification of that data is required.
- Sedimentation analyses is not required.
- Floodplain Evaluations and FEMA Flood Map Revision (e.g. LOMR/CLOMR) will not be required.

G. TRAFFIC SIGNAL, SIGNING AND STRIPING DESIGN AND REPORTS

Traffic Signal Modification Design - Traffic signal facilities will be field checked and evaluated for conflicts with the proposed roadway widening, length of mast arms, pedestrian heads and signal heads placement, suitability for the new lane configurations, and conformance with current standards. Design parameters for signal modifications include an eight phase intersection and controller with emergency vehicle pre-emption, battery backup, loop and/or video detection, and traffic signal interconnect with the existing on-grade crossing at Buchanan Street. Also, the proposed traffic signal will be designed to handle the local eastbound and westbound traffic of frontage road. Generally, the signal facilities will be kept at their existing locations except for those in conflict with the road widening and new grades.

Traffic Signal Plans – ENGINEER will prepare traffic signal modification plans for Magnolia Avenue/Buchanan Street, and Magnolia Avenue/Lincoln Street intersections. The plans will include existing and proposed traffic signal poles, mast arms, safety lighting, vehicle signal and pedestrian head modifications to conform to the

1 proposed roadway widening, per the current COUNTY/State Standards and based on the Manual on Uniform
2 Traffic Control Devices (MUTCD) and the California Supplement. The completed traffic signal facilities and
3 pedestrian crossing facilities at the ultimate locations will meet current COUNTY Standards and ADA
4 requirements and will be consistent with the ultimate intersection lane configurations. The modification of the
5 traffic signal will also include replacement of detector loops, video detection, extension of conduits, and
6 replacement of pullboxes. ENGINEER will coordinate with the traffic signal design with the COUNTY and the
7 City of Riverside, as required.

8 Traffic Control During Construction - Magnolia Avenue is currently four-lane, divided arterial within the project
9 limits and will be grade separated at the BSNF railroad crossing, and widened, with improvements made to
10 the east and west ends to match the existing four-lane, divided arterial section on both the north and south
11 ends. This project is along an arterial roadway lined by business park and light industrial land uses to the
12 north, and some residential properties toward the southeast. Access will have to be maintained during
13 construction along Magnolia Road on either side of the railroad tracks within the project limits. Traffic control
14 plans for construction and requirements will be developed to assure safe working conditions for the workmen
15 and to facilitate smooth traffic flow. ENGINEER will coordinate with the COUNTY to develop plans and
16 specifications for traffic control.

17 Traffic Control Plans - Due to the size of this project, construction will be phased. ENGINEER will prepare
18 traffic control plans for each phase showing the construction zone area, temporary traffic control devices,
19 temporary striping and lane transitions to existing, and the removal of all the conflicting pavement markings
20 and signs during construction. Because the grade separation bridge will be staged and is generally centered
21 over the existing roadway, road closures are not anticipated. Therefore, it is not likely a detour plan will be
22 necessary. It is anticipated that one lane of traffic in each direction will provided for through the construction
23 area during construction. The necessary traffic control plans will be prepared to conform to the general
24 requirements of the COUNTY, with consideration for the needs of the Contractor's construction operations.

25 Signing and Striping Design Plans - ENGINEER will field check and prepare existing signs inventory along
26 Magnolia Avenue, Lincoln Street, and Buchanan Street within the project limits. Existing signs and striping will
27 be modified as required for the proposed Magnolia grade separation and roadway improvements. ENGINEER
28 will prepare traffic signs and striping plans in accordance with the Manual on Uniform Traffic Control Devices
29 (MUTCD) and the California Supplement. The plans will be prepared in conformance with the COUNTY



1 requirements.

2 **H. ELECTRICAL AND LIGHTING**

3 **Electric and Lighting Task 1 – Final Design Services (65%, 100% & Final Submittals)**

4 Lighting design will include providing adequate illumination and comfortable visibility at night with
5 consideration of functionality, durability, ease of maintenance, safety, and pleasant aesthetics. The lighting
6 design will be in accordance with the Riverside County Transportation Department, and the City of Riverside,
7 Standards and the relevant standards and references.

- 8 • Electrical service to lighting, signal/communications, and irrigation systems will be provided in
9 compliance with the local utility company. ENGINEER shall provide coordination and design
10 necessary to obtain electrical service for the project improvements.
- 11 • Overpass lighting within the project limit will be provided and will be consistent with the illumination
12 levels and uniformity of the surrounding lighting systems. The lighting is to be selected in conjunction
13 with the city and COUNTY recommendations for aesthetics and is anticipated to be the type, the
14 style, and be positioned, for ease of maintenance and minimum tampering and vandalism.
- 15 • Street lighting will be provided on the overpass bridge structure, and new roadway and
16 widening/improvement of new and existing street within the project limits.
- 17 • Salvaged materials, as inspected and passed by County Inspector, of removed street light poles will
18 be delivered to the COUNTY.
- 19 • Temporary roadway lighting will be provided on selected temporary roadway widening/improvement
20 roadway as required.
- 21 • Lighting will be designed to meet the performance requirements for each type of lighting using
22 “Visual” lighting design software from Lithonia or “AGI 32”.
- 23 • Design will produce a set of drawings using roadway base maps that show the following:
 - 24 ➤ Pole and luminaire type and locations per photometric calculations and COUNTY standards.
 - 25 ➤ Underground conduits between pull boxes at each pole location
 - 26 ➤ Wire sizes per the voltage drop calculations
 - 27 ➤ Pull box and power source locations.
 - 28 ➤ Wiring/circuit diagrams, schedules, and details.
 - 29

- 1 > Coordinating light pole locations with all utility lines

2 **I. UTILITIES COORDINATION**

3 Utility Research

4 Utility Owners known to have facilities in the project area include:

- 5 • Level 3 Communication underground Fiber Optics in railroad right of way.
- 6 • Sprint and Nextel underground Fiber Optics in railroad right of way.
- 7 • Questar 90 16" High Pressure Natural Gas Line, idle asset.
- 8 • BNSF/Metrolink underground communication cabling in railroad right of way.
- 9 • Southern California Edison, SCE both underground and overhead distribution lines.
- 10 • AT&T and Verizon, both underground and overhead facilities.
- 11 • City of Riverside electrical overhead distribution lines.
- 12 • City of Riverside water facilities.
- 13 • Western Municipal Water District water and sewer facilities.
- 14 • CATV.
- 15 • Southern California Gas Company, SCG, distribution and high pressure mains.

16 Utility Location

17 ENGINEER will coordinate the precise location and character of the utilities within the project limits to be
18 relocated and/or protected in place.

- 19 • As the project geometric alignment develops, a Preliminary Utility Conflict Plan will be prepared to
20 identify the utilities that are in potential conflict with the project improvements.
- 21 • The Preliminary Utility Conflict Plan will utilized to develop a Pothole Plan, which will be used to
22 precisely locate and identify the underground utility: horizontally and vertically, material type, and
23 characteristics.
- 24 • Coordination with the respective Utility Owners will be performed to determine their requirements for,
25 and procedures to, pothole their facilities. This pothole work will be monitored by the Engineer and
26 once this pothole work is complete the ENGINEER will compile the results and finalize the pothole
27 plan for use by the project team and/or if it is determined that the COUNTY shall pothole to locate
28 utilities .
- 29 • A Specialty Pothole Contractor will be selected to perform the pothole services. The Pothole

1 Contractor will obtain the necessary permits from BNSF, COUNTY, and the City of Riverside, and
2 others as necessary, including traffic control plans for the pothole work. This pothole work will be
3 monitored by the ENGINEER and once this pothole work is complete, the ENGINEER will compile the
4 results and finalize the pothole plan for use by the project team.

5 Utility Relocation Coordination and Documentation; Right of Way- Utility Relocation Certification

6 Throughout the project design, the ENGINEER will schedule and hold separate utility coordination meetings
7 monthly, or more often as needed, with the utility company representatives to provide and clarify project
8 information and to monitor their progress with their relocation planning and construction.

9 The ENGINEER will document all meetings, contacts, phone calls, and correspondence with regards to the
10 utility coordination; follow Caltrans Local Assistance Guidelines for Utility Relocations as presented in Chapter
11 13; and maintain a Caltrans recommended filing system for the utility coordination work, which eventually will
12 lead to Right of Way Certification-Utility.

13 The ENGINEER will coordinate with the project team, SCE, and/or the City of Riverside Public Utilities
14 Department for street lighting, traffic signal, and irrigation electrical service points. It is anticipated that the
15 Utility Owners will prepare their relocation plans and construct the relocated facilities.

16 Once utility conflicts are identified, a registered Relocation Claim Letter will be sent to the respective Utility
17 Owners. This letter serves to requests the utility companies to research and disclose their prior rights,
18 prepare Conflict Resolution Plans and cost estimates for the required relocations.

19 Prepare a Utility Agreement, if necessary, between the COUNTY and the Utility Owner setting forth the work
20 to be done and depending on prior rights determination the responsibility for the cost and schedule for the
21 relocation work. The Utility Agreement development will be coordinated by the ENGINEER, including
22 necessary exhibits. This agreement will also address any work requested by the Utility Owners for future
23 improvements or upgrades to their existing facilities and the respective cost allocation.

24 Once the determination of prior rights and the responsibility for the cost of relocation has been determined, a
25 Notice to Relocate will be sent to Utility Owner for the facilities to be relocated.

26 It is anticipated that the following utilities, but not limited to, will require relocation and/or protect-in-place and
27 will require Utility Agreements:

- 28 1. Southern California Edison, SCE both underground and overhead distribution lines
- 29 2. AT&T Verizon, both underground and overhead facilities



- 1 3. City of Riverside electrical overhead distribution lines
- 2 4. City of Riverside water facilities
- 3 5. CATV
- 4 6. Southern California Gas Company, SCG, distribution and high pressure mains

5 The Utilities task mentioned above assumes the followings:

- 6 • Preliminary Utility Conflict Map with utilities located from pothole and field data collection.
- 7 • Utility Pothole Plan.
- 8 • Utility Pothole services by Specialty Contractor, estimate 50 each potholes.
- 9 • Utility meeting agendas and meeting notes with corresponding action items.
- 10 • Relocation Claim Letters.
- 11 • Notice to Relocate.
- 12 • Utility Agreements.
- 13 • Maintain a Decision and Action log for each utility owner documenting meetings, plan submittals, plan
- 14 review comments, decisions and actions.
- 15 • Right of Way Certification-Utility.

16 **J. RIGHT OF WAY, RIGHT OF ENTRY, AND EASEMENT COORDINATION SERVICES**

17 Right-of-Way, Right of Entry and Easements

18 Right-of-way mapping will be prepared and submitted to the COUNTY's Right-of-way agent to obtain the
19 necessary right-of-way for the roadway and structural improvements. Easements will be identified as
20 necessary for installation of improvements such as storm drains, slopes, or temporary access on private
21 property, or property under jurisdiction of non-COUNTY agencies. Right-of-entries will be identified for
22 temporary construction access to make improvements on areas adjacent to the private property.

23 ENGINEER will show the dimensions and limits of the right-of-way, easements, and right-of-entry required.

24 All necessary surveys and preparation of the legal descriptions and plats shall be performed by the COUNTY.

25 Acquisition of right-of-way, easements, and right-of-entries shall be performed by the COUNTY.

26 Right of Way and Easements Requirement Maps, as prepared by ENGINEER, will enable COUNTY to
27 prepare necessary acquisition documents. Timely meetings, coordination, and information exchange is vital to
28 keep the right-of-way and easement information update and correct. The cost of potential right-of-way and
29 easement acquisitions will be furnished by the COUNTY'S right-of-way agent and will be included in the cost

1 estimates for each stage of the design

2 As the proposed impacts to right-of-way and easements become more defined, the updated information for
3 the cost of right-of-way acquisitions, including construction easements, will be furnished by the COUNTY'S
4 right-of-way agent. The COUNTY'S right-of-way agent will contact the owners and execute agreements and
5 documents. Follow up and information sharing between the ENGINEER and the COUNTY will be necessary
6 to keep the acquisition process effective and complete.

7 **K. GEOTECHNICAL REPORT AND HAZMAT REPORT**

8 ENGINEER anticipates that the soils will likely consist of alternating layers of clays, sands, and silts in the
9 upper 35 feet. Sands are anticipated below a depth of 35 feet. Groundwater is anticipated to be
10 approximately 50 feet, but historically-high groundwater levels are as shallow as 30 feet. The site is located
11 within a zone identified as having high potential for liquefaction in the County General Plan Safety Element,
12 but preliminary geotechnical studies have indicated that liquefaction potential is likely low.

13 The ENGINEER understands that the proposed abutments are anticipated to be supported on driven steel H-
14 piles or small diameter cast-in-drilled-hole (CIDH) concrete piles. The proposed bents are anticipated to be
15 supported on large diameter (approximately 13 feet) CIDH piles that may be 80 to 100 feet long. ENGINEER
16 anticipates that the primary geotechnical considerations will be as follows:

- 17 • Obtaining encroachment permits for the geotechnical field investigation. To avoid delays in the field
18 investigation, it is proposed to perform the geotechnical investigation outside of the BNSF right-of-
19 way (ROW).
- 20 • Presence of sandy soils below the groundwater level that have significant potential for caving. Large
21 diameter CIDH piles that extend below groundwater will, therefore, need to use "wet" method of
22 construction.
- 23 • The proximity of the BNSF railroad and Arlington Channel. Excavations, including those for large
24 diameter CIDH piles, adjacent to the railroad will need to be protected and construction may be
25 subjected to time restrictions per BNSF requirements. Casing may also be required for the large
26 diameter CIDH piles and this may result in increased pile lengths. Special construction
27 staging/procedures will be required for installation of large diameter CIDH piles if the BNSF work-hour
28 restrictions prevent construction of the pile in one stage. The effects of proposed foundations on the
29 Arlington channel wall will also need to be addressed and mitigation measures should be

recommended.

- Presence of clays near existing surface. If these clays are expansive or prone to settlement, over excavation may be required for support of MSE walls and/or any miscellaneous shallow foundations (such as those for temporary bridge over Arlington Channel, support of false work, etc.).

GEOTECHNICAL DESIGN PHASE SERVICES

The purpose of the investigation in Stage I will be to provide geotechnical input to design. The scope of the investigation will consist of the tasks described below.

Geotechnical Task 1 - Work Plan/Permitting:

- Review project and underground utility plans.
- Prepare a field investigation work plan based on our review. ENGINEER currently envisions performing field investigation outside of the BNSF ROW.
- Obtain encroachment/access permits from the COUNTY and the City of Riverside.
- Mark investigation locations in the field.
- Contact Underground Service Alert (USA) to check for locations of underground utilities at the Geotechnical Task 2 field investigation locations.

Geotechnical Task 2 - Subsurface Investigation:

Table 1 - SUBSURFACE INVESTIGATION

LOCATION	PURPOSE	TYPE	DEPTH (feet)	NUMBER	TOTAL (feet)
Abutments	Foundation, settlement period, slope stability	Rotary Wash Boring	80	2	160
Bents	Foundation	Rotary Wash Boring or CPT	100 to 120	7	770
			150	1	150
	Shear wave velocity characterization	CPT	100	1	100
MSE Walls	Subgrade, bearing capacity, settlement, overexcavation, earthwork	Hollow Stem Auger Boring	30 to 50	3	130
Roadway/ Utilities/ Traffic Signals	Pavement thickness, earthwork, foundation design	Hollow Stem Auger Boring	5 to 15	7	65
TOTALS				21	1,375

The subsurface investigation will consist of borings and cone penetration test (CPT), as outlined in Table 1.



1 The field investigation depths selected will investigate the subsurface materials that will be influenced by the
2 proposed project and to investigate liquefaction potential. The number of exploration points selected will
3 provide overall coverage of the project site. Specific elements of the field investigation will consist of the
4 following:

- 5 • Provide traffic control in accordance with the Manual of Uniform Traffic Control Devices (MUTCD) and
6 the California Supplement.
- 7 • Prior to field investigation work, provide exploratory plan showing location of bores for each work
8 being investigated
- 9 • Perform geophysical survey to check for underground utilities at the field investigation locations. The
10 geophysical survey will use a variety of techniques, such as ground penetrating radar (GPR),
11 electromagnetic, electrical resistivity, and magnetometer surveys, to check for underground utilities
12 and confirm that proposed boring/CPT locations are not in conflict with underground utilities.
- 13 • Drill borings with proposed depths 50 feet or less with a truck-mounted hollow stem auger drill rig.
14 The diameter of the borings will be up to 8 inches.
- 15 • Drill the remainder of borings with a truck-mounted rotary wash drill rig. The diameter of the rotary
16 wash boring will be approximately 5 inches.
- 17 • Perform a field measurement to check the rotary wash drill rig sample hammer efficiency.
- 18 • Prepare field logs of borings in general accordance with Caltrans 2010 Soil and Rock Logging
19 Manual.
- 20 • Collect soil samples at approximately 5-foot intervals with either a drive sampler or a standard
21 penetration test (SPT) sampler. Soil samples will be collected for both hollow stem auger and rotary
22 wash bores.
- 23 • Collect bulk samples near the ground surface.
- 24 • Preserve soil samples for geotechnical laboratory testing.
- 25 • Advance the CPT with a truck-mounted rig provided by an independent subcontractor. The diameter
26 of the CPT will be approximately 1.5 inches. DYA will perform shear wave velocity measurements in
27 the CPT at 5-foot intervals.
- 28 • Backfill the rotary wash borings with cement-bentonite slurry.
- 29 • Backfill the hollow-stem auger borings with cuttings. If groundwater is encountered, cement-bentonite

grout will be placed from the bottom of the boring to 10 feet above the depth at which groundwater was encountered.

- Backfill CPT holes with bentonite chips.
- Patch paved surfaces with cold patch asphalt or rapid-set concrete.
- Temporarily store investigation derived waste (IDW) from rotary wash borings in drums adjacent to the boring locations.
- IDW from hollow-stem auger borings (if any) will be spread onsite or disposed at a City/COUNTY approved disposal area if there is no field evidence of contamination. If field evidence of contamination is encountered, the IDW will be drummed similar to those from rotary wash borings.
- Collect composite samples from IDW in drums to perform environmental testing for disposal purposes; see Task 2A.

Geotechnical Task 2A - Disposal of IDW: IDW generated during the field investigation will be temporarily stored on site while being tested for disposal purposes only. This scope of work does not include testing for environmental site characterization. Testing will be performed by an outside independent laboratory. ENGINEER estimates that the laboratory tests outlined in Table 2 will be conducted.

Table 2 - LABORATORY TESTS

TEST	PURPOSE	QUANTITY
Total recoverable petroleum hydrocarbons (TRPH) (EPA test method 418.1)	Hydrocarbon contamination	10
Volatile organic compounds (EPA test method 8260)	Hydrocarbon contamination	4
Full-range hydrocarbons (EPA test method 8015, modified)	Hydrocarbon contamination	4
California administrative code (CAC) metals (EPA test method 6000 and 7000 series)	Metal contamination	2
<p>Note: The type and number of tests are approximate and are intended to characterize the investigation derived waste (IDW) for disposal purpose only. Environmental characterization of the subsurface soils is not part of this scope but can be provided; see optional geotechnical task 9.</p>		

The IDW will be characterized based on the environmental test results noted in Table 2. If the IDW is characterized as nonhazardous, the IDW will be disposed of at a treatment, disposal, and storage facility (TDSF). If the IDW is characterized as hazardous, the IDW will have to be disposed at a hazardous waste facility. It is assumed that the IDW will be characterized as nonhazardous and can be disposed of in a TDSF.



The COUNTY's waste generator identification number (ID), if needed, will be used in the IDW waste disposal manifest.

Geotechnical Task 3 - Geotechnical Laboratory Testing: Soil samples collected during the field investigation will be re-examined to confirm their field classifications and to select soil samples for geotechnical testing. Testing will be performed in the laboratory. The laboratory geotechnical tests outlined in Table 3 will be performed.

Table 3 - LABORATORY TESTS

TEST	PURPOSE	QUANTITY
Moisture content/dry density	Correlation/grading factors	100
Atterberg limits/particle size distribution	Classification/correlation/expansion potential	50
Sand equivalent	Correlation/bedding	2
Shear strength	Foundations/lateral earth pressures/stability	15
Consolidation	Settlement/expansion/collapse potential	4
Expansion index	Expansion	4
Compaction	Correlation/grading factors	4
R-value	Pavement thickness	3
pH, sulfates, chlorides, and electrical resistivity	Soil corrosion potential	10 sets

Geotechnical Task 4 - Engineering Analyses: The results of the data review and field and laboratory tests will be analyzed. ENGINEER will provide engineering conclusions and recommendations regarding:

- Site conditions.
- Seismic hazards, ground motions, and design acceleration response spectra.
- Groundwater and liquefaction potential and mitigation.
- Pile foundation type, capacity, and settlement for bridge support.
- Shallow foundation bearing capacity and settlement for miscellaneous improvements.
- Small diameter drilled shaft recommendations, if applicable, for traffic poles.
- Effects of proposed foundation on existing Arlington Channel and recommended mitigation.



- 1 • Stability of existing and proposed slopes.
- 2 • Embankment materials, stability, and settlement.
- 3 • MSE wall external stability.
- 4 • Lateral earth pressures and resistance to lateral loads.
- 5 • Earthwork including backfilling and bedding for utilities.
- 6 • Asphalt concrete (AC) and Portland cement concrete (PCC) pavement thickness.
- 7 • Soil corrosion potential.

8 **Geotechnical Task 5 - Reporting/Management:** The conclusions and recommendations together with the
9 supporting field and laboratory test results will be presented in formal reports. The reports will be in general
10 accordance with the guidelines for Caltrans foundation and geotechnical design reports. The foundation
11 report will address the pile foundations for the grade separation and the design report will address the MSE
12 walls, pavement, utilities, earthwork, and other miscellaneous improvements. Construction considerations
13 pertaining to geotechnical matters will be included in the report. Any field evidence of contamination and
14 environmental test results (Task 8) will be included in the report. The report can indicate whether off-site
15 disposal or remediation will be required based on the test results. However, recommendations for methods of
16 remediation (if needed) are not included in the scope. Any specific requirements for recommendations for
17 remediation are additional to this scope. The draft geotechnical engineering reports will be provided in
18 electronic format (to reduce paper usage). After receipt of comment on the draft reports, ENGINEER will
19 provide one original and three copies of the final geotechnical engineering reports to the COUNTY.
20 ENGINEER will also prepare Caltrans style logs of test borings (LOTB).

21 **Geotechnical Task 6 - Consultation:** ENGINEER anticipates completing Geotechnical Tasks 1 through 5
22 services by the 65% submittal due date. Additional consultation, engineering analyses, and report revisions
23 will be performed to meet the requirements of the project and COUNTY.

24 **Geotechnical Task 7 - Review Plans and Specifications:** ENGINEER will review the plans and
25 specifications for conformance to the geotechnical recommendations contained in the geotechnical reports.

26 **Optional Geotechnical Task 8 - Investigation for Aerially Deposited Lead (ADL):** If initial testing in Task 2
27 detects the presence of ADL, and with approval of COUNTY, perform ADL study in accordance with Caltrans
28 minimum ADL investigation requirements.. The investigation will consist of the following:

- 29 • Health and Safety Plan - Preparing a health and safety plan (HSP) endorsed by a Certified Industrial



1 Hygienist.

- 2 • Permits - Obtaining an encroachment permit.
- 3 • Work Plan - Prepare a work plan that includes the HSP.
- 4 • Borings - Drill one boring location for every 300 feet or less. The task assumes a total of 12 locations.
- 5 Some of the borings proposed for roadway/utilities in Task 2 will be utilized for ADL study as well.
- 6 • Soil Sampling - At each boring location, obtain four soil samples at depths of zero (ground surface),
- 7 0.5 foot, 1 foot, and 5 feet, unless there is drilling refusal. These sample depths assume that ADL
- 8 generally does not extend deeper than 5 feet. If conditions indicate ADL extends deeper than 5 feet,
- 9 the sampling depths may need to be extended deeper, and a separate cost estimate will be provided.
- 10 • Traffic Safety - Provide traffic control in accordance with MUTCD.
- 11 • Laboratory Analysis - Initially, the soil samples from the borings will be analyzed for lead total
- 12 threshold limit concentration (TTL) by EPA Method 6010B. A minimum of 20 soil samples will be
- 13 analyzed. Discreet soil samples will be tested; composite sampling will not be performed. Caltrans
- 14 guidelines (2001) recommend that soil samples with TTL less than 1,000 milligrams per kilogram
- 15 (mg/kg), but greater than or equal to 50 mg/kg be tested for soluble lead using the California waste
- 16 extraction test (WET) to determine the soluble threshold limit concentration (STLC) using EPA
- 17 method 6010B. If the STLC is greater than 5 milligrams per liter (mg/l), the laboratory shall proceed
- 18 with the California WET using de-ionized water (DI-WET) and EPA method 6010B on the soil
- 19 samples. Soil samples with total lead concentrations greater than 1,000 mg/kg or 25 percent of soil
- 20 samples tested for total lead, whichever is greater, will be tested for toxicity characterization leaching
- 21 procedure (TCLP), EPA method 6010B. Soil samples with the highest total lead concentrations will
- 22 be tested for TCLP if not enough samples contain total lead greater than 1,000 mg/kg. In addition, a
- 23 minimum of 4 soil samples or 10 percent of the samples tested for total lead, whichever is higher, will
- 24 also be analyzed for soil pH (EPA 9045C) and California Title 22 metals. Soil samples with the
- 25 highest total lead concentration will be tested for California Title 22 metals. ENGINEER estimates to
- 26 conduct the ADL laboratory tests outlined in Table 4.
- 27
- 28
- 29

Table 4 - ESTIMATED ADL LABORATORY TESTING

Test Procedure	Estimated Quantity
Total Lead (EPA 6010)	40
Extractable Lead California (WET)	15
Extractable Lead California (DI-WET)	15
Toxicity Characterization Leaching Procedure (TCLP)	10
Title 22 Metals	4
pH	4

- Statistical Analysis - Analysis of the laboratory test results in accordance with EPA SW-846 will be performed.
- Reporting - Conclusions and recommendations will be presented in a separate ADL report.

Note: Recommendations for methods of remediation of ADL are not included in the scope of work. Any recommendations for remediation of ADL will be additional to the scope of work.

Optional Geotechnical Task 9 - Testing Soil Samples for Contamination: Significant amount of soils will need to be removed for the construction of large diameter CIDH piles planned for the bridge support. Previous Phase I Initial Site Assessment of the site soils did not reveal any known contamination, other than ADL, within the project alignment. However, since disposal of contaminated material may result in significant cost during construction, it might be desirable to check the subsurface soils for contamination during the investigation stage. If authorized, soil samples will be collected during the Task 2 investigation for contamination testing. The following will be performed under this task:

- Monitor the soil sample headspace for volatile organic compounds using a photo ionization detector (PID).
- Decontaminate the sampling equipment between each sample locations and decontaminate the drilling equipment between each boring locations.
- Collect soil samples at select intervals, label, store, and transport them to the Environmental testing laboratory using chain-of-custody protocol.

- Performing 24 Total recoverable petroleum hydrocarbons (TRPH- EPA test method 418.1), 12 Volatile organic compounds (EPA test method 8260), 12 Full-range hydrocarbons (EPA test method 8015, modified), and 6 California administrative code (CAC) metals (EPA test method 6000 and 7000 series).
- Include a summary of the test results in the Geotechnical Design Report.

Geotechnical Assumptions

- 1. No Night Time or Saturday Field Investigation:** Night time and Saturday geotechnical field investigations are not included in this scope. If field investigations need to be performed during night time or Saturdays, outside drilling contractors and traffic personnel will be subject to overtime and additional charges that will apply. For night-time drilling, additional lighting equipment will also be required.
- 2. No Hot Patch Asphalt for Borings:** Hot patch asphalt of borings are not included in this scope. If required by the COUNTY or City of Riverside, the cold patch asphalt placed at the boring locations will be replaced with hot patch asphalt at an additional cost.

L. RAILROAD COORDINATION

Provide assistance to the Project Team and COUNTY, as needed with Railroad coordination during the development of the project and project plan and specification review process.

- Decision and Action log will be maintained to documents, meetings, submittals, review comments, decisions and actions

Railroad Construction and Maintenance Agreement

Assist the COUNTY to coordination meetings and conferences as needed with the Railroad for the development of the Construction and Maintenance Agreement. This Agreement must be in place for the COUNTY to request an allocation from the CPUC grade separation Priority list.

- Coordinate with the BNSF and COUNTY for the development of the COUNTY/Railroad New Public Road Crossing Underpass/Overpass Agreement.
- Assist the COUNTY with the determination of the Railroad's estimated mandatory contribution towards the total project costs. Coordinate with the Railroad during the development of the preliminary plan for the grade separation and solicit their input and separation requirements.
- Request the Railroad to prepare the New Public Road Crossing Agreement.



- 1 • Meet and confer with the Railroad regarding the terms and conditions of the Agreement.
- 2 • Coordinate with the project team to furnish plans and cost estimates to the Railroad for said
- 3 agreement.
- 4 • Coordinate with the project Surveyor for the preparation of the legal description for the permanent
- 5 bridge crossing of the Railroad right of way and the temporary construction easement.
- 6 • Monitor and coordinate the development of the Agreement with the Railroad and the COUNTY.
- 7 • Keep the COUNTY updated with regards to the progress of the Agreement development.
- 8 • Make recommendations to the COUNTY regarding the terms of project specific conditions addressed
- 9 in the Agreement.
- 10 • With the COUNTY concurrence, negotiate with the Railroad the terms of project specific conditions.
- 11 • Coordinate with, and provide assistance to, the County staff and attorney regarding the terms of the
- 12 agreement.
- 13 • The Railroad will be responsible for preparing the plans and doing the work to alter crossing for
- 14 construction phasing, if necessary within 10' of the centerline of the tracks including crossing signal
- 15 protection.
- 16 • The Railroad will remove the existing crossing within 10' of the centerline of the tracks and remove
- 17 existing signals.

18 Of particular concern in the development of this agreement is the Railroad's mandatory contribution towards
19 the cost of the project and that it is not worded in such a manner as to preclude the COUNTY from obtaining
20 an allocation from the CPUC Grade Separation Priority List, Section 190 funds. The Railroad's contribution
21 shall be stated as an estimate of the agreed upon cost of their participation.

22 The above task includes:

- 23 • COUNTY/Railroad New Public Road Crossing Underpass/Overpass Agreement.
- 24 • Coordinate and monitor Railroad's review and approval process.
- 25 • Decision and Action log will be maintained to document meetings, document submittals,
- 26 document review comments, decisions and actions.

27 CPUC Order Authorizing Construction of a Grade Separation

28 A field diagnostics meeting will be arranged with the CPUC and BNSF. A part of this field review meeting will
29 be for the CPUC Area Engineer to review the site and to gain their input as to their concerns.



- 1 • Review the site, proposed construction phasing; evaluate the need to alter the existing grade crossing
2 for construction of the grade separation, need for reduced horizontal and or vertical clearance for
3 construction and other matters related to the application for an Order Authorizing Construction of a
4 Grade Separation.
- 5 • The California Public Utilities Commission, CPUC, approves the request to construct a Grade
6 Separation.
- 7 • A request to the CPUC, General Order 88-B, will be prepared and submitted for approval.

8 GO-88-B is the process to obtain approval for the grade separation. Because it is a staff level approval the
9 process should take about 60 days for approval. If the existing at-grade crossing protection is to be altered to
10 allow the existing crossing to remain open to public traffic during construction; additional information will be
11 submitted at that time showing the proposed alterations.

12 The request for approval for the Grade Separation requires the following;

- 13 • Evidence of environmental clearance.
- 14 • A letter from the BNSF and Metrolink as rail users stating no objection to the proposed Grade
15 Separation.
- 16 • The ENGINEER will provide the application to the CPUC for Order Authorizing Construction.
- 17 • CPUC Order Authorizing Construction of a Grade Separation.
- 18 • Coordinate and monitor CPUC approval process.

19 Optional Task 2.9- \$5.0 Million Allocation from the CPUC Grade Separation Priority List (Section 190 Funds)

20 The Section 190 program is funded by the legislature for \$15.0 million per year. The project is on the current
21 2010/2011 and 2011/2012 Priority List and currently rank No. 4, which qualifies the project for requesting a
22 \$5.0 mil allocation. Should the project not be successful in receiving an allocation in the 2011/2012 fiscal
23 year, the project will have to be re-nominated to the 2012/2013 and 2013/2014 CPUC Grade Separation
24 Priority List and requests for an allocation must be made from these fiscal years. Projects are eligible for an
25 allocation up to 80% of the project cost not to exceed \$5.0 mil under two (2) sets of circumstances;

- 26 • Prior to Construction, the project must be on the priority list from which the request for an allocation is
27 being made and if the project reaches a high enough priority the funding will be based on the total
28 project cost including construction.
- 29 • During, and subsequent to, Construction; the project must be on the priority list from which the

1 request for an allocation can be made and if the project reaches a high enough priority the allocation
2 will be based on the cost of construction.

3 Projects that have all their entitlements in place, and can fund their share of project cost, stand the best
4 chance in receiving an allocation. Request for allocations are due April 1, of each year and are made to
5 Caltrans Division of Rail. The ENGINEER will make application to Caltrans for an allocation.

6 The request for an allocation requires;

- 7 • Environmental clearance documentation for the project.
- 8 • Complete Construction and Maintenance Agreement including the Railroad's contribution towards the
9 estimated total project cost.
- 10 • CPUC Order Authorizing Construction of the Grade Separation.
- 11 • Resolution by the COUNTY Board of Supervisors stating they have the necessary funds to complete
12 the project.
- 13 • Resolution by the COUNTY Board of Supervisors that the City can award a construction contract
14 within two (2) years after receiving an allocation.
- 15 • The ENGINEER will prepare the draft Resolutions for the COUNTY and formally request a \$5.0
16 allocation from Caltrans.

17 The above task includes:

- 18 • Prepare a Request for a \$5.0 million allocation from the 2010/2011 and/or 2011/2012 Grade
19 separation Priority List. Total two (2) requests.
- 20 • Prepare a nomination application for the project to the 2012/2013 and 2013/2014 Grade Separation
21 priority list, if necessary.
- 22 • Coordinate and monitor Caltrans Division of Rail approval process.

23 **M. BRIDGE AESTHETICS**

24 **TASK I, BRIDGE AESTHETICS PRELIMINARY DESIGN SERVICES**

25 The proposed bridge aesthetic design services for the project. The general tasks include:

- 26 • Review the existing data to become familiar with the project.
- 27 • Visit the site by the Bridge Aesthetics Architect.
- 28 • Bridge Aesthetics Architect will meet with the COUNTY and design team to discuss the project design
29 parameters.

- 1 • Bridge Aesthetics Architect shall prepare various exhibits and sketches in color to illustrate alternative
- 2 bridge enhancement design concepts. Enhancement elements shall include, but not be limited to
- 3 railing and guardrail design, cost relief treatment of superstructure, column cap design and abutment
- 4 design, light fixture design, and other design elements.
- 5 • Prepare Conceptual Statement of probable cost for alternatives.
- 6 • Present Alternatives to the PDT and to the COUNTY.
- 7 • Based on input and comments from meetings, revise all design concepts to develop a preferred
- 8 design alternative.
- 9 • Prepare Final Design Package including site plan, overall elevation of both sides, two bridge sections,
- 10 six thumbnail sketches, one birds-eye perspective and selected enlarged details of proposed
- 11 enhancement features. Materials, colors, and textures will also be identified.

12 **TASK II, BRIDGE AESTHETICS CONSTRUCTION DOCUMENTS**

13 Based on approved preferred design alternative, prepare final design for the bridge including:

- 14 • Details for architectural enhancement features.
- 15 • Photometric analysis to verify light pole spacing and minimum illumination levels.
- 16 • Final selection of color, texture, and materials.
- 17 • Specifications.
- 18 • Prepare plan check revisions.

19 **N. LANDSCAPING**

20 **LANDSCAPE CONSTRUCTION DOCUMENTS**

21 Based upon ENGINEER and COUNTY approval of the conceptual plan, complete the preparation of the

22 following documents in sufficient detail to facilitate construction:

- 23 • Project Base Sheet – work from project base data, overhead structure engineering drawings and
- 24 aerial photography.
- 25 • Landscape Demolition/Salvage Plan – This plan will identify plant material to remain in place or be
- 26 boxed for future replanting. The plan will also identify irrigation system demolition limits and
- 27 necessary interim changes needed to maintain existing systems in operational condition.
- 28 • Landscape/Hardscape Construction Plan and Details – This plan will locate and identify landscape
- 29 hardscape and paving enhancements within areas identified for landscape.

- 1 • Monument Signage and Details – ENGINEER will relocate the existing Home Gardens gateway sign
2 or design a new monument sign, in a new location, to replace the existing gateway signage.
3 Coordinate with EDA or a Home Gardens community group to decide if the design can be changed or
4 if it has to match any of the other Home Gardens entry signs. ENGINEER will initially prepare two
5 alternate conceptual designs for new signage and color render each. Based upon EDA, or community
6 group input, revise or develop a hybrid signage design and prepare a color rendering of each for
7 approval. Based upon EDA / community group approval of the conceptual design, prepare
8 construction drawings for new sign or relocate the existing sign. Coordinate with the project electrical
9 engineer for monument signage lighting if required.
- 10 • Planting Plan and Details – This plan will locate and identify shrub and ground plane landscape
11 treatments, street trees, and all other items of plant material to be used.
- 12 • Irrigation Plan and Details - This plan will layout all proposed piping, valves, sprinkler heads, drip
13 emitters or dripline, mainline, backflow prevention and weather based controller for all planted areas.
14 Provide input to the project electrical Engineer for irrigation controller electric service needs. Specify
15 the water meter and coordinate with the local water purveyor.
- 16 • Prepare calculations and documentation for landscape and irrigation systems for compliance with
17 CalGreen requirements.
- 18 • Specifications - Prepare technical specifications for landscape construction, planting and irrigation.
- 19 • Opinion of Probable Construction Cost - Prepare an opinion of probable construction progress cost
20 based upon the final drawings.

21 **LANDSCAPE MEETINGS AND COORDINATION**

- 22 • Participate in coordination meetings with ENGINEER and COUNTY as required for general
23 landscape aesthetics, plan and team coordination.
- 24 • Coordinate time with County EDA regarding disposition of the existing landscaping and setting up
25 maintenance responsibilities for the future landscaping.
- 26 • Provide for meetings and coordination with the COUNTY, the County EDA or a designated Home
27 Gardens community group and the ENGINEER to determine whether the existing monument sign
28 should be relocated or redesigned.



- Coordinate with County EDA or a Home Gardens community group, to decide if the design can be changed or if it has to match any of the other Home Gardens entry signs. ENGINEER will present progress designs for input/approval.

O. PUBLIC INFORMATION

ENGINEER will assist the COUNTY as needed in meetings and presentations to local businesses, property owners and stakeholders. Meetings and presentations may include right-of-way negotiations, access during construction, informational handouts, and materials for COUNTY website.

P. DELIVERABLES

Deliverables (65%, 95%, 100%):

- | | |
|---|---|
| 1. Structure Plans. | 13. Summary of Quantities. |
| 2. Checked Structure Plans. | 14. Sign Plans, Details and Quantities. |
| 3. Title Sheet. | 15. Lighting Plans and electrical details. |
| 4. Typical Cross Sections. | 16. Landscape and Irrigation Plans and details |
| 5. Construction Details. | 17. Revised or New Standard Plan Sheets. |
| 6. Contour Grading Plans. | 18. Miscellaneous Details. |
| 7. Drainage Plans, Drainage Profiles and Drainage
Details. | 19. Construction Control Survey Maps(s). |
| 8. Hydrology and Hydraulics Reports. | 20. Construction Cost Estimate and Data. |
| 9. Utility Relocation Plans and Details, as
necessary. | 21. Draft Special Provisions-Computer Format. |
| 10. Stage Construction, Traffic Control Plans and
Detours. | 22. Draft PS&E (65%, 95%, 100% Submittals). |
| 11. Construction Area Signs Plan. | 23. Final PS&E (camera ready Submittal). |
| 12. Pavement Delineation/Striping, Pavement
Markers Plans and Details. | 24. Provide one (1) full size plan sets of mylars,
one (1) set of specifications, and a copy of
each on CD. |
| | 25. As Built Plans |

ARTICLE AIV • CONSTRUCTION BIDDING AND DESIGN SUPPORT DURING CONSTRUCTION PHASE

No work shall be performed under the Construction Bid Support and Design Support During Construction Phase (Phase III) without explicit written authorization from the COUNTY.

A. CONSTRUCTION BIDDING SUPPORT

Bidding procedures will be the responsibility of COUNTY. 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 an addendum prepared by the ENGINEER and issued by COUNTY or by covering change order after the award of the construction contract.

B. DESIGN SUPPORT DURING CONSTRUCTION

1. GENERAL

- a. ENGINEER shall attend the pre-construction meeting with the successful construction contractor upon notification by the COUNTY.
- b. Review and take appropriate action upon client supplied Requests for Information (RFI's), Requests for Change (RFC's) and Contract Change Orders (CCO's). The reviews and actions shall be for conformance with the design concept of the Project and with appropriate construction specifications and details.
- c. Review and take appropriate actions upon client supplied Contractor submittals such as shop drawings, samples of construction material, and product data as required in the construction documents. Review and action shall be only for conformance with the design concept of the Project and with the information given in the construction documents. Review of any Contractor prepared drawings shall not relieve the Contractor from its sole responsibility for dimensions, quantities, calculations, weights, fabrication processes, construction means and methods, coordination of trades or safety factors related to construction.
- d. Provide adjustments and revisions to design based upon unanticipated and/or unknown field conditions encountered during the course of construction.
- e. ENGINEER shall be available to visit to the jobsite for on-site review of construction and other



1 visits to the jobsite as requested by the COUNTY to resolve any discrepancies in the contract
2 documents. ENGINEER shall bring to the attention of the COUNTY Resident Engineer any
3 defects or deficiencies in the work by the construction contractor which the ENGINEER may
4 observe. ENGINEER shall have no authority to issue instructions on behalf of the COUNTY or to
5 deputize another to do so. All agreements shall be between the COUNTY and its construction
6 contractor. These provisions shall not be construed as making the ENGINEER responsible for
7 failure of the construction contractor to carry out the work in accordance with the contract
8 documents nor the construction means or methods or techniques, sequences, procedures or
9 safety programs in connection with the work.

- 10 f. ENGINEER shall prepare and deliver to the COUNTY the "As-Built" plans within two months of
11 ENGINEER's receipt of red-line "as-built" drawings from construction contractor or COUNTY.

12 **2. LANDSCAPE CONSTRUCTION OBSERVATION**

- 13 a. Construction Observation – Provide support by making periodic field observation visits, providing
14 clarifications and reviewing submittals upon request. The estimated following site observation
15 visits may be necessary:
- 16 b. Pre-construction meeting.
 - 17 c. Tree Demolition/Salvage.
 - 18 d. Hardscape Layout review.
 - 19 e. Irrigation - Mainline and Equipment.
 - 20 f. Irrigation – Laterals, Coverage Test.
 - 21 g. Planting – Tag/Approve trees at grower source.
 - 22 h. Planting – Approve Plant Material Spotting.
 - 23 i. Final Walk-Through/Begin Landscape Maintenance.
 - 24 j. 30/60/90 Day Landscape Maintenance period review.
 - 25 k. Final Walk-through/Owner Acceptance.
 - 26 l. General Office Coordination.
 - 27 m. Review of contractors redlined irrigation as-built drawings and AutoCAD entry of as-built
28 information.
- 29



ARTICLE AV • PROJECT COORDINATION, MEETINGS AND PRESENTATIONS

ENGINEER shall update the COUNTY on the progress to date, work to be accomplished in the next period, and potential problems of a technical nature or forecasted budget/schedule requirement.

ARTICLE AVI • COUNTY FURNISHED MATERIALS/ELEMENTS OF WORK

The COUNTY will be responsible for the following:

- Aerial topographic survey mapping, control surveys and right-of-way base mapping.
- Right-of way unit costs.
- Right-of-way, right of entry, and easement acquisition services.
- Legal and plats for right-of-way and easement acquisition. Contact and execute all documents related to right-of-way, right of entry and easement with the involved property owners.
- Plans, studies and other documents that are readily available to the COUNTY that would assist the ENGINEER with the grade separation studies.



Magnolia Avenue/BNSF Grade Separation Project Fee Proposal Summary

April 6, 2011

COMPANIES	PHASE I	PHASE II	PHASE III	PHASE IV	TOTAL
ABCOM Plans		\$ 1,659,086.11	\$ 32,478.04	\$ 93,444.70	\$ 1,785,008.85
Diaz Younan Geotechnical		\$ 195,779.90			\$ 195,779.90
Douglas Engineering Utilities/PUC		\$ 167,769.74			\$ 167,769.74
Thirteenth Street Architects Bridge Aesthetics		\$ 48,680.00			\$ 48,680.00
RHA Landscaping Landscaping		\$ 53,180.25		\$ 32,917.20	\$ 86,097.45
TOTAL		\$ 2,124,495.99	\$ 32,478.04	\$ 126,361.90	\$ 2,283,335.94

- Phase I **Preliminary Engineering & Environmental (completed)**
- Phase II **Plans, Specs & Estimates**
- Phase III **Bid Support**
- Phase IV **Construction Support**

FEE PROPOSAL WORKSHEET

COMPANY: AECOM	SCOPE OF WORK: Project Summary	PHASE: All Phases
PROJECT: Magnolia Avenue/BNSF Grade Separation Project		DATE: April 6, 2011

DIRECT LABOR

PERSONNEL	POSITION	HOURS	RATE	AMOUNT
Edward Ng	Project Manager	910	@ \$75.19	\$68,422.90
Mahmoud Khodr	Traffic Engineer	260	@ \$64.97	\$16,892.20
Alicia Colburn	Envir Coord	16	@ \$50.13	\$802.08
Robert Wong/Nadia D'Paraschi-Tigo	Sr Proj Engineer	70	@ \$52.00	\$3,640.00
Paul Lau	Project Engineer	491	@ \$46.14	\$22,654.74
Albert Pan	Project Engineer	130	@ \$46.80	\$6,084.00
Mike Flores	Associate Engineers	40	@ \$44.80	\$1,792.00
Tim Liu	Sr Design Engineer	216	@ \$35.86	\$7,745.76
Nelly Lo	Design Engineer	280	@ \$32.99	\$9,237.20
Heng Chow	Design Engineer	424	@ \$36.58	\$15,509.92
Nicolas Borrayo	Assistant Engineer	732	@ \$28.84	\$21,110.88
Julian Yap/Danny Pheng	Assistant Engineer	912	@ \$27.68	\$25,244.16
Phong Mai	Assistant Engineer	792	@ \$27.54	\$21,811.68
Mauro Mamawal	CADD	480	@ \$27.54	\$13,219.20
Nisa Hester	Project Controls	96	@ \$58.42	\$5,608.32
Norman Suydam	QA/QC	80	@ \$79.36	\$6,348.80
Sandra Kent	Clerical/Admin	128	@ \$21.83	\$2,794.24
James Faber	Principal in Charge		\$92.40	
Mohan Char	Structure Task PM	462	@ \$85.00	\$39,270.00
Limin He	Principal Bridge Engineer	642	@ \$60.11	\$38,590.62
Robert Price/Jackie Wang	Senior Bridge Engineer	944	@ \$61.09	\$57,668.96
Alicia Colburn	Enviro/Local Assis. Coord.			
Various	Bridge Engineer	1,020	@ \$55.00	\$56,100.00
Various	Associate Bridge Engineer	1,594	@ \$39.00	\$62,166.00
Various	Assistant Bridge Engineer		\$31.00	
Various	Senior CAD Technician	1,320	@ \$45.00	\$59,400.00
Various	Clerical	120	@ \$25.00	\$3,000.00
Robert Matthews	QA/QC	110	@ \$75.00	\$8,250.00
John Kim	Project Lead Engr	482	@ \$67.41	\$32,491.62
Joel Obedoza	Senior Engineer	752	@ \$55.50	\$41,736.00
Cris Canlobo	Assistant Eng/CADD	568	@ \$47.04	\$26,718.72

TOTAL HOURS **14,071** TOTAL DIRECT LABOR **\$674,310.00**

MULTIPLIERS

ESCALATION @		(Rates Vary by Phase)	
OVERHEAD @	135.00%	(of Direct Labor + Escalation)	\$910,318.50
PAYROLL ADDITIVES @		(of Direct Labor + Escalation)	
PROFIT (FIXED FEE) @	10.0%	(of Direct Labor + Escalation + Overhead + Payroll Additives)	\$158,462.85
TOTAL MULTIPLIERS			\$1,068,781.35

OTHER DIRECT COSTS

... Billed at Actual Cost ...

ITEM	QUANTITY	UNIT	UNIT COST	AMOUNT
Reproduction	1	Actual Cost	@ \$24,000.00	\$24,000.00
Copying	1	Actual Cost	@ \$9,200.00	\$9,200.00
Plotting	1	Actual Cost	@ \$4,500.00	\$4,500.00
Transportation/Travel	3650	MI	@ \$0.55	\$2,007.50
Special Deliveries	221	EA	@ \$10.00	\$2,210.00

TOTAL ODC'S **\$41,917.50**

SUB CONSULTANT SERVICES

COMPANY	LABOR	MULTIPLIERS	ODC'S	TOTAL
Diaz Youman	\$33,878.64	\$75,066.26	\$86,835.00	\$195,779.90
Douglas Engineering	\$44,532.00	\$61,917.74	\$61,320.00	\$167,769.74
Thirtieth Street Architects	\$45,180.00		\$3,500.00	\$48,680.00
RHA Landscaping	\$73,169.00	\$7,316.90	\$5,611.55	\$86,097.45

TOTAL SUBCONSULTANT SERVICES **\$498,327.09**

TOTAL **\$2,283,335.94**

FEE PROPOSAL WORKSHEET		
COMPANY: AECOM	SCOPE OF WORK: Preliminary Engineering & Environmental (completed)	PHASE: Phase I
PROJECT: Magnolia Avenue/BNSF Grade Separation Project		DATE: April 6, 2011

DIRECT LABOR

PERSONNEL	POSITION	HOURS	RATE	AMOUNT
Edward Ng	Project Manager		\$75.19	
Mahmoud Khodr	Traffic Engineer		\$64.97	
Alicia Colburn	Envir Coord		\$50.13	
Robert Wong/Nadia D'Paraschi-Tigo	Sr Proj Engineer		\$52.00	
Paul Lau	Project Engineer		\$46.14	
Albert Pan	Project Engineer		\$46.80	
Mike Flores	Associate Engineers		\$44.80	
Tim Liu	Sr Design Engineer		\$35.86	
Nelly Lo	Design Engineer		\$32.99	
Heng Chow	Design Engineer		\$36.58	
Nicolas Borryo	Assistant Engineer		\$28.84	
Julian Yap/Danny Pheng	Assistant Engineer		\$27.68	
Phong Mai	Assistant Engineer		\$27.54	
Mauro Mamawal	CADD		\$27.54	
Nisa Hester	Project Controls		\$58.42	
Norman Suydam	QA/QC		\$79.36	
Sandra Kent	Clerical/Admin		\$21.83	
James Faber	Principal in Charge		\$92.40	
Mohan Char	Structure Task PM		\$85.00	
Limin He	Principal Bridge Engineer		\$60.11	
Robert Price/Jackie Wang	Senior Bridge Engineer		\$61.09	
Alicia Colburn	Enviro/Local Assis. Coord.			
Various	Bridge Engineer		\$55.00	
Various	Associate Bridge Engineer		\$39.00	
Various	Assistant Bridge Engineer		\$31.00	
Various	Senior CAD Technician		\$45.00	
Various	Clerical		\$25.00	
Robert Matthews	QA/QC		\$75.00	
John Kim	Project Lead Engr		\$67.41	
Joel Obedoza	Senior Engineer		\$55.50	
Cris Canlobo	Assistant Eng/CADD		\$47.04	

TOTAL HOURS

TOTAL DIRECT LABOR

MULTIPLIERS

ESCALATION @		(of Direct Labor)
OVERHEAD @	135.00%	(of Direct Labor + Escalation)
PAYROLL ADDITIVES @		(of Direct Labor + Escalation)
PROFIT (FIXED FEE) @	10.0%	(of Direct Labor + Escalation + Overhead + Payroll Additives)

TOTAL MULTIPLIERS

OTHER DIRECT COSTS

*** Billed at Actual Cost ***

ITEM	QUANTITY	UNIT	UNIT COST	AMOUNT
Reproduction		Actual Cost	\$24,000.00	
Copying		Actual Cost	\$9,200.00	
Plotting		Actual Cost	\$4,500.00	
Transportation/Travel		MI	\$0.55	
Special Deliveries		EA	\$10.00	

TOTAL ODC'S

SUB CONSULTANT SERVICES

COMPANY	LABOR	MULTIPLIERS	ODC'S	TOTAL
Diaz Youman				
Douglas Engineering				
Thirtieth Street Architects				
RHA Landscaping				

TOTAL SUBCONSULTANT SERVICES

TOTAL

BID PROPOSAL WORKSHEET		
COMPANY: AECOM	SCOPE OF WORK: Plans, Specs & Estimates	PHASE: Phase II
PROJECT: Magnolia Avenue/BNSF Grade Separation Project		DATE: April 6, 2011

DIRECT LABOR

PERSONNEL	POSITION	HOURS	RATE	AMOUNT	
Edward Ng	Project Manager	710	@ \$75.19	\$53,384.90	
Mahmoud Khodr	Traffic Engineer	232	@ \$64.97	\$15,073.04	
Alicia Colburn	Envir Coord	16	@ \$50.13	\$802.08	
Robert Wong/Nadia D'Paraschi-Tigo	Sr Proj Engineer	54	@ \$52.00	\$2,808.00	
Paul Lau	Project Engineer	435	@ \$46.14	\$20,070.90	
Albert Pan	Project Engineer	110	@ \$46.80	\$5,148.00	
Mike Flores	Associate Engineers	40	@ \$44.80	\$1,792.00	
Tim Liu	Sr Design Engineer	184	@ \$35.86	\$6,598.24	
Nelly Lo	Design Engineer	260	@ \$32.99	\$8,577.40	
Heng Chow	Design Engineer	424	@ \$36.58	\$15,509.92	
Nicolas Borrayo	Assistant Engineer	644	@ \$28.84	\$18,572.96	
Julian Yap/Danny Pheng	Assistant Engineer	912	@ \$27.68	\$25,244.16	
Phong Mai	Assistant Engineer	792	@ \$27.54	\$21,811.68	
Mauro Mamawal	CADD	480	@ \$27.54	\$13,219.20	
Nisa Hester	Project Controls	96	@ \$58.42	\$5,608.32	
Norman Suydam	QA/QC	80	@ \$79.36	\$6,348.80	
Sandra Kent	Clerical/Admin	128	@ \$21.83	\$2,794.24	
James Faber	Principal in Charge		\$92.40		
Mohan Char	Structure Task PM	382	@ \$85.00	\$32,470.00	
Limin He	Principal Bridge Engineer	594	@ \$60.11	\$35,705.34	
Robert Price/Jackie Wang	Senior Bridge Engineer	388	@ \$61.09	\$54,247.92	
Alicia Colburn	Enviro/Local Assis. Coord.				
Various	Bridge Engineer	992	@ \$55.00	\$54,560.00	
Various	Associate Bridge Engineer	1,574	@ \$39.00	\$61,386.00	
Various	Assistant Bridge Engineer		\$31.00		
Various	Senior CAD Technician	1,264	@ \$45.00	\$56,880.00	
Various	Clerical	120	@ \$25.00	\$3,000.00	
Robert Matthews	QA/QC	110	@ \$75.00	\$8,250.00	
John Kim	Project Lead Engr	462	@ \$67.41	\$31,143.42	
Joel Obedoza	Senior Engineer	712	@ \$55.50	\$39,516.00	
Cris Canlobo	Assistant Eng/CADD	568	@ \$47.04	\$26,718.72	
		TOTAL HOURS	13,263	TOTAL DIRECT LABOR	\$627,241.24

MULTIPLIERS

ESCALATION @		(of Direct Labor)		
OVERHEAD @	135.00%	(of Direct Labor + Escalation)	\$846,775.67	
PAYROLL ADDITIVES @		(of Direct Labor + Escalation)		
PROFIT (FIXED FEE) @	10.0%	(of Direct Labor + Escalation + Overhead + Payroll Additives)	\$147,401.69	
			TOTAL MULTIPLIERS	\$994,177.37

OTHER DIRECT COSTS

*** Billed at Actual Cost ***

ITEM	QUANTITY	UNIT	UNIT COST	AMOUNT	
Reproduction	1	Actual Cost	@ \$21,500.00	\$21,500.00	
Copying	1	Actual Cost	@ \$9,000.00	\$9,000.00	
Plotting	1	Actual Cost	@ \$4,500.00	\$4,500.00	
Transportation/Travel	2650	MI	@ \$0.55	\$1,457.50	
Special Deliveries	121	EA	@ \$10.00	\$1,210.00	
				TOTAL ODC'S	\$37,667.50

SUB CONSULTANT SERVICES

COMPANY	LABOR	MULTIPLIERS	ODC'S	TOTAL
Diaz Youman	\$33,878.64	\$75,066.26	\$86,835.00	\$195,779.90
Douglas Engineering	\$44,532.00	\$61,917.74	\$61,320.00	\$167,769.74
Thirtieth Street Architects	\$45,180.00		\$3,500.00	\$48,680.00
RHA Landscaping	\$43,745.00	\$4,374.50	\$5,060.75	\$53,180.25

TOTAL SUBCONSULTANT SERVICES **\$465,409.89**

TOTAL **\$2,124,495.99**

FEE PROPOSAL WORKSHEET		
COMPANY: AECOM	SCOPE OF WORK: Bid Support	PHASE: Phase III
PROJECT: Magnolia Avenue/BNSF Grade Separation Project		DATE: April 6, 2011

DIRECT LABOR

PERSONNEL	POSITION	HOURS	RATE	AMOUNT	
Edward Ng	Project Manager	40	@ \$75.19	\$3,007.60	
Mahmoud Khodr	Traffic Engineer	4	@ \$64.97	\$259.88	
Alicia Colburn	Envir Coord		\$50.13		
Robert Wong/Nadia D'Paraschi-Tigo	Sr Proj Engineer	4	@ \$52.00	\$208.00	
Paul Lau	Project Engineer	16	@ \$46.14	\$738.24	
Albert Pan	Project Engineer	4	@ \$46.80	\$187.20	
Mike Flores	Associate Engineers		\$44.80		
Tim Liu	Sr Design Engineer	8	@ \$35.86	\$286.88	
Nelly Lo	Design Engineer	8	@ \$32.99	\$263.92	
Heng Chow	Design Engineer		\$36.58		
Nicolas Borrayo	Assistant Engineer	8	@ \$28.84	\$230.72	
Julian Yap/Danny Pheng	Assistant Engineer		\$27.68		
Phong Mai	Assistant Engineer		\$27.54		
Mauro Mamawal	CADD		\$27.54		
Nisa Hester	Project Controls		\$58.42		
Norman Suydam	QA/QC		\$79.36		
Sandra Kent	Clerical/Admin		\$21.83		
James Faber	Principal in Charge		\$92.40		
Mohan Char	Structure Task PM	40	@ \$85.00	\$3,400.00	
Limin He	Principal Bridge Engineer	8	@ \$60.11	\$480.88	
Robert Price/Jackie Wang	Senior Bridge Engineer	16	@ \$61.09	\$977.44	
Alicia Colburn	Enviro/Local Assis. Coord.				
Various	Bridge Engineer	4	@ \$55.00	\$220.00	
Various	Associate Bridge Engineer	4	@ \$39.00	\$156.00	
Various	Assistant Bridge Engineer		\$31.00		
Various	Senior CAD Technician	16	@ \$45.00	\$720.00	
Various	Clerical		\$25.00		
Robert Matthews	QA/QC		\$75.00		
John Kim	Project Lead Engr	8	@ \$67.41	\$539.28	
Joel Obedoza	Senior Engineer	16	@ \$55.50	\$888.00	
Cris Canlobo	Assistant Eng/CADD		\$47.04		
		TOTAL HOURS	204	TOTAL DIRECT LABOR	\$12,564.04

MULTIPLIERS

ESCALATION @		(of Direct Labor)		
OVERHEAD @	135.00%	(of Direct Labor + Escalation)	\$16,961.45	
PAYROLL ADDITIVES @		(of Direct Labor + Escalation)		
PROFIT (FIXED FEE) @	10.0%	(of Direct Labor + Escalation + Overhead + Payroll Additives)	\$2,952.55	
			TOTAL MULTIPLIERS	\$19,914.00

OTHER DIRECT COSTS

*** Billed at Actual Cost ***

ITEM	QUANTITY	UNIT	UNIT COST	AMOUNT
Reproduction		Actual Cost		
Copying		Actual Cost		
Plotting		Actual Cost		
Transportation/Travel		MI		
Special Deliveries		EA		

TOTAL ODC'S

SUB CONSULTANT SERVICES

COMPANY	LABOR	MULTIPLIERS	ODC'S	TOTAL
Diaz Youman				
Douglas Engineering				
Thirtieth Street Architects				
RHA Landscaping				

TOTAL SUBCONSULTANT SERVICES

TOTAL **\$32,478.04**

FEE PROPOSAL WORKSHEET		
COMPANY: AECOM	SCOPE OF WORK: Construction Support	PHASE: Phase IV
PROJECT: Magnolia Avenue/BNSF Grade Separation Project		DATE: April 6, 2011

DIRECT LABOR

PERSONNEL	POSITION	HOURS	RATE	AMOUNT
Edward Ng	Project Manager	160	@ \$75.19	\$12,030.40
Mahmoud Khodr	Traffic Engineer	24	@ \$64.97	\$1,559.28
Alicia Colburn	Envir Coord		\$50.13	
Robert Wong/Nadia D'Paraschi-Tigo	Sr Proj Engineer	12	@ \$52.00	\$624.00
Paul Lau	Project Engineer	40	@ \$46.14	\$1,845.60
Albert Pan	Project Engineer	16	@ \$46.80	\$748.80
Mike Flores	Associate Engineers		\$44.80	
Tim Liu	Sr Design Engineer	24	@ \$35.86	\$860.64
Nelly Lo	Design Engineer	12	@ \$32.99	\$395.88
Heng Chow	Design Engineer		\$36.58	
Nicolas Borrayo	Assistant Engineer	80	@ \$28.84	\$2,307.20
Julian Yap/Danny Pheng	Assistant Engineer		\$27.68	
Phong Mai	Assistant Engineer		\$27.54	
Mauro Mamawal	CADD		\$27.54	
Nisa Hester	Project Controls		\$58.42	
Norman Suydam	QA/QC		\$79.36	
Sandra Kent	Clerical/Admin		\$21.83	
James Faber	Principal in Charge		\$92.40	
Mohan Char	Structure Task PM	40	@ \$85.00	\$3,400.00
Limin He	Principal Bridge Engineer	40	@ \$60.11	\$2,404.40
Robert Price/Jackie Wang	Senior Bridge Engineer	40	@ \$61.09	\$2,443.60
Alicia Colburn	Enviro/Local Assis. Coord.			
Various	Bridge Engineer	24	@ \$55.00	\$1,320.00
Various	Associate Bridge Engineer	16	@ \$39.00	\$624.00
Various	Assistant Bridge Engineer		\$31.00	
Various	Senior CAD Technician	40	@ \$45.00	\$1,800.00
Various	Clerical		\$25.00	
Robert Matthews	QA/QC		\$75.00	
John Kim	Project Lead Engr	12	@ \$67.41	\$808.92
Joel Obedoza	Senior Engineer	24	@ \$55.50	\$1,332.00
Cris Canlobo	Assistant Eng/CADD		\$47.04	

TOTAL HOURS **604** TOTAL DIRECT LABOR **\$34,504.72**

MULTIPLIERS

ESCALATION @		(of Direct Labor)	
OVERHEAD @	135.00%	(of Direct Labor + Escalation)	\$46,581.37
PAYROLL ADDITIVES @		(of Direct Labor + Escalation)	
PROFIT (FIXED FEE) @	10.0%	(of Direct Labor + Escalation + Overhead + Payroll Additives)	\$8,108.61
TOTAL MULTIPLIERS			\$54,689.98

OTHER DIRECT COSTS

*** Billed at Actual Cost ***

ITEM	QUANTITY	UNIT	UNIT COST	AMOUNT
Reproduction	1	Actual Cost	@ \$2,500.00	\$2,500.00
Copying	1	Actual Cost	@ \$200.00	\$200.00
Plotting		Actual Cost		
Transportation/Travel	1000	MI	@ \$0.55	\$550.00
Special Deliveries	100	EA	@ \$10.00	\$1,000.00

TOTAL ODC'S **\$4,250.00**

SUB CONSULTANT SERVICES

COMPANY	LABOR	MULTIPLIERS	ODC'S	TOTAL
Diaz Youman				
Douglas Engineering				
Thirtieth Street Architects				
RHA Landscaping	\$29,424.00	\$2,942.40	\$550.80	\$32,917.20

TOTAL SUBCONSULTANT SERVICES **\$32,917.20**

TOTAL \$126,361.90

TASK	910	260	16	70	491	130	40	216	280	424	732	912	792	480	HOURS	(Top & Bottom) HOURS
PROJECT MANAGER	\$194.37	\$187.96	\$120.20	\$154.42	\$119.27	\$120.33	\$115.31	\$92.70	\$85.28	\$54.56	\$74.55	\$71.55	\$71.19	\$71.19	\$71.19	

PHASE TOTALS	910	260	16	70	491	130	40	216	280	424	732	912	792	480	5,753	14,071
PHASE I																
PHASE II	710	232	16	54	435	110	40	184	260	424	644	912	792	480	5,293	13,263
PHASE III	40	4	4	4	16	4	8	8	8	8	8	8	8	8	92	204
PHASE IV	160	24	12	12	40	16	24	24	12	80	80	80	80	80	368	604

TASK	96	80	128	462	642	944	1,020	1,594	992	1,574	1,264	120	110	6,516
PROJECT CONTROLS	\$181.02	\$205.15	\$55.43	\$235.55	\$219.73	\$155.33	\$157.92	\$142.18	\$100.52	\$80.14	\$115.53	\$64.63	\$133.88	\$133.88

PHASE TOTALS	96	80	128	462	642	944	1,020	1,594	992	1,574	1,264	120	110	6,516
PHASE I														
PHASE II	96	80	128	382	594	888	992	1,574	992	1,574	1,264	120	110	6,228
PHASE III				40	8	16	4	4	4	4	16			88
PHASE IV				40	40	40	24	16	24	16	40			200

TASK	482	752	568	1,802
PROJECT LEAD ENGR	\$174.25	\$143.47	\$121.60	\$1,802

PHASE TOTALS	482	752	568	1,802
PHASE I				
PHASE II	482	712	568	1,742
PHASE III	8	16	24	24
PHASE IV	12	24	36	36

COMPANY: **AECOM**
 PROJECT: **Magnolia Avenue/BNSF Grade Separation Project**
 SCOPE OF WORK: **Plans, Specs & Estimates**
 PHASE: **Phase II**
 DATE: **April 6, 2011**

710	232	16	54	435	110	40	194	260	424	644	912	792	480	5,293
-----	-----	----	----	-----	-----	----	-----	-----	-----	-----	-----	-----	-----	-------

\$194,037 \$167,966 \$132,859 \$134,422 \$119,277 \$120,933 \$116,851 \$92,700 \$88,268 \$94,556 \$74,550 \$71,445 \$43,119 \$71,119

	710	232	16	54	435	110	40	194	260	424	644	912	792	480	5,293
Project Management, QA/QC															
Meetings, Scheduling, Management, and Coordination	240	16	16	4	40	24	24	4							368
QA/QC Review	40	8		16	16	40	40			16					136
Civil, Grading, Estimates, Specs, Design Coordination															
Data Collection & Review Record Information	8			4	16	4		4		24	16	16			76
Research Existing Utilities Data	4			4	8	4		8		16	16	16			60
Field Review and Survey Coordination	8			16	16					24	24	24	16		88
Roadway Plans - 65%	64			48	48					96	96	80	80		384
Roadway Plans - 95%	64			32	32					60	60	40	40		256
Roadway Plans - Final	24			24	24					40	40	32	32		160
Offsite Improvement Plans - 65%	16			23	23					40	40	40	40		159
Offsite Improvement Plans - 95%	16			12	12					32	32	24	24		116
Offsite Improvement Plans - Final	12			8	8					16	16	16	8		60
MSE & Retaining Wall P&P Details	80			80	80					144	120	16	160		584
R/W, Right-of entry & Easement Maps & Docs	8			16	16					24	24	16			64
Utility Conflict Plans and Pothole Plans	8			16	16					24	24	36	24		84
Right-of-way and Easement Coordination	8			16	16					24	24	24	24		48
Utility Conflict and Installation Coordination	8			4	4					40	40	24	24		76
Cost Estimates	16	4		24	24			4		48	48	56	24		176
Special Provisions	64	40		36	36	8		40		24	24	16			228
Drainage & Water Quality															
Plan & Profile	4			8	8			80					88		180
CB Hydrology (10yr, 100yr)				4	4			40					40		84
Hydraulics-WSPG													60		60
Hydraulics-CB Inlet Calc (25 ea)				4	4			40					40		80
Water Quality Basin Calc													80		84
WQMP	2												80		82
Drainage Report	4			8	8			40					40		92
Erosion Control (4 shifts)				2	2								60		62
Staging and Traffic Handling															
65% Stage Construction Plans						40		80		120					360
95% Stage Construction Plans						20		40		80					220
Final Stage Construction Plans						10		40		80					210

COMPANY: AECOM
 PROJECT: Magnolia Avenue/BNSF Grade Separation Project
 SCOPE OF WORK: Plans, Specs & Estimates
 PHASE: Phase II
 DATE: April 6, 2011

NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
1	Traffic Signals, Signing & Striping				
2	Signing and Striping Plans (4 sheets)	Sheet	4	40	160
3	Traffic Signal Plans (2 sheets)	Sheet	4	40	160
4	Signal Interconnect Plans (2 sheets)	Sheet	4	40	160
5	Traffic Cost Estimates	Hour	4	4	16
6	Traffic Specs	Hour	40	40	1600
7	Structures				
8	Project Management				
9	Meetings and Coordination				
10	Project Control				
11	Draft General Plans (35% P & Q)				
12	Structure type Selection				
13	Unchecked Details (65% P&Q)				
14	Plans				
15	Quantities				
16	Intermediate PS&E (95% P&Q)				
17	Plans				
18	Specifications				
19	Estimates				
20	Address COUNTY Comments & Resubmit				
21	Final PS&E (100% PS&E)				
22	Plans				
23	Specifications				
24	Estimates				
25	Electrical				
26	Project Meetings & Coordination				
27	QA/QC				
28	Photometric/Power Calculations and Analysis				
29	Site Review				
30	Electrical & Lighting Plans, 65%				
31	Electrical & Lighting Plans, 100%				
32	Electrical & Lighting Plans, Final				
33	Cost Estimates				
34	Specifications				

NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
244			244	\$ 21,762	
244			244	\$ 21,762	
124			124	\$ 13,191	
4			4	\$ 672	
40			40	\$ 6,718	
80			80		
80			80		

COMPANY: **AECOM**

PROJECT: **Magnolia Avenue/BNSF Grade Separation Project**

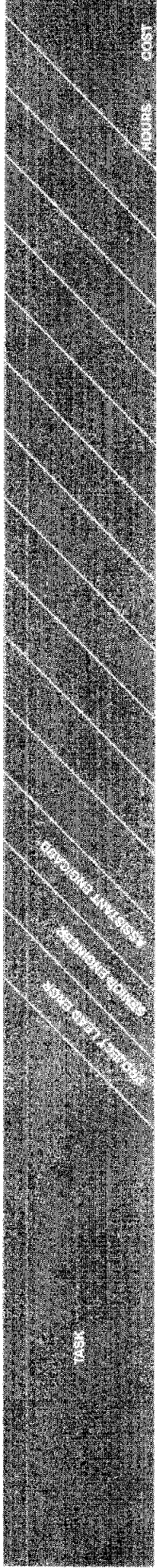
SCOPE OF WORK: **Bid Support**

PHASE: **Phase III**
DATE: **April 6, 2011**

Item	Quantity	Unit	Rate	Total
Construction Bidding and Award Support	88	Manhours	\$177.52	\$15,592

Item	Quantity	Unit	Rate	Total
Construction Bidding and Award Support	88	Manhours	\$177.52	\$15,592

COMPANY: **AECOM**
PROJECT: **Magnolia Avenue/BNSF Grade Separation Project**



\$174,210 \$142,470 \$319,680

Total Manhours	462	712	568	1,742
-----------------------	------------	------------	------------	--------------

Task Description	462	712	568	1,742
Project Management, QA/QC				
Meetings, Scheduling, Management, and Coordination				
QA/QC Review				
Civil, Grading, Estimates, Specs, Design Coordination				
Data Collection & Review Record Information				
Research Existing Utilities Data				
Field Review and Survey Coordination				
Roadway Plans - 65%				
Roadway Plans - 95%				
Roadway Plans - Final				
Offsite Improvement Plans - 65%				
Offsite Improvement Plans - 95%				
Offsite Improvement Plans - Final				
MSE & Retaining Wall P&P, Details				
RAW, Right-of entry & Easement Maps & Docs				
Utility Conflict Plans and Pothole Plans				
Right-of-way and Easement Coordination				
Utility Conflict and Installation Coordination				
Cost Estimates				
Special Provisions				
Drainage & Water Quality				
Plan & Profile				
CB Hydrology (10yr, 100yr)				
Hydraulics-WSPG				
Hydraulics-CB Inlet Calc (25 ea)				
Water Quality Basin Calc				
WQMP				
Drainage Report				
Erosion Control (4 shits)				
Staging and Traffic Handling				
65% Stage Construction Plans				
95% Stage Construction Plans				
Final Stage Construction Plans				

SUBCONSULTANT FEE PROPOSAL WORKSHEET

COMPANY: Diaz Youman	SCOPE OF WORK: Geotechnical	PHASE: Phase II
PROJECT: Magnolia Avenue/BNSF Grade Separation Project		DATE: April 6, 2011

DIRECT LABOR

PERSONNEL	POSITION	HOURS		RATE	AMOUNT
Somadevan Niranjana	Senior Engineer	223	@	\$46.00	\$10,258.00
V.R. Nadeswaren	Principal Engineer	64	@	\$64.37	\$4,119.68
Gary Gilbert	Associate Engineer			\$47.98	
	Project Engineer/Geologist	288	@	\$33.65	\$9,691.20
	Staff Engineer	238	@	\$30.26	\$7,201.88
	Junior Engineer	84	@	\$24.04	\$2,019.36
	Technical Editor	2	@	\$37.86	\$75.72
	Word Processor/Clerical	20	@	\$25.64	\$512.80
TOTAL HOURS		919		TOTAL DIRECT LABOR	\$33,878.64

MULTIPLIERS

ESCALATION @		(of Direct Labor)	
OVERHEAD @	192.34%	(of Direct Labor + Escalation)	\$65,162.18
PAYROLL ADDITIVES @		(of Direct Labor + Escalation)	
PROFIT (FIXED FEE) @	10.0%	(of Direct Labor + Escalation + Overhead + Payroll Additives)	\$9,904.08
TOTAL MULTIPLIERS			\$75,066.26

OTHER DIRECT COSTS

*** Billed at Actual Cost ***

ITEM	QUANTITY	UNIT		UNIT COST	AMOUNT
Field Truck	130	EA	@	\$16.00	\$2,080.00
Mileage	500	MI	@	\$0.51	\$255.00
Drillers, Traffic Control, IDW Disposal	1	Actual Cost	@	\$56,700.00	\$56,700.00
Geophysics	1	Actual Cost	@	\$5,100.00	\$5,100.00
Laboratory Testing	1	Actual Cost	@	\$13,000.00	\$13,000.00
Disposal of IDW	1	Actual Cost	@	\$7,700.00	\$7,700.00
Specialty Consultant	1	Actual Cost	@	\$2,000.00	\$2,000.00
TOTAL ODC'S					\$86,835.00

TOTAL \$195,779.90

SUBCONSULTANT FEE PROPOSAL WORKSHEET

COMPANY: Douglas Engineering	SCOPE OF WORK: Utilities/PUC	PHASE: All Phases
PROJECT: Magnolia Avenue/BNSF Grade Separation Project		DATE: April 6, 2011

DIRECT LABOR

PERSONNEL	POSITION	HOURS		RATE	AMOUNT	
Douglas H. Mays, P.E.	Project Manager	264	@	\$75.00	\$19,800.00	
Paul Mays	AutoCADD/ Engineering Tech	264	@	\$38.00	\$10,032.00	
Michael Mays	Engineering Tech	260	@	\$33.00	\$8,580.00	
Michael Mays	Field Eng'r Tech (pothole monitoring)	120	@	\$51.00	\$6,120.00	
		TOTAL HOURS		908	TOTAL DIRECT LABOR	\$44,532.00

MULTIPLIERS

ESCALATION @		(Rates Vary by Phase)		
OVERHEAD @	112.31%	(of Direct Labor + Escalation)	\$50,013.89	
PAYROLL ADDITIVES @	5.00%	(of Direct Labor + Escalation)	\$2,226.60	
PROFIT (FIXED FEE) @	10.0%	(of Direct Labor + Escalation + Overhead + Payroll Additives)	\$9,677.25	
			TOTAL MULTIPLIERS	\$61,917.74

OTHER DIRECT COSTS

*** Billed at Actual Cost ***

ITEM	QUANTITY	UNIT		UNIT COST	AMOUNT	
Reproduction	1	Actual Cost	@	\$700.00	\$700.00	
Travel (including rental car)		EA				
Project Supplies (record searches)	1	Actual Cost	@	\$300.00	\$300.00	
Postage/Delivery	1	Actual Cost	@	\$320.00	\$320.00	
Pothole Specialty Contractor	50	EA	@	\$1,200.00	\$60,000.00	
					TOTAL ODC'S	\$61,320.00

TOTAL **\$167,769.74**

SUBCONSULTANT FEE PROPOSAL WORKSHEET

COMPANY: Thirtieth Street Architects	SCOPE OF WORK: Bridge Aesthetics	PHASE: Phase II
PROJECT: Magnolia Avenue/BNSF Grade Separation Project		DATE: April 6, 2011

DIRECT LABOR

PERSONNEL	POSITION	HOURS		RATE	AMOUNT	
	Senior Architect	64	@	\$160.00	\$10,240.00	
	Licensed Architect	100	@	\$135.00	\$13,500.00	
	Drafts Person	160	@	\$110.00	\$17,600.00	
	Lighting Designer	24	@	\$160.00	\$3,840.00	
		TOTAL HOURS		348	TOTAL DIRECT LABOR	\$45,180.00

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	
Reproduction	1	Actual Cost	@	\$3,000.00	\$3,000.00	
Deliveries	1	Actual Cost	@	\$500.00	\$500.00	
					TOTAL ODC'S	\$3,500.00

TOTAL **\$48,680.00**

SUBCONSULTANT MANHOURLY WORKSHEET

COMPANY: Thirtieth Street Architects

SCOPE OF WORK: Bridge Aesthetics

PHASE: Phase II

PROJECT: Magnolia Avenue/BNSF Grade Separation Project

DATE: April 6, 2011

TASK	SENIOR ARCHITECT	LICENSED ARCHITECT	DRAFTS PERSON	LIGHTING DESIGNER	HOURS	COST
	\$150.00	\$135.00	\$110.00	\$160.00		

Total Manhours

64 100 160 24

348

TASK	SENIOR ARCHITECT	LICENSED ARCHITECT	DRAFTS PERSON	LIGHTING DESIGNER	HOURS	COST
Phase I - Preliminary Design						
Review data base	4				4	\$ 640
Site Visit	2				2	\$ 320
Meeting with project manager	2				2	\$ 320
Prepare 3 alternates	12	24	12	20	68	\$ 9,680
Conceptual statement of probable cost	8				8	\$ 1,280
Presentation to County	4				4	\$ 640
Revise alternatives	4	16			20	\$ 2,800
Prepare Final design package	4	16	12		32	\$ 4,120
Coordination	8				8	\$ 1,280
Phase II - Construction Drawings						
Prepare Construction Documents	8	16	120	4	148	\$ 17,280
Prepare Specifications		24			24	\$ 3,240
Estimated Cost	8				8	\$ 1,280
Plan Check Revisions		4	16		20	\$ 2,300

SUBCONSULTANT FEE PROPOSAL WORKSHEET

COMPANY: RHA Landscaping	SCOPE OF WORK: Landscaping	PHASE: All Phases
PROJECT: Magnolia Avenue/BNSF Grade Separation Project		DATE: April 6, 2011

DIRECT LABOR

PERSONNEL	POSITION	HOURS		RATE	AMOUNT
	Chief Landscape Architect	26	@	\$190.00	\$4,845.00
	Associate Landscaper	29	@	\$130.00	\$3,770.00
	Landscape Architect	173	@	\$115.00	\$19,895.00
	Designer	121	@	\$95.00	\$11,495.00
	Staff	44	@	\$85.00	\$3,740.00
	Chief Landscape Architect	13	@	\$222.00	\$2,775.00
	Associate Landscaper	117	@	\$152.00	\$17,784.00
	Landscape Architect	42	@	\$134.00	\$5,628.00
	Designer	14	@	\$111.00	\$1,554.00
	Staff	17	@	\$99.00	\$1,683.00
TOTAL HOURS		596		TOTAL DIRECT LABOR	\$73,169.00

MULTIPLIERS

ESCALATION @	(Rates Vary by Phase)	
OVERHEAD @	(of Direct Labor + Escalation)	
PAYROLL ADDITIVES @	(of Direct Labor + Escalation)	
PROFIT (FIXED FEE) @	10.0% (of Direct Labor + Escalation + Overhead + Payroll Additives)	\$7,316.90
TOTAL MULTIPLIERS		\$7,316.90

OTHER DIRECT COSTS

*** Billed at Actual Cost ***

ITEM	QUANTITY	UNIT		UNIT COST	AMOUNT
Agri Soils Testing	4	Ea	@	\$300.00	\$1,200.00
Mylar Plots	28	Ea	@	\$30.00	\$840.00
Mileage (now)	350	Miles	@	\$0.59	\$204.75
Mileage (future)	810	Ea	@	\$0.68	\$550.80
Misc.	2	Ea	@	\$250.00	\$500.00
Reproduction	408	Ea	@	\$2.00	\$816.00
Bond Plots	150	EA	@	\$10.00	\$1,500.00
TOTAL ODC'S					\$5,611.55

TOTAL **\$86,097.45**

SUBCONSULTANT FEE PROPOSAL WORKSHEET		
COMPANY: RHA Landscaping	SCOPE OF WORK: Landscaping	PHASE: Phase II
PROJECT: Magnolia Avenue/BNSF Grade Separation Project		DATE: April 6, 2011

DIRECT LABOR

PERSONNEL	POSITION	HOURS		RATE	AMOUNT
	Chief Landscape Architect	26	@	\$190.00	\$4,845.00
	Associate Landscaper	29	@	\$130.00	\$3,770.00
	Landscape Architect	173	@	\$115.00	\$19,895.00
	Designer	121	@	\$95.00	\$11,495.00
	Staff	44	@	\$85.00	\$3,740.00
	Chief Landscape Architect			\$222.00	
	Associate Landscaper			\$152.00	
	Landscape Architect			\$134.00	
	Designer			\$111.00	
	Staff			\$99.00	
		TOTAL HOURS	393	TOTAL DIRECT LABOR	\$43,745.00

MULTIPLIERS

ESCALATION @	(of Direct Labor)	
OVERHEAD @	(of Direct Labor + Escalation)	
PAYROLL ADDITIVES @	(of Direct Labor + Escalation)	
PROFIT (FIXED FEE) @	10.0% (of Direct Labor + Escalation + Overhead + Payroll Additives)	\$4,374.50
TOTAL MULTIPLIERS		\$4,374.50

OTHER DIRECT COSTS

*** Billed at Actual Cost ***

ITEM	QUANTITY	UNIT		UNIT COST	AMOUNT
Agri Soils Testing	4	Ea	@	\$300.00	\$1,200.00
Mylar Plots	28	Ea	@	\$30.00	\$840.00
Mileage (now)	350	Miles	@	\$0.59	\$204.75
Mileage (future)		Ea		\$0.68	
Misc.	2	Ea	@	\$250.00	\$500.00
Reproduction	408	Ea	@	\$2.00	\$816.00
Bond Plots	150	EA	@	\$10.00	\$1,500.00

TOTAL ODC'S \$5,060.75

TOTAL \$53,180.25

SUBCONSULTANT FEE PROPOSAL WORKSHEET

COMPANY: RHA Landscaping	SCOPE OF WORK: Landscaping	PHASE: Phase IV
PROJECT: Magnolia Avenue/BNSF Grade Separation Project		DATE: April 6, 2011

DIRECT LABOR

PERSONNEL	POSITION	HOURS		RATE	AMOUNT
	Chief Landscape Architect			\$190.00	
	Associate Landscaper			\$130.00	
	Landscape Architect			\$115.00	
	Designer			\$95.00	
	Staff			\$85.00	
	Chief Landscape Architect	13	@	\$222.00	\$2,775.00
	Associate Landscaper	117	@	\$152.00	\$17,784.00
	Landscape Architect	42	@	\$134.00	\$5,628.00
	Designer	14	@	\$111.00	\$1,554.00
	Staff	17	@	\$99.00	\$1,683.00
		TOTAL HOURS	203	TOTAL DIRECT LABOR	\$29,424.00

MULTIPLIERS

ESCALATION @	(of Direct Labor)	
OVERHEAD @	(of Direct Labor + Escalation)	
PAYROLL ADDITIVES @	(of Direct Labor + Escalation)	
PROFIT (FIXED FEE) @	10.0% (of Direct Labor + Escalation + Overhead + Payroll Additives)	\$2,942.40
TOTAL MULTIPLIERS		\$2,942.40

OTHER DIRECT COSTS

*** Billed at Actual Cost ***

ITEM	QUANTITY	UNIT	UNIT COST	AMOUNT
Agri Soils Testing		Ea	\$300.00	
Mylar Plots		Ea	\$30.00	
Mileage (now)		Miles	\$0.59	
Mileage (future)	810	Ea @	\$0.68	\$550.80
Misc.		Ea	\$250.00	
Reproduction		Ea	\$2.00	
Bond Plots		EA	\$10.00	
TOTAL ODC'S				\$550.80

TOTAL \$32,917.20

SUBCONSULTANT MANHOUR WORKSHEET SUMMARY

COMPANY: RHA Landscaping	SCOPE OF WORK: Landscaping	PHASE: All Phases
PROJECT: Magnolia Avenue/BNSF Grade Separation Project		DATE: April 6, 2011

TASK	CHIEF LANDSCAPE ARCHITECT	ASSOCIATE LANDSCAPER	LANDSCAPE ARCHITECT	DESIGNER	STAFF	CHIEF LANDSCAPE ARCHITECT	ASSOCIATE LANDSCAPER	LANDSCAPE ARCHITECT	DESIGNER	STAFF	HOURS
	\$209.00	\$142.60	\$126.50	\$104.50	\$83.50	\$244.20	\$167.20	\$147.40	\$122.10	\$108.90	
	26	29	173	121	44	13	117	42	14	17	595

PHASE TOTALS

PHASE I											
PHASE II	26	29	173	121	44						393
PHASE III											
PHASE IV						13	117	42	14	17	203

SUBCONSULTANT MANHOUR WORKSHEET

COMPANY: RHA Landscaping
 PROJECT: Magnolia Avenue/BNSF Grade Separation Project
 SCOPE OF WORK: Landscaping
 PHASE: Phase II
 DATE: April 8, 2011

TASK	CHIEF LANDSCAPE ARCHITECT	ASSOCIATE LANDSCAPE ARCHITECT	DESIGNER	STAFF	CHIEF LANDSCAPE ARCHITECT	ASSOCIATE LANDSCAPE ARCHITECT	DESIGNER	STAFF	LANDSCAPE ARCHITECT	ASSOCIATE LANDSCAPE ARCHITECT	DESIGNER	STAFF	CHIEF LANDSCAPE ARCHITECT	ASSOCIATE LANDSCAPE ARCHITECT	DESIGNER	STAFF	HOURS	COST
	26	29	173	121	44	209	00	\$145.00	\$126.50	\$104.50	393.50	\$244.20	\$167.20	\$147.40	\$122.10	\$108.90	393	

Total Manhours

26	29	173	121	44	209	00	\$145.00	\$126.50	\$104.50	393.50	\$244.20	\$167.20	\$147.40	\$122.10	\$108.90	393	
----	----	-----	-----	----	-----	----	----------	----------	----------	--------	----------	----------	----------	----------	----------	-----	--

TASK	CHIEF LANDSCAPE ARCHITECT	ASSOCIATE LANDSCAPE ARCHITECT	DESIGNER	STAFF	CHIEF LANDSCAPE ARCHITECT	ASSOCIATE LANDSCAPE ARCHITECT	DESIGNER	STAFF	LANDSCAPE ARCHITECT	ASSOCIATE LANDSCAPE ARCHITECT	DESIGNER	STAFF	CHIEF LANDSCAPE ARCHITECT	ASSOCIATE LANDSCAPE ARCHITECT	DESIGNER	STAFF	HOURS	COST
Project Management & Meetings	20		44														64	\$ 9,746
Design	5	14	93	89	32												233	\$ 27,000
General Project Tasks		2	15	9	5												31	\$ 3,592
RHA Plan Check & Revisions	1	13	9	11	6												39	\$ 4,678
Agency/Client Plan Check Revisions	1	1	13	12	1												27	\$ 3,105

