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)

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 ☐
Requires 4/5 Vote ☐

C.E.O. RECOMMENDATION:

APPROVE
BY: Tina Grande

County Executive Office Signature

Departmental Concurrence

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

☒ Policy ☒ Policy
☐ Consent ☐ Consent
Dep't Recomm.: Per Exec. Ofc.:

MINUTES OF THE BOARD OF SUPERVISORS

On motion of Supervisor Buster, seconded by Supervisor Stone and duly carried by unanimous vote, IT WAS ORDERED that the above matter is approved as recommended.

Ayes: Buster, Tavaglione, Stone, Benoit and Ashley
Nays: None
Absent: None
Date: May 10, 2011
xc: Transp.

Kecia Harper-Ihem
Clerk of the Board
By: Deputy

Prev. Agn. Ref. 6/16/09 3.45 | **District:** 2 | **Agenda Number:** 3.33

ATTACHMENTS FILED
WITH THE CLERK OF THE BOARD

Form 11 (Rev 07/2007)

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 10th day of May, 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.

MAY 10 2011 3.33

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:

Dated: 4/21/11

JUAN C. PEREZ

Director of Transportation

APPROVED AS TO FORM:

PAMELA J. WALLS, COUNTY COUNSEL

Dated: 4/27/11

By Deputy

APPROVAL BY THE BOARD OF SUPERVISORS

Dated: MAY 10 2011

BOB BUSTER

PRINTED NAME

Chairman, Riverside County Board of Supervisors

ATTEST:

Deputy Dated: MAY 10 2011

KECIA HARPER-IHEM

Clerk of the Board (SEAL)

ENGINEER Approvals

ENGINEER:

Dated: 4/8/11

PATRICK L. SOMERVILLE

PRINTED NAME

VICE PRESIDENT

TITLE

ENGINEER:

Dated: 4/8/11

JAMES M. FABER

PRINTED NAME

VICE PRESIDENT

TITLE

Consulting Services Contract • Amendment Budget Summary

PROJECT: **Magnolia Avenue Railroad Grade Separation** PROJECT NO.: **B7-0784**

CONSULTANT: **AECOM Technical Services, Inc.** CONTRACT NO.: **09-05-004**

	PHASE 1 PA/ED	PHASE 2 PS&E	PHASE 3 Bidding	PHASE 4 Con Support	PHASE 5	CONTINGENCY	TOTAL
Contract Budgets	**844,378**					**108,481**	**952,859**
Prior Amendments							
Prior Administrative Changes							
Current 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

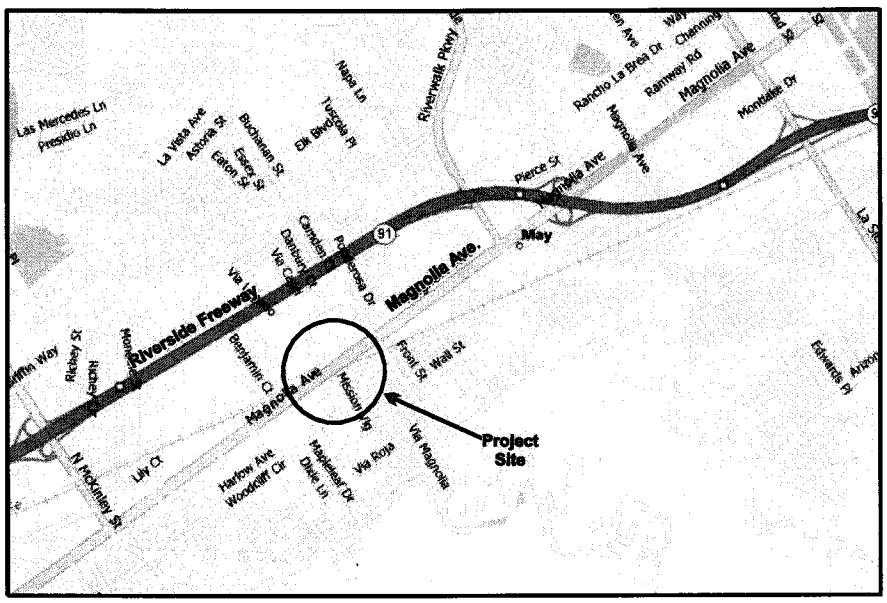
ARTICLE AI INTRODUCTION

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)

- COUNTY Departments
- Caltrans
- California Department of Fish and Game (CDFG)
- Regional Water Quality Control Board (RWQCB)
- State Resource Agencies
- U.S. Fish and Wildlife Service (USFWS)
- Army Corps of Engineers (ACOE)
- Utility Companies
- RCTC
- Riverside County Flood Control and Water Conservation District (RCFC&WCD)
- City of Riverside
- City of Corona
- Property and Business Owners

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

D. PHASES

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

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

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

E. STANDARDS

The final plans, specifications, and estimates shall be prepared in accordance with County's regulations, 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.

E. PROGRESS REPORTING

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

F. QUALITY CONTROL PLAN

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

ARTICLE AIII • ENGINEERING SERVICES

A. GENERAL

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

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

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

- Roadway Design.
- Structural Design.
- Drainage and Water Quality.
- Traffic Signals, Signage & Striping

- Electrical and Lighting.
- Utility Coordination.
- Right of Way Engineering.
- Geotechnical and Foundation Investigations.
- Railroad Coordination.
- Bridge Aesthetics.
- Landscape Architecture.
- Construction Staging and Traffic Handling
- Bidding and Construction Support.

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

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

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

B. RESEARCH AND DATA GATHERING

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

C. SURVEYING/TOPO/BASE/FIELD WORK

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

D. ROADWAY DESIGN AND PLANS

Roadway Plans/Profiles/Typical Sections

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

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

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

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

Retaining Wall Improvement Plans

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

Offsite Grading and Improvement Plans

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

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

E. STRUCTURAL ANALYSIS AND PLANS

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

Task 1a– Structure Type Selection

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

- Prepare Preliminary Design.
- Prepare Preliminary Plan Sheets.
- Prepare Preliminary Quantities.
- Prepare Preliminary Estimates.

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

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

Task 2a – Plans

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

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

Task 2b – Quantities

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

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

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

Task 3a – Plans

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

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

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

Task 3b – Specifications

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

- Prepare draft Specifications.
- Perform comparison of plans and specifications.

Task 3c – Quantities

This task includes all efforts required to prepare checked quantity calculations for identified contract bid items. The activities include, but are not limited to:

- Prepare draft Quantities.
- Perform an independent check of the draft Quantities.

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

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

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

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

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

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

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

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

Task 5 Structural Bid Support

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

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

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

F. DRAINAGE AND WATER QUALITY PLANS AND REPORTS

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

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

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

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

A Water Quality Management Plan will be prepared to identify all post-construction BMP's to be used and 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

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

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

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

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

requirements.

H. ELECTRICAL AND LIGHTING

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

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

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

- Coordinating light pole locations with all utility lines

I. UTILITIES COORDINATION

Utility Research

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

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

Utility Location

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

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

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

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

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

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

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

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

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

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

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

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

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

The Utilities task mentioned above assumes the followings:

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

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

Right-of-Way, Right of Entry and Easements

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

ENGINEER will show the dimensions and limits of the right-of-way, easements, and right-of-entry required. All necessary surveys and preparation of the legal descriptions and plats shall be performed by the COUNTY. Acquisition of right-of-way, easements, and right-of-entries shall be performed by the COUNTY.

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

estimates for each stage of the design

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

K. GEOTECHNICAL REPORT AND HAZMAT REPORT

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

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

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

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

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

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.

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

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

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

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

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

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

Hygienist.

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

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.

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

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

The above task includes:

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

<u>CPUC Order Authorizing Construction of a Grade Separation</u>

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

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

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

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

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

<u>Optional Task 2.9- $5.0 Million Allocation from the CPUC Grade Separation Priority List (Section 190 Funds)</u>

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

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

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

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

The request for an allocation requires;

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

The above task includes:

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

M. BRIDGE AESTHETICS

TASK I, BRIDGE AESTHETICS PRELIMINARY DESIGN SERVICES

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

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

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

TASK II, BRIDGE AESTHETICS CONSTRUCTION DOCUMENTS

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

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

N. LANDSCAPING

LANDSCAPE CONSTRUCTION DOCUMENTS

Based upon ENGINEER and COUNTY approval of the conceptual plan, complete the preparation of the following documents in sufficient detail to facilitate construction:

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

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

LANDSCAPE MEETINGS AND COORDINATION

- Participate in coordination meetings with ENGINEER and COUNTY as required for general landscape aesthetics, plan and team coordination.
- Coordinate time with County EDA regarding disposition of the existing landscaping and setting up maintenance responsibilities for the future landscaping.
- Provide for meetings and coordination with the COUNTY, the County EDA or a designated Home Gardens community group and the ENGINEER to determine whether the existing monument sign 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.
2. Checked Structure Plans.
3. Title Sheet.
4. Typical Cross Sections.
5. Construction Details.
6. Contour Grading Plans.
7. Drainage Plans, Drainage Profiles and Drainage Details.
8. Hydrology and Hydraulics Reports.
9. Utility Relocation Plans and Details, as necessary.
10. Stage Construction, Traffic Control Plans and Detours.
11. Construction Area Signs Plan.
12. Pavement Delineation/Striping, Pavement Markers Plans and Details.
13. Summary of Quantities.
14. Sign Plans, Details and Quantities.
15. Lighting Plans and electrical details.
16. Landscape and Irrigation Plans and details
17. Revised or New Standard Plan Sheets.
18. Miscellaneous Details.
19. Construction Control Survey Maps(s).
20. Construction Cost Estimate and Data.
21. Draft Special Provisions-Computer Format.
22. Draft PS&E (65%, 95%, 100% Submittals).
23. Final PS&E (camera ready Submittal).
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

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

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

2. LANDSCAPE CONSTRUCTION OBSERVATION

a. Construction Observation – Provide support by making periodic field observation visits, providing clarifications and reviewing submittals upon request. The estimated following site observation visits may be necessary:

b. Pre-construction meeting.

c. Tree Demolition/Salvage.

d. Hardscape Layout review.

e. Irrigation - Mainline and Equipment.

f. Irrigation – Laterals, Coverage Test.

g. Planting – Tag/Approve trees at grower source.

h. Planting – Approve Plant Material Spotting.

i. Final Walk-Through/Begin Landscape Maintenance.

j. 30/60/90 Day Landscape Maintenance period review.

k. Final Walk-through/Owner Acceptance.

l. General Office Coordination.

m. Review of contractors redlined irrigation as-built drawings and AutoCAD entry of as-built information.

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
AECOM Prime		$ 1,659,086.11	$ 32,478.04	$ 93,444.70	**$ 1,785,008.85**
Diaz Yourman Geotechnical		$ 195,779.90			**$ 195,779.90**
Douglas Engineering Utilities/PUC		$ 167,769.74			**$ 167,769.74**
Thirtieth Street Architects Bridge Asthetics		$ 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:	SCOPE OF WORK:	PHASE:
AECOM	**Project Summary**	**All Phases**
PROJECT:		DATE:
Magnolia Avenue/BNSF Grade Separation Project		**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:	SCOPE OF WORK:	PHASE:
AECOM	**Preliminary Engineering & Environmental (completed)**	**Phase I**
PROJECT:		DATE:
Magnolia Avenue/BNSF Grade Separation Project		**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 Borrayo	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

FEE PROPOSAL WORKSHEET

COMPANY:	SCOPE OF WORK:	PHASE:
AECOM	**Plans, Specs & Estimates**	**Phase II**
PROJECT:		DATE:
Magnolia Avenue/BNSF Grade Separation Project		**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	888	@	$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:	SCOPE OF WORK:	PHASE:
AECOM	**Bid Support**	**Phase III**
PROJECT:		DATE:
Magnolia Avenue/BNSF Grade Separation Project		**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:	SCOPE OF WORK:	PHASE:
AECOM	**Construction Support**	**Phase IV**
PROJECT:		DATE:
Magnolia Avenue/BNSF Grade Separation Project		**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**

MANHOUR WORKSHEET

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

TASK	PROJECT MANAGER	TRAFFIC ENGINEER	ENVIR. COORD.	SR. PROJ. ENGINEER	PROJECT ENGINEER	PROJECT ENGINEER	ASSOCIATE ENGINEERS	SR. DESIGN ENGINEER	DESIGN ENGINEER	DESIGN ENGINEER	ASSISTANT ENGINEER	ASSISTANT ENGINEER	ASSISTANT ENGINEER	CADD	HOURS	(Top & Bottom) HOURS
	$194.37	$167.96	$129.59	$134.42	$119.27	$120.98	$115.81	$92.70	$86.28	$94.56	$74.55	$71.55	$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	16	4		8	8		8				92	204
PHASE IV	160	24		12	40	16		24	12		80				368	604

TASK	PROJECT CONTROLS	QA/QC	CLERICAL/ADMIN	PRINCIPAL IN CHARGE	STRUCTURE TASK PM	PRINCIPAL BRIDGE ENGINEER	SENIOR BRIDGE ENGINEER	ENVIRO/LOCAL ASSIS. COORD.	BRIDGE ENGINEER	ASSOCIATE BRIDGE ENGINEER	ASSISTANT BRIDGE ENGINEER	SENIOR CAD TECHNICIAN	CLERICAL	QA/QC	HOURS
	$151.02	$205.15	$56.43	$238.85	$219.73	$155.38	$157.92		$142.18	$100.82	$80.14	$116.33	$64.63	$193.88	
PHASE TOTALS	**96**	**80**	**128**		**462**	**642**	**944**		**1,020**	**1,594**		**1,320**	**120**	**110**	**6,516**
PHASE I															
PHASE II	96	80	128		382	594	888		992	1,574		1,264	120	110	6,228
PHASE III					40	8	16		4	4		16			88
PHASE IV					40	40	40		24	16		40			200

TASK	PROJECT LEAD ENGR.	SENIOR ENGINEER	ASSISTANT ENGR/CADD	HOURS
	$174.25	$143.47	$121.60	
PHASE TOTALS	**482**	**752**	**568**	**1,802**
PHASE I				
PHASE II	462	712	568	1,742
PHASE III	8	16		24
PHASE IV	12	24		36

MANHOUR WORKSHEET

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

TASK	PROJECT MANAGER	TRAFFIC ENGINEER	ENVIR COORD	SR PROJ ENGINEER	PROJECT ENGINEER	PROJECT ENGINEER	ASSOCIATE ENGINEERS	SR DESIGN ENGINEER	DESIGN ENGINEER	DESIGN ENGINEER	ASSISTANT ENGINEER	ASSISTANT ENGINEER	ASSISTANT ENGINEER	CADD	HOURS	COST
	$194.37	$167.95	$129.59	$134.42	$119.27	$120.98	$115.81	$92.70	$85.28	$94.56	$74.55	$71.55	$71.19	$71.19		
Total Manhours	710	232	16	54	435	110	40	184	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	$ 62,186
QA/QC Review	40	8		16	16		40				16				136	$ 19,002
Civil, Grading, Estimates, Specs, Design Coordination																
Data Collection & Review Record Information	8			4	16	4			4		24	16			76	$ 7,760
Research Existing Utilities Data	4			4	8	4			8		16	16			60	$ 5,773
Field Review and Survey Coordination	8				16						24	24	16		88	$ 8,109
Roadway Plans -65%	64				48						96	96	80		384	$ 37,886
Roadway Plans - 95%	64				32						60	60	40		256	$ 27,870
Roadway Plans - Final	24				24						40	40	32		160	$ 15,650
Offsite improvement Plans -65%	16				23						40	40	40		159	$ 14,545
Offsite improvement Plans -95%	16				12						32	32	24		116	$ 10,925
Offsite improvement Plans -Final	12				8						16	16	8		60	$ 6,194
MSE & Retaining Wall P&P, Details	80				80					144	120			160	584	$ 59,044
R/W, Right-of entry & Easement Maps & Docs	8				16						24		16		64	$ 6,392
Utility Conflict Plans and Pothole Plans	8				16							36	24		84	$ 7,748
Right-of-way and Easement Coordination	8				16						24				48	$ 5,253
Utility Conflict and Installation Coordination	8				4						40	24			76	$ 6,731
Cost Estimates	16	4			24				4		48	56	24		176	$ 16,279
Special Provisions	64	40			36	8			40		24	16			228	$ 30,764
Drainage & Water Quality																
Plan & Profile	4			8					80				88		180	$ 14,940
CB Hydrology (10yr, 100yr)				4					40				40		84	$ 6,796
Hydraulics-WSPG													60		60	$ 4,271
Hydraulics-CB Inlet Calc (25 ea)									40				40		80	$ 6,259
Water Quality Basin Calc				4									80		84	$ 6,233
WQMP	2												80		82	$ 6,084
Drainage Report	4			8					40				40		92	$ 8,112
Erosion Control (4 shts)				2									60		62	$ 4,540
Staging and Traffic Handling																
65% Stage Construction Plans						40		80		120		120			360	$ 32,188
95% Stage Construction Plans						20		40		80		80			220	$ 19,416
Final Stage Construction Plans						10		40		80		80			210	$ 18,207

MANHOUR WORKSHEET

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

TASK	PROJECT MANAGER	TRAFFIC ENGINEER	ENVIR COORD	SR PROJ ENGINEER	PROJECT ENGINEER	PROJECT ENGINEER	ASSOCIATE ENGINEERS	SR DESIGN ENGINEER	DESIGN ENGINEER	DESIGN ENGINEER	ASSISTANT ENGINEER	ASSISTANT ENGINEER	ASSISTANT ENGINEER	CADD	HOURS	COST
Traffic Signals, Signing & Striping																
Signing and Striping Plans (4 sheets)	4	40									80		120		244	$ 21,762
Traffic Signal Plans (2 sheets)	4	40									80		120		244	$ 21,762
Signal Interconnect Plans (2 sheets)	4	40											80		124	$ 13,191
Traffic Cost Estimates		4													4	$ 672
Traffic Specs		40													40	$ 6,718
Structures																
Project Management																
Meetings and Coordination																
Project Control																
Draft General Plans (35% P & Q)																
Structure type Selection																
Unchecked Details (65% P&Q)																
Plans																
Quantities																
Intermediate PS&E (95% P&Q))																
Plans																
Specifications																
Estimates																
Address COUNTY Comments & Resubmit																
Final PS&E (100% PS&E)																
Plans																
Specifications																
Estimates																
Electrical																
Project Meetings & Coordination																
QA/QC																
Photometric/Power Calculations and Analysis																
Site Review																
Electrical & Lighting Plans, 65%																
Electrical & Lighting Plans, 100%																
Electrical & Lighting Plans, Final																
Cost Estimates																
Specifications																

MANHOUR WORKSHEET

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

TASK	PROJECT MANAGER	TRAFFIC ENGINEER	ENVIR COORD	SR PROJ ENGINEER	PROJECT ENGINEER	PROJECT ENGINEER	ASSOCIATE ENGINEERS	SR DESIGN ENGINEER	DESIGN ENGINEER	DESIGN ENGINEER	ASSISTANT ENGINEER	ASSISTANT ENGINEER	ASSISTANT ENGINEER	CADD	HOURS	COST
	$194.37	$167.95	$129.59	$134.42	$119.27	$120.98	$115.81	$92.70	$85.26	$94.56	$74.55	$71.55	$71.19	$71.19		
Total Manhours	40	4		4	16	4		8	8		8				92	
Construction Bidding and Award Support	40	4		4	16	4		8	8		8				92	$ 13,397

MANHOUR WORKSHEET

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

TASK	PROJECT MANAGER	TRAFFIC ENGINEER	ENVIR COORD	SR PROJ ENGINEER	PROJECT ENGINEER	PROJECT ENGINEER	ASSOCIATE ENGINEERS	SR DESIGN ENGINEER	DESIGN ENGINEER	DESIGN ENGINEER	ASSISTANT ENGINEER	ASSISTANT ENGINEER	ASSISTANT ENGINEER	CADD	HOURS	COST
	$194.37	$167.95	$129.59	$134.42	$119.27	$120.98	$115.81	$92.70	$85.28	$94.56	$74.55	$71.55	$71.19	$71.19		
Total Manhours	160	24		12	40	16		24	12		80				368	
Construction Support	160	24		12	40	16		24	12		80				368	$ 52,661

MANHOUR WORKSHEET

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

TASK	PROJECT CONTROLS	QA/QC	CLERICAL/ADMIN	PRINCIPAL IN CHARGE	STRUCTURES TASK PM	PRINCIPAL BRIDGE ENGINEER	SENIOR BRIDGE ENGINEER	ENVIRO/LOCAL ASSIS. COORD.	BRIDGE ENGINEER	ASSOCIATE BRIDGE ENGINEER	ASSISTANT BRIDGE ENGINEER	SENIOR CAD TECHNICIAN	CLERICAL	QA/QC	HOURS	COST
	$151.02	$205.15	$56.43	$238.85	$219.73	$155.38	$157.92		$142.18	$100.82	$80.14	$116.33	$64.63	$193.88		
Total Manhours	96	80	128		382	594	888		992	1,574		1,264	120	110	6,228	
Project Management, QA/QC																
Meetings, Scheduling, Management, and Coordination	96		40												136	$ 16,755
QA/QC Review		80	24												104	$ 17,766
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																
R/W, 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			40												40	$ 2,257
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 shts)																
Staging and Traffic Handling																
65% Stage Construction Plans																
95% Stage Construction Plans																
Final Stage Construction Plans																

MANHOUR WORKSHEET

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

TASK	PROJECT CONTROLS	QA/QC	CLERICAL/ADMIN	PRINCIPAL IN CHARGE	STRUCTURE TASK PM	PRINCIPAL BRIDGE ENGINEER	SENIOR BRIDGE ENGINEER	ENVIRO/LOCAL ASSIS. COORD.	BRIDGE ENGINEER	ASSOCIATE BRIDGE ENGINEER	ASSISTANT BRIDGE ENGINEER	SENIOR CAD TECHNICIAN	CLERICAL	QA/QC	HOURS	COST
Traffic Signals, Signing & Striping																
Signing and Striping Plans (4 sheets)																
Traffic Signal Plans (2 sheets)																
Signal Interconnect Plans (2 sheets)																
Traffic Cost Estimates																
Traffic Specs			24												24	$ 1,354
Structures																
Project Management						40									40	$ 6,215
Meetings and Coordination					160	40	30			30					260	$ 49,133
Project Control													120		120	$ 7,755
Draft General Plans (35% P & Q)																
Structure type Selection					40	80	160		160	160		160		10	770	$ 105,916
Unchecked Details (65% P&Q)																
Plans					20	80	160		360	400		400		40	1,460	$ 187,886
Quantities					10	24	24		24	80					162	$ 21,194
Intermediate PS&E (95% P&Q))																
Plans					20	80	120		280	400		400		30	1,330	$ 168,257
Specifications					20	60	120								200	$ 32,668
Estimates					20	30	30		20	120					220	$ 28,735
Address COUNTY Comments & Resubmit					20	24	24		64	64		64			260	$ 34,910
Final PS&E (100% PS&E)																
Plans					40	80	96		60	240		240		30	786	$ 102,840
Specifications					20	40	100								160	$ 26,402
Estimates					12	16	24		24	80					156	$ 20,390
Electrical																
Project Meetings & Coordination																
QA/QC																
Photometric/Power Calculations and Analysis																
Site Review																
Electrical & Lighting Plans, 65%																
Electrical & Lighting Plans, 100%																
Electrical & Lighting Plans, Final																
Cost Estimates																
Specifications																

MANHOUR WORKSHEET

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

TASK	PROJECT CONTROLS	CA/QC	CLERICAL/ADMIN	PRINCIPAL IN CHARGE	STRUCTURE TASK PM	PRINCIPAL BRIDGE ENGINEER	SENIOR BRIDGE ENGINEER	ENVIRO/LOCAL ASSIS. COORD.	BRIDGE ENGINEER	ASSOCIATE BRIDGE ENGINEER	ASSISTANT BRIDGE ENGINEER	SENIOR CAD TECHNICIAN	CLERICAL	QA/QC	HOURS	COST
	$151.02	$205.15	$56.43	$238.85	$219.73	$155.38	$157.92		$142.18	$100.82	$80.14	$116.33	$64.63	$193.88		
Total Manhours					40	8	16		4	4		16			88	
Construction Bidding and Award Support					40	8	16		4	4		16			88	$ 15,392

MANHOUR WORKSHEET

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

TASK	PROJECT CONTROLS	QA/QC	CLERICAL/ADMIN	PRINCIPAL IN CHARGE	STRUCTURE TASK PM	PRINCIPAL BRIDGE ENGINEER	SENIOR BRIDGE ENGINEER	ENVIR/LOCAL ASSIS. COORD.	BRIDGE ENGINEER	ASSOCIATE BRIDGE ENGINEER	ASSISTANT BRIDGE ENGINEER	SENIOR CAD TECHNICIAN	CLERICAL	QA/QC	HOURS	COST
	$151.02	$205.15	$56.43	$238.85	$219.73	$155.38	$157.92		$142.18	$100.82	$80.14	$116.33	$64.63	$193.88		
Total Manhours					40	40	40		24	16		40			200	
Construction Support					40	40	40		24	16		40			200	$ 30,999

MANHOUR WORKSHEET

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

TASK	PROJECT LEAD ENGR	SENIOR ENGINEER	ASSISTANT ENG/CADD												HOURS	COST
	$174.25	$143.47	$121.60													
Total Manhours	**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																
R/W, 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 shts)																
Staging and Traffic Handling																
65% Stage Construction Plans																
95% Stage Construction Plans																
Final Stage Construction Plans																

MANHOUR WORKSHEET

COMPANY:	SCOPE OF WORK:	PHASE:
AECOM	Plans, Specs & Estimates	Phase II

PROJECT:	DATE:
Magnolia Avenue/BNSF Grade Separation Project	April 6, 2011

TASK	PROJECT LEAD ENGR	SENIOR ENGINEER	ASSISTANT ENG/CADD												HOURS	COST
Traffic Signals, Signing & Striping																
Signing and Striping Plans (4 sheets)																
Traffic Signal Plans (2 sheets)																
Signal Interconnect Plans (2 sheets)																
Traffic Cost Estimates																
Traffic Specs																
Structures																
Project Management																
Meetings and Coordination																
Project Control																
Draft General Plans (35% P & Q)																
Structure type Selection																
Unchecked Details (65% P&Q)																
Plans																
Quantities																
Intermediate PS&E (95% P&Q))																
Plans																
Specifications																
Estimates																
Address COUNTY Comments & Resubmit																
Final PS&E (100% PS&E)																
Plans																
Specifications																
Estimates																
Electrical																
Project Meetings & Coordination	16	16													32	$ 5,084
QA/QC	16	20	16												52	$ 7,603
Photometric/Power Calculations and Analysis	52	88													140	$ 21,686
Site Review	16	16													32	$ 5,084
Electrical & Lighting Plans, 65%	134	200	220												554	$ 78,795
Electrical & Lighting Plans, 100%	130	240	240												610	$ 86,269
Electrical & Lighting Plans, Final	54	96	92												242	$ 34,370
Cost Estimates	20	20													40	$ 6,354
Specifications	24	16													40	$ 6,478

MANHOUR WORKSHEET

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

TASK	PROJECT LEAD ENGR	SENIOR ENGINEER	ASSISTANT ENG/CADD												HOURS	COST
	$174.25	$143.47	$121.60													
Total Manhours	**8**	**16**													**24**	
Construction Bidding and Award Support	**8**	**16**													**24**	**$ 3,690**

MANHOUR WORKSHEET

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

TASK	PROJECT LEAD ENGR	SENIOR ENGINEER	ASSISTANT ENG/CADD												HOURS	COST
	$174.25	$143.47	$121.60													
Total Manhours	12	24													36	
Construction Support	12	24													36	$ 5,534

SUBCONSULTANT FEE PROPOSAL WORKSHEET

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

DIRECT LABOR

PERSONNEL	POSITION	HOURS		RATE	AMOUNT
Somadevan Niranjanan	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 MANHOUR WORKSHEET

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

TASK	SENIOR ENGINEER	PRINCIPAL ENGINEER	ASSOCIATE ENGINEER	PROJECT ENGINEER/GEOLOGIST	STAFF ENGINEER	JUNIOR ENGINEER	TECHNICAL EDITOR	WORD PROCESSOR/CLERICAL						HOURS	COST
	$147.92	$207.00	$154.29	$108.21	$97.31	$77.31	$121.75	$82.45							
Total Manhours	223	64		288	238	84	2	20						919	
Work Plan/Permitting	8	4			8	16		1						37	$ 4,109
Subsurface Investigation	5			22	114	8								149	$ 14,832
Disposal of Investigation Derived Waste					8									8	$ 778
Geotechnical Laboratory Testing	8			16	8									32	$ 3,693
Analyses, Reports, Meetings, Consultants, Management	182	52		250	100	60	2	18						664	$ 80,835
Review of Plans and Specifications	20	8						1						29	$ 4,697

SUBCONSULTANT FEE PROPOSAL WORKSHEET

COMPANY:	SCOPE OF WORK:	PHASE:
Douglas Engineering	**Utilities/PUC**	**All Phases**
PROJECT:		DATE:
Magnolia Avenue/BNSF Grade Separation Project		**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 MANHOUR WORKSHEET

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

TASK	PROJECT MANAGER	AUTOCADD/ ENGINEERING TECH	ENGINEERING TECH	FIELD ENG'R TECH (POTHOLE MONITORING)										HOURS	COST
	$179.28	$90.84	$78.88	$121.91											
Total Manhours	**264**	**264**	**260**	**120**										**908**	
Task 2.1 Project Development, team meetings, PDT	**72**													**72**	**$ 12,908**
Task 2.2 Project Meetings and Coordination	**16**	**8**	**8**											**32**	**$ 4,226**
Task 2.3 Utility Research		**12**	**12**											**24**	**$ 2,037**
Task 2.4 Utility Location	**16**	**108**	**40**	**120**										**284**	**$ 30,463**
Task 2.5 Utility Relocation Coordination and Documentation, ROW Utility Relocation Certification	**80**	**104**	**192**											**376**	**$ 38,935**
Task 2.6 Railroad Coordination	**16**													**16**	**$ 2,868**
Task 2.7 Railroad Construction and Maintenance Agreement	**40**	**16**												**56**	**$ 8,625**
Task 2.8 CPUC Order Authoring Construction of a Grade Separation	**24**	**16**	**8**											**48**	**$ 6,387**

SUBCONSULTANT FEE PROPOSAL WORKSHEET

COMPANY:	SCOPE OF WORK:	PHASE:
Thirtieth Street Architects	**Bridge Asthetics**	**Phase II**
PROJECT:		DATE:
Magnolia Avenue/BNSF Grade Separation Project		**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 MANHOUR WORKSHEET

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

TASK	SENIOR ARCHITECT	LICENSED ARCHITECT	DRAFTS PERSON	LIGHTING DESIGNER										HOURS	COST
	$160.00	$135.00	$110.00	$160.00											
Total Manhours	64	100	160	24										348	
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:	SCOPE OF WORK:	PHASE:
RHA Landscaping	**Landscaping**	**All Phases**
PROJECT:		DATE:
Magnolia Avenue/BNSF Grade Separation Project		**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	**595**		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:	SCOPE OF WORK:	PHASE:
RHA Landscaping	**Landscaping**	**Phase II**
PROJECT:		DATE:
Magnolia Avenue/BNSF Grade Separation Project		**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:	SCOPE OF WORK:	PHASE:
RHA Landscaping	**Landscaping**	**Phase IV**
PROJECT:		DATE:
Magnolia Avenue/BNSF Grade Separation Project		**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:	SCOPE OF WORK:	PHASE:
RHA Landscaping	**Landscaping**	**All Phases**
PROJECT:		DATE:
Magnolia Avenue/BNSF Grade Separation Project		**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	$143.00	$126.50	$104.50	$93.50	$244.20	$167.20	$147.40	$122.10	$108.90	
PHASE TOTALS	**26**	**29**	**173**	**121**	**44**	**13**	**117**	**42**	**14**	**17**	**595**
PHASE I											
PHASE II	26	29	173	121	44						393
PHASE III											
PHASE IV						13	117	42	14	17	203

SUBCONSULTANT MANHOUR WORKSHEET

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

TASK	CHIEF LANDSCAPE ARCHITECT	ASSOCIATE LANDSCAPER	LANDSCAPE ARCHITECT	DESIGNER	STAFF	CHIEF LANDSCAPE ARCHITECT	ASSOCIATE LANDSCAPER	LANDSCAPE ARCHITECT	DESIGNER	STAFF					HOURS	COST
	$209.00	$143.00	$126.50	$104.50	$93.50	$244.20	$167.20	$147.40	$122.10	$108.90						
Total Manhours	**26**	**29**	**173**	**121**	**44**										**393**	
Project Management & Meetings	**20**		**44**												**64**	**$ 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**

SUBCONSULTANT MANHOUR WORKSHEET

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

TASK	CHIEF LANDSCAPE ARCHITECT	ASSOCIATE LANDSCAPER	LANDSCAPE ARCHITECT	DESIGNER	STAFF	CHIEF LANDSCAPE ARCHITECT	ASSOCIATE LANDSCAPER	LANDSCAPE ARCHITECT	DESIGNER	STAFF					HOURS	COST
	$209.00	$143.00	$126.50	$104.50	$93.50	$244.20	$167.20	$147.40	$122.10	$108.90						
Total Manhours						**13**	**117**	**42**	**14**	**17**					**203**	
Bid Support						**2**	**1**	**16**		**2**					**20**	**$ 3,026**
Construction Support						**8**	**72**	**26**	**14**	**9**					**129**	**$ 20,430**
Plant Establishment (to 1 yr after initial planting)						**3**	**45**			**6**					**54**	**$ 8,910**