



**Washington State  
Department of Transportation**  
Paula J. Hammond, P.E.  
Secretary of Transportation

**Urban Corridors**  
401 Second Avenue South, Suite 400  
Seattle WA 98104  
206-464-1220  
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[www.wsdot.wa.gov](http://www.wsdot.wa.gov)

March 3, 2009

Mr. Mike Rigsby  
PB Americas Inc.  
999 Third Avenue, Suite 2200  
Seattle, WA 98104

Re: AWVSRP - SR 99 Central Waterfront Conceptual Engineering Support for the  
Environmental Impact Statement  
Agreement Y-9715 Task CE  
**Record Original & Notice to Proceed**

Dear Mr. Rigsby:

Enclosed for your records is one fully executed original of Task CE for Agreement Y-9715. The Task Start Date is February 16, 2009 and the Task End Date is September 30, 2009. The total amount authorized for this task is \$2,695,503 to assist the state as prescribed in the Scope of the Task Order Document.

The manager for this task is Mr. Alec Williamson. He may be reached at 206-382-6366. Invoices should be sent to Mr. Williamson at 999 Third Avenue, Suite 2300, Seattle, WA 98104.

Please call me at (206) 464-1188 if you have any questions.

Sincerely,

Stacy Scott  
Deputy Consultant Liaison  
Urban Corridors Office

Enclosures:

cc: A, Williamson, MS 230  
G. Davis, MS 95  
UCO Consultant Liaison Files

D. Dilley, MS 47323  
B. Runion, MS 47420 (with second original)  
T. Tobin, MS 230



All terms and conditions of this agreement are in full force and effect for this Task Order document.

**Agreement No.**  
(To be filled in by Agreement Manager)

**Y-9715**

**On-Call Agreement Manager Information**

**Task No.**

**CE**

Agreement Manager Doyle Dilley	Phone 360-705-7107	Org. 308010	Mailstop 47323
Mailing Address PO Box 47323 Olympia WA 98504-7323			

**Project Manager Information (If different from On-Call Agreement Manager)**

Project Manager Alec Williamson	Phone 206-382-6366	Org. 589601	Mailstop NB82-230
Mailing Address 999 Third Avenue, Suite 2300 Seattle WA 98104			

**Project Information**

Project Title AWVSRP - SR 99 Central Waterfront Conceptual Engineering Support for the Environmental Impact Statement	
State Route No(s) SR 99	County(s) King

**Task Schedule**

Task Start Date February 16, 2009	Task End Date September 30, 2009
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← No payment will be made for work done **PRIOR** to Task Start Date or for work done **AFTER** Task End Date

**Task Cost**

This section required if there is Fed. Aid Part.

Work Order No.	Org. Code	Amount	Fed. Aid Part.?		Fed. Aid Project No.	Fed. Aid Part. %
XL3238	589206	\$2,695,503.00	<input checked="" type="radio"/> Yes	<input type="radio"/> No	0099(096)1	100
			<input type="radio"/> Yes	<input type="radio"/> No	PIN: 809936E	0
			<input type="radio"/> Yes	<input type="radio"/> No		
			<input type="radio"/> Yes	<input type="radio"/> No		
			<input type="radio"/> Yes	<input type="radio"/> No		
			<input type="radio"/> Yes	<input type="radio"/> No		
			<input type="radio"/> Yes	<input type="radio"/> No		
			<input type="radio"/> Yes	<input type="radio"/> No		
			<input type="radio"/> Yes	<input type="radio"/> No		
			<input type="radio"/> Yes	<input type="radio"/> No		

**Total Task Amount** → **\$2,695,503.00**

**Consultant Information**

Prime Consultant PB Americas, Inc. - AWV	Contact Mike Rigsby		
Address 999 Third Avenue, Suite 2200 Seattle WA 98104			
Phone 206-382-6352	Fax 206-382-5291	E-Mail rigsbym@consultant.wsdot.wa.gov	Federal I.D. No. 11-1531569
Are there any Subconsultants working on this project? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes, complete the Subconsultant Worksheet and return with signed Task Order.			

**Approval Signatures**

\*\*\*\*Note: Two original signed Documents are required.\*\*\*\*

\_\_\_\_\_  
Consultant

\_\_\_\_\_  
Washington State Department of Transportation

Agreement Manager (Signature required for execution of document ONLY for Communications and Public Involvement and Environmental Services Agreements)

**Scope of Task Order**

*Provide description of work and reference attachments for prime consultant and all subconsultants (to include detailed description of work schedule and estimate).*

Report Due Date
June 30, 2009

Scope: This Task Order describes the scope, schedule, and budget for conceptual engineering for two alternatives (as described below) necessary to support preparation of the Environmental Impact Statement (EIS) for replacement of the Alaskan Way Viaduct from South Royal Brougham Way to the Battery Street Tunnel.

The single-bore tunnel alternative (tunnel alternative) includes a south interchange and portal extending from approximately S. Atlantic Street to S. King Street and bounded on the west by the Port of Seattle Terminal 46 and on the east by 1st Avenue S.; a bored tunnel that is generally aligned along 1st Avenue S.; and a north portal and interchange in the vicinity of Aurora Avenue and Harrison Street. Additionally, a street connection between Alaskan Way and Elliott and Western Avenues (Armory Way) is included in this alternative. The removal of the viaduct and ramps from South Royal Brougham Way to the south portal of the Battery Street Tunnel is also included in the conceptual engineering. For the purposes of the EIS, this alternative will only include minimal restoration of the surface streets beneath the viaduct to include removal of viaduct columns to one (1) foot below grade, filling voids left from column removal, and restriping with the roadway and parking formerly under the viaduct. No waterfront street reconfiguration or urban design will be considered as part of this project.

The "no-build" alternative includes removal of the viaduct from Royal Brougham Way to the south portal of the Battery Street Tunnel with minimal restoration of the surface streets beneath the viaduct to include removal of viaduct columns to one (1) foot below grade, filling voids left from column removal, and restriping with the roadway and parking formerly under the viaduct. No street reconfiguration or urban design will be considered as part of this project.

Schedule: The Task Order duration is from February 16, 2009 through September 30, 2009. The work is budgeted to be complete by June 30, 2009.

Budget: The total budget for Task No. CE is \$2,695,503 and will be funded from Work Order No. XL 3238.

List of Attachments and Exhibits:

- Exhibit A - Scope of Work
- Attachment 1 - Project Footprint
- Exhibit D - Prime Consultant's Cost Computations (Cost Estimate)
- Exhibit E - Sub Consultant's Cost Computations (Cost Estimate)

Distribution: Originals:  Consultant  
 Accountant

Copies:  File  
 Task Manager

Consultant Services  
 Other Stacy Scott, UCO  
WSDOT HQ

# Subconsultant Work Sheet

Agreement No.	Task No.	Amendment No.	Amount
Y-9715	CE		\$2,695,503.00

Subconsultant Name Arthur G. Bendelius			Contact Arthur G. Bendelius		
Address 11272 Big Canoe					
			Big Canoe		GA 30143
Phone (706) 268-1965	Fax (706) 268-1974	E-Mail bendelius@pbworld.com		Federal I.D. No. 148-28-2360	
UBI No. 600 002 584	D/M/WBE Part.? <input type="radio"/> Yes <input type="radio"/> No	D/M/WBE No.		<b>Amount \$</b>	\$26,313.00

Subconsultant Name Bolima Drafting and Design, Inc. - AWW			Contact Bill Bolima		
Address 1904 Third Avenue, Suite 711					
			Seattle		WA 98101
Phone 206-332-9729	Fax 206-374-2686	E-Mail bbolima@bolima.com		Federal I.D. No. 91-1621432	
UBI No. 601 512 071	D/M/WBE Part.? <input type="radio"/> Yes <input type="radio"/> No	D/M/WBE No. D1M0202127		<b>Amount \$</b>	\$14,349.00

Subconsultant Name Entech Northwest, Inc.			Contact Michelle Jones		
Address 1420 5th Avenue, Suite 2200					
			Seattle		WA 98101
Phone 425-942-0353	Fax 253.942.8235	E-Mail mjones@entechnorthwest.com		Federal I.D. No. 91-2111382	
UBI No. 602 103 422	D/M/WBE Part.? <input type="radio"/> Yes <input type="radio"/> No	D/M/WBE No. D3F2312035		<b>Amount \$</b>	\$6,498.00

Subconsultant Name HDR Engineering, Inc. (Seattle)			Contact Mr. Lawrence Kyle		
Address 600 Stewart Street, Suite 520					
			Seattle		WA 98101
Phone 206-770-3536	Fax 206-770-3569	E-Mail Kylel@wsdot.wa.gov		Federal I.D. No. 47-0680568	
UBI No. 601 021 437	D/M/WBE Part.? <input type="radio"/> Yes <input type="radio"/> No	D/M/WBE No.		<b>Amount \$</b>	\$14,900.00

Subconsultant Name Jacobs Engineering Group, Inc. - AWW			Contact Jeff Schutt		
Address 600 - 108th Avenue NE, Suite 700					
			Bellevue		WA 98004
Phone 206-382-5266	Fax 206-382-8303	E-Mail jeff.schutt@jacobs.com		Federal I.D. No. 43-1621641	
UBI No. 601 440 563	D/M/WBE Part.? <input type="radio"/> Yes <input type="radio"/> No	D/M/WBE No.		<b>Amount \$</b>	\$589,509.00

<b>Subconsultant(s) Total</b> →	<b>\$935,223.00</b>
<b>Net Amount to Prime</b> →	<b>\$1,760,280.00</b>

# Subconsultant Work Sheet

<b>Agreement No.</b> Y-9715	<b>Task No.</b> CE	<b>Amendment No.</b>	<b>Amount</b> \$2,695,503.00
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Subconsultant Name Power Engineers, Inc.			Contact Jerry Johnson		
Address 3940 Glenbrook Drive			Hailey		ID 83333
Phone 208-788-345	Fax 208-788-0525	E-Mail jjohnson@powereng.com		Federal I.D. No. 82-0324246	
UBI No. 601 059 917	D/M/WBE Part.? <input type="radio"/> Yes <input type="radio"/> No	D/M/WBE No.		<b>Amount \$</b>	\$15,481.00

Subconsultant Name Roma Design Group			Contact Boris Dramov		
Address 1527 Stockton Street			San Francisco		CA 94133
Phone 415-616-9900	Fax 415-788-8728	E-Mail borisd@roma.com		Federal I.D. No. 94-1491043	
UBI No. 602 287 820	D/M/WBE Part.? <input type="radio"/> Yes <input type="radio"/> No	D/M/WBE No.		<b>Amount \$</b>	\$117,626.00

Subconsultant Name Rosewater GHD - AWV			Contact Charles Smith		
Address 101 Stewart Street, Suite 407			Seattle		WA 98101
Phone 206-382-5243	Fax 206-382-8303	E-Mail smithch@wsdot.wa.gov		Federal I.D. No. 98-0425935	
UBI No. 602 734 094	D/M/WBE Part.? <input type="radio"/> Yes <input type="radio"/> No	D/M/WBE No. D2F0600692		<b>Amount \$</b>	\$44,954.00

Subconsultant Name William Ott			Contact William Ott		
Address 129 E Lake Sammamish Shoreline NE			Sammamish		WA 98074
Phone 425-868-7415	Fax 425-868-7415	E-Mail wpo910@aol.com		Federal I.D. No. 54-2428296	
UBI No.	D/M/WBE Part.? <input type="radio"/> Yes <input type="radio"/> No	D/M/WBE No.		<b>Amount \$</b>	\$105,593.00

Subconsultant(s) Total →

\$935,223.00
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Net Amount to Prime →

\$1,760,280.00
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**THE ALASKAN WAY VIADUCT &  
SEAWALL REPLACEMENT PROGRAM  
AGREEMENT Y-9715**

**TASK NO. CE  
CENTRAL WATERFRONT  
CONCEPTUAL ENGINEERING SUPPORT FOR THE  
ENVIRONMENTAL IMPACT STATEMENT (EIS)**

**SCOPE OF WORK  
(EXHIBIT A)**

**Summary:**

This Task Order describes the scope, schedule, and budget for conceptual engineering for two alternatives (as described below) necessary to support preparation of the Environmental Impact Statement (EIS) for replacement of the Alaskan Way Viaduct from South Royal Brougham Way to the Battery Street Tunnel (PROJECT).

The single-bore tunnel alternative (tunnel alternative) includes a south interchange and portal extending from approximately S. Atlantic Street to S. King Street and bounded on the west by the Port of Seattle Terminal 46 and on the east by 1<sup>st</sup> Avenue S.; a bored tunnel that is generally aligned along 1<sup>st</sup> Avenue S.; and a north portal and interchange in the vicinity of Aurora Avenue and Harrison Street. Additionally a street connection between Alaskan Way and Elliott and Western Avenues (Armory Way) is included. The removal of the viaduct and ramps from South Royal Brougham Way to the south portal of the Battery Street Tunnel is also included in the conceptual engineering. For the purposes of the EIS, the alternative will only include minimal restoration of the surface streets beneath the viaduct to include removal of columns to one (1) foot below grade, filling voids left from column removal, and restriping with the roadway and parking formerly under the viaduct. No waterfront street reconfiguration or urban design will be considered as part of this project.

The "no-build" alternative includes removal of the viaduct from Royal Brougham Way to the south portal of the Battery Street Tunnel with minimal restoration of the surface streets beneath the viaduct to include removal of columns to one (1) foot below grade, filling voids left from

column removal, and restriping with the roadway and parking formerly under the viaduct. No street reconfiguration or urban design will be considered as part of this project.

The Task Order duration is from February 16, 2009 through September 30, 2009. The work is budgeted to be complete by June 30, 2009.

**Objective:**

The objective of this Task Order is to perform conceptual engineering necessary to support preparation of the EIS for the PROJECT. For the tunnel alternative, the CONSULTANT shall sufficiently develop the design to determine critical roadway and interchange geometry, tunnel cross section, spatial allocation, and structural concepts, tunnel system configuration, tunnel operations concept, demonstration of systems functionality, size and location of major facilities, constructability, construction sequencing and impacts, The scope of services will include development of a conceptual level design for the following project elements:

- Civil
- Structural
- Tunnel systems
- Architectural
- Urban design

This scope includes analysis of the following:

- Evaluation of utilities impacts and other utilities related considerations
- Construction impacts
- Geotechnical conditions and considerations (coordination and support)
- Right of Way requirements

The following additional support activities are included:

- Visual simulation and graphics
- Technical support for public processes
- Cost estimates
- Construction planning and scheduling

**Approach:**

The CONSULTANT shall develop conceptual engineering, after-project conditions, and project impacts for the single-bore tunnel alternative and for the "no-build" alternative for the PROJECT.

The following tasks detail the scope of services.

1. **Project Management:** The CONSULTANT shall perform the following project management activities:
  - Coordinate and manage all elements of this Task Order.

- Identify and communicate concerns and issues to the STATE and work to resolve them in a timely manner.
- Liaison with designated representatives of the STATE in all technical matters and notify the STATE of any activities that are directed or requested which divert from the established scope, quality, schedule, or cost baselines of the task order.
- Manage the cost and progress of designs against the baseline budget and schedule and maintain conformance with design standards.
- Prepare a project schedule that includes subtask durations, work product and deliverable due dates, quality assurance and control reviews, and milestone dates for the scoped activities.
- Attend and participate in meetings with the STATE, stakeholders, and the public to present design concepts and seek agreement with affected stakeholders relative to the technical aspects of the design.
- Conduct weekly progress meetings with the STATE to discuss the work and to seek direction and approval.
- Meet weekly with project engineering staff to review the progress of the design and to coordinate technical aspects of the work.
- Prepare and provide meeting notes for all meetings conducted by the CONSULTANT and provide copies to the attendees.
- Attend public hearings and meetings as necessary to support public presentations and open houses conducted by the STATE.

**2. Geotechnical Data (support):** Provide the following:

- Provide geotechnical needs and recommendations for exploration and analysis to the STATE.
- Review geotechnical data and analysis provided by the STATE to the CONSULTANT and provide comments.
- Coordinate and incorporate geotechnical analysis into design and construction planning.

**3. Architectural Design:** Develop architectural concepts for tunnel portals and ventilation, control, and egress (if required). In addition, the CONSULTANT shall develop concepts for buildings and structures associated with the tunnel alternative. Services will include the following:

- **Programming/site analysis:**
  - Determine project needs
  - Develop architectural goals for project
  - Define the activities that require space
  - Prepare functional relationship diagrams
  - Develop square footage requirements
  - Evaluate building locations
  - Evaluate regulatory restrictions and requirements
  - Evaluate constructed conditions and access to utilities

- **Schematic Design**
    - Develop architectural conceptual design
    - Coordinate conceptual design with other disciplines
    - Develop quantities in support of cost estimate and environmental documents
    - Draft report of architectural concept to communicate the design concept
    - Review the selected schematic design with the STATE
  - **Architectural Design Assumptions:**
    - Presentations to the Seattle Design Commission are not included
    - Graphical depictions for the architectural report will be prepared on 11 x 17 sheets
    - One (1) concept for each portal will be developed
  - **Work Products**
    - Architectural plans
    - Architectural sections
    - Architectural elevations
    - Report of architectural concept with graphics
4. **Civil Design:** Provide basic configuration plans for the single-bore tunnel and “no-build” alternatives. Prepare conceptual level highway, street, ramp and intersection designs. Provide necessary information required for R/W plans. Produce civil drawings in support of EIS.
- **Civil design includes the following:**
    - Develop civil design criteria for the tunnel alternative
    - Prepare Plans, Profiles, and Sections for the tunnel alternative
    - Prepare Plans for the “no-build” alternative
    - Prepare tunnel portal locations and plan views for the tunnel alternative
    - Prepare North and South Interchange Plans for the tunnel alternative
    - Prepare Horizontal Alignments w/Stationing for the tunnel alternative
    - Prepare Detour plans for the tunnel alternative
    - Identify conceptual Right of Way requirements and limits for the tunnel alternative
    - Prepare/supplement corridor analysis (as directed) to determine design speed for the tunnel alternative
    - Prepare a geometric design matrix for the tunnel alternative
    - Prepare a Design Approval Package in accordance with the WSDOT Design Manual, 2007 edition for the tunnel alternative
    - Develop quantities in support of cost estimate and environmental documents for both alternatives
    - Coordinate design alternatives with other disciplines
    - Interface with environmental staff
    - Present civil design elements to agency staff
    - Review environmental technical memoranda

- Review overall design drawing package
  - **Civil Assumptions**
    - Design of surface streets will be per City of Seattle Standards
    - Plans and Profiles will be prepared at appropriate scale on 11 x 17 sheets
    - Drawings of Supporting Details may require larger scale than plans and profiles
    - Sections will be shown at approximately fifteen (15) selected locations for the tunnel alternative
    - Preliminary Traffic Analysis will be available in sufficient time to finalize the work for this task
  - **Work Products:** The following will be provided:
    - Geometric design criteria for the tunnel alternative
    - Roadway Plan, Profile, and Section drawings for streets, interchanges, and the tunnel for the tunnel alternative including Armory Way
    - Roadway plan drawings for the surface restoration for the “no-build” alternative
    - Design Calculations for the tunnel alternative
    - Design Approval Package for the tunnel alternative
    - Graphic Support for both alternatives
5. **Structures:** The CONSULTANT shall update AWVSRP structural design criteria, develop the structural conceptual design for the tunnel alternative, and prepare conceptual level structural designs for interchanges, portals, the tunnel, and support facilities.
- **Work for the tunnel, interchanges and portals includes:**
    - Bridge locations and profiles for ramps, approaches, and overpasses for the tunnel
    - Bridge locations and profiles for Armory Way
    - Portal support systems
    - Structural sections
    - Establish tunnel liner thickness
    - Tunnel roadway structural conceptual design
    - Tunnel egress and walkway conceptual design
    - Develop quantities in support of cost estimate and environmental documents
    - Coordinate design with other disciplines
    - Interface with environmental staff
    - Present structural design elements to agency staff
    - Review of environmental technical memoranda
    - Review of overall design drawing package

- **Structural Assumptions**

- Design for all structures will be based on AWVSRP Structural Design Criteria as revised for the bored tunnel
- Sections will be prepared at 1"=30' on 11 x 17 sheets

- **Work Products**

- Supplement to AWVSRP structural design criteria
- Bridge location plans
- Conceptual support system plans for tunnel portals
- Tunnel roadway structural concept and sections
- Design calculations

6. **Urban Design:** The CONSULTANT shall provide concept level urban design. Considerations such as general type, size and location of non-motorized traffic circulation areas,) and landscape areas will be addressed.

- **Additional Engineering Work**

- Provide networks for pedestrian and bicycle traffic flows
- Develop quantities in support of cost estimate and environmental documents
- Coordinate design alternatives with other disciplines
- Interface with environmental staff
- Present urban design elements to agency staff
- Review city plans, projects, and proposals, district policies and adopted guidelines to determine how they are affected and/or how they can inform the development of the conceptual variants within the PROJECT area

- **Urban Design Assumptions**

- For the purposes of this design, the current configuration of the central waterfront, minus the viaduct will be depicted.
- Design is at a concept level only. Details such as specific landscape areas, urban furnishings, etc. are not included.
- Plans will be prepared at 1"=100'
- Profiles will be prepared at 1"=40'
- Combined section/ elevations will be shown at approximately fifteen (15) selected locations
- Treatments of existing building facades and outlying private property within the Urban Design area are not included in this scope.
- Projected pedestrian and bicycle traffic volumes necessary for design purposes will be provided through means of another task.
- Design for ADA is at a concept level only. Detailed ADA planning is not included in this scope.
- Formal presentations to STATE and the CITY for purposes of eliciting feedback will be limited to an initial presentation and one refinement presentation
- Formal presentations to community groups, identified stakeholders, etc. will be limited to two (2)

- 3D rendering is not included in this subtask
- **Work Products**
  - Urban design plans, profiles, and sections
  - Graphical report of urban design concept
- 7. **Utilities:** Evaluate impacts to existing utility systems and prepare documentation to inform the environmental process. Stormwater, sanitary/combined sewer, water, medium and high voltage electrical, fiber optic, gas, steam, telephone, and cable TV systems will be included in this evaluation of utilities. The focus of this effort is to identify impacts to utilities and to coordinate with Utility owners. The following information and analysis will be developed:
  - **Existing Utilities Systems**
    - Review of existing utility systems by type and ownership within the PROJECT area through use of existing mapping, Utility owners' records, and interview with utility systems owners
    - Evaluation of direct utility impacts and other consideration for utility systems
  - **Utility Services During Construction**
    - Construction sequence implications for maintenance of utility services
    - Potential service impacts of construction activities
  - **Code, Regulatory, and Improvement Effects on Utility Systems** Overview of implications of code/regulatory changes and utility owner proposed system improvements for utility systems.
  - **Stormwater:** Develop baseline input data for pollutant loading and stormwater analysis for the Biological Assessment:
    - Drainage basin description and delineation in the PROJECT area
    - Current stormwater management approach in the PROJECT area
    - Anticipated stormwater management approach in the PROJECT area
    - Projected stormwater volumes by basin
  - **Utilities Assumptions**
    - Relocated utilities will be replaced in kind; however current codes and criteria will be applied
    - The analysis will take into consideration space required for potential utility system betterments as identified by the responsible utility owners
    - Hydraulic modeling of water and sewer systems will not be performed by the CONSULTANT, however, where applicable, modeling performed under previous task orders will be considered
    - Unless infeasible, the CONSULTANT assumes that current stormwater management practices will be retained, i.e. basins currently managed as combined systems will remain combined, separated systems will remain

- separated, and low flow diversion systems will remain low flow diversion
- Existing utility roll plots developed under previous task orders will be used for this analysis. Roll plots for areas outside the mapping boundaries will be developed from Utility owners' records and CITY mapping. Roll plots will be produced at 1"=40".
- Utilities mapping developed under Task No. BD will used for this analysis. For areas not covered by existing mapping, City Geographic Information System data, photogrammetry, utility as-built plans, and other City records will be used and transferred to roll plots.

- **Work Products:**

- Existing utilities roll plots
- Existing utilities sections (submitted as a component of Civil roadway sections at key locations)
- Summary level stormwater report

**8. Tunnel Engineering:** Develop systems concept design for the tunnel alternative to include ventilation, power distribution, illumination, fire protection, egress, and controls. The CONSULTANT shall convene a Fire, and Life, Safety Committee to guide systems design to be chaired by the STATE.

- Review and revise as necessary previously developed AWVSRP criteria for the following tunnel systems elements:
  - Ventilation
  - Fire protection
  - Life safety systems
  - Monitoring and controls
  - Illumination
  - Tunnel electrical system and service
  - Tunnel drainage system
  - Communications
  - Americans with Disabilities Act (ADA) considerations
- Provide conceptual level schematics for tunnel systems including:
  - Ventilation system concept riser diagram including the required number and the approximate location of ventilation buildings
  - Schematic ventilation building equipment arrangements showing approximate overall building dimensions for use in architectural development of the structures
  - Integration of the tunnel systems by maintaining close coordination with the structural design
  - Fire protection including detection and fixed suppression systems schematics
  - Life Safety systems to include tunnel monitoring, communications, and egress
  - Tunnel operations monitoring and control system
  - Tunnel electrical system schematic and one-line diagram
  - Tunnel drainage system concept riser diagram

- **Work Products:**

- Tunnel systems design criteria
- Plans, schematics, and typical sections for tunnel systems
- Systems design calculations
- Conceptual tunnel operations plan

9. **Construction Planning:** Prepare a description and graphical flowchart of a proposed construction sequence and staging to a level of detail necessary to support the DEIS in analyzing the environmental impacts due to construction. Analysis will include:

- Evaluation of construction sequencing and impacts on adjacent public facilities and businesses, storage of construction materials and equipment, site accessibility, working space, office space, utility relocations, and requirements for temporary utility services
- Development of construction schedule and estimate the overall construction duration and incorporate as part of the graphical flowchart of construction activities
- Review and evaluate overall constructability and potential construction risks and refine construction sequencing, staging, schedule, and overall construction duration.
- Provide input and review construction contract packaging project delivery approach and recommendations.
- Tunnel construction engineering – develop feasible construction approach to include logistical requirements for tunnel boring (equipment, staging area operations and layout, haul requirements, staging requirements, launch and retrieval portal requirements, etc.); performance measures for the tunnel boring machine (TBM) and segmental tunnel lining system; grouting requirements; and potential settlement effects along the tunnel route.

- **Construction Planning Assumptions:**

- The STATE will conduct with CONSULTANT support, one (1) constructability workshop to review and evaluate proposed construction plans and designs for constructability and bidability
- The STATE will provide estimates of anticipated settlement to the CONSULTANT.

- **Work Products:**

- Construction sequencing and staging plan flow charts, and analysis
- Constructability, tunnel construction engineering, and construction impacts White Paper

10. **Cost Estimates:**

- Prepare a planning level cost estimate.
- Prepare one planning level estimate update.

## 11. Project Visualization:

- Prepare visual simulations to include videos and stills as directed by the STATE to support decision-making, EIS preparation, and public outreach.
- Prepare four (4) dimensional (4D) graphical support to support construction planning as directed by the STATE.

**Assumptions:** The following assumptions apply to all elements of this task order:

- Multiple alternative interchange configurations may be considered for each portal in the design development process however the STATE will determine the final PROJECT configuration that will be advanced in the Design Approval Package and the EIS Snapshot by March 16, 2009.
- Transportation and traffic analysis and modeling will be performed under a separate task order. Analysis needed to support the design process and preparation of the supplemental Corridor Analysis will be complete by May 1, 2009.
- Geotechnical data and analysis for engineering and construction considerations will be provided by the STATE or its consultants and are not included in this scope of work. The CONSULTANT will provide input, support, and review of geotechnical related documents and incorporate geotechnical engineering and design considerations into design and construction planning.
- Topographic and utility mapping services will be provided under a separate task order. In the absence of current project mapping, the CONSULTANT shall use STATE provided photogrammetry and City of Seattle archived Graphical Information Systems (GIS), mapping and utility as-built plans as available.
- Surveying and Record of Survey, and Right of Way plans will be prepared under separate task order or by the State.
- The Alaskan Way Viaduct and Seawall Replacement Program (AWVSRP) Quality Control and Quality Assurance Plan is applicable to all deliverables in this task order.
- Calculations will be limited to demonstration of concept level design.

## **Deliverables:**

1. EIS "Snapshot" – the following deliverables will be provided for use in development of the EIS as appropriate for the tunnel and for the "no-build" alternatives:
  - a. Conceptual level plan set consisting of:
    - i. Architectural plans, sections, and elevations
    - ii. Civil alignment and interchange plans, profiles, and sections
    - iii. Tunnel, portal, and bridge structural plans and sections
    - iv. Urban design plans, sections, and elevations
    - v. Existing Utilities plans and typical utility sections
    - vi. Tunnel systems schematics
  - b. Conceptual memoranda/white papers including the following:
    - i. Report depicting architectural themes and concepts with graphics
    - ii. Report depicting Urban design concepts and themes with graphics
    - iii. Utilities impacts
    - iv. Summary level stormwater report
    - v. Construction staging, sequence and impacts

- vi. Right of Way impacts
- vii. Corridor operations plan

2. Design development: The following additional deliverables will be provided to support the design development and approval process:

- a. Civil design criteria
- b. Supplement to the corridor analysis
- c. Geometric design matrix
- d. Structural design criteria update
- e. Tunnel systems design criteria
- f. Draft design approval package
- g. Draft deviations
- h. Construction impacts and constructability white paper
- i. Planning level cost estimate
- j. Planning level cost estimate update

**Activities List and Cost Accounts:**

<u>WSDOT MDL No.</u>	<u>PB No.</u>	<u>Description</u>
PE.PM.02	CE.01	Project Management
PE.PD.18	CE.02	Geotechnical Data (support)
PE.PD.30.02	CE.03	Architectural Design
PE.PD.20	CE.04	Civil Design
PE.BR.02.07	CE.05	Structures
PE.PD.32	CE.06	Urban Design
PE.PD.38	CE.07	Utilities
PE.BR.02.11	CE.08	Tunnel Systems
PE.PD.40.20	CE.09	Construction Planning
PE.PD.50	CE.10	Drawing Preparation
PE.PS.01.01	CE.11	Cost Estimates
PE.PS.08.01	CE.12	Project Visualization
-	CE.99	Other Direct Costs

**Deliverables:**

The deliverables are described in the tasks above.

**Anticipated Schedule:**

Draft Design Criteria – March 2009

Draft reports, white papers, and narrative work products – May 1, 2009

Draft “snapshot” of conceptual design for EIS – June 1, 2009

Final reports, drawings, and work products for EIS (Design Snapshot) – June 30, 2009

Initial Planning Level Cost Estimate – March 27, 2009

Planning Level Cost Estimate Update – June 30, 2009

Draft Design Approval Package submitted for STATE Review – June 30, 2009

**Consultant’s Cost Computations (Cost Estimate):**

The CONSULTANT’s Cost Computations (Cost Estimates) are included as Exhibits D and E and by reference are made part of this Task Order.

**Progress Reporting:**

Deliverable progress milestones may be completed early, with STATE approval, so that work may be progressed if the schedule will allow. Progress of deliverables will be updated monthly.

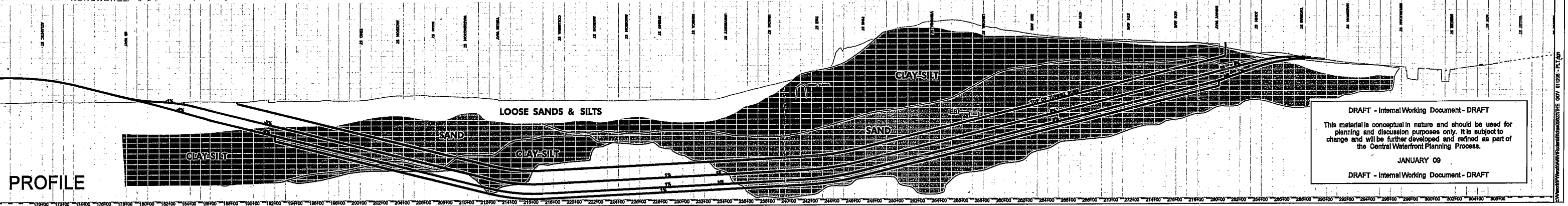
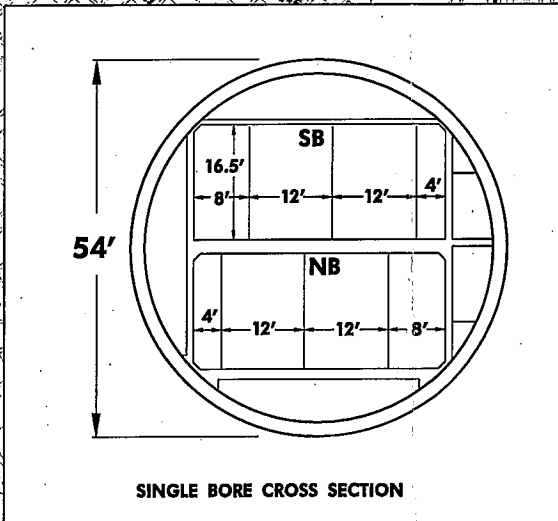
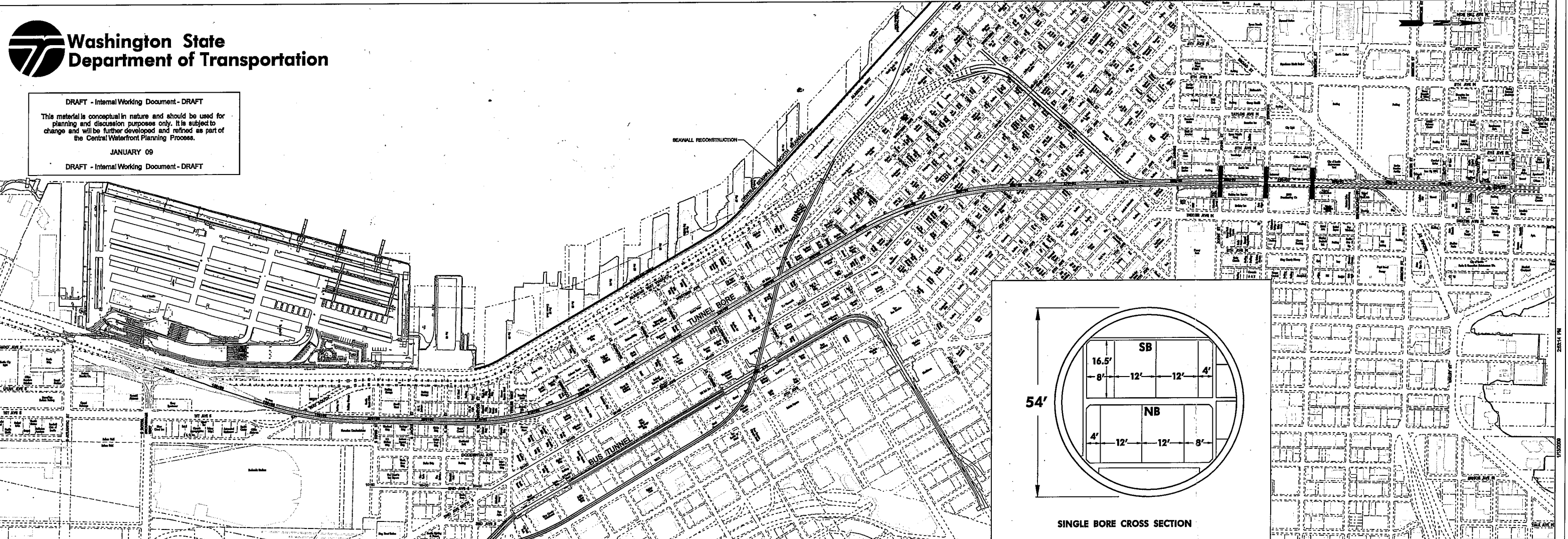
**List of Attachments and Exhibits:**

Attachment 1 – PROJECT footprint

Exhibit D – Prime Consultant’s Cost Computations (Cost Estimate)

Exhibit E – Sub Consultant’s Cost Computations (Cost Estimate)

DRAFT - Internal Working Document - DRAFT  
 This material is conceptual in nature and should be used for planning and discussion purposes only. It is subject to change and will be further developed and refined as part of the Central Waterfront Planning Process.  
 JANUARY 09  
 DRAFT - Internal Working Document - DRAFT



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 This material is conceptual in nature and should be used for planning and discussion purposes only. It is subject to change and will be further developed and refined as part of the Central Waterfront Planning Process.  
 JANUARY 09  
 DRAFT - Internal Working Document - DRAFT



**Alaskan Way Viaduct Phase 2**

AWV/PHASE 2, Y-9715

No.	Work Element Description	Executive Technical Mgr	Sr Engineering Mgr	Sr Engrg Mgr (Trimming)	Sr Engrg Mgr (Verification)	Sr Srpr Engr (MSE)	Sr Srpr Engr	Sr Srpr Engr (Civil)	Sr Principal Tech Specialist	Srpr Engr (Struct)	Srpr Engr (MSE)	Srpr Engr	Sr Engr Architect	Sr Engr	CADD Mgr	Sr Srpr CADD Designer	Engr II	Sr Tech Specialist	Computer Graphics Specialist IV	Total Hours
CE	<b>CENTRAL WATERFRONT CONCEPTUAL ENGINEERING SUPPORT FOR THE ENVIRONMENTAL IMPACT STATEMENT (EIS)</b>	273	632	249	617	907	720	720	178	1,143	660	720	400	426	500	500	520	300	510	9,938
CE-01	Project Management		580					720												1,300
CE-02	Geotechnical Data (Support)			60						100										160
CE-03	Architectural Design												400							400
CE-04	Civil Design						720		138			720		45			440			2,010
CE-05	Structures		52						1,044											1,165
CE-06	Urban Design																			0
CE-07	Utilities								40					380			80			500
CE-08	Tunnel Engineering	82		82	550	507				650										2,281
CE-09	Construction Planning	147		197	67															321
CE-10	Drawings Preparation														500	500				1,000
CE-11	Estimates																			0
CE-12	Project Visualization																	300	510	810
CE-99	Other Direct Costs																			0
	<b>Hours Totals</b>	228	632	249	617	907	720	720	178	1,148	660	720	400	426	500	500	520	300	510	9,938

Exhibit D  
Agreement Y-9715  
Task Order No. CE

PB  
Alaskan Way Viaduct and Seawall Replacement Program  
AWV Phase 2

PB

# Alaskan Way Viaduct Phase 2

AWV PHASE 2, Y-9715

PB		AWV PHASE 2, Y-9715						
No.	Work Element Description	Sr Supv Construction Engineer	Supv Environmental Engineer	Sr Environmental Engineer	Lead Environmental Engineer	Engineer I	Total Hours	
CE	<b>CENTRAL WATERFRONT CONCEPTUAL ENGINEERING SUPPORT FOR THE ENVIRONMENTAL IMPACT STATEMENT (EIS)</b>	80	52	48	56	56	292	
CE.01	Project Management						0	
CE.02	Geotechnical Data (Support)						0	
CE.03	Architectural Design						0	
CE.04	Civil Design						0	
CE.05	Structures						0	
CE.06	Urban Design						0	
CE.07	Utilities						0	
CE.08	Tunnel Engineering		52	48	56	56	212	
CE.09	Construction Planning						0	
CE.10	Drawings Preparation						0	
CE.11	Estimates	.80					80	
CE.12	Project Visualization						0	
CE.99	Other Direct Costs						0	
	<b>Hours Totals</b>	<b>80</b>	<b>52</b>	<b>48</b>	<b>56</b>	<b>56</b>	<b>292</b>	

## Alaskan Way Viaduct Phase 2

Consultant Fee Estimate - PB

Central Waterfront Conceptual Engineering Support for the Environmental Impact Statement (EIS)

Classification	Grade	Hours	x	Rate	=	Cost
Executive Technical Mgr	P-16	229		\$354.26		\$ 81,126
Sr Engineering Mgr	P-14	632		\$227.32		\$ 143,669
Sr Engrg Mgr (Tunneling)	P-14	249		\$221.61		\$ 55,180
Sr Engrg Mgr (Ventilation)	P-14	617		\$230.16		\$ 142,010
Sr Supv Engineer (M&E)	P-13	907		\$188.58		\$ 171,044
Sr Supv Engineer	P-13	720		\$184.50		\$ 132,843
Sr Supv Engineer (Civil)	P-13	720		\$171.11		\$ 123,202
Sr Principal Tech Specialist	P-13	178		\$166.92		\$ 29,712
Supv Engineer (Struct)	P-12	1,148		\$144.41		\$ 165,778
Supv Engineer (M&E)	P-12	660		\$142.91		\$ 94,320
Supv Engineer	P-12	720		\$161.27		\$ 116,118
Supv Architect	P-12	400		\$144.73		\$ 57,894
Sr Engineer	P-10	426		\$107.40		\$ 45,753
CADD Mgr I	P-11	500		\$118.24		\$ 59,120
Sr Supv CADD Designer	T-10	500		\$110.48		\$ 55,241
Engineer II	P-09	520		\$100.84		\$ 52,438
Sr Tech Specialist	P-11	300		\$123.37		\$ 37,012
Computer Graphics Specialist IV	P-09	510		\$94.60		\$ 48,245
Sr Supv Construction Engineer	P-13	80		\$199.63		\$ 15,971
Supv Environmental Engineer	P-12	52		\$152.21		\$ 7,915
Sr Environmental Engineer	P-10	48		\$95.65		\$ 4,591
Lead Environmental Engineer	P-11	56		\$103.78		\$ 5,812
Engineer I	P-08	56		\$75.80		\$ 4,245
Subtotal		10,228				\$ 1,649,239
					Escalation	\$ -
<b>Subtotal</b>	<b>TOTAL: LABOR</b>					<b>\$ 1,649,239</b>

Escalation Calculation at 4.5% for estimation purposes. None. Activity End Date precedes this firm's escalation cycle.  
 Assumes rate negotiations occur December 2009.

Direct Non-Salary Costs CE.99	Cost
See Attached	\$ 73,632
Prime Consultant Markup on Subconsultants at 4.0 percent: \$935,223 x 0.04 =	\$ 37,409
<b>SUBTOTAL: Prime Consultant Amount</b>	<b>\$ 1,760,280</b>

Subconsultant Costs	Cost
Arthur G Bendelius	\$ 26,313
Bolima Drafting & Design	\$ 14,349
Entech	\$ 6,498
HDR Engineering	\$ 14,900
Jacobs	\$ 589,509
Power Engineers	\$ 15,481
Roma Design Group	\$ 117,626
Rosewater GHD	\$ 44,954
Wm. P. Ott	\$ 105,593
<b>Subconsultant Costs Total</b>	<b>\$ 935,223</b>
<b>TOTAL</b>	<b>\$ 2,695,503</b>

PB

Exhibit D  
 Agreement Y-9715  
 Task Order No. CE

PB-Cost  
 Alaskan Way Viaduct  
 and Seawall Replacement Program  
 AWW Ph2 EIS  
 Page 17

## Alaskan Way Viaduct Phase 2

DIRECT EXPENSE Estimate for Task CE: PB

Central Waterfront Conceptual Engineering Support for the Environmental Impact Statement (EIS)

### Travel Quantities and Rates:

Number of Trips	Origin	Round Trip Rate: Airfare	Length in days of each trip	Number of travel days, all trips combined	Food + Lodging Per Diem Rate
4	New York	\$1,145	4	16	\$246.65
4	Boston	\$1,145	5	20	\$246.65
4	San Francisco	\$500	14	56	\$246.65
3	Austin	\$600	4	12	\$246.65
15	<<Trips, Total		Travel Days, Total>>	104	

Transportation to and from Airports at \$25.00 per occurrence:

For each trip, allow one residence-to-airport occurrence outbound, and one airport-to-residence occurrence upon return.

For each trip, allow one airport-to-office occurrence in Seattle, and one office-to-airport occurrence upon departure from Seattle.

Total Transportation per trip = \$100.00

### Travel Cost Computations:

Quantity and Descrip.	Item and Rate	Amount
Trip	Airfare (Weighted Avg. Rate)	
15	\$864.00	\$12,960
Trip	Transportation	
15	\$100.00	\$1,500
Travel Days:	Per Diem	
104	\$246.65	\$25,652

**Travel Subtotal: \$40,112**

**Travel Assumption:** From multiple locations: up to 15 trips of varying duration, PB Engineering Staff to be in Seattle.

### Local Cost Computations:

Description & Quantity	Item and Rate	Amount
Parking	Validation Stamps	
50	\$23	\$1,150
Courier/Fedex/Postage	Communication/Reviews	
10	\$18	\$180

**Local Cost Subtotal: \$1,330**

**Subtotal, This page \$41,442**

## Alaskan Way Viaduct Phase 2

DIRECT EXPENSE Estimate for Task CE: PB

Central Waterfront Conceptual Engineering Support for the Environmental Impact Statement (EIS)

Production Quantities and Rates:		
<u>Description &amp; Quantity</u>	<u>Item and Rate</u>	<u>Amount</u>
Snapshots (Concept) 60%	Printing/Production,	
50	\$165	\$8,250
Snapshots (Concept) 90%	Printing/Production,	
100	\$165	\$16,500
CD/DVD's in 'PDF' format	CD/DVD production	
40	\$36	\$1,440
Other reports	Printing/Production	
40	\$150	\$6,000
	<b>Production Subtotal:</b>	<b>\$32,190</b>
	<b>Subtotal from previous page - Travel &amp; Local costs:</b>	<b>\$41,442</b>
	<b>Overall Total</b>	<b>\$73,632</b>

# Alaskan Way Viaduct Phase 2

Arthur G Bendelius		AWV PHASE 2, Y-9715	
No.	Work Element Description	Principal - Arthur Bendelius	Total Hours
CE	<b>CENTRAL WATERFRONT CONCEPTUAL ENGINEERING SUPPORT FOR THE ENVIRONMENTAL IMPACT STATEMENT (EIS)</b>	100	100
CE.01	Project Management		0
CE.02	Geotechnical Data (Support)		0
CE.03	Architectural Design		0
CE.04	Civil Design		0
CE.05	Structures		0
CE.06	Urban Design		0
CE.07	Utilities		0
CE.08	Tunnel Engineering	100	100
CE.09	Construction Planning		0
CE.10	Drawings Preparation		0
CE.11	Estimates		0
CE.12	Project Visualization		0
CE.99	Other Direct Costs		0
<b>Hours Totals</b>		<b>100</b>	<b>100</b>

# Alaskan Way Viaduct Phase 2

Consultant Fee Estimate - Arthur Bendelius

Central Waterfront Conceptual Engineering Support for the Environmental Impact Statement (EIS)

Classification	Hours	x	Rate	=	Cost
Principal - Arthur Bendelius	100		\$150.00		\$ 15,000

	Subtotal	100			\$ 15,000
				Escalation	\$ -
<b>Subtotal</b>	<b>TOTAL: LABOR</b>				<b>\$ 15,000</b>

Escalation Calculation at 4.5% for estimation purposes.	None. Activity End Date precedes this firm's escalation cycle.
Assumes rate negotiations occur December 2009.	

Direct Non-Salary Costs CE.99	Cost
See Attached	\$ 11,313

<b>TOTAL</b>	<b>\$ 26,313</b>
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## Alaskan Way Viaduct Phase 2

DIRECT EXPENSE Estimate for Task CE: **Arthur Bendelius**  
 Central Waterfront Conceptual Engineering Support for the Environmental Impact Statement (EIS)

### Travel Quantities and Rates:

Number of Trips	Origin	Round Trip Rate: Airfare	Length in days of each trip	Number of travel days, all trips combined	Food + Lodging Per Diem Rate
4	Atlanta GA	\$1,145	5	20	\$246.65
4	<<Trips, Total		Travel Days, Total>>	20	

Transportation to and from Airports at \$25.00 per occurrence:

For each trip, allow one airport-to-office occurrence in Seattle, and one office-to-airport occurrence upon departure from Seattle.

Total Seattle Transportation per trip = \$50.00

### Travel Cost Computations:

Quantity and Descrip.	Item and Rate	Amount
Trip	Airfare (Weighted Avg. Rate)	
4	\$1,145.00	\$4,580
Trip	Transportation	
4	\$50.00	\$200
Travel Days	Per Diem	
20	\$246.65	\$4,933

**Travel Subtotal: \$9,713**

Travel Assumption: From Atlanta to Seattle: Up to 4 trips of up to 5 days each.

### Additional Travel Cost Computations:

Description & Quantity	Item and Rate	Amount
Car Service	Big Canoe, GA to/from Atlanta Airport	
8	\$200	\$1,600

**Subtotal: \$1,600**

**Total \$11,313**

# Alaskan Way Viaduct Phase 2

Bolima Drafting & Design		AWV PHASE 2, Y-9715	
No.	Work Element Description	CADD III	Total Hours
<b>CENTRAL WATERFRONT CONCEPTUAL ENGINEERING SUPPORT FOR THE ENVIRONMENTAL IMPACT STATEMENT (EIS)</b>			
CE		180	180
CE.01	Project Management		0
CE.02	Geotechnical Data (Support)		0
CE.03	Architectural Design		0
CE.04	Civil Design		0
CE.05	Structures		0
CE.06	Urban Design		0
CE.07	Utilities		0
CE.08	Tunnel Engineering		0
CE.09	Construction Planning		0
CE.10	Drawings Preparation	180	180
CE.11	Estimates		0
CE.12	Project Visualization		0
CE.99	Other Direct Costs		0
<b>Hours Totals</b>		<b>180</b>	<b>180</b>

# Alaskan Way Viaduct Phase 2

Consultant Fee Estimate - Bolima Drafting & Design

Central Waterfront Conceptual Engineering Support for the Environmental Impact Statement (EIS)

Classification	Hours	x	Rate	=	Cost
CADD III	180		\$79.72		\$ 14,349

	Subtotal	180			\$ 14,349
				Escalation	\$ -
<b>Subtotal</b>	<b>TOTAL: LABOR</b>				<b>\$ 14,349</b>

Escalation Calculation at 4.5% for estimation purposes.

None. Activity End Date precedes this firm's escalation cycle.

Assumes rate negotiations occur December 2009.

Direct Non-Salary Costs CE.99	Cost
NONE	\$ -

<b>TOTAL</b>	<b>\$ 14,349</b>
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# Alaskan Way Viaduct Phase 2

Entech		AWV PHASE 2, Y-9715	
No.	Work Element Description	Admin Support Personnel	Total Hours
CE	<b>CENTRAL WATERFRONT CONCEPTUAL ENGINEERING SUPPORT FOR THE ENVIRONMENTAL IMPACT STATEMENT (EIS)</b>	100	100
CE.01	Project Management	100	100
CE.02	Geotechnical Data (Support)		0
CE.03	Architectural Design		0
CE.04	Civil Design		0
CE.05	Structures		0
CE.06	Urban Design		0
CE.07	Utilities		0
CE.08	Tunnel Engineering		0
CE.09	Construction Planning		0
CE.10	Drawings Preparation		0
CE.11	Estimates		0
CE.12	Project Visualization		0
CE.99	Other Direct Costs		0
<b>Hours Totals</b>		<b>100</b>	<b>100</b>

## Alaskan Way Viaduct Phase 2

Consultant Fee Estimate - Entech

Central Waterfront Conceptual Engineering Support for the Environmental Impact Statement (EIS)

Classification	Hours	x	Rate	=	Cost
Admin Support Personnel	100		\$64.98		\$ 6,498

	Subtotal	100				\$ 6,498
				Escalation	\$	-
	<b>Subtotal</b>		<b>TOTAL: LABOR</b>		\$	<b>6,498</b>

Escalation Calculation at 4.5% for estimation purposes.

None. Activity End Date precedes this firm's escalation cycle.

Assumes rate negotiations occur December 2009.

Direct Non-Salary Costs CE.99	Cost
NONE	\$ -

<b>TOTAL</b>		\$	<b>6,498</b>
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# Alaskan Way Viaduct Phase 2

AWV PHASE 2, Y-9715						
HDR Engineering	Work Element Description	Sr Project Manager	Project Manager	Project Engineer	Design Engineer	Total Hours
CE	<b>CENTRAL WATERFRONT CONCEPTUAL ENGINEERING SUPPORT FOR THE ENVIRONMENTAL IMPACT STATEMENT (EIS)</b>	16	46	18	18	98
CE.01	Project Management					0
CE.02	Geotechnical Data (Support)					0
CE.03	Architectural Design					0
CE.04	Civil Design					0
CE.05	Structures					0
CE.06	Urban Design					0
CE.07	Utilities	16	46	18	18	98
CE.08	Tunnel Engineering					0
CE.09	Construction Planning					0
CE.10	Drawings Preparation					0
CE.11	Estimates					0
CE.12	Project Visualization					0
CE.99	Other Direct Costs					0
<b>Hours Totals</b>		<b>16</b>	<b>46</b>	<b>18</b>	<b>18</b>	<b>98</b>

Exhibit E  
 Agreement Y-9715  
 Task Order No. CE

HDR  
 Alaskan Way Viaduct and Seawall Replacement Program  
 AWV Phase 2

## Alaskan Way Viaduct Phase 2

Consultant Fee Estimate - HDR Engineering

Central Waterfront Conceptual Engineering Support for the Environmental Impact Statement (EIS)  
Viaduct Replacement Project Plans, Specifications, and Estimate

Classification	Hours	x	Rate	=	Cost
Sr Project Manager	16		\$191.89		\$ 3,070
Project Manager	46		\$166.80		\$ 7,673
Project Engineer	18		\$121.34		\$ 2,184
Design Engineer	18		\$98.90		\$ 1,780
Subtotal	98				\$ 14,707
				Escalation	\$ -
<b>Subtotal</b>	<b>TOTAL: LABOR</b>				<b>\$ 14,707</b>

Escalation Calculation at 4.5% for estimation purposes.	None. Activity End Date precedes this firm's escalation cycle.
Assumes rate negotiations occur December 2009.	

Direct Non-Salary Costs CE.99	Cost
See Below	\$ 193
Parking for meetings: 5 @ \$22	\$ 110
Mileage from Bellevue: 150 @ \$0.55	\$ 83
<b>TOTAL</b>	<b>\$ 14,900</b>

# Alaskan Way Viaduct Phase 2

Jacobs

AWV PHASE 2, Y-9715

No.	Work Element Description	Sr Project Mgr	Project Mgr	Supv Sr Civil Engineer	Sr Civil Engineer	Structural Engineer	Civil Engineer	Sr CADD	Sr Administrative	Total Hours
CE	<b>CENTRAL WATERFRONT CONCEPTUAL ENGINEERING SUPPORT FOR THE ENVIRONMENTAL IMPACT STATEMENT (EIS)</b>	469	24	460	964	863	800	700	200	4,480
CE.01	Project Management								200	200
CE.02	Geotechnical Data (Support)								0	0
CE.03	Architectural Design								0	0
CE.04	Civil Design				930		720			1,650
CE.05	Structures	280				734				1,014
CE.06	Urban Design									0
CE.07	Utilities			460			80			540
CE.08	Tunnel Engineering	153				100				253
CE.09	Construction Planning	36			34	29				99
CE.10	Drawings Preparation							700		700
CE.11	Estimates		24							24
CE.12	Project Visualization									0
CE.99	Other Direct Costs									0
	<b>Hours Totals</b>	<b>469</b>	<b>24</b>	<b>460</b>	<b>964</b>	<b>863</b>	<b>800</b>	<b>700</b>	<b>200</b>	<b>4,480</b>

# Alaskan Way Viaduct Phase 2

Consultant Fee Estimate - Jacobs

Central Waterfront Conceptual Engineering Support for the Environmental Impact Statement (EIS)  
Viaduct Replacement Project Plans, Specifications, and Estimate

Classification	Hours	x	Rate	=	Cost
Sr Project Mgr	469		\$194.01		\$ 90,989
Project Mgr	24		\$183.43		\$ 4,402
Supv Sr Civil Engineer	460		\$177.27		\$ 81,545
Sr Civil Engineer	964		\$145.04		\$ 139,819
Structural Engineer	863		\$135.89		\$ 117,270
Civil Engineer	800		\$78.10		\$ 62,482
Sr CADD	700		\$108.48		\$ 75,934
Sr Administrative	200		\$84.76		\$ 16,951
Subtotal	4,480				\$ 589,394
				Escalation	\$ -
<b>Subtotal</b>					<b>\$ 589,394</b>

TOTAL: LABOR

Escalation Calculation at 4.5%  
for estimation purposes.

None. Activity End Date precedes this firm's escalation cycle.

Assumes rate negotiations occur December 2009.

**Direct Non-Salary Costs CE.99**

	Cost
<b>See Below</b>	<b>\$ 115</b>
Courier/Postage/Fedex: 5 @ \$23	\$ 115

<b>TOTAL</b>	<b>\$ 589,509</b>
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# Alaskan Way Viaduct Phase 2

Power Engineers						
AWV PHASE 2, Y-9715						
No.	Work Element Description	Sr Project Mgr III	Sr Project Engr II	Engr II	Designer I	Total Hours
CE	<b>CENTRAL WATERFRONT CONCEPTUAL ENGINEERING SUPPORT FOR THE ENVIRONMENTAL IMPACT STATEMENT (EIS)</b>	48	28	16	16	108
CE.01	Project Management					0
CE.02	Geotechnical Data (Support)					0
CE.03	Architectural Design					0
CE.04	Civil Design					0
CE.05	Structures					0
CE.06	Urban Design					0
CE.07	Utilities	48	28	16	16	108
CE.08	Tunnel Engineering					0
CE.09	Construction Planning					0
CE.10	Drawings Preparation					0
CE.11	Estimates					0
CE.12	Project Visualization					0
CE.99	Other Direct Costs					0
<b>Hours Totals</b>		<b>48</b>	<b>28</b>	<b>16</b>	<b>16</b>	<b>108</b>

# Alaskan Way Viaduct Phase 2

## Consultant Fee Estimate - Power Engineers

Central Waterfront Conceptual Engineering Support for the Environmental Impact Statement (EIS)  
Viaduct Replacement Project Plans, Specifications, and Estimate

Classification	Hours	x	Rate	=	Cost
Sr Project Mgr III	48		\$188.58	\$	9,052
Sr Project Engr II	28		\$145.07	\$	4,062
Engr II	16		\$95.74	\$	1,532
Designer I	16		\$52.22	\$	836
Subtotal					\$ 15,481
					Escalation \$ -
<b>Subtotal</b>					<b>\$ 15,481</b>
<b>TOTAL: LABOR</b>					

Escalation Calculation at 4.5% for estimation purposes.	None. Activity End Date precedes this firm's escalation cycle.
Assumes rate negotiations occur December 2009.	

Direct Non-Salary Costs CE.99	Cost
None	\$ -

<b>TOTAL</b>	<b>\$ 15,481</b>
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# Alaskan Way Viaduct Phase 2

Roma Design Group					
AWV PHASE 2, Y-9715					
No.	Work Element Description	Principal In Charge	Principal	Sr Urban Designer	Total Hours
CE	<b>CENTRAL WATERFRONT CONCEPTUAL ENGINEERING SUPPORT FOR THE ENVIRONMENTAL IMPACT STATEMENT (EIS)</b>	140	140	220	500
CE.01	Project Management				0
CE.02	Geotechnical Data (Support)				0
CE.03	Architectural Design				0
CE.04	Civil Design				0
CE.05	Structures				0
CE.06	Urban Design	140	140	220	500
CE.07	Utilities				0
CE.08	Tunnel Engineering				0
CE.09	Construction Planning				0
CE.10	Drawings Preparation				0
CE.11	Estimates				0
CE.12	Project Visualization				0
CE.99	Other Direct Costs				0
<b>Hours Totals</b>		<b>140</b>	<b>140</b>	<b>220</b>	<b>500</b>

# Alaskan Way Viaduct Phase 2

Consultant Fee Estimate - Roma Design Group

Central Waterfront Conceptual Engineering Support for the Environmental Impact Statement (EIS)

Classification	Hours	x	Rate	=	Cost
Principal In Charge	140		\$333.66		\$ 46,712
Principal	140		\$257.20		\$ 36,008
Sr Urban Designer	220		\$125.13		\$ 27,528
Subtotal					\$ 110,248
					Escalation \$ -
<b>Subtotal</b>					<b>\$ 110,248</b>
<b>TOTAL: LABOR</b>					

Escalation Calculation at 4.5% for estimation purposes.	None. Activity End Date precedes this firm's escalation cycle.
Assumes rate negotiations occur December 2009.	

Direct Non-Salary Costs CE.99	Cost
See Attached	\$ 7,378

<b>TOTAL</b>	<b>\$ 117,626</b>
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## Alaskan Way Viaduct Phase 2

DIRECT EXPENSE Estimate for Task CE: ROMA

Central Waterfront Conceptual Engineering Support for the Environmental Impact Statement (EIS)

### Travel Quantities and Rates:

Number of Trips	Origin	Round Trip Rate: Airfare	Length in days of each trip	Number of travel days, all trips combined	Food + Lodging at reduced Per Diem Rate
4	San Francisco	\$550	3	12	\$246.65
4	<<Trips, Total		Travel Days, Total>>	12	

Transportation to and from Airports at \$25.00 per occurrence:

For each trip, allow one residence-to-airport occurrence outbound, and one airport-to-residence occurrence upon return.

For each trip, allow one airport-to-office occurrence in Seattle, and one office-to-airport occurrence upon departure from Seattle.

Total Transportation per trip = \$100.00

### Travel Cost Computations:

Quantity and Descrip.	Item and Rate	Amount
Trip	Airfare	
4	\$550.00	\$2,200
Trip	Transportation	
4	\$100.00	\$400
Travel Days	Per Diem	
12	\$246.65	\$2,960
<b>Subtotal:</b>		<b>\$5,560</b>

### Travel Assumption:

From San Francisco to Seattle: Up to 4 trips of 2 persons each averaging 3 days duration for Roma Staff.

### Additional Direct Cost Computations:

Description & Quantity	Item and Rate	Amount
Courier/Fedex/Postage	Communication/Reviews	
10	\$18	\$180
Color copies	Drawings	
950	\$1.724	\$1,638
<b>Additional Cost Subtotal:</b>		<b>\$1,818</b>
<b>Total:</b>		<b>\$7,378</b>

# Alaskan Way Viaduct Phase 2

Rosewater GHD

AWV PHASE 2, Y-9715

No.	Work Element Description	Sr Program Director	Sr Project Manager	Project Manager	Lead Engineer	Project Engineer	Staff Engineer	Total Hours
CE	<b>CENTRAL WATERFRONT CONCEPTUAL ENGINEERING SUPPORT FOR THE ENVIRONMENTAL IMPACT STATEMENT (EIS)</b>	22	60	50	50	44	28	254
CE.01	Project Management							0
CE.02	Geotechnical Data (Support)							0
CE.03	Architectural Design							0
CE.04	Civil Design							0
CE.05	Structures							0
CE.06	Urban Design							0
CE.07	Utilities	22	60	50	50	44	28	254
CE.08	Tunnel Engineering							0
CE.09	Construction Planning							0
CE.10	Drawings Preparation							0
CE.11	Estimates							0
CE.12	Project Visualization							0
CE.99	Other Direct Costs							0
	<b>Hours Totals</b>	22	60	50	50	44	28	254

# Alaskan Way Viaduct Phase 2

Consultant Fee Estimate - Rosewater GHD

Central Waterfront Conceptual Engineering Support for the Environmental Impact Statement (EIS)

Classification	Hours	x	Rate	=	Cost
Sr Program Director	22		\$272.84		\$ 6,002
Sr Project Manager	60		\$223.02		\$ 13,381
Project Manager	50		\$172.53		\$ 8,626
Lead Engineer	50		\$144.44		\$ 7,222
Project Engineer	44		\$147.59		\$ 6,494
Staff Engineer	28		\$108.67		\$ 3,043
Subtotal					\$ 44,769
					Escalation \$ -
<b>Subtotal</b>					<b>\$ 44,769</b>

TOTAL: LABOR

Escalation Calculation at 4.5% for estimation purposes.

None. Activity End Date precedes this firm's escalation cycle.

Assumes rate negotiations occur December 2009.

**Direct Non-Salary Costs CE.99**

	Cost
See Below	\$ 185
Printing/Copying: 350 sheets @ \$0.10 (B&W)	\$ 35
Printing/Copying: 150 sheets @ \$1.00 (Color)	\$ 150
<b>TOTAL</b>	
	<b>\$ 44,954</b>

# Alaskan Way Viaduct Phase 2

Wm Ott				
AWV PHASE 2, Y-9715				
No.	Work Element Description	Wm Ott - Principal	Sr Construction Specialist	Total Hours
CE	<b>CENTRAL WATERFRONT CONCEPTUAL ENGINEERING SUPPORT FOR THE ENVIRONMENTAL IMPACT STATEMENT (EIS)</b>	290	290	580
CE.01	Project Management			0
CE.02	Geotechnical Data (Support)			0
CE.03	Architectural Design			0
CE.04	Civil Design			0
CE.05	Structures			0
CE.06	Urban Design			0
CE.07	Utilities			0
CE.08	Tunnel Engineering			0
CE.09	Construction Planning	290	290	580
CE.10	Drawings Preparation			0
CE.11	Estimates			0
CE.12	Project Visualization			0
CE.99	Other Direct Costs			0
<b>Hours Totals</b>		<b>290</b>	<b>290</b>	<b>580</b>

# Alaskan Way Viaduct Phase 2

Consultant Fee Estimate - Wm P. Ott

Central Waterfront Conceptual Engineering Support for the Environmental Impact Statement (EIS)

Classification	Hours	x	Rate	=	Cost
Wm Ott - Principal	290		\$185.00		\$ 53,650
Sr Construction Specialist	290		\$175.00		\$ 50,750
Subtotal					\$ 104,400
					Escalation \$ -
<b>Subtotal</b>					<b>\$ 104,400</b>
TOTAL: LABOR					
Escalation Calculation at 4.5% for estimation purposes.		None. Activity End Date precedes this firm's escalation cycle.			

Direct Non-Salary Costs CE.99	Cost
See Below	\$ 1,193
Parking (reduced rate): 45 @ \$10	\$ 450
Mileage: 1,350 @ \$0.55	\$ 743
<b>TOTAL</b>	<b>\$ 105,593</b>