
From: Abbott, Eldon (Consultant)
Sent: Thursday, June 18, 2009 1:36 PM
To: Conte, Rick (Consultant); Clark, Gordon T. (Consultant); Rigsby, Mike (Consultant)
Subject: Attachment B Task Order CL 2 Work Final as per today's discussions
Importance: High
Attachments: Attachment B Task Order CL 2 WorkFinal 6_18_09 Revision3.xls

Rick, Mike and Gordon I think that I have made all of the changes that we discussed this morning except revising the Average Hourly Rate that Gordon put in to calculate the approximate cost. Let me know if you see anything that I missed or if this is okay to send out to Don Phelps and Susan for their records.

Eldon

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**Work Plan Outline
SR 99 Tunnel Program
and
SR Bored Tunnel Project RFQ/RFP Development**

Task	Legend: Del (D) = Deliverable; Asbl (A) = Assembly of Work Product only; Lead (L) = Task Lead; Support (S) = Task Support to Others Lead;	Hours	Work Product	Del (D) or Asbl (A)	Lead (L)/ Support (S)
CL.01	Project Management	4657.5			L
	i. Coordinate and manage all elements of this Task Order, and coordinate with other program element designers as appropriate to support the Tunnel preliminary design and RFP.				L
	ii. Coordination with South Interchange, Vent & Control Building designers for managing interface schedule and details.				L
	iii. Liaison with designated representatives of the STATE in all technical matters				L
	iv. Manage the cost and progress of the tasked scope of work				L
	v. Prepare schedule for delivery of the tasked scope of work				L
	vi. Participate in weekly progress meetings with the STATE				S
	vii. Public and stakeholder meetings				S
	viii. Permitting strategy development				S
	viii. Coordinate with other Tasks and Design Leads				
	Deliverables				
	Design Basis Report			D	L
	Recommended Qualification requirements for RFQ		W		L
	Recommended Evaluation Criteria for RFQ & RFP		W		L
	SR99 Tunnel Concept of Operations Report			D	L
	Tunnel Operations & Maintenance Report & Cost Estimate		W		S
CL.02	Civil Design	4012.5			L
	i. Mainline and ramp roadway geometry from S. Atlantic St. to Roy St.		W		L
	ii. Tunnel and roadway vertical and horizontal alignments considering existing ROW & acquisitions required		W		L
	iii. Staging area evaluation		W		L
	iv. Drainage design		W		L
	v. Detours/MOT		W		L
	vi. Provide input and coordination for Ventilation structures and control buildings) siting		W		L
	vii. Provide support for Right-of-Way acquisition to WSDOT as needed		W		S
	viii. Develop Civil Design Criteria		W		L
	ix. Develop needed Specifications		W		L
	x. TESC/construction wastewater treatment/discharge planning		W		L
	xi. Preparation of Geometrics Design Approval Package			D	L
	Deliverables				
	Preliminary storm water drainage report for ESA consultation		W		L
	Preliminary ROW plans for construction		W		L
	Preliminary Staging plans		W		L
	Preliminary Alignment plans		W		L
	Preliminary Drainage Plans (tunnel portals and surface streets)		W		L
	Preliminary Detour plans		W		L
	Preliminary Survey Control Plans		W		L
	Preliminary Road sections various locations		W		L
	Civil Geometrics Design Approval Package Documentation		W		S
	Existing Utility Plans		W		L
	Design Approval Package			D	L
	Specifications		W		L
	Design Criteria		W		L
CL.03	Structural Design	3150			L
	i. Tunnel liner – structural design to include fire resistance, water tightness, concrete performance requirements, lining thickness				L
	ii. Durability (includes corrosion)				L
	iii. Roadway structure and pavement design				L
	iv. Support of Excavation layout for construction of TBM Launch Pit & Retrieval Pit				L
	v. Seismic design and soil liquefaction potential				L
	vi. Structural Design Criteria				L

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vii. Operation and maintenance considerations					
Deliverables					
Tunnel Durability Study				D	L
Preliminary South Portal Excavation support structure plans			W		L
Preliminary North Portal Excavation support structure plans			W		L
Preliminary North Ventilation Structure structural plans			W		L
Preliminary South Ventilation Structural structural plans			W		L
Preliminary Tunnel interior structure plans, sections, and details			W		L
Preliminary tunnel liner sections and details			W		L
Specifications			W		L
Design Criteria			W		L
CL.04 Architectural Design		937.5			L
i. Spatial geometry of roadway structures, and ventilation structures					L
ii. Architectural hardware and finishes in tunnel and at portals					L
iii. Security provisions (access control)					L
iv. Emergency Egress configuration and ADA compliance					L
v. Architectural design criteria					
Deliverables					
Preliminary Tunnel interior architectural plans, sections, and details			W		L
Preliminary North Ventilation Structure architectural base plans			W		L
Preliminary North Control Building architectural base plans			W		L
Preliminary South Ventilation Structure architectural base plans			W		L
Preliminary South Control Building architectural base plans			W		L
Design Criteria			W		L
Specifications			W		L
CL.05 Tunnel Mechanical Systems Design		3780			
i. Ventilation Systems Design and Analysis					L
ii. Drainage collection, conveyance, pumps stations for storm (portals) and tunnel wash down/fire suppression wastewater (Assess need for treatment plant verses holding tanks for storm water discharge.					L
iii. Fire suppression sprinklers					L
iv. Mechanical systems design criteria					L
v. Operation and maintenance considerations					S
vi. Provide Water Supply for Tunnel Maintenance and Wash down					L
Deliverables					
Preliminary Tunnel Drainage Plans, Profiles, and Details			W		L
Preliminary Tunnel Ventilation Plans, Sections, and Details			W		L
Preliminary Fire Suppression System Plans and Details			W		L
Develop Design Criteria			W		L
Develop Needed Specifications			W		L
CL.06 Tunnel and Roadway Electrical Systems Design		2385			
i. Electrical distribution system for Low and Medium Voltage					L
ii. Fire detection and alarms					L
iii. Hydrocarbon and emissions monitoring for tunnel spills					L
iv. Illumination					L
v. Control power					L
vi. Signage and ITS power					L
vii. Intrusion detection					L
viii. SCADA					L
ix. Communications (telephones, CCTV, FM, radio rebroadcast)					L
x. Tunnel and Roadway Electrical Systems Design Criteria					L
xi. Operation and maintenance considerations					
xii. Backup Power considerations (generators and UPS)					
Deliverables					
Program-wide Preliminary illumination plans			W		L
Prel. Electrical distribution system plans, schematics, and details			W		L
Prel. Fire detection and alarms plans, schematics, and details			W		L
Prel. Hydrocarbon monitoring plans, schematics, and details			W		L
Prel. Illumination plans, schematics, and details			W		L
Prel. Control power plans, schematics, and details			W		L

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	Prel. Signage and ITS power plans, schematics, and details		W		L
	Prel. Intrusion detection plans, schematics, and details		W		L
	Prel. SCADA plans, schematics, and details		W		L
	Prel. Communications (telephones, CCTV, FM, radio rebroadcast) plans, schematics, and details		W		L
	Develop Design Criteria				L
	Develop Needed Specifications		W		L
CL.07	Traffic Surveillance and Control System Design	2850			
	i. ITS including VMS Signs, Tunnel Closure Scenarios, tolling provisions (license plate readers & transponders)				L
	ii. Incident detection				L
	iii. Signage				L
	iv. Vehicle detection systems and cameras				L
	v. Program-wide Traffic Surveillance and Control System Design Criteria				L
	vi. Infrastructure requirements to implement tolling				
	vii. Operation and maintenance considerations				
	Deliverables				
	Program-wide Preliminary traffic surveillance and control system plans		W		L
	Prel. Tunnel ITS Plans, schematics, and details		W		L
	Prel. Tunnel Incident detection plans, schematics, and details		W		L
	Prel. Tunnel Signage plans, and details		W		L
	Prel. Vehicle detection systems and cameras plans, aschemtcis, and details		W		L
	Prel. ITS Plans, schematics, and details		W		L
	Prel. Incident detection plans, schematics, and details		W		L
	Prel. Signage plans, and details		W		L
	Prel. Vehicle detection systems and cameras plans, aschemtcis, and details		W		L
	Develop Design Criteria		W		L
	Develop Needed Specifications		W		L
CL.08	Tunnel Utility Services Design	2610			
	i. Construction power (coordinate with power company on need for isolation switches for TBM power), water, and process water services				L
	ii. Tunnel operation power, water, and sewer services				L
	iv. Utility accommodation planning (leased space)				S
	Deliverables				
	Tunnel Electrical Power Service Preliminary plans		W		L
	Tunnel Water Service Preliminary plans		W		L
	Tunnel Wastewater Service Preliminary plans		W		L
	Develop Design Criteria		W		L
	Develop Needed Specifications		W		L
CL.09	Geotechnical Data and Analysis (support)	787.5			S
	i. Input, review, and analysis of geotechnical exploration program, laboratory testing program, data and environmental reports				S
	ii. Preparation of Geotechnical Baseline Report				L
	iii. Provide input, review comments and analysis of geotechnical monitoring program for Design Build RFP package.				S
	iv. Confirm Settlement influence zones by others and impacts on facilities of 4% and 5% profile grades				S
	v. Act as the primary author of the Geotechnical Baseline Report with input from WSDOT and Shannon and Wilson on developing baselines for the project.				L
	vi. Review and comment on WSDOT's geotechnical monitoring program for construction.				S
	vi. Develop Building Settlement Mitigation Proposals for WSDOT consideration using Building Assessment surveys by others and tunneling settlement envelopes developed by others				L
	Deliverables				
	Program-wide Geotechnical and Environmental Data Reports				S
	Program-wide geotechnical analysis and recommendations reports				S
	Tunnel Geotechnical Baseline Report			D	L
	Settlement Impacts Analysis Report			D	L
	Develop Design Criteria		W		L
	Develop Needed Specifications		W		L

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CL.10	Specifications	600			
	Tunnel performance specifications development		W		L
CL.11	Construction Planning	1050			L
	i. Identify City of Seattle holidays and special events that will impact DB Contract work schedule.				L
	ii. Staging and material handling requirements				L
	iii. Construction related traffic planning				L
	iv. Community related constraints and special consideration (noise, vibration, work hours, etc.)				L
	v. Construction schedule				S
	vi. Determine bonding requirements				S
	vii. Determine DB Project Insurance requirements				S
	viii. Tunnel spoils treatment and potential disposal options				S
	ix. Deleted				L
	x. Identify list of permits needed for DB Contract and list of issues associated with permitting agencies.				S
	xi. Quality management planning				L
	xii. Construction contract packaging recommendations				S
	xiii. Identify options for tunnel muck disposal based on soil characteristics and sites available with barge or truck access			D	L
	Deliverables				
	Quality Management Plan			D	L
	Muck Disposal Study Report			D	L
CL.12	Project Visualization	2700			L
	Graphics, videos, stills, and other visualizations (AS DIRECTED)		W		L
CL.13	Tunnel Engineering	2070			L
	i. Select Tunnel and roadway vertical and horizontal alignments considering ground conditions & impacts of ground movements on buildings and utilities				
	ii. Develop integrated cross-section with Tunnel Systems and ITS				
	Liner Thickness				L
	Size Interior Structure (walls, slabs, block-outs, etc.)				L
	Allocate space for Systems				L
	Develop emergency egress configuration & location				L
	Integrate requirements for adjacent sections				L
	Develop integrated cross-section with Tunnel Systems and ITS				L
	Identify deviations from WSDOT Standards				L
	iii. Select appropriate tunnel technology				L
	iv. Estimate ground loss from tunneling (input to geotechnical estimation of ground movements)				L
	v. Evaluate applicable Soil Conditioning options for environmental disposal issues				L
	vi. Development of performance criteria and specifications for the TBM, tunnel construction, and tunnel liner in support of RFP				L
	Deliverables				
	TBM performance and tunnel construction control criteria		W		L
	Develop Design Criteria		W		L
	Develop Needed Specifications		W		L
	Tunnel Cross section Report			D	L
CL.14	Cost Estimates	1125			
	Preliminary level construction cost estimate - Project wide			D	L
	Tunnel Project construction cost estimate			D	L
	Preparation of Operations & Maintenance Cost Estimate		W		L
CL.15	Risk Management planning (program wide support)	735			S
	i. Risk register				S
	ii. Risk assessment and analysis				S
	iii. Risk mitigation planning				S
	iv. Risk allocation and cost estimate				S
	v. Assess WSDOT and DB contractor's Risk due to a seismic event during construction and during tunnel operation				S
	Risk Management Plan				S

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CL.16	Plans Preparation	3000			L
	i. program-wide drafting support and 3-D Modeling for conflicts				L
	ii. Program-wide CADD file system management				L
	Program-wide Preliminary Engineering Plan Set			A	L
	Tunnel Project Preliminary Engineering Plan Set			A	L
CL.17	RFQ Support - Deleted	0			
CL.18	RFP Preparation	2902.5	D		
	DB Contract Agreement				S
	Technical Requirements			A	L
	Division 1 - General requirements				S
	Division 2 - Special Conditions			A	L
	i. Section 1 – Project Description		W		L
	ii. Section 2- Project Requirements and Provisions for Work		W		L
	iii. Section 3-Design and Construction Criteria		W		L
	iv. Section 4-Technical Specifications			A	L
	v. Section 5 - Contractor Quality Control			A	L
	Additional Mandatory Requirements			A	L
	a. III-A – Geotechnical Baseline Report			A	L
	b. III-B – Geotechnical Data Report – Phase I Borings			A	S
	c. III-C - Geotechnical Data Report – Phase II Borings			A	S
	d. III-D – Geotechnical Lab Test Report			A	S
	e. III-E- Soil Contamination Baseline Report			A	S
	f. III-F - AWV Tunnel Concept of Operations Report			A	L
	g. III-G- AWV EIS and Supplemental Report			A	S
	h. III-H-AWV Record of Decision			A	S
	i. III-I – Draft Permit Applications and Conditions			A	S
	j. III-J – ROW Plans			A	S
	k. III-K-Joint Participation Agreements & MOU (Railroad, etc.)			A	S
	l. III-L-Preliminary Hydraulic Report			A	L
	m. III- M Required WSDOT General Provisions			A	S
	n. III-N-Proposed Utility Relocation Plans			A	S
	Reference Documents			A	L
	a. Reference Plans			A	L
	b. Reference Specifications			A	L
	c. Existing Structures and Utility Plans			A	L
	i. Elliott Bay Interceptor (EBI) Plans & Condition Survey			A	L
	ii. Elliott Bay Adit Connection Plans & Condition Survey			A	L
	iii. BNSF Tunnel Plans & Condition Survey			A	L
	iv. Building Foundation Plans			A	L
	v. Existing Utility Plans			A	L
	vi. Building Condition Survey			A	L
	vii. Risk Assessment Matrix			A	S
	d. Tunnel Spoil Disposal Study Report			A	L
	e. Soil Conditioning Study Report			A	L
	f. Building Condition and Settlement Mitigation Studies			A	L
	g. Adjacent Construction Contract Preliminary Plans and Schedules for Construction			A	S
	h. Tunnel Systems Preliminary Plans and Design Criteria			A	L
	i. Proposal evaluation criteria			A	S
CL.19	Settlement Mitigation Recommendation Report	600			
	i. <u>Depending on estimated impacts on buildings and utilities along the tunnel alignment, develop contingency plans for protection of impacted building and utilities</u>				S
					L
		39,953			S
		\$6,991,688			

CL.01	Staff	From	To	Months	%	Hours
Management	Abbott	7/1/09	3/31/10	9	100%	1350
	Clark	7/1/09	3/31/10	9	75%	1012.5
	O'Carroll	7/1/09	3/1/10	8	10%	120
	Diemert	7/1/09	3/31/10	9	25%	337.5
	TBD Admin	7/1/09	1/29/10	7	100%	1050
	Mohanty	7/1/09	1/29/10	7	50%	525
						4395
Review	Monsees	7/1/09	1/29/10	7	5%	52.5
	Peyton	7/1/09	1/29/10	7	5%	52.5
	Connell	7/1/09	1/29/10	7	5%	52.5
	Horkan	7/1/09	1/29/10	7	5%	52.5
	Elioff	7/1/09	1/29/10	7	5%	52.5
						262.5
						4657.5
CL.02	Staff	From	To	Months	%	Hours
Civil Design	Jensen	7/1/09	10/30/09	4	100%	600
	Etulain	7/1/09	9/30/09	3	100%	450
	Barbour	7/1/09	9/30/09	3	100%	450
	Kirby	10/1/09	3/2/10	5	100%	750
	Cetin	7/1/09	9/30/09	3	100%	450
	Lider	7/1/09	9/30/09	3	25%	112.5
	Loen	9/1/09	12/1/09	3	50%	225
	Ringstead	9/1/09	12/1/09	3	50%	225
	Rodenbough	10/1/09	3/2/10	5	100%	750
						4012.5
CL.03	Staff	From	To	Months	%	Hours
Structural Design	Schettler	7/1/09	12/30/09	6	100%	900
	Valenti	7/1/09	10/30/09	4	100%	600
	Peiffer	7/1/09	10/30/09	4	100%	600
	Kirandag	7/1/09	10/30/09	4	100%	600

CL.08	Staff	From	To	Months	%	Hours
Tunnel Utility Services Design	Schutt	7/1/09	12/30/09	6	100%	900
	Spencer	7/1/09	10/30/09	4	50%	300
	Smith	7/1/09	10/30/09	4	50%	300
	Fieser	7/1/09	10/30/09	4	75%	450
	Peiffer	7/1/09	10/30/09	4	75%	450
	Sironen	7/1/09	10/15/09	4	20%	105
	Ward	7/1/09	10/15/09	4	20%	105
						2610
CL.09	Staff	From	To	Months	%	Hours
Geotechnical Data and Analysis (support)	Richards	7/1/09	1/29/10	7	50%	525
	Schiebe	7/1/09	1/29/10	7	25%	262.5
						787.5
CL.10	Staff	From	To	Months	%	Hours
Specifications	Zollner	7/1/09	10/30/09	4	100%	600
						600
CL.11	Staff	From	To	Months	%	Hours
Construction Planning	O'Carroll	7/1/09	10/30/09	4	0%	0
	Klink	7/1/09	11/30/09	5	50%	375
	Fiorentino	7/1/09	11/30/09	5	50%	375
	Sakai	7/1/09	10/30/09	4	25%	150
	Ott	7/1/09	10/30/09	4	25%	150
						1050
CL.12	Staff	From	To	Months	%	Hours
Project Visualization	Mezher	7/1/09	3/1/10	8	50%	600

	Johnson	7/1/09	3/1/10	8	50%	600
	Buckmaster	7/1/09	3/1/10	8	50%	600
	Taylor	7/1/09	3/1/10	8	75%	900
						2700
CL.13	Staff	From	To	Months	%	Hours
Tunnel Engineering	Hansmire	7/1/09	9/30/09	3	50%	225
	O'Carroll	7/1/09	1/29/10	7	40%	420
	Richards	7/1/09	1/29/10	7	50%	525
	Smirnoff	8/1/09	1/30/10	6	100%	900
						2070
CL.14	Staff	From	To	Months	%	Hours
Cost Estimates	Klink	7/1/09	12/30/09	6	50%	450
	Fiorentino	7/1/09	12/30/09	6	50%	450
	Caro	7/1/09	9/30/09	3	50%	225
						1125
CL.15	Staff	From	To	Months	%	Hours
Risk Management planning (program wide support)	O'Carroll	7/1/09	12/30/09	6	15%	135
	You	7/1/09	10/30/09	4	100%	600
						735
CL.16	Staff	From	To	Months	%	Hours
Plans Preparation	Snider	7/1/09	11/30/09	5	100%	750
	Osborne	7/1/09	11/30/09	5	100%	750
	Danny DeLaCruz	7/1/09	11/30/09	5	100%	750
	TBD	7/1/09	11/30/09	5	100%	750
						3000
CL.17	Staff	From	To	Months	%	Hours

RFQ Support - Deleted from Scope	Cross	7/1/09	8/30/09	2	0%	0
	Donahue	7/1/09	8/30/09	2	0%	0
	Diemert	7/1/09	8/30/09	2	0%	0
						0
CL.18	Staff	From	To	Months	%	Hours
RFP Preparation	Cross	7/1/09	3/31/10	9	100%	1350
	Donahue	7/1/09	12/30/09	6	25%	225
	Dave Pierce	7/1/09	12/30/09	6	15%	135
	Leintz	7/1/09	12/30/09	6	20%	180
	Diemert	7/1/09	3/31/10	9	75%	1012.5
						2902.5
CL.19						
Settlement Mitigation Recommendation Report	Staff	From	To	Months	%	Hours
	Clark	8/1/09	11/30/09	4	25%	150
	Scheibe	7/1/09	10/30/09	4	75%	450
						600
						39,953
						\$6,991,688