

Independent Cost Estimate

ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROGRAM
Consultant Agreement Y-10393
Task AC: Phase 1 Central Tunnel Explorations

SHANNON & WILSON, INC.

| Task No. | Task and/or DELIVERABLE | Quantity | Principal | Vice President | Sr Assoc/ Assoc | Principal Prof. | Sr. Professional | Profess III/IV | Profess I/II | Sr. Tech | Sr. Drafter | Technician | Drafter | Admin | Clerical | TOTAL HOURS |
|---|---|----------|-----------|----------------|-----------------|-----------------|------------------|----------------|--------------|----------|-------------|------------|----------|----------|----------|-------------|
| Average labor Rate | | | \$ 68.35 | \$ 59.70 | \$ 43.99 | \$ 36.52 | \$ 29.85 | \$ 25.88 | \$ 20.59 | \$ 28.52 | \$ 28.52 | \$ 17.21 | \$ 17.21 | \$ 21.92 | \$ 15.42 | |
| AC-1 | Project Management and Meetings (February 09 to December 09) | | | | | | | | | | | | | | | |
| | Prepare monthly progress reports | 11 | | | | | | | | | | | | | | |
| | Weekly coordination and meetings with team | 2hrs/wk | | | | | | | | | | | | | | |
| | Invoicing | 11 | | | | | | | | | | | | | | |
| AC-1 Subtotal: Management and Meetings | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| AC-2 | Field Explorations | | | | | | | | | | | | | | | |
| | <u>Site Specific Health and Safety Plan (SSHSP)</u> | | | | | | | | | | | | | | | |
| | Update existing SSHSP | 0 | | | | | | | | | | | | | | |
| | <u>Prepare Drilling and Sampling Plan (DSP)</u> | | | | | | | | | | | | | | | |
| | Prepare Draft DSP | 1 | | | | | | | | | | | | | | |
| | Incorporate comments and prepare final DSP | 1 | | | | | | | | | | | | | | |
| | <u>Update Historic Subsurface Database</u> | | | | | | | | | | | | | | | |
| | Collect data from GeoMap NW | | | | | | | | | | | | | | | |
| | Collect data from City of Seattle vault and King County | | | | | | | | | | | | | | | |
| | Spatially locate data and enter into subsurface database | | | | | | | | | | | | | | | |
| | <u>Preparation Work Prior to Field Explorations</u> | | | | | | | | | | | | | | | |
| | Collect and plot information on areaways and EBI | | | | | | | | | | | | | | | |
| | Obtain street use permits and prepare traffic control plans | 17 | | | | | | | | | | | | | | |
| | Do walk-through and coordinate with railroads, City and driller | | | | | | | | | | | | | | | |
| | Coordination with communications and real estate team | | | | | | | | | | | | | | | |
| | <i>Weekly coordination meetings (February through April)</i> | 12 | | | | | | | | | | | | | | |
| | <i>Weekly progress reports (March and April)</i> | 10 | | | | | | | | | | | | | | |
| | Mark locations, utility clearance | 17 | | | | | | | | | | | | | | |
| | <u>Coordinate and Perform Field Explorations</u> | | | | | | | | | | | | | | | |
| | Monitor coring and vacuum excavation | 17 | | | | | | | | | | | | | | |
| | Monitor 9 mud rotary borings (including well installation) | 55 days | | | | | | | | | | | | | | |
| | Monitor 8 sonic cores (including well installation) | 35 days | | | | | | | | | | | | | | |
| | Geotechnical oversight and coordination | 8 wks | | | | | | | | | | | | | | |
| | Develop monitoring wells | 14 | | | | | | | | | | | | | | |
| | Obtain monthly groundwater readings until December 2009 | 9 mos | | | | | | | | | | | | | | |
| | Perform tidal monitoring in selected wells | 4 | | | | | | | | | | | | | | |
| | Perform groundwater sampling and slug tests in monitoring wells | 14 | | | | | | | | | | | | | | |
| | Coordinate and observe downhole seismic testing | 9 | | | | | | | | | | | | | | |
| | Warehouse support and organization/storage of samples | 8 wks | | | | | | | | | | | | | | |
| | Environmental sampling and IDW oversight | 8 wks | | | | | | | | | | | | | | |
| AC-2 Subtotal: Field Explorations | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Independent Cost Estimate

ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROGRAM
Consultant Agreement Y-10393
Task AC: Phase 1 Central Tunnel Explorations

SHANNON & WILSON, INC.

| Task No. | Task and/or DELIVERABLE | Quantity | Principal | Vice President | Sr Assoc/ Assoc | Principal Prof. | Sr. Professional | Profess III/IV | Profess I/II | Sr. Tech | Sr. Drafter | Technician | Drafter | Admin | Clerical | TOTAL HOURS |
|-------------------------|---|----------|-----------|----------------|-----------------|-----------------|------------------|----------------|--------------|----------|-------------|------------|----------|----------|----------|-------------|
| | Average labor Rate | | \$ 68.35 | \$ 59.70 | \$ 43.99 | \$ 36.52 | \$ 29.85 | \$ 25.88 | \$ 20.59 | \$ 28.52 | \$ 28.52 | \$ 17.21 | \$ 17.21 | \$ 21.92 | \$ 15.42 | |
| AC-3 | Laboratory Testing | | | | | | | | | | | | | | | |
| | <u>Perform Geotechnical Laboratory Testing</u> | | | | | | | | | | | | | | | |
| | Develop Laboratory Testing Program | - | | | | | | | | | | | | | | |
| | Perform Geotechnical Index Testing | | | | | | | | | | | | | | | |
| | Water Contents | 500 | | | | | | | | | | | | | | |
| | Atterberg Limits | 85 | | | | | | | | | | | | | | |
| | Sticky Limits | 85 | | | | | | | | | | | | | | |
| | Grain Size Analyses | 85 | | | | | | | | | | | | | | |
| | Hydrometer Analyses | 34 | | | | | | | | | | | | | | |
| | Fines Content Analyses | 50 | | | | | | | | | | | | | | |
| | Quartz Content Estimations | 55 | | | | | | | | | | | | | | |
| | Permeameter Tests | 9 | | | | | | | | | | | | | | |
| | CU Triaxial Series Tests | 4 | | | | | | | | | | | | | | |
| | Point Load Tests | 12 | | | | | | | | | | | | | | |
| | Corrosion Test Summary and Check | 34 | | | | | | | | | | | | | | |
| | Abrasion Test Summary and Check | 12 | | | | | | | | | | | | | | |
| | <u>Perform Analytical (Environmental) Laboratory Testing</u> | | | | | | | | | | | | | | | |
| | Coordinate analytical testing program | 80 | | | | | | | | | | | | | | |
| | Update and cross-check environmental database with test results | 80 | | | | | | | | | | | | | | |
| | AC-3 Subtotal: Laboratory Testing | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| AC-4 | Geologic Review, Profile, and Data Compilation | | | | | | | | | | | | | | | |
| | <u>Geologic Review</u> | | | | | | | | | | | | | | | |
| | Review, sampling, photographing, and logging of sonic cores | 1810 | | | | | | | | | | | | | | |
| | Review of samples obtained from mud rotary borings | 402 | | | | | | | | | | | | | | |
| | Preparation of boring and sonic core logs | 17 | | | | | | | | | | | | | | |
| | <u>Data Review and Summary</u> | | | | | | | | | | | | | | | |
| | Level 2 data quality analysis and summary of environmental data | 69 | | | | | | | | | | | | | | |
| | Shear wave velocity testing analyses summary and check | 9 | | | | | | | | | | | | | | |
| | Prepare tables and figures summarizing field and test data | - | | | | | | | | | | | | | | |
| | <u>Generate Subsurface Profile</u> | | | | | | | | | | | | | | | |
| | Generate profile along tunnel alignment | 1 | | | | | | | | | | | | | | |
| | Update exploration logs based on profile | 17 | | | | | | | | | | | | | | |
| | <u>Provide Data to Project Team</u> | | | | | | | | | | | | | | | |
| | Provide data to project team (interim letter with logs and profile) | | | | | | | | | | | | | | | |
| | AC-4: Geologic Review, Profile, and Data Compilation | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL HOURS/COST | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |