

Pat-8

WORK ORDER  
PURSUANT TO AN AGREEMENT BETWEEN  
THE CITY OF FORT COLLINS  
AND  
Anderson Consulting Engineers

DATED: 10/30/2014

Work Order Number:

Purchase Order Number:

Project Title: Shields Pit Project

Original Bid/RFP Project Number & Name:

Commencement Date: 10/30/2014

Completion Date: 4/1/2015

Maximum Fee: (time and reimbursable direct costs): 16,064

Project Description: This scope of work identifies the work effort required by Anderson Consulting Engineers, Inc. (ACE) to complete the final design of the Shields Pit Project located southeast of the corner of Horsetooth Road and Ziegler Road. Additional service provided as part of this scope include construction observation and coordination, as well as the development of as-built information. Bradley Anderson, P.E., CFM, President of ACE/Principal Engineer, will serve as the Project Manager for this work and Brian Smith, P.E., CFM, Senior Engineer for ACE, will serve as the senior design engineer during the remaining construction phase and as-built documentation phase of the project.

Scope of Services: See attached

Professional agrees to perform the services identified above and on the attached forms in accordance with the terms and conditions contained herein and in the Professional Services Agreement between the parties. In the event of a conflict between or ambiguity in the terms of the Professional Services Agreement and this work order (including the attached forms) the Professional Services Agreement shall control.

The attached forms consisting of \_\_\_\_ (\_\_\_\_) pages are hereby accepted and incorporated herein, by this reference, and Notice to Proceed is hereby given.

Professional

By: Bradley Anderson

Date: 10/31/14

City of Fort Collins

By: [Signature]  
Project Manager

Date: 10/30/2014

By: \_\_\_\_\_  
Gerry Paul  
Director of Purchasing and Risk Management  
(over \$60,000.00)

Date: \_\_\_\_\_

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**ANDERSON CONSULTING ENGINEERS, INC**  
**SCOPE OF WORK**  
**for**  
**ADDITIONAL DESIGN AND AS-BUILT SERVICES**  
**SHIELDS PIT PROJECT**

This scope of work identifies the additional work effort that was required by Anderson Consulting Engineers, Inc. (ACE) to complete the final design of the Shields Pit Project located southeast of the corner of Horsetooth Road and Ziegler Road. Additional service provided as part of this scope include construction observation and coordination, as well as the development of as-built information. Bradley Anderson, P.E., CFM, President of ACE/Principal Engineer, will serve as the Project Manager for this work and Brian Smith, P.E., CFM, Senior Engineer for ACE, will serve as the senior design engineer during the remaining construction phase and as-built documentation phase of the project.

**Task 1. Additional Final Design Services**

During the final design and permitting phase of the project, water samples collected from the existing Shields Pit revealed high concentrations of several metals. Based on coordination with the Colorado Department of Public Health, it was determined that any water discharged offsite for construction purposes would require remediation. Due to the costly, and likely unachievable, requirement to remediate the high metal concentrations from the water prior to being discharged offsite, the feasibility of utilizing an onsite percolation pit was investigated and analyzed. Three test pit locations were identified and excavated by Connell along the eastern edge of the property. The percolation rate from two of the test pits was measured by filling the pits with a known volume of water and determining the length of time it took for this volume of water to infiltrate. Based on the percolation rate of the test pits, a larger percolation pit was excavated to facilitate the infiltration of water that will be displaced by filling the existing pit during construction.

Due to the effectiveness of the percolation pit that was excavated to facilitate construction, the decision was made to modify the final grading plan to include a permanent percolation pit along the eastern side of the property. In addition to modifying the final grading plan to incorporate a permanent percolation pit, the decision was also made to raise the elevations of the final grading plan to accommodate the higher water surface elevation being observed within the pit.

This task includes effort that has already been incurred by ACE staff to facilitate the investigation, analysis, and coordination of the percolation pits and to revise the final grading plan. These efforts required additional data collection, design, and coordination effort that was not included as part of the original scope of work.

Cost..... \$8,764

**Task 2. Construction Observation, Coordination and Grading Plan Modifications**

Based on recent discussion with Natural Areas staff, it is our understanding that Natural Areas would like ACE to provide as-needed services during construction of the project. Therefore, this task includes time for ACE's project manager and senior engineer to visit the site to conduct construction observation, data collection and coordination on an as-needed basis. A total of six site visits have been assumed for the senior engineer and four site visits have been assumed for the project manager during the approximate 4-month construction period. It is noted that this task assumes that the majority of the construction coordination with City of Fort Collins' staff and Connell will be completed as part of the Rigden construction meetings being held on a weekly/bi-weekly basis.

Due to recent complications with the temporary percolation pit, it has been realized that a revision to the final grading plan may be warranted to achieve the goals of the project based on the current site conditions. Therefore, this task also includes effort for ACE to conduct one revision to the grading plan if necessary. Two additional coordination meetings, held outside of the regular Rigden construction meetings, have also been assumed for this task to discuss and review the grading plan revisions with Natural Areas staff and the contractor, if it is determined that a revision to the grading plan is necessary.

Cost..... \$5,000

**Task 3. As-built Survey and Preparation of As-built Construction Drawings**

Due to the out of scope design services required to complete the final design as documented in Task 1 of this scope of work, the collection of as-built survey information and the development of as-built construction drawings could not be completed as part of the original scope of work. Therefore, the effort associated with this task as part of the original scope of work has been included as Task 3 in this scope of work. This task assumes that the development of an as-built grading plan will be necessary to facilitate post-project augmentation requirements. It is further assumed that Connell will conduct a post-project topographic survey that ACE will utilize to generate topography for incorporation into the as-built grading plan. Digital ACAD drawings and pdf copies of the as-built construction drawings will be prepared and distributed.

Cost..... \$2,000

**COST SUMMARY:**

**Total Labor Cost.....\$15,764**  
**Other Direct Costs..... \$300**  
**Outside Services ..... N/A**  
**TOTAL COST.....\$16,064**