

RFP: Pump Station Excavation

Introduction/Background Information

Kiewit is an international construction and engineering company focused on energy, oil and gas, infrastructure and mining projects. Recently completed projects include the Port Mann Bridge, Kearl Oil Sands Froth Treatment Facility and Devil's Slide Tunnel. Kiewit is staffed with engineers, construction managers and technical specialist who provide design, estimating and construction services.

Kiewit has been contracted to construct a new pump station facility near Denver, Colorado. The pump station is located in an exhausted gravel quarry and bordered by an existing slurry wall that cannot be disturbed during construction. Also included in the project scope are two micro tunnels that extend from the new pump station excavation to existing water retention cells.

Project Description and Scope of Services

The objective of the project is to provide a safe, cost effective design for the pump station excavation and micro tunnel thrust walls. The design firm is to provide geotechnical and structural design services for Kiewit, the client. Project constraints include the following:

- Maintain an existing slurry wall near the proposed pump station
- Limited site access
- Rock Excavation
- Located in an exhausted gravel quarry

The scope of work and required deliverables are included below. Additional design requirements are provided in the contract documents. The design calculation package should include assumptions, references, codes/standards and design calculations.

Scope of Work

1. Design a temporary pump station excavation (Due April)
 - Depth: 70 feet
 - Diameter: 40 feet
 - Service life: 2 years
 - Access to base of excavation

2. Design micro tunnel thrust walls (Due April)
 - Two tunnel headings/locations
 - Tunnel sections rated for 700 kips of thrust
3. Provide a preliminary safety and cost risk assessment for the excavation (Due January)
4. Provide a final safety and cost risk assessment for the excavation (Due April)

Available Information

The following information is available for the design team:

- Project Geotechnical Report
- Pump Station Drawings
- Project Specifications

Outcome and Performance Standards

“Teams will provide the work "as is" meaning that there is no engineering stamp certifying the work.”

Aside: The ability to continue receiving support from outside sponsors is somewhat contingent on the good work you and the undergraduate students do. You represent the BYU Civil & Environmental Engineering Department. The expectation is that you will interact in a professional manner at all times with your mentor and project sponsor, treating them with the utmost respect and consideration of their busy schedules. While successful completion of the design project is fundamental to the outcome of the work, it is expected that you will also learn important team dynamics and leadership principles. This means that in the process of completing the project you are also seeking to help each member of your design team to grow and develop confidence in his/her engineering abilities.

Deliverables

The deliverables are:

1. Construction Drawings
2. Design Calculation Package
3. Design Basis Memo
4. A final report with design alternatives for the project that include economic and environmental considerations.
5. A poster reflecting a summary of your design project.

6. A presentation summarizing your design project.

All deliverables are due Friday April 1.

During the week of April 4th both a presentation to sponsors and poster session for students, faculty and other interested people will be organized.

Term of Contract

Undergraduate students are to work during winter semester, eight hours/week/student with at least 3 hours working together. Any class time or time spent on class assignments counts towards the eight hours.

Payments, Incentives, and Penalties

Much of the capstone work is graded by graduate student mentors, including evaluations of the following components:

Team process (how well you work together to accomplish the goals)

Project proposal

Project Management Plan (PMP)

50% complete status report

Final report, poster, and presentation

Overall satisfaction of the client in meeting specific deliverables

Contractual Terms and Conditions

There will be no monetary compensation with respect to the work completed, and all work is completed and delivered on a "best effort" basis.

Aside: Each member of the undergraduate team will be asked to sign a [non-disclosure agreement](#) that simply states the work you do belongs to the project sponsor.

Evaluation and Award Process

3 different graduate students will evaluate proposals blindly, and the average of their scores will be the grade you are given on the proposal and used for granting awards

where there is competition. They will be evaluating you from the exact rubric listed below.

Timeliness - 1 pt off per full hour late, up to 5.	5
Grammar/Spelling - 1 pt off per blatant error, up to 10.	10
Cover Page - Title, Data, Sponsor, Team Name, Team Members, Department of Civil & Environmental Engineering, Ira A. Fulton College of Engineering and Technology, Brigham Young University - 1 pt per piece of information included.	8
Cover Letter - brief letter of introduction that 1) states your intent to propose and 2) how you may be contact - 4 pts per piece completed.	8
Executive Summary (3/4 to 1 page that summarizes the contents of your proposal) - 7 points for completion, helpfulness - 3 pts max.	10
Team Abilities (Adjust the SOQ to make it relevant to the project) - Summary AS A TEAM of 1) relevant courses and experience, and 3) abilities to complete the work on time and in a professional manner, 4) including use of specific engineering tools/software. Include résumés. 2 pts for including résumés, 6 more points max, 2 per piece completed.	8
Key Personnel - 1) Identify which individuals will focus on which pieces of your potential tasks, and 2) some kind of organizational chart or visual describing how you will work together as a team. 5pts max per piece.	10
Project Understanding - 1) Did they address specific items mentioned in the RFP? 2) Do they repeat basic background in somewhat new terms to <i>demonstrate their understanding</i> of the project? 3) Do they mention key deliverables they may need to provide? 4) Did they articulate a <i>specific</i> approach for developing design alternatives and deliverables? 4 pts max per piece.	16
Formatting - Does it look professional? Consistent? Yes or no, 5 pts each.	10
Concise vs. Wordy , Meaningful vs. Fluffy, repetitive wording. 8 pts means concise, and accurate, and specific. 1 pt means often confusing, wordy, or vague.	8
Clear and professional flow of writing and style. 7 pts means that you would feel comfortable handing this in if it were your own; it is easy to read and understand; feels professional; 1 pt means it feels like it was cut-pasted, rushed, and done with little thought; hard to read; feels like a high school essay.	7
Video Interview - Message is clear and consistent with proposal, each member participates, professional but catches your attention. Leniency on video/audio quality will be given with a focus on the content and overall organization.	20
Total	120

Process Schedule

October 21, 4:00 pm - Request for Proposals will be available online:

<http://cecapstone.groups.et.byu.net/content/winter-2015-projects>

October 27, 4:50 pm - Question and Answer period with respect to the proposal and submission procedures. The period where you can register your intent to propose on a project will begin. Each team will need to identify the primary target of their proposal and three other alternatives (no proposal necessary). Public knowledge of an intent to propose should help distribute proposals more evenly.

*November 17, 4:00 pm - Three copies of the proposal must be submitted at the beginning of class. Team video interviews should be made available online or on disc and referenced in the proposal.

December 1 - Award notification.

*The review committee reserves the right to reject any proposal or presentation that is not submitted in a timely fashion or in accordance with the instructions given in this RFP.

Contacts

Brian Peterson

Cell: (801) 657-2006, Email: briandpeterson11@gmail.com

Faculty Advisor: Dr. Rollins

Submittal Requirements for the proposal

Turn in three copies of the proposal that should include

Cover letter

Executive summary, 1 page or less (by itself)

Work plan that outlines the approach to solving the problem, how the team will work together (including weekly work schedule that shows the hours each team member will work and the time block the team will be together, this is a necessary requirement).

Necessary tools, data, equipment, etc. A couple of paragraphs or a bullet list with one sentence explanation for each item.

Schedule indicating important milestones.

Engineering Design Budget. This is an estimate of the design phase cost.

Outcome and Performance Standards. Provide the following statement:
“Teams will provide the work "as is" meaning that there is no engineering stamp certifying the work.”

Statement of qualifications that outlines the background, experience, education, and organizational structure of the team. Include some discussion of how you plan to become a "high functioning" team in the course of completing the project.

Outside consultants (professors or others) that are necessary to “make this work.”

Appendices:

Appendix A: 1 page resume for each member of the team

Appendix B: (if necessary)