

ASC – REGION 7

HEAVY CIVIL PROBLEM INSTRUCTIONS

Guzman Water Reservoir

Kern-Tulare Water District

This year the competition problem requires each team to prepare a proposal for the Guzman Water Reservoir Project for the Kern-Tulare Water District located in Kern County, California. Your assignment includes responding to the following problem questions, preparing a proposal as well as a bid package per the project plans and specifications. All contract documents can be found on the provided flash drives. Proposal packages will include the bid submittal in sealed envelope, and proposal binder with provided tabs for organization.

I. Takeoff and Estimate Items.

- A. Prepare a quantity take-off and direct cost estimate for all bid items that are not already filled out on your bid proposal worksheet.
- B. Prepare your bid in accordance with the specifications and bid proposal forms provided.
- C. Direct cost estimates should include:
 - a. Methodology, audit trail, and must be legible.
 - b. Production calculations, crew analysis, alternatives
 - c. Include all worksheets for review
 - d. Analysis and selection of lowest responsible supplier / subcontractor quotes.
- D. Each bid item estimate, and all backup associated with that item, shall be placed in binder behind its respective tab that has been provided. Judges will not search for bid item backup.
- E. Logic, order, clarity, and technical accuracy will be considered when scoring.
- F. Written proposal of required information: all answers, working papers, assumptions, summaries, tables, charts, schedules, and phasing plans are to be included. Use your best judgment when preparing this document for order and presentation.
- G. Takeoff and estimate to be hard copy, and placed proposal binder behind respective tab.

II. Bid Submittal

- A. Ensure all items on the bid submittal checklist are completed and included in bid submittal envelope that has been provided.
- B. Bid submittal packages that do not include all documents listed on the “bid submittal checklist” or that are received after 09:30:59 PM on Thursday February 9, 2023, will be deemed non-responsive.
- C. All documents in bid submittal documents to be placed in provided bid submittal envelope.

III. Project Plan and Specification Questions

- A. All answers can be found in the contract documents provided in the document management server.
- B. Provide detailed answers including the respective paper trail and final document name that the answer was located.
- C. Plan and specification questions to be hard copy, and placed proposal binder behind respective tab.

IV. Project Schedule.

- A. Prepare a detailed critical path method (CPM) schedule for all items of work.
- B. It is optional, but not required to include a schedule narrative to help explain potential logic, schemes, or reasoning.
- C. The schedule shall outline in sufficient detail the proposed operations, the interrelations of the various operations, and the order of performance so that the progress of the work can be evaluated accurately at any time during the performance of the contract and ensure that the work will be completed within the specified number of working days.
- D. Schedule and narrative to be hard copy and placed in proposal binder behind respective tab.

V. Project Analysis

- A. Prepare and submit a detailed earth moving plan.
- B. Your plan should include the following at minimum:
 - a. Breakdown of equipment and crew used for dam excavation and dam embankment and their associated operations. (Include operations post clear and grub until final, compacted embankment and grading of the dam).
 - b. Detailed spreadsheet accounting for all CY and how they are moved.
 - c. Average haul length, quantity associated, and production.
 - d. Include diagrams and drawings as applicable.
 - e. Complete soils analysis spreadsheet and plot results on Sheet C-1.12.
- C. Project earth moving plan (dirt flow diagram) to be folded neatly, placed in provided document pocket and inserted in proposal binder.

VI. Bid Proposal Worksheet

- A. Complete the Bid Proposal Worksheet utilizing all required data and selection of the lowest responsible supplier / subcontractor quotes.
- B. Prepare bid proposal worksheet: Unit pricing extension, overhead (indirect costs) and profit (margin)
- C. Bid proposal worksheet to be **hard copy and in excel format**. Hard copy to be placed in proposal binder. Excel format to be placed onto flash drive and inserted into provided envelope. Envelope with flash drive to be placed in bid proposal binder.

VII. Oral Presentation

- A. Presentation will be 25 minutes; this includes presentations and questions. Please allow at least 10 minutes for questions and answers. There will be a 200-point deduction for any team that does not allow 10 minutes for questions.
- B. Presentation materials must be turned in by 6:30 AM on Friday, February 10th.
- C. Presentation to be uploaded to provided flash drive and in **.ppt** format.

VIII. Assumptions

General Assumptions:

- 1. Subcontractor / Supplier quotes will be supplied in hard copy form throughout the time allowed for bid preparation.
- 2. Information provided will include project plans and specifications. You will need to use parts of each of these.
- 3. It is OKAY for your team to make assumptions on issues and information not available during the bid preparation period. Please note these assumptions on your worksheets for grading purposes.
- 4. Bid opening will be as life-like as possible. Please follow specifications for bid document preparation instructions.

Project Assumptions:

- 1. Yard(s) can be acquired within the project limits.
- 2. Water source 2 miles from jobsite.
- 3. Project is a commutable distance for crews.
- 4. Anticipated notice to proceed date is March 7, 2023.
- 5. Bid items with an (F) are considered final pay bid items.
- 6. Each team will use a profit margin of 15%.
- 7. Total indirect costs are \$700,000.00
- 8. Heavy equipment haul is not included in indirect cost shown above and needs to be added to your mobilization bid item. Heavy equipment is considered equipment with an operating weight > 90,000 LB. Assume \$4,000.00 per piece of heavy equipment, each way.
- 9. Disregard the DBE Contract Goal requirement (i.e., Treat all subs/suppliers the same)

IX. Specification / Contract Questions

Provide answers to the following questions, ***answers may be found in either the project plans, contract provisions, technical specifications, geotechnical report, or contract documents.*** For an answer to be correct, teams must include the location where the answer was found (i.e. Standard Specifications, Special Provisions, Plans, etc.), section, page and paragraph with answer. Show your work if calculations are needed.

1. How far away does excavation have to be from the toe of the dams?

2. What is the bottom elevation of the proposed reservoir?

3. What elevation is the high-water line of the reservoir?

4. What is the compaction, gradation requirement for the No. 200 sieve, and moisture requirements for the dam?

5. How thick is the drainage layer?

6. What is the spacing on the slide valve stem pedestals for the Low-Level Outlet Structure?
7. How many LF of permanent fiber rolls are on the dam?
8. What is the 28-day strength and slump required for the concrete at the Overflow Spillway splash apron?
9. What thickness do the lifts for the dam embankment need to be placed in (loose)?
10. What is the elevation of the top of the rip rap and how thick is it to be placed?

Bonus: Based on the information provided for Test Pit 11, 0' - 5' depth (TP11) in Part B of the Specs, how much water (in gallons) is required to achieve 3% over optimum moisture on 100,000 CY? Show your calculations below.