



Marine Problem

2010 ASC Student Competition Problem Statement



**GENERAL
CONSTRUCTION
COMPANY**

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Introduction

General Construction Company is proud to be the sponsor of the Marine Problem at the 2010 ASC Student Competition in Reno. Founded in 1910, General Construction is a heavy construction contractor with marine, heavy civil and industrial capabilities. Marine construction and engineering is our specialty with projects that include bridges over water, piers, marinas, harbor terminals, submerged cables, dredging, jetties, outfalls, and heavy-lifting.

Problem Preview

The marine construction project selected for our problem should be new and unique to the competing teams, however the fundamentals of the problem will not be. It will encompass the business challenges that are routinely encountered in managing a construction project, including:

- Quantity takeoff, cost estimating and pricing
- Work plan concepts, methods, and schemes
- Problem solving
- Scheduling
- Technical and basic engineering requirements
- Labor, equipment, and resource planning
- Bid proposal preparation
- Communication, including written and oral

The problem may include a number of the following physical aspects of marine construction:

- Piledriving (steel, concrete precast, timber), drilled shafts and deep foundations
- Dredging and rock slope protection
- Marine fendering and vessel berthing systems
- Coffercells and cell dewatering systems
- Cast-in-place concrete forming/support and placement over water
- Structural steel erection and welding
- Precast concrete segments
- Reinforcing steel
- Mechanical piping, utilities and controls
- Electrical, power supply and cathodic protection systems
- Backland grading, excavation, trenching, and paving
- Marine environmental protection and mitigation

The student competition is designed to enhance and expose every participant to the varied facets of the construction industry. Each team's estimating, scheduling, organizational, leadership, technical solutions, and communication skills will be challenged, but also enhanced and further developed while participating in this competition. The problem will be based on real-life situations for a "hard-money" project. Because hard-money projects can be won by a mere dollar, the pressure is high and every little aspect of the estimate and planning process can make or break the job on bid day. Students should embrace these challenges and recognize the enormity of the value that is gained from this experience.

Competition Process

All teams will receive the project documents according to the schedule below. After a brief review period, a mandatory Pre-Bid Conference will be held. At this conference the RFI process will be defined. Each team must then estimate the specified portions of the project and assemble the required bid package materials. Each team will submit their bid to the judges before the scheduled deadline. Following submittal of pricing materials, teams must prepare and submit oral presentation materials.

The presentation will be similar to an estimate/bid review where the estimators present their work to senior management and fellow employees using simple visual aids and oral presentation skills. For the presentation, teams should dress professionally. The judges will focus on the content and quality of the estimate and emphasize the basics of construction estimating, scheduling and planning.

Schedule of Events

Thursday, February 11 th	6:00 AM	Problem Distribution
	7:30 AM – 8:00 AM.....	Pre-bid conference (mandatory)
	10:30 PM.....	Bids due (any late bids will be considered non-responsive and will be penalized 250 points)
	10:35 PM.....	Bid opening with oral presentation draw
Friday, February 12 th	8:00 AM	Bid review presentation materials due
	8:30 AM	Presentations begin – <u>anticipated</u> 35-minute time-frame allocation (based on 10 competing teams):
		A) 20 minute team presentation
		B) 15 minute Q&A led by the judges
	5:00 PM – 6:00 PM	Project recap by GCC judging panel
Saturday, Feb. 13 th	TBD	Awards ceremony

Scoring

Scoring criteria will be assigned to each main category, and to subcategories, to establish a consistent and uniform scoring guide for the GCC judging panel. The following scoring criteria represents the criteria for the main categories:

Bid Submittal	200 points
Contract Questions	100 points
Estimate	400 points
Means & Method Plans	500 points
Schedule.....	200 points
Written Proposal-Binder	100 points
<u>Oral Presentation</u>	<u>1,000 points</u>
Total	2,500 points

Preparation

Teams and team members are advised to prepare for the competition by utilizing the following skills:

1. **PROBLEM SOLVING**
 - Specification reading, plan reading, method analysis, etc.
 - Scheduling, sequencing and access, particularly in a marine environment
 - Construction methods, equipment analysis, crew and public safety, quality, etc.
 - Technical and engineering solutions: concrete placing and supporting concrete over water, rigging, construction support, etc.
2. **COST ESTIMATING**
 - Quantity takeoff
 - Labor, material, equipment, subcontract analysis, taxes, sureties, insurance
 - Production calculations, crew analysis
 - Audit trail, presentation organization, and readability
3. **PRICING**
 - Unit pricing extension, overhead and profit, use of estimating spreadsheets
 - Job supervision and other indirect costs
 - Avoiding mistakes, especially under pressure
4. **CONTRACT**
 - General Conditions and Special Provisions
 - Contract review
 - Addenda and scope changes
 - Submitting a complete bid package
5. **PROPOSAL PRESENTATION**
 - Project overview, problem contract solutions, schedule, technical solutions, etc.
 - Verbal skills, presentation graphics, charts, etc.
 - Logic, order, clarity, technical accuracy, etc.

Problem Rules

The rules for the competition are designed to provide each team with an equal opportunity to apply their knowledge in developing and presenting their problem solution to the panel of judges. The following rules serve as a supplement to the published 2010 ASC Student Competition Rules:

1. Teams may have a maximum of six members.
2. Once the problems have been distributed each team will be on an honor system regarding outside help. No one except the six-member team is allowed inside the designated hotel room during the problem solution and oral presentation preparation timeframe. This includes faculty, coaches, friends, and spouses. Contact with outside sources is prohibited, including the use of phone calls, faxes, and internet. The judges will be randomly visiting the team rooms throughout the competition. Failure to meet this requirement will make the team subject to disqualification.
3. The problems that are used in this competition are drawn from actual construction projects. Student team members that have worked on, or have knowledge of the project that is provided will have an unfair advantage in developing their solution. If, upon receiving the problem any team member recognizes the subject problem project, shall notify the problem sponsor to discuss the student's project or problem knowledge. Alternates may be considered should there be an identified conflict. Failure to notify the sponsor will make the team subject to disqualification.

Problem Rules *(continued)*

4. Each team will be allowed to use whatever computer equipment (per ASC rules) they bring to the competition site. Take note, the estimate preparation can be done with paper, pencil, and a calculator. A computer with software for scheduling, spreadsheet calculations, and word processing will be helpful.
5. Written proposal documents, working papers, support data, and bid forms will be turned in as one complete package for review by the judges on Feb. 11th at 10:30 PM. This means the doors will shut and teams that are not inside will be considered non-responsive. For scoring purposes this is a 250-point deduction (10% overall) from your score. Please note there will be no opportunity to submit any required information after the bidding deadline.
6. All teams will submit their oral presentation materials to the judges by the designated time on Friday Feb. 12th. Teams will be limited to only those items submitted for use during their presentation, no exceptions. As a courtesy to the presenters, the presentation room doors will close promptly at the designated start time and will not reopen until the end of the presentation. Under NO circumstances may a team member, coach, or associated student or faculty member enter the oral problem presentation room until that team's designated presentation time on Friday. You must leave at least 15 minutes within your presentation allocation for questions by the judges. Failure to do so will result in a 200 point deduction off your presentation score.

General Construction Company will provide the following for the presentations:

- USB thumb-drive for submitting electronic presentation materials
 - Laptop equipped with Microsoft Office 2007 (PowerPoint, Word, Excel), Primavera SureTrak and Project Planner (P3).
 - LCD projector
 - Projection screen
7. No proposal or presentation materials will be returned so copies should be made prior to being submitted. Upon request, the judging panel will provide scoring feedback to the team coach and captain after the competition.
 8. Student team captains must acknowledge that they understand the ASC competition rules, and that they have reviewed these rules with their team members and faculty coaches. The team captain must sign an acknowledgment statement and submit it to the Managing Director of the ASC student competition prior to the start of the event.
 9. All decisions of the problem sponsor and judges are final.
 10. MOST IMPORTANT RULE: Have fun, learn, and develop new peer relationships.

Contact Information

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