ASSOCIATED SCHOOLS OF CONSTRUCTION REGIONS 6 & 7

MECHANICAL 2024

Project Narrative

Background

Murray Company is the Plumbing and Process Subcontractor working for Top Pick Contracting (General Contractor) on the Mount Olympus Science and Technology campus located in Northern California. The campus consists of three main buildings – Lambda, Gamma, and Beta. Top Pick Contracting has on-going projects in each building.

BETA Project – A new ground-up building, currently under construction with long lead equipment starting to arrive and be installed.

GAMMA Project – A Tenant Improvement (TI) of an existing building, in the Design Development Phase. A bulletin has recently been issued adding scope to the job and the impacted subcontractors are responsible for producing a cost proposal.

LAMBDA Project – A mechanical upgrade to an existing building. The scope within this active building requires a shutdown of various systems to tie-in the new scope with minimal disruption to building occupants.

The Murray Team is on each of these projects under a Master Service Agreement (MSA) for the campus. With the various stages of construction happening at once, Murray Company must triage each issue brought to them and provide what is requested. Every entity will have a different opinion of what is important, be it the Owner, General Contractor, or Murray Company and it is Murray's job to prioritize accordingly.

There is a standing Owner-Architect-Contractor (OAC) meeting every Friday to discuss the status of all the on-going Campus Work. The meeting is the best time for the key players to review all pressing issues, constraints, and critical plans. This week, Top Pick has invited Murray Company to the meeting since they have numerous items in their court.

The Murray Team will present their deliverables (highest priority to lowest priority) to attendees at the OAC. Each deliverable should be summarized by describing the general plan, highlighting issues, and pointing out any needs from other parties.

For the OAC meeting to be effective all deliverables must be submitted the night before, via the project team binder (hardcopy) and flash drive (electronic).

Deliverables

The deliverables listed below are to be organized and presented in order of highest priority to lowest priority.

BETA Project

- TAB 1 Heat Pump Impacts Murray Change Estimate (MCE 002) Proposal
  - Include detailed summary of scope on cover sheet.
  - Summarize changes from ROM (why did cost increase or decrease?)

GAMMA Project

- TAB 2 Bulletin #1 Murray Change Estimate (MCE 001) Proposal
  - Include detailed summary of scope on cover sheet.
  - Include summary of Shift Work activities on cover sheet.
  - Duration of all activities.

LAMBDA Project

- TAB 3 Recommend Shutdown Window
  - Include cost proposal associated with recommended option (MCE 005)
  - Indicate what other things were considered (outside of cost) to help determine ultimate recommendation.
    - How does impact to building users differ between options? Impact to crew working hours? Safety implications? Quality implications?
  - Provide a breakout schedule for the recommended option.
    - Must be logic based with activities sequenced and tied together.
    - Include separate activities for subcontractor scope(s).
    - Include separate activities for any necessary Owner activities.

Project Team

Murray Company, Plumbing and Process Subcontractor

Noah Wilson, Project Executive
Lucas Anderson, Project Manager
Ezra Smith, Project Engineer
James Moore, Superintendent
Jackson White, General Foreman
Theo Martin, Shop Foreman

Top Pick Contracting, General Contractor

Chloe Taylor, Project Manager
Maverick Jones, Superintendent
Daniel Miller, Project Executive

Absolutely Certain Consulting, Owner's Consultant

Henry Robinson, Cost Consultant
Luke Rodriguez, Schedule Consultant
David Thompson, Executive

DeArchitects, Project Architect

Dean Henderson, Principal

Owen & Ner, Project Owner

Sebastian Ner, Owner

Spirit of the Problem

Each student team will assume the role of the Murray Company Team. Numerous issues need to be tackled at the same time and each team must triage the deliverables and assign priorities. Effective teams will be the ones that prioritize the critical, time sensitive Project issues.

Be aware that although most information is provided in the flash drive, there may be information missing which is intended to be requested in a timely fashion as a part of the problem. This includes vendor quotes, subcontractor quotes, Request for Information (RFIs), and submittals to name a few examples.

Submit RFI or Quote Requests to the *two* e-mail addresses below. Responses will be provided every hour.

Lynn Dunk	**ldunk@murraycompany.com**
Stuart Campbell	**stcampbell@murraycompany.com**

Separately, remember that Murray Company has been working on the Mount Olympus Campus for 10 years and would like to continue working on the Campus for years to come. For this to happen, Murry

Company needs to keep our Client's best interests in mind. The buildings and systems we install are meant to last and the people working in them every day not only want the best product but something that is easy to use and maintain.

Timeline of Events

Please refer to "Teams Schedule of Events" document for further details.

Thursday, February 8, 2024:

6:00 AM – 6:30 AM	Competition Kickoff
9:30 AM – 10:00 AM	Reconvene for Q&A
4:00 PM	RFI & Quote Request Deadline
8:00 PM	Binders Due (both hard copy and electronic)

Friday, February 9, 2024:

7:00 AM	Presentation Materials Due & Team Presentation Order Announced
8:00 AM	First Team Presentation
6:45 PM	Problem Recap
7:00 PM	Student Mixer sponsored by Northern California MCA

Saturday, February 10, 2024:

8:00 AM – 12:00 PM	Job Fair
12:15 PM	Awards Ceremony

Glossary of Terms

Clearance – Minimum space clear of all construction items. Typically used to provide maintenance access to components or for safety reasons.

Crew – Field team who is installing a specific scope. Generally made up of a mix of Foreman, Journeyman, and Apprentices.

Crew Mix – The ratio of Foreman, Journeymen, and Apprentices in a crew. For example, 1 Foreman, 2 Journeymen, and 1 Apprentice.

Direct Labor - This type of labor is generally hands-on labor, executed by craftsmen, that adds value to the project. Examples: excavating, welding, cutting, installing, etc.

DT – Doubletime, this refers to hours of work that are paid at a rate higher than standard time or overtime. Refer to project specific for additional information to determine when this labor rate is appropriate.

Edge Distance – Edge distance refers to the horizontal distance between an anchor and the nearest edge of the concrete substrate (or other structural member).

Equipment – Equipment comes in all forms. It is typically a skid of components used to generate systems such as Domestic Hot Water, Compressed Dry Air, and Vacuum.

Equipment Pad – Large, heavy equipment typically needs to be installed on a concrete pad that both provides enough substrate to anchor to and height off the ground to route drain piping from the equipment to adjacent drains. It also serves to keep liquid away from the equipment should there be a spill. Also referred to as a *Housekeeping Pad*.

Fabrication – Labor expended constructing scope off site in a controlled environment. Generally results in an increased control of quality and lower labor factors which make it a preferred method for constructing large quantities of materials.

Fixtures – Plumbing components like faucets and sinks, toilets, shower heads, and bathtubs.

Indirect Labor - This type of labor supports the project but is not directly hands-on. Examples: work done by Project Managers, Project Engineers, Safety Professionals, Project Supervision, Scheduler, Quality Control, etc.

Installation – Labor expended constructing scope on site.

Interconnecting Piping – The small runs of piping that are required between pieces of equipment that are shipped loose to a job site.

Line Freeze – the use of liquid nitrogen to freeze a liquid piping system in a specific location to isolate the flow of the liquid downstream. Its typically used to tie into a system that can't be shutdown at

other locations due to the critical processes on going, or to avoid draining down and subsequently refilling a large portion of the existing system.

MCE Take Off Recap – Murray Change Estimate form that is used to produce a cost proposal. The take off tab is used to list all the components of the scope. The Recap multiplies the quantity of items by the cost of each item. THE YELLOW CELLS indicate editable cells. All other cells are frozen and intended not to be edited.

O&M - Operation and Maintenance - Generally the manufacturer that provides equipment will provide a manual for the equipment which includes operation instructions and all necessary maintenance.

OAC – Owner Architect Contractor meeting generally held weekly to discuss the project status.

OT - Overtime, this refers to hours of work that are paid at a rate higher than standard time. There are a myriad of rules that determine when overtime must be paid, including legal requirements as well as terms negotiated by Unions.

POC – Point of connection. This is a termination point on a skid or in a system where other piping will connect to.

PPE - Personal Protective Equipment - Protective gear, equipment and apparel, that is used to minimize exposure to job hazards that can cause injury, and/or illness. Examples: safety glasses, hard hat, reflective safety vest, face shield, etc.

Shift Work – 8 hour day starting off at an irregular time (ie 3PM, 4PM). Shift work may be performed at the option of the Employer with forty-eight (48) hour notice prior to the start of the shift, but when it is performed, it must continue for a period of not less than three (3) consecutive workdays.

Shutdown - A defined period of time that a facility shuts down all or part of the existing operations in order to allow for maintenance, and/or construction and tie-ins. Welding, or hot work is generally allowed everywhere in the facility during a shutdown.

The House – A term used to refer to the building outside of the equipment room.