

REGION 6
ROCKY MOUNTAIN REGION
AK, AZ, CO, ID, MT, NV, NM, UT, WY



REGION 7
FAR WEST REGION
CA, HI, OR, WA

Region 7- Commercial Building Division **February 8-11, 2023**

Problem Statement



Sunnyvale Civic Center Modernization

ANSWER PACKET

Sunnyvale, CA

Problem Sponsor:



HENSEL PHELPS

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**Associated Schools of Construction Competition
Region 7 – Commercial Building Division
February 8-11, 2023**

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PROBLEM SPONSOR



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I. COMMERCIAL DIVISION TIMETABLE

Thursday, February 9th	
Opening Conference / Distribute Problem / Establish Presentation Order	6:00 AM
First Progress Meeting / RFI's Due	10:00 AM
Second Progress Meeting / Question Session	2:00 PM
Subcontractor Interviews (10 min. / team)	2:20 PM – 7:00 PM
Content Due	10:00 PM
Friday, February 10th	
Interview Materials Due (all teams)	6:45 AM
Interview Start	7:00 AM
Project Debriefing	6:30 PM
Saturday, February 11th	
Career Fair	8:00 AM – 12:00 PM
Awards Ceremony	11:00 AM

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II. PREFACE

WELCOME to the 2023 ASC Student Competition. All participants are to be commended for the personal time and commitment made in preparing for and participating in this competition. The construction industry has noted these sacrifices and the premier student population that is competing this year. This is evident in the quantity and quality of companies committed to the competition and Career Fair.

The student competition is designed to challenge each team in different facets of the construction industry. Each team's estimating, scheduling, organization, leadership, productivity, and communication skills will be tested and enhanced while participating in this competition.

The competition will present each participant with construction industry exposure that may not otherwise be experienced until after working in the industry. It is Hensel Phelps' desire to present each team member with real life situations through this competition. Some of these "experiences" may seem uncomfortable and/or appear to contain no logic. Be aware the real world is very often not kind, fair, or logical! The construction industry will present situations where people are less than pleasant, and pressure is applied to the extreme, but it will also provide great feelings of accomplishment and team camaraderie. Some questions, both in real life and in this competition, may have multiple answers and some questions may have no correct answer. The superior level of the student competitors attending the competition should embrace these challenges and recognize the value of these lessons.

The judges in the interview presentation portion of this competition may seem to "put you through the wringer" with tough questions and references to deficiencies in your written proposal. Although it is human nature to "take it personal", please understand that these lessons are for the good of your development and excellence. It is not the intent of the judges to frustrate and alienate you, yet the spirit of competition places a duty on the judges to ask the hard questions that will allow team rankings to occur. At the end of the competition each team member should reflect on the knowledge and experience gained, and hopefully the judges can become mentors and friends to you.

As a driven team member, realize that all teams have come to the competition with the main goal of WINNING! However, with so many competitors, also realize that there can only be one winner announced. As an intelligent, driven, and committed individual, you should recognize the vast knowledge, industry exposure, and experience gained in competing and finishing this problem. This is the real reason all teams and individuals are competing. Yes, it is true, every person competing is a winner, regardless of the final overall placement. Make sure you, and your team, understand this; it does make a difference!

Determination of the Winner is based on a uniform grading scale for the written portion of the competition coupled with the oral presentation, judged by a seasoned multi-member judge panel. The combination of these two components, in the scoring ratios listed, determines the overall team placement. Overall team placements will not be posted, but feedback will be provided after the competition.

Congratulations for participating and Good Luck!

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III. PROJECT INFORMATION (Andrew Cameron & Eloy Garcia)

The Sunnyvale Civic Center Modernization Phase 1 is a design-bid-build (hard bid) project managed by the Public Works Department of Sunnyvale, CA. The project consists of four (4) main packages of construction that include a new Emergency Operations Center (EOC), new City Hall, renovations within the existing Department of Public Safety (DPS) and campus site improvements. These work packages are phased and sequenced to allow for continued construction and uninterrupted operations for the City Staff.



Rendering of the EOC

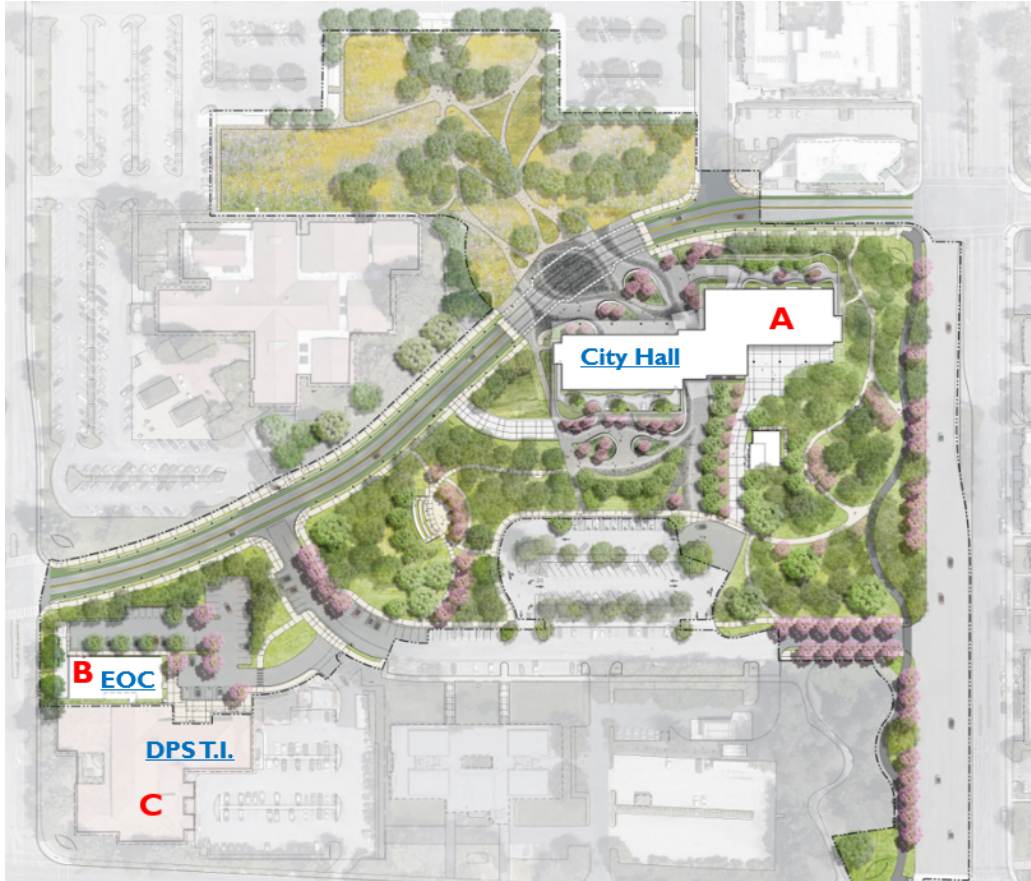
The new Emergency Operations Center (EOC) is a two-story (2) cast in place structure that utilizes post tension supports for the decks. The facility will be capable of remaining fully operational for twenty-four (24) hours and will serve as the new nerve center for the campus. This facility features integrated AV systems, STC rated partitions, and interior glazing walls. Once the EOC is completed the City staff will move out of the existing Department of Public Safety to allow the construction team to start the soft demo and tenant improvement renovation work.



Rendering of the New City Hall

The City Hall is a four-story steel structure with a subgrade basement level for parking. The facility is designed to be LEED Platinum and Net Zero utilizing 1,700 solar panels mounted on a cantilevered roof canopy spanning over the entire building. The building features several key design items including: a timber curtain wall system, a wood panel clad central stair and a council chamber with fixed audience seating and acoustic wood ceiling panels.

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Site map capturing the full 12-acre site and location of the DPS building

The Department of Public Safety (DPS) interior renovation work will occur while the balance of the facility remains open and active. The construction work will need to be isolated behind temporary walls and all workers will need to pass a background check in order to gain access into the construction zone. The renovation work will update the locker rooms and restroom facilities along with providing the DPS with a new crime lab space and evidence storage systems.

Finally, the project site work consists of twelve acres of redevelopment around the footprint of the new City Hall. After the City staff moves into the new City Hall their existing facilities on the campus will need to be demolished and re-graded to support a small amphitheater and pedestrian walking paths. The new campus grounds will also feature a granite paver roadway and public plaza along Olive Ave.

As a Hard Bid project all the Specifications and Drawings are viewed as complete. If the perspective bidders determine additional information is required, they will need to generate pre-bid RFIs. All the pre-bid RFIs will be answered and distributed back to the bidders.

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IV. Problem Scenario (Andrew Cameron and Eloy Garcia)

(Competing schools will represent a Pursuit Team that must develop a bid and establish a strategy for the successful execution of the following project.)

The NorCal District is looking for a project to support the staff that are finishing up current projects. In addition, a district strategy is to expand the self-work craft force. Self-work will enable the district to not only increase profitability for the employee-owners but allow greater control on schedule for future projects.

Hensel Phelps Senior Leadership has identified the Sunnyvale Civic Center Modernization (SCCM) as a strategic project for the NorCal District. The pursuit is attractive for the district for many reasons. One reason is that the SCCM project will be a landmark project for the City of Sunnyvale. This client has never completed a project of this size and intends to continue developing the surrounding areas. In addition, the project affords many opportunities to increase our companies self-work portfolio and craft development. Therefore, to develop a new relationship and provide an opportunity to grow its people, the leadership team has put together a pursuit team to secure this win.

This targeted hard bid pursuit will require the team develop a bid and support a pre-bid review meeting with upper management to ensure there is a clear strategy to win and execute the project. The components listed under the problem outline represent real deliverables that the team will need to generate for running a successful job.

Senior Leadership has scheduled a pre-bid review meeting to review the status of the proposal. The review meeting will be your team's opportunity to present the current project strategy including project phasing, overall risk mitigation measures, and self-work strategy. Your written overview is due by **10:00 PM tonight** and will be asked to present a complete review tomorrow. Interim progress meetings are scheduled for 10:00 AM and 2:00 PM (Thursday, February 9th).

Any questions should be delivered, in writing, on the Request for Information form (RFI) to the senior management team via email rfranssen@henselphelps.com by 10:00 AM on Thursday, February 9, 2023. Responses to the RFI's will be provided before the 2:00 PM meeting. The RFI form has been provided in the Supplemental Information (X.0.3). An opportunity for verbal questions will be provided at the 2:00 PM meeting.

Please note that some of the written questions occur later than the pre-bid review, at some future point in the project. Consider these a "Time Warp" and answer them with that understanding. This is to challenge the team on the full realm of construction issues.

For the oral presentation on Friday, all team members shall contribute and include team members including Project Manager, Superintendent, Estimator, and Scheduler; other roles will be at the team's discretion. The 30-minute presentation should allow for 20 minutes of team presentation and 10 minutes of questions and answers. Your presentation should focus on the following topics: Cost, Schedule, Self-Work Strategy, Site Utilization, Quality, and Safety. Creativity and innovation are encouraged, shallow marketing pitches are not.

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V. PROBLEM OUTLINE

Structure and tab your documentation according to the following outline. Include only the information requested in **Section VI. Submission Requirements**.

1.	GENERAL SUMMARY	10
2.	ESTIMATE	12
3.	GENERAL CONDITIONS.....	14
4.	PROPOSAL SUMMARY (TAB ANALYSIS)	17
5.	SCHEDULE.....	20
6.	COORDINATION OF WORK	26
7.	CHANGE MANAGEMENT	27
8.	PERSONNEL ISSUES	29
9.	SAFETY	32
10.	SITE UTILIZATION	34
11.	SUSTAINABILITY	37

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VI. SUBMISSION REQUIREMENTS:

Please note that some of the following questions do not fit into the time frame of the Problem Scenario described earlier (i.e. they occur earlier or later in the construction phase), consider these a “Time Warp” and answer them with that understanding.

0.1 EARLY DELIVERABLE - BIOGRAPHIES

Although this item has past, as a requirement of the Pre-Problem Statement, your team’s final score may reflect a small point deduction if you failed to comply with this item in a timely and professional manner.

0.2 QUALITY OF SUBMITTED PROPOSAL

The appearance and organization of proposals is important in the construction industry as it is often our first opportunity to interact with a new Owner and/or impress the upper management in our company. We want them to see the professional image we are trying to portray and be able to find and understand the information we are presenting. Points will be awarded in this section based upon the appearance and organization of your team’s submitted response to the following problems.

0.3 TIMELINESS OF PROPOSAL

Unless stated otherwise, one electronic copies of your proposal are due at **10:00 PM**, as per the Timetable in Section I. A ½ point penalty will be deducted from the team’s score for each minute the proposal is turned in late.

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1. GENERAL SUMMARY

Written by Nadine Roeser

The Sunnyvale Civic Center Modernization (SCCM) is an important and strategic project pursuit for the Northern California District. With the work at a nearby project closing, landing this job in the Sunnyvale area would be a big win for the district and the many local Hensel Phelps employees, including craft, living in the area.

You are the Project Manager leading the project chase and are finalizing the estimate to determine the final hard bid price that will be recommended to Upper Management. The General Summary form has been mostly filled out with the assistance from the estimating team, however you are now tasked to fill in numbers your team came up with for the final bid tabs, concrete estimate, and General Conditions. Once these values are finalized, you will be able to determine how Hensel Phelps will approach Fee and Contingency, leading to a final bid price to be presented.

PART A – General Summary

Using the General Summary spreadsheet (X1.1), fill in the missing values to complete your final bid to present to Upper Management. Keep in mind to utilize the final values determined in Section 2 (Estimate, as needed), Section 3 (General Conditions), and Section 4 (Proposal Summary) to complete the spreadsheet. Be sure not to modify unhighlighted cells within the excel file as you will only need to fill in the yellow highlighted sections to complete accordingly.

PART B – Contingency

The Sunnyvale Civic Center Modernization is a design, bid, build project chase. Throughout the industry, there have been many unknown factors that have effects on the health of projects, whether it be long material lead times, material pricing, labor work force, etc. You must determine what Contingency % should be included with the bid and present it to Upper Management based on what you foresee as Project Risks. Using the General Summary spreadsheet (X1.1), fill in the orange highlighted section with the Contingency % you determine to be best fit. In addition, in no more than 150 words, explain the reasoning behind the Contingency % chosen.

PART C – Fee

The Sunnyvale Civic Center Modernization project would be a big win for the NorCal District, presenting another opportunity to keep the self-work craft busy in the area. You are cautious in determining what Fee % should be presented for Hensel Phelps in the hard bid pursuit, as the fee could sometimes make or break the final number that is awarded. Finish the General Summary spreadsheet (X1.1) and fill out the highlighted section with the Fee % to be submitted. Similar to Part B, in no more than 150 words, explain to Upper Management the reasoning behind the Fee % chosen and be prepared to explain how to project could potentially increase margin.

ANSWER: PART A - Reference attached X.1.1.a

PART B - Reference attached X.1.1.a.

A 0.5% Contingency Fee was determined per the General Summary bid submission. Because it is a design, bid, build pursuit, Contingency is not considered to cover any design document gaps as those are to be pursued via Prime Change Orders in lieu of tracking against Contingency. With the nature of the project, a 0.5% Contingency Fee would be used for

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unanticipated conditions, including but not limited to potential escalation, schedule acceleration to maintain phasing turnovers, or buyout gaps.

PART C - Reference attached X1.1.a.

The project would be an important win for the NorCal District; therefore, you consider a 4% Fee competitive with the hard bid approach. You also understand that if this Project is awarded to Hensel Phelps, there are opportunities to aim for an overall net Fee of 5% under the Self-Work, buyout gains, and unspent Contingency. Awarding Hensel Phelps Self-Work allows more control and ownership on the project from a schedule/budget perspective. Showing a 4% Fee on the main project bid would give Hensel Phelps more edge in winning this hard bid pursuit.

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2. ESTIMATE

Written by Amanda Schilling & Daniel Oni

The Sunnyvale Civic Center Modernization (SCCM) project provides a unique opportunity for Hensel Phelps to expand its self-work portfolio and craft development. It also provides an opportunity for Hensel Phelps to set a quality standard for our trade partners to follow. Proper management of our self-work will ensure we increase our overall profit. Hensel Phelps continually strives to increase the quantity of self-performed work and ultimately create more opportunity for our craft. Self-performing the concrete scope gives us a unique opportunity to control our destiny by driving the schedule, enhancing profit, and providing a quality product to the end users.

PART A – Concrete Estimate

As the Lead Estimator, you have been tasked with putting together a comprehensive value to furnish and install the complete cast-in-place concrete scope of work for the SCC City Hall and EOC Addition.

The estimate is comprised of formwork, concrete material, place and finish, labor, equipment, and associated general conditions. For the general conditions portion, you will be quantifying all costs associated with the self-perform concrete scope of work including General Foremen. Note: Dedicated self-perform staff such as Area Superintendents and Field Engineers will only be accounted for under Section 3 General Conditions.

Use the provided contract drawings to quantify the value of cast-in-place concrete to be installed at the SCC City Hall and the EOC Addition, specifically:

- Columns
- Foundations
- Walls
- Mat Slab
- Slab on Grade
- EOC Slab on Deck
- City Hall Slab on Metal Deck

Supplemental Information:

- Concrete Estimate Spreadsheet (X.2.1) Tabs 1-4 – This spreadsheet has been formulated for your use in compiling data, all teams will use the same format. Only yellow cells are editable. The summary sheet (Tab 1) will automatically calculate your overall totals for the concrete scope.
- Cost data, wage rates, production rates, and material costs have been included in the Concrete Estimate Spreadsheet (X.2.1) for your use.

Clarifications and Exclusions:

In order to keep all teams' estimates consistent, please follow the guidelines below:

- There are 4 tabs that require information to be populated. Only utilize the yellow cells, when necessary.
- Do NOT modify the Estimate Spreadsheet.
- Do NOT include reinforcing bar in your estimate, as it is included in the General Summary.

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- Do NOT provide any other concrete components other than the items listed above and on the excel file.
- Do assume excavations for footings are neat dug.
- For General Conditions, partial months may be used to calculate costs.

Estimate Part A Deliverable:

1. Submit two electronic copies in native format (Excel) of your Concrete Estimate.

PART B – Concrete Pump Plan

Using the Concrete Pump Plan provided in X.2.2 determine the location and size of the pump required for each placement noted in the file. Use the drop-down options highlighted in yellow along with the X.2.3 - Concrete Placements and Pump Location Options to help you determine which one of the three pump locations is appropriate for each placement. This activity is only for the SCC City Hall and the placements are identified within the Excel file.

Remember, although larger pumps can produce more, they also cost more per yard of concrete. As the lead Field Engineer, you will need to reference the estimate to confirm the concrete pump costs do not cause the overall concrete scopes to go over budget. Civil Drawings and building elevation views will need to be referenced as well to identify where pumps may be placed.

Estimate Part B Deliverable:

1. Submit one electronic copy in native format (Excel) of your Concrete Pump Plan X.2.2. This file should be named "X.2.2.B Concrete Pump Plan - (School Name)".

PART C – Fee

While understanding the extent of self-perform work on this project, determine what fee percentage, if any, will be allocated to your estimate in Part A. The proposed fee percentage shall be populated in the Concrete Estimate Spreadsheet (X.2.1) on Tab 1. A short narrative (250 word maximum) shall be submitted describing why the percentage was selected.

Estimate PART C Deliverable:

1. Submit one electronic copy in (PDF) of your narrative describing determination of fee percentage used for overall concrete estimate. This file should be titled "X.2.4.C - Fee Determination Narrative – (School Name)"

ANSWER:

PART A – Reference attached X.2.1.a

PART B – Reference: PDF file X.2.2.a

PART C – After reviewing the concrete scope of work, it was determined that 10% markup would be added to the concrete self-work. Based on the overall project fee, it was determined that to increase the overall profit of the project, adding a fee on the self-work concrete scope still kept the overall project under budget. Additionally, with a fee of 10% and the overall costs of the concrete self-work, Hensel Phelps is able to maintain a competitive price compared to other concrete trade partners.

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3. GENERAL CONDITIONS

Written by Isiah Clark

General Conditions (GCs) are real construction costs that are not immediately quantifiable by the untrained eye and are the costs associated with on-site management, supervision, and contract administration. GCs are the costs incurred during a construction project that typically are not seen as work in place, but are integral to the success, efficiency, and safety of the project. GCs are a critical component to risk and management and afford the contractor the ability to forecast costs, staffing, and project needs.

At the outset of the job, a GC Estimate is required to forecast the associated project costs. To support the final GC estimate you have been tasked in creating a staffing plan that encompasses the duration of the project. Hensel Phelps is performing at a high level across all districts, so it is imperative that the project's staffing needs are communicated to upper management early on. This projection will not only aid upper management in their ability to forecast staffing needs for your project, but it will also identify future opportunities for staff to grow and develop into new positions.

Another key component of the GCs estimate is the jobsite office. Deciding where the project staff will be based throughout the project is critical to efficiency and is a key cost element. Luckily there are many options available to house our project staff in the area such as jobsite trailers or a satellite office (an office space near the jobsite) in neighboring buildings. You are being tasked with reviewing the Site Utilization plan in Section 10 and the provided quotes in Section X.3.6 to decide on the best fit for the team.

PART A – Staffing Plan and Field Organizational Chart

Prepare a staffing plan that directly reflects the project need in accordance with the project phasing plan and schedule. Create the staffing plan using the template provided in Section X.3.1. Each staff member's total dedicated duration on the project should be included on the form to accurately project staffing costs as these durations are pulled into the GC estimate.

Using the staffing plan that you have created, develop two field organizational charts that depict the various roles that will be required for the project to run smoothly and efficiently for field staff only. An example and a template of a field organizational chart has been provided (X.3.2). Note that this serves as an example of how an organizational chart should be arranged; the scopes and responsibilities for each staff member should be developed through your own breakdown of the staffing plan and understanding of the scopes required for the project. Include the position, scope area (City Hall, DPS, etc.) and general responsibilities of the staff member in each box of the matrix. Descriptions of each positions' responsibilities have been provided (X.3.3) for your reference. The first organizational chart should include the areas throughout the project when the construction of the city hall building is set to begin. The second chart should show how the project team will transition into the latter phase of the project once the finishes of the EOC building are set to begin.

Through your evaluation of the staffing plan and allocation of roles and responsibilities, provide In no more than 150 words, an evaluation to upper management as to whether you believe the project is overstaffed, understaffed, or sufficiently staffed. If you believe the project is overstaffed or understaffed, provide an explanation for your reasoning as well as proposed solutions as to how the staffing can be adjusted to ensure the project is staffed for success. Take notes of your assumptions and justifications for staffing recommendations that you feel are abnormal or require justification. Grading will be based on logic and reasoning of your staffing recommendations. Any

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pertinent information to justify your matrix should be written in the assumptions and justifications section of the spreadsheet.

General Conditions Part A Deliverables:

1. Submit an electronic copy (PDF) of your Staffing Plan (X.3.1).
2. Submit an electronic copy in native format (PowerPoint) of your Field Organizational Charts (X.3.2)
3. Submit an electronic copy of your written narrative, in no more than 150 words, describing your staffing decisions.

PART B – Jobsite Satellite Office vs. Trailers & General Conditions Estimate

(Note: The General Conditions budget from this part should be carried into the General Summary section)

In no more than 250 words, provide a written explanation justifying your choice for the job-site office. Any relevant information found in the quotes, related to the site utilization plan, or the project phasing should be included in the explanation.

In addition, using the General Conditions Template provided in Section X.3.4, prepare detailed general conditions estimate projecting all cost from Notice of Award through Final Completion. Use the historic company rates found in Section X.3.5 to calculate the overall value for the GCs. As you determine the costs and units for each GC item, be mindful that items may be comprised of labor, material, equipment or any combination of all three. Use your best judgment, team experience, or available resources to determine these breakdowns.

Please note the following:

- General Conditions include all the operating costs and expenses for your on-site salaried supervision.
- Project Executives are to be carried by district overhead and not included in GCs.
- Home-office overhead is not included in GCs. However, satellite project office and relocation costs will be billed to the project.
- Supervisory staff positions should be allocated to the project as the team sees fit to complete the change order work and base scope of work closeout.
- All General Conditions associated with direct work such as subcontracts and specific costs of work are carried within the specific scope budget; therefore, those costs are not to be included in the overall General Conditions breakdown.
- The project will be assigned two interns over the summer. All costs associated with the moving and housing of interns are provided by the jobsite
- Reference Schedule Section X.5 for Notice to Proceed and Substantial Completion information.
- Assume Material Sales Tax of 9%
- Permit Fees are carried by the owner

General Conditions PART B Deliverables:

1. Submit an electronic copy (PDF) of your written narrative describing your jobsite office decisions.
2. Submit an electronic copy in native format (Excel) of your General Conditions Estimate.

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ANSWER: PART A – Reference X.3.1.a & X.3.2.a

After compiling the staffing matrix and organization chart it was determined that the project is properly staffed. Each staff member holds a vital role in the project without being overwhelmed. The roles offer tremendous opportunity for growth with the employee's careers and opportunities to expand upon the foundation of knowledge they may have gained from previous project experience. Due to the project's phasing, it is the intention that many of the initial staff can transition into different roles throughout the project. This will provide additional opportunities to learn and create well rounded employees.

PART B – Reference X.3.4.a

While the jobsite trailers offered more versatility and could ideally be located on the jobsite, after reviewing the project phasing and the site utilization plan it was determined that there was no space to install the trailers without major impacts to the local landscaping. This led to the decision to utilize the nearby satellite office for project staff. The satellite office is close enough to the project jobsite where no shuttle would be needed and eliminates the potential added cost. Additionally, the difference in cost was not so great that it was an overbearing concern. With the satellite office being the cheaper option of the two, it was the obvious choice for the project.

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4. PROPOSAL SUMMARY (TAB ANALYSIS)

Written by Luis Jimenez & Austin Thornburg

It is bidding day for the Sunnyvale Civic Center Job, and to say the bid room is chaotic would be an understatement. As a Lead Estimator you have been tasked with reviewing proposals and closing the bid tab for 5 challenging scopes, Metal Stud Framing, Applied Fireproofing, Drywall and Sheathing, Air and Water Barrier, and Fixed Audience Seating. You know that successfully closing these tabs will be of paramount importance in the team's pursuit. Not only will a successful procurement help fortify the district's backlog and profit plan for the coming years, but it will also highlight your value to the company and the estimating department. Your performance today will certainly be scrutinized at your next performance review.

As a Lead Estimator, you understand how important a succinct and thorough tab analysis is for your Chief Estimator. Amidst the hustle and bustle of bid day activities, you understand that your ability to communicate scope and cost will influence the decisions that could either win or lose this procurement.

After reviewing your scopes with the Chief Estimator, the two of you have decided to split your scopes into three bid tabs. The first tab will consist of Metal Stud Framing, Drywall and Sheathing, and Air and Water Barrier. The second tab will account for the Applied Fireproofing scope. Finally, the third tab will account for the Fixed Audience Seating. The project information has "been on the street" for several weeks and the team has received interest from numerous bidders, some familiar and some unfamiliar to Hensel Phelps. Looking at the varied states of completeness for the proposals, you know completing the bid tabs will not be an easy task; however, you recognize your importance as the first line of defense when it comes to risk mitigation for the project team.

To assist with your bid tab analysis, the Senior Estimator and the Project Manager have generated bid tab "skeletons" with check questions and an estimated budget for the definable feature of work to be bid. These bid tabs have been provided as a reference tool but should not be viewed as a complete analysis of the scope. The budget provided for each scope by the Project Manager and the Senior Estimator represents a best estimate based on historical data and subcontractor pricing but will vary from the trade partner's proposals.

To complete your bid tab analysis, you will need to identify which bidders have captured in their entirety the scopes assigned to you on bid day. It is imperative to fully understand which proposals are incomplete, which proposals carry too much scope, and a thorough understanding of any qualifications or exclusions. To complete your bid day assignment, you will need to review the submitted proposals, complete a bid tab for both scopes of work, and make a final recommendation to the Chief Estimator as to which trade partner's budget number should be carried in the final project bid. Sum values should be rounded to the nearest \$1,000 to allow the tabs to be quickly processed. Remember every minute counts on Bid Day!

Clarifications:

If a subcontractor has not included a certain scope use a "Blue Number" to represent an estimated value. "Blue Numbers" are values derived by the estimating team or by applying a number provided by a different trade partner that did capture the scope in their proposal. "Blue Numbers" are named as such because they are input in the bid tab using blue pencil. "Red Numbers," unlike blue numbers, are used to deduct scope that should not have been included in the proposal. "Red Numbers" are deducted from the proposal total. Red Numbers are named as such because they are input in the bid tab using red pencil.

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You will be allowed to briefly interview each subcontractor “by phone” to ask general scope questions not already included in their proposals or to clarify inclusions or exclusions within their proposals. Subcontractor representatives will be available in the Presentation Room at the time assigned this afternoon. Each trade will be represented by a separate member of the Hensel Phelps team, giving you the opportunity to interview multiple subcontractors at once. You will be allotted ten (10) minutes to conduct your interviews. Please note that this is intended to be a realistic exercise. Your subcontractors may be rude or evasive; this is not an attempt to frustrate the team, but rather to represent the very real difficulties encountered in real time buyout situations.

Considerations:

- Company policy requires Payment and Performance bonds for all subcontractors with a subcontract value over \$50,000.
- Hensel Phelps is signatory to the Laborers, Carpenters, and Concrete Mason Unions.
- All subcontractors will have to report Certified Payroll to the City of Sunnyvale for review.
- All confirmed pricing must be held for 120 Days.

Included in Section X.4.2 are the subcontractor proposals for each scope of work requested for review by your Project Manager and Senior Estimator. Carefully read through each proposal and fill in the values for each line item on the Bid Tabs provided in Section X.4.1 using blue and red numbers where necessary to assure a complete scope. Once you have completed your review sum up the total value and select a subcontractor by circling the complete value for the required scope of work.

Proposal Summary Deliverables –

1. Submit an electronic copy in (Excel) of each “closed” bid tab with the selected subcontractors total value circled.
2. Submit an electronic copy with a brief narrative for each of the three scopes (500 words or less) explaining why the subcontractor for each scope was chosen.

ANSWER: *Reference attached X.4.1.a*

Metal Stud Framing, Drywall & Sheathing, Air & Water Barrier - Scope Award – Rock U’R World

You are correct in that Hurry-Up! Gyp Gyp Inc. is the lowest bidder. However, did you notice that they did not have a California Contractor’s License. Yup! That is an automatic disqualification leaving you with three other contenders. The 2nd lowest most qualified bidder is Rock U’R World and will therefore be awarded the scope.

Applied Fireproofing - Scope Award - Rock U’R World

If Rock U’R World and Captain Crunch Drywall were not aggressively trying to win the Metal Stud Framing, Drywall & Sheathing, Air & Water Barrier scope of work, Smoke and Flame Guard would have been the low bid winner. Fortunately for us, Rock U’r World was the low bidder for the Metal Stud Framing, Drywall & Sheathing, Air & Water Barrier scope of work and now we reap the benefit of getting a discount.

Keep in mind that even though we got lucky with a discount there are some benefits that will come from Rock U’R World owning both these scopes. Some benefits include but are not limited to:

Ease in Coordination

Back Charges between both scopes being delt w/ internally

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Since Fireproofing and Drywall go hand-in-hand, there is a chance schedule can improve

Fixed Audience Seating – Scope Award – Steady Fixtures

Aren't those Virtus 13205 seats expensive? The low bid winner here is Steady Fixtures and on top of that they will be providing the seats the owner wants. What a Win for the entire team!

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5. SCHEDULE

Written by Gustavo Bueno & Marcus Ramirez

The Construction Schedule is your navigation tool that outlines all construction activities from start to finish and everything in-between as you develop the “how to” when it comes to the strategic planning process for building your project. It assures adequate planning, scheduling, and reporting during execution of all construction activities so they may be implemented in an orderly and expeditious manner, within the Contract Time and the Milestones stipulated by the Contract. The contract schedule also assures coordination of the work between the Contractor and the various subcontractors. It also assists in detecting problems for the purpose of taking corrective action and to provide a mechanism or tool for determining and monitoring such actions.

Your company has been awarded the Sunnyvale Civic Center Phase 1 project and they have provided you with the extraordinary opportunity in which you have been appointed as the Project Superintendent of this monumental project. As the Project Superintendent you naturally inherit the task of developing a schedule that accurately emulates your plan for constructing the project. Utilizing the construction documents, such as drawings and specifications provided, you are to submit a proposed Construction Schedule in CPM format for your review with management. The schedule is to effectively communicate your plan. In turn, your schedule presentation, written and oral, will be comprised of:

1. Building a CPM Schedule to support a final completion of a maximum of 28 months from Notice to Proceed.
2. Identifying the Critical path and justifying it.
3. Incorporating key milestones

The following criteria explains the background information and requirements of the CPM schedule your team will present.

Part A – Construction Schedule

General CPM Schedule Criteria:

- a. Presentation Criteria:
 - i. Column Format:
 1. At a minimum show the following columns to the left of the timescale (Gantt Chart): Activity ID, Activity Description, Original Duration, Early Start and Early Finish (see Figure “A” example below):

Figure A:

Activity ID	Activity Name	OO	Start	Finish
Sunnyvale Civic Center - CPM				
Project Milestones				
Construction Milestones				
Contracting/Submittals/Procurement City Hall and EOC				
Delegated Design CH and EOC				

- i. Activity count: No less than 600 and no more than 1000 activities.
- ii. There should be a continuous logic flow of critical path activities from the Notice to Proceed through to Final Project Completion.
- iii. Organize your activities so they are easy to read, grouped intuitively and follow proper sequence to present a nice schedule “flow.”

- b. Work Breakdown Structure (WBS):

In order to maintain flow and composition, schedules are typically organized by a WBS. The WBS is the outline of a schedule, and acts as an umbrella to capture the theme or specific nature of an

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activity set. A WBS can contain multiple layers and subsets to aid in the organization of the activities, or it can be simply based on the structure and complexity of the schedule.

The following (i.- ix.) is the base WBS provided by your Project Superintendent. There are Maximum Working Days (MWD) shown after certain WBS for assistance, which you are not required to match to the exact day; but they serve as a duration guide. Each WBS should contain a breakdown of activities which will demonstrate your knowledge of the entire project. The Main WBS subcategories have been provided to assist in building your schedule, you will need to further detail the WBS as necessary and most importantly incorporate the activities required to show the full flow of work from start to finish.

- i. Milestones (Constrained Dates)
 - a) Contract Award (March 06, 2023)
 - b) Notice to Proceed (March 06, 2023)
 - c) Interim Milestones
 - d) Substantial Completion
 - i. EOC (September 16, 2024) 560 Calendar Days Post NTP
 - ii. City Hall (March 03, 2025) 728 Calendar Days Post NTP
 - iii. DPS T.I (June 16, 2025) 833 Calendar Days Post NTP
 - e) Project Completion (July 7, 2025) 854 Calendar Days Post NTP
- ii. Preconstruction
 - a) Subcontracts-Submittals-FAB
 - i. Buyout
 - ii. Submittals Preparation & Review
 - iii. Material Procurement & Fabrication
- iii. Mobilization
 - i. Construction Trailer Set Up
 - ii. Site Set Up
- iv. Early Site Work
 - i. Demolition
 - ii. Grading – Excavation – Caissons
 - iii. Site Utilities
 - iv. Tree Relocation
- v. Building Structure City Hall (182 MWD) EOC (124 MWD)
 - i. Foundations
 - ii. Shotcrete
 - iii. Elevator Pits
 - iv. Columns and Interior Walls
 - v. Slab on Grade
 - vi. Elevated Deck
 - 1. Deck
 - 2. Columns & Walls
 - vii. Stairs
 - 1. Concrete Pan Stair
 - 2. Floating Central Stair
 - viii. Exterior Skin
 - 1. Exterior Glass
 - 2. North Elevation
 - 3. East Elevation
 - 4. South Elevation
 - 5. West Elevation
 - 6. Roof & Terraces

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- ix. Elevated PV Canopy
- x. Interiors
- xi. Site Improvements
- vi. Start-up & Commissioning CPM Schedule Body Breakdown
 - i. Milestones:
 - 1. Contract Award Notice to Proceed Design Development – This milestone marks the date that the project has been awarded and the owner has issued a contract to begin design. This will be the date utilized for the start of the contractual durations.
 - 2. Notice to Proceed Construction Documents & Construction - The NTP Construction Documents & Construction marks the date in which the second contract with the owner has been issued. This contract acknowledges the acceptance of the design intent and allows Hensel Phelps to begin developing the construction documents for permitting as well as actual work on the project such as buyout, preconstruction, and mobilization for construction.
 - 3. Substantial Completion – Defined as “the building can be used for its intended purpose.” To satisfy this requirement, all construction activities shall be substantially complete, the building systems must be energized and operational.
 - 4. Final Completion – Designates the date that trainings, close out documentation, and final billings (Subcontractor and Owner) have been completed and submitted to the Owner.
- vii. Calendar
 - i. Weather Delays (Reference Specifications Volume I)
 - ii. Holidays to be included within the 854 consecutive days from NTP.
 - iii. The schedule should be on a standard 5-day work week calendar.
- viii. Bid Packages & Scope Buyout
 - i. Hensel Phelps will need to sign up subcontractors to perform various scopes of work and will need to ensure that this subcontractor is capable to perform the work needed.
 - ii. Assume the estimating department cannot buyout all scopes of work during the same time.
 - iii. Assume 20 workings days to allow for Buyout scopes noted below. You may need to add additional scopes to facilitate any submittal requirements.
 - 1. Elevators
 - 2. Mechanical
 - 3. Electrical / Low Voltage
 - 4. Fire Protection
 - 5. Plumbing
 - 6. Laboratory Casework / Equipment
 - 7. Framing & Drywall
 - 8. Metal Stairs
 - 9. Timber Curtainwall Systems
 - 10. Caissons/Shoring
 - 11. Structural Concrete & Reinforcing
 - 12. Waterproofing
 - 13. Curtain Wall
 - 14. Doors & Hardware
 - 15. Flooring
 - iv. Submittal Preparation, Review & Approval:

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1. Submittal preparation and review allows time for your subcontractors to provide you with the product data (PD) and shop drawings (SD) related to their material and scope of work that they plan to utilize on the project. This time is also utilized for Hensel Phelps, the Design Team and Owner to review the submittal information for design compliance and acceptance.
2. Assume a period of 5 working days for subcontractors to create submittals, 5 working days for internal review of submittals, 5 working days for submission and review to Architect/Engineer, and 10 working days for submission and review by the Owner.
3. Provide Submittal activities for the following scopes:
 - a. Electrical
 - b. Mechanical
 - c. Plumbing
 - d. Fire Protection
 - e. Site Utilities
 - f. Shoring System
 - g. Structural Concrete
 - h. Structural Steel
 - i. Landscaping and Tree Management
 - j. Misc. Metals and Metal Stairs
 - k. Timber Curtain Wall
 - l. Metal Framing and Sheathing
 - m. Millwork
 - n. Roofing and Pavers
 - o. Elevators
 - p. Fire Alarm
- v. Material Procurement:
 1. Material procurement is a very important aspect of any Project. In many cases, the material can't get on site fast enough to facilitate the Schedule. Before a Subcontractor can even start material procurement, you need approved submittals. In some cases, only the Architect/Engineer need to review/approve those submittals prior to the Subcontractor proceeding with material procurement. Similarly, to other sections, utilize the best activity as a predecessor to the Subcontracting procuring material. The schedule should depict material procurement (fabrication and delivery) of the following items:
 - a. Air Handling Units (AHU's) – (100 WD)
 - b. Elevators – (80 WD)
 - c. Metal Stairs – (60 WD)
 - d. Curtain Wall – (150 WD)
 - e. Roofing Pavers – (70 WD)

Notes: Material Procurement activities cannot begin until its associated Buyout and Submittal activities have been completed. You need to track its release. Do not forget to show an Owner activity for this. You are not limited to only these material deliveries, add additional as you deem necessary.

- vi. Commissioning Schedule Build-out:
 1. Electrical System Start-up & Commissioning
 2. Fire Protection System Commissioning
 3. Mechanical System Start-up & Commissioning

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4. Plumbing System Start-Up & Commissioning

Schedule PART A Deliverables:

1. Submit an electronic copy of the Full Baseline CPM Schedule in Native File Format (i.e. XER file).
2. Submit an electronic copy (PDF) of the following:
 - a. Full CPM with WBS: Earliest start date.
 - b. Primary Critical Path with no WBS: Sorted by start date.

Schedule Part B – 90 Day Finishes Visual Schedule

As the Area Superintendent overseeing interior finishes for the City Hall. Your Project Superintendent has requested a 90-day visual schedule and workflow for this sequence of work, depicting the plan to get from tape and finish activities to the date where the building is substantially complete ready for punch-list. Your trade partners have provided you with some production information and durations via a pull plan session, but it is your job to put together a complete schedule incorporating all elements of the interior finishes including:

- Tape and Finish
 - Paint
 - Ceilings
 - MEPFSS Devices
 - Flooring
 - Millwork
 - Doors
 - Stairs
 - Elevators
1. Format Criteria/Considerations
 1. There should be a continuous logic flow
 2. Organize your activities so they are easy to read, grouped intuitively and follow proper sequence to present a nice schedule “flow.”
 3. Based on contract documents the project team identified that level 1 has high end finishes with longer lead items than the rest of the building.
 4. Using the information from the CPM schedule you developed, properly fill the PDF document Finishes Sequence (X.5.3).

Schedule PART B Deliverables:

1. Submit an electronic copy of your Finishes Sequence in PDF (X.5.3).

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ADDENDUM SCHEDULE

Schedule Part C – Notice of Power Delay

(Time Warp to Completion of EOC)

As the General Contractor you are experiencing your schedule to start slipping due to obstacles beyond Hensel Phelps control and attributed solely to PG&E. Hensel Phelps has submitted an impact notice to the City of Sunnyvale requesting a 107-day schedule extension for the EOC. The owner has granted the time extension request. Incorporate this impact into your schedule and adjust the substantial completion dates accordingly.

Note: This addendum only applies to the schedule portion of the problem statement. Do not use it for any other sections of the problem.

Schedule PART C Deliverables (Note: Supersedes Part A Deliverables):

3. Submit an electronic copy of the Full Baseline CPM Schedule in Native File Format (i.e. XER file).
4. Submit an electronic copy (PDF) of the following:
 - c. Full CPM with WBS: Earliest start date.
 - d. Primary Critical Path with no WBS: Sorted by start date.

ANSWER: **PART B – Reference attached X.5.3.a**

PART A / C – Reference answer documents X.5.1.a & X.5.2.a

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6. COORDINATION OF WORK

Written by Nick Kawamoto

Part A – Tree Protection Plan

During design development, the City of Sunnyvale has identified a requirement to protect certain trees currently planted on the project site. As the construction team begins to coordinate the development of the site, a plan needs to be established for the protection and relocation of the trees specified by the City of Sunnyvale. A tree protection plan needs to be established for the project to outline all requirements for the duration of the construction process. You are the Area Superintendent responsible for site work activities and are tasked with reviewing the Contract Drawings and Specifications to identify all requirements that need to be included in the SCC Tree Protection Plan.

Throughout the construction process there will be activities that pose a risk to the ground around existing trees planted on site. As part of the Tree Protection Plan, we need to identify risks associated with construction activities and provide mitigation strategies for each identified risk. This planning is crucial to the construction process to ensure proper care is taken for the trees as they are transitioned into their new locations.

As construction of the project begins, we need to coordinate all activities that may affect protected trees to ensure no damage is done to them during the phasing of the project. An overall planting plan has been provided, identifying relocated protected trees. Knowing the existing and final locations of the protected trees will help coordinate construction activities and relocation

Reference: L-1 Landscape Drawings, 015639 – TEMPORARY TREE AND PLANT PROTECTION

PART A – Tree Protection Coordination Matrix

Utilizing the L-1 Landscape Drawings and 015639 project specs, complete the Tree Protection Coordination Matrix (see X.6.1 for the template) to include all construction activities that may disturb the ground around the protected trees. For all identified construction activities, provide an assessment of the activities as well as mitigation efforts that may be taken to ensure no Protected Trees are damaged during the construction process.

Coordination of Work Part A Deliverables:

1. Submit an electronic copy (PDF) of the Tree Protection Coordination Matrix (X.6.1).

PART B – Coordination of Work

Create a drawing set (X.06.2 - Coordination of Work - Tree Protection Drawings) that identifies only protected trees that are to be transplanted on site. Label all transplanted tree with the applicable construction activity number taken from the Tree Protection Coordination Matrix previously completed for part A (X.06.1)

Coordination of Work PART B Deliverables:

1. Submit an electronic copy (PDF) of the drawings (X.06.2 - Coordination of Work - Tree Protection Drawings) that identify all transplanted trees on site; label all trees with the applicable construction activity number taken from the Tree Protection Coordination Matrix completed as Deliverable A.

ANSWER: *Reference answer documents X.6.1.a & X.6.2.a*

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7. CHANGE MANAGEMENT

Written by Ivan Soria

(Time Warp to Later in The Project – Consider this section independent from Proposal Summary)

The SCC project is underway, and your team is working hard to provide the Owner with a state-of-the-art facility within schedule and budget. Your Project Manager has returned from the weekly Owner-Architect-Contractor meeting with Proposed Change Order (PCO) 148 which details the addition of turnstiles and glass railing on level 4 to control public access to the City Manager's space. The building turnover is 4 weeks away and the Owner made it clear that they would not accept a time extension request. They have, however, approved swing shift and weekend work in order to get this done on time. You are the Project Engineer tasked with composing and reviewing the Change Estimate for this additional scope of work.

PART A (Early Deliverable: 10 AM): Assembling the Change Estimate

Create a Change Estimate for the added Turnstiles using the Change Estimate spreadsheet provided in Section X.7.1 and taking into consideration the following:

1. This will be Change Estimate No. 335.
2. There are fourteen subcontractors involved with this scope of work (eight direct trade partners and six lower tier), including Hensel Phelps.
3. Four of the pricing listed have been reviewed previously by you. Their pricing is already shown in the worksheet tab titled "Subcontractor List" and are highlighted in green.
4. For the remaining subcontractors, review the proposals provided in X.7.2, X.7.3, X.7.4, and X.7.5. After carefully reviewing each proposal and making any corrections necessary, input their final cost into the appropriate tab of the worksheet.
5. Scope review is not required.
6. Use the Approved Wage Rate Sheet provided in Section X.7.6 to verify the correct labor rate is applied in each proposal. Lower tier wages have been verified and are correct.
7. Allowable mark-ups include:
 - a. Labor Overhead and Profit = 20%
 - b. Equipment Overhead and Profit = 15%
 - c. Material Overhead and Profit = 15%
 - d. Sales tax on all materials = 9%
 - e. Mark Up Allowed on Lower Tier Sub (J32 auto-populates) = 6%
 - f. No Markup allowed on Shipping or Engineering costs
8. Hensel Phelps will be performing intermittent and final clean
9. Note: the "Subcontractor List" tab extracts information from the trade partner tabs. Edits should only be made to cells highlighted.

Change Management Part A 10:00 AM Deliverable:

1. Add your team's name at the bottom of the Change Estimate Spreadsheet (X.7.1) and submit one PDF copy of the Change Estimate and one electronic copy in native format (Excel).

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**ADDENDUM
CHANGE MANAGEMENT**

Part B – Credit Evaluation

(Time Warp: The Owner has approved your change order in Part A and construction for the Turnstiles is partially complete.)

Your Project Manager has returned from another Owner-Architect-Contractor Meeting and stated the Owner no longer wishes to add the level 4 turnstiles and has requested a credit for the balance of uninstalled work. You have been tasked to assess the remaining work and to create the credit change estimate.

Based on your field observations, discussions with the subcontractors and Hensel Phelps staff you gather the following information:

The Electrical subcontractor has already gone through 40 hours of design development and generation of shop drawings; while shop labor for the new millwork pieces is 75% complete. The framing layout and deck scanning is complete. No finished products have been installed yet. The turnstile system and baseplate, being a long lead item, was already purchased and delivered by Ranker.

Based on your discussions with the Project Superintendent and the subcontractors, you know the percentage of work complete for Acoustical Ceilings and Security Electronics is 27% and 13%, respectively, of their cost in CE 335.

Using the Change Estimate Spreadsheet Part B provided in Section X.7.7, populate the credit amount to be returned to the Owner for the remaining subcontractors on the “Subcontractors” worksheet.

Your Project Manager has requested an explanation, no longer than one page, briefly describing your justification for each of the credits provided.

Change Management PART B Deliverable:

1. Submit an electronic copy (PDF) and an electronic copy in native format (Excel) of X.7.7.

ANSWER: ***PART A – Reference X.7.1.a***

PART B – Reference X.7.7.a, see notes for narrative.

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8. PERSONNEL ISSUES

Written by Lauren Ho

(Time Warp)

Cayla is a Project Engineer for Hensel Phelps for the City Hall Phase at the Sunnyvale Civic Center (SCC) project. She has been with Hensel Phelps for 6 years, a Project Engineer for two years, and has extensive experience in design build, subcontractor management, and cost management. Cayla leads a team of three experienced Office Engineers, all of whom started the SCC project with prior experience in the Office Engineer role. Due to her team's proven capabilities, Cayla is accustomed to a supportive leadership style. She asks her Office Engineers to take the lead in action planning and problem solving. She provides reassurance, support, encouragement, and praise. She also explains ways to make tasks more challenging if motivation is low.

Cayla has just been informed that a new Office Engineer, Daniel, will join her team on Monday. Daniel has two years of experience as a Field Engineer with Hensel Phelps, but no prior experience as an Office Engineer. He is excited to learn a new role but is admittedly concerned about his lack of experience.

Daniel will be responsible for managing the following scopes of work:

- Earthwork and Utilities
- Waterproofing
- Concrete Reinforcing
- Landscaping
- Precast Planter Walls
- AC Pavement
- LEED Management
- Staff Meeting Minutes
- Owner Change Management
- Schedule Updates

PART A – Coaching and Developing People

Hensel Phelps has high expectations for its leaders, as they are responsible for the company's coaching and development. To aid managers in this endeavor, the company has developed the *How I Want to Be Coached (HIWTBC) Form*. This worksheet is completed by the employee to identify needs and expectations from a coaching relationship with their supervisor.

At Cayla's request, Daniel has completed the *HIWTBC Form* and emailed it to Cayla for review (X.8.1). They have scheduled a meeting to review the responses and set goals on Monday at 8:00am.

Put yourself in Cayla's shoes and review Daniel's responses in preparation for Monday's meeting. Provide a plan with three (3) actions you will implement to coach and develop Daniel as an Office Engineer.

When formulating your actions, please make sure that you have considered the following:

- How will you adjust your leadership/teaching style?
- How will you communicate and provide feedback?

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- How will you motivate Daniel?

Personnel Issues PART A Deliverable:

1. Submit two (2) electronic copies of your responses, in PDF format.

PART B – Goal Setting

Goal setting is the process of defining what is important at an individual level and then focusing on what it takes to meet that goal. To ensure that goals are reasonable and achievable, employees and managers should ensure that goals meet the **SMART** criteria defined as: **S** – Specific and Strategic, **M** – Measurable, **A** – Achievable, **R** – Results-oriented, and **T** – Time-bound.

At Cayla's request, Daniel has drafted three goals that he would like to achieve in the short term, as an Office Engineer on the SCC Project. Daniel's goals will also be discussed in Monday's 8:00am meeting.

1. Submit all submittals on time
2. Manage the entire process of an owner change from initiation, change order pricing, to the budget adjustment. Due by 8/1/2023
3. Learn how to make the project schedule like a Project Superintendent

Put yourself in Cayla's shoes and review Daniel's three goals in preparation for Monday's meeting. Provide a response on the quality of each goal to ensure the goals are reasonable and achievable. Assist Daniel by revising the goal if it does not meet the SMART criteria.

Hensel Phelps has an excellent database of extensive resources and training materials. You know that this is the perfect opportunity to utilize those trainings and specifically the ones that address positions in leadership.

You have handouts from previous training that you may use as a reference:

- 'Coaching and Developing People' in Section X.8.2
- 'Fundamentals of Management' in Section X.8.3

Personnel Issues PART B Deliverable:

1. Submit two (2) electronic copies of your responses, in PDF format.

ANSWER:

PART A – Coaching and Developing People

1. *The takeaway from Daniel's HIWTBC Form is that he is a quick learner, team player, and is understandably concerned about his lack of office experience. Cayla will need to adjust her leadership/teaching style from supporting to instructing. Cayla will identify desired outcomes, goals, and timelines. She should provide specific direction and take the lead in problem solving. If she leads Daniel the same way that she leads the three experienced Office Engineers, Daniel will fail due to unclear expectations and lack of skills.*

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2. *Cayla will need to communicate specific direction and instruction. Until it is proven that Daniel is capable and confident, Cayla cannot assume that he understands the required tasks.*

Cayla will need to provide frequent follow-up and feedback. Daniel noted on the HIWTBC Form that being called out in a group setting is a “trigger”. Cayla should note that and provide Daniel feedback in a one-on-one setting.

3. *Per Daniel’s HIWTBC responses, he is motivated by self-growth, team success, and being challenged. Cayla will need to provide encouragement and praise so that Daniel feels like he is making progress. Because he is a project transfer, it is important to make Daniel feel like he is a part of the team, which may be intimidating on large projects like the Sunnyvale Civic Center. Cayla will need to be careful about involving Daniel with problem solving. Although it is one of his motivators, she will need to evaluate his skill level before doing so.*

PART B – Goal Setting

1. *“Submit all submittals on time” is broad, immeasurable, and does not meet the SMART criteria. Because Daniel does not have experience in the Office Engineer role, it is likely that he does not understand the submittal process enough to make a measurable goal. During the Monday meeting, Cayla should discuss with Daniel the scopes that he is in charge of and review the Submittal Log to see the earliest submittals that need to be sent to the Owner for approval by the end of the month. A realistic and measurable goal is “Learn the submittal review/packaging process and submit three specific submittals by the deadlines shown on the Submittal Log – due by 3/1/2023.” Setting an early goal will give Daniel a push to learn quick and provide an early opportunity for Cayla to provide Daniel feedback on his progress.*

An alternate and acceptable response is to change the goal to something related to Daniel’s list of responsibilities, provided in the Problem Statement. All answers that meet the SMART criteria and provide an explanation will be accepted.

2. *“Manage the entire process of an owner change from initiation, change order pricing, to the budget adjustment. Due by 8/1/2023” is a SMART goal. Owner change management is specific to Daniel’s role as an Office Engineer. It is measurable with a quantity of 1 owner change and details the specific tasks included. Daniel has included a due date in 6 months, which is reasonable since he wants to manage the entire process from start to finish.*
3. *“Learn how to make the project schedule like a Project Superintendent” is not a SMART goal. As a brand-new Office Engineer with only 2 years of construction experience, it is not realistic for Daniel to master scheduling theory like a Project Superintendent. Because of Daniel’s interest in scheduling, Cayla should encourage Daniel to keep a schedule related goal but revise it to be achievable during his current role as an Office Engineer. A realistic goal for Daniel is: “Learn the P6 program and input the schedule updates without assistance within 4 months – due by 6/1/2023.”*

All answers that meet the SMART criteria and provide an explanation will be accepted.

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9. SAFETY

Written by Sydnee Greer

PART A – Public Safety Hazards

(This section is independent of the schedule)

At Hensel Phelps we pride ourselves on our zero-accident safety culture. This mentality applies to people on and off our jobsites. Many of our projects are in close proximity to the public, therefore, it is very important to plan work activities with the public's safety in mind. Looking ahead to identify and mitigate risks plays a huge role in our day-to-day jobs.

Scenario:

You are an Area Superintendent at the Sunnyvale Civic Center. With several trade partners on site, it is important that you meet weekly to discuss upcoming work activities and deliveries. While reviewing upcoming construction activities, you noticed that some of them have the potential for public exposure. As the General Contractor on the project, it is your responsibility to assist in recognizing and mitigating these risks. The following list of activities will occur on site:

- Existing utility tie-in
- Foundation layout
- Foundation excavation
- Concrete curb replacement
- Off hauling spoils
- Crane Erection
- Offloading of large equipment
- Street paving
- Formwork Installation
- Concrete slab placement

From the activities listed above, identify the five that you believe pose the biggest risk for public safety. Fill in the Public Hazard Analysis Matrix (X.9.1) with the five construction activities you identified and list the public hazards associated with the activity. You will also need to identify the potential consequences of each hazard, the likelihood of it occurring, and the risk mitigation strategies you will put in place.

Safety Part A Deliverable:

1. Submit an electronic copy (PDF) of the Public Hazard Analysis Matrix (X.9.1).

PART B – Activity Hazard Analysis

(Time warp to City Hall Roof Activities)

With the new City Hall building having 1,700 solar panels mounted on a cantilevered roof canopy, your team needed to work with your solar panel trade partner on a plan to access these panels. The extents of the parking garage and foundation walls create a unique situation that makes the use of typical site equipment challenging. With the level 1 Plaza being supported by a slab on metal deck (SOMD), weight capacities are a huge concern. It was determined that the SOMD cannot support the dead and live load of a lift. Your team and your trade partner decided that it would be best to utilize a suspended scaffold system to access these solar panels

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(reference X.9.2). As the office engineer overseeing this scope of work, it is your responsibility to review your trade partner's Activity Hazard Analysis (AHA) for the suspended scaffold system.

After receiving the AHA from your trade partner (X.9.3), you noticed they were missing critical details related to their controls. As a seasoned office engineer, you know Hensel Phelps does their best to help set trade partners up for success. To help guide them and convey the level of detail that is expected in their AHA, you will need to provide three additional controls to each of their job steps.

Safety Part B Deliverable:

1. Submit an electronic copy (PDF) of the Suspended Scaffold Activity Hazard Analysis (X.9.3).

ANSWER: ***PART A – Reference X.9.1.a***
 PART B – Reference X.9.3.a

10. SITE UTILIZATION

Written by Connor Willey

(Time warp to after the Structural Steel Preparatory Meeting)

Site utilization plans provide an illustrative look into the construction team's logistical solutions to a project's challenges and constraints during different timelines of the project. Effective site utilization plans convey the planned routes of deliveries, material and equipment laydown, and temporary facilities during different sequences of work throughout the project lifecycle. A poorly coordinated plan adds confusion and hinders the project team from succeeding on time and on budget due to double handling of material, poor crew morale, and lack of trust in the Hensel Phelps team. As the jobsite evolves, site utilization plans must be updated to meet the changing variables and constraints that develop as work is completed.

At the Sunnyvale Civic Center, the owner is cautious of conceding more space than absolutely necessary for each phase of work. The Contract Documents specifically state that West Olive Avenue must remain open throughout the Project duration, and the Owner has rejected all previous requests to close the entirety of West Olive Avenue. The Contract Documents provided sequencing drawings for completing the road paving in stages with one lane remaining active, and the Owner does not see any reason to deviate from this plan. Your Project Superintendent believes the steel erection cannot be safely completed with West Olive Avenue active and has requested that you provide a site utilization plan of the New City Hall building area during structural steel erection to help convince the Owner otherwise.

This week the Structural Steel Preparatory Meeting was held with the steel trade partner, and a preliminary crane plan was provided by their team who insisted that the road be shut down to complete their work. Their plan does not provide context to the site surrounding the New City Hall building, and as the Area Superintendent in charge of this work it is your responsibility to incorporate this additional context into the overall site utilization plan for this timeframe. Accurately portraying the location and needs of the crane and erection plan is critical for your team to persuade the Owner to allow West Olive Avenue to be fully shut down for an extended period of time. Your Project Superintendent has stressed that the plan will need to clearly identify anything utilizing the road and surrounding areas in order to demonstrate the impacts on the space. It is crucial to not extend the temporary fence line beyond the area required to complete this scope of work due to impacts to the neighboring community.

Before their meeting with the owner, your Project Superintendent has requested the following three deliverables from you:

PART A – Site Utilization Plan

Use X.10.1 – Site Utilization Plan and supplemental information (X.10.5-8) to display the following information:

- Project Name
- Key/Legend
- Date of Plan
- Date(s) Plan is Active
- Site Temporary Fence
- Crane Build Area(s)
- Steel Laydown Area(s)

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- Crane 1 & Pad Location
- Crane 2 & Pad Location
- Crane Pick Radii
- Haul route(s) and material offload location(s)
- Traffic Control measures of active and closed roadways
- Site Access Points (Vehicle and Personnel)
- Emergency Assembly Area
- Break Areas
- Restrooms and Handwash Stations
- Eye Wash, First Aid, and AED Kits
- Dumpsters of each type (Wood, Concrete, Metal, General)
- Jobsite Trailers (if applicable)
- Future Stair Tower and Hoist Locations

Site Utilization PART A Deliverable:

1. Submit an electronic copy (PDF) of a site utilization plan using template X.10.1 during the Phase 2 New City Hall building steel erection.

PART B – Haul Route Plan

Use X.10.2 - Haul Route Plan and supplemental information (X.10.5-8) to display the following information:

- Project Name
- Key/Legend
- Date of Plan
- Date(s) Plan is Active
- Haul route(s) into the jobsite from S Pastoria Ave and S Mathilda Ave via El Camino Real
- Active and closed roadways delineated
- Vehicle entry routes for employees of the active existing City Hall

Site Utilization PART B Deliverable:

1. Submit an electronic copy (PDF) of a haul route using template X.10.2 during the site utilization plan timeframe provided in Part A.

PART C – Closure Request

Using X.10.3 - West Olive Way Closure Request, Submit a written request no more than one page long providing reasoning to the owner that West Olive Avenue needs to be fully shut down for steel activities. Provide requested dates of closure and specific measures to address affected through traffic and any other impacts to closing the road.

Site Utilization PART C Deliverable:

1. Submit a signed copy (PDF) of your written request to close West Olive Avenue using template X.10.3 at least ninety (90) days prior to the start of steel erection.

ANSWER: PART A – Reference X.10.1.a

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PART B – Reference X.10.2.a
PART C – Reference X.10.3.a



11. SUSTAINABILITY

Written by Taryn Downey

PART A – COMPLETING THE CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT (C+DWM) PLAN

(Time Warp - Preconstruction)

The Owner has established that this Project shall achieve at a minimum LEED Platinum. Multiple LEED credits have been identified as the responsibility of the Contractor, among them being the Construction and Demolition Waste Management Planning. The Owner has established that the sole hauler on this project will be Specialty's. As the Office Engineer responsible for the administration of this plan, your Project Manager has emailed you a copy of the Draft C+DWM Plan and has requested that you update this draft with the project-specific information that is missing in the blank locations identified throughout.

Attachments: X.11.1 - Draft C+DWM Plan, X.11.2 - 01 74 19 – C+DWM

Sustainability Part A Deliverable:

1. Submit an electronic copy (PDF) the Final C+DWM Plan (X.11.1)

PART B – COMPLETING THE LEED-NC v4 MATERIALS REPORTING FORM

In addition to your responsibilities in administering the C+DWM Plan, you are also responsible for managing the drywall and insulation scopes of work. You are currently working on completing two LEED submittals related to these scopes. You have all of the backup documentation compiled, with the only thing missing being the LEED-NC v4 Materials Reporting Form for each of the materials to be submitted. Both of the materials being submitted are to be installed at the building interior and are not a part of the structure or building enclosure.

Complete the attached LEED-NC v4 Materials Reporting Form for each submittal provided and attach to the top of the associated LEED submittal.

Note: All of the information required is provided within the backup documentation for each product.

Attachments: X.11.3-LEED-NC v4 Materials Reporting Form, X.11.4-Rockwool Cavityrock LEED Submittal, X.11.5-USG Sheetrock Firecode X LEED Submittal

Sustainability Part B Deliverable:

1. Submit an electronic copy (PDF) of each completed LEED submittal with the associated LEED-NC v4 Material Reporting Form completed and slip-sheeted to the top of the submittal.

PART C – IAQ: BUILDING FLUSH-OUT

Per the project Indoor Air Quality Plan, a building flush-out is to be performed prior to building occupancy in accordance with Specification Section 01 81 19. As the project nears this phase,

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you have been asked to provide specific information required to coordinate the building flush-out process for the City Hall building.

The mechanical contractor has informed you that during the flush-out, the HVAC system can be expected to provide 4 Air Changes per Hour.

Notes:

- Assume the areas at the Garage Level are not included in the building flush-out process.
- Each air change shall be assumed to be made up of 100% outside air.

Attachments: X.11.6-Sustainability Part C Answer Sheet, X.11.7-Specification 01 81 19, X.11.8-LEED v4.1 BD+C Guide

Sustainability Part C Deliverable:

1. Provide an electronic copy (PDF) of the completed Sustainability Part C Answer Sheet (X.11.6).

PART D – PRODUCT SUBSTITUTION EVALUATION

Material supply chain issues have impacted the availability of certain materials called for in the project specifications. In order to support the project schedule, two of the subcontractors assigned to you have sent material substitution requests to be submitted for approval by the Owner/Architect. Prior to processing these submittals, they must be reviewed to ensure that they comply with the LEED requirements outlined in the specifications.

**Assume that these materials meet any performance requirements in the specifications and are only being reviewed for LEED compliance.*

Attachments: X.11.9 - Sustainability Part D Answer Sheet, X.11.10-01 81 13 - Sustainable Design Requirements, X.11.11 - Sherwin Williams Promar 200 - Submittal, X.11.12 - Rustoleum Galvanizing Spray - Submittal

Sustainability PART D Deliverable:

1. Provide an electronic copy (PDF) of the completed Sustainability Part D Answer Sheet (X.11.9).

ANSWER: PART A – Reference X.11.1.a

PART B – Reference X.11.2.a, X.11.3.a

PART C – Reference X.11.6.a

PART D – Reference X.11.9.a

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12. TEAM MEMBERS RESUMES

Provide each team members personal resume (not a resume tailored to this problem). Include mailing address, telephone and email contact information. Photos are encouraged but not required.

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VII. COMPETITION SCORING SYSTEM

Item	Description	POINTS
0.1	Early Deliverable - Biographies	0 (note 1)
0.2	Quality of Submitted Proposal	2
0.3	Timeliness of Proposal	0 (note 2)
1.	General Summary	10
2.	Estimate	20
3.	General Conditions	10
4.	Proposal Summary	14
5.	Schedule	20
6.	Coordination of Work	6
7.	Change Management	8
8.	Personnel Issues	6
9.	Safety	6
10.	Site Utilization	12
11.	Sustainability	6
Subtotal		120
Oral Presentation		80
GRAND TOTAL		200 POINTS

Note 1: No points shall be issued in the competition for content of this previously due item; however points may be deducted from the team's score for having failed to comply with this item in a timely and professional manner.

Note 2: $\frac{1}{2}$ **point** will be deducted from the total score for **every minute** past the deadline time. Judges reserve the right to "cap" the penalty amount at their discretion; however, no team with a penalty cap will be allowed to place in the competition awards.

As the team placement results often are separated by mere fractions of a point, it is recommended that your team take each point seriously. No points scoring information will be provided to the teams at the conclusion of the competition, but feedback will be provided for each component in an "above-average / average / below-average" format.

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VIII. LIST OF JUDGES

Oral Presentation Judges:

Wade Chance, Project Manager
(480) 789-2359
wchance@henselphelps.com

Lisette Flores, Project Engineer
(520) 834-5690
lflores@henselphelps.com

Gustavo Bueno, Area Superintendent
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Amanda Schilling, Area Superintendent
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Nick Kawamoto, Project Engineer
(425) 785-8025
nkawamoto@henselphelps.com

Connor Willey, Area Superintendent
(425) 299-6277
cwilley@henselphelps.com

Alternates:

Marcus Ramirez, Project Engineer
(574) 904-2271
mramirez@henselphelps.com

Sydney Greer, Field Engineer
(916) 945-7030
sgreer@henselphelps.com

Administrator / Executive Judge:

Ryan Piper, Operations Manager
(425) 646-2660
rcpiper@henselphelps.com

Western District
4129 East Van Buren, Suite 100
Phoenix, AZ 85008

Northern California District
4750 Willow Road, Suite 100
Pleasanton, CA 94588

Northern California District
4750 Willow Road, Suite 100
Pleasanton, CA 94588

Southern California District
18850 Von Karman Ave., Suite 100
Irvine, CA 92612

Pacific Northwest Area Office
15375 SE 30th Place, Suite 110
Bellevue, WA 98007

Pacific Northwest Area Office
15375 SE 30th Place, Suite 110
Bellevue, WA 98007

Western District
4129 East Van Buren, Suite 100
Phoenix, AZ 85008

Pacific Northwest Area Office
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IX. THE RULES

The rules for the competition are designed to provide each team with an equal opportunity to apply their knowledge in developing their respective solutions and an equal opportunity to present their solutions to the panel of judges. The following rules apply to the Commercial Division and serve to supplement the ASC Competition Rules.

Rule No. 1 Two (2) electronic copies of the proposal must be turned into the judges. Two (2) thumb drives will be provided at the start of the competition for your use. Your final submission must be submitted on the provided thumb drives. No proposals will be formally returned. If you desire a copy for yourself or need one for your oral presentation preparation, please make copies prior to the submission of the proposal. Some proposals may be available for students to re-claim at the conclusion of the competition but may have marks from the grading effort in certain sections.

Rule No. 2 The equipment usage for each team is to be as outlined in the Competition Rules as published by the ASC. Use of the Internet is allowable and may be necessary for certain components of the problem. Any additional equipment required for a presentation is the responsibility of the team. If your presentation requires specific software, you must provide your own computer or inquire as to its availability on the provided computer.

Rule No. 3 The problems that are used for the competition are drawn from actual construction projects. In the past, there have been situations where student team members have worked on, or have specific knowledge of, the project that is the subject of the problem. This can be perceived as giving the team an unfair advantage in developing a solution. If, upon receiving the problem, any student recognizes the project that is the subject of the problem statement, the student shall notify the problem sponsor to discuss the extent of the student's project or problem knowledge. Alternates may be considered should there be an identified conflict. The judges will have the final decision. Failure to notify the problem sponsor makes the team subject to disqualification.

Rule No. 4 While the judges will endeavor to administer the problem with all fairness and appreciation for the team's perspectives, the decisions of the judges shall be final when deciding conflicts and scoring.

Rule No. 5 A one-half ($\frac{1}{2}$) point deduction will be taken for each minute the proposal is turned in past the time it is due. Written proposals are due Thursday at 10:00 PM. Location of proposal delivery will be announced at the opening conference. Other deliverable items, if applicable, will be due as specified elsewhere herein.

Rule No. 6 Oral interviews will begin at 7:00 AM on Friday, February 10th. Presentation materials for all teams are to be turned in to the Judges by 6:45 AM. No other presentation material will be allowed into the presentation that is not turned into the judges by this time - NO EXCEPTIONS WILL BE ALLOWED. Teams are encouraged to bring electronic presentation materials on a thumb drive for use on the Hensel Phelps provided presentation computer; this will save on set-up time. Hensel Phelps' computer will utilize Microsoft Office software; if specialized software is necessary then the team must provide a computer to run their presentation and this computer must be delivered prior to the 6:45 AM deadline.

Rule No. 7 No phone calls or emails may be made to the Owner, Construction Manager, Architect, Civil, or Structural Engineer, or any other design consultants listed on the Drawings. Similarly, no components of the problem may be sent to others outside the team for assistance in completing the problem. Any violations of the above are subject to point penalties or team disqualification, at the Judge's discretion.

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Rule No. 8 Due to the sensitive nature of disclosing project information that the Owner and / or design professionals may not wish to be publicly distributed, Hensel Phelps reserves the right to require Confidentiality Agreements be signed by each team member prior to distribution of the Problem Statement. This may further require that all or some Contract Documents or other material provided to the team, both electronically and hard copy, be returned to Hensel Phelps at the conclusion of the competition.

Rule No. 9 The premise of the proposal and oral interview is that you are presenting to the upper management of your own company. It is preferred that your team take the identity of Hensel Phelps but other team / company names are acceptable. You are therefore asked to refrain from including extra peripheral information about your company such as safety plans, company profiles or other marketing materials. Our intent is to test you on your knowledge of construction concepts, means and methods, not your ability to make up or compile marketing materials and canned programs. Please limit your responses generally to the information requested, although innovation and enhancement is encouraged.

Any team observed violating these rules may be asked to withdraw from the competition or be assessed point penalties. These Rules are subject to change; and, the final version will be included in the Problem Statement distributed at the opening conference.

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X. SUPPLEMENTAL INFORMATION

Note: Documents are provided in electronic format only on thumb drive(s):

X.0.1	Drawings
X.0.2	Specifications
X.0.3	Request for Information Form
X.0.4	Evaluation Form
X.1.1	General Summary
X.2.1	Concrete Estimate
X.2.2	Concrete Pump Plan
X.2.3	Placements and Pump Location Options
X.2.4	Concrete Pump Sizing Guide
X.3.1	Staffing Matrix
X.3.2	Org Chart
X.3.3	Staff Duties
X.3.4	General Conditions
X.3.5	Historical Rates
X.3.6	Office Quotes
X.4.1	Proposal Summary Template
X.4.2	Subcontractor Proposals
X.5.3	90 Day Finishes Sequence
X.6.1	Coordination of Work – Tree Protection and Coordination
X.6.2	Coordination of Work – Tree Protection Drawings
X.7.1	Change Estimate Part A
X.7.2	Framing, Drywall, Taping Pricing
X.7.3	Millwork Pricing
X.7.4	Electrical Pricings
X.7.5	Glazing Pricing
X.7.6	Approved Wage Rates
X.8.1	How I Want To Be Coached
X.8.2	Coaching and Developing People
X.8.3	Fundamentals of Management
X.9.1	Public Hazard Analysis Matrix
X.9.2	Suspended Scaffold References
X.9.3	Suspended Scaffold AHA
X.10.1	Site Utilization Plan
X.10.2	Haul Route Plan
X.10.3	West Olive Way Closure Template
X.10.4	Herrick Erection Plan
X.10.5	Liebherr LR1250 Catalog
X.10.6	Liebherr LR1300 Catalog
X.10.7	LR 1250 Lift Report
X.10.8	LR 1300 Lift Report
X.11.1	Draft C+DWM Plan
X.11.2	01 74 18 – C + DWM
X.11.3	LEED-NC v4 Materials Reporting Form
X.11.4	Rockwool Cavityrock LEED Submittal
X.11.5	USG Sheetrock Firecode X LEED Submittal
X.11.6	Sustainability Part C
X.11.7	01 81 19 – Construction IAQ Requirements
X.11.8	LEED_v4.1_BD_C

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X.11.9	Sustainability Part D
X.11.10	01 81 13 – Sustainable Design Requirements
X.11.11	Sherwin Williams Promar 200 – Submittal
X.11.12	Rustoleum Galvanizing Spray - Submittal