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ASSOCIATED SCHOOLS OF CONSTRUCTION

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

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

National Preconstruction Problem
February 13-16, 2008

Problem Statement

Phase II: Request for Proposals

Downtown Condominium Project
Seattle, WA

Problem Sponsor:

PCL Construction Services, Inc.
15405 SE 37th Street, Suite 200
Bellevue, WA 98006

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National Preconstruction Services Problem
February 13-16, 2008

I. PRECONSTRUCTION PROBLEM TIME TABLE

THURSDAY, FEBRUARY 14 TH

Turn in Phase I RFP .....6:00 AM
Phase II Pre-Proposal Conf.....6:00 AM
Written Questions (RFI's) Due.....10:00AM
First Progress Meeting .....11:00 AM
Second Progress Meeting.....2:00 PM
Phase II Proposals Due .....9:00 PM

FRIDAY, FEBRUARY 15TH

Interview Start Times Posted .....8:30 AM
Interview Materials Due (All Teams) .....8:30 AM
Interviews Start .....9:00 AM
Project Debriefing .....7:00 PM

SATURDAY, FEBRUARY 16TH

Career Fair .....8:00 AM – 12:00PM
Awards Banquet / Luncheon .....12:15 PM

II. PREFACE

Welcome to the 2008 ASC Student Competition. PCL Construction Services, Inc. is proud to be the sponsor of the new Preconstruction Services National Problem at the 2008 Competition in Sparks, NV.

We believe this problem will enhance each student's experience to the every day occurrence of preconstruction services in today's construction environment. Clients require varying levels of preconstruction services including design coordination, budget development and construction planning.

The problem proposed will be typical to the services provided to a client including the proper selection of your construction team, and in some cases, consultants and subcontractor team. Other services include risk analysis, contracts, design creation, estimating, constructability review, resource requirements, budgeting, scheduling, purchasing, safety and contracting.

This competition is an invaluable tool for your career development. It is designed to enhance and expose each team member in different facets of the construction industry. Each team members' technical knowledge of estimating, scheduling, planning, leadership, and communication skills will be put to the test during the next two days.

PCL hopes every team benefits from this 'real-life' experience. We are here to support the ASC and its members, so please ask questions after the competition is complete or any time throughout the school year.

Understand there are many dynamic elements to every project whether in design or under construction, including this actual project performed by PCL. Please keep an open mind to the challenges that are presented during this event. Learn from our own project experience, as well!

At the end of the day, only three teams are awarded a placement, with the best being recognized at the ASC Awards Ceremony on Saturday. Regardless of your final overall placement, each competitor is truly a winner when you combine the experience of the competition, coupled with the industry exposure you have gained throughout the event.

We look forward to great thinking, fellowship and sportsmanship throughout the week. We are proud to serve our great industry with this problem and advancing construction education to all the member schools, faculty and students of the Associated Schools of Construction! Good luck!

III. PROBLEM SCENARIO

Congratulations. The development team of PRIHD Development Partnership has short listed your firm from your team from their response to the Phase I RFP. Your team is now invited to continue on to the next stage of the Contractor selection process. You and several other competing teams will now be responding to the Phase 2 Request for Proposal.

Your team will develop the Phase II RFP Response based upon the schematic design drawings and outline specification documents prepared by the Owners' design consultants.

Your team will be asked to establish a project budget, prepare a preconstruction schedule and provide various other deliverables as defined in the succeeding portions of this Problem Statement. You must submit you documentation to the development team by 9:00 PM tonight and be prepared to present you findings to the developer's panel in a meeting with them tomorrow. Interim progress meetings are scheduled for 11:00AM and 2:00 PM today. Any questions should be delivered, in writing on the Request for Information (RFI) form to the management team at the 11:00 AM meeting. Response to these RFI's will be provided at or before the 2:00 PM meeting. The RFI form is provided in Section X - Supplemental Information Tab 0.0.

For the oral presentation on Friday, all teams shall include students representing at a minimum the following firm positions; your project executive, preconstruction manager, project manager, sr. estimator, project superintendent and project engineer. You will be allowed 25 minutes for the team presentation and 10 minutes for questions and answers from upper management.

At a minimum, your presentation should cover the following areas:

- Budget
- Schedule
- Site Utilization
- Team Differentiators

PROJECT INFORMATION

The developer proposes to construct a 204 unit high rise residential project, with light retail in the Belltown neighborhood of Seattle, to be located at the corner of Second and Broad. The site currently has an existing 4 story concrete and steel framed building with an at grade asphalt parking lot for about 44 cars. The developer owns the property outright. The proposed project will have 3 levels of below grade parking, approximately 3,500sf of retail and 204 mid-high quality level studio, 1, 2 and 3 bedroom condominiums.

The Owner has provided a geotechnical report which did not encounter any subsurface obstacles or contaminants. The excavation of the building will extend from property line to property line. The project will be 13 stories above grade, constructed of a post tension concrete frame, and clad with a mix of materials, including brick, metal panel and window wall. Balconies and decks will be constructed on a hybrid of concrete and steel with glass railing systems.

The developer anticipates breaking ground in late 2008/early 2009 and anticipates a 19-21 month construction schedule.

Mithun, the design firm has progressed the design to the 50 % schematic design stage, and the developer now wishes to engage a contractor to provide preconstruction services including design coordination, constructability review, budget development and construction planning prior to moving into the next design phase. The developer has a history of teaming with contractors and design consultants and does not necessarily award on the initial lowest budget or fee structure proposed.

Your firm has extensive high rise residential experience, and has in fact completed four projects within a ten block radius of the proposed project within the last ten years.

After the response to Phase 1, the developer has decided that the form of contract will be an AIA102-2007 with A201 General Conditions.

Any information concerning the size, scope and time lines provided in previous correspondence has been superseded by the information provided in this written problem statement.

IV. PROBLEM OUTLINE

Organize and tab your documentation submittal according to the following outline. Include only the information requested in **Section V- Submission Requirements.** Remember to be as brief as necessary to convey your points.

1. **Cover Letter**
2. **Executive Summary**
3. **Project Budget**
    a. **Conceptual Estimate Summary**
    b. **Preconstruction Services Fee**
    c. **General Conditions**
    d. **Street Use Fees**
    e. **Concrete Estimate**
    f. **Subcontractor Recap**
4. **Project Schedule**
5. **Site Logistics**
6. **Area Summary & Analysis**
7. **Mechanical Load Analysis**
8. **Electrical Lighting Analysis**
9. **LEED Analysis**
10. **Bonus**

V. SUBMISSION REQUIREMENTS:

The appearance and organization of proposals is important in our industry, as it is often our first opportunity to interact with a new client and/or impress the upper management in your 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 appearance and organization, as well as the clear and concise responses the following requirements. Six copies on your Phase II response are to be submitted.

A disc has been included with some of the forms referenced so that you do not have to recreate them. Use these forms to respond to those portions of the problem for consistency across all teams. ***Always,*** *check formulas to ensure that proper extensions are made.*

1. Cover Letter

Provide a brief cover letter. Be sure to acknowledge all addenda, provide a company logo and sign the letter.

2. Executive Summary

An Executive Summary is an important part of your proposal. It identifies, in a summary fashion, the key benefits and features you want an Owner to know about your Company, and why they should choose your team over others for their project. It is an important sales tool. It let's you be creative and points out your most important differentiators from your competition. It should key in on what you have learned from your research of the Owner's "hot buttons" and should address how you will make sure those "hot buttons" are addressed. Your response to a Request for Proposal should always include an Executive Summary. See the Supplemental Information section for the Executive Summary exercise. Provide your final exercise in this section.

Deliverable:

1. *Executive Summary*

3. Project Budget

A. Conceptual Estimate Summary

You will be finalizing the estimate to determine the budget price that you will submit to the developer. The estimate will be prepared on the 50% Schematic Design Pricing set of documents that have been provided. The Conceptual Estimate Summary form has been filled out with the values for the items that have already been analyzed, priced and summarized, but you will be taking proposals on a few remaining trades, preparing a detailed concrete estimate, estimating your General Conditions, including street use fees, and determining your required fee for the

Project. See Supplemental Information section for forms. You will also prepare an estimate of the costs anticipated to be incurred during the preconstruction period of the project. You must plug the values of these items into the Conceptual Estimate Summary Form, apply your required fee for the project, and determine what the overall budget for the project should be.

Deliverable:

1. *Completed Conceptual Estimate Summary*

B. Preconstruction Costs

In an ever increasingly competitive industry and the requirement of many of our clients to operate in a collaborative environment with design professionals, the scope of preconstruction services to continues to grow. Preconstruction services can tie up significant amount of personnel resources who are not engaged in our core business of building actual projects. What was once considered as a loss leader and relatively inexpensive cost of project pursuit, preconstruction costs often represent a significant cost that need to be reimbursed by our clients as a professional service, much like that of our design consultants.

As part of your overall budget for the project you will need to prepare an estimate of preconstruction services. A preconstruction personnel billing rate worksheet and estimate form has been included in the Supplemental Information section for your use in developing the estimate. A description of required services for preconstruction services to be included in your estimate has also been included. Preconstruction costs shall be calculated to include personnel directly working on the project, as well as miscellaneous reimbursables. Preconstruction personnel generally work on multiple projects at one time and are generally not charged full time against any given project. Home office overhead is not to be included in preconstruction costs.

Deliverable:

1. *Preconstruction Services Estimate*

C. General Conditions

General Conditions are defined as the on-site project management and supervision costs incurred throughout the duration of the project to support and supervise subcontracted and self performed work. General condition costs are to be categorized by Project Staff for jobsite personnel costs only, and Project Overhead and Equipment related for equipment rental equipment, and the balance of general conditions costs not included as Project Staff.

Prepare a detailed breakout of General Conditions that your team anticipates for the project. Use the forms provided for each of the two categories of General Conditions costs as included in the Supplemental Information Section. One excel file has both worksheets, tabbed at the bottom of the spreadsheet. Personnel rates and equipment rental are included for your use. You may also use R.S. Means® manuals for any information required to complete your estimate, but not provided on

the rate sheets. Home office overhead is not included in the General Conditions for the project. You do not have to include costs for the Owner and subcontractors.

Supervisory staff positions are to be provided as deemed necessary by your team. The staff worksheet lists suggested positions as a starting point, but add or subtract as your team deems necessary. Remember there are 2080 work hours in a year.

Supervision costs for self performed work do not need to be included. Tower crane costs are included in the structure estimate and do not need to be included in the General Conditions. Personnel hoists are included in finishes section of the Estimate Summary and are not to be included in the General Conditions.

Prepare a Staffing Matrix showing the duration and period for each member to be assigned to the project.

Deliverables:

1. *Completed General Conditions Estimate Forms*
2. *Staffing Matrix*

D. Street Use Fees

As part of your site utilization plan you may be required to utilize sidewalks, streets, alleys, or enter the Right of Way from time to time, or for the duration of the project. This is typical for projects developed in an urban setting. Depending upon the jurisdiction in which any given project is located, street use permits and fees may be significant and cannot be overlooked in the development of your initial budget. In order to estimate these fees you must first understand your site utilization plan, and then need to calculate area and duration against the jurisdictions fee schedule. Use the estimate form provided in the Supplemental Information section. A use fee schedule has been provided for the jurisdiction of the project. Make sure to read the fee schedule carefully. 2nd Avenue and Broad Street are considered to be arterials.

Use fees are calculated for all areas you intend to use beyond the property line of the site into the Right of Way of the jurisdiction, including public streets, sidewalks and alleys. They do not include any fees for usage of private property adjacent to the developer's property. Any use of private property would have to be negotiated with the actual land owner of that property.

Once you have completed your Street Use Estimate, load the total into the line item in the Project Overhead and Equipment Section of the General Expenses where indicated for "Street and Sidewalk Use".

Deliverable:

1. *Completed Street Use Estimate Form*

E. Concrete Estimate

Your company prides themselves on being a builder not a broker, and has a long history of self performing many scopes of work, including concrete work. Although the plans and outline specification are at a schematic design stage, there is sufficient information to prepare a detailed concrete estimate for the project. Your estimate for concrete should include:

- Foundations
- Slab-on-grade
- Foundation walls below grade- 1 sided
- Columns
- Core Walls
- Shear Walls
- Supported slabs/Elevated decks.

For each category above, provide costs for forming, placing, finishing, curing, grinding and patching, as applicable. All excavation, spoils removal, reinforcing steel, post tensioned cables, stud rails, under slab rock and vapor barrier, and site concrete shall be subcontracted and therefore not included in your estimate.

A Concrete Estimate form has been provided for your use in the Supplemental Information Section. Quantities for the foundation system (spread footings, continuous footings, matt footings have been provided since footings are not indicated on the drawings provided. The first couple of line items have been fully completed for your reference. For the balance, you must apply the proper crew rate, productivity and material pricing against the quantities provided. Do not change any quantities, or other lump sum totals provided in the spreadsheet. The balance of the concrete elements described in the first paragraph are to be added to Concrete Estimate form by your team from your own quantity takeoffs. As always, ensure that the formulas are correct and that the totals check.

Utilize the labor crew rates for the selected category of work. These rates are fully burdened, and do not include profit markup. Use the concrete supply quote for pricing the concrete material for each strength required by the documents. Make sure to read the entire quote to derive the proper yardage price for each type of concrete. Also included is a concrete pumping quote for your use.

Use the historic concrete productivity data to apply against your quantities and the wage rates provided to arrive at your total labor for each item. Choose the most appropriate category for each item. The productivity rates have been provided by your company's Chief Estimator and should not be changed.

Review with your team and recommend a fee structure for self performed work to be included in your concrete estimate and include within your concrete estimate. Insert your required self performed fee at location provided at the bottom on the Concrete Pricing sheet. Supervision and Overhead related to the concrete work, including the cranes, have been included at the bottom of

the Concrete Estimate. Remember, if this work was subcontracted out, the subcontractor would require profit and overhead.

Deliverable:

1. *Completed Concrete Estimate Form*

F. Subcontractor Bid Recaps

The team has decided that the electrical scope shall be procured under a design-build methodology. You have received proposals from three electrical firms. You are assigned the task of "recapping" the bids to determine the lowest responsible proposal. In order to arrive at the value of work to be loaded into the Conceptual Estimate Summary you must recap the quotes to determine the most advantageous value to use. The Recap sheet has been created and "check questions" written on them to determine if the subcontractors have the correct scope per the plans and outline specifications. You may find that additional check questions are necessary to define the complete scope or differentiate between the proposals. Feel free to add to the check questions as you deem necessary. Choose your subcontractors carefully to ensure that they will perform the correct scope, staff the project adequately, and that they are financially stable. Although the project is design-build, the Owner will contract directly for design services with the selected subcontractor, so design fees are not to be included in the electrical budget for the project. Additionally, utility company charges will be paid directly by the Owner and temporary power is being covered elsewhere in the estimate.

Once you have arrived at a recapped total for each firm, take the lowest responsive and responsible bid and load that number in the electrical line of the Conceptual Estimate Summary. Utilize the lighting exercise in Section 8 to verify garage lighting count is close to your calculation.

What risks do you see in the electrical quotes? Provide a brief narrative of any concerns.

Deliverables:

1. *Completed Subcontractor Recap Form*
2. *Narrative of Risks for Electrical Scope of Work*

4. Schedule

As part of your review with management, you will be required to present a complete, workable Critical Path Schedule (CPM) to plan the work within the guidelines prescribed below. As this is a preconstruction services problem, we are equally interested in the activities and your thought processes in the preconstruction phase as in the construction phase. The schedule is to convey your teams plan to fully execute the project from cradle to grave.

The following criteria explain the background information and requirements of the CPM schedule you team will present.

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1. General Schedule Criteria:
   a. Presentation Criteria:
      i. Format:
         1. At minimum, show Activity ID, Activity Description, Original Duration (OD), Early Start (ES), Early Finish (EF), and Total Float (TF), per activity (see Figure "A" below)
         2. Organize and sort Preconstruction activities grouped together with construction activities following.

Figure A: Schedule Activity Example

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float	FEB 1 18 25
2008 ASC Student Competition						
Design						
01010	Contractor Selection/Notice to	1	14FEB08	14FEB08	0	Contra
Permitting and Entitlements						
01020	MUP Submittal	1	14FEB08	14FEB08	0	MUP Si

      ii. Activity Count: 100- 150 activities
      iii. Provide an equal amount of preconstruction and construction activities. Include design, permitting and entitlements, easement negotiations, long lead and construction activities
      iv. Show the logic between activities
      v. Clearly show the critical path of the schedule
      vi. Organize activities so they are easy to read, activities are grouped intuitively and the schedule flows well.

   b. Contractual Criteria
      1. Project Start Date for Preconstruction (Notice to Proceed): February 14, 2008
      2. Preconstruction Period: 10 Months
      3. Project Duration: 19-20 Months
      4. Minimum Milestones to be presented on CPM Schedule:

Contract Award	Permit Submittal (s)
Design Complete	GMP Estimate
Begin Demolition	Structure Complete
Finishes Begin	C of O Inspections
Final Completion	

      5. Assume the following calendar holidays: May 26, 2008, July 04, 2008, September 01, 2008, November 27-28, December 25, 2008, January 01, 2009, June 01, 2009, July 06, 2009, September 01, 2009, November 26-27, 2009, December 25, 2009, January 01, 2010, May 26, 2010, July 04, 2010, September 01, 2010, November 25-26, 2010, December 25, 2010, January 01, 2011.

2. Preconstruction Phase Criteria:
   a) The Architect and consultants will be 50% complete with the Schematic Design phase on February 14, 2008.

b) The permitting agency will allow phased permitting for demolition, excavation and shoring, structure and finishes.
c) Estimates will be required at the completion of each design phase
d) The project may be contracted under a phased GMP's contract.

3. All other work criteria:
   a) Original durations for the demolition, excavation, shoring and concrete structure shall be derived on a quantitative basis per the worksheet and explanation included in the scheduling section of the Supplemental Information. Use the worksheets to calculate durations based upon quantities that you survey, then divide by a productivity rates that you derive. Examples have been provided. You may use RS Means or other productivity data resources to help.
   b) The remainder of the work will be handled by subcontractors your team will manage.
   c) Scheduling of all work should support the assumption made by the Site Utilization Plans drafted in Section 5 below
   d) Review the plans thoroughly. Ensure that your schedule encompasses as much of the work possible in the limited number of activities your are required to provide.
   e) Your team may begin construction anytime, provided you have your first permit in hand. You may lag activities as you see fit and are reasonable logic assumptions.
   f) The last activity in your schedule should be Contract Completion.

General comments:
1. Do not resource load or cost load your schedule
2. Remember preconstruction period encompasses all project activities prior to the actual commencement of work in the field.
3. When it comes to scheduling, there are no right or wrong answers. Ensure that you team can substantiate and explain all of the assumptions and decisions made in the process of developing your schedule.

Deliverables:

1. *Preconstruction Schedule*
2. *Completed Scheduling Durations Form*

5. Site Logistics

The Downtown Condominium Project is located on a congested urban site, bordered by two major arterials on the South and East sides of the site, and alley to the west with an adjacent 7-story apartment Building and a 4 story apartment building to the North of two separate on-grade parking lots. The site is currently partially occupied by a 4 story office building, with one level below grade. There is an on grade parking lot to the North of the office building dedicated to the office building and within the property line for the project. Just North of the Office Building Parking lot is a privately

owned pay parking lot. The mass excavation of the project extends to the property line in all directions. Dry utilities are located in the alley and wet utility mains are in the street to the East.

There is currently on street parking meters on both arterials generating revenue for the City. Access to the alley must be maintained for Fire Department Access, as well as the Apartment Building Parking Garage entrance at the South end of the Alley. No employee parking of any kind will be allowed on the site.

Site Plan

Use the full size drawing to create your site logistics plan (C2.01). Other drawings may be used if you determine them necessary to fully explain your plan. Your plan can add or omit items from the basic list below, as long as a valid reason is present and that your logic does not violate code requirements or jurisdictional limits. Ensure that the locations of all items listed below are coordinated with future work activities, so they do not impede construction progress. In addition, if your site utilization changes/evolves throughout the project, describe any such changes. Include the following without limiting to:

- Project Office location
- Property lines
- Location of subcontractor offices, dryshacks, etc.
- Locations for temporary fences
- Location of access roads and gates
- Project and required signage
- Location of temp services; Water, Power, etc
- Prefab areas
- Location and boom radius of crane
- Personnel/material hoist location
- Concrete Pumping locations
- Delivery locations for staging and unloading
- Stair towers, if used.
- Emergency evacuation location
- Any other items that your team things should be on the plan

In addition to a graphical plan provide written narrative to further explain the site utilization plan prepared by your team. When site work is to take place, briefly explain any conflicts that might occur with locations of trailers, etc. and completing all of the landscaping and site work. Provide a brief explanation of how these conflicts will be coordinated and resolved. If there are no foreseen conflicts, briefly explain how the site utilization plan was coordinated with the final site work.

Deliverable:

1. *Site Logistics Plan*
2. *Site Logistics Narrative*

6. Area Summary & Analysis

Prepare an Area Summary by building use per the spreadsheet provided in the Supplemental Information Section Tab 6.0. The spreadsheet is partially completed, and you must provide the remaining information to complete the Area Summary. As you may know, contractors calculate building area based upon gross square footage, not net usable. Building pricing must include all square footage so that it may be taken off and priced. Remember; never trust any summary, notes on drawings, information from proformas etc. provided by the Owner or his consultants. You must do the takeoff to validate any quantities provided by others. Developers and architects often work in net saleable/rentable square foot, efficiency ratios, etc. that leave out actual area such as hallways, stairs, elevators, janitors closets, etc. that must be included in a construction estimate. Definitions of areas have been included in the supplemental information section.

Hint; if you complete this takeoff first you may use it in the solution to some other sections in the problem.

Deliverable:

1. *Completed Area Analysis Form*

7. Mechanical Load Analysis

For this exercise you will need to calculate the anticipated cooling and heating loads for the building, so you can determine the right amount of money to carry in your proposal estimate for the chiller and the boiler. Information received from subcontractors can be very contradicting when it comes to anticipated loads, and because of this pricing may vary widely. It is necessary at times to perform your own calculations for heating and cooling loads so you can determine the right amount of money to include for these components, and to help select the right subcontractor's information to use in the proposal.

Note: Calculations and outcomes from this analysis are not used in any other part of your response to this problem statement.

Deliverable:

1. *Completed Cooling/Heating Form and Sub Selection*

8. Electrical Lighting Analysis

For this exercise you will need to calculate the number of light fixtures required to light the parking garage levels in order to verify the quantity of light fixtures proposed by your electrical bidders. You will need to calculate the fixture counts using two different methods. Like mechanical pricing, information received from subcontractors can be very contradicting when it comes to fixture counts, and thus pricing may vary widely. It is necessary at times to perform your own calculations of the correct number of fixtures so you can determine the right amount of money to include, and to help select the right subcontractor's fixture information to use in the proposal.

Problem 1: SF Method - State of Washington Allowed
Using the information given from the State of Washington, fill out the SF method worksheet to determine the allowable wattage for lighting the garage. Using the information provided on the light fixture cut sheets; calculate the number of fixtures required and the cost of the light fixture package.

Problem 2: Zonal Cavity Method – Maintained Foot-candles
This method is a much more scientific method of calculating lighting levels that will maintained using different fixture types .Using the information given, fill out the zonal cavity worksheet to determine number of fixtures required for lighting the garage.

Deliverable:

1. *Completed Lighting SF and Zone Worksheets*

9. LEED ™ Analysis

The developer has questioned the team about possibly marketing a LEED™ for New Construction project. Based upon information contained within the outline specifications and drawings, make a recommendation as to the possible number of attainable LEED™ points currently available to the project and the associated rating?

In addition, please recommend what LEED™ points could be cost effective and easily achieved by slightly modifying the specifications to attain the next highest rating? We are looking only for a recommendation; *do not modify the information to achieve additional points*. Utilize the LEED™ scorecard provided in Section X.

Deliverable:

1. *Completed LEED™ Scorecard*
2. *Narrative*

10. Bonus

The developer requests your opinion as the optimum methodology to reduce unit count as follows:

(9ea) 1-Open S-1
(1ea) 1-Open S-2
(1ea) 1-Open S-4
(2ea) 1-Open S-5
(1ea) 1-Open S-7
(1ea) 1-Open S-8
(1ea) 1-Open S-9
(1ea) 1-Open S-12
(1ea) 1-Flat S-3
(1ea) 1-Flat D-1
(1ea) 1-Flat D-2
(1ea) 1-Flat D-3
(1ea) 2-Flat S-1
(1ea) 2-Flat S-5

(1ea) 1-Open S-11

Provide a written narrative with your proposed solution to this request. There are no budget or schedule components necessary in your response to the bonus question.

Deliverable:

1. *Narrative*

VI. COMPETITION SCORING SYSTEM:

Item	Description	Points
	Phase 1 RFP Phase I	20
	Phase 2 RFP Phase II	50
	Phase 3 Interview	30

Time Adherence Scoring

- Phase I Submittal
  - (on time = 0, up to 1 min late = -1, up to 10 min late = -2, later = -4)
- Phase II Submittal
  - (on time = 0, up to 1 min late = -2, up to 10 min late = -3, later = -6)
- Phase III Presentation
  - (on time = 0, up to 1 min late = -1; up to 2 min = -2; 3 = -3; 4 = -4; later = -5)

VII. LIST OF JUDGES:

Stewart Grauer, Construction Manager (425) 454-8020	Seattle District 15405 SE 37th St, Su 200 Bellevue, WA 98006
Jim Pittman, Project Manager (425) 454-8020	Seattle District 15405 SE 37th St, Su 200 Bellevue, WA 98006
Doug Sprute, Sr. Estimator (425) 454-8020	Seattle District 15405 SE 37th St, Su 200 Bellevue, WA 98006
Jeff Miller, Construction Manager (818) 246-3481	LA District 700 N. Central Avenue, Suite 700 Glendale, CA, USA 91203
Wil Painter, Regional Manager, Preconstruction (818) 246-3481	LA District 700 N. Central Avenue, Suite 700 Glendale, CA, USA 91203
Scott Viola, Project Manager (808) 541-9101	Hawaii District 1099 Alakea Street, Suite 1560 Honolulu, HI, USA 96813
Alternates:	
Kurt Boyd, Manager Business Development (425) 454-8020	Seattle District 15405 SE 37th St, Su 200 Bellevue, WA 98006
Dale Kain, Director of Corp. Development (303)365-6500	Denver Head Office 2000 South Colorado Blvd Tower Two Suite 2-500 Denver, CO 80222
Dave Yount, Operations Manager (818) 246-3481	LA District 700 N. Central Avenue, Suite 700 Glendale, CA, USA 91203

VIII. COMPETITION 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 problem solutions to the judges. The following rules apply to the National Preconstruction Services Problem and supplement the ASC Competition Rules:

1. While the competition is in progress, only the six students identified as being team members shall be present in the teams' room. Faculty advisors may not interface with their team once the competition has begun.
2. Six (6) copies of the proposal must be turned in at the prescribed time. **Proposals will not be returned to the teams.** If you require some of the material in your proposal for your oral presentation, please make the appropriate copies prior to your submission of the written problem for your use.
3. The number of computers per team and use of the internet is to be as outlined in the ASC Competition Rules.
4. Once the presentations begin, only the teams who have presented their solutions may be present at the presentations of subsequent teams. This will mean that the first team up gets to see them all, while the last team does not get to see any of the others. The purpose of this rule is to prevent those participating in later sessions from gaining an advantage as to the contents of previous sessions.
5. Presentation materials for all teams are to be turned in to the judges prior to the first interview, by 8:30 AM on Friday, February 15th. No other presentation material will be allowed into the presentation that is not turned into the judges by this time. NO EXCEPTIONS.
6. All decisions of the judges are final.
7. The problem presented is an actual project under construction. To avoid any conflict of interest or unfair advantage, any student who may have potentially worked on the project in any way shall identify themselves to PCL immediately. This issue will be reviewed, and if appropriate we may request that an alternate be assigned to the project. PCL shall make the final decision as to equity in such a case.
8. Points will be deducted if proposals are submitted later per the Scoring System noted in Section VI. Written proposals will be due as indicted in Section I. The turn in location will be announced at the commencement of the competition. Other deliverables will be as noted elsewhere in the Problem Statement.
9. No phone calls, emails, or communication of any kind shall be made to the Owner, Architect, Engineer or design consultants that may be listed in the documents provided for this competition. They are aware that no team is to contact them and have been notified to contact the judges is any contact occurs. Contact with the any of the above shall disqualify team from the competition.
10. Do not submit any extraneous materials with your written proposal, including company profiles, marketing materials etc. Please limit your response to the information requested. Be brief, clear and concise.
11. Any information concerning the size and scope and timelines provided in previous correspondence has been superseded by the information provided in the written problem statement and is not to be used in response to Phase 2.

12. Last and most important rule: Have fun, learn, and develop new relationships.

Violation of any of these rules will be grounds for disqualification from the competition

IX. COMPETITION EVALUATION FORM:

Please complete the evaluation form included in the Supplemental Information section Tab IX. Your feedback is important to our team as we strive to continually improve the problem in years to come. Please be honest and forthright with your responses.

Please complete one questionnaire per team and turn it in at the problem debrief. This form will be your admission ticket to the Debrief and Answer Session.

X. SUPPLEMENTAL INFORMATION

	Description	Electronic Form on Disk
0.0	RFI Form	X
2.0	Executive Summary Exercise	
3A.0	Conceptual Estimate Summary Form	X
3b.1	Preconstruction Estimate Form	X
	Preconstruction Billing Rates	
	Preconstruction Description of Work	
3c.1	Staff Estimate Form	X
	Project Overhead & Equip Estimate Form	X
	Staff Billing Rate Schedule	
	Equipment Rental Rates	
3.d.1	Street Use Estimate Form	X
	Street Use Fee Schedule	
3.e.1	Concrete Pricing Form	X
	Concrete Work Productivities	
	Other Pricing Data	
	Concrete Material Quote	
3.f.1	Electrical Recap Card	X
	Electrical Bids (3ea)	
4.0	Scheduling Durations Form	X
	Scheduling Information	
6.0	Area Summary Form	X
	Gross Building Area Definitions	
7.0	Mechanical Loads Narrative	
	Mechanical Estimating Exercise Forms	X
8.0	Electrical Loads Narrative	
	Load Calc Forms- SF Method & Zonal Cavity Method	X
9.0	LEED Scorecard	X
IX.	Evaluation Form	

PCL Construction Services, Inc.

Job Number

REQUEST FOR INFORMATION				PCL RFI #:	XXXX
Downtown Condominium Project				Subcontractor RFI#:	
				Number of Pages (Including Attachments):	
To:		Company:	NBBJ	Date Issued:	
Initiated by:		Company:		Respond by:	
Drawing/Sheet:		Spec Section:			

Subject:

Request:

Proposed Solution:

All impacts pending response.

Cost Impact: Yes ☐ No ☐ Schedule Impact: Yes ☐ No ☐ Signed: Ckd:

Response:

Approved for construction: No Yes Responding Party: Date:

Subcontractors affected by this Request for Information must notify PCL in writing within five (5) days of receipt identifying any cost and/or schedule impact. Otherwise they shall not be considered.

Copies to:

Field (**1**) copies

Plan Room

PCL Construction Services, Inc.
WA License #PCLCOSI099NW / OR CCB #083460
15405 SE 37th Street, Suite 200 Bellevue, Washington 98006 (206) 454-8020 Fax (206) 454-5924

Executive Summary Exercise

Exercise Narrative:

An Executive Summary is an important part of your proposal. It identifies, in a summary fashion, the key benefits and features you want an Owner to know about your Company, and why they should choose you over others for their project. It is an important sales tool. It let's you be creative and points out your most important differentiators from your competition. It should key in on what you have learned from your research of the Owner's "hot buttons" and should address how you will make sure those "hot buttons" are addressed. Your response to a Request for Proposal should always include an Executive Summary.

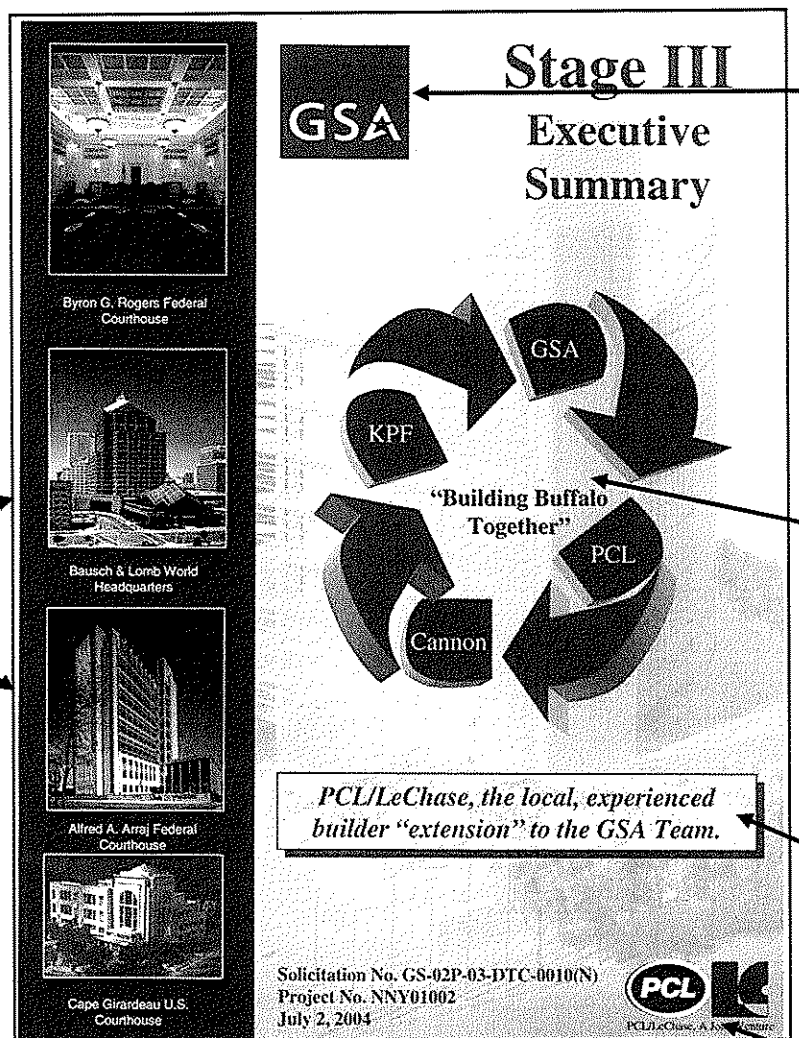
Executive Summary Exercise

Exercise Process:

Based on the information given in this handout, create an Executive Summary for your proposal. Insert the Summary in Section 2 of the Phase II proposal book and include the following:

- 1st Page – Include a key message, some of your differentiators, and a simple theme statement
- 2nd Page – Include a theme statement and the key reasons PRIHD should choose you, and not your competition
- Be creative.

Executive Summary Components (1st Page)



Owner Logo

Differentiators

Key Message

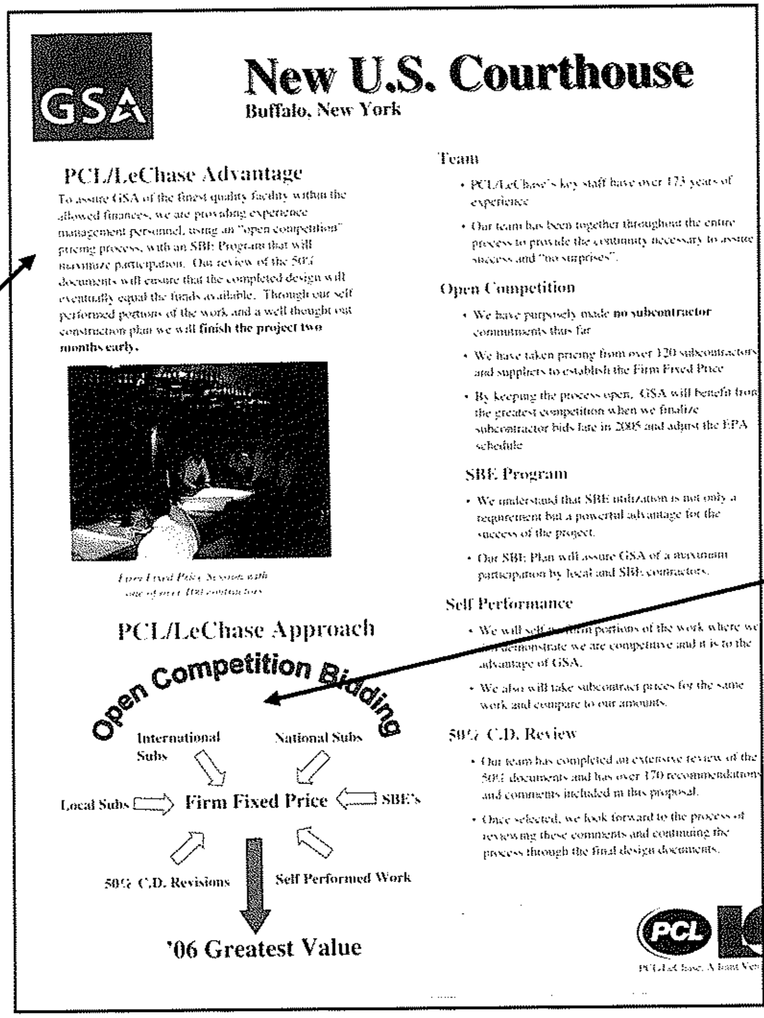
Simple Theme Statement

Your Logo

PRIHD

Executive Summary Components (2nd Page)

Theme Statement



GSA

New U.S. Courthouse
Buffalo, New York

PCL/LeChase Advantage

To assure GSA of the finest quality facility within the allowed finances, we are providing experience management personnel, using an "open competition" pricing process, with an SBE Program that will maximize participation. Our review of the 50% documents will ensure that the completed design will eventually equal the funds available. Through our self performed portions of the work and a well thought out construction plan we will **finish the project two months early.**

PCL/LeChase Approach

Team

- PCL/LeChase's key staff have over 173 years of experience
- Our team has been together throughout the entire process to provide the continuity necessary to assure success and "no surprises".

Open Competition

- We have purposely made **no subcontractor** commitments thus far
- We have taken pricing from over 120 subcontractors and suppliers to establish the Firm Fixed Price
- By keeping the process open, GSA will benefit from the greatest competition when we finalize subcontractor bids late in 2005 and adjust the EPA schedule

SBE Program

- We understand that SBE utilization is not only a requirement but a powerful advantage for the success of the project.
- Our SBE Plan will assure GSA of a maximum participation by local and SBE contractors.

Self Performance

- We will self perform portions of the work where we demonstrate we are competitive and it is to the advantage of GSA.
- We also will take subcontract prices for the same work and compare to our amounts.

50% C.D. Review

- Our team has completed an extensive review of the 50% documents and has over 170 recommendations and comments included in this proposal.
- Once selected, we look forward to the process of reviewing these comments and continuing the process through the final design documents.

"Why You?",

"Why Not Them?"

Owner: DCP, LLC
Project: Downtown Condominium Project
Location: Seattle, WA
Designer: Mithun
Area: 303,690 SF

PCL Construction Services, Inc
Seattle Office

Conceptual Estimate Summary

Description	Quantity	UoM	Unit Price		Total Cost	Remarks
DIRECT COSTS						
				0		
PRECONSTRUCTION SERVICES	1.0	LS		0		Provide per Preconstruction Estimate Section
SITEWORK	1.0	LS		0	**128,103**	
BLDG EXCAVATION	1.0	LS		0	**2,062,099**	
STRUCTURE	1.0	LS		0		Provide per Concrete Estimate Section
STRUCTURE OVERHEAD COST	1.0	LS		0	**w/above**	
METALS	1.0	LS		0	**1,314,517**	
THERMAL/MOIST PROTECT	1.0	LS		0	**4,961,526**	
FINISHES	1.0	LS		0	**6,452,572**	
Unit Finishes	1.0	LS		0	**6,592,991**	
SPECIALTIES	1.0	LS		0	**45,094**	
BUILDING EQUIPMENT	1.0	LS		0	**30,750**	
CONVEYING SYSTEMS	1.0	LS		0	**636,381**	
BLDG MECHANICAL	1.0	LS		0	**7,934,342**	
BLDG ELECTRICAL	1.0	LS		0		Provide from Electrical Recap
WARRANTY CONTINGENCY	1.0	LS		0	**510,831**	
DESIGN CONTINGENCY	1.0	LS		0	**255,415**	
DIRECT COSTS				**0**	**30,924,621**	
GENERAL EXPENSE COSTS						
PROJECT STAFF	1.0	LS		0		Provide from Project Staff Estimate
PROJECT OVERHEAD & EQUIP	1.0	LS		0		Provide from Project Overhead Estimate
INSURANCE/TAXES	1.0	LS		0	**1,208,681**	
0			**0**	**0**	**1,208,681**	
TOTAL COST			**0**	**0**	**32,133,302**	
Fee		%	**0**		**0**	Provide Fee required by your Firm.
WSST						
WASHINGTON STATE SALES TAX	1	LS	0	0	**NIC**	
TOTAL BID			**0**	**0**	**32,133,302**	Calculate Totals

Downtown Condominium Project
Seattle, WA

PRECONSTRUCTION ESTIMATE

SPEC/PROD	ITEM	QTY		UNIT	MATERIAL	UNIT	EQUIP/SUB	CREW RATE	PROD	LABOR	TOTAL
					0		0		1.00	0	0
					0		0			0	0
					0		0			0	0
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					0		0			0	0
					0		0			0	0
					0		0			0	0
	Subtotal			0.0%	0		--			--	0
					0		0			0	0
	Subtotal				0		--			--	0
					--		--			0	0
					--		--			0	0
	Total				**0**		**0**			**0**	**0**

EXTENDED BY
CHECKED BY ________

PRECONSTRUCTION ESTIMATE

PCL Construction Services, Inc.
Downtown Condo Project
Preconstruction Billing Rates

DESCRIPTION	TOTAL HOURLY RATE
OFFICER IN CHARGE	In Fee
PRECON. MANAGER	$110.00
CONST. MANAGER	$ 105.00
CHIEF ESTIMATOR	$ 95.00
SR. ESTIMATOR	$ 85.00
ESTIMATOR	$ 65.00
PROJECT SUPT.	$ 90.00
PROJECT MANAGER	$ 85.00
PROJECT ENGINEER	$ 60.00
OFFICE / ADMIN.	$ 45.00

NOTES & CLARIFICATIONS

1. Liability, B&O and City Taxes are included.
2. Cell phones and computer equipment included.
3. Other Overhead costs are included in FEE for preconstruction costs

EXHIBIT A

Description of Work

Pre-construction services to be provided by Consultant include, but are not limited to, design assistance, cost estimating, value engineering, scheduling, construction phasing, constructability review, weekly or bi-weekly design review meetings with the Owner, input from key subcontractors as to building systems, and means & methods of construction. More specifically, Consultant will:

1. Investigate existing property conditions.
2. Participate in meetings with public agencies and utilities, and assist in preparation of compliance documents with Architect and other consultants as requested.
3. Provide scheduling and estimating services:
    a. Prepare conceptual estimates from preliminary plans based on historical costs adjusted to location and time. Estimates will be reviewed by the project team, modified as required and developed into a mutually agreeable budget itemized into cost systems for each component.
    b. Prepare preliminary estimates for each phase of the work as information becomes available. The control budget will be revised and updated accordingly.
    c. Provide value engineering input by reviewing conceptual and working drawings during their preparation focusing on construction methods and details. Cost analyses of design options will be carried out and recommendations made for alternatives to be included in the bid packages.
    d. Evaluate market conditions and schedule bid calls to obtain the most competitive prices commensurate with overall project scheduling.
    e. Prepare cash flow projections and update regularly.
    f. Prepare a preliminary schedule following initial review of the project. This schedule will contain activities integrating the whole team to include entitlements, permits, approvals, design development, bid packages and construction. This will be provided for Owner's approval in conjunction with the preliminary drawings and conceptual estimate.
    g. Update and revise the approved master schedule as necessary to coordinate the ongoing activities of all members of the project team.
    h. Monitor progress on both design and other preconstruction activities with regular reports indicating the responsibility for any corrective action.
    i. Provide input as required to Owner's entitlement process which is anticipated to conclude in TBD.
4. Provide constructability review of the bid documents. This review will verify and help identify any problems in the following areas:
    a. Reasonableness of work sequence, interface relationships, and periods of performance.
    b. Adequacy of lead times for material and equipment procurement.
    c. Accuracy of job-site description and depiction of conditions.
    d. Degree of site restrictions and adequacy of access, work areas and disposal sites.

e. Availability of utility connections for construction.

f. Consideration of the impact of adverse weather on the CPM schedule and milestone operations.

g. Impact upon and plans for pedestrian and vehicular traffic and ongoing operations.

5. Work with Owner to develop a Site Plan that will provide logistics guidelines. The Site Plan will include:

   a. Location of temporary buildings, lunchrooms, etc.

   b. Location of temporary gas lines and power services.

   c. Assist entitlement team in utility company negotiations with respect to permanent utility relocations.

   d. Material storage areas.

   e. Access roads and gates.

   f. Temporary fencing and gates.

   g. Location and boom radius of crane, personnel, personnel/material hoist, saws, concrete pumps, and all other construction equipment.

   h. Delivery and unloading areas (concrete, precast, rebar, structural steel, etc.) including traffic flow.

   i. Prefab and precasting areas (if required).

   j. Subcontractors' offices and storage areas.

   k. Other consultant's office, testing labs, etc.

   l. Footprint of the building, existing street, overhead lines, fire hydrant, vaults, traffic signals, bus stops, other buildings, utilities (e.g. gas, water, sewer) and items to be protected (e.g. trees).

   m. Worker access gates.

   n. Worker parking during construction.

   o. Safety/first aid locations including emergency meeting place and safety bulletin board.

   p. Hazardous Storage i.e. gasoline, oxygen, acetylene, PCB's, paint, etc.

   q. Outline of excavation/shoring.

   r. Property lines.

   s. Special Conditions (phased areas, prohibited areas, environmental issues, dewatering, etc).

   t. Emergency shutoffs.

Downtown Condominium Project
Seattle, WA

PROJECT STAFF

SPEC/PROD	ITEM	MH	QTY		UNIT	MATERIAL	UNIT	EQUIP/SUB	CREW RATE	PROD	LABOR	TOTAL
						0		0			0	0
	Construction Manager	0				0		0	0.00	1.00	0	0
	Project Manager	0				0		0			0	0
	Project Engineer (s)	0				0		0			0	0
	Superintendent	0				0		0			0	0
	Assist. Supt	0				0		0			0	0
	Accounting Clerk	0				0		0			0	0
	Safety Coordinator	0				0		0			0	0
	Quality Control Coordinator	0				0		0			0	0
		0				0		0			0	0
		0				0		0			0	0
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	Subtotal				0.0%	0		--			--	0
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	Subtotal					0		--			--	0
						--		--			0	0
						--		--			0	0
		0				**0**		**0**			**0**	**0**
	Subtotal											

EXTENDED BY
CHECKED BY ________

PROJECT STAFF

Downtown Condominium Project
Seattle, WA

PROJECT OVERHEAD

SPEC/PROD	ITEM	MH	QTY		UNIT	MATERIAL	UNIT	EQUIP/SUB	CREW RATE	PROD	LABOR	TOTAL
						0		0			0	0
		0				0		0			0	0
		0				0		0			0	0
		0				0		0			0	0
						0		0			0	0
		0				0		0			0	0
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	Steet Use Fees (Insert from PartVI 3 D)					0		0			0	0
						0		0			0	0
						0		0			0	0
						0		0			0	0
	Subtotal				0.0%	0		--			--	0
						0		0			0	0
	Subtotal					0		--			--	0
						--		--			0	0
						--		--			0	0
		0				**0**		**0**			**0**	**0**
	Subtotal											

EXTENDED BY _
CHECKED BY ________

PROJECT OVERHEAD

PCL Construction Services, Inc.
Downtown Condo Project
Construction Billing Rates

DESCRIPTION	TOTAL HOURLY RATE
OFFICER IN CHARGE	In Fee
PRECON. MANAGER -	In Fee
CONST. MANAGER	In Fee
CHIEF ESTIMATOR	In Fee
SR. ESTIMATOR -	$ 75.00
ESTIMATOR -	$ 55.00
PROJECT SUPT. -	$ 82.00
ASSIST. SUPT	$ 55.00
PROJECT MANAGER -	$ 75.00
PROJECT ENGINEER -	$ 52.00
OFFICE / ADMIN. / Accountant	$ 45.00
SAFETY COORDINATOR	$ 50.00
QUALITY CONTROL SUPERVISOR	$ 50.00

NOTES & CLARIFICATIONS

1.) Rates are fully burdened.
2.) Liability, B&O and City Taxes are not included.

Equipment Rental Rates - Downtown Condominium Project

Equipment Description	Month	Hrly Rate
01A Air Compressor		
(A1B) Diesel 150 - 190 CFM	$800.00	$4.62
(A1C) Diesel 200 CFM	$1,125.00	$6.50
(A1L) Electric 150-225 CFM	$1,150.00	$6.65
06B Buggy - Concrete Powered		
(BGA) 10CF Powered	$700.00	$4.05
07B Buckets - Concrete/Trash		
(B7A) Concrete 1 to 1 1/2 Yard	$350.00	$2.02
(B7B) Concrete 1-3/4 to 3 Yard	$575.00	$3.32
(B7D) Trash 4 Yard	$475.00	$2.75
(B7E) Refuse Hopper 2 Yard	$250.00	$1.45
01C Compactors		
(C1A) BW75 Roller	$1,050.00	$6.07
(C1C) BW90 Roller/BP50 Reversing Plate	$1,000.00	$5.78
01F Finishers Concrete Trowels		
Double Blade Ride-On	$2,200.00	$12.72
Double Blade Ride-On Diesel	$3,500.00	$20.23
04F Forklifts		
(F4A) RT Telescoping 10,000 LBS	$3,600.00	$20.81
(F4A) RT Telescoping 8,000 LBS	$2,800.00	$16.18
(F4A) RT Telescoping 6,000 LBS	$2,100.00	$12.14
01H Hoists - Tugger/Chain		
(H1F) Electric 15,000 lb Chain	$900.00	$5.20
01J Office Equipment		
Ricoh 2075 Copier/Printer/Scanner	$1,100.00	$6.36
Canon 3175 Laser Fax Machines (Large)	$175.00	$1.01
Cannon L3175 Laser Fax Machine (Med)	$125.00	$0.72
Cannon L9000 Laser Fax	$160.00	$0.92
Ricoh 1075 Copier/Printer/Scanner	$1,000.00	$5.78
02J Computer Equipment		
External Modem	$35.00	$0.20
HP Plotter	$400.00	$2.31
Wireless Lan Bridge	$284.00	$1.64
4-Port KVM Switch	$19.00	$0.11
UPS	$30.00	$0.17
Cisco Router	$120.00	$0.69
File Server (Lg.)	$400.00	$2.31
AutoCad Workstation	$125.00	$0.72

Equipment Description	Month	Hrly Rate
11" x17" Epson 1640 Color Scanner	$175.00	$1.01
Notebook	$225.00	$1.30
Lexmark T520 Printer	$82.00	$0.47
Tape Backup External	$46.00	$0.27
Firewall	$55.00	$0.32
File Server (Small)	$175.00	$1.01
3-Comm Firewall	$30.00	$0.17
3COM Dual Speed HUB 16 ports	$20.00	$0.12
Lexmark X522 MF Printer	$248.00	$1.43
Color Laser Printer Legal/Letter	$296.00	$1.71
Epson Wide Format Inkjet	$49.00	$0.28
Color Laser Printer 11 x 17	$424.00	$2.45
RAS Server	$48.00	$0.28
Desktop Pentium Workstation	$150.00	$0.87
Lexmark Wide Format Printer (810)	$150.00	$0.87
Tape Drive	$175.00	$1.01
8.5 x 11 HP Scan Jet 6300C	$40.00	$0.23
M/F Printer Lexmark X520 MFP	$135.00	$0.78
20" LCD Monitors	$45.00	$0.26
02L Generators		
(L2D) Generator - 15 KW Diesel	$900.00	$5.20
(L2F) Generator - 30 KW Diesel	$925.00	$5.35
(L2G) Generator 50 KW Diesel	$1,600.00	$9.25
(L2I) Generator - 75 KW Diesel	$1,700.00	$9.83
03L Light Towers		
(L3A) Portable 5-10 KW	$1,000.00	$5.78
06L Loaders - Skid Steer		
(L6A) Bobcat 753 (1300 #)	$1,500.00	$8.67
(L6B) Bobcat 853 / 863 (1700 # to 1900 #)	$2,000.00	$11.56
01M Mixers - Concrete		
(M1D) 6/9 CF Gas	$587.00	$3.39
02M Mixers Motar		
(M2B) 8 CF Gas & Electric Tilt	$587.00	$3.39
01P Pumps - Water & Asphalt		
(P1L) Sub 3" Electric	$568.00	$3.28
(P1H) Trash 4" Diesel	$689.00	$3.98
(P1I) Trash 6" Diesel	$1,277.00	$7.38
01R Radio Equipment		
(R1A) Hand Held GP350, H7750	$100.00	$0.58
(R1B) Base Station	$245.00	$1.42
(R1C) Single Chargers	$15.00	$0.09
(R1E) Repeaters	$900.00	$5.20

Equipment Description	Month	Hrly Rate
(R1F) 6 Bank Chargers	$65.00	$0.38
05R Phone Systems		
(R5Q) - Norstar Jobsite - 16 sets	$800.00	$4.62
(R5E) - Norstar Jobsite - 40 sets	$880.00	$5.09
(R5U) - McKee (16) Station Intercom	$1,500.00	$8.67
(R5V) - McKeen (8) Station Intercom	$700.00	$4.05
(REQ) - Norstar Jobsite - 8 sets	$600.00	$3.47
01S Saws		
(S1A) 3 to 7.5 HP - Radial Arm	$525.00	$3.03
(S1C) Concrete Saw 18 HP, 16"	$650.00	$3.76
(S1D) Concrete Saw 35 HP, 18"	$850.00	$4.91
(S1F) Concrete Saw 50 HP, 48"	$1,100.00	$6.36
04S Survey Equipment		
(S4A) - Level, Auto (NAO, NAK, AE3) (26x - 20x)	$150.00	$0.87
(S4B) - Level, Engineer (AE5, NA3, NA2) (40x - 28x)	$200.00	$1.16
(S4C) - Transit (T05, NT2, TL20) (11"-20")	$375.00	$2.17
(S4D) - Transit (T1, T16, NT4D) (6"-10")	$375.00	$2.17
(S4E) - Transit (T2, NT5A, T1000) (1"-5")	$450.00	$2.60
(S4G) - Laser Spectra Physics	$400.00	$2.31
(S4I) - Transit (T56, 160D, DT20)	$350.00	$2.02
(S4J) - Level Electronic (EL1) Laser	$400.00	$2.31
(S4L) - Laser Level LB1 (Grade Control)	$600.00	$3.47
(S4S) - Total Station - Nikon DTM - 520	$800.00	$4.62
(S4T) - Total Station - Nikon DTM	$800.00	$4.62
(S4U) - Data Recorder	$400.00	$2.31
05T Trailers		
(TEC) - 8 x 40 Container	$165.00	$0.95
(T5A) - 8 x 20 Container	$150.00	$0.87
(T5B) - 20 to 30 FT Office Trailer	$250.00	$1.45
(T5C) - 31 to 40 FT Office Trailer	$250.00	$1.45
(T5D) - 41 to 52FT Office Trailer	$375.00	$2.17
(TEE) - 8 x 10 Container	$125.00	$0.72
(T5I) - 53 to 60 FT Office Trailer	$400.00	$2.31
01V Trucks Light		
(V1A) - 1/2 & 3/4 Ton Regular Cab Gas 4x2	$1,100.00	$6.36
(V1B) - 1/2 & 3/4 Ton Regular Cab Gas 4x4	$1,125.00	$6.50
(V1D) - 1 Ton Crew Cab Gas 4x4	$1,200.00	$6.94
(V1E) - 1/2 & 3/4 Ton Extended Cab Gas	$1,100.00	$6.36
(V1F) - 1/2 & 3/4 Ton Van, Delivery	$1,100.00	$6.36
(V1G) - 1/2 & 3/4 Ton Van 12 plus Passenger	$1,200.00	$6.94
(V1H) - 1/2 Extra Cab 4 x 4, Gas	$1,400.00	$8.09
(V1J) - Sport Utility Vehicle	$1,600.00	$9.25
(V1M) - 1/2 & 3/4 Ton Regular Gas Diesel	$1,400.00	$8.09

Equipment Description	Month	Hrly Rate
02V Trucks Heavy		
(VBF) - 5 T c/w 14 T Pitman Diesel	$4,500.00	$26.01
(V2A) - 1T S/A Flat Deck Gas	$1,400.00	$8.09
(V2D) - 1 1/2 T S/A Flat Deck Diesel	$1,900.00	$10.98
Personnel Carriers		
(4M) - John Deere Gator ATV 6x4	$775.00	$4.48
02 Welders		
(W2) - 230 - 300 AMP Diesel c/w Trailer	$600.00	$3.47
(W2E) - 350 - 400 AMP Diesel c/w Trailer	$725.00	$4.19
Misc.		
(BR) - Forklift Debris Dumper 3.5 cy	$275.00	$1.59
(CB) - Jumping Jack	$375.00	$2.17
(CB) - Plate Tamper	$360.00	$2.08
(CC) - Shop Compressor c/w 2 Staples	$550.00	$3.18
(CC) - 4 - 10 CFM Compressor	$250.00	$1.45
(DPR) - Magnetic Drill Press	$200.00	$1.16
(FB) - 48" Fan	$145.00	$0.84
(FN) - 20" Fan	$90.00	$0.52
(FC) - 36" Finisher	$425.00	$2.46
(FC) - 44" Finisher	$500.00	$2.89
(FC) - 48" Finisher	$580.00	$3.35
(FPR) - Floor Polisher/Stripper 17"	$280.00	$1.62
(GC) - Grinder/ Vaccuum	$350.00	$2.02
(GCR) - Ceiling Grinder	$384.00	$2.22
(GE) - 5 GKW Genset	$500.00	$2.89
(GE) - HI Cycle Genset	$340.00	$1.97
(GI) - Hilti DX350/451	$185.00	$1.07
(H) - 3 - 400k BTU Heater	$250.00	$1.45
(HE) - Kango 950 / Hilti TE 72, 74, 75	$318.00	$1.84
(HE) - Hilti TE ss, 24, 52, 54 /	$225.00	$1.30
(HJ) - 60 # Rock Drill	$200.00	$1.16
(HP / HJ) - 30 # Air Hammer	$200.00	$1.16
(HP/HJ) - 60 # Air Hammer	$200.00	$1.16
(HP/HJ) - 90 # Air Hammer	$200.00	$1.16
(HR) - 15 KW Electric Heater	$200.00	$1.16
(J) - Trans. Jack (5TN)	$200.00	$1.16
(P) - 2" Sub Pump -High Head(Flyght)	$400.00	$2.31
(P) - 2" Sub Pump -Low Head	$300.00	$1.73
(P) - 2" Trash, Gas	$325.00	$1.88
(PSR) - Pressure Washer	$800.00	$4.62
(RL) - Ret. Lanyard - 30'	$95.00	$0.55
(RL) - Ret. Lanyard - 60'	$125.00	$0.72
(SBR) - Chain Saw	$300.00	$1.73
(SBR) - Table Saw-10"x 3hp	$250.00	$1.45
(SBR) - Concrete Saw 13 Hp	$275.00	$1.59
(SCR) - Cut Off Saw, 14" Gas	$450.00	$2.60

Equipment Description	Month	Hrly Rate
(SR) - Compound Mitre Saw 12"	$325.00	$1.88
(T) - 500 to 1000 gal Tank	$125.00	$0.72
(TBR) - Knack Portable Workstation, Flammable Cabinet	$125.00	$0.72
(UJB) - B Box - 100amp 3 phase	$150.00	$0.87
(UMP) - 200 AMP Panel	$285.00	$1.65
(UP) - Spider Box - 50 AMP, 1 Phase	$120.00	$0.69
(UP) - C Panel 60 amp 3 phase	$250.00	$1.45
(V) - Concrete Vibrator to 2" x 16'	$250.00	$1.45
(V) - Concrete Vibrator Hi Cycle	$500.00	$2.89
(V) - Concrete Vibrator Gas	$340.00	$1.97
(W) - 250 AMP Electric Welder	$250.00	$1.45
(WF) - Farm Wagon	$185.00	$1.07
(WF) - Tank Wagon	$365.00	$2.11
Site Fencing (Cost per Month/LF)	$0.20	n/a
(WX) - Cutting Torch Outfit	$350.00	$2.02

Downtown Condominium Project
Sidewalk and Street Use Permits

2nd Avenue Street	**$0**
Alley	**$0**
Broad St.	**$0**
Unknown	**$0**
Total Estimate	**$0**

2nd Avenue Street (Arterial)
Lane Closure

	Date	Length	Width	Cost/sf	Cost/30 dys
Month 1					$0
Month 2					$0
Month 3					$0
Month 4					$0
Month 5					$0
Month 6					$0
Month 7					$0
Month 8					$0
Month 9					$0
Month 10					$0
Month 11					$0
Month 12					$0
Month 13					$0
Month 14					$0
Month 15					$0
Month 16					$0
Month 17					$0
Month 18					$0
Month 19					$0
Month 20					$0
			2nd Avenue		**$0**

2nd Avenue Sidewalk (Arterial)

	Length	Width	Cost/sf	Cost/30 dys
Month 1				$0
Month 2				$0
Month 3				$0
Month 4				$0
Month 5				$0
Month 6				$0
Month 7				$0
Month 8				$0
Month 9				$0
Month 10				$0
Month 11				$0
				$0

Alley (non Arterial)

	Length	Width	Cost/sf	Cost/30 dys
Month 1				$0
Month 2				$0
Month 3				$0
Month 4				$0
Month 5				$0
Month 6				$0
Month 7				$0
Month 8				$0
Month 9				$0
Month 10				$0
Month 11				$0
Month 12				$0
Month 13				$0
Month 14				$0
				$0

Broad St. (Arterial)
Lane Closure

Month 1					$0
Month 2					$0
Month 3					$0
Month 4					$0
Month 5					$0
Month 6					$0
Month 7					$0
Month 8					$0
Month 9					$0
Month 10					$0
Month 11					$0
Month 12					$0
Month 13					$0
Month 14					$0
Month 15					$0
Month 16					$0
Month 17					$0
Month 18					$0
Month 19					$0
Month 20					$0
Month 21					$0
Month 22					$0
				Broad St.	**$0**

SidewalkClosure- Broad (Arterial)

	Date	Length	Width	Cost/sf	Cost/30 dys
Month 1					$0
Month 2					$0
Month 3					$0
Month 4					$0
Month 5					$0
Month 6					$0
					$0

Note: Modify this worksheet as necessary to respond to this section.

STREET USE PERMIT FEE SCHEDULE

Effective January 1, 2007

Activities that use the public Right-of-Way and that block mobility					
Use Code	**Use Description**	**Base Permit Fee**	**Franchise and Utility Map Surcharge**	**Occupation Fee (Long Term)**	**Use Fee (Short Term)**
3A	street barricading for temporary private use (e.g.: grand openings, rallies)	$101	$30	N/A	**ON NON-ARTERIAL** mo 1=no fee, mo2&3=$.10/sf/10d mo4&5=$.20/sf/10d mo6&7=$.40/sf/10d mo8&9=$.80/sf/10d mo10+=$1.20/sf/10d in mo 10+ up to $.20/sf/10day credit for mobility mitigation **ON ARTERIAL** mo1=$.10/sf/10d mo2=$.20/sf/10d mo3=$.40/sf/10d mo4=$.80/sf/10d mo5=$1.20/2f/10d in mo5+ up to $.20/sf/10d credit for mobility mitigation
13	temporary placement of materials not for construction, and for bus staging				
15	installation of public art				
22	shoring and excavation				
31	construction use				
31B	single family construction/debris dumpster				
31C	low income housing construction				
40	roadway paving				
41	bus shelter installation				
44	mobile crane, manlift, boom truck, pump truck, etc				
46	waterproofing or similar surfacing of concrete walks over areaways				
49	street opening for miscellaneous purposes				
50	scaffold, swing staging, scissor lift				
45	commercial or multi-use construction street improvement [public improvements by private development]	$2500 per application			
45A	single family residential construction street improvement [public improvements by private development]	$1250 per application			

STREET USE PERMIT FEE SCHEDULE

Effective January 1, 2007

Utility activities that use the public Right-of-Way and that block mobility					
Use Code	**Use Description**	**Base Permit Fee**	**Franchise and Utility Map Surcharge**	**Occupation Fee (Long Term)**	**Use Fee (Short Term)**
51	utility system construction	$101	$30	N/A	**ON NON-ARTERIAL** mo 1=no fee, mo2&3=$.10/sf/10d mo4&5=$.20/sf/10d mo6&7=$.40/sf/10d mo8&9=$.80/sf/10d mo10+=$1.20/sf/10d in mo 10+ up to $.20/sf/10day credit for mobility mitigation **ON ARTERIAL** mo1=$.10/sf/10d mo2=$.20/sf/10d mo3=$.40/sf/10d mo4=$.80/sf/10d mo5=$1.20/2f/10d in mo5+ up to $.20/sf/10d credit for mobility mitigation
51A	utility main line or inserts				
51B	utility poles (less than 500 51B uses per year based on prior year volumes)				
51C	utility aerials				
51D	utility service connections and repairs =2" diameter (less than 500 51D uses per year based on prior year volumes)				
51E	utility maintenance (including vault replacements and pole bases)				
51G	utility service conduit by private party				
51H	utility poles (more than 500 51H uses per year based on prior year volumes)				
51I	utility service connections and repairs =2" diameter (more than 500 51I uses per year based on prior year volumes)				
51F	use of right-of-way for staging, curb crossing or excavation related to side sewer work				None

STREET USE PERMIT FEE SCHEDULE

Effective January 1, 2007

Activities that use the public Right-of-Way that involve little to no mobility blockage					
Use Code	**Use Description**	**Base Permit Fee**	**Franchise and Utility Map Surcharge**	**Occupation Fee (Long Term)**	**Use Fee (Short Term)**
23	cornices, architectural features	$101	$30	N/A	None
25	driveways				
26	concrete driveways "Curb Cut"				
28	water service lines less than 2" in diameter				
29	fences and non-structural walls				
34	grade and rock (temporary)				
35	clear and grub street and alley				
37	new sidewalk with existing curb				
38	surfacing planting strip or shoulder, including required landscaping				
43	tree removal when blocking street				
47	cross curb and sidewalk with equipment				
52A	pole banners [up to four blocks per permit]				
54A	miscellaneous private temporary uses up to 4 hours				

STREET USE PERMIT FEE SCHEDULE

Effective January 1, 2007

Activities that have value to the general citizenry					
Use Code	**Use Description**	**Base Permit Fee**	**Franchise and Utility Map Surcharge**	**Occupation Fee (Long Term)**	**Use Fee (Short Term)**
1	beautification	None	None	None	None
1A	tree pruning, planting, and removal and other plantings				
5A	clocks in public Historic Landmark places				
54	miscellaneous uses for use of public per SMC 15.04.100				
55	sidewalk repair (less than 100 sq. ft.)				
55A	sidewalk repairs (100 sq. ft. or greater)	$101			
Miscellaneous					
Use Code	**Use Description**	**Base Permit Fee**	**Franchise and Utility Map Surcharge**	**Occupation Fee (Long Term)**	**Use Fee (Short Term)**
57	impound fee	$97 per occurrence	None	N/A	N/A
58	sign removal	$78 per sign or poster			
59	mobility impact surcharge	$360			

STREET USE PERMIT FEE SCHEDULE

Effective January 1, 2007

Activities that occur over more than one year

Use Code	Use Description	Base Permit Fee	Franchise and Utility Map Surcharge	Occupation Fee (Long Term)	Use Fee (Short Term)
2	small directional signs	$101 (first year); $97 (subsequent years)	$30 (first year)	None	N/A
2B	portable signs (i.e.: sandwich board signs, "A" frames, etc.)				
3	street barricading for private use				
5	clocks				
6	signs, flags, etc. extending over ROW				
7B	ramp primary access over underwater street				
8	ventilating ducts				
9	underground vaults				
14	miscellaneous renewable uses				
14A	vending carts				
14B	tables and chairs [max 4]				
16A	inactive areaways prior to January 1, 1995				
17	sidewalk elevator doors				
21A	non-public utilities				
21B	underground storage tanks				
27A	stanchions				
29A	structural retaining walls/rockeries				
33	contractors' trucks/equipment per vehicle				
48	building maintenance over ROW [per bldg]				
52	street decorations				

STREET USE PERMIT FEE SCHEDULE

Effective January 1, 2007

Long term uses of the Right-of-Way					
Use Code	**Use Description**	**Base Permit Fee**	**Franchise and Utility Map Surcharge**	**Occupation Fee (Long Term)**	**Use Fee (Short Term)**
61	term uses for long-term street level occupations (structures in right-of-way)	Fees determined by ordinance			
61A	term uses for skybridges or bridges over right-of-way				
61B	term uses for tunnels under right-of-way				
61C	term uses for pipelines in right-of-way				
61D	other term uses in right-of-way (including utility franchises)				

STREET USE PERMIT FEE SCHEDULE

Effective January 1, 2007

Occupation of Right-of-Way street					
Use Code	**Use Description**	**Base Permit Fee**	**Franchise and Utility Map Surcharge**	**Occupation Fee (Long Term)**	**Use Fee (Short Term)**
2A	fixed ground signs	$101 (first year); $97 (subsequent years)	$30 (first year)	$590/yr	N/A
21	underground storage in street				
7	structures and overhangs			$.51/sf/yr	
12	material storage				
16	areaways existing prior to January 1, 1995				
18	sidewalk cafes			$1.56/sf/yr	
18A	merchandise on sidewalks				
22B	shoring unremoved (must be removed to a point 4 ft below finished grade)			$1011/pile	
27	awnings, marquees and canopies [plus 27A if stanchions]	$101		$.51/sf	

STREET USE PERMIT FEE SCHEDULE

Effective January 1, 2007

Occupation of underwater street					
Use Code	**Use Description**	**Base Permit Fee**	**Franchise and Utility Map Surcharge**	**Occupation Fee (Long Term)**	**Use Fee (Short Term)**
7A	structures and overhangs in underwater streets	$101 (first year); $97 (subsequent years)	$30 (first year)	$0.14/sf/mo	N/A
12A	moorage not covered elsewhere				
WW100	installations and overhangs in state waterways				
WW200	moorage in state waterways				
WW250	temporary moorage or other uses of state waterways				
WW150	non-profit organizations water safety for youth			None	

Per ordinance or council action					
Use Code	**Use Description**	**Base Permit Fee**	**Franchise and Utility Map Surcharge**	**Occupation Fee (Long Term)**	**Use Fee (Short Term)**
11	shoreline street ends [land portion]	Fees determined by ordinance			
14C	1st amendment vending	$40	None	$35/mo	None
14D	stadium vending [April - September]	None		$121.50/mo	
14E	stadium vending [October - March]	None		$18/mo	
16B	areaways built after January 1, 1995	Fees based upon appraisal			

STREET USE PERMIT FEE SCHEDULE

Effective January 1, 2007

Other Fees and Charges

Hourly Charge for Street Use service including but not limited to: review, investigation, inspection, drafting, design guidance, document preparation and other activities related to the administration of the permit	*$150*
Penalty Fee (No Job Start Call, No Permit)	*$300*
Pre-Submittal Consultation Fee	*$375*
A Deposit may be required	*Amount determined based on services requested*

Downtown Condominium Project
Seattle, WA

CONC. PRICING

SPEC/PROD	ITEM	MH	QTY		UNIT	MATERIAL	UNIT	EQUIP/SUB	CREW RATE	PROD	LABOR	TOTAL
	FOUNDATIONS					0		0			0	0
	FORM STRIP FOOTINGS	272	1,360	SF	1.50	2,040		0	51.66	0.20	14,052	16,092
	PLACE CONCRETE	56	159	CY	85	13,515		0	46.11	0.35	2,566	16,081
	PUMP	0	159	CY		0	15.00	2,385			0	2,385
						0		0			0	0
	FORM PAD FOOTINGS	0	5952	SF		0		0			0	0
	PLACE PAD FOOTINGS	0	463	CY		0		0			0	0
	PUMP	0	463	CY		0		0			0	0
						0		0			0	0
	FORM SPREAD FOOTINGS	0	224	SF		0		0			0	0
	PLACE SPREAD FOOTINGS	0	17	CY		0		0			0	0
	PUMP	0	17	CY		0		0			0	0
						0		0			0	0
	FORM RAFT SLAB	0	1904	SF		0		0			0	0
	PLACE RAFT SLAB CONC.	0	705	CY		0		0			0	0
	PUMP	0	705	CY		0		0			0	0
						0		0			0	0
	(Add to and Expand this Spread Sheet as Necessary)					0		0			0	0
						0		0			0	0
						0		0			0	0
						0		0			0	0
						0		0			0	0
						0		0			0	0
						0		0			0	0
						0		0			0	0
						0		0			0	0
						0		0			0	0
						0		0			0	0
						0		0			0	0
						0		0			0	0
	Temporary Rails @ Perimeter		1	LS		0	115,505	115,505			0	115,505
	Tower Crane Estimate		1	LS		0	958,668	958,668			0	958,668
	Mobile Cranes		1	LS		0	50,000	50,000			0	50,000
	Structure Overhead		1	LS		0	1,277,190	1,277,190			0	1,277,190
						15,555		2,403,748			16,618	2,435,921
	Subtotal				0.0%	0		--			--	0
						15,555		2,403,748			16,618	2,435,921
	Subtotal					0		--			--	0
						--		--			0	0
	FEE on Self Performed Work					--		--			0	0
	Total	0				**0**		**2,403,748**			**0**	**0**

EXTENDED BY
CHECKED BY _____

CONCRETE

Downtown Condominium Project
Historic Productivities - Concrete Related

Description	UOM	Prod. Rate
Footing Forms- Pads	MH/SF	0.200
Footing Forms- Continous	MH/SF	0.200
Form Spread Footings	MH/SF	0.200
Form Raft Slab	MH/SF	0.200
Form Slab Edge	MH/SF	0.250
Grade Beam Forms	MH/SF	0.250
Pile Cap Forms	MH/SF	0.300
SOG Edge Form/Const. Jt.	MH/SF	0.200
Form Slab Edge	MH/SF	0.250
Form Walls	MH/SF	0.200
Form 1-sided Walls	MH/SF	0.175
Form 2 Sided Walls	MH/SF	0.100
Form Core Walls	MH/SF	0.090
Form Shear Walls	MH/SF	0.100
Form Door Openings	MH/SF	0.100
Form Columns	MH/SF	0.100
Form Elevated Slab	MH/SF	0.085
Set Screeds	MH/SF	0.002
Transfer Beam Forms	MH/SF	0.100
Curved Wall Form	MH/SF	0.250
Dome Slabs	MH/SF	0.150
Place Mudd Slabs	MH/CY	0.835
Place Pad Footings	MH/CY	0.350
Place Continous Footings	MH/CY	0.350
Place Slab on Grade	MH/CY	0.500
Place Shear Walls	MH/CY	0.500
Place Core Walls	MH/CY	0.600
Place 1 Sided Walls	MH/CY	0.500
Place Columns	MH/CY	0.600
Place Slab on Metal Deck	MH/CY	1.500
Place Elevated Slab	MH/CY	0.350
Place Transfer Beams	MH/CY	0.500
Place Ductbank Concrete	MH/CY	2.500
Place Topping Slab	MH/CY	1.500
Finish SOG	MH/SF	0.0082
Finish Elevated Slab	MH/SF	0.0082
Cure SOG	MH/SF	0.001
Cure Elevated Slab	MH/SF	0.001
Cure & Protect	MH/SF	0.004
Patch & Grind Walls	MH/SF	0.010
Patch & Grind Columns	MH/SF	0.010
Grind Soffits	MH/SF	0.020

Use the following information for Concrete Pricing:

Crew Labor Rates:

Flagmen	$41.15/Hr
Demo/Excav Lab	$45.95/Hr
Laborer Concrete Placing	$46.11/Hr
Laborer- Place Slabs	$49.62/Hr
Rough Carp-Interior	$53.52/Hr
Form Carp- Foundations	$51.66/Hr
Form Carp- Walls and Cols	$54.48/Hr
Form Carp- Slabs	$53.63/Hr
Form Carp- Elevated Decks	$52.28/Hr
Form Carp- Core Walls	$52.87/Hr

Note: Labor rates are a composite crew rate and fully burdened. NR= Non-Repetitive.

Form Lumber/Misc. Hardware:	$1.50/SF
Heat & Protect Concrete:	$4.00/CY

Concrete Pumping:
32 Meter: $100/Hr & 2.00/CY + $40 Travel Charge
55 Meter: $220/Hr & 3.00/CY + $100 Travel Charge
32 Meter Placing Boom: $190/Hr + 2.75/CY

CADMAN
HEIDELBERGCEMENT Group®

Quote No.

Customer:	P C L Construction	Customer #		Date:	03/24/06
Project Name:	2nd & Broad	Bid Date:		Contact:	Cam
Job Address:	2nd & Broad	Prices Escalate:	$4.00 Effective: 1/1/08	Phone #	425-454-8020
		Sale Type:	3	Fax #	425-990-3537
City/County:	Seattle	Zone:	565D	Cell / Pgr#	
P.O. Number:		Pre.Wage:	No	Expiration:	12/15/07

Product Description	Mix #	Plant	Price Per Cubic Yard
Foundation - 5000 PSI @ 56 Days 6" Slump	581081R	54	$82.50
Slab on Grade - 3000 PSI .45 w/c 6" Slump	631081R	54	$83.50
Elevated Beams & Slabs - 6000 PSI 6" Slump	661281	54	$90.00
Elevated Beams & Slabs - 6000 PSI 8" Slump	661281R	54	$92.00
Elevated Beams & Slabs - 6000 PSI 6" Slump Air	661283	54	$90.00
Elevated Beams & Slabs - 6000 PSI 8" Slump Air	661283R	54	$92.00
Columns & Shear Walls - 8000 PSI 8" Slump	200004	54	$94.50
Basement Walls - 4000 PSI 6" Slump	551081R	54	$80.00

6-4:30 ST
4:30 OT @ 1.00/min 6:00 PM
6:01- 2.00/min

05/12/06
TOM CALLED & CONFIRMED
QUOTE IS STILL GOOD!

Environmental Surcharge	Add $3.50
Winter Heat (November 15th - March 15th)	Add $2.75
Fuel surcharge will apply 1.25/y	ADD 2.50
Repelex with Hycrete - Complete Waterproof Concrete System (Includes 10 year performace based warranty upon approv	$190.00
Pump Blowback (Per Occurrence)	$100.00
Fibermesh Secondary Reinforcement	$10.00
Fiber Mix Secondary Reinforcement	$7.00
Novomesh Fiber (Replaces W2.9 or light rebar mat)	$25.00

READY MIX PLANT NUMBERS
REDMOND 50 ■ BELLEVUE 53 ■ SKY RIVER 30 ■ MILL CREEK 31 ■ ISSAQUAH 51 ■ BLACK DIAMOND 40 ■ SEATTLE 54

Ed Gray	(425) 766-7216	(425) 961-7390
SR. SALES REPRESENTATIVE	*PHONE*	*FAX NUMBER*

SAT. PREMIUM OVER 200 y @ 6.00/y

Acceptance of quote is acceptance of Cadman's Terms and Conditions, receipt of which is acknowledged.

All materials subject to availability. All prices based on full loads.

Quote is based on agreed products and quantities at bid time. Selective purchasing may void above pricing.

Ten minutes allowed for unloading aggregate. Seven minutes per cubic yard allowed for unloading concrete. Standby fee of $105.00 per hour is assessed beyond these limits.

Short load fee of $25.00 per cubic yard of concrete will be assessed for each yard under 8. Saturday delivery premium is $12.00 per cubic yard.

READY MIX DISPATCH (425) 961-7100 **AGGREGATE DISPATCH: (425) 961-7200**

Notes: FAILURE TO SIGN AND RETURN WITHIN 30 DAYS OF BID DATE, WILL VOID THIS QUOTE.

Confirmed by: ______
Date: ______
Purchase Order: ______

CADMAN
HEIDELBERGCEMENT Group

Quote No.

Customer:	P C L Construction	Customer #		Date:	03/24/06
Project Name:	2nd & Broad	Bid Date:		Contact:	Cam
Job Address:	2nd & Broad	Prices Escalate:	5% Effective: 1/1/08	Phone #	425-454-8020
		Sale Type:	3	Fax #	425-990-3537
City/County:	Seattle	Zone:	565D	Cell / Pgr#	
P.O. Number:		Pre.Wage:	No	Expiration:	12/15/07

Product No.	Description	B/Fill ◆ Pit No.	Price per Cubic Truck Yard	Agg ◆ Pit No.	Base Price Per Ton	Environmental Surcharge	Total Pick Up Per/Ton	Total Delivered Sale / Ton	Total Delivered T&T / Ton
1000	1 1/2 " - 3/4" Washed			6	12.50	1.00	$13.50	$19.45	$17.35
2150	1 1/4"- 0 Minus Rock			6	11.50	1.00	$12.50	$18.45	$16.35
2250	5/8"- Minus Rock			6	11.80	1.00	$12.80	$18.75	$16.65
1120	Pea Gravel			6	14.50	1.00	$15.50	$21.45	$19.35
1320	Fill Sand			6	9.00	1.00	$10.00	$15.95	$13.85
2355	5/8" Clear Crushed			6	13.00	1.00	$14.00	$19.95	$17.85
1255	Type 17			6	9.25	1.00	$10.25	$16.20	$14.10

Fuel surcharge will apply.

◆ PIT NUMBERS ◆

REDMOND 1 ◆ HIGHROCK 2 ◆ SKY RIVER 3 ◆ BLACK DIAMOND 4 ◆ ISSAQUAH 5 ◆ SEATTLE 6 ◆ NORTH BEND 9 ◆ GOLD BAR 11

Ed Gray
SR. SALES REPRESENTATIVE

(425) 766-7216
PHONE

(425) 961-7390
FAX NUMBER

Acceptance of quote is acceptance of Cadman's Terms and Conditions, receipt of which is acknowledged.

All materials subject to availability. All prices based on full loads.

Quote is based on agreed products and quantities at bid time. Selective purchasing may void above pricing.

Ten minutes allowed for unloading aggregate. Seven minutes per cubic yard allowed for unloading concrete. Standby fee of $105.00 per hour is assessed beyond these limits.

Short load fee of $25.00 per cubic yard of concrete will be assessed for each yard under 8. Saturday delivery premium is $12.00 per cubic yard.

READY MIX DISPATCH (425) 961-7100 AGGREGATE DISPATCH: (425) 961-7200

Notes: FAILURE TO SIGN AND RETURN WITHIN 30 DAYS OF BID DATE, WILL VOID THIS QUOTE.

Confirmed by: _____

Date: _____

Purchase Order : _____

CADMAN
HEIDELBERGCEMENT Group

Cadman, Inc.
Fuel Surcharge Calculation Chart

Diesel Price	Charge Per Load
Less than $1.75 per gallon	N/C
$1.75 - $1.99	$2.50
$2.00 - $2.24	$5.00
$2.25 - $2.49	$7.50
$2.50 - $2.74	$10.00
$2.75 - $2.99	$12.50
$3.00 - $3.24	$15.00
$3.25 - $3.49	$17.50

Each week, we update our surcharge to reflect the prior week's diesel price, established by the West Coast Diesel Price Index. If you would like up-to-date information, you can check the weekly price on line through the D.O.E. home page at www.eia.doe.gov.

We appreciate your business and sincerely thank you for your patronage.

CADMAN, INC.
ADDITIONAL COSTS/CHARGES
SCHEDULING/SERVICE INFORMATION

Environmental/Regulatory Surcharge: An environmental surcharge of $3.50 per cubic yard of concrete and $1.00 per ton of aggregate will be added to all invoices.
Fuel Surcharge: A fuel surcharge will be added to all deliveries.
Winter Heat: A winter heat surcharge of $2.75 per cubic yard of concrete is in effect during the period of November 15th – March 15th.
Minimum Loads: Our minimum concrete load is eight (8) cubic yards. A short load surcharge of $25.00 per every yard under eight (8) will be added to smaller loads. Our minimum load for aggregate delivery is 15 tons. Loads under 15 tons will be charged for time and material.
Standby Time: A standby surcharge is assessed for concrete loads that exceed seven (7) minutes per cubic yard unloading time on the jobsite and ten (10) minutes per load aggregate. Additional time will be charged at $105.00 per hour or $1.75 per minute.
Overtime: Concrete deliveries between 4:30 PM and 6:00 PM are subject to an overtime surcharge of $60.00 per hour. This time will be calculated from "time truck leaves plant" until "back at plant". After 6:00 PM charges will be at double time or $120.00 per hour. All scheduled pours starting after 6:00 PM will be subject to special opening fees.
Special Openings: Concrete orders which require a special plant opening (Sundays, holidays, non-working Saturdays, pours starting before 4:00 AM or after 6:00 PM) will be invoiced at an additional $1,200.00 for plant opening with operator and $650.00 per truck required. Charges for special aggregate plant openings are handled on a per job basis based on equipment, personnel and product needs.
Extended Hauls: Deliveries over 45 minutes from plant will be subject to an extended haul surcharge at $1.75 per minute for each minute over 1.5 hours total travel time (or 45 minutes one way).
Early Starts: Concrete orders with start times between 4:00 AM and 6:00 AM will be charged an early start plant opening at $200.00 per hour and overtime at $1.00 per minute, (per truck) until 6:00 AM.
Saturday Deliveries: A $12.00 per cubic yard premium will be assessed for all concrete delivered on a working Saturday. Non-working Saturdays are subject to Special Openings. Saturday delivery hours are between 7:00 AM and 1:00 PM.
Pump Blowback: A pump blowback surcharge, at $100.00 per occurrence, is charged if a concrete pump cleans up or blows back into our ready mix truck.
Color Washout: A color washout surcharge, of $35.00 per truck, will be charged for color added at job site.
Returned Concrete: Returned concrete, over two cubic yards, may be subject to a $25.00 per cubic yard disposal surcharge and truck time to disposal site.
Late Cancellations: A cancellation surcharge of $250.00 may be charged for firm orders cancelled less than 3 hours prior to confirmed pour.

Scheduling/Service Information

- Purchaser's changes to original delivery request shall be made to Cadman's dispatch office only and not through Cadman drivers, quality assurance personnel, or sales representatives.
- Cadman has no responsibility to communicate with Purchaser when Pump Company holds or cancels orders.
- Will call orders will be subject to cancellation if not confirmed by 1:00 p.m. the day prior to delivery.
- All orders placed after 1:00 p.m. are subject to changes based on availability.
- All first round orders, prior to 8:00 a.m., are required to be placed as firm orders.
- Cadman does not guarantee on-time service for **same day** orders, time changes, or increased ordered quantity.
- The obligations of Cadman are subject to contingencies of strikes, accidents, delays in transportation, governmental regulations, fires or any other causes unavoidable or beyond our control.
- Purchaser agrees that it waives its right to reject acceptance of Cadman materials without notification in writing within three (3) business days after receipt.
- Deliveries beyond the nearest public road, including access to the job site, are the responsibility and/or the risk of the purchaser.
- Aggregates supplied to this project may be sourced from different locations.
- All materials are subject to availability.

Minimum Batch Sizes: Following are the minimum required batch sizes for the different classes of concrete.

Colored Concrete	3 Yard Minimum
Normal Weight Concrete – Less than 5000 PSI	1 Yard Minimum
Normal Weight Concrete – 5000 PSI or Greater	2 Yard Minimum
Light Weight Concrete	2 Yard Minimum

Cadman, Inc. Terms and Conditions

1. TERMS OF PAYMENT •Terms of payment to customers of satisfactory and approved credit are net cash on or before the 10th of the month following delivery. •In the absence of any such credit terms, all deliveries under this contract are 'collect on delivery' (COD). •Transactions after the 25th day of each month will appear on the subsequent month's statement. •Accounts are considered delinquent if payment has not been received in our office by the 25th of the month following purchase. Delinquent accounts on the 15th of the following month shall be placed on a cash only basis for future purchases until the delinquency is paid in full. Interest at 18% will be charged on overdue accounts. •Credit cards are accepted at time of purchase only. If payment is made by bankcard after purchase date, a 3% fee will be incurred. •Purchaser shall make all payments due hereunder in lawful money of the United States and in the accordance with the above terms, without any retention and without regard to any agreement Purchaser may have with other parties. Attorneys' Fees and Costs Should legal action be necessary to collect this invoice, whether or not suit be instituted, Cadman shall be entitled to recover reasonable attorney fees and costs, including appeals, bankruptcies and post-judgment collection efforts. It is agreed that any suit brought under any contract or agreement with customer shall be in King County, WA. •CADMAN ROUTINELY EXERCISES IT'S RIGHT TO SEND MATERIALMAN'S NOTICES ON ALL JOBS. •All Federal, State, and local taxes, assessments, fees, duties, and charges leveled by reason of this proposal are in addition to prices quoted and shall be paid by purchaser. •NSF/Returned checks are subject to a handling charge and are not re-deposited. Cadman requires NSF checks to be replaced with cash or cashier's check. •Lack of purchase order or job numbers do not affect the terms of sale.

2. ADDITIONAL COSTS/CHARGES •An Environmental Surcharge is added to all ready mix and aggregate invoices. A Fuel Surcharge may be added to all deliveries. Surcharges are intended to cover Cadman's increasing expenses in complying with environmental regulations and increasing energy/fuel costs. Surcharges are not taxes or costs required by any federal, state or local authority. •A Winter Heat surcharge is in effect during the period of November 15th – March 15th. •Our minimum concrete load is eight (8) cubic yards. A Short Load surcharge will be added to every yard under eight. Our minimum load for aggregate delivery is 15 tons. Loads under 15 tons will be charged time and material. •A Standby surcharge is assessed for concrete loads that exceed seven (7) minutes per cubic yard unloading time on the jobsite and ten minutes per load aggregate. •Concrete deliveries between 4:30pm and 6:00pm are subject to an Overtime surcharge. This time will be calculated from "time truck leaves plant" until "back at plant." After 6:00pm charges are at double time rate. •Deliveries over 45 minutes from plant will be subject to an Extended Haul surcharge for each minute over 1.5 hours total travel time (or 45 minutes one way). •Concrete orders with start times between 4:00am and 6:00am will be charged an Early Start Plant Opening and Overtime until 6:00am. •A Special Opening surcharge is charged for all orders placed on Sundays, holidays, jobs starting after 6:00pm, and non-scheduled Saturday pours. •Saturday Deliveries are charged a premium for each cubic yard delivered. Saturday delivery hours are between 7:00am and 1:00pm. •A Pump Blowback surcharge is charged if a concrete pump cleans up or blows back into our ready mix truck. An additional surcharge, at Cadman's discretion, may be added for returned concrete due to clean-up process. •A Color Washout Surcharge will be charged for color added at job site. •Returned Concrete over two cubic yards may be subject to a disposal surcharge and truck time to disposal site. •A Cancellation Surcharge may be charged for firm orders cancelled less than 3 hours prior to confirmed pour.

3. SCHEDULING/SERVICE INFORMATION •Purchaser's changes to original delivery request shall be made to Cadman's dispatch office only and not through Cadman drivers, quality assurance personnel, or sales representatives. •Cadman has no responsibility to communicate with Purchaser when Pump Company holds or cancels orders. •Will call orders are subject to cancellation if not confirmed by 1:00pm the day prior to delivery. All orders confirmed after 1:00pm are subject to changes based on availability. •All first round orders, prior to 8:00am, are required to be placed as firm orders. •Cadman does not guarantee on-time service for same day orders, time changes, or increased ordered quantity. •The obligations of Cadman are subject to contingencies of strikes, accidents, delays in transportation, governmental regulations, fires or any other causes unavoidable or beyond our control. •Minimum Batch Sizes: Colored Concrete – 3 Yard Minimum; Normal Weight Concrete (Less than 5000 PSI) – 1 Yard Minimum; Normal Weight Concrete (5000 PSI or Greater) – 2 Yard Minimum; Light Weight Concrete – 2 Yard Minimum. •**All materials are subject to availability.**

4. LIABILITY DISCLAIMER AND INDEMNITY FOR DELIVERY BEYOND PUBLIC ROAD All concrete deliveries will be made in concrete transit mixer trucks to curb of public roadway unless otherwise directed by Purchaser. In the event Purchaser directs delivery to be made beyond curb line, Purchaser agrees as follows: Purchaser has requested Cadman to make use of a path for the delivery of materials and access to the project requiring Cadman trucks to travel beyond the boundaries of the nearest traveled public road. Purchaser acknowledges that damage to the premises and/or adjacent property may occur because of the size and weight of Cadman trucks and Cadman trucks may become damaged, disabled or stuck using Purchaser's required path. **Cadman disclaims any liability or responsibility for damage of any kind that arises from Cadman's use of Purchaser's required path.** Purchaser agrees to defend, indemnify and hold harmless Cadman from all claims, liability, damages, costs, judgments or losses of any kind (including reasonable attorney's fees and costs) resulting from damage to property of any kind (including damage to Cadman's trucks) arising from or in any way connected to Cadman's use of the required path. Upon Cadman's tender of defense under this provision, the Purchaser agrees to appoint counsel of Cadman's choice to defend against third party claim(s). Such counsel will be at the sole expense of purchaser.

5. PERSONAL INJURY INDEMNITY PROVISION •This indemnification provision is part of the terms and conditions between the Purchaser and Cadman and is intended to comply with the provisions of RCW 4.24.115. In the event of any conflicts between this document and any other term, subcontract or agreement between the Purchaser and Cadman this document shall control. •The Purchaser agrees to defend, indemnify, and hold harmless Cadman from any and all bodily injury/negligence based or damage to property/contract based claims, demands losses, and liabilities to or by third parties arising from, resulting from, or connected in any way with the product or products sold by Cadman to Purchaser, even through such claims may prove to be false, groundless or fraudulent, to the fullest extent permitted by law and subject to the limitations provided below. •Purchaser's duty to indemnify Cadman shall not apply to liability for damages arising out of bodily injury to persons or damage to property caused by or resulting from the sole negligence of Cadman or its agents or employees. Purchaser's duty to indemnify Cadman for liability for damages arising out of bodily injury to persons or damage to property caused by or resulting from the concurrent negligence of (a) Cadman or its agents or employees, and (b) Purchaser or its agents or employees shall apply only to the extent of negligence of Purchaser or its agents or employees, provided, this paragraph shall not apply in situations where negligence is not a requirement of Purchaser's liability, such as in contract. •**Purchaser specifically and expressly waives any immunities that may be granted it under the Washington State Industrial Insurance Act, Title 51 RCW, or the laws of any other state, provided that such waiver shall be expressly limited to Purchaser's indemnity obligations herein and shall not be a benefit to any third party.** Further, the indemnification obligation under this provision shall not be limited in any way by any limitation on the amount or type of any damages, compensation or benefits payable to or for any third party under worker's compensation acts, disability benefits acts or other employee benefits acts. Purchaser's duty to defend, indemnify and hold Cadman harmless shall include payment of all damages, costs, interest, penalties, reasonable attorneys' fees, Cadman's personnel-related costs, and all other claim-related expenses. Upon Cadman's tender of defense under this provision, the Purchaser agrees to appoint counsel of Cadman's choice to defend against third party claim(s). Such counsel will be at the sole expense of the Purchaser. THE PURCHASER HEREBY CERTIFIES THAT THE PROVISIONS OF THIS DOCUMENT WERE SPECIFICALLY AND MUTUALLY NEGOTIATED.

6. POINT OF ACCEPTANCE The Purchaser's point of acceptance is at the truck chute. Cadman does not accept responsibility for physical changes to the concrete caused by job delays, delivery systems, placing of equipment or circumstances beyond our control.

7. WAIVER/DISCLAIMER IN EVENT OF ADDITION OF WATER AND/OR FOREIGN MATERIAL If water and/or foreign material is added to the concrete by or at the request of the Purchaser, its employees, agents, contractors or subcontractors, Purchaser agrees to accept the concrete as altered and specifically and knowingly waives all rights to reject, revoke acceptance of, or assert any claim for breach of any warranty related to the altered concrete. Further, Cadman disclaims and shall not be responsible for the strength, slump or other properties of the altered concrete.

8. CONCRETE TESTING Purchaser agrees that all ready mix concrete testing, including concrete strength testing for acceptance, shall be in accordance with ASTM, UBC and ACI requirements and guidelines and that Cadman shall be provided with a copy of all test results within three (3) working days of the performance of tests on Cadman's concrete. Notification of deficient concrete compressive strength test results: Purchaser agrees to notify Cadman in writing within twenty-four (24) hours of deficient concrete compressive strength test results, to retain test specimens, and to make them available to Cadman for further inspection and testing.

9. CADMAN HEREBY EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES No warranties, express or implied, (including warranties of fitness for a particular purpose or warranties of merchantability) are made and all materials are sold "AS IS". Cadman is not responsible for consequential or incidental damages of any kind including but not limited to any expenses related to construction defects, delay damages, impact damages, lost profits, labor costs, equipment and tool costs, material costs, bond and insurance costs, home office overhead costs, jobsite overhead, interest and attorneys' fees and preparation of claim costs.

10. LIMITATION OF REMEDIES •Purchaser's exclusive remedy for breach of contract shall be as follows: Cadman's liability is limited to (1) the difference between the original purchase price of the Cadman material or (2) the direct cost of repairing the Cadman material, which ever is less. In no event will Cadman be liable for any direct or consequential damages related to its material. •Purchaser agrees that it waives its right to reject acceptance of Cadman materials without notification in writing within three (3) business days after receipt.

TIME LIMITATION Purchaser acknowledges that no legal action may be commenced or maintained by Purchaser as to any claim, known or unknown, based upon negligence or express or implied warranty or contract after 1 year from the last date Cadman delivered material to Purchaser.

TITLE AND RISK OF LOSS Unless otherwise expressly stated herein, title to the materials sold hereunder shall remain with Cadman until Cadman has received full payment for the same. Risk of loss of the materials sold hereunder shall pass to the Purchaser upon delivery of the materials at the place of delivery designated herein. Thereafter, in addition to assuming all risk of loss, Purchaser shall be responsible for compliance with all governmental regulations and ordinances with regard to storage or placement of the same and agrees to indemnify and hold Cadman harmless against all claims resulting from damage to property of any kind arising from the storage, use or handling of said materials.

CONCRETE WARNINGS

Concrete can cause injury to eyes and irritate the skin. Avoid contact with eyes and skin. Wear waterproof gloves, a fully buttoned long-sleeved shirt, full-length trousers, and tight fitting eye protection when working with concrete materials. If you have to stand in wet concrete, use waterproof boots that are tight at tops and high enough to keep concrete from flowing into them. If you are finishing concrete, wear kneepads to protect knees. FIRST AID: If concrete or cement dust is inhaled, remove to fresh air. Get medical attention if irritation persists. Wash wet concrete, mortar, and cement admixtures from your skin with fresh, clean water immediately after contact. Indirect contact through clothing can be as serious as direct contact, so promptly rinse wet concrete, mortar, cement or cement mixtures from clothing. Seek immediate medical attention if you have persistent or severe discomfort. In case of eye contact, flush with plenty of water for at least 15 minutes. Consult a physician immediately. KEEP OUT OF REACH OF CHILDREN. IF INGESTED, CALL POISON CONTROL. PURCHASER AGREES TO CONVEY THIS WARNING TO ALL PERSONS WHO MAY USE OR [illegible] CONTACT WITH WET (UNHARDENED) CONCRETE, MORTOR, CEMENT, OR CEMENT MIXTURES.

	Downtown Condominium Project	Bid Recap:	16A - ELECTRICAL			
Sec	Description	Total Cost				
	Electrical					
	Design Fee	By Owner				
	Residential Units					
	Commons Areas					
	Service					
	Equipment Connections					
	Fire Alarm					
	Generator					
	Telecom/CATV Systems					
	Security Systems					
	CCTV Camera System					
	Video Surveillance System					
	Temp Power	Exlcuded				
	Utility Company Charges	By Owner				
	Electrical Permit	$ 45,000.00				
	Warranty Costs	$ 50,000.00				
	Parking- Onsite	Not Permitted				
	BONDABLE	Not Included				
	PER PLANS AND SPECS					
	Sales Tax	Not Included				
	ADDENDUM 1 & 2					
	UNION /NON UNION					
	ELECTRICAL					

AC/DC Electric Company
900 Poplar Place
Seattle, Washington 98144
(206)624-3400

February 14, 2008

PCL CONSTRUCTION SERVICES
15405 S.E. 37th St
Suite 200
Bellevue WA 98006

Attn: Estimating Dept.

Re: Downtown Condominium Project
Seattle, WA

We are please to submit our design-build electrical proposal for the above referenced project. AC/DC is an open shop non-union electrical contractor with extensive residential experience. We acknowledge receipt of Addendum 1 &2.

Our proposal is based upon the following

RESIDENTIAL -

Each of the 205 units will be equipped with:

1 - Bath mirror fixture type per bathroom.
1 or 4 - Surface drum fixtures depending on the unit size.
1 - 10' track light with 6 halogen heads per kitchen.
1 - Dining Room fixture.
1 - Exterior wall mount fixture for units with a patio or deck (176 total fixtures).
1 - Fan/heat lamp unit per bath (duct work by others) this will serve as the whole house fan.
2 - Dedicated receptacles for kitchen appliance circuits.
1 - GFI receptacle per kitchen and bathroom.
1 - WP receptacle for units with decks or patios (176 total).
1 - Dryer/washer receptacle where indicated.
Duplex receptacles approximately 12' on center in the living areas, bedroom outlets will be on arc fault breakers.
Switching as required.
1 - Recessed wall heater in each living room each with individual wall thermostat.
1 - Baseboard heater in each bedroom room each with individual wall thermostat.
1 - Range hood connection.
1 - Garbage disposal connection.
1 - Dishwasher connection.
1 - Dryer fan connection.
1, 2 or 3 - 120 volt smoke detectors depending on unit size.

We have also included the wiring for the two guest suites in this section.

COMMON AREAS -

19- 2X4 parabolic lay in fixtures.

33 - Recessed fluorescent downlights.
82 - Stairway lights.
95 - fluorescent strip lights.
84- Type A fluorescent garage lights**
113 - Exit lights.
2 - Elevator pit lights.
271 - Corridor surface mount fluorescent dome fixtures.
212 - Wall sconces for unit entry doors.
23 - Exterior wall sconces.
95 - Switches.
138 - Duplex receptacles.
6 - Dedicated receptacles for the fitness room.
4 - WP receptacles.
1 - $ 2,500.00 fixture allowance.

** (151 - if Type B metal halide garage lights are used)

SERVICE -

1 - 3000 amp 277/480 volt main switchboard.
1 - 600 amp 277/480 volt emergency switchboard.
4 - 1200 amp 120/208 volt residential meter centers.
1 - 600 amp 277/480 volt house panel.
1 - 400 amp 277/480 volt emergency panel for roof loads.
4 - 100 amp 120/208 volt house panels.
4 - 100 amp 120/208 volt emergency panels.
1 - 100 amp 120/208 volt single phase loadcenter in each unit (212 total).
1 - 75 KVA transformer.
2 - 750 KVA transformer.
1 - 400 amp 277/480 volt feeder to the future retail space.
40' - Secondary feeder length.
100' - 8-4" Conduit only for SCL primary service.
100' - 4-4" Conduit only for telephone service.
100' - 2-4" Conduit only for cable TV service.

EQUIPMENT CONNECTIONS -

We will provide disconnects and connections to the following equipment. We exclude starters. Since many equipment locations are not known at this time, we have listed our assumed length next to the major pieces of equipment.

1 - 100 HP fire pump (250').
2 - 30 HP elevators (70' ea).
9 - Garage exhaust fans (200' ea).
1 - Transformer room exhaust fan (30').
1 - Trash room exhaust fan (130').
1 - Electrical room fan (30').
5 - Pressurization fans (100' ea).
1 - Supply fan heater (120').
2 - Cabinet heater (170' ea).
2 - Corridor ventilation fans (160' ea).
1 - Elevator room heat pump (80').
4 - Boiler room equipment (30' ea).
4 - Hot Circulation pumps (40').

2 - Common area heat pumps (130' ea).
23 - Fire/smoke dampers.
5 - Motorized dampers.
2 - Storm sump pumps (180' ea).
2 - Sewage sump pumps (180' ea).
2 - Booster sump pumps (180' ea).
1 - Main entry power doors.
1 - Irrigation controller.
10 - Heat trace connections.

FIRE ALARM -

1 - FACP.
90 - Smoke detectors.
43 - Pull stations.
360 - Speakers.
134 - Speaker/strobes.
14 - Strobes.
54 - Fire fighter phone jacks.
42 - Monitoring device connection points.
2 - Elevator recall relays.

GENERATOR -

1 - 350 KW diesel generator.
1 - 600 amp ATS.
We will provide a fuel tank with the capacity to provide 8 hours of operating time.

TELECOMMUNICATIONS & CABLE TV SYSTEM CABLING -

Backbone Cabling-
Install 100 pair phone cable in conduit from the 1st level telecommunications room, located in main electrical room, up to the IDF rooms to be located in a secure and common area on the 4th, 7th, 10th, and 12th floors. Terminate each end on 110-300 pair punch down blocks. Label and verification test each pair end to end.

Install 13mm Coaxial cable in separate conduit from the 1st level telecommunications room, located in main electrical room, up to the IDF rooms to be located in a secure and common area on the 4th, 7th, 10th and 12th floors. This cable is pre-wire only- termination to be done by Comcast.

Install (1) 14 x 24 inch Leviton media panel with voice and CATV termination modules in each residential unit. Install (1) Cat5e voice cable and (1) RG6 coaxial CATV cable from media panel in each unit to the nearest floor serving IDF. Terminate each end, label with unit number and test. CATV cable will be terminated at each media panel only, Comcast will terminate cable at each IDF room. All cables will be labeled with unit number.

Horizontal / Residential Unit Cabling-
Install (1) Cat5e voice cable to each bedroom and living room of the residential units. Homerun cables back to the unit's media panel. Terminate, label, and test. Cross-connect all outlet cables to backbone cabling.

Install (1) RG6 coaxial cable for CATV outlets to each bedroom and living room of the residential units. Homerun cables back to units media panel. Terminate, label and test. Cross-connect all outlet cables to backbone cabling.

Miscellaneous-
Install voice cabling needed to support elevator equipment room, fire alarm panel, and miscellaneous office cabling.

SECURITY SYSTEMS -

Access Controlled System for Building Security and Controlled Entry

Fully functioning access control system consisting of forty-five (45) controlled locations. All locations controlled via proximity card reader technology connected to intelligent controllers and all equipment controlled professional access control software.

Intercom System - Telephone Based Communication

Fully functioning intercom system consisting of one (1) main entry panel located at main entrance for visitor-controlled entry.

Labor rates

Our current labor rates are as follows:

Foreman	$ 58.60
Journeyman	$ 55.20
Apprentice	$ 39.75

These rates are our direct cost prior to the application of the fee.

Fee

The fee would be the total of the above reimbursable costs marked up 8% for overhead, plus an additional 6% for profit on the total of the reimbursable costs and overhead. Fee and overhead is included in our budget below.

Changes to the Work

Change order reimbursable costs and markups for additional Construction Services will be the same as described above. AC/DC shall, if requested, provide separate tracking of costs associated with individual changes.

Permits

Permits for our work are included

Bonding

We are bondable, but have not included bond costs in our proposal.

QUOTE -

RESIDENTIAL UNITS	**$ 1,292,645.00**
COMMON AREA	**$ 299,940.00**
SERVICE	**$ 785,595.00**
EQUIPMENT CONNECTIONS	**$ 84,110.00**
FIRE ALARM	**$ 235,510.00**
GENERATOR	**$ 133,420.00**
TELECOMMUNICATIONS & CATV SYSTEMS	**$ 188,440.00**
SECURITY SYSTEMS	**$ 123,850.00**
TOTAL	**$ 3,143,510.00**
Design Fee, included above	**$60,000.00**

ALTERNATES -

Video Surveillance System

Fully functioning video surveillance based on twelve (12) color cameras, digital video recorder, monitors, and all required equipment and installation materials.

QUOTE **$ 31,140.00**

Optional cameras in elevator lobby - Floors 1-13

QUOTE **$ 15,120.00**

Offsite Parking add

QUOTE **$30,000.00**

This quote excludes:
1) Sales Tax.
2) Trench and backfill
3) Landscape restoration.
4) Temp power
5) Asphalt or concrete cut and patch.
6) Drywall patch and paint.
7) Utility company charges.

The suppliers of copper, aluminum, steel and PVC products have informed AC/DC that, due to current market conditions, the manufacturers have invoked the *Force Majeure* provisions of their supply agreements. This means that, effective immediately, the pricing of their products will be on a "price in effect" basis.

We have included our standard builders risk insurance. We do not include any special rider required for an apartment or condo project.

We have not included a contingency in this proposal.
We have included costs for the warranty period.
We have contemplated doing this work during normal working hours.

Please call me if you have any questions please do not hesitate to contact the undersigned.

Sincerely,
AC/DC Electrical

Don Sparky

PB ELECTRIC

February 14, 2008

Stewart M. Grauer
PCL Constructors Inc.
15405 SE 37th Street, Suite 200
Bellevue, WA 98006

Re: Downtown Condominium Project
Electrical Design/Build Proposal

Dear Stew,

PB is delighted to present our proposal to provide electrical design/build services for the Downtown Condominium Project. This response contains the project management, budget, and free information as requested in your RFP dated January 05, 2008, as well as samples of various management tools we use to assure that scheduled milestones are achieved and budget targets are met.

The PB team is committed to providing the Downtown Condominium project with cost effective, efficient, and flexible solutions necessary to meet the Owner's needs now and in the future. We will accomplish this by teaming with Diamond Engineering, Inc. utilizing recent hi-rise residential design experience to provide you with solid economical engineering solutions and design alternatives, conscientious cost modeling, and quality electrical construction. We are a union contractor and have the available capacity and demonstrated ability to successfully provide design and budgeting that will meet – or come in under – your target GMP electrical budget and meet the project schedule to facilitate the Owner's targeted occupancy.

We acknowledge receipt of Addendum No. 1 & 2.

We look forward to meeting you and working with you on this important project. Should you have any questions or require any additional information, please contact me at (206) 225-8000.

Very truly yours,

PB Electric

Peter A. Billings
Vice President, Operations

PB Electric ◊ PO Box 355 ◊ Seattle, WA 98045
Phone# 206-220-8000 ◊ Fax# 206-225-8000

PB ELECTRIC

Basis of Design/Electrical

CRITERIA:

1.1 General

A. General Design: The electrical design shall support a new high rise building consisting of Residential, Retail, and Parking areas. The building is primarily residential occupancy, R-2 High Rise per the IBC.

1. Systems and Functions shall include but not limited to:
    a) Data and Voice systems
    b) Access and Entry control
    c) Fire Detection and Alarm
    d) Television Signal Distribution
    e) Legally Required Standby Systems
2. Electrical service will be supplied by Seattle City Light (SCL) with integral vaults. Preliminary design indicates a 277/480V system. Consideration should be given to utilize a 120/208V system. The main electrical switchboard will be located in a parking level electrical room near the SCL vault. The balance of the electrical distribution system shall be located throughout the building facilitating best means for distributing residential and house power. Assumed distribution means will be by busway, costs need to considered for alternative pipe and wire riser. Metering will be provided for House, Commercial and Residential loads.
3. Telephone and Telephone Services
    a) Four 4" conduits shall be coordinated with the local telephone company and stubbed to property line.
    b) Coordinate with television service providers, Comcast or equal. Provide conduit to property line as needed.

2.1 **Objective**

A. Lighting: Using the city of Seattle Energy Code in conjunction with architect's directions, determining the best type of lighting for any given area. Energy saving fluorescent fixtures will be utilized wherever practicable. Incandescent fixtures are anticipated for the residential units. All areas will be illuminated to minimum levels.

B. Devices: Residential grade devices will be installed in the residential units, color options are ivory, white and brown. Common areas shall have commercial grade devices, ivory, white and brown. All device plates shall be plastic with matching colors to installed devices.

C. Equipment Connections: Electrical contractor is to provide final electrical connections to all electrically operated equipment provided and installed by other trades. Disconnecting means for motors shall be provided by EC and satisfy all NEC and City codes. Residential appliances are supplied and installed by others, any required cords for connections will be assumed to be supplied with appliance. All equipment supplied by mechanical systems including but not limited to: exhaust fans, heat and cooling units, VFD drives, motor starters, control wiring, duct or smoke detectors for same, shall be the responsibility of the mechanical contracror.

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Phone# 206-220-8000 ◊ Fax# 206-225-8000

PB ELECTRIC

D. Fire Protection
    1. Fire alarm detection and evacuation systems shall be designed and installed to meet all IBC, NFPA 72, state and local codes.
    2. Electrical connections to a fire pump if required.
    3. Coordination for specific system requirements shall be accomplished with the SFD.

E. Generator: An emergency generator shall be provided under the following conditions.
    1. To supply power to emergency lighting.
    2. For emergency elevator requirements.
    3. Any pressurization fans requiring emergency power.
    4. Fire pumps, transfer switch and controllers (FBO) if required.
    5. Exhaust and fuel piping are to be provided by the mechanical contractor and coordinated between trades.

F. Systems: Various systems will be required for proper use and operation of this building.
    1. A door intercom/access system utilizing the telephone system for access to individual residential tenants.
    2. A card access system allowing entry to the garage, lobbies and elevators.
    3. Prewiring of residential units matching the technologies of today.
        a) Use of hybrid cable with multiple coax and UTP type cables.
        b) Provide an interface and connection point accessible to the residential tenants, i.e.: Smart Box" or MDU to allow distribution of services within the individual units.
        c) Two UTP copper riser systems will be installed.
            I. Main copper riser will be provide by local service provider, assuming to be Quest.
            II. Secondary copper riser will be by house to support emergency and other communication requirements, i.e.: elevator and stairwell phones.
        d) Local provider for CATV services will install coaxial distribution system.
            I. Consideration should be given to possible satellite systems.

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Phone# 206-220-8000 ◊ Fax# 206-225-8000

PB ELECTRIC

Electrical Budget

GROSS SQUARE FOOTAGE

We have calculated the following GSF as follows:

Garage	83,019 sf
Retail	4,154 sf
Storage	12,671 sf
Electrical/Mechanical Areas	2,585 sf
Mail Room/Fire Comm.	942 sf
Residential	165,397 sf
Lobby	1,186 sf
Fitness/Amenity	3,490 sf
All Other	48,203 sf
Total Gross	**321,647 sf**

Switch Board & Power Distribution	$	597,500.00
Emergency Power System	$	119,500.00
Mechanical Equipment Connectors	$	239,000.00
Fire Alarm System	$	155,350.00
CCTV/Security, incl Lobby	$	167,300.00
Communications Pathway	$	59,750.00
Shell and Core Outlets and Lighting	$	83,650.00
Lobby Lighting Allowance	$	5,930.00
Parking Garage	$	186,750.00
Site Allowance	$	25,000.00
Residential Allowance	$	1,535,270.00
TOTAL	**$**	**3,175,000.00**

Note: You have requested approximate counts of light fixtures Type A and B to match fixtures used on other Owner parking garages. If fixture type A (fluorescent) is used 98 ea. are required; if fixture type B (metal halide) is used 165 ea. are required. Final counts will vary and may be adjusted as specifications and design is completed.

Exclusions

The above excludes the following:

1. Washington State Sales Tax
2. Bond Premiums
3. Temp Power or Lighting
4. Trash Hauling or Dumpster Charges
5. Electrical Permit
6. Mechanical Control Wiring
7. Warranty Costs
8. Utility Company Charges
9. Design Fees

PB Electric ◊ PO Box 355 ◊ Seattle, WA 98045
Phone# 206-220-8000 ◊ Fax# 206-225-8000

PB ELECTRIC

Clarifications

1. We have included off-site parking for our craftsmen.
2. We have bonding capacity to cover this project, but have not included bond costs.

PB Electric ◊ PO Box 355 ◊ Seattle, WA 98045
Phone# 206-220-8000 ◊ Fax# 206-225-8000

BULLS EYE ELECTRICAL

February 14, 2008

Stewart M. Grauer
PCL Construction Services, Inc.
15405 SE 37th Street, Suite 200
Bellevue, WA 98006

Re: Downtown Condominium/Mixed Used Project

Dear Stewart,

Thank you for the opportunity to present our proposal for the **Dowtown Condominium/Mixed Use Project!** We have included for your review and evaluation the Qualifications and Performance Requirements section from your letter dated January 05, 2008. Please note the extensive track record for projects of this type as designed by our design build partners, **Spark Arrest, LLC**. We understand the significance of this project for PCL and PRIDH, Inc. and we are prepared to assist in any capacity to insure its complete success. We trust the following information meets with your approval and look forward to joining your team for this exciting project. Should you have any questions please call me directly.

Sincerely,
Bulls Eye Electrical Contractors, LLC

Edward B. Guttormson
General Manager

BULLS EYE ELECTRICAL CONTRACTORS, LLC
9595 Stonebrook Ave NE, Bellevue, WA 98005
Phone# (206) 525-4425 ♦ Fax# (206) 525-5423

BULLS EYE ELECTRICAL

Draft Budget

Fire Alarm Quote		$ 256,515.00
Fire Alarm Installed		$ 455,411.00
Lighting Quote		$ 414,080.00
Standard Lighting RI Common Space		$ 77,397.00
Standard Lighting RI Units		$ 140,390.00
PW Modular Quote		$ 251,307.00
Branch RI Common Space		$ 178,397.00
Branch RI Units		$ 505,606.00
Mechanical Wiring and Connections		$ 195,295.00
Gear Quote		$ 193,355.00
Gear RI/Distribution RI		$ 936,862.00
General Quote		$ 185,876.00
Voice/Data		$ 260,947.00
Access Control Allowance		$ 17,230.00
Access Control RI		$ 10,360.00
CCTV/Security/Video Quote		$ 51,303.00
CCTV RI		$ 16,094.00
Intercom		$ 68,533.00
CATV		$ 102,107.00
Temporary Power		$ 63,159.00
Permit		$ 62,605.00
GC's		$ 1,098,638.00
Fee		$ 581,854.00
	Total:	**$ 6,123,321.000**

Please note this budget is a draft only and does not include any escalation costs for materials or quote items. It does not include labor escalation cost beyond June 09. We do not include baseboard heating or duct smoke detectors.

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BULLS EYE ELECTRICAL

Electrical Basis of Design

PROJECT SUMMARY

The Downtown Condominium Project is a 13 level mix used residential and retail building located at 2900 2nd Ave in Seattle. The building is 332,560 GSF consisting of 233 parking stalls, 204 residential units plus two additional full guest suites, and 4154 GSF of retail specs.

CODES:
Electrical will comply with the international Building Code (IBC), city of Seattle Electrical Code and Seattle Energy Code.

LEED certification is not anticipated for this project. A list of electrical LEED concepts will be submitted upon request.

LIGHTING

Lighting in common areas shall be energy saving fluorescent lighting. The lighting shall be located to meet energy code and highlight architectural elements. Exterior lighting shall be metal halide and located to highlight stair landings, architectural elements, and entry ways. Low voltage landscape lighting will be located to up-light trees. The garage parking lights shall be fluorescent and located to obtain 4-5 foot-candles. The garage entrance will be lit to 50 foot-candles during daylight hours to allow for a smooth visual transition between the daylight areas and the parking garage. For attic stock purposes, we understand the Owner has a desire to match existing fixtures that are used on other parking garages they own. The following is a breakout of fixture counts based on the preliminary design information and fixture cut sheets we have received to date: Fixture type A (fluorescent) = 112ea., Fixture type B (metal halide) = 172ea. Final lighting selection will occur with Mithum, and PRIDH's concurrence.

Each dwelling unit shall contain one surface mounted 10' track with 6 halogen heads in the kitchen, one surface mirror light in the bathroom, multiple surface mounted fixtures at 10 foot centers in hallways and a pendant mounted incandescent light fixture above the dinning table. Each unit entry shall be lit by an accent sconce.

ELECTRICAL SERVICE

Per discussion with Don Foote of Seattle City Light (SCL) the project will contain a dedicated 3 hour electrical building vault to support (3) network transformers that shall supply normal power to the building. The vault will be fed from the alley with (4) 8" and (2) 2" concrete encased conduits. The vault shall be approximately 32'Wx25'D with (3) 6'Wx7'H doors. An 8" CMU curb will be placed to allow for oil retention. Initial dimensions of each transformer shall be 4'Wx7'Lx61/2"H and weigh 15,000 lbs. Lead time with new non-stock network transformers is 6 months minimum. In order to meet schedule, our team shall work immediately with SCL to solidify SCL requirements and obtain SCL "sign-off" for the work. SCL shall be contacted at least fifty working days in advance before permanent power is required to ensure a smooth transition between temporary and permanent power.

BULLS EYE ELECTRICAL CONTRACTORS, LLC
9595 Stonebrook Ave NE, Bellevue, WA 98005
Phone# (206) 525-4425 ♦ Fax# (206) 525-5423

From the vault a cable/busway shall be routed to the two electrical switchboards. The service switchboards shall be rated at 4000 amps and 2000 amps at 480/277V, 3phase 4W. The total calculated electrical load of the building is 3,557KVA.

EMERGENCY SYSTEMS

Emergency power will be delivered by a 500KW emergency generator located in a one hour enclosure in the building. The generator accessories shall include a day tank, a fuel fill station, battery charger and related equipment. The generator shall feed exiting and egress lighting, emergency elevators, stairway and elevator pressurization fans, fire pump and fire pump controller, fire alarm system and other systems that legally require to be on emergency power. The fire pumps shall be fed from a dedicated automatic transfer switch.

TELECOMMUNICATION AND CABLE TV SERVICES

Quest shall be the communication service provider and Comcast shall be the cable TV provider. We propose to provide provisions on the roof for a dish network to maximize the choices of communications/cable TV service providers

From the alley service conduits will enter the building and terminate in the telecommunication demark room. Refer to the electrical site plan for additional information.

ELECTRICAL DISTRIBUTION

Electrical distribution will distribute through-out the building to meet the requirements of the project. Referring to the electrical one-line diagram, all transformation will occur in the electrical room. A busway will run from the electrical room to the main electrical room riser shafts to meter banks. From the meter bank dedicated power will be ran to each unit's 200A, single phase power panel. This approach will minimize the space requirements for the electrical rooms.

Normal and emergency house panels will be located on every third floor to accommodate common space power requirements.

Retail shall be served with a dedicated 400 amp service.

TELECOMMUNICATION AND CABLE TV DISTRIBUTION

Combination telecommunication and cable TV closets will be located on appropriate floors to allow distribution of low voltage services to each unit. Backbone riser cable shall be run from each IDF closet back to the main telecommunication demark room. Each unit shall be served by a RG-6 cable for cable TV and Cat 5 cable for telephone. Each unit will have both a cable TV/Internet jack and data/phone jack located in each bedroom and the living room.

A dedicated telecommunication and Cable TV conduit shall be installed to the retail space.

BULLS EYE ELECTRICAL

LOW VOLTAGE SYSTEMS

An intercom system shall be located at each unit's entry door to allow two way communication and entry door release.

Referring to the fire alarm riser diagram, the fire alarm system shall consist of an addressable fire alarm panel that will monitor the initiating devices (smoke detectors, flow switches, tamper switches, etc...) and a voice control panel that will activate the speaker system. A fire fighter phone system will be located at each elevator lobby and each stairwell landing. Each unit shall contain a smoke detection/alarm system as required by code.

The electronic security system shall consist of card readers at the main lobby, Broad Street Entrance, garage entrance and exit and stair doors on levels one to penthouse. The security system shall interface with the fire alarm system to allow unlock only of the stairwell doors to allow egress from the building.

DEVICES

Per the acoustic design review the outlet boxes that are to be located on the unit corridor wall shall be separated by a minimum of two stud-bays from other boxes and caulked around to prevent sound leakage.

Each unit shall contain a 200 amp single phase panel and wiring devices to meet the requirements of code and the project requirements. Power for a range, microwave, refrigerator, dishwasher, disposal and washer/dryer is included. Base units will use electrical resistant baseboard heaters with the tenant's option to upgrade to an air to air unit.

The fitness center shall contain a minimum of six dedicated circuits to serve exercise equipment.

Branch power shall be distributed to the fire alarm system, CO monitoring system, security system, intercom system, mechanical equipment and other equipment requiring power.

Receptacles shall be located in corridors, lobbies, and as required by code. Two 20 ampere receptacles shall be provided at the elevated amenity deck; four at the rooftop gardens and one each at the fitness deck and at the dog run.

Retail shall contain temporary baseboard heating for freeze protection.

EQUIPMENT CONNECTION

Electrical power shall serve mechanical equipment, irrigation equipment and related equipment requiring power.

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BULLS EYE ELECTRICAL

EXCLUSIONS:

1. Design Fees
2. Utility Company Charges
3. On-Site Parking
4. Warranty Costs
5. Sales Tax

CLARIFICATIONS

1. We are bondable, but have not included bond costs in our proposal
2. We acknowledge receipt of Addenda 1.
3. We are a union contractor.

BULLS EYE ELECTRICAL CONTRACTORS, LLC
9595 Stonebrook Ave NE, Bellevue, WA 98005
Phone# (206) 525-4425 ♦ Fax# (206) 525-5423

The Downtown Condo Project
Scheduling Duration Areas

			Misc. Work			Notes/Comments
			Rate/Day	Qty	Duration (Days)	
	Demolition			625,000 CF		
	Mass Excavation			22100 CY		
	Shoring- Soil Nailing			13940 SF		
	Footings			1345 CY		
					-	
					-	
Floors	Level		Concrete Work			
			Rate/Wk	SF	Duration(WKS)	
1	P3 SOG					
2	P2 Elevated Deck					
3	P1 "					
4	Ground Lvl					
5	L2					
6	L3					
7	L4					
8	L5					
9	L6					
10	L7					
11	L8					
12	L9					
13	L10					
14	L11					
15	L12					
16	Penthouse Floor Slab					
17	Penthouse Roof					
Totals				-	-	- -
					-	-

Start by Determining Quantities
Use Gross Floor Areas (GFA)

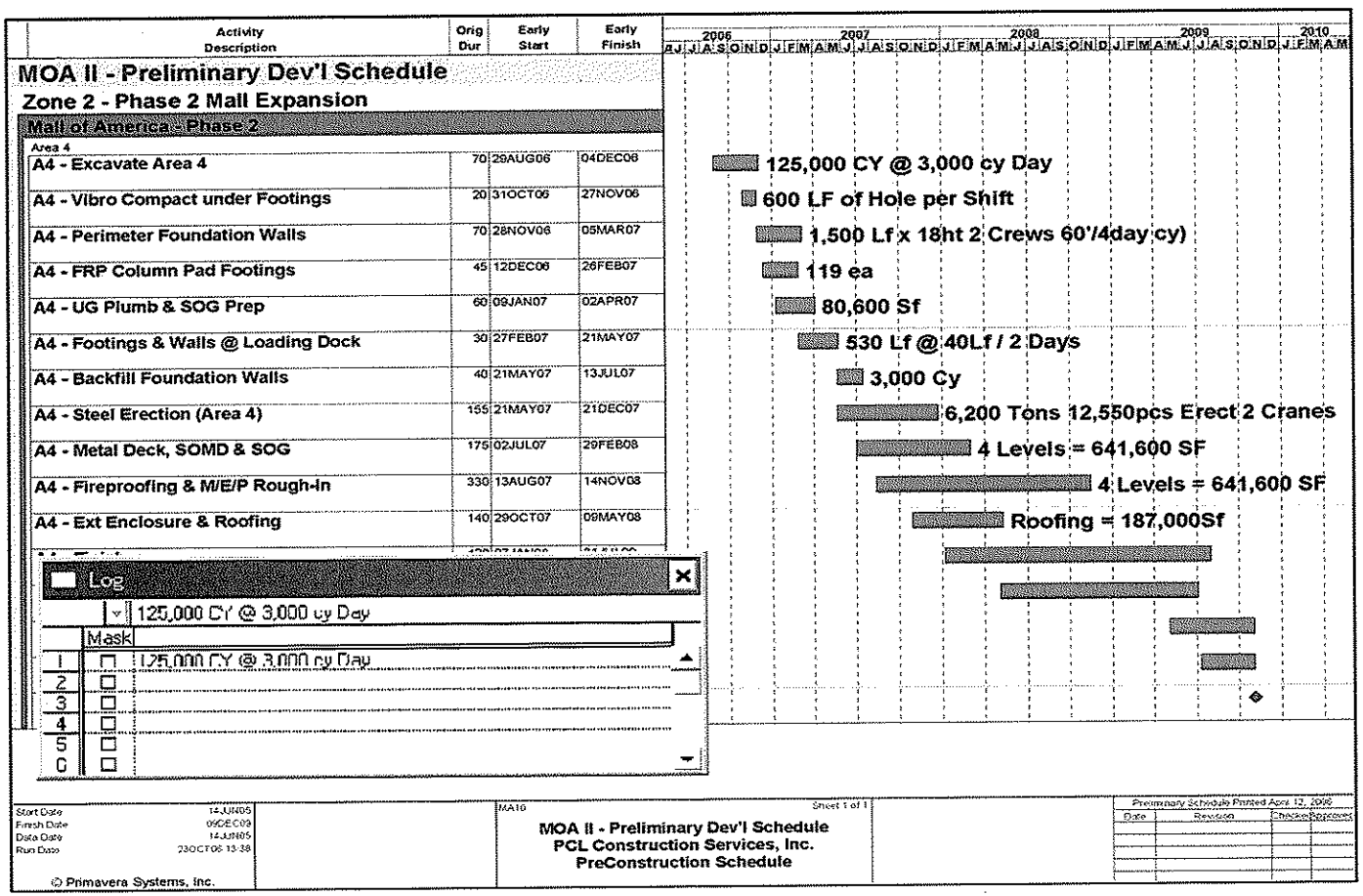
PreConstruction Scheduling

Productivity and Durations

- **Standard list of Durations:**
- **How to figure Productivity & Durations:**
  - **From Estimate – Manhours & Quantity**
  - **Take off quantity on Drawings – SF, CY, Ea**
    - **Do your own take off - Estimators don't take off Balcony SF or could be wrong.**
- **R.S. Means**
- **Rule of thumb**

Determine Activity Duration

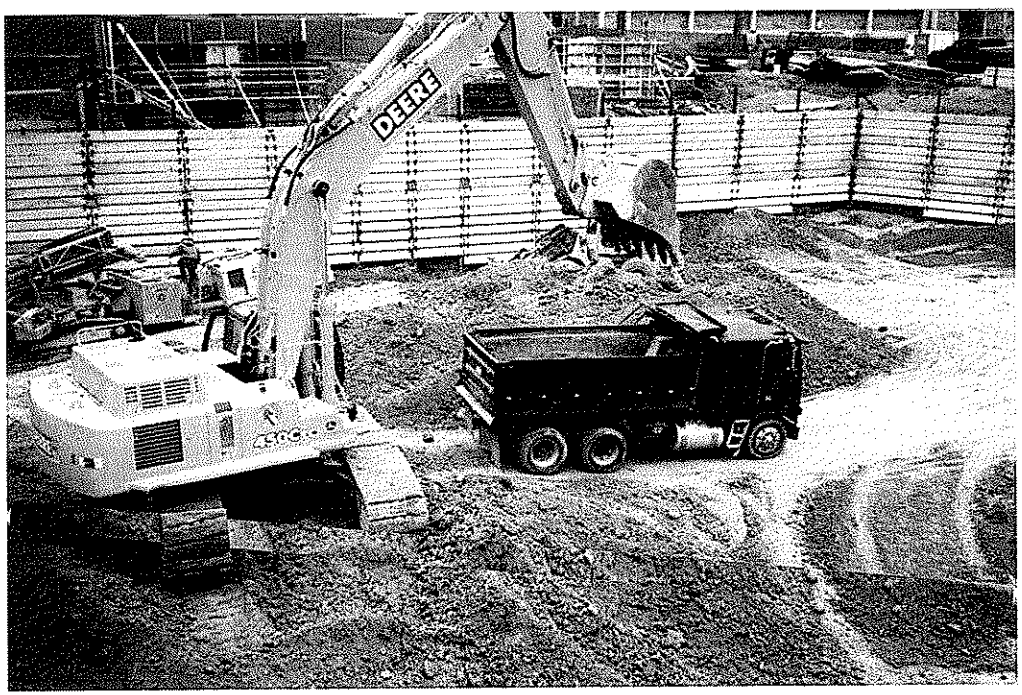
- Duration = Quantity ÷ Productivity Rate



Calculating Durations Ex:

Excavation: Cy per Day 500 Assumed

25,700 CY ÷ 500 CY/Day = 51Days



Common Activity Durations:

These common construction activities and duration "rules of thumb" can help you build your baseline project schedule. All durations are estimates and may vary from one project to another.

CSI Division 01: General

- Cranes: 1 month allowance after structure top off before taking down crane, 12,000 SF floor plate is the upper limit for one tower crane

CSI Division 02: Site construction

- Demolition: 20,000- 25,000 CF/day, 8 person crew
- Excavation: 600-1000 BCY/day
- Fine Grading: small areas 300-500 sy/hr, large areas 500-800 sy/hr
- Asphalt Paving: small areas 500-1000 tons/day, large areas 1500-2000 tons/day
- Concrete Paving: Small Areas 30 sy/hr Large areas 50 sy/hr
- Caissons: 2100mm bell X 5500mm deep = 4 piles / day using a 3 man crew
- Auger cast piles: 6 auger cast piles per day 18 inch diameter, 4' to 6' diameter caisson 50 feet deep in one day, 15-20 vertical feet/hr (holes up to 48" diameter)
- Driven piles: 7 piles/day, 18 M long, typical 4 man crew
- Shoring: 8 to 12 H piles per day drilled or pounded, 4 tie backs per day
- Storm sewer: RCP > 24 inches = 45 to 61 LM/day, RCP < 24 inches = 31 to 45 LM/day, 5 man crew
- Water distribution: 31 LM/day typical 5 man crew

CSI Division 03: Concrete

- Tying Rebar: 100 to 250 lbs/manhour
- Concrete Placing: 10000 - 8000 SF / week / tower crane for a typical floor, 8000 - 6000 SF / week / tower crane if fly forms cannot be used, Formwork Erection and Stripping: 6 sf/mhr to 12 sf/mhr Lagging for Shored Excavations: 1 sy/mhr
- Footings (pad): 1.564 M2/man/hr to 4.283 M2/man/hr, typical 5 man crew
- Footings (continuous): 1.86 M2/Man/hr, typical 5 man crew
- Grade beams: 1 LM/manhour
- Foundation walls: 2.1 M2/man/hr
- Foundation wall rebar: 7 to 10 manhours/tonne
- Concrete finishing: 1200 - 1500 SF / DAY / cement finisher
- Concrete Wall Cycle: 20 linear feet per day
- Suspended slab rebar: 7 manhours/tonne
- Slab On Metal Deck
- Precast structural panels: 20 panels/day, 6 man crew
- Precast spandrel panels: 30 to 40 panels/day, 6 man crew

CSI Division 04: Masnory

- Masonry block: 160 blocks/mason/day
- Masonry block (warehouse): 350 to 400 blocks/mason/day
- Masonry block (high storage): 500 blocks/mason/day
- Brick: 700 to 800 bricks/mason/day

CSI Division 05: Metals

- Structural steel erection: 35 tons/day or 35 pieces/day/hook, 5 man crew
- Metal Deck: 30000 SF/month
- Misc Metals
- Ornamental Metals & Handrails
- Expansion Joints
- Aluminum Ceiling & Assemblies

CSI Division 06: Wood & plastics

- Rough carpentry (backing and blocking)
- Finish carpentry: use 27% of contract value, typical crew size 5 to 10 men
- Architectural woodwork: use 27% of contract value, typical crew size 5 to 10 men

CSI Division 07: Thermal & moisture protection

- Waterproofing
- Water Repellant Coatings
- Exterior Insulation Finish System (EIFS): 100 SF/day/installer
- Exterior wall assemblies: 185 M2/day typical
- Metal Wall & Roof Panels
- Roofing: EPDM ballasted: 1000 M2/day typical 8 man crew. Built up roof: 175 M2/day typical 6 man crew. Standing seam roof: 50 M2/day typical 15 man crew
- Spray Fireproofing: 3000 to 5000 SF/day
- Caulking & Sealants

CSI Division 08: Doors & windows

- Windows: 1200 SF/day
- Curtainwall: Panelized system: 2500 SF/day, typical crew size 7 men. Stick built: 750 to 1250 SF/day, typical crew size 7 men
- Hollow metal door frames: 2 manhours/frame, 8 frames installed per day, 2 man crew
- Hollow metal door and hardware: 4 manhours/door, 1 man crew
- Overhead doors: 1 door/day, 2 man crew
- Door hardware

CSI Division 09: Finishes

Interior finishes follows structure 6 to 8 floors behind, due to need for reshoring, eye brow of fly forms preventing drifting of loads underneath, and the need for a rain barrier between the top concrete deck and finishing floors. The status of elevators will dictate the completion of interior finishes. One month after elevators are complete is usually enough time to complete interior finishes.

- Metal Studs: 45 M2/day, 1 man crew
- Drywall hang, tape, finish: 140 M2/day, 5 man crew, 5/8" drywall
- Drywall ceilings: 900 SF/day
- Tape and Finish Gypsum Board
- Ceramic and Quarry Tile: 250-300 SF/day/2 man crew
- Grouting tile: 500-600 SF/day/2 man crew
- Terrazzo: 130 SF/day/2 man crew
- Acoustical Ceiling Grid: 2000 SF/day
- Acoustical Ceiling Tile: 2000 SF/day
- Carpet: 1500 SF/day
- Resilient Flooring, Rubber Base
- Painting, Vinyl Wall Coverings
- Special Flooring

CSI Division 10: Specialties

- Toilet Partitions: 5 to 10 stalls/day/installer
- Toilet Accessories
- Louvers and Vents

CSI Division 11: Equipment

- Audio/Video equipment
- Security equipment
- Maintenance equipment
- Parking Control Equipment
- Detention Equipment
- Water Softening Equipment
- Building Maintenenance Fall Arrest Equipment

CSI Division 12: Furnishings

- Artwork
- Casework
- Furnishings

CSI Division 13: Special construction

- Swimming pools
- Security cameras
- Solar panels

CSI Division 14: Conveying systems

- Elevators: Hydro: 4 weeks/elevator, 2 man crew, Traction: 18 weeks/elevator, 2 man crew. 4 to 5 months to build elevators after dry in of machine room, 2 months before the first car becomes available after dry in of machine room, 1 month to refurbish the car used during construction and put it in control group.
- Hoists: Hoists will be needed for structures with a roof height 65 feet or more above ground,
  Hoists will be needed until the first elevator can be used during construction, 2 months to close in hoist bay after removal.
- Escalators: 6 weeks/escalator, 3 man crew

CSI Division 15: Mechanical

Use 45% of contract value for labor divided by $65/hour to calculate total manhours

- Underground Storm pipe
- Sanitary sewer pipe: 50 LF / day
- Pipe laying: 2 to 3 joints per hour (storm drain pipe up to 48" diameter with excavation less than 10' deep and open cut)
- Rough in Fire Protection Lines
- Fire Protection Trim
- Rough in Plumbing
- Plumbing Fixtures
- Rough in Mech Piping
- Mech Equipment
- Rough in Ductwork & Equipment
- HVAC Trim
- Mech Start-up & Commissioning
- Air Handling Units
- Heat Exchangers
- Pumps
- Cooling Towers
- Centrifugal Chillers
- Steam Boilers
- Supply and return fans
- Variable Frequency Drives
- Terminal Units VAV boxes

CSI Division 16: Electrical

Use 45% of contract value for labor divided by $65/hour to calculate total manhours

- Underground Electrical Rough-In
- Rough-In Elect Conduit & Panel Boards
- Electrical Pull Wire & Terminate
- Electrical Switchgear & UPS Equip
- Electrical Light Fixtures
- Electrical Trim & Test
- Rough-In Elect Fire Alarm
- Temperature Controls Wire & Trim
- Security System Wire & Trim
- Switchgear

- Transformers
- Generators
- Distribution Panels
- UPS System
- Fire Alarm Panels

Project: Downtown Condominium Project
Owner: PRIDH Development
A/E: Mithun

Area Summary

Area	Total GSF	SF Breakout: Parking	Circ./Service	Retail	Condo's		Condo Units (EA)	Parking Stalls (EA)	Comments		
Parking L4											
Parking L3											
Parking L2											
Parking L1											
Grnd Lvl											
Level 2											
Level 3	21914	0	5212	0	15465		21	0	2 guest suites w/Circ/Service		
Level 4	21695	0	3332	0	18023		25	0			
Level 5	21641	0	3355	17945	0		25	0			
Level 6	21772	0	3326	0	17982		25	0			
Level 7	20145	0	3074	0	15211		14	0	Amenity Space w/Circ/Service		
Level 8	18742	0	1938	0	16120		20	0			
Level 9	18742	0	1983	0	16120		20	0			
Level 10	18742	0	1983	0	16120		20	0			
Level 11	18742	0	1983	0	16120		20	0			
Level 12	17720	0	1881	0	14305		18	0			
Penthouse	15145	0	1718	0	12099		7	0			
Totals	215000	0	29785	17945	157565	0	215	0	#DIV/0!	Stalls/Unit	0.00

GROSS BUILDING AREA DEFINITION – PROJECTS AND PROJECT COMPONENTS

The most common method of defining project costs is to express them as a function of the gross building area. This parameter is used when referring to total project costs and to some of the building system unit costs. It is therefore essential to use a standard method of measurement for this important parameter. This will permit communication and computation on a clear and understandable basis and will allow comparison of values to be made on the basis of a generally agreed upon unit of measurement.

Dimensions used in the calculation of gross building areas for the total project should be taken from the outside to outside of exterior walls.

Dimensions used in the calculation of gross building area for project components should be taken from the outside of exterior walls and from the outside of the common wall of the designated component (see Section 1.6 of this reference book). Do not deduct the areas of stairwell openings, elevator shaft openings, pipe or duct shaft openings. Include projecting columns and walls if they are the full height of the floor. Measurement of gross building area is further described below and on the next page.

Full Areas

- Full height basements or sub-basements, including, but not duplicating, elevator pits, boiler rooms, sump pits or other space below basement level.
- Pipe space, service tunnels and plenums 6 feet 6 inches high and over.
- Enclosed spaces (4 sides) beneath the floors as in a stilt design.
- All typical floors.
- Mezzanines and interior balconies (see also page 1.2.3 for "30%" rule).
- Mechanical spaces.
- Penthouses.
- Any full height space above the roof (stair penthouses, machine rooms and the like).
- Totally enclosed connecting plazas, passageways and promenade decks.

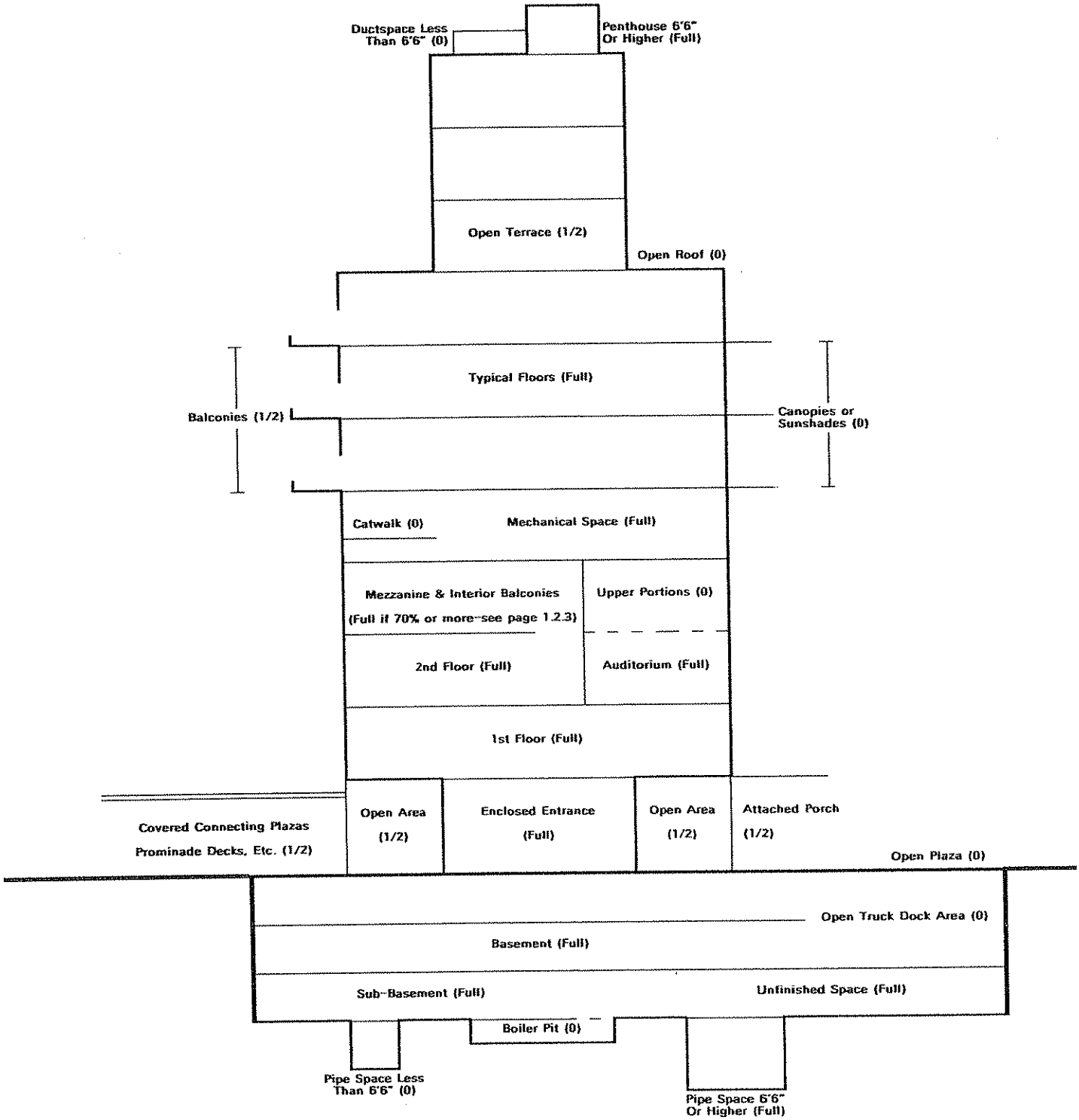
Half Areas

- Exterior balconies with entrances to the interior of the building.
- Attached porches, open on three sides.
- Unenclosed spaces beneath buildings of stilt design.
- Covered (no walls) connecting plazas, passageways and promenade decks.

Areas To Be Excluded

- Open spaces extending beyond one floor in height, such as the upper spaces of auditoriums, gymnasiums, swimming pools, atria, and the like.
- Catwalks, unoccupied or unfinished attic spaces, roofs.
- Window canopies or sunshades.

ILLUSTRATION OF GROSS FLOOR AREA METHOD OF MEASUREMENT



The current trend towards the incorporation of atriums and carve-outs in hotels, office buildings and shopping centers requires a standard procedure so the gross building area parameter will be consistent.

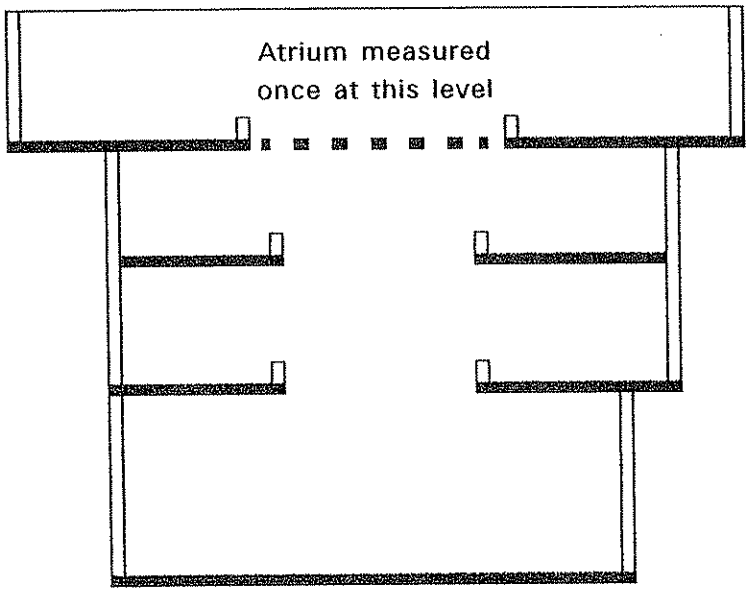
Atriums and carve-outs which are less than 30% of the gross area of that floor are NOT to be deducted when calculating the gross building area. In the case of the commercial rental unit/mall project component of a shopping centre, this decision will be based on 30% of the combined area of the mall + the commercial rental unit areas.

Mezzanines which are in excess of 70% of the area of the enclosure at that floor level shall be taken in full (not actual mezzanine area).

Calculate the ACTUAL area of sloping ramps and NOT the area in plan when calculating gross building area.

Areas of atriums and carve-outs which are more than 30% of the gross area of the floor are to be taken ONCE only. The measurements are to be taken at the floor where the dimensions of the space are the greatest.

The sketch below illustrates this rule:



Note: This measurement of the atrium would only be a consideration if the atrium comprised more than 30% of the area at that level. This would NOT be deducted at all unless it comprised more than 30% of the total building area at that level.

CONFIGURATION QUANTITY DEFINITIONS – PROJECTS AND PROJECT COMPONENTS

Building Footprint Area

Gross area of building coverage at grade level measured to outside face of perimeter walls or to outer extent of perimeter foundations.

Site Area

Site area is the area of the site measured to the property lines. Site area is to include the building footprint area.

Glazed Area to Roof

Glazed area to roof is the actual area of any glazed roofs or canopies. Sloped areas are classified as roofs (not walls) and are to be measured along the slope.

Roof Area (Remainder)

Roof area is the actual area of the remainder of the roofed area. Sloped areas are classified as roofs (not walls) and are to be measured along the slope.

Exterior Basement Wall Area

Exterior basement wall area is to be measured at the outside of the perimeter of the building and extends from the top of the footings to the top of the floor slab which is at or nearest to grade.

Exterior Wall – Above Grade (Not Including Glazed Areas)

Exterior wall is to be measured at the outside of the perimeter of the building and extends from the top of the floor slab which is at or nearest to grade to the top of the building including roof parapets. Do not include any glazed wall areas. Include exterior walls to penthouses.

Exterior Glazed Wall Areas

Exterior glazed wall area shall include all exterior glazed areas which form the exterior walls of the building. Interior glazing is part of the interior construction building system and is not to be included here. If the glazed area could be considered as a roof or as a wall, i.e., sloping, then it shall be taken as a ROOF.

PRIHD

Mechanical System Pricing Exercise

Exercise Narrative:

For this exercise you will need to calculate the anticipated cooling and heating loads for the building. Information received from subcontractors can be very contradicting when it comes to anticipated loads, and because of this pricing may vary widely. It is necessary at times to perform your own calculations for heating and cooling loads so you can determine the right amount of money to include for these components, and to help select the right subcontractor's information to use in the proposal.

PRIHD

Mechanical System Pricing Exercise

Exercise Process:

Using the information given, fill out the cooling and heating worksheet to determine the anticipated loads that should be used in your proposal. Review the subcontractor bids, select the one you believe contains the best unit rates to carry for the chiller and the boiler, and estimate the total costs on the worksheet. In addition, identify which subcontractor's information you selected to use for your cost calculations and why.

Mechanical System Pricing Exercise

- Assume this project is located in Seattle Washington. Seattle winter design temp. for heat loss calculations is between 20˚F and 30˚F. Heat loss factors are .72 at 20˚F, and .57 at 30˚F. Use a 20˚F winter design temp. for this exercise
- Assume the building has a North and West exposure
- Redundancy is a percent of equipment that is used for backup when a failure occurs. Typically 50-66% redundancy for heating, and no redundancy for cooling (unless it's a special use like a computer room), is used for load calculations. Use 50% heating redundancy for this exercise
- Diversity is the percent of the cooling load in zones that do not peak at the same time. (i.e. in school buildings, the gym and cafeteria are loads that do not peak at the same time as the classrooms) Assume a 90% diversity rate for this exercise

Mechanical System Pricing Exercise

Rules of Thumb

COOLING LOADS RATES:

Apartments/Condos	350-450 sq ft/ton
Hotels	220-350 sq ft/ton
Restaurants	80-150 sq ft/ton
Retail	150-400 sq ft/ton
Office	190-360 sq ft/ton

1 Ton Refrigeration = 12,000 Btu/h

HEAT LOSS CALCULATIONS:

- Determine cubic volume of building or space
- Find winter design temperature for location
- Use loss factor of 6.0 to 3.6 for single story to multiple story buildings

# of Stories	Loss Factor
1	6.0
2	4.6
3	4.3
4	4.1
5	3.9
6 plus	3.6

- Multiply loss factor by 1.1 (if bldg has N & W exposures)
- Multiply loss factor by .57 for outside design temp. of 30˚ F (Dallas, TX)

Example: 30'w x 30'l x 30h' space = 27,000 ft^3

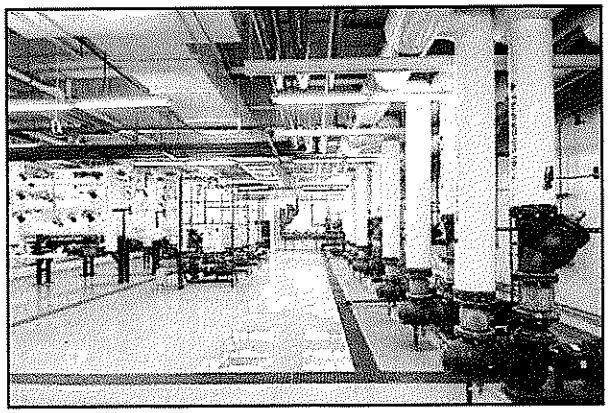
3 Story loss factor = 4.3

4.3 x 1.1 x 0.57 = 2.70 Btu/ft^3

27,000 ft^3 x 2.70 = 72,900 Btu

72,900 Btu/900 ft^2 = 81.0 Btu/ft^2

Mechanical Systems Costs
HVAC Equipment



(Vendor costs should be within the ranges noted)

- **Air Handlers:** **$2-$6 per cfm**
- **Exhaust Fans:** **$0.50-$1 per cfm**
- **Pumps:** **$900-$2,000 per HP** (5HP-25HP size)
- **Boilers:** **$19-$30 per MBH**
  (1,000MBH - 7,000MBH boiler size)
- **Chillers:** **$400-$500 per ton**

Note: For boilers 1000BTUs = 1MBH

Mechanical System Pricing Exercise

Subcontractor Quote Information

The following summarizes the conceptual chiller and boiler pricing information received from 3 subcontractors:

SEAHAWK HVAC:

Chiller Load Bid = 488 Tons; Chiller Bid Amount = $224,194

Boiler Load Bid = 24,715 MBH; Boiler Bid Amount = $654,947

SUPERSONIC MECHANICAL:

Chiller Load Bid = 425 Tons; Chiller Bid Amount = $223,126

Boiler Load Bid = 24,950 MBH; Boiler Bid Amount = $648,700

MARINER PLUMBING AND HEATING:

Chiller Load Bid = 440 Tons; Chiller Bid Amount = $229,280

Boiler Load Bid = 23,075 MBH; Boiler Bid Amount = $622,325

Team _____ *Mechanical Estimating Exercise*

Calculation of Heating and Cooling Loads & Cost

Cooling Load Analysis

	Area (1)		Rate (2)		Load (4)	
Condos		sf		sf/ton		tons
Offices & Public Spaces		sf		sf/ton		tons
Retail		sf		sf/ton		tons
Total Basic Tonnage		sf	#DIV/0! (average)	sf/ton	0	tons

Heating Load Analysis

	Area (1)		Rate (3)		Load (4)	
Condos		sf		BTU/sf		BTU's
Offices & Public Spaces		sf		BTU/sf		BTU's
Retail		sf		BTU/sf		BTU's
Total Basic BTUs		sf		BTU/sf	0	BTU's

Cost Analysis

	Amt (5)		Cost (6)		Amount (7)
Cooling (Chiller only)					
Basic tonnage	-	tons			
Diversity		%			
Redundancy		%			
Estimated Cooling $		tons		$/ton	
Heating (Boiler only)					
Basic BTU's	-	BTUs			
Diversity		%			
Redundancy		%			
Estimated Heating $		BTUs			
		MBH		$/MBH	

Notes:

(1) Calculate areas from plans
(2) Chose cooling rate from table of alternatives given in handouts
(3) Calculate heat loss rate from information given in handouts (one rate for entire building)
(4) Multiply the area by the rate to calculate cooling tons or heating BTU's
(5) Use calculated tons and BTU's and from written PRIHD requirements provided, determine the diversity and redundancy percentages
(6) From bids, determine the right Subcontractor cost to use for your estimate. Same sub for both chiller and boiler
(7) Multiply the quantity by the selected sub rate to determine the estimated costs for heating and cooling
(8) For heating, 1,000 BTUs = 1 MBH
(9) Identify which subcontractor you used for pricing and why on the following sheet

SUBCONTRACTOR SELECTED: _____

REASON FOR SELECTED SUBCONTRACTOR:

Electrical System Pricing Exercise

Exercise Narrative:

For this exercise you will need to calculate the number of light fixtures and watts/sf required to light the parking garage on sheets A2.01 to A2.05, in order to determine which fixture you would use for your RFP response. Only calculate the SF that will be lit by parking garage type fixtures, do not include shaft areas in your SF calculations. There are two different methods to calculate the garage lighting in this exercise. Like mechanical pricing, information received from subcontractors can be very contradicting when it comes to fixture types and counts, and thus pricing may vary widely. It is necessary at times to have your team perform your own calculations of the correct number of fixtures so you can determine the right amount of money to include, and to help select the right subcontractor's fixture information to use in the proposal.

Electrical System Pricing Exercise

Exercise Process:

Problem 1: SF Method - State of Washington Allowed

Using the information given from the State of Washington, Table 15-1 Unit LPA, fill out the "SF Method" worksheet to determine the allowable wattage for lighting the parking garage. Using the information provided on the two different light fixtures, (Fixture Type A and Fixture Type B), determine if the wattage required to use either of these fixtures is within the wattage levels allowed by the State of Washington. If they are not, you'll need to move to Problem 2.

Electrical System Pricing Exercise

Exercise Process:

Problem 2: Zonal Cavity Method – Maintained Foot-candles

This method is a much more scientific method of calculating lighting levels that will be maintained using different fixture types. Using the information given, fill out the "Zonal Cavity Worksheet" to determine if either of the two fixtures will be within the State of Washington allowable lighting allowance and recommend which fixture you will include in your proposal.

Electrical System Pricing Exercise

Fixture Information:

Type A:

- 42 watt fluorescent lamps, 3200 Lumens per lamp, four (4) lamps per fixture
- With ballast losses each lamp consumes 45 watts of power or 180 watts/fixture
- Quoted Cost = $700.00/fixture

Type B:

- 100 watt metal-halide lamp, 8500 lumens per lamp, One (1) lamp per fixture
- With ballast losses this lamp consumes 118 watts of power or 118 watts/fixture
- Quoted Cost = $395/fixture

2006 Washington State Nonresidential Energy Code Compliance Form

Interior Lighting Summary — LTG-INT

2006 Washington State Nonresidential Energy Code Compliance Forms — Revised July 2007

Project Info			Date 12/26/2007
	Project Address	1 - Always fill out this line on PRJ-SUM	For Building Department Use
		2 - Fill out this line on PRJ-SUM	
		3 - Fill out this line on PRJ-SUM	
	Applicant Name:	4 - Fill out this line on PRJ-SUM	
	Applicant Address:	5 - Fill out this line on PRJ-SUM	
	Applicant Phone:	6 - Fill out this line on PRJ-SUM	

Project Description

☐ New Building ☐ Addition ☐ Alteration ☐ Plans Included

Refer to WSEC Section 1513 for controls and commissioning requirements.

Compliance Option

◯ Prescriptive ◯ Lighting Power Allowance ◯ Systems Analysis

(See Qualification Checklist (over). Indicate Prescriptive & LPA spaces clearly on plans.)

Alteration Exceptions

(check appropriate box - sec. 1132.3)

☐ No changes are being made to the lighting

☐ Less than 60% of the fixtures new, installed wattage not increased, & space use not changed.

Maximum Allowed Lighting Wattage

Location (floor/room no.)	Occupancy Description	Allowed Watts per ft² **	Area in ft²	Allowed x Area
	** From Table 15-1 (over) - document all exceptions on form LTG-LPA		Total Allowed Watts	

Proposed Lighting Wattage

Location (floor/room no.)	Fixture Description	Number of Fixtures	Watts/ Fixture	Watts Proposed
	Total Proposed Watts may not exceed Total Allowed Watts for Interior		Total Proposed Watts	

Notes:

1. For proposed Fixture Description, indicate fixture type, lamp type (e.g. T-8), number of lamps in the fixture, and ballast type (if included). For track lighting, list the length of the track (in feet) in addition to the fixture, lamp, and ballast information.
2. For proposed Watts/Fixture, use manufacturer's listed maximum input wattage of the fixture (not simply the lamp wattage) and other criteria as specified in Section 1530. For hard-wired ballasts only, the default table in the NREC Technical Reference Manual may also be used. For track lighting, list the greater of actual luminaire wattage or length of track multiplied by 50, or as applicable, the wattage of current limiting devices or of the transformer.
3. List all fixtures. For exempt lighting, note section and exception number, and leave Watts/Fixture blank.

Interior Lighting Summary (back) LTG-INT

Prescriptive Spaces	Occupancy: ◯ Warehouses, storage areas or aircraft storage hangers ◯ Other
Qualification Checklist Note: If occupancy type is "Other" and fixture answer is checked, the number of fixtures in the space is not limited by Code. Clearly indicate these spaces on plans. If not qualified, do LPA Calculations.	Lighting Fixtures: (Section 1521) ☐ Check if 95% or more of fixtures comply with 1,2 or 3 and rest are ballasted. 1. Fluorescent fixtures which are non-lensed with a) 1 or 2 two lamps, b) reflector or louvers, c) 5-60 watt T-1, T-2, T-4, T-5, T-8 lamps, and d) hard-wired electronic dimming ballasts. Screw-in compact fluorescent fixtures do not qualify. 2. Metal Halide with a) reflector b) ceramic MH lamps <= 150w c) electronic ballasts 3. LED lights.

TABLE 15-1 Unit Lighting Power Allowance (LPA)

Use[1]	LPA[2] (W/sf)	Use[1]	LPA[2] (W/sf)
Automotive facility	0.9	Office buildings, office/administrative areas in facilities of other use types (including but not limited to schools, hospitals, institutions, museums, banks, churches)[5,7,11]	1.0
Convention center	1.2	Penitentiary and other Group I-3 Occupancies	1.0
Courthouse	1.2	Police and fire stations[8]	1.0
Cafeterias, fast food establishments[5], restaurants/bars[5]	1.3	Post office	1.1
Dormitory	1.0	Retail[10], retail banking, mall concourses, wholesale stores (pallet rack shelving)	1.5
Exercise center	1.0	School buildings (Group E Occupancy only), school classrooms, day care centers	1.2
Gymnasia[9], assembly spaces[9]	1.0	Theater, motion picture	1.2
Health care clinic	1.0	Theater, performing arts	1.6
Hospital, nursing homes, and other Group I-1 and I-2 Occupancies	1.2	Transportation	1.0
Hotel/motel	1.0	Warehouses[11], storage areas	0.5
Hotel banquet/conference/exhibition hall[3,4]	2.0	Workshops	1.4
Laboratory spaces (all spaces not classified "laboratory" shall meet office and other appropriate categories)	1.8	Parking garages	0.2
Laundries	1.2		
Libraries[5]	1.3	**Plans Submitted for Common Areas Only[7]**	
Manufacturing facility	1.3	Main floor building lobbies[3] (except mall concourses)	1.2
Museum	1.1	Common areas, corridors, toilet facilities and washrooms, elevator lobbies	0.8

Footnotes for Table 15-1

1) In cases in which a general use and a specific use are listed, the specific use shall apply. In cases in which a use is not mentioned specifically, the Unit Power Allowance shall be determined by the building official. This determination shall be based upon the most comparable use specified in the table. See Section 1512 for exempt areas.
2) The watts per square foot may be increased, by two percent per foot of ceiling height above twenty feet, unless specifically directed otherwise by subsequent footnotes.
3) Watts per square foot of room may be increased by two percent per foot of ceiling height above twelve feet.
4) For all other spaces, such as seating and common areas, use the Unit Light Power Allowance for assembly.
5) Watts per square foot of room may be increased by two percent per foot of ceiling height above nine feet.
6) Reserved.
7) For conference rooms and offices less than 150ft^2 with full height partitions, a Unit Lighting Power Allowance of 1.10 w/ft^2 may be used.
8) Reserved.
9) For indoor sport tournament courts with adjacent spectator seating over 5,000, the *Unit Lighting Power Allowance* for the court area is 2.60 W/ft^2.
10) Display window illumination installed within 2 feet of the window, provided that the display window is separated from the retail space by walls or at least three-quarter-height partitions (transparent or opaque). and lighting for free-standing display where the lighting moves with the display are exempt.

    An additional 1.5 w/ft^2 of merchandise display luminaires are exempt provided that they comply with all three of the following:

    a) located on ceiling-mounted track or directly on or recessed into the ceiling itself (not on the wall).
    b) adjustable in both the horizontal and vertical axes (vertical axis only is acceptable for fluorescent and other fixtures with two points of track attachment).
    c) fitted with LED, tungsten halogen, fluorescent, or high intensity discharge lamps.

    This additional lighting power is allowed only if the lighting is actually installed.
11) Provided that a floor plan, indicating rack location and height, is submitted, the square footage for a warehouse may be defined, for computing the interior Unit Lighting Power Allowance, as the floor area not covered by racks plus the vertical face area (access side only) of the racks. The height allowance defined in footnote 2 applies only to the floor area not covered by racks.

"SF Method"
Lighting Load Analysis

Team _____

Parking Lighting - Washington	Action	Fixture A	Fixture B
Calculate Watts Allowed By State to Light Parking Garage			
1 Parking Ramp Area (sf)	(Take-off Sheets A2.01-A2.05)		
2 Lighting Power Allowance (Watts/sf)	(Find from info given to you)		
3 Total Wattage Allowed by State	#1 * #2		
Calculate # of Fixtures Allowed to Meet State Allowance using Wattage			
4 Watts/fixture	(Find from info given to you)		
5 Quantity of Fixtures allowed to be used to stay below lighting power allowance	#3 / #4		
Calculate # of Fixtures Required Using Lighting Specs			
6 Area (sf)/Fixture (Area each fixture will light)	This is given "Rule of Thumb" to use for this calculation	800	500
7 Number of fixtures required using square foot per fixture "Rule of Thumb"	#1 / #6		
8 Total watts used if (sf) quantity is used	#7 * #4		
9 Req'd watts/sf based on Lighting Specs	#8 / #1		
Calculate Fixture Package Cost			
10 Cost per Fixture	(Find from info given to you)		
11 Cost of Parking Lighting System	#7 * #10		
12 Fixture Package Cost per sf	#11 / #1		
If line #9 exceeds #2, use the more accurate way of determining quantity of fixtures needed (Problem 2)	Does req'd fixture wattage/sf exceed State allowable wattage? If no, stop here. If yes, move to Problem 2	Y / N	Y / N

Notes:

"Zonal Cavity Method" of determining the quantity of light maintained on the floor of a parking ramp

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Fixture Type	IES FC req'd	Area (SF)	Length + Width	Ceiling Height	Rm Cavity Ratio	Coefficient of Utilization	Maint. Factor	Lumens per Lamp	Total Lumens Required	# of Lamps Required	Lamps per Fixture	# Fixtures Required	# Fixtures Installed	Watts per Fixture	Installed Watts	Installed Watts per SF	State Allowed Watts per SF
A			1190	10													
B			1190	10													

INFORMATION NEEDED:

1) IES requires 5 foot-candles (FC) of light in a parking ramp (IES = Illuminating Engineering Society of North America)

5) Room Cavity Ratio (RCR) Formula = (IES FC)*(Height) * (Length + Width)/Area (Note: Length + width is for two sides/fl of the garage footprint only, not all 4 sides. This is provided for you.)

6) Coefficient of Utilization (COU): This is a multiplier that accounts for light reflectivity based on design and garage materials
(From COU Chart)

7) Maintenance Factor (MF): This is a multiplier that accounts for light loss due to lamps aging and getting dirty and ballast factors
(From MF Worksheet)

9) Total Lumens required = (IES FC)*(SF) / (COU)*(MF)

10) Number of lamps required = Total Lumens required / lumens per lamp

12) Number of fixtures required = number of lamps required / lamps per fixture

13) Number of fixtures installed = number of fixtures required rounded up to nearest whole #

14) Watts per fixture = from information given

15) Installed watts = (number of fixtures installed) * (watts per fixture)

16) Installed watts per SF = Installed watts / Area

17) State Allowed watts/SF = from State Table 15-1 information in Problem 1

18) Cost per fixture from information given

19) Total fixture package cost = (# of fixtures installed) * (cost per fixture)

20) Cost per sf = (cost per fixture) / Area

Fixture Package Costs

	18	19	20
Fixture Type	Cost per fixture	Package Total $	Cost per sf
A			
B			

CONCLUSION: Using this Zone Cavity Method:

1) Is either fixture under the State allowed watts per SF? If so, which fixture? _____

2) Which fixture would you include in your proposal and why? _____

COEFFICIENT OF UTILIZATION CHART

Fixture Type A
Coefficient of Utilization (This is the percentage of light that actually reaches the area being illuminated)

RCR Value	Ceiling Reflectance =	70%		50%	
	Wall Reflectance =	50%	30%	50%	30%
0	COU Value =	0.42	0.41	0.35	0.30
1	COU Value =	0.48	0.45	0.42	0.38

Type A COU value selected: _____

Fixture type B
Coefficient of Utilization (This is the percentage of light that actually reaches the area being illuminated)

RCR Value	Ceiling Reflectance =	70%		50%	
	Wall Reflectance =	50%	30%	50%	30%
0	COU Value =	0.41	0.40	0.33	0.30
1	COU Value =	0.43	0.42	0.35	0.36

Type B COU value selected: _____

Note: For this calculation, assume the ceiling of the parking structure will be painted (70% reflectance) and the walls will be rubbed exposed concrete (50% reflectance). The COU value you will need will be an extrapolated value based on the RCR value calculated from the worksheet.

MAINTENANCE FACTOR WORKSHEET

The Maintenance Factor (MF) is the factor obtained by multiplying the following:
Maintenance Factor equals (DDF) * (LF)

Dirt Depreciation Factor (DDF)	DDF
Areas that are kept very clean, with minimal dirt and dust in area	0.95
Areas that are kept clean, with dirt and dust in area	0.90

Lamp Factor (LF)	LF
Fluorescent Lamps	0.95
Metal-Halide Lamps	0.85

DDF * LF = MF (for Zone Cavity Method Calculation)

Type A _____ _____ _____

Type B _____ _____ _____

Notes: Assume in discussion with Owner, the parking area will be swept every other month, but dirt and dust will be prevalent in the area

LEED™ Scorecard

Instructions

The scorecard below should be used throughout the design and development of your building project to track your anticipated LEED™ score. The spreadsheet automatically dates each printout to give you a snapshot of your LEED™ score as your project progresses. The active spreadsheet sums the credit points for each category and provides a total score for the project. Do not input values in the category subtotal or in the project total fields as this will be done automatically.

The prerequisites are required and must be achieved. Thus, a "**Y**" appears adjacent in the first box and the other two are shaded. Beside each credit are three boxes to indicate the likelihood of achieving each credit. To score the project appropriately, input the number of points for that credit into the first column labeled "**Y**" if this credit will be pursued. Input the number of points in the second column labeled "**?**" if it is unsure if this credit will be pursued. Finally, input the number of points in the third column labeled "**N**" if this credit will not be pursued or is not applicable to the project. The possible points available for each credit are shown inthe far right column in each category. Remember that Energy & Atmosphere Credit 1.1 through 1.5 are each worth **two** points.

The total number of points listed in the first box of the Total Project Score indicates the current anticipated score of the project. The ranges for each LEED certification category are listed below this row. A minimum of 26 points and achievement of all prerequisites is required to certify a project.

In the Innovation & Design Process category you are encouraged to propose up to four innovations for your project. You should rename the credit titles for Credits 1.1 to 1.4 to reflect the strategies your project will propose.

Total Project Score

Possible Points 69

Certified 26 to 32 points Silver 33 to 38 points Gold 39 to 51 points Platinum 52 or more points

Sustainable Sites — Possible Points 14

Y	?	N			
Y			Prereq 1	**Erosion & Sedimentation Control**	
			Credit 1	**Site Selection**	1
			Credit 2	**Urban Redevelopment**	1
			Credit 3	**Brownfield Redevelopment**	1
			Credit 4.1	**Alternative Transportation**, Public Transportation Access	1
			Credit 4.2	**Alternative Transportation**, Bicycle Storage & Changing Rooms	1
			Credit 4.3	**Alternative Transportation**, Alternative Fuel Refueling Stations	1
			Credit 4.4	**Alternative Transportation**, Parking Capacity	1
			Credit 5.1	**Reduced Site Disturbance**, Protect or Restore Open Space	1
			Credit 5.2	**Reduced Site Disturbance**, Development Footprint	1
			Credit 6.1	**Stormwater Management**, Rate and Quantity	1
			Credit 6.2	**Stormwater Management**, Treatment	1
			Credit 7.1	**Landscape & Exterior Design to Reduce Heat Islands**, Non-Roof	1
			Credit 7.2	**Landscape & Exterior Design to Reduce Heat Islands**, Roof	1
			Credit 8	**Light Pollution Reduction**	1

Water Efficiency — Possible Points 5

Y	?	N			
			Credit 1.1	**Water Efficient Landscaping**, Reduce by 50%	1
			Credit 1.2	**Water Efficient Landscaping**, No Potable Use or No Irrigation	1
			Credit 2	**Innovative Wastewater Technologies**	1
			Credit 3.1	**Water Use Reduction**, 20% Reduction	1
			Credit 3.2	**Water Use Reduction**, 30% Reduction	1

Energy & Atmosphere — Possible Points 17

Y	?	N			
Y			Prereq 1	**Fundamental Building Systems Commissioning**	
Y			Prereq 2	**Minimum Energy Performance**	
Y			Prereq 3	**CFC Reduction in HVAC&R Equipment**	
			Credit 1.1	**Optimize Energy Performance**, 20% New / 10% Existing	2
			Credit 1.2	**Optimize Energy Performance**, 30% New / 20% Existing	2
			Credit 1.3	**Optimize Energy Performance**, 40% New / 30% Existing	2
			Credit 1.4	**Optimize Energy Performance**, 50% New / 40% Existing	2
			Credit 1.5	**Optimize Energy Performance**, 60% New / 50% Existing	2
			Credit 2.1	**Renewable Energy**, 5%	1
			Credit 2.2	**Renewable Energy**, 10%	1
			Credit 2.3	**Renewable Energy**, 20%	1
			Credit 3	**Additional Commissioning**	1
			Credit 4	**Ozone Depletion**	1
			Credit 5	**Measurement & Verification**	1
			Credit 6	**Green Power**	1

Materials & Resources — Possible Points 13

Y	?	N			
Y			Prereq 1	**Storage & Collection of Recyclables**	
			Credit 1.1	**Building Reuse**, Maintain 75% of Existing Shell	1
			Credit 1.2	**Building Reuse**, Maintain 100% of Existing Shell	1
			Credit 1.3	**Building Reuse**, Maintain 100% Shell & 50% Non-Shell	1
			Credit 2.1	**Construction Waste Management**, Divert 50%	1
			Credit 2.2	**Construction Waste Management**, Divert 75%	1
			Credit 3.1	**Resource Reuse**, Specify 5%	1
			Credit 3.2	**Resource Reuse**, Specify 10%	1
			Credit 4.1	**Recycled Content**, Specify 25%	1
			Credit 4.2	**Recycled Content**, Specify 50%	1
			Credit 5.1	**Local/Regional Materials**, 20% Manufactured Locally	1
			Credit 5.2	**Local/Regional Materials**, of 20% Above, 50% Harvested Locally	1
			Credit 6	**Rapidly Renewable Materials**	1
			Credit 7	**Certified Wood**	1

Indoor Environmental Quality — Possible Points 15

Y	?	N			
Y			Prereq 1	**Minimum IAQ Performance**	
Y			Prereq 2	**Environmental Tobacco Smoke** (ETS) **Control**	
			Credit 1	**Carbon Dioxide** (CO_2) **Monitoring**	1
			Credit 2	**Increase Ventilation Effectiveness**	1
			Credit 3.1	**Construction IAQ Management Plan**, During Construction	1
			Credit 3.2	**Construction IAQ Management Plan**, Before Occupancy	1
			Credit 4.1	**Low-Emitting Materials**, Adhesives & Sealants	1
			Credit 4.2	**Low-Emitting Materials**, Paints	1
			Credit 4.3	**Low-Emitting Materials**, Carpet	1
			Credit 4.4	**Low-Emitting Materials**, Composite Wood	1
			Credit 5	**Indoor Chemical & Pollutant Source Control**	1
			Credit 6.1	**Controllability of Systems**, Perimeter	1
			Credit 6.2	**Controllability of Systems**, Non-Perimeter	1
			Credit 7.1	**Thermal Comfort**, Comply with ASHRAE 55-1992	1
			Credit 7.2	**Thermal Comfort**, Permanent Monitoring System	1
			Credit 8.1	**Daylight & Views**, Daylight 75% of Spaces	1
			Credit 8.2	**Daylight & Views**, Views for 90% of Spaces	1

Innovation & Design Process — Possible Points 5

Y	?	N			
			Credit 1.1	**Innovation in Design**: Specific Title	1
			Credit 1.2	**Innovation in Design**: Specific Title	1
			Credit 1.3	**Innovation in Design**: Specific Title	1
			Credit 1.4	**Innovation in Design**: Specific Title	1
			Credit 2	**LEED™ Accredited Professional**	1

2008 ASC Student Competition
National Preconstruction Services Problem
Evaluation Form

Dear ASC Preconstruction Services Problem Teams/Team Leaders:

Please have each team leader complete this evaluation form and return it with the Team Leader to the Debrief and Answer Session on Friday, February 15, 2008 at 7:00 PM. ***The provided evaluation form is your admission ticket*** for your team to the 7:00 PM Debrief and Answer Session.

Your feedback is important to our team as we improve the quality of this problem in the years to come. Be honest and forthright with your answers. If you need additional space, please use the back of this form for your comments. Please label the question number to which you are responding.

Thank you for your time and consideration.

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1. **Why did you choose this particular problem?**

2. **What was the most challenging component of the problem statement?**

3. **What time on Thursday did your team complete the written Phase II portion of the problem?**

4. **How well does your class work prepare you for this problem?**

5. **How much time (in total hours) did your team exercise the industry at large in preparing for this problem?**

PCL CONSTRUCTION SERVICES, INC.
WASHINGTON LICENSE #PCLCOSI099NW
15405 SE 37TH STREET, SUITE 200, BELLEVUE, WASHINGTON 98006 ◆ TELEPHONE (425)454-8020 ◆ FAX (425)454-5924

6. How satisfied are you with the time allotment to respond to each section of the problem?

a. Phase I - Prequalification

☐ Very Dissatisfied ☐ Dissatisfied ☐ Neither Dissatisfied or Satisfied ☐ Satisfied ☐ Very Satisfied

b. Phase II – Proposal

☐ Very Dissatisfied ☐ Dissatisfied ☐ Neither Dissatisfied or Satisfied ☐ Satisfied ☐ Very Satisfied

c. Presentation

☐ Very Dissatisfied ☐ Dissatisfied ☐ Neither Dissatisfied or Satisfied ☐ Satisfied ☐ Very Satisfied

7. List any recommended changes to the competition rules. Include how to implement your recommendation.

8. Overall, how satisfied were you with the Preconstruction Services Problem?

☐ Very Dissatisfied ☐ Dissatisfied ☐ Neither Dissatisfied or Satisfied ☐ Satisfied ☐ Very Satisfied

9. Overall, how satisfied were you with the Preconstruction Services Problem as a learning tool?

☐ Very Dissatisfied ☐ Dissatisfied ☐ Neither Dissatisfied or Satisfied ☐ Satisfied ☐ Very Satisfied

10. Overall, how satisfied were you as to the professionalism of the PCL Problem team members?

☐ Very Dissatisfied ☐ Dissatisfied ☐ Neither Dissatisfied or Satisfied ☐ Satisfied ☐ Very Satisfied

11. List three positive things about this years' competition. Does not have to be Preconstruction Services Problem specific.

12. List three negative things about this years' competition. Does not have to be Preconstruction Services Problem specific.

13. On a scale of 1-10, (ten being the best) how would you rate this year's competition?

14. Rate each category using the following evaluation scoring system:

1 = Poor 2 = Needs Improvement 3 = Average 4 = Good 5 = Excellent

a. _____ Location of facilities
b. _____ Quality of the presentation room & equipment
c. _____ Applicability to school course work
d. _____ Availability of support from the Architect/Contracting/Engineering community
e. _____ Format of the problem statement
f. _____ Amount of work to the problem statement
g. _____ Quality of the problem statement
h. _____ Clarity of the Addendum
i. _____ Amount of presentation time

15. How much of the financial burden of this trip was paid by the students (not including entertainment and gambling) as a percentage of total costs?