# CONDITIONS OF THE CONTRACT

- 00 11 13 Advertisement for Bids
- 00 21 13 Instructions to Bidders
- 00 42 13 Form of Proposal Part A: Base Bid
- 00 50 00 Agreement between Owner and Contractor
- 00 72 00 General Conditions for Washington State Facilities Construction with Washington State University Amendments
  - Attachment A: Good Faith Hazardous Material Survey

## DIVISION 01  GENERAL REQUIREMENTS

- 01 11 00 Summary of Work
- 01 26 00 Change Order Procedures
- 01 29 00 Applications for Payment
  - Current Prevailing Wage Rates
- 01 29 73 Schedule of Values
- 01 31 19 Project Meetings
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- 01 32 13 Progress Schedule
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- 01 33 00 Submittals
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- 01 41 00 Regulatory Requirements
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- 01 45 00 Quality Control
- 01 45 34 Contract Performance Evaluation Program
- 01 50 00 Construction Facilities & Temporary Controls
- 01 60 00 Material and Equipment
- 01 70 00 Project Close-Out
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- 01 78 23 Operation & Maintenance Manuals
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- 01 81 19 Indoor Air Quality Management Plan

## DIVISION 02  EXISTING CONDITIONS

- 02 41 19 Demolition - Stage Rigging Systems

## DIVISION 11  EQUIPMENT

- 11 61 33 Stage Rigging Systems

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END OF SECTION 00 01 10
Sealed bids are being requested by the Board of Regents of Washington State University, for the above referenced project.

Project Scope:

Beasley Coliseum is preparing a theater rigging demolition project. The scope of the project is to remove and discard the proscenium, 3 electrics, all associated hardware, and rigging components. The Contractor is required to provide all equipment necessary to safely remove and discard the theater rigging components. The Contract time is 30 days from Notice to Proceed to Substantial Completion. Proposals MUST BE based on this Contract Time.

Project is located at 925 NE North Fairway Road, Pullman, WA 99164.

Bid Estimate: $40,000.00 to $50,000.00

Bids will be received prior to 2:00 p.m.; Wednesday, March 27, 2019 at Facilities Services, McCluskey Services Building, 2425 East Grimes Way, Pullman, WA 99164-1150. Proposals will then be publicly opened and read aloud in Room 190D, McCluskey Services Building.

A mandatory pre-bid conference for general contractors will be held 9:00 a.m. on Wednesday, March 13, 2019 in the Cougar Lounge at Beasley Coliseum, at 925 NE North Fairway Road, Pullman, WA 99164.

Parking on campus is enforced 24 hours a day, every day. It is bidder’s responsibility to obtain parking permits to attend pre-bid meetings, site visits, and bid openings. Daily permit rates may be found at: http://transportation.wsu.edu/TempFees.html. Identify the meeting and project when obtaining the permit to receive appropriate rates.

Bid documents may be obtained at https://facilities.wsu.edu/facilities-services-capital/contractors/. Contractors who would like to be included on the Planholder’s list shall either attend the pre-bid meeting or request to be added by emailing contracts@wsu.edu.

Printing Disclaimer: The bidding documents are available for all interested bidders and plancenters. The University does not provide printing services; it is the bidder’s responsibility to print the drawings to the appropriate scale indicated. We encourage the use of professional printing shops.

Owner reserves the right to reject any and all bids and to waive any informalities or irregularities in the bids received.

Maja S. Huff
509-335-9082
Contracts@wsu.edu
Facilities Services
Washington State University
PART 1  GENERAL

1.01  PROJECT IDENTIFICATION

A. Refer to the Advertisement for Bids for Project identification, availability of bidding documents, Prebid Conference, and Contract completion date. Refer to Summary of Work, Section 01 11 00, for a brief description of the Work.

1.02  BIDDER QUALIFICATIONS

A. Contractor Registration:

1. Bidders subject to the Contractor's Registration Act (RCW Chapter 18.27) must show their State of Washington Contractor's license number on the Form of Proposal. In addition, bidders are cautioned to verify that all subcontractors submitting bids are also registered and licensed in accordance with the laws of the State of Washington. Owner is prohibited by virtue of RCW 39.06.010 from executing any Contract for public works with any contractor who is not registered or licensed in accordance with the laws of this state. Prior to submitting a bid, bidder must obtain an appropriate clearance and license to do business in the State of Washington as follows:

a. Contractor's License: Make license application to the Department of Labor and Industries, Contractor's Registration, P.O. Box 7689, Olympia, Washington 98504.

b. Registration Number: Out-of-State Contractors must obtain a registration number and permission to do business in the State of Washington from the Secretary of State, Olympia, Washington 98501.

c. Other Registrations: Register with the State Department of Revenue as a contractor engaging in business in this state and register with the State Department of Labor and Industries and the Employment Security Department.

2. Payment and Performance Bonds:

a. Bidders must be able to furnish satisfactory separate Payment and Performance Bonds for full amount of the initial Contract Sum, plus sales tax.

1.03  EXAMINATION OF SITE AND CONTRACT DOCUMENTS

A. Before submitting a bid or proposal, bidders shall carefully examine the Contract Documents, visit the Project site, and fully inform themselves as to all existing conditions and limitations, and shall include in their bid or proposal a sum to cover the cost of all items included in the Work, and shall rely on their own examination in making their bid or proposal. No change in the Work, the
Contract Sum, or the Contract Time will be allowed for issues that would have been reasonably apparent by the foregoing examination.

B. Bidder acknowledges that it has satisfied itself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the Project site, including all exploratory work done by Owner, as well as from the Drawings and Specifications made a part of the Contract Documents.

C. Bidder acknowledges that adjoining areas will be in normal course during the Work. Bidder should anticipate pedestrian and traffic congestion, limited parking, and the need to coordinate all Work with ongoing operations.

D. Owner assumes no responsibility for any conclusions or interpretations made by bidder based on the information made available by Owner. Should a bidder find discrepancies or omissions in the Drawings or Specifications, or should bidder be in doubt as to their meaning, bidder shall at once notify Owner. If appropriate, Owner will send written instructions to all bidders by addenda. Questions received less than 7 Days before the time of bid opening may not be answered. All issued addenda shall be incorporated into these Contract Documents.

1.04 PREBID CONFERENCE

A. All bidders are required to attend a pre-bid conference due to limited work space, and site access through lower level entrance at the project. Refer to the Advertisement for Bids for the date, time and location. Bids from firms that do not attend the pre-bid conference will be determined to be non-responsive and the bids will be returned unopened.

B. Parking on campus is enforced 24 hours a day, every day. It is bidder’s responsibility to obtain parking permits to attend pre-bid meetings, site visits, and bid openings. Due to the possibility of parking at multiple locations on campus, Bidders are advised to consider obtaining Orange Temporary Permits. Go to http://transportation.wsu.edu/TempFees.html for more information about parking permits.

1.05 CLARIFICATIONS

A. Should bidders find discrepancies in, omissions from, or unclear information within the Contract Documents, they should notify Owner at once. Owner shall issue a written instruction in the form of an addendum to all bidders. Neither the Owner nor Architect/Engineer will be responsible for any oral instructions. Questions received less than 7 Days before bid opening may not be answered. All addenda issued prior to the opening of bids will be incorporated into the Contract.

1.06 SPECIFIED PRODUCTS

A. Bids must be based upon items identified in the Specifications or approved substitutions. In certain cases, specific items have been named because of
operational or maintenance considerations; approval of substitutions should not be assumed.

B. Requests for approval of substitutions must be made in writing and received by Owner at least 7 Days prior to the date of bid opening. Said request must include complete descriptions, technical data, and performance records. Any approval of the proposed substitution will be made by addendum issued to all bidders.

C. To submit substitution requests prior to Bid opening:

1. Only one substitution request per bidder will be considered for each product.

2. Requests for substitutions shall provide sufficient data to allow Owner to evaluate the suitability of the proposed product. Bidder must clearly identify product and model number of proposed substitution.

D. By requesting a substitution, bidder represents and warrants that (1) it has personally investigated the proposed material or product and determined that it is equal or better in all respects to that specified, (2) the same or better warranty will be provided for the substitution, (3) it has coordinated with affected subcontractors, (4) the substitution will not impact other parts of the Work, (5) the aggregate costs associated with the substitution actually reduces its bid amount, (6) all costs associated with the substitution are included in its bid, and (7) it waives any known or unknown future claim for an increase in the Contract Sum or Contract Time associated with the substitution.

E. Owner retains full discretion over whether to approve a substitution, and Owner's approval does not relieve bidder of the above requirements.

1.07 TAXES

A. State of Washington Sales Tax shall not be included in the bid price, except that the retail sales tax upon sales and rentals to prime contractors and subcontractors of tools, cranes, air compressors, bulldozers, lubricating oil, sandpaper, form lumber, and similar items of material and equipment which are primarily for use by the bidder rather than for resale as a component part of the finished work, shall be included in the bid price. (See WAC 458-20-170 (State Department of Revenue Rule 170))

B. Sales tax applicable to the Contract Sum will be added to the Contract Sum by Owner at the time the Contract (Section 00 50 00) is written and shall be paid to Contractor. Contractor shall then remit payment for the sales tax to the State Department of Revenue in conformance with the law.

1.08 FILING FEES

A. Applicable state laws concerning prevailing wages, hours, workers' compensation, and other conditions of employment are called to the attention of
bidders for their compliance. Bidders shall include in their bid any and all fees, including filing fees, required to comply with applicable labor laws.

1.09 PAYMENT AND PERFORMANCE BONDS

A. Upon award of the Contract, the successful bidder will be required to provide Owner with satisfactory separate payment and performance bonds. Cost of bond premiums must be included in the bidder's proposal.

1.10 FORM OF PROPOSAL

A. Proposals must be formatted in accordance with the following:

1. Bidder must utilize the Form of Proposal, examples of which are included in the Contract Documents; all numbers must be clearly and legibly stated both in writing and in figures; and signatures must be in longhand.

2. Each part of the Form of Proposal must be sealed in its own opaque envelope and marked "Proposal - Beasley Remove Overhead Stage Rigging”. Bidders name shall appear on the outside of this sealed envelope. All bids are to be delivered or mailed to Facilities Services, P.O. Box 641150, 100 McCluskey Services Building, Washington State University, Pullman, WA 99164-1150. If mailed, the envelopes for both Part A and Part B shall be enclosed in a single envelope for mailing.

3. Bids will be received in the following form on the dates and at the times indicated in the Advertisement for Bids.

4. Proposal:
   a. Completed proposal indicating the following:
      1) Base Bid and Alternate Bid (if any) amounts;
      2) Acknowledgment of Addenda received;
      3) Signature, Corporate Identification, and Contractor License number; and
      4) Bid Security to be attached to proposal form.

5. All proposals will remain sealed until the bid opening. Bidders may, at their option, submit a single fully completed proposal (Form of Proposal), together with the required bid security, up until the time set for receipt of the first submittal.

6. An official clock, at the office location designated for receipt of bids, will be designated by Owner for determining the timely receipt of each bid.

B. Proposals received and determined untimely by Owner, may be considered as non-responsive and will be returned to bidder unopened.

C. Bids (Proposal) will be received until the respective times indicated in the Advertisement for Bids. They must be received prior to the respective times
stated; i.e., where bids for Part A are required until 2:00 p.m., all bids received by 1:59:59 p.m. are timely; all bids received on or after 2:00:00 p.m. are untimely.

D. Bidders are solely responsible for delivery of their proposals at the specified location and before the specified time set for receipt of bids.

1.11 BID ALTERNATES, ALLOWANCES AND UNIT PRICES – NOT USED

A. BidAlternates, Allowances, and Unit Prices adjust the Project scope by adding, deleting, or modifying specific parts of the Work as stated hereinafter.

B. An Alternate is an amount proposed by bidders and stated on the Bid Form for certain construction activities defined in the bidding documents that may be added to or deducted from the Base Bid amount and/or the Owner decides to accept a corresponding change in either the amount of construction to be completed, or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Each bidder shall submit, on the Form of Proposal, an amount for each Bid Alternate stating the difference in cost from the Base Bid amount for adding, deleting, or modifying specific materials and/or construction.

2. The difference in cost shall include all deletions, additions, and adjustments to all trades as may be necessary by each modification.

3. Only Alternates authorized by these specifications or pursuant to addenda will be considered.

C. An Allowance is an amount established in the Contract Documents for inclusion in the Contract Sum to cover the cost of prescribed items not specified in detail sufficient to estimate at time of bid.

1. Each bidder shall include in the Base Bid amount the amount for each Allowance as identified in the bidding documents.

D. A Unit Price is an amount as a price per unit of measurement for materials or services added or deleted from the Base Bid amount.

1. Each bidder shall submit on the Bid Proposal Form, an amount for each Unit Price stating the difference per unit or measurement for materials or services added or deleted from the Base Bid amount.

2. The Unit Price stated shall be used as the amount for either adding or deleting the item per unit of measurement from the Work.

3. The Unit Price amounts submitted on the Form of Proposal shall be used as the cost per unit of measurement for the entire duration of the Contract.
1.12 BID GUARANTEE

A. Bidder shall furnish a bid guarantee in the form of a cashier’s check or bid bond made payable to the Board of Regents of Washington State University for an amount equal to at least 5% of the total Base Bid amount, as evidence of good faith and as a guarantee that, if awarded the Contract, the bidder will execute the Contract and provide payment and performance bonds as required.

B. Should the successful bidder fail to enter into a Contract and furnish satisfactory bonds within 10 Days after its proposal has been accepted, the bid security shall be forfeited as liquidated damages.

C. Owner reserves the right to hold the bid guarantee of the 3 lowest bidders until the successful bidder has entered into a contract and furnished required bonds.

1.13 MWBE PARTICIPATION

A. Washington State University is committed to the enhancement of opportunities for minority and women owned and controlled businesses in public contracting. The use or solicitation of minority and women’s business enterprise firms is expressly encouraged.

1.14 MODIFICATION OF PROPOSALS

A. Modifications to proposals already submitted will be permitted only if requested in writing over the signature of the bidder and provided such requests are received prior to the time set for receipt of bids.

B. The original Form of Proposal will remain unopened until bid opening. Modifications in the form of facsimile transmissions will not be accepted.

C. Withdrawal of proposals will be permitted only if requested in writing over the signature of the bidder and provided such requests are received prior to the time set for receipt of bids.

D. Withdrawal requests in the form of facsimile transmissions will not be accepted.

E. After the scheduled closing time for the receipt of Form of Proposals, no bidder will be permitted to withdraw a proposal unless said award is delayed for a period exceeding 60 Days.

1.15 ALTERATIONS PROHIBITED

A. Except as otherwise provided herein, Forms of Proposal which are incomplete, or which are conditioned in any way, or which contain items not called for in the Proposal Form, or which are not in conformity to the law, may be rejected.
B. The Form of Proposal invites bids on specific Drawings and Specifications. Only the amounts and information asked for on the Form of Proposal furnished will be considered.

1.16 LOW RESPONSIBLE BIDDER

A. It is the intent of Owner to award the Contract to the low responsible bidder. Before award, the bidder must meet the following bidder responsibility criteria to be considered a responsible bidder. The bidder may be required by Owner to submit documentation demonstrating compliance with the criteria. Bidder must:

1. Have a current certificate of registration in compliance with chapter 18.27 RCW, which must have been in effect at the time of bid submittal;
2. Have a current Washington Unified Business Identifier (UBI) number;
3. If applicable:
   a. Have Industrial Insurance (workers’ compensation) coverage for the bidder’s employees working in Washington, as required in Title 51 RCW;
   b. Have a Washington Employment Security Department number, as required in Title 50 RCW;
   c. Have a Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW;
4. Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065(3).
5. Not have been found out of compliance by the Washington State Apprenticeship and Training Council for working apprentices out of ratio, without appropriate supervision, or outside their approved work processes as outlined in their standards of apprenticeship under chapter 49.04 RCW for the one-year period immediately preceding the first date of advertising for this project.
6. Not have been determined by a final and binding citation and notice of assessment issued by the Department of Labor and Industries, or through a civil judgment entered by a court of limited or general jurisdiction, to have willfully violated, any provision of chapter 49.46, 49.48, or 49.52 RCW, as defined in RCW 49.48.82.

B. In addition to the bidder responsibility criteria above, bidder must also meet the following supplemental bidder responsibility criteria applicable to the Project:

1. The ability, capacity, and skill of bidder to perform the service required;
2. The experience and efficiency of bidder;
3. Whether bidder can perform the Contract within the time specified;
4. The satisfactory completion of previous contracts or services;
5. Such other information having a bearing on the decision to accept a bid proposal.

C. Whenever Owner evaluates Contractor’s responsibility, the foregoing may be taken into account. In addition to Contractor’s experience, evaluation of bidder’s responsibility will also be based on the documented experience of the Project Manager, Project Engineer, and the Superintendent proposed for the Project. A minimum of five-years experience or three projects of comparable size and scope to this Project will be required for Contractor’s Project Manager, Project Engineer, and superintendent.

D. Within 48 hours of receipt of request, apparent low bidder will provide such information about its team as Owner determines to be reasonably necessary to evaluate the responsibility of the bidder. Failure to reply with requested information will render a bidder non-responsible at Owner’s option. At minimum, a bidder shall provide:

1. A financial statement;
2. List of projects currently under construction, including current contract amount and status of each;
3. Names and resumes of proposed Project Manager, Project Engineer, and Superintendent;
4. Name of bonding company/agent; and
5. References including project and owner name, a project contact, and project contact telephone number.

E. As evidence that bidder meets the bidder responsibility criteria, the apparent low bidder must submit documentation as may be required above to the Owner within 48 hours of the bid submittal deadline. Owner reserves the right to request such documentation from other bidders also.

F. Owner will review Contractor’s past Contract Performance to assist in evaluating the contractor’s qualifications and proven ability to successfully perform future contracts only when past performance has been previously documented via the Contract Performance Program.

G. If Owner determines bidder does not meet the bidder responsibility criteria above and is therefore not a responsible bidder, Owner shall notify bidder in writing with the reasons for its determination. If bidder disagrees with this determination, it may appeal the determination within 24 hours of receipt of Owner’s determination by presenting additional information to Owner. Owner will consider the additional information before issuing its final determination. If the final determination affirms that bidder is not responsible, Owner will not execute a Contract with any other bidder until 2 business days after the bidder determined to be not responsible has received the final determination.
1.17 CONTRACT AWARD

A. Owner intends but is not required to enter into a contract with the successful bidder, for all Work called for in the Contract Documents.

B. The determination of the successful bidder will be made, on the basis of the sum of the Base Bid together with Owner-selected Alternates.

C. The responsibility of bidder and its subcontractors will be considered in making the award. Owner reserves the right to reject any or all bids and to waive informalities advantageous to Owner and/or the protection of the public interest.

D. Reinstatement of Bid Alternate not initially selected shall be in accordance with provisions of the Bid Proposal Form of Proposal.

1.18 CONTRACT FORMS

A. Owner’s standard form Contract is included with the Contract Documents.

END OF SECTION 00 21 13
Washington State University
Beasley Remove Overhead Stage Rigging
Pullman, WA

Refer to Instructions to Bidders for bid submittal procedures.

Bidder's Firm Name: ________________________________ Date: ____________

To: Facilities Services, Capital
   McCluskey Services Building, P.O. Box 641150
   Washington State University
   Pullman, Washington 99164-1150

Pursuant to and in compliance with the Advertisement for Bids and the Instructions to Bidders, the Bidder, having carefully examined the Contract Documents entitled "Beasley Remove Overhead Stage Rigging" and having visited the Project site and examined the conditions affecting the Work, hereby proposes and agrees to provide all labor, materials, equipment, services, and incidentals necessary to complete the Work for the following stipulated sums:

A. BASE BID

   ________________________________________________________________
   ________________________________________________________________ DOLLARS ($__________________),

B. UNIT PRICES – NOT USED
C. ALTERNATES – NOT USED
D. REINSTATEMENT OF BID ALTERNATES – NOT USED
E. SALES TAX

   The Bidder agrees that the amounts indicated in the proposal do not include Washington State and local sales taxes except as required by the Instructions to Bidders.

F. CONTRACT PROVISIONS

   Should the Bidder be notified of the acceptance of this proposal within 60 Days from the date set for the opening thereof or at any time thereafter before this proposal is withdrawn, the bidder agrees to execute a Contract for the Work and to furnish the required bonds.

   1. TIME OF COMPLETION
      The bidder agrees, if awarded a Contract for the Work, to complete the Work within the Contract Time specified.
2. LIQUIDATED DAMAGES
The bidder agrees that time is of the essence of the Contract and acknowledges that the amount of damages specified is a measure of the damages which the Owner will sustain should the Bidder fail to complete the Work within the Contract Time.

G. BID GUARANTEE

The Bidder agrees that the bid guarantee accompanying the Part A Form of Proposal is left in escrow with Owner, that the amount of the guarantee is the measure of the damages that Owner will sustain by failure of the bidder to execute a Contract for the Work and furnish required bonds, and that if the bidder fails to deliver said documents within 10 Days after receipt of notice of award to the bidder, the bid guarantee shall become the property of Owner.

H. MINORITY AND WOMEN'S BUSINESS ENTERPRISE (MWBE) PARTICIPATION

Owner is committed to the enhancement of opportunities for minority and women owned and controlled firms in public contracting. While neither required, nor a part of bidder responsiveness, the use or solicitation of minority and women business enterprises is expressly encouraged.

I. CONTRACTOR AND SUBCONTRACTOR PARTICIPATION

If Base Bid exceeds one million dollars ($1,000,000), the Bidder agrees, if awarded the Contract, that all firms named on Part B of the Form of Proposal will be directly subcontracted for performance of their respective work category.

J. ADDENDA

The bidder hereby acknowledges receipt of Addendum by number(s):

K. PREVAILING WAGE CERTIFICATION

The bidder has not been determined by a final and binding citation and notice of assessment issued by the Department of Labor and Industries, or through a civil judgment entered by a court of limited or general jurisdiction, to have willfully violated, any provision of chapter 49.46, 49.48, or 49.52 RCW, as defined in RCW 49.48.82.

L. DECLARATION

The bidder represents and warrants that he/she possess the authority to sign for and bind bidder.
The Bidder declares under penalty of perjury under the laws of the State of Washington, that all of the foregoing information as recited is true and correct to the best of his/her knowledge.

Bidder’s Firm Name: ________________________________

Signed By: ____________________________ Official Title: _______________________

Print Name: ________________________________

Address: ________________________________

City: __________________ State: ______ Zip Code: ______

Telephone: __________________ Fax: __________________

State of Washington Contractor’s License Number: ________________________________

Federal Tax Identification Number: ________________________________

Email Address: ________________________________

The firm represented by the above signature is a:

Sole Proprietorship ________
Partnership ________
Corporation ________ State of Incorporation __________________
Other ________

END OF SECTION 00 42 13
Beasley Remove Overhead Stage Rigging

Agreement between Owner and Contractor

(Fixed Contract Sum)

This AGREEMENT is effective as of the date of the first signature on the Agreement so long as all other parties’ authorized signatories have also executed the Agreement. This Agreement is made by and between the following parties in connection with the Project identified below.

OWNER: Washington State University
c/o Facilities Services, Capital
P.O. Box 641150
Pullman, WA 99164-1150

CONTRACTOR: [To be determined]

ARCHITECT (A/E): Shuler Shook
325 North Saint Paul, Suite 3250
Dallas, TX 75201

PROJECT: Beasley Remove Overhead Stage Rigging
925 NE North Fairway Road
Pullman, WA 99164

In consideration of the mutual covenants and obligations contained herein, Owner and Contractor agree as set forth herein.

Article 1
The Work of the Contract

1.1 Contractor to fully execute the Work. Contractor shall fully execute the entire Work in strict accordance with the Contract Documents, and shall provide all material, equipment, tools, and labor necessary to timely complete the Work described in and reasonably inferable from the Contract Documents, except to the extent specifically indicated to be the responsibility of others.

1.2 Contractor to further Owner’s interests. Contractor accepts the relationship of trust and confidence established by this Agreement and covenants with Owner to cooperate and collaborate with Owner and others involved with the Project and to exercise Contractor’s best skill and judgment; to furnish efficient, professional construction administration, management services and supervision with sufficient quantities of fully qualified, competent and experienced personnel; and to perform the Work in an expeditious and economical manner consistent with Owner’s interests. The parties will endeavor to promote harmony, cooperation and mutual respect among the Project participants to the fullest extent possible in order to further the success of the Project and to effect prompt and successful completion of the Project within the requirements of the Contract Documents, the Contract Time and the Contract Sum.
Article 2
Contract Documents

2.1 The Contract Documents. The “Contract Documents” form the “Contract.” The Contract Documents consist of this Agreement (Agreement between Owner and Contractor or the “Agreement”); any attached Exhibits and other documents listed in the Contract Documents; the General Conditions; other documents listed in Article 8 of this Agreement; and written modifications, amendments and Change Orders to the Contract issued after execution of this Agreement.

2.2. Contract is complete and integrated agreement. The Contract represents the entire, complete, and integrated agreement between the parties and supersedes prior negotiations, representations or agreements, either written or oral. No oral representations or other agreements have been made by the parties except as specifically established in the Contract.

2.3 Contract is between only Owner and Contractor. The Contract Documents shall not be construed to create a contractual relationship of any kind between any Persons other than Owner and Contractor.

Article 3
Definitions

3.1 Terms, words and phrases to have ordinary meanings. Terms, words and phrases used in the Contract Documents shall have the meanings given them in this Agreement and in the General Conditions or, if not defined, in a manner consistent with construction industry standards. In the event of any inconsistency in such definitions, the definitions in this Agreement shall control.

3.2 Construction Documents. The Construction Documents are identified in the General Conditions and other Contract Documents as Drawings and Specifications. The Construction Documents do not include shop drawings or other Submittals.

3.3 Contractor. “Contractor” is the Person identified as such in the Agreement and General Conditions. Contractor must be licensed, bonded, and insured as a contractor in the State of Washington, and must legally be permitted to do business. Contractor’s authorized representative, including its Designated Representative, shall be authorized to act on Contractor’s behalf with respect to the Project.

3.4 General Conditions modified. Section 4.03E of the General Conditions is hereby modified to clarify that Contractor and Owner may agree on the number of copies of Submittals to be provided to Owner. If no such agreement is reached, Contractor shall submit five copies.

Article 4
Notice to Proceed and Substantial Completion

4.1 Notice to Proceed. The date of Notice to Proceed will be specified in a written Notice issued by Owner. Owner may issue separate written authorizations to proceed for different portions of the Work.
4.2 **Contract Time measured from date of commencement.** The Contract Time shall be measured from the Notice to Proceed date to the contractual date of Substantial Completion established in Section 4.3, subject to adjustments as provided in the Contract Documents. Time is of the essence in completion of the Work.

4.3 **Substantial Completion and Final Completion.** Contractor shall achieve Substantial Completion of the Work by Thirty (30) Days following Notice to Proceed, subject to adjustments as provided in the Contract Documents, and shall achieve Final Completion not later than Thirty (30) Days thereafter. Contractor represents to Owner that the Contract Time is adequate for full performance of the Work. Contractor shall also achieve any interim milestones and phasing requirements set forth in the Contract Documents.

4.4 **Liquidated damages.** Owner will assess, and Contractor will be responsible for, liquidated damages in the amount of Five hundred forty-two dollars and sixty-seven cents ($542.67) per Day for each Day beyond the contractual date for Substantial Completion that Substantial Completion is not timely achieved, and subsequently Two hundred thirty-two dollars ($232.00) per Day for each Day beyond the time period established in Section 4.3 that Final Completion of the entire Work is not achieved. Contractor and Owner agree that the liquidated damages amounts are not penalties and are a reasonable estimation of actual damages to Owner, as of this date of Agreement, based on the inherent uncertainty and difficulty in calculating and quantifying damages caused by delays in the construction of university facilities.

**Article 5
Contract Sum**

5.1 **Contract Sum.** For Contractor’s performance of the Contract, Owner shall pay to Contractor the Contract Sum of _______________ dollars ($__________), subject to additions and deductions for changes in the Work as provided in the Contract Documents. The Contract Sum includes by way of example and not limitation all costs of construction; general conditions; all taxes except Washington State sales tax due on the Contract Sum; Contractor’s contingency; any approved Allowances; all insurance; overhead; and Contractor’s fee.

5.2 **Alternates.** The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by Owner:

<table>
<thead>
<tr>
<th>Alternate No.</th>
<th>Description</th>
<th>Price ($0.00)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.3 **Unit Prices.** Any Unit Prices are as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Units</th>
<th>Price ($0.00)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Unit Prices as set forth in the Contract Documents are “all in.” They include all material, equipment, labor, delivery, installation, and Subcontractor costs, any overhead and profit not included in the fee, and any other costs or expenses in
connection with, or incidental to, the performance of that portion of the Work to which such Unit Prices apply.

5.4 **Allowances.** Allowances included in the Contract Sum are as follows:

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<tr>
<th>Allowance</th>
<th>Amount</th>
<th>Included Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
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Allowances may be included in the Contract Sum due to uncertainty in scope, price and/or quantity at the time this Agreement is executed. Whenever actual costs are more or less than an allowance, the Contract Sum will be appropriately adjusted. Contractor must provide Owner with written notice of its intent to expend an allowance amount (providing Owner with the opportunity to approve or reject the cost) before expending an allowance amount.

5.5 **Changes in the Work.**

5.5.1 Owner may, without invalidating the Contract, order changes in the Work consisting of additions, deletions or other revisions. Owner shall issue such changes in writing.

5.5.2 Adjustments of the Contract Sum and/or Contract Time on account of changes in the Work may be determined by any of the methods listed in the General Conditions.

**Article 6**

**Payments**

6.1 **Applications for Payment.**

6.1.1 The Contract Documents detail the requirements for Applications for Payment. Based upon Applications for Payment that Contractor submits to Owner, Owner shall make progress payments to Contractor on account of the Contract Sum.

6.2 **Progress Payments.**

6.2.1 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows and in accordance with Section 01 29 00, Applications for Payment:

1. Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage of completion of each portion of the Work by the share of the Contract Sum allocated to that portion in the Schedule of Values. Pending final determination of the cost to Owner of changes in the Work, amounts not in dispute may be included as provided in the General Conditions unless Owner requires that actual cost records be provided;

2. Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by Owner, suitably stored and insured off the site at a location agreed upon in writing);

3. Subtract the aggregate sum of previous payments made by Owner;
.4 Subtract amounts, if any, for which Owner has withheld payment; and

.5 Subtract the statutory retainage of five percent (5%) of the above amount as a fund for the protection and payment of the claims of any Person arising out of the Work and the State of Washington with respect to taxes.

6.3 Final Payment.

6.3.1 Final payment, constituting the entire unpaid balance of the Contract Sum, less retainage, shall be made by Owner to Contractor no later than 30 Days after Contractor has fully performed the Contract and Final Completion has occurred (except for Contractor’s responsibility to correct non-conforming Work discovered after final payment or to satisfy other requirements, if any, that extend beyond final payment), and Contractor has submitted a final Application for Payment.

6.3.2 Owner shall release retainage to Contractor in accordance with Chapter 60.28 RCW and the Contract Documents.

Article 7
Miscellaneous Provisions

7.1 Designated Representatives.

7.1.1 Owner’s Designated Representative, designated below, shall be authorized to act on Owner’s behalf with respect to the Project:

Kevin Poitra
Project Manager
Facilities Services, Capital

7.1.2 Contractor’s Designated Representative, identified below, shall be authorized to act on Contractor’s behalf with respect to the Project:


7.1.3 Neither Owner’s nor Contractor’s Designated Representatives shall be changed without 10 Days’ written notice to the other party.

7.2 Interest. Payments due and unpaid under the Contract Documents shall bear interest as specified by RCW 39.76, not to exceed the Bank of America prime plus two percent (2%) per annum.

7.3 Quality control and assurance and Owner’s right to inspect the Work: Contractor shall develop and submit an overall Quality Control and Assurance Plan to ensure that the Work is inspected by qualified members of Contractor’s staff or third parties. The Quality Control and Assurance Plan must be acceptable to Owner. Owner expressly reserves the right to inspect any and all portions of the Work at any time during the Project. Contractor shall provide access to the Work as needed by Owner or its representatives, including the use of scaffolding, platforms, or lifts. All corrections or observations noted by Owner shall be logged by Contractor for
correction, tracking and documentation to the satisfaction of Owner.

7.4  **Contractor to actively manage and supervise Work.** Contractor shall review and inspect the Work of Subcontractors on a regular basis for defects and deficiencies in their Work and for conformance with the Construction Documents and other Contract Documents, and shall stop the Work of Subcontractors, if necessary. Contractor shall provide notification at regularly scheduled progress meetings of any major defects or deficiencies and recommend remedial action.

7.5  **Use of Third Party Neutral.** Owner and Contractor intend to utilize a Third Party Neutral to assist in addressing and resolving disputes that may arise during the Project. The Third Party Neutral will be jointly engaged and will have the roles and responsibilities set forth in a Third Party Neutral Agreement, which shall be established in accordance with Section 00 80 10, Third Party Neutral.

**Article 8**

**Enumeration of the Contract Documents**

8.1  **The Contract Documents.** The Contract Documents, except for modifications issued after execution of this Agreement, are enumerated as follows:

8.1.1  This executed Agreement, any attached Exhibits and other documents listed in this Agreement.


8.1.3  The Addenda, if any, are as follows:

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<th>Number</th>
<th>Date</th>
<th>Pages</th>
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8.1.4  Other documents, if any, forming part of the Contract Documents are as follows:

See Contract Documents.

Department of Labor and Industries Prevailing Wage Rates.

**OWNER:**

WASHINGTON STATE UNIVERSITY

**CONTRACTOR:**

FIRM NAME

WA CONTRACTOR LICENSE NUMBER

(Signature)  (Date)  (Signature)  (Date)

(Printed Name)  (Printed Name)

Vice President for  (Title)

Finance and Administration

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WSU amendments to the Washington State Facility Construction General Conditions are identified by a bar on the right hand side of modified paragraphs.
PART 1 - GENERAL PROVISIONS

1.01 DEFINITIONS

A. “Application for Payment” means a written request submitted by Contractor to Owner for payment of Work completed in accordance with the Contract Documents and approved Schedule of Values, supported by such substantiating data as Owner may require.

B. “Architect,” “Engineer,” or “A/E” means a person or entity lawfully entitled to practice architecture or engineering, representing Owner within the limits of its delegated authority.

C. An “Allowance” is an amount included in the Contract Sum for a stated part of the Work that is not fully defined and/or quantified at the time the Contract Sum is established. When that part of the Work is adequately defined and/or quantified, the Contract Sum will be adjusted to account for the difference between the Allowance and the actual cost of the item. Following the adjustment, that part of the Work will no longer be an Allowance item. Although not capitalized in Section 5.02B, “allowance” shall mean “Allowance.”

D. “Change Order” means a written instrument signed by Owner and Contractor stating their agreement upon all of the following: (1) a change in the Work; (2) the amount of the adjustment in the Contract Sum, if any, and (3) the extent of the adjustment in the Contract Time, if any.

E. “Claim” means Contractor’s exclusive remedy for resolving disputes with Owner arising out of or relating to the Contract Documents or the breach thereof or requesting an adjustment in the Contract Sum or Contract Time, as more fully set forth in Part 8. As used in the Contract Documents, the exclusive meaning of “equitable adjustment” is the ability of Contractor to follow the contractual dispute resolution process in Part 8, including the requirement for submitting a timely Notice, substantiation, and Claim.

F. The “Contract” is the agreement between Owner and Contractor and is formed by the Contract Documents. The Contract represents the entire and integrated agreement between Owner and Contractor and supersedes prior negotiations, representations or agreements, either written or oral.

G. “Contract Award Amount” is the sum of the Base Bid and any accepted Alternates, if any, for Design-Bid-Build projects and is the accepted initial Guaranteed Maximum Price for Design-Build and GC/CM projects.

H. “Contract Documents” means the General Conditions, modifications to the General Conditions, Supplemental Conditions, Agreement, Drawings and Specifications, and all addenda and modifications thereof.

I. “Contract Sum” is the total amount payable by Owner to Contractor for performance of the Work in accordance with the Contract Documents, including all taxes imposed by law and properly chargeable to the Work, except Washington State sales tax.

J. “Contract Time” is the number of Days or other time period allotted in the Contract Documents from the Notice to Proceed for achieving Substantial Completion of the Work.

K. “Contractor” means the person or entity who has agreed with Owner to perform the Work in accordance with the Contract Documents.

L. “Day(s)” means calendar day(s) unless otherwise specified.
M. “Drawings” are the graphic and pictorial portions of the Contract Documents showing the design, location, and dimensions of the Work, and may include plans, elevations, sections, details, schedules, and diagrams.

N. “Final Acceptance” means the written acceptance of the Work by Owner, as more fully set forth in Section 6.08B.

O. “Final Completion” means that the Work is fully and finally complete in accordance with the Contract Documents and Contractor has submitted its final Application for Payment, as more fully set forth in Section 6.09A.

P. “Force Majeure” means those acts entitling Contractor to request an equitable adjustment in the Contract Time, as more fully set forth in paragraph 3.05A.

Q. “Notice” means a written notice which has been delivered in person to the individual or a member of the firm or entity or to an officer of the corporation for which it was intended or, if delivered or sent by registered or certified mail, to the last business address known to the party giving notice. Although not capitalized in the following provisions, “notice” shall mean “Notice” in Sections 3.03B, 3.03C, 3.06A, 5.01D, 5.02C, 5.03, 5.09A, 5.10A, 5.15A, 5.16F, 5.17, 9.01A, 9.02A, and 9.02B.

R. “Notice to Proceed” means a written Notice from Owner to Contractor that permits pre-construction and construction activities to commence upon specified terms and defines the date on which the Contract Time begins to run.

S. “Owner” means the Washington State University Board of Regents, which has the authority to enter into, administer, and/or terminate the Work in accordance with the Contract Documents. Owner shall designate in writing a Representative who shall have authority to bind Owner with respect to all matters requiring Owner’s approval or authorization. A/E does not have such authority.

T. “Person” means a corporation, partnership, business association of any kind, trust, company, or individual.

U. “Prior Occupancy” means Owner’s use of all or parts of the Project before Substantial Completion, as more fully set forth in Section 6.08A.

V. “Progress Schedule” means a schedule of the Work, in a form satisfactory to Owner, as further set forth in Section 3.02.

W. “Project” means the total construction of which the Work performed in accordance with the Contract Documents may be the whole or a part and which may include construction by Owner or by separate contractors.

X. “Project Record” means the separate set of Drawings and Specifications as further set forth in paragraph 4.02A.

Y. “Schedule of Values” means a written breakdown allocating the total Contract Sum to each principal category of Work, in such detail and format as requested by Owner.

Z. “Specifications” are that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards and workmanship for the Work, and performance of related services.
AA. “Subcontract” means a contract between Contractor and a Subcontractor for the purpose of obtaining supplies, materials, equipment, work or services of any kind for or in connection with the Work. Although not capitalized in the following provisions, “subcontract” shall mean “Subcontract” in Sections 5.10A, 5.20E, 9.01B, and 9.02B.

BB. “Subcontractor” means any Person of any tier, other than Contractor, who agrees to furnish or furnishes by contract with, or through Contractor, any supplies, materials, equipment, or services of any kind in connection with the Work. The term “Subcontractor” does not include a separate contractor or subcontractors of a separate contractor. Although not capitalized in the following provisions, “subcontractor” shall mean “Subcontractor” in Sections 5.04B, 5.04C, 5.04G, 5.20A, and 5.21B.

CC. “Substantial Completion” means that stage in the progress of the Work (or portion of the Work designated and approved by Owner) when the construction is sufficiently complete, in accordance with the Contract Documents, so that Owner can fully occupy or utilize the Work (or portion designated by Owner) for its intended use, as more fully set forth in Section 6.07. There may be separate dates of Substantial Completion specified in the Contract Documents for various phases or portions of the Work.

DD. “Work” means the construction and services required by the Contract Documents, and includes, but is not limited to, labor, materials, supplies, equipment, services, permits, and the manufacture and fabrication of components, performed, furnished, or provided in accordance with the Contract Documents. Although not capitalized in the following provisions, “work” shall mean “Work” in Sections 3.02D, 5.04B, 5.04C, 5.07D, 5.12A, 6.02 and 7.02A.

EE. A “Work Directive” (“WD”) is a binding written order prepared by Owner that directs Work prior to total agreement on adjustment, if any, in the Contract Sum or Contract Time, or both.

FF. “Work Site” means the space identified and circumscribed on construction documents. The work site is controlled by the Contractor and the Contractor is responsible for compliance to regulatory requirements within the circumscribed area. Changes to the work site shall be submitted by Contractor and approved by Owner.

1.02 ORDER OF PRECEDENCE

Any conflict or inconsistency in the Contract Documents shall be resolved by giving the documents precedence in the following order, with a revision to a Contract Document having precedence over the original document and a later document having precedence over an earlier document:

1. Signed Agreement, with any Change Orders having precedence.
2. Supplemental Conditions.
3. Modifications to the General Conditions.
4. General Conditions.
5. Specifications and Drawings. The Specifications and Drawings are complementary and shall have equal precedence. Thus, anything mentioned in the Specifications but not shown on the Drawings, or shown on the Drawings but not mentioned in the Specifications, shall be of like effect as if shown or mentioned in both. If there is any inconsistency between the Specifications and Drawings, Contractor will make an inquiry to Owner to determine how to proceed. Unless otherwise directed, Contractor will provide the better quality or greater quantity of any Work or materials, as reasonably interpreted by Owner, at no change in the Contract Sum or Contract...
1.03  EXECUTION AND INTENT

Contractor Representations: Contractor makes the following representations to Owner:

1. Contract Sum and Contract Time reasonable: The Contract Sum is reasonable compensation for the Work and the Contract Time is adequate for the performance of the Work, as represented by the Contract Documents;

2. Contractor familiar with project: Contractor has carefully reviewed the Contract Documents, visited and examined the Project site, become familiar with the local conditions in which the Work is to be performed, and satisfied itself as to the nature, location, character, quality and quantity of the Work, the labor, materials, equipment, goods, supplies, work, services and other items to be furnished and all other requirements of the Contract Documents, as well as the surface and subsurface conditions and other matters that may be encountered at the Project site or affect performance of the Work or the cost or difficulty thereof;

3. Contractor financially capable: Contractor is financially solvent, able to pay its debts as they mature, and possesses sufficient working capital to complete the Work and perform Contractor’s obligations required by the Contract Documents; and

4. Contractor can complete Work: Contractor is able to furnish the plant, tools, materials, supplies, equipment and labor required to complete the Work and perform the obligations required by the Contract Documents and has sufficient experience and competence to do so.

PART 2 - INSURANCE AND BONDS

2.01  CONTRACTOR’S LIABILITY INSURANCE

General insurance requirements: Prior to commencement of the Work, Contractor shall obtain all the insurance required by the Contract Documents and provide evidence satisfactory to Owner that such insurance has been procured, including but not limited to (1) Certificates of Insurance on ACORD Form 25, and/or ACORD Form 27 or their equivalents, and which shall list any applicable self-insured retentions, (2) the actual costs (expressed as a percentage) of Contractor’s liability insurance under Section 2.01A.1 below, (3) applicable endorsements evidencing proof of compliance with the requirements listed below, (4) evidence of State Workers’ Compensation coverage, and (5) a copy of any builder’s risk policy required by the Contract Documents. All policies, endorsements and certificates must be signed copies and shall contain a provision that policies will not be cancelled without first giving thirty (30) days (or in the event of non-payment of premium, ten (10) days) prior written Notice to Owner. Contractor shall furnish to Owner copies of any subsequently issued endorsements amending, modifying, altering or restricting coverage terms or limits. Review of Contractor’s insurance by Owner shall not relieve or decrease the liability of Contractor. Companies writing the insurance to be obtained by Part 2 shall be licensed to do business under Chapter 48 RCW or comply with the Surplus Lines Law of the State of Washington. Contractor shall include in the Contract Sum the cost of all insurance and bond costs required for the Work. Insurance carriers providing insurance shall be acceptable to Owner, and its A. M. Best rating shall be indicated on the insurance certificates.

A. Term of insurance coverage: Contractor shall maintain the following insurance coverage during the Work and for one year after Substantial Completion. Contractor shall also maintain the following insurance coverage during the performance of any corrective Work required by Section 5.16.
1. **General Liability Insurance**: Commercial General Liability (CGL) on an occurrence-based ISO Form CG 00 01 or broader, including products and completed operations, personal and advertising injury, bodily injury and property damage liability arising from Contractor's operations or Work, including operations or Work Contractor may subcontract or sublet to others.

   The policy shall be purchased from a company or companies lawfully authorized to do business in the State of Washington possessing an A.M. Best's policyholder's rating of A or better and a financial rating of no less than XI.

   Contractor's policy shall be designated primary and non-contributory to Owner's policies, and shall include a waiver of subrogation against Owner. Any self-insured retentions or deductibles must be disclosed and approved by Owner, and Contractor agrees to be responsible for payment of any and all self-insured retentions or deductibles.

2. **Automobile Liability Insurance**: Automobile liability on ISO Form CA 00 01 covering Code 1 (any auto).

3. **Stop Gap Liability Insurance** for damages because of bodily injuries to Contractor's employees.

B. **Industrial Insurance compliance**: Contractor shall comply with the Washington State Industrial Insurance Act and, if applicable, the Federal Longshoremen's and Harbor Workers’ Act and the Jones Act.

C. **Insurance to protect for the following**: All insurance coverages shall protect against claims for damages for personal and bodily injury or death, as well as claims for property damage, which may arise from operations in connection with the Work whether such operations are by Contractor or any Subcontractor.

D. **Owner as Additional Insured**: All insurance coverages shall be endorsed to include Owner, its officers, and employees, and any required governmental agencies as additional named insureds with coverage at least as broad as ISO Forms CG 20 10, CG 20 37, and CA 20 48, with no self-insured retentions applicable to the additional insureds.

E. **Subcontractor Coverage**: Contractor shall ensure and require that Subcontractors have insurance coverage to cover bodily injury and property damage on all operations and all vehicles owned or operated by Subcontractors. Subcontractors shall name Contractor and Owner, any required governmental agencies, and others designated in the Contract Documents as well as their officers and employees, as additional insureds and give at least thirty (30) Days’ Notice of cancellation.

### 2.02 COVERAGE LIMITS

**Insurance amounts**: The coverage limits shall be not less than the amounts specified in the Agreement; if limits are not specified in the Agreement, coverage limits shall be not less than as follows:

A. $1,000,000 per occurrence for bodily injury, property damage, personal and advertising injury.

B. $2,000,000 general aggregate to apply separately to each project or location.

C. $2,000,000 annual aggregate for products and completed operations.

D. $1,000,000 combined single limit each automobile accident or loss.
E. $1,000,000 per accident for bodily injury or occupational disease of Contractor’s employees

Coverages and Minimums: Owner’s review, specification or approval of the insurance in this Contract or of its coverage or amount shall not relieve or decrease the liability of Contractor under the Contract Documents or otherwise. Coverages are the minimum to be provided and are not limitations of liability under the Contract, indemnification, or applicable law provisions. Contractor may, at its expense, purchase larger coverage amounts.

2.03 PROOF OF INSURANCE COVERAGE

A. Certificate & endorsements required: Prior to commencement of the Work, Contractor shall furnish to Owner completed certificates of insurance coverage and endorsements evidencing compliance with the additional insured, cancellation, and waiver of subrogation requirements.

B. List Project info: All insurance certificates shall name Owner’s Project number and Project title.

C. Policy: In the event of a claim or loss, Contractor shall promptly provide Owner with a complete copy of all applicable policies.

2.04 PAYMENT AND PERFORMANCE BONDS

Conditions for bonds: Payment and performance bonds for 100% of the Contract Award Amount, plus Washington State sales tax, shall be furnished for the Work, using the current version of the Payment Bond and Performance Bond form published by and available from the American Institute of Architects (AIA) – form A312. No payment or performance bond is required if the Contract Sum is $150,000 or less and Contractor requests and the Owner agrees that Owner may, in lieu of the bond, retain 10% of the Contract Sum for the period specified in RCW 39.08.010.

2.05 ALTERNATIVE SURETY

When alternative surety required: Contractor shall promptly furnish payment and performance bonds from an alternative surety if:

A. Owner has a reasonable objection to the surety; or

B. Any surety fails to furnish reports on its financial condition if required by Owner.

2.06 BUILDER’S RISK

A. Owner to buy builder’s risk insurance: Owner shall purchase and maintain builder’s risk insurance in the amount of the Contract Sum, including all Change Orders, for the Work on a replacement cost basis until Substantial Completion. For projects not involving new building construction, an “Installation Floater” is an acceptable substitute for the builder’s risk insurance. The insurance shall cover the interests of Owner, Contractor, and any Subcontractors, as their interests may appear.

B. Losses covered: Builder’s risk insurance shall be placed on an “all risk” basis or equivalent policy form and insure against the perils of fire and extended coverage and physical loss or damage including theft, vandalism, malicious mischief, collapse, false work, flood, wind, temporary buildings, earthquake, debris removal including demolition, and shall cover reasonable compensation for A/E’s services and expenses required as a result of an insured loss. Losses up to the deductible amount shall be the responsibility of Contractor.
C. Waiver of subrogation rights: Owner and Contractor waive all subrogation rights against each other, any Subcontractors, A/E, A/E's subconsultants, separate contractors described in Section 5.19, if any, and any of their subcontractors, for damages caused by fire or other perils to the extent covered by property insurance obtained pursuant to this Section 2.06 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by Owner as fiduciary. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective to a Person or entity even though that Person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the Person or entity had an insurable interest in the property damaged.

PART 3 - TIME AND SCHEDULE

3.01 PROGRESS AND COMPLETION

Contractor to meet schedule: Contractor shall diligently prosecute the Work, with adequate forces, achieve Substantial Completion within the Contract Time, and achieve Final Completion within the time period specified in the Contract Documents. If Contractor fails to perform in a timely manner in accordance with the Contract Documents and, through the fault of Contractor or Subcontractor(s), fails to meet the Progress Schedule, Contractor shall be in default and shall take such steps as may be necessary to immediately improve its progress without change in the Contract Sum or Contract Time.

3.02 CONSTRUCTION SCHEDULE

A. Preliminary Progress Schedule: Unless otherwise provided in Division 1, Contractor shall, within 14 Days after issuance of the Notice to Proceed, submit a preliminary Progress Schedule consistent with the requirements of the Contract Documents. The Progress Schedule shall not exceed time limits specified by the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work, and shall show the sequence in which Contractor proposes to perform the Work, and the dates on which Contractor plans to start and finish major portions of the Work, including dates for submission of Submittals per Section 4.03, which shall be coordinated with the Progress Schedule and identify dates for Owner review, and for acquiring materials and equipment.

B. Form of Progress Schedule: Unless otherwise provided in Division 1, the Progress Schedule shall be in the form of a bar chart, or a critical path method analysis, as specified by Owner. The preliminary Progress Schedule may be general, showing the major portions of the Work, with a more detailed Progress Schedule submitted as directed by Owner.

C. Owner comments on Progress Schedule: Owner shall return comments on the preliminary Progress Schedule to Contractor within 14 Days of receipt. Review by Owner of Contractor's schedule does not constitute an approval or acceptance of Contractor's construction means, methods, logic or sequencing, or its ability to complete the Work within the Contract Time. Contractor shall revise and resubmit its schedule, as necessary. Owner may withhold a portion of progress payments until a Progress Schedule has been submitted that meets the requirements of this Section 3.02.

D. Monthly updates and compliance with Progress Schedule: Contractor shall utilize and comply with the Progress Schedule. On a monthly basis, or as otherwise directed by Owner, Contractor shall submit an updated Progress Schedule at its own expense to Owner indicating actual progress. If, in the opinion of Owner, Contractor is not in conformance with the Progress Schedule for reasons other than acts of Force Majeure as identified in Section 3.05, Contractor shall take such steps as are necessary to bring the actual completion dates of its work activities into conformance with the Progress Schedule, and if directed by Owner, Contractor shall submit a
corrective action plan or revise the Progress Schedule to reconcile with the actual progress of the Work.

E. **Contractor to notify Owner of delays:** Contractor shall perform the Work in accordance with the most recent Progress Schedule submitted to Owner. Contractor shall promptly notify Owner in writing of any actual or anticipated event that is delaying or could delay achievement of any milestone or performance of any critical path activity of the Work. Contractor shall indicate the expected duration of the delay, the anticipated effect of the delay on the Progress Schedule, and the action being or to be taken to correct the problem. Provision of such Notice does not relieve Contractor of its obligation to complete the Work within the Contract Time.

### 3.03 OWNER'S RIGHT TO SUSPEND THE WORK FOR CONVENIENCE

A. **Owner may suspend Work:** Owner may, at its sole discretion, order Contractor, in writing, to suspend all or any part of the Work for up to 90 Days, or for such longer period as mutually agreed.

B. **Compliance with suspension; Owner’s options:** Upon receipt of a written notice suspending the Work, Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of cost of performance directly attributable to such suspension. Within a period up to 90 Days after the notice is delivered to Contractor, or within any extension of that period to which the parties shall have agreed, Owner shall either:
   1. Cancel the written notice suspending the Work; or
   2. Terminate the Work covered by the notice as provided in the termination provisions of Part 9.

C. **Resumption of Work:** If a written notice suspending the Work is cancelled or the period of the notice or any extension thereof expires, Contractor shall resume Work.

D. **Equitable Adjustment for suspensions:** Contractor shall be entitled to an equitable adjustment in the Contract Time, or Contract Sum, or both, for increases in the time or cost of performance directly attributable to such suspension, provided Contractor complies with all requirements set forth in Part 7.

### 3.04 OWNER'S RIGHT TO STOP AND/OR CARRY OUT THE WORK FOR CAUSE

A. **Owner may stop Work for Contractor’s failure to perform:** If Contractor fails or refuses to perform its obligations in accordance with the Contract Documents, Owner may order Contractor, in writing, to stop the Work, or any portion thereof, until Owner has accepted satisfactory corrective action.

B. **Owner may carry out the Work after Contractor’s failure to perform:** If Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a 14-Day period after receipt of written Notice from Owner to commence and continue to make reasonable progress toward the correction of such default or neglect with diligence and promptness, Owner may, without prejudice to other remedies Owner may have, correct such deficiencies, and an appropriate Change Order shall be issued deducting from payments then or thereafter due Contractor the reasonable cost of correcting the deficiencies, including Owner’s expenses and compensation for A/E’s additional services made necessary by the default, neglect or failure. If payments then or thereafter due Contractor are not sufficient to cover such amounts, Contractor shall pay the difference to Owner.
C. **No equitable adjustment for Contractor’s failure to perform:** Contractor shall not be entitled to an equitable adjustment in the Contract Time or Contract Sum for any increased cost or time of performance attributable to Contractor’s failure or refusal to perform or from any reasonable remedial action taken by Owner based upon such failure.

3.05 **DELAY**

A. **Force Majeure actions not a default; Force Majeure defined:** Any delay in or failure of performance by Owner or Contractor shall not constitute a default if and to the extent the cause for such delay or failure of performance was unforeseeable and beyond the control of the party. Acts of Force Majeure include, but are not limited to:

1. Acts of God or the public enemy;
2. Acts or omissions of any government entity not the fault of Owner or Contractor;
3. Fire or other casualty for which Contractor is not responsible;
4. Quarantine or epidemic;
5. Industry-wide strike or defensive lockout;
6. Unusually severe weather conditions which could not have been reasonably anticipated; and
7. Unusual delay in receipt of supplies or products which were ordered and expedited and for which no substitute reasonably acceptable to Owner was available.

   a. “Unusually severe weather” shall mean weather conditions that are abnormal for the period of time for which Force Majeure is claimed, that could not reasonably have been anticipated or avoided, and that had an adverse effect on the Progress Schedule. Neither the Contract Time nor the Contract Sum will be adjusted for normal inclement weather or if the Work was behind schedule (unless behind schedule for a reason not the responsibility of the Contractor) at the time the unusually severe weather occurred. The Contractor shall be entitled to a change in the Contract Time only (but not a change in the Contract Sum) if the Contractor can substantiate to the reasonable satisfaction of the Owner that there was unusually severe weather as compared to normal using a ten (10) year average of accumulated record mean values from climatological data compiled by the U.S. Department of Commerce National Oceanic and Atmospheric Administration for the locale closest to the Project, and that the abnormal inclement weather actually impacted and extended the critical path of the Work. Unusual is defined as a 10-year weather event of either or both precipitation or temperature extremes that fall outside the upper and lower ranges within a 10-year periodicity.

B. **Contract Time adjustment for Force Majeure:** Contractor shall be entitled to an equitable adjustment in the Contract Time for changes in the time of performance directly attributable to an act of Force Majeure, provided it makes a request for equitable adjustment. Contractor shall not be entitled to an adjustment in the Contract Sum resulting from an act of Force Majeure.

C. **Contract Time or Contract Sum adjustment if Owner at fault:** Contractor shall be entitled to an equitable adjustment in Contract Time, and may be entitled to an equitable adjustment in
Contract Sum, if the cost or time of Contractor’s performance is changed due to the fault or negligence of Owner, provided the Contractor makes a request for equitable adjustment.

D. No Contract Time or Contract Sum adjustment if Contractor at fault: Contractor shall not be entitled to an adjustment in Contract Time or in the Contract Sum for any delay or failure of performance to the extent such delay or failure was caused by Contractor or anyone for whose acts Contractor is responsible.

E. Contract Time adjustment only for concurrent fault: To the extent any delay or failure of performance was concurrently caused by the Owner and Contractor, Contractor shall be entitled to an adjustment in the Contract Time for that portion of the delay or failure of performance that was concurrently caused, provided it makes a request for equitable adjustment, but shall not be entitled to an adjustment in Contract Sum.

F. Contractor to mitigate delay impacts: Contractor shall make all reasonable efforts to prevent and mitigate the effects of any delay, whether occasioned by an act of Force Majeure or otherwise. Contractor shall not recover damages, an equitable adjustment or an increase in the Contract Sum or Contract Time from Owner where Contractor could have reasonably avoided the delay by the exercise of due diligence.

G. Types of damages permitted: If Contractor and its Subcontractors are entitled to a change in the Contract Sum, the amount of the change shall be the actual costs incurred by the Contractor and Subcontractors directly related to the change calculated in accordance with Section 7.02. Contractor and its Subcontractors shall not otherwise (not reflected by the actual costs incurred as calculated in accordance with Section 7.02) be entitled to damages arising out of actual or alleged loss of efficiency; morale, fatigue, attitude, or labor rhythm; constructive acceleration; home office overhead; expectant underrun; trade stacking; reassignment of workers; rescheduling of Work, concurrent operations; dilution of supervision; learning curve; beneficial or joint occupancy; logistics; ripple; season change; extended overhead; profit upon damages for delay; impact damages including cumulative impacts; or similar damages. Any effect that such alleged events may have on Contractor or its Subcontractors, to the extent not otherwise paid, is subsumed in and fully compensated through the percentage Fee on Change Orders paid through Section 7.02A.3.e and any liquidated damages paid hereunder.

3.06 NOTICE TO OWNER OF LABOR DISPUTES

A. Contractor to notify Owner of labor disputes: If Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay timely performance in accordance with the Contract Documents, Contractor shall immediately give notice, including all relevant information, to Owner.

B. Pass through notification provisions to Subcontractors: Contractor agrees to insert a provision in its Subcontracts and to require insertion in all sub-subcontracts, that in the event timely performance of any such contract is delayed or threatened by delay by any actual or potential labor dispute, the Subcontractor or Sub-subcontractor shall immediately notify the next higher tier Subcontractor or Contractor, as the case may be, of all relevant information concerning the dispute.

3.07 DAMAGES FOR FAILURE TO ACHIEVE TIMELY COMPLETION

A. Liquidated Damages:

1. Reason for Liquidated Damages: Timely performance and completion of the Work is essential to Owner and time limits stated in the Contract Documents are of the essence.
Owner will incur serious and substantial damages if Substantial Completion of the Work does not occur within the Contract Time. However, it would be difficult if not impossible to determine the exact amount of such damages. Consequently, provisions for liquidated damages are included in the Contract Documents.

2. **Calculation of Liquidated Damages amount:** The liquidated damage amounts set forth in the Contract Documents will be assessed not as a penalty, but as liquidated damages for breach of the Contract Documents. This amount is fixed and agreed upon by and between the Contractor and Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain. This amount shall be construed as the actual amount of damages sustained by the Owner, and may be retained by the Owner and deducted from periodic payments to the Contractor.

3. **Contractor responsible even if Liquidated Damages assessed:** Assessment of liquidated damages shall not release Contractor from any obligations or liabilities pursuant to the Contract Documents. If Contractor substantially fails to perform in a timely manner in accordance with the Contract Documents and, through the fault of Contractor or Subcontractor(s), fails to achieve Substantial Completion within the Contract Time, Contractor shall be in default.

**B. Actual Damages:** If no liquidated damages are established, actual damages may be assessed for failure to achieve both Substantial Completion and Final Completion within the time provided. Actual damages will be calculated on the basis of direct architectural, administrative, and other related costs attributable to the Project from the date when Substantial and/or Final Completion should have been achieved, as applicable. Owner may offset these costs against any payment due Contractor.

**PART 4 - SPECIFICATIONS, DRAWINGS, AND OTHER DOCUMENTS**

4.01 **DISCREPANCIES AND CONTRACT DOCUMENT REVIEW**

A. **Specifications and Drawings are basis of the Work:** The intent of the Specifications and Drawings is to describe a complete Project to be constructed in accordance with the Contract Documents. Contractor shall furnish all labor, materials, equipment, tools, transportation, permits, and supplies, and perform the Work required in accordance with the Drawings, Specifications, and other provisions of the Contract Documents.

B. **Parts of the Contract Documents are complementary:** The Contract Documents are complementary. What is required by one part of the Contract Documents shall be binding as if required by all. Anything mentioned in the Specifications and not shown on the Drawings, or shown on the Drawings and not mentioned in the Specifications, shall be of like effect as if shown or mentioned in both.

C. **Contractor to report discrepancies in Contract Documents:** Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by Owner. If, during the performance of the Work, Contractor finds a conflict, error, inconsistency, or omission in the Contract Documents, it shall promptly and before proceeding with the Work affected thereby, report such conflict, error, inconsistency, or omission to A/E in writing.

D. **Contractor knowledge of discrepancy in documents – responsibility:** Contractor shall do no Work without applicable Drawings, Specifications, and, where required, accepted shop drawings and other Submittals, unless instructed to do so in writing by Owner. If Contractor performs any construction activity, and it knows or reasonably should have known that any of the Contract
Documents contain a conflict, error, inconsistency, or omission, Contractor shall be responsible for the performance and shall bear the cost for its correction.

E. Contractor to perform Work implied by Contract Documents: Contractor shall provide any work or materials the provision of which is clearly implied and is within the scope of the Contract Documents even if the Contract Documents do not mention them specifically.

F. Interpretation questions referred to A/E: Questions regarding interpretation of the requirements of the Contract Documents shall be referred to the A/E.

4.02 PROJECT RECORD

A. Contractor to maintain Project Record Drawings and Specifications: Contractor shall legibly mark in ink on a separate set of the Drawings and Specifications all actual construction, including depths of foundations, horizontal and vertical locations of internal and underground utilities and appurtenances referenced to permanent visible and accessible surface improvements, field changes of dimensions and details, actual suppliers, manufacturers and trade names, models of installed equipment, changes made to the building enclosure, and Change Order Proposals. This separate set of Drawings and Specifications shall be the “Project Record.” The Project Record shall include all Architectural, Mechanical, Electrical, Structural and Civil as-built drawings, whether or not any changes occur and shall also include Addenda, Change Orders, WDs and other modifications to the Contract, in good order and marked currently to indicate field changes and selections made during construction, as well as one copy of accepted shop drawings, product data, samples and other required Submittals.

B. Update Project Record weekly and keep on site: The Project Record shall be maintained on the Project site throughout the construction and shall be clearly labeled “PROJECT RECORD.” The Project Record shall be available to A/E and Owner at all times. The Project Record shall be updated at least weekly noting all changes and shall be available to Owner at all times.

C. Final Project Record to A/E before Final Acceptance: Contractor shall submit the completed and finalized Project Record to A/E prior to Final Acceptance.

4.03 SUBMITTALS

A. Definition of Submittals: “Submittals” means documents and other information required to be submitted to A/E by Contractor pursuant to the Contract Documents, showing in detail: the proposed fabrication and assembly of structural elements; and the installation (i.e. form, fit, and attachment details) of materials and equipment. Submittals can include, but are not limited to, drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, samples, and similar materials furnished by Contractor to explain in detail specific portions of the Work required by the Contract Documents. For materials and equipment to be incorporated into the Work, Contractor submittal shall include the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the item. When directed, Contractor shall submit all samples at its own expense. Owner may duplicate, use, and disclose Submittals provided in accordance with the Contract Documents.

B. Approval of Submittals by Contractor and A/E: Contractor shall coordinate all Submittals with the Progress Schedule per Section 3.02A, shall review them for accuracy, completeness, and compliance with the Contract Documents, and shall indicate its approval thereon as evidence of such coordination and review. Where required by law, Submittals shall be stamped by an appropriate professional licensed by the state of Washington. Submittals submitted to A/E without evidence of Contractor’s approval shall be returned for resubmission. Contractor shall
review, approve, and submit Submittals with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of Owner or separate contractors. Contractor’s submittal schedule shall allow a reasonable time for A/E review. A/E will review, approve, or take other appropriate action on the Submittals. Contractor shall perform no portion of the Work requiring submittal and review of Submittals until the respective submittal has been reviewed and the A/E has approved or taken other appropriate action. Owner and A/E shall respond to Submittal with reasonable promptness. Any Work by Contractor shall be in accordance with reviewed Submittals. Submittals made by Contractor which are not required by the Contract Documents may be returned without action.

C. Contractor not relieved of responsibility when Submittals approved: Approval, or other appropriate action with regard to Submittals, by Owner or A/E shall not relieve Contractor of responsibility for any errors or omissions in such Submittals, nor from responsibility for compliance with the requirements of the Contract Documents. Unless specified in the Contract Documents, review by Owner or A/E shall not constitute an approval of the safety precautions employed by Contractor during construction, or constitute an approval of Contractor’s means or methods of construction. If Contractor fails to obtain approval before installation and the item or work is subsequently rejected, Contractor shall be responsible for all costs of correction.

D. Variations between Submittals and Contract Documents: Submittals, including product data, samples and similar submissions, are not Contract Documents. If Submittals vary from the requirements of the Contract Documents, Contractor shall describe such variations in writing, separate from the Submittals, at the time it submits the Submittals containing such variations. If Owner approves any such variation, an appropriate Change Order will be issued. If the variation is minor and does not involve an adjustment in the Contract Sum or Contract Time, a Change Order need not be issued; however, the modification shall be approved by Owner in writing and recorded upon the Project Record. Approval for substitutions shall not be sought and shall not be approved through the submission of Submittals.

E. Contractor to submit 5 copies of Submittals: Unless otherwise provided in Division 1, Contractor shall submit to A/E for approval 5 copies of all Submittals. Unless otherwise indicated, 3 sets of all Submittals shall be retained by A/E and 2 sets shall be returned to Contractor.

4.04 ORGANIZATION OF SPECIFICATIONS

Specification organization by trade: Specifications are prepared in sections which conform generally with trade practices. These sections are for Owner and Contractor convenience and shall not control Contractor in dividing the Work among the Subcontractors or in establishing the extent of the Work to be performed by any trade.

4.05 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS, AND OTHER DOCUMENTS

A. A/E, not Contractor, owns Copyright of Drawings and Specifications: The Drawings, Specifications, and other documents prepared by A/E are instruments of A/E’s service through which the Work to be executed by Contractor is described. Neither Contractor nor any Subcontractor shall own or claim a copyright in the Drawings, Specifications, and other documents prepared by A/E, and A/E shall be deemed the author of them and will, along with any rights of Owner, retain all common law, statutory, and other reserved rights, in addition to the copyright. All copies of these documents, except Contractor’s set, shall be returned or suitably accounted for to A/E, on request, upon completion of the Work.

B. Drawings and Specifications to be used only for this Project: The Drawings, Specifications, and other documents prepared by the A/E, and copies thereof furnished to Contractor, are for use solely with respect to this Project. They are not to be used by Contractor or any Subcontractor on
other projects or for additions to this Project outside the scope of the Work without the specific written consent of Owner and A/E. Contractor and Subcontractors are granted a limited license to use and reproduce applicable portions of the Drawings, Specifications, and other documents prepared by A/E appropriate to and for use in the execution of their Work.

C. License granted to Owner: Contractor and all Subcontractors grant a non-exclusive license to Owner, without additional cost or royalty, to use for its own purposes (including reproduction) all Submittals, together with the information and diagrams contained therein, prepared by Contractor or any Subcontractor. In providing Submittals, Contractor and all Subcontractors warrant that they have authority to grant to Owner a license to use the Submittals, and that such license is not in violation of any copyright or other intellectual property right. Contractor agrees to defend and indemnify Owner pursuant to the indemnity provisions in Section 5.03 and 5.22 from any violations of copyright or other intellectual property rights arising out of Owner's use of the Submittals hereunder, or to secure for Owner, at Contractor's own cost, licenses in conformity with this section.

D. Submittals to be used only for this Project: Submittals prepared by Contractor, Subcontractors of any tier, or its or their equipment or material suppliers, and copies thereof furnished to Contractor, are for use solely with respect to this Project. They are not to be used by Contractor or any Subcontractor of any tier, or material or equipment supplier, on other projects or for additions to this Project outside the scope of the Work without the specific written consent of Owner. The Contractor, Subcontractors of any tier, and material or equipment suppliers are granted a limited license to use and reproduce applicable portions of the Submittals appropriate to and for use in the execution of their Work under the Contract Documents.

E. Electronic Files: If the parties intend to transmit the instruments of service or any other information or documentation in digital form (other than PDF), they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Contract Documents.

PART 5 - PERFORMANCE

5.01 CONTRACTOR CONTROL AND SUPERVISION

A. Contractor responsible for Means and Methods of construction: Contractor shall supervise and direct the Work, using its best skill and attention, and shall perform the Work in a skillful manner. Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work, unless the Contract Documents give other specific instructions concerning these matters. Contractor shall disclose its means and methods of construction when requested by Owner.

B. Competent superintendent required: Contractor, as soon as practicable after award of the Contract, shall furnish in writing to Owner the name and qualifications of its proposed superintendent. Owner may reply within 14 Days to Contractor in writing stating (1) whether Owner has reasonable objection to the proposed superintendent or (2) that Owner requires additional time to review. Failure of Owner to reply within the 14-Day period shall constitute Notice of no reasonable objection. The superintendent shall not be employed on any other project during the course of the Work. Unless approved by the Owner's representative and only when overseeing projects on the same campus or location where oversite and supervision will not be degraded. Performance of the Work shall be directly supervised by a competent superintendent who shall be in attendance at the Project site during performance of the Work and who has authority to act on behalf of Contractor. Communications given to the superintendent shall be as binding as if given to Contractor. The superintendent must be satisfactory to Owner and shall not be changed without the prior written consent of Owner. Owner may require
Contractor to remove the superintendent from the Work or Project site, if Owner reasonably deems the superintendent incompetent, careless, or otherwise objectionable, provided Owner has first notified Contractor in writing and allowed a reasonable period for transition.

C. **Contractor responsible for acts and omissions of self and agents:** Contractor shall be responsible to Owner for acts and omissions of Contractor, Subcontractors, and their employees and agents.

D. **Contractor to employ competent and disciplined workforce:** Contractor shall enforce strict discipline and good order among all of the Contractor’s employees and other persons performing the Work. Contractor shall not permit employment of persons not skilled in tasks assigned to them. Contractor’s employees shall at all times conduct business in a manner which assures fair, equal, and nondiscriminatory treatment of all persons. Owner may, by written notice, request Contractor to remove from the Work or Project site any employee Owner reasonably deems incompetent, careless, or otherwise objectionable.

E. **Contractor to keep project documents on site:** Contractor shall keep on the Project site a copy of the Drawings, Specifications, addenda, reviewed Submittals, and permits and permit drawings.

F. **Contractor to comply with ethical standards:** Contractor shall ensure that its owner(s) and employees, and those of its Subcontractors, comply with the Ethics in Public Service Act RCW 42.52, which, among other things, prohibits state employees from having an economic interest in any public works contract that was made by, or supervised by, that employee. Contractor shall remove, at its sole cost and expense, any of its, or its Subcontractors’ employees, if they are in violation of this act.

5.02 **PERMITS, FEES, AND NOTICES**

A. **Contractor to obtain and pay for permits:** Unless otherwise provided in the Contract Documents, Contractor shall secure and pay for the building, any land use permits and all other permits, licenses, and inspections necessary for proper execution and completion of the Work. Prior to Final Acceptance, the approved, signed permits shall be delivered to Owner.

B. **Allowances for permit fees:** If allowances for permits or utility fees are called for in the Contract Documents and set forth in Contractor’s bid, and the actual costs of those permits or fees differ from the allowances in the Contract Documents, the difference shall be adjusted by Change Order.

C. **Contractor to comply with all applicable laws:** Contractor shall comply with and give notices required by all federal, state, and local laws, ordinances, rules, regulations, and lawful orders of public authorities applicable to performance of the Work.

D. **Taxes:** Contractor shall pay sales, consumer, use, business and occupation, income and similar taxes for the Work that are legally enacted when the initial Contract Sum is agreed.

5.03 **PATENTS AND ROYALTIES**

Payment, indemnification, and notice: Contractor is responsible for, and shall pay, all royalties and license fees. Contractor shall defend, indemnify, and hold Owner harmless from any costs, expenses, and liabilities arising out of the infringement by Contractor of any patent, copyright, or other intellectual property right used in the Work; however, provided that Contractor gives prompt notice, Contractor shall not be responsible for such defense or indemnity when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents. If Contractor has reason to believe that use of the required design, process, or product constitutes an infringement of a patent or copyright, it shall promptly notify Owner of such potential infringement.
5.04 PREVAILING WAGES

A. Contractor to pay Prevailing Wages: Contractor shall pay the prevailing rate of wages to all workers, laborers, or mechanics employed in the performance of any part of the Work in accordance with RCW 39.12 and the rules and regulations of the Department of Labor and Industries. The schedule of prevailing wage rates for the locality or localities of the Work, is determined by the Industrial Statistician of the Department of Labor and Industries. It is the Contractor’s responsibility to verify the applicable prevailing wage rate.

B. Statement of Intent to Pay Prevailing Wages: Before payment is made by the Owner to the Contractor for any work performed by the Contractor and subcontractors whose work is included in the application for payment, the Contractor shall submit, or shall have previously submitted to the Owner for the Project, a Statement of Intent to Pay Prevailing Wages, approved by the Department of Labor and Industries, certifying the rate of hourly wage paid and to be paid each classification of laborers, workers, or mechanics employed upon the Work by Contractor and Subcontractors. Such rates of hourly wage shall not be less than the prevailing wage rate.

C. Affidavit of Wages Paid: Prior to release of retainage, the Contractor shall submit to the Owner an Affidavit of Wages Paid, approved by the Department of Labor and Industries, for the Contractor and every subcontractor that performed work on the Project.

D. Disputes: Disputes regarding prevailing wage rates shall be referred for arbitration to the Director of the Department of Labor and Industries. The arbitration decision shall be final and conclusive and binding on all parties involved in the dispute as provided for by RCW 39.12.060.

E. Statement with pay application; Post Statements of Intent at job site: Each Application for Payment submitted by Contractor shall state that prevailing wages have been paid in accordance with the prefilled statement(s) of intent, as approved. Copies of the approved intent statement(s) shall be posted on the job site with the address and telephone number of the Industrial Statistician of the Department of Labor and Industries where a complaint or inquiry concerning prevailing wages may be made.

F. Contractor to pay for Statements of Intent and Affidavits: In compliance with chapter 296-127 WAC, Contractor shall pay to the Department of Labor and Industries the currently established fee(s) for each statement of intent and/or affidavit of wages paid submitted to the Department of Labor and Industries for certification.

G. Certified Payrolls: Consistent with WAC 296-127-320, the Contractor and any subcontractor shall submit a certified copy of payroll records if requested.

5.05 HOURS OF LABOR

A. Overtime: Contractor shall comply with all applicable provisions of RCW 49.28 and they are incorporated herein by reference.

5.06 NONDISCRIMINATION

A. Discrimination prohibited by applicable laws: Discrimination in all phases of employment is prohibited by, among other laws and regulations, Title VII of the Civil Rights Act of 1964, the Vietnam Era Veterans Readjustment Act of 1974, Sections 503 and 504 of the Vocational Rehabilitation Act of 1973, the Equal Employment Act of 1972, the Age Discrimination Act of 1967, the Americans with Disabilities Act of 1990, the Civil Rights Act of 1991, Presidential Executive Order 11246, Executive Order 11375, the Washington State Law Against Discrimination, RCW 49.60, and Gubernatorial Executive Order 85-09. These laws and
regulations establish minimum requirements for affirmative action and fair employment practices which Contractor must meet.

B. During performance of the Work:

1. **Protected Classes:** Contractor shall not discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, age, marital status, or the presence of any physical, sensory, or mental disability, Vietnam era veteran status, or disabled veteran status, nor commit any other unfair practices as defined in RCW 49.60.

2. **Advertisements to state nondiscrimination:** Contractor shall, in all solicitations or advertisements for employees placed by or for it, state that all qualified applicants will be considered for employment, without regard to race, creed, color, national origin, sex, age, marital status, or the presence of any physical, sensory, or mental disability.

3. **Contractor to notify unions and others of nondiscrimination:** Contractor shall send to each labor union, employment agency, or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice advising the labor union, employment agency, or workers’ representative of Contractor’s obligations according to the Contract Documents and RCW 49.60.

4. **Owner and State access to Contractor records:** Contractor shall permit access to its books, records, and accounts, and to its premises by Owner, and by the Washington State Human Rights Commission, for the purpose of investigation to ascertain compliance with this section of the Contract Documents.

5. **Pass through provisions to Subcontractors:** Contractor shall include the provisions of this section in every Subcontract.

5.07 **SAFETY PRECAUTIONS**

A. **Contractor responsible for safety:** Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Work. Contractor shall be solely and completely responsible for conditions of the Project site, including safety of all persons and property, during performance of the Work. Contractor shall maintain the Project site and perform the Work in a manner that meets statutory and common-law requirements for the provision of a safe place to work. This requirement shall apply continuously and not be limited to working hours. Any review by Owner or A/E of Contractor’s performance shall not be construed to include a review of the adequacy of Contractor’s safety measures in, on or near the site of the Work.

B. **Contractor safety responsibilities:** In carrying out its responsibilities according to the Contract Documents, Contractor shall protect the lives and health of employees performing the Work and other persons who may be affected by the Work; prevent damage to materials, supplies, and equipment whether on site or stored off-site; and prevent damage to other property at the site or adjacent thereto. Contractor shall comply with all applicable laws, ordinances, rules, regulations, and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury, or loss; shall erect and maintain all necessary safeguards for such safety and protection; and shall notify owners of adjacent property and utilities when prosecution of the Work may affect them.

C. **Contractor to maintain safety records:** Contractor shall maintain an accurate record of exposure data on all incidents relating to the Work resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment. Contractor shall immediately report
any such incident to Owner. Owner shall, at all times, have a right of access to all records of exposure.

D. **Contractor to provide HazMat training:** Contractor shall provide all persons working on the Project site with information and training on hazardous chemicals in their work at the time of their initial assignment, and whenever a new hazard is introduced into their work area.

1. **Information.** At a minimum, Contractor shall inform persons working on the Project site of:
   
   a. **WAC:** The requirements of chapter 296-62 WAC, General Occupational Health Standards;
   
   b. **Presence of hazardous chemicals:** Any operations in their work area where hazardous chemicals are present; and
   
   c. **Hazard communications program:** The location and availability of written hazard communication programs, including the required list(s) of hazardous chemicals and material safety data sheets required by chapter 296-62 WAC.

2. **Training.** At a minimum, Contractor shall provide training for persons working on the Project site which includes:
   
   a. **Detecting hazardous chemicals:** Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);
   
   b. **Hazards of chemicals:** The physical and health hazards of the chemicals in the work area;
   
   c. **Protection from hazards:** The measures such persons can take to protect themselves from these hazards, including specific procedures Contractor, or its Subcontractors, or others have implemented to protect those on the Project site from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used; and
   
   d. **Hazard communications program:** The details of the hazard communications program developed by Contractor, or its Subcontractors, including an explanation of the labeling system and the material safety data sheet, and how employees can obtain and use the appropriate hazard information.

E. **Hazardous, toxic or harmful substances:** Contractor’s responsibility for hazardous, toxic, or harmful substances shall include the following duties:

1. **Illegal use of dangerous substances:** Contractor shall not keep, use, dispose, transport, generate, or sell on or about the Project site, any substances now or hereafter designated as, or which are subject to regulation as, hazardous, toxic, dangerous, or harmful by any federal, state or local law, regulation, statute or ordinance (hereinafter collectively referred to as “hazardous substances”), in violation of any such law, regulation, statute, or ordinance, but in no case shall any such hazardous substance be stored more than 90 Days on the Project site.
2. Contractor notifications of spills, failures, inspections, and fines: Contractor shall promptly notify Owner of all spills or releases of any hazardous substances which are otherwise required to be reported to any regulatory agency and pay the cost of cleanup. Contractor shall promptly notify Owner of all failures to comply with any federal, state, or local law, regulation, or ordinance; all inspections of the Project site by any regulatory entity concerning the same; all regulatory orders or fines; and all responses or interim cleanup actions taken by or proposed to be taken by any government entity or private party on the Project site.

F. Public safety and traffic: All Work shall be performed with due regard for the safety of the public. Contractor shall perform the Work so as to cause a minimum of interruption of vehicular traffic or inconvenience to pedestrians. All arrangements to care for such traffic shall be Contractor’s responsibilities. All expenses involved in the maintenance of traffic by way of detours shall be borne by Contractor.

G. Contractor to act in an emergency: In an emergency affecting the safety of life or the Work or of adjoining property, Contractor is permitted to act, at its discretion, to prevent such threatened loss or injury, and Contractor shall so act if so authorized or instructed.

H. No duty of safety by Owner or A/E: Nothing provided in this Section 5.07 shall relieve Contractor of sole and complete responsibility for safety at the Project site, for sole and complete responsibility for any violation of safety or property protection requirements or the correction thereof, or impose any duty upon Owner or A/E with regard to, or as constituting any express or implied assumption of control or responsibility over, any other safety conditions relating to employees or agents of Contractor or any of its Subcontractors, or the public. Any Notice Owner or A/E gives to Contractor of a safety or property protection violation will not: (1) relieve Contractor of sole and complete responsibility for the violation and the correction thereof, or for sole liability for the consequences of said violation; (2) impose any obligation upon Owner or A/E to inspect or review Contractor’s safety program or precautions or to enforce Contractor’s compliance with the requirements of this Section 5.07; or (3) impose any continuing obligation upon Owner or A/E to provide such Notice to Contractor or any other persons or entity.

5.08 OPERATIONS, MATERIAL HANDLING, AND STORAGE AREAS

A. Limited storage areas: Contractor shall confine all operations, including storage of materials, to Owner-approved areas.

B. Temporary buildings and utilities at Contractor expense: Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be provided by Contractor only with the consent of Owner and without expense to Owner. The temporary buildings and utilities shall be removed by Contractor at its expense upon completion of the Work.

C. Roads and vehicle loads: Contractor shall use only established roadways or temporary roadways authorized by Owner. When materials are transported in prosecuting the Work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by federal, state, or local law or regulation.

D. Ownership and reporting by Contractor of demolished materials: Ownership and control of all materials or facility components to be demolished or removed from the Project site by Contractor shall immediately vest in Contractor upon severance of the component from the facility or severance of the material from the Project site. Contractor shall be responsible for compliance with all laws governing the storage and ultimate disposal. Contractor shall provide Owner with a copy of all manifests and receipts evidencing proper disposal when required by Owner or applicable law.
E. Contractor responsible for care of materials and equipment on-site: Contractor shall be responsible for the proper care and protection of its materials and equipment delivered to the Project site. Materials and equipment may be stored on the premises subject to approval of Owner. When Contractor uses any portion of the Project site as a shop, Contractor shall be responsible for any repairs, patching, or cleaning arising from such use.

F. Contractor responsible for loss of materials and equipment: Contractor shall protect and be responsible for any damage or loss to the Work, or to the materials or equipment until the date of Substantial Completion, and shall repair or replace without cost to Owner any damage or loss that may occur, except damages or loss caused by the acts or omissions of Owner. Contractor shall also protect and be responsible for any damage or loss to the Work, or to the materials or equipment, after the date of Substantial Completion, and shall repair or replace without cost to Owner any such damage or loss that might occur, to the extent such damages or loss are caused by the acts or omissions of Contractor, or any Subcontractor.

5.09 PRIOR NOTICE OF EXCAVATION

A. Excavation defined; Use of locator services: “Excavation” means an operation in which earth, rock, or other material on or below the ground is moved or otherwise displaced by any means, except the tilling of soil less than 12 inches in depth for agricultural purposes, or road ditch maintenance that does not change the original road grade or ditch flow line. Before commencing any excavation, Contractor shall provide notice of the scheduled commencement of excavation to all owners of underground facilities or utilities, through locator services.

5.10 UNFORESEEN PHYSICAL CONDITIONS

A. Notice requirement for concealed or unknown conditions: If Contractor encounters conditions at the site which are subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents, or unknown physical conditions of an unusual nature which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then Contractor shall give written notice to Owner promptly and in no event later than 7 Days after the first observance of the conditions. Conditions shall not be disturbed prior to such notice.

B. Adjustment in Contract Time and Contract Sum: If such conditions differ materially and cause a change in Contractor’s cost of, or time required for, performance of any part of the Work, the Contractor may be entitled to an equitable adjustment in the Contract Time or Contract Sum, or both, provided it makes a request therefore as provided in Part 7.

5.11 PROTECTION OF EXISTING STRUCTURES, EQUIPMENT, VEGETATION, UTILITIES AND IMPROVEMENTS

A. Contractor to protect and repair property: At all times until Owner’s occupancy of the Work or a designated portion of the Work, Contractor shall protect the Work from damage, weather, deterioration, theft, vandalism and malicious mischief and shall bear the risk of any uninsured loss or destruction of, or injury or damage to, all materials, equipment, tools, and other items incorporated or to be incorporated in the Work or designated portion, or consumed or used in the performance of the Work or designated portion, including all Work in process and completed Work. Contractor shall protect from damage all existing structures, equipment, improvements, utilities, streets, curbs, walks and vegetation at or near the Project site or on adjacent property of a third party, the locations of which are made known to or should be known by Contractor. Contractor shall repair any damage, including that to the property of a third party, resulting from failure to comply with the requirements of the Contract Documents or failure to exercise reasonable care in performing the Work. If Contractor fails or refuses to repair the damage
promptly, Owner may have the necessary work performed and charge the cost to Contractor. If a governmental authority having jurisdiction requires that the repairing and patching be done with its own labor and/or materials, Contractor shall abide by such regulations, and it shall pay for this work at no additional cost to Owner.

B. Tree and vegetation protection: Contractor shall only remove trees when specifically authorized to do so, and shall protect vegetation that will remain in place.

C. Special site conditions: If, in the course of the Work, Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, Contractor shall immediately suspend any operations that would affect them and shall notify Owner and A/E. Upon receipt of such Notice, Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. Contractor shall continue to suspend these operations until otherwise instructed by Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Part 8.

5.12 LAYOUT OF WORK

A. Advanced planning of the Work: Contractor shall plan and lay out the Work in advance of operations so as to coordinate all work without delay or revision.

B. Layout responsibilities: Contractor shall lay out the Work from Owner-established baselines and bench marks indicated on the Drawings, and shall be responsible for all field measurements in connection with the layout. Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the Work. Contractor shall be responsible for executing the Work to the lines and grades that may be established. Contractor shall be responsible for maintaining or restoring all stakes and other marks established.

5.13 MATERIAL AND EQUIPMENT

A. Contractor to provide new and equivalent equipment and materials: All equipment, material, and articles incorporated into the Work shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in the Contract Documents. References in the Specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard quality and shall not be construed as limiting competition. Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of A/E and after submittal and approval of a substitute request, is equal to that named in the Specifications, unless otherwise specifically provided in the Contract Documents.

B. Contractor responsible for fitting parts together: Contractor shall do all cutting, fitting, or patching that may be required to complete the Work or to make its several parts fit together properly, or receive or be received by work of others set forth in, or reasonably implied by, the Contract Documents. Contractor shall not damage or endanger any work of Owner or separate contractors by cutting, excavating, or otherwise altering the Work and shall not cut or alter the work of any other contractor unless approved in advance by Owner. Contractor shall restore all areas requiring cutting, fitting and patching to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

C. Owner may reject defective Work: Should any of the Work be found defective, or in any way not in accordance with the Contract Documents, this Work, in whatever stage of completion, may be
rejected by Owner. However, neither this authority of Owner nor a decision made either to exercise or not to exercise such authority shall give rise to a duty or responsibility of Owner or its representatives to Contractor, Subcontractors, their agents or employees, or other persons or entities performing portions of the Work.

5.14 AVAILABILITY AND USE OF UTILITY SERVICES

A. Owner to provide and charge for utilities: Owner shall make all reasonable utilities available to Contractor from existing outlets and supplies, as specified in the Contract Documents. Unless otherwise provided in the Contract Documents, the utility service consumed shall be charged to or paid for by Contractor at prevailing rates charged to Owner or, where the utility is produced by Owner, at reasonable rates determined by Owner. Contractor will carefully conserve any utilities furnished.

B. Contractor to install temporary connections and meters: Contractor shall, at its expense and in a skillful manner satisfactory to Owner, install and maintain all necessary temporary connections and distribution lines, together with appropriate protective devices, and all meters required to measure the amount of each utility used for the purpose of determining charges. Prior to the date of Final Acceptance, Contractor shall remove all temporary connections, distribution lines, meters, and associated equipment and materials.

5.15 TESTS AND INSPECTION

A. Contractor to provide for all testing and inspection of Work: Contractor shall maintain an adequate testing and inspection program and perform such tests and inspections as are necessary or required to ensure that the Work conforms to the requirements of the Contract Documents. Contractor shall be responsible for inspection and quality surveillance of all its Work and all Work performed by any Subcontractor. Unless otherwise provided, Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. Contractor shall give Owner timely notice of when and where tests and inspections are to be made. Contractor shall maintain complete inspection records and make them available to Owner.

B. Owner may conduct tests and inspections: Owner may, at any reasonable time, conduct such inspections and tests as it deems necessary to ensure that the Work is in accordance with the Contract Documents. Owner shall promptly notify Contractor if an inspection or test reveals that the Work is not in accordance with the Contract Documents. Unless the subject items are expressly accepted by Owner, such Owner inspection and tests are for the sole benefit of Owner and do not:

1. Constitute or imply acceptance;
2. Relieve Contractor of responsibility for providing adequate quality control measures;
3. Relieve Contractor of responsibility for risk of loss or damage to the Work, materials, or equipment;
4. Relieve Contractor of its responsibility to comply with the requirements of the Contract Documents; or
5. Impair Owner’s right to reject defective or nonconforming items, or to avail itself of any other remedy to which it may be entitled.
C. Inspections or inspectors do not modify Contract Documents: Neither observations by an inspector retained by Owner, the presence or absence of such inspector on the site, nor inspections, tests, or approvals by others, shall relieve Contractor from any requirement of the Contract Documents, nor is any such inspector authorized to change any term or condition of the Contract Documents.

D. Contractor responsibilities on inspections: Contractor shall promptly furnish, without additional charge, all facilities, labor, material and equipment reasonably needed for performing such safe and convenient inspections and tests as may be required by Owner. Owner may charge Contractor any additional cost of inspection or testing when Work is not ready at the time specified by Contractor for inspection or testing, or when prior rejection makes reinspection or retest necessary. Owner shall perform its inspections and tests in a manner that will cause no undue delay in the Work.

5.16 CORRECTION OF NONCONFORMING WORK

A. Work covered by Contractor without inspection: If a portion of the Work is covered contrary to the request of Owner or the requirements in the Contract Documents or a governmental authority having jurisdiction, it must, if required in writing by Owner, be uncovered for Owner’s observation and be replaced at Contractor’s expense and without change in the Contract Sum or Contract Time.

B. Payment provisions for uncovering covered Work: If, at any time prior to Final Completion, Owner desires to examine the Work, or any portion of it, which has been covered, Owner may request to see such Work and it shall be uncovered by Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an adjustment in the Contract Sum for the costs of uncovering and replacement, and, if completion of the Work is thereby delayed, an adjustment in the Contract Time, provided it makes such a request as provided in Part 7. If such Work is not in accordance with the Contract Documents, the Contractor shall pay the costs of examination and reconstruction.

C. Contractor to correct and pay for non-conforming Work: Contractor shall promptly correct Work found by Owner not to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed, or completed. Contractor shall bear all costs of correcting such nonconforming Work, including additional testing and inspections.

D. Contractor’s compliance with correction and warranty provisions: If, within one year after the date of Substantial Completion of the Work or designated portion thereof, or within one year after the date for commencement of any system warranties established under Section 6.08, or within the terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, Contractor shall correct it promptly after receipt of written Notice from Owner to do so. Owner shall give such Notice promptly after discovery of the condition. This period of one year shall be extended, with respect to portions of Work first performed after Substantial Completion, by the period of time between Substantial Completion and the actual performance of the Work. Contractor’s duty to correct with respect to Work repaired or replaced shall run for one year from the date of repair or replacement. Obligations under this Section 5.16D shall survive Final Acceptance and are in addition to other warranties provided by contract or law.

E. Contractor to remove non-conforming Work: Contractor shall remove from the Project site portions of the Work which are not in accordance with the requirements of the Contract Documents and are neither corrected by Contractor nor accepted by Owner.
F. **Owner may charge Contractor for non-conforming Work**: If Contractor fails to correct nonconforming Work within a reasonable time after written notice to do so, Owner may replace, correct, or remove the nonconforming Work and charge the cost thereof to the Contractor.

G. **Contractor to pay for damaged Work during correction**: Contractor shall bear the cost of correcting destroyed or damaged Work, whether completed or partially completed, caused by Contractor's correction or removal of Work which is not in accordance with the requirements of the Contract Documents.

H. **No Period of limitation on other requirements**: Nothing contained in this section shall be construed to establish a period of limitation with respect to other obligations which Contractor might have according to the Contract Documents. Establishment of the time period of one year as described in Section 5.16D relates only to the specific obligation of Contractor to correct the Work, and has no relationship to the time within which the Contractor's obligation to comply with the Contract Documents may be sought to be enforced, including the time within which such proceedings may be commenced.

I. **Owner may accept non-conforming Work and charge Contractor**: If Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, Owner may do so instead of requiring its removal and correction, in which case the Contract Sum may be reduced as appropriate and equitable.

**5.17 CLEAN UP**

Contractor to keep site clean and leave it clean: Contractor shall at all times keep the Project site, including hauling routes, infrastructures, utilities, and storage areas, free from accumulations of waste materials. Before completing the Work, Contractor shall remove from the premises its rubbish, tools, scaffolding, equipment, and materials. Upon completing the Work, Contractor shall leave the Project site in a clean, neat, and orderly condition satisfactory to Owner. If Contractor fails to clean up as provided herein, and after reasonable notice from Owner, Owner may do so and the cost thereof shall be charged to Contractor.

**5.18 ACCESS TO WORK**

Owner and A/E access to Work site: Contractor shall provide Owner and A/E access to the Work in progress wherever located.

**5.19 OTHER CONTRACTS**

Owner may award other contracts; Contractor to cooperate: Owner may undertake or award other contracts for additional work at or near the Project site. Owner shall help coordinate the activities of Owner's own forces and of each separate contractor engaged by Owner with the Work of Contractor, who shall reasonably cooperate with the other contractors and with Owner's employees and shall carefully adapt scheduling and perform the Work in accordance with these Contract Documents to reasonably accommodate the other work.

**5.20 SUBCONTRACTORS AND SUPPLIERS**

A. **Subcontractor Responsibility**: The Contractor shall include the language of this paragraph in each of its first tier subcontracts, and shall require each of its subcontractors to include the same language of this section in each of their subcontracts, adjusting only as necessary the terms used for the contracting parties. Upon request of the Owner, the Contractor shall promptly provide documentation to the Owner demonstrating that the subcontractor meets the subcontractor responsibility criteria below. The requirements of this paragraph apply to all subcontractors.
regardless of tier. At the time of subcontract execution, the Contractor shall verify that each of its first tier subcontractors meets the following bidder responsibility criteria:

1. Have a current certificate of registration as a contractor in compliance with chapter 18.27 RCW, which must have been in effect at the time of subcontract bid submittal;

2. Have a current Washington Unified Business Identifier (UBI) number;

3. If applicable, have:
   a. Industrial Insurance (workers’ compensation) coverage for the subcontractor’s employees working in Washington, as required in Title 51 RCW;
   b. A Washington Employment Security Department number, as required in Title 50 RCW;
   c. A Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW;
   d. An electrical contractor license, if required by Chapter 19.28 RCW;
   e. An elevator contractor license, if required by Chapter 70.87 RCW.

4. Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065 (3).

5. On a project subject to the apprenticeship utilization requirements in RCW 39.04.320, not have been found out of compliance by the Washington state apprenticeship and training council for working apprentices out of ratio, without appropriate supervision, or outside their approved work processes as outlined in their standards of apprenticeship under chapter 49.04 RCW for the one-year period immediately preceding the date of the Owner’s first advertisement of the project.

6. Meet all supplemental responsibility criteria set forth in the Contract Documents.

B. **Provide names of Subcontractors and use qualified firms:** Before submitting the first Application for Payment, Contractor shall furnish in writing to Owner the names, addresses, and telephone numbers of all Subcontractors, as well as suppliers providing materials in excess of $2,500. Contractor shall utilize Subcontractors and suppliers which are experienced and qualified, and meet the requirements of the Contract Documents, if any. Contractor shall not utilize any Subcontractor or supplier to whom Owner has a "reasonable objection," and shall obtain Owner’s written consent before making any substitutions or additions. A "reasonable objection" shall include without limitation:

   .1 a proposed Subcontractor differing from the entity listed with a proposal or bid,
   .2 lack of "responsibility" of the proposed Subcontractor, as defined in RCW 39.04.350 or otherwise in the Contract Documents, or
   .3 lack of qualification, including technical qualification, as required by the Specifications.

C. **Subcontracts in writing and pass through provision:** All Subcontracts must be in writing. By appropriate written agreement, Contractor shall require each Subcontractor, so far as applicable to the Work to be performed by the Subcontractor, to be bound to Contractor by terms of the
Contract Documents, and to assume toward Contractor all the obligations and responsibilities which Contractor assumes toward Owner in accordance with the Contract Documents. Each Subcontract shall preserve and protect the rights of Owner in accordance with the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights. Where appropriate, Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. However, nothing in this paragraph shall be construed to alter the contractual relations between Contractor and its Subcontractors with respect to insurance or bonds.

D. Coordination of Subcontractors; Contractor responsible for Work: Contractor shall schedule, supervise, and coordinate the operations of all Subcontractors. No Subcontracting of any of the Work shall relieve Contractor from its responsibility for the performance of the Work in accordance with the Contract Documents or any other obligations of the Contract Documents.

E. Automatic assignment of subcontracts: Each subcontract agreement for a portion of the Work is hereby assigned by Contractor to Owner provided that:

1. Effective only after termination and Owner approval: The assignment is effective only after termination by Owner for cause pursuant to Section 9.01 and only for those Subcontracts which Owner accepts by notifying the Subcontractor in writing; and

2. Owner assumes Contractor’s responsibilities: After the assignment is effective, Owner will assume all future duties and obligations toward the Subcontractor which Contractor assumed in the Subcontract.

3. Impact of bond: The assignment is subject to the prior rights of the surety, if any, obligated under any bond provided in accordance with the Contract Documents.

5.21 WARRANTY OF CONSTRUCTION

A. Contractor warranty of Work: In addition to any special warranties provided elsewhere in the Contract Documents, Contractor warrants that all Work conforms to the requirements of the Contract Documents and is free of any defect in equipment, material, or design furnished, or workmanship performed by Contractor.

B. Contractor responsibilities: With respect to all warranties, express or implied, for Work performed or materials furnished according to the Contract Documents, Contractor shall:

1. Obtain warranties: Obtain, assign if requested, and furnish directly to Owner, all warranties that would be given in normal commercial practice or that are required by the Contract Documents, first executed by the applicable Subcontractor and those suppliers and manufacturers furnishing materials for the Work, and subsequently countersigned by Contractor, which shall extend to Owner all rights, claims, benefits and interests that Contractor may have under express or implied warranties or guarantees against the Subcontractor, supplier or manufacturer for defective or non-conforming Work;

2. Warranties for benefit of Owner: Require all warranties to be executed, in writing, for the benefit of Owner;

3. Enforcement of warranties: Enforce all warranties for the benefit of Owner, if directed by Owner; and
4. **Contractor responsibility for subcontractor warranties:** Be responsible to enforce any subcontractor’s, manufacturer’s, or supplier’s warranties should they extend beyond the period specified in the Contract Documents.

C. **Warranties beyond Final Acceptance:** The obligations under this section shall survive Final Acceptance.

5.22 **INDEMNIFICATION**

A. **Contractor to indemnify Owner:** To the fullest extent permitted by law, Contractor shall defend, indemnify, and hold Owner and A/E, their consultants, and agents and employees, directors, officers, lenders, successors and assigns of any of them (collectively, the "Indemnified Parties"), harmless from and against all third-party claims, demands, losses, damages, or costs, including but not limited to damages arising out of bodily injury or death to persons and damage to property, direct and indirect, or consequential (including but not limited to costs and attorneys' fees incurred on such claims or in proving the right to indemnification), arising out of, caused by or resulting from:

1. **Sole negligence of Contractor:** The sole negligence or willful misconduct of Contractor or any of its Subcontractors, their agents and anyone directly or indirectly employed by them or anyone for whose acts they may be liable ("Indemnitor");

2. **Concurrent negligence:** The concurrent negligence of Indemnitor, but only to the extent of the negligence of Indemnitor; and

3. **Patent infringement:** The use of any design, process, or equipment that constitutes an infringement of any United States patent presently issued, or violates any other proprietary interest, including copyright, trademark, and trade secret, unless specifically directed to use such design, process, or equipment by Owner.

The obligations of Contractor under this Section 5.22 shall not be construed to negate, abridge, or otherwise reduce any other right or obligations of indemnity that would otherwise exist as to any party or person described in this Section. To the extent the wording of this Section 5.22 would reduce or eliminate the insurance coverage of Owner or Contractor, this Section 5.22 shall be considered modified to the extent that such insurance coverage is not affected. To the extent that any portion of this Section 5.22 is stricken by a court or arbitrator for any reason, all remaining provisions shall retain their vitality and effect. The provisions of this Section 5.22 shall survive completion, acceptance, final payment and termination of the Contract.

B. **Employee action and RCW Title 51:** In any action against Owner and any other entity indemnified in accordance with this section, by any employee of Contractor, its Subcontractors, Sub-subcontractors, agents, or anyone directly or indirectly employed by any of them, the indemnification obligation of this section shall not be limited by a limit on the amount or type of damages, compensation, or benefits payable by or for Contractor or any Subcontractor under RCW Title 51, the Industrial Insurance Act, or any other employee benefit acts. In addition, Contractor waives immunity as to Owner and A/E only, in accordance with RCW Title 51.

**PART 6 - PAYMENTS AND COMPLETION**

6.01 **CONTRACT SUM**

**Owner shall pay Contract Sum:** Owner shall pay Contractor the Contract Sum plus Washington State sales tax for performance of the Work, in accordance with the Contract Documents.
6.02 SCHEDULE OF VALUES

Contractor to submit Schedule of Values: Before submitting its first Application for Payment, Contractor shall submit to Owner for approval a breakdown allocating the total Contract Sum to each principal category of work, in such detail as requested by Owner (“Schedule of Values”). The approved Schedule of Values shall allocate at least the percentage of the original Contract Sum so designated in the Contract Documents to that portion of the Work between Substantial Completion and Final Completion to recognize not-yet-earned costs for demobilization, Project Record, O&M manuals, and any other requirements for Project closeout and in advancing the Work from Substantial Completion to Final Completion. The approved Schedule of Values shall be used by Owner as a basis for reviewing progress payments. Payment for Work shall be made only for and in accordance with those items included in the Schedule of Values.

6.03 APPLICATION FOR PAYMENT

A. Monthly Application for Payment with substantiation: At monthly intervals, unless determined otherwise by Owner, Contractor shall submit to Owner an itemized Application for Payment for Work (using Owner’s form) completed in accordance with the Contract Documents and the approved Schedule of Values. Each application shall be supported by such substantiating data as Owner may require.

B. Contractor certifies Subcontractors paid: By submitting an Application for Payment, Contractor is certifying that all Subcontractors have been paid, less earned retainage in accordance with RCW 60.28.011, as their interests appeared in the last preceding Application for Payment. By submitting an Application for Payment, Contractor is recertifying that the representations set forth in Section 1.03 are true and correct, to the best of Contractor’s knowledge, as of the date of the Application for Payment. Owner has the right to request written evidence from Contractor that Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by Owner to Contractor for subcontracted Work. Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Owner shall not have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

C. Reconciliation of Work with Progress Schedule: At the time it submits an Application for Payment, Contractor shall analyze and reconcile, to the satisfaction of Owner, the actual progress of the Work with the Progress Schedule. The submission of an Application for Payment constitutes a certification that the Work is current on the Progress Schedule.

D. Payment for material delivered to site or stored off-site: If authorized by Owner, the Application for Payment may include request for payment for material delivered to the Project site and suitably stored, or for completed preparatory work. Payment may similarly be requested for material stored off the Project site, provided Contractor complies with or furnishes satisfactory evidence of the following:

1. Suitable facility or location: The material will be placed in a facility or location that is structurally sound, dry, lighted and suitable for the materials to be stored or otherwise approved by Owner;

2. Facility or location within 10 miles of Project: The facility or location is located within a 10-mile radius of the Project. Other locations may be utilized, if approved in writing, by Owner;
3. **Facility or location exclusive to Project's materials:** Only materials for the Project are stored within the facility or location (or a secure portion of a facility or location set aside for the Project);

4. **Insurance provided on materials in facility or location:** Contractor furnishes Owner a certificate of insurance extending Contractor’s insurance coverage for damage, fire, and theft to cover the full value of all materials stored, or in transit;

5. **Facility or location locked and secure:** The facility or location (or secure portion thereof) is continuously under lock and key, and only Contractor’s authorized personnel shall have access;

6. **Owner right of access to facility or location:** Owner shall at all times have the right of access in company of Contractor;

7. **Contractor assumes total responsibility for stored materials:** Contractor and its surety assume total responsibility for the stored materials; and

8. **Contractor provides documentation and Notice when materials moved to site:** Contractor furnishes to Owner certified lists of materials stored, bills of lading, invoices, and other information as may be required, and shall also furnish Notice to Owner when materials are moved from storage to the Project site.

### 6.04 PROGRESS PAYMENTS

A. **Owner to pay within 30 Days:** Owner shall make progress payments, in such amounts as Owner determines are properly due, within 30 Days after receipt of a properly executed Application for Payment. Owner shall notify Contractor in accordance with chapter 39.76 RCW if the Application for Payment does not comply with the requirements of the Contract Documents.

B. **Withholding retainage; Options for retainage:** Owner shall retain 5% of the amount of each progress payment until 45 Days after Final Acceptance and receipt of all documents required by law or the Contract Documents, including, at Owner’s request, consent of surety to release of the retainage. In accordance with chapter 60.28 RCW, Contractor may request that monies reserved be retained in a fund by Owner, deposited by Owner in a bank or savings and loan, or placed in escrow with a bank or trust company to be converted into bonds and securities to be held in escrow with interest to be paid to Contractor. Owner may permit Contractor to provide an appropriate bond in lieu of the retained funds.

C. **Title passes to Owner upon payment:** Title to all Work and materials covered by a progress payment shall pass to Owner at the time of such payment free and clear of all liens, claims, security interests, and encumbrances. Passage of title shall not, however, relieve Contractor from any of its duties and responsibilities for the Work or materials, or waive any rights of Owner to insist on full compliance by Contractor with the Contract Documents. A progress payment, or partial or entire use or occupancy of the Project by Owner, shall not constitute acceptance of Work.

D. **Interest on unpaid balances:** Payments due and unpaid in accordance with the Contract Documents shall bear interest as specified in chapter 39.76 RCW.
6.05 PAYMENTS WITHHELD

A. Owner’s right to withhold payment: Owner may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any payment to such extent as may be necessary to protect Owner from loss or damage for reasons including but not limited to:

1. Non-compliant Work: Work not in accordance with the Contract Documents;

2. Remaining Work to cost more than unpaid balance: Reasonable evidence that the Work required by the Contract Documents cannot be completed for the unpaid balance of the Contract Sum;

3. Owner correction or completion of Work: Work by Owner to correct defective Work or complete the Work in accordance with Section 5.16;

4. Third party claims for which Contractor may be responsible: Claims (except where an insurer has unconditionally accepted coverage without prior payment of any deductibles or self-insured retentions) filed or reasonable evidence indicating probable filing of such claims unless Contractor provides security acceptable to Owner;

5. Failure to pay Subcontractor: The failure of Contractor to make payments to Subcontractors for labor, materials or equipment;

6. Damages: Damage to Owner or a separate contractor (except where an insurer has unconditionally accepted coverage);

7. Affidavits of Wages Paid: Failure to submit affidavits pertaining to wages paid as requested or otherwise required by statute;

8. Progress Schedule: Failure to submit a properly updated Progress Schedule;

9. Maintenance of Project Record: Failure to properly maintain as the Project Record;

10. Other construction records: Failure to properly submit any other required construction reports or records;

11. Certified payrolls: Failure to properly submit certified payrolls when requested;

12. Contractor’s failure to perform: Contractor’s failure otherwise to perform in accordance with the Contract Documents; or

13. Contractor’s negligent acts or omissions: Cost or liability that may occur to Owner as the result of Contractor’s fault or negligent acts or omissions.

B. Owner to notify Contractor of withholding for unsatisfactory performance: In any case where part or all of a payment is going to be withheld for unsatisfactory performance, Owner shall notify Contractor in accordance with chapter 39.76 RCW.

6.06 RETAINAGE, BOND CLAIM RIGHTS, AND LIENS

A. Chapters 39.08 RCW and 60.28 RCW incorporated by reference: Chapters 39.08 RCW and 60.28 RCW, concerning the rights and responsibilities of Contractor and Owner with regard to the performance and payment bonds and retainage, are made a part of the Contract Documents by reference as though fully set forth herein.
B. **Liens:** Contractor shall promptly pay (and secure the discharge of any liens asserted by) all persons properly furnishing labor, equipment, materials or other items in connection with the performance of the Work (including, but not limited to, any Subcontractors) to the extent that Owner has paid Contractor for this Work. Owner may, at its option, withhold payment, in whole or in part, to Contractor until lien and claim releases are furnished. Contractor may provide other security acceptable to Owner, such as a bond, in lieu of paying disputed liens or claims. Contractor shall defend, indemnify, and hold harmless Owner from any liens, including all expenses and attorneys’ fees, except to the extent a lien has been recorded because of a failure of payment by Owner for the Work implicated in any such lien.

6.07 **SUBSTANTIAL COMPLETION**

A. **Substantial Completion defined:** Substantial Completion is the stage in the progress of the Work (or portion thereof designated and approved by Owner) when the construction is sufficiently complete, in accordance with the Contract Documents, so Owner has full and unrestricted use and benefit of the facilities (or portion thereof designated and approved by Owner) for the use for which it is intended, the Project has been constructed in substantial accordance with the Contract Documents, and at a minimum the following elements have been accomplished (see also, Section 01 70 00 Project Completion):

1. A written punch list has been prepared;
2. The Authority Having Jurisdiction has granted a certificate of occupancy; and
3. The first final draft of the Operation and Maintenance manuals has been submitted to Owner.

All Work other than incidental corrective or punch list work shall be completed. Substantial Completion shall not have been achieved if the Work cannot achieve Final Completion within the time specified in the Agreement. The date Substantial Completion is achieved shall be established in writing by Owner. Contractor may request an early date of Substantial Completion which must be approved by Change Order. Owner’s occupancy of the Work or designated portion thereof does not necessarily indicate that Substantial Completion has been achieved.

B. **Contractor to provide weekly reports before Substantial Completion:** Beginning at least 30 Days before the scheduled date of Substantial Completion, Contractor shall prepare reports weekly, identifying items to be completed in order to obtain necessary occupancy certificates and permits, and make recommendations to Owner for effectuating the earliest possible completion. When Contractor considers that the Work, or a portion thereof that Owner agrees to accept separately, has achieved Substantial Completion, Contractor shall prepare and submit to Owner a comprehensive list of items to be completed or corrected prior to final payment. Contractor shall proceed promptly to complete and correct items on the list. Failure to include an item on the list does not alter the responsibility of Contractor to complete all Work in accordance with the Contract Documents.

C. **Owner to determine if Work is complete:** Upon receipt of Contractor’s list, Owner will make an inspection to determine whether the Work or designated portion thereof has achieved Substantial Completion. If Owner’s inspection discloses any item, whether or not included on Contractor’s list, that is not sufficiently complete in accordance with the Contract Documents so that Owner can occupy or utilize the Work or designated portion thereof for its intended use, Contractor shall, before the occurrence of Substantial Completion, complete or correct the item upon notification by Owner, and Contractor shall then submit a request for another inspection by Owner to determine Substantial Completion. If Owner determines that the Work or designated portion has not achieved Substantial Completion, Contractor shall expeditiously complete the Work or
designated portion, again request an inspection, and pay the costs associated with the re-
inspection.

D. **Owner may take over punch list:** If, at 30 Days after the date of Substantial Completion, Owner
considers that the remaining items on its list ("punch list") are unlikely to be completed within the
time period specified in the Contract Documents for Final Completion, Owner may, upon seven
Days’ written Notice to Contractor, take over and perform some or all of the punch list items. If
Contractor fails to correct the deficiencies within the time period specified, Owner may deduct the
actual cost of performing this punch list work, including any design costs, plus ten 10% to account
for Owner’s transaction costs, from the Contract Sum.

E. **Owner to establish date of Substantial Completion:** When the Work or designated portion thereof
has achieved Substantial Completion, Owner shall establish the date of Substantial Completion in
writing, establish responsibilities of Contractor for security, maintenance, heat, utilities, damage to
the Work and insurance, and fix the time within which Contractor shall finish all items on the list
accompanying the document. The writing establishing Substantial Completion shall be submitted
to Contractor for its written acceptance of the responsibilities assigned to it. Any items not
included in the document but required or necessary for Final Completion of the Work shall be
supplied and installed by Contractor as a part of the Contract Sum, notwithstanding their not
being included in the punch list. Upon written acceptance of the writing establishing Substantial
Completion by Contractor and Owner, and upon Contractor’s Application for Payment, Owner
shall make payment as provided in the Contract Documents. Such payment shall be adjusted for
Work that is incomplete or not in accordance with the requirements of the Contract Documents.
No further payment will be due or owing until the payment following Final Completion.

F. **Contractor to complete punch list in timely manner:** Contractor shall prepare, continue to monitor,
and cause to be completed, all punch lists with respect to the activity of each Subcontractor and
report weekly to Owner on outstanding punch list items.

**6.08 PRIOR OCCUPANCY**

A. **Prior Occupancy defined; Restrictions:** Owner may, when legally permissible to do so and upon
written Notice to Contractor, take possession of or use any completed or partially completed
portion of the Work ("Prior Occupancy") at any time prior to Substantial Completion, and
Contractor shall cooperate with such occupancy and use and the establishment of a punch list.
Unless otherwise agreed in writing, Prior Occupancy shall not: be deemed an acceptance of any
portion of the Work; accelerate the time for any payment to Contractor; prejudice any rights of
Owner provided by any insurance, bond, guaranty, or the Contract Documents; relieve Contractor
of the risk of loss or any of the obligations established by the Contract Documents; establish a
date of Substantial or Final Completion; establish a date for termination or partial termination of
the assessment of liquidated damages; or constitute a waiver of claims.

B. **Damage; Duty to repair and warranties:** Notwithstanding anything in the preceding paragraph,
Owner shall be responsible for loss of or damage to the Work resulting from Prior Occupancy.
Contractor’s one year duty to repair any system warranties shall begin on building systems
activated and used by Owner as agreed in writing by Owner and Contractor.

**6.09 FINAL COMPLETION, ACCEPTANCE, AND PAYMENT**

A. **Final Completion defined:** Final Completion shall be achieved when the Work is fully and finally
complete in accordance with the Contract Documents. The date Final Completion is achieved
shall be established by Owner in writing, but in no case shall it constitute Final Acceptance, which
is a subsequent, separate, and distinct action (see also, Section 01 70 00 Project Completion).
B. **Final Acceptance defined:** Unless otherwise determined by Owner, Final Acceptance shall be achieved after Contractor has completed all the requirements of the Contract Documents. The date Final Acceptance is achieved shall be established by Owner in writing. Pursuant to RCW 60.28, “Lien for Labor, Materials, Taxes on Public Works,” completion of the Contract Work shall occur upon Final Acceptance. Neither Final Acceptance nor final payment shall release Contractor or its sureties from any obligations of these Contract Documents or the payment and performance bonds, or constitute a waiver of any claims by Owner arising from Contractor’s failure to perform the Work in accordance with the Contract Documents (see also, Section 01 70 00 Project Completion).

C. **Final payment waives Claim rights:** Acceptance of final payment by Contractor or any Subcontractor shall constitute a waiver and release to Owner of all claims by Contractor or any such Subcontractor for an increase in the Contract Sum or the Contract Time, and for every act or omission of Owner relating to or arising out of the Work, except for those Claims made in accordance with the procedures, including the time limits, set forth in Part 8.

**PART 7 - CHANGES**

7.01 **CHANGE IN THE WORK**

A. **Changes in the Work:** Changes in the Work may be accomplished after execution of the Contract without invalidating the Contract. Changes in the Work that adjust the Contract Sum and/or Contract Time are incorporated into the Contract solely by Change Order and are subject to the limitations stated in this Part 7 and elsewhere in the Contract Documents. A Change Order may be bilateral or unilateral, as described below. Change Orders may be initiated by mutual agreement or through a Contract Change Proposal (“CCP”) or Work Directive (“WD”).

B. **Change Orders:**

1. A Bilateral Change Order is signed by Owner and Contractor to record their agreement on the terms of a change in the Work. A Bilateral Change Order may reflect the agreement of Owner and Contractor on a standalone issue, or it may incorporate one or more mutually agreed upon CCPs or WDs. A Bilateral Change Order shall constitute full payment and final settlement of all claims for time and cost, including direct, indirect, impact and consequential costs, related to the Change Order and Work covered by, affected by and related to the events giving rise to the Change Order.

2. A Unilateral Change Order is initially signed only by Owner to set forth, subject to the Contract, the terms of a change in the Work based upon one or more CCPs and/or WDs to which the parties have not yet fully agreed. Within 7 Days of its receipt of a Unilateral Change Order, Contractor shall notify Owner in writing either (a) of its acceptance of its terms, in which case the Unilateral Change Order will automatically become a Bilateral Change Order, or (b) of Contractor’s rejection, in which case Contractor must submit a written rejection within 14 Days after Contractor delivered written Notice of rejection to Owner as noted above. The written rejection must fully explain the reasons for rejecting the Unilateral Change Order and include all necessary supporting documentation. The rejection will then be considered in accordance with Section 8.02 (Informal Resolution of Disputes). Failure to submit a written Notice of rejection within 7 Days of Contractor’s receipt of a Unilateral Change Order or a written rejection with 14 Days shall constitute Contractor’s acceptance of the terms of the Unilateral Change Order.
C. Change Orders via Contract Change Proposal:

1. Contractor shall be responsible for maintaining an Issues Log. If Contractor at any time believes that a change in the Work has or may have occurred, Contractor shall add such item to the Issues Log. At a minimum, the Issues Log shall identify:
   
   a. Detailed scope of the change in the Work;
   
   b. Contract Time impact noting specifically how it impacted the critical path of the project, if any;
   
   c. The amount of any anticipated, proposed, or approved change in the Contract Sum;
   
   d. Date first included on the Issues Log;
   
   e. Owner-initiated or Contractor-initiated; and
   
   f. Action status.

2. If the Contractor believes an item on the Issues Log warrants a CCP, Contractor shall provide written Notice to Owner in accordance with Section 8.02, and shall submit a written CCP in accordance with this Section. All CCPs shall be substantiated and submitted within 7 Days of being added to the Issues Log along with a revised progress schedule identifying the time impact affecting the critical path, if any. The CCP shall identify the proposed full compensation for implementing the proposed change in the Work, including any adjustment in the Contract Sum or Contract Time. Upon receipt of the CCP, Owner may accept the proposal and incorporate it into a Bilateral Change Order, reject the proposal and either issue a WD or elect not to proceed with the proposal, request further documentation, or negotiate acceptable terms with Contractor.

D. Work Directives:

1. A WD is a written order prepared by Owner that directs Contractor to perform Work prior to total agreement on an adjustment, if any, in the Contract Sum and/or Contract Time. Owner may direct Contractor, at any time and without invalidating the Contract, through a WD to proceed with a change in the Work or to perform Work that Contractor contends to be a change in the Work, with or without the agreement of Contractor and prior to agreement of the basis for adjustment, if any, to the Contract. Owner's use of a WD does not constitute agreement that the directive constitutes a change in the Work, the Contract Sum or the Contract Time.

2. A WD normally includes:
   
   a. The scope of the directed Work,
   
   b. Any proposed adjustment to the Contract Sum or not-to-exceed amount,
   
   c. Any proposed change to the Contract Time,
   
   d. The proposed method of determining any change in the Contract Sum and/or Contract Time, and
e. The supporting data that Contractor must submit in accordance with the requirements of Part 7 of the General Conditions.

3. Upon receipt of a WD, Contractor shall promptly commence and proceed diligently with performance of the directed Work. Within 7 Days of its receipt of a WD, Contractor shall notify Owner in writing either (a) of its acceptance of its terms, in which case the terms will become effective, and the WD will be incorporated into a Bilateral Change Order, or (b) of Contractor’s rejection of the terms, in which case Contractor must submit a written rejection within 14 Days after Contractor delivered written Notice to Owner as noted above. The written rejection must fully explain the reasons for rejecting the WD and include all necessary supporting documentation. The rejection will then be considered in accordance with Section 8.02. Contractor’s rejection of a WD shall not relieve Contractor of its obligation to comply promptly with the WD.

E. Contractor fault or negligence alleged as basis for change in Contract Sum: No change in the Contract Sum shall be allowed to the extent Contractor’s changed cost of performance is due to the fault or negligence of Contractor or anyone for whose acts Contractor is responsible; or to the extent Contractor is responsible for change concurrently caused by Contractor and Owner; or to the extent the change is caused by an act of Force Majeure as defined in Section 3.05.

7.02 CHANGE IN THE CONTRACT SUM

A. General Application

1. Contract Sum changes only by Change Order: The Contract Sum shall only be changed by a Change Order.

2. Allowances: Any Allowances stated in the Contract Documents shall be included in the Contract Sum. Items covered by Allowances shall be supplied for such amounts and by such persons or entities as Owner may direct, but Contractor shall not be required to employ persons or entities to whom Contractor has made reasonable and timely objection. Owner shall select materials and equipment under an Allowance with reasonable promptness. Allowances shall cover the net cost to Contractor of materials and equipment delivered and/or installed at the site, as identified in the Allowance, and all required taxes, less applicable trade discounts. Whenever actual costs are more than or less than Allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect the difference between actual, reasonable costs and the Allowances.

3. Pricing Components: Contractor shall maintain and submit a complete itemization of the costs incurred as a result of any change in the Work, including labor, material, Subcontractor costs, and fee. The total cost of any change in the Work or of any other increase or decrease in the Contract Sum, including a Claim, shall be limited to the actual, reasonable amounts for the following components, itemized in the manner set forth below and submitted on breakdown sheets in a form approved by Owner. If the total cost of the change in the Work does not exceed $5,000.00, Contractor shall not be required to submit a breakdown if the description of the change in the Work is sufficiently definitive for Owner to determine fair value.

a. Labor costs: The labor cost component is determined by multiplying the estimated or actual additional number of hours needed to perform the change in the Work by the fully burdened hourly labor costs. The fully burdened hourly costs shall include the following:
(1) **Basic wages and benefits:** Hourly rates and benefits as stated on the Department of Labor and Industries approved “Statement of Intent to Pay Prevailing Wages” shall be applicable unless a high, documented amount is actually paid by a contractor for the laborers, apprentices, journeymen, foremen, and other staff performing and/or directly supervising the change in the Work at the site. Any amount in excess of approved “Statement of Intent to Pay Prevailing Wages” shall be substantiated and subject to audit.

(2) **Worker's insurance:** Direct contributions to the State of Washington for industrial insurance; medical aid; and supplemental pension, by the class and rates established by the Department of Labor and Industries.

(3) **Federal insurance:** Direct contributions required by the Federal Insurance Compensation Act; Federal Unemployment Tax Act; and the State Unemployment Compensation Act.

(4) **Supervision:** The labor cost component may include the actual, demonstrated additional supervision hours (not already compensated by Owner) directly related to a change in the Work.

(5) **Travel and Per Diem allowance:** Travel allowance and/or subsistence, if applicable, required by regional labor union agreements, which are itemized and identified separately.

**b. Material costs:** The material cost component must be itemized and include material invoices or reasonable lump-sum estimates of the quantity and cost of additional materials needed to perform the change in the Work. Material costs shall be developed first from actual known costs; second from supplier quotations; and, if neither of these is available, then from standard industry pricing guides acceptable to Owner. Material costs shall consider all available discounts. Freight costs, express charges, or special delivery charges shall be itemized.

**c. Equipment costs:** The equipment cost component must be itemized by the type of equipment and include the estimated or actual length of time the construction equipment appropriate for the Work is or will be used on the change in the Work on site. Costs will be allowed for construction equipment only to the extent used solely for the changed Work, or for additional rental costs actually incurred by Contractor solely for the changed Work. Equipment charges shall be computed on the basis of actual invoice costs or, if owned, from the current edition of the Associated General Contractors Washington State Department of Transportation (AGC WSDOT) Equipment Rental Agreement current edition as of the Contract execution date. The EquipmentWatch Rental Rate Blue Book shall be used as a basis for establishing rental rates of equipment not listed in the above source. The maximum rate for standby equipment shall not exceed that shown in the AGC WSDOT Equipment Rental Agreement. The rate for Contractor-owned equipment necessarily standing by for future use on the changed Work shall be no more than 50% of the rate established above unless otherwise approved by Owner. The total rental cost shall not exceed the cost of purchasing the equipment outright.

**d. Subcontractor costs:** The Subcontractor cost component consists of payments Contractor makes to Subcontractors for the cost of changed Work performed by
Subcontractors. Subcontractors’ costs shall be calculated and itemized in the same manner as prescribed herein for Contractor.

e. **Fee:** The Fee component is compensation for all items and costs not listed in subparagraphs a through d above, and is added to the total cost to Owner of the sum of these items. The Fee shall compensate Contractor, Subcontractor and suppliers for, among other things, combined overhead, profit and other costs, including all office, home office and site overhead, employee per diem, subsistence and travel costs not separately reimbursable under subparagraph a above, warranty, safety costs, printing and copying, quality control/assurance, purchasing, small or hand tool (a tool that costs $250 or less and is normally furnished by the performing contractor) or expendable charges, temporary construction facilities, field engineering, schedule updating, Project Record, home office cost, taxes (including all taxes except B&O tax and Washington State sales tax payable based on the amount of the approved Application for Payment), office engineering, estimating costs, additional overhead because of extended time, Claim and change preparation, direct and indirect delay, acceleration or impact, and any other cost incidental to the change in the Work. The Fee shall be strictly limited in all cases to the rates below.

(1). **Contractor markup on Contractor Work:** Contractor is allowed a Fee for any Work actually performed by Contractor’s own forces of 16% of the first $50,000 of the cost of such Work and 4% of the remaining cost, if any.

(2). **Subcontractor markup for Subcontractor Work:** Each Subcontractor (including lower-tier Subcontractors) is allowed a Fee for any Work actually performed by its own forces of 16% of the first $50,000 of the cost of such Work and 4% of the remaining cost, if any.

(3). **Contractor markup for Subcontractor Work:** Contractor is allowed a Fee for any Work performed by its Subcontractor(s) of 6% of the first $50,000 of the amount due each Subcontractor for such Work and 4% of the remaining amount, if any.

(4). **Subcontractor markup for lower-tier Subcontractor Work:** Each Subcontractor is allowed a Fee for any Work performed by its Subcontractor(s) of any lower-tier of 4% of the first $50,000 of the amount due the lower-tier Subcontractor for such Work and 2% of the remaining amount, if any.

(5). **Basis of cost applicable for markup:** The cost of the Work to which the Fee is to be applied shall be based on the cost components in subparagraphs 7.02.A 3.a – d.

(6). **Application of Fee:** The Fee shall not be included on deductive changes in the Work. Where a change in the Work involves additive and deductive work by Contractor or the same Subcontractor, the Fee as well as bond and insurance markups will apply to the net difference.

f. **Insurance and bond premiums:** The cost of any change in insurance or bond premium is added to the sum of the cost components in subparagraphs 7.02.A 3.a – e and is limited to the following:
(1) Contractor’s liability insurance: The cost of any changes in Contractor’s contractually required liability insurance arising directly from the Change Order; and

(2) Payment and Performance Bond: The cost of any additional premium for Contractor’s contractually required bond arising directly from the Change Order.

g Tax: Washington State sales tax and B&O tax arising directly from the Change Order shall be added to the cost of the Change Order.

h. Unit Prices: If Unit Prices, including pre-agreed rates for material quantities, are applicable to a change in the Work, the Unit Prices shall be applied to the quantities of the items involved as determined in Section 7.02A. Quantities must be supported by field measurement statements signed by Owner. Owner shall be afforded access and be permitted to measure quantities. Contractor shall not exceed any cost limit(s) without Owner’s prior written approval. Unit Prices shall include reimbursement for all direct and indirect costs of the Work, but exclude Fee (7.02 A.e), bond, and insurance costs (7.02 A.f).s.

7.03 CHANGE IN THE CONTRACT TIME

A. Changes in Contract Time: The Contract Time shall only be changed by a Change Order.

B. Time extension permitted only if delay is not Contractor’s fault: If Contractor is delayed at any time in the commencement or progress of the Work (1) by an act or neglect of Owner or anyone for whose acts Owner is responsible; or (2) by changes ordered by Owner in the Work; or (3) by Force Majeure; or (4) by delay authorized by Owner pending dispute resolution; or (5) by other causes that Owner determines may justify delay, then Contractor shall reasonably attempt to mitigate the delay, and the Contract Time shall be extended by Change Order for such reasonable time as Owner may reasonably determine consistent with the provisions of the Contract Documents. No adjustment in the Contract Time shall be allowed to the extent Contractor’s changed time of performance is due to the fault or negligence of Contractor or anyone for whose acts Contractor is responsible.

C. Contractor must demonstrate impact on critical path of schedule: Any change in the Contract Time covered by a Change Order or Claim shall be limited to the change in the critical path of the Work attributable to the change or event(s) giving rise to the Change Order or Claim. Contractor shall be responsible for showing clearly on the Progress Schedule that the change or event had a specific impact on the critical path and, except in case of concurrent delay, was the sole cause of such impact, and could not have been avoided by resequencing of the Work or other reasonable alternatives in accordance with Section 01 32 13 Project Schedule.

D. Cost arising from change in Contract Time: Contractor is entitled to compensation for the cost of a change in Contract Time only if all the following conditions are met:

1. Must be solely fault of Owner: The change in Contract Time must solely be caused by the fault or negligence of Owner or others for whom Owner is responsible;

2. Procedures: Contractor must follow the procedure set forth in Section 7.03B and Section 8.02;

3. Demonstrate impact on critical path: Contractor must establish the extent of the change in Contract Time in accordance with Section 7.03C and Section 01 32 13 Project Schedule.
Schedule. Owner is not obligated directly or indirectly for damages or an increase in the Contract Sum for any delay suffered by a Subcontractor that does not increase the Contract Time; and

4. **Cost measured exclusively by the pricing components of Section 7.02A.3:** If Contractor or a Subcontractor of any tier is entitled to compensation arising from or related to a change in Contract Time, the pricing components of Section 7.02A.3 shall exclusively be used to measure the actual costs incurred as a result of the change in Contract Time. Neither Contractor nor a Subcontractor of any tier is entitled to payment for costs arising out of actual or alleged loss of efficiency; morale, fatigue, attitude, or labor rhythm; home office overhead; expectant underrun; trade stacking; reassignment of workers; rescheduling of work; concurrent operations; dilution of supervision; learning curve; beneficial or joint occupancy; logistics; ripple; season change; extended overhead; profit upon damages for delay; impact damages, including cumulative impact; or similar damages.

**PART 8 - CLAIMS AND DISPUTE RESOLUTION**

### 8.01 CLAIMS

**A. Definition:** A Claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of the Contract terms, payment of money, extension of time or other relief with respect to the terms of the Contract Documents. The term “Claim” also includes other disputes and matters in question between Owner and Contractor arising out of or relating to the Contract Documents. Claims must be initiated in writing and be made in accordance with the Contract Documents. Neither a CCP, a Request for Information, a Bilateral or Unilateral Change Order, a reservation of rights, minutes of a meeting, a daily report, or a log entry shall constitute a Claim or Notice of a Claim. However, Owner and Contractor may agree in a signed writing to supplement how Contractor can provide a Notice of Claim as specified in this Part 8.

**B. Continuing Contract performance:** Pending final resolution of a Claim, including the dispute resolution process in Part 8, and except as otherwise agreed in writing or in the Contract Documents, Contractor shall proceed diligently with performance of the Work and maintain the Progress Schedule, and Owner shall continue to make payments of undisputed amounts in accordance with the Contract Documents.

**C. Claims for additional cost:** If Contractor wishes to make a Claim for an increase in the Contract Sum, written Notice as provided herein shall be given before proceeding to execute the Work, and written Notice and a written Claim must be made in accordance with this Part 8, or it will be waived.

**D. Claims for additional time:** If Contractor wishes to make a Claim for an increase in the Contract Time, written Notice as provided herein shall be given, and a written Claim must be made in accordance with this Part 8, or it will be waived.

**E. Claims for consequential damages:** Contractor and Owner waive certain Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes damages incurred by Owner for profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and damages incurred by Contractor for principal and home office overhead and expenses including but not limited to the compensation of personnel stationed there, for loss of financing, business and/or reputation, for losses on other projects, for loss of profit, and for interest or financing costs. This mutual waiver is applicable, without limitation, to all consequential damages due to either party’s termination. Nothing contained in this subparagraph E, however, shall be deemed to preclude an
award of liquidated or other delay damages, when applicable, in accordance with the Contract Documents, or to preclude or limit Contractor’s obligation to procure and maintain the insurance policies required by this Contract or indemnify Owner for damages, including direct, indirect or consequential damages, alleged by a third party.

8.02 INFORMAL RESOLUTION OF DISPUTES

A. **Procedure to reduce disputes:** In an effort to reduce the incidence and cost to all parties of extended disputes, all disputes, direct or indirect, arising out of or relating to the Contract Documents or the breach thereof, except those that have been waived under the terms of the Contract Documents, shall be decided exclusively by the dispute resolution procedure of Part 8 unless the parties mutually agree in writing otherwise. To the extent that Owner and Contractor agree to a partnering or dispute review process to help address disputes, these processes shall be in addition to, and not in place of, the mandatory contractual dispute resolution procedures.

B. **Notice:** Except for disputes requiring Notice before proceeding with the affected Work as otherwise described in the Contract Documents, Contractor shall submit a written Notice of any Claim to Owner’s Project Manager, consistent with the requirements of the Contract Documents, within 7 Days of the occurrence of the event giving rise to a dispute. If Contractor did not have actual knowledge of such an event, the written Notice shall be submitted within 7 Days of the date that Contractor reasonably should have been aware of the event. The Notice shall set forth, at a minimum, a description of the event(s) leading to or causing the dispute, the nature of the impacts to Contractor and its Subcontractors, if any, and an estimate of any claimed adjustments in the Contract Sum and/or Contract Time. Without waiving any rights, Owner and Contractor may discuss and attempt to resolve a dispute identified in a Notice of Claim directly with each other or with a third-party neutral or dispute review board if utilized on a Project.

C. **Substantiation:** If an issue remains unresolved, Contractor shall submit timely written substantiation to support Contractor’s position relating to the Notice of Claim. Such substantiation, which shall include an explanation of Contractor’s position and any supporting documentation, shall be provided within 30 Days of submitting a Notice. Contractor may delay submitting data by an additional 14 Days if it notifies Owner that substantial data must be assembled.

D. **Owner’s Project Manager to make initial decision on all disputes:** After Contractor has submitted written substantiation to Owner that complies with all applicable provisions of Parts 7 and 8, as well as Section 01 32 13, Project Schedule, Owner’s Project Manager will endeavor to respond, in writing, to Contractor within 7 Days of the date substantiation is received, or with Notice to Contractor of the date by which Owner’s Project Manager expects to render a decision. If necessary to fully and fairly evaluate an issue, the Project Manager may request additional information or extend the time in which to respond. If the issue is not resolved, or if Project Manager does not respond within the later of 7 Days of the date written substantiation is received or the date specified for rendering a decision, the dispute may be escalated by Contractor to Owner’s Assistant Vice President, Facilities Services, Capital as set forth in Section 8.02E below.

E. **Contractor may respond to initial decision:** The initial decision of the Project Manager will be final and conclusive unless, within 7 Days of the date Contractor receives the initial decision or the date specified for rendering a decision, Contractor notifies Owner’s Project Manager in writing of Contractor’s disagreement with the initial decision, in which case Contractor must then submit a written rejection to Owner’s Assistant Vice President, Facilities Services, Capital within 14 Days. The written rejection must attach the submitted Notice and substantiation and fully explain the reasons for Contractor’s disagreement with the initial decision. It must also include all applicable supporting documentation. Failure to submit a written rejection to Owner’s Assistant Vice
President, Facilities Services, Capital within 14 Days shall constitute Contractor's acceptance of the initial decision.

F. Assistant Vice President, Facilities Services, Capital decision: Following Contractor's full compliance with the procedure above, Owner's Assistant Vice President, Facilities Services, Capital will endeavor to respond in writing to Contractor with a decision within 7 Days of delivery of the Contractor's rejection or with Notice to Contractor of the date by which Owner's Assistant Vice President, Facilities Services, Capital expects to render a decision. If Owner's Assistant Vice President, Facilities Services, Capital does not respond within the later of 7 Days after delivery of the rejection or the date specified to render a decision, the dispute will be deemed denied and Contractor may further escalate the dispute as set forth in Section 8.02G below.

G. Claim: If Contractor disagrees with the decision of the Assistant Vice President, Facilities Services, Capital, or if no decision is timely received, Contractor shall timely submit a Claim if it wishes to pursue formal dispute resolution or seek additional relief against Owner of any kind. A Claim must be consistent with the Notice, substantiation and rejection previously provided, be submitted to Owner in writing within 14 Days of the date the decision of the Assistant Vice President, Facilities Services, Capital is received by Contractor or due, and after review by, Contractor. Contractor acknowledges and agrees that no additional documentation from what was submitted to Owner's Assistant Vice President, Facilities Services, Capital (per part 'F' of this section) may be submitted and considered in any subsequent dispute resolution proceeding. Contractor's failure to provide timely information for Owner's consideration during the dispute resolution procedure of Part 8 has a substantial impact upon and prejudices Owner, including but not limited to its inability to fully investigate or verify a Claim, mitigate damages, choose alternative options, adjust the budget, delete or modify the impacted Work, and/or monitor time, cost and quantities.

8.03 FORMAL RESOLUTION OF CLAIMS

A. Option for direct discussions: At any time following Contractor's initiation of formal dispute resolution, Owner may require that an officer of Contractor and Owner's Assistant Vice President, Facilities Services, Capital (all with authority to settle) meet, confer, and attempt to resolve the Claim. If the Claim is not resolved during such meeting, or if no such meeting is requested, Contractor may bring no litigation against Owner unless Contractor complies with the procedures described in Sections 8.03B and C. This requirement cannot be waived except by an explicit written waiver signed by Owner and Contractor.

B. Mediation:

1. Mediation required: Claims, disputes, or other matters in controversy arising out of or related to the Contract shall be subject to mediation as a condition precedent to the initiation of binding dispute resolution. This requirement cannot be waived except by an explicit written waiver signed by both Owner and Contractor. Unless Owner and Contractor mutually agree in writing otherwise, all unresolved Claims shall be considered at a single mediation session that shall occur after Substantial Completion and prior to Final Acceptance by Owner.

2. Mediation procedure: The parties shall endeavor to resolve Claims by mediation. A request for mediation shall be delivered in writing to the other party to the Contract, and the parties shall promptly attempt to mutually agree on a mediator. If the parties do not agree on a mediator within 30 Days of a party's demand, the mediation, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect.
on the date of the Agreement. Mediation shall proceed in advance of binding dispute resolution proceedings.

3. **Mediation fee to be shared**: The parties to the mediation shall share the mediator’s fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction.

4. **Representatives with authority must attend mediation**: Representatives of Contractor and Owner must attend the mediation session in person with authority to settle the Claim. To the extent there are other parties in interest, such as A/E, insurers or Subcontractors, their representatives, also with authority to settle the Claim, shall also attend the mediation session in person.

C. **Litigation**: Contractor may bring no litigation on a Claim unless the Claim has been raised and considered in accordance with the procedures of this Part 8, including mandatory mediation. Contractor shall have the burden to demonstrate in any litigation that it has complied with all requirements of this Part 8. All unresolved Claims of Contractor shall be waived and released unless Contractor has complied with the time limits of the Contract Documents, and litigation is served and filed within 180 Days after the Date of Substantial Completion approved in writing by Owner. This requirement cannot be waived except by an explicit, written waiver signed by Owner and Contractor. The pendency of a mediation, which shall mean the time period between a party’s receipt of a written mediation demand and the date of the initial mediation session, shall stay this deadline for serving and filing a lawsuit. The deadline may also be stayed for an additional period by agreement of the parties or court order. Neither Contractor nor a Subcontractor, whether claiming under a bond or lien statute or otherwise, shall be entitled to attorneys’ fees directly or indirectly from Owner (but may recover attorneys’ fees from the bond or statutory retainage fund itself to the extent allowable under law).

8.04 **CLAIMS PROCESS**

A. **Notice and Claims**: Any Notice and any Claim of Contractor, whether under the Contract or otherwise, must be made pursuant to and in strict accordance with the applicable provisions of the Contract Documents. No act, omission, or knowledge, actual or constructive, of Owner or anyone for whose acts Owner is responsible shall in any way be deemed to be a waiver of the requirement for timely written Notice and a timely written Claim unless Owner and Contractor sign an explicit, unequivocal written waiver. The fact that Owner and Contractor may consider, discuss, or negotiate a Claim that has or may have been procedurally or substantively defective or untimely under the Contract shall not constitute a waiver of the provisions of the Contract Documents unless Owner and Contractor sign an explicit, unequivocal written waiver. Contractor acknowledges and agrees that Contractor’s failure to timely submit required Notices and/or timely submit Claims has a substantial impact upon and prejudices Owner, including but not limited to its inability to fully investigate or verify the Claim, mitigate damages, choose alternative options, adjust the budget, delete or modify the impacted Work, and/or monitor time, cost and quantities.

B. **Claim must cover all costs and be documented**: A Claim shall be deemed to cover all changes in cost and time (including direct, indirect, impact, and consequential) to which Contractor (and Subcontractors) may be entitled and may not contain reservations of rights without Owner’s written approval; any such unapproved reservations of rights shall be without effect. Any requests by Contractor for an adjustment in both the Contract Sum and Contract Time that arise out of the same event(s) shall be submitted together. A Claim must be fully substantiated and documented. At a minimum, a Claim shall contain the following information:
1. **Factual statement of Claim:** A detailed factual statement of the Claim for additional compensation and/or time, if any, providing all necessary dates, locations, and items of Work affected by the Claim, that confirms not only that Contractor suffered the damages claimed, but that the damages claimed were actually a result of the act, event, or condition complained of;

2. **Dates:** The date on which event(s) arose which gave rise to the Claim;

3. **Owner and A/E employee’s knowledgeable about Claim:** The name of each employee of Owner and/or A/E believed to be knowledgeable about the Claim;

4. **Support from Contract Documents:** The specific provisions of the Contract Documents that support the Claim;

5. **Identification of other supporting information:** The identification of any documents and the substance of any oral communications that support the Claim;

6. **Copies of supporting documentation:** Data and copies of any identified documents, other than the Contract Documents, that support the Claim, including without limitation a complete explanation as to why the relief sought is not within the scope of the Contract Documents;

7. **Details on Claim for Contract Time:** If an adjustment in the Contract Time is sought, the specific days and dates for which it is sought; the specific reasons Contractor believes an extension in the Contract Time should be granted, and Contractor's analysis of its Progress Schedule to demonstrate the reason for the extension in Contract Time showing cause and analysis of the resultant delay to the critical path and other information required by the Contract Documents and Section 01 32 13, Project Schedule;

8. **Details on Claim for adjustment of Contract Sum:** If an adjustment in the Contract Sum is sought, the exact amount sought and a breakdown of that amount into the categories and with the detail required by Section 7.02; and

9. **Statement certifying Claim:** A statement certifying, under penalty of perjury, that the Claim is made in good faith, that the supporting cost and pricing data are true and accurate to the best of Contractor's knowledge and belief, that the Claim is fully supported by the accompanying data, and that the amount requested accurately reflects the adjustment in the Contract Sum or Contract Time for which Contractor believes Owner is responsible.

C. **False Claims:** Contractor shall not make any negligent or fraudulent misrepresentations, concealments, errors, omissions, or inducements to Owner in the formation or performance of this Contract. If Contractor or a Subcontractor submits false or frivolous substantiation or a Claim to Owner, which for purposes of this Section 8.01C is defined as substantiation or a Claim based in whole or in part upon a materially incorrect fact, statement, representation, assertion, or record, Owner shall be entitled to collect from Contractor by offset or otherwise (without prejudice to any right or remedy of Owner) any and all costs and expenses, including investigation and consultant costs, incurred by Owner in investigating, responding to, and defending against such false or frivolous substantiation or Claim.

D. **Notification of surety:** Owner may, but is not obligated to, notify Contractor's surety, if any, of the nature and amount of any claim it may assert against Contractor. If the claim relates to a possibility of Contractor's default, Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.
E. **Liens:** If a Claim relates to or is the subject of a lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice and filing deadlines.

F. **All Claims must be submitted for final resolution within the time period specified by applicable law:** Owner and Contractor shall commence all Claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of this Part 8 and within the time period specified by applicable law.

G. **Waiver of rights:** Any Claim of Contractor against Owner shall be conclusively deemed to have been waived by Contractor unless made in accordance with the requirements of Part 8.

H. **Owner may investigate:** To assist in the review of a Claim, Owner may at any time visit the Project site, communicate directly with Subcontractors, or request additional information (including requesting an audit as authorized below) in order to fully evaluate the issues raised by the Claim.

I. **Owner may audit Claims:** All Claims filed against Owner shall be subject to audit at any time following the filing of the Claim. Failure of Contractor or Subcontractors of any tier to permit Owner access to the books and records of Contractor or Subcontractors of any tier, or to maintain and retain sufficient records to allow Owner to verify all or a portion of the Claim, shall constitute a waiver of the Claim and shall bar any recovery.

J. **Contractor to make documents promptly available:** In support of Owner’s audit of any Claim, Contractor and any Subcontractor shall, upon request, promptly make available to Owner within seven Days of Owner’s request, at the office of Contractor or any requested Subcontractor during normal business hours, at least the following documents and other documents requested by Owner; failure to fully comply with this requirement shall constitute a material breach of contract and waiver of any Claim:

1. Daily time sheets and supervisor’s daily reports;
2. Collective bargaining agreements;
3. Insurance, welfare, and benefits records;
4. Payroll registers;
5. Earnings records;
6. Payroll tax forms;
7. Material invoices, requisitions, and delivery confirmations;
8. Material cost distribution worksheet;
9. Equipment records (list of company equipment, rates, etc.);
11. Contracts between Contractor and each of its Subcontractors, and all lower-tier Subcontractor contracts and supplier contracts;
12. Subcontractors’ and agents’ payment certificates;
13. Cancelled checks (payroll and vendors);
14. Job cost reports, including job cost summary and job cost detail reports, related labor and equipment reports, and monthly totals;
15. Job payroll ledger;
16. Planned resource loading schedules and summaries;
17. General ledger;
18. Cash disbursements journal;
19. Financial statements for all years during performance of the Work. In addition, Owner may require, if it deems it appropriate, additional financial statements for 3 years preceding execution of the Work;
20. Depreciation records on all company equipment whether these records are maintained by the company involved, its accountant, or others;
21. If a source other than depreciation records is used to develop costs for Contractor’s internal purposes in establishing the actual cost of owning and operating equipment, all such other source documents;
22. All non-privileged documents which relate to each and every Claim together with all documents which support the amount of any adjustment in the Contract Sum or Contract Time sought by each Claim;
23. Work sheets or software used to prepare and establish the cost components for items of the Claim, including but not limited to labor, benefits and insurance, materials, equipment, Subcontractors, all documents that establish the time periods, individuals involved, the hours for the individuals, and the rates for the individuals;
24. Work sheets, software, and all other documents used by Contractor to prepare its bid;
25. The above items for its Subcontractors; and
26. Any other information in any form or media not expressly protected from discovery by applicable law.

K. **Contractor to cooperate and provide facilities for audit:** The audit may be performed by employees or representatives of Owner. Contractor and its Subcontractors shall provide adequate facilities acceptable to Owner for the audit during normal business hours. Contractor and all Subcontractors shall make a good faith effort to cooperate with Owner’s auditors.

L. **Reciprocal RCW 42.56 rights:** Contractor agrees, on behalf of itself and Subcontractors, that any invocation of RCW 42.56 at any time by Contractor or a Subcontractor, or their respective representatives, shall initiate an equivalent right to disclosures from Contractor and Subcontractors for the benefit of Owner. Failure to fully comply with these requirements shall constitute a material breach of the Contract and shall constitute a waiver of all Claims by Contractor and any Subcontractor that does not fully comply.
PART 9 - TERMINATION OF THE WORK

9.01 TERMINATION BY OWNER FOR CAUSE

A. 7 Day Notice to Terminate for Cause: Owner may, upon 7 Days written notice to Contractor and to its surety, terminate (without prejudice to any right or remedy of Owner) the Work, or any part of it, for cause upon the occurrence of any one or more of the following events:

1. Contractor fails to prosecute Work: Contractor fails to prosecute the Work or any portion thereof with sufficient diligence to ensure Substantial Completion of the Work within the Contract Time;

2. Contractor bankrupt: Contractor is adjudged bankrupt, makes a general assignment for the benefit of its creditors, or a receiver is appointed on account of its insolvency;

3. Contractor fails to correct Work: Contractor fails in a material way to replace or correct Work not in conformance with the Contract Documents;

4. Contractor fails to supply workers or materials: Contractor repeatedly fails to supply skilled workers or proper materials or equipment;

5. Contractor failure to pay Subcontractors or labor: Contractor repeatedly fails to make prompt payment due to Subcontractors or for labor;

6. Contractor violates laws: Contractor materially disregards or fails to comply with laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction; or

7. Contractor in material breach of Contract: Contractor is otherwise in material breach of any provision of the Contract Documents.

B. Owner’s actions upon termination: Upon termination, Owner may at its option:

1. Take possession of Project site: Take possession of the Project site and take possession of or use all materials, equipment, tools, and construction equipment and machinery thereon owned by Contractor to maintain the orderly progress of, and to finish, the Work;

2. Accept assignment of Subcontracts: Accept assignment of subcontracts pursuant to Section 5.20; and

3. Finish the Work: Finish the Work by whatever other reasonable method it deems expedient.

C. Surety’s role: Owner’s rights and duties upon termination are subject to the prior rights and duties of the surety, if any, obligated under any bond provided in accordance with the Contract Documents.

D. Contractor’s required actions: When Owner terminates the Work in accordance with this section, Contractor shall take the actions set forth in paragraph 9.02B, and shall not be entitled to receive further payment until the Work is accepted.

E. Contractor to pay for unfinished Work: Contractor shall not be entitled to receive further payment until the Work is finished. If the unpaid balance of the Contract Sum exceeds the cost of finishing the Work, including compensation for A/E’s services and expenses made necessary thereby and any other extra costs or damages incurred by Owner in completing the Work, or as a result of
Contractor’s actions, such excess shall be paid to Contractor. If such costs exceed the unpaid balance, Contractor shall pay the difference to Owner. These obligations for payment shall survive termination.

F. Contractor and Surety still responsible for Work performed: Termination of the Work in accordance with this section shall not relieve Contractor or its surety of any responsibilities for Work performed.

G. Conversion of “Termination for Cause” to “Termination for Convenience”: If Owner terminates Contractor for cause and it is later determined that none of the circumstances set forth in paragraph 9.01A exist, then such termination shall be deemed a termination for convenience pursuant to Section 9.02.

9.02 TERMINATION BY OWNER FOR CONVENIENCE

A. Owner Notice of Termination for Convenience: Owner may, upon written notice, terminate (without prejudice to any right or remedy of Owner) the Work, or any part of it, for the convenience of Owner.

B. Contractor response to termination Notice: Unless Owner directs otherwise, after receipt of a written notice of termination for either cause or convenience, Contractor shall promptly:

1. Cease Work: Stop performing Work on the date and as specified in the notice of termination;

2. No further orders or Subcontracts: Place no further orders or subcontracts for materials, equipment, services or facilities, except as may be necessary for completion of such portion of the Work as is not terminated;

3. Cancel orders and Subcontracts: Cancel all orders and subcontracts, upon terms acceptable to Owner, to the extent that they relate to the performance of Work terminated;

4. Assign orders and Subcontracts to Owner: Assign to Owner all of the right, title, and interest of Contractor in all orders and subcontracts;

5. Take action to protect the Work: Take such action as may be necessary or as directed by Owner to preserve and protect the Work, Project site, and any other property related to this Project in the possession of Contractor in which Owner has an interest; and

6. Continue performance not terminated: Continue performance only to the extent not terminated.

C. Terms of adjustment in Contract Sum if Contract terminated: If Owner terminates the Work or any portion thereof for convenience, Contractor shall be entitled to make a request for an equitable adjustment for its reasonable direct costs incurred prior to the effective date of the termination, plus reasonable allowance for overhead and profit on Work performed prior to termination, plus the reasonable administrative costs of the termination, but shall not be entitled to any other costs or damages, whatsoever, provided however, the total sum payable upon termination shall not exceed the Contract Sum reduced by prior payments. Contractor shall be required to make its request in accordance with the provisions of Part 7.

D. Owner to determine whether to adjust Contract Time: If Owner terminates the Work or any portion thereof for convenience, the Contract Time shall be adjusted as determined by Owner.
9.03 TERMINATION BY CONTRACTOR FOR CAUSE

A. Contractor termination: Except as provided by RCW 60.28.080, Contractor may terminate the Contract for any of the following reasons:

1. Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped permanently;

2. An act of government, such as a declaration of national emergency, that requires all Work to be stopped permanently;

3. Because Owner has improperly not made payment of undisputed amounts within the time stated in the Contract Documents; or

4. The Work is stopped for a period of 60 consecutive Days through no act or fault of Contractor, a Subcontractor, or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with Contractor,

B. Contractor termination procedure: If one of these reasons exists, Contractor may, upon seven Days’ written Notice to Owner (during which period Owner has the opportunity to cure), terminate the Contract and recover from Owner payment for Work executed in accordance with the Contract Documents, including reasonable overhead and profit on Work executed and costs incurred by reason of such termination. The total recovery of Contractor shall not exceed the unpaid balance of the Contract Sum.

PART 10 - MISCELLANEOUS PROVISIONS

10.01 GOVERNING LAW

Applicable law and venue: The Contract Documents and the rights of the parties herein shall be governed by the internal laws of the state of Washington, without regard to its choice-of-law provisions. Venue shall be in the county in which the Project is located, unless otherwise specified.

10.02 SUCCESSORS AND ASSIGNS

Bound to successors; Assignment of Contract: Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to the other party hereto and to the partners, successors, assigns, and legal representatives of such other party in respect to covenants, agreements, and obligations contained in the Contract Documents. Neither party shall assign the Contract without written consent of the other, except that Contractor may assign the Work for security purposes to a bank or lending institution authorized to do business in the state of Washington. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations set forth in the Contract Documents. If a majority of the ownership or the control of Contractor is acquired by a third party, and such acquisition reasonably imperils performance or creates a conflict of interest that Owner, in its sole discretion, cannot reasonably reconcile, then Owner may terminate this Contract at any time for cause under Section 9.01.

10.03 MEANING OF WORDS

Meaning of words used in Contract Documents: Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings. Reference to standard Specifications, manuals, or codes of any technical society, organization, or association, or to the code of any governmental authority, whether such reference is specific or by implication, shall be to the latest
standard specification, manual, or code in effect on the date for submission of bids, except as may be otherwise specifically stated. Wherever in the Drawings and Specifications an article, device, or piece of equipment is referred to in the singular manner, such reference shall apply to as many such items as are shown on the Drawings, or required to complete the installation.

10.04 RIGHTS AND REMEDIES

A. No waiver of rights: Waiver of any provisions of the Contract Documents must be in writing and authorized by Owner. No other waiver is valid on behalf of Owner. No action, delay in acting, or failure to act by Owner or A/E shall constitute a waiver of a right or duty afforded under the Contract Documents, nor shall action, delay in acting, or failure to act constitute approval or an acquiescence in a breach therein, or otherwise prejudice the right of Owner to enforce a right or remedy at any subsequent time, except as may be specifically agreed in writing.

B. Rights under Contract do not limit other rights: Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

C. If portion of Contract is void, remainder is enforceable: If any portion of this Contract is held to be void or unenforceable, the remainder of the Contract shall be enforceable without such portion.

10.05 CONTRACTOR REGISTRATION AND COMPLIANCE

A. Contractor must be registered and licensed: Pursuant to RCW 39.06, Contractor shall be registered and licensed as required by the laws of the State of Washington, including but not limited to RCW 18.27. Contractor shall also have a current state unified business identifier number; have industrial insurance coverage for Contractor's employees working in Washington as required in Title 51 RCW; have an employment security department number as required in Title 50 RCW; have a state excise tax registration number as required in Title 82 RCW; and not be disqualified from bidding on any public works contract under RCW 39.06.010 (unregistered or unlicensed contractors) or RCW 39.12.065(3) (prevailing wage violations).

B. Employer contributions: Pursuant to RCW 50.24, "Contributions by Employers," in general and RCW 50.24.130 in particular, Contractor shall pay contributions for wages for personal services performed under this Contract or arrange for a bond acceptable to the Commissioner.

C. Apprenticeship requirements: If the Contract Sum for the Project exceeds one million dollars, Contractor shall comply with all applicable apprenticeship requirements.

10.06 TIME COMPUTATIONS

Computing time: When computing any period of time, the day of the event from which the period of time begins shall not be counted. The last day is counted unless it falls on a weekend or legal holiday, in which event the period runs until the end of the next day that is not a weekend or holiday. When the period of time allowed is less than 7 days, intermediate Saturdays, Sundays, and legal holidays are excluded from the computation.

10.07 RECORDS RETENTION

Six year records retention period: The wage, payroll, and cost records of Contractor, and its Subcontractors, and all records subject to audit in accordance with Section 8.03, shall be retained for a period of not less than 6 years after the date of Final Acceptance.
10.08 **THIRD-PARTY AGREEMENTS**

No third party relationships created: The Contract Documents shall not be construed to create a contractual relationship of any kind between: A/E and Contractor; Owner and any Subcontractor; or any persons other than Owner and Contractor.

10.09 **ANTITRUST ASSIGNMENT**

Contractor assigns overcharge amounts to Owner: Owner and Contractor recognize that in actual economic practice, overcharges resulting from antitrust violations are in fact usually borne by the purchaser. Therefore, Contractor hereby assigns to Owner any and all claims for such overcharges as to goods, materials, and equipment purchased in connection with the Work performed in accordance with the Contract Documents, except as to overcharges which result from antitrust violations commencing after the Contract Sum is established and which are not passed on to Owner under a Change Order. Contractor shall put a similar clause in its Subcontracts, and require a similar clause in its sub-Subcontracts, such that all claims for such overcharges on the Work are passed to Owner by Contractor.

10.10 **HEADINGS AND CAPTIONS**

Headings for convenience only: All headings and captions used in these General Conditions are only for convenience of reference, and shall not be used in any way in connection with the meaning, effect, interpretation, construction, or enforcement of the General Conditions, and do not define the limit or describe the scope or intent of any provision of these General Conditions.

10.11 **INDEPENDENT CONTRACTOR**

Contractor is independent contractor: Contractor shall be and operate as an independent contractor in the performance of the Work and shall have complete control over and responsibility for all personnel performing the Work. Contractor is not authorized to enter into any agreements or undertakings for or on behalf of Owner or to act as or be an agent or employee of Owner.

10.12 **OWNER’S ROLE**

Owner’s role is limited. Owner will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely Contractor’s responsibility under the Contract Documents. The presence of Owner at the Project site shall not in any manner be construed as assurance that the Work is being completed in compliance with the Contract Documents, nor as evidence that any requirement of the Contract Documents of any kind, including Notice, has been met or waived. Owner will not be responsible for Contractor’s failure to perform the Work in accordance with the requirements of the Contract Documents. Owner will not have control over or charge of and will not be responsible for acts or omissions of Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.
Good Faith Survey
Beasley Coliseum (#0806)
Washington State University
Pullman, Washington

July 16, 2018
Updated January 15, 2019

Prepared by:
Stephan Gilley
WSU Environmental Health and Safety
AHERA Building Inspector # BIR 20180426-03 (exp. April 26, 2019)
1 INTRODUCTION
Washington State University (WSU) Environmental Health and Safety (EH&S) conducted a “Good Faith” asbestos and limited lead in painted coatings survey of Beasley Coliseum (Beasley) in June and July of 2018. Beasley is located at 925 Northeast North Fairway Road at the north end of WSU’s campus in Pullman, Washington. This survey was conducted to meet Washington Administrative Code (WAC) 296-62-07721 Good Faith survey requirements for construction, renovation, demolition, and maintenance projects at Beasley with the following limitations.

1.1 Limitations of the Assessment
The conclusions herein are professional opinions based solely upon visual site observations and interpretations of analytical data as described in this report. The survey excluded areas of the building which were inaccessible or would have caused damage to the building if sampled. Locations where inspectors would have been exposed to hazards were not evaluated (e.g., operating HVAC or building mechanical systems). Typical construction techniques can render building portions inaccessible. As a result, additional asbestos-containing materials (ACM) may be present in inaccessible areas (e.g., wall cavities, within energized systems). Suspect regulated materials within inaccessible areas should be presumed to contain asbestos until characterized. The following specific areas were excluded from this survey:

- Enclosed vertical duct and pipe/shaft chases
- Locked rooms: 36, 55, 104B
- Roof and arena ceiling deck

The opinions presented herein apply to the site conditions existing at the time of the investigation, and interpretation of current regulations pertaining to asbestos and lead. Opinions and recommendations provided herein may not apply to future site conditions. Regulatory requirements in effect at the time of the work should be verified prior to any work impacting regulated materials. This report represents the findings of this survey only, and is not intended to establish scope or contractual terms supporting regulated material disturbance, abatement or disposal.

2 METHODOLOGY
This good faith survey was conducted by Stephan Gilley and Matt McKibbin with WSU EH&S, AHERA Building Inspectors #BIR20180426-03 and #BIR20180426-02 (exp. April 26, 2019) in June and July 2018. The asbestos survey was performed referencing the “Good Faith” survey requirements outlined in WAC 296-62-07721.

To identify suspect ACM, EH&S walked through accessible Beasley locations, noting building materials and construction. Not all concealed areas or sub-surface suspect materials may have been surveyed (see Limiting Conditions in Section 1.1). Approximate suspect material quantities were estimated based upon field observations, measurements, and scaled building drawings provided by WSU Facilities Services. Quantities given are intended for order of magnitude information only and must be field verified to support project bidding or estimates.

2.1 Asbestos Bulk Sampling
Suspect ACM was grouped into homogeneous sampling areas (HSA) and categorized referencing 40 CFR 763, as thermal systems insulation (TSI), surfacing material, or miscellaneous material. The sampling plan included, at a minimum, the collection and analysis of samples as follows:
Thermal System Insulation

- In a distributive manner, a minimum of three samples of each HSA that was not presumed to contain asbestos.
- At least one bulk sample from each homogeneous area of patched TSI if the patch was less than 6 square feet.
- In a manner sufficient to determine whether the material is ACM, samples were collected from plaster/mudded pipe fitting insulation.

Surfacing Material

- In a distributive manner, a minimum of three samples collected from each homogeneous area that was 1,000 square feet or less.
- A minimum of five samples collected from each homogeneous area that was greater than 1,000 square feet but less than or equal to 5,000 square feet.
- A minimum of seven samples collected from each homogeneous area that was greater than 5,000 square feet.

Miscellaneous Material

- In a distributive manner as deemed sufficient by the Inspector. At least one sample was collected of each suspect miscellaneous material not presumed to contain asbestos.

Non-Suspect Materials

- Fiberglass, wood, metal, structural concrete or other generally recognized non-ACM were not sampled.

Asbestos bulk samples and chain-of-custody forms were delivered to NVL Laboratories (NVL) in Seattle, Washington for analysis. In addition, five quality control samples were delivered to Environmental Hazard Services, LLC (EHS) in Richmond, Virginia. Each sample was analyzed by Polarized Light Microscopy (PLM) with dispersion staining referencing EPA Method 600/R-93/116. The detection limit for this type of analysis is approximately one percent (by visual estimate). Materials containing more than one percent asbestos are considered ACM.

2.2 Limited Lead Paint/Coatings Sampling

This lead survey was performed to assist employers’ efforts to comply with the Washington Labor and Industries (LNI) lead standard for the construction industry (WAC 296-155-176) during renovation/demolition activities. Paint evaluation was limited to large homogeneous surfaces. Paint chip samples were collected from surfaces throughout the building and analyzed by flame atomic absorption spectrophotometry (FAAS) referencing EPA Method SW846 7000B. Paint chip results are reported by milligrams per kilogram of lead by weight. Any detection of lead in paint is reported as a lead-containing paint.

3 RESULTS

The following section details WSU EHS asbestos sampling and lead in painted coatings sampling results. Asbestos and lead sample locations are identified on Figures 1 through 5.

3.1 Visual Inspection

Beasley is an octagonal shaped 12,058 seat athletic arena completed in 1973 with attached elevated walkway at the west end crossing with Stadium Way. The building houses the men’s and women’s basketball programs and administrative offices for coliseum operations. The facility is also designed to host entertainment events and university functions such as concerts, lectures, and commencement ceremonies.
Since original construction, the men’s and women’s locker rooms 40 and 41 have been renovated several times with new carpet, showers and cabinetry. In the arena seating area, lighting systems have gradually been replaced and a new center-hung scoreboard was installed in 2011. ACM fireproofing was originally applied to the metal support structure and roof deck along the perimeter of the arena at the time of construction. Half of the fireproofing was abated, which is discussed in Section 3.2 below. The rest of the building has largely retained its original finishes outside of new paint and branding of walls.

Arena concourses, corridors and seating areas have unfinished concrete floors. Walls are largely unfinished concrete or concrete masonry as well. Offices, locker rooms, concession areas and associated support rooms are finished with gypsum wallboard partition walls, various suspended ceiling tile systems and either unfinished concrete, vinyl floor tiles or carpeted floors.

HVAC is provided by 7 supply fan units attached to the interior roof deck. Air is conditioned through chilled water and steam coils in each unit and ducted throughout the building. With the exception of the supply fans themselves which are insulated with fiberglass, ductwork is uninsulated. A catwalk network provides access to the HVAC units and lighting system mounted on the roof deck.

The building envelope is enclosed with a metal framed glass window, doors and sloped roofing system adjoined to the concrete structure at the lower level. At the upper levels, an elevated soffit is enclosed with metal siding and finished with plaster on the underside. An asphaltic layered built-up roofing system was originally installed on the main roof. Rubber membrane roofing was overlaid on the outside edges of the original roof in the early 1990s. Roof brows located over building entrances are coated with an uninsulated rubber membrane and epoxy system on concrete.

### 3.2 Asbestos

Table 1 summarizes confirmed ACMs and assumed ACMs identified (bold font) during the survey.

Photographs referenced in the tables are provided in Appendix A. Quantities are estimated for order of magnitude information only and not intended for bidding purposes or fee estimates for construction or renovation projects.

<table>
<thead>
<tr>
<th>Material</th>
<th>Location(s) of ACM</th>
<th>Photo #</th>
<th>Approximate Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>White spray-applied fireproofing (painted black)</td>
<td>Arena roof deck level Applied to steel beams, girders, columns and ceiling deck with overspray on adjacent structures and utilities (see Figure 5)</td>
<td>1</td>
<td>2,000 SF</td>
</tr>
<tr>
<td>Pipe insulation Hard magnesia-block type</td>
<td>Mechanical room 53 – Steam and condensate piping from the steam tunnel to the steam manifold</td>
<td>2</td>
<td>100 LF/10 EA</td>
</tr>
<tr>
<td>Tank insulation</td>
<td>Mechanical room 53 – Expansion and heat recovery tanks</td>
<td>3A/3B</td>
<td>2 EA</td>
</tr>
<tr>
<td>Vermiculite insulation</td>
<td>Under foam insulation in wall sections between first floor and second floor</td>
<td>4 and 5</td>
<td>180-255 CF</td>
</tr>
</tbody>
</table>
### Material | Location(s) of ACM | Photo # | Approximate Quantity
--- | --- | --- | ---

**Class II – Miscellaneous Materials**

<table>
<thead>
<tr>
<th>Material</th>
<th>Location(s) of ACM</th>
<th>Photo #</th>
<th>Approximate Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Built-up roofing</strong></td>
<td>Roof</td>
<td>-</td>
<td>82,000 SF</td>
</tr>
<tr>
<td><strong>Joint compound</strong> applied to seams and nail head locations on the gypsum wallboard system</td>
<td>Gypsum wallboard system throughout building</td>
<td>-</td>
<td>7,500 SF</td>
</tr>
<tr>
<td><strong>Brown soft mastic</strong> applied to fiberglass duct insulation anchor pins</td>
<td>Attached to metal supply fan ductwork on catwalk level throughout Beasley</td>
<td>6</td>
<td>1,000 SF</td>
</tr>
<tr>
<td><strong>Tan brittle duct mastic</strong> applied to insulation anchor pins on ends of absolute cold generator tank</td>
<td>53: Mechanical room</td>
<td>7</td>
<td>50 SF</td>
</tr>
<tr>
<td>12-inch gray with white streak vinyl floor tile and associated black mastic</td>
<td>104, 104B, 104C, 110 Suite (under carpet)</td>
<td>8</td>
<td>750 SF</td>
</tr>
<tr>
<td><strong>Metal sink units with various colored undercoating</strong></td>
<td>19, 31, 37, 104, 112, 116, 122, 134</td>
<td>9</td>
<td>14 EA</td>
</tr>
<tr>
<td><strong>Gray caulk</strong> in concrete expansion joints</td>
<td>Concrete expansion joints in concourse 100</td>
<td>10</td>
<td>350 LF</td>
</tr>
<tr>
<td><strong>Fire rated doors</strong> (assumed)</td>
<td>Ground and first floors</td>
<td>-</td>
<td>5 EA</td>
</tr>
<tr>
<td><strong>Pipe flange gaskets</strong> (assumed)</td>
<td>Mechanical rooms throughout Beasley</td>
<td>12</td>
<td>20 EA</td>
</tr>
<tr>
<td><strong>Mirror mastic</strong> (assumed)</td>
<td>Bathrooms: 106, 114, 120, 136</td>
<td>13</td>
<td>12 EA</td>
</tr>
</tbody>
</table>

Note: **Bold** indicates material that contains asbestos within description

Appendix B details asbestos survey sample numbers, material descriptions, sample locations and laboratory analytical results. Specific observations concerning ACMs are discussed below.

**Sprayed-on Fireproofing**

Asbestos-containing fireproofing was applied to structural steel beams, girders and columns along the perimeter roof deck of the arena within approximately 40-feet of the exterior soffit wall. Overspray is located on adjacent structures, utilities, soffit wall batt insulation and soffit plaster (see Figure 5). Visually, the ACM fireproofing is soft and white (painted black) with brown mica particles.

Half of the ACM fireproofing was abated and replaced in an identical manner with non-ACM fireproofing in 1992. Figure 5 identifies the area of abatement. Non-ACM fireproofing is differentiated visually with a gray tint (painted black) and significantly stiffer than the ACM fireproofing. The fireproofing was generally observed to be in good condition with the exception of some scuffing near accessible areas. ACM fireproofing is present in sections 17 through 35. Non-asbestos gray sprayed-on fireproofing was observed at Sections 1-16.
Thermal System Insulation

Steam and condensate pipes located in the steam tunnel and into the building steam manifold (all greater than 12-inches outside diameter) located in mechanical room 53 are insulated with ACM magnesia-type block pipe insulation on straight runs and elbows. Hot water distribution piping (3 to 9-inch outside diameter) from the steam manifold to the remainder of the building are insulated with fiberglass on straight runs and mudded/plaster elbows that do not contain asbestos. Domestic water piping (~3-inch outside diameter) is also insulated with fiberglass on straight runs and mudded/plaster elbows which do not contain asbestos.

A 210-gallon water tank and boiler pressure vessel in Room 53 are insulated with asbestos containing block insulation.

Vermiculite Wall Insulation

An approximately 2-inch wall gap is filled with 20-inches of loose vermiculite along the entire perimeter wall of Beasley. Vermiculite is present at the base of yellow batt wall insulation visible from the top row of seating at each section. Figure 4 and photos 4 and 5 identify the specific location of ACM vermiculite. A failure in the exterior plaster/foam soffit released the vermiculite in November 2018 between a pair of columns above the loading dock. Approximately 5 to 7 cubic feet of vermiculite was released.

3.3 Lead Paints and Coatings

Appendix C details lead paint/coatings sample numbers, descriptions, sample locations, and lead paint chip results collected during the survey. Metal door frames contained detectable quantities of lead in Beasley.

4 CONCLUSIONS

A copy of this report must be provided to any entity bidding on work in Beasley. A copy of this report must also be on site during any demolition, renovation and/or construction activities.

4.1 Asbestos-containing Materials

Regulated ACMs are identified in Table 1. Construction, renovation and maintenance activities involving the disturbance or removal of ACM must be conducted in accordance with WAC 296-62-077. Asbestos abatement must be performed by a Washington State licensed asbestos abatement contractor. Contractors should use caution during construction even after asbestos abatement activities, as concealed ACM that has not previously been evaluated for asbestos may be encountered. Inaccessible concealed spaces (e.g., wall and ceiling spaces enclosed by wallboard, internal components of energized systems etc. that have not been surveyed for ACM, and should be presumed to contain asbestos until destructive sampling is performed in those areas.

4.2 Lead-containing Paints/Coatings

Materials that have been shown to contain detectable levels of lead are regulated due to the potential for occupational exposure to lead if these materials are disturbed. Projects that may disturb lead require employers to evaluate worker/project personnel exposure to lead and prevent exposure above the permissible exposure limit (PEL).
FIGURES
Figure 1
Ground Floor – Sample Locations

Legend
P##### = Asbestos bulk sample location
Pb-## = Lead paint chip sample location

Not to scale
ACMs/Assumed ACMS generally found throughout the building:
1. Joint compound on gypsum wallboard partition wall systems.
2. Brown soft duct mastic applied to fiberglass duct insulation anchor pins on metal ductwork.
3. Metal sink units with various colored undercoating.
4. Fire rated metal doors.
ACMs/Assumed ACMs generally found throughout the building:
1. Joint compound on gypsum wallboard partition wall systems.
2. Brown soft duct mastic applied to fiberglass duct insulation anchor pins on metal ductwork.
3. Metal sink units with various colored undercoating.
4. Fire doors (assumed)
5. Metal vault door in Room 110D

Legend
P##### = Asbestos bulk sample location
Pb-## = Lead paint chip sample location
Asbestos containing vermiculite wall insulation: A 2-inch wall gap is filled with approximately 16 inches of loose vermiculite along the perimeter wall of Beasley.
ACMs/assumed ACMS generally found throughout the building:
1. Joint compound on gypsum wallboard partition wall systems.
2. Brown soft duct mastic applied to fiberglass duct insulation anchor pins on metal ductwork.
3. Fire rated metal doors (assumed)
APPENDIX A
Photographic Log
Photo No. 1

Location:
Mechanical penthouse perimeter

Description:
White spray-applied fireproofing (painted black) applied to steel beams, girders, columns and ceiling deck with overspray on adjacent structures and utilities

Photo No. 2

Location:
Mechanical room: 53

Description:
Magnesia block-type pipe insulation on condensate line and steam manifold valve covers
<table>
<thead>
<tr>
<th>Photo No.</th>
<th>Location:</th>
<th>Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td>3A</td>
<td>Mechanical room: 53</td>
<td>Hard white magnesia-block type insulation on water tank.</td>
</tr>
<tr>
<td>3B</td>
<td>Mechanical room: 53</td>
<td>Hard magnesia-block type insulation on water tank and boiler pressure vessel</td>
</tr>
<tr>
<td>Photo No.</td>
<td>Location:</td>
<td>Description:</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------</td>
<td>--------------</td>
</tr>
<tr>
<td>4</td>
<td>Exterior bleacher view</td>
<td>Typical - concrete bleachers are insulated with a foam and plaster lath system attached by glue pins. The foam/plaster system failed at this location in November of 2018. ACM vermiculite poured out of a ~2-inch gap along the perimeter wall at location of red arrow. Approx. 50-gallons of vermiculite was recovered.</td>
</tr>
<tr>
<td>5</td>
<td>260 – top row of seats</td>
<td>ACM vermiculite is present in the bracketed area beneath the visible yellow fiberglass batt insulation within a ~2-inch gap in the concrete. This 2-inch gap is visible from the exterior in photo #10.</td>
</tr>
<tr>
<td>Photo No.</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td><strong>Location:</strong></td>
<td>Metal supply fan ductwork throughout Beasley – accessible by catwalk</td>
<td></td>
</tr>
<tr>
<td><strong>Description:</strong></td>
<td>Brown soft duct mastic under yellow foam insulation applied to fiberglass duct insulation anchor pins.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Photo No.</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location:</strong></td>
<td>Mechanical room: 53</td>
</tr>
<tr>
<td><strong>Description:</strong></td>
<td>Tan brittle duct mastic applied to anchor pins on ends of absolute cold generator tank</td>
</tr>
<tr>
<td>Photo No.</td>
<td>Location: Rooms 104, 104B, 104C, 110 suite (under carpet)</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Description: 12-inch gray with white streak vinyl floor tile and associated black mastic</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Photo No.</th>
<th>Location: Rooms 19, 31, 37, 104, 112, 116, 122, 134</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Description: Metal sink units with various colored undercoatings</td>
</tr>
<tr>
<td>Photo No.</td>
<td>Location:</td>
</tr>
<tr>
<td>-----------</td>
<td>------------</td>
</tr>
<tr>
<td><strong>10</strong></td>
<td>Concourse level 100</td>
</tr>
<tr>
<td><strong>11</strong></td>
<td>Exterior soffit overhang facing upward</td>
</tr>
<tr>
<td>Photo No.</td>
<td>Location: Mechanical rooms throughout Beasley</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Description: Pipe flange gaskets are assumed to contain asbestos</td>
</tr>
<tr>
<td>Photo No.</td>
<td>Location: Bathrooms: 106, 114, 120, 136</td>
</tr>
<tr>
<td>13</td>
<td>Description: Mirror mastic is assumed to contain asbestos</td>
</tr>
</tbody>
</table>
APPENDIX B
Table Summary of Asbestos Sampling and Analytical Results
<table>
<thead>
<tr>
<th>Sample #</th>
<th>Building Name</th>
<th>Building #</th>
<th>Sample Location</th>
<th>Material</th>
<th>Material Description/color</th>
<th>Type</th>
<th>Quantity</th>
<th>Quantity Descriptor</th>
<th>Comments</th>
<th>Sample Results</th>
<th>ACM?</th>
<th>Homogenous Material Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSI-01-A</td>
<td>Beasley</td>
<td>0806</td>
<td>70E</td>
<td>Pipe insulation</td>
<td>Mudded pipe fitting insulation</td>
<td>TSI</td>
<td>500</td>
<td>EA</td>
<td>2-inch mudded fittings</td>
<td>ND</td>
<td>No</td>
<td>Domestic water and heating distribution piping throughout building</td>
</tr>
<tr>
<td>TSI-01-B</td>
<td>Beasley</td>
<td>0806</td>
<td>70C</td>
<td>Pipe insulation</td>
<td>Mudded pipe fitting insulation</td>
<td>TSI</td>
<td>500</td>
<td>EA</td>
<td>2-inch mudded fittings</td>
<td>ND</td>
<td>No</td>
<td>Domestic water and heating distribution piping throughout building</td>
</tr>
<tr>
<td>TSI-01-C</td>
<td>Beasley</td>
<td>0806</td>
<td>20M</td>
<td>Pipe insulation</td>
<td>Mudded pipe fitting insulation</td>
<td>TSI</td>
<td>500</td>
<td>EA</td>
<td>Horizontal Pipe run</td>
<td>ND</td>
<td>No</td>
<td>Domestic water and heating distribution piping throughout building</td>
</tr>
<tr>
<td>TSI-01-D</td>
<td>Beasley</td>
<td>0806</td>
<td>40</td>
<td>Pipe insulation</td>
<td>Mudded pipe fitting insulation</td>
<td>TSI</td>
<td>500</td>
<td>EA</td>
<td>2-inch mudded fittings</td>
<td>ND</td>
<td>No</td>
<td>Domestic water and heating distribution piping throughout building</td>
</tr>
<tr>
<td>TSI-01-E</td>
<td>Beasley</td>
<td>0806</td>
<td>102A</td>
<td>Pipe insulation</td>
<td>Mudded pipe fitting insulation</td>
<td>TSI</td>
<td>500</td>
<td>EA</td>
<td>2-inch mudded fittings</td>
<td>ND</td>
<td>No</td>
<td>Domestic water and heating distribution piping throughout building</td>
</tr>
<tr>
<td>TSI-02-A</td>
<td>Beasley</td>
<td>0806</td>
<td>20M</td>
<td>Pipe insulation</td>
<td>Mudded pipe fitting insulation</td>
<td>TSI</td>
<td>500</td>
<td>EA</td>
<td>6-inch to 9-inch mudded fittings</td>
<td>ND</td>
<td>No</td>
<td>Hot and chilled water distribution piping throughout building</td>
</tr>
<tr>
<td>TSI-02-B</td>
<td>Beasley</td>
<td>0806</td>
<td>302</td>
<td>Pipe insulation</td>
<td>Mudded pipe fitting insulation</td>
<td>TSI</td>
<td>500</td>
<td>EA</td>
<td>6-inch to 9-inch muddled fittings</td>
<td>ND</td>
<td>No</td>
<td>Hot and chilled water distribution piping throughout building</td>
</tr>
<tr>
<td>TSI-02-C</td>
<td>Beasley</td>
<td>0806</td>
<td>Catwalk</td>
<td>Pipe insulation</td>
<td>Mudded pipe fitting insulation</td>
<td>TSI</td>
<td>500</td>
<td>EA</td>
<td>SF-3: 6-inch elbow</td>
<td>ND</td>
<td>No</td>
<td>Hot and chilled water distribution piping throughout building</td>
</tr>
<tr>
<td>TSI-02-D</td>
<td>Beasley</td>
<td>0806</td>
<td>Catwalk</td>
<td>Pipe insulation</td>
<td>Mudded pipe fitting insulation</td>
<td>TSI</td>
<td>500</td>
<td>EA</td>
<td>SF-2: 6-inch elbow</td>
<td>ND</td>
<td>No</td>
<td>Hot and chilled water distribution piping throughout building</td>
</tr>
<tr>
<td>TSI-02-E</td>
<td>Beasley</td>
<td>0806</td>
<td>301</td>
<td>Pipe insulation</td>
<td>Mudded pipe fitting insulation</td>
<td>TSI</td>
<td>500</td>
<td>EA</td>
<td>SF-1: 6-inch elbow</td>
<td>ND</td>
<td>No</td>
<td>Hot and chilled water distribution piping throughout building</td>
</tr>
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<td>TSI-02-F</td>
<td>Beasley</td>
<td>0806</td>
<td>300E</td>
<td>Pipe insulation</td>
<td>Layer 1: White woven cloth Layer 2: Mudded pipe fitting insulation</td>
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<td>500</td>
<td>EA</td>
<td>SF-4: 6-inch elbow Layer 1: ND Layer 2: ND</td>
<td>No</td>
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<td>EA</td>
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<td>Hot and chilled water distribution piping throughout building</td>
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<td>500</td>
<td>EA</td>
<td>SF-13: 6-inch elbow</td>
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<td>12</td>
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<td>Muddled pipe fitting insulation</td>
<td>TSI</td>
<td>500</td>
<td>EA</td>
<td>SF-10: 6-inch elbow</td>
<td>ND</td>
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<td>TSI-03-A</td>
<td>Beasley</td>
<td>0806</td>
<td>53</td>
<td>Pipe insulation</td>
<td>Layer 1: White woven cloth Layer 2: Muddled valve collar insulation Layer 3: Yellow fiberglass pipe insulation</td>
<td>TSI</td>
<td>10</td>
<td>EA</td>
<td>Valve collar Layer 1: ND Layer 2: ND Layer 3: ND</td>
<td>No</td>
<td>No</td>
<td>Mechanical room 53: Steam condensate and valves</td>
</tr>
<tr>
<td>TSI-03-B</td>
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<td>0806</td>
<td>53</td>
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<td>Muddled valve collar insulation</td>
<td>TSI</td>
<td>10</td>
<td>EA</td>
<td>Valve collar</td>
<td>ND</td>
<td>No</td>
<td>Mechanical room 53: Steam condensate and valves</td>
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<tr>
<td>Sample #</td>
<td>Building Name</td>
<td>Building #</td>
<td>Sample Location</td>
<td>Material</td>
<td>Material Description/color</td>
<td>Type</td>
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<td>Comments</td>
<td>Sample Results</td>
<td>ACM?</td>
<td>Homogenous Material Location</td>
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<td>TSI-03-C</td>
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<td>53</td>
<td>Pipe insulation</td>
<td>Magnesia-block type pipe insulation on straight run – steam line</td>
<td>TSI</td>
<td>100/10</td>
<td>LF/EA</td>
<td>12-inch mag line from tunnel</td>
<td>15% AMO /15% CHR</td>
<td>Yes</td>
<td>Mechanical room 53: Steam condensate and valves</td>
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<td>TSI-04-A</td>
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<td>0806</td>
<td>53</td>
<td>Tank insulation</td>
<td>White block tank insulation with woven cover</td>
<td>TSI</td>
<td>2</td>
<td>EA</td>
<td>210-gallon water tank</td>
<td>3% AMO/30% CHR</td>
<td>Yes</td>
<td>Mechanical room 53: Water tank and pressure vessel</td>
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<td>TSI-04-B</td>
<td>Beasley</td>
<td>0806</td>
<td>53</td>
<td>Tank insulation</td>
<td>White block tank insulation with woven cover</td>
<td>TSI</td>
<td>2</td>
<td>EA</td>
<td>Boiler pressure vessel</td>
<td>4% CHR</td>
<td>Yes</td>
<td>Mechanical room 53: Water tank and pressure vessel</td>
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<td>FP-01-A</td>
<td>Beasley</td>
<td>0806</td>
<td>Catwalk: 302</td>
<td>Fireproofing</td>
<td>Gray spray applied fireproofing (painted black)</td>
<td>Surf.</td>
<td>2,000</td>
<td>SF</td>
<td>Newer material</td>
<td>ND</td>
<td>No</td>
<td>Sections 1-16 and 36: Non-asbestos containing gray fireproofing applied to steel beams, girders, columns and ceiling deck with overspray on adjacent structures and utilities</td>
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<td>FP-01-B</td>
<td>Beasley</td>
<td>0806</td>
<td>Catwalk: 302 SF-6</td>
<td>Fireproofing</td>
<td>Gray spray applied fireproofing (painted black)</td>
<td>Surf.</td>
<td>2,000</td>
<td>SF</td>
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<td>0806</td>
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<td>2,000</td>
<td>SF</td>
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<td>2,000</td>
<td>SF</td>
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<td>ND</td>
<td>No</td>
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<td>2,000</td>
<td>SF</td>
<td>Newer material</td>
<td>ND</td>
<td>No</td>
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<td>Catwalk: Section 14</td>
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<td>Gray spray applied fireproofing (painted black)</td>
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<td>SF</td>
<td>Newer material</td>
<td>ND</td>
<td>No</td>
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<td>SF</td>
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<td>Sections 1-16 and 36: Non-asbestos containing gray fireproofing applied to steel beams, girders, columns and ceiling deck with overspray on adjacent structures and utilities</td>
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<tr>
<td>Sample #</td>
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<td>Sample Location</td>
<td>Material</td>
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<td>Sample Results</td>
<td>ACM?</td>
<td>Homogenous Material Location</td>
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<td>FP-02-A</td>
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<td>0806</td>
<td>Catwalk: Section 35</td>
<td>Fireproofing</td>
<td>White spray-applied fireproofing (painted black)</td>
<td>Surf.</td>
<td>2,000</td>
<td>SF</td>
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<td>5% CHR</td>
<td>Yes</td>
<td>Sections 17-35: ACM black fireproofing applied to steel beams, girders, columns and ceiling deck with overspray on adjacent structures and utilities</td>
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<td>FP-02-B</td>
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<td>Catwalk: Section 34</td>
<td>Fireproofing</td>
<td>White spray-applied fireproofing (painted black)</td>
<td>Surf.</td>
<td>2,000</td>
<td>SF</td>
<td>-</td>
<td>7% CHR</td>
<td>Yes</td>
<td>Sections 17-35: ACM black fireproofing applied to steel beams, girders, columns and ceiling deck with overspray on adjacent structures and utilities</td>
</tr>
<tr>
<td>APM-01-A</td>
<td>Beasley</td>
<td>0806</td>
<td>300S</td>
<td>Mastic</td>
<td>Gray soft duct mastic</td>
<td>Misc</td>
<td>-</td>
<td>SF</td>
<td>SF-6: Anchor pin HVAC</td>
<td>ND</td>
<td>No</td>
<td>300S</td>
</tr>
<tr>
<td>APM-01-B</td>
<td>Beasley</td>
<td>0806</td>
<td>300S</td>
<td>Mastic</td>
<td>Gray soft duct mastic</td>
<td>Misc</td>
<td>-</td>
<td>SF</td>
<td>SF-6: Anchor pin HVAC</td>
<td>ND</td>
<td>No</td>
<td>300S</td>
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<td>APM-02-A</td>
<td>Beasley</td>
<td>0806</td>
<td>Catwalk: SF-3</td>
<td>Mastic</td>
<td>Brown soft duct mastic</td>
<td>Misc</td>
<td>1,000</td>
<td>SF</td>
<td>Anchor pin HVAC</td>
<td>25% CHR</td>
<td>Yes</td>
<td>Applied to fiberglass duct insulation anchor pins attached to metal supply fan ductwork throughout Beasley</td>
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<td>APM-02-B</td>
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<td>0806</td>
<td>Catwalk: SF-2</td>
<td>Mastic</td>
<td>Brown soft duct mastic</td>
<td>Misc</td>
<td>1,000</td>
<td>SF</td>
<td>Anchor pin HVAC</td>
<td>20% CHR</td>
<td>Yes</td>
<td>Applied to fiberglass duct insulation anchor pins attached to metal supply fan ductwork throughout Beasley</td>
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<td>APM-02-C</td>
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<td>Catwalk: SF-6</td>
<td>Mastic</td>
<td>Brown soft duct mastic</td>
<td>Misc</td>
<td>1,000</td>
<td>SF</td>
<td>South end of SF-6 unit: Anchor pin HVAC</td>
<td>6% CHR</td>
<td>Yes</td>
<td>Applied to fiberglass duct insulation anchor pins attached to metal supply fan ductwork throughout Beasley</td>
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<tr>
<td>APM-03-A</td>
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<td>0806</td>
<td>53</td>
<td>Mastic</td>
<td>Tan brittle duct mastic</td>
<td>Misc</td>
<td>50</td>
<td>SF</td>
<td>Anchor pin mastic on ends of absolute cold generator tank</td>
<td>14% CHR</td>
<td>Yes</td>
<td>53</td>
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<td>Mastic</td>
<td>Tan brittle duct mastic</td>
<td>Misc</td>
<td>50</td>
<td>SF</td>
<td>Anchor pin mastic on ends of absolute cold generator tank</td>
<td>18% CHR</td>
<td>Yes</td>
<td>53</td>
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<td>GWB-01-A</td>
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<td>0806</td>
<td>20M</td>
<td>Wallboard system</td>
<td>White joint compound</td>
<td>Misc</td>
<td>7,500</td>
<td>SF</td>
<td>-</td>
<td>2% CHR</td>
<td>Yes</td>
<td>Dominant wallboard system throughout building</td>
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<td>GWB-01-B</td>
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<td>0806</td>
<td>53</td>
<td>Wallboard system</td>
<td>Layer 1: White joint compound</td>
<td>Misc</td>
<td>7,500</td>
<td>SF</td>
<td>-</td>
<td>Layer 1: 3% CHR Layer 2: ND</td>
<td>Yes</td>
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<td>PLAS-01-A</td>
<td>Beasley</td>
<td>0806</td>
<td>12A</td>
<td>Plaster</td>
<td>Layer 1: Sandy plaster Layer 2: Brittle white skim coat</td>
<td>Surf.</td>
<td>1,750</td>
<td>SF</td>
<td>On CMU wall</td>
<td>Layer 1: ND Layer 2: ND</td>
<td>No</td>
<td>12A, exterior soffit</td>
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<tr>
<td>Sample #</td>
<td>Building Name</td>
<td>Building #</td>
<td>Sample Location</td>
<td>Material</td>
<td>Material Description/color</td>
<td>Type</td>
<td>Quantity</td>
<td>Quantity Descriptor</td>
<td>Comments</td>
<td>Sample Results</td>
<td>ACM?</td>
<td>Homogenous Material Location</td>
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<td>0806</td>
<td>12A</td>
<td>Plaster</td>
<td>Layer 1: Sandy plaster</td>
<td>Surf.</td>
<td>1,750</td>
<td>SF</td>
<td>On CMU wall</td>
<td>Layer 1: ND Layer 2: ND</td>
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<td>12A, exterior soffit</td>
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<td>CMU-01-B</td>
<td>Beasley</td>
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<td>13</td>
<td>CMU</td>
<td>Gray concrete masonry with mortar</td>
<td>Misc.</td>
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<td>SF</td>
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<td>SU-01-B</td>
<td>Beasley</td>
<td>0806</td>
<td>104</td>
<td>Sink undercoat</td>
<td>Pink sink undercoat</td>
<td>Misc.</td>
<td>14</td>
<td>EA</td>
<td>-</td>
<td>4% CHR</td>
<td>Yes 19, 31, 104, 112, 116, 122, 134</td>
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<td>1CWT-01-A</td>
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<td>0806</td>
<td>120</td>
<td>Ceramic wall tile</td>
<td>Layer 1: 1-inch white ceramic tile Layer 2: White mortar</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td>Floor and wall tile</td>
<td>Layer 1: ND Layer 2: ND</td>
<td>No</td>
<td>106, 114, 120, 136</td>
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<td>CPTMY-01-A</td>
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<td>Carpet mastic</td>
<td>Yellow carpet mastic</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td>Under carpet</td>
<td>ND</td>
<td>No</td>
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<td>CPTMBR-01-A</td>
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<td>0806</td>
<td>39</td>
<td>Carpet mastic</td>
<td>Brown carpet mastic</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td>Under carpet</td>
<td>ND</td>
<td>No</td>
<td>39</td>
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<td>Carpet mastic</td>
<td>Brown carpet mastic</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td>Under carpet</td>
<td>ND</td>
<td>No</td>
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<td>12VFT-02-A</td>
<td>Beasley</td>
<td>0806</td>
<td>104</td>
<td>Floor tile</td>
<td>Layer 1: 12-inch gray with white streak vinyl floor tile Layer 2: Black mastic</td>
<td>Misc.</td>
<td>750</td>
<td>SF</td>
<td>-</td>
<td>Layer 1: ND Layer 2: 2% CHR</td>
<td>Yes</td>
<td>104, 104C, 110</td>
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<td>Beasley</td>
<td>0806</td>
<td>104C</td>
<td>Floor tile</td>
<td>Layer 1: 12-inch gray with white streak vinyl floor tile Layer 2: Black mastic</td>
<td>Misc.</td>
<td>750</td>
<td>SF</td>
<td>-</td>
<td>Layer 1: ND Layer 2: 3% CHR</td>
<td>Yes</td>
<td>104, 104C, 110</td>
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<td>Sample #</td>
<td>Building Name</td>
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<td>Sample Location</td>
<td>Material</td>
<td>Material Description/color</td>
<td>Type</td>
<td>Quantity</td>
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<td>Comments</td>
<td>Sample Results</td>
<td>ACM?</td>
<td>Homogenous Material Location</td>
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<td>4BLCB-01-B</td>
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<td>39</td>
<td>Cove base system</td>
<td>Layer 1: 4-inch black cove base</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td></td>
<td>Layer 1: ND</td>
<td>Layer 2: ND</td>
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<td>0806</td>
<td>34</td>
<td>Cove base system</td>
<td>Layer 1: 4-inch gray cove base</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td></td>
<td>Layer 1: ND</td>
<td>Layer 2: ND</td>
<td>Layer 3: ND</td>
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<td>34</td>
<td>Cove base system</td>
<td>Layer 1: 4-inch gray cove base</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
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<td>Layer 1: ND</td>
<td>Layer 2: ND</td>
<td>Layer 3: ND</td>
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<td>4PCB-01-A</td>
<td>Beasley</td>
<td>0806</td>
<td>27</td>
<td>Cove base system</td>
<td>Layer 1: 4-inch purple cove base</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td></td>
<td>Layer 1: ND</td>
<td>Layer 2: ND</td>
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<td>4PCB-01-B</td>
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<td>0806</td>
<td>31</td>
<td>Cove base system</td>
<td>Layer 1: 4-inch purple cove base</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td></td>
<td>Layer 1: ND</td>
<td>Layer 2: ND</td>
<td>Layer 3: ND</td>
</tr>
<tr>
<td>2X4TCT-01-A</td>
<td>Beasley</td>
<td>0806</td>
<td>100 near 126 entry</td>
<td>Ceiling tile</td>
<td>2 ft. by 4 ft. white tectum ceiling tile</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td>Above doors</td>
<td>ND</td>
<td>No</td>
<td>100 entry doors</td>
</tr>
<tr>
<td>2X4TCT-01-B</td>
<td>Beasley</td>
<td>0806</td>
<td>100 near 134 entry</td>
<td>Ceiling tile</td>
<td>2 ft. by 4 ft. white tectum ceiling tile</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td>Above doors</td>
<td>ND</td>
<td>No</td>
<td>100 entry doors</td>
</tr>
<tr>
<td>12CT-01-A</td>
<td>Beasley</td>
<td>0806</td>
<td>110D</td>
<td>Ceiling tile</td>
<td>Layer 1: 12-inch rough textured ceiling tile</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td>Ceiling and walls</td>
<td>Layer 1: ND</td>
<td>Layer 2: ND</td>
<td>No</td>
</tr>
<tr>
<td>12CT-01-B</td>
<td>Beasley</td>
<td>0806</td>
<td>110D</td>
<td>Ceiling tile</td>
<td>Layer 1: 12-inch rough textured ceiling tile</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td>Ceiling and walls</td>
<td>Layer 1: ND</td>
<td>Layer 2: ND</td>
<td>No</td>
</tr>
<tr>
<td>12CT-02-A</td>
<td>Beasley</td>
<td>0806</td>
<td>102</td>
<td>Ceiling tile</td>
<td>Layer 1: 12-inch etch pattern ceiling tile</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td>Ceiling and walls</td>
<td>Layer 1: ND</td>
<td>Layer 2: ND</td>
<td>No</td>
</tr>
<tr>
<td>12CT-02-B</td>
<td>Beasley</td>
<td>0806</td>
<td>102</td>
<td>Ceiling tile</td>
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<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td>Ceiling and walls</td>
<td>Layer 1: ND</td>
<td>Layer 2: ND</td>
<td>Layer 3: ND</td>
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<tr>
<td>12CT-03-A</td>
<td>Beasley</td>
<td>0806</td>
<td>170E</td>
<td>Ceiling tile</td>
<td>Layer 1: 12-inch drill hole pattern ceiling tile</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td></td>
<td>Layer 1: ND</td>
<td>Layer 2: ND</td>
<td>No</td>
</tr>
<tr>
<td>12CT-03-B</td>
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<td>0806</td>
<td>170E</td>
<td>Ceiling tile</td>
<td>Layer 1: 12-inch drill hole pattern ceiling tile</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td></td>
<td>Layer 1: ND</td>
<td>Layer 2: ND</td>
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</tr>
<tr>
<td>2X4SCT-01-A</td>
<td>Beasley</td>
<td>0806</td>
<td>116</td>
<td>Ceiling tile</td>
<td>2 ft. by 4 ft. deep etch-pinhole suspended ceiling tile</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td>Replacement tile</td>
<td>ND</td>
<td>No</td>
<td>116</td>
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<tr>
<td>2X4SCT-01-B</td>
<td>Beasley</td>
<td>0806</td>
<td>116</td>
<td>Ceiling tile</td>
<td>2 ft. by 4 ft. deep etch-pinhole suspended ceiling tile</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td>Replacement tile</td>
<td>ND</td>
<td>No</td>
<td>116</td>
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<tr>
<td>2X4SCT-02-A</td>
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<td>27</td>
<td>Ceiling tile</td>
<td>2 ft. by 4 ft. etch-pinhole suspended ceiling tile</td>
<td>Misc.</td>
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<td>SF</td>
<td></td>
<td>ND</td>
<td>No</td>
<td>27, 31, 116</td>
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<tr>
<td>2X4SCT-02-B</td>
<td>Beasley</td>
<td>0806</td>
<td>31</td>
<td>Ceiling tile</td>
<td>2 ft. by 4 ft. etch-pinhole suspended ceiling tile</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td></td>
<td>ND</td>
<td>No</td>
<td>27, 31, 116</td>
</tr>
<tr>
<td>Sample #</td>
<td>Building Name</td>
<td>Building #</td>
<td>Sample Location</td>
<td>Material</td>
<td>Material Description/color</td>
<td>Type</td>
<td>Quantity</td>
<td>Quantity Descriptor</td>
<td>Comments</td>
<td>Sample Results</td>
<td>ACM?</td>
<td>Homogenous Material Location</td>
</tr>
<tr>
<td>----------</td>
<td>---------------</td>
<td>------------</td>
<td>-----------------</td>
<td>----------------</td>
<td>---------------------------------</td>
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<td>----------</td>
<td>---------------------</td>
<td>----------</td>
<td>-----------------</td>
<td>-------</td>
<td>-----------------------------</td>
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<tr>
<td>BWM-01-A</td>
<td>Beasley</td>
<td>0806</td>
<td>120</td>
<td>Wall mastic</td>
<td>Brown brittle mastic</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td>CMU wall</td>
<td>ND</td>
<td>No</td>
<td>114-120: CMU wall section</td>
</tr>
<tr>
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<td>Beasley</td>
<td>0806</td>
<td>114</td>
<td>Wall mastic</td>
<td>Brown brittle mastic</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td>CMU wall</td>
<td>ND</td>
<td>No</td>
<td>114-120: CMU wall section</td>
</tr>
<tr>
<td>WJC-01-A</td>
<td>Beasley</td>
<td>0806</td>
<td>100 near 114</td>
<td>Wall caulk</td>
<td>Gray soft joint caulk</td>
<td>Misc.</td>
<td>1,000</td>
<td>LF</td>
<td>On concrete wall</td>
<td>5% CHR</td>
<td>Yes</td>
<td>100: Corridor walls</td>
</tr>
<tr>
<td>WJC-01-B</td>
<td>Beasley</td>
<td>0806</td>
<td>100 near 106</td>
<td>Wall caulk</td>
<td>Gray soft joint caulk</td>
<td>Misc.</td>
<td>1,000</td>
<td>LF</td>
<td>On concrete wall</td>
<td>6% CHR</td>
<td>Yes</td>
<td>100: Corridor walls</td>
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<tr>
<td>FSD-01-A</td>
<td>Beasley</td>
<td>0806</td>
<td>260: Section 35</td>
<td>Sound damping</td>
<td>Light brown fibrous insulation</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td>Under steel grating on walls</td>
<td>ND</td>
<td>No</td>
<td>260 perimeter walls</td>
</tr>
<tr>
<td>FSD-01-B</td>
<td>Beasley</td>
<td>0806</td>
<td>260: Section 15</td>
<td>Sound damping</td>
<td>Light brown fibrous insulation</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td>Under steel grating on walls</td>
<td>ND</td>
<td>No</td>
<td>260 perimeter walls</td>
</tr>
<tr>
<td>BWG-01-A</td>
<td>Beasley</td>
<td>0806</td>
<td>Exterior windows near 108</td>
<td>Window glazing</td>
<td>Black soft waxy window glazing</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td>Interior glass</td>
<td>ND</td>
<td>No</td>
<td>100: Exterior windows</td>
</tr>
<tr>
<td>BWG-01-B</td>
<td>Beasley</td>
<td>0806</td>
<td>Exterior windows near 114</td>
<td>Window glazing</td>
<td>Black soft waxy window glazing</td>
<td>Misc.</td>
<td>-</td>
<td>SF</td>
<td>Interior glass</td>
<td>ND</td>
<td>No</td>
<td>100: Exterior windows</td>
</tr>
<tr>
<td>V-01</td>
<td>Beasley</td>
<td>0806</td>
<td>Catwalk entrance 3005</td>
<td>Vermiculite</td>
<td>Loose vermiculite wall insulation</td>
<td>TSI</td>
<td>180-255</td>
<td>CF</td>
<td>-</td>
<td>CHR 4%, ACT &lt;1%</td>
<td>Yes</td>
<td>Perimeter wall of Beasley (see Figure 4)</td>
</tr>
<tr>
<td>V-02</td>
<td>Beasley</td>
<td>0806</td>
<td>Exterior</td>
<td>Vermiculite</td>
<td>Loose vermiculite wall insulation</td>
<td>TSI</td>
<td>180-255</td>
<td>CF</td>
<td>-</td>
<td>CHR 5%, ACT &lt;1%</td>
<td>Yes</td>
<td>Perimeter wall of Beasley (see Figure 4)</td>
</tr>
<tr>
<td>Assumed</td>
<td>Beasley</td>
<td>0806</td>
<td>Throughout</td>
<td>Fire door</td>
<td>Metal fire rated doors</td>
<td>Misc.</td>
<td>5</td>
<td>EA</td>
<td>-</td>
<td>Assumed</td>
<td>Yes</td>
<td>Ground and first floors</td>
</tr>
<tr>
<td>Assumed</td>
<td>Beasley</td>
<td>0806</td>
<td>Throughout</td>
<td>Flange gasket</td>
<td>Pipe flange gaskets</td>
<td>Misc.</td>
<td>20</td>
<td>EA</td>
<td>-</td>
<td>Assumed</td>
<td>Yes</td>
<td>Mechanical rooms throughout Beasley</td>
</tr>
<tr>
<td>Assumed</td>
<td>Beasley</td>
<td>0806</td>
<td>Restrooms throughout</td>
<td>Mirror mastic</td>
<td>Mirror mastic</td>
<td>Misc.</td>
<td>12</td>
<td>EA</td>
<td>-</td>
<td>Assumed</td>
<td>Yes</td>
<td>Bathrooms: 106, 114, 120, 136</td>
</tr>
</tbody>
</table>

**Previous Sampling:** Fall Protection Anchors – Roof sampling: WSU Facilities June 12, 2013

- CHR = Chrysotile asbestos
- ACM = Asbestos-containing material
- ACT = Actinolite asbestos
- SF = Square feet
- EA = Each
- LF = Linear feet
- CF = Cubic feet
- Misc = Miscellaneous material
- TSI = Thermal systems insulation

**Notes:**

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Building Name</th>
<th>Building #</th>
<th>Sample Location</th>
<th>Material</th>
<th>Material Description/color</th>
<th>Type</th>
<th>Quantity</th>
<th>Quantity Descriptor</th>
<th>Comments</th>
<th>Sample Results</th>
<th>ACM?</th>
<th>Homogenous Material Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>B11335</td>
<td>Beasley</td>
<td>0806</td>
<td>Roof</td>
<td>Roofing</td>
<td>Layer 1: Silver paint</td>
<td>Misc.</td>
<td>9,000</td>
<td>SF</td>
<td>Layer 1: &lt;1% CHR Layer 2: ND</td>
<td>Yes</td>
<td>Roof</td>
<td></td>
</tr>
<tr>
<td>B11336</td>
<td>Beasley</td>
<td>0806</td>
<td>Roof</td>
<td>Roofing</td>
<td>Layer 1: Silver paint</td>
<td>Misc.</td>
<td>9,000</td>
<td>SF</td>
<td>Layer 1: &lt;1% CHR Layer 2: ND</td>
<td>Yes</td>
<td>Roof</td>
<td></td>
</tr>
<tr>
<td>B11337</td>
<td>Beasley</td>
<td>0806</td>
<td>Roof</td>
<td>Roofing</td>
<td>Layer 1: Silver paint</td>
<td>Misc.</td>
<td>9,000</td>
<td>SF</td>
<td>Layer 1: &lt;1% CHR Layer 2: ND</td>
<td>Yes</td>
<td>Roof</td>
<td></td>
</tr>
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</table>
APPENDIX C
Table Summary of Lead Paint Sampling
## TABLE SUMMARY OF LEAD PAINT SAMPLING
### BEASLEY COLISEUM

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Building Name</th>
<th>Building #</th>
<th>Sample Location (Room #)</th>
<th>Paint Color</th>
<th>Substrate</th>
<th>Component</th>
<th>Results (mg/kg)</th>
<th>Reporting limit</th>
<th>Lead-containing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pb-01</td>
<td>Beasley</td>
<td>0806</td>
<td>12A</td>
<td>White</td>
<td>Plaster</td>
<td>Wall</td>
<td>&lt; 52</td>
<td>52</td>
<td>No</td>
</tr>
<tr>
<td>Pb-02</td>
<td>Beasley</td>
<td>0806</td>
<td>39</td>
<td>White</td>
<td>Concrete</td>
<td>Wall</td>
<td>&lt; 89</td>
<td>89</td>
<td>No</td>
</tr>
<tr>
<td>Pb-03</td>
<td>Beasley</td>
<td>0806</td>
<td>106</td>
<td>White</td>
<td>CMU</td>
<td>Wall</td>
<td>&lt; 230</td>
<td>230</td>
<td>No</td>
</tr>
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<td>Pb-04</td>
<td>Beasley</td>
<td>0806</td>
<td>90 tunnel</td>
<td>Red</td>
<td>CMU</td>
<td>Wall</td>
<td>&lt; 450</td>
<td>450</td>
<td>No</td>
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<tr>
<td>Pb-05</td>
<td>Beasley</td>
<td>0806</td>
<td>104A</td>
<td>White</td>
<td>Metal</td>
<td>Doorframe</td>
<td>9100</td>
<td>570</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Results by EPA Method SW 846-3051 analysis are reported in mg/kg lead
APPENDIX D
Asbestos and Lead Chain-of-Custody Forms and Laboratory Analytical Results
July 5, 2018

Matt McKibbin
Washington State University EH&S
PO Box 641172
Pullman, WA 99164-1172

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1812017.00

Client Project: 025397-2018
Location: Beasley

Dear Mr. McKibbin,

Enclosed please find test results for the 42 sample(s) submitted to our laboratory for analysis on 6/26/2018.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both EPA 600/M4-82-020, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and EPA 600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

Nick Ly, Technical Director

Enc.: Sample Results
# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

**Client:** Washington State University EH&S  
**Address:** PO Box 641172  
Pullman, WA 99164-1172  
**Attention:** Mr. Matt McKibbin  
**Project Location:** Beasley

**Client Project #:** 025397-2018  
**Samples Received:** 42  
**Samples Analyzed:** 42  
**Method:** EPA/600/R-93/116 & EPA/600/M4-82-020

### Lab ID: 18062748  
**Client Sample #:** TSI-01-A  
**Location:** Beasley

<table>
<thead>
<tr>
<th>Layer 1 of 1</th>
<th><strong>Description:</strong> White crumbly material with paint &amp; woven fibrous mesh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Fibrous Materials:</td>
<td>Other Fibrous Materials:</td>
</tr>
<tr>
<td>Calcareous binder, Paint, Fine particles</td>
<td>Cellulose 25%</td>
</tr>
<tr>
<td>Glass debris</td>
<td>Glass fibers</td>
</tr>
</tbody>
</table>

**Asbestos Type:** %  
None Detected ND

### Lab ID: 18062749  
**Client Sample #:** TSI-01-B  
**Location:** Beasley

<table>
<thead>
<tr>
<th>Layer 1 of 1</th>
<th><strong>Description:</strong> Loose off-white crumbly material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Fibrous Materials:</td>
<td>Other Fibrous Materials:</td>
</tr>
<tr>
<td>Calcareous binder, Fine particles, Fine grains</td>
<td>Cellulose 15%</td>
</tr>
<tr>
<td>Glass beads, Glass debris</td>
<td>Glass fibers 20%</td>
</tr>
</tbody>
</table>

**Asbestos Type:** %  
None Detected ND

### Lab ID: 18062750  
**Client Sample #:** TSI-01-C  
**Location:** Beasley

<table>
<thead>
<tr>
<th>Layer 1 of 1</th>
<th><strong>Description:</strong> Loose off-white crumbly material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Fibrous Materials:</td>
<td>Other Fibrous Materials:</td>
</tr>
<tr>
<td>Calcareous binder, Glass debris, Fine grains</td>
<td>Glass fibers 22%</td>
</tr>
<tr>
<td>Glass beads, Fine particles</td>
<td>Cellulose 5%</td>
</tr>
</tbody>
</table>

**Asbestos Type:** %  
None Detected ND

### Lab ID: 18062751  
**Client Sample #:** TSI-01-D  
**Location:** Beasley

<table>
<thead>
<tr>
<th>Layer 1 of 1</th>
<th><strong>Description:</strong> Loose crumbly off-white material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Fibrous Materials:</td>
<td>Other Fibrous Materials:</td>
</tr>
<tr>
<td>Calcareous binder, Glass debris, Fine grains</td>
<td>Glass fibers 25%</td>
</tr>
<tr>
<td>Fine particles</td>
<td>Cellulose 10%</td>
</tr>
</tbody>
</table>

**Asbestos Type:** %  
None Detected ND

---

**Sampled by:** Client  
**Analyzed by:** Matt Macfarlane  
**Reviewed by:** Nick Ly  
**Date:** 07/02/2018  
**Date:** 07/05/2018  
Nick Ly, Technical Director

*Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.*

---

*Page 2 of 34*
Client: Washington State University EH&S
Address: PO Box 641172
Pullman, WA 99164-1172

Attention: Mr. Matt McKibbin
Project Location: Beasley

Client Project #: 025397-2018
Samples Received: 42

Samples Analyzed: 42

Method: EPA/600/R-93/116 & EPA/600/M4-82-020

V. Analysis

<table>
<thead>
<tr>
<th>Lab ID: 18062752</th>
<th>Client Sample #: TSI-02-A</th>
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</thead>
<tbody>
<tr>
<td>Location: Beasley</td>
<td></td>
</tr>
<tr>
<td>Layer 1 of 1</td>
<td>Description: Loose off-white crumbly material</td>
</tr>
<tr>
<td></td>
<td>Non-Fibrous Materials: Calcareous binder, Glass debris, Fine particles</td>
</tr>
</tbody>
</table>
|                  | Other Fibrous Materials:
|                  | Glass fibers: 15% |
|                  | Cellulose: 6% |
|                  | Asbestos Type: None Detected ND |

<table>
<thead>
<tr>
<th>Lab ID: 18062753</th>
<th>Client Sample #: TSI-02-B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location: Beasley</td>
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</tr>
<tr>
<td>Layer 1 of 1</td>
<td>Description: Loose off-white crumbly material</td>
</tr>
<tr>
<td></td>
<td>Non-Fibrous Materials: Calcareous binder, Glass debris, Glass beads</td>
</tr>
</tbody>
</table>
|                  | Other Fibrous Materials:
|                  | Glass fibers: 30% |
|                  | Cellulose: 12% |
|                  | Asbestos Type: None Detected ND |

<table>
<thead>
<tr>
<th>Lab ID: 18062754</th>
<th>Client Sample #: TSI-02-C</th>
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</thead>
<tbody>
<tr>
<td>Location: Beasley</td>
<td></td>
</tr>
<tr>
<td>Layer 1 of 1</td>
<td>Description: Loose off-white crumbly material</td>
</tr>
<tr>
<td></td>
<td>Non-Fibrous Materials: Calcareous binder, Glass debris, Fine particles</td>
</tr>
</tbody>
</table>
|                  | Other Fibrous Materials:
|                  | Glass fibers: 20% |
|                  | Cellulose: 10% |
|                  | Asbestos Type: None Detected ND |

<table>
<thead>
<tr>
<th>Lab ID: 18062755</th>
<th>Client Sample #: TSI-02-D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location: Beasley</td>
<td></td>
</tr>
<tr>
<td>Layer 1 of 1</td>
<td>Description: Loose crumbly off-white material</td>
</tr>
<tr>
<td></td>
<td>Non-Fibrous Materials: Calcareous binder, Glass debris, Fine particles</td>
</tr>
</tbody>
</table>
|                  | Other Fibrous Materials:
|                  | Glass fibers: 32% |
|                  | Cellulose: 10% |
|                  | Asbestos Type: None Detected ND |

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.
### Bulk Asbestos Fibers Analysis

**Client:** Washington State University EH&S  
**Address:** PO Box 641172  
Pullman, WA 99164-1172  

**Attention:** Mr. Matt McKibbin  
**Project Location:** Beasley

---

**Lab ID:** 18062756  
**Client Sample #:** TSI-02-E  
**Location:** Beasley  
**Description:** Loose off-white crumbly material  
**Non-Fibrous Materials:**  
- Calcareous binder, Fine grains, Fine particles  
- Glass debris  
**Other Fibrous Materials:**  
- Glass fibers 25%  
- Cellulose 15%  
**Asbestos Type:** None Detected ND

---

**Lab ID:** 18062757  
**Client Sample #:** TSI-02-F  
**Location:** Beasley  
**Comments:** Unsure of correct layer sequence.  
**Description:** Loose off-white crumbly material  
**Non-Fibrous Materials:**  
- Calcareous binder, Glass debris, Fine particles  
**Other Fibrous Materials:**  
- Glass fibers 20%  
- Cellulose 9%  
**Asbestos Type:** None Detected ND

---

**Layer 2 of 2**  
**Description:** Loose tan fibrous material  
**Non-Fibrous Materials:**  
- Calcareous particles, Fine particles  
**Other Fibrous Materials:**  
- Glass fibers 98%  
**Asbestos Type:** None Detected ND

---

**Lab ID:** 18062758  
**Client Sample #:** TSI-02-G  
**Location:** Beasley  
**Description:** Off-white crumbly material with paint & woven fibrous mesh  
**Non-Fibrous Materials:**  
- Calcareous binder, Paint, Fine particles  
**Other Fibrous Materials:**  
- Cellulose 20%  
- Glass fibers 13%  
**Asbestos Type:** None Detected ND

---

**Lab ID:** 18062759  
**Client Sample #:** TSI-02-H  
**Location:** Beasley

---

**Sampled by:** Client  
**Analyzed by:** Matt Macfarlane  
**Reviewed by:** Nick Ly  
**Date:** 07/02/2018  
**Date:** 07/05/2018  

---

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government
### Bulk Asbestos Fibers Analysis
**By Polarized Light Microscopy**

**Client:** Washington State University EH&S  
**Address:** PO Box 641172  
Pullman, WA 99164-1172  

**Attention:** Mr. Matt McKibbin  
**Project Location:** Beasley

---

**Batch #: 1812017.00**  
**Client Project #: 025397-2018**  
**Date Received:** 6/26/2018  
**Samples Received:** 42  
**Samples Analyzed:** 42  
**Method:** EPA/600/R-93/116  
& EPA/600/M4-82-020

<table>
<thead>
<tr>
<th>Layer 1 of 1</th>
<th>Description</th>
<th>Non-Fibrous Materials:</th>
<th>Other Fibrous Materials: %</th>
<th>Asbestos Type: %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Off-white crumbly material</td>
<td>Calcareous binder, Fine particles, Glass debris</td>
<td>Cellulose 10% Glass fibers 16%</td>
<td>None Detected ND</td>
</tr>
</tbody>
</table>

**Lab ID: 18062760**  
**Client Sample #:** TSI-02-I  
**Location:** Beasley  
**Comments:** Unsure of correct layer sequence.

<table>
<thead>
<tr>
<th>Layer 1 of 1</th>
<th>Description</th>
<th>Non-Fibrous Materials:</th>
<th>Other Fibrous Materials: %</th>
<th>Asbestos Type: %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Off-white crumbly material with paint &amp; white woven mesh</td>
<td>Calcareous binder, Paint, Glass debris Fine particles</td>
<td>Cellulose 30%</td>
<td>None Detected ND</td>
</tr>
</tbody>
</table>

**Lab ID: 18062761**  
**Client Sample #:** TSI-03-A  
**Location:** Beasley  
**Comments:**  

<table>
<thead>
<tr>
<th>Layer 1 of 3</th>
<th>Description</th>
<th>Non-Fibrous Materials:</th>
<th>Other Fibrous Materials: %</th>
<th>Asbestos Type: %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Off-white crumbly material</td>
<td>Calcareous binder, Fine grains, Glass beads Fine particles</td>
<td>Cellulose 10% Synthetic fibers 5% Glass fibers 13%</td>
<td>None Detected ND</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Layer 2 of 3</th>
<th>Description</th>
<th>Non-Fibrous Materials:</th>
<th>Other Fibrous Materials: %</th>
<th>Asbestos Type: %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beige crumbly fibrous material</td>
<td>Binder/Filler, Fine particles, Glass debris</td>
<td>Glass fibers 85%</td>
<td>None Detected ND</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Layer 3 of 3</th>
<th>Description</th>
<th>Non-Fibrous Materials:</th>
<th>Other Fibrous Materials: %</th>
<th>Asbestos Type: %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Loose yellow fibrous material</td>
<td>Fine particles, Calcareous particles</td>
<td>Glass fibers 99%</td>
<td>None Detected ND</td>
</tr>
</tbody>
</table>

---

**Sampled by:** Client  
**Analyzed by:** Matt Macfarlane  
**Reviewed by:** Nick Ly  
**Date:** 07/02/2018  
**Date:** 07/05/2018

**Note:** If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.
# Bulk Asbestos Fibers Analysis

**By Polarized Light Microscopy**

**Client:** Washington State University EH&S  
**Address:** PO Box 641172  
Pullman, WA 99164-1172

**Attention:** Mr. Matt McKibbin  
**Project Location:** Beasley

---

<table>
<thead>
<tr>
<th>Lab ID: 18062762</th>
<th>Client Sample #: TSI-03-B</th>
<th>Location: Beasley</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Layer 1 of 1</strong></td>
<td><strong>Description:</strong> Crumbly off-white material</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-Fibrous Materials:</td>
<td>Other Fibrous Materials:%</td>
</tr>
<tr>
<td></td>
<td>Calcareous binder, Fine grains, Glass debris</td>
<td>Cellulose 10%</td>
</tr>
<tr>
<td></td>
<td>Fine particles</td>
<td>Glass fibers 17%</td>
</tr>
</tbody>
</table>

**Asbestos Type:** %

| None Detected ND |

<table>
<thead>
<tr>
<th>Lab ID: 18062763</th>
<th>Client Sample #: TSI-03-C</th>
<th>Location: Beasley</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Layer 1 of 1</strong></td>
<td><strong>Description:</strong> White crumbly fibrous material</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-Fibrous Materials:</td>
<td>Other Fibrous Materials:%</td>
</tr>
<tr>
<td></td>
<td>Calcareous binder, Fine particles</td>
<td>Cellulose 20%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Glass fibers 8%</td>
</tr>
</tbody>
</table>

**Asbestos Type:** %

| Chrysotile 15% |
| Amosite 10% |

<table>
<thead>
<tr>
<th>Lab ID: 18062764</th>
<th>Client Sample #: TSI-04-A</th>
<th>Location: Beasley</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Layer 1 of 1</strong></td>
<td><strong>Description:</strong> White crumbly material with paint</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-Fibrous Materials:</td>
<td>Other Fibrous Materials:%</td>
</tr>
<tr>
<td></td>
<td>Calcareous binder, Paint, Fine particles</td>
<td>Cellulose 5%</td>
</tr>
</tbody>
</table>

**Asbestos Type:** %

| Chrysotile 30% |
| Amosite 3% |

<table>
<thead>
<tr>
<th>Lab ID: 18062765</th>
<th>Client Sample #: TSI-04-B</th>
<th>Location: Beasley</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Layer 1 of 1</strong></td>
<td><strong>Description:</strong> Off-white crumbly material with paint &amp; woven mesh</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-Fibrous Materials:</td>
<td>Other Fibrous Materials:%</td>
</tr>
<tr>
<td></td>
<td>Calcareous binder, Paint, Glass debris</td>
<td>Cellulose 25%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Glass fibers 12%</td>
</tr>
</tbody>
</table>

**Asbestos Type:** %

| Chrysotile 4% |

---

**Batch #: 1812017.00**  
**Client Project #: 025397-2018**  
**Date Received:** 6/26/2018  
**Samples Received:** 42  
**Samples Analyzed:** 42  
**Method:** EPA/600/R-93/116  
& EPA/600/M4-82-020

---

**Sampled by:** Client  
**Analyzed by:** Matt Macfarlane  
**Date:** 07/02/2018  
**Reviewed by:** Nick Ly  
**Date:** 07/05/2018

---

**Note:** If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos: (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.
Client: Washington State University EH&S  
Address: PO Box 641172  
Pullman, WA 99164-1172

Attention: Mr. Matt McKibbin  
Project Location: Beasley

**Lab ID: 18062766**  
**Client Sample #:** FP-01-A  
**Location:** Beasley  
**Layer 1 of 1**  
**Description:** Grey crumbly lumpy material  
**Non-Fibrous Materials:** Calcareous binder, Fine particles, Synthetic foam  
**Other Fibrous Materials:** Cellulose 20%  
**Asbestos Type:** None Detected ND

**Lab ID: 18062767**  
**Client Sample #:** FP-01-B  
**Location:** Beasley  
**Layer 1 of 1**  
**Description:** Grey crumbly lumpy material  
**Non-Fibrous Materials:** Calcareous binder, Synthetic foam, Fine particles  
**Other Fibrous Materials:** Cellulose 10%  
**Asbestos Type:** None Detected ND

**Lab ID: 18062768**  
**Client Sample #:** FP-01-C  
**Location:** Beasley  
**Layer 1 of 1**  
**Description:** Grey lumpy crumbly material with paint  
**Non-Fibrous Materials:** Calcareous binder, Synthetic foam, Paint  
**Other Fibrous Materials:** Cellulose 25%  
**Asbestos Type:** None Detected ND

**Lab ID: 18062769**  
**Client Sample #:** FP-01-D  
**Location:** Beasley  
**Layer 1 of 1**  
**Description:** Grey crumbly lumpy material with paint  
**Non-Fibrous Materials:** Calcareous binder, Synthetic foam, Paint  
**Other Fibrous Materials:** Cellulose 14%  
**Asbestos Type:** None Detected ND

**Lab ID: 18062770**  
**Client Sample #:** FP-01-E  
**Location:** Beasley

---

**Note:** If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.

---

**Sampled by:** Client  
**Analyzed by:** Matt Macfarlane  
**Reviewed by:** Nick Ly

**Date:** 07/02/2018  
**Date:** 07/05/2018  
**Signature:** Nick Ly, Technical Director
# Bulk Asbestos Fibers Analysis

**By Polarized Light Microscopy**

Client: Washington State University EH&S  
Address: PO Box 641172  
Pullman, WA 99164-1172  

**Attention:** Mr. Matt McKibbin  
Project Location: Beasley

**Batch #: 1812017.00**  
Client Project #: 025397-2018  
Date Received: 6/26/2018  
Samples Received: 42  
Samples Analyzed: 42  
Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<table>
<thead>
<tr>
<th>Layer 1 of 1</th>
<th>Description</th>
<th>Non-Fibrous Materials</th>
<th>Other Fibrous Materials</th>
<th>Asbestos Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grey lumpy crumbly material</td>
<td>Calcareous binder, Synthetic foam, Fine particles</td>
<td>Cellulose 20%</td>
<td>None Detected ND</td>
</tr>
<tr>
<td></td>
<td>Grey crumbly lumpy material with paint</td>
<td>Calcareous binder, Synthetic foam, Fine particles</td>
<td>Cellulose 19%</td>
<td>None Detected ND</td>
</tr>
<tr>
<td></td>
<td>Grey crumbly lumpy material</td>
<td>Calcareous binder, Synthetic foam, Fine particles</td>
<td>Cellulose 12%</td>
<td>None Detected ND</td>
</tr>
<tr>
<td></td>
<td>White lumpy crumbly material with paint</td>
<td>Calcareous binder, Paint, Mica</td>
<td>Cellulose 2%</td>
<td>Chrysotile 5%</td>
</tr>
</tbody>
</table>

**Lab ID:** 18062771  
**Client Sample #:** FP-01-F  
**Location:** Beasley  

**Lab ID:** 18062772  
**Client Sample #:** FP-01-G  
**Location:** Beasley  

**Lab ID:** 18062773  
**Client Sample #:** FP-02-A  
**Location:** Beasley  

**Lab ID:** 18062774  
**Client Sample #:** FP-02-B  
**Location:** Beasley  

**Notes:**  
- If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.
Bulk Asbestos Fibers Analysis
By Polarized Light Microscopy

Client: Washington State University EH&S
Address: PO Box 641172
Pullman, WA 99164-1172

Attention: Mr. Matt McKibbin
Project Location: Beasley

Batch #: 1812017.00
Client Project #: 025397-2018
Date Received: 6/26/2018
Samples Received: 42
Samples Analyzed: 42
Method: EPA/600/R-93/116 & EPA/600/M4-82-020

Layer 1 of 1 Description: White lumpy crumbly material w/ paint
Non-Fibrous Materials: Other Fibrous Materials:%
Calcereous binder, Paint, Mica None Detected ND
Fine particles
Asbestos Type: %
Chrysotile 7%

Lab ID: 18062775 Client Sample #: APM-01-A
Location: Beasley

Layer 1 of 1 Description: Soft grey shiny material with black paint
Non-Fibrous Materials: Other Fibrous Materials:%
Binder/Filler, Paint Cellulose <1%
Asbestos Type: %
None Detected ND

Lab ID: 18062776 Client Sample #: APM-02-A
Location: Beasley

Layer 1 of 1 Description: Tacky yellow mastic with black paint
Non-Fibrous Materials: Other Fibrous Materials:%
Mastic/Binder, Paint None Detected ND
Asbestos Type: %
Chrysotile 25%

Lab ID: 18062777 Client Sample #: APM-02-B
Location: Beasley

Layer 1 of 2 Description: Silver perforated metal
Non-Fibrous Materials: Other Fibrous Materials:%
Metal None Detected ND
Asbestos Type: %
None Detected ND

Layer 2 of 2 Description: Soft yellow mastic
Non-Fibrous Materials: Other Fibrous Materials:%
Mastic/Binder Cellulose <1%
Asbestos Type: %
Chrysotile 20%

Lab ID: 18062778 Client Sample #: APM-03-A
Location: Beasley

SAMPLED BY: Client
ANALYZED BY: Matt Macfarlane
REVIEWED BY: Nick Ly, Technical Director
DATE: 07/02/2018
DATE: 07/05/2018

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples were analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.
### Bulk Asbestos Fibers Analysis

**By Polarized Light Microscopy**

<table>
<thead>
<tr>
<th>Layer 1 of 2</th>
<th>Description</th>
<th>Non-Fibrous Materials</th>
<th>Other Fibrous Materials:%</th>
<th>Asbestos Type: %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Silver perforated metal</td>
<td></td>
<td>Metal, Rust, Fine particles</td>
<td>None Detected ND</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Layer 2 of 2</th>
<th>Description</th>
<th>Non-Fibrous Materials</th>
<th>Other Fibrous Materials:%</th>
<th>Asbestos Type: %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crumbly yellow mastic</td>
<td></td>
<td>Mastic/Binder</td>
<td>None Detected ND</td>
<td></td>
</tr>
</tbody>
</table>

#### Lab ID: 18062779

**Client Sample #: APM-03-B**

**Location:** Beasley

**Comments:** No gypsum wallboard present in sample.

<table>
<thead>
<tr>
<th>Layer 1 of 1</th>
<th>Description</th>
<th>Non-Fibrous Materials</th>
<th>Other Fibrous Materials:%</th>
<th>Asbestos Type: %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White compacted powdery material</td>
<td></td>
<td>Calcareous binder, Fine particles</td>
<td>None Detected ND</td>
</tr>
</tbody>
</table>

**Layer 1 of 2**

**Description:** Silver perforated metal

**Asbestos Type:** None Detected ND

**Layer 2 of 2**

**Description:** Soft yellow mastic

**Asbestos Type:** Chrysotile 14%

#### Lab ID: 18062780

**Client Sample #: GWB-01-A**

**Location:** Beasley

**Comments:** No gypsum wallboard present in sample.

<table>
<thead>
<tr>
<th>Layer 1 of 1</th>
<th>Description</th>
<th>Non-Fibrous Materials</th>
<th>Other Fibrous Materials:%</th>
<th>Asbestos Type: %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White compacted powdery material</td>
<td></td>
<td>Calcareous binder, Fine particles</td>
<td>None Detected ND</td>
</tr>
</tbody>
</table>

**Layer 1 of 2**

**Description:** White compacted powdery material

**Asbestos Type:** Chrysotile 2%

#### Lab ID: 18062781

**Client Sample #: GWB-01-B**

**Location:** Beasley

<table>
<thead>
<tr>
<th>Layer 1 of 2</th>
<th>Description</th>
<th>Non-Fibrous Materials</th>
<th>Other Fibrous Materials:%</th>
<th>Asbestos Type: %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White compacted powdery material</td>
<td></td>
<td>Calcareous binder, Fine particles</td>
<td>None Detected ND</td>
</tr>
</tbody>
</table>

**Layer 1 of 2**

**Description:** White compacted powdery material

**Asbestos Type:** Chrysotile 3%

---

**Sampled by:** Client

**Analyzed by:** Matt Macfarlane  **Date:** 07/02/2018

**Reviewed by:** Nick Ly  **Date:** 07/05/2018

**Note:** If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.
### Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

**Client:** Washington State University EH&S  
**Address:** PO Box 641172  
Pullman, WA 99164-1172

**Attention:** Mr. Matt McKibbin  
Project Location: Beasley

**Batch #: 1812017.00**  
Client Project #: 025397-2018  
Date Received: 6/26/2018  
Samples Received: 42  
Samples Analyzed: 42  
Method: EPA/600/R-93/116 & EPA/600/M4-82-020

#### Layer 2 of 2

**Description:** Pink chalky material with paper

<table>
<thead>
<tr>
<th>Non-Fibrous Materials:</th>
<th>Other Fibrous Materials:</th>
<th>Asbestos Type:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gypsum/Binder</td>
<td>Cellulose</td>
<td>12% None Detected ND</td>
</tr>
<tr>
<td>Glass fibers</td>
<td></td>
<td>2% None Detected ND</td>
</tr>
</tbody>
</table>

**Lab ID:** 18062782  
**Client Sample #:** Plas-01-A  
**Location:** Beasley

#### Layer 1 of 2

**Description:** White compacted brittle material with paint

<table>
<thead>
<tr>
<th>Non-Fibrous Materials:</th>
<th>Other Fibrous Materials:</th>
<th>Asbestos Type:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcareous binder, Paint</td>
<td>None Detected</td>
<td>ND None Detected</td>
</tr>
</tbody>
</table>

**Lab ID:** 18062783  
**Client Sample #:** CMU-01-A  
**Location:** Beasley  
**Comments:** Unsure of correct layer sequence.

#### Layer 2 of 2

**Description:** Off-white sandy crumbly material

<table>
<thead>
<tr>
<th>Non-Fibrous Materials:</th>
<th>Other Fibrous Materials:</th>
<th>Asbestos Type:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcareous binder, Sand, Mineral grains</td>
<td>Cellulose</td>
<td>2% None Detected ND</td>
</tr>
</tbody>
</table>

**Lab ID:** 18062784  
**Client Sample #:** SU-01-A  
**Location:** Beasley

---

**Note:** If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.
# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

**Client:** Washington State University EH&S  
**Address:** PO Box 641172  
Pullman, WA 99164-1172

**Attention:** Mr. Matt McKibbin  
**Project Location:** Beasley

---

**Batch #: 1812017.00**  
**Client Project #: 025397-2018**  
**Date Received:** 6/26/2018  
**Samples Received:** 42  
**Samples Analyzed:** 42  
**Method:** EPA/600/R-93/116 & EPA/600/M4-82-020

---

<table>
<thead>
<tr>
<th>Layer 1 of 1</th>
<th>Description</th>
<th>Non-Fibrous Materials</th>
<th>Other Fibrous Materials</th>
<th>Asbestos Type</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Loose pink crumbly material</td>
<td>Fine particles, Binder/Filler</td>
<td>None Detected</td>
<td>ND</td>
<td>Chrysotile 4%</td>
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</tbody>
</table>

**Lab ID:** 18062785  
**Location:** Beasley  
**Client Sample #:** CPTMY-01-A

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<thead>
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<th>Layer 1 of 1</th>
<th>Description</th>
<th>Non-Fibrous Materials</th>
<th>Other Fibrous Materials</th>
<th>Asbestos Type</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Soft yellow mastic</td>
<td>Mastic/Binder, Miscellaneous particles, Fine grains</td>
<td>Synthetic fibers</td>
<td>3%</td>
<td>None Detected ND</td>
</tr>
<tr>
<td></td>
<td>Fine particles</td>
<td></td>
<td>Cellulose</td>
<td>&lt;1%</td>
<td></td>
</tr>
</tbody>
</table>

**Lab ID:** 18062786  
**Location:** Beasley  
**Client Sample #:** CPTMY-01-B

<table>
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<tr>
<th>Layer 1 of 2</th>
<th>Description</th>
<th>Non-Fibrous Materials</th>
<th>Other Fibrous Materials</th>
<th>Asbestos Type</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Soft sticky yellow mastic</td>
<td>Mastic/Binder, Calcareous particles, Miscellaneous particles</td>
<td>Synthetic fibers</td>
<td>5%</td>
<td>None Detected ND</td>
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**Layer 2 of 2 | Description:** Off-white compacted powdery material

<table>
<thead>
<tr>
<th>Non-Fibrous Materials</th>
<th>Other Fibrous Materials</th>
<th>Asbestos Type</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Calcareous binder</td>
<td></td>
<td>None Detected</td>
<td>ND</td>
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</tbody>
</table>

**Lab ID:** 18062787  
**Location:** Beasley  
**Client Sample #:** 4BLCB-01-A

<table>
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<tr>
<th>Layer 1 of 2</th>
<th>Description</th>
<th>Non-Fibrous Materials</th>
<th>Other Fibrous Materials</th>
<th>Asbestos Type</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Black rubbery material</td>
<td>Rubber/Binder</td>
<td>None Detected</td>
<td>ND</td>
<td>None Detected ND</td>
</tr>
</tbody>
</table>

**Layer 2 of 2 | Description:** Brittle brown mastic

<table>
<thead>
<tr>
<th>Non-Fibrous Materials</th>
<th>Other Fibrous Materials</th>
<th>Asbestos Type</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastic/Binder</td>
<td></td>
<td>None Detected</td>
<td>ND</td>
</tr>
</tbody>
</table>

---

**Sampled by:** Client  
**Analyzed by:** Matt Macfarlane  
**Reviewed by:** Nick Ly  
**Date:** 07/02/2018  
**Date:** 07/05/2018

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.
**Bulk Asbestos Fibers Analysis**

*By Polarized Light Microscopy*

**Client:** Washington State University EH&S  
**Address:** PO Box 641172  
Pullman, WA 99164-1172  

**Attention:** Mr. Matt McKibbin  
**Project Location:** Beasley

**Batch #: 1812017.00**  
**Client Project #: 025397-2018**  
**Date Received:** 6/26/2018  
**Samples Received:** 42  
**Samples Analyzed:** 42  
**Method:** EPA/600/R-93/116 & EPA/600/M4-82-020

| Lab ID: 18062788 | Client Sample #: 4BLCB-01-B |  |
| Layer 1 of 2 | Description: Black rubbery material  
Non-Fibrous Materials:  
Rubber/Binder | Other Fibrous Materials:%  
None Detected | **Asbestos Type:** %  
None Detected ND  |

| Layer 2 of 2 | Description: Brittle brown mastic with paper & paint  
Non-Fibrous Materials:  
Mastic/Binder, Paint | Other Fibrous Materials:%  
Cellulose | **Asbestos Type:** %  
None Detected ND  |

| Lab ID: 18062789 | Client Sample #: CPTMBR-01-A |  |
| Layer 1 of 1 | Description: Soft sticky yellow mastic  
Non-Fibrous Materials:  
Mastic/Binder, Miscellaneous particles, Fine particles | Other Fibrous Materials:%  
Synthetic fibers | **Asbestos Type:** %  
None Detected ND  
Cellulose | <1%  |

---

**Sampled by:** Client  
**Analyzed by:** Matt Macfarlane  
**Reviewed by:** Nick Ly  
**Date:** 07/02/2018  
**Date:** 07/05/2018  
**Nick Ly, Technical Director**

*Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.*
### Project Information

**Company:** Washington State University EH&S  
**Address:** PO Box 641172  
Pullman, WA 99164-1172  
**Project Manager:** Mr. Matt McKibbin  
**Phone:** (509) 335-3041  
**Direct:** (509) 335-5311  

**NVL Batch Number:** 1812017.00  
**TAT:** 5 Days  
**AH:** No  
**Due Date:** 7/3/2018  
**Time:** 9:50 AM

**Email:** mrmckibbin@wsu.edu  
**Fax:** (509) 730-5548

---

**Project Name/Number:** 025397-2018  
**Project Location:** Beasley

---

**Subcategory:** PLM Bulk  
**Item Code:** ASB-02  
**EPA 600/R-93-116 Asbestos by PLM <bulk>**

---

**Total Number of Samples:** 42  
**Rush Samples:**

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<td>TSI-01-A</td>
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<td>2</td>
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<td>TSI-01-B</td>
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<tr>
<td>3</td>
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<td>TSI-01-C</td>
<td>A</td>
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<tr>
<td>4</td>
<td>18062751</td>
<td>TSI-01-D</td>
<td>A</td>
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<td>18062752</td>
<td>TSI-02-A</td>
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<td>6</td>
<td>18062753</td>
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<td>7</td>
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<td>18</td>
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<td>TSI-04-B</td>
<td>A</td>
</tr>
</tbody>
</table>

---

**Print Name:** Shaista Khan  
**Signature:**  
**Company:** NVL  
**Date:** 6/26/18  
**Time:** 950

**Print Name:** Matt Macfarlane  
**Signature:**  
**Company:** NVL  
**Date:** 7/2/18

---

**Fax:**  
**Emailed:**

---

**Special Instructions:**

---

**Date:** 6/26/2018  
**Time:** 12:57 PM  
**Entered By:** Fatima Khan
**Company:** Washington State University EH&S  
**Address:** PO Box 641172, Pullman, WA 99164-1172  
**Project Manager:** Mr. Matt McKibbin  
**Phone:** (509) 335-3041  
**Direct:** (509) 335-5311  

**NVL Batch Number:** 1812017.00  
**TAT:** 5 Days  
**Due Date:** 7/3/2018  
**Time:** 9:50 AM  
**Email:** mrmckibbin@wsu.edu  
**Fax:** (509) 730-5548

**Project Name/Number:** 025397-2018  
**Project Location:** Beasley

**Subcategory:** PLM Bulk  
**Item Code:** ASB-02  
**EPA 600/R-93-116 Asbestos by PLM <bulk>**

**Total Number of Samples:** 42

<table>
<thead>
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<th>Lab ID</th>
<th>Sample ID</th>
<th>Description</th>
<th>A/R</th>
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<td>36</td>
<td>18062783</td>
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### Office Use Only

- **Print Name:** Shaista Khan  
- **Signature:**  
- **Company:** NVL  
- **Date:** 6/26/18  
- **Time:** 950

- **Print Name:** Matt Macfarlane  
- **Signature:**  
- **Company:** NVL  
- **Date:** 7/2/18

**Special Instructions:**

- **Faxed:**  
- **Emailed:**

**Date:** 6/26/2018  
**Time:** 12:57 PM  
**Entered By:** Fatima Khan

---

**Print Name:**  
**Signature:**  
**Company:**  
**Date:**  
**Time:**
**Company**: Washington State University EH&S  
**Address**: PO Box 641172  
Pullman, WA 99164-1172

**Project Manager**: Mr. Matt McKibbin  
**Phone**: (509) 335-3041  
**Direct**: (509) 335-5311

**Project Name/Number**: 025397-2018  
**Project Location**: Beasley

Subcategory: PLM Bulk  
**Item Code**: ASB-02  
**EPA 600/R-93-116 Asbestos by PLM <bulk>**

**NVL Batch Number**: 1812017.00  
**TAT**: 5 Days  
**AH**: No  
**Due Date**: 7/3/2018  
**Time**: 9:50 AM  
**Email**: mrmckibbin@wsu.edu  
**Fax**: (509) 730-5548

<table>
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<th>Description</th>
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<td>39</td>
<td>18062786</td>
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<tr>
<td>40</td>
<td>18062787</td>
<td>4BLCB-01-A</td>
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<tr>
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<td>42</td>
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</table>

**Sampled by**:  
**Relinquished by**: Federal Express  
**Print Name**: Shaista Khan  
**Company**: NVL  
**Date**: 6/26/18  
**Time**: 950

**Received by**:  
**Signature**: Matt Macfarlane  
**Company**: NVL  
**Date**: 6/26/18  
**Time**: 7/2/18

**☑ Faxed  ☐ Emailed**

**Special Instructions:**

---

Date: 6/26/2018  
Time: 12:57 PM  
Entered By: Fatima Khan

---

page 16 of 34
Company: Washington St. University EH&S  
Address: PO Box 641172  
Pullman, WA 99164  
Phone: 509-335-5604

Project Manager: Matt McKibbin  
Cell: (509) 730-5548  
Email: rmckibbin@wsu.edu, stephan.gilley@wsu.edu

Project Name/Number: 025397-2018  
Project Location: BEASLEY

- [ ] PCM Air (NIOSH 7400)  
- [ ] TEM (NIOSH 7402)  
- [ ] TEM (AHERA)  
- [ ] TEM (EPA Level II Modified)
- [ ] PLM (EPA 600/R-93-116)  
- [ ] EPA 400 Points (600/R-93-116)  
- [ ] Asbestos in Vermiculite (EPA 600/R-04/004)  
- [ ] EPA 1000 Points (600/R-93-116)  
- [ ] Asbestos in Sediment (EPA 1900 Points)  
- [ ] Asbestos Friable/Non-Friable (EPA 600/R-93/116)  
- [ ] Other

Reporting Instructions: email

☐ Call:  
☐ Fax:  
☐ Email: rmckibbin@wsu.edu, stephan.gilley@wsu.edu

Total Number of Samples

<table>
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<th>Sample ID</th>
<th>Description</th>
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</tr>
</thead>
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Print Name: Stephen Gilley  
Signature:  
Company: WSU EH&S  
Date: 6-22-18  
Time: 14:30

Sampled by: Stephen Gilley  
Relinquish by: Stephen Gilley

Office Use Only

Received by:  
Analyzed by:  
Called by:  
Faxed/Email by:  

4708 Aurora Ave N, Seattle, WA 98103  
p 206.547.0100  
f 206.634.1936  
www.nvlabs.com

Page 17 of 34
July 12, 2018

Matt McKibbin
Washington State University EH&S
PO Box 641172
Pullman, WA 99164-1172

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1812751.00

Client Project: 025397-2018
Location: Beasley Coliseum

Dear Mr. McKibbin,

Enclosed please find test results for the 31 sample(s) submitted to our laboratory for analysis on 7/6/2018.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both EPA 600/M4-82-020, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and EPA 600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

*signature*

Nick Ly, Technical Director

Enc.: Sample Results
Client: Washington State University EH&S
Address: PO Box 641172
Pullman, WA 99164-1172
Attention: Mr. Matt McKibbin
Project Location: Beasley Coliseum

Client Project #: 025397-2018
Samples Received: 31
By Polarized Light Microscopy

Samples Analyzed: 31
Method: EPA/600/R-93/116 & EPA/600/M4-82-020

Lab ID: 18066036  Client Sample #: 2x4TCT-01-A
Layer 1 of 1  Description: Tan crumbly fibrous material with paint
Non-Fibrous Materials:
Binder/Filler, Paint  Other Fibrous Materials:
Wood fibers  70%
Asbestos Type: %

Lab ID: 18066037  Client Sample #: 2x4TCT-01-B
Location: Beasley Coliseum
Layer 1 of 1  Description: Tan crumbly fibrous material with paint
Non-Fibrous Materials:
Binder/Filler, Paint, Fine particles  Other Fibrous Materials:
Wood fibers  76%
Asbestos Type: %

Lab ID: 18066038  Client Sample #: FSD-01-A
Location: Beasley Coliseum
Layer 1 of 1  Description: Brown fibrous material
Non-Fibrous Materials:
Glass debris, Fine particles  Other Fibrous Materials:
Glass fibers  95%
Asbestos Type: %

Lab ID: 18066039  Client Sample #: FSD-01-B
Location: Beasley Coliseum
Layer 1 of 1  Description: Brown fibrous material
Non-Fibrous Materials:
Glass debris, Fine particles  Other Fibrous Materials:
Glass fibers  98%
Asbestos Type: %

Lab ID: 18066040  Client Sample #: APM-01-B
Location: Beasley Coliseum
Layer 1 of 1  Description: Soft grey shiny material with paint
Non-Fibrous Materials:
Binder/Filler, Paint  Other Fibrous Materials:
None Detected ND
Asbestos Type: %

Sampled by: Client
Analyzed by: Matt Macfarlane  Date: 07/12/2018
Reviewed by: Nick Ly  Date: 07/12/2018

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.
Client: Washington State University EH&S
Address: PO Box 641172
Pullman, WA 99164-1172

Attention: Mr. Matt McKibbin
Project Location: Beasley Coliseum

Client Project #: 025397-2018
Samples Received: 31
Samples Analyzed: 31
Method: EPA/600/R-93/116 & EPA/600/M4-82-020

<table>
<thead>
<tr>
<th>Lab ID: 18066041</th>
<th>Client Sample #: CPTMBR-01-B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Layer 1 of 1</strong></td>
<td><strong>Description:</strong> Soft yellow mastic</td>
</tr>
<tr>
<td>Non-Fibrous Materials:</td>
<td>Other Fibrous Materials:%</td>
</tr>
<tr>
<td>Mastic/Binder, Fine grains</td>
<td>Synthetic fibers 4%</td>
</tr>
<tr>
<td>Cellulose &lt;1%</td>
<td></td>
</tr>
<tr>
<td><strong>Asbestos Type:</strong> %</td>
<td>None Detected ND</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lab ID: 18066042</th>
<th>Client Sample #: CMU-01-B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location:</strong> Beasley Coliseum</td>
<td></td>
</tr>
<tr>
<td><strong>Layer 1 of 1</strong></td>
<td><strong>Description:</strong> Grey crumbly material</td>
</tr>
<tr>
<td>Non-Fibrous Materials:</td>
<td>Other Fibrous Materials:%</td>
</tr>
<tr>
<td>Cement/Binder, Fine grains, Mineral grains</td>
<td>None Detected ND</td>
</tr>
<tr>
<td>Fine particles</td>
<td></td>
</tr>
<tr>
<td><strong>Asbestos Type:</strong> %</td>
<td>None Detected ND</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lab ID: 18066043</th>
<th>Client Sample #: 12CT-02-A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Layer 1 of 2</strong></td>
<td><strong>Description:</strong> White compressed fibrous material with paint</td>
</tr>
<tr>
<td>Non-Fibrous Materials:</td>
<td>Other Fibrous Materials:%</td>
</tr>
<tr>
<td>Binder/Filler, Paint, Glass debris</td>
<td>Glass fibers 85%</td>
</tr>
<tr>
<td><strong>Layer 2 of 2</strong></td>
<td><strong>Description:</strong> Brown brittle mastic</td>
</tr>
<tr>
<td>Non-Fibrous Materials:</td>
<td>Other Fibrous Materials:%</td>
</tr>
<tr>
<td>Mastic/Binder</td>
<td>Glass fibers &lt;1%</td>
</tr>
<tr>
<td><strong>Asbestos Type:</strong> %</td>
<td>None Detected ND</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lab ID: 18066044</th>
<th>Client Sample #: 12CT-02-B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Layer 1 of 4</strong></td>
<td><strong>Description:</strong> White compressed fibrous material with paint</td>
</tr>
<tr>
<td>Non-Fibrous Materials:</td>
<td>Other Fibrous Materials:%</td>
</tr>
<tr>
<td>Binder/Filler, Paint, Glass debris</td>
<td>Glass fibers 81%</td>
</tr>
<tr>
<td><strong>Asbestos Type:</strong> %</td>
<td>None Detected ND</td>
</tr>
</tbody>
</table>

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.
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Address: PO Box 641172  
Pullman, WA 99164-1172

Attention: Mr. Matt McKibbin  
Project Location: Beasley Coliseum

---

**Layer 2 of 4**  
**Description:** White foamy material

<table>
<thead>
<tr>
<th>Non-Fibrous Materials</th>
<th>Other Fibrous Materials</th>
<th>Asbestos Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synthetic foam</td>
<td>Glass fibers</td>
<td>1%</td>
</tr>
</tbody>
</table>
| **Layer 3 of 4**  
**Description:** Grey compressed fibrous material with paint

<table>
<thead>
<tr>
<th>Non-Fibrous Materials</th>
<th>Other Fibrous Materials</th>
<th>Asbestos Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binder/Filler, Paint, Fine particles</td>
<td>Cellulose</td>
<td>50%</td>
</tr>
<tr>
<td>Calcareaeous particles</td>
<td>Glass fibers</td>
<td>21%</td>
</tr>
</tbody>
</table>

*Layer 4 of 4*  
**Description:** Brown brittle mastic

<table>
<thead>
<tr>
<th>Non-Fibrous Materials</th>
<th>Other Fibrous Materials</th>
<th>Asbestos Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastic/Binder</td>
<td>None Detected</td>
<td>ND</td>
</tr>
</tbody>
</table>

---

**Lab ID:** 18066045  
**Client Sample #:** 12CT-01-A

**Layer 1 of 2**  
**Description:** White crumbly fibrous material with paint

<table>
<thead>
<tr>
<th>Non-Fibrous Materials</th>
<th>Other Fibrous Materials</th>
<th>Asbestos Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binder/Filler, Paint, Glass debris</td>
<td>Glass fibers</td>
<td>80%</td>
</tr>
</tbody>
</table>

**Layer 2 of 2**  
**Description:** Crumbly brown mastic

<table>
<thead>
<tr>
<th>Non-Fibrous Materials</th>
<th>Other Fibrous Materials</th>
<th>Asbestos Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastic/Binder</td>
<td>None Detected</td>
<td>ND</td>
</tr>
</tbody>
</table>

---

**Lab ID:** 18066046  
**Client Sample #:** 12CT-01-B

**Layer 1 of 2**  
**Description:** White crumbly fibrous material with paint

<table>
<thead>
<tr>
<th>Non-Fibrous Materials</th>
<th>Other Fibrous Materials</th>
<th>Asbestos Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binder/Filler, Paint, Glass debris</td>
<td>Glass fibers</td>
<td>84%</td>
</tr>
</tbody>
</table>

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.
Client: Washington State University EH&S
Address: PO Box 641172
Pullman, WA 99164-1172

Attention: Mr. Matt McKibbin

Project Location: Beasley Coliseum

Layer 2 of 2
Description: Soft brown crumbly mastic
Non-Fibrous Materials: Mastic/Binder
Other Fibrous Materials:% None Detected
Asbestos Type: % None Detected

Layer ID: 18066047
Client Sample #: 4GRCB-01-A
Location: Beasley Coliseum
Comments: Unsure of correct layer sequence.

Layer 1 of 4
Description: Grey rubbery material
Non-Fibrous Materials: Rubber/Binder
Other Fibrous Materials:% None Detected
Asbestos Type: % None Detected

Layer 2 of 4
Description: Soft tacky yellow mastic
Non-Fibrous Materials: Mastic/Binder
Other Fibrous Materials:% None Detected
Asbestos Type: % None Detected

Layer 3 of 4
Description: Crumbly brown mastic
Non-Fibrous Materials: Mastic/Binder
Other Fibrous Materials:% None Detected
Asbestos Type: % None Detected

Layer 4 of 4
Description: White compacted powdery material with paint
Non-Fibrous Materials: Calcereous binder, Paint
Other Fibrous Materials:% None Detected
Asbestos Type: % None Detected

Layer ID: 18066048
Client Sample #: 4GRCB-01-B
Location: Beasley Coliseum
Comments: Unsure of correct layer sequence.

Layer 1 of 5
Description: Grey rubbery material
Non-Fibrous Materials: Rubber/Binder
Other Fibrous Materials:% None Detected
Asbestos Type: % None Detected

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.
**Bulk Asbestos Fibers Analysis**

By Polarized Light Microscopy

**Batch #: 1812751.00**

Client: Washington State University EH&S
Address: PO Box 641172
Pullman, WA 99164-1172

Attention: Mr. Matt McKibbin
Project Location: Beasley Coliseum

---

Layer 2 of 5

**Description:** Soft yellow mastic

- Non-Fibrous Materials: Mastic/Binder
- Other Fibrous Materials: None Detected
- Asbestos Type: None Detected

Layer 3 of 5

**Description:** White compacted powdery material with paint

- Non-Fibrous Materials: Calcareous binder, Paint
- Other Fibrous Materials: None Detected
- Asbestos Type: None Detected

Layer 4 of 5

**Description:** Brittle brown mastic

- Non-Fibrous Materials: Mastic/Binder
- Other Fibrous Materials: None Detected
- Asbestos Type: None Detected

Layer 5 of 5

**Description:** Brown paper & paint

- Non-Fibrous Materials: Binder/Filler, Paint
- Other Fibrous Materials: Cellulose
- Asbestos Type: 75%

---

**Layer 1 of 1**

**Description:** Soft black rubbery material with embedded woven fibers

- Non-Fibrous Materials: Rubber/Binder, Fine particles, Miscellaneous particles
- Other Fibrous Materials: Cellulose
- Asbestos Type: 10%

**Layer 1 of 1**

**Description:** Soft black rubbery material with embedded woven fibers

- Non-Fibrous Materials: Rubber/Binder, Fine particles
- Other Fibrous Materials: Cellulose
- Asbestos Type: 14%

---

**Lab ID: 18066049**

**Client Sample #: BWG-01-A**

Location: Beasley Coliseum

---

**Lab ID: 18066050**

**Client Sample #: BWG-01-B**

Location: Beasley Coliseum

---

**Lab ID: 18066051**

**Client Sample #: BWM-01-A**

Location: Beasley Coliseum

---

**Note:** If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.

---

**Sampled by:** Client  
**Analyzed by:** Matt Macfarlane  
**Reviewed by:** Nick Ly  
**Date:** 07/12/2018  
**Date:** 07/12/2018  

Nick Ly, Technical Director

---

Page 6 of 32
### Bulk Asbestos Fibers Analysis

**By Polarized Light Microscopy**

---

**Client:** Washington State University EH&S  
**Address:** PO Box 641172  
Pullman, WA 99164-1172

**Attention:** Mr. Matt McKibbin  
**Project Location:** Beasley Coliseum

---

**Batch #: 1812751.00**  
**Client Project #: 025397-2018**  
**Date Received:** 7/6/2018  
**Samples Received:** 31  
**Samples Analyzed:** 31  
**Method:** EPA/600/R-93/116 & EPA/600/M4-82-020

---

<table>
<thead>
<tr>
<th>Layer 1 of 1</th>
<th>Description</th>
<th>Non-Fibrous Materials:</th>
<th>Other Fibrous Materials:%</th>
<th>Asbestos Type: %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Crumbly brown mastic</td>
<td>Mastic/Binder, Fine grains, Mineral grains</td>
<td>None Detected</td>
<td>ND</td>
</tr>
<tr>
<td></td>
<td>Crumbly brown mastic with grey crumbly material</td>
<td>Mastic/Binder, Fine grains, Mineral grains</td>
<td>None Detected</td>
<td>ND</td>
</tr>
<tr>
<td></td>
<td>Grey crumbly fibrous material with paint</td>
<td>Binder/Filler, Paint, Perlite</td>
<td>Cellulose 58%</td>
<td>None Detected</td>
</tr>
<tr>
<td></td>
<td>Grey crumbly fibrous material with paint</td>
<td>Binder/Filler, Paint, Perlite</td>
<td>Cellulose 65%</td>
<td>None Detected</td>
</tr>
<tr>
<td></td>
<td>Grey crumbly fibrous material with paint</td>
<td>Binder/Filler, Paint, Perlite</td>
<td>Cellulose 10%</td>
<td>None Detected</td>
</tr>
</tbody>
</table>

---

**Note:** If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.
**Bulk Asbestos Fibers Analysis**  
*By Polarized Light Microscopy*

**Client:** Washington State University EH&S  
**Address:** PO Box 641172  
Pullman, WA 99164-1172  

**Attention:** Mr. Matt McKibbin  
**Project Location:** Beasley Coliseum

**Client Project #: 025397-2018**  
**Batch #: 1812751.00**  
**Date Received:** 7/6/2018  
**Samples Received:** 31  
**Samples Analyzed:** 31  
**Method:** EPA/600/R-93/116 & EPA/600/M4-82-020

<table>
<thead>
<tr>
<th>Layer 1 of 1</th>
<th>Description</th>
<th>Non-Fibrous Materials:</th>
<th>Other Fibrous Materials:</th>
<th>Asbestos Type:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beige crumbly fibrous material with paint</td>
<td>Binder/Filler, Glass debris, Fine grains</td>
<td>Cellulose</td>
<td>45%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fine particles, Paint</td>
<td>Glass fibers</td>
<td>15%</td>
</tr>
</tbody>
</table>

**Lab ID: 18066056**  
**Client Sample #: 2x45CT-01-B**  
**Location:** Beasley Coliseum

<table>
<thead>
<tr>
<th>Layer 1 of 1</th>
<th>Description</th>
<th>Non-Fibrous Materials:</th>
<th>Other Fibrous Materials:</th>
<th>Asbestos Type:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beige crumbly fibrous material with paint</td>
<td>Binder/Filler, Paint, Fine grains</td>
<td>Cellulose</td>
<td>56%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fine particles, Glass debris</td>
<td>Glass fibers</td>
<td>10%</td>
</tr>
</tbody>
</table>

**Lab ID: 18066057**  
**Client Sample #: 4PCB-01-A**  
**Location:** Beasley Coliseum

<table>
<thead>
<tr>
<th>Layer 1 of 3</th>
<th>Description</th>
<th>Non-Fibrous Materials:</th>
<th>Other Fibrous Materials:</th>
<th>Asbestos Type:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rubbery purple material</td>
<td>Rubber/Binder</td>
<td>None Detected</td>
<td>ND</td>
</tr>
<tr>
<td>Layer 2 of 3</td>
<td>Description: Soft tan mastic</td>
<td>Mastic/Binder</td>
<td>None Detected</td>
<td>ND</td>
</tr>
<tr>
<td>Layer 3 of 3</td>
<td>Description: Crumbly brown mastic</td>
<td>Mastic/Binder</td>
<td>None Detected</td>
<td>ND</td>
</tr>
</tbody>
</table>

**Lab ID: 18066058**  
**Client Sample #: 4PCB-01-B**  
**Location:** Beasley Coliseum

---

**Sampled by:** Client  
**Analyzed by:** Matt Macfarlane  
**Reviewed by:** Nick Ly  
**Date:** 07/12/2018  
**Date:** 07/12/2018

---

**Note:** If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.
Bulk Asbestos Fibers Analysis
By Polarized Light Microscopy

Client: Washington State University EH&S
Address: PO Box 641172
Pullman, WA 99164-1172

Attention: Mr. Matt McKibbin
Project Location: Beasley Coliseum

Batch #: 1812751.00
Client Project #: 025397-2018
Date Received: 7/6/2018
Samples Received: 31
Samples Analyzed: 31
Method: EPA/600/R-93/116 & EPA/600/M4-82-020

Layer 1 of 3
Description: Purple rubbery material
Non-Fibrous Materials: Rubber/Binder
Other Fibrous Materials:% None Detected ND
Asbestos Type: % None Detected ND

Layer 2 of 3
Description: Soft tan mastic
Non-Fibrous Materials: Mastic/Binder
Other Fibrous Materials:% Cellulose <1%
Asbestos Type: % None Detected ND

Layer 3 of 3
Description: Crumbly brown mastic
Non-Fibrous Materials: Mastic/Binder
Other Fibrous Materials:% Synthetic fibers <1%
Asbestos Type: % None Detected ND

Lab ID: 18066059  Client Sample #: WJC-01-A
Location: Beasley Coliseum
Layer 1 of 1
Description: Soft grey crumbly material
Non-Fibrous Materials: Putty Compound, Fine particles
Other Fibrous Materials:% None Detected ND
Asbestos Type: % Chrysotile 5%

Lab ID: 18066060  Client Sample #: WJC-01-B
Location: Beasley Coliseum
Layer 1 of 1
Description: Soft grey crumbly material
Non-Fibrous Materials: Putty Compound, Fine particles
Other Fibrous Materials:% None Detected ND
Asbestos Type: % Chrysotile 6%

Lab ID: 18066061  Client Sample #: 12VFT-02-A
Location: Beasley Coliseum
Comments: Insufficient black mastic for further analysis.
Layer 1 of 2
Description: Grey vinyl tile
Non-Fibrous Materials: Vinyl/Binder, Mineral grains
Other Fibrous Materials:% None Detected ND
Asbestos Type: % None Detected ND

Sampled by: Client
Analyzed by: Matt Macfarlane
Reviewed by: Nick Ly, Technical Director
Date: 07/12/2018

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.
## Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

**Batch #: 1812751.00**

Client Project #: 025397-2018
Date Received: 7/6/2018
Samples Received: 31
Samples Analyzed: 31
Method: EPA/600/R-93/116 & EPA/600/M4-82-020

### Client:
Washington State University EH&S

### Address:
PO Box 641172
Pullman, WA 99164-1172

### Attention:
Mr. Matt McKibbin

### Project Location:
Beasley Coliseum

---

<table>
<thead>
<tr>
<th>Layer</th>
<th>Description</th>
<th>Non-Fibrous Materials:</th>
<th>Other Fibrous Materials:%</th>
<th>Asbestos Type: %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 of 2</td>
<td>Soft black asphaltic mastic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Asphalt/Binder</td>
<td>None Detected</td>
<td>ND</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Chrysotile 2%</td>
</tr>
</tbody>
</table>

**Lab ID: 18066062**

**Client Sample #:** 12VFT-02-B

**Location:** Beasley Coliseum

<table>
<thead>
<tr>
<th>Layer</th>
<th>Description</th>
<th>Non-Fibrous Materials:</th>
<th>Other Fibrous Materials:%</th>
<th>Asbestos Type: %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 of 3</td>
<td>Clear brittle adhesive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adhesive/Binder</td>
<td>Cellulose 2%</td>
<td>None Detected ND</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Synthetic fibers &lt;1%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hair &lt;1%</td>
<td></td>
</tr>
<tr>
<td>2 of 3</td>
<td>Grey vinyl tile</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vinyl/Binder, Mineral grains</td>
<td>None Detected</td>
<td>ND</td>
</tr>
<tr>
<td>3 of 3</td>
<td>Soft black asphaltic mastic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Asphalt/Binder</td>
<td>None Detected</td>
<td>ND</td>
</tr>
</tbody>
</table>

**Lab ID: 18066063**

**Client Sample #:** 12VFT-01-A

**Location:** Beasley Coliseum

<table>
<thead>
<tr>
<th>Layer</th>
<th>Description</th>
<th>Non-Fibrous Materials:</th>
<th>Other Fibrous Materials:%</th>
<th>Asbestos Type: %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 of 2</td>
<td>Off-white vinyl tile</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vinyl/Binder, Mineral grains</td>
<td>None Detected</td>
<td>ND</td>
</tr>
<tr>
<td>2 of 2</td>
<td>Crumbly yellow mastic</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Sampled by:** Client

**Analyzed by:** Matt Macfarlane

**Reviewed by:** Nick Ly

**Date:** 07/12/2018

**Nick Ly, Technical Director**

---

**Note:** If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.
# Bulk Asbestos Fibers Analysis

**By Polarized Light Microscopy**

**Batch #: 1812751.00**

**Client Project #: 025397-2018**

**Date Received:** 7/6/2018  
**Samples Received:** 31  
**Samples Analyzed:** 31  
**Method:** EPA/600/R-93/116 & EPA/600/M4-82-020

---

### Lab ID: 18066064  
**Client Sample #:** 12VFT-01-B  
**Location:** Beasley Coliseum  
**Layer 1 of 2**  
**Description:** Off-white vinyl tile  
**Non-Fibrous Materials:** Vinyl/Binder, Mineral grains  
**Other Fibrous Materials:**  
<table>
<thead>
<tr>
<th>Asbestos Type</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>None Detected</td>
<td>ND</td>
</tr>
</tbody>
</table>

### Lab ID: 18066065  
**Client Sample #:** 1CWT-01-A  
**Location:** Beasley Coliseum  
**Layer 1 of 2**  
**Description:** White glazed brittle material  
**Ceramic/Binder, Fine grains**  
**Other Fibrous Materials:**  
<table>
<thead>
<tr>
<th>Asbestos Type</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>None Detected</td>
<td>ND</td>
</tr>
</tbody>
</table>

### Lab ID: 18066066  
**Client Sample #:** 1CWT-01-B  
**Location:** Beasley Coliseum  
**Comments:** Unsure of correct layer sequence.  
**Layer 1 of 3**  
**Description:** White glazed brittle material  
**Ceramic/Binder, Fine grains**  
**Other Fibrous Materials:**  
<table>
<thead>
<tr>
<th>Asbestos Type</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>None Detected</td>
<td>ND</td>
</tr>
</tbody>
</table>

---

**Sampled by:** Client  
**Analyzed by:** Matt Macfarlane  
**Reviewed by:** Nick Ly  
**Date:** 07/12/2018  
**Date:** 07/12/2018  
**Nick Ly, Technical Director**

---

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.
Client: Washington State University EH&S
Address: PO Box 641172
Pullman, WA 99164-1172

Attention: Mr. Matt Mckibbin
Project Location: Beasley Coliseum

Bulk Asbestos Fibers Analysis
By Polarized Light Microscopy

Batch #: 1812751.00
Client Project #: 025397-2018
Date Received: 7/6/2018
Samples Received: 31

Samples Analyzed: 31
Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 3 of 3 Description: Grey brittle material
Non-Fibrous Materials: Cellulose 2%
Binder/Filler, Fine grains
Other Fibrous Materials:% Asbestos Type: %

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.

Sampled by: Client
Analyzed by: Matt Macfarlane Date: 07/12/2018
Reviewed by: Nick Ly Date: 07/12/2018
Nick Ly, Technical Director
**Company**: Washington State University EH&S  
**Address**: PO Box 641172  
Pullman, WA 99164-1172

**Project Manager**: Mr. Matt McKibbin  
**Phone**: (509) 335-3041  
**Direct**: (509) 335-5311

**NVL Batch Number**: 1812751.00  
**TAT**: 5 Days  
**AH**: No  
**Due Date**: 7/13/2018  
**Time**: 9:40 AM  
**Fax**: (509) 730-5548  
**Email**: mrmckibbin@wsu.edu

**Project Name/Number**: 025397-2018  
**Project Location**: Beasley Coliseum

**Subcategory**: PLM Bulk

**Item Code**: ASB-02  
**EPA 600/R-93-116 Asbestos by PLM <bulk>

**Total Number of Samples**: 31

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</tr>
<tr>
<td>2</td>
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<td>3</td>
<td>18066038</td>
<td>FSD-01-A</td>
<td>A</td>
</tr>
<tr>
<td>4</td>
<td>18066039</td>
<td>FSD-01-B</td>
<td>A</td>
</tr>
<tr>
<td>5</td>
<td>18066040</td>
<td>APM-01-B</td>
<td>A</td>
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<tr>
<td>6</td>
<td>18066041</td>
<td>CPTMBR-01-B</td>
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<td>7</td>
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<td>CMU-01-B</td>
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<td>8</td>
<td>18066043</td>
<td>12CT-02-A</td>
<td>A</td>
</tr>
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<td>9</td>
<td>18066044</td>
<td>12CT-02-B</td>
<td>A</td>
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<tr>
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<td>18066052</td>
<td>BWM-01-B</td>
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<tr>
<td>18</td>
<td>18066053</td>
<td>2x45CT-02-A</td>
<td>A</td>
</tr>
</tbody>
</table>

**Print Name**: Emily Schubert  
**Date**: 7/6/2018  
**Time**: 11:38 AM  
**Entered By**: Emily Schubert

**Office Use Only**

**Sampled by**: Client  
**Relinquished by**: Federal Express

**Received by**: Emily Schubert  
**Company**: NVL  
**Date**: 7/6/18  
**Time**: 940

**Analyzed by**: Matt Macfarlane  
**Company**: NVL  
**Date**: 7/12/18

**Special Instructions:**

Date: 7/6/2018  
Time: 11:38 AM  
Entered By: Emily Schubert

Date: 7/6/2018  
Time: 11:38 AM  
Entered By: Emily Schubert
### Project Details

**NVL Batch Number:** 1812751.00  
**TAT:** 5 Days  
**AH:** No  
**Rush TAT:** No  
**Due Date:** 7/13/2018  
**Time:** 9:40 AM  
**Email:** mrmckibbin@wsu.edu  
**Fax:** (509) 730-5548

### Project Information

- **Project Name/Number:** 025397-2018  
- **Project Location:** Beasley Coliseum

### Sample Details

- **Subcategory:** PLM Bulk  
- **Item Code:** ASB-02  
- ** EPA 600/R-93-116 Asbestos by PLM <bulk>

### Total Number of Samples

- Total Number of Samples: 31  
- Rush Samples: 

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<td>2x45CT-01-A</td>
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<td>18066056</td>
<td>2x45CT-01-B</td>
<td>A</td>
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<tr>
<td>22</td>
<td>18066057</td>
<td>4PCB-01-A</td>
<td>A</td>
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<td>18066059</td>
<td>WJC-01-A</td>
<td>A</td>
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<td>18066060</td>
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<td>A</td>
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<td>26</td>
<td>18066061</td>
<td>12VFT-02-A</td>
<td>A</td>
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<tr>
<td>27</td>
<td>18066062</td>
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<td>18066064</td>
<td>12VFT-01-B</td>
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<tr>
<td>30</td>
<td>18066065</td>
<td>1CWT-01-A</td>
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<td>31</td>
<td>18066066</td>
<td>1CWT-01-B</td>
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### Office Use Only

- **Sampled by:** Client  
- **Relinquished by:** Federal Express  
  
- **Received by:** Emily Schubert  
- **Analyzed by:** Matt Macfarlane  
- **Results Called by:** NVL  
- **Fax:**  
- **Emailed:** 

### Special Instructions:

Date: 7/6/2018  
Time: 11:38 AM  
Entered By: Emily Schubert  

Page 14 of 32
### ASBESTOS
**CHAIN OF CUSTODY**

**Company:** Washington St. University EH&S  
**Address:** PO Box 641172  
**Pullman, WA 99164**  
**Phone:** 509-335-5604  

**Project Manager:** Matt McKibbin  
Cell: (509) 730-5548  
Email: mrmckibbin@wsu.edu, stephan.gilley@wsu.edu  
Fax: ( )  

**Project Name/Number:** 025397-2018  
**Project Location:** BEASLEY  
**Coliseum**

- PCM Air (NIOSH 7400)  
- PLM (EPA 600/R-93-116)  
- PLM Gravimetry (600/R-93-116)  
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)  
- TEM (NIOSH 7402)  
- TEM (AHERA)  
- EPA 400 Points (600/R-93-116)  
- Asbestos in Vermiculite (EPA 600/R-04/004)  
- TEM (EPA Level II Modified)  
- EPA 1000 Points (600/R-93-116)  
- Asbestos in Sediment (EPA 1900 Points)  
- Other

**Reporting Instructions:** Email  
- Call ( )  
- Fax ( )  
- Email  
  mrmckibbin@wsu.edu, stephan.gilley@wsu.edu

**Total Number of Samples:** 31

<table>
<thead>
<tr>
<th>Sample ID</th>
<th>Description</th>
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</tr>
</thead>
<tbody>
<tr>
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<td>see attached sheets</td>
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<th>Sampled by</th>
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<th>Company</th>
<th>Date</th>
<th>Time</th>
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<tbody>
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<td>Stephan Gilley</td>
<td></td>
<td>WSU EH&amp;S</td>
<td>7-2-18</td>
<td>14:30</td>
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<td>7-5-18</td>
<td>14:55</td>
</tr>
</tbody>
</table>

**Office Use Only**

- Received by
- Analyzed by
- Called by
- Faxed/Email by

**Print Name:**  
**Signature:**  
**Company:**  
**Date:**  
**Time:**
## Laboratory Results

<table>
<thead>
<tr>
<th>Lab Sample Number</th>
<th>Client Sample Number</th>
<th>Layer Type</th>
<th>Lab Gross Description</th>
<th>Asbestos</th>
<th>Other Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-07-00830-001</td>
<td>TSI-01-E</td>
<td>Gray Powdery Fibrous; Homogeneous</td>
<td>NAD</td>
<td>35% Fibrous Glass</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>65% Non-Fibrous</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-07-00830-002</td>
<td>SU-01-B</td>
<td>Pink Vinyl-Like; Homogeneous</td>
<td>4% Chrysotile</td>
<td>96% Non-Fibrous</td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td><strong>Total Asbestos: 4%</strong></td>
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<tr>
<td>18-07-00830-003</td>
<td>APM-02-C</td>
<td>Yellow/Black Adhesive; Inhomogeneous</td>
<td>6% Chrysotile</td>
<td>94% Non-Fibrous</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td><strong>Total Asbestos: 6%</strong></td>
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</tr>
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<td></td>
<td></td>
<td><strong>Unable to separate mastics</strong></td>
<td></td>
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<tr>
<td>18-07-00830-004</td>
<td>CPTMY-01-C</td>
<td>Yellow Adhesive; Homogeneous</td>
<td>NAD</td>
<td>2% Synthetic</td>
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<td></td>
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<td>98% Non-Fibrous</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>18-07-00830-005</td>
<td>GWB-01-C</td>
<td>White Chalky; Brown Fibrous; Inhomogeneous</td>
<td>Trace &lt;1% Chrysotile</td>
<td>15% Cellulose</td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>2% Fibrous Glass</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>83% Non-Fibrous</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Total Asbestos: Trace &lt;1%</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chrysotile present in joint compound material. This material alone contains 2% Chrysotile.
Environmental Hazards Services, L.L.C

Client Number: 49-3308
Project/Test Address: Beasley Coliseum; Pullman, WA

QC Sample: 27-M12009-3
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Kathy Fletcher

Reviewed By Authorized Signatory: Missy Kanode

QA/QC Clerk

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0 VELAP 460172. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND:
NAD = no asbestos detected
### Asbestos Chain-of-Custody

**Company Name:** Washington State University EH&S  
**Address:** P.O. Box 641172  
**City/State:** Pullman, WA 99164

**Phone:** 509-335-5604  
**Fax:** ( )  
**E-mail:** rmckibbin@wsu.edu, stephan.gilley@wsu.edu  
**Acct. Number:**

**Project Name / Testing Address:** BEASLEY COLISEUM  
**City/State (Required):** Pullman, WA

**Collected by:** Stephan Gilley  
**Purchase Order Number:** 025397-2018

---

**Turn Around Times:**

*If no TAT is specified, sample(s) will be processed and charged as 3-day TAT.*

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<th>2 - Day</th>
<th>3 - Day</th>
<th>Same Day (Must Call Ahead)</th>
<th>Weekend (Must Call Ahead)</th>
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<th>TRAM Filter Code</th>
<th>PCM</th>
<th>TSI/Read Code 100</th>
<th>TRA/Read Code</th>
<th>Time On</th>
<th>Time Off</th>
<th>Flow Rate</th>
<th>Total Time (min)</th>
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<tr>
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<td>7-2-18</td>
<td>✓</td>
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<td>CPTMY-01-C</td>
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</table>

**Comments:**

**Released by:** Stephan Gilley  
**Signature:**  
**Date/Time:** 7-5-18 14:15

**Received by:**  
**Signature:**  
**Date/Time:** 7-5-18 19:37
July 9, 2018

Matt McKibbin
Washington State University EH&S
PO Box 641172
Pullman, WA 99164-1172

RE:  Metals Analysis; NVL Batch # 1812752.00

Dear Mr. McKibbin,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846-3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm² by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft². TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m³. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

Shalini Patel, Laboratory Analyst
**Analysis Report**  
**Total Lead (Pb)**

**Client:** Washington State University EH&S  
**Address:** PO Box 641172  
Pullman, WA 99164-1172

**Attention:** Mr. Matt McKibbin  
**Project Location:** Beasley Coliseum

**Batch #:** 1812752.00  
**Matrix:** Paint  
**Method:** EPA 3051/7000B  
**Client Project #:** 025397-2018  
**Date Received:** 7/6/2018  
**Samples Received:** 5  
**Samples Analyzed:** 5

<table>
<thead>
<tr>
<th>Lab ID</th>
<th>Client Sample #</th>
<th>Sample Weight (g)</th>
<th>RL in mg/Kg</th>
<th>Results in mg/Kg</th>
<th>Results in percent</th>
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<tbody>
<tr>
<td>18066067</td>
<td>Pb-01</td>
<td>0.1934</td>
<td>52</td>
<td>&lt;52</td>
<td>&lt;0.0052</td>
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<td>18066068</td>
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<td>89</td>
<td>&lt;89</td>
<td>&lt;0.0089</td>
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<tr>
<td>18066069</td>
<td>Pb-03</td>
<td>0.0216</td>
<td>230</td>
<td>&lt;230</td>
<td>&lt;0.023</td>
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<td>18066070</td>
<td>Pb-04</td>
<td>0.0110</td>
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<td>&lt;450</td>
<td>&lt;0.045</td>
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<tr>
<td>18066071</td>
<td>Pb-05</td>
<td>0.0088</td>
<td>570</td>
<td>9100</td>
<td>0.91</td>
</tr>
</tbody>
</table>

**Comments:** Small sample size (<0.05g) for most of the samples.

---

Sampled by: Client  
Analyzed by: Yasuyuki Hida  
Reviewed by: Shalini Patel  
Date Analyzed: 07/09/2018  
Date Issued: 07/09/2018  
Shalini Patel, Laboratory Analyst

mg/ Kg = Milligrams per kilogram  
RL = Reporting Limit  
< = Below the reporting Limit  
Percent = Milligrams per kilogram / 10000  
Note: Method QC results are acceptable unless stated otherwise.  
Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.
**Project Name/Number:** 025397-2018  
**Project Location:** Beasley Coliseum

**Subcategory** Flame AA (FAA)  
**Item Code** FAA-02  
**Description** EPA 7000B Lead by FAA <paint>

<table>
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<tr>
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<th>Sample ID</th>
<th>Description</th>
<th>A/R</th>
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<tr>
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<td>18066071</td>
<td>Pb-05</td>
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**Print Name**  
**Signature**  
**Company**  
**Date**  
**Time**

**Sampled by**  
**Relinquished by** Federal Express

**Print Name**  
**Signature**  
**Company**  
**Date**  
**Time**

**Received by** Emily Schubert  
**Analyzed by** Yasuyuki Hida  
**Results Called by**

- **Faxed**  
- **Emailed**

**Office Use Only**

**Special Instructions:**

Date: 7/6/2018  
Time: 11:44 AM  
Entered By: Soumeya Benzina
METALS
CHAIN OF CUSTODY

Company: Washington State University EH&S
Address: P.O. Box 641172
Pullman, WA 99164
Phone: 509-335-3401

Project Manager: Matt McKibbin
Cell: 509-730-5568
Email: mmckibbin@wsu.edu, stephan.gilley@wsu.edu
Fax: -

Project Name/Number: 025397-2018
Project Location: BEASLEY COLISEUM

<table>
<thead>
<tr>
<th>Total Metals</th>
<th>Q ppm</th>
<th>Q AF Filter</th>
<th>Q Paint Chips (cm)</th>
<th>Q Soil</th>
<th>Q CAF (ppb)</th>
<th>Q HVAC (ppb)</th>
<th>Q HVAC (ppb)</th>
<th>Q HVAC (ppb)</th>
<th>Q HVAC (ppb)</th>
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<td>Q TCLP</td>
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Total Number of Samples: 5

<table>
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<th>Sample ID</th>
<th>Description</th>
<th>A/R</th>
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<tbody>
<tr>
<td>1</td>
<td>Pb-01 Room 12A: White plaster wall</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Pb-02 Room 39: White concrete wall</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Pb-03 Room 106: White CMU wall</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Pb-04 Room 900/unnamed: Red CMU wall</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Pb-05 Room 104A: White metal door frame</td>
<td></td>
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<tr>
<td>6</td>
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Print Name: Stephan Gilley
Signature: [Signature]
Company: WSU EH&S
Date: 6-28-18
Time: 13:05

Print Name: Stephan Gilley
Signature: [Signature]
Company: WSU EH&S
Date: 7-5-18
Time: 14:45

1812752

Office Use Only

Received by: [Signature]
Company: [Company]
Date: 7/8/18
Time: 14:45

Accepted by: [Signature]
Company: [Company]
Date: 7/8/18
Time: 14:45

4708 Aurora Ave N, Seattle, WA 98103 | 206.547.0100 | 206.634.1936 | www.nvilabs.com
November 19, 2018

Matt McKibbin
Washington State University EH&S
PO Box 641172
Pullman, WA 99164-1172

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1822650.00

Client Project: N-A
Location: Beasley Coliseum

Dear Mr. McKibbin,

Enclosed please find test results for the 2 sample(s) submitted to our laboratory for analysis on 11/14/2018.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both EPA 600/M4-82-020, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and EPA 600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

Nick Ly, Technical Director

Enc.: Sample Results
**Bulk Asbestos Fibers Analysis**

**By Polarized Light Microscopy**

Client: Washington State University EH&S  
Address: PO Box 641172  
Pullman, WA 99164-1172  

**Attention: Mr. Matt McKibbin**  
Project Location: Beasley Coliseum

---

**Batch #: 1822650.00**  
Client Project #: N-A  
Date Received: 11/14/2018  
Samples Received: 2  
Samples Analyzed: 2  
Method: EPA/600/R-93/116 & EPA/600/M4-82-020

---

**Lab ID: 18116505  Client Sample #: V-01**  
Location: Beasley Coliseum

<table>
<thead>
<tr>
<th>Layer 1 of 1</th>
<th>Description: Tan micaceous material with white chalky material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Fibrous Materials:</td>
<td>Other Fibrous Materials:%</td>
</tr>
<tr>
<td>Vermiculite, Mica, Gypsum/Binder</td>
<td>Cellulose 8%</td>
</tr>
<tr>
<td>Fine grains, Calcareous particles, Insect parts</td>
<td>Synthetic fibers 2%</td>
</tr>
<tr>
<td>Nut shell</td>
<td>Glass fibers &lt;1%</td>
</tr>
</tbody>
</table>

**Asbestos Type: %**  
Chrysotile 4%  
Actinolite <1%

---

**Lab ID: 18116506  Client Sample #: V-02**  
Location: Beasley Coliseum

<table>
<thead>
<tr>
<th>Layer 1 of 1</th>
<th>Description: Tan micaceous material with white chalky material</th>
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<tbody>
<tr>
<td>Non-Fibrous Materials:</td>
<td>Other Fibrous Materials:%</td>
</tr>
<tr>
<td>Vermiculite, Mica, Gypsum/Binder</td>
<td>Cellulose 7%</td>
</tr>
<tr>
<td>Fine grains, Calcareous particles</td>
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</tbody>
</table>

**Asbestos Type: %**  
Chrysotile 5%  
Actinolite <1%

---

Sampled by: Client  
Analyzed by: Akane Yoshikawa  
Reviewed by: Nick Ly  
Date: 11/15/2018  
Date: 11/19/2018  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.

---

(page 2 of 4)
Company: Washington State University EH&S  
Address: PO Box 641172  
Pullman, WA 99164-1172

Project Manager: Mr. Matt McKibbin  
Phone: (509) 335-3041  
Direct: (509) 335-5311

NVL Batch Number: 1822650.00  
TAT: 2 Days  
AH: No  
Rush TAT:  
Due Date: 11/16/2018  
Time: 9:20 AM

Email: mrmckibbin@wsu.edu  
Fax: (509) 730-5548

Project Name/Number: N-A  
Project Location: Beasley Coliseum

Subcategory: PLM Bulk  
Item Code: ASB-02  
EPA 600/R-93-116 Asbestos by PLM <bulk>

Total Number of Samples: 2  
Rush Samples: No

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<th>A/R</th>
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<td>A</td>
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<td>18116506</td>
<td>V-02</td>
<td>A</td>
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Print Name  
Signature  
Company  
Date  
Time

Sampled by: Client  
Relinquished by: Federal Express

Print Name  
Signature  
Company  
Date  
Time

Received by: Emily Schubert  
NVL  
11/14/18  
920

Analyzed by: Akane Yoshikawa  
NVL  
11/15/18

Results Called by: NVL

Fax  
Emailed

Special Instructions:

Date: 11/14/2018  
Time: 10:44 AM  
Entered By: Shaina Mitchell

Page 3 of 4
**ASBESTOS**
**CHAIN OF CUSTODY**

**Company:** Washington St. University EH&S  
**Address:** PO Box 641172  
**Pullman, WA 99164**  
**Phone:** 509-335-3041

**Project Manager:** Matthew McKibbin  
**Cell:** (509) 730-5548  
**Email:** mrmckibbin@wsu.edu

<table>
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<th>Project Name/Number</th>
<th>Project Location</th>
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<tr>
<td>PCM Air (NIOSH 7400)</td>
<td>TEM (NIOSH 7402)</td>
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<tr>
<td>PLM (EPA 600/R-93-116)</td>
<td>TEM (AHERA)</td>
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<tr>
<td>PLM Gravimetry (600/R-93-116)</td>
<td>TEM (EPA Level II Modified)</td>
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<td>Asbestos Friable/Non-Friable (EPA 600/R-93/116)</td>
<td>EPA 400 Points (600/R-93-116)</td>
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<td>Asbestos in Vermiculite (EPA 600/R-04/004)</td>
<td>Asbestos in Sediment (EPA 1900 Points)</td>
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<td>Other</td>
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**Reporting Instructions**  
- [ ] Call ( )  
- [ ] Fax ( )  
- [ ] Email  

**Total Number of Samples:** 2

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<td>V-02</td>
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**Sampled by:** Matthew McKibbin  
**Relinquish by:** Matthew McKibbin

**Office Use Only**

<table>
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<th>Company</th>
<th>Date</th>
<th>Time</th>
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<tr>
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<td>WSU EH&amp;S</td>
<td>11-8-18</td>
<td>1200</td>
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<th>Time</th>
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<tbody>
<tr>
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<td>WSU EH&amp;S</td>
<td>11-8-18</td>
<td>1200</td>
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</table>
APPENDIX E
Laboratory Accreditations and Certificates
For the National Voluntary Laboratory Accreditation Program

Effective Dates
2017-10-01 through 2018-09-30

This laboratory is accredited in accordance with the recognized international standard ISO/IEC 17025:2005.

Asbestos Fiber Analysis

listed on the Scope of Accreditation, for

is accredited by the National Voluntary Laboratory Accreditation Program for specific services.

Seattle, WA

NVL Laboratories Inc.

NVLAP LABCODE: 102063-0

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP

National Institute of Standards and Technology

United States Department of Commerce
SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

NVL Laboratories, Inc.
4708 Aurora Avenue N.
Seattle, WA 98103
Mr. Nghiêp Vi Ly
Phone: 206-547-0100  Fax: 206-634-1936
Email: nick.l@nvllabs.com
http://www.nvllabs.com

ASBESTOS FIBER ANALYSIS

Bulk Asbestos Analysis

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
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<td>EPA -- Appendix E to Subpart E of Part 763 -- Interim Method of the Determination of Asbestos in Bulk Insulation Samples</td>
</tr>
<tr>
<td>18/A03</td>
<td>EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials</td>
</tr>
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</table>

For the National Voluntary Laboratory Accreditation Program

Effective 2017-10-01 through 2018-09-30
APPENDIX F
Building Inspector Training Certificates
Certificate of Completion

Matthew McKibbin

has successfully completed

4-Hr AHERA Certified Building Inspector Refresher Training

In compliance with TSCA Title II AHERA 40 CFR Part 763

as approved by the State of Missouri

Accreditation #MO-129

Date of Training: April 26, 2018 in Pullman, WA

Date of Exam: April 26, 2018. Passing score of at least 70%.

Certificate # BIR20180426-10

Expires: 04/26/2019

Jennifer Caraway, Instructor
Certificate of Completion

Stephan Gilley

has successfully completed

4-Hr AHERA Certified Building Inspector Refresher Training

In compliance with TSCA Title II AHERA 40 CFR Part 763

as approved by the State of Missouri

Accreditation #MO-129

Date of Training: April 26, 2018 in Pullman, WA

Date of Exam: April 26, 2018. Passing score of at least 70%.

Certificate # BIR20180426-03

Expires: 04/26/2019

Jennifer Caraway, Instructor
PART 1       GENERAL

1.01       SUMMARY

A. Contractor shall perform the entire Work in accordance with the Contract Documents.

B. Without limiting the requirements of the Contract Documents, the Work of the Contract can be summarized as follows:

1. Beasley Coliseum is preparing a theater rigging demolition project. The scope of the project is to remove and discard the proscenium, 3 electrics, all associated hardware, and rigging components. The Contractor is required to provide all equipment necessary to safely remove and discard the theater rigging components.

1.02       SCHEDULE OF ALTERNATES – NOT USED

1.03       SCHEDULE OF ALLOWANCES – NOT USED

1.04       SCHEDULE OF UNIT PRICES – NOT USED

1.01       GENERAL INFORMATION

A. Owner and Owner's Designated Representative:

1. Owner: Board of Regents
   Washington State University
   Pullman, WA 99164-1045

2. Owner's Designated Representative:
   a. All Owner capital projects are administered by the Department of Facilities Services, Capital. Project specific designated representatives are listed within the Agreement.

3. Consulting Services: Owner has retained an Architect/Engineer to design the entire Project. The Architect/Engineer is identified below, as are others involved as members of the Owner team working on the Project:
   a. Theatre Consultant: Shuler Shook, Pleasanton, CA
   b. Structural Engineer: Coffman Engineers, Spokane, WA
   c. Electrical Engineer: Coffman Engineers, Spokane, WA

1.02       SPECIAL CONDITIONS

A. Site Access: The lower level entrance into Beasley Coliseum has a height and width limitation. Specific details to be discussed at Pre-Bid.
B. Schedule and Phasing: Construction activities may only occur between June 30, 2019 to August 3, 2019. (Contract Time is anticipated to be within this construction window)

C. Owner Occupancy: The building will be occupied during construction.


END OF SECTION 01 11 00
PART 1 GENERAL

1.01 SUMMARY

A. This Section includes the administrative and procedural requirements for executing changes in the Work. This Section is subject to and governed by the Agreement and General Conditions. In the event of any conflict, the Agreement and General Conditions will have a higher precedence as established in the General Conditions.

1.02 SUBMITTALS

A. Contractor shall submit a breakdown of its actual wage rates prior to commencement of construction activities. The breakdown must show:

1. Basic wage rate (Based on L&I Intent to Pay Prevailing Wages);
2. Fringe Package (Based on L&I Intent to Pay Prevailing Wages);
3. FUI (Federal Unemployment Insurance);
4. FICA (Federal Insurance Compensation Act);
5. SUI (State Unemployment Compensation Act);
6. Medicare; and
7. WC (Workers Compensation).

B. Contractor shall submit detailed supporting documentation to verify the above rates, if requested by Owner. All such rates shall be subject to audit.

C. Contractor shall submit prior to commencement of construction activities a list of all equipment that it anticipates will be used on the Project and the actual operating cost of each piece of equipment. The General Conditions describe allowable equipment charges. All costs shall be subject to audit.

1.03 CONTRACT CHANGE PROPOSAL PROCEDURES

A. Contractor shall maintain an Issues Log/ CCP Log as described in the General Conditions:

1. The action status shall indicate which party is currently responsible and when it is appropriate to submit a CCP to Owner. Contractor shall submit a Contract Change Proposal (CCP) with Substantiating Documentation, as described in subsection C below, to Owner within 7 Days of this action status change.

2. Upon final agreement and authorization by Owner a CCP may be incorporated into the Contract via Change Order and shall be reflected on the Issues Log.
B. Direction to perform Work:

1. Owner may directly order Work by a written Work Directive (WD). WDs may be unilateral or bilateral as described in the General Conditions and may be issued on a fixed price or on a "cost-not-to-exceed" basis. The WD may include the following:
   a. A detailed description of the proposed change, products, and location of modification to the Work;
   b. Supplementary or revised Drawings and/or Specifications; and
   c. Projected time for making the change and a statement as to whether overtime work is, or is not, acceptable.

C. Substantiating Documentation required with all CCPs:

1. Contractor shall provide back-up documentation required to substantiate any proposed change in the following format:
   a. CCP narrative, including:
      1) Description of proposed change. In order to allow for efficient review of a change proposal Contractor shall provide enough narrative to the line item breakdown to allow Owner to properly assess that the change is fair and reasonable;
      2) Cause of or reason for making change with a statement of why proposed change is not covered by Contract Documents
      3) Both credited and additive elements relating to a change in Contract Sum and/or Contract Time;
      4) A specific period of time during which Contractor's pricing will be considered valid;
      5) Any schedule considerations that may trigger further impact to the Contract Time if acceptance of the proposed change if delayed beyond a specific date; and
      6) Date change Work is to be completed.
   b. Owner supplied Change Proposal Submittal Form.
   c. CCP Cost Estimate Detail Sheet(s), or other form acceptable to Owner, including:
      1) Line-item estimate detailing material, labor, equipment, Subcontractor, and supplier costs and quantities; and
      2) Subcontractor and supplier proposals with supporting line-item estimates.
   d. CCP Progress Schedule with Contemporaneous Period Analysis detailing if any impact to the planned progress of the Work and
critical path.

e. Other supporting documentation, as appropriate.

D. Correlation with Contractor's Submittals:

1. Application for Payment forms shall record each Unilateral and Bilateral Change Order as a separate item of Work.

2. The Progress Schedule shall be revised to reflect changes in the Contract Time.

3. Project Record shall incorporate all changed Work.

END OF SECTION 01 26 00
PART 1 GENERAL

1.01 SUMMARY

A. This Section includes procedures for preparation and submittal of Applications for Payment.

1.02 SUBMITTALS

A. Prior to submitting its first Application for Payment, Contractor shall:

1. Submit a preliminary Progress Schedule per Section 01 32 13 – Progress Schedule.

2. If requested, submit a projected monthly cash-flow analysis for the duration of the Project.

3. Submit an approved Intent to Pay Prevailing Wages form prior to commencing the Work. An approved Intent to Pay Prevailing Wages form must be on file with Owner for each classification of laborers, workers, or mechanics employed by Contractor or Subcontractors whose Work is included in an Application for Payment.

4. “Washington State Prevailing Wage Rates for Public Works Contracts/Whitman County” are made a part of the Contract Documents and are included at the end of this Section. It is Contractor’s responsibility to verify with the Washington State Department of Labor and Industries the most current and applicable prevailing wage rates for this Project.

5. Submit and receive approval of the Schedule of Values per Section 01 29 73 – Schedule of Values, and the General Conditions. All Applications for Payment shall be in the same format.

6. Submit a list of all Subcontractors with points of contact and other contact information, including phone number, email address, and mailing address.

7. Submit a list of all major material suppliers with points of contact and other contact information, including phone number, email address, and mailing address.

8. Submit Retainage Option Form to Owner for the disposition of retainage funds.

   a. In accordance with Chapter 60.28 of the Revised Code of Washington (RCW), Owner shall reserve retainage not to exceed 5% of the monies earned by Contractor as a trust fund for the protection and payment of:

      1) The claims of any person and/or Owner arising out of or relating to Work performed on the Project; and

      2) The State with respect to taxes, fees, or penalties that may be imposed and due from Contractor (see General
b. Retainage will be released per Section 01 70 00 - Project Close-Out.

c. At the option of Contractor, the moneys reserved by Owner shall be:

1) Retained in a fund by Owner;
2) Bonded for all of the retainage using a bond form acceptable to Owner;
3) Placed in escrow with a bank or trust company by Owner.

   a) Escrow: If the retained funds are to be placed in escrow, Contractor will select the escrow agent, subject to approval by Owner. The selected agent must be a bank or trust company in the State of Washington.

   b) Escrow Agent: If Contractor elects the escrow option, an escrow agreement shall be executed by Contractor, Owner, and bank or trust company. Three copies of the agreement should be completed and executed by Contractor and returned to Owner for execution; Owner will forward copies to the bank or trust company for receipt, acceptance, and execution. The bank or trust company will retain one copy and return one copy each to Contractor and Owner. A completed and signed escrow agreement must be on file with Owner before Contractor's first Application for Payment is processed.

   c) Escrow Investments: The bank or trust company may invest the retained funds in bonds and other securities selected by Contractor, except stocks, subject to the written approval of Owner.

   d) The investments selected must mature on or prior to the date 45 Days following Final Acceptance of the Work. Interest on such investments may be paid to Contractor as it accrues.

   e) Escrow Costs and Fees: All escrow costs and fees shall be paid by Contractor.

   f) Release of Escrow Investments to Contractor: Retainage will be released per Section 01 70 00 - Project Close-Out. Once Contractor has fully complied with the Contract Documents and statute, Owner shall issue written instructions to the bank or trust company to release to Contractor the investment held in escrow.
B. Draft Application for Payment:

1. Contractor shall submit a draft, itemized Application for Payment within the last 7 Days of the month.

2. The draft application does not constitute a payment request and shall not be signed.

3. Contractor shall carefully check all extensions, totals, and required information for accuracy before submittal.

4. Contractor and Owner may meet to confer regarding the current progress of the Work and the amount of payment to which Contractor is entitled. Owner may request that Contractor provide supporting documentation substantiating its right to payment. Contractor is not entitled to make a final payment request, nor is any payment due Contractor, until such data is furnished. Contractor may include in its Application for Payment projected costs to the end of the month.

   a. Fill in the following information within Owner’s Application for Payment form:

      1) Percentage of Work completed based upon the approved schedule of values.

      2) List Change Orders approved by Owner prior to submission date. Use Owner’s designations. Do not bill for changed Work until a fully executed Change Order has been received.

      3) Certification of Participation WBE and MBEs, all certification types acceptable, supply this regardless of having firms to report upon.

      4) List all Subcontractors that have performed Work at the site during the pay period.

      5) If applicable, Apprentice/Journeyman Participation.

5. Contractor shall submit or make available for review the following prior to the draft Application for Payment:

   a. Project Record; (see Section 01 78 39 – Project Record)

   b. Updated Progress Schedule in native format (see section 01 32 13 – Progress Schedule);

   c. Contractor Quality Control Reports (see Section 01 45 00 - Quality Control); and

   d. Stored Materials: Requests for payment of stored materials may only be made for materials properly stored on or off-site and in full compliance with the General Conditions.

C. Application for Payment:

1. Contractor may not submit the approved Application for Payment (or payment will be withheld) until all requirements of the draft application for
payment are met.

2. Upon approval of the Draft Application for Payment, contractor will be authorized to submit the agreed upon Application for Payment for processing and payment. This application for payment shall be signed by hand by a responsible officer of the Contractor and may be submitted in scanned format electronically.

3. Formal submittal must include all parts of the Application for Payment form.

4. Owner shall make progress payments in such amounts as it determines are properly due within 30 Days of receipt of a properly executed Application for Payment.

5. Owner shall notify Contractor in accordance with Chapter 39.76 RCW if the Application for Payment does not comply with the requirements of the Contract Documents.

D. Disputed Amounts: If Contractor believes it is entitled to payment for Work performed during the prior calendar month in addition to the agreed-upon amount, Contractor may, also within the same period, submit to Owner along with the approved Application for Payment a separate, written payment request specifying the exact additional amount claimed due, the category in the Schedule of Values in which the payment is claimed due, the specific Work for which the additional amount is due, and why the additional payment is due. Furthermore, for the submittal to be considered, Contractor and all Subcontractors shall file with Owner by the same date certified copies of all payroll records relating to the additional amount due, pursuant to WAC 296-127-320.

E. Payments to Subcontractors: Contractor shall pay each Subcontractor no later than 10 Days after receipt of payment from Owner the amount to which the Subcontractor is entitled. Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to lower-tier Subcontractors in a similar manner.

1. Applications for Payment shall not request payment for portions of the Work that Contractor does not intend to pay a Subcontractor, unless such Work has been performed by others whom Contractor intends to pay.

2. If, after making an Application for Payment but before paying a Subcontractor for its performance covered by the Application, Contractor discovers that part or all of the payment otherwise due to the Subcontractor is subject to withholding from the Subcontractor under the Subcontract (such as for unsatisfactory performance or non-payment of lower-tier Subcontractors), Contractor may withhold the amount as allowed under the Subcontract, but it shall:

   a. Give the Subcontractor and Owner written notice of the withholding as soon as practicable once Contractor determines the cause for the withholding but before the due date of the Subcontractor payment;
b. Include the reasons for the withholding and the actions the Subcontractor must take to release the payment; and

c. Once Subcontractor has taken the required remedial actions, pay Subcontractor within 8 Days.

3. Owner may, at its sole option, issue joint checks to Contractor and to any Subcontractor. If Owner makes payments by joint check, such value shall be reflected on the next Application for Payment.

F. Application for Final Payment:

1. Application for Final Payment will be accepted for processing only after Contractor has completed the requirements of Final Completion as described in Section 01 70 00 – Project Close-Out.

G. Release of Retainage:

1. Retainage will be released per Section 01 70 00 - Project Close-Out.

END OF SECTION 01 29 00
Washington State Prevailing Wage

The PREVAILING WAGES listed here include both the hourly wage rate and the hourly rate of fringe benefits. On public works projects, worker's wage and benefit rates must add to not less than this total. A brief description of overtime calculation requirements are provided on the Benefit Code Key.

Journey Level Prevailing Wage Rates for the Effective Date: 2/22/2019

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<tr>
<th>County</th>
<th>Trade</th>
<th>Job Classification</th>
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<th>Overtime</th>
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<td>$37.19</td>
<td>7B</td>
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<tr>
<td>Whitman</td>
<td><strong>Glaziers</strong></td>
<td>Journey Level</td>
<td>$30.59</td>
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<td>Whitman</td>
<td><strong>Heat &amp; Frost Insulators And Asbestos Workers</strong></td>
<td>Journey Level</td>
<td>$51.04</td>
<td>5K</td>
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<td>Whitman</td>
<td><strong>Heating Equipment Mechanics</strong></td>
<td>Journey Level</td>
<td>$54.61</td>
<td>6Z</td>
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<td>Whitman</td>
<td><strong>Hod Carriers &amp; Mason Tenders</strong></td>
<td>Journey Level</td>
<td>$40.54</td>
<td>7B</td>
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<td>Whitman</td>
<td><strong>Industrial Power Vacuum Cleaner</strong></td>
<td>Journey Level</td>
<td>$12.00</td>
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<tr>
<td>Whitman</td>
<td><strong>Inland Boatmen</strong></td>
<td>Journey Level</td>
<td>$12.00</td>
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<tr>
<td>Whitman</td>
<td><strong>Inspection/Cleaning/Sealing Of Sewer &amp; Water Systems By Remote Control</strong></td>
<td>Cleaner Operator, Foamer Operator</td>
<td>$12.00</td>
<td>1</td>
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<tr>
<td>Whitman Inspection/Cleaning/Sealing Of Sewer &amp; Water Systems By Remote Control</td>
<td>Grout Truck Operator</td>
<td>$12.00</td>
<td>1</td>
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<tr>
<td>Whitman Inspection/Cleaning/Sealing Of Sewer &amp; Water Systems By Remote Control</td>
<td>Head Operator</td>
<td>$12.78</td>
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<td>Whitman Inspection/Cleaning/Sealing Of Sewer &amp; Water Systems By Remote Control</td>
<td>Technician</td>
<td>$12.00</td>
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<td>Whitman Inspection/Cleaning/Sealing Of Sewer &amp; Water Systems By Remote Control</td>
<td>Tv Truck Operator</td>
<td>$12.00</td>
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<td>Whitman Insulation Applicators</td>
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<td>$45.11</td>
<td>5A 1B 8N</td>
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<td>Whitman Ironworkers</td>
<td>Journeyman</td>
<td>$61.21</td>
<td>7N 1O</td>
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<td>Whitman Laborers</td>
<td>Air And Hydraulic Track Drill</td>
<td>$39.83</td>
<td>7B 1M</td>
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<td>Whitman Laborers</td>
<td>Asphalt Raker</td>
<td>$39.83</td>
<td>7B 1M</td>
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<td>Asphalt Roller, Walking</td>
<td>$39.56</td>
<td>7B 1M</td>
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<tr>
<td>Whitman Laborers</td>
<td>Brick Pavers</td>
<td>$39.29</td>
<td>7B 1M</td>
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<td>Whitman Laborers</td>
<td>Brush Hog Feeder</td>
<td>$39.29</td>
<td>7B 1M</td>
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<tr>
<td>Whitman Laborers</td>
<td>Brush Machine</td>
<td>$39.83</td>
<td>7B 1M</td>
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<tr>
<td>Whitman Laborers</td>
<td>Caisson Worker, Free Air</td>
<td>$39.83</td>
<td>7B 1M</td>
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<tr>
<td>Whitman Laborers</td>
<td>Carpenter Tender</td>
<td>$39.29</td>
<td>7B 1M</td>
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<tr>
<td>Whitman Laborers</td>
<td>Cement Finisher Tender</td>
<td>$39.56</td>
<td>7B 1M</td>
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<td>Whitman Laborers</td>
<td>Cement Handler</td>
<td>$39.29</td>
<td>7B 1M</td>
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<tr>
<td>Whitman Laborers</td>
<td>Chain Saw Operator &amp; Faller</td>
<td>$39.83</td>
<td>7B 1M</td>
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<tr>
<td>Whitman Laborers</td>
<td>Clean-up Laborer</td>
<td>$39.29</td>
<td>7B 1M</td>
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<td>Compaction Equipment</td>
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<td>7B 1M</td>
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<tr>
<td>Whitman Laborers</td>
<td>Concrete Crewman</td>
<td>$39.29</td>
<td>7B 1M</td>
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<tr>
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<td>Concrete Saw, Walking</td>
<td>$39.56</td>
<td>7B 1M</td>
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<td>Concrete Signalman</td>
<td>$39.29</td>
<td>7B 1M</td>
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<td>Concrete Stack</td>
<td>$39.83</td>
<td>7B 1M</td>
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<td>Whitman Laborers</td>
<td>Confined Space Attendant</td>
<td>$39.29</td>
<td>7B 1M</td>
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<tr>
<td>Whitman Laborers</td>
<td>Crusher Feeder</td>
<td>$39.29</td>
<td>7B 1M</td>
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<td>Whitman Laborers</td>
<td>Demolition</td>
<td>$39.29</td>
<td>7B 1M</td>
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<td>Whitman Laborers</td>
<td>Demolition Torch</td>
<td>$39.56</td>
<td>7B 1M</td>
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<td>Whitman Laborers</td>
<td>Dope Pot Fireman, Non-mechanical</td>
<td>$39.56</td>
<td>7B 1M</td>
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<tr>
<td>Whitman Laborers</td>
<td>Driller Helper (when Required To Move &amp; Position Machine)</td>
<td>$39.56</td>
<td>7B 1M</td>
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<tr>
<td>Whitman Laborers</td>
<td>Drills With Dual Masts</td>
<td>$40.11</td>
<td>7B 1M</td>
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<td>Whitman Laborers</td>
<td>Dry Stack Walls</td>
<td>$39.29</td>
<td>7B 1M</td>
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<td>Whitman Laborers</td>
<td>Dumpman</td>
<td>$39.29</td>
<td>7B 1M</td>
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<td>Whitman Laborers</td>
<td>Erosion Control Laborer</td>
<td>$39.29</td>
<td>7B 1M</td>
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<tr>
<td>Whitman Laborers</td>
<td>Final Detail Cleanup (i.e., Dusting, Vacuuming, Window Cleaning; Not Construction Debris Cleanup)</td>
<td>$37.19</td>
<td>7B 1M</td>
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<td>Firewatch</td>
<td>$39.29</td>
<td>7B 1M</td>
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<td>Whitman Laborers</td>
<td>Form Cleaning Machine Feeder, Stacker</td>
<td>$39.29</td>
<td>7B</td>
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<td>Whitman Laborers</td>
<td>Form Setter, Paving</td>
<td>$39.56</td>
<td>7B</td>
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<td>Whitman Laborers</td>
<td>General Laborer</td>
<td>$39.29</td>
<td>7B</td>
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<td>Grade Checker</td>
<td>$41.82</td>
<td>7B</td>
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<td>Whitman Laborers</td>
<td>Grout Machine Header Tender</td>
<td>$39.29</td>
<td>7B</td>
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<td>Whitman Laborers</td>
<td>Guard Rail</td>
<td>$39.29</td>
<td>7B</td>
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<td>$39.83</td>
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<td>Whitman Laborers</td>
<td>Hazardous Waste Worker (level A)</td>
<td>$40.11</td>
<td>7B</td>
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<td>Hazardous Waste Worker (level B)</td>
<td>$39.83</td>
<td>7B</td>
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<td>Hazardous Waste Worker (level C)</td>
<td>$39.56</td>
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<td>Hazardous Waste Worker (level D)</td>
<td>$39.29</td>
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<td>Whitman Laborers</td>
<td>Hdpe Or Similar Liner Installer</td>
<td>$39.29</td>
<td>7B</td>
<td>1M</td>
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<td>Whitman Laborers</td>
<td>High Scaler</td>
<td>$39.83</td>
<td>7B</td>
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<td>Whitman Laborers</td>
<td>Jackhammer Operator Miner, Class “b”</td>
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<td>Whitman Laborers</td>
<td>Laser Beam Operator</td>
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<td>7B</td>
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<td>Whitman Laborers</td>
<td>Miner, Class “a”</td>
<td>$39.29</td>
<td>7B</td>
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<td>Whitman Laborers</td>
<td>Miner, Class “c”</td>
<td>$39.83</td>
<td>7B</td>
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<td>7B</td>
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<td>Whitman Laborers</td>
<td>Monitor Operator, Air Track Or Similar Mounting</td>
<td>$39.83</td>
<td>7B</td>
<td>1M</td>
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<tr>
<td>Whitman Laborers</td>
<td>Mortar Mixer</td>
<td>$39.83</td>
<td>7B</td>
<td>1M</td>
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<td>Whitman Laborers</td>
<td>Nipper</td>
<td>$39.29</td>
<td>7B</td>
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<tr>
<td>Whitman Laborers</td>
<td>Nozzleman</td>
<td>$39.83</td>
<td>7B</td>
<td>1M</td>
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<td>Whitman Laborers</td>
<td>Nozzleman, Water (to Include Fire Hose), Air Or Steam</td>
<td>$39.56</td>
<td>7B</td>
<td>1M</td>
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<tr>
<td>Whitman Laborers</td>
<td>Pavement Breaker, 90 Lbs. &amp; Over</td>
<td>$39.83</td>
<td>7B</td>
<td>1M</td>
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<td>Whitman Laborers</td>
<td>Pavement Breaker, Under 90 Lbs.</td>
<td>$39.56</td>
<td>7B</td>
<td>1M</td>
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<td>Whitman Laborers</td>
<td>Pipelayer</td>
<td>$39.83</td>
<td>7B</td>
<td>1M</td>
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<td>Whitman Laborers</td>
<td>Pipelayer, Corrugated Metal Culvert And Multi-plate</td>
<td>$39.56</td>
<td>7B</td>
<td>1M</td>
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<td>Whitman Laborers</td>
<td>Pipewrapper</td>
<td>$39.83</td>
<td>7B</td>
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<td>Whitman Laborers</td>
<td>Plasterer Tenders</td>
<td>$39.83</td>
<td>7B</td>
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<td>Whitman Laborers</td>
<td>Pot Tender</td>
<td>$39.56</td>
<td>7B</td>
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<td>Whitman Laborers</td>
<td>Powderman</td>
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<td>7B</td>
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<td>Whitman Laborers</td>
<td>Powderman Helper</td>
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<td>7B</td>
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<td>Whitman Laborers</td>
<td>Power Buggy Operator</td>
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<td>7B</td>
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<td>Whitman Laborers</td>
<td>Power Tool Operator, Gas, Electric, Pneumatic</td>
<td>$39.56</td>
<td>7B</td>
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<tr>
<td>Whitman Laborers</td>
<td>Railroad Equipment, Power Driven, Except Dual Mobile</td>
<td>$39.56</td>
<td>7B</td>
<td>1M</td>
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<tr>
<td>Whitman</td>
<td>Laborers</td>
<td>Railroad Power Spiker Or Puller, Dual Mobile</td>
<td>$39.56</td>
<td>7B</td>
<td>1M</td>
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<tr>
<td>Whitman</td>
<td>Laborers</td>
<td>Remote Equipment Operator</td>
<td>$40.11</td>
<td>7B</td>
<td>1M</td>
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<tr>
<td>Whitman</td>
<td>Laborers</td>
<td>Remote Equipment Operator (i.e. Compaction And Demolition)</td>
<td>$39.56</td>
<td>7B</td>
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<td>Whitman</td>
<td>Laborers</td>
<td>Rigger/signal Person</td>
<td>$39.56</td>
<td>7B</td>
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<td>Laborers</td>
<td>Riprap Person</td>
<td>$39.29</td>
<td>7B</td>
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<td>Laborers</td>
<td>Rodder &amp; Spreader</td>
<td>$39.56</td>
<td>7B</td>
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<td>Whitman</td>
<td>Laborers</td>
<td>Sandblast Tailhoseman</td>
<td>$39.29</td>
<td>7B</td>
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<td>Whitman</td>
<td>Laborers</td>
<td>Scaffold Erector, Wood Or Steel</td>
<td>$39.29</td>
<td>7B</td>
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<td>Whitman</td>
<td>Laborers</td>
<td>Stake Jumper</td>
<td>$39.29</td>
<td>7B</td>
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<td>Whitman</td>
<td>Laborers</td>
<td>Structural Mover</td>
<td>$39.29</td>
<td>7B</td>
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<td>Whitman</td>
<td>Laborers</td>
<td>Tailhoseman (water Nozzle)</td>
<td>$39.29</td>
<td>7B</td>
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<td>Whitman</td>
<td>Laborers</td>
<td>Timber Bucker &amp; Faller (by Hand)</td>
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<td>7B</td>
<td>1M</td>
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<td>Whitman</td>
<td>Laborers</td>
<td>Track Laborer (rr)</td>
<td>$39.29</td>
<td>7B</td>
<td>1M</td>
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<td>Whitman</td>
<td>Laborers</td>
<td>Traffic Control Laborer</td>
<td>$37.19</td>
<td>7B</td>
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<td>Traffic Control Supervisor</td>
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<td>Laborers</td>
<td>Trencher, Shawnee</td>
<td>$39.83</td>
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<td>Whitman</td>
<td>Laborers</td>
<td>Trenchless Technology Technician</td>
<td>$39.83</td>
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<td>Whitman</td>
<td>Laborers</td>
<td>Truck Loader</td>
<td>$39.29</td>
<td>7B</td>
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<td>Whitman</td>
<td>Laborers</td>
<td>Tugger Operator</td>
<td>$39.56</td>
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<td>Vibrators, All</td>
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<td>Laborers</td>
<td>Wagon Drills</td>
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<td>Welder, Electric, Manual Or Automatic (hdpe Or Similar Pipe And Liner)</td>
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<td>Well-point Person</td>
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<td>General Laborer &amp; Topman</td>
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<p>| Whitman | <strong>Modular Buildings</strong> | Journey Level | $12.00 | 1 |
| Whitman | <strong>Painters</strong> | Journey Level | $34.65 | 6Z | 1W |
| Whitman | <strong>Pile Driver</strong> | Journey Level | $46.24 | 5A | 1B | 8N |
| Whitman | <strong>Plasterers</strong> | Journey Level | $40.48 | 7K | 1N |
| Whitman | <strong>Playground &amp; Park Equipment Installers</strong> | Journey Level | $12.00 | 1 |
| Whitman | <strong>Plumbers &amp; Pipefitters</strong> | Journey Level | $80.93 | 6Z | 1Q |
| Whitman | <strong>Power Equipment Operators</strong> | A-frame Truck (2 Or More Drums) | $44.39 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | A-frame Truck (single Drum) | $43.78 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Asphalt Plant Operator | $44.99 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Assistant Plant Operator, Fireman Or Pugmixer (asphalt) | $43.78 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Assistant Refrigeration Plant &amp; Chiller Operator (over 1000 Ton) | $44.39 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Assistant Refrigeration Plant (under 1000 Ton) | $43.78 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Automatic Subgrader (ditches &amp; Trimmers) | $44.99 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Backfillers (cleveland &amp; Similar) | $44.39 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Backhoe &amp; Hoe Ram (under 3/4 Yd.) | $44.71 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Backhoe (45,000 Gw &amp; Under) | $44.71 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Backhoe (45,000 Gw To 110,000 Gw) | $44.99 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Backhoe (over 110,000 Gw) | $45.26 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Backhoes &amp; Hoe Ram (3 Yds &amp; Over) | $45.26 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Backhoes &amp; Hoe Ram (3/4 Yd. To 3 Yd.) | $44.99 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Bagley Or Stationary Scraper | $43.78 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Batch &amp; Wet Mix Operator (multiple Units, 2 &amp; Incl. 4) | $44.99 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Batch Plant &amp; Wet Mix Operator, Single Unit (concrete) | $44.39 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Batch Plant (over 4 Units) | $44.99 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Belt Finishing Machine | $43.78 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Belt Loader (kocal Or Similar) | $44.39 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Belt-crete Conveyors With Power Pack Or Similar | $44.39 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Bending Machine | $44.39 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Bit Grinders | $43.46 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | Blade (finish &amp; Bluetop), Automatic, Cmi, Abc, Finish Athey &amp; Huber &amp; Similar When Used As Automatic | $45.26 | 7B | 1M | 8D |
| Whitman | <strong>Power Equipment Operators</strong> | | $44.99 | 7B | 1M | 8D |</p>
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<thead>
<tr>
<th>Whitman</th>
<th>Power Equipment Operators</th>
<th>Blade Operator (motor Patrol &amp; Attachments)</th>
<th>$43.78</th>
<th>7B</th>
<th>1M</th>
<th>8D</th>
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<td>Power Equipment Operators</td>
<td>Blower Operator (cement)</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<td>Boat Operator</td>
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<td>Power Equipment Operators</td>
<td>Bob Cat (skid Steer)</td>
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<td>Bolt Threading Machine</td>
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<td>Boom Cats (side)</td>
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<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Boring Machine (earth)</td>
<td>$44.99</td>
<td>7B</td>
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<td>8D</td>
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<td>Boring Machine (Rock Under 8 inch Bit - Quarry Master, Joy Or Similar)</td>
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<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
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<td>Power Equipment Operators</td>
<td>Bump Cutter (wayne, Saginaw Or Similar)</td>
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<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Cableway Controller (dispatcher)</td>
<td>$44.55</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Cableway Operators</td>
<td>$44.55</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Canal Lining Machine (concrete)</td>
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<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
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<td>Carrydeck &amp; Boom Truck (under 25 Tons)</td>
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<td>7B</td>
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<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Cement Hog</td>
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<tr>
<td>Whitman</td>
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<td>Chipper (without Crane) Cleaning &amp; Doping Machine (pipeline)</td>
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<td>7B</td>
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<td>8D</td>
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<tr>
<td>Whitman</td>
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<td>Clamshell, Dragline</td>
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<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
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<td>Compactor (self-propelled With Blade)</td>
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<td>7B</td>
<td>1M</td>
<td>8D</td>
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<td>Compressors (under 2000 Cfm, Gas, Diesel Or Electric Power)</td>
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<td>7B</td>
<td>1M</td>
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<td>Concrete Cleaning / Decontamination Machine Operator</td>
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<td>7B</td>
<td>1M</td>
<td>8D</td>
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<td>Whitman</td>
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<td>Concrete Pump Boon Truck</td>
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<td>7B</td>
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<td>Concrete Pumps (squeeze-crete, Flow-crete, Whitman &amp; Similar)</td>
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<td>7B</td>
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<td>Concrete Saw (multiple Cut)</td>
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<td>Concrete Slip Form Paver</td>
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<td>Whitman</td>
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<td>Conveyor Aggregate Delivery Systems (c.a.d.)</td>
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<td>7B</td>
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<td>Crane Oiler- Driver (cdl Required) &amp; Cable Tender, Mucking Machine</td>
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<td>7B</td>
<td>1M</td>
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<tr>
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<td>Cranes (25 Tons &amp; Under), All Attachments Incl. Clamshell, Dragline</td>
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<td>7B</td>
<td>1M</td>
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<td>7B</td>
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<td>Cranes (25 Tons To And Including 45 Tons), All Attachments Incl. Clamshell, Dragline</td>
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<td>Cranes (45 Tons To 85 Tons), All Attachments Incl. Clamshell And Dragline</td>
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<td>Crusher, Grizzle &amp; Screening Plant Operator</td>
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<td>Curb Extruder (asphalt Or Concrete)</td>
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<td>Dozer / Tractor (up To D-6 Or Equivalent) And Traxcavator</td>
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<td>Fork Lift Or Lumber Stacker, Hydra-life &amp; Similar</td>
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<td>Generator Plant Engineers (diesel Or Electric)</td>
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<td>8D</td>
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<td>Gunite Combination Mixer &amp; Compressor</td>
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<td>$45.26</td>
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<td>Helicopter Pilot</td>
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<td>Helper, Mechanic Or Welder, H.D</td>
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<td>Hoist (2 Or More Drums Or Tower Hoist)</td>
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<td>Power Equipment Operators</td>
<td>Hoist, Single Drum</td>
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<td>Hydraulic Platform Trailers (goldhofer, Shau erly And Similar)</td>
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<td>Hydro-seeder, Mulcher, Nozzleman</td>
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<td>Lime Batch Tank Operator (recycle Train)</td>
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<td>Lime Brain Operator (recycle Train)</td>
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<td>Loader (360 Degrees Revolving Koehring Scooper Or Similar)</td>
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<td>Loader Operator (front-end &amp; Overhead, 4 Yds. Incl. 8 Yds.)</td>
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<td>Loaders (bucket Elevators And Conveyors)</td>
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<td>Master Environmental Maintenance Technician</td>
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<td>Mixer (portable - Concrete)</td>
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<td>Mobile Crusher Operator (recycle Train)</td>
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<td>Mucking Machine</td>
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<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Multiple Dozer Units With Single Blade</td>
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<td>Power Equipment Operators</td>
<td>Pavement Breaker, Hydra-hammer &amp; Similar</td>
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<td>Paving (dual Drum)</td>
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<td>Paving Machine (asphalt And Concrete)</td>
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<td>Posthole Auger Or Punch</td>
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<td>Pump (grout Or Jet)</td>
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<td>Quad-track Or Similar Equipment</td>
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<td>Whitman</td>
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<td>Railroad Ballast Regulation Operator (self-propelled)</td>
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<td>8D</td>
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<td>Railroad Power Tamper Operator (self-propelled)</td>
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<td>Railroad Tamper Jack Operator (self-propelled)</td>
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<td>Railroad Track Liner Operator (self-propelled)</td>
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<td>Refrigeration Plant Engineer (1000 Tons &amp; Over)</td>
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<tr>
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<td>Power Equipment Operators</td>
<td>Refrigeration Plant Engineer (under 1000 Ton)</td>
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<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Rollerman (finishing Asphalt Pavement)</td>
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<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Rollers, All Types On Subgrade, Including Seal And Chip Coating (farm Type, Case, John Deere And Similar,or Compacti...</td>
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<td>Roto Mill (pavement Grinder)</td>
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<td>Rotomill Groundsmen</td>
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<td>Rubber-tired Scrapers (multiple Engine With Three Or More Scrapers)</td>
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<td>Rubber-tired Skidders (r/t With Or Without Attachments)</td>
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<td>Scrapers, All, Rubber-tired</td>
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<td>Scree Operator</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Shovels (3 Yds. &amp; Over)</td>
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<td>7B</td>
<td>1M</td>
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<td>Shovels (under 3 Yds.)</td>
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<td>1M</td>
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<td>Signalman (whirleys, Highline, Hammerheads Or Similar)</td>
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<td>7B</td>
<td>1M</td>
<td>8D</td>
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<td>Power Equipment Operators</td>
<td>Soil Stabilizer (p &amp; H Or Similar)</td>
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<td>7B</td>
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[$43.78 | 7B | 1M | 8D]
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<th>Power Equipment Operators</th>
<th>Spray Curing Machine (concrete)</th>
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<td>Spreader Box (self-propelled)</td>
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<td>1M</td>
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<td>Straddle Buggy (ross &amp; Similar On Construction Job Only)</td>
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<td>Surface Heater &amp; Planer Machine</td>
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<td>Tractor (farm Type R/t With Attachments, Except Backhoe)</td>
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<td>Trenching Machines (under 7 Ft. Depth Capacity)</td>
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<td>Tug Boat Operator</td>
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<td>Turnhead (with Re-screening)</td>
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<td>Vactor Guzzler, Super Sucker</td>
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<td>A-frame Truck (single Drum)</td>
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<td>Assistant Plant Operator, Fireman Or Pugmixer (asphalt)</td>
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<td>Assistant Refrigeration Plant &amp; Chiller Operator (over 1000 Ton)</td>
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<td>Assistant Refrigeration Plant (under 1000 Ton)</td>
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<td>Automatic Subgrader (ditches &amp; Trimmers)</td>
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<tr>
<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong> Bagley Or Stationary Scraper</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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</tr>
<tr>
<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong> Batch &amp; Wet Mix Operator (multiple Units, 2 &amp; Incl. 4)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
<td></td>
</tr>
<tr>
<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong> Batch Plant &amp; Wet Mix Operator, Single Unit (concrete)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
<td></td>
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<tr>
<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong> Batch Plant (over 4 Units)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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</tr>
<tr>
<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong> Belt Finishing Machine</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong> Belt Loader (kocal Or Similar)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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</tr>
<tr>
<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong> Belt-crete Conveyors With Power Pack Or Similar</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
<td></td>
</tr>
<tr>
<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong> Bending Machine</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
<td></td>
</tr>
<tr>
<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong> Bit Grinders</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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</tr>
<tr>
<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong> Blade (finish &amp; Bluetop), Automatic, Cmi, Abc, Finish Athey &amp; Huber &amp; Similar When Used As Automatic</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
<td></td>
</tr>
<tr>
<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong> Blade Operator (motor Patrol &amp; Attachments)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
<td></td>
</tr>
<tr>
<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong> Blower Operator (cement)</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
<td></td>
</tr>
<tr>
<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong> Boat Operator</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
<td></td>
</tr>
<tr>
<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong> Bob Cat (skid Steer)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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</tr>
<tr>
<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong> Bolt Threading Machine</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
<td></td>
</tr>
<tr>
<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong> Boom Cats (side)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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</tr>
<tr>
<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong> Boring Machine (earth)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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</tr>
<tr>
<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong> Boring Machine (Rock Under 8 inch Bit - Quarry Master, Joy Or Similar)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
<td></td>
</tr>
<tr>
<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong> Bump Cutter (wayne, Saginau Or Similar)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Cableway Controller (dispatcher)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Cableway Operators</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Canal Lining Machine (concrete)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Carrydeck &amp; Boom Truck (under 25 Tons)</td>
<td>$44.71</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Cement Hog</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Chipper (without Crane) Cleaning &amp; Doping Machine (pipeline)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Clamshell, Dragline</td>
<td>$46.36</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Compactor (self-propelled With Blade)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Compressor (2000 Cfm Or Over, 2 Or More, Gas Diesel Or Electric Power)</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Compressors (under 2000 Cfm, Gas, Diesel Or Electric Power)</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Concrete Cleaning / Decontamination Machine Operator</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Concrete Pump Boon Truck</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Concrete Pumps (squeeze-crete, Flow-crete, Whitman &amp; Similar)</td>
<td>$44.55</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Concrete Saw (multiple Cut)</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Concrete Slip Form Paver</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Conveyor Aggregate Delivery Systems (c.a.d.)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Crane Oiler- Driver (cdl Required) &amp; Cable Tender, Mucking Machine</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Cranes (25 Tons &amp; Under), All Attachments Incl. Clamshell, Dragline</td>
<td>$44.71</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Cranes (25 Tons To And Including 45 Tons), All Attachments Incl. Clamshell, Dragline</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Cranes (45 Tons To 85 Tons), All Attachments Incl. Clamshell And Dragline</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Cranes (85 Tons &amp; Over) And All Climbing, Overhead, Rail &amp; Tower. All Attachments Incl.</td>
<td>$46.36</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Crusher Feeder</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Crusher, Grizzle &amp; Screening Plant Operator</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Curb Extruder (asphalt Or Concrete)</td>
<td>$44.55</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Deck Engineer</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Deck Hand</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Derricks &amp; Stifflegs (65 Tons &amp; Over)</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Derricks &amp; Stifflegs (under 65 Tons)</td>
<td>$44.71</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Distributor Leverman</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Ditch Witch Or Similar</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Dope Pots (power Agitated)</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Dozer / Tractor (up To D-6 Or Equivalent) And Traxcavator</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Dozer / Tractors (d-6 &amp; Equivalent &amp; Over)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Dozer, 834 R/t &amp; Similar</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Drill Doctor</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Driller Licensed</td>
<td>$46.36</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Drillers Helper</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Drilling Equipment (8 inch Bit &amp; Over - Robbins, Reverse Circulation &amp; Similar)</td>
<td>$44.71</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Drills (churn, Core, Calyx Or Diamond)</td>
<td>$44.55</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Elevating Belt (holland Type)</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Elevating Belt-type Loader (euclid, Barber Green &amp; Similar)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Elevating Grader-type Loader (dumor, Adams Or Similar)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Elevator Hoisting Materials</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Equipment Serviceman, Greaser &amp; Oiler</td>
<td>$44.55</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Fireman &amp; Heater Tender</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Fork Lift Or Lumber Stacker, Hydra-life &amp; Similar</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Generator Plant Engineers (diesel Or Electric)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Gin Trucks (pipeline)</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Grade Checker</td>
<td>$44.71</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Gunite Combination Mixer &amp; Compressor</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>H.d. Mechanic</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>H.d. Welder</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Heavy Equipment Robotics Operator</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Helicopter Pilot</td>
<td>$46.36</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Helper, Mechanic Or Welder, H.D</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Hoe Ram</td>
<td>$44.71</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Hoist (2 Or More Drums Or Tower Hoist)</td>
<td>$44.55</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Hoist, Single Drum</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Hydraulic Platform Trailers (goldhofer, Shaurerly And Similar)</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Hydro-seeder, Mulcher, Nozzleman</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Lime Batch Tank Operator (recycle Train)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Lime Brain Operator (recycle Train)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Loader (360 Degrees Revolving Koehring Scooper Or Similar)</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Loader Operator (front-end &amp; Overhead, 4 Yds. Incl. 8 Yds.)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Loaders (bucket Elevators And Conveyors)</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Loaders (overhead &amp; Front-end, Over 8 Yds. To 10 Yds.)</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Loaders (overhead &amp; Front-end, Under 4 Yds.. R/t)</td>
<td>$44.55</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Loaders (overhead And Front-end, 10 Yds. &amp; Over)</td>
<td>$46.36</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Locomotive Engineer</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Longitudinal Float</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Master Environmental Maintenance Technician</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Mixer (portable - Concrete)</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Mixermobile</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Mobile Crusher Operator (recycle Train)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Mucking Machine</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Multiple Dozer Units With Single Blade</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Pavement Breaker, Hydraulic Hammer &amp; Similar</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Paving (dual Drum)</td>
<td>$44.71</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Paving Machine (asphalt And Concrete)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Piledriving Engineers</td>
<td>$44.71</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Plant Oiler</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Posthole Auger Or Punch</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Power Broom</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Pump (grout Or Jet)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Pumpman</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Quad-track Or Similar Equipment</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Railroad Ballast Regulation Operator (self-propelled)</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Railroad Power Tamper Operator (self-propelled)</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Railroad Tamper Jack Operator (self-propelled)</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Railroad Track Liner Operator (self-propelled)</td>
<td>$44.71</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Refrigeration Plant Engineer (1000 Tons &amp; Over)</td>
<td>$44.71</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Refrigeration Plant Engineer (under 1000 Ton)</td>
<td>$44.55</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Rollerman (finishing Asphalt Pavement)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Rollers, All Types On Subgrade, Including Seal And Chip Coating (farm Type, Case, John Deere And Similar,or Compacting</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Vibrator), Except When Pulled B</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Rotomill Groundsman</td>
<td>$44.55</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Rubber-tired Scrapers (multiple Engine With Three Or More Scrapers)</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Rubber-tired Skidders (r/t With Or Without Attachments)</td>
<td>$44.55</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Scrapers, All, Rubber-tired</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Scree Operator</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Shovels (3 Yds. &amp; Over)</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Shovels (under 3 Yds.)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Signalman (whirleys, Highline, Hammerheads Or Similar)</td>
<td>$44.71</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Soil Stabilizer (p &amp; H Or Similar)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Spray Curing Machine (concrete)</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Spreader Box (self-propelled)</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Spreader Machine</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Steam Cleaner</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Straddle Buggy (ross &amp; Similar On Construction Job Only)</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Surface Heater &amp; Planer Machine</td>
<td>$44.55</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Tractor (farm Type R/t With Attachments, Except Backhoe)</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Traverse Finish Machine</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Trenching Machines (7 Ft. Depth &amp; Over)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Trenching Machines (under 7 Ft. Depth Capacity)</td>
<td>$44.55</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Tug Boat Operator</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Tugger Operator</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Turnhead (with Re-screening)</td>
<td>$44.55</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Turnhead Operator</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Ultra High Pressure Wateriet Cutting Tool System Operator, (30,000 Psi)</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Vactor Guzzler, Super Sucker</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Vacuum Blasting Machine Operator</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Vacuum Drill (reverse Circulation Drill Under 8&quot; Bit)</td>
<td>$44.55</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Welding Machine</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Whirleys &amp; Hammerheads, All</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman</td>
<td>Power Line Clearance Tree Trimmers</td>
<td>Journey Level In Charge</td>
<td>$49.96</td>
<td>5A</td>
<td>4A</td>
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<tr>
<td>Whitman</td>
<td>Power Line Clearance Tree Trimmers</td>
<td>Spray Person</td>
<td>$47.37</td>
<td>5A</td>
<td>4A</td>
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<tr>
<td>Whitman</td>
<td>Power Line Clearance Tree Trimmers</td>
<td>Tree Equipment Operator</td>
<td>$49.96</td>
<td>5A</td>
<td>4A</td>
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<td>Whitman</td>
<td>Power Line Clearance Tree Trimmers</td>
<td>Tree Trimmer</td>
<td>$44.57</td>
<td>5A</td>
<td>4A</td>
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<td>Whitman</td>
<td>Power Line Clearance Tree Trimmers</td>
<td>Tree Trimmer Groundperson</td>
<td>$33.60</td>
<td>5A</td>
<td>4A</td>
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<tr>
<td>Whitman</td>
<td>Refrigeration &amp; Air Conditioning Mechanics</td>
<td>Journey Level</td>
<td>$80.93</td>
<td>6Z</td>
<td>1Q</td>
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<tr>
<td>Whitman</td>
<td>Residential Brick Mason</td>
<td>Journey Level</td>
<td>$49.04</td>
<td>5A</td>
<td>1M</td>
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<tr>
<td>Whitman</td>
<td>Residential Carpenters</td>
<td>Journey Level</td>
<td>$45.11</td>
<td>5A</td>
<td>1B</td>
<td>8N</td>
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<tr>
<td>Whitman</td>
<td>Residential Cement Masons</td>
<td>Journey Level</td>
<td>$43.20</td>
<td>7B</td>
<td>1N</td>
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<tr>
<td>Whitman</td>
<td>Residential Drywall Applicators</td>
<td>Journey Level</td>
<td>$45.11</td>
<td>5A</td>
<td>1B</td>
<td>8N</td>
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<tr>
<td>Whitman</td>
<td>Residential Drywall Tapers</td>
<td>Journey Level</td>
<td>$40.10</td>
<td>7E</td>
<td>1P</td>
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<tr>
<td>Whitman</td>
<td>Residential Electricians</td>
<td>Journey Level</td>
<td>$30.15</td>
<td>5I</td>
<td>1E</td>
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<tr>
<td>Whitman</td>
<td>Residential Glaziers</td>
<td>Journey Level</td>
<td>$30.59</td>
<td>7L</td>
<td>4L</td>
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<td>Whitman</td>
<td>Residential Insulation Applicators</td>
<td>Journey Level</td>
<td>$45.11</td>
<td>5A</td>
<td>1B</td>
<td>8N</td>
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<tr>
<td>Whitman</td>
<td>Residential Laborers</td>
<td>Journey Level</td>
<td>$39.29</td>
<td>7B</td>
<td>1M</td>
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<tr>
<td>Whitman</td>
<td>Residential Marble Setters</td>
<td>Journey Level</td>
<td>$49.04</td>
<td>5A</td>
<td>1M</td>
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<td>Whitman</td>
<td>Residential Painters</td>
<td>Journey Level</td>
<td>$34.65</td>
<td>6Z</td>
<td>1W</td>
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<tr>
<td>Whitman</td>
<td>Residential Plumbers &amp; Pipefitters</td>
<td>Journey Level</td>
<td>$58.78</td>
<td>6Z</td>
<td>1Q</td>
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<td>Whitman</td>
<td>Residential Refrigeration &amp; Air Conditioning Mechanics</td>
<td>Journey Level</td>
<td>$58.78</td>
<td>6Z</td>
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<td>$54.61</td>
<td>5I</td>
<td>1B</td>
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<td>Journey Level</td>
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<td>1M</td>
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<td>Residential Terrazzo Workers</td>
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<td>5A</td>
<td>1M</td>
<td></td>
</tr>
<tr>
<td>Whitman</td>
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<td>Journey Level</td>
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<td>5A</td>
<td>1M</td>
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</tr>
<tr>
<td>Whitman</td>
<td>Residential Terrazzo/Tile Finishers</td>
<td>Journey Level</td>
<td>$42.21</td>
<td>5A</td>
<td>1M</td>
<td></td>
</tr>
<tr>
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<tr>
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<td>Journey Level</td>
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<tr>
<td>Whitman</td>
<td>Roofers</td>
<td>Journey Level</td>
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<td>Sign Makers &amp; Installers</td>
<td>Journey Level</td>
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<td>Sign Makers &amp; Installers (Electrical)</td>
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<td>Whitman</td>
<td>Solar Controls For Windows</td>
<td>Journey Level</td>
<td>$12.00</td>
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<td>Whitman</td>
<td>Sprinkler Fitters (Fire Protection)</td>
<td>Journey Level</td>
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<td>Whitman</td>
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<td>Stone Masons</td>
<td>Journey Level</td>
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<td>5A</td>
<td>1M</td>
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<td>Whitman</td>
<td>Street And Parking Lot Sweeper Workers</td>
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<td>Whitman</td>
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<td>Chain Person</td>
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<td>Whitman</td>
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<td>Instrument Person</td>
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<tr>
<td>Whitman</td>
<td>Telephone Line Construction - Outside</td>
<td>Cable Splicer</td>
<td>$41.22</td>
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<tr>
<td>Whitman</td>
<td>Telephone Line Construction - Outside</td>
<td>Hole Digger/Ground Person</td>
<td>$23.12</td>
<td>5A</td>
<td>2B</td>
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<tr>
<td>Whitman</td>
<td>Telephone Line Construction - Outside</td>
<td>Installer (Repairer)</td>
<td>$39.53</td>
<td>5A</td>
<td>2B</td>
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<td>Whitman</td>
<td>Telephone Line Construction - Outside</td>
<td>Special Apparatus Installer I</td>
<td>$41.22</td>
<td>5A</td>
<td>2B</td>
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<tr>
<td>Whitman</td>
<td>Telephone Line Construction - Outside</td>
<td>Special Apparatus Installer II</td>
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<td>5A</td>
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<tr>
<td>Whitman</td>
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<td>Telephone Equipment Operator (Heavy)</td>
<td>$41.22</td>
<td>5A</td>
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<tr>
<td>Whitman</td>
<td>Telephone Line Construction - Outside</td>
<td>Telephone Equipment Operator (Light)</td>
<td>$38.36</td>
<td>5A</td>
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<tr>
<td>Whitman</td>
<td>Telephone Line Construction - Outside</td>
<td>Telephone Lineperson</td>
<td>$38.36</td>
<td>5A</td>
<td>2B</td>
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<tr>
<td>Whitman</td>
<td>Telephone Line Construction - Outside</td>
<td>Television Groundperson</td>
<td>$21.92</td>
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<td>Whitman</td>
<td>Telephone Line Construction - Outside</td>
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<td>$29.13</td>
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<td>Whitman</td>
<td>Telephone Line Construction - Outside</td>
<td>Television System Technician</td>
<td>$34.68</td>
<td>5A</td>
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<td>Whitman</td>
<td>Telephone Line Construction - Outside</td>
<td>Television Technician</td>
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<td>Whitman</td>
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<td>Occupation</td>
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<td>Hourly Rate</td>
<td>Code</td>
<td>Volume</td>
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<tr>
<td><strong>Telephone Line Construction - Outside</strong></td>
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<tr>
<td>Whitman Terrazzo Workers</td>
<td>Journey Level</td>
<td>$42.21</td>
<td>5A</td>
<td>1M</td>
<td></td>
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<tr>
<td>Whitman Tile Setters</td>
<td>Journey Level</td>
<td>$42.21</td>
<td>5A</td>
<td>1M</td>
<td></td>
<td></td>
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<tr>
<td>Whitman Tile, Marble &amp; Terrazzo Finishers</td>
<td>Journey Level</td>
<td>$34.33</td>
<td>5A</td>
<td>1M</td>
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<tr>
<td>Whitman Traffic Control Stripers</td>
<td>Journey Level</td>
<td>$45.53</td>
<td>7A</td>
<td>1K</td>
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<tr>
<td>Whitman Truck Drivers</td>
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<tr>
<td>Whitman Truck Drivers Asphalt Mix Over 20 Yards</td>
<td>Journey Level</td>
<td>$43.40</td>
<td>5D</td>
<td>1V</td>
<td>8M</td>
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<tr>
<td>Whitman Truck Drivers Asphalt Mix To 20 Yards</td>
<td>Journey Level</td>
<td>$43.23</td>
<td>5D</td>
<td>1V</td>
<td>8M</td>
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<tr>
<td>Whitman Truck Drivers Dump Truck</td>
<td>Journey Level</td>
<td>$43.23</td>
<td>5D</td>
<td>1V</td>
<td>8M</td>
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<tr>
<td>Whitman Truck Drivers Dump Truck &amp; Trailer</td>
<td>Journey Level</td>
<td>$43.40</td>
<td>5D</td>
<td>1V</td>
<td>8M</td>
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<tr>
<td>Whitman Truck Drivers Other Trucks</td>
<td>Journey Level</td>
<td>$43.12</td>
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<td>8M</td>
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<tr>
<td>Whitman Truck Drivers - Ready Mix</td>
<td>Journey Level</td>
<td>$44.47</td>
<td>6I</td>
<td>2G</td>
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<tr>
<td>Whitman Well Drillers &amp; Irrigation Pump Installers</td>
<td>Irrigation Pump Installer</td>
<td>$13.92</td>
<td>1</td>
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<tr>
<td>Whitman Well Drillers &amp; Irrigation Pump Installers</td>
<td>Oiler</td>
<td>$12.00</td>
<td>1</td>
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<tr>
<td>Whitman Well Drillers &amp; Irrigation Pump Installers</td>
<td>Well Driller</td>
<td>$18.00</td>
<td>1</td>
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</table>
Overtime Codes

Overtime calculations are based on the hourly rate actually paid to the worker. On public works projects, the hourly rate must be not less than the prevailing rate of wage minus the hourly rate of the cost of fringe benefits actually provided for the worker.

1. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.

B. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

C. The first two (2) hours after eight (8) regular hours Monday through Friday and the first ten (10) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other overtime hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

D. The first two (2) hours before or after a five-eight (8) hour workweek day or a four-ten (10) hour workweek day and the first eight (8) hours worked the next day after either workweek shall be paid at one and one-half times the hourly rate of wage. All additional hours worked and all worked on Sundays and holidays shall be paid at double the hourly rate of wage.

E. The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

F. The first two (2) hours after eight (8) regular hours Monday through Friday and the first ten (10) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other overtime hours worked, except Labor Day, shall be paid at double the hourly rate of wage. All hours worked on Labor Day shall be paid at three times the hourly rate of wage.

G. The first ten (10) hours worked on Saturdays and the first ten (10) hours worked on a fifth calendar weekday in a four-ten hour schedule, shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of ten (10) hours per day Monday through Saturday and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

H. All hours worked on Saturdays (except makeup days if work is lost due to inclement weather conditions or equipment breakdown) shall be paid at one and one-half times the hourly rate of wage. All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

I. All hours worked on Sundays and holidays shall also be paid at double the hourly rate of wage.

J. The first two (2) hours after eight (8) regular hours Monday through Friday and the first ten (10) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked over ten (10) hours Monday through Saturday, Sundays and holidays shall be paid at double the hourly rate of wage.

K. All hours worked on Saturdays and Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at double the hourly rate of wage.

M. All hours worked on Saturdays (except makeup days if work is lost due to inclement weather conditions) shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

N. All hours worked on Saturdays (except makeup days) shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
Overtime Codes Continued

1. O. The first ten (10) hours worked on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays, holidays and after twelve (12) hours, Monday through Friday and after ten (10) hours on Saturday shall be paid at double the hourly rate of wage.

P. All hours worked on Saturdays (except makeup days if circumstances warrant) and Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at double the hourly rate of wage.

Q. The first two (2) hours after eight (8) regular hours Monday through Friday and up to ten (10) hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of ten (10) hours per day Monday through Saturday and all hours worked on Sundays and holidays (except Christmas day) shall be paid at double the hourly rate of wage. All hours worked on Christmas day shall be paid at two and one-half times the hourly rate of wage.

R. All hours worked on Sundays and holidays shall be paid at two times the hourly rate of wage.

S. The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays and all other overtime hours worked, except Labor Day, shall be paid at double the hourly rate of wage. All hours worked on Labor Day shall be paid at three times the hourly rate of wage.

U. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays (except Labor Day) shall be paid at two times the hourly rate of wage. All hours worked on Labor Day shall be paid at three times the hourly rate of wage.

V. All hours worked on Sundays and holidays (except Thanksgiving Day and Christmas day) shall be paid at one and one-half times the hourly rate of wage. All hours worked on Thanksgiving Day and Christmas day shall be paid at double the hourly rate of wage.

W. All hours worked on Saturdays and Sundays (except make-up days due to conditions beyond the control of the employer)) shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at double the hourly rate of wage.

X. The first four (4) hours after eight (8) regular hours Monday through Friday and the first twelve (12) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked over twelve (12) hours Monday through Saturday, Sundays and holidays shall be paid at double the hourly rate of wage. When holiday falls on Saturday or Sunday, the day before Saturday, Friday, and the day after Sunday, Monday, shall be considered the holiday and all work performed shall be paid at double the hourly rate of wage.

Y. All hours worked outside the hours of 5:00 am and 5:00 pm (or such other hours as may be agreed upon by any employer and the employee) and all hours worked in excess of eight (8) hours per day (10 hours per day for a 4 x 10 workweek) and on Saturdays and holidays (except labor day) shall be paid at one and one-half times the hourly rate of wage. (except for employees who are absent from work without prior approval on a scheduled workday during the workweek shall be paid at the straight-time rate until they have worked 8 hours in a day (10 in a 4 x 10 workweek) or 40 hours during that workweek.) All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and Labor Day shall be paid at double the hourly rate of wage.

Z. All hours worked on Saturdays and Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid the straight time rate of pay in addition to holiday pay.
2. **Overtime Codes Continued**

   ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.

   B. All hours worked on holidays shall be paid at one and one-half times the hourly rate of wage.

   C. All hours worked on Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at two times the hourly rate of wage.

   F. The first eight (8) hours worked on holidays shall be paid at the straight hourly rate of wage in addition to the holiday pay. All hours worked in excess of eight (8) hours on holidays shall be paid at double the hourly rate of wage.

   G. All hours worked on Sunday shall be paid at two times the hourly rate of wage. All hours worked on paid holidays shall be paid at two and one-half times the hourly rate of wage including holiday pay.

   H. All hours worked on Sunday shall be paid at two times the hourly rate of wage. All hours worked on holidays shall be paid at one and one-half times the hourly rate of wage.

   O. All hours worked on Sundays and holidays shall be paid at one and one-half times the hourly rate of wage.

   R. All hours worked on Sundays and holidays and all hours worked over sixty (60) in one week shall be paid at double the hourly rate of wage.

   U. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked over 12 hours in a day or on Sundays and holidays shall be paid at double the hourly rate of wage.

   W. The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage. On a four-day, ten-hour weekly schedule, either Monday thru Thursday or Tuesday thru Friday schedule, all hours worked after ten shall be paid at double the hourly rate of wage. The first eight (8) hours worked on the fifth day shall be paid at one and one-half times the hourly rate of wage. All other hours worked on the fifth, sixth, and seventh days and on holidays shall be paid at double the hourly rate of wage.

3. **Overtime Codes Continued**

   ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.

   A. Work performed in excess of eight (8) hours of straight time per day, or ten (10) hours of straight time per day when four ten (10) hour shifts are established, or forty (40) hours of straight time per week, Monday through Friday, or outside the normal shift, and all work on Saturdays shall be paid at time and one-half the straight time rate. Hours worked over twelve hours (12) in a single shift and all work performed after 6:00 pm Saturday to 6:00 am Monday and holidays shall be paid at double the straight time rate of pay. Any shift starting between the hours of 6:00 pm and midnight shall receive an additional one dollar ($1.00) per hour for all hours worked that shift. The employer shall have the sole discretion to assign overtime work to employees. Primary consideration for overtime work shall be given to employees regularly assigned to the work to be performed on overtime situations. After an employee has worked eight (8) hours at an applicable overtime rate, all additional hours shall be at the applicable overtime rate until such time as the employee has had a break of eight (8) hours or more.

   C. Work performed in excess of eight (8) hours of straight time per day, or ten (10) hours of straight time per day when four ten (10) hour shifts are established, or forty (40) hours of straight time per week, Monday through Friday, or outside the normal shift, and all work on Saturdays shall be paid at one and one-half times the hourly rate of wage. All work performed after 6:00 pm Saturday to 5:00 am Monday and Holidays shall be paid at double the hourly rate of wage. After an employee has worked eight (8) hours at an applicable overtime rate, all additional hours shall be at the applicable overtime rate until such time as the employee has had a break of eight (8) hours or more.
Overtime Codes Continued

3. E. All hours worked Sundays and holidays shall be paid at double the hourly rate of wage. Each week, once 40 hours of straight time work is achieved, then any hours worked over 10 hours per day Monday through Saturday shall be paid at double the hourly wage rate.

F. All hours worked on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sunday shall be paid at two times the hourly rate of wage. All hours worked on paid holidays shall be paid at two and one-half times the hourly rate of wage including holiday pay.

H. All work performed on Sundays between March 16th and October 14th and all Holidays shall be compensated for at two (2) times the regular rate of pay. Work performed on Sundays between October 15th and March 15th shall be compensated at one and one half (1-1/2) times the regular rate of pay.

I. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. In the event the job is down due to weather conditions during a five day work week (Monday through Friday,) or a four day-ten hour work week (Tuesday through Friday,) then Saturday may be worked as a voluntary make-up day at the straight time rate. However, Saturday shall not be utilized as a make-up day when a holiday falls on Friday. All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

J. All hours worked between the hours of 10:00 pm and 5:00 am, Monday through Friday, and all hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

4. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.

A. All hours worked in excess of eight (8) hours per day or forty (40) hours per week shall be paid at double the hourly rate of wage. All hours worked on Saturdays, Sundays and holidays shall be paid at double the hourly rate of wage.

B. All hours worked over twelve (12) hours per day and all hours worked on holidays shall be paid at double the hourly rate of wage.

C. On Monday through Friday, the first four (4) hours of overtime after eight (8) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay, unless a four (4) day ten (10) hour workweek has been established. On a four (4) day ten (10) hour workweek scheduled Monday through Thursday, or Tuesday through Friday, the first two (2) hours of overtime after ten (10) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay. On Saturday, the first twelve (12) hours of work shall be paid at one and one half (1-1/2) times the straight time rate of pay, except that if the job is down on Monday through Friday due to weather conditions or other conditions outside the control of the employer, the first ten (10) hours on Saturday may be worked at the straight time rate of pay. All hours worked over twelve (12) hours in a day and all hours worked on Sunday and Holidays shall be paid at two (2) times the straight time rate of pay.
4. **D.** All hours worked in excess of eight (8) hours per day or forty (40) hours per week shall be paid at double the hourly rate of wage. All hours worked on Saturday, Sundays and holidays shall be paid at double the hourly rate of pay. Rates include all members of the assigned crew.

**EXCEPTION:**
On all multipole structures and steel transmission lines, switching stations, regulating, capacitor stations, generating plants, industrial plants, associated installations and substations, except those substations whose primary function is to feed a distribution system, will be paid overtime under the following rates:

The first two (2) hours after eight (8) regular hours Monday through Friday of overtime on a regular workday, shall be paid at one and one-half times the hourly rate of wage. All hours in excess of ten (10) hours will be at two (2) times the hourly rate of wage. The first eight (8) hours worked on Saturday will be paid at one and one-half (1½) times the hourly rate of wage. All hours worked in excess of eight (8) hours on Saturday, and all hours worked on Sundays and holidays will be at the double the hourly rate of wage.

All overtime eligible hours performed on the above described work that is energized, shall be paid at the double the hourly rate of wage.

**E.** The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

On a four-day, ten-hour weekly schedule, either Monday thru Thursday or Tuesday thru Friday schedule, all hours worked after ten shall be paid at double the hourly rate of wage. The Monday or Friday not utilized in the normal four-day, ten hour work week, and Saturday shall be paid at one and one half (1½) times the regular shift rate for the first eight (8) hours. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

**F.** All hours worked between the hours of 6:00 pm and 6:00 am, Monday through Saturday, shall be paid at a premium rate of 20% over the hourly rate of wage. All hours worked on Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at double the hourly rate of wage.

**G.** All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

**H.** The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other overtime hours worked, except Labor Day, and all hours on Sunday shall be paid at double the hourly rate of wage. All hours worked on Labor Day shall be paid at three times the hourly rate of wage.

**I.** The First eight (8) hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of eight (8) per day on Saturdays shall be paid at double the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

**J.** The first eight (8) hours worked on a Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of eight (8) hours on a Saturday shall be paid at double the hourly rate of wage. All hours worked over twelve (12) in a day, and all hours worked on Sundays and Holidays shall be paid at double the hourly rate of wage.

**K.** All hours worked on a Saturday shall be paid at one and one-half times the hourly rate of wage, so long as Saturday is the sixth consecutive day worked. All hours worked over twelve (12) in a day Monday through Saturday, and all hours worked on Sundays and Holidays shall be paid at double the hourly rate of wage.
Benefit Code Key – Effective 8/31/2018 thru 3/2/2019

4. L. The first twelve (12) hours worked on a Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked on a Saturday in excess of twelve (12) hours shall be paid at double the hourly rate of pay. All hours worked over twelve (12) in a day Monday through Friday, and all hours worked on Sundays shall be paid at double the hourly rate of wage. All hours worked on a holiday shall be paid at one and one-half times the hourly rate of wage, except that all hours worked on Labor Day shall be paid at double the hourly rate of pay.

M. All hours worked on Sunday and Holidays shall be paid at double the hourly rate. Any employee reporting to work less than nine (9) hours from their previous quitting time shall be paid for such time at time and one-half times the hourly rate.

N. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays, and all work performed between the hours of midnight (12:00 AM) and eight AM (8:00 AM) every day shall be paid at double the hourly rate of wage.

O. All hours worked between midnight Friday to midnight Sunday shall be paid at one and one-half the hourly rate of wage. After an employee has worked in excess of eight (8) continuous hours in any one or more calendar days, all additional hours shall be at the applicable overtime rate until such time as the employee has had a break of six (6) hours or more. All hours worked on Holidays shall be paid at double the hourly rate of wage.

P. All hours worked on Holidays shall be paid at one and one-half times the hourly rate of wage.

Q. The first four (4) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked over twelve (12) hours Monday through Saturday shall be paid at double the hourly rate. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

R. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage, so long as Saturday is the sixth consecutive day worked. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

R. Placeholder

5. Holiday Codes


Holiday Codes Continued


**Holiday Codes Continued**


7. **Z.** Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, And Christmas Day (7). If a holiday falls on Saturday, the preceding Friday shall be considered as the holiday. If a holiday falls on Sunday, the following Monday shall be considered as the holiday.

observed as a holiday on the preceding Friday.

7. J. Holidays: New Year's Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day and Christmas Day (6). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

K. Holidays: New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

L. Holidays: New Year's Day, Memorial Day, Labor Day, Independence Day, Thanksgiving Day, the Last Work Day before Christmas Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

M. Paid Holidays: New Year's Day, The Day after or before New Year’s Day, President’s Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, And the Day after or before Christmas Day (10). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

N. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. When Christmas falls on a Saturday, the preceding Friday shall be observed as a holiday.


Q. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, And the Day after or before Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be observed as the holiday. If any of the listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly.

R. Paid Holidays: New Year's Day, the day after or before New Year’s Day, President’s Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and The Day after or before Christmas Day (10). If any of the listed holidays fall on Saturday, the preceding Friday shall be observed as the holiday. If any of the listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly.

S. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, Christmas Day, the Day after Christmas, and A Floating Holiday (9). If any of the listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly.

T. Paid Holidays: New Year's Day, the Day after or before New Year’s Day, President’s Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and The Day after or before Christmas Day. (10). If any of the listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

V. Holidays: New Year's Day, President’s Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, the day before or after Christmas, and the day before or after New Year’s Day. If any of the above listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly.
Holiday Codes Continued


X. Holidays: New Year's Day, Day before or after New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and the day before or after Christmas Day. If a holiday falls on a Saturday or on a Friday that is the normal day off, then the holiday will be taken on the last normal workday. If the holiday falls on a Monday that is the normal day off or on a Sunday, then the holiday will be taken on the next normal workday.

Y. Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, and Christmas Day. (8) If the holiday falls on a Sunday, then the day observed by the federal government shall be considered a holiday and compensated accordingly.

Z. Holidays: New Year's Day, President's Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

15. A. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the day before Christmas Day and Christmas Day. (8) Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.


Note Codes

8. D. Workers working with supplied air on hazmat projects receive an additional $1.00 per hour.

L. Workers on hazmat projects receive additional hourly premiums as follows - Level A: $0.75, Level B: $0.50, And Level C: $0.25.

M. Workers on hazmat projects receive additional hourly premiums as follows: Levels A & B: $1.00, Levels C & D: $0.50.

N. Workers on hazmat projects receive additional hourly premiums as follows - Level A: $1.00, Level B: $0.75, Level C: $0.50, And Level D: $0.25.
8. **P.** Workers on hazmat projects receive additional hourly premiums as follows - Class A Suit: $2.00, Class B Suit: $1.50, Class C Suit: $1.00, And Class D Suit $0.50.

**Q.** The highest pressure registered on the gauge for an accumulated time of more than fifteen (15) minutes during the shift shall be used in determining the scale paid.

**R.** Effective August 31, 2012 – A Traffic Control Supervisor shall be present on the project whenever flagging or spotting or other traffic control labor is being utilized. A Traffic Control Laborer performs the setup, maintenance and removal of all temporary traffic control devices and construction signs necessary to control vehicular, bicycle, and pedestrian traffic during construction operations. Flaggers and Spotters shall be posted where shown on approved Traffic Control Plans or where directed by the Engineer. All flaggers and spotters shall possess a current flagging card issued by the State of Washington, Oregon, Montana, or Idaho. These classifications are only effective on or after August 31, 2012.

**S.** Effective August 31, 2012 – A Traffic Control Supervisor shall be present on the project whenever flagging or spotting or other traffic control labor is being utilized. Flaggers and Spotters shall be posted where shown on approved Traffic Control Plans or where directed by the Engineer. All flaggers and spotters shall possess a current flagging card issued by the State of Washington, Oregon, Montana, or Idaho. This classification is only effective on or after August 31, 2012.

**T.** Effective August 31, 2012 – A Traffic Control Laborer performs the setup, maintenance and removal of all temporary traffic control devices and construction signs necessary to control vehicular, bicycle, and pedestrian traffic during construction operations. Flaggers and Spotters shall be posted where shown on approved Traffic Control Plans or where directed by the Engineer. All flaggers and spotters shall possess a current flagging card issued by the State of Washington, Oregon, Montana, or Idaho. This classification is only effective on or after August 31, 2012.

**U.** Workers on hazmat projects receive additional hourly premiums as follows – Class A Suit: $2.00, Class B Suit: $1.50, And Class C Suit: $1.00. Workers performing underground work receive an additional $0.40 per hour for any and all work performed underground, including operating, servicing and repairing of equipment. The premium for underground work shall be paid for the entire shift worked. Workers who work suspended by a rope or cable receive an additional $0.50 per hour. The premium for work suspended shall be paid for the entire shift worked. Workers who do “pioneer” work (break open a cut, build road, etc.) more than one hundred fifty (150) feet above grade elevation receive an additional $0.50 per hour.

**V.** In addition to the hourly wage and fringe benefits, the following depth and enclosure premiums shall be paid. The premiums are to be calculated for the maximum depth and distance into an enclosure that a diver reaches in a day. The premiums are to be paid one time for the day and are not used in calculating overtime pay.

- Depth premiums apply to depths of fifty feet or more. Over 50' to 100' - $2.00 per foot for each foot over 50 feet. Over 101' to 150' - $3.00 per foot for each foot over 101 feet. Over 151' to 220' - $4.00 per foot for each foot over 220 feet. Over 221' - $5.00 per foot for each foot over 221 feet.

- Enclosure premiums apply when divers enter enclosures (such as pipes or tunnels) where there is no vertical ascent and is measured by the distance travelled from the entrance. 25’ to 300’ - $1.00 per foot from entrance. 300’ to 600’ - $1.50 per foot beginning at 300’. Over 600’ - $2.00 per foot beginning at 600’.

**W.** Meter Installers work on single phase 120/240V self-contained residential meters. The Lineman/Groundmen rates would apply to meters not fitting this description.
PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Procedures for preparation and submittal of the Schedule of Values.

1.02 SUBMITTALS

A. Contractor shall submit an initial Schedule of Values per the Pre-Construction Submittal Requirements of Section 01 33 00.

B. Contractor shall submit supporting documentation justifying the amounts in the Schedule of Values if requested by Owner.

1.03 SCHEDULE OF VALUES

A. Contractor shall submit a typed schedule on Owner's form. Once approved, Contractor shall not revise the Schedule of Values without prior approval by Owner.

B. Format:

1. Separate each category of Work into a separate line item.

2. List all major Work activities indicated on the Progress Schedule.

3. Separate floors, phases, and other easily recognized building divisions when appropriate.

4. Separate labor, materials and equipment for each item.

5. Identify site mobilization, demobilization, bonds, and insurance as individual line items.

6. Include a line item for close-out Work between Substantial Completion and Final Completion.

7. If applicable, include a line item for allowances. For unit cost allowances, give quantities measured from the Contract Documents multiplied by the unit cost.

8. When required by Owner, include separate line items for "separately funded Work."

END OF SECTION 01 29 73
PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Preconstruction Meeting;
2. Progress Meetings; and
3. Other meetings, as requested by Owner.

1.02 PRECONSTRUCTION MEETING

A. Meeting Location: Owner will schedule a meeting prior to the start of construction. The purpose of this meeting is to review Contract administration requirements and mobilization procedures. Attendance is required for the following:

1. Architect/Engineer and design Subconsultants;
2. Contractor's Superintendent and Project Manager;
3. Representative of major Subcontractors, as appropriate;
4. Others, as appropriate.

B. Owner’s Designated Representative shall:

1. Preside over and conduct meeting.
2. Record, reproduce, and distribute copies of minutes within 7 Days of the meeting to all meeting participants.

C. Agenda for the meeting will include at a minimum:

1. The Work;
2. Progress Schedule, including Work sequence, phasing, and occupancy requirements;
3. Communications chain and persons authorized to direct changes;
4. Use of the Project site;
5. Special Project procedures;
6. Procedures and processing:
   a. Application for Payments and Schedule of Values;
   b. Contract Change Proposals (CCP), Work Directive (WD);
   c. Change Orders (CO);
d. Requests for Information (RFI);
e. Submittals; and
f. Others as appropriate.

7. Project Record;
8. Construction facilities, controls, and construction aids;
9. Temporary utilities;
10. Security procedures;
11. Safety and first-aid procedures;
12. Environmental Health and Safety;
13. Housekeeping procedures;
14. AHJ representative(s) and inspection procedures;
15. Utility shutdowns;
16. Parking;
17. Existing conditions;
18. Subcontractor list;
19. Emergency phone and keys to site;
20. Progress meeting scheduling;
21. Shipment and deliveries; and
22. Other(s) as appropriate.

1.03 PROGRESS MEETINGS

A. Progress meetings will occur as required.

B. Meeting Location: Contractor's Project field office, unless otherwise agreed.

C. Attendance: Representatives attending meetings must be qualified and authorized to act on behalf of their firms. Attendance shall include:

1. Architect/Engineer and Subconsultants, as appropriate;
2. Owner's Designated Representatives;
3. Contractor's Superintendent and Project Manager;
4. Subcontractors, as appropriate;
5. Suppliers, as appropriate; and
6. Others, as appropriate.

D. Owner's Designated Representative shall:
1. Administer progress and other specially scheduled meetings;

2. Record, reproduce, and distribute copies of minutes within 6 Days of meeting to all meeting participants; and

E. Contractor shall, at each meeting, provide each meeting attendant with:

1. Short-interval (look-ahead) schedule coordinated with the Progress Schedule;

2. Updated Progress Schedule, if appropriate;

3. Updated submittal log and schedules;

4. Updated RFI log;

5. Issues Log;

6. Quality Control Log; and

7. Any applicable tracking mechanisms.

F. Agenda for these meetings will include at a minimum:

1. Project safety;

2. Review and approval of minutes from previous meeting;

3. Review Work progress since previous meeting;

4. Review plans for progress for subsequent Work period and short-interval (look-ahead) schedule;

5. Review Progress Schedule;

6. Present corrective measures and procedures to regain Progress Schedule, as applicable;

7. Present field observations, problems, and conflicts;

8. Discuss RFIs;

9. Review quality control;

10. Review submittal log and schedules and present methods to expedite as required;

11. Review off-site fabrication;

12. Review delivery schedules;

13. Review coordination issues;

14. Review proposed changes for:
   a. Effect on Progress Schedule and on completion date.
   b. Effect on any other contracts of the Project.

15. Review Issues Log;
16. Review draft Application for Payment (at end of month);
17. Review Project Record; and
18. Review any other issues.

1.04 OTHER MEETINGS

A. Owner may call additional Project meetings as appropriate.

B. Meetings as required by other sections.

C. Format and agenda of these meetings will follow that of Progress Meetings unless Owner determines otherwise.

END OF SECTION 01 31 19
PART 1 GENERAL

1.01 GENERAL COMMUNICATION

A. Subcontractors: Informal communication between Owner, Owner's consultants, and other Subcontractors is permitted. If written clarification or direction is required to resolve questions, transmit questions in writing using a Request for Information (RFI) through the Contractor to Owner.

B. In case of an EMERGENCY, dial 9-1-1 if appropriate; otherwise, contact Owner's Designated Representative. If he or she is not available contact Facilities Services, Capital at 509-335-5571.

1.02 CORRESPONDENCE

A. Address all correspondence to Owner's Designated Representative.

B. Contractor shall copy Architect/Engineer on all correspondence to and from Owner.

C. Include Project title and Owner Project number on all correspondence.

1.03 REQUEST FOR INFORMATION

A. When field conditions or Contract Document require clarification, a written Request for Information (RFI) must be submitted per the following:

1. Identify the nature and location of each clarification/verification using a RFI form and provide at least the following information:
   a. Project name and number;
   b. Date;
   c. Date response requested;
   d. RFI number;
   e. Subject;
   f. Initiator of the question;
   g. Indication of costs;
   h. Indication of schedule impact;
   i. Location on site;
   j. Contract Drawing reference;
   k. Contract Specification section and paragraph reference;
   l. Descriptive text;
m. Recommended solution(s); and
n. Space for reply on same page as questions.

B. Each RFI must be limited to a single issue.

C. Route and copy RFIs in same manner as correspondence.

1.04 NONCONFORMATION REPORT


B. Procedure: If Contractor proceeds to install deficient Work or fails to correct Work that in the opinion of Owner fails to conform to the Contract Documents, an NCR may be issued. Upon receipt of a NCR, Contractor shall take immediate action to correct nonconforming Work. Correction of nonconforming Work will be reviewed at progress meetings.

1.05 COORDINATION

A. Special Coordination: Contractor shall:

1. Special cleaning and protection: Protect existing theater equipment to remain in the Coliseum; floor, seats, handrails, etc.

2. Material/equipment staging areas: Contractor is allowed to use the lower entrance into Beasley Coliseum for a staging area only, but not for parking.

3. Access routes: use the lower entrance for material deliveries and debris removal.

B. General Coordination: Contractor shall:

1. Coordinate with Work of other sections to ensure that all fixtures, devices, switches, outlets, ducts, pipes, and similar items can be installed as shown without modifications to framing. Provide all blockouts, raceways and similar framing, as required;

2. Coordinate the Work and not delegate responsibility for coordination to any Subcontractor. Contractor must make available to each Subcontractor, prior to the execution of each Subcontract, copies of the Contract Documents to which the Subcontractor will be bound. Subcontractor will similarly make copies of the Contract Documents available to their respective lower-tier Subcontractors. Contractor must provide Owner copies of the written agreements between Contractor and any Subcontractor upon request;

3. Anticipate interrelationship of all Subcontractors and their relationship with the total Work;
4. Resolve differences or disputes between Subcontractors and materials suppliers concerning coordination, interference, or extent of Work between sections;

5. Be in charge of and responsible for the Work and the Project site, including directing and scheduling all Work; and

6. Cooperate with Separate Contractors. Work by others may be occurring within the building or at locations adjacent or near to the Project site. Contractor must cooperate with all such work.

C. Mechanical and Electrical Coordination: Contractor shall:

1. Resolve all “tight”, restricted, or inaccessible areas involving Work of various disciplines in advance of installation.

2. If necessary, and before Work proceeds in these areas, prepare coordination drawings for review showing all Work in “tight”, restricted, or inaccessible areas.

3. Provide coordination drawings necessary to resolve “tight”, restricted, or inaccessible areas, at no increase in Contract Sum.

D. Job Site Field Measurements and Templates: Contractor shall:

1. Obtain field measurements required for accurate fabrication and installation of Work. Exact measurements are Contractor’s responsibility.

2. Furnish or obtain templates, patterns, and setting instructions as required for installation of all Work. Contractor shall verify in field, as needed.

E. Contractor Badging:

1. All employees of Contractor and Subcontractors, vendors, or consultants retained by Contractor must obtain a Facilities Services Contractor Identification (ID) badge if they will be performing Work on the Pullman campus of Washington State University.

   a. ID badges issued for prior Facilities Services projects are valid provided the employee/employer information is still correct and the ID badge has not expired.

2. Facilities Services will issue the Contractor an authorization memorandum necessary to obtain ID badges. Contractor will be responsible for providing copies of the authorization letter to appropriate Subcontractors, consultants, and vendors for use in procuring ID badges for their employees.

3. ID badges will be issued by the Cougar Card Center located on the ground floor of the Compton Union Building (CUB). Employees are required to appear in person so pictures and signatures may be obtained.

   a. To receive an ID badge, each employee will be required to
present a copy of the authorization letter issued by Facilities Services, a form of picture identification, the name of their current employer and a payment of $10.00.

b. The maximum effective period for an ID badge is 24 months.

c. When ID badges expire, if they are lost or stolen, or if the individual changes employers, the ID badge is no longer valid and the employee is required to obtain a new ID badge through the standard authorization process.

4. A valid ID badge must be worn by all employees in full view above the waist at all times when working at the Pullman campus of Washington State University.

   a. Contractor shall enforce Owner’s ID badge policy at all times at the Project site.

5. Subject to Owner review and approval, Contractor may acquire and maintain a limited number of temporary ID badges from Owner to utilize for short duration visits by employees for whom repeat visits are not anticipated. Contractor shall maintain a log indicating the date, time issued/returned, employee name, and employer for all temporary badges. The temporary ID badges shall display “Facilities Services Contractor, Temporary Badge”, Contractor’s name, and a number unique to that particular temporary ID badge.

6. Contractor ID badges will not function as Cougar Cards. Individuals may obtain a Cougar Card as a “community member” but those cards will not be considered an acceptable substitute for the requirement to obtain and display an ID badge.

7. ID badge expenses:

   a. On projects with a Guaranteed Maximum Price (GMP) the expense for ID badges may be considered a Cost of the Work.

   b. On fixed price contracts, Contractor shall include any and all expenses related to ID badges in its bid, including the actual cost of each badge. These costs will be included in the Contract Sum and not separately reimbursable.

END OF SECTION 01 31 23
PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies the administrative and procedural requirements to comply with the requirements of the General Conditions regarding preparation of Contractor's Progress Schedules, monthly update to the Progress Schedules, and other schedules as specified herein. The purposes of these schedules and reports are to:

1. Ensure adequate planning and execution of the Work by Contractor;
2. Establish a standard against which progress of the Work can be tracked;
3. Assist in monitoring progress;
4. Evaluate the impact of any changes to the Contract; and
5. Support the basis for progress payments.

B. All schedule submittals including updated Progress Schedules will be reviewed by Owner for compliance with Contract terms and the needs of the University. Review of any schedule does not constitute approval or acceptance of Contractor's construction means, methods, or sequencing, or an assessment by Owner of Contractor's ability to complete the Work within the Contract Time.

1.02 WORK INCLUDED

A. Contractor shall submit a preliminary Progress Schedule, as required by the Pre-Construction Submittal Requirements of Section 01 33 00.

B. Contractor shall prepare and submit Progress Schedules and reports as required by this Section. **NOTE: Processing and payment of the second Application for Payment is contingent upon receipt, review, and subsequent acceptance of the updated Progress Schedule.**

C. Contractor shall participate in monthly scheduling meetings and provide updated Progress Schedules as require by this Section.

D. Contractor shall perform Contemporaneous Period Analysis (CPA) of any delays associated with the critical path schedule as required by this Section.

E. Contractor shall provide weekly Short-Interval (look-ahead) schedules as required by this Section.

F. Contractor shall submit a Submittal Schedule as required by this Section.

1.03 PRELIMINARY PROGRESS SCHEDULE

A. Contractor shall submit a preliminary Progress Schedule as part of the Pre-
Construction Submittal Requirements in Section 01 33 00 - Submittals. The schedule shall include activity description, activity start and end dates. The schedule shall emphasize milestone dates and date of Substantial Completion. Schedule shall clearly identify the critical path schedule elements.

B. Progress Schedule shall be in Bar Chart format.

C. Schedule activities longer than 14 days shall be sufficiently detailed.

D. Participate in schedule update meetings and provide updated Progress Schedules.

1.04 CONTRACTOR'S PROGRESS SCHEDULE

A. Within three calendar days of receiving WSU comments on the preliminary Progress (Bar Chart) Schedule, the Contractor shall prepare and submit a detailed Progress (Bar Chart) Schedule. This schedule shall be the Contractor's as-planned schedule and shall be used to plan, organize, and execute the Work, record and report actual performance and progress through updates, as well as show how the Contractor plans to complete all remaining Work. The accepted Contractor's Progress (Bar Chart) Schedule and subsequent updates shall be the basis for consideration and analysis of requests for time extensions.

B. Updates:

1. The Contractor is required to prepare and submit an updated Progress (Bar Chart) Schedule as agreed upon at the Pre-construction Meeting.

2. The Contractor and Owner's Designated Representative will review the updated schedule and will discuss any differences or issues raised. Decisions made and agreed to by all parties are binding. However, no contracted completion dates will be modified except by an approved Contract Change Proposal and subsequent Change Order.

3. Timely submission of updates is of significant and crucial importance to the management of this Project. Lack of or late receipt of updates diminishes their value to the Project. Therefore, at the Owner's Designated Representative discretion, partial payment may be withheld for a late update as may be determined by the Owner's Designated Representative in consideration of the value of the update at the time of receipt, the circumstances of the late submittal, and the level of progress achieved on the Project.

C. The Contractor shall submit the Progress Schedule, consisting of the reports and diagrams as specified by this subsection, in the following formats quantities:

1. Electronic PDF file of all reports, schedules, etc.

2. Native electronic copy of the CPM Progress Schedule.

D. Float: Contractor is not entitled to any adjustment in the Contract Time or the Contract Sum, or to any additional payment or equitable adjustment of any sort,
by reason of the loss or the use of any float time, including time between Contractor’s anticipated completion date and the end of the Contract Time, whether or not the float time is described as such on the Progress Schedule.

E. Qualifications: Contractor shall submit the resume(s) of the person(s) designated as responsible for schedules and reports (the Contractor's scheduler) Prior to commencing construction activities. Contractor's scheduler shall have demonstrable capability to plan, coordinate, execute, and monitor a CPM schedule as required for this Project. Owner’s Designated Representative will approve or disapprove the Contractor's proposed scheduler. In the event of disapproval, a new scheduler shall be proposed within 7 Days and be subject to the same consideration criteria as noted above.

1.05 MONTHLY UPDATES

A. Contractor shall prepare and submit updated Progress Schedules and participate in schedule update meetings with the Owner each month. Participation in the meeting and submission of the monthly update is a condition precedent for payment of the line item value for scheduling Work.

1. Updated monthly schedule submittals:
   a. A PDF electronic version of complete Project schedule showing the critical path accompanied by a narrative of any deviations from the previous month.
   b. Electronic schedule file in native format.
   c. Short-interval schedules or look-ahead schedules shall not be an acceptable submittal.

B. Contractor shall prepare an update of the current Progress Schedule each month to reflect Work progress achieved since the previous update. Progress updating shall be performed without changes to the schedule logic or the original duration of activities. Monthly progress updating is required and necessary prior to performing a Contemporaneous Period Analysis of any change to the calculated completion date from the prior update.

C. Contractor may, in a second report, incorporate any logic and duration changes that represent revised planning. All such changes must be clearly identified and submitted for acceptance.

D. The Progress Schedule must clearly identify the current Substantial and Final Completion dates.

E. Contractor shall account for all adverse weather days and similar excusable noncompensable delays. By whatever method Contractor chooses to account for such delays and events, a narrative description and CPA of the accounting shall be included with the narrative report.

F. Monthly schedule update meetings:

1. Monthly schedule update meetings shall be held at Contractor's Project
field office one week prior to the due date of Contractor’s monthly Application for Payment, unless otherwise agreed.

2. The Contractor shall provide updated Project schedule submittals.

3. The Contractor shall also provide a narrative report including:
   a. A description of the Work accomplished during the preceding period;
   b. A discussion of the Work that had been scheduled to be performed during the previous period but was not, and explain why it was not performed; and
   c. A discussion of the Work scheduled for the upcoming period noting any issues or events that could impact this Work. If Contractor intends to make logic or original activity duration changes, the report must specifically identify such changes.

4. Contractor, Owner, and Architect/Engineer will review these reports and will discuss any differences or issues raised. No contractual completion dates will be modified except by approved Change Order.

G. Timely submission of updates is of significant and crucial importance to the Project. Owner may withhold payment as per Section 01 29 00 Applications for Payment.

1.06 THE CONTEMPORANEOUS PERIOD ANALYSIS

A. It is Owner’s intent to resolve all issues affecting the Contract completion date in a timely, efficient and effective manner. To achieve this goal, and in addition to contractor’s obligation to follow the contractual dispute resolution procedure, Contractor shall analyze any delays to the critical path or completion date by application of the Contemporaneous Period Analysis method. A CPA shall normally coincide with the monthly schedule update meetings.

B. Assessment of impacts due to changes or other events, in accordance with the CPA method, must be based on the most recent accepted updated Progress Schedule. No logic or duration changes shall be made to updates until progress related data has been incorporated into the Progress Schedule and the Progress Schedule is updated to reflect actual progress for the period. All data shall be provided to Owner.

C. Submission of an accurate and properly updated Progress Schedule and completion of the Contemporaneous Period Analysis are conditions precedent to the review and approval of any request for an extension in the Contract Time. Owner may assess liquidated damages, if any, regardless of the status of any requests for time extensions pending, until any such requests are resolved.

D. The process for preparing and submitting a CPA is as follows:

1. Contractor will notify Owner in writing of event(s) or occurrence(s) which constitute a delay of the critical path or completion date affecting progress
2. Contractor shall evaluate the event(s) or occurrence(s) and produce a narrative of the resulting delay describing the effect upon concurrent or logically connected subsequent activities.

3. Consistent with the narrative, Contractor shall produce a subnet to graphically describe the event(s) or occurrence(s) and the effect upon the Progress Schedule.

4. Contractor will recalculate the Progress Schedule and provide an updated PDF and Native Progress Schedule.

E. The CPA will be reviewed at the monthly schedule update meeting or at a special meeting scheduled with Owner. At the CPA review meeting, Contractor shall present the CPA and respond to questions.

F. Until and unless substantiated delay is accepted by Owner, the time effect shall not be incorporated into any monthly update. If accepted after a monthly update in which the event(s) or occurrence(s) took place, that monthly update may be recalculated, resubmitted and shall be included in an approved Change Order.

1.07 SHORT-INTERVAL SCHEDULE

A. Prepare a weekly Short-Interval (look-ahead) Schedule based upon the Contractor's Work plan and the updated Progress Schedule.

B. Format for the Short-Interval (look-ahead) Schedule shall be acceptable to Owner. The format shall include comment annotation as necessary.

C. Content of the Short-Interval (look-ahead) Schedule shall include the Work planned for the next 3-week period and the Work that was performed in the previous week.

D. Copies of the Short-Interval (look-ahead) Schedule shall be provided at the weekly progress meetings to be used as a basis for discussion of progress and of planned Work.

1.08 SUBMITTAL SCHEDULE

A. Provide a Submittal Schedule within 10 Days of Owner's Acceptance of the Project Schedule per Section 01 33 00 - Submittals.

PART 2 PRODUCTS

2.01 SCHEDULING SOFTWARE

A. Contractor shall utilize Microsoft Project or Primavera P6 unless otherwise agreed to by Owner.

END OF SECTION 01 32 13
PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preconstruction photography.

B. Construction photography of Work-in-progress.

1.02 GENERAL

A. Contractor shall provide photographs taken from locations coordinated with Owner.

B. Photographer: Experienced in taking construction photography.

C. Equipment: All photos shall be in digital format.

D. Video images may be acceptable for certain operations. Confirm with Owner.

PART 2 PRODUCTS

2.01 PRECONSTRUCTION PHOTOGRAPHS

A. Contractor shall provide electronic files containing photographs of the existing conditions at the site, surroundings, and haul routes per the Pre-Construction Submittal Requirements of Section 01 33 00. Coordinate with Owner the extent of the preconstruction photographic record that is required.

2.02 CONSTRUCTION PHOTOGRAPHS

A. Contractor shall provide electronic files containing photographs of construction progress on a monthly basis.

2.03 PHOTOGRAPHIC SUBMITTALS

A. Photographs shall be submitted each month during the Contract Time, or as otherwise agreed upon by Owner. The number of photographs shall be sufficient to document the site to the satisfaction of the Owner and Contractor.

B. Photographs shall be representative of Project progress, showing all major Work and any critical concealed conditions.

C. The files in each monthly photograph submittal must each be labeled with the Project name, Project number, and submittal date. Additionally, each photograph shall be dated, labeled, and accompanied by a brief description identifying the location and direction the photo was taken. Date stamp using month/date/year format.
PART 3  EXECUTION

3.01  PRECONSTRUCTION PHOTOGRAPHS

A. Coordinate the scope of preconstruction photographic record survey with Owner.

B. Take preconstruction photographs to identify and establish a baseline record of existing conditions.

C. A preconstruction photographic record survey shall include, but not be limited to, all areas that may be impacted or damaged by construction phase activities.

D. The extent or nature of the existing site and adjacent surroundings shall be thoroughly documented.

3.02  CONSTRUCTION PHOTOGRAPHS

A. Contractor shall take construction photographs each month during construction of the Project.

B. Contractor shall document concealed conditions (once exposed) that differ from expectations.

1. It is critical that Contractor photographically document concealed conditions that may benefit Owner’s future maintenance and operations activities. Take photographs (with a reference point) prior to cover or concealment. For example:
   b. Under-slab utility rough-in.
   c. Wall cavity utility routing.
   d. Above-ceiling installation after ceiling support system installed, but prior to cover.

2. The photograph record described above shall be considered minimum and shall not be deemed to limit the quantity or quality of the photographic record.

END OF SECTION 01 32 33
PART 1 GENERAL

1.01 SUMMARY

A. This section includes administrative and procedural requirements for submittals required for performance of the Work, including:

1. Pre-Construction Submittal Requirements; and

2. Product data.

B. Coordination: Review of the submittals by Owner is not for the purpose of determining their accuracy and/or completeness, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of Contractor as required by the Contract Documents.

1. Owner reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are provided.

2. Allow at least 14 Days for review of each submittal by Owner. Complex or interrelated submittals, or the submission of multiple submittals at or near the same time, will require additional time. Provide a "priority list" when submitting multiple submittals at or near the same time. Submittal sequencing should coincide with the submittal schedule (see Section 01 32 13 – Progress Schedule).

C. Submittal Preparation: Place a permanent label or title block on each submittal for identification.

1. Include the following information on the label or title block:
   a. Project name, Project number, and date;
   b. Name and address of Owner;
   c. Name and address of Contractor and submitting Subcontractor, if applicable;
   d. Name and address of supplier and manufacturer, if applicable;
   e. Number and title of appropriate Specification section; and
   f. Drawing number and detail references, as appropriate.

2. Provide adequate space for action stamps to record review.

D. Submittal Transmittal: Package submittals in manageable quantities and transmit to Owner and Architect/Engineer, if applicable, simultaneously. Submittals received from sources other than Contractor will be returned without action. By submitting submittals, Contractor represents to Owner that Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements, and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within each submittal with the requirements of the Work and of the Contract Documents.
1. Address one topic or related set of topics in each transmittal based upon Specification sections (i.e., mechanical items should not be submitted under same transmittal with electrical items).

2. Clearly call out relevant information, deviations, and requests for data, including minor variations from the Contract Documents on both the transmittal and all copies of a submittal.

3. Shop drawings, product data, samples, and mock-ups shall be submitted to Owner’s Designated Representative for review/approval. The minimum number of submittals to be provided are:
   a. Reference technical Specifications for additional submittal requirements.

4. Owner may modify the required submittal quantities.

E. Material and Color Submittal: Submit samples of actual colors and/or materials.

F. Number submittals by Specification section number and revision letter.

G. In the event of the need to "revise and resubmit" a submittal, resubmit same in acceptable form/content, clearly identifying deviations from the previous rejected submittal. Contractor shall also keep accurate records of the receipt, review, and delivery of all submittals and shall submit to Owner, as requested, status reports.

H. Provide a final electronic copy of all approved submittals.

1.02 PRE-CONSTRUCTION SUBMITTAL REQUIREMENTS

A. All Pre-Construction Submittals are required before onsite construction activities may commence. Contractor shall submit the following Pre-Construction Submittals within 7 days of Notice to Proceed. Submittal review for these items only shall be supplied within 7 days of receipt by Owner.

1. Indoor Air Quality Management Plan
2. Site Safety and Health Plan (for information only)
3. Quality Control / Quality Assurance Plan
4. Waste Management Plan
5. Progress Schedule
6. Schedule of Values
7. Pre-Construction Photographs
8. Emergency Points of Contact
9. List of Subs and Suppliers
10. Demolition Plan

1.03 SHOP DRAWINGS – NOT USED

1.04 PRODUCT DATA – NOT USED
1.05 SAMPLES AND MOCK-UPS – NOT USED

A. Submit samples and mock-ups that are identical to the material or product proposed. Samples include partial sections of components, cuts or containers of materials, color range sets, and swatches showing color, texture and pattern.

1. Package samples to facilitate review. Include the following:
   a. Generic description of the sample;
   b. Source;
   c. Product name or name of manufacturer;
   d. Compliance with recognized standards;
   e. Availability and delivery time; and
   f. Specification section.

B. Requirements: Submit samples and mock-ups for review of kind, color, pattern, and texture for a comparison of these characteristics before actual installation.

1. Where variation in color, pattern, texture or other characteristics are inherent in the material, submit not less than four units to show limits of variation.

C. Submittals: Where samples are for selection of appearance from a range of standard choices, submit a full set of choices for the material or products.

D. Maintain sets of approved samples and mock-ups at the Project site for quality comparisons throughout the course of construction.

E. Demolish and remove all samples and mock-ups prior to Substantial Completion but not sooner than directed by Owner.

1.06 OWNER'S ACTION

A. Review: Except for submittals for information or a similar purpose, Owner will review each submittal, mark to indicate action taken, and return promptly.

B. Owner approval of submittals does not supersede or alter Contract Document requirements.

END OF SECTION 01 33 00
PART 1 GENERAL

1.01 SUMMARY

A. This Section includes the administrative and procedural requirements for any general alterations to be performed during the Project, including but not limited to products, transition and adjustments, cutting, patching, and repair and cleaning.

1.02 SUBMITTALS

A. Contractor shall submit a written request in advance of cutting or alteration that impacts:

1. Structural integrity of any element of Project.
2. Integrity of weather-exposed or moisture-resistant elements.
3. Efficiency, maintenance, or safety of any operational elements.
5. Work of Owner or a separate contractor.

B. Contractor must include in its written request, when required:

1. Identification of Project.
2. Location and description of affected Work.
3. Necessity for cutting or alteration.
4. Description of proposed Work and products to be used.
5. Alternatives to cutting and patching.
6. Effect on Work of Owner or separate contractor.
7. Written permission of affected separate contractor.
8. Date and time Work will be executed.

1.03 QUALITY ASSURANCE

A. Limits of Work:

1. Contractor shall maintain existing building structure (including structural floor and roof decking) and envelope (exterior skin and framing, excluding window assemblies and nonstructural roofing material) not indicated to be removed; do not cut such existing conditions beyond indicated limits.
2. Contractor shall maintain existing interior nonstructural elements (interior walls, doors, floor coverings, and ceiling systems) not indicated to be removed; do not cut such existing conditions beyond indicated limits.
3. Contractor shall maintain existing nonshell, nonstructural components (walls, flooring, and ceilings) not indicated to be removed; do not cut such existing conditions beyond indicated limits.
B. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

C. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operating elements include the following:

1. Primary operational systems and equipment.
2. Air or smoke barriers.
3. Fire-suppression systems.
4. Mechanical systems piping and ducts.
5. Control systems.
6. Communication systems.
7. Conveying systems.
8. Electrical wiring systems.
9. All low voltage systems.
10. Operating systems of special construction in Division 13.
11. Other operating systems as appropriate.

D. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended that result in increased maintenance or decreased operational life or void of warranty, or could adversely affect safety. Miscellaneous elements include the following:

1. Water, moisture, or vapor barriers.
2. Firestopping or fire barriers.
3. Membranes and flashings.
4. Exterior curtain-wall construction.
5. Equipment supports.
6. Piping, ductwork, vessels, and equipment.
7. Noise and vibration-control elements and systems.
8. Other miscellaneous systems as appropriate.

E. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exterior conditions or in occupied spaces in a manner that would, in Owner's opinion, reduce the building's aesthetic qualities. Contractor shall remove and replace conditions that have been cut and patched in a visually unsatisfactory manner.

PART 2 PRODUCTS

2.01 PRODUCTS FOR PATCHING AND EXTENDING WORK

A. New Materials: Match existing products and Work when patching and extending Work.
B. Type and Quality of Existing Products: Determine by inspection and testing products where necessary; refer to existing Work as a standard.

PART 3 EXECUTION

3.01 EXAMINATION

A. Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents related to that portion of the Work, as well as other information available to Contractor, take field measurements, and inspect any existing conditions, including elements subject to damage or movement during cutting and patching.

B. After uncovering existing Work, inspect conditions affecting performance of Work.

C. By beginning any cutting or patching, Contractor represents and warrants its acceptance of existing conditions.

D. Contractor shall verify that demolition is complete and areas are ready for installation of new Work.

3.02 PREPARATION

A. Contractor shall cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.

B. Contractor shall remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, deteriorated masonry, concrete, and disturbed subgrade material. Replace materials as specified for finished Work.

C. Contractor shall remove debris and abandoned items from area and from concealed spaces.

D. Contractor shall prepare surface and remove surface finishes to provide for proper installation of new Work and finishes.

E. Contractor shall close openings in exterior surfaces to protect existing Work. Contractor shall insulate ductwork and piping to prevent moisture and condensation in exposed areas.

F. Contractor shall provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect Work from damage.

3.03 PERFORMANCE

A. Contractor shall coordinate alterations and renovations to expedite completion of the Work.
B. Remove, cut, and patch Work in a manner to minimize damage. Provide a means of restoring products and finishes to their original or specified condition.

C. Refinish remaining existing surfaces in renovated rooms and spaces, to specified condition for each material, with a neat and clean transition to adjacent finishes.

D. In addition to specified replacement of equipment and fixtures, restore existing plumbing, heating, ventilation, air conditioning, and electrical systems to full original operational condition.

E. Install products as specified in individual sections.

F. Remove samples of installed Work for testing when requested.

G. Provide openings in the Work for penetration of mechanical and electrical Work.

H. Cut rigid materials using the appropriate equipment and tool. Pneumatic tools not allowed without prior approval.
   1. Concrete Walls: Saw-cut walls using accurately located straight lines, unless directed otherwise. Minimize overcuts.
   2. Masonry Walls: Saw-cut along mortar joints, cutting block uniformly in accurately located straight lines, unless otherwise directed. Remove all mortar adhering to edges. Overcuts not allowed.
   3. Wood Framed Walls: Demolish plaster or gypsum wallboard, removing wall framing only as required. Cut wall finish materials in straight uniform lines.
   4. Concrete Floors: Saw-cut floors and remove. Core drill as required.

I. Restore Work with new products in accordance with requirements of Contract Documents.

J. Fit Work to existing pipes, sleeves, ducts, conduit, and other penetrations through surfaces, while maintaining assemblies.

K. At penetrations of fire rated walls, partitions, ceilings, or floors, completely seal voids with firestopping material to full thickness of the penetrated element, while maintaining assemblies.

L. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 01 35 16
PART 1 GENERAL

1.01 SECTION INCLUDES

A. Requirements pertaining to regulatory requirements.

B. List of regulatory requirements.

1.02 CONTRACTOR RESPONSIBILITY

A. Contractor is solely responsible for compliance with all codes, laws, or regulatory requirements.

B. Inspections performed or not performed by the City of Pullman, Labor and Industries, Owner, Owner Designated Representative, or others who are under contract to Owner do not waive or change Contractor’s obligations, nor do such inspections constitute approval or acceptance of portions of the Work.

1.03 CONTRACTOR REQUIREMENTS

A. Contractor shall perform the Work in accordance with the requirements of governing agencies and applicable regulatory requirements, including those included in this Section and elsewhere in the Contract Documents. Contractor must comply with all applicable laws, building codes, regulations, and rules, including, when applicable, the Washington State University campus code.

B. Contractor shall schedule and coordinate inspections and gain approvals required by the City of Pullman and other governing agencies in a timely manner and as required for Owner occupancy of the Project within the Contract Time.

C. Contractor shall inform the City of Pullman Building and Fire Departments, Labor and Industries, and other governing agencies of changes in the Work affecting regulatory requirements in a timely manner.

D. Contractor shall promptly forward to Owner all inspection reports, orders, permits, and other directives and correspondence received from the City of Pullman inspectors or other governing agencies having jurisdiction over the Work.

E. Contractor shall promptly notify Owner when the Contract Documents appear to be in conflict with Regulatory Requirements.

F. Contractor shall, at all times, use its best efforts and exercise its judgment as an experienced contractor to adopt and implement policies and practices designed to avoid work stoppages, slowdowns, disputes, or strikes where reasonably possible and practical under the circumstances, and shall, at all times, maintain Project-wide labor harmony.
1.04 REGULATORY REQUIREMENTS

A. Authority Having Jurisdiction (AHJ) shall be the organization, office, or individual responsible for enforcing the requirements of the applicable code(s) or standard(s), and or for approving equipment, materials, installation(s), or procedure(s).

B. Regulatory authorities establish minimum requirement levels. Where provisions of the Contract Documents and regulatory requirements differ or conflict, the more stringent requirement governs.

C. Regulatory requirements added by other sections of the Contract Documents or otherwise applicable are binding upon the Work in accordance with the provisions of this Section. The regulatory-requirements list provided below is intended to assist Contractor in determining the regulatory requirements for the Project, but neither the inclusion nor omission of any item from the list shall be construed to relieve Contractor of obligations that otherwise exist under the law or the Contract.

1.05 LIST OF REGULATORY REQUIREMENTS


C. National Fire Protection Association (NFPA) Codes.


H. State of Washington, WAC Chapters 173, 246, and 296, as applicable.

I. U.S. Environmental Protection Agency 40 CFR, as applicable.

J. U.S. Transportation Department Title 49, Parts Pertaining to Transportation of Hazardous Materials.

K. U.S. Nuclear Regulatory Commission Title 10, Parts Pertaining To Radioactive Materials Management.

M. Washington State Energy Code, WAC 51-11C. Shortened


P. Federal Emergency Management Agency (FEMA) requirements for floodway/floodplain development.

Q. Electrical Work:
   1. NFPA 70, National Electrical Code (NEC), most recent adopted edition.
   2. Underwriters’ Laboratories (UL).
   3. National Electrical Manufacturer’s Association (NEMA).

1.06 PERMITS REQUIRED

A. Contractor shall obtain and pay for all required building permits, including any renewals. Contractor shall identify costs for permits on the Schedule of Values for permits obtained.

B. All trade permits (e.g. electrical, pressure vessel, elevator, etc.) must be included in each Subcontractor bid.

C. Owner obtains permits for the following facilities and activities.
   1. U.S. Army Corps of Engineers:
      a. Wetlands (404).
   2. Permits and/or Approvals from the DOE or local environmental authority:
      a. Stormwater from Construction Sites (Notice of Intent).
      b. Wastewater Discharge Facilities.
      c. Well Construction (including Well Abandonment).
      d. Water Rights.
      e. Notice of Construction (Air Pollution Sources).
      f. SEPA.
      g. Floodway/Floodplain development.

END OF SECTION 01 41 00
PART 1 GENERAL

1.01 SUMMARY

A. Conduct portions of the Work requiring special procedures due to hazardous materials and conditions in accordance with regulatory standards and guidance provided in this Section.

1.02 SUBMITTALS

A. Contractor shall deliver a current copy of its site specific Health and Safety Plan to the Owner per the Pre-Construction Submittal Requirements of Section 01 33 00. The submittal must include each Subcontractor’s site specific Health and Safety Plan. Submittal to Owner is for information only, not for review, acceptance, or approval of the Health and Safety Plan, nor for analysis of content or completeness.

1.03 QUALIFICATIONS OF HEALTH AND SAFETY PERSONNEL

A. Contractor shall employ a competent person for each hazardous construction task in accordance with the requirements of WAC 296-155.

B. Contractor shall submit to Owner the names of its employees performing duties as competent persons, as well as the names of Subcontractor employees performing duties as competent persons.

1.04 HAZARDOUS MATERIALS MANAGEMENT

A. Dangerous Waste Management:

1. Contractor agrees and acknowledges that:

   a. Contractor has direct and exclusive control over the Work and operations at the Project site and is responsible for any Contractor generated, created, or disturbed Washington State dangerous waste and its collection, labeling, accumulation, transportation, and disposal. Owner’s EH&S department will provide assistance to Contractor upon request, and will coordinate transportation and disposal of Project-generated Washington State dangerous waste.

   b. Contractor must provide Owner immediate notification of any pre-existing unanticipated Washington State dangerous waste or site contamination.

2. Contractor is responsible for securing its own waste generator identification number, and Contractor shall sign all manifests associated with the Contractor-generated waste.

   a. Contractor shall obtain an EPA/State ID number in accordance with WAC 173-303-360 before conducting activities generating chemical waste designated as Washington State dangerous waste.
b. Contractor shall cancel the EPA/State ID number when:
   1) All activities generating or managing waste have ceased;
   2) All regulated wastes have been removed from the Project site under proper manifests, and all site contamination is remediated; and
   3) All annual dangerous-waste reporting requirements are complete.

c. Contractor may call the Washington State Department of Ecology (DOE) to request a reporting package for early submittal.

d. Contractor shall furnish to Owner’s EH&S Department, Pullman, WA, within 3 Days from submittal or receipt, copies of the following documents:
   1) Form 2 Notification of Dangerous Waste Activities;
   2) All signed Uniform Hazardous Waste Manifests (original copy when shipping wastes and copy returned from the treatment, storage, disposal, or recycling facility), Land Disposal Restriction Notification forms, Certificates of Recycling/Disposal/Destruction, and Exception Reports;
   3) All Annual Reports; and
   4) All correspondence from the DOE.

3. Owner remains responsible for Washington State dangerous waste and site contamination: (1) pre-existing Contractor’s activities at the site, (2) not listed in the Contract Documents, and (3) not disturbed by Contractor through improper construction activities.

4. For waste identified in contract document and for unanticipated Washington State dangerous waste or site contamination discovered during the course of the Work on the site, Contractor shall:
   a. Collect, containerize, and accumulate all Washington State dangerous waste or site contamination in accordance with applicable Federal, State, and local regulations.
   b. Coordinate all transportation and disposal activities through Owner’s EH&S department, who will utilize the Washington State Hazardous Waste Disposal Services contract or equivalent pre-approved contractor. Owner’s disposal contractor shall complete all applicable dangerous waste shipping papers including all Uniform Hazardous Waste Manifests, Land Disposal Restriction Notification forms, profiles and barrel packing lists.

B. Hazardous Materials Spills and Releases:

1. Contractor and Subcontractor(s) shall immediately report all hazardous materials spills at the Project site to Owner. If a hazardous material spill occurs at a Project site in Whitman County, and if any individual may be affected by the spill, Contractor and/or Subcontractor(s) must immediately report the spill to Whitcom (emergency dispatch). In other counties,
Contractor and Subcontractor(s) must report spills to the appropriate emergency response agency in that area.

2. Contractor shall be responsible for spill containment, cleanup, decontamination, post-cleanup monitoring, disposal of any wastes generated from cleanup activities, and generation of any reports required by regulatory agencies and/or regulations including, but not limited to, WAC 173-303 and WAC 173-340.

C. Spill Prevention Control and Countermeasures:

1. Owner’s EH&S department is responsible for Owner’s SPCC Plan. Any of Contractor's on-site activities involving the handling and/or storage of materials meeting the definition of oil per 40 CFR 112 in containers and/or equipment with a capacity greater than 42 gallons must be included in the Owner’s SPCC Plan. Contractor shall provide Owner’s EH&S department with an inventory of this equipment or containers at least 14 Days prior to the equipment or containers being brought to the Project site.

2. Contractor shall provide and utilize secondary containment for containers and tanks of oil with a capacity greater than 42 gallons. Owner may waive this requirement in its sole discretion upon Contractor's request after Owner reviews Contractor’s written explanation as to why secondary containment is unnecessary for a particular container or tank.

D. Asbestos:

1. All Contractor employees involved in excavation or demolition shall be asbestos awareness trained. Contractor shall submit to Owner the name of Contractor's competent trainer, the names of each of Contractor’s trained personnel, and the date of each training. Contractor’s submittal must also state that the training was conducted for asbestos awareness for the Work.

2. All asbestos abatement Work shall be performed by persons trained in Washington State-approved courses and certified by the State of Washington.

3. All asbestos abatement Work performed shall be overseen by a consultant hired by the Owner to ensure the Work meets regulatory standards and Owner requirements.

4. All asbestos cement pipe Work shall be performed by persons trained in an asbestos cement pipe procedures course whose content is reviewed and approved by the Washington State Department of Labor and Industries, per WAC 296-62-07722(3)(ii)(C).

5. If suspected asbestos-containing material is discovered during Contractor’s execution of the Work, and abatement of the material is not a requirement of the Contract, Contractor shall suspend any Work that affects the material and immediately notify Owner. Contractor shall safeguard the area to prevent entry until certified personnel determine whether the material is non-asbestos containing or the material is abated, at which time the Work in that area may resume.
E. Lead:

1. Owner shall inform Contractor of lead-containing coatings and materials that the Contractor may encounter while performing the Work. These materials or coatings may release lead into the air, soil, or water, or may be a source of contamination due to skin contact. Owner shall provide general data about the percentage of lead content of each suspected lead-containing material or coating and/or provide Contractor with data showing the amount of lead per surface area.

2. Contractor is responsible for protecting its employees from lead exposure, as required by Washington law.

3. Contractor shall manage all paint chips, building components, soil, and/or other material considered by Owner to be dangerous waste according to the Dangerous Waste Management paragraph.

F. Polychlorinated Biphenyls:

1. Owner may survey oil-filled equipment prior to commencement of construction. This equipment includes, but is not limited to, transformers, electrical switches, hydraulic elevators, emergency generators, capacitors and light ballasts. Owner’s survey shall usually determine if the equipment is filled with oil containing polychlorinated biphenyl (PCB). Owner shall remove, or arrange for the removal of, any equipment that contains oil in concentrations qualifying the equipment as dangerous waste per WAC 173-303.

2. If oil-filled equipment is discovered during Contractor’s execution of the Work, Contractor shall suspend any Work that may affect the equipment and immediately notify Owner. Owner shall test the equipment and determine the appropriate management method for the equipment and the oil it contains.

G. Mercury:

1. Owner may survey all equipment suspected of containing mercury prior to commencement of construction. This equipment includes, but is not limited to, switches and thermostats. Owner’s survey shall determine if the equipment contains mercury. Owner shall remove, or arrange for the removal of, any such equipment.

2. If mercury-containing equipment is discovered during Contractor’s execution of the Work, Contractor shall suspend any Work that may affect the equipment and immediately notify Owner. Owner shall test the equipment and determine the appropriate management method for the equipment and the mercury it contains.

H. Hazardous Materials or Equipment:

1. Fixed equipment such as fume hoods, safety cabinets, and vacuum systems, and related ductwork, fans, and appurtenances, may contain or be contaminated with hazardous materials. Owner may test this
equipment to determine what, if any, hazards are present. If equipment contains a hazard, or if the equipment itself is a dangerous waste, Owner shall inform Contractor of the nature of the hazard including any information necessary for Contractor to protect its workers. If the equipment is a dangerous waste, Contractor shall dispose of, or make arrangements for the disposal of, the equipment per the above Dangerous Waste Management paragraph.

I. Underground Storage Tanks (USTs): NOT USED

J. Department of Homeland Security (DHS) Chemicals of Interest (COI)

1. Contractor and Subcontractors shall report any COI to Owner as required by the DHS. Contractor may contact Owner’s Representative in conjunction with the University’s EH&S Department for the specific means of reporting.

1.05 WATER AND STORMWATER POLLUTION PREVENTION: NOT USED

1.06 AIR POLLUTION

A. Contractor shall comply with all provisions of the Owner’s Air Operating Permit, WAC 173-400 and WAC 173-401 requirements as applicable.

B. Contractor shall control pollutants, such as diesel emissions, chemical emissions, and dust generated by the Project, so that pollutants do not adversely impact the Project site or the surrounding-area air quality.

C. Contractor shall submit to Owner within 30 Days of the Notice to Proceed a list of any stationary air emission-generating equipment included in the Work, such as: fuel-powered electrical generators, internal combustion engines, boilers, paint booths, CFC-containing equipment, or other regulated emission sources. Contractor shall assist Owner in the preparation of necessary permit applications, and Owner shall obtain necessary permits. Contractor shall abide by any conditions or requirements of permits.

D. Per WAC 173-400, Contractor shall mitigate all fugitive emissions (such as dust, vehicle exhausts, and other emissions that do not pass through a stack, chimney, or vent) generated by the Work. Contractor shall mitigate dust at the Project site throughout the entire duration of the Work. Dust mitigation may include application of specific chemical compounds approved by Owner, or may be accomplished with intermittent watering and sprinkling at such a frequency as will satisfactorily settle dust (excluding paved surfaces). Paved surfaces shall be cleaned mechanically without the discharge of water or chemicals to storm drains and/or surface waters. Under no circumstances shall Contractor permit dust mitigation cause soil erosion or pollution of surface waters.

E. No materials shall be burned without required permits. If permitted burning is done, odors shall be minimized in accordance with the Owner’s Air Operating Permit.
F. CFCs (chlorofluorocarbons) or HCFCs (hydrochlorofluorocarbons) are not permitted as refrigerants in new or renovation projects. New permanently installed refrigeration equipment, such as chillers, temperature controlled chambers, air conditioning equipment, compressors, etc., must contain HFC (hydrofluorocarbon) refrigerants only (i.e., R-134A, R-404A, or R-507). At the completion of the Project, Contractor must provide detailed documentation to Owner about the refrigeration equipment installed, including identifying markings, capacity, and type of refrigerant. Refrigerant must be installed only by persons certified to do so.

G. Indoor Air Quality:

1. Owner shall notify Contractor of the location of fresh air supply intakes for buildings in the immediate area of the Work, and of fresh air supply intakes for buildings that may be affected by emissions from Contractor operations.

2. Contractor shall notify Owner 3 Days prior to commencing Work in which Contractor must operate vehicles or equipment in areas where fresh air supply intakes are located.

3. Contractor shall notify Owner 3 Days prior to commencing Work in which Contractor will be using solvents or other volatile chemicals, or processes which emit fumes, smoke, or strong odors that may affect fresh air supply intakes, or may enter Owner’s buildings through doorways or windows.

4. Contractor shall not allow its activities that emit vapors, fumes, smoke or strong odors to negatively affect fresh air supply intakes.

5. If air releases of hazardous chemicals must occur, Contractor shall submit no later than 30 Days after the Notice to Proceed a chemical release plan detailing how such incidents may adversely affect Owner. Such a plan shall also specify protection to be provided to the employees of Owner and Contractor actions required to minimize chemical overexposure.

6. During welding activity, Contractor shall confine fumes to the Project site, and the fumes must not adversely affect Owner’s employees or students.

1.07 PUBLIC HEALTH

A. Solid Waste Disposal:

1. Contractor shall legally dispose of or recycle all solid waste at an off-site location. Contractor shall not burn, dump, or bury waste materials, debris, or rubbish on Owner property. Contractor shall clean the Project site at the end of each work shift. Contractor is liable for any and all damage resulting from improper waste handling and disposal (see Section 07 74 19 - Construction Waste Management).

2. Environmental Noise:
Per WAC 173-60, and applicable local requirements, Contractor shall not exceed maximum permissible environmental noise levels for the duration of the Work.

B. General Sanitation:

1. Per WAC 246-203, Contractor shall supply adequate water for drinking and hand washing purposes. The use of common drinking cups or towels is prohibited. For hand washing purposes, Contractor shall supply hot running water, soap, disposable towels, and a waste receptacle.

C. Drinking Water Protection:

1. Per WAC 246-290 and 246-291, Contractor shall protect all public water supplies. No portion of a public water system containing potable water shall be put into service nor shall service be resumed until the facility has been effectively disinfected and a satisfactory bacteriological sample has been obtained from a DOE-certified laboratory. Results of sampling shall be sent to Owner. The procedure used for disinfection shall conform to current standards of the American Water Works Association.

2. A minimum sanitary control area around all wells shall be maintained at all times. The sanitary control area shall extend at least 100 feet from any well. No source of contamination may be constructed, stored, disposed or applied within the sanitary control area.

3. If wells are being constructed or abandoned, Owner shall procure the appropriate water rights and construction permits per WAC 173-160. Owner shall provide copies of these documents to Contractor. Wells shall be constructed/abandoned properly by a licensed well driller. Contractor shall submit a plan to Owner detailing how all disinfection shall be accomplished.

4. Backflow Prevention:

a. Any connection made by Contractor to Owner’s drinking water system, including connection to a fire hydrant, must be made through a backflow prevention assembly approved by a Washington State certified cross connection control specialist (CCS) engaged by Owner and inspected and tested by a Washington State certified backflow assembly tester (BAT).

b. Contractor shall label all non-potable water outlets, in a manner acceptable to the Owner, “Non-potable Water / Do Not Drink”.

D. Vector Control: NOT USED

E. On-Site Sewage Disposal:

1. Contractor is responsible for fully complying with WAC 246-272. A construction permit application shall be submitted to the appropriate jurisdictional authority for approval. The jurisdictional authority shall issue a construction permit prior to the commencement of construction and
shall perform pre-opening inspections. Contractor shall ensure that the appropriate authority inspects and approves the site prior to construction and when the project is substantially complete.

1.08 OCCUPATIONAL HAZARD MANAGEMENT

A. Chemical Hazard Communication:

1. If any hazardous chemicals will be used in the Work or present at the Project site, copies of applicable Material Safety Data Sheets (MSDS) shall be made immediately available to Owner prior to use by Contractor and during any use of the hazardous chemicals in the Work.

2. If the use or presence of hazardous chemicals at the Project site may affect the health of individuals outside the Project site, Contractor shall submit a written plan to Owner at least 30 Days prior to such use or presence detailing how Owner can avoid exposure to the products. Contractor shall submit MSDS / SDS to Owner for any hazardous chemical to which persons outside the project site may be exposed. The exposure avoidance plan shall also specify actions that should be taken if inadvertent exposure occurs. Owner shall provide Contractor with a written plan detailing how Contractor employees can avoid exposure to hazardous chemicals used by Owner that may impact the Project site, and shall specify actions which should be taken if inadvertent exposure occurs. Owner shall submit MSDS / SDS to Contractor for any hazardous chemical to which persons inside the project site may be exposed.

B. Lock-Out/Tag-Out:

1. When Owner and Contractor are to be engaged in coordinated activities requiring the control of hazardous energy, Owner and Contractor shall inform each other of their respective lock-out or tag-out procedures.

C. Confined Space:

1. When Contractor employees are to enter permit-required confined spaces, Owner shall:

   a. Inform Contractor that the Project site contains permit required spaces and that permit-space entry is allowed only through compliance with a confined-space program meeting WAC 296-809.

   b. Inform Contractor of hazards that have been identified.

   c. Coordinate entry operations with Contractor when both Owner and Contractor personnel will be working in or near permit spaces.

   d. Debrief Contractor at the conclusion of the entry operations regarding any hazards confronted or created in permit spaces during entry operations.

END OF SECTION 01 41 19
PART 1 GENERAL

1.01 SUMMARY

A. Contractor shall perform all Work in a skillful and workmanlike manner. Materials and equipment furnished by Contract and any Subcontractor(s) must be of good quality and new unless the Contract Documents require or permit otherwise. Materials shall conform to the manufacturer’s standards in effect at the date of execution of the Contractor and shall be installed in accordance with the manufacturer’s instructions, specifications, and directions. Contractor shall, if requested by Owner, furnish satisfactory evidence regarding the kind and quality of any materials identifying thereon the source, and warranting their quality and compliance with the Contract Documents.

B. Section includes:

1. Contractor’s Quality Control Program;
2. Manufacturer’s instructions;
3. Manufacturer’s field services;
4. Testing laboratory services; and
5. Contractor tests and inspections.

1.02 QUALITY CONTROL PROGRAM SUBMITTALS

A. Contractor shall submit a written Quality Control Program for the Project per the Pre-Construction Submittal Requirements of Section 01 33 00. This submittal shall include but not be limited to the following:

1. An overview of Contractor’s Quality Control Program.
2. Identification and resume of Contractor’s on-site Quality Control Manager.
3. A description of the activities, record keeping, and correspondence that the QCM will perform and be accountable for throughout the duration of the Project.
4. A description of the quality control meetings to be conducted, sample inspection check lists (i.e., samples of actual inspection check list forms that will be submitted to Owner when scheduling inspections), and Subcontractors’ quality control representatives. All forms that Contractor intends to use in its Quality Control Program shall be part of the submittal.
5. A description of the QCM activities when inspections fail to verify compliance with the Contract Documents.
   a. These activities are to include, as a minimum, follow-up with applicable Subcontractors, correction and/or completion of Work required for re-inspection, and the re-inspection.
   b. Contractor shall submit its weekly Non-Compliance Logs at least 2 Days prior to each Progress Meeting.
6. A description of the QCM activities to provide the required notifications for inspections.

7. A description of record keeping and information turn-over to Owner as a component of the Operating and Maintenance data (i.e. factory representative’s start-up reports and permission to energize, verification of correct voltage and phasing to motors, etc.).

1.03 CONTRACTOR’S QUALITY CONTROL PROGRAM

A. Contractor shall establish and maintain a written Quality Control Program which shall be issued by Contractor to Subcontractors performing Work on the Project and utilized to verify that the execution of the Work is consistent with the requirements of the Contract Documents.

B. The Quality Control Program shall include, but not be limited to the following:

1. Preparatory Phase:
   a. Prior to beginning Work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. Contractor shall:
   
   b. Review of each paragraph of applicable specifications, reference codes, and standards. Make a copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field at the preparatory inspection. Maintain these copies in the field, available for use by Owner’s Designated Representative until final acceptance of the work.
   
   c. Review the Drawings.
   
   d. Check to assure that all materials and/or equipment have been tested, submitted, and approved.
   
   e. Review provisions that have been made to provide required control inspection and testing.
   
   f. Examine the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
   
   g. Perform a physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
   
   h. Review appropriate accident safety procedures.
   
   i. Discuss procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
   
   j. Check to ensure that the portion of the plan for the work to be performed has been accepted by the Owner’s Designated Representative.
   
   k. Schedule, manage and record the minutes of each preparatory
l. Review all RFIs associated with the Work.

2. Initial Phase:
   a. At the beginning of the Work, Contractor shall:
   b. Check work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.
   c. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing. Resolve all differences and deficiencies.
   d. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.
   e. Check safety to include compliance with and upgrading of the Safety Plan. Review with each worker. Particular attention should be given to high hazard work.
   f. Prepare and attach to the daily CQC report separate minutes of this phase.
   g. Repeat the initial phase any time acceptable specified quality standards are not being met.

3. Follow Up Phase:
   a. Perform daily checks to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the Work. The checks shall be made a matter of record in the QC documentation. Conduct final follow-up checks and correct deficiencies prior to the start of additional features of work which may be affected by the deficient work. Do not build upon nor conceal non-conforming work.

C. Contractor’s Quality Control Program shall be independent of any inspections and testing performed by Owner or by any independent testing and inspection agencies hired by Owner.

D. Within the Quality Control Program, Contractor shall have available on the jobsite at all times a written report of quality control activities. At a minimum, the report shall note Project site quality control inspections, performance of scheduled tests and follow-up testing, other required inspections, deficiency log, and examinations of workmanship and quality.

E. Test results shall identify applicable Contract (including Specification) requirements, the test or analysis procedures used, and the actual test results. A statement shall be included that the item tested or analyzed conforms or fails to conform to the Contract Documents. Each report shall be conspicuously stamped on the cover sheet “CONFORMS” or “DOES NOT CONFORM” as the case may be. All test reports shall be signed by a testing laboratory representative authorized to sign certified test reports. Copies of all test reports
shall be available on the jobsite at all times.

F. If the Quality Control Program is found to be defective and Contractor does not promptly correct the deficiency, Owner may:

1. Withhold payment until satisfactory corrective action has been taken, or
2. Issue a stop work order until satisfactory corrective action has been taken.

G. Pre-Inspections: Contractor shall pre-inspect Work that requires normal, special, and additional inspections as indicated in the Contract Documents.

1.04 FIELD SAMPLES - NOT USED

1.05 MOCK-UPS – NOT USED

1.06 MANUFACTURERS’ INSTRUCTIONS

A. Contractor shall comply with manufacturers’ instructions in full detail, including each step in sequence. Do not omit preparatory steps or installation procedures unless specifically modified or exempted by Contract Documents.

B. Should instructions conflict with Contract Documents, Contractor shall request clarification before proceeding.

1.07 MANUFACTURERS’ FIELD SERVICES

A. When specified, Contractor must require product manufacturer to furnish a qualified representative to observe field conditions and quality of workmanship, and to provide recommendations, certifications, and other specified services.

B. Representative shall submit written report to Owner listing observations and recommendations.

1.08 TESTING LABORATORY SERVICES

A. Owner will arrange for services of an independent Testing Laboratory to inspect and test the Work to verify compliance with Contract Documents.

B. Contractor’s Responsibilities:

1. Cooperate with Testing Laboratory personnel, and furnish access, tools, samples, certifications, test reports, design mixes, equipment, storage, and assistance as requested by the Testing Laboratory.

2. Notify Owner and Testing Laboratory a minimum of 7 Days in advance of all required tests and 48 hours in advance of all required inspections. When tests or inspections cannot be performed, through fault of Contractor, Contractor shall reimburse Owner for costs incurred by Owner.
3. Contractor shall remove and replace Work found to not comply with Contract Documents.

4. If initial tests and inspections indicate deficient work, Contractor shall reimburse Owner for costs of all subsequent tests and inspections related to such deficiency.

5. All damage to Work as a result of normal testing operations shall be repaired by Contractor to match surrounding surfaces.

6. Schedule testing and inspection so that work of testing and inspection personnel will be as continuous and brief as possible.

7. Contractor shall reimburse Owner for travel and lodging expenses incurred for testing and inspection services performed outside a radius of 100 miles of the Project site.

1.09 CONTRACTOR TESTS AND INSPECTIONS

A. Inspection and testing performed exclusively for Contractor’s convenience shall be the Contractor’s sole responsibility.

B. Earthwork Compaction Testing Requirements:

1. Owner will engage the services of a Testing Laboratory to perform all soil and structural fill compaction testing. Compactions of any fill material shall be equal to or exceed the specified percentage of maximum dry density as defined by ASTM test procedure D1557 (modified proctor). Obtaining such specified compaction performance is the sole responsibility of Contractor.

2. During any of Contractor’s operations, Owner reserves the right to perform compaction tests for its own information only. At Owner’s discretion, copies of such tests may be made available to Contractor. The taking of any such tests by Owner in no way relieves Contractor from testing to assure itself of compliance with the Contract Documents.

C. Approved Structural Steel Fabricators:

1. Contractor shall pay for any required structural steel fabrication special inspections.

D. Cast-in-Place Concrete Strength Testing Requirements:

1. Concrete test cylinders will be made by Owner or Owner’s Testing Laboratory. Contractor shall be responsible for proper care of cast cylinders while on the Project site (with respect to temperature, humidity and protection).

2. Contractor is also responsible for timely transportation to the laboratory in Spokane (or closer) on a schedule that will permit adequate laboratory curing before testing.

3. Contractor shall notify the Owner at least 48 hours before any concrete
pour to allow time for observation.

4. Frequency and location of tests are to be determined. As a minimum, four test cylinders will be made for each day’s pour or for every hundred cubic yards, whichever is greater.

5. The results of Owner’s tests will be made available to Contractor.

6. The quality of all concrete is to be the sole responsibility of Contractor. If Contractor feels that additional testing is required to assure continued quality control, the frequency, testing, and payment therefore is Contractor’s responsibility.

E. All Other Work Inspection and Testing Requirements:

1. Contractor shall, at no additional cost to Owner, provide all inspections and tests required to assure full compliance with the Contract Documents. Unless specifically required, Contractor is not required to submit copies of such test results to Owner. Contractor, however, shall maintain copies of all testing and inspection reports at the Project site for inspection and copying by Owner.

2. The performance of testing or inspection by Owner or Owner’s Testing Laboratory does not relieve Contractor from responsibility for meeting all requirements of the Contract Documents.

END OF SECTION 01 45 00
PART 1 GENERAL

1.01 SUMMARY

A. Contractor shall be evaluated on performance throughout the course of the contract to provide past performance documentation for future projects.

B. Section includes:

1. Program Objectives;
2. Performance Categories and Assessment;
3. Evaluation Reports;

1.02 PROGRAM OBJECTIVES

A. The Contract Performance Evaluation Program is intended to improve contractor selection given the following primary objectives:

1. Assist the Owner in evaluating the contractor’s qualifications and proven ability to successfully perform future contracts when past performance has been previously documented;
2. Provide the University objective data relating to Contractor responsibility;
3. Provide contractors with a means of enhancing their qualifications and reputation by receiving recognition for exceptional performance;
4. Encourage better working relationships between the University and the Contractor and to provide feedback to the contractor during and after the contract period;

1.03 PERFORMANCE CATEGORIES AND ASSESSMENT

A. Contractor shall be evaluated based upon the following categories:

1. Schedule and Time Management;
2. Quality Management;
3. Communication Effectiveness;
4. Management Approach;
5. Code and Compliance; and

B. Each of the above categories will be assessed by multiple key project stakeholders and provided one of the following performance levels based upon objective and cumulative data:

1. Outstanding (5): Contractor has exceeded the majority of all of the
significant contract criteria and has met or exceeded the Schedule, Quality, Communications, Management, Code Compliance and Cost requirements of the contract. The contractor was extremely or completely knowledgeable of the contract requirements and applicable laws and regulations. A very consistent high level of cooperation, project management, and job site control appreciably contributed to an unusually good result.

2. Very Good (4): Contractor has exceeded many of the significant contract criteria and has met or exceeded some of the Schedule, Quality, Communications, Management, Code Compliance, and Cost requirements of the contract. The contractor was knowledgeable of the contract requirements and applicable laws and regulations. Was generally cooperative and performed their work with minimal prompting. Their performance results were very good.

3. Satisfactory (3): Contractor has satisfactorily met the overall contract criteria and has met the overall Schedule, Quality, Communications, Code Compliance and Cost requirement of the contract. The contractor occasionally had to be prompted or reminded of the contract requirements, but overall the project was acceptable, producing an acceptable result.

4. Marginal (2): Contractor may have met many, but not all, of the contract criteria and failed to meet one or more of the Schedule, Quality, Communications, Code Compliance or Cost performance requirements of the contract. Even though the project may have been accepted, the contractor’s performance, as evaluated, was marginal overall. The contractor frequently had to be prompted or reminded of the contract requirements; overall the project was less than satisfactory.

5. Unsatisfactory (1): Contractor failed to meet many or most of the contract criteria and failed to meet the overall Schedule, Quality, Communications, Code Compliance and Cost performance requirements of the contract. While the project may have been accepted by the owner, the effort expended in prompting the contractor to perform was excessive. The contractor’s poor or uncooperative performance created serious unnecessary and avoidable difficulties in achieving contract completion.

1.04 EVALUATION REPORTS

A. At the midpoint of project completion, Owner shall provide contractor with a draft Contract Evaluation Report based upon the current performance during the contract. This shall provide the Contractor an opportunity improve performance levels during the contract, and provide an opportunity for Contractor-Owner communication and working relationship.

B. A final Contract Performance Evaluation Report will be completed upon contract completion and shall become the official report of record.

1. A Summary Contract Performance Evaluation will be provided to the Contractor within 30 calendar days after Final Completion.
2. Final Contract Performance Evaluation Reports will remain on record for a minimum of 5 years from date issued.

C. Upon receipt of the Summary Contract Performance Evaluation, Contractor shall review the report and may request a debrief conference within 21 calendar days of receipt.

D. If after the debrief, Contractor would like to dispute the evaluation findings the Contractor shall submit in writing, the specific reasons for disagreement and include the basis for their appeal within 14 calendar days following the debrief.

1. Upon receipt of appeal, Owner shall convene a review with the Assistant Vice President, Facilities Services, Capital to consider the objectivity, accuracy, completeness and fairness of the Contract Performance Evaluation.

2. The Contractor shall be notified and issued a final determination within 30 calendar days of receipt of the appeal.

END OF SECTION 01 45 34
PART 1 GENERAL

1.01 TEMPORARY UTILITIES

A. Owner may furnish to Contractor temporary Owner-owned utilities when available and upon Owner written approval. Owner reserves the right to restrict the use of its utilities if, in its opinion, Contractor fails to adequately conserve utilities or to use utilities appropriately. When using Owner-owned utilities, Contractor is to make metered connections to the nearest available service and disconnect same when no longer needed.

B. If Owner-owned utilities are not available at the Project site, or if Owner restricts use of Owner-owned utilities, Contractor shall obtain required services from commercial sources or public utilities, and Contractor is responsible to pay for all utility costs.

C. Contractor shall field verify the availability of utility services provided by Owner and coordinate the Work accordingly.

D. In remodeling projects where portions of the building are to remain in service, Contractor shall be responsible for coordinating the Work to maintain utility services to the occupied portions of the building.

1.02 TEMPORARY ELECTRICAL SERVICE

A. Contractor shall provide all services required for construction operations and may connect to existing services when available upon Owner approval.

B. Contractor shall provide lighting for construction operations.

C. Contractor may use existing lighting when available and adequate.

D. Contractor shall maintain site lighting throughout the duration of the Work.

1.03 HEAT AND VENTILATION

A. Contractor shall provide heat and ventilation as required to maintain specified conditions for construction operations and to protect materials and finishes from damage due to temperature or humidity.

B. After a building is substantially enclosed, the permanent heating system or a temporary hook-up of equipment from the permanent system may be used for temporary heat provided that the equipment is properly installed by the responsible electrical and mechanical Subcontractors and available for supplying temporary heat. Owner shall be the sole judge of the adequacy of the building enclosure for temporary heating or cooling purposes.

C. Contractor shall arrange with the electrical and mechanical Subcontractors installing said systems and equipment for the use, operation, and maintenance of
the systems. Contractor shall pay for all connections and attendants for temporary heating, including necessary accessories such as temporary (construction) air filters to protect the air distribution systems from contamination.

D. Contractor shall provide a dust free air distribution system and correct all damage to this system caused by the Work.

E. In existing facilities, Contractor shall coordinate use of the existing systems with Owner. Contractor shall extend and supplement with temporary units as required to maintain specified conditions for construction operations.

F. Use of electric resistance type heating systems for temporary heat is prohibited.

G. The warranty period for any permanent equipment used during construction will not commence until Contractor achieves Substantial Completion.

1.04 TEMPORARY WATER SERVICE

A. Unless available from an Owner-owned utility, Contractor shall provide service required for construction operations. At all times, Contractor shall utilize backflow/cross-connection devices, certified by Owner, to safeguard water supply.

B. For Work in existing facilities, Contractor shall connect to existing services when approved by Owner and extend branch piping with outlets so that water is available for use by all persons associated with the Work.

C. Provide drinking water from a safe source for all those associated with the Work.

1.05 SANITARY FACILITIES

A. Use of permanent and/or existing Owner’s facilities will be allowed as long as proper cleanliness is maintained. If, in the opinion of the Owner, restrooms are not being properly maintained, Contractor will be required to provide its own sanitary facilities at its own expense.

B. Owner will designate any restrooms that can be used by Contractor personnel.

1.06 BARRIERS

A. Contractor shall provide barriers as required to prevent public entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.

B. When temporary fencing is indicated by the Drawings, or if fencing is provided at Contractor’s option, enclosures shall be constructed of 6 feet high commercial grade chain link with vehicular and personnel gates, as required.
1.07 ENCLOSURES

A. Contractor shall provide temporary weather-tight closures of openings to provide acceptable working conditions, protect materials, facilitate temporary heating, and prevent entry of unauthorized persons. Provide doors with self-closing hardware and locks.

B. Contractor shall provide temporary roofing when so indicated by the Drawings or when made necessary by the Project requirements.

C. Contractor shall provide temporary dust-proof partitions when required to confine dust and moisture to the immediate Work area.

D. Contractor shall provide temporary noise-proof partitions when required to confine noise to the immediate Work area.

1.08 PROTECTION OF EXISTING FACILITIES

A. Utility Tunnel Protection: Contractor shall provide adequate planking across any tunnels to distribute loads and prevent damage. If necessary, Contractor shall provide temporary shoring inside tunnel areas.

B. Low Overhead Clearance: Contractor shall be fully responsible for addressing all vehicular limitations caused by low overhead restrictions throughout campus. Route all traffic to avoid damage to overhead structures. Review proposed routing with Owner prior to commencement of construction.

C. Tree and Plant Protection: Contractor shall protect trees and other plants not scheduled for removal; maintain protection until Project completion.

1. In the event that a tree or plant is damaged as a result of the Work that, in the opinion of Owner, requires replacement, Contractor shall be responsible for such replacement.

2. If at any time Contractor judges that the protection of plant materials designated to be saved is incompatible with Work required, or if operations necessarily threaten the health of any plant material, Contractor shall immediately notify Owner and cease Work affecting the area until a written agreement is reached concerning acceptable procedure.

1.09 SECURITY

A. Contractor shall provide security to protect the Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, and theft. Coordinate with Owner's security program.

B. During construction, all openings to Owner's utility tunnel system must be protected against unauthorized entry. Contractor shall provide closures, approved by Owner, including locked doors or hatches at any openings created by the Work.
1.10 PROTECTION OF INSTALLED WORK

A. Contractor shall provide temporary protection for installed products. Control traffic in immediate area to minimize damage.

B. Contractor shall provide protective coverings for walls, projections elevator cabs, jambs, sills, and soffits of openings. Protect finished floors and stairs from traffic, movement of heavy objects, and storage.

C. Contractor shall prohibit traffic and storage on waterproofed and roofed surfaces and on lawns and landscaped areas.

1.11 CLEANING DURING CONSTRUCTION

A. Contractor shall clean the site each day during construction and shall prevent the accumulation of waste materials and rubbish.

B. Contractor shall clean interior areas prior to the start of finish Work and maintain areas free of dust and other contaminants during finishing operations.

1.12 OFF-SITE CLEAN UP

A. Contractor shall continuously keep sidewalks, lawns, parking areas, and streets clear of construction materials, debris, gravel, rock, and dirt related to the Project.

1.13 LIFTING DEVICES AND HOISTING FACILITIES

A. Contractor shall provide cranes, hoists, towers, and other lifting devices necessary for the proper and efficient movement of materials.

1.14 MECHANICAL AND ELECTRICAL SYSTEM SHUT-DOWNS

A. Any shut-down of mechanical or electrical systems affecting Owner's operations shall be scheduled by Contractor during off-hours. Contractor shall submit a written shut-down request providing at least 14 Days advance notice. Any shut-down must be coordinated with and approved by Owner.

1.15 CONSTRUCTION PARKING

A. Contractor's employees may park only in accordance with campus traffic and parking regulations and pay all required fees.

B. When working in Pullman's central campus, Contractor's vehicular use will be limited to the following:

1. Delivery of materials to and from Project site;

2. Single vehicle for use by Project supervisor of each major Contractor (four total vehicles maximum); and
3. Workers' vehicles shall not be allowed to park in the central mall.

1.16 NOISE CONTROL

A. Any construction related noise that interferes or is likely to interfere with normal use of adjacent space(s) shall be scheduled and approved by Owner.

B. Contractor shall restrict any construction related noise to the hours approved by Owner and in accordance with the state and local noise ordinance.

C. Owner may approve Contractor working extended hours. Request any extended hours of operation with Owner.

1.17 TRAFFIC OBSTRUCTIONS

A. Contractor shall submit a written traffic control plan for all traffic obstructions, either pedestrian or vehicular, for approval by Owner, per the Pre-Construction Submittal Requirements of Section 01 33 00.

B. In some cases, it may be necessary to develop special routes for large or unwieldy deliveries that could interfere with pedestrian movement, especially at peak times.

C. Contractor shall avoid deliveries or equipment operations that block street traffic during peak times.

D. Pedestrian Obstructions: Any equipment on sidewalks or other pedestrian ways shall be barricaded. Barricades shall include a horizontal member at a maximum of two feet above the walking surface.

1.18 REMOVAL OF TEMPORARY FACILITIES

A. Contractor shall remove temporary materials, equipment, services, and construction facilities prior to Substantial Completion inspection.

B. Contractor shall clean and repair damage caused by installation or use of temporary facilities.

C. Contractor shall restore existing facilities used during construction to specified or original condition.

END OF SECTION 01 50 00
PART 1 GENERAL

1.01 PRODUCTS

A. Products include material, equipment, and systems.

B. Comply with Specifications and referenced standards as minimum requirements.

C. Components required to be supplied in quantity within a specification section shall be the same, and shall be interchangeable.

D. All materials shall be new unless specifically noted otherwise.

1.02 TRANSPORTATION AND HANDLING

A. Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturer's unopened containers or packaging, dry.

B. Provide equipment and personnel to handle products by methods to prevent soiling or damage.

C. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.

1.03 STORAGE AND PROTECTION

A. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.

B. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.

C. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter.

D. Arrange storage to provide access for inspection. Periodically inspect to assure products are undamaged, and are maintained under required conditions.

1.04 VARIATION FROM SPECIFIED PRODUCTS

A. Subsequent to Bid Opening/Proposal - Approved Equivalents:

1. Requests for approved equivalents will only be considered when approved equivalent statements, used in reference to product
specifications, are specifically provided for within individual Specification sections.

2. The terms "or an approved equivalent", "approved equivalent", or similar statements, when used herein in connection with manufacturers' products, shall be understood to mean products that are equally effective and suitable for their intended use; based on the judgment of the Owner, whose decision shall be final.

3. Written requests for consideration by the Owner of approved equivalents may be submitted throughout the Project.

4. Time extensions and additional costs resulting from use of approved equivalent products will not be considered.

B. No Substitutions:

1. The terms "No Substitutions", "Alternative Products not Acceptable", or similar statements used in reference to product specifications, shall mean that only the specified product will meet the needs of the University and that no other products will be considered at any time before or during the Project.

C. Requirements and Procedures for Product Variations:

1. The Contract is based on the standards of quality established in the Contract Documents.

2. Substitution or approved equivalent revisions shall be made only with the prior written acceptance of the Owner.

3. All requests for substitutions or approved equivalents must be on the proposer's letterhead and shall be accompanied by complete specifications, samples, records of performance, certified copies of tests by impartial and recognized laboratories, and such other information as the Owner may request to prove the merit of the proposed revisions.

4. The Contractor assumes the responsibility for capacity, dimensions, clearance, etc., of the named manufacturer's particular item to assure that the revision meets the requirements.

5. The Contractor shall assume the cost of any redesign, in the form of changes to the Drawings, or for the Work of any other trades, or any other costs required to properly incorporate any revision associated with substitutions or use of approved equivalent products.

6. Final decisions as to the quality and suitability of proposed revisions will rest solely with the Owner and will be based on proof submitted.

7. When the Owner approves a substitution or approved equivalent proposed by the Contractor, it is with the understanding that the Contractor certifies that the article or material is equivalent to or better than that specified.

END OF SECTION 01 60 00
PART 1 GENERAL

1.01 PURPOSE

A. Provide for an orderly, timely, and efficient completion of the Work for Owner.

1.02 SUBSTANTIAL COMPLETION

A. Requirements for Substantial Completion: Contractor shall comply with all requirements for Substantial Completion identified in the General Conditions and other Contract Documents. Prior to Substantial Completion, Contractor must have constructed the Work in substantial accordance with the Contract Documents, and:

1. Certificate of Occupancy received from the AHJ.
2. All elements of the Work must be operational and in good working order and condition, except for incidental punchlist Work;
3. The fire and life safety systems, if any, must be tested and accepted;
4. Any elevators must be operational, functioning, and in good working order and condition, and be fully approved for use;
5. All mechanical, electrical, plumbing, telecommunications, security, and access control systems must operate and function in good working order and condition, including commissioning;
6. The finish portion of the Work must be complete including but not limited to paint, trim, doors, partitions, cabinetry, floor coverings, ceilings, wall finish, and other finish surfaces, except for incidental punchlist Work;
7. All roadway improvements, paving, sidewalks, parking areas, other street improvements, lighting, landscaping and irrigation must be complete;
8. Utilities must be complete, connected, and operating normally;
9. Contractor must have removed all construction facilities, temporary controls, and construction debris;
10. Contractor must have completed training Owner’s personnel on all operating instructions and submitted training DVDs; and
11. Final cleaning.

B. Prior to Substantial Completion Contractor shall request in writing that Owner grant Substantial Completion. Accompanying the request Contractor submit the following:

1. A list of all items remaining to be completed or corrected;
2. Signed originals from authorities having jurisdiction of all certificates of compliance and final approval, as applicable;
3. All system software files required by the Contract Documents, including
but not limited to lighting and environmental controls;

4. Revised Draft Operation & Maintenance manuals; and

5. Draft Project Record.

C. Upon satisfactory completion of the requirements for Substantial Completion, Owner shall prepare and forward to Contractor a letter of Substantial Completion. The letter will identify the date of Substantial Completion and include a punch list identifying all remaining incomplete Work. Contract warranties shall begin as of the date of Substantial Completion.

1.03 FINAL COMPLETION

A. Requirements for Final Completion: Upon receipt of Contractor’s written Notice that Contractor has inspected and completed punch list items and that the Work is ready for final inspection and acceptance, Owner will promptly make such inspection accompanied by Contractor. If Owner determines that some or all of the punch list items are not complete, Contractor shall be responsible to Owner for all costs, including re-inspection fees, for any subsequent inspection to determine completion of the punch list. When Owner finds all punch list items complete and the Work and Contract fully performed, Owner shall establish the date of Final Completion. Owner is not required to establish Final Completion until the following are complete:

1. Complete all requirements listed in the Contract Documents for Substantial Completion of the Work;

2. Complete all remaining punch list items and remaining Work, and obtain approval by Owner that all Work is complete;

3. Obtain permanent occupancy permits (if only a temporary occupancy permit was issued at Substantial Completion);

4. Submit Project Record, any final property survey, and final Operation and Maintenance manuals (if not previously submitted) required by the Contract Documents;

5. Deliver any required tools, spare parts, extra stock of material and similar physical items to Owner as required by the Contract Documents;

6. Complete cleaning after completion of punch list;

7. Submit executed warranties;

8. Complete any required sustainability documentation for which Contractor is responsible;

9. Submit a final comprehensive list of all Subcontractors of all tiers and suppliers for the Project; and

10. Submit certification that materials used in the Work are "asbestos-free" and that all requirements of governing jurisdictions related to the Project have been addressed.
11. Final Project Record.

B. Upon satisfactory completion of the requirements for Final Completion, Contractor shall submit a final Application for Payment.

1.04 FINAL ACCEPTANCE

A. Requirements for Final Acceptance: Final Acceptance shall be established by Owner in writing. Owner shall not be obligated to accept the Project as complete before Final Completion has occurred and Contractor has submitted the following:

1. An affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which Owner or Owner’s property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, except for any claims that are specifically identified on the affidavit (Affidavit of Payment of Debts and Claims, AIA form G706 or equivalent).

2. A certificate or written statement evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 Days' prior written Notice has been given to Owner.

3. Receipt of consent of surety, if any, to final payment (AIA form G707 or equivalent).

4. If required by Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by. If a Subcontractor refuses to furnish a release or waiver required by Owner, Contractor may furnish a bond satisfactory to Owner to indemnify Owner against such lien. If such lien remains unsatisfied after payments are made, Contractor shall refund to Owner all money that Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys’ fees.

5. Provide copy to Owner of all “Affidavits of Wages Paid”. Pursuant to RCW 39.12.040, an "Affidavit of Wages Paid" from Contractor and from each Subcontractor certified by the Industrial Statistician of the Washington State Department of Labor and Industries, with the fees paid by Contractor or Subcontractor.

B. Contingent upon completion of all Affidavits of Wages Paid, the “Notice of Completion of Public Works Contract” form may be completed by Owner.

1.05 RETAINAGE

A. Retainage must be held at least 45 Days following Final Acceptance. If there are either unpaid taxes or fees, or unsatisfied claims of lien against the retained percentage, disbursement of retainage funds will be made in accordance with Washington law.
B. The retainage will be held and applied by Owner as a trust fund in the manner required by RCW 60.28. Release of the retainage will be processed in the ordinary course of business following Final Acceptance of the Work by Owner, provided no notice of lien has been given as provided in RCW 60.28, no claims have been brought to the attention of Owner, Owner has no claims under the Contract, and the requirements below have been met.

C. Owner shall not release retainage until the following requirements have been satisfied.

1. “Certificate of Payment of State Excise Taxes by Public Works Contractor”: Following receipt of Owner’s notice of completion and after determining that all taxes, increase and penalties due from Contractor have been paid, the Department of Revenue will issue this certificate to Owner.

2. “Certificate of Payment of Contributions, Penalties and Interest on Public work Contract”: Upon receiving a copy of Owner’s notice of completion and after determining that Contractor is in compliance with the provisions of the Employment Security Act, the Employment Security Department will issue this certificate to Owner.

3. “Certificate of Release”: Upon receipt of Contractor’s request for release and verification from its records that required premiums have been paid by Contractor and each Subcontractor, the Department of Labor and Industries will issue a statement to that effect.

END OF SECTION 01 70 00
PART 1 GENERAL

1.01 SUMMARY

A. This Section describes the waste management and recycle management criteria for debris and solid waste generated as part of the Work.

B. Contractor shall be responsible for sorting, segregating, and placing designated waste materials into containers provided by Owner. Contractor shall be responsible for segregating and disposing all unacceptable and dangerous wastes as defined below.

C. Owner shall be responsible for furnishing waste collection containers, servicing those containers, and disposing solid waste from the Project, with the exception of unacceptable and dangerous waste.

D. Waste that is disposed of by Contractor shall be in accordance with all applicable local, state, and federal regulations, including WAC 173-350, Solid Waste Handling Standards, and WAC 173-303, Dangerous Waste Regulations.

1.02 DEFINITIONS


B. Dangerous Waste: Solid waste designated in WAC 173-303 and/or 40 CFR. As used in this Section, the words “dangerous waste” will refer to the full universe of wastes regulated by WAC 173-303 and 40 CFR.

C. Demolition Waste: Largely inert waste, resulting from the selective demolition of buildings, roads and other man-made structures such as cured concrete, asphaltic compounds, brick and masonry, ceramic, glass, steel, and aluminum, and non-inert materials such as clean wood, composition roofing and roofing paper, and minor amounts of metal. Plaster (i.e., sheetrock or plaster board) or any other material, other than clean wood, that is likely to produce gases or leachate during its decomposition process and asbestos waste are not considered to be demolition waste.

D. Land Clearing Waste: Natural vegetation and clean soils from clearing and grubbing land for development such as stumps, brush, weeds, tree branches, tree bark, mud, dirt, sod and rocks.

E. Recycle/Recycling: The process of separating waste materials for remanufacturing or reprocessing into usable or marketable materials. Examples of recycling include separating wood off-cuts for recycling by a wood processor into paper pulp, or separating cardboard, plastic, beverage containers, or miscellaneous metals for recycling.

F. Reuse: To use a construction waste material again in roughly its same form. Materials can be reused on-site or on other projects off-site. Examples of reuse
include removing a hardwood floor and reinstalling it in a new project, or using soil from one site as fill on another site.

G. Salvage: To remove a construction waste material or equipment from an existing building for reuse on-site or reuse on other projects off-site. Items to be salvaged shall be designated by Owner for removal and delivery to Owner.

H. Unacceptable Waste: All waste not authorized for disposal by Owner. This includes any waste that is now or hereafter defined by federal law or by the governing jurisdiction as radioactive, dangerous, hazardous or extremely hazardous waste, unsanitary waste, and vehicle tires in excess or those permitted to be disposed of by the laws of the governing jurisdiction. It does not include any waste destined for salvage, recycling, or general demolition.

I. Waste: All solid waste generated within the limits of the Project, or extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable and recyclable materials, masonry, and concrete.

J. Waste Management Plan: A Project-specific plan for the salvage, collection, transportation, recycling, and disposal of the waste generated at the Project site. A waste management plan includes procedures for separating, storing, and transporting waste and includes methods to assure proper implementation of the plan.

1.03 WASTE MANAGEMENT PLAN

A. Draft Waste Management Plan: Per the Pre-Construction Submittal Requirements of Section 01 33 00, Contractor shall submit to Owner a Draft Waste Management Plan. The Draft Plan shall contain the following:

1. List of materials to be salvaged, materials to be recycled, and materials to be disposed of as solid waste, and dangerous waste.

2. General material handling methods, including segregation and sorting, and placing solid waste into designated containers, on-site storage, and any special procedures for removing and protecting materials.

3. Plan for communicating salvage and recycling requirements on the Project.

4. Dangerous waste identification, accumulation, and disposal management procedures.

5. Materials to be sorted, salvaged, and recycled:
   a. At a minimum, the following types of materials in reusable condition shall be salvaged and sorted. Contractor shall remove and deliver to the Owner at designated location on the Pullman campus.
      1) Kitchen equipment;
      2) Cabinets;
3) Carpet;
4) Dimensional lumber;
5) Lighting fixtures, without asbestos or PCBs;
6) Shelving;
7) Sinks; and
8) Surplus building materials (new, leftover, unwanted).

Review with Owner for clarification.

b. At a minimum, the following types of materials shall be sorted and included for recycling:

1) All metals (from banding, stud trim, ductwork, piping, rebar, roofing, other trim, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze);
2) Beverage containers;
3) Cardboard (from supplies and packaging);
4) Clean wood (all unpainted, untreated wood scrap including pallets and engineered wood);
5) Mixed office paper (including blue prints);
6) Film plastic (from shrink wrap and other packaging, and sheeting used as protection or erosion control); and
7) Plate glass.

c. With the exception of unacceptable waste, all materials not designated for salvage or recycle per Paragraph 1.03(A)(5) above, may be co-mingled and disposed of as waste.

B. Dangerous Waste Management:

1. Contractor is responsible for all dangerous waste generated during the Project shall be identified, accumulated and disposed in accordance with WAC 173-303. Contractor generated dangerous waste must be shipped for disposal within 90 Days of generation.

2. Contractor may accumulate dangerous waste in accordance with WAC 173-303 and Washington Department of Ecology Technical Information Memorandum 94-120, Satellite Accumulation. If Contractor accumulates dangerous waste in volume greater than 55 gallons or acutely hazardous waste in a volume greater than one quart, Contractor shall establish and operate a “90-Day” accumulation area in accordance with WAC 173-303.

3. Contractor shall dispose dangerous waste only through vendor(s) approved by Owner. Contractor shall arrange all dangerous waste shipments. Utilization of the vendor and facilities included in the State of Washington Hazardous Waste Disposal contract is authorized. Any other proposed vendor(s) and/or facilities are subject to audit by Owner, prior to utilization. Contractor shall pay for said audits. Contractor shall
coordinate with Owner’s Environmental Health & Safety (EH&S) Department for transportation and disposal of all Project generated dangerous waste. EH&S will sign all Uniform Hazardous Waste Manifests.

C. Final Waste Management Plan: Once Owner has reviewed the draft Waste Management Plan and responded with comments or corrections, Contractor shall submit a final plan within 14 Days.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 WASTE CONTAINMENT

A. Owner will provide and service containers for all wastes, with the exception of unacceptable waste. This service is at no cost to Contractor.

B. Contractor shall provide separate waste containers for and properly dispose of all unacceptable waste, including dangerous waste, in accordance with applicable law.

3.02 CONTAMINATION OF WASTE

A. Contractor shall take extraordinary care to ensure construction wastes are properly sorted, segregated, and placed within the correct containers.

B. Should any waste containers designated for salvage, recycle, or general disposal be cross-contaminated with dangerous or unacceptable waste, Contractor shall pay all costs of legally disposing the contaminated waste.

C. Co-mingling of waste:

1. Should designated recycle or salvage containers become cross contaminated with other than unacceptable wastes, the Contract Sum shall be reduced at a rate of $500.00 per cubic yard size of container. (i.e. a partially full, co-mingled 3 yard container would result in a charge to Contractor of $1,500.00).

D. Project progress meetings shall include review of construction waste management as an agenda item.

END OF SECTION 01 74 19
PART 1  GENERAL

1.01  PURPOSE

A. Contractor shall submit advance/draft electronic of Operation & Maintenance manuals (O&Ms) at or immediately following the 80% Application for Payment. Subsequent Applications for Payment will not be processed until an advance/draft copy of the O&Ms has been submitted for review.

B. Contractor shall submit a final draft of O&Ms on or before Substantial Completion and provide training of Owner’s staff in the operation and maintenance of the facility.

1.02  PROCEDURES

A. Together with a request for Substantial Completion, Contractor shall provide one revised draft electronic version of O&Ms.

B. To achieve Final Completion, Contractor shall submit:
   1. Two final copies of O&Ms;
   2. A text-searchable PDF electronic file of the O&Ms;
   3. Separate Test & Balance Reports and Telecommunications Test Reports in an independent three ring binder;
   4. A text-searchable PDF electronic file of the Test & Balance Reports and Telecommunications Test Reports.

PART 2  PRODUCTS

2.01  O&M MANUAL MATERIALS

A. O&M Manuals shall be bound into 3-ring binders (three sets) with the cover and spine to be composed and laid out per the cover page template on the last page of this Section.

B. The maximum thickness for each manual shall be 3”. Multiple manual sets shall be organized by:
   1. General,
   2. Vertical Transportation,
   3. Mechanical,
   4. Electrical, and
5. Other (Laboratory Equipment, Special Equipment, etc.).

C. Paper shall be 8 1/2" x 11", 20 lb. white paper. Divisions within volumes are to be accomplished and annotated with permanently imprinted tabs (insertable indexes are not permitted) which indicate Specification Section numbers only.

D. Copies must be legible. Facsimile transmission copies are not acceptable. Original equipment manufacturer (OEM) printed material is preferred.

PART 3 EXECUTION

3.01 PRODUCTION

A. O&Ms are to be as follows:

1. Table of Contents – a listing of the contents of all volumes. This table of contents shall be inserted at the beginning of each volume in the set.
   a. Identify Contractor, include name, address, phone and fax number, and provide a contact name.

2. Subcontractor List – a list or spreadsheet, organized by Specification Section, of all suppliers and Subcontractors of all tiers who performed Work on the Project. Include the name, address, phone and fax number of Subcontractor or supplier, the Specification Section, and the description of the Work. When Subcontractors perform Work of more than one Specification Section, provide a separate listing of each Specification Section. This listing shall be at the beginning of volume #1 only.
   a. Written certification from Contractor attesting that no asbestos containing products have been incorporated into the Work.

3. Warranty List – a list or spreadsheet containing Contractor’s one-year correction period obligation and all extended (greater than one-year) warranties, organized by Specification Section that indicates:
   a. Item Description (include here special warranty numbers or codes),
   b. Length of warranty,
   c. Specification Section, and
   d. Contractor’s contact information, followed by physical copies of the Contractor’s one-year correction period obligation and all extended warranties. Note that 1-year warranties from Subcontractors are not to be bound into each volume of the O&Ms. This warranty list and attendant warranties shall be at the
4. Provide data as outlined in each specification section.

B. Original equipment manufacturer (OEM) information is required to be a part of all equipment information within the O&Ms.

C. Shop Drawings and product data initially submitted for acceptance are generally not acceptable for O&M use (one notable exception is snow melting cable layout drawing – a manufacturer detailed item). Routine Project components such as asphalt, concrete, pipe, fittings, conduit, etc., are not to be included in O&Ms.

END OF SECTION 01 78 23
(O&M cover and spine data on next page)
Facility #0806, Beasley Coliseum

Beasley Upgrade Overhead Stage Rigging

2019

General
O&M Manual

Vol. X of Y

(Spine and Cover)
PART 1 GENERAL

1.01 PURPOSE AND PROCEDURE

A. Contractor shall submit draft Project Record drawings on or before Substantial Completion. Requests for Substantial Completion will not be considered if submission of Project Record drawings has not occurred.

B. Contractor shall submit final Project Record drawings before Final Completion may be achieved.

PART 2 PRODUCTS

2.01 MATERIALS

A. Project Record drawings are to be red-line markings on original Drawings which clearly indicate the as-built dimensions (both horizontally and vertically) for all installed Work.

B. Identify on Project Record drawings all underground utilities encountered during the Work. Locate these utilities both horizontally and vertically and tie the dimension string(s) back to permanent and visible structures.

C. Clearly label each sheet with the words “PROJECT RECORD DRAWINGS.”

D. Do not affix requests for information (RFIs), change proposals (CCPs) or architectural supplemental instructions (ASIs) to the Project Record drawings. If all or part of a Drawing has been modified, it is acceptable to affix the revised layout over top of the original. However, all dimensions that have been modified are to be red-lined or yellow highlighted.

E. Copies must be legible.

PART 3 EXECUTION

3.01 PRODUCTION

A. During construction, Project Record information will be reviewed not less than monthly concurrent with the monthly review of the draft Application for Payment.
PART 1  GENERAL

1.01 DESCRIPTION

A. Owner has set the following indoor air quality requirements for site operations on the Project, within the limits of the Progress Schedule, Contract Sum, and available materials, equipment, products, and services. These include:

1. Protect workers on the site from air quality problems during construction.
2. Prevent indoor air quality problems in the completed facility.
3. Prevent indoor air quality problems in adjacent facilities.

B. To achieve these requirements, Contractor shall develop an “Indoor Air Quality (IAQ) Management Plan” for this Project.

C. Comply with current LEED Reference Guide.

1.02 IAQ MANAGEMENT PLAN MANAGER

A. Contractor shall identify an IAQ Management Plan Manager who will be responsible to monitor construction activities to ensure that the requirements of the IAQ Management Plan are met. The IAQ Manager may also be the Contractor’s Quality Control Manager. The IAQ Manager will be responsible for the following:

1. Draft and submit the IAQ Management Plan to Owner for acceptance.
3. Conduct meetings as required with all participants in the construction process to communicate the IAQ procedures and understand the importance of the requirements of the IAQ Management Plan. If necessary, post signs to ensure workers’ safety.
4. Identify IAQ problems and institute remedial action as necessary.
5. Be present at regular Progress Meetings, as appropriate, and be responsible for providing a monthly written status report as it relates to IAQ for the Project and be prepared to discuss construction related IAQ procedures currently in effect.

1.03 IAQ MANAGEMENT PLAN

A. Draft IAQ Management Plan: Submit a Draft IAQ Management Plan within 14 Days after Notice to Proceed, which contains preliminary descriptions of the following procedures for which Contractor is responsible (initial installation, verification that element(s) are in place, daily inspection and upkeep, and removal):
1. List of indoor air quality protective measures to be instituted at Project site, including HVAC system protection during construction and any other control measure applicable to the Project;

2. A plan and schedule for inspection and maintenance of indoor air quality measures;

3. Installation sequencing for porous materials, including paint;

4. Measures to be employed to protect ducts and stored on-site or installed absorptive materials from moisture damage;

5. Type of filtration media used during construction, and

6. Cleanup of contaminated components after construction.

B. The Draft IAQ Management Plan shall meet or exceed the minimum requirements of the current Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guidelines.

C. Final IAQ Management Plan: After review and comment on the “Draft IAQ Management Plan,” Contractor shall submit a “Final IAQ Management Plan” that includes the finalized written procedures for above noted elements This final plan shall address all review comments noted on the draft submittal and be submitted prior to the commencement of construction.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 IAQ MANAGEMENT PLAN IMPLEMENTATION

A. Contractor shall implement and maintain the approved IAQ Management Plan for the duration of the Project and update procedures at any time due to unanticipated building conditions. Contractor shall:

1. Use temporary filtration media during construction to protect HVAC at each return air grille; filtration media shall have a Minimum Efficiency Reporting Value (MERV) of 8 as determined by ASHRAE 52.2 - 1999. Isolate the return side of the HVAC system from the surrounding environment as much as possible. Return side shall have the heaviest Work areas dampered off and all return system openings sealed with plastic. Return side shall be shut down and sealed whenever possible.

2. Avoid the use of products, materials and operations that would cause IAQ problems or concerns.

3. Protect the ventilation system components (equipment and ductwork) from contamination, and provide cleaning of the ventilation components, including ductwork exposed to contamination during construction. Protect during transit and installation.

4. Provide ventilation as may be necessary to protect workers’ health and
avoid the accumulation of volatile compounds, dust and other harmful airborne contamination.

5. Provide weekly reports and photographs of construction IAQ management measures such as protection of ducts and stored or installed absorptive materials. In each report, describe and illustrate IAQ measures (installation, effectiveness, upkeep, etc.) during construction along with a description of the SMACNA approach employed.

6. Provide data sheets of filtration media used during construction and installed prior to building occupancy.

7. During installation of carpet, resilient flooring, paints, furnishings, and other VOC emitting products, provide supplemental (spot) ventilation for at least 72 hours after Work is completed and describe these activities in the weekly reports.

B. Contractor shall conduct regular inspection and maintenance of indoor air quality measures, including ventilation system protection and ventilation rate.

C. Contractor shall use low-toxic cleaning supplies for surfaces and equipment.

D. When dry sanding for gypsum board assemblies, Contractor shall provide the following protection:
   1. Isolate the space;
   2. Provide plastic sheet separation during sanding;
   3. Close and seal all air system devices and ductwork; and
   4. Sequence the Work to avoid contamination of other spaces with gypsum dust.

3.02 VENTILATION OF CONSTRUCTION FUMES

A. When hazardous chemicals, mineral-spirit based paints, adhesives, or other similar materials are used, the Contractor shall exhaust toxic, noxious, or odor producing fumes from the building in a manner approved by Owner. Contractor’s method of exhaust shall ensure the safety of building occupants and pedestrians in and around the Project site. All supply and return air ductwork within the construction area shall be capped air-tight to prevent distribution of fumes.

3.03 COMPLETION PROCEDURES

A. Remove all IAQ measures as well as signs, framing, and supports at completion of Project.

END OF SECTION 01 81 19
PART 1 - GENERAL

1.1 RELATED DOCUMENTS
A. The General Conditions, Supplementary General Conditions, bidding, and contract conditions shall apply to, and form a part of, this Section.

1.2 GENERAL CONDITIONS
A. For the sake of brevity these specifications shall omit phrases such as "(Sub) Contractor shall furnish and install", "unless otherwise indicated or specified", etc., but these phrases are nevertheless implied. Mention of materials and operations requires the (Sub) Contractor to furnish and install such materials and perform such operations complete to the satisfaction of the theatre consultant. Exceptions are noted herein or shown on the drawings.

B. No representative of the Owner shall have power to waive the obligations of this contract for the furnishing of good materials or of performing good work, as herein described, in full accordance with the contract documents. The failure of any representative of the Owner to condemn any defective work or materials shall not release the obligation to at once tear out, remove, and properly replace the same at any time prior to final acceptance upon discovery of said defective work or material. However, when requested, the Owner's representative shall observe and accept or reject any material furnished; and in the event the material has been once accepted by the Owner's representative, such acceptance shall be binding on the Owner unless such material can be clearly shown as not meeting the specifications for this work.

C. Demolished materials shall be removed from site unless otherwise noted. It shall be the responsibility of this section to dispose of all materials in accordance with all applicable codes, ordinances, and laws.

1.3 SCOPE OF WORK
A. The work under this contract shall include the furnishing of all labor, materials, tools, equipment, transportation, services, etc., and supervision necessary to complete the demolition of certain components of the existing rigging system and other items herein listed. Extent of all demolition work shall be furnished as described in these specifications, as illustrated on the accompanying drawings, or as directed by the Theatre Consultant.

B. Definitions used throughout the Contract Documents:
1. Remove and discard: Detach items from existing construction and legally dispose of them off-site.
2. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.
3. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, or removed and reinstalled.
4. Abandon in place: Leaving the existing item in place, not to be reused.
C. Removed and discard base bid demolition work is comprised of, but not limited to, the following principal items:
   1. Existing Rigging hoist components for 7 utility hoists, and 3 variable speed hoists and three stage electric light pipe hoists for light pipe structures:
      a. Associated wire rope
      b. Associated loft blocks for utility and variable speed hoists
      c. Associated loft blocks for stage electric light pipe #1
      d. Associated battens that are damaged (bent, creased, excessive burrs, etc.)
      e. Miscellaneous hardware (batten clamps, trim chain, etc.)

D. The following items shall be removed and reinstalled. Remove and store equipment noted then reinstall equipment at the specified location on new stage rigging System. Any question as to installed location of equipment should be cleared with the theatre consultant prior to installation.
   1. Batten pipes in acceptable condition and as indicated in the drawings.
   2. Stage electric light pipe structure #1, after removal of articulating panels and hardware. See demo drawings.

E. The following items are to be abandoned in place:
   1. Utility hoists on gridiron unless otherwise noted
   2. Variable speed hoists on gridiron unless otherwise noted
   3. Electric light pipe structure hoists #1, #2, and #3
   4. Electric light pipe structure counterweight arbors, see note on demolition drawings.
   5. Electric light pipe structure clew guide tracks
   7. Electric light pipe structure mule blocks, except in cases where they conflict with new equipment

F. The following items are to remain in place and all their related elements are to remain undisturbed. Any elements of these systems that need to be disturbed to accommodate new work shall be cleared with the theatrical consultant prior to the disturbance of the system. All disturbed items shall be restored to their pre-disturbed condition as part of this section.
   1. Rigging system pertaining to the scrim ceilings and all its related elements including but not limited to:
      a. Rigging blocks (loft blocks, mule blocks, etc.)
      b. Clews and tracks
      c. Hoists
      d. Battens
      e. Any element that is essential to the proper working order of this system.
   2. Rigging system pertaining to the soft good storage bag battens and all its related elements including but not limited to:
      a. Rigging blocks (loft blocks, mule blocks, etc.)
      b. Clews and tracks
      c. Hoists
      d. Battens
      e. Any element that is essential to the proper working order of this system.
3. Rigging system pertaining to the Proscenium Ceiling Panels and all its related elements including but not limited to:
   a. Rigging blocks (loft blocks, mule blocks, etc.)
   b. Clews and tracks
   c. Hoists
   d. Battens
   e. Ceiling Panels
   f. Any element that is essential to the proper working order of this system.

4. The Act Curtain Hoist:
   a. Hoist
   b. Loft blocks
   c. Lift lines
   d. Uninterruptable power supply (for draw motor)
   e. Electric cable management

5. Hoists indicated in Section 11 61 33 as Alternate, that do not get included in this contract with base bid items.

6. Existing control system including console.
   a. Subject to acceptance of add alternate to add existing hoist to new control console.

7. Any other system that is not specifically called out for demo or modification in the contract documents shall not be disturbed.

1.4 RESPONSIBILITY
   A. Notwithstanding the detailed information contained herein and on the drawings, provide working overall systems in accordance with good theatre practice and accepted industry standards. Verify the completeness of the parts list, type numbers and the overall suitability of the equipment to meet the intent of the design. Notify the Consultant of any discrepancies, relevant to said information, prior to the bid date, for review.

   B. Minor items of equipment needed in order to meet the requirements stated above, even if not specifically mentioned herein or on the drawings, shall be supplied without claim for additional payment.

1.5 RIGGING CONTRACTOR QUALIFICATION
   A. Qualified rigging contractors shall have been actively engaged in the sales and installation of theatrical rigging systems and equipment for a minimum of eight years. In addition, the qualified contractor shall have completed a minimum of eight projects of similar scope and magnitude within the last five years. Contractors not demonstrating this minimum experience at the time of bid submission will not be considered qualified to perform the work specified in this section.

1.6 JOB CONDITIONS
   A. Verify all conditions applicable or pertaining to this work. Coordinate with scheduled work of any other trades and notify Consultant in writing of discrepancies, conflicts, or omissions prior to bid time or correct at Contractor's expense.
B. So far as possible, the drawings show arrangement of equipment that will fit into the spaces available without interference. If conditions exist at the jobsite, which make installation of work as shown impossible, prepare drawings for Consultant's review showing how the work may be installed. On acceptance of the drawings by the theatre consultant, install the work without additional cost to the Owner.

C. Contractor shall take care not to damage any equipment, which will be reused, or to disconnect any wiring other than as required to interface new system. Any equipment, which will be reused, that is damaged by the Contractor shall be repaired or replaced by the Contractor at no cost to the Owner.

D. Promptly repair damages caused to facilities and equipment by demolition operations at no cost to the Owner.

E. Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations. Do not interrupt existing utilities serving occupied or used facilities, except when authorized, in writing, by authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to governing authorities.

1.7 TESTS AND OBSERVATIONS

A. The complete job shall be, during and/or after demolition, subject to the following tests, inspections and observations:
   1. Observations and tests conducted by the theatre consultant. Upon notice, Contractor shall furnish personnel not to exceed 2 persons, one to include the job foreman, and tools to assist and be directed by the theatre consultant or their representative for a reasonable amount of time to make such tests and inspections as are requested by the theatre consultant.
   2. Inspections and tests conducted by any government or local authority having jurisdiction over the job.

1.8 PERMITS

A. Obtain all permits necessary for the execution of any work pertaining to the demolition, and conform in all trades with all applicable local codes.

PART 2 - PRODUCTS - NOT APPLICABLE

PART 3 - EXECUTION

3.1 LABOR AND SUPERVISION

A. Employ only fully trained personnel, assisted by competent common laborers, for the demolition of the existing stage rigging equipment. Personnel shall be adequately and properly trained in the demolition of the style of equipment specified herein. Employ a competent superintendent on the work at all times. This superintendent shall represent the demolition Contractor in Contractor's absence. All directions given to the superintendent by the Consultant shall be as binding as if they were given to this Contractor personally.
B. Provide for full protection of the sports court flooring by placing 1/2" plywood over the entire surface of the floor under the areas in which work is to be performed. Protect all sports floor edges with appropriate ramps where equipment is to roll onto floor. Plywood shall remain in place for the duration of demolition and installation.

C. Burning of removed materials from demolition shall not be permitted on-site.

3.2 CLEANING OF THE SITE

A. Remove from the site all rubbish, trash, discarded packing materials, cartons, and other debris caused by daily operations. Upon completion of work, the entire area of work by this Contractor shall be left in broom clean condition.

END OF SECTION 02 41 19
PART 1 - GENERAL

1.1 GENERAL CONDITIONS

A. For the sake of brevity these specifications omit phrases such as "(Sub)Contractor shall furnish and install," "unless otherwise indicated or specified," etc., but these phrases are nevertheless implied. Mention of materials and operations requires the (Sub)Contractor to furnish and install such materials and perform such operations complete to the satisfaction of the Architect's Consultant. Exceptions are noted herein or shown on the drawings.

B. No representative of the Owner shall have power to waive the obligations of this contract for the furnishing of good materials or of performing good work, as herein described, in full accordance with the contract documents. The failure of any representative of the Owner to condemn any defective work or materials shall not release the obligation to at once tear out, remove, and properly replace the same at any time prior to final acceptance upon discovery of said defective work or material. When requested, however, the Owner's representative shall observe and accept or reject any material furnished. In the event the material has been accepted once by the Owner's representative, such acceptance shall be binding on the Owner unless it can be clearly shown that such material does not meet the specifications for this work.

C. All equipment and installation shall be the responsibility of a single contractor. This Contractor shall assume complete responsibility for the engineering, fabrication, transportation, and installation of the work in this Section.

D. All equipment shall be fabricated, manufactured, and installed in accordance with applicable standards, including:
   1. Rigging Manual (published by the Construction Safety Association)
   2. Wire Rope Handbook (published by Wire Rope Corporation of America)
   5. American Society of Mechanical Engineers (ASME)
   6. American National Standards Institute (ANSI)
   8. American Institute of Steel Construction (AISC)
   9. National Fire Protection Association (NFPA)
   10. National Electrical Manufacturers Association (NEMA)
   11. Any and all local governmental or other applicable codes.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Section, apply to work of this section.

B. Refer to Contract Drawings TR series for plans, graphic representations, schedules, and notations showing Stage Rigging System work.
1.3 SCOPE OF WORK

A. Work under this section shall include the furnishing of all labor, materials, tools, transportation, services, and supervision necessary to complete the installation of the Stage Rigging System, and other items as herein listed, all as described in these specifications, and as illustrated on the drawings, and as directed by the Consultant. Any question as to the installation of equipment should be cleared with the Consultant prior to installation. Work is comprised of, but not limited to, the following principal items:

1. Verification of dimensions and conditions at the job site,
2. Protection of the arena floor under the gridiron from small objects such as hand tools, bolts, nuts, etc., that may be dropped during installation. Protection shall consist of a layer of 1/2” minimum plywood. Sport court flooring will be removed by Owner prior to commencement of work.
3. Line sets wire rope, head blocks, loft blocks, battens, hardware, chain, etc.,
4. Motorized hoists and control,
5. All wire, conduit, junction boxes and all other electrical components for motorized hoists and control,
6. Miscellaneous steel for mounting equipment,
7. Miscellaneous components and parts herein specified.
9. Portable and loose equipment
10. Proof of performance testing

B. Furnish and install complete Stage Rigging System with all necessary apparatus, equipment, wiring, etc., required to insure complete systems in excellent working order as specified herein and on the attached diagrams.

C. Consistent with the detailed information contained herein and on the drawings, provide functional and complete overall systems. Verify complete parts lists, the accuracy of the type numbers, and the overall suitability of the equipment to produce complete functional systems coordinated and interfaced with related work.

D. Minor items of equipment needed in order to meet the requirements stated above, even if not specifically mentioned herein or on the drawings, shall be provided in quality equivalent to other conditions on the project with no claim for additional payment.

1.4 JOB CONDITIONS

A. Coordinate layout and installation of rigging with other adjacent work, including structural, light fixtures, HVAC equipment, plumbing, and fire-suppression elements.

B. Verify all conditions on job site applicable or pertaining to this work. Coordinate with facility event schedule. Notify Consultant in writing of discrepancies, conflicts, or omissions prior to commencement of work or correct the same at Contractor's expense.

C. The drawings show diagrammatically the sheaves, running lines, controls, etc. So far as possible the drawings show arrangement of equipment that will fit into the spaces available without interference. If conditions exist at the job site that make
it impossible to install work as shown, prepare and submit drawings to the Consultant for approval showing how the work may be installed, and, on approval, install the work without additional cost to the Owner.

D. Contractor shall take care not to damage any equipment or to disconnect any wiring other than as required to interface new system. Any contractor-damaged equipment shall be repaired or replaced by the Contractor at no additional cost to the Owner. Return any systems disturbed during work to found condition.

E. Deliver materials to the job site such that they will be protected from damage. Store all materials at building site under cover.

1.5 APPROVED FABRICATORS
A. The hoists, motors, hardware and related components specified herein shall be fabricated by the following:

Wenger Corp/J. R. Clancy, Inc., 7041 Interstate Island Road, Syracuse, New York, 13209
http://www.jrclancy.com/

Electronic Theatre Controls, Inc., 3031 Pleasant View Rd., Middleton, WI 53562
http://www.etcconnect.com/

1.6 RIGGING CONTRACTOR QUALIFICATION
A. Qualified rigging contractors shall have been actively engaged in the sales and installation of theatrical rigging systems and equipment for a minimum of eight years. In addition, the qualified contractor shall have completed a minimum of eight projects of similar scope and magnitude within the last five years. Contractors not demonstrating this minimum experience at the time of bid submission will not be considered qualified to perform the work specified in this section.

1.7 SUBSTITUTIONS
A. Notwithstanding any reference in the specifications to any article, device, product, materials, fixtures, form, or type of construction by name, make, or catalog number, such reference shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition. The Contractor in such cases, may at his option use any article, device, product, material, fixture, form or type of construction which in the judgment of the Consultant expressed in writing, is equivalent to that specified.

B. All materials and equipment specified herein have been determined to provide an overall physical appearance and background of proven operation desired by the Owner, and therefore, to establish a standard of quality required for this project. If equipment or material other than that specified is proposed to be furnished, this Contractor shall be required to furnish the Consultant with such samples as he requires, the same to be submitted by the Consultant to an independent testing laboratory selected by the Owner for tests to determine the actual equality of the proposed substitute items. All costs and charges incurred by these tests shall be
borne by the Contractor. Should such tests prove the substitute materials and equipment equal and acceptable, the Contractor shall be so advised. However, the Owner reserves the right to examine, and where necessary, to have additional tests made by the same independent testing laboratory of the actual equipment delivered to the job site to insure that the delivered equipment is equal in fact to that specified. Should such secondary tests prove the equipment is satisfactory, the Owner will pay the cost for such tests. Otherwise, the Contractor shall pay for the test and shall proceed to remove unacceptable equipment from the job site and to provide that specified. The Consultant's decision, based on this test, will be final.

C. The plans and specifications are based on specific equipment, accessories, processes and arrangements as indicated herein. Acceptance of the shop drawing submittal indicates only the acceptance of the manufacturer and quality and assumes that the specific requirements and arrangements are in compliance with the intent of the plans and specifications. The Contractor shall, at no additional cost to the Owner, furnish all accessories, layouts, equipment, etc., and shall perform all work necessary for proper functioning and to fit his substitute items to the intent and arrangement indicated in the specifications.

D. If a substitute system is selected, the Contractor, at no additional cost, shall provide any changes in architectural, electrical, or structural systems required as a result of the alternate system to the Owner. The decision of the Consultant as to the compliance of the proposed system based on the submitted data and demonstrated system shall be final.

1.8 SHOP DRAWINGS AND SAMPLES

A. Shop drawings and equipment data sheets shall be submitted to the Consultant in accordance with the requirements of these specifications. Contractor assumes the responsibility for the accuracy of all dimensions and quantities.

B. Acceptance of submitted equipment shall be obtained prior to equipment purchase or fabrication. If shop drawings are rejected, correct and resubmit in the manner as specified. All shop drawing information regarding this Section shall be submitted at the same time; no partial submittals will be accepted.

C. Shop drawings shall be performed at a scale of not less than 1/4" = 1'-0" for plans and 1" = 1" for details. Drawings and catalogs shall be marked to show the name of project, date, Consultant, Contractor and/or Manufacturer and Supplier.

D. Drawings: Submit a complete set of shop drawings in electronic Portable Document Format (PDF) for review prior to fabrication. Drawings shall indicate complete details and dimensions of all work to be performed, including all equipment types and locations, clearances required, guides, chains, linesets, contractor-fabricated equipment, and all other details required to describe work to be performed. Shop drawings shall contain at least the following details:
   1. Groove details for all sheaves and drums
   2. Complete rigging schematics with weights of all equipment
   3. Complete hanging/attachment details
   4. Complete hardware details
   5. Weights of all equipment
   6. Schematic diagrams of all electrical work including motorized hoist control
7. Manufacturer’s data sheets
8. Indication of all variance from contract drawings

E. Prepare shop drawings and field changes under the supervision of a professional structural engineer licensed by the state of the installation. All as-built drawings shall be stamped and certified by said engineer. Structural Engineer’s review shall include but not be limited to, all elements related to overhead lifting, structural support of elements and all suspended elements provided under this section.

F. Acceptance of submitted equipment shall be obtained prior to equipment purchasing or fabrication. If shop drawings are rejected, correct and resubmit in the manner as specified. All shop drawing information shall be submitted at the same time; **no partial submittals will be reviewed**. Review is for conformance with design intentions only. Review does not relieve contractor of responsibility to verify field conditions; nor does it relieve the contractor of responsibility for errors, omissions, or deviations in submittals.

G. The Contractor assumes responsibility for the accuracy of all dimensions and quantities.

1.9 RECORDS FOR OWNER

A. Drawings: Maintain a full record set of drawings on the job to show the actual installation of the work performed.
   1. Submit a complete set of drawings in PDF showing 'as installed' work to the Consultant for review. If 'as installed' documents are rejected, correct and resubmit in the manner specified.
   2. Upon acceptance, provide four (4) sets of drawings and four (4) USB data storage devices with electronic copy in PDF showing 'as installed' work to the Consultant for review.

B. Manuals: At the time of project closeout, submit four (4) sets each of the following manuals in hardcopy along with four (4) electronic copies in PDF format to the Consultant for review. Manuals (8-1/2" x 11") are to be neatly bound and include title page with the name of the project, date, Owner, Consultant, Contractor, Contractor and/or Manufacturer and Supplier. The manuals to be supplied are as follows:
   1. Operation and Instruction Manual, including:
      a. Table of contents
      b. Brief description of the operation of each system, (descriptions shall be written such that new personnel may read the manual and be able to set-up and operate the system).
      c. Manufacturer’s operation instructions for all user-operated equipment.
      d. Small scale, clear laminated plan(s) showing the location of all equipment.
   2. Maintenance Data Manual, including:
      a. Table of contents
      b. A list of all equipment supplied by this contract with manufacturer's name, model and part number.
c. A listing of equipment manufacturer’s/supplier’s addresses for all equipment covered by this contract.

d. All equipment warranties and guarantees including contractor's guarantee. Explain the limits of the warranty, and whom to contact for service, etc.

e. Manufacturer’s owner and service manuals on all equipment under this contract.

f. Replacement parts lists of all major items and equipment indicating specific part ordering numbers.

g. Approved shop drawing catalog data sheets.

h. All test results required under these specifications. Videos shall be submitted in DVD format.

i. Any and all other data and/or drawings required during construction.

1.10 TESTS AND OBSERVATIONS

A. The complete job shall be, during and/or after construction, subject to the following tests and observations:

1. By Consultant observations and tests conducted by them or for them in their presence. Upon notice, Contractor shall furnish personnel, not to exceed two (2) persons (one to be the job foreman), and tools to assist for a reasonable amount of time to make such tests and observations as are requested by the Consultant.

2. By any Government or local authority.

3. Operation and visual examination of all components.

4. Verification and fine-tuning of all hoist limit switch settings (ultimate and normal).

5. Full load testing of all motorized sets that suspend loads. Testing shall include full range of travel in all axis of movement, directed by the installed control system. Test shall include both controlled stop and emergency stop conditions. Test weight shall be equal to the payload listed on the Drawings.

   a. Variable speed sets shall be tested at a minimum of three speeds: creep, 60%, and maximum specified. Tests shall be performed at each speed for the full range of travel.

   b. For all sets, a test with the weight uniformly distributed across all lift lines shall be performed.

   c. For ten percent of each set type, but not less than one per type, a test with the weight eccentrically distributed shall be performed. Test weight shall be equal to the capacity of the set and distributed so that one lift line shall carry the maximum load per lift line as shown in the Drawings.

   d. Testing must be video-recorded with audio by the contractor and submitted with written certification for each set.

   e. Motorized sets need not have the scheduled equipment (curtains, lighting fixtures, curtains, et. al.) installed during the full load testing if the Contractor prefers to use a “dummy” load. Cable management systems must be operating normally during the test.

6. Simulated failure test of mechanical over-speed brakes. Test shall be simulated so as not to compromise the integrity of the installed
components. Test does not need to be performed on site but must be video-recorded and submitted. In lieu of this test, manufacturer may supply written certification of a successful test of representative samples.

B. After completion of installation and preliminary tests by the Contractor, observation of the work shall be performed by the Consultant. The cost of periodic trips to the job site for final observation by the Consultant has been provided for in the Consultant's contract. The cost of any additional trips to the job site due to delays, omissions, or mistakes by the Contractor shall be borne by the Contractor.

1.11 GUARANTEE

A. All labor and materials provided under this contract, unless otherwise noted, shall be guaranteed for a period of one (1) year following the date of final acceptance of the installation.

B. The following equipment provided under this contract shall be guaranteed for a period of two (2) years following the date of final acceptance of the installation

1. Motorized gear/motor/brake assemblies.
2. Motorized hoist control system.

C. All equipment with factory warranties greater than one year shall have their warranties under the Owner's name.

D. All defects occurring in labor or materials within the guarantee period shall be rectified by replacement or repair. Contractor shall, within this guarantee period, be required to answer all service calls within a 24-hour period and repair or replace any faulty item within 72 hours after the initial service call without charge to the Owner.

PART 2 - PRODUCTS

2.1 GENERAL

A. All materials shall be new and of first quality.

B. All load bearing rigging components shall be rated for overhead lifting; capable of supporting design loads as shown with minimum design factor of eight (8); and shall be of, or treated with, corrosion resistant materials.

C. The rigging products of certain manufacturers may be specified by catalog number for establishing a standard of quality. Items equal in quality and performance by manufacturers other than those specified will be permissible upon written acceptance by the Consultant.

D. Equipment quantities are "as required" or "as shown on drawings" or "as specified elsewhere" unless otherwise noted.

E. Loading capacities of systems, where specified in the Drawings or the Specifications, refer to the net working payloads exclusive of the dead loads – pipe battens, truss battens, sandbags, hooks, plug strips, etc. – exactly as indicated on the Drawings and Specifications. Should the Contractor choose to suggest alternate methods that require heavier loads, the Contractor shall be responsible for increasing the capacities of the individual components, including the arbor
capacities, accordingly. Any alternate methods must be approved specifically by the Consultant in writing prior to execution.

F. Provide all guards and other protective devices required to ensure protection of individuals who may be near or adjacent to equipment and devices during normal operation.

2.2 HEAD BLOCKS

A. Head blocks shall have one sheave of sufficient width to accommodate required number of wire rope grooves. Sheave shall conform to cable manufacturer's recommendation on depth and design of grooves and shall have 1/64" tolerance. Pitch diameter from any wire rope groove to any other shall not vary by more than .001". Head blocks shall be equipped with life-time lubricated Timken tapered roller bearings. The shaft shall be SAE Grade 8 steel bolt with head keyed to prevent shaft rotation. Insert steel sleeve into bore to provide bearing surface for roller bearings. Head blocks shall be equipped with at least 3 spacers of 1/2" pipe to prevent jumping of wire rope from the grooves. Side plates shall be at least 10 gauge securely welded to base frame with a continuous staggered weld. Provide base angles and auxiliary base angles as necessary for support to structure. Fasteners shall be SAE Grade 5 or better.

B. Sheave Material: Nylatron GSM

C. Sheave Diameter: Shall meet or exceed cable manufacturer's recommended D:d ratio, but not less than 30:1.

D. Minimum Shaft Diameter: As required by design load, but not less than 1".

E. Quantity: As indicated on the drawings

2.3 LOFT BLOCKS AND MULE BLOCKS

A. Loft blocks and mule blocks shall have one sheave (mules may require more than one sheave) of sufficient width to accommodate required number of wire rope grooves. Sheave shall conform to cable manufacturer's recommendation on depth and design of groove and shall have a 1/64" tolerance. Pitch diameter from any groove to any other shall not vary by more than .001". Blocks shall be equipped with life-time lubricated, sealed bearings as specified below. The shaft shall be SAE Grade 8 steel bolt with head keyed to prevent shaft rotation. Blocks shall be equipped with at least 2 spacers of 1/2" pipe to prevent jumping of cable from the grooves. Side plates shall be at least 10 gauge securely welded to base frame with a continuous staggered weld. Provide base angles as necessary for support to structure. Fasteners shall be SAE Grade 5 or better. Provide idlers on each block with sufficient number of sheaves to support passing wire rope on each loft block.

B. Approved Sheave Material:
   1. NYLATRON GS
   2. ZYTEL GRZ

C. Sheave Diameter: Shall meet or exceed cable manufacturer's recommended D:d ratio, but not less than 30:1.
D. Bearings:
1. Standard Rigging Loft Blocks - Precision Ball Bearings
2. Standard Rigging Mule Blocks with two or less lines - Precision Ball Bearings
3. Standard Rigging Mule Blocks with three or more lines - Sealed Timken Tapered Roller Bearings

E. Minimum Shaft Diameter: 5/8"

F. Approved Equipment:
1. Upright Loft Block: Atlas Silk Series 40NS
2. Underhung Loft Block: Atlas Silk Series 42NS
3. Pivot Loft Block: Atlas Silk Series 44NS
4. Underhung Swivel Loft Block: Atlas Silk Series 46NS
5. Upright Mule Block: Atlas Silk Series 80NS
6. Underhung Mule Block: Atlas Silk Series 81NS

G. Quantity: Refer to drawings and as required

2.4 SAG BARS
A. Sag bars shall be min. 2 in. x 2 in. rock maple, oak, or UHMW, reinforced with steel channel. All wood edges shall be radiused and sanded smooth.

B. Sag bars shall be provided as required. They shall be designed and installed such that they prevent the lift line cables from coming into contact with the structure or other components.

2.5 WIRE ROPE
A. Wire rope shall be first quality, galvanized carbon steel, and impregnated with a dry lubricant. All cable ends shall be neat, seized and smoothed to prevent scratching and catching. Wire rope shall be terminated with cable thimbles and utilize one of the following termination methods:
   1. Nicopress sleeves as manufactured by National Telephone Supply, applied in conformity with manufacturer's instructions.
   2. Forged wire rope clips as manufactured by The Crosby Group, Inc. (Crosby® Clips), applied in conformity with manufacturer's instructions.

B. Wire Rope Diameter:
   1. Packaged Hoists – 3/16"
   2. Drum Hoist – 3/8"
   3. As indicated

C. Approved Equipment:
   1. Hoist and Rigging – MacWhyte 7 x 19 Utility Cable

2.6 HOIST LINE TERMINATION ASSEMBLIES - WIRE ROPE
A. Batten termination
   1. Type 1 – Wire rope shall be terminated as specified elsewhere or as shown on drawings and fitted with 36" long trim chain. Trim chain shall be connected through the cable thimble and terminated as specified
elsewhere. Chain shall make at least one full wrap around the pipe batten. Type 1 terminations will be installed on all single batten linesets unless otherwise noted

2. Type 2 – Wire rope shall be as specified elsewhere or as shown on drawings and fitted with rated jaw-jaw turnbuckles. Type 2 terminations will be installed on all double batten linesets unless otherwise noted.

2.7 CHAIN
A. Batten termination assemblies (trim chains).
   1. Each chain shall be 36-inches long fabricated from 1/4-inch alloy Theatrical Chain, specifically designed for theatrical overhead lifting applications.
   2. The chain shall have a minimum breaking strength of 13,000 pounds.
   3. The chain shall be compatible with industry-recognized chain hardware. Individual link size shall match the National Association of Chain Manufacturers, Welded Steel Chain Specifications for Grade 30 Proof Coil Chain.
   4. Each link of the chain shall be stamped with the manufacturer’s identifying mark.
   5. The chain shall be lot traceable, with a coded date stamp on every tenth link of chain.

B. Approved product:
   1. J.R. Clancy Alpha Chain
   2. Texas Scenic Company, Theatrical Chain

2.8 CHAIN TERMINATIONS
A. Shackle for termination of dead hanging chain and hoist line terminations (trim chains).

B. Approved Equipment: Crosby Load Rated Forged Screw Pin Anchor Shackle.

C. Shackles shall be “moused” shut with wire, after proper installation.

D. Quick link for termination of certain special components. Quick links may only be utilized when specifically indicated herein or on drawings.

E. Approved Equipment: Cooper Group Rapid Link load rated at 880 lbs.

2.9 BATTENS
A. New Pipe battens shall be nominal 1-½” I.D. black steel pipe, ASTM A53/A Strong (Schedule 40), stripped and painted with at least one coat of black primer and one coat of flat black paint free of surface irregularities, in lengths as indicated on rigging schedule.

B. Splices shall be close-fitting internal steel sleeves with a wall thickness of not less than 0.1875 inch, and min. 24 inches long. Both sides of the splice shall be held in place with a minimum of two (2) plug welds per side.

C. All battens shall have bright yellow end caps on each end for visibility in the loft. End caps shall be a minimum of 6” long and provide a smooth surface to the batten end. Line set number shall be stenciled on each end of each batten inside of the
end caps, in contrasting color paint, such that the number is readable from the floor when the pipe is flown out and from position upstage of the batten when the pipe is flown in. In lieu of end caps, battens can be painted for 24” on each end with bright yellow enamel.

D. Paint on every batten provided by this section a 1” wide strip at center stage of the batten.

2.10 MISCELLANEOUS COMPONENTS

A. Special components may be required for muling around structural components to meet wire rope fleet angle requirements, supporting hoisting cable, or dropping lines through structure to battens. These special components shall meet or exceed comparable equipment specified herein. Idler blocks, pivot blocks, structural support for these blocks, etc., required to make all lines fully operable, whether such components are specifically named or not, shall be furnished without claim for additional payment.

B. Additional mounting components, such as miscellaneous steel, wood blocking, and fittings, required for installation, support, bracing, and operation of equipment under this Section shall be provided without claim for additional payment. These components shall be coordinated with other trades.

2.11 MOTORIZED RIGGING COMPONENTS

A. All motors, hoisting cables, chain, sheaves, hardware, etc., shall be rated for overhead lifting; capable of supporting design loads as shown and shall be of, or treated with, corrosion resistant materials.

B. Motors

1. General
   a. All motors shall be properly sized for the application and not more than 1.25 times the specified load and at the specified speed.
   b. Motors shall be totally enclosed and fan cooled.
   c. Except as otherwise specified, all motors shall have minimum Class A winding insulation in accordance with NEMA Standard MG 1-12.40 rated for 15 to 20 minute intermittent duty cycle.
   d. All motors shall be equipped with sealed bearings.
   e. Conduit connection box shall be watertight, of cast iron, aluminum, or wrought iron construction, with neoprene gasket. A tapped hole shall be provided for conduit entrance and connection box shall be oriented and coordinated with associated equipment to provide full access to internal connections. Corrosion resistant, high melting point, non-flammable sealing compound shall be used around motor leads where they pass through the motor frame.

2. AC Motors
   a. All AC motors shall be squirrel-cage type, of NEMA torque design B, with medium starting torque, normal breakdown torque, low slip, and low starting current.
   b. All AC motors shall be TEFC (totally enclosed, fan cooled) enclosures as defined by NEMA Standard MG 1-12.21.
3. For all fixed speed winches, the gear reducer shall incorporate a high inertia flywheel at the motor stage for "soft start" and "soft stop" capability.

C. Gear Reducers
   1. General
      a. The output shaft shall be supported by two tapered roller bearings. The gears shall run in an oil bath. The shaft bearings shall be provided with double lip oil seals to prevent leakage.
      b. Two (2) removable, threaded lubrication plugs shall be furnished for each gearbox. Upper plug opening shall be for lubricant entrance, and lower plug opening shall permit simultaneous purging of spent lubricant from the bearing.
      c. Provide a drain plug in the bottom of the frame on the bearing brackets so as to permit periodic drainage of any possible accumulation of moisture.
      d. Provide full drip pan under motor and reducer assembly.
   2. Right Angle and Helical Bevels
      a. Each right angle bevel or spiral bevel gear drive shall be selected to transmit twice required torque, horsepower, and impact. All ratings shall be AGMA mechanical ratings for load classification service factor equal to 2.0, except as otherwise noted.
      b. Each right angle bevel gear drive unit shall consist of the following:
         i. One housing made of high tensile nickel cast iron, properly reinforced at all strain points for maximum rigidity, with precisely located gear set bearing supports. Each housing shall have sufficient capacity for lubricant, and surface area for adequate heat dissipation.
         ii. Pinions, gears, and gear shafts manufactured from chromium, molybdenum alloy steel (AISI C-4150) and heat-treated to 32 Rockwell "C" scale minimum core hardness.
         iii. Pinion and gear shafts supported by tapered roller or precision ball bearings of adequate capacity, properly mounted, and furnished with oil seals.
         iv. All shaft diameters precisely ground, stepped, and radius to minimize stress concentrations.
   3. Helical Worm
      a. Gear reducers shall be combination helical-worm reducer, directly flange-mounted to the motor/brake assembly. The reducer shall have two (2) gear stages; the first stage shall be helical and the second stage shall consist of a worm and worm wheel. The worm shaft shall be milled, hardened, and ground to insure maximum efficiency and long life.
      b. Gear reducers shall be enclosed in high-strength gray cast iron housings with precisely located gear set bearing supports. Each housing shall have sufficient capacity for lubricant, and surface area for adequate heat dissipation.
      c. Gear reducer shall incorporate a high inertia flywheel at the motor stage for "soft start" and "soft stop" capability.
d. Gear reducers shall be SEW-Eurodrive "Helical-Worm Gear" or approved equal.

e. Gear reducers shall be of the worm gear type with compound helical bevel to single envelopment worm or double enveloping worm gears. Single stage 'Spirol' gearing is not acceptable equipment provided for the work of this specification.

f. Worm gear reducers shall be selected to safely transmit specified torque and horsepower. Capacity and type shall be as required. Design of the power transmission train shall provide for gearing ratios of the worm gear stage to be greater than 40:1 wherever practical. Ratios less than 40:1 shall require approval of the Consultant. All ratings shall be AGMA Class 2 mechanical ratings with a load classification service factor equal to 1.3, except as otherwise noted or approved.

g. Each worm gear reducer shall consist of essentially the following:
   i. One housing made of high tensile nickel cast iron, properly reinforced at all strain points for maximum rigidity, with precisely located gear set bearing supports. Each housing shall have sufficient capacity for lubricant, and surface area for adequate heat dissipation.
   ii. Worm gears manufactured from gear bronze with minimum tensile strength of 40,000 PSI and properly keyed or splined to the gear shaft. Gear shafts shall be manufactured from chromium, molybdenum alloy steel (AISI C-4150).
   iii. Worm and worm shaft manufactured from chromium, molybdenum alloy steel (AISI C-4150) and heat-treated to 32 Rockwell "C" scale minimum core hardness.
   iv. Each worm gear and shaft supported by two (2) tapered roller bearings of adequate capacity, properly mounted, and furnished with oil seals.
   v. All shaft diameters precisely ground, stepped, and radiused to minimize stress concentrations.

D. Primary Brake

1. Automatic power failure braking shall provide fail-safe stopping in the event of power loss.

2. Except where indicated otherwise, all brakes shall operate from single-phase AC, and shall be electrically released/spring applied, designed to conform to applicable NEMA standards for intermittent duty. All brakes shall be furnished with means for manual release.

3. Brakes shall have drip-tight NEMA type 2 enclosures.

4. All brakes shall stop and hold a minimum of 200% of motor full torque capacity.

5. Any required brake conditioning (for example burn-in) shall be completed prior to system commissioning.

6. Brake noise shall comply with the noise requirement as outlined in this specification.

E. Secondary brakes

1. All motors shall incorporate one of the secondary brake methods described below.
a. Centrifugal overspeed
   i. Brakes shall be a fully mechanical overspeed brakes, directly mounted to the drum shaft or sprocket drive shaft.
   ii. The overspeed brake shall engage automatically when the set exceeds the maximum specified speed by 10%.
   iii. It shall be possible to preset the brake tension to adjust the stopping distance, so that it brings the load to a controlled stop without shock.
   iv. The secondary brake shall stop and hold 200% of the full load torque.

b. Drive-through brakes
   i. The brake shall be a continuously applied, automatic load brake with a retarding torque matching the load on the hoist.
   ii. The brake shall be selected and designed to accommodate the heat produced during normal operation without undue wear.

c. Redundant gear/motor/brake assemblies
   i. When redundant gear/motor/brake assemblies are used as the secondary braking mechanism, at least two assemblies shall be required to move to the load, while any one shall be able to stop and hold the full torque load.
   ii. The gear/motor/brake assemblies shall be located on the extents of the drive train so that either gear/motor/brake can stop and hold the full load.
   iii. The brakes shall engage automatically when the load exceeds the maximum specified speed by 10%, E-stop is engaged or the control system detects a fault.

2. A redundant motor brake on a single motor shaft shall not be used as a secondary brake.
3. The secondary brake shall not apply more than 300% of the full load torque to the system.
4. Any required brake conditioning (for example burn-in) shall be completed prior to system commissioning.
5. Brake noise shall comply with the noise requirement as outlined in this specification.

F. Frames & Guards
1. All motors and associated gearboxes shall be installed on built-up frames, which contain all elements of the lifting system. Frames shall be securely attached to structure.
2. All motor units shall have durable, leak-proof drip pans to contain leakage of oil from motor, gearbox and/or pillow blocks.
3. All exposed moving equipment, devices, and ropes within 7 feet of a working surface shall be guarded in a manner to prevent accidental contact with other machinery, devices, lines, or personnel. Guards shall not impede the operation of the protected device or adjacent devices.
   a. Sheaves, drums, shaft assemblies, and ropes moving at the lineset load speed on a hoist limited to no greater than 30 feet per minute and located at the gridiron and catwalks may not require this guarding if both the following conditions are met:
i. “Authorized Personnel Only” signage is provided at access points to these areas, per the Drawings.

ii. Clearances are provided around the equipment such that people need not contact components to access any part of the gridiron/catwalk.

b. Guard construction shall be sufficient to resist incidental impact without deforming. When located underfoot, guards shall be capable of supporting a 310 pound person.

i. Guard material for custom assemblies shall be open metal mesh with openings not to exceed 1/2 in. unless otherwise noted in the Drawings.

ii. Shrouds for packaged hoists, as engineered by the hoist manufacturer, may act as guards, provided all other provisions of this Section are met.

iii. Guards for curtain machines may be sheet metal, provided all other provisions of this Section are met.

c. Guards shall be removable for maintenance.

d. Guard construction and attachment shall not produce additional noise when the motor is in operation.

e. Guard construction must be designed so as to not impede cooling.

G. Grooved Wire Rope Drums

1. Drums shall be grooved welded steel, properly annealed. Minimum tread diameter shall be at least 30 times the diameter of the wire rope employed.

2. Drums shall have integral hubs with properly sized shafts for the transmission of loads and torque. Drums shall be connected to the hub using a key to prevent relative rotation. All driving hubs must have a minimum of two set screws.

3. All wire rope drums shall have sufficient capacity in a single layer for maximum travel plus a minimum of three (3) dead wraps for each wire rope connection. One (1) hole shall be drilled through the root of the groove for each rope end. This hole shall have an axis which, in section, is angled 45° from a radial line drawn from the shaft to the center of the hole. Hole shall be chamfered, free of burrs, and of correct size to retain stop sleeve cable retainer.

4. Drums shall be grooved for wire rope and sized as noted in drawings. Grooves shall be lathe turned and machined to the proper size for the rope used, with groove diameters sized to fit rope closely and prevent rope from assuming an oval or elliptical shape under load. Groove diameter shall be no greater than 10% larger than rope diameter for ropes smaller than 3/8 in. diameter, and 8% larger for ropes 3/8 in. diameter and larger. Minimum groove depth shall be 40% of the rope diameter.

5. Steel rod or pipe keepers shall be provided to prevent cable from jumping out of grooves. These elements shall be located so that they do not bear on the cable when the cable is correctly seated in the groove.

6. Fleet angles shall not exceed 1 ½ degrees.

7. Shafts through drums shall be supported on both ends by bearing blocks to minimize bending stresses in the shaft. Single-line drum blocks shall utilize self-aligning, four-bolt, flange-mount style, cast iron housings with ball bearings, equal to Peer UCF-200 series. Multi-line drum blocks shall
utilize self-aligning, two-bolt, pillow block style, cast iron housings with tapered ball bearings, equal to Peer UC 00 series. Each bearing shall be selected to support at least three (3) times the total load of the respective drum.

H. Shafts, Keys and Couplings
1. All shafting shall be designed and proportioned in accordance with the "Code for Design of Transmission Shafting" of the ANSI to safely transmit all applied loads and torques and their combinations with proper allowance for impact.
2. All shafting shall be designed to satisfy critical speed and torsional deflection criteria.
3. All shafting shall be of AISI C-1018 steel minimum, unless otherwise specified.
4. All keys and keyways shall be designed to safely transmit all applied loads and shall be proportioned according to ANSI standards.
5. All stepped down shaft corners shall be properly radiused.
6. Shaft couplings shall maintain the proper alignment and load rating of the shaft. System design shall employ the fewest number of couplings possible.

I. Electrical Enclosures and Panels
1. Recessed panels shall be contained within code gauge, formed, and welded, steel back boxes or rack mount style enclosures. The operating panels shall be minimum 16-gauge steel or 6061-T6 aluminum plate, recessed within the back box to a depth sufficient to permit a locking hinged door to completely cover the panel without affecting any device within the enclosure. The front surface of the cabinet cover shall be flush with the finished wall surface.
2. Surface mounted enclosures shall be code gauge steel back boxes, with all seams and joints continuously welded and ground smooth. Surface mounted cabinets shall conform to NEMA ICS 6-1993 R200, Type 3; type shall be appropriate to the location. Operating panel shall be mounted per the drawings, on the front cover of the enclosure or recessed within the back box to a depth sufficient to permit a locking hinged door to completely cover the panel without affecting any device.
3. Rack mounted panels shall be contained within a NRTL-listed rack. Surface mounted cabinets shall conform to NEMA standards. The operating panels shall be minimum 16-gauge steel or 6061-T6 aluminum plate, recessed within the rack to a depth sufficient to permit a locking hinged door to completely cover the panel without affecting any device within the enclosure.
4. Internal components shall be protected by a locking mechanism to prevent unauthorized access. An integral device shall be provided to hold the operating panel open for service. Complete accessibility to internal components shall be provided when opened. Internal bracing shall be provided where required by panel size to prevent flexing of the panels.
5. All steel shall be zinc-phosphate treated, primed with a coat of zinc chromate, and finish painted with baked enamel. All aluminum panels shall be anodized and then be painted with a thermo setting epoxy paint. All finish colors shall be as selected by the Consultant.
6. All labels and legends shall be permanently engraved directly into the faceplate. Engravings shall be filled with contrasting color enamel. Micarta, lamicoid, and other types of engraved plastic labels shall not be used unless permanently, mechanically attached. Dry transfer, decals, plastic "Dymo," or other types of adhesive labels or silk screened legends shall not be used.

7. All control panel faceplates shall have beveled edges and rounded corners.

8. Panel(s) shall have a nameplate in a conspicuous location identifying the Rigging Contractor, Project and Panel Designation.

9. Each panel shall be completely factory-wired internally, with permanently identified barrier type terminal strips provided for the connection of the external wiring. All panels shall be factory tested.

J. Motor control cabinets
   1. Cabinet(s) shall be of steel framed construction with applied steel side, top and bottom panels, equal to a NEMA Type 3 rating. All components shall be factory primed and painted.
   2. Cabinet(s) shall have a locking front door with an integral safety-interlock, which when the door is opened shall automatically disable the main electrical feed to the panel.
   3. Cabinet(s) shall contain all motor control system electronics, starters, and power.
   4. All wires inside the cabinet(s) shall be identified at the jacket with separate numbers.
   5. An engraved Lamicoid label shall be bolted or riveted to the front of each cabinet, to read:

      (Name of Venue)
      (Name of Rigging Motor Control Cabinet)
      (Axis Name #1)
      (Axis Name #2)
      (Etc.)

      Schuler Shook Theatre Planners
      (Name, Location and Phone Number of Rigging Contractor)
      (Year of Commissioning)

   6. Install where shown in the Drawings.

K. Limit Switches
   1. All linear motion monitoring switches shall be furnished with rotary lever arm, cam, or plunger style operators. All adjustable linear motion monitoring limit switches shall include sufficient liquid-tight, flexible conduit and wire including grounding conductor, to permit at least 10 ft. of movement for adjustment.

   2. All rotary motion monitoring limit switches shall have a minimum NEMA Type 12 or IP65 rated surface mounted enclosure with provisions for conduit fitting mounting. Each limit switch shall employ a lead screw or...
gear driven, ball bearing supported camshaft and associated precision, snap-action type contact assemblies. Each circuit shall be actuated by an individually adjustable cam operator.

3. All intermediate position limit switches shall provide accurate positioning regardless of direction of travel. See Drawings for intermediate preset positions.

4. All motor-operated equipment shall be equipped with normal travel limit switches to stop motion at each end of travel and redundant over-travel limits which shall remove power from the motor when actuated at each over-travel limit of travel. All over-travel limit switches, when struck, shall de-energize the corresponding motor, and all other affected motors until the assembly is manually reset. Bypass and reset over-travel limits shall be limited to authorized, trained personnel; bypass and reset shall not be possible from a user control panel.

5. All limit switches shall be located so as to be easily accessible following installation for adjustment and observation.

6. Exact limit settings will be verified in the field during commissioning.

L. Encoders shall be used to provide position and speed data for all permanently installed motorized rigging sets with programmable presets or positional feedback, as indicated in the Drawings. These encoders shall be capable of retaining position data during emergency stop and normal power down events.

M. Safety and Protective Devices

1. Slack line detection shall be provided for each lift line by means of a low-voltage detecting device. Lift line contact with this detector shall signal a slack condition to the control system.

N. Electrical Cable Management

1. Cable Management on linesets with existing electrical or audio system devices mounted to the batten shall be maintained in its existing condition. In cases where an existing batten is being replaced, cable management shall be transferred to the new batten using the same cable management techniques and material.

2.12 MOTORIZED “PACKAGED” HOISTS

A. General

1. Single, self-contained hoist modules shall be used for each motorized batten location. Hoist assemblies shall be a compact design with all required components integrated in its structure, including cable drum, winch, gearmotor, and brake.

2. Hoists shall be UL or ETL marked as meeting "UL 1340 Standard for Hoists.

3. All moving elements shall be properly guarded and enclosed to prevent injury and to protect from contact with contaminants. This enclosure shall also help reduce acoustical noise from the motor and moving components.

4. The assembly shall mount horizontally to I-beam flanges indicated on the drawings. All mounting equipment shall be adjustable to actual field conditions.

5. All motors, hoisting cables, chain, sheaves, hardware, etc., shall be rated for overhead lifting; capable of supporting design loads as shown, with
minimum safety factor of eight (8) and shall be of, or treated with, corrosion resistant materials.

6. Each hoist shall have the capacity to raise and lower the specified loads at the specified speeds for the full range of travel, as shown in the Drawings.

7. The hoist assembly shall permit the number and size of lift lines as indicated on the drawings.

8. Each hoist assembly shall have an affixed, engraved name plate. The name plate shall include the following information: hoist number, lifting capacity, sustaining capacity, incoming power source (including voltage, panel number, circuit numbers and panel location), and manufacturer’s name and 24 hour service phone number.

B. Drums and sheaves

1. The cable drum shall move along its axis to maintain a zero-fleet angle between cable take-off points on the drum and muling sheaves within the assembly throughout the range of operation.

2. The helically grooved cable drums shall be designed to properly support the required loads without crushing or deformation. Drums shall carry only one layer of cable. Cables shall terminate through a properly angled, smooth hole in the drum, sized to retain a copper Nicopress stop sleeve. Cable clips are not acceptable. Drum shall allow for three cable wraps to remain on the drum for each lift line when the batten is in its maximum low trim position.

3. A mechanism shall be provided to retain lift lines in their grooves.

4. Drum material shall be molybdenum disulfide filled nylon.

5. Head block sheaves shall be mounted between 12-gauge steel (2.78 mm) minimum side plates that fully enclose the sheaves. The block shall have an additional mounting location for one sheave to allow one cable to exit the hoist in the opposite direction. The block shall be located so all cables have a zero degree fleet angle relative to the pitch of the drum groove.

6. The block shall be mounted to permit the attachment of dual or solid state load cells for load monitoring.

C. Systems with multiple wire rope drums which do not have a 1:1 ratio with an intermediate load brake, or systems incorporating intermediate universal joints, differentials, or couplings, shall not be allowed.

D. All sheaves shall meet provisions given elsewhere in this specification.

E. Encoders and limit switches

1. Encoders and limit switches shall be utilized to limit travel to upper and lower positions. Switches operate in conjunction with motor starter relays. Each hoist shall have four (4) limit settings: ultimate high; ultimate low; normal high; normal low.

2. Positively driven mechanical limit switches or solid state encoders shall be provided for normal limit indication.

3. Ultimate limit switches shall be backup, positively driven mechanical limit switches set to operate before any object being raised or lowered is stopped prior to damaging the object being hoisted due to a collision with permanent structure above or below the hoisted object. All ultimate limit switches, when struck, shall de-energize the corresponding motor, and all
other motors in the group (no movement in ANY direction) until a special maintenance procedure is activated. Verify exact limit locations in field.

F. Electrical
1. Each motor shall have its starter assembly, circuit protection local to the motor assembly. As an alternative, the Contractor may provide a central motor control cabinet (MCC) on the gridiron. Coordinate MCC placement with the Consultant, Owner, and devices.
2. Starter assemblies shall include a safety line contactor, incoming power fuses, control transformer with fuses, all related safety relays and terminal blocks.
3. Every motorized hoist control shall have circuit protection.
4. The MCC, if present, shall be fed all power necessary for motorized hoists and control from the existing hoist power distribution busways.
5. All internal wiring in the MCC shall be completed and tested at the factory before delivery to the job site.
6. Cabinet shall be a NEMA rated enclosure.
7. All electronic components shall be sized at 200% of nominal capacity.
8. The input high-voltage power available shall be 480VAC, 50/60 Hz Three Phase. Any modifications to this power are the responsibility of the hoist manufacturer.
9. All electrical work from and including the buss system and the motor control cabinet (if present), including high and low voltage wire, terminations, and conduit, is the responsibility of this section.
10. High voltage and low voltage power shall be terminated in separate buss systems, with one high voltage and one low voltage receptacle for each hoist assembly. These receptacles shall be spaced in the raceway such that they are located horizontally within 2” of the center of the corresponding hoist centerline. Each high voltage receptacle shall have local circuit protection.
11. Both high and low voltage buss systems shall be factory-built and tested for the application before delivery to the job site.
12. Each hoist assembly shall be have safety twist-locking connectors for power and control connections to the raceway.
13. Each hoist shall have over-current and ground fault circuit protection located at the raceway.
14. In the event that a loss of communication occurs during a move, the hoist shall immediately come to a controlled stop.
15. All electrical installations must meet or exceed the latest version of all applicable standards and wiring and safety codes.

G. Motor Controllers:
1. For fire and electrical safety, motor controllers shall conform to the NEC, be built in accordance with UL Standard 508E, and be “touch safe” per IEC 204-1 “Protection against direct contact” rules.
2. Controllers shall be wired so that operation of the normal end of travel limit switches shall only allow movement away from the limit switch.
3. Variable speed controllers shall be solid state flux vector controllers designed for hoisting duty. Each controller shall incorporate closed loop feedback using a solid state position encoder mounted on the motor shaft to provide the greatest accuracy and performance. The controller shall
provide an essentially infinite speed range, including the ability to produce full torque at zero speed. The use of open loop drives is prohibited.

4. Controllers shall provide under voltage, over voltage, instantaneous over current, overload, and phase loss protection.

5. Operation of the key switch shall disconnect power to all starters and drives.

H. Emergency Stop System

1. The E-stop and overtravel limit switches shall be part of a circuit which is separate from and redundant to the normal end of travel limit switches. This circuit shall not depend on software or electronic logic. When activated, the Emergency-Stop shall halt all motor movement and remove power to the motors by separate line contactors using a UL580E Type 2, non-welding, positive break contactor. An override mechanism to allow resetting of the overtravel limits shall be included.

2. For hoists running at more than 50 fpm, a Category 1 controlled (ramped) stop is required, with removal of power when a stop is achieved after a predetermined interval not greater than 1 second.

3. The E-stop loop shall be continuous and wired such that the depression of any E-stop switch disconnects power from system. Power cannot be restored until all E-stop buttons have been released. Resetting the emergency stop circuit shall not initiate motion.

4. All E-stop switches shall be of the self-latching, mushroom type. The button shall easily activate the control system with a push to activate/turn to release action. The switches shall be red and clearly labeled “EMERGENCY STOP” in white letters.

5. Hard-wired E-Stop switches shall be located on the motor control panel.

I. Hoist shall have the following performance requirements in addition to those listed above:

1. Stopping distance of one-half inch (1/2”) at full load at full speed under normal operation

2. Preset targets and limit settings to 1/8” accuracy.

3. Speed regulation within 5% at full load.

4. Load sensing shall protect against unwanted load changes due to over and underloading.

5. Hoist shall provide slack line detection.

J. Installation and commissioning of the motorized rigging system shall be performed by a factory authorized and trained technician.

2.13 MOTORIZED HOIST CONTROL

A. Control System Functions

1. The control system shall be specifically designed for the control of motorized theatrical rigging equipment. It shall provide a level of reliability, accuracy, and integrity appropriate for overhead lifting in places of public assembly.

2. The system shall be capable of controlling all specified hoists but shall not allow more than eight hoists to operate simultaneously. Programmed play positions trims shall be stored in non-volatile memory.
3. The control system shall perform the functions as noted below. This list of functional requirements describes the minimum operating parameters of the systems.
   a. Operator authorization levels to ensure secure access levels and lockout levels of operation and control as noted in this Section.
   b. Axis grouping allowing multiple axis to operate simultaneously with different target positions.
   c. Programmability of target position and group.
   d. Indication of position. All position data to be acquired from positional encoders specific to each axis.

B. Variable Drive Systems
1. Supplied flux vector drive units shall be capable of operating within a ±10% variance of the nominal operating voltage. Frequency input shall accept 60Hz input with a tolerance of ±5%. Rigging motor power to be supplied for the project is 480VAC, 3 phase, 60Hz.
2. Flux vector drive units shall have a minimum overload rating of 150% rated current for 60 seconds.
3. Flux vector drive units shall be designed to control the speed of NEMA torque design B motors.
4. Flux vector drive units shall be able to function in an environment, without de-rating, at a maximum temperature of 104°F (40°C) under maximum relative humidity conditions of 90% (non-condensing). The drive unit shall function, without de-rating, up to an altitude of 3300ft (1000m) above sea level.
5. All inverter sections shall be of the PWM (pulse width modulated) type and consist of an IGBT (insulated gate bipolar transistor) inverter bridge through entire power range (GTO or BJT devices not acceptable). Only flux (space) vector modulation shall be utilized, six step modulation is not acceptable.
6. The drive shall operate with a minimum of 0.98 primary power factor and efficiency rating of 0.96 to 0.98. Unit shall be supplied with properly sized line reactors to reduce multiple order harmonics induced into the power supply lines.
7. Flux vector drive units provided shall incorporate the following minimum functionality:
8. Microprocessor based adjustable frequency drive with sinusoidal PWM current control providing:
   a. Voltage/Frequency control with feedback
   b. Open or Closed Loop Flux Vector Control
   c. Self-tuning (measurement of motor resistance and speed loop optimization)
   d. 0-500Hz output frequency with a minimum 0.01 Hz setpoint resolution.
   e. Minimum adjustable carrier frequency 8kHz (adjustable to 20kHz with derating)
   f. Full rated torque down to zero speed.
9. Operator display and interface keypad shall permit operator adjustment of all operational parameters. It shall also be possible to adjust and monitor operational parameters via an integrated serial data port.
10. The flux vector drive unit shall be capable of adjustment of the following minimum complement of operational parameters:
   a. Password or code controlled access authorization to the individual parameters
   b. Selectable motor operating mode [Torque/Velocity]
   c. Minimum Frequency adjustment
   d. Maximum Frequency adjustment
   e. Constant Voltage Frequency adjustment
   f. Operating Source (Local, Remote, Serial)
   g. Voltage Boost/ Current Boost adjustment capabilities
   h. Motor Overload adjustment
   i. Overload Time
   j. Analog Scaling of torque/speed output
   k. Acceleration Time
   l. De-acceleration Time
   m. Accel/De-accel Ramp Characteristic
   n. Independently Adjustable Preset Speeds
   o. Adjustable Carrier Frequency
   p. Individual adjustment of torque and current limits
   q. Braking Frequency Control. Unit shall be configured to release the brake only after full torque has been developed in the motor.
   r. The flux vector drive unit shall be capable of displaying the following minimum complement of operational system information:
      i. Motor Speed [based on encoder data]
      ii. Output Frequency
      iii. Output Current
      iv. Output Voltage
      v. DC Bus Voltage

11. External control of the drive unit shall incorporate:
   a. Digital Inputs for control of Start/Stop and Forward/Reverse
   b. Analog input [±10VDC, 4-20mA] Speed and Direction
   c. Serial data port control of Start/Stop, and Forward/Reverse, and Speed;

12. The flux vector drive unit shall be provided with isolated digital outputs for the following signals:
   a. Buffered, quadrature output with index signal of the motor encoder signal
   b. A minimum of four (4) digital outputs [24VDC 50mA] whose state may be assigned and adjusted via system parameters

13. Motor rotational position data shall be by incremental optical encoder. The flux vector drive control unit shall accept a differential, 5VDC, quadrature signal, with index marker.

14. The flux vector drive unit shall monitor and protect the drive unit from the following minimum complement of fault conditions:
   a. DC Bus Undervoltage
   b. DC Bus Overvoltage
   c. Loss of Control Voltage
   d. Heat Sink Overtemperature Protection
   e. Motor Thermal
   f. Inverter Overload Protection
g. Inverter Overcurrent and Output Stage Short Circuit  
h. Ground Fault  
i. Motor Overspeed  
j. Loss of Motor Encoder Data  

15. As required by the application, the unit shall be equipped with a means to dissipate regenerative braking power developed during de-acceleration of the load mechanically coupled to the controlled motor. This dissipation may take the form of regenerative coupling to the supply line power or resistor banks integral or auxiliary to the drive system enclosure.  

16. The unit shall be externally protected from over current conditions per UL 198C by properly sized and coordinated fuses.  

17. The Vendor may elect to control the flux vector drive unit via discrete, hardwired control or an open-standard, digital data transfer protocol (e.g. Profi-Bus) provided positive, hardwired, control of drive output is also provided. Use of proprietary digital data transfer protocols or hardwired control schemes which do not conform to a minimum EN-954-1 category 3 supervised safety system is not permitted.  

18. The following flux vector drive units are acceptable for the Work of this Section:  
a. Baldor/Sweo18Q Series  
b. Mitsubishi V200E Series  
c. Siemens MC6SE70 Series  

C. Fixed Speed Starters  
1. Each hoist shall include a fixed speed reversing starter. Starter assemblies shall be located in a single cabinet on the gridiron. Starter assemblies shall include a safety line contactor, reversing contactor sized for plugging and jogging, incoming power fuses, control transformer with fuses, all related safety relays and terminal blocks.  

D. Emergency Stop  
1. The emergency stop system shall meet NFPA-79 (Electrical Standard for Industrial Machinery)  

2. The emergency stop circuit shall be a normally closed circuit or a supervised circuit that provides the same or greater level of reliability and security. Its operation shall not depend on software or semiconductors.  

3. Emergency Stop. There shall be a single emergency stop system that shall, when activated, stop all elements as shown in the Drawings.  
a. Emergency stop actuators shall be rear-illuminated mushroom pushbutton switches. Operation shall be PUSH to engage and TWIST to release. Color: red.  

4. This system shall function as noted below.  
a. Category 1: A controlled stop per NFPA-79 (Electrical Standards for Industrial Machinery) shall be provided. The system shall stop all motors and remove power in not less than 0.75 seconds.  
b. Engagement of the system shall remove power from the motors, but not the control system electronics.  
c. Feedback  
i. When activated all pushbuttons described in this paragraph shall be illuminated and shall flash to indicate a “STOP”
condition. Buttons shall continue to flash until system has been taken out of “STOP” condition.

d. When the system is taken out of the “STOP” condition no movement shall begin automatically.

5. Panel design and location as shown in the Drawings.

6. E-stops shall be located in all control panels, and at the motor control center.

E. Software

1. Motor Control
   a. The system shall provide a controller; preset creation and editing facilities; and a display of the current position and target position of each hoist. A complete display of the status of all axis, faults and interlocks shall be provided.

2. The system shall be capable of the following operating parameters:
   a. Jog - One axis can be selected and operated directly.
   b. Single Target – axis may be simultaneously directed to a common target height.
   c. Absolute Targets – axis can be selected, with individual target heights for each axis, and simultaneously directed to the targets.
   d. Relative Target – axis can be simultaneously directed to move a specific distance from their present position.
   e. Relative Positioning – axis can be simultaneously directed to move a set distance and maintain their preset spatial relationship to the others in the selection.
   f. Quantity of axis in motion: For parameters b through e above the system shall be able to move at least 1 axis but no more than 8 axis simultaneously.

3. Time and speed based targeting shall be available for variable speed hoists.

4. Cues and Presets
   a. Cues and Presets shall be able to be composed, stored, modified, and recalled to allow recording and re-creation of movements. Individual cues shall have the ability to contain any or all of the following features.
      i. Target position – which may be relative or absolute, or to match the present or previous target position.
      ii. Acceleration – An acceleration time or rate may be selected to provide the desired effect, or the default value may be used.
      iii. Speed may be selected as a velocity, a percentage of full speed, or as a travel time, in which case the system will calculate the speed required. If no selection is made, the default value will be used.
      iv. Deceleration - A deceleration time or rate may be selected, independently of the acceleration rate.
   b. Multiple hoists: A single cue shall be able to control multiple hoists, each with its own speed and target.
   c. Synchronized Groups: It shall be possible to group hoists for synchronized operation. If any hoist in a group loses
synchronization the entire group shall stop and provide feedback to
the user.

d. Cues shall be able to be named or numbered to suit the user's
needs.

e. Presets shall be recorded in a manner similar to cues to provide a
defined starting point for the following cues. Cues shall have a
sequential relationship with the base preset and preceding and
following cues.

5. The system shall monitor and provide feedback on the following system
components:

a. Axis position

b. Limit Switch Status

c. Emergency Stop Status

d. Interlock Status

e. Fault condition

f. Electrical supply status

g. Load Sensing

h. Slack Line Detection

6. The system shall be able to accept control direction from 2 user input
devices at the same time. This function shall be user-configurable to allow
for different levels of axis control.

7. System Hierarchy – The system shall provide the following levels of
operational access:

a. System Administrator. User shall be able to modify all operational
parameters. This level shall be password protected. The password
shall be user-defined at system startup.

b. Supervisor. User shall be able to set targets, speed, write cues,
and monitor feedback parameters. This level shall be password
protected. The password shall be user-defined at system startup.

c. Operator. User shall be able to jog sets as noted above, execute
cues, and monitor feedback parameters. This level shall be
password protected. The password shall be user-defined at system
startup.

d. Observation Mode. User shall be able to monitor all axis positions
and all feedback parameters.

e. Manufacturer Access. Access is password protected and shall be
set by the manufacturer and is not user-definable. This level of
access shall be equal to System Administrator level access.

8. For a period of two (2) years following acceptance, the Rigging Contractor
shall provide and install, at no cost to the Owner, all control system
upgrades. Thereafter the Rigging Contractor shall notify the Owner of all
system upgrades for the life of the control system. The Rigging Contractor
shall keep system user's name and address in a database for this purpose.
All upgrades shall include a full written description of operational
modifications. System upgrades shall be designed so as to allow existing
data to be accessed and upgraded.
F. User interface

1. The control system shall be comprised of individual control panels as shown in the Drawings. Each panel may contain one or more of the following control elements:
   a. Emergency Stop Button(s) as described in this section.
   b. One ON/OFF key switch. Provide five (5) keys. Switch shall not allow removal of key when in the ON position.
   c. Movement Controls: One set of two (2) momentary contact switches, labeled with the appropriate directional destination. It shall be necessary to maintain contact on the switch in order to maintain movement. A dedicated DEADMAN switch shall be acceptable as an alternative to push to run switches.
   d. Positional Readout: One illuminated digital readout for each winch. Readout shall at all times indicate the axis’ location as related to a defined datum point. Readout shall be in feet and inches, accurate to 0.25 in.
   e. Set Trim Controls: Controls shall be an illuminated push-button. Controls shall set two (2) intermediate targets between the mechanical upper and lower limits. The location of these intermediate targets shall be as indicated in the dynamic display, and shall be selectable within 1/2 in. Button shall flash when the location has been stored in the control software. The user will be required to hold the button for three (3) seconds in order to set the trim position.
   f. Selector switch(es): Switch(es) shall allow selection of one or more motor/winch as noted on the Drawings.
   g. Visual Feedback Indicators
      i. Control Power Status shall indicate when illuminated that the control panel is active and communicating with the control system/software. Color: Green
      ii. Motor Power Status shall indicate when illuminated that the motor(s) in the system are energized and within the acceptable amperage range. Color: Yellow
      iii. Axis in Motion/Move Complete shall indicate, by flashing, that any axis is in motion. A steady illumination shall indicate that the axis is no longer in motion. Indicator shall turn off after ten (10) seconds following completion of movement. Color: Amber
      iv. Interlock faults/Error reporting shall indicate when illuminated that an error condition exists in the system. The indicator shall monitor the following conditions. Color: Red
         a) Overtravel
         b) Safety and Protective Devices
         c) Load Sensor monitoring
         d) Slack Line Detection
   h. Graphic Display
      i. Rear-illuminated display screen shall display information about system as defined by this Specification and the Drawings.
ii. Screen size shall be a minimum of 12 in. diagonal, 1920x1200 captive touch screen.

2. Local Control
   a. Provide local motor control in immediate proximity to each individual motor location.
   b. Control at motors shall be in NEMA type 1 housings. In addition to pushbuttons for control of stop, up, down and overtravel limit bypass, control stations at motors shall include a three-position switch for delegating control of motor to local-off-normal. All STOP functions, whether local or remote, shall function regardless of the position of the local-off-normal selector switch.
   i. Maintenance pendants may be provided for local control functions provided that the connection of a fixed speed style control pendant to a variable speed unit will not result in motion or damage to the connected units or vice versa. Connectors shall equal AMPHENOL MS or 97 series. When a maintenance pendant is plugged in the unit shall automatically switch from Normal to Local mode.

3. Rigging Control Console:
   a. Furnish console with 50 foot minimum umbilical with integral power and data.
   b. The following control systems shall be acceptable:
      i. "Scene Control 12" by JR Clancy.
      ii. "Foundation Desk: by Entertainment Technology Controls
      iii. Approved substitutions.

4. All labels and legends shall be permanently engraved into the face of the panel and filled with a contrasting paint. No surface-mounted labels or tags of any kind will be permitted. No decals or silk-screened legends will be permitted.

5. Provide vinyl dust covers for all equipment components that are not wall-mounted.

G. Safety & Protective Devices
1. Each hoist set that employs slack-line detection shall create an Emergency Stop condition when a slack line is detected.
2. Each winch set that employs load sensing shall create an Emergency Stop condition when load thresholds are exceeded. The control system shall monitor the loads on the hoists, first learning the characteristics of a new load, then monitoring each move for changes in the load. Load information shall be obtained from solid state load cells.
3. Any interlock in an "unsafe" position shall prevent operation, stop the axis if the axis is in operation, and require manual resetting.
4. Secondary brake systems shall provide feedback to the control system to alert the operator(s) that the brakes have engaged.

H. Signage
1. Provide an engraved lamicoid placard at each control panel location.
2. Placard shall include the following information:
   a. Name, address, and phone number of stage rigging contractor.
   b. Cautionary notice:
CAUTION
HEAVY LOADS OVERHEAD.
DO NOT OPERATE STAGE RIGGING SYSTEM
WITHOUT PROPER TRAINING.

c. Notice regarding the necessity of periodic inspections.

J. All components shall be NRTL listed and labeled as such.
K. Install as indicated in the Drawings.
L. Quantities as per schedule.

2.14 ACT CURTAIN AND DRAW MOTOR
A. Existing act curtain hoist and associated hardware to remain.
B. Existing lift lines and truss batten to remain.
C. Existing draw motor to remain but be repaired and made operational.
   1. Existing electric cable management to remain.
D. Existing bi-parting traveler track, carriers, and miscellaneous hardware to remain.
E. Migrate act curtain hoist and draw motor to the new control system.

PART 3 - EXECUTION

3.1 INSTALLATION, LABOR AND SUPERVISION
A. Employ only fully trained stage riggers, assisted by competent common laborers, for the erection and installation of the stage equipment and related accessories herein specified. Stage Riggers shall be adequately and properly trained in the erection and installation of the style of rigging specified herein. Employ a competent superintendent on the work at all times.
B. Install all items of the stage rigging where indicated and completely connect and make operative as specified. Install in accordance with generally accepted theatre industry practices and the following references.
   1. USITT Recommended Guidelines for Stage Rigging and Stage Machinery
   3. Rigging Manual (published by the Construction Safety Association)
C. Maintain wire rope fleet angles at one and one-half degrees (1½) or less. Install Mule Blocks as required to maintain specified angles. System should run quietly in every respect when operated.

3.2 CLEARANCES
A. Entire rigging system and components shall, when completed, be free running and free from binding, rubbing, bumping, etc., in all respects.
3.3 INSTRUCTION OF OWNER PERSONNEL
   A. A representative of the Contractor, fully knowledgeable and qualified in Rigging
      Systems operation, shall provide six hours of instruction to the Owner designated
      personnel on the use, operation, and maintenance of this System. Designated
      instruction times shall be arranged through the Owner and will occur over up to
      two sessions.

3.4 CLEANING OF THE SITE
   A. Remove from the site all rubbish, trash, discarded packing materials, cartons, and
      other debris caused by daily operations. Upon completion of work, the entire area
      of work shall be left in broom and mop clean condition.

END OF SECTION 11 61 33