Captive Elk Facility
Washington State University
Pullman, WA

Project Manual

Project No. 9899-2018
Issued 2/14/2019
Washington State University
Facility Services, Capital
The Architect or Engineer Stamp on this page applies to all portions of the Specifications below.

ARCHITECT

Palouse Design Associates
1005 SW Crestview
Pullman, WA 99163
509-432-6652

Specification Divisions 024119, 033000, 055000, 061000, 064100, 074113, 081100, 081400, 085200, 087000, 092500, 099100, 108000, 133419, 312200, 312500, 323113, 323115 and 331113

MECHANICAL ENGINEERS:

FSI consulting engineers
304 W. Pacific Ave. Suite 210
Spokane, WA 99201
206-622-3321

Specification Sections 22 05 00, 22 05 29, 22 05 53, 22 07 00, 22 10 00, 22 13 00, 22 33 00, 22 40 00, 23 05 00, 23 05 93, 23 07 00, 23 09 16, 23 30 00
The Architect or Engineer Stamp on this page applies to all portions of the Specifications below.

ELECTRICAL ENGINEERS:

L&S Engineering Associates, Inc.
216 W. Pacific Ave., Suite 211
Spokane, WA 99201
509-777-2461

Specification Divisions 026000

END OF ARCHITECTURAL / ENGINEERING STAMPS
## CONDITIONS OF THE CONTRACT

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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:

Demolish existing building #165D in the Veterinary Feed Lot Shelter. Construct a new 1-level, 5200 SF Captive Elk Facility building. Contract time shall be 98 days from Notice to Proceed to Substantial Completion. Proposals MUST BE based on Contract Time.

Project is located at 435 SE Dairy Rd, Pullman, WA 99164.

Bid Estimate: $200,000.00

Alternate No. 1 - Add all portions of feed shed described on sheet A108, Civil, Mechanical & Electrical drawings.

Alternate No. 2 - In lieu of shelling room 101/101A per base bid, add all interior finish work in 101/101A, including GWB on exterior walls, ceiling, and interior walls; casework; and related finishes. See Mechanical and Electrical for additional information regarding M/E/P systems.

Alternate No. 3 - Add all perimeter and boundary high tensile fencing and gates except at building and sorting areas.

Alternate No. 4 - Add all grading within the area called out on sheet C101.

Alternate No. 5 - Add all wood fencing at north and south sorting areas, including gates as identified on sheet A109.

Alternate No. 6 - Revise sanitary sewer connection as called out on sheet C102.

Alternate No. 7 - Substitute typical perimeter fence (B1/A109) in lieu of chain link fencing identified on sheet A101.

Bids will be received prior to 2:00 p.m.; Wednesday, March 6, 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 at 10:00 am on February 27, 2019 at McCluskey Services Building, Room 190D.

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 http://facilitiesservices.wsu.edu/contractors.aspx.
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

END OF SECTION 00 11 13
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 [specific justifiable reason, ie site access, complexity of project, etc]. 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 (Parts A and B), 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. Bids must not contain any recapitulation of the Work to be done.

3. Bidders must include prices for all Alternate Bid items if they are included in the Form of Proposal.
   a. Bidders shall bid upon all Alternates indicated in the Form of Proposal. When bidding on alternates for which there is no charge, bidder shall write the words "No Charge" or some similar designation in the space provided on the Form of Proposal. If a bidder fails to bid an alternate, or notes "no bid," it will be construed as meaning that there will be no change in the Contract Sum and that the alternate is included in the Contract Sum.

4. Each part of the Form of Proposal must be sealed in its own opaque envelope and marked "Proposal, Part A - New Captive Elk Facility". 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 envelope shall be enclosed in a single envelope for mailing.

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

6. Proposal Part A (First Submittal):
   a. Completed Part A 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 Part A proposal form.

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

8. 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 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

A. Bid Alternates, 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 CONTRACTOR AND SUBCONTRACTOR PARTICIPATION

A. For Work with an estimated contract price of one million dollars or more, for construction, alteration, or repair, each bidder shall submit as part of its bid, the names of the Subcontractors with whom the bidder, if awarded the Contract, will subcontract for performance of the work of heating, ventilation, and air conditioning (HVAC), plumbing, and electrical, or to name itself for the Work. The bidder shall not list more than one Subcontractor for each category of Work identified, unless Subcontractors vary with bid alternates, in which case bidder must indicate which Subcontractor will be used for which alternate. Failure of bidder to submit as part of the bid the names of such Subcontractors or to name itself to perform such Work or the naming of two or more Subcontractors to perform the same Work shall render the bidder's bid non-responsive and, therefore, void. The requirement of this Section to name the bidder's proposed HVAC, plumbing, and electrical Subcontractors applies only to proposed HVAC,
plumbing, and electrical subcontractors who will contract directly with the bidder submitting the bid to Owner.

B. Contract price for purposes of RCW 39.30.060 shall mean the Base Bid amount if the estimated Contact price is not otherwise identified.

1.15 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.

1.16 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.

1.17 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 Contractors 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.] or [A minimum of three projects of comparable size and scope will be required for bidder.]

D. For projects involving research and laboratory space, or a combination of research, laboratory, and office space, the required experience for bidder, Project Manager, Superintendent, and Project Engineer shall be as follows:

1. Bidder shall have documented experience as a GC on projects of similar type, value, and scope for a minimum of eight years or three projects.
2. The Project Manager shall have documented experience managing and planning projects of similar type, value, and scope as the Contractor’s Project Manager for a minimum of five years or three projects.

3. The Superintendent shall have documented experience directing daily activities of all subcontractors on projects of similar type, value, and scope as the GC’s Superintendent for a minimum of five years or three projects.

4. The Project Engineer shall have documented experience coordinating and administering the work on projects of similar type, value and scope as the GC’s Project Engineer for a minimum of three years or two projects.

E. 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.

F. 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.

G. 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.

H. 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.
1.18 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.

1.19 CONTRACT FORMS

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

END OF SECTION 00 21 13
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 "New Captive Elk Facility" 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

The Bidder proposes to modify the Base Bid by deleting from, adding to or otherwise modifying the Work as further described by the Contract Documents for the following stipulated sums:

Alternate No. & Description

Alternate No. 1 – Add all portions of feed shed described on sheet A108, Civil, Mechanical & Electrical drawings.

$_________________________ DOLLARS ($______________).

Alternate No. 2 – In lieu of shelling room 101/101A per base bid, add all interior finish work in 101/101A, including GWB on exterior walls, ceiling, and interior walls; casework; and related finishes. See Mechanical and Electrical for additional information regarding M/E/P systems.

$_________________________ DOLLARS ($______________).
Alternate No. 3 – Add all perimeter and boundary high tensile fencing and gates except at building and sorting areas.

______________________________ DOLLARS ($_______).

Alternate No. 4 – Add all grading within the area called out on sheet C101.

______________________________ DOLLARS ($_______).

Alternate No. 5 – Add all wood fencing at north and south sorting areas, including gates as identified on sheet A109.

______________________________ DOLLARS ($_______).

Alternate No. 6 – Revise sanitary sewer connection as called out on sheet C102.

______________________________ DOLLARS ($_______).

Alternate No. 7 – Substitute typical perimeter fence (B1/A109) in lieu of chain link fencing identified on sheet A101.

______________________________ DOLLARS ($_______).

For Alternates, which do not affect the Base Bid, indicate a zero (0) in the space provided for the Alternate.

D. REINSTATEMENT OF BID ALTERNATES

The Bidder agrees that Owner has the right to reinstate any Alternate not incorporated in the original Contract, for the sum originally proposed, provided Owner notifies the Bidder within 60 Days of Notice to Proceed.

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
Captive Elk Facility

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): Palouse Design Associates
1005 SW Crestview,
Pullman, WA 99163

PROJECT: Captive Elk Facility
435 SE Dairy Rd,
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 Ninety-Eight (98) 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 Three hundred seventy-four dollars, and ninety-four cents ($374.94) per Day for each Day beyond the contractual date for Substantial Completion that Substantial Completion is not timely achieved, and subsequently Two hundred ninety-six dollars, and ninety-four cents ($296.94) 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.

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**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>1</td>
<td>Add all portions of feed shed described on sheet A108, Civil, Mechanical &amp; Electrical drawings</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>In lieu of shelling room 101/101A per base bid, add all interior finish work in 101/101A, including GWB on exterior walls, ceiling, and interior walls; casework; and related finishes. See Mechanical and Electrical for additional information regarding M/E/P systems.</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:

<table>
<thead>
<tr>
<th>Allowance</th>
<th>Amount</th>
<th>Included Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Joanie Thomas</th>
<th>Jason Harper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Manager</td>
<td>Construction Manager</td>
</tr>
<tr>
<td>Facilities Services, Capital</td>
<td>Facilities Services, Capital</td>
</tr>
</tbody>
</table>
7.1.2 Contractor’s Designated Representative, identified below, shall be authorized to act on Contractor’s behalf with respect to the Project:

[Signature]

[Signature]

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:

<table>
<thead>
<tr>
<th>Number</th>
<th>Date</th>
<th>Pages</th>
</tr>
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</table>

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)

Joe Kline, P.E.
Assistant Vice President
Facilities Services, Capital

(Printed Name) (Title)

END OF SECTION 00 50 00
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<td>4.03</td>
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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
Time. In case of conflict within the Specifications, provisions in Division 1 shall take precedence over provisions of any other Division. In case of conflict within the Drawings, large scale Drawings shall take precedence over small scale Drawings.

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.
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
Captive Elk Facility Section 00 72 00
Washington State University - Pullman GENERAL CONDITIONS FOR WASHINGTON STATE FACILITY CONSTRUCTION WITH WASHINGTON STATE UNIVERSITY AMENDMENTS

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;

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 **RETAINEAGE, 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.

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**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.

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.).

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.
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 comply with Section 8.04. Any claim of a Subcontractor of any tier may be brought only through, 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.

END OF SECTION 00 72 00
Washington State University • Asbestos Management Program

Reasonable Certainty
of Non-Disturbance of Asbestos

For any WSU public works project, the Project Officer, Architect, Engineer, Project Leader or Construction Supervisor primarily responsible must complete and sign a form which contains the above title and specifically states that asbestos disturbance is not expected to occur. Alternatively, this form can be used. If no suspect materials will be disturbed, check "No Asbestos Disturbed" in Item 1 below, sign the form, and provide a copy of the signed form to all bidders on the project. Otherwise, check the items listed below in Item 2 which may be disturbed, sign and place this form in the project file, and arrange for a good faith inspection of the project. A copy of the good faith inspection report must then be made available to all bidders on the project as well as to any employer whose employees are in the immediate vicinity of abatement work associated with this project.

1. The project only involves materials made of metal, glass, wood, structural concrete, or else, if the project involves any material listed below, the material will not be disturbed by project activity.

   ☐ No Asbestos Disturbance

   □ Building #165D - No suspect materials present. Materials below ground were not evaluated.

2. The project involves one or more of the following materials, which may be disturbed by project activity (check each item).

   □ Linoleum        □ Vinyl Floor Tile    □ Flooring Mastic    □ Baseboard Mastic
   □ Drywall         □ Wall Plaster       □ Wall Texture       □ Loose Insulation
   □ Ceiling Tile    □ Popcorn Ceiling   □ Textured Ceiling  □ Siding Shingles
   □ Roofing Tar     □ Roofing Shingles  □ Pipe Insulation    □ Pipe Gaskets
   □ Boiler Insulation □ Tank Insulation □ Woven Gaskets    □ Fireproofing
   □ Fume Hood       □ Oven             □ Furnace           □ Transite Panels
   □ Panel Adhesive  □ Transite Water Pipe □ Transite Steam Pipe □ Underground Panels

3. Certification

   I certify that to the best of my knowledge, the above-provided information is correct.

   Signature: [Signature]

   Typed/Printed Name, Address and Telephone Number of Person Signing This Form:

   Matthew McKibbin, WSU Industrial Hygienist
   (509) 335-5311 - Env. Health & Safety
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. Demolish existing building #165D in the Veterinary Feed Lot Shelter. Construct a new 1-level, 5200 SF Captive Elk Facility building.

1.02  SCHEDULE OF ALTERNATES

A. Without limiting the requirements of the Contract Documents, the Work of the Alternates can be summarized as follows:

1. Alternate No. 1 - Add all portions of feed shed described on sheet A108, Civil, Mechanical & Electrical drawings.

2. Alternate No. 2 - In lieu of shell room 101/101A per base bid, add all interior finish work in 101/101A, including GWB on exterior walls, ceiling, and interior walls; casework; and related finishes. See Mechanical and Electrical for additional information regarding M/E/P systems.

3. Alternate No. 3 - Add all perimeter and boundary high tensile fencing and gates except at building and sorting areas.

4. Alternate No. 4 - Add all grading within the area called out on sheet C101.

5. Alternate No. 5 - Add all wood fencing at north and south sorting areas, including gates as identified on sheet A109.

6. Alternate No. 6 - Revise sanitary sewer connection as called out on sheet C102.

7. Alternate No. 7 - Substitute typical perimeter fence (B1/A109) in lieu of chain link fencing identified on sheet A101

1.03  SCHEDULE OF ALLOWANCES – NOT USED

1.04  SCHEDULE OF UNIT PRICES – NOT USED

1.05  GENERAL INFORMATION

A. Owner and Owner's Designated Representative:

1. Owner: Board of Regents
   Washington State University
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 prepare the program and 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. Architect/Engineer: Palouse Design Associates, Pullman, WA
   b. Civil Engineer: HHPR, Inc., Vancouver, WA
   c. Structural Engineer: HHPR, Inc., Vancouver, WA
   d. Mechanical Engineer: FSI Consulting Engineers, Seattle, WA
   e. Electrical Engineer: L&S Engineering Associates, Spokane, WA
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
Conditions).

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
**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.
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.
Overtime Codes Continued

2. 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. 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.
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.
Overtime Codes Continued

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 (1-1/2) 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.
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. 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.

Q. 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

Holiday Codes


Holiday Codes Continued


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.

7. A. Holidays: New Year's Day, Memorial Day, Independence Day, Labor 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.

B. Holidays: New Year's Day, Memorial Day, Independence Day, Labor 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.

C. Holidays: New Year's Day, Martin Luther King Jr. Day, Memorial Day, Independence 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.

D. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8). Unpaid Holidays: President’s Day. Any paid holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any paid holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

E. 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. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

F. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the last working 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. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.


H. Holidays: New Year's Day, Martin Luther King Jr. Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the Last Working Day before Christmas Day and Christmas Day (9). 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.
Benefit Code Key – Effective 8/31/2018 thru 3/2/2019

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 Last Working Day 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 a holiday.

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.
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: 2/14/2019

<table>
<thead>
<tr>
<th>County</th>
<th>Trade</th>
<th>Job Classification</th>
<th>Wage</th>
<th>Holiday</th>
<th>Overtime</th>
<th>Note</th>
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Whitman Insulation Applicators
Journey Level
$45.11 5A 1B 8N

Whitman Ironworkers
Journeyman
$61.21 7N 1O

Whitman Laborers
Air And Hydraulic Track Drill
$39.83 7B 1M

Whitman Laborers
Asphalt Raker
$39.83 7B 1M

Whitman Laborers
Asphalt Roller, Walking
$39.56 7B 1M

Whitman Laborers
Brick Pavers
$39.29 7B 1M

Whitman Laborers
Brush Hog Feeder
$39.29 7B 1M

Whitman Laborers
Brush Machine
$39.83 7B 1M

Whitman Laborers
Caisson Worker, Free Air
$39.83 7B 1M

Whitman Laborers
Carpenter Tender
$39.29 7B 1M

Whitman Laborers
Cement Finisher Tender
$39.56 7B 1M

Whitman Laborers
Cement Handler
$39.29 7B 1M

Whitman Laborers
Chain Saw Operator & Faller
$39.83 7B 1M

Whitman Laborers
Clean-up Laborer
$39.29 7B 1M

Whitman Laborers
Compaction Equipment
$39.56 7B 1M

Whitman Laborers
Concrete Crewman
$39.29 7B 1M

Whitman Laborers
Concrete Saw, Walking
$39.56 7B 1M

Whitman Laborers
Concrete Signalman
$39.29 7B 1M

Whitman Laborers
Concrete Stack
$39.83 7B 1M

Whitman Laborers
Confined Space Attendant
$39.29 7B 1M

Whitman Laborers
Crusher Feeder
$39.29 7B 1M

Whitman Laborers
Demolition
$39.29 7B 1M

Whitman Laborers
Demolition Torch
$39.56 7B 1M

Whitman Laborers
Dope Pot Fireman, Non-mechanical
$39.56 7B 1M

Whitman Laborers
Driller Helper (when Required To Move & Position Machine)
$39.56 7B 1M

Whitman Laborers
Drills With Dual Masts
$40.11 7B 1M

Whitman Laborers
Dry Stack Walls
$39.29 7B 1M

Whitman Laborers
Dumpman
$39.29 7B 1M

Whitman Laborers
Erosion Control Laborer
$39.29 7B 1M

Whitman Laborers
Final Detail Cleanup (i.e., Dusting, Vacuuming, Window Cleaning; Not Construction Debris Cleanup)
$37.19 7B 1M

Whitman Laborers
Firewatch
$39.29 7B 1M
<p>| Whitman Laborers | Form Cleaning Machine Feeder, Stacker | $39.29 | 7B | 1M |
| Whitman Laborers | Form Setter, Paving | $39.56 | 7B | 1M |
| Whitman Laborers | General Laborer | $39.29 | 7B | 1M |
| Whitman Laborers | Grade Checker | $41.82 | 7B | 1M |
| Whitman Laborers | Grout Machine Header Tender | $39.29 | 7B | 1M |
| Whitman Laborers | Guard Rail | $39.29 | 7B | 1M |
| Whitman Laborers | Gunite | $39.83 | 7B | 1M |
| Whitman Laborers | Hazardous Waste Worker (level A) | $40.11 | 7B | 1M |
| Whitman Laborers | Hazardous Waste Worker (level B) | $39.83 | 7B | 1M |
| Whitman Laborers | Hazardous Waste Worker (level C) | $39.56 | 7B | 1M |
| Whitman Laborers | Hazardous Waste Worker (level D) | $39.29 | 7B | 1M |
| Whitman Laborers | Hdpe Or Similar Liner Installer | $39.29 | 7B | 1M |
| Whitman Laborers | High Scaler | $39.83 | 7B | 1M |
| Whitman Laborers | Jackhammer Operator Miner, Class &quot;b&quot; | $39.56 | 7B | 1M |
| Whitman Laborers | Laser Beam Operator | $39.83 | 7B | 1M |
| Whitman Laborers | Miner, Class &quot;a&quot; | $39.29 | 7B | 1M |
| Whitman Laborers | Miner, Class &quot;c&quot; | $39.83 | 7B | 1M |
| Whitman Laborers | Miner, Class &quot;d&quot; | $40.11 | 7B | 1M |
| Whitman Laborers | Monitor Operator, Air Track Or Similar Mounting | $39.83 | 7B | 1M |
| Whitman Laborers | Mortar Mixer | $39.83 | 7B | 1M |
| Whitman Laborers | Nipper | $39.29 | 7B | 1M |
| Whitman Laborers | Nozzlemen | $39.83 | 7B | 1M |
| Whitman Laborers | Nozzlemen, Water (to Include Fire Hose), Air Or Steam | $39.56 | 7B | 1M |
| Whitman Laborers | Pavement Breaker, 90 Lbs. &amp; Over | $39.83 | 7B | 1M |
| Whitman Laborers | Pavement Breaker, Under 90 Lbs. | $39.56 | 7B | 1M |
| Whitman Laborers | Pipelayer | $39.83 | 7B | 1M |
| Whitman Laborers | Pipelayer, Corrugated Metal Culvert And Multi-plate | $39.56 | 7B | 1M |
| Whitman Laborers | Pipewrapper | $39.83 | 7B | 1M |
| Whitman Laborers | Plasterer Tenders | $39.83 | 7B | 1M |
| Whitman Laborers | Pot Tender | $39.56 | 7B | 1M |
| Whitman Laborers | Powderman | $41.48 | 7B | 1M |
| Whitman Laborers | Powderman Helper | $39.56 | 7B | 1M |
| Whitman Laborers | Power Buggy Operator | $39.56 | 7B | 1M |
| Whitman Laborers | Power Tool Operator, Gas, Electric, Pneumatic | $39.56 | 7B | 1M |
| Whitman Laborers | Railroad Equipment, Power Driven, Except Dual Mobile | $39.56 | 7B | 1M |
| Whitman | Laborers | Railroad Power Spiker Or Puller, Dual Mobile | $39.56 | 7B | 1M |
| Whitman | Laborers | Remote Equipment Operator | $40.11 | 7B | 1M |
| Whitman | Laborers | Remote Equipment Operator (i.e. Compaction And Demolition) | $39.56 | 7B | 1M |
| Whitman | Laborers | Rigger/signal Person | $39.56 | 7B | 1M |
| Whitman | Laborers | Ripper Person | $39.29 | 7B | 1M |
| Whitman | Laborers | Rodder &amp; Spreader | $39.56 | 7B | 1M |
| Whitman | Laborers | Sandblast Tailhouseman | $39.29 | 7B | 1M |
| Whitman | Laborers | Scaffold Erector, Wood Or Steel | $39.29 | 7B | 1M |
| Whitman | Laborers | Stake Jumper | $39.29 | 7B | 1M |
| Whitman | Laborers | Structural Mover | $39.29 | 7B | 1M |
| Whitman | Laborers | Tailhouseman (water Nozzle) | $39.29 | 7B | 1M |
| Whitman | Laborers | Timber Bucker &amp; Faller (by Hand) | $39.29 | 7B | 1M |
| Whitman | Laborers | Track Laborer (rr) | $39.29 | 7B | 1M |
| Whitman | Laborers | Traffic Control Laborer | $37.19 | 7B | 1M | 8T |
| Whitman | Laborers | Traffic Control Supervisor | $38.19 | 7B | 1M | 8S |
| Whitman | Laborers | Trencher, Shawnee | $39.56 | 7B | 1M |
| Whitman | Laborers | Trenchless Technology Technician | $39.83 | 7B | 1M |
| Whitman | Laborers | Truck Loader | $39.29 | 7B | 1M |
| Whitman | Laborers | Tugger Operator | $39.56 | 7B | 1M |
| Whitman | Laborers | Vibrators, All | $39.83 | 7B | 1M |
| Whitman | Laborers | Wagon Drills | $39.56 | 7B | 1M |
| Whitman | Laborers | Water Pipe Liner | $39.56 | 7B | 1M |
| Whitman | Laborers | Welder, Electric, Manual Or Automatic (hdpe Or Similar Pipe And Liner) | $40.11 | 7B | 1M |
| Whitman | Laborers | Well-point Person | $39.29 | 7B | 1M |
| Whitman | Laborers | Wheelbarrow, Power Driven | $39.56 | 7B | 1M |
| Whitman | Laborers - Underground Sewer &amp; Water | General Laborer &amp; Topman | $39.29 | 7B | 1M |
| Whitman | Laborers - Underground Sewer &amp; Water | Pipe Layer | $39.83 | 7B | 1M |
| Whitman | Landscape Construction | Landscape Laborer | $37.19 | 7B | 1M | 8T |
| Whitman | Landscape Construction | Landscape Operator | $44.55 | 7B | 1M | 8D |
| Whitman | Lathers | Journey Level | $45.11 | 5A | 1B | 8N |
| Whitman | Marble Setters | Journey Level | $49.04 | 5A | 1B | 8N |
| Whitman | Metal Fabrication (In Shop) | Fitter | $12.76 | 1 | 1 |
| Whitman | Metal Fabrication (In Shop) | Laborer | $12.00 | 1 | 1 |
| Whitman | Metal Fabrication (In Shop) | Machine Operator | $12.66 | 1 | 1 |
| Whitman | Metal Fabrication (In Shop) | Painter | $12.00 | 1 | 1 |
| Whitman | Metal Fabrication (In Shop) | Welder | $12.76 | 1 | 1 |
| Whitman | Millwright | Journey Level | $64.25 | 5A | 1B | 8N |</p>
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<th>Modular Buildings</th>
<th>Journey Level</th>
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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>Automatic Subgrader (ditches &amp; Trimmers)</td>
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<td>Backfillers (cleveland &amp; Similar)</td>
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<td>Whitman</td>
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<td>Backhoe &amp; Hoe Ram (under 3/4 Yd.)</td>
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<tr>
<td>Whitman</td>
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<td>Backhoe (45,000 Gw &amp; Under)</td>
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<td>Backhoes &amp; Hoe Ram (3/4 Yd. To 3 Yd.)</td>
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<td>Bagley Or Stationary Scraper</td>
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<td>Batch &amp; Wet Mix Operator (multiple Units, 2 &amp; Incl. 4)</td>
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<td>Batch Plant &amp; Wet Mix Operator, Single Unit (concrete)</td>
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<td>Batch Plant (over 4 Units)</td>
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<td>Belt Finishing Machine</td>
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<td>Belt Loader (kocal Or Similar)</td>
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<td>7B 1M 8D</td>
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<td>Power Equipment Operators</td>
<td>Belt-crete Conveyors With Power Pack Or Similar</td>
<td>$44.39</td>
<td>7B 1M 8D</td>
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<td>Bending Machine</td>
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<td>Bit Grinders</td>
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<td>Power Equipment Operators</td>
<td>Blade (finish &amp; Bluetop), Automatic, Cmi, Abc, Finish Athey &amp; Huber &amp; Similar When Used As Automatic</td>
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<td>7B 1M 8D</td>
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<td>Power Equipment Operators</td>
<td></td>
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<td>7B 1M 8D</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Blade Operator (motor Patrol &amp; Attachments)</td>
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<td>7B</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Blower Operator (cement)</td>
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<td>Whitman</td>
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<td>Bob Cat (skid Steer)</td>
<td>$44.39</td>
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<td>Bolt Threading Machine</td>
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<td>Power Equipment Operators</td>
<td>Boom Cats (side)</td>
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<td>Boring Machine (earth)</td>
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<td>Boring Machine (Rock Under 8 inch Bit - Quarry Master, Joy Or Similar)</td>
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<td>Bump Cutter (wayne, Saginau Or Similar)</td>
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<td>Cableway Controller (dispatcher)</td>
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<td>Canal Lining Machine (concrete)</td>
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<tr>
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<td>Carrydeck &amp; Boom Truck (under 25 Tons)</td>
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<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Cement Hog</td>
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<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Chipper (without Crane) Cleaning &amp; Doping Machine (pipeline)</td>
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<td>Power Equipment Operators</td>
<td>Clamshell, Dragline</td>
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<td>Compactor (self-propelled With Blade)</td>
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<td>Compressor (2000 Cfm Or Over, 2 Or More, Gas Diesel Or Electric Power)</td>
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<td>Compressors (under 2000 Cfm, Gas, Diesel Or Electric Power)</td>
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<td>Concrete Pumps (squeeze-crete, Flow-crete, Whitman &amp; Similar)</td>
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<td>Cranes (25 Tons &amp; Under), All Attachments Incl. Clamshell, Dragline</td>
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<td>1M</td>
<td>8D</td>
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<td>Whitman</td>
<td>Power Equipment Operators</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</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</td>
<td>Elevating Belt-type Loader (eucld, 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</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</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</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</td>
<td>Fireman &amp; Heater Tender</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Fork Lift Or Lumber Stacker, Hydra-life &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</td>
<td>Generator Plant Engineers (diesel Or Electric)</td>
<td></td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Gin Trucks (pipeline)</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
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<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Grade Checker</td>
<td>$44.71</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Gunite Combination Mixer &amp; Compressor</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>H.d. Mechanic</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>H.d. Welder</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Heavy Equipment Robotics Operator</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</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</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</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</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</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</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</td>
<td>Hydro-seeder, Mulcher, Nozzlaman</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</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</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</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</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</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</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>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators</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</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>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators</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</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</td>
<td>Master Environmental Maintenance Technician</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</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</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</td>
<td>Mobile Crusher 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</td>
<td>Mucking Machine</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</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>County</td>
<td>Occupation</td>
<td>Description</td>
<td>Hourly Rate</td>
<td>Day</td>
<td>Week</td>
<td>Month</td>
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<tr>
<td>Whitman</td>
<td>Power Equipment Operators</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</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</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</td>
<td>Plant Oiler</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Posthole Auger Or Punch</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Power Broom</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Pump (grout Or Jet)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Pumpman</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</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</td>
<td>Railroad Ballast Regulation 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</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</td>
<td>Railroad Tamper Jack 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</td>
<td>Railroad Track Liner Operator (self-propelled)</td>
<td>$44.71</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</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</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</td>
<td>Rollerman (finishing Asphalt Pavement)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<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 Compacting Vibrator), Except When Pulled B</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Roto Mill (pavement Grinder)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Rotomill Groundsmans</td>
<td>$44.55</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</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</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</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</td>
<td>Screed Operator</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</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</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</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</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</td>
<td>$43.78</td>
<td></td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Spray Curing Machine (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</td>
<td>Spreader Box (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</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</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</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</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</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</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</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</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</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</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</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</td>
<td>Turnhead Operator</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Ultra High Pressure Waterjet Cutting Tool System Operator, (30,000 Psi)</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Vactor Guzzler, Super Sucker</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</td>
<td>Vacuum Blasting 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</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</td>
<td>Welding Machine</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Whirleys &amp; Hammerheads, All</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>A-frame Truck (2 Or More Drums)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>A-frame Truck (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</td>
<td>Asphalt 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</td>
<td>Assistant Plant Operator, Fireman Or Pugmixer (asphalt)</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Assistant Refrigeration Plant &amp; Chiller Operator (over 1000 Ton)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Assistant Refrigeration Plant (under 1000 Ton)</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Automatic Subgrader (ditches &amp; Trimmers)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Backfillers (cleveland &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</td>
<td>Backhoe &amp; Hoe Ram (under 3/4 Yd.)</td>
<td>$44.71</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
</tr>
<tr>
<td>Whitman</td>
<td>Power Equipment Operators</td>
<td>Backhoe (45,000 Gw &amp; Under)</td>
<td>$44.71</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Backhoe (45,000 Gw To 110,000 Gw)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Backhoe (over 110,000 Gw)</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Backhoes &amp; Hoe Ram (3 Yds &amp; Over)</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Backhoes &amp; Hoe Ram (3/4 Yd. To 3 Yd.)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
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<tr>
<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Bagley Or Stationary Scraper</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>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>
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<tr>
<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Batch Plant &amp; Wet Mix Operator, Single Unit (concrete)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Batch Plant (over 4 Units)</td>
<td>$44.99</td>
<td>7B</td>
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<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Belt Finishing Machine</td>
<td>$43.78</td>
<td>7B</td>
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<tr>
<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Belt Loader (kocal Or Similar)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Belt-crete Conveyors With Power Pack Or Similar</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Bending Machine</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Bit Grinders</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>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>
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<tr>
<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Blade Operator (motor Patrol &amp; Attachments)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Blower Operator (cement)</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Boat Operator</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Bob Cat (skid Steer)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Bolt Threading Machine</td>
<td>$43.46</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Boom Cats (side)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>Boring Machine (earth)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>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>
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<tr>
<td>Whitman Power Equipment Operators- Underground Sewer &amp; Water</td>
<td>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>
<td>Department</td>
<td>Description</td>
<td>Rate</td>
<td>Ex</td>
<td>Hr</td>
<td>Days</td>
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<tr>
<td>Whitman Power Equipment Operators...</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 Power Equipment Operators...</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 Power Equipment Operators...</td>
<td>Canal Lining Machine (concrete)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
<td></td>
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<tr>
<td>Whitman Power Equipment Operators...</td>
<td>Carrydeck &amp; Boom Truck (under 25 Tons)</td>
<td>$44.71</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman Power Equipment Operators...</td>
<td>Cement Hog</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman Power Equipment Operators...</td>
<td>Chipper (without Crane) Cleaning &amp; Doping Machine (pipeline)</td>
<td>$44.39</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman Power Equipment Operators...</td>
<td>Clamshell, Dragline</td>
<td>$46.36</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
<td></td>
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<tr>
<td>Whitman Power Equipment Operators...</td>
<td>Compactor (self-propelled With Blade)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman Power Equipment Operators...</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>
<td></td>
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<tr>
<td>Whitman Power Equipment Operators...</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>
<td></td>
</tr>
<tr>
<td>Whitman Power Equipment Operators...</td>
<td>Concrete Cleaning / Decontamination Machine Operator</td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
<td></td>
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<tr>
<td>Whitman Power Equipment Operators...</td>
<td>Concrete Pump Boon Truck</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
<td></td>
</tr>
<tr>
<td>Whitman Power Equipment Operators...</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>
<td></td>
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<tr>
<td>Whitman Power Equipment Operators...</td>
<td>Concrete Saw (multiple Cut)</td>
<td>$43.78</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
<td></td>
</tr>
<tr>
<td>Whitman Power Equipment Operators...</td>
<td>Concrete Slip Form Paver</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<tr>
<td>Whitman Power Equipment Operators...</td>
<td>Conveyors Aggregate Delivery Systems (c.a.d.)</td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
<td></td>
</tr>
<tr>
<td>Whitman Power Equipment Operators...</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>
<td></td>
</tr>
<tr>
<td>Whitman Power Equipment Operators...</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>
<td></td>
</tr>
<tr>
<td>Whitman Power Equipment Operators...</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>
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<tr>
<td>Whitman Power Equipment Operators...</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>
<td></td>
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<tr>
<td>Whitman Power Equipment Operators...</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>
<td></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>
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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>
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<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>
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<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>
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<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>
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<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>
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<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>
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<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>
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<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>
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<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>
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<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>
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<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>
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<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>
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<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>
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<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>
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<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>
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<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>
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<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>
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<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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[Link to Wage Lookup](https://fortress.wa.gov/lni/wagelookup/prvWagelookup.aspx)
<p>| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Fork Lift Or Lumber Stacker, Hydra-life &amp; Similar | $44.39 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Generator Plant Engineers (diesel Or Electric) | $44.39 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Gin Trucks (pipeline) | $43.78 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Grade Checker | $44.71 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Gunite Combination Mixer &amp; Compressor | $44.39 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | H.d. Mechanic | $45.26 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | H.d. Welder | $45.26 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Heavy Equipment Robotics Operator | $45.26 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Helicopter Pilot | $46.36 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Helper, Mechanic Or Welder, H.D | $43.46 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Hoe Ram | $44.71 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Hoist (2 Or More Drums Or Tower Hoist) | $44.55 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Hoist, Single Drum | $43.78 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Hydraulic Platform Trailers (goldhofer, Shaurerly And Similar) | $45.26 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Hydro-seeder, Mulcher, Nozzleman | $43.46 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Lime Batch Tank Operator (recycle Train) | $44.99 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Lime Brain Operator (recycle Train) | $44.99 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Loader (360 Degrees Revolving Koehring Scooper Or Similar) | $45.26 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Loader Operator (front-end &amp; Overhead, 4 Yds. Incl. 8 Yds.) | $44.99 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Loaders (bucket Elevators And Conveyors) | $43.78 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Loaders (overhead &amp; Front-end, Over 8 Yds. To 10 Yds.) | $45.26 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Loaders (overhead &amp; Front-end, Under 4 Yds.. R/t) | $44.55 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Loaders (overhead And Front-end, 10 Yds. &amp; Over) | $46.36 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Locomotive Engineer | $44.39 | 7B | 1M | 8D |
| Whitman Power Equipment Operators-Underground Sewer &amp; Water | Longitudinal Float | $43.78 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Master Environmental Maintenance Technician | $45.26 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Mixer (portable - Concrete) | $43.78 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Mixermobile | $44.39 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Mobile Crusher Operator (recycle Train) | $44.99 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Mucking Machine | $44.39 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Multiple Dozer Units With Single Blade | $44.99 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Pavement Breaker, Hydra-hammer &amp; Similar | $43.78 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Paving (dual Drum) | $44.71 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Paving Machine (asphalt And Concrete) | $44.99 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Piledriving Engineers | $44.71 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Plant Oiler | $43.46 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Posthole Auger Or Punch | $44.39 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Power Broom | $43.78 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Pump (grout Or Jet) | $44.39 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Pumpman | $43.46 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Quad-track Or Similar Equipment | $44.99 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Railroad Ballast Regulation Operator (self-propelled) | $43.78 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Railroad Power Tamper Operator (self-propelled) | $43.78 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Railroad Tamper Jack Operator (self-propelled) | $43.78 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Railroad Track Liner Operator (self-propelled) | $44.71 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Refrigeration Plant Engineer (1000 Tons &amp; Over) | $44.71 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Refrigeration Plant Engineer (under 1000 Ton) | $44.55 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Rollerman (finishing Asphalt Pavement) | $44.99 | 7B | 1M | 8D |
| Whitman | Power Equipment Operators - Underground Sewer &amp; Water | Rollers, All Types On Subgrade, Including Seal And Chip Coating (farm Type, Case, John Deere And Similar,or Compacting | $43.46 | 7B | 1M | 8D |</p>
<table>
<thead>
<tr>
<th>Whitman</th>
<th><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></th>
<th><strong>Vibrator), Except When Pulled B</strong></th>
<th>$44.99</th>
<th>7B</th>
<th>1M</th>
<th>8D</th>
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<tr>
<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Roto Mill (pavement Grinder)</strong></td>
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<td>7B</td>
<td>1M</td>
<td>8D</td>
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<td><strong>Rotomill Groundsman</strong></td>
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<td>7B</td>
<td>1M</td>
<td>8D</td>
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<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Rubber-tired Scrapers (multiple Engine With Three Or More Scrapers)</strong></td>
<td>$45.26</td>
<td>7B</td>
<td>1M</td>
<td>8D</td>
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<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Rubber-tired Skidders (r/t With Or Without Attachments)</strong></td>
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<td>7B</td>
<td>1M</td>
<td>8D</td>
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<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Scrapers, All, Rubber-tired</strong></td>
<td>$44.99</td>
<td>7B</td>
<td>1M</td>
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<td><strong>Screed Operator</strong></td>
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<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Shovels (3 Yds. &amp; Over)</strong></td>
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<td>7B</td>
<td>1M</td>
<td>8D</td>
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<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Shovels (under 3 Yds.)</strong></td>
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<td>1M</td>
<td>8D</td>
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<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Signalman (whirleys, Highline, Hammerheads Or Similar)</strong></td>
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<td>7B</td>
<td>1M</td>
<td>8D</td>
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<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Soil Stabilizer (p &amp; H Or Similar)</strong></td>
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<td>1M</td>
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<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Spray Curing Machine (concrete)</strong></td>
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<td>7B</td>
<td>1M</td>
<td>8D</td>
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<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Spreader Box (self-propelled)</strong></td>
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<td>7B</td>
<td>1M</td>
<td>8D</td>
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<td><strong>Spreader Machine</strong></td>
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<td>7B</td>
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<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Steam Cleaner</strong></td>
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<td>7B</td>
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<td>8D</td>
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<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Straddle Buggy (ross &amp; Similar On Construction Job Only)</strong></td>
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<td>7B</td>
<td>1M</td>
<td>8D</td>
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<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Surface Heater &amp; Planer Machine</strong></td>
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<td>7B</td>
<td>1M</td>
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<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Tractor (farm Type R/t With Attachments, Except Backhoe)</strong></td>
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<td>7B</td>
<td>1M</td>
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<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Traverse Finish Machine</strong></td>
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<td>8D</td>
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<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Trenching Machines (7 Ft. Depth &amp; Over)</strong></td>
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<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></td>
<td><strong>Trenching Machines (under 7 Ft. Depth Capacity)</strong></td>
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<td>7B</td>
<td>1M</td>
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<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Tug Boat Operator</strong></td>
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<td>7B</td>
<td>1M</td>
<td>8D</td>
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<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Tugger Operator</strong></td>
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<td>8D</td>
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<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Turnhead (with Re-screening)</strong></td>
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<td>7B</td>
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<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Turnhead Operator</strong></td>
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<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Ultra High Pressure Waterjet Cutting Tool System Operator, (30,000 Psi)</strong></td>
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<td>7B</td>
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<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Vactor Guzzler, Super Sucker</strong></td>
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<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Vacuum Blasting Machine Operator</strong></td>
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<td>Whitman</td>
<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Vacuum Drill (reverse Circulation Drill Under 8” Bit)</strong></td>
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<td><strong>Welding Machine</strong></td>
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<td>8D</td>
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<td><strong>Power Equipment Operators-Underground Sewer &amp; Water</strong></td>
<td><strong>Whirleys &amp; Hammerheads, All</strong></td>
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<tr>
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<td><strong>Power Line Clearance Tree Trimmers</strong></td>
<td><strong>Journey Level In Charge</strong></td>
<td>$49.96</td>
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<td>4A</td>
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<td><strong>Spray Person</strong></td>
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<td><strong>Tree Trimmer Groundperson</strong></td>
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<td><strong>Residential Plumbers &amp; Pipefitters</strong></td>
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<td><strong>Residential Sheet Metal Workers</strong></td>
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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.”
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 weekly, or 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 NONCONFORMANCE 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:

1. All shutdowns to be scheduled in advance through the WSU Construction Manager.

2. Staging areas will be at the Project Site will be discussed and determined at Pre-Construction Meeting.

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.

B. Contractor shall provide a licensed and royalty pre-paid copy of the mutually
agreed upon scheduling software. The selected software must be capable of performing target-to-current schedule comparisons, cost and resource loading functions and have the option of executing calculations in retained logic. Activities must be able to process lead and lag time relationships, start-to-finish or finish-to-finish relationships, and be capable of being hammocked, if required. The software must be registered with Owner and be provided in a format compatible with Owner’s systems.

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;
2. Shop Drawings;
3. Product data;
4. Samples; and
5. Mock-ups.

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. Pre-Construction, Shop Drawings, Product Data: Electronic copies.
   b. Samples: As required by the technical Specification section.
   c. Mock-ups: As required by the technical Specification section.
   d. Demonstrations: As required to facilitate installation and inspection.
   e. 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 14 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. SWPP (Storm Water Pollution Prevention Plan)
11. Demolition Plan
12. Asbestos Safety Plan
13. Traffic Control Plan
14. List of Long Lead Items

1.03 SHOP DRAWINGS

A. Submit Shop Drawings drawn to accurate scale. Do not reproduce Contract Documents or copy standard information for use as Shop Drawings. Standard information prepared without specific references to the Project will not be accepted as a Shop Drawing.

B. Shop Drawings Include: fabrication and installation drawings, setting diagrams, schedules, patterns, templates, and similar drawings. Include the following information:
   1. Dimensions;
   2. Products and materials;
   3. Compliance with specified standards;
   4. Coordination requirements;
   5. Notation of dimensions established by field measurements;
   6. Any deviation from Drawings or Specifications; and
   7. Date when review is requested to maintain Progress Schedule.

1.04 PRODUCT DATA

A. Product data includes: Manufacturer's printed installation instructions, catalog cuts, standard color charts, rough-in diagrams and templates, standard wiring diagrams, and performance curves.
   1. Where product data must be specially prepared because standard printed data is not suitable, the submittal must be provided as a Shop Drawing.

B. Requirements: Mark each copy to show applicable options. Include the following information:
   1. Manufacturer's printed recommendations;
2. Compliance with recognized trade-association standards;
3. Compliance with recognized testing-agency standards;
4. Application of testing-agency labels and seals;
5. Notation of dimensions verified by field measurement;
6. Notation of coordination requirements;
7. Any deviation from Drawings or Specifications; and
8. Date when review requested to maintain Progress Schedule.

1.05 SAMPLES AND MOCK-UPS

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.
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):

1. Removal of USTs shall be performed in accordance with DOE regulations. Removal of existing USTs shall be performed by a DOE-certified UST removal company following the submittal of required forms. Copies of forms must be provided to Owner’s EH&S department at the same time they are submitted to DOE.

2. Installation of any UST must be done by DOE-certified UST installers. The installation shall be permitted by DOE following the submittal of completed UST installation forms. Copies of forms must be provided to Owner at the same time they are submitted to DOE.

3. Retrofits and upgrades of existing USTs must be completed by DOE certified companies. Records of the retrofit or upgrade must be submitted to DOE following the retrofit or upgrade. Copies of such records must be provided to Owner at the same time they are submitted to DOE.

4. If a UST is discovered during Contractor’s execution of the Work, Contractor shall suspend any Work that may affect the UST and immediately notify Owner. Owner will determine if UST must be sampled and/or removed. If necessary, Owner shall engage a certified company to remove UST.

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:

A. Water Pollution:

1. Discharge of any pollutants (including sewage and chlorinated water from water line disinfection) into surface or ground waters of the State (including storm drains, ditches and any other water conveyances) is prohibited.
2. Contractor removal of snow, ice, soil, and mud from roadways and sidewalks shall be accomplished without polluting storm drains or surface waters. Mud and soil removal shall be undertaken on a full-time basis, not just once or twice a day. Soil or mud that is dropped onto streets and sidewalks by vehicles at the Project site shall immediately be cleaned by Contractor. Contractor may not use water to clean streets and sidewalks. Under no circumstances may dust mitigation cause soil erosion or pollution of surface waters.

3. If a discharge to surface or ground waters does occur, Contractor shall immediately notify Owner.

B. Stormwater Pollution Prevention Plan (SWPPP):

1. For projects that disturb a soil surface area of one acre or greater:
   a. Contractor shall prepare a written SWPPP that meets DOE regulations and the requirements of Owner’s Municipal Stormwater Permit.
   b. Owner shall apply for a DOE NPDES Construction Stormwater General Permit for stormwater discharge, and then transfer the permit to Contractor. Contractor shall comply with all provisions of the permit.
   c. Contractor shall maintain a copy of the NPDES permit and the SWPPP on-site at all times.
   d. Contractor shall maintain on-site or on call, at all times, a Certified Erosion and Sediment Control Lead (CESCL).
   e. Contractor’s SWPPP shall identify all management practices used to prevent stormwater pollution and the location(s) at which each practice will be utilized on the Project site.
   f. Contractor shall obtain approval from Owner of the SWPPP prior to groundbreaking. Contractor shall construct approved BMP’s and the site inspected and approved, per permit requirements, prior to groundbreaking.
   g. Contractor shall use best management practices (BMPs) and shall inspect BMPs at least once a week. In addition, Contractor shall inspect BMPs immediately following each rainfall event of 0.1 inches or greater.
   h. Contractor shall maintain a written log detailing the results of inspections beginning with the first day of construction. Contractor’s written log shall describe all erosion control activities resulting from inspections. In addition, the following dates and events shall be included in the written log:
      1) The beginning and completion of major grading activities.
      2) Rainfall events of 0.1 inches or greater.
3) When construction activities temporarily or permanently cease on-site, or on a portion of the site.

4) When stabilization measures are initiated for portions of the site.

5) Stormwater sampling results.

i. Contractor shall maintain and/or repair all BMPs as necessary to ensure continued performance of their intended function. Contractor’s maintenance and repair activities shall include, but are not limited to:

1) Removal of sediment from silt fences before it reaches approximately one third the height of the fence, especially if heavy rains are expected; and

2) Cleaning or removal and replacement of drain inlet protection devices at least once every 7 Days, and once daily during storm events or before 6 inches of sediment can accumulate.

j. Contractor shall remove all temporary erosion and sedimentation control measure from the Project site within 30 Days after final site stabilization is achieved, or after the temporary BMPs are no longer necessary. Contractor shall remove any trapped sediment from the Project site. Contractor shall permanently stabilize any areas of soil disturbed by sediment removal.

k. In addition to sediment control, Contractor shall prevent other pollutant discharges from contaminating stormwater, groundwater, or soils.

1) Any maintenance or repair of heavy equipment and vehicles involving oil changes, hydraulic system draining and removal, solvent and degreasing cleaning operations, fuel tank draining and removal, and other activities that may result in discharge or spillage of pollutants to the ground or into stormwater runoff must be conducted using spill prevention measures, such as drip pans. Contractor shall immediately clean any contaminated surfaces following any discharge or spill incident. Emergency repairs may be performed on-site using temporary plastic placed beneath and, if raining, over the vehicle.

2) Wheel wash or tire bath wastewater shall be discharged to a separate on-site treatment system.

3) Application of agricultural chemicals including fertilizers and pesticides shall be conducted in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Manufacturers’ recommendations for application rates and procedures shall be followed.

4) Use of lime, flyash, or other soil amendments that could alter the pH of discharge waters is prohibited.
5) Highly turbid or contaminated dewatering water from construction equipment operation shall be handled separately from stormwater. Management options include infiltration, transportation off-site for legal disposal, or use of a sedimentation bag with outfall to a ditch or swale for small volumes of localized dewatering.

I. Contractor shall provide to Owner all notifications/reports required by permit to DOE.

1) If stormwater sampling results show turbidity greater than or equal to 250 NTU, Contractor shall immediately report to DOE and shall notify Owner of the report.

2) Contractor shall file monthly Discharge Monitoring Reports (DMR's) with DOE as required. Contractor shall provide copies of all DMR's to Owner.

2. For projects that disturb a soil surface area of 5,000 square feet or greater, but less than one acre, provisions shall be made to meet applicable local regulations, as necessary.

   a. Contractor shall make provisions for inspection and approval by the local authority prior to groundbreaking.

3. For projects that create additional impervious surfaces, provisions shall be made to meet stormwater flow control and treatment requirements, as applicable.

C. Wetlands:

   1. Contractor must follow all Federal, State and local regulations including but not limited to WAC 173-201 regarding protection of wetlands.

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).

B. Environmental Noise:

1. Per WAC 173-60, and applicable local requirements, Contractor shall not exceed maximum permissible environmental noise levels for the duration of the Work.

C. 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.

D. 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”.

E. Vector Control:

1. Buildings shall be constructed so as to minimize the attraction and/or harborage of pests and vectors such as birds and rodents. Minimize bird roosting areas by not constructing exposed pipes, beams, or flat ledges on openings, especially underneath covered areas directly accessible to the outside. Openings 1/4-inch or larger shall be sealed. Leave a minimum of a 3-foot swath around the building that is bare. Do not plant trees, shrubs and grass immediately adjacent to building.

2. The presence of standing water shall be minimized or eliminated to prevent mosquito breeding.

F. 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.

G. Water Recreation Facilities:

1. Contractor is responsible for fully complying with WAC 246-260. A construction permit application shall be submitted to the appropriate jurisdictional authority for approval prior to the commencement of construction. WSU EH&S shall be consulted prior to the development of a construction permit application. Contractor shall ensure that the appropriate regulatory authority inspects and approves the site prior to operation.

H. Food Service Facilities:

1. Contractor is responsible for fully complying with WAC 246-215. A construction permit application shall be submitted to the appropriate jurisdictional authority for approval prior to the commencement of construction. WSU EH&S shall be consulted prior to the development of a construction permit application. Contractor shall ensure that the appropriate regulatory authority inspects and approves the food service prior to operation.
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.
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. Field samples;
3. Mock-ups;
4. Manufacturer’s instructions;
5. Manufacturer’s field services;
6. Testing laboratory services; and
7. 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 (QCM).
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 meeting.

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

A. Field samples are defined as the partial installation of selected materials at the Project site for Owner’s review and acceptance of visual features and workmanship. Generally, accepted field samples are incorporated into the Work.

B. Contractor shall provide field samples as required by the Contract Documents at location acceptable to Owner.

C. Perform Work in accordance with the Contract Documents.

D. Approved samples will serve as an acceptable standard of quality and workmanship.

E. Maintain samples until completion of relevant Work.

F. Upon completion of relevant Work or when directed by Owner, demolish and remove samples from Project site unless sample is accepted as part of completed Work.

1.05 MOCK-UPS

A. Contractor shall provide mock-ups as required by the Contract Documents. Provide additional mock-ups, as required by Owner, until approval is obtained.

B. Do not proceed with subsequent Work until approval of the mock-up is obtained.

C. The approved mock-up shall be the standard of workmanship and materials for the Work that is represented by the mock-up.

D. Maintain mock-up in approved condition, until directed otherwise by Owner.

E. Unless specified otherwise, remove mock-up at completion of the Work or when directed by Owner.
F. Unless specified or approved otherwise, mock-ups shall be completed and approved prior to the pre-installation meeting at which the Work represented by the mock-up will be discussed.

G. Notify Owner a minimum of 7 Days prior to requesting mock-up approval.

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. General: Owner will select and employ an independent testing agency, engineering service, or a special inspector to conduct the tests and inspections to be provided by Owner. Inspections that are normally associated with obtaining State approval (e.g., electrical work as specified in Division 26, etc.) shall be provided and paid for by Contractor. Contractor shall comply with all applicable building codes and provide all testing services required by the Contract Documents unless specifically identified as Owner’s responsibility.

B. Owner’s testing agency shall prepare test reports, logs and certificates applicable to the Work for which Owner will provide testing and shall deliver the specified number of copies to the designated parties. If any inspection or testing reveals failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for Owner’s services and expenses, shall be at Contractor’s expense.

1.02 DESCRIPTION

A. Definition: For the purpose of this Section, all references made herein to testing laboratory, testing agency, or special inspector shall refer to as the tests or inspections conducted by a special inspector provided by Owner.

1.03 QUALITY ASSURANCE

A. Qualifications: Contractor’s inspection personnel must be approved by Owner and possess certain qualifications as stated in this Section. The testing agency shall comply with all requirements of ASTM E329.

1. The inspector for waterproofing and roofing shall have specialized technical knowledge and experience specific to waterproofing and roofing.

2. The testing agency for concrete testing and inspection services should be an agency other than the agency employed by Contractor for the purpose of establishing concrete mix designs, etc.

3. Geotechnical inspection will be performed by a licensed geotechnical consulting firm.

1.04 DUTIES OF OWNER’S TESTING AGENCY

A. General: Testing agencies shall conduct testing and inspection services, interpret them, evaluate the results for compliance with the Contract Documents, and report the findings to the Owner, Contractor, and local building authority, as applicable. Testing and inspection services shall be performed in accordance with applicable ASTM standard methods or other specified procedures.
B. Testing: Materials to be tested are those so specified and others as Owner or authorities having jurisdiction over the Project may direct.

C. Inspection: Inspections, continuous and special, shall be performed by the inspectors as required by the Contract Documents and authorities having jurisdiction.

D. Rejected Work: Inspectors shall have the right to recommend rejection of materials and workmanship that is defective. Rejected workmanship shall be satisfactorily corrected and rejected materials shall be removed from the Project site without charge to Owner. If Contractor does not correct rejected work within a reasonable time, Owner may elect to correct the work and charge the expense to Contractor.

E. Inspectors are not authorized to do the following:

1. Release, revoke, waive, alter, or enlarge on requirements of the Contract Documents;
2. Approve or accept any portion of the Work, except as specified for soil conditions (i.e. bearing capacities, etc.);
3. Perform any duties of Contractor; or
4. Stop Work.

F. Should the Owner elect at any time before Final Acceptance to make an examination of Work already completed by removing or tearing out the same, Contractor shall on request promptly furnish all necessary facilities, labor, and material. If such Work is found to be defective in any respect, Contractor shall be responsible for the cost of such examinations and of satisfactory reconstruction. If such Work is found to meet the requirements of the Contract, however, Owner shall be responsible for the cost of such examinations and of satisfactory reconstruction.

1.05 PAYMENTS

A. Owner shall pay for the cost of initial testing and inspection, except as otherwise specified in the Contract Documents. Initial tests and inspections are defined as the first tests and inspections as hereinafter specified.

B. In the event any test or inspection reveals Work not in compliance with the Contract Documents, Contractor shall pay for or be backcharged for all costs of re-testing and re-inspection.

C. Additional tests and inspections not herein specified but requested by Owner shall be paid for by Owner, unless the results of such tests or inspections reveal Work not in compliance with the Contract Documents, in which case Contractor shall pay for or be backcharged for all costs of testing, re-testing, re-inspection, and any related Owner costs.
D. Costs for additional tests or inspections required because of any change in materials or change in the source of supply from that specified shall be paid by or backcharged to Contractor.

E. Contractor is responsible for all work required to correct any deficiencies.

F. Contractor is responsible for the cost of any testing required for the convenience of Contractor in the scheduling and performance of the Work.

G. Contractor is responsible for the cost to verify testing done without prior notice, with improper supervision, or contrary to construction practice, and for testing of materials for which mill reports are required but not furnished.

H. Contractor is responsible for the cost of any testing that is required to be performed by Contractor by the Contract Documents.

1.06 TESTS AND INSPECTION REPORTS

A. Copies of Test and Inspection Reports: Copies of test and inspection reports will be distributed at weekly intervals. Such reports shall include all tests performed, regardless of whether such tests indicate that material is satisfactory or unsatisfactory. Samples taken but not tested shall also be reported. Records of special sampling operations shall also be reported. Test and inspection reports shall be distributed electronically as requested by Owner.

B. Test and inspection reports shall be distributed as follows:

1. Architect/Engineer;
2. Owner; and
3. Contractor.

1.07 CONTRACTOR’S RESPONSIBILITIES

A. Coordination: Contractor shall initiate and coordinate all required tests and inspections, including conforming with requirements of applicable public agencies and authorities. Inspection of the Work does not relieve Contractor of any obligation under the Contract. The Owner’s Designated Representative shall have authority to reject Work that is not in compliance with the Contract Documents.

B. Access: Inspectors shall at all times have free access to the Work, wherever the Work is in preparation. Contractor shall at all times provide and maintain proper facilities and safe access for such inspection. Contractor shall also cooperate with testing personnel and furnish access, tools, samples, certifications, test reports, design mixes, equipment, storage, and requested assistance.

C. Storage Facilities: Contractor shall furnish adequate storage facilities for the sole use of the testing laboratory for safe storage of specimens that must remain on the site.
D. Data: Furnish records, drawings, certificates and similar data, including Shop Drawings and Change Orders, as may be required by the testing and inspection personnel to confirm compliance with the Contract Documents.

E. Notice: Contractor shall furnish notice to Owner and inspector at least 48 hours in advance of all required tests and inspections, unless otherwise specified.

F. Defective Work: Contractor shall remove and replace any Work found defective by Owner or not complying with the Contract Documents at no additional cost or Contract Time. Where testing personnel take cores or cut-outs to verify compliance, repair prior to acceptance. Where defective Work requires redesign, any redesign costs shall be paid for by Contractor.

G. Cancellations: Contractor shall give sufficient advance notice to the inspector to allow in the event of any cancellation or rescheduling of a previously scheduled test or inspection. Any charges due to insufficient advance notice of cancellations or delay shall be paid by or backcharged to Contractor.

1.08 TEST FAILURES

A. Where a sample fails to pass a required test, Owner may permit re-testing of the sampled material. In such cases, two samples shall be tested and the material shall be rejected if either of the two subsequent samples fail.

1.09 REPORTING TEST FAILURES

A. Immediately upon inspector’s determination of a test failure, inspector shall notify Owner. On the same day, inspector shall send written test results to those named on the distribution list above.

1.10 REMOVAL OF MATERIALS

A. Unless otherwise directed, materials not conforming to the requirements of the Contract Documents shall be promptly removed from the Project site and properly disposed of without additional expense to Owner.

END OF SECTION 01 45 23
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 60 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. Contractor shall provide temporary restroom facilities. Facilities shall not directly or indirectly drain or discharge onto Owner property or any waters of the State. Place where directed at the time Work begins; maintain in sanitary condition. Remove upon completion of the Work and disinfect the premises.

B. Use of permanent and/or existing Owner’s facilities is not allowed.

C. 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.

D. 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 SECTION INCLUDES

A. Contractor shall furnish, install, and maintain one (1) temporary on-site Project identification sign, and appropriate informational signs to identify Project, Project entrance, Project address, and direct traffic.

B. No other signs may be displayed at the Project site, including:
   1. Separate contractor, Subcontractor, or supplier signs or advertisements;
   2. Signs that flash, blink, rotate or otherwise draw unusual attention, except where required by safety regulations;
   3. Company or agency logos; and
   4. Any sign or graphic on equipment that is objectionable to Owner.

1.02 SUBMITTALS

A. Design Data: Contractor shall submit sign construction details. Where text may not be detailed, show layout of required information. Indicate margins, borders, spacing, and similar information.

PART 2 PRODUCTS

2.01 PROJECT IDENTIFICATION SIGN

A. One sign of the size, design, lettering, and construction selected by Owner. Size to be 8'-0" x 4'-0".

B. Graphic design, style of lettering, and colors: As selected and provided by Owner.

2.02 SIGN MATERIALS

A. Sign Surfaces: Exterior MDO plywood, 3/4" thickness, with plastic sealed and sanded edges.

B. Sign Posts: 4x4 pressure treated and painted white.

C. Rough Hardware: Galvanized.

D. Graphics: Owner will supply electronic information for sign graphics and lettering.

2.03 FABRICATION

A. Paint all exposed surfaces of supports, framing, and surface materials. Apply
one coat of primer and one coat of exterior grade white paint.

PART 3 EXECUTION

3.01 INSTALLATION

A. Within one month of pre-construction meeting, erect sign at the site at a location of high public visibility as directed and as approved by Owner. Locate in lighted location, if possible.

3.02 MAINTENANCE

A. Maintain signs and supports in neat, clean condition for the entire construction duration until Substantial Completion. Repair damages.

B. Relocate information signs as required by Work progress.

3.03 REMOVAL

A. Remove signs, framing, and supports following Substantial Completion of the Project.

END OF SECTION 01 58 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 specifies administrative and procedural requirements for field engineering services, including but not limited to the following:

1. Land survey Work; and
2. Establishment of coordinated reference points for general building layout and location.

1.02 SUBMITTALS

A. Project Record: Contractor shall submit a record of Work performed and record survey data as required by the Contract Documents.

1.03 QUALITY ASSURANCE

A. Surveyor: Contractor shall engage a registered Professional Land Surveyor registered in the State of Washington to perform the required land-surveying services.

B. Owner may furnish surveys describing physical characteristics, legal limitations, utility locations, and a legal description for the Project site. Contractor may rely on the information furnished by Owner but must exercise proper precautions to ensure the safe performance of the Work. Contractor shall assume that the locations of any underground or hidden utilities, underground tanks, plumbing, or electrical runs indicated in the surveys or Contract Documents are shown in approximate locations, but Contractor is responsible for verifying the location of all utilities impacted by the Work. Additionally, Owner may make available to Contractor the results of investigations of hidden or subsurface conditions for the convenience of Contractor. While Contractor may rely upon such investigation results, there is no guarantee, express or implied, that the conditions indicated are representative of those existing throughout the Project site, or that unforeseen developments may not occur. Contractor is solely responsible for interpreting the information and extrapolating beyond the location, including each individual boring, test pit, or other locations.

1.04 EXAMINATION

A. Identification: Contractor shall verify the location of benchmarks and control points provided by Owner.

B. Contractor shall verify layout information on Drawings in relation to the property survey and existing benchmarks before proceeding to layout the Work.
Contractor shall also locate and protect existing benchmarks and control points and preserve permanent reference points during construction.

1. Do not change or relocate benchmarks or control points without prior written approval of Owner. Promptly report lost or destroyed reference points and requests to relocate reference points because of changes in grades or locations.

2. Promptly replace lost or destroyed Project control points. Base replacements on the original survey control points.

C. Contractor shall establish and maintain a minimum of two permanent benchmarks at the Project site.

1. Record benchmark locations, with horizontal and vertical data, on Project Record.

D. Existing utilities and equipment: The existence and location of underground and other utilities are not guaranteed. Before beginning the Work, Contractor shall investigate and verify the existence and location of underground and other utilities (including irrigation and snow melt systems).

1. Prior to construction, verify the locations and invert elevation at points of connection sanitary sewer, storm sewer, and water service piping.

1.05 PERFORMANCE

A. Contractor shall work from lines and levels established by the property survey; establish benchmarks and markers to set lines and levels at each story of construction and elsewhere as needed to locate each element of the Project; and calculate and measure required dimensions within indicated or recognized tolerances. Do not scale Drawings to determine dimensions.

1. Advise entities engaged in Work activities of marked lines and levels provided for their use.

2. As construction proceeds, check every major element for line, level, and plumb.

B. Surveyor’s Log: Contractor shall maintain a surveyor’s log of control points and other survey Work. Make this log available to Owner for reference.

1. Record deviations from required lines and levels and advise Owner when deviations that exceed indicated or recognized tolerances are detected. On Project Record, record deviations that are accepted and not corrected.

2. Following completion of foundation walls, major site improvements, and other Work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and site Work.
C. Site Improvements: Contractor shall locate and lay out site improvements, including pavement, stakes for grading, fill and topsoil placement, utility slopes, and invert elevations.

D. Existing Utilities: Contractor shall furnish information necessary to adjust, move, or relocate existing structures, utility poles, lines, services, or other appurtenances affected by construction. Contractor shall coordinate with local authorities having jurisdiction.

E. Contractor shall record accurately on the Project Record the principal metes, bounds, lines, and levels of the Project.

END OF SECTION 01 71 23
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.


F. 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.

G. 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.

H. 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.

I. 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.

J. 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.
K. 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.

L. 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.

M. 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.

N. 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.

1.02 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

      1) Dimensional lumber;

      2) Lighting fixtures, without asbestos or PCBs;

      3) 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 beginning of volume #1 only, immediately following the asbestos certification.

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)
165D, Captive Elk Facility

Captive Elk Facility

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.

END OF SECTION 01 78 39
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

1.01  DESCRIPTION OF WORK

A. Commissioning is a systematic process of ensuring that all building systems perform interactively according to the design intent and Owner's operational needs. This begins in the design phase and continues through construction. The commissioning process incorporates the traditionally separate functions of system documentation, equipment startup, control system calibrations, testing and balancing, performance testing, and training. Commissioning during the construction phase is intended to achieve the following specific objectives:

1. Verify that applicable equipment and systems are installed according to the Contract, manufacturer's recommendations, and industry accepted standards and that they receive adequate operational checkout by installing contractors.
2. Verify and document proper functional performance of equipment and systems.
3. Document all non-performing equipment and systems and track corrective actions through to final resolution.

B. Work includes the completion of formal commissioning procedures on selected equipment and systems. Commissioning procedures will be designed and coordinated under the direction of a Commissioning Agent (CA). Contractor is not responsible for hiring the CA. The CA will work directly for Owner. Contractor is responsible for coordinating and cooperating with the CA as necessary to complete the training and commissioning processes.

1.02  DEFINITION OF TERMS

A. Commissioning Agent (CA): Is an independent third-party consultant under contract with Owner. CA responsibilities are listed in Subsection 1.03 for information, reference, and clarification.

B. Installation Verification Audit: Includes the on-site inspection and review of related system components for conformance to the Contract. The CA will check for proper systems installation and verify systems readiness for function testing. Noted deficiencies will be documented and must be satisfactorily resolved prior to continuing with commissioning on the affected component or system.

C. Commissioning Plan: Outlines the commissioning process. Provides a brief overview of each start-up and functional test to be performed and identifies the responsible Contractor and/or supplier. It also outlines the responsibilities of all personnel to the commissioning process, estimates the commissioning schedule and provides sample Installation Verification, Start-Up, and Functional Performance Test Procedures and related documentation for information.
D. Start-Up Testing: Initial test checkout of component or systems completed prior to functional performance testing. The start-up tests verify that the equipment is installed and operating properly per the Contact.

E. Testing, Adjusting and Balancing (TAB): Testing, adjusting and balancing is a process where heating and air conditioning systems are tested against design standards, adjusted for maximum efficiency, and balanced to provide optimum performance. The Work typically covers balancing and adjusting air and water distribution in areas of the building served by an HVAC system, and verification and adjustment of heating and cooling loads to insure proper indoor environmental conditions. Areas that do not meet the design standards are referred to the appropriate party for correction. Reports are prepared documenting performance and compliance with design standards.

F. Function Performance Testing: Includes the documented testing of individual components and equipment under actual operating conditions. Final performance commissioning of systems will begin only after Contractor certifies that system components are 100% complete, start-up test results have been accepted, and the CA agrees that systems are ready for functional testing.

G. Commissioning Issues Log: Generated by the CA, includes deficiencies discovered during the commissioning process. The log identifies the responsible contractor, current disposition of issues, and the date of final resolution as confirmed by the CA. Deficiencies are defined as those issues where products, execution or performance do not satisfy the Contract, the design intent or Owner’s need.

H. Final Commissioning Report: Includes the overall final commissioning document, prepared by the CA, which details the actual commissioning procedures performed, inspection and testing results, and the final version of the Commissioning Issues Log indicating that all issues discovered through the commissioning process have been verified as resolved.

1.03 COMMISSIONING AGENT’S DUTIES AND RESPONSIBILITIES

A. Meet and communicate with the Owner’s Designated Representative, Contractor, equipment representatives, and others as necessary to facilitate the commissioning process.

B. Write the commissioning plan.

C. Review commissioning-related Specifications, submittals, and Contract Documents. Communicate noted deficiencies and concerns to Owner.

D. Review the Owner Project requirements and Basis of Design documents to insure Owner’s intent and design requirements are met.

E. Chair controls integration meetings to ensure acceptance of control strategies and determine methods to achieve the required sequence of operation.
F. Develop installation and start-up checklists from:
   1. Information in the Contract Documents; and
   2. Information from equipment manufacturers as provided by Contractor.

G. Coordinate functional testing procedures with Contractor and integrate into Progress Schedule.

H. Develop detailed and specific inspection and functional testing procedures for equipment and systems to be commissioned.

I. Confirm completion of all static piping and duct tests and flushing and cleaning as performed by Contractor.

J. Complete a detailed physical inspection and visual checkout of commissioning related equipment and components. Document specific deficiencies for resolution.

K. Confirm completion of equipment and systems start-up procedures as performed by Contractor and equipment representatives. Verify appropriate documentation is completed and provided for inclusion in the final commissioning report. Record noted deficiencies.

L. Schedule and coordinate the final on-site functional testing process. Complete a documented checkout of every specified operating parameter and mode. Document deficiencies and resolutions.

M. Review Contractor-provided O&Ms. Ensure the manuals provide in-depth, Project-specific information. Provide formal comment.

N. Work with Owner, Architect/Engineer, if any, and Contractor to satisfactorily resolve outstanding issues.

O. Provide Owner with final, complete, and documented verification to ensure commissioned systems are 100% operational per Contract, prior to Owner’s acceptance. Exceptions may be made for seasonal commissioning.

P. Perform seasonal commissioning as required to verify proper system operation during peak heating and cooling seasons.

Q. Complete all other items noted in Contract as Commissioning Agent responsibilities.

R. Provide a final Commissioning Report to Owner.

1.04 DUTIES AND RESPONSIBILITIES FOR COMMISSIONING

A. The commissioning process will require the active participation of persons qualified to represent the following interests:
1. Owner,
2. Contractor,
3. Equipment manufacturer’s representatives,
4. Mechanical Subcontractor,
5. HVAC Subcontractor,
6. Controls Subcontractor,
7. TAB Subcontractor,
8. Electrical Subcontractor, and
9. Others as appropriate.

B. The CA will coordinate, schedule, and oversee the final functional performance commissioning process. Participants shall include in their contracts all costs necessary to participate in and complete the commissioning process.

C. Contractor will assure the participation and cooperation of Subcontractors and coordinate with Owner and Architect/Engineer, as required for the commissioning process.

Owner will assure the participation of its chosen representatives.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 CONTRACTOR RESPONSIBILITIES FOR COMMISSIONING

A. Contractor shall provide material, equipment, and tools to facilitate completing the functional performance testing process. The CA will provide specialized and calibrated test equipment to perform the calibration and functional performance testing.

B. Contractor shall budget and provide sufficient time and qualified personnel to participate on-site in this process until the process is successfully completed and all deficiencies have been corrected or otherwise resolved.

C. Contractor shall provide training to Owner. Specified training on related systems and equipment operation and maintenance shall only commence after final performance commissioning is successfully completed, and systems are verified by the CA to be 100% complete and functional.

D. Contractor shall reimburse the CA for repeated test failures. After a second failed start-up or functional performance test, the CA and Owner shall be entitled to additional compensation for time and expenses involved with re-testing. The compensation shall be at published company billing rates.

E. Owner will not accept equipment and systems, and Owner will generally not make final payment, until all equipment and systems have been successfully
commissioned and all specified requirements have been satisfied.

F. Include a line item for commissioning in the Schedule of Values. Ensure sufficient costs are included for Contractor’s expenses related to all commissioning tasks.

END OF SECTION 01 91 00
PART 1 - GENERAL

1.01 RELATED DOCUMENTS
   
   A. The general provisions of the Contract, including Washington State University General Conditions for Washington State Facility Construction, Special Provisions and General Requirements, apply to the work specific in this section.

1.02 SUMMARY
   
   A. This Section includes the following:

   1. Demolition, removal and disposal, off-site, of selected portions of building or structure indicated, including but not limited to the following:
      
      a) Existing pole barn structure,
      
      b) Mechanical and electrical related equipment as identified in mechanical and electrical construction documents,
      
      c) Concrete slab removal as identified on sheet A102.

1.03 SUBMITTALS
   
   A. Schedule of Selective Demolition Activities: Indicate the following:

   1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Interruption of utility services. Indicate how long utility services will be interrupted.
   
   2. Coordination for shutoff, capping, and continuation of utility services.
   
   3. Use of elevator and stairs.
   
   4. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
   
   5. Means of protection for items to remain and items in path of waste removal from building.
   
   6. Dust and noise control measures.
1.04 QUALITY ASSURANCE

A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Standards: Comply with ANSI A10.6 and NFPA 241.

1.04 PROJECT CONDITIONS

A. Owner will occupy portions of building and areas immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

B. Hazardous Materials: Hazardous materials are not known to be present in construction to be selectively demolished. A report on the presence of hazardous materials is included in Division Two. The report is informational only.

C. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
   1. Maintain fire-protection facilities in service during selective demolition operations

PART 2 - PRODUCTS (Not Used)
PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

D. Survey the condition of the building to determine whether any element might result in structural deficiency of any portion of the structure.

3.02 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

   1. Comply with requirements for access and protection specified in Division 01 Section 01 50 00 "Construction Facilities and Temporary Controls."

B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

   1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
   2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.

3.03 SELECTIVE DEMOLITION

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated.

B. Neatly cut openings and holes plumb, square and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. To minimize disturbance of adjacent
surfaces, use hand and small power tools designed for sawing or grinding, not hammering or chopping. Temporarily cover openings to remain.

C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition.

D. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

E. Promptly patch and repair holes and damaged surfaces caused to adjacent construction by selective demolition requirements.

F. Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials. Completely fill holes and depressions in existing masonry walls to remain with an approved masonry patching material, applied according to manufacturer's recommendations.

G. Existing Landscape Protection: Protect existing landscape trees, plantings, ground covers and irrigation systems at adjoining areas to construction and staging.

H. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

3.04 CLEANING

A. Clean adjoining structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 02 41 19
PART 1 GENERAL

1.01 GENERAL

A. The requirements of the General Conditions, Special Provisions and Division 1 of the specifications apply to the work of this section.

B. Provide all labor and materials necessary for the completion of the work of this section as specified or shown on the drawings.

1.02 SUMMARY

A. This Section includes the following:


1.03 SUBMITTALS

A. Product Data: Per Section 01 33 00.

B. Mix Design: Submit for approval mix design and supplier proposed for use.

C. Material Safety Data Sheets for all chemicals used to WSU for review.

1.04 QUALITY CONTROL

A. Contractor shall make the following items part of the Contractor's Quality Control Plan.

1. Comply with all governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle and store materials in accordance with manufacturer's instructions.

2. Testing: employ an independent testing agency acceptable to Owner to design concrete mixes and to perform material evaluation tests.

PART 2 PRODUCTS

2.01 MATERIALS

A. Concrete Materials:
   1. Cement: IBC Chapter ASTM C 150, Type I – Portland Type.
   2. Fly Ash: ASTM C 618, Type F.
   3. Domtar Gypsum.
   5. Water: Potable
   6. All concrete shall have a minimum 28 day compressive strength of 3000 psi.

B. Concrete Accessories
   1. Bonding Agent: Polyvinyl acetate or acrylic base.
   3. Chemical Hardener: Magnesium fluosilicate and zinc fluosilicate blend, liquid type.

PART 3 EXECUTION

3.01 INSTALLATION

A. Examine substrates and existing conditions for proposed installations and confirm that conditions are satisfactory for installation and comply with manufacturer’s requirements.

B. Comply with ASTM C 94. Verify lines, levels and dimensions before proceeding with work.

C. Controls Joints: Provide sawn or tooled joints: depth equal to ¼ slab thickness. Spacing as required and approved.

D. Finish: Install sealer in accordance with manufacturer’s recommendations. Apply protective coating in accordance with manufacturer’s recommendations for broom finish. Broom finish required at all areas except Scale Room/Lab.
E. Repair any surface defects, cure and protect work.

END OF SECTION 03 30 00
PART 1 GENERAL

1.01 GENERAL

A. The general provisions of the Contract, including Washington State University General Conditions for Washington State Facility Construction, Special Provisions and General Requirements, apply to the work specific in this section.

1.02 SUMMARY

A. This Section includes the following:

1. Structural steel columns.
2. Miscellaneous steel components as indicated.

1.03 SUBMITTALS

A. Product Data: Per Section 01 33 00.

B. Products: Submit manufacturer’s product data and installation instructions for each material and product used.

1.04 QUALITY CONTROL

A. Contractor shall make the following items part of the Contractor’s Quality Control Plan.

1. Fabricator Qualifications: Firm experienced in producing metal fabrications similar to those indicated for the Project with a record of successful in-service performance and with sufficient production capacity to produce required units without delaying work.

2. Welding Standards: Comply with applicable provisions of AWS D1.1 “Structural Welding Code – Steel”. Certify that each welder has satisfactorily passed AWS qualifications tests for welding processes involved.
1.05 DELIVERY, STORAGE AND HANDLING

A. Field Measurements: Check actual locations of walls and other construction to which metal fabrications must fit by accurate field measurements prior to fabrication. Show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delays to the work.

PART 2 PRODUCTS

2.01 MATERIALS

A. For metal fabrications exposed to view in the completed work, provide materials selected for their surface flatness, smoothness and freedom from blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names or roughness.

B. Steel Plates, Shapes and Bars: ASTM A 36/a 36M.

C. Steel Tubing: ASTM A 500; ASTM A 501

D. Galvanized Steel Sheet: ASTM A 446/A 446M; Grade A, G 90 (Z 275) coating.

E. Cast-in-Place Anchors in Concrete: Anchors fabricated from corrosion-resistant materials capable of sustaining without failure, the load imposed within a safety factor of 4, as determined per ASTM E 488.

F. Paint: Shop primer for ferrous metal to be fast-curing, lead and chromate free, universal modified alkyd primer complying to performance requirements of FS TT-P-6644, selected for good resistance to normal atmospheric corrosion, compatibility with finish paint systems and capability to provide a sound foundation for fluid-applied topcoats despite prolonged exposure.

G. Fasteners: Provide plated fasteners complying with ASTM B 633, Class Fe/Zn 235 for electrodeposited zinc coating, for exterior use. Select fasteners for type, grade and class required.
PART 3    EXECUTION

3.01 INSTALLATION

   A. Examine substrates and existing conditions for proposed installations and confirm that conditions are satisfactory for installation and comply with manufacturer's requirements.

   B. Adjust railings prior to anchoring to ensure alignment at abutting joints. Space supports at spacing indicated. Plumb supports in each direction.

   C. Touchup paint immediately after erection, clean field welds, bolted connections and abraded areas of shop paint and paint exposed areas of the same material as used for shop painting.

END OF SECTION 05 50 00
PART 1 GENERAL

1.01 GENERAL

A. The requirements of the General Conditions, Special Provisions and Division 1 of the specifications apply to the work of this section.

B. Provide all labor and materials necessary for the completion of the work of this section as specified or shown on the drawings.

1.02 SUMMARY

A. This Section includes the following:

1. Framing with dimension lumber.
2. Wood blocking, purlins and nailers.
3. Roof sheathing.

1.03 SUBMITTALS

A. Product Data: Per Section 01 33 00.

B. Materials Certificates: For dimension lumber specified to comply with minimum allowable unit stresses.

C. For preservative-treated wood products, indicate type of preservative used and net amount of preservative retained.

D. Material List: Provide a complete materials list of products and manufacturers to be furnished and installed under this section.

E. Material Safety Data Sheets for all chemicals used to WSU for review.

1.04 QUALITY CONTROL

A. Contractor shall make the following items part of the Contractor's Quality Control Plan.

1. Contractor shall verify that all shop drawings, samples and other submittals are complete and have been reviewed and approved prior to starting rough carpentry work.
2. Prior to start of work, Contractor shall verify that materials are as specified and undamaged. Contractor shall inspect preparatory work and ensure that it is acceptable for subsequent follow on installation.

3. Single source responsibility for engineered wood products: Obtain each type of wood product from one source and a single manufacturer.

1.05 DELIVERY, STORAGE AND HANDLING

A. Stack lumber and sheathing flat with spacer between each bundle to provide air circulation. Provide for air circulation around stacks and under covering.

B. Keep materials undercover and dry. Protect from weather and contact with damp or wet surfaces.

PART 2 PRODUCTS

2.01 WOOD PRODUCTS AND ACCESSORIES

A. Lumber: Lumber grades shall be DF #2 or better, kiln dried, sizes as indicated on drawings. Provide dressed lumber, S4S, unless otherwise indicated.

B. Plywood: APA grade “B-C” in thickness indicated.

C. Wood Preservative (pressure treatment): Comply with applicable requirements of AWPA C2.

1. Application: Treat the following:
   a. Sills.
   b. Members in contact with concrete.
   c. Posts.

D. Fasteners: Provide fasteners of size and size that comply with requirements specified in this article for material and manufacture.

1. Where rough carpentry is exposed to weather, in contact with concrete, pressure-preservative treated, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
2. Nails, Brads and Staples: ASYM F 1667
3. Power-Driven Fasteners: NES NER-272
4. Wood Screws: ASME B18.6.1

PART 3 EXECUTION

3.01 INSTALLATION

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking and similar supports to comply with requirements for attaching other construction.

B. Sort and select lumber so that natural characteristics will not interfere with installation or fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

END OF SECTION 06 10 00
PART 1 GENERAL

1.01 GENERAL

A. The requirements of the General Conditions, Special Provisions and Division 1 of the specifications apply to the work of this section.

B. Provide all labor and materials necessary for the completion of the work of this section as specified or shown on the drawings.

1.02 SUMMARY

A. This Section includes the following:

1. Architectural wood casework.
2. Casework accessories

1.03 SUBMITTALS

A. Product Data: Per Section 01 33 00.

B. Products: Submit manufacturer’s product data and installation instructions for each material and product used.

1.04 QUALITY CONTROL

A. Contractor shall make the following items part of the Contractor’s Quality Control Plan.

1. Fabricator/Installer: Company specializing in architectural woodwork and cabinet installations with minimum three years documented experience in institutional and commercial projects.

2. Architectural casework and accessories to be supplied by a single-source supplier with resources to provide products of consistent quality in appearance and physical properties without delaying the work. Cabinet materials and construction to conform to or exceed ANSI/KCMA A161.1 and AWI Premium Grade quality.
1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver products to site in cardboard-wrapped or crated containers. Store materials under cover and keep dry prior to installation.

B. Stack materials on edge or lay flat on a smooth, level surface. Protect edges and corners from chipping.

PART 2 PRODUCTS

2.01 MATERIALS

A. Manufacturers:
   2. Design Craft Cabinets, Inc., Clarkston, WA.
   3. KOP Cabinets, Spokane, WA (509) 624-1231.

B. Cabinets:
   5. High-pressure decorative laminate: NBBEMA LD 3, by Formica Corp. or equal.
   6. Cabinet hardware and accessories:
      a. Adhesive: FS MMM-A-130 contact adhesive. Type recommended by laminate manufacturer to suit application.
      b. Shelf standards and rests: Knape & Vogt #255/256.
      c. Drawer and door pulls: Amerock # 865, aluminum finish.
      d. Hinges: Commercial, Mepla half overlay system SSP; self-closing; 130 degree hinge.
      e. Locks: National N8173 26D 107 deadbolt door locks.
      f. Fasteners: Corrosion resistant fasteners, size and type to suit application.
PART 3  EXECUTION

3.01 INSTALLATION

A. Inspect substrate to verify surfaces are clean and smooth, free of depressions, waves or projections.

B. Condition woodwork to average prevailing humidity conditions prior to installation.

C. Install woodwork to comply with AWI Section 1700 for grade specified.

D. Install woodwork plumb, level, straight and true with no distortions. Shim as required.

E. Scribe and cut woodwork to adjoin work as required.

F. Anchor woodwork to anchors or blocking or directly to substrates as required for complete installation.

G. Clean, lubricate and adjust hardware.

H. Clean woodwork in exposed and semi-exposed surfaces.

END OF SECTION 06 41 00
PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. The general provisions of the Contract, including City of Pullman General Conditions, Special Provisions and General Requirements, apply to the work specific in this section.

1.02 SUMMARY

A. This Section includes the following:

1. Exposed-fastener, metal roof/wall panels.
2. Leak barrier underlayment and roof deck protection.
3. Metal flashing associated with metal roof panels.

1.03 SUBMITTALS

A. Manufacturer’s Installation Instructions: Provide published instructions that indicate preparation required and installation procedures. Include construction details, material descriptions, dimensions of individual components and profiles and finishes.

B. Shop Drawings: Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, anchorages, attachment system, trim, flashings, closures and accessories.

C. Samples: Provide sample metal panel minimum 12” long in selected color.

1.04 QUALITY CONTROL

A. Contractor shall make the following items part of the Contractor’s Quality Control Plan.

1. Contractor shall verify that all shop drawings, samples and other submittals are complete and have been reviewed and approved prior to starting rough carpentry work.
2. Prior to start of work, Contractor shall verify that materials are as specified and undamaged. Contractor shall inspect preparatory work and ensure that it is acceptable for subsequent follow on installation.

3. Contractor shall inspect installation daily to ensure compliance with Project requirements.

B. Installer Qualifications: Installer shall be a company specializing in metal roof panel installation with three years documented experience.

1.05 DELIVERY, STORAGE AND HANDLING

A. Store all products in manufacturer’s unopened, labeled packaging until they are ready for installation.

B. Store products in a covered, ventilated area, at temperature not more than 110 degrees F.

C. Store bundles on a flat surface. Maximum stacking height shall not exceed manufacturer’s recommendations. Store all rolls on end.

D. Weather Limitations: Proceed with installation of metal roof panels only when existing and forecasted weather conditions will permit work to be performed to manufacturer’s recommendations and warranty requirements, and when substrate is completely dry.

1.06 WARRANTY

A. Manufacturer’s/Installer’s Warranty: Two years from date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Metal Roof/Wall Panels:
   1. Fabral Mighti Rib.
   2. Metal Sales Delta Rib.
   3. Substitutions: As approved by the Architect.

   1. 26 Gauge, exterior finish and color from manufacturer’s standard lines as chosen by Owner.
2. Rib Spacing: 12 inches O.C.

C. Underlayment: Type II, 36 inch wide asphalt-saturated organic felt complying with ASTM D 226 or ASTM D 4869.


E. Pipe Roof Jacks: Galvanized sheet metal base with flexible, adjustable collar. Construction Materials, Inc. or approved equal.

F. Panel Fasteners: Self-tapping screws designed to withstand design loads. Provide exposed heads matching color of metal panels by means of plastic caps or factory-applied coating. Provide EPDM or PVC sealing washers for exposed fasteners.

G. Metal Flashings/Trim: Furnished under Section 07 62 00.

PART 3 EXECUTION

3.01 EXAMINATION

A. Inspect existing roofs to verify all surfaces are clean and smooth, free of depression, waves or projections following removal of prior roofing materials. Do not begin installation until the roof deck has been properly prepared.

B. Verify all roof and wall openings, pipes and vents through roof are solidly set.

C. Beginning of installation acknowledges acceptance of existing conditions.

3.02 PREPARATION
A. Field measure existing roof conditions prior to beginning installation.
B. Install starter and edge strips, and cleats before starting installation.

3.03 INSTALLATION

A. Conform to all manufacturer’s recommendations, construction drawings and shop drawings for the installation of all portions of the work

B. Metal Roof/Wall Panels:
   1. Install screw fasteners in predrilled holes.
   2. Locate and space fasteners in uniform vertical and horizontal alignment.
   3. Install flashing and trim as metal panel work proceeds.
   4. Install splices, top and bottom of panels in strict accordance to manufacturer’s installation instructions.
   5. Provide weather-tight escutcheons for penetrating panels.

C. Underlayment and Eave Protection: Install in strict compliance with manufacturer’s requirements.

D. Ridge Vent: Install ridge vent per manufacturer’s instructions.

3.04 PROTECTION

A. Protect installed products from foot traffic until completion of the project.

B. Any roof areas that are not completed by the end of the workday are to be protected from moisture and contaminants.

END OF SECTION 07 41 13
PART 1 GENERAL

1.01 GENERAL

A. The general provisions of the Contract, including Washington State University General Conditions for Washington State Facility Construction, Special Provisions and General Requirements, apply to the work specific in this section.

1.02 SUMMARY

A. This Section includes the following:

1. Steel doors and frames.

1.03 SUBMITTALS

A. Product Data: Per Section 01 33 00.

B. Products: Submit manufacturer’s product data and installation instructions for each material and product used.

1.04 QUALITY CONTROL

A. Contractor shall make the following items part of the Contractor's Quality Control Plan.


2. Door supplier/installer shall have no less than (2) years’ experience furnishing/installing hardware on projects of similar scope.

3. Contractor shall inspect installation daily to ensure compliance with Project requirements.
1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver products to site in original, unopened packaging bearing name and identification of manufacturer or supplier. Deliver, handle and store materials in accordance with manufacturer’s instructions.

B. Inspect doors and frames upon delivery for damage. Minor damage may be repaired provided refinished items are equal in all respects to new work and acceptable to the Architect; otherwise remove and replace damaged items as directed.

C. Store doors and frames at building site under cover. Place units on a minimum 4-inches high wood blocking. If cardboard wrapper becomes wet, remove from carton immediately. Provide ¼-inches spaces between stacked doors to promote air circulation.

PART 2 PRODUCTS

2.01 MATERIALS

A. Exterior Steel Doors:
   3. Finish: Factory primed and field painted.
   4. Conform to SDI 100, Grade III. Flush panel, style and rail construction.

B. Exterior Steel Frames:
   2. Corners: Mitered or coped.
   3. Type: Drywall slip-on.
   5. Provide stick frame assemblies; conform to SDI 100 for Grade III doors.

C. Fabricate steel door and frame units to be rigid, neat in appearance and free from defects, warp or buckle. Wherever practicable, fit and assemble units in manufacturer’s plant.

D. Internal Construction: Manufacturer’s standard honeycomb, polyurethane, polystyrene, unitized steel grid, vertical steel stiffeners or rigid mineral fiber core with internal sound deadener on inside of face sheets where appropriate with SDI standards.
E. Clearances: Not more than 1/8 inch at jambs and heads. Not more than 3/4 inch at bottom.

F. Thermal-Rated Assemblies: At exterior locations provide doors fabricated as thermal insulating door and frame assemblies and tested in accordance with ASTM C 236 or SATM C 976 on fully operable door assemblies.

G. Hardware Preparation: Prepare doors and frames to receive hardware in accordance with Door Hardware Schedule and templates provided by the hardware supplier. Reinforce doors to receive surface applied hardware.

H. Glazing Stops: Minimum 20 gage steel. Provide non-removable stops on the outside of exterior doors. Provide screw applied removable glazing beads on inside of glass in doors.

PART 3 EXECUTION

3.01 INSTALLATION

A. Examine substrates and existing conditions for proposed installations and confirm that conditions are satisfactory for installation and comply with manufacturer’s requirements.

B. Install standard doors, frames and accessories in accordance with the final shop drawings, manufacturer’s data and as specified. In metal stud partitions, install at least 3 wall anchors per jamb at hinge and strike levels.

C. Grout frames prior to installation with fast setting plaster mix, taping compound or mortar as appropriate to type of installation.

D. Fit hollow metal doors accurately in frames, within clearances specified in ANSI/SDI 100.

E. Repair any surface defects, operational defects or other blemishes to doors, frames or hardware. Provide final cleaning as recommended by manufacturer. Check and readjust operating hardware items, leaving steel doors and frames undamaged and in complete and proper operating condition.

END OF SECTION 08 11 00
PART 1 GENERAL

1.01 GENERAL

A. The requirements of the General Conditions, Special Provisions and Division 1 of the specifications apply to the work of this section.

B. Provide all labor and materials necessary for the completion of the work of this section as specified or shown on the drawings.

1.02 SUMMARY

A. This Section includes the following:

1. Solid core wood doors and interior hollow metal frames.

1.03 SUBMITTALS

A. Product Data: Per Section 01 33 00.

B. Products: Submit manufacturer’s product data and installation instructions for each material and product used.

1.04 QUALITY CONTROL

A. Contractor shall make the following items part of the Contractor’s Quality Control Plan.


2. Hardware supplier/installer shall have no less than (2) years experience furnishing/installing hardware on projects of similar scope.

3. Contractor shall inspect installation daily to ensure compliance with Project requirements.
1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver products to site in original, unopened packaging bearing name and identification of manufacturer or supplier. Deliver, handle and store materials in accordance with manufacturer’s instructions.

B. Do not deliver doors until building is enclosed, wet work is complete and HVAC system is operating and will maintain temperature and relative humidity at occupancy levels during the remainder of the construction period.

PART 2 PRODUCTS

2.01 MATERIALS

A. Interior Flush Wood Doors:
   1. Material: Hardwood faced, flush, solid core.
   3. Finish: 1 coat stain, 1 coat lacquer sanding sealer and 2 coats catalinized lacquer cut 50/50 w/ lacquer thinner, satin-gloss.

B. Interior Steel Frames:
   2. Corners: Mitered or coped.
   3. Type: Drywall slip-on.

PART 3 EXECUTION

3.01 INSTALLATION

A. Examine substrates and existing conditions for proposed installations and confirm that conditions are satisfactory for installation and comply with manufacturer’s requirements.

B. 

C. Fabricate wood doors and metal frames to be rigid, neat and free from seams, defects, dents, warp, buckle, and exposed fasteners. Install doors and frames in compliance with SDI-100. Prepare doors and frames to receive hardware and provide for 3 silencers per door.

D. Doors and hardware to be installed in accordance with manufacturer’s recommendations. Mount all hardware in compliance with “Recommended Locations for Builders Hardware for Standard Steel Doors and Frames” by
the Door and Hardware Institute.

E. All door hardware mounting heights, opening and operating forces to comply with IIC A117.1.

F. Repair any surface defects, operational defects or other blemishes to doors, frames or hardware. Provide final cleaning as recommended by manufacturer.

END OF SECTION 08 14 00
1.01 GENERAL
   A. The requirements of the General Conditions, Special Provisions and Division 1 of the specifications apply to the work of this section.
   B. Provide all labor and materials necessary for the completion of the work of this section as specified or shown on the drawings.

1.02 SUMMARY
   A. This Section includes the following:
      1. Fixed windows.

1.03 SUBMITTALS
   A. Product Data: Per Section 01 33 00.
   B. Include details of each frame type, elevations of window types, conditions at openings, details of construction, location and installation requirements of window hardware and reinforcements and details of joints and connections. Show anchorage and accessory items.
   C. Material List: Provide a complete materials list of products and manufacturers to be furnished and installed under this section.

1.04 QUALITY CONTROL
   A. Contractor shall make the following items part of the Contractor's Quality Control Plan.
      1. Contractor shall verify that all shop drawings, samples and other submittals are complete and have been reviewed and approved prior to starting rough carpentry work.
2. Prior to start of work, Contractor shall verify that materials are as specified and undamaged. Contractor shall inspect preparatory work and ensure that it is acceptable for subsequent follow on installation.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver products to site in cardboard-wrapped or crated, store and protect.

B. Inspect frames upon delivery for damage. Minor damage may be repaired provided refinished items are equal in all respects to new work and acceptable to the Architect; otherwise, remove and replace damaged items as directed.

C. Store windows at building site under cover. Prevent contact with materials during storage which may cause deterioration, discoloration or staining.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide Steel Clad Exterior Doors from one of the following manufacturers:
   2. Jeld-Wen Products.

2.02 MATERIALS

A. Vinyl Extrusions: Provide frame components extruded from high performance polyvinyl chloride. Frames shall have precision welded mitered frames.

B. Weatherstrip: Nylon pyle with polypropylene backing and integral pliable fin.

C. Glazing: Fabricator shall provide all glazing incorporated into insulated glass units ¾” overall thickness. Minimum U-Value per Washington State Non-Residential Code.

D. All windows to have integral venting.
2.03 FABRICATION

A. Fabricate all window units to be rigid, neat in appearance and free of defects, warp or buckle. Wherever practicable, fit and assemble units in manufacturer’s plant. Clearly identify work that cannot be permanently factory-assembled before shipment, to assure proper assembly at project site.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install frames in accordance with manufacturer’s recommendations.

B. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders leaving spaces smooth and undamaged.

C. Check and readjust operating hardware items, leaving windows clean, with all labels removed and in complete and proper operating condition.

END OF SECTION 08 52 00
PART 1 GENERAL

1.01 GENERAL

A. The general provisions of the Contract, including Washington State University General Conditions for Washington State Facility Construction, Special Provisions and General Requirements, apply to the work specific in this section.

1.02 SUMMARY

A. This Section includes the following:

1. Finish Hardware, including:
   a. Hinges.
   b. Lock Cylinders and Keys.
   c. Closers.
   d. Weatherstripping.
   e. Thresholds.

1.03 SUBMITTALS

A. Product Data: Per Section 01 33 00.

B. Products: Submit manufacturer's product data and installation instructions for each material and product used.

1.04 QUALITY CONTROL

A. Contractor shall make the following items part of the Contractor's Quality Control Plan.

1. Product Data: Manufacturer’s technical data for each item of door hardware, installation instructions, maintenance of operating parts and finish and other information necessary to show compliance with requirements.

2. Hardware supplier/installer shall have no less than (2) years’ experience furnishing/installing hardware on projects of similar scope. Supplier/installer shall have facilities in the Project's vicinity with a record of successful in-service performance for supplying
and installing door hardware similar in type, quantity and quality of that specified.

3. The supplier/installer shall coordinate with WSU Key Shop representatives to finalize keying requirements and to obtain final instructions prior to installation.

4. Final hardware schedule shall be coordinated with doors, frames and related work to ensure proper size, thickness, hand, function and finish door hardware.

5. Contractor shall coordinate height of panic devices with location of lower edge of vision panels to minimize use of spacing shims and minimize occlusion of glass surface by panic device.

6. Contractor shall inspect installation daily to ensure compliance with Project requirements.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver products to site in original, unopened packaging bearing name and identification of manufacturer or supplier. Deliver, handle and store materials in accordance with manufacturer’s instructions.

B. Inspect finish hardware upon delivery for damage. Inventory door hardware with representatives of hardware supplier to verify correctness of hardware.

C. Store hardware in secure location.

1.06 WARRANTY

A. Provide standard, basic warranty, signed by Contractor, Installer and Manufacturer, agreeing to repair or replace defective materials and workmanship as follows:

1. Locks: 5 years.
2. Closers: 30 years
PART 2 PRODUCTS

2.01 MATERIALS

A. Except as indicated, no substitutions will be allowed unless approved by the Architect. Substitution requests shall in conformance to section 01 33 00.

B. Hardware Finish: All hardware finish shall be US26D unless noted otherwise. Provide matching finishes for each component to the greatest extent possible.

C. Hinges: Manufacturers – Ives, Stanley or approved equal.
   1. Use heavy-duty, ball bearing butts.
   2. Provide Phillips flat-head screws into drilled and tapped holes.
   3. 1-1/2 pairs or as noted.
   4. Non-removable hinge pins.

D. Lock Cylinder: Schlage – no substitutions allowed.
   1. Keying to be coordinated through WSU Key Shop. All cylinders shall be master keyed per WSU Key Shop direction, with Schlage Everest cylinders, keyed as directed.
   2. Construction keying shall be coordinated with WSU Key Shop.
   3. Keying coordination meeting shall be conducted upon commencement of the work.

E. Closers: LCN 4040Xp Series – no substitutions allowed.

F. Thresholds: Pemco 271 A – no substitutions allowed.

G. Weatherstripping: Pemco AG – no substitutions allowed.

H. Door Hardware (Hardware Group 1):
   1. Butts: 1-1/2 pair, 4-1/2”x4-1/2” – 5BB1.
   2. Entrance Lever Lock: Schlage ND53. Coordinate all keying with WSU Key Shop.
   4. Threshold: 271 A.
   5. Weatherstripping: AG
   6. 

I. Door Hardware (Hardware Group 2):
   1. Butts: 1-1/2 pair, 4-1/2”x4-1/2” – 5BB1.
   3. Threshold: 271 A.
   4. Door Pull: Ives 32MC71
PART 3   EXECUTION

3.01 INSTALLATION

A. Examine substrates and existing conditions for proposed installations and confirm that conditions are satisfactory for installation and comply with manufacturer’s requirements.

B. Hardware Preparation: Prepare doors and frames to receive hardware in accordance with Door Hardware Schedule and templates provided by the hardware supplier.

C. All doors to be adjusted to meet ADA accessibility requirements.

D. Adjust and check each operating item of hardware and each door to ensure proper operating or function of each unit. Replace units that cannot be adjusted to operate freely and smoothly or as intended for the application made.

E. Clean adjacent surfaces soiled by hardware installation.

END OF SECTION 08 70 00
PART 1 GENERAL

1.01 GENERAL

A. The requirements of the General Conditions, Special Provisions and Division 1 of the specifications apply to the work of this section.

B. Provide all labor and materials necessary for the completion of the work of this section as specified or shown on the drawings.

1.02 SUMMARY

A. This Section includes the following:

1. Gypsum board assemblies.

1.03 SUBMITTALS

A. Product Data: Per Section 01 33 00.

B. Material List: Provide a complete materials list of products and manufacturers to be furnished and installed under this section.

C. Material Safety Data Sheets for all chemicals used to WSU for review.

1.04 QUALITY CONTROL

A. Contractor shall make the following items part of the Contractor’s Quality Control Plan.

1. Contractor shall verify that all shop drawings, samples and other submittals are complete and have been reviewed and approved prior to starting rough carpentry work.

2. Prior to start of work, Contractor shall verify that materials are as specified and undamaged. Contractor shall inspect preparatory work and ensure that it is acceptable for subsequent follow on installation.

3. Contractor shall inspect installation daily to ensure compliance with Project requirements.
1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver products to site in original packages, containers or bundles bearing name and identification of manufacturer or supplier. Store materials at building site under cover. Prevent contact with materials during storage which may cause deterioration, discoloration or staining.

PART 2 PRODUCTS

2.01 MATERIALS

A. Gypsum Wallboard: Provide gypsum wallboard from one of the following manufacturers:
   1. United State Gypsum.
   3. Domtar Gypsum.

B. Water Resistant Gypsum Wallboard – Comply with ASTM 630, C1396. USG Sheetrock Brand Water Resistant gypsum panels or equal. Install at all 'wet' locations.

PART 3 EXECUTION

3.01 INSTALLATION

A. Examine substrates and existing conditions for proposed installations and confirm that conditions are satisfactory for installation and comply with manufacturer’s requirements.

B. Install gypsum board for tape and 3-coat joint compound finish in compliance with ASTM C 840 and GA 216, Level 4 finish. Install gypsum board assemblies true, plumb, level and in proper relation to adjacent surfaces.

C. Apply resilient wall base in lengths as long as practicable, tightly adhere wall base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates, according to manufacturer’s installation procedures.

D. Provide all adhesives, trim and accessories recommended by the FRP manufacturer.
E. Repair any surface defects, visible adhesive or other blemishes. Leave ready for final finish.

END OF SECTION 09 25 00
PART 1 GENERAL

1.01 GENERAL

A. The requirements of the General Conditions, Special Provisions and Division 1 of the specifications apply to the work of this section.

B. Provide all labor and materials necessary for the completion of the work of this section as specified or shown on the drawings.

1.02 SUMMARY

A. This Section includes the following:

1. Painting.

1.03 SUBMITTALS

A. Product Data: Per Section 01 33 00.

B. Samples: Submit (2) representative samples from each material specified indicating visual characteristics and finish. The Owner will select actual colors from manufacturer’s standard color line.

1.04 QUALITY CONTROL

A. Contractor shall make the following items part of the Contractor’s Quality Control Plan.

1. Standards: Comply with WSU standards for VOC and environmental requirements.

2. Engage an experienced applicator specializing in commercial painting and finishing projects of a similar size and scope.

3. Contractor shall inspect installation daily to ensure compliance with Project requirements.
1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver products to site in original, unopened and labeled containers bearing name and identification of manufacturer or supplier. Store paint materials not in use, in tightly covered containers, at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in well ventilated area.

B. Provide continuous ventilation and heating facilities to maintain surface and ambient temperatures above 50 degrees F for 24 hours before, during and 48 hours after application of finishes.

PART 2 PRODUCTS

2.01 MATERIALS

A. Manufacturer: Latex-based paint from one of the following:
   1. Columbia.
   2. Sherwin-Williams.
   3. United.

B. Gypsum Drywall Walls and Ceilings:
   1. Semi-gloss.
   2. 1 coat latex primer.
   3. 2 coats latex finish.

C. Metal Surfaces:
   1. Semi-gloss.
   2. 2 coat latex.

D. Wood Surfaces
   1. 1 coat lacquer sanding sealer
   2. 2 coats Catalinized lacquer cut 50/50 with lacquer thinner, satin finish.

PART 3 EXECUTION

3.01 INSTALLATION

A. Inspect surfaces, report unsatisfactory conditions; beginning work means acceptance of substrate.
B. Comply with manufacturer’s instructions and recommendations for preparation, priming and coating work. Coordinate work with all trades.

C. Remove spilled, splashed or spattered paint.

D. Protect all newly painted surfaces until project completion.

END OF SECTION 09 91 00
PART 1 GENERAL

1.01 GENERAL

A. The requirements of the General Conditions, Special Provisions and Division 1 of the specifications apply to the work of this section.

B. Provide all labor and materials necessary for the completion of the work of this section as specified or shown on the drawings.

1.02 SUMMARY

A. This Section includes the following:

1. Toilet room accessories.

1.03 SUBMITTALS

A. Product Data: Per Section 01 33 00.

B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections and relationship with adjacent construction for toilet partitions.

1.04 QUALITY CONTROL

A. Contractor shall make the following items part of the Contractor’s Quality Control Plan.

1. Provide products of acceptable manufacturers, which have been in satisfactory use for similar types of installations.

2. Use experienced installers specializing in installation of products on projects of a similar size and scope.

3. Contractor shall inspect installation daily to ensure compliance with Project requirements.
1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver products to site in original, unopened and labeled packaging bearing the name of the manufacturer and/or supplier.

B. Store and protect materials and coordinate installation and sequencing with other work.

PART 2 PRODUCTS

2.01 MATERIALS

A. Toilet Room Accessories: Surface mounted, one per restroom unless indicated otherwise.
   1. Mirrors – Bobrick B-290-2436.
   2. Soap Dispensers – Bobrick B2112.
   5. Signage – AmeraProducts CR-MH68

PART 3 EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance.

B. All installations are to be in compliance with ANSI 117.1.

C. Adjust hardware, clean and protect work. Restore any damaged finishes and test for proper installation

END OF SECTION 10 80 00
PART 1       GENERAL

1.01 RELATED DOCUMENTS

A. The general provisions of the Contract, including Washington State University General Conditions for Washington State Facility Construction, Special Provisions and General Requirements, apply to the work specific in this section.
B. General Structural Notes.

1.02 SUMMARY

A. This Section includes components for construction of a Post Frame Building, including, but limited to (see drawings for additional requirements):
   1. Cast in place concrete.
   2. Lumber.
   3. Wood roof trusses and accessories.
   4. Metal wall panels.
   5. Metal roof panels.
   6. Aluminum gutters and downspouts

1.03 SUBMITTALS

A. Product Data: Per Section 01 33 00.
B. Design Drawings: Submit drawings and calculations, stamped and signed by an engineer licensed in the State of Washington, to include but not limited to assembly dimensions, sizes, locations of structural members, connections, attachments, openings; wall and roof system dimensions, panel layout, general construction details, anchorages and method of anchorage; framing anchor bolt settings, sizes and locations.
C. Product Data: Provide data on profiles and colors of all cladding materials.

1.04 QUALITY CONTROL

A. Contractor shall make the following items part of the Contractor’s Quality Control Plan.
1. Comply with all governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle and store materials in accordance with manufacturer’s instructions.

2. Testing: Employ an independent testing agency acceptable to Owner to design concrete mixes and to perform material evaluation tests.

3. Trusses: Comply with applicable requirements and recommendations of the following publications:
   b. TPI DSB, Recommended Design Specification for Temporary 1Bracing of Metal Plate Connected Wood Trusses.
   c. TPI HIB, Commentary and Recommendations for Handling, Installing and Bracing Metal Plate Connected Wood Trusses.

4. Truss manufacturer shall specialize in manufacturing of metal-plated wood trusses with minimum three years documented experience.

1.05 DELIVERY, STORAGE AND HANDLING

A. Handle and store all building components with care and comply with manufacturer’s written instructions to avoid damage.

PART 2 PRODUCTS

2.01 MATERIALS

A. Concrete: Post foundations shall be cast-in-place concrete. See drawings for additional information and General structural Notes.

B. Lumber: Lumber Grading Rules - WWPA. See Section 06 10 63 ROUGH CARPENTRY for detailed information. Lumber components shall include, but not be limited to:

   1. Posts
   2. Wall girts
   3. Post headers
4. Roof trusses
5. Roof purlins
6. Roof sheathing
7. Trim
8. Accessories

C. Trusses: Wood members to be single top and bottom chord, Douglas Fir species No. 1 grade, 19 percent minimum moisture content.

D. Truss Connectors: Structural-quality steel sheet, zinc coated by hot dip process complying with ASTM A653, G60; grade 33 and not less than 0.0359 inch thick.

E. Temporary and Permanent Truss Bracing: Type, size and spacing as specified by truss manufacturer

F. Truss Accessories: Fasteners and bearing plates to be hot-dip galvanized (unfinished) steel, type to suit applications.

G. Other connectors and fasteners required for a complete installation shall be hot dip galvanized complying with ASTM A 153/A and153M.

H. Metal Roof Panels: Rolled-rib profile, exposed fastener lap-seam metal roof. Formed with raised, trapezoidal major ribs and intermediate stiffening ribs symmetrically spaced between major ribs; designed to be installed by lapping side edges of adjacent panels and mechanically attaching panels to supports using exposed fasteners in side laps. Zinc-coated (galvanized) or aluminum-zinc coated steel sheet, nominal thickness required to meet performance requirements. Color from manufacturer’s standard color range.

I. Metal Wall Panels: Rolled-rib profile, exposed fastener lap-seam metal roof. Formed with raised, trapezoidal major ribs and intermediate stiffening ribs symmetrically spaced between major ribs; designed to be installed by lapping side edges of adjacent panels and mechanically attaching panels to supports using exposed fasteners in side laps. Zinc-coated (galvanized) or aluminum-zinc coated steel sheet, nominal thickness required to meet performance requirements. Color from manufacturer’s standard color range.

J. Post Frame Accessories: Provide accessories as standard for a complete post frame building installation. Use factory-fabricated/finished accessories to the greatest extent possible. Provide all accessories, fasteners, trim, etc. for a complete installation.
1. Panel Thickness: 2”.
2. Exterior Surface: Ribbed.
5. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.

L. Gutter and downspouts: Pre-finished aluminum, .027 inch with all fasteners, anchoring devices and accessories for a complete installation. Color from standard product line. Provide concrete splashblocks sloping away from the building at all downspout locations.

M. Hollow Metal Doors and Frames: Hollow metal frame and door assembly compatible with pole building wall system

1. Steel Frame:
   a. Minimum 16 gauge steel sheet.
   b. Corners mitered or coped.
2. Steel Doors:
   a. Minimum 18 gauge steel sheet.
3. Frame and door to be factory primed and field painted.
4. Hardware: Complete assembly with 1-1/2 pair butts, door knobs and deadbolt. Coordinate lock and keying with WSU Key Shop.

PART 3 EXECUTION

3.01 EXAMINATION

A. Inspection:

1. Before start of installation, contractor shall carefully inspect existing conditions affecting construction of post frame building.
2. Verify that work may be installed in accordance with all applicable codes and regulations, and with original design as shown and indicated on the shop drawings approved by the designer of record.
3.02 ERECTION

A. General: Work shall proceed in accordance with contractors current, written instructions and per approved design specifications and approved shop drawings for erection of post-frame building systems.

1. Handle, install and brace all trussed during construction according to TPI's, HIB-Post Frame document.
2. Install wood trusses within tolerances in TPI 1 and requirements of the International Building Code.
3. Set structural posts accurately in locations and to elevations indicated. Maintain structural stability of frame during erection.
4. Framing for Openings: Provide shapes of proper design and size to reinforce openings and to carry loads and vibrations imposed. Securely attach to structural framing.

B. Metal Roof/Wall Panel Installation

1. Provide metal roof panels of full length from eave to ridge unless otherwise indicated or restricted by shipping limitations.
2. Install metal panels perpendicular to structural supports unless otherwise indicated.
3. Flash and seal metal panels with weather closures at perimeter of openings and similar elements.
4. Locate and space fastenings in uniform vertical and horizontal alignment.
5. Locate metal panel splices over, but not attached to structural supports.
6. Lap metal flashing over metal panels to allow moisture to run over and off the material.
7. All roof and wall accessories to be installed weathertight.
8. Install all metal roof, wall and trim components to within tolerances recommended in NFBA's Cladding Tolerances standards and manufacturer’s written instructions.

D. Gutter, Downspout, Flashing and Trim

1. Install gutters and downspouts, flashings and trim in accordance with manufacturer’s instructions.
2. Provide concrete splash blocks that drain run-off away from building.
E. Cleaning and Protection

1. Cleaning: Contractor shall clean all building elements, components and/or surfaces for a finished facility acceptable to the Owner.
2. Touch-up all marred, abraded or otherwise damaged finished as required, so that any damage is eliminated.
3. At the completion of Work, remove trash, debris and all excess materials, cartons and/or items so that all areas of work are clean.
4. Protection: Provide protective measures, as required, so the wood post-frame building is without damage or deterioration at the time of Substantial Completion.

END OF SECTION 13 34 19
PART 1 - GENERAL

1.01 WORK INCLUDED

A. Work includes complete mechanical systems indicated on the drawings and specified. The Bid and Contract Documents and General Requirements of the specification are a part of this division of the specification. Where the word “provide” is used, it means “furnish and install complete and ready for use.” Provide supervision, labor, material, equipment, and machinery necessary to complete the mechanical systems. Provide finished work, tested and ready for operation.

1.02 RELATED WORK

A. All portions of specification Division 1 apply to this work.

B. Additional sections of the mechanical specifications are required to provide a fully functional system. Refer to the specifications index.

1.03 CODES AND STANDARDS

A. Give necessary notices, obtain permits, and pay taxes, fees, and other costs, including utility connections or extensions for the work. File necessary drawings, prepare documents, and obtain necessary approvals of governmental departments having jurisdiction. Include all costs associated with notices; permits; taxes; fees; utility connections or extensions; government approvals; and other related costs in original bid. Obtain required certificates of inspection for work and deliver to the WSU Project Manager before request for acceptance and final payment for the work.

B. Comply with laws, ordinances, rules, regulations, and lawful orders of any public authority bearing on the performance of the work. If the Contractor observes that any of the Contract Documents are at variance therewith in any respect, they shall promptly notify the WSU Project Manager in writing and any necessary changes shall be accomplished by appropriate modification. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules, and regulations, and without notice to the WSU Project Manager, they shall assume full responsibility, and shall bear all costs.

C. Material and equipment within the scope of the UL Testing Laboratory Service shall be listed by the Underwriters Laboratories for the purpose for which they are used and shall bear its listing mark.
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D. All codes and standards refer to the current edition.

1. ASTM B584 – Standard Specification for Copper Alloy Sand Castings for General Applications

2. ASTM D1557 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 feet-pound force per cubic foot)

1.04 REQUIRED SUBMITTAL DATA FOR THIS SPECIFICATION SECTION

A. Valves

1.05 GENERAL REQUIREMENTS FOR SHOP DRAWING AND SUBMITTAL DATA

A. Check and verify field measurements and requirements. Submit promptly, so as not to delay the work, one copy, checked and approved by the Contractor, of all shop drawings, submittal data, and layout drawings. At the discretion of the WSU Project Manager, the Contractor may submit PDF submittals in lieu of paper copies. Confirm with the WSU Project Manager prior to submitting. The WSU Project Manager will check and review with reasonable promptness the shop drawings and submittal data only for conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Make corrections required by the WSU Project Manager and resubmit to the WSU Project Manager one corrected copy. The WSU Project Manager’s review of the shop drawings and submittal data shall not relieve the Contractor from responsibilities for deviation from the Contract Documents unless the Contractor has in writing called to the WSU Project Manager’s attention deviation at the time of submission and secured the WSU Project Manager’s written approval. Nor shall it relieve the Contractor from responsibility for errors in the shop drawings and submittal data.

B. The shop drawings and submittal data for the material and equipment shall be submitted at one time. Each copy shall be in a three-ring binder, indexed, and properly labeled indicating specific material or equipment for which it is to be used and the specification section and paragraph number relating to the submitted item.

C. Review, approve, and stamp shop drawings and submittal data before submission to the WSU Project Manager. Notify the WSU Project Manager in writing of any deviation from the requirements of the Contract Documents.

D. Failure to submit shop drawings and submittal data in ample time for checking and review shall not entitle the Contractor to an extension of contract time.
E. See individual specification sections for required submittal data.

1.06 DRAWINGS
A. Drawings are diagrammatic, indicating the general arrangement of systems and work, and do not attempt to show exact details or all offsets in piping and ductwork. Do not scale drawings. Examine the contract drawings for exact location of fixtures and equipment. Where they are not definitely located, obtain this information from the WSU Project Manager.

B. Follow drawings in laying out work and check drawings of other trades to verify spaces in which work will be installed. Maintain maximum headroom. If space conditions appear inadequate, notify the WSU Project Manager before proceeding with the work. Make reasonable modifications in the work without extra cost as needed to prevent conflict with work of other trades and for proper execution of the work.

1.07 EQUIPMENT DEVIATIONS
A. Specific manufacturers and model numbers are noted to indicate a standard of design and are not intended to be restrictive.

B. Where the term “or approved equal” is used, alternative and/or substitute products will be considered only prior to the bid date (Prior Approval). Where the term “or equal” is used, approval of alternative and/or substitute products may be requested by the contractor after the bid date. Submittal, review, and potential approval of alternative and/or substitute products will be considered and executed only under terms and conditions specified in Section 01 25 00 Substitution Procedures.

C. When submitting an alternative and/or substitute product, Contractor shall include complete product literature of original specified item.

D. Provide redesign to any part of the work resulting from the use of equipment and material other than specified or indicated on the drawings. Obtain approval of redesign from the WSU Project Manager. Redesign cost and additional construction cost resulting from the redesign shall be at the Contractor’s expense.

PART 2 - PRODUCT

2.01 GENERAL
A. Provide valves of same manufacturer throughout where possible.

B. Provide valves with manufacturer’s name and pressure rating clearly marked on outside of body.
C. All valves intended for domestic water systems shall have NSF rating for the application for which they are to be used.

D. Provide valves suitable to connect to adjoining piping as specified for pipe joints. Use pipe size valves, unless indicated otherwise.

E. Thread pipe sizes 2-inches and smaller.

F. Flange pipe sizes 2½-inches and larger.

G. Solder or thread-to-solder adapters for copper tubing.

H. Use valves with factory installed press ends with press copper piping.

2.02 BALL VALVES

A. 2-Inches and Smaller: Two-piece cast bronze body and end-piece ASTM B584 (alloy shall contain no more than 15% zinc), full port stainless-steel ball, blowout proof; B16 stainless-steel stem, Teflon seats and seals, threaded ends, 600 pounds per square inch cold working pressure, Class 150. Where piping is insulated, valves shall be provided with 2-inch extended handles of non-thermal conductive material and a protective sleeve that allows operation of the valve without breaking the vapor seal or disturbing the insulation.

B. Acceptable Manufacturers: NIBCO Jenkins, Kennedy, Powell, Ohio, or Milwaukee.

2.03 GATE VALVES

A. 2-Inches and Smaller Gate Valves: Bronze body, wedge disc, threaded bonnet, threaded ends, non-rising stem, 150 pounds per square inch, cold working pressure.

B. Acceptable Manufacturers: NIBCO Kennedy, Milwaukee, Vennessa, or Tyco.

PART 3 - EXECUTION

3.01 COOPERATION WITH OTHER TRADES

A. Give full cooperation to other trades and furnish in writing to other trades, with copies to the WSU Project Manager, any information necessary to permit the work of all trades to be installed satisfactorily and with the least possible interference or delay.

B. Where plumbing work will be installed in close proximity to, or will interfere with work of other trades, assist in working out space conditions to make a satisfactory adjustment. If work is installed before coordinating with other
trades, or if it causes any interference with work of other trades, make the necessary changes in the work to correct the conditions and bear all costs.

C. Furnish to other trades necessary templates, patterns, setting drawings, and shop details for the proper installation of work and for coordinating adjacent work.

3.02 SAFETY

A. The WSU Project Manager has not been retained to provide design and construction services relation to the Contractor’s safety precautions, or to means, methods, techniques, sequences, or procedures required for the Contractor to perform their work. The Contractor is solely and completely responsible for conditions of the job site, including safety of persons and property during performance of work. This requirement applies continuously and is not limited to normal working hours. Comply with “Safety and Health Regulations for Construction,” Volume 36, No. 75, Part II of the Federal Register by the US Department of Labor. Provide required safety measures and consult with the state or federal safety inspector for interpretation whenever in doubt as to whether safe conditions do or do not exist or whether compliance with state or federal regulations exists.

3.03 PROTECTION

A. Protect work and material from damage and be liable for damage.

B. Be responsible for work and equipment until finally inspected, tested, and accepted; protect work against theft, injury, or damage; and carefully store material and equipment received on site which are not immediately installed. Close open ends of work with temporary covers or plugs during storage and construction to prevent entry of obstructing material.

3.04 SCAFFOLDING, RIGGING, AND HOISTING

A. Provide ladders, scaffolding, rigging, hoisting, and services necessary for delivery into the premises and erection of any equipment and apparatus and execution for the work. Remove such items from premises when no longer required.

3.05 EXCAVATING AND BACKFILLING

A. Mass excavation to approximate building levels will be done by the General Contractor. The Mechanical Subcontractor shall do trench and pit excavation and backfilling required for mechanical work, inside and outside the building, including repairing of finished surfaces, required shoring, bracing, pumping and protection for safety of persons and
property. The Mechanical Subcontractor shall remove excess earth resulting from their work from the site. Local or State safety codes shall be strictly observed. Check the elevations of the utilities entering and leaving the building. If such elevations require excavations lower than the footing levels, notify the WSU Project Manager of such conditions before excavations are commenced. Make the excavations at the minimum required depths to not undercut the footings.

B. Filling, Backfilling, and Compaction

C. General: Remove debris and decayable matter from areas to be filled before proceeding. Use only materials approved by the WSU Project Manager for fills. Obtain WSU Project Manager’s approval before filling against concrete or masonry walls. Make fills as soon as feasible to insure maximum settlement.

D. Compaction of Fills: Compact by ASTM D1557, Method “A,” 95% density under paved areas and building areas to 10 feet beyond building perimeter, 90% elsewhere. Place fills in lifts which, when compacted, shall not exceed 8-inches in depth and compact with multiple-wheeled pneumatic-tired rollers or other approved methods. Fills made from cuts shall be made and compacted in one operation so that the material is not left exposed to rain while in an uncompacted state.

E. Fills under Interior Slabs: 4-inches of ¾-inch to 1½ inches washed gravel, evenly graded. Cover with reinforced Kraft paper, Brownskin, Sisalkraft or equal. Lap joints 4-inches, turn up 4-inches onto vertical surfaces. Repair any punctures in membrane before pouring concrete. Place 12-inches of washed gravel under plenums.

F. Fills against Concrete Walls Where Walls are Dampproofed: Fill to be material from excavations, approved by the WSU Project Manager.

3.06 MATERIAL AND WORKMANSHIP

A. Materials and equipment required for the work shall be new and shall be furnished, delivered, erected, installed, connected, and finished in every detail; and shall be selected and arranged to fit properly into the building spaces. Where no specific kind or quality of material is given, an article as approved by the WSU Project Manager shall be provided.

B. Furnish the services of an experienced superintendent, who shall be constantly in charge of the work.

C. Equipment and materials shall be installed with the approval of the WSU Project Manager in accordance with the recommendations of the manufacturer. This includes the performance of such tests as the manufacturer recommends.
D. Provide equipment in the midrange of written performance documentation to allow for adjustment.

3.07 ACCESSIBILITY

A. Install the work with adequate clearances throughout the project, including being responsible for the sufficiency of the size of shafts, chases, double partitions, and suspended ceilings. Cooperate with other trades where work is in the same space. Such spaces and clearances shall be kept to the minimum size required.

B. Locate all equipment which must be serviced, operated, or maintained in fully accessible positions. Minor deviations from drawings may be made to allow for better accessibility and any change shall be approved by the WSU Project Manager.

C. The Mechanical Subcontractor shall provide the General Contractor the exact locations of access panels for each concealed valve, control damper or other device requiring service. Access panels will be provided and installed by the General Contractor and as specified in the other divisions of the specifications. Submit locations of these panels to the General Contractor in sufficient time to be installed in the normal course of work.

3.08 ELECTRICAL CONNECTIONS

A. The Electrical Subcontractor shall provide wiring, except temperature control wiring, equipment control wiring, and interlock wiring. The Electrical Subcontractor shall provide power wiring complete from power source to motor or equipment junction box, including power wiring through starters. Electrical Subcontractor shall provide starters and disconnect switches not factory-mounted on equipment.

B. The Mechanical Subcontractor shall, regardless of voltage, provide temperature control wiring, interlock wiring, and equipment control wiring for the equipment that the Mechanical Subcontractor furnishes or installs.

C. The Electrical Subcontractor shall be responsible for power wiring. Control wiring shall be the responsibility of the Mechanical Subcontractor. Motors and equipment shall be provided for current characteristics as indicated on the electrical drawings.

3.09 CUTTING AND PATCHING

A. Provide drilling, coring, cutting, and patching necessary to install the work specified in this division. Patching shall match adjacent surfaces.

B. No structural members shall be cut without the approval of the WSU Project Manager, and cutting shall be done in a manner directed by them.
Do not damage or endanger any portion of the project or work of the Owner or any other separate contractor by drilling, coring, cutting, patching, excavating, and backfilling.

C. Inform the General Contractor and other subcontractors affected of requirements for cutting and patching.

3.10 BOXES, SLEEVES, AND CHASES

A. Inform the General Contractor of requirements for boxes, sleeves, and chases. The General Contractor shall set boxes, sleeves, and chases. Furnish General Contractor with the boxes and sleeves and be responsible for informing General Contractor of required location.

3.11 OPERATING INSTRUCTIONS

A. Upon completion of the work, furnish the necessary skilled labor and helpers for operating the systems and equipment for a period of three (3) days of eight (8) hours each, or as otherwise specified. Give at least forty-eight (48) hours’ notice to the Owner in advance of this period. During this period, instruct the Owner or their representative fully in the operation, adjustment, and maintenance of all equipment furnished. The training of the appropriate maintenance staff for each equipment type and/or system shall include, as a minimum, the following:

B. System/Equipment overview (what it is, what it does, and with which other systems and/or equipment does it interface).

C. Review of the available O&M materials.

D. Review of the Record Drawings on the subject system/equipment.

E. Hands-on demonstration of all normal maintenance procedures, normal operating modes, and all emergency shutdown and startup procedures.

3.12 MECHANICAL EQUIPMENT MANUALS

A. Upon completion of the work and prior to acceptance of the mechanical work, prepare servicing manuals in accordance with industry-accepted standards describing the requirements of mechanical equipment provided under this division of the specification.

B. As a minimum, include in the manuals:

1. Submittal data stating equipment size and selected options for each piece of equipment requiring maintenance.

2. Maintenance schedules
3. Manufacturers’ operation and maintenance instructions with parts list specific to the equipment installed, with extraneous matter removed or neatly marked out. Routine maintenance actions shall be clearly identified together with supplementary drawings and information where necessary to describe and itemize servicing.

4. Provide a table of contents with all contents listed in an orderly presentation.

5. Manufacturers’ printed warranties

6. Names, addresses, and phone numbers of General Contractor, Mechanical Subcontractor(s), and all other related Subcontractors.

7. Names, addresses, and phone numbers of equipment suppliers.

8. Names, addresses, and phone numbers of at least two service agencies.

9. Controls system maintenance and calibration information, including wiring diagrams, schematics, and control sequence descriptions. Desired or field determined setpoints shall be permanently recorded on control drawings at control devices, or for digital control systems, in programming comments.

10. A complete narrative of how each system is intended to operate. A Sequence of Operation is not acceptable as a narrative for this requirement. Narrative shall include:
   
   a. A detailed explanation of the original design intent.
   b. The basis of design (how the design was selected to meet the design intent).
   c. A detailed explanation of how new equipment is to interface with existing equipment or systems (where applicable).
   d. Suggested set points.

C. Data in manuals shall be neat, clean copies. Drawings shall be accordion-folded. Manufacturers’ advertising literature or catalogs will not be acceptable for operating and maintenance instruction.

D. Place data for the manual in hardcover three-ring loose-leaf notebooks. Label bound edge of notebooks with the name of the building, Owner, name of the project, year of completion and the words “Mechanical Equipment.” Label front of notebooks with the name of the Owner, name of the building, name of the project, Owner’s project number, date,
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General Contractor, Mechanical Subcontractor, WSU Project Manager, Architect, and Mechanical Engineer.

E. Submit one (1) copy of the data in a preliminary draft form to the WSU Project Manager for approval prior to preparing finished copies.

F. Provide two (2) copies of the finished manuals to the WSU Project Manager.

3.13 RECORD DRAWINGS

A. Within 90 days after the date of system acceptance, provide record drawings of all buildings and plot plans. Record drawings shall include as a minimum the location and performance data on each piece of equipment, general configuration of duct and pipe distribution system, including sizes, and the terminal air and water design flow rates of the actual installation. Record drawings shall also incorporate any mechanical work which deviates from the contract drawings, including changes resulting from addenda, Requests for Information, and Change Orders. Neatly draft changes on clean “hard copy” drawings to show the work clearly in the actual locations as built.

3.14 CLEANING

A. Promptly remove waste material and rubbish caused by the work. At the Completion of the work, clean the dirt and debris from the mechanical installation, including equipment, piping, ductwork, and plumbing fixtures.

3.15 WARRANTY

A. All work, materials, and equipment to be free from defects. Correct all defects and failures occurring within one year from date of substantial completion without cost to the Owner except when such failure is due to neglect or carelessness by the Owner, as determined by the WSU Project Manager.

B. The warranty disregards shorter time limits by any manufacturer of equipment provided.

C. Make all necessary adjustments and corrections during first year of operation. The fact that the WSU Project Manager was present during any construction does not relieve the Contractor from responsibility for defects discovered after completion of the work.

3.16 GENERAL INSTALLATION

A. Install all valves with stems upright or horizontal, not inverted.

3.17 VALVE SERVICE
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A. Isolation and Shutoff 2-Inch and Smaller Valves: Use valves listed under “Ball Valves.”

B. 2½-Inch and Larger Valves: Use valves listed under “Gate Valves.”

C. System Drains

1. Use ¾-inch drain valve for all piping sizes, unless indicated otherwise on the drawings. Provide capped hose adapter where not indicated piped to drain.

3.18 VALVE ACCESS

A. Install valves in accessible location to allow for maintenance and removal.

END OF SECTION 22 05 00
DIVISION 22 – PLUMBING
22 05 29 HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT

PART 1 - GENERAL

1.01 WORK INCLUDED
   A. Pipe, Duct, and Equipment Hangers and Supports
   B. Anchors, Equipment Bases and Supports
   C. Seismic Protection of Piping and Equipment

1.02 RELATED WORK
   A. All portions of specification Division 1 apply to this work.
   B. All portions of specification Section 22 05 00 apply to this work.
   C. Additional sections of the mechanical specifications are required to provide a fully functional system. Refer to the specifications index.

1.03 CODES AND STANDARDS
   B. The International Building Code for seismic protection of equipment.

1.04 REQUIRED SUBMITTAL DATA
   A. Equipment Bases and Supports

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS
   A. Pipe Hangers and Supports
      1. Anvil, Erico, Grabler, Fee & Mason, Unistrut, Superstrut, or equal.

2.02 INTERMEDIATE ATTACHMENTS
   A. Trapeze Pipe Racks: Fabricate from structural angles or channels or Unistrut channels to suit weight of piping to be supported. Size for a minimum safety factor of five (5).
   B. Hanger Straps: Galvanized bar steel; ¾-inch wide by 18-gauge for 2½-inches and smaller pipe; ½-inch wide by 16 gauge for 3-inches to 4-inches pipe; 1⅛-inches wide by 12-gauge for 6-inch pipe size.
DIVISION 22 – PLUMBING
22 05 29 HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT

2.03 PIPE ATTACHMENTS

A. Pipe Clamps
   2. Horizontal Racked Piping: Unistrut P-1109 series or Unistrut P-2024C series clamps for Unistrut channel pipe racks.
   3. Application: Use on piping systems without any thermal expansion.

2.04 EQUIPMENT BASES AND SUPPORTS

A. Concrete pads shall be 3½-inches high. Pads shall extend 6-inches beyond machine base in all directions with ¾-inch top edge chamfered.

PART 3 - EXECUTION

3.01 HANGER SPACING FOR PIPING

A. Horizontal Copper Pipe: Maximum hanger spacing and minimum hanger rod diameters as follows:

<table>
<thead>
<tr>
<th>Pipe Size</th>
<th>Span</th>
<th>Rod Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>½-inch pipe</td>
<td>5-foot span</td>
<td>⅜-inch rod</td>
</tr>
<tr>
<td>1-inch pipe</td>
<td>6-foot span</td>
<td>⅜-inch rod</td>
</tr>
<tr>
<td>1¼ and 1½-inch</td>
<td>6-foot span</td>
<td>¾-inch rod</td>
</tr>
</tbody>
</table>

3.02 INSTALLATION OF PIPE HANGERS AND SUPPORTS

A. Provide piping supports and hangers with a means of adjustment for leveling, grading of piping and cold spring movements.

B. Install anchor bolts for all mechanical equipment and piping as required. Tightly fit and clamp base-supported equipment anchor bolts at all equipment support points. Provide locknuts where equipment is hung.

3.03 EQUIPMENT BASES AND SUPPORTS

A. Provide supports, pads, bases, and their attachments for mechanical work to be furnished or installed.

B. Provide concrete pads for pumps, compressors, other rotating mechanical machinery, boilers, expansion tanks, and for equipment where indicated on the drawings. Insert four (4) 6-inch-long steel dowel rods into floors to anchor pads.
3.04 SEISMIC PROTECTION OF EQUIPMENT

A. Provide seismic protection for all equipment in accordance with the International Building Code, and all local amendments, most recently adopted by the authority having jurisdiction.

END OF SECTION 22 05 29
DIVISION 22 – PLUMBING
22 05 53 IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT

PART 1 - GENERAL

1.01 WORK INCLUDED
   A. Plumbing Systems Identification and Flow Arrows
   B. Valve Tags

1.02 RELATED WORK
   A. All portions of specification Division 1 apply to this work.
   B. All portions of specification Section 22 05 00 apply to this work.
   C. Additional sections of the mechanical specifications are required to provide a fully functional system. Refer to the specifications index.

1.03 CODES AND STANDARDS
   A. The following standards apply to this section:
      1. ASME A13.1 – Scheme for the Identification of Piping Systems

1.04 REQUIRED SUBMITTAL DATA
   A. Product Data: For each type of product indicated.

1.05 DEFINITIONS
   A. “Concealed” work is defined as work installed within pipe shafts, duct spaces, above furred or hung ceilings, or otherwise built into the building and not exposed to view.
   B. “Exposed” work is defined as work in walkway tunnels, Mechanical and Fan Rooms, exterior to building (including rooftops), all occupied areas and all other areas not defined as “concealed.”

1.06 MANUFACTURERS
   A. Acceptable Manufacturers: Seton, Zeston, or Approved Equal.

PART 2 - PRODUCTS

2.01 PIPING IDENTIFICATION BANDS AND FLOW ARROWS
   A. Snap-around or adhesive-backed markers with UV resistant inks and vinyl. Marker construction, size, color, letter type, and wording shall be in conformance with ASME A13.1. Provide custom markers for unique service and where pressure, temperature or other conditions of the service vary in the project.
DIVISION 22 – PLUMBING
22 05 53 IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT

B. Color Schedule

<table>
<thead>
<tr>
<th>Service</th>
<th>Label/Letters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Cold Water</td>
<td>Dark Blue/White</td>
</tr>
<tr>
<td>Domestic Hot Water</td>
<td>Dark Blue/White</td>
</tr>
</tbody>
</table>

2.02 VALVE TAGS

A. Seton 1½-inch round brass with stamped characters with brass “S” hooks.

PART 3 - EXECUTION

3.01 IDENTIFICATION AND FLOW ARROWS

A. Identify and provide flow direction arrows on all exposed piping and equipment.

B. Apply piping identification bands and flow arrows on 10-foot centers in general, 20-foot centers in open areas where pipe is exposed, and wherever a pipe leaves or enters any wall, floor, ceiling, or foundation. Place the proper band on pipe at each valve, branch connection, manifold, entrance, and exit from a tank, vessel, or piece of equipment.

C. Provide tag on each valve. Tag shall be provided with an identifying number. Post a plastic-laminated Valve Index where directed by WSU Project Manager. Index shall identify location, service, and identification number of each tagged valve.

END OF SECTION 22 05 53
PART 1 - GENERAL

1.01 WORK INCLUDED
   A. Pipe Insulation

1.02 RELATED WORK
   A. All portions of specification Division 1 apply to this work.
   B. All portions of specification Section 22 05 00 apply to this work.
   C. Additional sections of the mechanical specifications are required to provide a fully functional system. Refer to the specifications index.

1.03 CODES AND STANDARDS
   A. General
      1. UL 723 – Tests for Surface Burning Characteristics of Building Materials
   B. For Elastomeric Material
      1. ASTM C534/C534M – Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form
   C. For Flame Spread and Fuel Contributed and Smoke
      2. NFPA 255 – Standard Method of Test of Surface Burning Characteristics of Building Materials

1.04 REQUIRED SUBMITTAL DATA
   A. Product Data: For each type of product indicated.

PART 2 - PRODUCT

2.01 GENERAL
   A. Materials shall be of the highest grade. Adhesives, sealers, vapor coatings, etc., shall be compatible with the materials to which they are applied, and shall not corrode, soften, or otherwise attack such material in
DIVISION 22 – PLUMBING
22 07 00 PLUMBING INSULATION

either the wet or dry state. Scrap pieces of insulation shall not be used where a full section will fit. Glass fiber materials which become wet or damaged during installation shall be removed and replaced with new materials. Acceptability of a manufacturer is not to be taken as acceptability of its “usual” or “regular” accessory materials such as facings, adhesives, etc.

B. Unless specified otherwise, all facings, coatings, PVC covers, and other accessories shall have a fire hazard rating not to exceed 25 for Flame Spread and 50 for Fuel Contributed and Smoke Developed; ratings determined by ASTM E84, NFPA 255, or UL 723. UL label or listing, or satisfactory test results from the approved testing laboratory, shall be available to indicate that fire hazard ratings for materials do not exceed the above amounts.

C. Product used shall emit no volatile organic compounds (VOCs) when applied, and shall not contain phenol, formaldehyde, or acrylics.

D. Insulation shall comply with the latest adopted version of the Washington State Energy Code Commercial Provisions.

2.02 ACCEPTABLE MANUFACTURERS

A. Acceptable Manufacturers: Certain-Teed, Knauf, or Owen-Corning Fiberglas.

2.03 PIPING INSULATION MATERIALS

A. Provide insulation material as follows:

<table>
<thead>
<tr>
<th>Service</th>
<th>Insulation Material</th>
<th>Insulation Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Hot, Cold, and Hot Circulating Water Piping</td>
<td>Two-Piece Fiberglas ASJ/SSL-II</td>
<td>Fiberglas ASJ/SSL-II, or at contractor’s option Armstrong ½-inch thick self-seal Armaflex 2000 on piping ½-inch through 2-inch pipe size</td>
</tr>
</tbody>
</table>

2.04 PIPING INSULATION THICKNESS

A. All domestic cold water piping, including all piping installed in concealed spaces, shall be insulated per the following table, and in accordance with all requirements of the Washington State Plumbing Code, and shall be sealed vapor-tight to prevent condensation from forming on the pipe or insulation.

B. Insulate all piping with the materials specified in the preceding table to the thicknesses required in the latest adopted version of the Washington State
Energy Code Commercial Provisions, and in accordance with the following table, except:

1. Specified insulation that has a conductivity outside the range indicated in the following table shall be provided with the minimum thickness required in the “Alternative Insulation Types” portion of the Washington State Energy Code Commercial Provisions.

<table>
<thead>
<tr>
<th>Design Operating Temp Range (°F)</th>
<th>Insulation Conductivity</th>
<th>Nominal Pipe Diameter (Inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Conductivity Range</td>
<td>Mean Rating Temp (°F)</td>
</tr>
<tr>
<td>All Domestic Water and Service Hot Water Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>105-140</td>
<td>0.21-0.28</td>
<td>100</td>
</tr>
<tr>
<td>Below 105</td>
<td>0.22-0.28</td>
<td>75</td>
</tr>
</tbody>
</table>

PART 3 - EXECUTION

3.01 PREPARATION

A. Install covering after piping, ductwork, and equipment have been tested and approved.

B. Ensure surface is clean and dry prior to installation. Ensure insulation is dry before and during application.

C. Ensure insulation is continuous through inside walls except at firewalls.

D. Deliver material to job site in original non-broken factory packaging, with manufacturer’s labels.

E. Perform work at ambient and equivalent temperatures as recommended by the manufacturer.

3.02 PIPING

A. Apply insulation to connections, joints, welds, flanges, or threaded joints after pipe tests are completed.

B. Apply insulation over flanged joints after piping has been brought up to operating temperature and flange bolts have been fully tightened.

C. Insulate flanges, unions, strainers, flexible connections, and expansion joints only on domestic cold water systems.
D. Provide rigid inserts where piping supports pass around the outside of insulation with a vapor barrier. Repair damage to vapor barrier resulting from installation of the inserts by sealing with a vapor barrier pressure-sensitive tape.

E. Finish insulation neatly at hangers, supports and other protrusions.

F. Provide adequate support for insulation on vertical pipe to prevent slipping.

G. Insulate thermometer and pressure/temperature test wells over their exterior length. Insulate wells protruding above finish pipe or equipment insulation. Neatly taper insulation away from top of well.

H. Insulate pressure gauge lines up to first shutoff valve in gauge lines.

I. Cover piping, fittings, valves, and accessories in utility tunnels, located outdoors, and where indicated on the drawings with metal jacketing.

J. Do not insulate cold-water piping or rainwater leader buried under concrete slab on grade, or direct buried underground pipe outside the building.

K. Insulate soil and waste piping where noted on the drawings, where piping is installed in outside walls, and where subject to freezing.

L. Seal butt joints of insulation with pressure sensitive vapor barrier tape. Seal exposed ends of insulation with Benjamin-Foster 30-36, and at 21-foot intervals on continuous runs of pipe. Use Armstrong No. 520 adhesive on Armaflex II and Armstrong 2000 products. Apply insulation with all sides and end joints butted tightly.

M. Valves, Fittings, and Accessories
   1. Except as specified otherwise, insulate with covering same as pipe insulation material or equal in temperature resistance and thickness to that of connecting pipe.
   2. Fittings, valves, and accessories exposed in rooms cover with Zeston PVC covers, installed in accordance with the manufacturer’s directions.

END OF SECTION 22 07 00
PART 1 - GENERAL

1.01 WORK INCLUDED

A. Domestic Water Service.

B. Hot, Cold, and Hot Water Circulating Piping System, Connection to Fixtures and Equipment.

C. Cleaning and Disinfection of Domestic Hot and Cold Systems.

1.02 RELATED WORK

A. All portions of specification Division 1 apply to this work.

B. All portions of specification Section 22 05 00 apply to this work.

C. Additional sections of the mechanical specifications are required to provide a fully functional system. Refer to the specifications index.

1.03 CODES AND STANDARDS

A. Conform to the standards, details, specifications, and requirements of Washington State University.


D. University of Southern California – USC Manual of Cross-Connection Control

E. All standards refer to the current edition.

1. ASME B16.22 – Standard for Wrought Copper and Bronze Solder-Joint Pressure Fittings

2. ASTM A74 – Standard for Hub and Spigot Cast-Iron Soil Pipe and Fittings

3. ASTM B75 – Standard for Seamless Copper Tube

4. ASTM B813 – Standard for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube

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7. ASTM D1785 – Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120
8. ASTM D2564 – Solvent Cements for PVC Plastic Piping Systems
10. AWWA C651 – Disinfecting Water Mains
11. CISPI No. 301 – Cast-Iron Soil Pipe and Fittings for Hubless Cast-Iron Sanitary System
12. CISPI No. 310 – Couplings for Use in Connection with Hubless Cast-Iron Soil Pipe
13. NSF 61 – Standard for Drinking Water System Components
14. UL 510 – Standard for Polyvinyl Chloride, Polyethylene and Rubber Insulating Tape

1.04 REQUIRED SUBMITTAL DATA

A. Backflow Prevention Devices
B. Thermometers

PART 2 - PRODUCT

2.01 PIPING SYSTEMS

A. All material in conformance with the standards listed in 1.03.
B. Domestic Water Service (Below Ground)
   1. Pipe: Type K hard copper, ASTM B75.
   2. Fittings: Wrought copper or bronze soldered, ASME B16.22
C. Domestic Water Piping (Aboveground)
   1. Pipe: Type L hard copper, ASTM B75.
   2. Fittings: Wrought copper or bronze soldered, ASME B16.22
D. Soil/Waste Pipe (Aboveground)
1. Pipe: Service-weight coated cast-iron, no-hub for piping. CISPI 301.

2. Fittings: Service-weight coated cast-iron no-hub fittings, coupling, shields, and clamp assemblies. CISPI 301 and CISPI 310.

E. Soil/Waste Piping (Below Ground)
1. Pipe: Service-weight coated cast-iron, bell and spigot or cast-iron no-hub pipe, ASTM A74 and CISPI 301.

2. Fittings: Service-weight coated cast-iron bell and spigot or no-hub fittings, couplings and shield and clamp assemblies, ASTM A74, CISPI 301, and CISPI 310.

F. Vent Piping (Aboveground)
1. Pipe: Service-weight coated cast-iron, no-hub pipe. CISPI 301.

2. Fittings: Service-weight coated cast-iron no-hub fittings, couplings, shields, and clamp assemblies. CISPI 301 and CISPI 310.

G. Vent Piping (Below Ground)
1. Pipe: Service-weight coated cast-iron, no-hub pipe, ASTM A74 and CISPI 301.

2. Fittings: Service-weight coated cast-iron no-hub fittings, couplings and shield and clamp assemblies, CISPI 301 and CISPI 310.

2.02 UNIONS

A. Copper tube, Sweat, Nibco No. 733, Grinnell-ITT No. 9730, EPC No. 4733.

B. Dielectric unions, soldered to threaded 2-inch and below, flanged 2½-inch and above. Select gasket for pressure and temperature range of service. Capitol Series CS or F, Epco “Dielectric Union.”

2.03 THERMOMETERS

A. Industrial, adjustable angle, 7-inch aluminum case, red mercury type, separable socket.

B. Scale shall be selected appropriate to the usage.
2.04 ESCUTCHEON RINGS
A. Chrome-plated split ring type.
B. Deep recessed type on pipes with sleeves through floor which extend above finished floor line to conceal pipe sleeve.

2.05 BACKFLOW PREVENTION DEVICES
A. The assembly shall meet the requirements of ASSE 1013, AWWA C511, USC Manual of Cross-Connection Control, and CSA B64.4.
B. Reduced-Pressure-Backflow-Assembly (RPBA): The assembly shall consist of a pressure differential relief valve located in a zone between two positive seating check valves and captured springs. Backsiphonage protection shall include provision to admit air directly into the reduced pressure zone via a separate channel from the water discharge channel. The assembly shall include two tightly closing shutoff valves before and after the valve and test cocks.
   1. Seats: Bronze, removable and replaceable without removing valve from the line.
   2. Checks: Independently operating.
   3. Relief Valve: Independently operating, located between the two check valves.
      a. Rated 175 pounds per square inch maximum working pressure with continuous temperature range of 33°F to 140°F.
      b. Unit to be complete with vent-port funnel to maintain the air gap and to provide a drain connection point.
   4. Sizes ¾ inch through 2 inches – Bronze body, bronze strainer, upstream and downstream quarter-turn ball valves, union connections: Watts Regulator, Febco, Zurn-Wilkins, Conbraco, or approved equal.
C. Double-Check-Valve-Assembly (DCVA): The assembly shall consist of two (2) positive seating check valves and captured springs. The assembly shall include two (2) tightly closing shutoff valves before and after the valve and test cocks.
   1. Seats: Bronze, removable and replaceable without removing valve from the line.
   2. Checks: Independently operating.
3. Sizes ¾-inch through 2-inches: Bronze body, bronze strainer, upstream and downstream quarter-turn ball valves, union connections. Watts Regulator, Febco, Zurn-Wilkins, Conbraco, or approved equal.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

A. Route piping to avoid interference with structure, ceiling supports and framing, lights, and work of other trades. Provide offsets as required.

B. Keep openings in piping and ends of pipe closed during installation.

C. Provide for all expansion, locating offsets and spring pieces where necessary.

D. Elbows shall be long-radius.

E. Change size in piping with reducing couplings; bushings not acceptable.

F. Install all piping parallel with the building and other piping.

G. Cut pipe accurately to measurement established on building and work into place without springing or forcing.

H. Piping installed on fill, excavated areas, and backfill shall be adequately supported on beams supported by the building structure and undisturbed earth.

I. Install piping concealed in finished rooms, unless indicated otherwise.

J. Install exposed work neatly and skillfully; run pipes parallel to the closest wall; maintain maximum headroom; avoid light fixtures.

K. Correct piping leaks immediately; use new materials; leak-sealing compounds or peening not permitted.

L. Piping shall meet the Washington State Energy Code maximum distances for Hot Water Circulation Piping per Section C404 using the Maximum Length or the Maximum Volume method.

3.02 COPPER PIPING JOINTS

A. Contractor to provide sweated joints in compliance with the method outlined in ASTM B828.

B. Ream thoroughly to remove all burrs.
C. Polish contact surfaces of fittings and pipes with emery cloth, sandpaper, or steel brush, and wipe clean before fluxing male and female surfaces of joints.

D. Steel wool not permitted for polishing.

E. Apply a thin even coating of flux with a brush to both tube and fitting as soon as possible after cleaning.

F. Insert the tube end into fitting cup, making sure that the tube is seated against the base of the fitting cup. Employ a slight twisting motion while inserting tube. Remove excess flux from the exterior of the joint with a cotton rag.

G. Support the tube and fitting assembly to ensure a uniform capillary space around the entire circumference of the joint.

H. Preheat the fitting and tube evenly, taking care to avoid burning the flux.

I. Apply solder to the fitting while concurrently heating the fitting/tube.

J. Water flushable solder for all potable water systems in conformance with the Uniform Plumbing Code and ASTM B813.

K. Provide solder unions, ground joint, or flanged joints where necessary for access to equipment.

3.03 UNIONS

A. Provide unions at all connections to equipment and where necessary to disconnect for repairs.

B. Use union fittings wherever practicable to save joints.

C. Provide dielectric unions between iron and copper pipe.

3.04 PIPE SLEEVES

A. Provide sleeves for all mechanical piping passing through concrete floor slabs or roof slabs and concrete, masonry, and tile wall construction. Select the wall/floor sleeve size and type according to seal manufacturer’s recommendations.

B. In all areas where pipes are exposed, extend sleeves ¼-inch above finished floor, except in rooms having floor drains, where sleeves shall be extended ¾-inch above floor.

C. Fasten sleeves securely in floors, roofs, and walls so that they will not become displaced when concrete is poured or when other construction is built around them. Take precautions to prevent concrete, plaster, or other
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22 10 00 PLUMBING PIPING AND PUMPS

materials from being forced into the space between the pipe and sleeve during construction.

3.05 PIPE SEALS AND ESCUTCHEON RINGS

A. At exterior walls, walls below grade, and floor slabs on grade, provide watertight seal.

B. Fill annular space at piping penetrations with fiberglass batt insulation to a compressed fit.

C. Provide escutcheon rings for all exposed uninsulated pipes passing through walls, floors, and ceilings.

3.06 UNDERGROUND PIPE PROTECTIVE WRAP

A. All piping not specifically rated for direct burial shall receive protective pipe wrapping. This includes, but is not limited to, copper tubing, black steel pipe and galvanized steel pipe.

B. The pipe wrap shall consist of a double wrapping of 100% lap, 7-mil-thick, rubber based, pressure sensitive adhesive backed, polyvinyl-chloride plastic tape. The tape shall continuously cover the underground portion of the pipe to a point 6-inches above the floor level. The tape shall conform to UL 510 and shall be “Tartan 1710” as manufactured by 3M Corp. or other approved.

3.07 BACKFLOW PREVENTERS

A. Install preventer prior to reducing valve(s) or any takeoffs. Route drain to appropriately sized drain. If no appropriate drain, drain to building exterior – coordinate location with WSU Project Manager.

3.08 TESTING

A. Upon completion of roughing-in and before setting fixtures, test hot and cold water system at 150 pounds per square inch hydrostatic. Hold test for a minimum of thirty (30) minutes.

B. If a portion of piping is to be concealed before finishing, this portion shall be tested separately.

C. If test shows leak or defect, repair by remaking with new material, and retest.
3.09 CLEANING AND CHLORINATION OF POTABLE WATER PIPING

A. Initial Flushing: All domestic water piping shall be thoroughly flushed so that it is free from scale, sediment, construction debris, etc. Minimum flushing velocity shall be 2.5-feet-per second.

B. Final Flushing: On completion of installation and testing of the potable water systems, pre-flush, chlorinate with sodium hypochlorite to AWWA C651 specifications and let stand for 24 hours. Open and close valves to assure complete chlorination. Thoroughly flush again until flush water meets AWWA standards and refill the pipeline.

C. Certificate: Submit to WSU Project Manager, a certificate from the testing firm, stating that the chlorination and flushing have been successfully carried out.

END OF SECTION 22 10 00
PART 1 - GENERAL

1.01 WORK INCLUDED
A. Sewage Pumps and Accessories
B. Pump Basin

1.02 RELATED WORK
A. All portions of specification Division 1 apply to this work.
B. All portions of specification Section 22 05 00 apply to this work.
C. Additional sections of the mechanical specifications are required to provide a fully functional system. Refer to the specifications index.

1.03 CODES AND STANDARDS
A. Comply with the version of the Uniform Plumbing Code of the IAPMO most recently adopted and as amended by the Authority Having Jurisdiction (AHJ).
B. NFPA 70 – National Electrical Code (NEC)

1.04 REQUIRED SUBMITTAL DATA
A. Sewage Pumps
B. Sewage Pump Accessories
C. Sewage Pump Controller
D. Pump Basin

PART 2 - PRODUCT

2.01 SEWAGE PUMPS
A. Submersible Pumps: The submersible pumps shall be capable of handling residential sewage with 2-inch solid handling capability. Each centrifugal sewage pump shall be equal to Series LE50 SERIES pump, size and capacity as scheduled on drawings; as manufactured by Liberty Pumps, Weil Pump, Zoeller Pump, or equal. The castings shall be constructed of Class 25 cast iron. The motor housing shall be oil filled to dissipate heat. All mating parts shall be machined and sealed with a Buna-N O-ring. All fasteners exposed to the liquid shall be stainless steel. The motor shall be protected on the top side with sealed cord entry plate with molded pins to conduct electricity, eliminating the ability of water to enter internally.
through the cord. The motor shall be protected on the lower side with a
unitized ceramic/carbon seal with stainless steel housings and spring. The
pump shall be furnished with stainless steel handle.

B. Electrical Power Cord: The submersible pump shall be supplied with
25 feet of multiconductor power cord. It shall be cord type SJTW, capable
of continued exposure to the pumped liquid. The power cord shall be sized
for the rated full load amps of the pump in accordance with the National
Electric Code. The power cable shall not enter the motor housing directly
but will conduct electricity to the motor by means of a water tight
compression fitting cord plate assembly, with molded pins to conduct
electricity. This will eliminate the ability of water to enter internally through
the cord by means of a damaged or wicking cord.

C. Motors: Single-phase motors shall be oil-filled, permanent split capacitor,
Class B insulated NEMA B design, rated for continuous duty. At maximum
load, the winding temperature shall not exceed 130°C unsubmerged. The
pump motor shall have an integral thermal overload switch in the windings
for protecting the motor. The capacitor circuit shall be mounted internally
in the pump.

D. Bearings and Shaft: An upper and lower ball bearing are required. Both
bearings shall be permanently lubricated by the oil, which fills the motor
housing. The motor shaft shall be made of 300 or 400 Series stainless
steel and have a minimum diameter of 0.50-inch.

E. Seals: The pump shall have a unitized carbon/ceramic seal with stainless
steel housings and spring equal to Crane Type 6A. The motor
plate/housing interface shall be sealed with a Buna-N O-ring.

F. Impeller: The impeller shall be engineered thermoplastic elastomer, with
pump-out vanes on the back shroud to keep debris away from the seal
area. It shall be threaded to the motor shaft.

G. Controls: The pumps shall be controlled with a NEMA 4X outdoor duplex
control panel with three float switches and a high-water alarm. All units
can be supplied with CSA and UL approved automatic wide-angle tilt float
switches or pre-installed heavy-duty vertical switches. The switches shall
be equipped with piggyback style plug that allows the pump to be
operated manually without the removal of the pump if a switch becomes
inoperable. Manual pumps are operable by means of a pump control
panel.

H. Paint: The exterior of the casting shall be protected with powder coat
paint.
I. Support: The pump shall have cast iron support legs, enabling it to be a free-standing unit. The legs will be high enough to allow 2-inch solids to enter the volute.

J. Serviceability: Components required for the repair of the pump shall be shipped within a period of 24 hours.

K. Factory-Assembled Tank Systems with Guide Rail and Quick Disconnect Discharge: Guide factory-mounted rail system with pump suspended by means of bolt-on quick disconnect which is sealed by means of nitrile grommets or O-rings. The discharge piping shall be Schedule 80 PVC and furnished with a check valve and PVC shut off ball valve. The tank shall be wound fiberglass or roto-molded plastic. An inlet hub shall be provided with the fiberglass systems. Zinc-plated steel guide rail fiberglass cover duplex system with outdoor panel and alarm.

L. Testing: The pump shall have a ground continuity check and the motor chamber shall be Hi-potted to test for electrical integrity, moisture content and insulation defects. The motor and volute housing shall be pressurized, and an air leak decay test is performed to ensure integrity of the motor housing. The pump shall be run, its voltage current monitored, and the tester shall check for noise or other malfunctions.

M. Warranty: Standard limited warranty shall be 3 years.

PART 3 - EXECUTION

3.01 INSTALLATION

A. SEWAGE PUMPS AND BASIN

1. Install in accordance with manufacturer's written instructions.

B. PIPING

1. Excavate pipe trenches to a true and smooth bottom grade and straight alignment. Provide ample width in the trench for proper laying of pipe, and ready makeup and inspection of the joints. Provide minimum trench width 12-inches greater than outside diameter of pipe. Dewater trench before and during installation. Provide native soils for backfill and bedding. If native soils are unsuitable, install pipe on a 4-inch thick bed of pea gravel. Provide depressions in trench at fittings.

3.02 TESTING

A. Subject piping system to hydrostatic test pressure that is not less than 50 psi.
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B. After hydrostatic test pressure has been applied for at least 10 minutes, examine piping, joints, and connections for leakage. Eliminate leaks by tightening, repairing, or replacing components, and repeat hydrostatic test until there are no leaks.

C. Records: The Contractor shall keep a record of each test, initialed by test witnesses, in a logbook which is available on site for inspection; copies delivered to the WSU Project Manager at job completion.

END OF SECTION 22 13 00
PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes the following conventional plumbing fixtures and related components:

1. Electric Domestic Water Heaters
2. Domestic Water Expansion Tanks

1.02 RELATED WORK

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.03 REQUIRED SUBMITTAL DATA

A. Product Data: For each type of water heater indicated. Include selected fixture and trim, fittings, accessories, appliances, appurtenances, equipment, and supports. Indicate materials and finishes, dimensions, construction details, and flow-control rates.

1.04 CODES AND STANDARDS

A. All codes and standards refer to the current edition.

1. ANSI Z21.22/CSA 4.4 – Relief Valves for Hot Water Supply Systems
2. ASHRAE 90.1 – Energy Standard for Buildings Except Low-Rise Residential Buildings
3. ASME PTC 25.3 – Safety and Relief Valves
4. ASSE 1005 – Performance Requirements for Water Heater Drain Valves ¾-Inch Size
5. NFPA 70 – National Electrical Code (NEC)
6. NSF 61 – Drinking Water System Components – Health Effects
7. UL 174 – Household Electric Storage Tank Water Heaters
8. UL 486A/486B – Wire Connectors
9. UL 1453 – Electric Booster and Commercial Storage Tank Water Heaters
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B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Regulatory Requirements:
   2. Comply with the requirements of the most recently adopted version of the Uniform Plumbing Code (IAPMO) and as amended by the Authority Having Jurisdiction.

D. NSF Standard: Comply with NSF 61 for fixture materials that will be in contact with potable water.

E. Select combinations of fixtures and trim, faucets, fittings, and other components that are compatible.

F. Comply with the following applicable standards and other requirements specified for miscellaneous fittings and components:

PART 2 - PRODUCTS

2.01 ELECTRICAL STORAGE-TYPE DOMESTIC WATER HEATERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on the drawings or equal.

   1. Description: Non-ASME-code, steel vertical arrangement rated at 150 pounds per square inch gauge. Interior lining shall comply with NSF 61 barrier materials for potable-water tank linings, including extending lining material into tappings.

   2. Factory-Installed Storage-Tank Appurtenances
      a. Anode Rod: Replaceable magnesium.
      b. Dip Tube: Provide unless cold-water inlet is near bottom of tank.
      c. Drain Valve: Corrosion-resistant metal complying with ASSE 1005.
      d. Insulation: Comply with ASHRAE 90.1.
      e. Jacket: Steel with enameled finish.
      f. Heating Elements: Electric, screw-in or bolt-on immersion type
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g. Temperature Control: Adjustable thermostat.
h. Combination Temperature and Pressure Relief Valves: ASME rated and stamped and complying with ASME PTC 25.3 and ANSI Z21.22/CSA 4.4, for combination temperature and pressure relief valves.

2.02 EXPANSION TANKS

A. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on the drawings or equal.

B. Description: Certified NSF 61 for domestic water use, ASME or non-ASME rated, steel pressure-rated tank with polypropylene liner and constructed with welded joints and factory-installed butyl-rubber diaphragm rated for 150-pounds per square inch gauge minimum working pressure and a continuous water temperature of 200°F.

C. Include air precharge to minimum system-operating pressure at tank.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Assemble heaters and other components according to manufacturers' written instructions.

B. Install water heaters level and plumb according to roughing-in drawings.

3.02 CONNECTIONS

A. Piping installation requirements are specified in other Division 22 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Ground equipment according to Division 26 Section “Grounding and Bonding.”

1. Connect wiring according to Division 26 Section “Conductors and Cables.”

2. Connect hot- and cold-water-supply piping to hot- and cold-water-tempering equipment. Connect output form water-tempering equipment to emergency plumbing fixtures.

3. Ground equipment.

   a. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If
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manufacturer’s torque values are not indicated, use those specified in UL 486A/486B.

3.03 ADJUSTING
A. Adjust equipment temperature settings.

END OF SECTION 22 33 00
PART 1 - GENERAL

1.01 WORK INCLUDED

A. This section includes plumbing fixtures, associated trim, and fittings necessary to make a complete installation from wall or floor connections to rough piping, and certain accessories. It includes the following conventional plumbing fixtures and related components:

1. Domestic Hot Water (HW) Recirculating Pumps
2. Faucets
   a. Private Lavatory Faucets
   b. Shower Faucets
   c. Sink Faucets
3. Flashings
4. Floor Cleanouts
5. Floor Drains
6. Lavatories
7. Protective Shielding Guards
8. Showers
9. Sinks
10. Toilet Seats
11. Valves
    a. Water Flow Balancing Valves
    b. Manual Water Tempering Valves
    c. Drain Valves
    d. Trap Primer Valves
12. Water Closets
13. Water Hammer Arrestors
14. Yard Hydrants
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1.02 RELATED WORK

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.03 CODES AND STANDARDS

A. All codes and standards refer to the current edition.

1. ANSI/ISEA Z358.1 – American National Standard for Emergency Eyewash and Shower Equipment

2. ARI 1010 – Self-Contained, Mechanically Refrigerated Drinking-Water Coolers

3. ASME 112.18.1 – Plumbing Supply Fittings

4. ASME A112.1.2 – Air Gaps in Plumbing Systems (For Plumbing Fixtures and Water-Connected Receptors

5. ASME A112.18.1 – Plumbing Supply Fittings

6. ASME A112.18.2 – Plumbing Waste Fittings

7. ASME A112.18.3 – Performance Requirements for Backflow Devices and Systems in Plumbing Fixture Fittings

8. ASME A112.18.6 – Flexible Water Connectors

9. ASME A112.19.1 – Enameled Cast Iron and Enameled Steel Plumbing Fixtures

10. ASME A112.19.2 – Ceramic Plumbing Fixtures

11. ASME A112.19.3 – Stainless Steel Plumbing Fixtures

12. ASME A112.19.5 – Flush Valves and Spuds for Water Closets, Urinals, and Tanks

13. ASME A112.21.2M – Roof Drains

14. ASME A112.3.1 – Stainless Steel Drainage Systems for Sanitary DWV, Storm, and Vacuum Applications, Above- and Below Ground

15. ASME A112.36.2M – Cleanouts

16. ASME A112.6.1M – Supports for Off-the-Floor Plumbing Fixtures for Public Use
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17. ASME A112.6.3 – Floor and Trench Drains
18. ASME B1.20.1 – Pipe Threads, General Purpose (Inch)
19. ASME B1.20.7 – Hose Coupling Screw Threads (Inch)
20. ASME Boiler and Pressure Vessel Code (BPVC)
21. ASSE 1001 – Performance Requirements for Atmospheric Type Vacuum Breakers
22. ASSE 1003 – Performance Requirements for Water Pressure Reducing Valves for Domestic Water Distribution Systems
23. ASSE 1008 – Performance Requirements for Plumbing Aspects of Residential Food Waste Disposer Units
24. ASSE 1010 – Performance Requirements for Water Hammer Arresters
25. ASSE 1011 – Performance Requirements for Hose Connection Vacuum Breakers
26. ASSE 1014 – Performance Requirements for Backflow Prevention Devices for Hand-Held Showers
27. ASSE 1016 – Performance Requirements for Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations
28. ASSE 1017 – Performance Requirements for Temperature Actuated Mixing Valves for Hot Water Distribution Systems
29. ASSE 1018 – Performance Requirements for Trap Seal Primer Valves-Potable Water Supplied
30. ASSE 1021 – Performance Requirements for Drain Air Gaps for Domestic Dishwasher Applications
31. ASSE 1023 – Performance Requirements for Hot Water Dispensers Household Storage Type – Electrical
32. ASSE 1025 – Sanitation in Construction
33. ASSE 1037 – Performance Requirements for Pressurized Flushing Devices for Plumbing Fixtures
34. ASSE 1044 – Performance Requirements for Trap Seal Primer – Drainage Types and Electronic Design Types
35. ASSE 1047 – Performance Requirements for Reduced Pressure Detector Fire Protection Backflow Prevention Assemblies
36. ASSE 1048 – Performance Requirements for Double Check Detector Fire Protection Backflow Prevention Assemblies
37. ASSE 1069 – Performance Requirements for Automatic Temperature Control Mixing Valves
38. ASSE 1070 – Performance Requirements for Water Temperature Limiting Devices
40. ASTM F444 – Standard Consumer Safety Specification for Scald-Preventing Devices and Systems in Bathing Areas
41. ASTM F446 – Standard Consumer Safety Specification for Grab Bars and Accessories Installed in the Bathing Area
42. ASTM F462 – Standard Consumer Safety Specification for Slip-Resistant Bathing Facilities
43. CSA B125.1 – Plumbing Supply Fittings
44. CSA B125.3 – Plumbing Fittings
45. IAPMO Z124.5 – Plastic Toilet Seals
46. ICC A117.1 – Accessible and Usable Buildings and Facilities
47. ICPA SS-1 – Performance Standard for Solid Surface Materials
48. NFPA 70 – National Electrical Code
49. NSF 2 – Food Equipment
50. NSF 61 – Drinking Water System Components - Health Effects
51. PDI-G101 – Testing and Rating Procedure for Hydro Mechanical Grease Interceptors with Appendix of Installation and Maintenance
52. PDI-WH 201 – Water Hammer Arresters Standard
53. UL 1951 – Electrical Plumbing Accessories
54. UL 430 – Waste Disposers
55. UL 499 – Electric Heating Appliances
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B. Conformance

1. Comply with requirements in ICC A117.1 and “Americans with Disabilities Act” for plumbing fixtures for people with disabilities.


3. Comply with the requirements of the most recently adopted version of the Uniform Plumbing Code (IAPMO) and as amended by the Authority Having Jurisdiction.

4. NSF Standard: Comply with NSF 61, “Drinking Water System Components – Health Effects,” for fixture materials that will be in contact with potable water.

5. Select combinations of fixtures and trim, faucets, fittings, and other components that are compatible.

6. Comply with the following applicable standards and other requirements specified for plumbing fixtures:

   a. Enameled, Cast-Iron Fixtures: ASME A112.19.1M.
   b. Electric Water Coolers: ARI 1010.
   g. Stainless Steel Residential Sinks: ASME A112.19.3.
   h. Vitreous China Fixtures: ASME A112.19.2M.

7. Comply with the following applicable standards and other requirements specified for faucets:

   a. Backflow Protection Devices for Faucets and Handheld Showers: ASME A112.18.3M.
   c. Combination, Pressure-Equalizing and Thermostatic-Control Antiscald Faucets: ASSE 1016.
   e. Faucets: ASME A112.18.1.
   g. Hose-Connection Vacuum Breakers: ASSE 1011.
   h. Hose-Coupling Threads: ASME B1.20.7.
   i. Integral, Atmospheric Vacuum Breakers: ASSE 1001.
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m. Pressure-Equalizing-Control Antiscald Faucets: ASTM F444 and ASSE 1016.

8. Comply with the following applicable standards and other requirements specified for miscellaneous fittings and components:

b. Brass and Copper Supplies: ASME A112.18.1.
d. Cleanouts: ASME A112.36.2M or ASME A112.3.1

f. Disposers: ASSE 1008 and UL 430.
g. Double-Check Detector Assembly Backflow Preventers: ASSE 1048
h. Drainage-Type Trap Seal Primer Valves: ASSE 1044
i. Electrical Components, Devices, and Accessories: NFPA 70, Article 100
j. Emergency Showers and Eyewashes: ANSI Z358.1
k. Expansion Joints: ASME A112.21.2M
l. Fixed Air-Gap Fittings: ASME A112.1.2
m. Flexible Water Connectors: ASME A112.18.6.

n. Floor Drains: ASME A112.6.3. or ASME A112.21.1M

o. Gang Shower Thermostatic Mixing Valves: ASSE 1069
q. Grease Interceptors: PDI-G101
r. Hose Bibbs: ASME A112.18.1M
s. Hose Stations: ASME A112.18.1M
t. Hose-Coupling Threads: ASME B1.20.7.
u. Hot-Water Dispensers: ASSE 1023 and UL 499.
w. Off-Floor Fixture Supports: ASME A112.6.1M.

aa. Point-of-Use Thermostatic Water Mixing Valves: ASSE 1070

and/or CSA B125.3

bb. Pressure Vessels: ASME Boiler and Pressure Vessel Code:

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cc. Reduced-Pressure Detector Assembly Backflow Preventers: ASSE 1047
dd. Roof Drains: ASME A112.21.2M or ASME A112.3.1
ff. Shower/Tub Combination Valves: ASME 112.18.1 and/or CSA B125.1
hh. Supply-Type Trap Seal Primer Valves: ASSE 1018
ii. Thermostatic Water Mixing Valves: ASTM F444 and ASSE 1017
jj. Trench Drains: ASME A112.21.1M or ASME A112.3.1
kk. Wall Hydrants: ASME A112.21.3M
ll. Water Hammer Arrestors: ASSE 1010 or PDI-WH 201
mm. Water Regulators: ASSE 1003

1.04 REQUIRED SUBMITTAL DATA
A. Product Data: For each type of plumbing fixture indicated. Include selected fixture and trim, fittings, accessories, appliances, appurtenances, equipment, and supports. Indicate materials and finishes, dimensions, construction details, and flow-control rates.

1.05 DEFINITIONS
A. Accessible Fixture: Plumbing fixture that can be approached, entered, and used by people with disabilities.
B. Fitting: Device that controls the flow of water into or out of the plumbing fixture. Fittings specified in this Section include supplies and stops; faucets and spouts; showerheads and tub spouts; drains and tailpieces; and traps and waste pipes. Piping and general-duty valves are included where indicated.
C. FRP: Fiberglass-reinforced plastic.
D. PMMA: Polymethyl methacrylate (acrylic) plastic.
E. PVC: Polyvinylchloride plastic.

1.06 QUALITY ASSURANCE
A. Source Limitations: Obtain plumbing fixtures, faucets, and other components of each category through one source from a single manufacturer.
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PART 2 - PRODUCTS

2.01 BACKFLOW PREVENTERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on the drawings or equal.

1. Hose-Connection Vacuum Breakers
   a. Description: Nickel plated or rough bronze to match hose bibb, with non-removable and manual drain features, and ASME B1.20.7, garden-hose threads on outlet.

2.02 CLEANOUTS

A. Description: Floor or wall cast-iron cleanout. Clamping device and adjustable housing for floor installation. Outlet connection to match drainage piping, Zurn 1400 series or equal.

2.03 DOMESTIC HOT WATER RECURCULATING PUMPS

A. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on the drawings or equal.

1. Description: Factory-assembled and -tested, centrifugal, overhung-impeller, close-coupled, inline pump; designed for installation with pump and motor shafts mounted horizontally or vertically. Pump shall be rated for 150-pound per square inch gauge minimum working pressure and a continuous water temperature of 240°F and shall comply with the requirements for circulating pumps as described by The Hydraulic Institute.

2. Pump Construction
   a. Casing: Cast-iron or bronze, with inlet and outlet companion-flange connections.
      1) Impeller: Polypropylene; statically and dynamically balanced and keyed to shaft.
      2) Pump Shaft: Ceramic
   3. Motor: Single speed, with permanently lubricated bearings, unless otherwise indicated; and rigidly mounted to pump casing.
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2.04 FAUCETS

A. Lavatory Faucets

1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on the drawings or equal.

   a. Description: Single-control or two-handle mixing valve. Include hot- and cold-water indicators; coordinate faucet inlets with supplies and fixture holes; coordinate outlet with non-integral spout, if applicable.

      1) Body Material: Solid brass.
      2) Finish: Polished chrome plated.
      Faucet shall conform to ASSE 1070 and/or CSA B125.3 or be provided with an external thermostatic mixing valve in compliance with standards.

B. Shower Faucets

1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on the drawings or equal.

   a. Description: Single-handle, thermostatic and pressure-balance valve. Include hot- and cold-water indicators; check stops; and showerhead, arm, and flange. Coordinate faucet inlets with supplies and outlet with showerhead.

      1) Body Material: Solid brass.
      2) Finish: Polished chrome plated.

C. Sink Faucets

1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on the drawings or equal.

   a. Description: Single-control or two-handle mixing valve. Include hot- and cold-water indicators; coordinate faucet inlets with supplies and fixture holes; coordinate outlet with non-integral spout, if applicable.

      1) Body Material: Solid brass
      2) Finish: Polished or rough chrome plated.
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2.05 FLASHING MATERIALS
A. Roof Flashing Assemblies: Manufactured assembly made of 4-pounds per square foot, 0.0625-inch-thick, lead flashing collar and skirt extending at least 10 inches from pipe with galvanized steel boot reinforcement, and counterflashing fitting.
B. Manufacturers: Acorn Engineering Company; Elmdor/Stoneman Division.

2.06 FLOOR DRAINS
A. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on the drawings or equal.
   1. Description: Cast-iron floor drain with nickel-bronze strainer. Outlet connection to match drainage piping.

2.07 LAVATORIES
A. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on the drawings or equal.
   1. Description: Accessible or standard, wall or countertop-mounted, bottom-outlet, vitreous-china fixture with integral overflow.

2.08 PROTECTIVE SHIELDING GUARDS
A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work are the following, or equal: TRUEBRO, Inc.; Zurn Plumbing Products Group, Tubular Brass Plumbing Products Operation.
   1. Make, model, and additional components as indicated in the Plumbing Fixture Schedule on the drawings, or equal.
B. Description: Manufactured plastic enclosure for covering plumbing fixture hot- and cold-water supplies and trap and drain piping. Comply with the Americans with Disabilities Act (ADA) requirements.

2.09 SINKS
A. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on the drawings or equal.
   1. Description: One, two, or three-compartment, counter- or wall-mounted or freestanding, stainless-steel fixture.

2.10 SHOWERS
A. Individual Showers
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1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on the drawings or equal.
   a. Description: Accessible or standard, FRP one-piece shower enclosure with slip-resistant bathing surface. Provide shower rod with curtain for accessible unit and obscure glass door and panels for standard unit.

2.11 TRAP SEAL PRIMER VALVES

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work are the following, or equal:

1. Supply-Type Trap Seal Primer Valves: Water-supply-fed rough bronze body rated for 125 pounds per square inch gauge working pressure with atmospheric-vented drain chamber with threaded or soldered inlet and gravity drain outlet

2. Drainage-Type Trap Seal Primer Valves: Chrome-plated cast-brass fixture-trap with trap makeup connection.

2.12 TOILET SEATS

A. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on the drawings or equal.

1. Description: Toilet seat for water-closet-type fixture.
   a. Material: Molded, solid plastic.

2.13 WATER CLOSETS

A. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on the drawings or equal.

1. Description: Floor-mounted, bottom outlet, vitreous-china fixture designed for close-coupled, gravity-type tank.
2.14 WATER FLOW BALANCING VALVES
A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work are the following, or equal:
   1. Memory-Stop Balancing Valves
      a. Available Manufacturers: Conbraco Industries, Inc.; Crane Co., Crane Valve Group; Milwaukee Valve Company; and Nibco, Inc.
      b. Description: Two-piece, copper-alloy body, full-port ball valve with chrome-plated brass ball; replaceable seats and seals; threaded or solder-joint ends; and vinyl-covered steel handle with memory-stop device rated for 400 pounds per square inch gauge CWP per MSS SP-110.

2.15 WATER TEMPERING VALVES
A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work are the following, or equal: Sparco, Inc.; and Watts Industries, Inc., Water Products Division.
B. Description: Manually adjustable, thermostatically controlled piston or disc water tempering valve; rough bronze body with threaded inlet and outlet; and adjustable temperature setting capable of limited anti-scald protection.

2.16 YARD HYDRANTS
A. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on the drawings or equal.
   1. Non-Freeze Exposed-Outlet Post Hydrant
      a. Description: Lever operation with adjustable flow wheel handle with casing and operating rod of length required for burial of valve below frost line; drain hole in valve housing, drainable hose-connection with non-removable vacuum breaker and garden-hose threads on outlet.

2.17 MISCELLANEOUS PIPING SPECIALTIES
A. Water Hammer Arrestors: Metal-bellows type with pressurized metal cushioning chamber. Sizes indicated are based on ASSE 1010 or PDI-WH 201, Sizes A through F.
B. Stops: Chrome plated, quarter-turn, keyed, angle stop, compliant with NSF 61. Fitting connection to match size and type of upstream piping.
C. Supplies: Braided stainless steel, fittings to match fixture and upstream connections; length to match installation requirements to within 6 inches. Compliant with NSF 61.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine roughing-in of water supply and sanitary drainage and vent piping systems to verify actual locations of piping connections before plumbing fixture installation.

B. Examine cabinets, counters, floors, and walls for suitable conditions where fixtures will be installed.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Assemble plumbing fixtures, trim, fittings, and other components according to manufacturers’ written instructions.

1. Install floor-mounting fixtures on closet flanges or other attachments to piping or building substrate.

2. Install counter-mounting fixtures in and attached to casework.

3. Install fixtures level and plumb according to roughing-in drawings.

4. Install water-supply piping with stop on each supply to each fixture to be connected to water distribution piping. Attach supplies to supports or substrate within pipe spaces behind fixtures. Install stops in locations where they can be easily reached for operation.

   a. Exception: Use ball valves if supply stops are not specified with fixture.

5. Install trap and tubular waste piping on drain outlet of each fixture to be directly connected to sanitary drainage system.

6. Install tanks for accessible, tank-type water closets with lever handle mounted on wide side of compartment.

7. Install toilet seats on water closets.
8. Install faucet-spout fittings with specified flow rates and patterns in faucet spouts if faucets are not available with required rates and patterns. Include adapters if required.


10. Install traps on fixture outlets.
    a. Exception: Omit trap on fixtures with integral traps.
    b. Exception: Omit trap on indirect wastes, unless otherwise indicated.

11. Install water hammer arrestors at the following locations. Install in an accessible location behind a panel or door:
    a. At all quick-closing valves or faucets including dishwashers, clothes washers, sinks, and lavatories.
    b. One a branch serving the single fixture within 2 feet of the flush valve or faucet.
    c. One a branch serving two fixtures between the two flush valves or faucets.
    d. One a branch serving three or more fixtures between the last two flush valves or faucets.

12. Install escutcheons at piping-wall ceiling penetrations in exposed, finished locations and within cabinets and millwork. Use deep-pattern escutcheons if required to conceal protruding fittings.

13. Seal joints between fixtures and walls, floors, and countertops using sanitary-type, one-part, mildew-resistant silicone sealant. Match sealant color to fixture color. Sealants are specified in Division 7 Section “Joint Sealants.”

14. Install dielectric fitting in supply piping to fixture if piping and fixture connections are constructed of different metals.

15. Use chrome-plated brass or copper tube, fittings, and valves in locations exposed to view. Plain copper tube, fittings, and valves may be used in concealed locations.

3.03 CONNECTIONS

A. Piping installation requirements are specified in other Division 22 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.
B. Connect fixtures with water supplies, stops, and risers, and with traps, soil, waste, and vent piping. Use size fittings required to match fixtures.

3.04 FIELD QUALITY CONTROL

A. Verify that installed plumbing fixtures are categories and types specified for locations where installed.

1. Check that plumbing fixtures are complete with trim, faucets, fittings, and other specified components.

2. Inspect installed plumbing fixtures for damage. Replace damaged fixtures and components.

3. Mechanical-Component Testing: After plumbing connections have been made, test for compliance with requirements. Verify ability to achieve indicated capacities and temperatures. Replace malfunctioning fixtures and components, then retest. Repeat procedure until units operate properly.


3.05 ADJUSTING

A. Operate and adjust faucets and controls. Replace damaged and malfunctioning fixtures, fittings, and controls.

B. Adjust metered ADA faucets to flow for no less than 10 seconds.

C. Adjust water pressure at faucets and flushometer valves to produce proper flow and stream.

1. Replace washers and seals of leaking and dripping faucets and stops.

2. Install fresh batteries in sensor-operated mechanisms.

3. Adjust or replace fixture flow regulators for proper flow and stream height.

4. Adjust equipment temperature settings.

3.06 CLEANING

A. Clean fixtures, faucets, and other fittings with manufacturers’ recommended cleaning methods and materials. Do the following:

1. Remove faucet spouts and strainers, remove sediment and debris, and reinstall strainers and spouts.
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2. Remove sediment and debris from drains.
   B. After completing installation of exposed, factory-finished fixtures, faucets, and fittings, inspect exposed finishes and repair damaged finishes.

3.07 PROTECTION
   A. Provide protective covering for installed fixtures and fittings.
   B. Do not allow use of plumbing fixtures for temporary facilities unless approved in writing by Owner.

END OF SECTION 22 40 00
PART 1 - GENERAL

1.01 WORK INCLUDED

A. Work includes complete mechanical systems indicated on the drawings and specified. The Bid and Contract Documents and General Requirements of the specification are a part of this division of the specification. Where the word “provide” is used, it means “furnish and install complete and ready for use.” Provide supervision, labor, material, equipment, and machinery necessary to complete the mechanical systems. Provide finished work, tested and ready for operation.

1.02 RELATED WORK

A. All portions of specification Division 1 apply to this work.

B. Additional sections of the mechanical specifications are required to provide a fully functional system. Refer to the specifications index.

1.03 CODES AND STANDARDS

A. Give necessary notices, obtain permits, and pay taxes, fees, and other costs, including utility connections or extensions for the work. File necessary drawings, prepare documents, and obtain necessary approvals of governmental departments having jurisdiction. Include all costs associated with notices; permits; taxes; fees; utility connections or extensions; government approvals; and other related costs in original bid. Obtain required certificates of inspection for work and deliver to the WSU Project Manager before request for acceptance and final payment for the work.

B. Comply with laws, ordinances, rules, regulations, and lawful orders of any public authority bearing on the performance of the work. If the Contractor observes that any of the Contract Documents are at variance therewith in any respect, they shall promptly notify the WSU Project Manager in writing and any necessary changes shall be accomplished by appropriate modification. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules, and regulations, and without notice to the WSU Project Manager, they shall assume full responsibility, and shall bear all costs.

C. Material and equipment within the scope of the UL Testing Laboratory Service shall be listed by the Underwriters Laboratories for the purpose for which they are used and shall bear their listing mark.
1.04 GENERAL REQUIREMENTS FOR SHOP DRAWING AND SUBMITTAL DATA

A. Provide shop drawings and product submittals as required in each of the following specification sections. Check and verify field measurements and requirements. Submit promptly, so as not to delay the work, one copy, checked and approved by the Contractor, of all shop drawings, submittal data, and layout drawings. At the discretion of the WSU Project Manager, the Contractor may submit PDF submittals in lieu of paper copies. Confirm with the WSU Project Manager prior to submitting. The WSU Project Manager will check and review with reasonable promptness the shop drawings and submittal data only for conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Make corrections required by the WSU Project Manager and resubmit to the WSU Project Manager one corrected copy. The WSU Project Manager’s review of the shop drawings and submittal data shall not relieve the Contractor from responsibilities for deviation from the Contract Documents unless the Contractor has in writing called to the WSU Project Manager’s attention deviation at the time of submission and secured the WSU Project Manager’s written approval, nor shall it relieve the Contractor from responsibility for errors in the shop drawings and submittal data.

B. The shop drawings and submittal data for the material and equipment may be submitted at separate times as follows:

1. Shop Drawings – a minimum of four (4) weeks prior to fabrication or installation.

2. Control Drawings and Submittal Data – a minimum of four (4) weeks prior to installation.

3. All other Submittal Data – a minimum of four (4) weeks prior to purchase.

C. Each of the above groups of submittal information shall be in three ring binders, indexed, and properly labeled with the specification section and paragraph number relating to the submitted item and shall indicate the specific material or equipment for which it is to be used. At the discretion of the WSU Project Manager, PDF Submittals may be allowed. If PDF are allowed, all groups of submittal information shall be electronically indexed and labeled in one PDF. Submittals not submitted in this manner, or incomplete submittals, will be returned unreviewed for resubmittal in compliance with the above.

D. Review, approve, and stamp shop drawings and submittal data before submission to the WSU Project Manager. Notify the WSU Project
Manager in writing of any deviation from the requirements of the Contract Documents.

E. Failure to submit shop drawings and submittal data in ample time for checking and review shall not entitle the Contractor to an extension of contract time.

F. Where indicated for submittal, prepare detail layout drawings at no smaller than ¼-inch = 1-foot-0-inches scale. Submit these drawings for review, and include final drawings with each set of the Owner’s record drawings. Submit Layout drawings for review before commencing shop fabrication or field erection.

G. See individual specification sections for required submittal data.

1.05 DRAWINGS

A. Drawings are diagrammatic, indicating the general arrangement of systems and work, and do not attempt to show exact details or all offsets in piping and ductwork. Do not scale drawings. Examine the architectural drawings for exact location of fixtures and equipment. Where they are not definitely located, obtain this information from the WSU Project Manager.

B. Follow drawings in laying out work and check drawings of other trades to verify spaces in which work will be installed. Maintain maximum headroom. If space conditions appear inadequate, notify the WSU Project Manager before proceeding with the work. Make reasonable modifications in the work without extra cost as needed to prevent conflict with work of other trades and for proper execution of the work.

1.06 EQUIPMENT DEVIATIONS

A. Specific manufacturers and model numbers are noted to indicate a standard of design and are not intended to be restrictive.

B. Where the term “or approved equal” is used, alternative and/or substitute products will be considered only prior to the bid date (Prior Approval). Where the term “or equal” is used, approval of alternative and/or substitute products may be requested by the contractor after the bid date. Submittal, review, and potential approval of alternative and/or substitute products will be considered and executed only under terms and conditions specified in Section 01 25 00 Substitution Procedures.

C. When submitting an alternative and/or substitute product, Contractor shall include complete product literature of original specified item.

D. Provide redesign to any part of the work resulting from the use of equipment and material other than specified or indicated on the drawings.
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Obtain approval of redesign from the WSU Project Manager. Redesign cost and additional construction cost resulting from the redesign shall be at the Contractor’s expense.

PART 2 - PRODUCT (NOT USED)

PART 3 - EXECUTION

3.01 COOPERATION WITH OTHER TRADES

A. Give full cooperation to other trades and furnish in writing to other trades, with copies to the WSU Project Manager, any information necessary to permit the work of all trades to be installed satisfactorily and with the least possible interference or delay.

B. Where mechanical work will be installed in close proximity to, or will interfere with work of other trades, assist in working out space conditions to make a satisfactory adjustment. If work is installed before coordinating with other trades, or if it causes any interference with work of other trades, make the necessary changes in the work to correct the conditions and bear all costs.

C. Furnish to other trades necessary templates, patterns, setting drawings and shop details for the proper installation of work and for coordinating adjacent work.

3.02 PROTECTION

A. Protect work and material from damage and be liable for damage.

B. Be responsible for work and equipment until finally inspected, tested, and accepted; protect work against theft, injury, or damage; and carefully store material and equipment received on site which are not immediately installed. Close open ends of work with temporary covers or plugs during storage and construction to prevent entry of obstructing material.

3.03 SCAFFOLDING, RIGGING, AND HOISTING

A. Provide ladders, scaffolding, rigging, hoisting, and services necessary for delivery into the premises and erection of any equipment and apparatus and execution for the work. Remove these items from premises when no longer required.

3.04 MATERIAL AND WORKMANSHIP

A. Materials and equipment required for the work shall be new and shall be furnished, delivered, erected, installed, connected, and finished in every detail; and shall be selected and arranged to fit properly into the building.
spaces. Where no specific kind or quality of material is given, an article as approved by the WSU Project Manager shall be provided.

B. Furnish the services of an experienced superintendent, who shall be constantly in charge of the work.

C. Equipment and materials shall be installed with the approval of the WSU Project Manager in accordance with the recommendations of the manufacturer. This includes the performance of such tests as the manufacturer recommends.

D. Provide equipment in the midrange of written performance documentation to allow for adjustment.

3.05 ACCESSIBILITY

A. Install the work with adequate clearances throughout the project, including being responsible for the sufficiency of the size of shafts, chases, double partitions, and suspended ceilings. Cooperate with other trades where work is in the same space. Such spaces and clearances shall be kept to the minimum size required.

B. Locate all equipment which must be serviced, operated, or maintained in fully accessible positions. Minor deviations from drawings may be made to allow for better accessibility and any change shall be approved by the WSU Project Manager.

C. The Mechanical Subcontractor shall provide the General Contractor the exact locations of access panels for each concealed valve, control damper or other device requiring service. Access panels will be provided and installed by the General Contractor and as specified in the other divisions of the specifications. Submit locations of these panels to the General Contractor in sufficient time to be installed in the normal course of work.

3.06 ELECTRICAL CONNECTIONS

A. The Electrical Subcontractor shall provide wiring, except temperature control wiring, equipment control wiring, and interlock wiring. The Electrical Subcontractor shall provide power wiring complete from power source to motor or equipment junction box, including power wiring through starters. Electrical Subcontractor shall provide starters and disconnect switches not factory-mounted on equipment.

B. The Mechanical Subcontractor shall, regardless of voltage, provide temperature control wiring, interlock wiring, and equipment control wiring for the equipment that the Mechanical Subcontractor furnishes or installs.
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C. The Electrical Subcontractor shall be responsible for power wiring. Control wiring shall be the responsibility of the Mechanical Subcontractor. Motors and equipment shall be provided for current characteristics as indicated on the electrical drawings.

3.07 CUTTING AND PATCHING

A. Provide drilling, coring, cutting, and patching necessary to install the work specified in this division. Patching shall match adjacent surfaces.

B. No structural members shall be cut without the approval of the WSU Project Manager, and cutting shall be done in a manner directed by them. Do not damage or endanger any portion of the project or work of the Owner or any other separate contractor by drilling, coring, cutting, patching, excavating, and backfilling.

C. Inform the General Contractor and other subcontractors affected of requirements for cutting and patching.

3.08 BOXES, SLEEVES, AND CHASES

A. Inform the General Contractor of requirements for boxes, sleeves, and chases. The General Contractor shall set boxes, sleeves, and chases. Furnish General Contractor with the boxes and sleeves and be responsible for informing General Contractor of required location.

3.09 OPERATING INSTRUCTIONS

A. Upon completion of the work, furnish the necessary skilled labor and helpers for operating the systems and equipment for a period of three (3) days of eight (8) hours each, or as otherwise specified. Give at least forty-eight (48) hours’ notice to the Owner in advance of this period. During this period, instruct the Owner or their representative fully in the operation, adjustment, and maintenance of all equipment furnished. The training of the appropriate maintenance staff for each equipment type and/or system shall include, as a minimum, the following:

1. System/Equipment overview (what it is, what it does and which other systems and/or equipment does it interface with).

2. Review of the available O&M materials.

3. Review of the Record Drawings on the subject system/equipment.

4. Hands-on demonstration of all normal maintenance procedures, normal operating modes, and all emergency shutdown and startup procedures.
3.10 MECHANICAL EQUIPMENT MANUALS

A. Upon completion of the work and prior to acceptance of the mechanical work, prepare servicing manuals in accordance with industry-accepted standards describing the requirements of mechanical equipment provided under this division of the specification.

B. As a minimum, include in the manuals:

1. Submittal data stating equipment size and selected options for each piece of equipment requiring maintenance.

2. Maintenance schedules

3. Manufacturers’ operation and maintenance instructions with parts list specific to the equipment installed, with extraneous matter removed or neatly marked out. Routine maintenance actions shall be clearly identified together with supplementary drawings and information where necessary to describe and itemize servicing.

4. Provide a table of contents with all contents listed in an orderly presentation.

5. Manufacturers’ printed warranties

6. Names, addresses, and phone numbers of General Contractor, Mechanical Subcontractor(s), and all other related Subcontractors.

7. Names, addresses, and phone numbers of equipment suppliers.

8. Names, addresses, and phone numbers of at least two service agencies.

9. HVAC controls system maintenance and calibration information, including wiring diagrams, schematics, and control sequence descriptions. Desired or field determined setpoints shall be permanently recorded on control drawings at control devices, or for digital control systems, in programming comments.

10. A complete narrative of how each system is intended to operate. A Sequence of Operation is not acceptable as a narrative for this requirement. Narrative shall include:

   a. A detailed explanation of the original design intent.
   b. The basis of design (how the design was selected to meet the design intent).
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23 05 00 COMMON WORK RESULTS FOR HVAC

c. A detailed explanation of how new equipment is to interface with existing equipment or systems (where applicable).
d. Suggested set points.

C. Data in manuals shall be neat, clean copies. Drawings shall be accordion-folded. Manufacturers’ advertising literature or catalogs will not be acceptable for operating and maintenance instruction.

D. Place data for the manual in hardcover three-ring loose-leaf notebooks. Label bound edge of notebooks with the name of the building, Owner, name of the project, year of completion, and the words “Mechanical Equipment.” Label front of notebooks with the name of the Owner, name of the building, name of the project, Owner’s project number, date, General Contractor, Mechanical Subcontractor, Architect, and Mechanical Engineer.

E. Submit one copy of the data in a preliminary draft form to the WSU Project Manager for approval prior to preparing finished copies.

F. Provide two (2) copies of the finished manuals to the WSU Project Manager.

3.11 TEMPERATURE CONTROL DIAGRAMS

A. Laminate in plastic temperature control diagrams, piping diagrams, valve list and color code. Mount where directed by WSU Project Manager.

3.12 RECORD DRAWINGS

A. Within 90 days after the date of system acceptance, provide record drawings of all buildings and plot plans. Record drawings shall include as a minimum the location and performance data on each piece of equipment, general configuration of duct and pipe distribution system, including sizes, and the terminal air and water design flow rates of the actual installation. Record drawings shall also incorporate any mechanical work which deviates from the contract drawings, including changes resulting from addenda, Requests for Information, and Change Orders. Neatly draft changes on clean “hard copy” drawings to show the work clearly in the actual locations as built.

3.13 CLEANING

A. Promptly remove waste material and rubbish caused by the work. At Completion of the work, clean the dirt and debris from the mechanical installation, including equipment, piping, ductwork, and plumbing fixtures.

B. Upon completion of the project and after cleaning is complete and before project is air balanced, provide clean air filters throughout.
3.14 WARRANTY

A. All work, materials, and equipment to be free from defects. Correct all defects and failures occurring within one year from date of substantial completion without cost to the Owner except when such failure is due to neglect or carelessness by the Owner, as determined by the WSU Project Manager.

B. The warranty disregards shorter time limits by any manufacturer of equipment provided.

C. Make all necessary adjustments and corrections during first year of operation. The fact that the WSU Project Manager was present during any construction does not relieve the Contractor from responsibility for defects discovered after completion of the work.

END OF SECTION 23 05 00
DIVISION 23 – HVAC
23 05 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC

PART 1 - GENERAL

1.01 WORK INCLUDED
A. Air Systems Balancing
B. Balancing Reports

1.02 RELATED WORK
A. All portions of specification Division 1 apply to this work.
B. All portions of specification Section 23 05 00 apply to this work.
C. Additional sections of the mechanical specifications are required to provide a fully functional system. Refer to the specifications index.

1.03 CODES AND STANDARDS
A. NEBB Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems (PSTABES)

1.04 REQUIRED SUBMITTAL DATA
A. Proposed Systems Balancing Contractor Name and Certification
B. Balancing Plan

1.05 SYSTEMS BALANCING CONTRACTOR
A. Systems balancing contractor shall be qualified to perform the testing and balancing work as indicated on the drawings and specified herein. Qualifications include:
   1. A minimum five (5) years’ experience record in systems balancing of projects of similar scope and complexity, and
   2. Contractor shall be independent of the installing contractors or equipment suppliers for this project.
B. Qualified Systems Balancing Contractors: Testcomm, Riley Engineers, or approved equal.
C. To be considered for consideration as an approved equal, company shall submit a list of recent past similar projects including a description of the size and scope of the project, name of the principal technician and
references including current phone numbers; and maintain association with AABC or NEBB as follows:

1. Membership in the AABC, or
2. Certification by the NEBB.

D. Within 60 days after contract award, submit the name of the proposed systems balancing contractor along with the name of the principal technician along with past similar projects including a description of the size and scope of the project.

1.06 COORDINATION WITH COMMISSIONING

A. Upon completion of the work, provide the necessary skilled labor, helpers, materials, and equipment to support the commissioning work. During the commissioning, coordinate with the commissioning company and make all adjustments required to demonstrate systems are working properly.

1.07 PROCEDURES

A. Perform testing, adjusting, and balancing (TAB) in accordance with the procedural standards of the organization certifying the TAB firm.

PART 2 - PRODUCT

2.01 BALANCING REPORT

A. When balancing is nearly complete, provide a “95% complete” balancing report for the review by the WSU Project Manager. When acceptable to the WSU Project Manager, provide an electronic version of the report in PDF format.

B. Provide final balancing reports incorporating comments made on the preliminary report, Alternately, when acceptable to the WSU Project Manager, provide an electronic version of the report in PDF format.

C. Include in Report: Project Name, Owner, Engineer, Systems Balancing Subcontractor, other data necessary to describe activity and the status of the systems plus the following data:

1. Heat Recovery Devices
   a. Design Data and Recorded Data
      1) Entering and Leaving Air Temperature for Both Air Streams
      2) Cubic Feet per Minute
      3) Air Pressure Drop
DIVISION 23 – HVAC
23 05 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC

4) Identification Data
5) System Served
6) Location

PART 3 - EXECUTION

3.01 PROCEDURES
A. Obtain confirmation from mechanical contractor that systems to be balanced are complete and functioning per design intent prior to commencing balancing.

3.02 INSTRUMENTS
A. Use accurate and recently calibrated instruments. Provide instrument calibration history if requested by the WSU Project Manager.

3.03 GENERAL PROCEDURES
A. Perform testing, balancing, and adjusting (TAB) in accordance with the procedural standards of the organization certifying the TAB firm and generally accepted engineering standards.

B. Air flow rates shall be measured and adjusted to deliver final flow rates within 10% of design rates.

END OF SECTION 23 05 93
PART 1 - GENERAL

1.01 WORK INCLUDED
A. Duct Insulation

1.02 RELATED WORK
A. All portions of specification Division 1 apply to this work.
B. All portions of specification Section 23 05 00 apply to this work.
C. Additional sections of the mechanical specifications are required to provide a fully functional system. Refer to the specifications index.

1.03 CODES AND STANDARDS
A. General
   1. NFPA 90A – Standard for the Installation of Air Conditioning and Ventilating Systems
   2. NFPA 90B – Standard for the Installation of Warm Air Heating and Air-Conditioning Systems
B. For Flame Spread and Fuel Contributed and Smoke
   3. UL 723 – Tests for Surface Burning Characteristics of Building Materials

1.04 REQUIRED SUBMITTAL DATA
A. Duct Insulation

1.05 DEFINITIONS
A. “Conditioned space” is defined as a cooled space, heated space (fully heated), heated space (semi-heated), or indirectly conditioned space.
PART 2 - PRODUCT

2.01 GENERAL

A. Materials shall be of the highest grade. Adhesives, sealers, vapor coatings, etc., shall be compatible with the materials to which they are applied; shall not corrode, soften, or otherwise attack such material in either the wet or dry state; and shall not emit volatile organic compounds (VOCs). Scrap pieces of insulation shall not be used where a full section will fit. Glass fiber materials which become wet or damaged during installation shall be removed and replaced with new materials. Acceptability of a manufacturer is not to be taken as acceptability of its “usual” or “regular” accessory materials such as facings, adhesives, etc.

B. Unless specified otherwise, all facings, coatings, PVC covers, and other accessories shall have a fire hazard rating not to exceed 25 for flame spread and 50 for fuel contributed and smoke developed; ratings determined by UL 723, NFPA 255, or ASTM E84. UL label or listing, or satisfactory test results from the approved testing laboratory, shall be available to indicate that fire hazard ratings for materials do not exceed the above amounts.

C. Product used shall emit no volatile organic compounds (VOCs) when applied, and shall not contain phenol, formaldehyde, or acrylics.

D. Insulation shall comply with the latest adopted version of the Washington State Energy Code Commercial Provisions.

E. Acceptable Manufacturers

1. Certain-Teed
2. Knauf
3. Owen-Corning Fiberglas

2.02 DUCTS

A. Ducts and plenums shall be insulated with Fiberglas FRK-25 faced duct wrap. Ducts carrying mechanically cooled air (and required to be insulated in the table below) shall be provided with a vapor retarder with a perm rating not greater than 0.5 and all joints shall be sealed. Minimum densities and out-of-package thicknesses in accordance with the latest adopted versions of the Washington State Energy Code Commercial Provisions and the International Energy Conservation Code to provide an installed nominal R-value (excluding air film resistance) are as follows:
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23 07 00 HVAC INSULATION

<table>
<thead>
<tr>
<th>Type</th>
<th>Location/Situation</th>
<th>Installed R-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outside Air Intake</td>
<td>Within Conditioned Space</td>
<td>R-8</td>
</tr>
</tbody>
</table>

PART 3 - EXECUTION

3.01 PREPARATION

A. Install covering after ductwork, and equipment have been tested and approved.

B. Ensure surface is clean and dry prior to installation. Ensure insulation is dry before and during application.

C. Ensure insulation is continuous through inside walls except at firewalls.

D. Deliver material to job site in original non-broken factory packaging, with manufacturer’s labels.

E. Perform work at ambient and equivalent temperatures as recommended by the manufacturer.

3.02 DUCTS

A. Insulate outside air ducts as indicated in Part 2 of this specification and as indicated on the drawings.

B. Adhere insulation to metal with 4-inch wide strips of insulation bonding adhesive at 8-inches on center. Additionally, secure insulation to the bottom of rectangular ductwork wider than 24-inches with Miracle surface anchors or metal stick clips 18-inches on center. Round duct over 12-inches in diameter spiral wind over insulation 16-gauge black annealed wire. Wrap insulation firmly on the ductwork with all circumferential joints butted and longitudinal joints overlapped a minimum of 2-inches. Secure overlap and 2-inch facing flange with 9/16 flare-door staples 6-inches on center. Tape with 3-inch-wide foil reinforced Kraft tape. Tape all pin penetrations or punctures in facing.

C. Insulate all access panels in ducts with vapor barrier insulation same as duct insulation. Seal edges of insulation on access panel and finish openings to assure accessibility.

D. Lined ducts need only be insulated as required to meet the thermal criteria indicated in Part 2 of this specification.

END OF SECTION 23 07 00
**DIVISION 23 – HVAC**

**23 09 16 AUTOMATIC TEMPERATURE CONTROLS**

**PART 1 - GENERAL**

1.01 **WORK INCLUDED**

A. Furnish and install all control equipment, engineering services, job drawings and field supervision for automatic temperature control systems described in this Section and/or indicated on the Drawings.

1.02 **RELATED WORK**

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections apply to work of this section.

1.03 **CODES AND STANDARDS**

A. AMCA 500 – Laboratory Methods of Testing Dampers for Rating

B. Electrical Standards: Provide electrical products which have been tested, listed, and labeled by UL and comply with NEMA standards.

C. NEMA Compliance

1. Comply with NEMA standards pertaining to components and devices for electric control systems.

2. Comply with NFPA 90A – Standard for the Installation of Air Conditioning and Ventilating Systems where applicable to controls and control sequences.

1.04 **SUBMITTALS**

A. Product Data: Provide product data for each type of product indicated.

1.05 **SERVICE AND GUARANTEE**

A. The temperature control system(s) as herein specified shall be free from defects in workmanship and material under normal use and service. If within one (1) year from date of Acceptance by the Owner, any of the equipment herein described is proved to be defective in workmanship or material, it shall be replaced or repaired at no expense to the Owner.

**PART 2 - PRODUCTS**

2.01 **MATERIALS AND EQUIPMENT**

A. Provide electric control products in sizes and capacities indicated, consisting of dampers, thermostats, sensors, and other components as
required for complete installation. Except as otherwise indicated, provide manufacturer’s standard control system components as indicated by published product information, designed, and constructed as recommended by manufacturer as indicated.

2.02 CONTROL DAMPERS

A. Low-Leakage Type (Outside Air, Exhaust/Relief Air Applications): Damper frame shall be not less than 16-gauge galvanized steel structural hat channel with tabbed corners for reinforcement. Blades shall be single skin, not less than 16-gauge galvanized steel with longitudinal grooves for reinforcement. Blade edge seals shall be PVC coated polyester fabric mechanically locked in the blade edge. Jamb seals shall be flexible metal, compression type, to prevent leakage between blade end and damper frame. Bearings shall be corrosion resistant, molded synthetic sleeve type turning in an extruded hole in the damper frame. Axles shall be square or hexagonal positively locked into the damper blade. Linkage shall be concealed out of the airstream within the damper frame to reduce pressure drop and noise. Control dampers shall be performance tested in accordance with AMCA 500 with leakage not greater than 4 cfm per square foot at 1-inch water gauge when damper is being held by torque of 50 inch-pounds.

2.03 CONTROL DAMPER ACTUATORS

A. Provide electric actuators of enough size and reserve power to operate control dampers matched to application as described in the Sequence of Operation. Upon loss of power, actuators shall operate in a fail-safe manner as indicated to be normally open or normally closed, or as required for freeze protection utilizing spring return or capacitors. Actuators shall be designed and listed to operate in the application environment.

2.04 ROOM THERMOSTAT

A. Room thermostat shall be programmable type with seven-day programming for two occupied and two unoccupied periods per day; individual occupied and unoccupied set points; three-hour override of unoccupied program with automatic return to programmed schedule; battery backup with rechargeable nicad battery; fan “auto” cycle available for both occupied and unoccupied cycles; and automatic changeover on heating/cooling sequences.

B. Thermostat shall be Honeywell T7300 with appropriate Q7300 switching sub-base.
PART 3 - EXECUTION

3.01 ELECTRICAL

A. Install systems and materials in accordance with manufacturer's instructions and roughing-in drawings, and details on drawings. Install electrical components and use electrical products complying with requirements of applicable Division 26 sections of these specifications. All system controllers, junction boxes, etc. shall be mounted at readily accessible and convenient locations and heights.

B. Room Temperature Sensors and Thermostats – Mounting Heights

1. Room temperature sensors and thermostats with occupant adjustment capabilities shall be mounted with the highest operable part at 54 inches above finished floors where the clear floor space allows parallel approach by a person in a wheelchair.

2. Room temperature sensors and thermostats with occupant adjustment capabilities shall be mounted with the highest operable part at 48 inches above finished floors where the clear floor space allows only forward approach by a person in a wheelchair.

C. Control Wiring: The term “control wiring” is defined to include providing of wire, conduit and miscellaneous materials as required for mounting and connecting electrical control devices.

D. Wiring System: Install complete control wiring system for electric control systems. Conceal wiring, except in mechanical rooms and areas where other conduit and piping are exposed. Provide multi-conductor instrument harness (bundle) in place of single conductors where number of conductors can be run along common path. Fasten flexible conductors bridging cabinets and doors, neatly along hinge side, and protect against abrasion. Tie and support conductors neatly.

3.02 ADJUSTMENTS

A. After completion of installation, adjust thermostats, dampers, motors, and similar equipment provided as work of this section.

END OF SECTION 23 09 16
PART 1 - GENERAL

1.01 WORK INCLUDED

A. Duct Systems
B. Hangers and Supports
C. Hardware and Accessories
D. Grilles, Registers, and Diffusers

1.02 RELATED WORK

A. All portions of specification Division 1 apply to this work.
B. All portions of specification Section 23 05 00 apply to this work.
C. Additional sections of the mechanical specifications are required to provide a fully functional system. Refer to the specifications index.

1.03 CODES AND STANDARDS

A. Comply with the current editions of the following standards unless specified or indicated otherwise:

1. AMCA 500 – Laboratory Methods of Testing Dampers for Rating
2. AMCA 511 – Certified Ratings Program – Product Rating Manual for Air Control Devices
3. ASTM A525 – Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process
4. ASTM A653/A653 – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
5. ASTM C1071 – Standard Specification for Fibrous Glass Duct Lining Insulation (Thermal and Sound Absorbing Material)
7. ASTM C423 – Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
10. ASHRAE Guide Equipment Volume: Duct Construction, Chapter 1
12. SMACNA Fire Damper and Heat Stop Guide for Air Handling Systems
13. SMACNA HVAC Duct Construction Standards
14. SMACNA Industrial Duct Construction Standards
15. SMACNA Manual for the Balancing and Adjustment of Air Distribution Systems
16. SMACNA Seismic Restraint Manual – Guidelines for Mechanical Systems
17. NFPA 90A – Standard for the Installation of Air-Conditioning and Ventilating Systems
18. NFPA 90B – Standard for the Installation of Warm Air Heating and Air-Conditioning Systems
20. UL 181 – Factory-Made Air Ducts and Connectors
21. UL 555 – Fire Dampers
22. UL 555S – Smoke Dampers
23. UL 1812 – Ducted Heat Recovery Ventilators
24. UL 2221 – Standard for Fire Resistive Grease Duct Enclosure Assemblies
25. Uniform Mechanical Code (UMC)
28. Insulation shall comply with UL 181 and NFPA 90A.
29. All electrical components shall be UL listed and installed in accordance with the National Electric Code.

30. Attachments to the ceiling system shall be in accordance with Uniform Building Code (UBC).

31. The entire assembly of all electrically driven devices (including air terminal units) shall be UL or ETL listed.

1.04 REQUIRED SUBMITTAL DATA

A. Grilles, Registers, and Diffusers

PART 2 - PRODUCT AND FABRICATION

2.01 DUCT MATERIAL

A. For material, gauges, fabrication, and installation, select from the SMACNA options that will result in a composite assembly that will be serviceable within the following criteria:


   
a. Exhaust Duct Systems: use ½-inch of water gauge negative basis of compliance

B. G-90 coated galvanized steel of lock forming grade ASTM A525 and ASTM A653/AS653M, unless indicated on the drawings or specified otherwise.

2.02 HVAC DUCT CONSTRUCTION STANDARDS

A. Comply with *SMACNA HVAC Duct Construction Standards* and with the following exceptions, selections, or deviations.

B. Duct Sealing: Supply ducts upstream of terminal boxes and aluminum duct seal per Class “A” requirement in Table No. 1-2, “Duct Sealing Requirements.”

C. Fittings

1. Where space allows, elbows in rectangular ducts may be full throat elbow type. For velocities 1500 fpm and higher, use 1.5 radius. For velocities lower than 1500 fpm, use 1 radius.
D. Hanging and Supporting System

1. Strap and Rod Sizes: Comply with *SMACNA HVAC Duct Construction Standards – Metal and Flexible*, Table 5-1, “Rectangular Duct Hangers Minimum Size,” and Table 5-2, “Minimum Hanger Sizes for Round Duct.”

E. Automatic Dampers

1. Furnish and install, at locations shown on plans, control dampers manufactured by an ISO 9001 accredited manufacturer that meet the following minimum construction requirements. Frames shall be 5-inches by 1-inch by 0.125-inch (minimum thickness) 6063T5 extruded aluminum hat channel with hat shaped mounting flanges on both sides of the frame. Each corner shall be reinforced with two die-formed internal braces and machine staked for maximum rigidity.

2. Damper blades shall be airfoil type extruded aluminum for superior pressure drop and low noise generation. Each blade shall be maximum 6-inches depth with integral structural reinforcing tube running full length. Minimum thickness of blade shall be 0.070-inch.

3. Blade edge seals shall be flexible and suitable for −72°F to 275°F, mechanically locked in extruded blade slots yet easily replaceable in field. Jamb seals shall be flexible stainless-steel, compression type to prevent leakage between the end of the blade and the damper frame. Use of blade end to overlap the frame for jamb seal is not acceptable. Adhesive or clip-on type blade or jamb seals are not acceptable.

4. Bearings shall be non-corrosive molded synthetic. Axles shall be ½-inch (13) plated steel hexagonal shaped and to provide positive locking connection to blade (round axles are not acceptable). Linkage shall be concealed out of airstream, within frame to reduce pressure drop, noise, and maintenance.

5. Submittal must include leakage, maximum airflow, and maximum pressure ratings based on AMCA 500. Damper shall be tested and licensed in accordance with AMCA 511 for air performance and air leakage. Damper shall meet the leakage requirements of the International Energy Conservation Code by leaking less than 3 cubic feet per minute per square foot at 1-inch of static pressure and shall be AMCA licensed as Class 1A. Damper shall be Ruskin Model CD50, Greenheck, or approved equal.

2.03 ENERGY RECOVERY VENTILATORS

A. General

1. The energy recovery ventilator (ERV) shall be a RenewAire LE Series, Greenheck, Cook or approved equal.

2. The energy recovery cores shall be certified by ARI under Standard 1060.

3. The ERV shall be ETL listed to comply with UL 1812.

B. Performance

1. The ERV shall have the performance characteristics scheduled on the drawings.

2. The ERV shall be capable of transferring both sensible and latent energy between airstreams. Latent energy transfer shall be accomplished by direct water vapor transfer from one airstream to the other, without exposing transfer media in succeeding cycles directly to the exhaust air and then to the fresh air.

3. The ERV core shall perform without condensing or frosting under normal operating conditions. Normal operating conditions are defined as outside temperatures above −10º F and inside relative humidity below 40%.

4. Unit shall have the capacity to operate continuously without the need for bypass, recirculation, preheaters or defrost cycles under normal operating conditions.

5. Water vapor transfer shall be through molecular transport by hydroscopic resin and shall not be accomplished by "porous plate" mechanisms. Exhaust and fresh airstreams shall always travel in separate passages, and airstreams shall not mix. No metal separators or metal core material shall be acceptable.

C. Construction

1. The energy recovery component shall be of fixed-plate crossflow construction, with no moving parts.

2. No condensate drain pans or drains shall be allowed. Unit shall be capable of operating in both winter and summer conditions without generating condensate.
3. The unit case shall be constructed of G90 galvanized, 20-gauge steel, with lapped corners and zinc-plated screw fasteners.

4. The unit interior floor shall be constructed of G90 galvanized, 20-gauge steel.

5. Access doors shall provide easy access to blowers, ERV cores, and filters. Doors shall have an airtight compression seal using closed cell foam gaskets. Pressure taps, with captive plugs, shall be provided, allowing cross-core pressure measurement for accurate airflow measurement.

6. Case walls and doors shall be insulated with 1-inch, 4-pound density, foil/scrim faced, high-density fiberglass board insulation, providing a cleanable surface and eliminating the possibility of exposing the fresh air to glass fibers, and with minimum R-value of 4.3.

7. The ERV cores shall be protected by MERV-8 rated, 2-inch nominal, pleated, disposable filters in both airstreams.

8. Unit shall have single-point power connection and a single-point 24VAC contactor control connection.

9. Blower motors shall be premium efficiency, EISA-compliant for energy efficiency. The blower motors shall be totally enclosed (TEFC) and shall be supplied with factory installed motor starters.

10. Provide factory installed solid mounting of blower assembly.

11. The unit electrical box shall include a factory installed, non-fused disconnect switch and a 24 VAC, Class II transformer/relay package.

2.04 GRILLES, REGISTERS, AND DIFFUSERS

A. General

1. Units shall be number, type, performance, and size as indicated on the drawings. Units have been selected based on the manufacturer indicated on the drawings. Other units may be provided by the manufacturer of Titus, Shoemaker, Krueger, Nailor, Price, or approved equal. If an approved equal manufacturer is provided, select and size units to obtain same performance and quality as unit scheduled.
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2. Sizes indicated on drawings give the “seen” dimension first, second dimension is the dimension “into the drawing.” Sizes indicated do not include borders.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Route ductwork to avoid interference with structure, ceiling supports and framing, lights, and work of other trades. Provide offsets as required.

B. Remove construction debris and dirt in ducts and plenum interiors at end of work; no additional cost to the Owner.

3.02 SUPPORT

A. Construct and install per recommended practices of SMACNA HVAC Duct Construction Standards, with the following additions and exceptions.

3.03 SUPPORT FOR EQUIPMENT

A. Provide one or more sets of hangers for equipment in duct runs, as recommended by their manufacturers.

3.04 INSTALLATION OF ENERGY RECOVERY VENTILATORS

A. Install per the manufacturer’s written installation instructions.

B. Provide straight, gradual transition ductwork for a minimum of three (3) duct diameters downstream of the blowers.

3.05 INSTALLATION OF REGISTERS AND DIFFUSERS

A. Provide flexible or hard duct connections as indicated on drawings. Flexible duct shall be 48-inch maximum length, maximum total turn of 45-degrees. Tightly clamp ends of flexible ducts to sheet metal connection. For double wall flexible duct, clamp interior liner and tape exterior liner to sheet metal connection.

B. Diffusers and grilles shall be appropriate frame style for location and be well fitted to the ceiling or trim of ceiling.

C. Grilles and registers shall be appropriate frame style for location and be well fitted to the building construction and/or ductwork.

D. Support of diffusers, registers, and grilles shall be concealed attachments wherever possible. Supports and attachments for ceiling mounted diffusers and grilles shall be from structure of the duct or from the ceiling. Diffusers and grilles in lay-in ceilings shall be positively attached to the
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ceiling suspension main runners or to cross runners with the same carrying capacity as the main runner per the International Building Code.

E. Interior of Ducts (Where Visible through Grilles): Apply one coat of black paint.

END OF SECTION 23 30 00
PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to work of this section.

B. Related Sections include the following:
   1. Division 01 Section “General Commissioning Requirements”.

1.02 SCOPE OF WORK – GENERAL

A. This section specifies general requirements for electrical installations and includes requirements common to more than one section of Division 26. It expands and supplements the requirements specified in sections of Division 01.

B. Provide all materials, labor, transportation, tools, permits, facilities, inspections, utilities fees and incidentals necessary for the complete installation of electrical work indicated and described in the Contract Documents.

C. It is the intent of the Contract Documents to provide an installation complete in every respect. In the event that additional details or special construction is required for work indicated or specified under this section of work, or work specified in other sections, provide material and equipment which is usually furnished with such systems in order to complete the installation, whether mentioned or not.

D. All work shown and/or specified shall be completely installed and connected in a first class and workmanlike, professional manner. Work shall be complete in all details.

E. All work shall be performed by trade technicians properly qualified to perform the work required. System-specific sub contractors shall be hired (as required) to furnish and install the system.

F. Workmanship shall comply with the National Electrical Installation Standards (NEIS), published by the National Electrical Contractors Association (NECA).

G. All work shall be done in accordance with system manufacturer’s instructions, recommendations, and requirement, with the exception where the drawings or specifications indicate other detailed instructions.
1.03 SEQUENCE OF WORK

A. Conduct work in a sequence to provide the least possible interference to the activities of the Owner; permit orderly transfer of activities and equipment to completed areas.

B. Work shall be substantially complete by the dates listed in Division 01 Section.

1.04 ALTERNATES

A. Refer to Division 01 Section “Alternates” for description of alternates. Review Contract Documents for additional information.

1.05 DEFINITIONS

A. Provide: Furnish and install complete and ready for intended use.

B. Indicated: Shown on drawings.

C. Noted: Noted on Drawings or in Specifications.

D. Finished Spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe and duct shafts, unheated spaces immediately below roof, spaces above ceilings, unexcavated spaces, crawlspace, and tunnels.

E. Exposed, Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical and electrical equipment rooms.

F. Exposed, Exterior Installations: Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.

G. Concealed, Interior Installations: Concealed from view and protected from physical contact by building occupants and hidden from sight. Examples include above ceilings, within finished walls and in chases or furred spaces.

H. Concealed, Exterior Installations: Concealed from view and protected from weather conditions and physical contact by building occupants but subject to outdoor ambient temperatures. Examples include installations within unheated shelters and utility vaults.
1.06 CODES AND STANDARDS

A. Code Compliance: Comply with most currently adopted edition of following:
   2. International Mechanical Code (IMC), Standards and Amendments.
   5. National Electrical Code (NEC); NFPA 70.
   7. Applicable State and local codes, laws and ordinances.

B. Comply with Contract Document requirements which exceed minimum code and standards requirements.

1.07 SAFETY OF PERSONS AND PROPERTY

A. Comply with applicable laws, ordinances, rules and regulations of any public authority for the safety of persons and property, including requirements of the Washington Industrial Safety and Health Administration (WISHA) and/or the Occupational Safety and Health Act (OSHA) and Division 01, General and Supplementary Conditions.

1.08 PERMITS AND FEES

A. Obtain and pay for required permits and fees necessary to fully complete work included in the Contract Documents.

B. Include all required utility company fees or charges for electrical power service or revisions to existing service.

C. Include all required utility company fees or charges for telephone and broadband internet service(s) or revisions to existing service(s). Example of services includes copper (such as POTS and T1) and fiber optic.

D. Include all required utility company fees or charges for the setup and connection of television service(s) or revisions to existing service(s). Example of services includes Cable TV and Satellite TV.

1.09 INTENT AND INTERPRETATION

A. Drawings and Specifications supplement each other and any details contained in one and not the other shall be included as if contained in both. Items not specifically mentioned in the specifications or noted on the drawings, but which are obviously necessary to make a complete working installation, must be included.
B. Drawings are partly diagrammatic and do not necessarily show exact location of new equipment, conduits, and existing utilities, unless specifically dimensioned. Size and location of equipment are drawn to scale where possible, however some graphic symbols may be distorted dimensionally to obtain clarity in representation.

C. Approximate location of each item is indicated on the drawings. These drawings are not intended to give complete and exact details in regard to location. Exact locations are to be determined by actual measurements at the building.

D. Riser and other diagrams are schematic only and do not necessarily show the physical arrangement of equipment. They shall not be used for obtaining quantities or lineal runs of conduit and conductors.

E. Drawings generally indicate required minimum allowable size, quantity and type of conductors and points of termination of conduits. Routing or total number of conduits required for circuits are not indicated. Provide additional conduits as required to complete installation for specific equipment furnished.

F. Receptacles, switches and other devices shall be located symmetrically with Architectural elements and coordinated with equipment or devices furnished in other Sections, or by the Owner. Devices shall be centered on windows, wall spaces, or other items, unless specifically dimensioned otherwise.

G. Electrical drawings shall serve as working drawings for Division 26, 27 and 28 work. Refer to Architectural, Structural, Civil, Landscape, and Mechanical drawings for additional detail affecting the installation of work. Architectural drawings shall take precedence over the Electrical drawings if any dimensional discrepancies exist.

1.10 SUBMITTAL OF EQUIPMENT FOR APPROVAL

A. Refer to Division 01 requirements for submittal definitions, requirements and procedures. Additional requirements are listed below.

B. Submittal data shall clearly identify electrical components, devices and accessories as listed and labeled by Underwriter’s Laboratory, or other testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Clearly mark submittals as to which items, options, colors, model, etc. to be furnished.
D. Submittals not meeting the following requirements will be returned for revision:
   1. Provide a cover page for each item or group of items. Cover page shall provide a 3” x 5” space for Engineer's review stamp.
   2. Each cover page must be clearly identified with the project name, specification number and paragraph number.
   3. Submittal package must be accompanied by an itemized index listing specification section, paragraph number, item and manufacturer; larger projects will be index tabbed by specification section with index for each section.

1.11 GUARANTEE

A. Guarantee satisfactory operation of material and equipment installed under Divisions 26, 27, and 28. Repair or replace any defective materials, equipment, or workmanship which may show itself within one year from date of Substantial Completion.

   1. Incandescent lamps shall have two month warranty period only.
   2. Specific requirements in individual Division 26, 27, and 28 Sections.

PART 2 - PRODUCTS

2.01 GENERAL MATERIALS AND EQUIPMENT REQUIREMENTS

A. Materials used under this Contract, unless specifically noted otherwise, shall be new and of the latest and most current model line produced by the manufacturer. Outdated “new” equipment is not acceptable.

B. Electrical components, devices, and accessories to be listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

2.02 EQUIPMENT AND MATERIAL SUBSTITUTIONS

A. Throughout these Contract Documents, various materials, equipment, apparatus, etc., are specified by manufacturer, brand name, and type or catalog number. Such designation is to establish standards of desired quality and construction and shall be the basis of the bid.

B. Where more than one manufacturer is listed, and only one manufacturer's catalog number is indicated, that standard of quality and construction shall be maintained by materials supplied by other manufacturer(s).

C. Substitutions of equipment or materials shall be made only with written prior approval. Prior approval requests must be received at least ten (10) days prior to bid date unless otherwise instructed. Refer to Division 01 Section “Product Requirements” for procedures in requesting substitutions.
D. Acceptance of substitution request signifies manufacturer recognition only. No attempt has been made to check each item as to special features, capacities, or physical dimensions required by this project. Verify requirements before submitting for approval. Acceptance of exact features, sizes, capacities, etc., all of which must meet or exceed design requirements will be determined when submitted during the construction phase.

E. The Contractor shall bear full responsibility for substituted equipment and materials, including, but not limited to:
   1. Costs.
   2. Available space requirements.
   3. Effect on other trades.
   4. Changes in electrical requirements
   5. Changes in structural requirements.

PART 3 - EXECUTION

3.01 ELECTRICAL SYSTEMS COMMISSIONING

A. Coordinate electrical systems commissioning with the Commissioning Authority.

B. Comply with requirements of Division 01 Section “General Commissioning Requirements” and requirements of individual Division 26, 27, and 28 Sections for Electrical Systems Commissioning.

C. The Contractor shall have a knowledgeable technician present at all testing and commissioning activities. The technicians shall assist the commissioning authority in the completion of the testing of components and systems, and conduct training.

3.02 COORDINATION

A. Refer to Division 01 Section “Project Management And Coordination”.

B. Coordinate available space for equipment and systems with other trades. Refer to Architectural, Structural and Mechanical Drawings for additional building details necessary for coordination.

C. Cutting, patching, wiring, finishing or any other work required for relocation of work installed due to interferences between works of the various trades will be at no additional cost to the Owner.

3.03 CUTTING AND PATCHING

A. Comply with Division 01 Section “Execution” for general requirements for cutting and patching.
B. Do all cutting, drilling and patching that must be done in order that work is properly installed. All work of this nature is subject to the following conditions:

1. All disturbed construction or finish must be made good.
2. Structural work shall not be disturbed, except on approval of Architect.
3. In general, cutting through floors, walls and partitions is to be avoided and only where absolutely necessary will same be permitted. When necessary, it shall be done in a careful manner and the opening filled about conduits as directed by the Architect. Holes through concrete or masonry shall be made only with a core drill. Obtain permission from Architect for each individual opening.
4. All masonry or other finish damaged or cut into during the installation of this work must be replaced or repaired with materials of like kind and quality as the original materials by skilled labor, experienced in that particular building trade.

3.04 Management of Construction waste

A. Comply with Division 01 waste management and disposal procedures. Separate and segregate recyclable materials by type.

3.05 CLEANUP

A. At the time of final cleanup, all fixtures and equipment, new or existing, shall be thoroughly cleaned and left in condition for use. All debris and unused materials shall be removed from the construction site, leaving the premises in a clean condition.

B. Site shall be kept clean on a day-today basis.

3.06 WARNING TAPE

A. 5 mil plastic tape, at least 4” wide, with block lettering of a contrasting color at least 2” high, indicating the type of service at intervals not to exceed 5’ along its length. The tape shall include 1 mil minimum metallic foil core or backing to facilitate locating.

3.07 PAINTING

A. Paint all exposed conduits, raceways, multi-outlet assemblies and panelboard trim as directed by Architect.

B. Comply with Division 09 Section “Interior Painting” requirements for painting.
3.08 TESTS

A. All work shall be complete in every respect and shall be tested and approved satisfactory to the Architect and in accordance with the local, state and federal regulations governing the installation.

B. Be responsible for making any and all tests necessary to insure against concealment of defective materials and/or workmanship.

C. Determine, by test, that all wiring and connections are free from shorts between wires and shorts to ground and that all circuits have proper continuity.

D. All defects shall be corrected and retested before installation of fixtures and equipment.

E. All miscellaneous systems shall be tested for conformity to specifications and for proper operation. Provide certification and/or documentation as described in individual Division 26, 27, and 28 Sections. Typical tests shall include outlet polarity, insulation resistance, large circuit breaker tests, surge suppression systems, phase relationships and load balance.

3.09 MANUFACTURER'S INSTRUCTIONS

A. Furnish proper equipment and/or materials required for installation as intended by the manufacturer, for all work described under Division 26. If needed for proper installation or operation, request advice and supervisory assistance from the representative of the specific manufacturer. Manufacturer's published instructions shall be followed for preparing, assembling, installing, erecting, and cleaning manufactured materials or equipment, unless otherwise indicated. Promptly notify the Architect in writing of any conflict between the requirements of the Contract Documents and the manufacturer's directions and obtain the Architect's instructions before proceeding with the work.

3.10 SEISMIC RESTRAINTS

A. Equipment, conduits, raceways, cable tray, etc. shall be provided with seismic restraints in accordance with Code requirements.

3.11 EXAMINATION OF SITE

A. Visit site of proposed work and become familiar with conditions affecting work. Verify measurements at the building before beginning work. In accordance with NEC Article 547, the site is to be considered a dusty corrosive and wet location outside of the sacaleroom.
3.12 SITE UTILITY SERVICES

A. Where applicable, make connections to temporary electrical service immediately so as to provide the use of this service by other trades. Comply with Division 01 Section “Temporary Facilities and Controls” requirements.

3.13 EXISTING UTILITIES

A. Locations of existing concealed electrical utilities and connection points have been indicated as closely as possible from available information. Assume that such connection points are within a 10-foot (10’) radius of indicated locations. Where connection points are not within this radius, contact the Architect for a decision before proceeding.

3.14 LAYING OUT WORK

A. Locations of equipment and devices, as shown on the drawings, are approximate unless dimensioned. Exact locations of such items shall be determined from the Construction Drawings. Verify physical dimensions of each component of electrical equipment, to fit available space and promptly notify the Architect prior to roughing-in if conflicts appear. Coordinate equipment to available space and access routes through construction. Offsets in conduits required for proper system installation shall be provided at no additional cost to Owner.

3.15 REPLACEMENT OF PAVING AND CONCRETE

A. Existing sidewalks, concrete paving, curbs, or asphalt paving removed or damaged during period of installation or as a result thereof, shall be replaced with like material in a manner as directed by and to the satisfaction of the Architect.

3.16 OPENINGS IN CONDUITS

A. Cap or seal temporary openings in conduits or raceways during construction. Remove caps or seals for final connections.

3.17 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to project properly identified with names, model numbers, types, grades, compliance labels, and similar information needed for distinct identifications; adequately packaged and protected to prevent damage during shipment, storage, and handling.

B. Store equipment and materials at the site, unless off-site storage is authorized in writing. Protect stored equipment and materials from damage.
C. Coordinate deliveries of electrical materials and equipment to minimize construction site congestion. Limit each shipment of materials and equipment to the items and quantities needed for the smooth and efficient flow of installations.

3.18 ACCESSIBILITY

A. Install equipment and materials to provide required access for servicing and maintenance. Coordinate location of concealed equipment and devices requiring access with location of access panels and doors. Allow ample space for removal of parts that require replacement or servicing.

B. Access Doors: Prime coated 14 gauge steel, and flush, with screwdriver operated cam lock; frame to accommodate construction type. Access doors shall be manufactured by Acudor, Elmdor or approved equivalent. See Division 08 Section “Access Doors and Frames.”

C. Access doors shall be a minimum size of 24” square and compatible with the surface in which they are installed. Access door fire rating shall be equivalent to the wall, ceiling or floor they are installed in.

3.19 CONCRETE BASES

A. Concrete forms and Reinforcement Materials as specified in Division 03:
   1. Forms: 2-1/2 inch minimum height, ¾ inch chamfered edge at top of form.
   2. Reinforcement 6x6x10/10 welded fabric
   3. Provide concrete pads for electrical equipment and bases for site lighting fixtures.

B. Concrete: 3000-psi, 28-day compressive strength as specified in Division 03.

3.20 EXCAVATING AND BACKFILLING

A. Provide all necessary excavation, backfill, and related work in compliance with requirements of the General Specifications.

B. Dig trenches to the uniform width required for the particular item to be installed and sufficiently wide to provide ample working room

C. Where rock is encountered, carry the excavation 6 inches below the noted elevation, and backfill with 6 inch layer of sand prior to installing raceway.

D. Grade bottom of trenches as indicated to provide solid bearing for the entire body of the raceway.
E. Backfill trenches with concrete where trench excavations pass within 18 inches of column or wall footings and which are carried below the bottom of such footings. Place concrete to the level of the bottom of the adjacent footings.

F. Do not backfill trenches until inspections have been made and backfilling authorized by the Architect. Use care in backfilling to avoid damage to or displacement of the raceway systems.

G. Exercise extreme care while excavating in the area of existing utilities. Check carefully for locations of all possible utilities, whether shown on the drawings or not, and establish the location of all cutoff valves and switches for ready shut-off in case of an emergency. Assume complete responsibility for all damage to any utility caused by excavation, as well as damage to personal property and property caused by said damaged utility.

H. Refinishing of streets, walks, paved areas, lawns, curbs, and fences removed or damaged by the excavation shall be done to the satisfaction of the Architect.

END OF SECTION 26 05 00
PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to work of this section.

B. Related Sections include the following:
   1. Division 01 Section “Submittal Procedures”.
   2. Division 01 Section “Closeout Procedures”.

1.02 SCOPE OF WORK - GENERAL

A. This section specifies procedural requirements for electrical installations project closeout, including but not limited to:
   1. Project Record Document submittal.
   3. Operation and Maintenance Instruction and Training.
   5. Final Cleaning.
   6. Training Session Agenda.

1.03 PROJECT RECORD DOCUMENTS

A. Record differences between electrical Work as installed and as shown in Contract Drawings on a set of dedicated electrical “as-built” plans. Plans to be obtained from the Architect. Return the finished plans to the Architect at completion of the project. Notations made on drawings shall be neat and legible using red ink only. Mistakes or corrections shall be crossed out and the correction made next to it. Comply with Division 01 Section requirements.

B. Hard copy record drawings shall be converted to electronic AutoCAD 2012 (or later) format and saved on to CD-Rom. If Contractor can not provide this service, L&S Engineering shall be hired to perform conversion.

C. Mark drawings to indicate the following:
   1. Revisions to conduits and conductors; size and location both exterior and interior.
   2. Revisions to branch circuiting.
   3. Revisions to device and outlet location and/or height.
   4. Revisions to lighting fixture locations.
   5. Concealed equipment and/or devices.
   6. Installed location of all underground site utilities including but not limited power, telecommunication, and future conduit raceways.
D. Revise equipment and fixture schedules on the plans to indicate actual installed manufacturer and model numbers.

E. Mark specifications to indicate change orders; actual equipment and materials used.

F. Record the following information for each connected motor and equipment item:
   1. Nameplate data (volts, amps, phase)
   2. Actual current drawn by each equipment item and each motor larger than 1/3 horsepower when operating at or near normal load.
   3. Rating and catalog number or each thermal overload device finally selected for each motor over 1/3 horsepower.

G. Record the voltage between phases and between each phase and neutral, and the actual current in each phase at each panel with normal load applied.

1.04 OPERATION AND MAINTENANCE MANUALS

A. Prepare and submit Operation and Maintenance (O&M) Manuals for electrical systems provided. Comply with Division 01 Section requirements.

B. Manual binder shall have permanent lettering of a contrasting color.

C. Information to be included on the binder cover is as follows:

   ELECTRICAL
   OPERATION AND MAINTENANCE
   MANUAL
   (Project Name)
   (Project Location)
   (Year)

   OWNER:  (NAME)
   ARCHITECT:  (NAME)
   ELECTRICAL ENGINEER:  L&S Engineering Associates, Inc.
   GENERAL CONTRACTOR:  (NAME)
   ELECTRICAL CONTRACTOR:  (NAME)
1. The spine shall be lettered as follows:
   ELECTRICAL O & M MANUAL (Year)
   (Project Name)

D. Provide master index at beginning of Manual showing sections and items included. Use plastic tab indexes for sections of Manual.

E. Cover section: List name, address, and phone number of Project Architect, General Contractor, Electrical Engineer, Electrical Contractor and all Electrical Sub-Contractors. Provide a list of equipment suppliers with address and phone number.

F. Provide a separate section for each Section of the Specifications. Provide index for each section listing equipment included. Include all items specified.

G. Include descriptive literature of each manufactured item (catalog cut sheets, etc). Literature shall show capacities and size of equipment used and be marked indicating each specific item with applicable data underlined. Data sheets shall be originals or clean copies of originals. Copies of faxes are not acceptable.

H. Include copies of approved submittals or shop drawings for all items requiring submittal.

I. One (1) copy of the O&M Manual shall be submitted for review and approval by the Design Engineer. After approval, submit three (3) copies of the manual to the Architect for approval, unless otherwise directed by Division 01 Section requirements.

J. Information to be included in O&M Manual:
   1. Description of function, normal operating characteristics and limitations, performance curves, engineering data and tests, and complete nomenclature and commercial numbers of all replaceable parts.
   2. Manufacturer's printed operating procedures to include start-up, break-in, routine and normal operating instructions; regulation, control, stopping shut-down, and emergency instructions; and summer and winter operating instructions.
   3. Maintenance procedures for routine preventative maintenance and troubleshooting; disassembly, repair, and reassembly; aligning and adjusting instructions.
   4. Sequence of operation for each installed system.
   5. Itemized listing of lamp type and source for all installed lighting fixtures.
   6. Test records and certifications.
   7. Equipment start-up reports.
8. Warranty information and letters of guarantee.
9. Instruction period checklist for each equipment item.
10. Recommended supply source(s) for repair parts.

K. Complete O&M Manual shall be available for use by Owner's representatives during instruction and training sessions.

L. Provide electronic files of approved O&M Manual. Comply with requirements of Division 01 Section “Operation and Maintenance Data”.

1.05 OPERATION AND MAINTENANCE INSTRUCTION AND TRAINING

A. Instruct Owner's Representative(s) in the Operation and Maintenance procedures described in Operation and Maintenance Manual. Comply with Division 01 Section requirements.

B. Enlist services of qualified personnel, including each sub-trade and factory trained specialists for each major piece of equipment, to attend training sessions and provide operation and maintenance instructions.

C. Submit training agenda, schedule and list of representatives to Design Engineer for review 30 days prior to training sessions. Confirm attendance by written notification to all participants.

D. Prepare checklist of all equipment and systems requiring instruction and maintenance for verification and agreement by the Owner's Representative of satisfactory start-up and instruction. Checklist shall include a statement of completion by the Contractor, date and topic(s) covered in each training session, and an attendance list of all participants at each training session. Submit a copy of checklist to Design Engineer for review 30 days prior to training sessions. Include copy of the completed checklist in Operation and Maintenance Manual.

E. All electrical systems shall be properly functioning prior to instruction period.

PART 2 - EXECUTION

2.01 ELECTRICAL EQUIPMENT AND SYSTEMS START-UP

A. Provide the services of a factory-authorized service representative to test and inspect unit installation, provide start-up service and demonstrate and train Owner's maintenance personnel.

B. Include certification of factory-authorized representative status as part of equipment submittal from manufacturer.
C. Include written start-up reports with test data for equipment in Operation and Maintenance Manual.

2.02 FINAL CLEANING

A. At time of final cleanup, clean all lighting fixtures, devices and equipment and leave in condition for use intended. Vacuum cabinet interiors of control panels, mechanical units, etc. to remove all electrical construction debris.

END OF SECTION 26 05 05
PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specifications, apply to work of this section.

B. Related Sections include the following:
   1. Division 01 Section, “Summary” for phasing requirements.
   2. Division 01 Section, “Cutting and Patching”.
   3. Division 01 Section, “Selective Demolition” for general demolition requirements and procedures.
   4. Division 01 Section 028082 “Lighting and Electrical Components.”

1.02 SUMMARY

A. Include all labor, equipment, and materials necessary to complete demolition of existing electrical systems as shown on the drawings and described herein.

B. Electrical services to areas occupied by Owner shall be maintained. If interruption of service is necessary, coordinate and schedule work with owner to minimize interruption.

C. Provide temporary raceways, circuits and connections to maintain power and communications systems in all occupied areas.

D. Remove and dispose of all transformers and related equipment which contain polychlorinated biphenals (PCB's) in full compliance with EPA regulations.

1.03 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Detach items from existing construction and deliver them to Owner.

C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.

D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.
PART 2 - SALVAGE

2.01 MATERIALS OWNERSHIP

A. The Owner shall have first salvage rights to all removed lighting fixtures and equipment. Coordinate selection with the Owner's Representative.

B. Except for items or materials to be reused, salvaged, reinstalled or otherwise indicated to remain owner’s property, demolished materials shall become Contractor’s property and removed from Project site.

C. Transport and legally dispose of off site, all materials resulting from demolition not being salvaged.

PART 3 - EXECUTION

3.01 CONTINUITY OF SERVICE

A. Obtain permission from the Architect and Owner’s Representative prior to interruption of existing electrical systems. Reconnect existing circuit loads were necessary.

B. Where live circuits are encountered during demolition, relocate and/or extend the circuits as required to accommodate construction.

C. Protect, brace and support existing active electrical circuits or equipment as required.

D. Circuits damaged during work of this contract shall be repaired. Data cables shall be replaced from termination jack to patch panel.

E. Schedule work to avoid interruptions to the occupied facilities. The Owner may require work to be performed on nights, weekends or holidays. Include overtime work as necessary.

3.02 DEMOLITION

A. Condition and Premises: The Owner assumes no responsibility for condition of areas to be demolished. General conditions existing at time of inspection for bidding purposes will be maintained by Owner.

B. Contractor shall visit the site and inspect all transformers and related equipment which is suspected of containing PCB’s.

C. All equipment which is not labeled as containing PCB’s, but is suspect shall be tested for contamination.
D. All equipment which is determined to contain PCB’s (either by label or test) shall be removed and disposed of utilizing a method which is in full compliance with all EPA regulations for handling, transporting, and disposing of equipment containing PCB's.

E. Cleanup of any existing spillage containing PCB’s shall be by the General Contractor.

F. Employ the services of a qualified company that specializes in the testing, handling, and disposal of items containing PCB’s for removal and disposal of contaminated equipment.

G. Certify in writing to the Owner that all methods of handling and disposal of the PCB contaminated equipment have been accomplished in accordance with the EPA, and the regulations governing PCB’s.

H. Not all conduit, devices or equipment are shown on drawings. Other demolition may be required.

I. Partial Removal: Items of salvageable value to Contractor indicated to be removed, may be removed from structure as work progresses. Salvaged items must be transported from site as they are removed. Storage or sale of removed items on site will not be permitted.

J. Protections: Ensure safe passage of persons around area of demolition. Conduct operations to prevent injury to adjacent buildings, structures, other facilities, and persons.

K. Damages: Promptly repair damages caused to adjacent facilities by demolition operations at no cost to Owner.

L. Existing Utility Services: Maintain existing utilities indicated to remain, keep in service and protect against damage during demolition operations.

M. Cut and/or patch and repair all existing floor, wall and roof penetrations not being re-used. Comply with Division 01 Section requirements.

N. All roof penetrations that are re-used shall be inspected and made air and water tight.

O. Cut and remove buried raceway and conductors, indicated to be abandoned in place, 2 inches below the surface of adjacent construction. Cap raceways and patch surface to match existing finish.
P. Remove, store, clean, reinstall, reconnect and make operational components indicated for relocation.

END OF SECTION 26 05 07
PART 1 - GENERAL

1.01 PROVISIONS

A. A complete system of wires shall be installed in the raceway system.

B. All wiring rated greater than 100 amps may be aluminum but must be sized appropriately. Branch circuits and feeders rated 100 amps and less shall be copper.

1.02 RELATED REQUIREMENTS

A. All provisions of the contract including Division 01 apply to work specified in each section of this Division 26, 27, 28.

1.03 SUBMITTALS

A. Complete manufacturer's data, including catalog cuts. Submit parts replacement/ordering information as part of O & M Manuals.

B. All submittals shall be made in accordance with requirements of Section 260500 and Division 01.

PART 2 - PRODUCTS

2.01 MATERIALS

A. All wiring shall be rated at 600 volts.

B. Wire sizes #12 AWG and #10 AWG shall be solid, type THHN/THWN. Wire sizes #8 AWG and larger shall be stranded, type THHN/THWN or sizes #4 AWG and larger may be type XHHW. Minimum wire size shall be #12 AWG, unless noted otherwise.

1. Exceptions:
   a. See Sections 271500 and 283111 for Communications Systems wire and cable requirements.

C. Flexible Cord: Flexible cord shall consist of an outer jacket of oil-resistant thermoplastic elastomer or neoprene around individual insulated copper conductors and an insulated copper grounding conductor. Individual conductors shall have insulation rated 600 VAC. Wire shall be stranded. The outer sheath shall be marked with cord type, wire gauge and conductor quantity at 24” intervals. Neutral conductors shall be the same size as the phase conductors. Flexible cord shall be Type SEO, Type SEOO or Type SEOOW, rated for at least 105 degrees C. In wet or damp locations, flexible cord shall be Type SEOOW.
D. Aluminum conductors shall be stranded AA-8030 series aluminum alloy with XLPE insulation. Insulation shall be rated for 600V Type RHHW-2, compact stranded conductors.

E. Metal Clad Cable (MC) shall be made in accordance with U.L. 1569. Armor shall be galvanized interlocking steel strip with THHN conductors rated 90 degrees Celsius. Provide a neutral conductor for each phase conductor.

F. All wire shall be marked with gauge and insulation type on 24" centers, and color coded as required by the N.E.C.

G. All wire and cable shall be brought to the job in the original containers bearing the U.L. label.

H. Molded connectors with metal thread-on core shall be used for splicing #12 and #10 wires. Stranded cables shall be connected to lugs using mechanical connectors, and shall be wrapped with electrical tape to a thickness equal to the wire insulation.

I. Compression connectors for aluminum conductors shall be dual listed for use with both copper and aluminum conductors. Connections shall be made with hydraulic compression tool and shall have oxide-inhibiting compound. Connectors shall be Burndy Hyplug.

J. Support vertical conductors in raceways with a screw body and wedging type plug segments made to support cables and relieve strain without damaging conductor insulation.

K. Wire pulling lubricants shall be non-toxic, polymer based and compatible with conductor insulation. The dielectric strength of the conductor insulation shall not be reduced.

L. Termination fittings for aluminum conductors shall be Burndy "Hyplugs".

2.02 ACCEPTABLE MANUFACTURERS

A. Copper Wire and cable shall be as manufactured by Rome, Southwire, General Cable, American Insulated Wire, Superior/Essex or Cerrowire.

B. Aluminum wire shall be manufactured by Stabiloy.

C. MC cable shall be manufactured by AFC Cable Systems or Alflex.

D. Molded connectors shall be as manufactured by 3M or Buchanan.

E. Mechanical connectors shall be manufactured by Burndy, O.Z./Gedney Co., or Thomas & Betts.
F. Cable supports shall be manufactured by O.Z./Gedney.

G. Wire pull lubricant shall be manufactured by Thomas & Betts or Ideal.

H. Tape shall be manufactured by 3M.

I. Substitutions may be considered only when submitted in conformance with Section 260500.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Wires shall be pulled in such a manner as to avoid kinking or abrasion to the insulation. Use only approved lubricants which do not deteriorate conductors or insulation. Oil or grease shall not be used to lubricate wires.

B. Make sure that all conduit fittings have insulated bushings in place before pulling wires. If it is found that the insulating bushings are not in place before pulling wire, the wire will be removed and replaced with new at the contractor’s expense.

C. Where more than three current carrying conductors are installed in a single raceway, the minimum wire size shall be increased to comply with NEC Table 310-16, Note 8.

D. Where the distance from the overcurrent device to the first outlet exceeds 100 feet, the minimum wire size shall be #10 AWG.

E. MC cable may be used only for connections to luminaries. MC cable shall not exceed 6 feet in length.

F. All receptacle circuits associated with computer outlets shall have separate neutrals. No shared neutrals will be allowed. Neutral conductor shall be considered as "current-carrying" for the purpose of applying NEC Table 310-16, Note 8, above.

G. Wiring shall be arranged as shown on the drawings. Combining of homeruns will be allowed for up to three 20 amp circuits. Each circuit shall have a separate neutral.

H. Provide separate equipment ground conductor full length of all raceways. This conductor is not shown on the drawings and is in addition to the conductors shown.
I. Conductor insulation shall be color coded as follows:

<table>
<thead>
<tr>
<th>CONDUCTOR</th>
<th>208Y/120 VAC</th>
<th>480Y/277 VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase A</td>
<td>Black</td>
<td>Brown</td>
</tr>
<tr>
<td>Phase B</td>
<td>Red</td>
<td>Orange</td>
</tr>
<tr>
<td>Phase C</td>
<td>Blue</td>
<td>Yellow</td>
</tr>
<tr>
<td>Neutral</td>
<td>White *</td>
<td>Grey *</td>
</tr>
<tr>
<td>Ground</td>
<td>Green</td>
<td>Green</td>
</tr>
</tbody>
</table>

1. * Neutral shall have colored stripe where so specified

J. Except where conductor sizes are indicated on the drawings, the following schedule, listing minimum conductor size, shall be adhered to:

<table>
<thead>
<tr>
<th>CIRCUIT OVERCURRENT</th>
<th>DEVICE RATING</th>
<th>CONDUCTOR SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 amperes or less</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>30 amperes</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>40 amperes</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>50 amperes</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>60 amperes</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>70 amperes</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>80 amperes</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>90 amperes</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>100 amperes</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

K. For paralleled conductors, lengths of the conductors shall be identical and one conductor for each phase and neutral shall be run in each conduit.

L. All terminations of aluminum wire shall be made with aluminum compression type fittings only, used in conjunction with hydraulic actuated dies. Dies shall compress the full circumference of the cable.

3.02 TESTING

A. Measure and record insulation resistance values for each service entrance conductor and each conductor rated 100 amps or more. Adjust measurements for ambient temperature. Test as recommended per wire manufacturer using 500 VDC or 1,000 VDC testing equipment. Replace wires with resistance of less than one megohm.

B. Inspect wire and cable for physical damage and proper connection.

C. Torque test conductor connections and terminations to manufacturer’s recommended values.
D. Perform continuity test on all power conductors. Verify proper phasing connections.

END OF SECTION 26 05 19
PART 1 - GENERAL

1.01 PROVISIONS

A. Provide grounding for the entire electrical system as required in Article 250 of the N.E.C., and as specified herein.

B. Provide grounding and bonding of telecommunications cabling as required by the NEC and as called for in ANSI/TIA/EIA 569 and 607-B, and as specified herein.

1.02 RELATED REQUIREMENTS

A. All provisions of the contract including Division 01 apply to work specified in each section of this Division 26.

B. See Sections 260500, 260519, 262413, and 262416.

1.03 SUBMITTALS

A. Complete manufacturer’s data, including catalog cuts. Submit parts replacement/ordering information as part of O & M Manuals.

B. All submittals shall be made in accordance with requirements of Section 260500 and Division 01.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Ground Rods: Copperweld 3/4" x 10'-0" or as required.

B. Ground Clamps: Burndy Type NT.

C. Compression Grounding: Burndy Hyground Irreversible Compression Grounding System, Thomas & Betts EZ Ground Compression Connectors, or approved equal.

D. All grounding and bonding conductors shall be copper. Aluminum or copper clad aluminum is not allowed.

2.02 ACCEPTABLE MANUFACTURERS

A. Acceptable manufacturers shall be as listed above.

B. Substitutions may be considered only when submitted in conformance with Section 260500.
PART 3 - EXECUTION

3.01 INSTALLATION

A. The following are specifically included as requiring grounding:
   1. Electric service, equipment, and enclosures.
   2. All raceways.
   3. Neutral conductor on interior wiring systems.
   4. Main and branch circuit panelboards.
   5. Non-current carrying parts of fixed equipment.
   6. Grounding terminal of all receptacles.
   7. Motors.
   8. Transformer case and neutral.
   9. All equipment that may become energized and accessible to the animals.

B. Install two ground rods vertically, spaced 10 feet apart, with top flush with ground level unless physically protected. Connect to water service on street side of main shutoff valve, building structural steel, and service transformer ground rod.

C. Provide ground strap between each wiring device and its associated outlet box.
   1. Exception: Straps may be omitted if self-grounding devices are utilized.

D. Provide separate ground conductor full length of all raceways. Ground conductor is not shown on the drawings, and is in addition to conductors shown.

E. Equipotential Bonding Grid:
   1. Provide an equipotential bonding system for each concrete floor and slab incorporating the rebar.

END OF SECTION 26 05 26
PART 1 - GENERAL

1.01 PROVISIONS

A. Each switch, wall receptacle, light fixture, telecom work area outlet, A/V wall device, and other miscellaneous device shall be provided with an outlet box.

B. All outlet boxes shall be of the flush type unless specifically noted otherwise.

C. Box dimensions shall be selected to meet wiring space requirements. Depth may be limited by building conditions.

1.02 RELATED REQUIREMENTS

A. All provisions of the contract including Division 01 apply to work specified in each section of this Division 26.

1.03 SUBMITTALS

A. Complete manufacturer's data, including catalog cuts on standard equipment, and shop drawings for all custom equipment. Submit parts replacement/ordering information as part of O & M Manuals.

B. All submittals shall be made in accordance with requirements of Section 260500 and Division 01.

PART 2 - PRODUCTS

2.01 PROHIBITED MATERIALS

A. Sectional outlet boxes shall not be utilized.

2.02 MATERIALS

A. Flush outlet boxes shall be galvanized pressed steel, of the knockout type, not less than 4" square, minimum 14 U.S. gauge.

B. Provide extension rings for all flush boxes. Boxes which occur in concrete block walls shall be equipped with 1-1/2" square cornered tile extensions.

C. Outlet boxes installed in surface metallic raceway systems shall be shallow boxes manufactured as part of the system.
D. Surface mounted outlet boxes shall be utilized only in conjunction with exposed conduits, and shall be of the cast metal type with internal hubs and mounting flanges.

1. Exception: Exposed outlet boxes serving equipment connections in mechanical spaces and other unfinished areas may be pressed steel.

E. Boxes for exterior below grade installation shall be watertight, rated for exterior use, with gasketed covers and watertight connections. Boxes shall be cast steel, fully coated with corrosive protective compound. Boxes in paved areas shall be traffic rated.

2.03 ACCEPTABLE MANUFACTURERS

A. Pressed steel boxes shall be manufactured by Bowers, Raco, or T&B (Steel City).

B. Cast metal boxes shall be manufactured by Bell.

C. Surface boxes which are part of surface metallic raceway systems shall be manufactured by the same manufacturer as the surface metallic raceway.

D. Cast exterior boxes shall be manufactured by OZ.

E. Substitutions may be considered only when submitted in conformance with Section 260500.

PART 3 - EXECUTION

3.01 INSTALLATION

A. All outlet boxes shall be flush unless specifically noted otherwise.

B. This Contractor shall carefully lay out all outlets and check with the plumbing, heating, ventilating, and other contractors so that the outlets are not blocked, hidden, or rendered inaccessible due to equipment or piping of these trades passing over, under, across, or in close proximity to same, or to cause the devices or fixtures in or on these outlets to be inaccessible for use or maintenance.

C. Any minor changes in the location of outlets from those shown on the plans shall be made without extra charge if so directed by the Architect before installation.

D. Where two or more of the same type devices occur adjacent to each other, they shall be in a gang type box with a gang type cover. Where different type devices occur adjacent to each other, space outlet boxes so that finish plates will be spaced one inch apart (verify with Architect).
E. Contractor shall consult the Architectural drawings for exact height of all outlets not specified herein or shown on the drawings.

F. Flush ceiling and wall outlet boxes shall have a 3/8" fixture stud where fixture depends on such for support.

G. Outlet boxes shall be supported independent from the raceway system.

H. All switch outlets shall be located where shown, on strike side of door, and shall be 6" from the door casing, unless it is necessary to center switch between door and other construction for appearance.

I. Where two or more outlets occur on the same wall, unless individually noted otherwise, they shall be mounted at exactly the same height.

J. Where outlets are shown side by side but at different heights, they shall be centered one above the other unless otherwise indicated.

K. Outlets which are shown immediately opposite one another on two sides of a wall shall have boxes sized to prevent contact between the two. Nipples between boxes are prohibited.

L. Outlets shown immediately opposite one another on two sides of a fire rated wall shall have 24" minimum horizontal separation.

M. No outlet or group of outlets in a single stud space of a fire rated wall shall have a total opening area larger than 16 square inches.

N. All unused openings in outlet boxes must be left sealed or closed with plugs.

O. Grout around all outlet boxes to seal space between box and wall or ceiling materials.

3.02 MOUNTING HEIGHTS

A. Outlet boxes shall be mounted at heights as shown on the drawings. Dimensions are measured to the top of the box unless a "B" follows the dimension. In this case, the dimension is to the bottom of the box.

1. Exception: In spaces where existing outlets are installed, new outlets shall be mounted at the same height as existing similar outlets.

END OF SECTION 26 05 31
PART 1 - GENERAL

1.01 PROVISIONS

A. Furnish and install pull and junction boxes in all locations shown or required for proper installation of the raceway and wiring systems.

1.02 RELATED REQUIREMENTS

A. All provisions of the contract including Division 01 apply to work specified in each section of this Division 26.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Provide galvanized sheet steel junction and pull boxes, with screw-on covers, of the type, shape, and size to suit each respective location and installation.

1. Type for various locations:

a. 100 cubic inches or smaller: Standard outlet box with stamped knockouts.

b. 150 cubic inches or larger: Code gauge steel with slides formed and welded, with screw covers unless shown to have hinged doors. Hinged doors shall have locking device same as furnished for panelboards. Knockouts shall be factory stamped, or formed in the field with a cutting tool to provide a clean, symmetrically cut hole.

c. Exterior or wet areas: Weatherproofed galvanized steel construction with proper gaskets and corrosion resistant fasteners.

d. Ordinary Cast Metal Boxes: Provide cast aluminum or malleable iron with a minimum wall thickness of 1/8”. Boxes shall have integral threaded raceway hubs and mounting flanges. Boxes shall be corrosion resistant on the inside and outside and contain gasketed covers held in place with a minimum of four corrosion-resistant screws.
e. Vehicle-Rated Cast Metal Boxes. Provide cast malleable iron with a minimum wall thickness of 7/16”. Boxes shall have integral threaded raceway hubs or a minimum of five full thread taps within the box wall. Boxes shall be corrosion resistant on the inside and outside and contain a flange with a raised lip around the perimeter for flush mounting in pavement. Covers shall be gasketed with a checkered plate and help in place with a minimum of four stainless steel mounting screws. Boxes shall be rated NEMA Type 4 and suitable for vehicular traffic up to AASHTO H-20 loading. Covers shall be labeled with type of service in raised cast letters.

f. Composite Boxes: Provide polymer concrete boxes reinforced with woven fiberglass. Covers shall be made of the same material and designed for 150 pounds per square inch. Boxes shall be open at the bottom and have covers held in place with at least two stainless steel penta-head bolts. Provide embossed labeling on covers and a pull slot for lifting.

g. Concrete Boxes: Provide pre-cast reinforced concrete boxes with cast-in knockouts for raceways. Provide hinged, galvanized steel covers with tamperproof latches and retractable handles. Boxes shall be rated for vehicular traffic up to AASHTO H-20 loading.

2.02 APPROVED MANUFACTURERS

A. Pull and junction boxes shall be as manufactured by the following:

B. Cast Metal Boxes:
   1. Appelton, Crouse Hinds, OZ/Gedney

C. Composite Boxes:
   1. Quazite

D. Concrete Boxes:

PART 3 - EXECUTION

3.01 PROHIBITED INSTALLATION METHODS

A. No box shall be secured to the ceiling system, HVAC ductwork, or mechanical piping.
3.02 INSTALLATION

A. Install electric boxes as indicated, and in compliance with N.E.C. requirements, in accordance with manufacturer’s recommendations and with recognized industry practices to ensure that the boxes serve the intended purpose.

B. Provide pull and junction boxes wherever necessary for proper installation of the various electrical systems.

C. Provide knockout closures to cap all unused holes where blanks have been removed.

D. Coordinate and locate boxes to ensure accessibility of electrical wiring.

E. Secure boxes rigidly to the building element on which they are mounted, or solidly embed boxes in concrete or masonry.

F. Identify all boxes with label showing the individual feeder or electrical system.

G. Boxes shall have the appropriate NEMA rating for the location.

H. Concrete boxes shall be used below grade in exterior concrete or asphalt.

I. Concrete boxes shall be used below grade in exterior locations with vehicular traffic.

J. Composite boxes shall be used below grade in exterior locations without paving or vehicular traffic.

K. Ordinary cast metal boxes shall be used in exposed locations in mechanical, electrical and telecommunications rooms.

END OF SECTION 26 05 32
PART 1 - GENERAL

1.01 PROVISIONS
   A. All Division 26, 27 and 28 wires and cables shall be enclosed in a raceway system unless specifically noted otherwise.
   B. All raceways shall be concealed unless noted otherwise.
   C. All raceway shall be NEMA 4X due to the corrosive environment.
   D. Provide a complete raceway system for all mechanical system low voltage controls. Coordinate with mechanical contractor; review all related specifications and drawings for extent of work.

1.02 RELATED REQUIREMENTS
   A. All provisions of the contract including Division 01 apply to work specified in each section of this Division 26.
   B. See Sections 013513, 260500, and 260519.

1.03 SUBMITTALS
   A. Complete manufacturer’s data, including catalog cuts. Submit parts replacement/ordering information as part of O & M Manuals.
   B. All submittals shall be made in accordance with requirements of Section 260500 and Division 01.

PART 2 - PRODUCTS

2.01 PROHIBITED MATERIALS
   A. “Pot-metal” or cast fittings, couplings, or connectors.
   B. Aluminum raceways, fittings, couplings, and connectors.
   C. Electrical Non-Metallic Tubing (ENT). Also known by trade name “smurf tubing”.

2.02 MATERIALS
   A. Rigid Steel Conduit: Standard iron pipe size with screwed joints for electrical raceway use, in conformance with ANSI C80.1 “Rigid and Steel Conduit.” Raceway shall be zinc coated by hot dip galvanizing or sherarding. Manufacturer shall be Allied Tube and Conduit or Triangle PWC.
B. Electrical Metallic Tubing: Zinc-coated steel in conformance with ANSI C80.3 “Electrical Metallic Tubing,” manufactured by Allied Tube and Conduit, or Triangle PWC.


D. Liquidtight Flexible Nonmetallic Conduit, Type “LFNC”: As manufactured by Carlon Electrical Products or P.W. Pipe.

E. Fittings, Couplings and Connectors: Utilize fittings listed and approved for specific conduit or raceway system used. All fittings, couplings, and connectors shall be steel or malleable iron and shall have insulated bushings molded or locked into the metallic body of the fitting for protection of conductors. Fittings for galvanized rigid steel raceways shall be the threaded type. Fittings for EMT shall be or compression type. Fittings for flexible conduit shall be of the wedge and screw or the squeeze and clamp type. Fittings for liquid tight flexible conduit shall have a threaded grounding cone, and a compression ring with gland for tightening. Fittings shall be manufactured by Appleton, Thomas & Betts, OZ/Gedney or same manufacturer as conduit.

2.03 ACCEPTABLE MANUFACTURERS

A. Acceptable manufacturers shall be as listed above.

B. Substitutions may be considered only when submitted in conformance with Section 260500.

PART 3 - EXECUTION

3.01 PROHIBITED LOCATIONS AND INSTALLATION METHODS

A. Electrical metallic tubing shall not be installed underground, in concrete, or exterior (non-galvanized).

B. No raceway shall be secured to the ceiling system, ceiling hangers, HVAC ductwork, or mechanical piping.

3.02 REQUIRED LOCATIONS

A. Nonmetallic conduit shall be used for all exterior raceways and in locations specifically noted or required by code.

B. Rigid non-metallic conduit shall be used for all conduits installed underground.
C. Liquidtight flexible conduit shall be used in place of flexible conduit in damp or wet locations, including all connections to pumps.

D. Electrical metallic tubing shall be used in all locations not noted above.

3.03 INSTALLATION

A. Maximum size raceway to be installed in concrete floor slabs shall not be larger in outside diameter than 1/3 the overall thickness of the slab. Raceways shall be installed in middle third of the slab thickness and leave at least 1-inch concrete cover. Raceways shall be secured to reinforcing to prevent sagging or shifting during concrete placement. Raceways shall be spaced no closer than three diameters laterally to prevent voids in the concrete. Curved portions of bends shall not be visible above the finished slab.

B. Non-metallic raceways run in concrete slabs shall make a transition to rigid steel conduit before rising above the slab.

C. Stub-ups in floor slabs shall be made with an adjustable top or coupling threaded inside for plugs, set flush with the finished floor. For connections to equipment, extend raceway from fitting with rigid steel conduit; flexible metal conduit may be used 6 inches above the floor.

D. Maintain minimum 6-inch separation from steam and hot water lines.

E. All raceways shall be installed parallel with or at right angles to the building lines, and not installed diagonally.

F. The locations of all raceways shall be coordinated with all other trades. If a conflict occurs due to lack of this coordination, then changes in the location of the raceways shall be made without extra charge.

G. For conduits one inch and larger, hickey bends are not acceptable. Either manufactured elbows or bends fabricated in a bending machine must be used.

H. Where a conduit enters a box or other fitting through a knockout, an approved double locknut and insulating bushing must be provided. All conduits shall be equipped with insulating bushings at all outlets, pull boxes, panels, etc.

I. Flexible conduit connections to motors shall include (1) 90 degree bend.

J. All conduit shall be cleaned by pulling a swab through the conduit before pulling in wires.
K. Branch raceway runs are shown schematically. Except where exact routing is indicated, branch circuit raceways may be grouped, and the actual routing of branch circuit raceways may be altered, providing actual locations are properly entered on the “As-Built” drawings.

L. Conduit connections between outlet boxes less than 24 inches apart on opposite sides of a wall shall be made with a loop of flexible conduit (no nipples).

M. Provide expansion fittings for all rigidly fastened conduits spanning expansion joints, and for all runs 1-1/2 inch or larger exceeding 150 feet in length. Fittings shall be hot-dipped galvanized malleable iron with a packing ring to exclude water, a pressure ring, and a separate external bonding jumper.

N. Seal around all conduits at ceiling, floor, and wall penetrations with an approved fire stop material to provide airtight fireproof seal.

O. Provide roof jack at all roof penetrations. Coordinate roof jack type and installation with General Contractor. Equipment must be compatible with required roof guarantee.

P. Install raceway sealing fittings per the manufacturer’s recommendations. Sealing fittings shall be located in approved, accessible locations and filled with U.L. listed sealing compound. For concealed raceways, install fittings in a flush steel box with a blank cover. Sealing fittings shall be installed where raceways enter/leave a hazardous area, a refrigerated area and as otherwise required by the code.

Q. Where conduit runs are 100 feet or longer contain the equivalent of four (4) 90E bends, pull/junction boxes shall be provided. Pull box locations shall be indicated on the record drawings.

R. Minimum size conduit shall be 3/4 inch, except where a single circuit of two #12 or two #14 AWG wires are installed, which requires 1/2 inch conduit minimum. Minimum size conduit to be 3/4 inch below grade. Conduit sizes shown on the drawings shall supersede these requirements.

S. All unused raceways shall be provided with a nylon pull string. Raceways larger than 1-1/2 inch shall be provided with a 1/4 inch poly pull line.

END OF SECTION 26 05 33
PART 1 - GENERAL

1.01 PROVISIONS

A. Provide each wiring device and each outlet with a plate.

B. Plate shall be size and type to match device.

1.02 RELATED REQUIREMENTS

A. All provisions of the contract including Division 01 apply to work specified in each section of this Division 26.

1.03 SUBMITTALS

A. Complete manufacturer’s data, including catalog cuts on standard equipment, and shop drawings for all custom equipment. Submit parts replacement/ordering information as part of O & M Manuals.

B. All submittals shall be made in accordance with requirements of Section 260500 and Division 01.

PART 2 - PRODUCTS

2.01 PROHIBITED MATERIALS

A. Sectional plates shall not be utilized.

2.02 MATERIALS

A. All devices shall be equipped with black nylon plates, of type to match device.

B. All junction boxes in finished areas shall be provided with blank plates.

C. Plates on exposed pressed steel boxes shall be pressed steel of the same manufacture as the box, unless noted otherwise.

D. Weatherproof while-in-use receptacle covers shall be cast aluminum with gasket. Plate shall mount on a vertical single gang outlet and meet or exceed UL requirements. Provide a lockable hasp. Cover shall be equivalent to Intermatic #WP101MXD.

2.03 ACCEPTABLE MANUFACTURERS

A. Plates shall be manufactured by P&S, Arrow Hart, Hubbell, or Leviton.
B. Substitutions may be considered only when submitted in conformance with Section 260500.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install plate on each device outlet, communications outlets, and junction box.

B. Device plates shall be fitted tight to wall. Adjust device to accommodate.

C. All receptacles other than 15 or 20 amperes, 120 volt, shall be engraved with designation of amperage, voltage, and phase, in 3/16” high letters. See Section 260553.

D. All device plates shall be identified as to circuit number. See Section 260553.

END OF SECTION 26 05 51
PART 1 - GENERAL

1.01 GENERAL
A. All identification shall use the room numbers assigned by the Owner. Obtain a list of room numbers from the Owner’s Representative prior to preparing identification.

1.02 PROVISIONS
A. Install nameplates on all main distribution panels, starters, panelboards, disconnect switches (including those at main panels), enclosures, and cabinets installed under this contract.
B. Install plates with engraved labels at all control switches noted on the drawings.
C. Install printed labels on all device plates, showing circuit number.
D. Install type written branch circuit directory cards in all panelboards.
E. Provide fault current information on service entrance equipment.
F. Provide arc flash information on electrical equipment.
G. Install printed labels on cover of all junction boxes, showing system identification and/or circuit number.
H. All wiring in all outlet and junction boxes shall be properly identified as to cable source or circuit number. Verify type of marker with Engineer before installation.

1.03 RELATED REQUIREMENTS
A. All provisions of the contract including Division 01 apply to work specified in each section of this Division 26, 27, 28.
B. See Sections 260500, 262416, 262726, and 262816.

1.04 SUBMITTALS
A. Detailed shop drawings for all custom nameplates.
B. All submittals shall be made in accordance with requirements of Section 260500 and Division 01.
PART 2 - PRODUCTS

2.01 PROHIBITED MATERIALS

A. Dymo (or equivalent) labels shall not be utilized, unless specifically noted.

B. Permanent type marking pens (i.e. Sharpie).

2.02 MATERIALS

A. Nameplates:
   1. Nameplates shall be fabricated from black bakelite, with 1/4" or 3/8" engraved white letters.
   2. Wherever engraved plates are noted on the drawings, such labels shall be engraved directly into the metal or plastic plate, dead front, or other material.
   3. Engraved letters shall be 1/4" or 3/8" high, filled with black enamel, and read as directed.

B. Printed labels shall be matte white polypropylene with adhesive back designed for exterior applications. Label text shall be 3/4" high, black and shall be applied to the label by a thermal transfer printer. Printed labels shall be made using a Brady ID PAL printer.

C. The available fault current shall be indicated on the main distribution panel. Fault current information and date of calculation shall be located on the incoming section of the main switchboard.

D. A warning sign complying with NEC Article 110.16 shall be provided for all switchboards, panelboards, motor starters, dry-type transformers, disconnect switches, and lighting control panels. Arc flash signs shall be in accordance with ANSI Standard Z535.4 requirements. Signs shall state “Warning”, “Arc Flash Hazard”, and “Appropriate PPE Required.”

E. Schedules:
   1. Provide typewritten directory for each panel, on heavy card stock, showing all circuit numbers.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Nameplates:
   1. Panelboards: Mount above door opening. On dead front panels install above circuit breakers, unless panelboard is located in a utility-type room, then install nameplate on outside of panelboard above door.
2. Disconnect Switches, Relays, Contactors, and Lighting Control Panel(s): Mount nameplate on outside of cabinet, near top.

3. Control Switches: Install nameplate in location as directed near switch. Nameplate is required unless engraved labels are specified.


B. Schedules:

1. Panelboards: Mount in frame under plastic cover, on back side of door. Schedule shall show circuit service for each circuit breaker, using "Owners" room numbers. Spares and spaces shall be written in pencil.

C. Device Plates:

1. Provide line voltage branch circuit identification labels on all receptacle outlet device plates.

2. Provide network identification labels on all telecom work area outlets.

END OF SECTION 26 05 53
PART 1 - GENERAL

1.01 PROVISIONS

A. This Section of the Specification applies to low voltage lighting controls for the project.

B. Provide complete lighting controls for interior lighting as indicated on the plans and specified herein. Specifications shall take precedence over the plans if discrepancies arise.

C. Adjust and test the lighting controls, and demonstrated operation to the Owner's Representative and Commissioning Agent.

D. Instruct the Owner's staff in operating the controls and recommended maintenance procedures.

1.02 RELATED REQUIREMENTS

A. Drawings and the general provisions of the Contract, including General and Supplementary Conditions and Division 1 specification sections, apply to work in this section.

B. See Sections 260500, 260519, 260531, and 260532

1.03 GENERAL DESCRIPTION

A. Interior office area lighting shall be occupancy based with dual technology occupancy sensors, power pack relays and slave relays.

B. Include low-voltage cabling and all other miscellaneous equipment and devices required for a complete and operable lighting control system.

1.04 SYSTEM OPERATION

A. Occupancy-based controls for interior lighting shall provide automatic shut-off control as indicated.

1. Control interior lighting by room, with automatic controls functioning to turn off the general room lighting after a time delay when no occupant is present in the room.

2. Occupancy sensors shall provide complete and proper volumetric coverage of each room.
3. Occupancy-based controls, except wall switch occupancy sensors, shall include means for automatic self-adjustment. Sensors shall have adjustable sensitivity and time-delay settings, which shall be adjusted in each room to suit the actual room conditions. Dual technology sensors shall also be equipped with selectable technology logic, initially set to require actuation of both technologies to activate the sensor and either technology to keep it activated. The occupancy sensors shall be aimed and adjusted such that the presence of one occupant anywhere in a room is sufficient to keep the control from automatically shutting off the lighting, without requiring excessive activity or special movement on the part of the occupant. Normal air movement while the room is unoccupied shall not in itself cause the occupancy sensors to remain activated.

4. Wall switch occupancy sensors, shall include means for manual adjustment. Sensors shall have adjustable sensitivity and time-delay settings, which shall be adjusted in each room to suit the actual room conditions. The occupancy sensors shall be adjusted such that the presence of one occupant within sight of the sensor is sufficient to keep the controls from automatically shutting off the lighting, with sufficient time-delay to allow an occupant to conduct any normal functions that may be out of sight from the sensor. Normal air movement while the room is unoccupied shall not in itself cause the occupancy sensor to remain activated.

5. Occupancy based controls, except wall switch occupancy sensors, shall include auxiliary contacts for interface with the energy management system for HVAC system control, in accordance with requirements of Division 23.

B. Dimming daylight harvesting controls for interior lighting shall provide automatic dimming control as indicated.

1. Control interior lighting in daylight zones room by room, with automatic controls to dim the general room lighting in the daylight zone, after a time delay, whenever the ambient illumination in the daylight zone increases or decreases outside of the pre-set deadband beyond the setpoints for the current level.

2. Increase in ambient illumination in the daylight zone shall cause the lamps to dim proportionately, with the row closet to the window dimming more than the row or rows farther away. Decrease in the ambient illumination in the daylight zone shall cause the lamps to increase lumen output proportionately.

3. The controls shall include an automatic shut-off feature, capable of automatically shutting off a channel when the daylight remains adequate to cause the channel to fully dim for a pre-set interval. The controls shall include facilities to disable this feature.
4. Dimming daylight harvesting controls shall be compatible with occupancy sensors which shall function as described above to shut off all lights in the room, including those in the daylight zone, when the room is unoccupied. Occupancy sensors shall shut off the lights in the room regardless of the ambient illumination.

C. Automatic lighting controls which are programmed shall incorporate back-up capabilities for at least 10 hours upon interruption of power.

1.05 SUBMITTALS

A. Test Reports: Record of all field test data. Submit to the Architect.

B. Training Documentation: Sign-off form and attendee sign-in sheet for the training session.

1.06 WARRANTY

A. Provide a five year complete manufacturer’s warranty on all products to be free of manufacturers’ defects.

PART 2 - PRODUCTS

2.01 LIGHTING CONTROLS

A. Design is the Acuity Controls nLight. Provide the following devices as required
   1. Dual Technology Occupancy Sensors
   2. Daylight Sensor
   3. WallPods
   4. nLight Enabled Fixtures

PART 3 - EXECUTION

3.01 INSTALLATION

A. Provide detailed point to point wiring diagrams for every termination. Provide wire specifications and wire colors to simplify contactor termination requirements

B. Install the work of this Section in accordance with manufacturer’s printed instructions unless otherwise indicated.

C. Calibrate all sensor time delays and sensitivity to guarantee proper detection of occupants and energy savings.
   1. Adjust time delay so that controlled area remains lighted for 5 minutes after occupant leaves area.
D. Provide written or computer-generated documentation of the system including room by room description including:
   1. Sensor parameters, time delays, sensitivities, and daylighting setpoints.
   2. Sequence of operation, (e.g. manual ON, Auto OFF. etc.)
   3. Load Parameters (e.g. blink warning, etc.)

E. Re-programming – After 30 days from occupancy re-calibrate all sensor time delays and sensitivities to meet the Owner’s Project Requirements. Provide a detailed report to the Architect / Owner of the activities.

3.02 FIELD TESTING

A. Upon completion of the installation, the system shall be tested by the manufacturer's factory authorized representative who will verify a complete fully functional system.

B. The electrical contractor shall provide both the manufacturer, commissioning agent and the electrical engineer with ten working days written notice of the system startup and adjustment date.

C. Upon completion of the system testing the factory-authorized technician shall provide the proper training to the owner’s personnel on the adjustment and maintenance of the system.

END OF SECTION 26 09 23
PART 1 - GENERAL

1.01 PROVISIONS

A. Furnish and install all lighting and power branch circuit panelboards shown on the drawings.

B. Panels shall be mounted in steel cabinets arranged for flush or surface mounting as indicated on the plans.

1.02 RELATED REQUIREMENTS

A. All provisions of the contract including Division 01 apply to work specified in each section of this Division 26.

B. See Sections 260500 and 260553.

1.03 SUBMITTALS

A. Complete manufacturer's data, including catalog cuts on standard equipment, and shop drawings for all custom equipment. Submit parts replacement/ordering information as part of O & M Manuals.

B. Include schedule showing circuit breaker size and number of poles, keyed to circuit number. Schedule shall be arranged the same as the panel schedules included in the specifications.

C. All submittals shall be made in accordance with requirements of Section 260500 and Division 01.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Cabinet and trim shall be of code gauge steel (minimum) with 4" (minimum) wiring gutter all around. All panelboards shall be equipped with a hinged, locking door. Two keys shall be furnished with each cabinet, and all locks on all cabinets shall be keyed alike.

B. Where panels occur adjacent to one another, cabinets and doors for each panel shall be of the same height.

C. All panelboards shall be painted with gray lacquer over rust preventative primer. Sides and top of surface mounted panels shall be painted to match fronts.

D. Panels shall be of the circuit breaker type, and shall have capacity and arrangement as shown on the panel schedule.
E. Branch circuit breakers shall be bolt-on type and shall be of the ambient compensated, thermal magnetic type, which will provide inverse time delay overload, and instantaneous short circuit protection. All branch circuit breakers shall have a minimum interrupting rating of 10,000 amperes RMS symmetrical. Branch circuit breakers shall have one, two or three poles as designated on the panel schedule. No circuit breakers utilizing handle ties for two or three pole operation will be acceptable.

1. Voltage and current ratings shall be as indicated on the drawings.

F. Provide a typewritten directory for each panel, placed inside the panel door. The directory shall list all rooms served by each breaker, using the "Owner's" room numbers. Directories shall be installed in a metal directory frame and glass. Spares and spaces shall be written in pencil.

G. Each panel shall be equipped with a ground lug for feeder ground.

H. Each panel and cabinet and the units comprising same shall bear the manufacturer's nameplate and the U.L. label.

2.02 ACCEPTABLE MANUFACTURERS

A. Panelboards shall be Siemens type “P2” or “P3”, G.E., Cutler-Hammer, or Square D.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Mount panels in locations shown, making sure that code-required clearances exist.

B. All panels shall be mounted with top at the same height; approximately 6'-6".

C. Where cabinets cannot be set fully flush due to shallowness of all of partition, trim protruding sides with approved metal or hardwood molding, fastened to cabinet so as to conceal intersection of wall and cabinet.

D. If paint is damaged during shipping or installation, damaged portion shall be sanded smooth and entire panel repainted.

E. Provide (5) extra 3/4" conduits stubbed into accessible ceiling spaces above each flush mounted panel.
F. Utilize hydraulic actuated dies to compress the cable connecting lugs. Dies shall compress the full circumference of the cable.

END OF SECTION 26 24 16
PART 1 - GENERAL

1.01 PROVISIONS

A. Provide wiring devices at all device outlet locations shown on the drawings.

1.02 RELATED REQUIREMENTS

A. All provisions of the contract including Division 01 apply to work specified in each section of this Division 26.

B. See Sections 260500, 260551, and 260553.

1.03 SUBMITTALS

A. Complete manufacturer's data, including catalog cuts. Submit parts replacement/ordering information as part of O & M Manuals.

B. All submittals shall be made in accordance with requirements of Section 260500 and Division 1.

PART 2 - PRODUCTS

2.01 MATERIALS

A. WALL SWITCHES

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restroom Single Pole Switches</td>
<td>Hubbell LH MT D 2 B</td>
</tr>
<tr>
<td>All Other Line Voltage Single Pole Switches</td>
<td>Hubbell HBL1221BK</td>
</tr>
<tr>
<td>Two Pole Switches</td>
<td>Hubbell HBL1222BK</td>
</tr>
</tbody>
</table>

B. WALL RECEPTACLES

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duplex Receptacles</td>
<td>Hubbell HBL5362BK</td>
</tr>
<tr>
<td>GFI Receptacle</td>
<td>Hubbell GFR5362SGBK</td>
</tr>
</tbody>
</table>

C. LIGHTING CONTROL

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Voltage Switches</td>
<td>nLIGHT nPODM DX BK LT</td>
</tr>
<tr>
<td>Power Packs</td>
<td>nLIGHT nPP16 DS EFP SA</td>
</tr>
<tr>
<td>Photocell</td>
<td>nLIGHT nCM ADCX LT RJB</td>
</tr>
<tr>
<td>Occupancy Sensor</td>
<td>nLIGHT nCM PDT 10 RJB LT</td>
</tr>
<tr>
<td>WeatherProof Receptacles</td>
<td>Leviton 6599-I w/#G196-V</td>
</tr>
</tbody>
</table>
D. Unless noted otherwise, devices shall have black finish.
E. Additional devices shall be as noted on the drawings.

2.02 ACCEPTABLE MANUFACTURERS

A. Acceptable manufacturers shall be as listed above.
B. A&H, Hubbell, P&S and Leviton devices which are the approved equal of those specified above are considered acceptable.
C. Substitutions may be considered only when submitted in conformance with Section 260500.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Mount devices securely to outlet boxes.
B. Provide ground straps between each wiring device and its associated outlet box.
   1. Exception: Ground strap not required with self-grounding devices.
C. Orient receptacles so that ground pin is at top.
D. Mount weatherproof receptacles vertically, up 18” from finished grade.
E. All Toilet Rooms shall have GFI type receptacles.
F. All receptacles within 6 feet of a sink shall be GFI type receptacles.
G. All interior damp or wet location outlets shall be weather-resistant type GFI receptacles.
H. All exterior damp or wet location outlets shall be weather-resistant type GFI receptacles.
I. Provide device labeling per Specification Section 260553.

END OF SECTION 26 27 26
PART 1 - GENERAL

1.01 PROVISIONS

A. Provide equipment and/or branch circuit disconnect switches in all locations shown or specified and in all locations required by code.

1.02 RELATED REQUIREMENTS

A. All provisions of the contract including Division 01 apply to work specified in each section of this Division 26.

1.03 SUBMITTALS

A. Complete manufacturer's data, including catalog cuts. Submit parts replacement/ordering information as part of O & M Manuals.

B. All submittals shall be made in accordance with requirements of Section 260500 and Division 01.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Each motor and/or equipment item shall be equipped with a one, two, or three pole fused, heavy-duty disconnect switch sized to match the motor and/or equipment.

1. Disconnect switches for 20 Amperes or less, single phase loads shall be toggle-type switches.

B. Switches shall be externally operable, quick-make, quick-break, with neutral connecting block as required, and lockable operating handle. Mount in code gauge steel cabinet.

C. See Section 262813 for fuse requirements.

D. Provide Class R rejection kits on fuseholders.

2.02 ACCEPTABLE MANUFACTURERS

A. Disconnect switches shall be manufactured by Cutler-Hammer, General Electric, Siemens, or Square D.

B. Substitutions may be considered only when submitted in conformance with Section 260500.
PART 3 - EXECUTION

3.01 INSTALLATION

A. Install a disconnect switch on a pedestal near the existing transformer.

B. Install the disconnect switch at the controller location and wire to disconnect both motor and/or equipment and associated controller.

C. If the motor and/or equipment are not in sight from the controller location, provide a second disconnect switch at the motor and/or equipment, whether shown on the drawings or not.

D. Install where accessible and within reach of personal, as required by code.

END OF SECTION 26 28 16
PART 1 - GENERAL

1.01 PROVISIONS

A. Provide molded-case, insulated case, or power circuit breaker mounted in grouped equipment. Grouped equipment includes motor control centers (if applicable), panelboards, etc.

B. Circuit breakers shall be of the same brand as the panelboard manufacturer.

C. Related Specifications:
   1. See Sections 260534, and 262416.

D. The Contractor shall submit the following shop drawings and data for review by the Engineer:
   1. Ratings: Voltage, frame size, trip rating, trip settings, interrupting capacity at rated voltage.
   2. Dimensions, mounting details and enclosure types.
   3. Certification that the breakers conform to the standards required and that they are all listed for the applications on this job.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Where interrupting current ratings are shown that do not comply with the standard ratings of the manufacturer, the next highest rating shall be provided by the Contractor.

B. Molded case breakers shall comply with NEMA Standard AB-1-1986. They shall be thermal magnetic trip free, non-interchangeable trip, non-adjustable trip unless otherwise noted.

C. Refer to the power riser diagram and panelboard schedules for required interrupting capacity ratings (AIC) of circuit breaker devices.
D. Power circuit breakers shall comply with NEMA Standard SG-3-1981 and shall be as follows:

1. Power circuit breakers shall use a "stored energy" mechanism in closing and tripping the breaker. This shall consist of steel springs which shall be fully charged by the operator prior to closing and which, when released, shall provide enough energy to close and latch the breaker under any service conditions within the specified rating of the breaker. When the breaker is tripped it shall be driven open by steel springs which shall be fully charged at all times after closing to permit instantaneous tripping upon closure if necessary. The breakers shall be trip free.

2. Solid state type trips shall be used consisting of current transformers, a solid state unit to interpret the output of the current transformers, and a tripping solenoid acting directly to trip the breaker. The current transformers shall have taps which can be changed simply in the field to permit trip ratings to be changed in any of the manufacturer's standard settings. Trip units shall be capable of being calibrated and tested by a portable test set. The time delay and pickup characteristics shall also be variable in the field. The devices shall be designed such that performance at any setting is repeatable. A ground detection device shall be provided; it shall be an integral part of the trip device and provide field adjustable settings.

3. Power circuit breakers used for motor starting shall have a position switch and auxiliary contacts.

4. The manufacturer shall be capable of furnishing certified test reports for the test required in NEMA Standard SG-3-1981.

E. Circuit breakers shall be fully rated for interrupting ratings shown above. Series rated breakers are not acceptable.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Molded case breakers shall be firmly attached to bus and cable. Connections shall be rechecked after the first load cycle has been applied to the breaker.

B. Individual units in enclosure shall be mounted at 4' - 6" above the floor on walls and 3' - 6" above floor, when strut supported at motors, etc.

C. Provide time/current coordination curves for all circuit breakers on standard log-log transparencies.

END OF SECTION 26 28 17
PART 1 - GENERAL

1.01 PROVISIONS

A. Make all required connections to equipment furnished by the Owner, or under Division 01 through 26.

1.02 RELATED REQUIREMENTS

A. All provisions of the contract including Division 01 apply to work specified in each section of this Division 26.

B. See Sections 260500, 260538, 262726, and 283111.

PART 2 - PRODUCTS

2.01 See referenced sections.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Provide disconnect switch at all equipment unless cord/cap connected.

B. Where equipment has a cord connection, install a new plug on cord if equipment plug does not match the receptacle provided.

C. Coordinate all receptacles, plugs, wiring, and locations with the equipment provided PRIOR to rough-in. Make sure code required clearances are provided.

D. Provide all required connections from fire/smoke dampers to fire alarm system for shut-down of HVAC units.

E. Locate receptacle for each electric water cooler so that cord and plug are concealed inside or behind cooler. Provide hardwired connection if required. All receptacles for electric water coolers shall be protected by a GFI breaker.

F. Kitchen Fire Suppression Systems.

1. Provide wiring from fire suppression panel to:
   a. Remote pull stations
   b. Gas solenoid valves
   c. Shunt-trip breaker(s)
   d. Fire alarm panel
2. Provide a 1P-20 amp circuit to each suppression panel. Do not connect to a panel which is shunt-tripped by a fire suppression system.

3. Provide shunt-trip breakers for all electrical sources located under kitchen hoods that are provided with fire suppression system. Wire to shut off all power to equipment and receptacles under the hood upon activation of the fire suppression system.

G. Kitchen Equipment:

1. Verify all rough-in and connection requirements from drawings provided by the equipment supplier. Make final connection to all equipment.

2. Conceal conduit stub-ups for equipment connections in walls behind equipment. Install boxes flush in wall with flush cover plates. Keep exposed conduits, boxes, and flexible to a minimum length and exposure in order to meet health department regulations.

3.02 ELECTRICAL SYSTEMS COMMISSIONING

A. The equipment and systems referenced in this Section are to be commissioned per Division 01 Section 01810 “Commissioning”. The Contractor has specific responsibilities for scheduling, coordination, startup, test development, testing and documentation. Coordinate all commissioning activities with the Commissioning Consultant.

END OF SECTION 26 29 25
PART 1 - GENERAL

1.01 PROVISIONS

A. Provide lighting fixtures in all locations shown on the drawings.

B. Bidders shall acquaint themselves with the conditions and requirements of the building construction, as this work is based on furnishing all materials required to entirely complete each fixture ready for use.

1.02 RELATED REQUIREMENTS

A. All provisions of the contract including Division 01 apply to work specified in each section of this Division 26.

B. See Sections 260500, 260529, and 262813.

1.03 SUBMITTALS

A. Complete manufacturer’s data, including catalog cuts on standard equipment, and shop drawings for all custom equipment. Submit parts replacement/ordering information as part of O & M Manuals.

B. If lamps are included with the fixture, provide lamp submittal data.

C. All submittals shall be made in accordance with requirements of Section 260500 and Division 01.

PART 2 - PRODUCTS

2.01 MATERIALS

A. See schedule for listing of required lighting fixtures. Fixtures shall be complete with trim, mounting hardware, and lamps.

B. All fixtures shall bear the U.L. label associated with the type, location, and usage of the individual fixture.

C. Fixtures manufactured with pre-painted metal will not be accepted.

D. Each ballasted fixture shall be provided with ballasts of one of the following types. Ballasts shall be protected with a single element fuse, located within the ballast compartment. Ballast voltage rating shall be selected to match circuit voltage.

1. Fluorescent ballasts shall be program rapid start, true electronic (no hybrids) with the following performance requirements:

2. Comply with Federal Efficiency Law #100-357

4. Provide transient protection that meets or exceeds IEEE 587 category A and shall provide high frequency ground fault protection, lightning protection, brownout protection and faulty lamp protection.

5. Power factor shall be 95% or greater at full light output.

6. Total harmonic distortion and third harmonic distortion shall be less than 10%

7. Ballast factor shall be greater than 0.85

8. Lamp current crest factor shall be less than 1.5

9. Operate at not less than 20kHz frequency and have no audible noise, performing better than sound rating "A"

10. Provide at a minimum, normal rated lamp life as state by the lamp manufacturer

11. Have class P thermal protection and be U.L. listed

12. Metal halide ballasts shall be of the constant wattage autotransformer, high power factor type, with -20 degree F starting rating. Provide taps for (4) input voltages.

E. LED Drivers

1. Certified by Electrical Testing Laboratory (ETL)

2. Minimum Efficiency of 85%

3. Sound “A” rating.

4. Minimum power factor of 90%

5. Temperature Range: -30 deg. C to 50 deg C.

6. Conform to electromagnetic interference standard FCC Regulation Part 15, Subpart J.

7. Lamp-driver combination shall not reduce normal rated life of lamps.

F. All fixtures shall be complete with lamps of one of the following types:

1. Fluorescent (T8, 265 ma.): Osram/Sylvania Octron "800XPS" series, 3500K.

2. Fluorescent (Compact): Osram/Sylvania DULUX D/E series, 3500K.

3. LED: Lamp shall be rated for 50,000 hours of operation before reaching L70.


5. All other lamps shall be as required by equipment or as noted on the drawings.

G. All plastic lenses shall be K-12 virgin acrylic unless noted otherwise. All flat plastic lenses shall be 0.125” minimum thickness.

H. All door frames for fluorescent fixtures shall be equipped with spring-loaded latches.
I. All louvered fixtures shall be shipped with dust covers and shall be removed after final building vacuuming has been completed.

J. Fixtures mounted to T-bar ceilings shall utilize standard T-bar accessories as manufactured by the A&G Co. or equivalent.

K. Spares: Provide spare equipment in the following quantities:
   1. Fluorescent lamps: (1) cases of each different size and type.
   2. HID lamps: (1) cases of each different size and type.
   3. Lenses: 10% (or 25 lenses, whichever fewer) of each different type.

L. Luminaires noted or indicated as emergency units shall be connected to a circuit from the emergency generator.

2.02 ACCEPTABLE MANUFACTURERS

A. Acceptable manufacturers shall be as listed above, and in the fixture schedule.

B. Substitutions may be considered only when submitted in conformance with Section 260500.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Mount fixtures securely and adequately to meet the requirements of NFPA 70, Para. 410.16 and UBC Standard 47-18. Mount in locations as indicated on the drawings as follows:

B. Surface/Suspended
   1. Mount stem suspended fixtures on swivel hangers which are a standard catalog item of the same manufacture as the fixture. Provide one more hanger than the number of fixtures in the row. Coordinate degree of swivel with the ceiling slope.
   2. Mount cable suspended fixtures with cable and hangers which are a standard catalog item of the same manufacture as the fixture. Cable hangers shall be adjustable for leveling the fixtures. Provide the number of hangers as recommended by the fixture manufacturer. Electrical feeds for cable suspended fixtures shall be with a coiled cord.
   3. Mount surface fixtures at two support points. Provide 1-1/2" metal spaces for fixtures which occur on combustible ceilings. Submit spacer for approval.
C. **Recessed**

1. Coordinate recessed fixture locations with the acoustical tile pattern, concealed ductwork, piping, etc.
2. Check ceiling type (lay-in, gypboard, etc.) before ordering fixtures.
3. Fixtures installed in T-bar ceilings shall be supported as required by N.E.C.
4. All recessed fixtures (in accessible ceilings) shall be connected by means of a flexible conduit which is attached to a 4" square junction box. Box may serve more than one fixture.

D. Verify all measurements. Contractor is responsible for fixtures fitting in place in a satisfactory and workmanlike manner, to the approval of the Architect.

E. Contractor shall verify fixture locations with the Architectural Reflected Ceiling Plans, where such plans are provided.

END OF SECTION 26 51 00
PART 1 GENERAL

1.01 RELATED DOCUMENTS
   A. The other Contract Documents complement the requirements of this section.
   B. Other sections of this Specification may relate, and may impose additional work
      and/or additional materials upon this section. Contractor to coordinate any cross-
      referencing of Specification sections.

1.02 DESCRIPTION OF WORK
   A. Excavation, filling, grading, and compaction in accordance with this Specification and
      to extent shown on Drawings.
      1. Preparing subgrades
      2. Excavating and backfilling
      3. Drainage and granular base for concrete slabs

1.03 UNIT PRICES
   A. Excavation
      1. Unsuitable Soils
         a. ASTM D2487 soil classification groups OL, OH, and PT, or a combination of
            these group symbols, and soils as described in Section 01 22 00.
         b. Unsuitable soils may also include satisfactory soils not maintained within 2
            percent of optimum moisture content at time of compaction.
         c. Unsuitable soils may also include soils not in conformance with geotechnical
            report.
         2. Rock
            a. Unanticipated rock ledges or larger than anticipated boulders that require
               blasting, or equipment with greater capacity than would normally be required.

1.04 COORDINATION
   A. Coordinate excavation, filling, grading, and compaction with other trades and with
      local utility companies.

1.05 SITE
   A. Definition: The term “site” as herein referenced means Owner’s entire property on
      which improvements are to be constructed and as shown on the Site Plan.

1.06 WARRANTY/BONDING
   A. Furnish labor and material warrantee or maintenance bond for all work in public right-
      of-way, or easement, in accordance with requirements of jurisdiction having authority.

1.07 ENGINEERING CONTROL
   A. Extent:
1. Personnel from an independent testing and inspection laboratory will assist the Architect as Owner’s representative at the site. Earthwork operations are subject to inspections and approvals.

2. Intermittent, rather than continuous, inspections are anticipated.

3. Contractor shall inform the Architect and Inspectors of schedules so that inspections can be made at appropriate times.

4. Unapproved earthwork buried by fills prior to approvals is subject to rejection. Any fill that does not meet Specification requirements is subject to removal, replacement, and re-compaction at Architect’s discretion.

1.08 PROJECT CONDITIONS

A. Notify utility locator service for area where Project is located before grading or excavation.

PART 2 PRODUCTS

2.01 MATERIALS

A. General:

1. If specified in the landscape specification sections, existing topsoil is acceptable to use for landscaping areas or where topsoil is called out in drawings. Following clearing and grubbing, Contractor will be allowed to stockpile topsoil on site for future use.

2. Dry weather fill: Existing native site materials may be utilized for non-structural fills. Aeration of the native material may be required to achieve the recommended compaction criteria.

3. Wet weather fill: Existing native site materials may not be suitable for fills, or may require augmentation.

B. Granular Fill:

1. Crushed Rock
   a. Approved, manufactured from ledge rock, talus or gravel, uniform in quality and substantially free from wood, bark and other extraneous materials. Less than 5% material by weight passing through the No. 200-sieve, maximum 6-inches diameter.
   b. For placement under interior building floor slabs (see also Interior Concrete Slabs).

2. Structural (Engineered) Fill
   a. Shall be imported granular material of pit run rock, quarry run rock, crushed rock or crushed gravel and sand, with less than 5 percent passing the US Standard No. 20 sieve.
   b. Shall be recycled material from onsite crushed surfacing, asphalt or concrete blended per the requirements of the Standard Specifications, Section 9-03.21(1). The material shall be crushed and blended to meet the requirements.
and gradation of 9-03.14(1). Recycled material shall not be used within one foot of the bottom of the building slab.

PART 3 EXECUTION

3.01 PREPARATION

A. Layout:
   1. Locate and work from existing monuments, and benchmarks.
   2. Locate existing utilities on and adjacent to the project site.

3.02 TEMPORARY EROSION AND SEDIMENTATION CONTROL

A. Refer to Section 31 25 00 Erosion and Sedimentation Control.

3.03 PROTECTION

A. General:
   1. Protect existing adjacent property from damage during work under this Contract.

3.04 GRADING

A. It shall be the Contractor’s responsibility to verify balance, and if additional material is required, or excess material is to be removed from site to meet contours shown on drawing, it shall be at the Contractor’s expense.
   1. Coordinate with Owner’s inspector for inspections. Obtain approvals prior to proceeding with succeeding lifts.
      a. Inspection of grubbed and stripped surfaces before grading operations.
      b. Inspection of cut areas to detect presence of unsuitable soil areas.
      c. Inspection of each lift of fill materials before proceeding with succeeding lifts.
      d. Inspection and approval of off-site materials.
      e. Inspection and compaction tests for compaction.
   2. Uniformly grade areas to a smooth surface, free from irregular surface changes, to bring site to elevations and contours shown in drawings.
   3. Proof roll subgrades, before filling or placing aggregate courses, with heavy pneumatic-tired equipment to identify unsuitable soil areas and areas of excess yielding. Do not proof roll wet or saturated subgrades, see geotechnical report for wet weather construction.
   4. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities.
   5. Remove unsuitable soils and replace with suitable soils or as directed by Architect. (See Section 01 22 00.)
   6. Sub base and Base Courses: Under pavements, place sub base course on prepared subgrade. Place base course material over sub base. Compact to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D1557.
7. Under Concrete Slabs-on-Grade: Place granular base on prepared subgrade (see Interior Concrete Slab). Compact to required sections and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D1557.

3.05 PROTECTION AND DISPOSAL

A. Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specify tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction.

C. Where settling occurs before project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

D. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner’s property.

3.06 STRUCTURAL (ENGINEERED) FILL

A. Place in maximum 8-inch deep lifts and compact each lift to not less than 95 percent of maximum dry density, as determined by ASTM D 1557.
PART 1 GENERAL

1.01 RELATED DOCUMENTS
   A. The other Contract Documents complement the requirements of this section.
   B. Other sections of this Specification may relate, and may impose additional work and/or additional materials upon this section. Contractor to coordinate any cross-referencing of Specification sections.

1.02 DESCRIPTION OF WORK
   A. This work shall consist of providing project erosion and sedimentation control (ESC) in accordance with city, state and federal requirements. The implementation of the ESC and the construction, maintenance, replacement, and upgrading of these ESC facilities is the responsibility of the Contractor until all construction is completed and approved and the permanent vegetation/landscaping is established.

1.03 STANDARD SPECIFICATIONS
   A. Standard specifications referenced herein shall be the latest edition of the WSDOT/APWA Standard Specifications as prepared by the Washington State Department of Transportation and the American Public Works Association, Washington State Chapter. Technical specifications only, Division 1 and measurement and payment portions of the Standard Specifications do not apply.
   B. Reference specifications shall be the City of Pullman Erosion Control Ordinance, including the standard city construction details.

PART 2 PRODUCTS

2.01 MATERIALS
   A. All materials shall be in conformance with the requirements shown on the City of Pullman standard erosion control details.

PART 3 EXECUTION

3.01 INSTALLATION AND MAINTENANCE
   A. Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authority having jurisdiction and the sediment and erosion control Civil drawings.
   B. Erosion control as shown on the plans are the base recommendations, and are in no way intended to represent all of the potential erosion control measures that may be required during construction. Contractor shall be responsible for grading of temporary cut-off ditches, sedimentation ponds, sumps, Baker Tanks™, bypass pumping, and/or other means as required and necessary to control storm water runoff during construction so that no silt-laden water leaves the project site. All such measures shall be at Contractor's expense.
   C. At no time shall more than one foot of sediment be allowed to accumulate within a trapped catch basin. All catch basins and conveyance systems shall be cleaned
prior to paving. The cleaning operation shall not flush sediment-laden water into the downstream system.

D. Stabilized construction entrance(s) will be constructed at the beginning of construction. Locations shall be reviewed and approved by the Owner. These entrance(s) shall be maintained by the contractor of this project for the duration of the project. Additional measures may be required to ensure that all paved areas adjacent to the project are kept clean for the duration of the project.

E. Sediment fences, bio-bags, and other ESC measures shall be removed when they have served their useful purpose and when approved by the engineer, but not before the upslope area has been permanently stabilized. Upon completion of construction and full site establishment, remove erosion and sedimentation controls and restore and stabilize any areas that are disturbed during removal.

F. Construction and maintenance of graveled construction entrances, temporary sediment fences, and straw bale sediment barriers, and other erosion control work shall conform to City of Pullman requirements.

G. All materials shall be in good physical condition to provide proper sediment retention.

H. Sediment fences and barriers shall be inspected by the contractor immediately after each rainfall and at least daily during prolonged rainfall. Inspect all other ESC facilities daily, and provide repair and/or maintenance as necessary to ensure their continued functioning. Any required repairs shall be made immediately.

END OF SECTION
PART 1  GENERAL

1.01  GENERAL

A. The requirements of the General Conditions, Special Provisions and Division 1 of the specifications apply to the work of this section.

B. Provide all labor and materials necessary for the completion of the work of this section as specified or shown on the drawings.

1.02  SUMMARY

A. This Section includes the following:

1. Chain-link fences and gates.
2. Excavation and concrete foundations for post bases.

1.03  STRENGTH REQUIREMENTS

A. Structural Performance: Chain-link fence and gate framework shall withstand the effects of gravity loads and the following loads and stresses with the limits and under conditions indicated according to ASCI/SEI 7:

1. Minimum Post Size: Determine according to ASTM F 1043 for framework up to 20 feet high and post spacing not to exceed 6 feet.
2. Minimum Post Size and Maximum Spacing: Determine according to CLFMI WLG 2445, based upon mesh size and pattern specified.

1.04  SUBMITTALS

A. Product Data: Per Section 01 33 00.

B. Material List: Provide a complete materials list of products and manufacturers to be furnished and installed under this section.

1.03  QUALITY CONTROL

A. Contractor shall make the following items part of the Contractor’s Quality Control Plan.
1. Contractor shall verify that all shop drawings, samples and other submittals are complete and have been reviewed and approved prior to starting chain link fencing and gate work.

2. Manufacturer: Company specializing in manufacturing the products specified in this section with a minimum three years experience.

3. Perform work in accordance with CLFMI – Product Manual and manufacturer’s instructions.

B. Warranty: Manufacturer’s standard form in which installer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within the specified warranty period.

C. Warranty Period: 15 Years from Date of Substantial Completion.

PART 2 PRODUCTS

2.01 MATERIALS

A. Framing (Posts/Rails): ASTM F1043 Schedule 40 galvanized steel pipe. 1-1/2" line posts, 2" corner posts. Metallic coating for steel framing to be Type A per ASTM A 123/A 123M. Provide steel caps on posts.

B. Fabric Wire (Steel): ASTM A 392, Type II, Class 2 zinc coated wire fabric, 11 gauge, 2" mesh.

C. Tension Wire (Steel): Metallic-coated steel wire, 6 gauge, marcelled tension wire complying to ASTM A 817 and ASTM A 824.

D. Swing Gates: Comply with ASTM F 900 for gate posts and single/double swing gate types. Pipe and tubing to comply with ASTM F 1043 and ASTM F 1083. Framed corner construction to be welded.

E. Fittings: Comply with ASTM F 626. Provide all fittings as recommended by the manufacturer for a complete installation.

D. Concrete: ASTM C 94; Normal Portland Cement, Type II, 3000 psi strength at 28 days, 3 inch slump; nominal sized coarse aggregate.

2.02 COMPONENTS

A. Terminal and Gate Posts: 2-7/8" diameter.
B. Top and Brace Rails: 1-5/8” diameter, plain end, sleeve coupled.

C. Fabric: 2 inch diamond mesh interwoven wire, 11 gauge thick, top salvage twisted tight, bottom salvage knuckle end closed.

D. Tension Wire: 7 gauge thick steel, single strand.

E. Tie Wire: Steel, 11-gauge galvanized.

F. Gate Type: Hinged swing gate with diagonal trussing to prevent sagging.

G. Gate Hardware: Butterfly latch; two 180 degree gate hinges per leaf and hardware for padlock. Keyed padlock to be supplied by Owner.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install framework, fabric, gates and accessories in accordance with ASTM F567 and manufacturer’s instructions.

B. Set intermediate, terminal and gate posts plumb, in concrete footings.

1. Concrete footing depth below finish floor: As indicated.
2. Footing diameter:
   a. Line posts – 8 inches.
   b. End and gate posts – 12 inches.

C. Brace each gate post to adjacent line post with horizontal center brace rail and diagonal truss rods. End posts adjacent to walls are to be set no more than 1-1/2” clearance from wall.

D. Provide top rail through line post tops and splice with 6 inch long rail sleeves.

E. Position bottom of fabric 2 inches above grade. Fasten fabric to top rail, line posts, braces and bottom tension wire with tension bars and tension bar clips.

F. Attach fabric to end and gate posts with tension bars and tension bar clips.

G. Install bottom tension wire stretched taut between terminal posts.
H. Install gate with fabric to match fence. Install two hinges per leaf, latch and catches.

END OF SECTION 32 31 13
PART 1 GENERAL

1.01 GENERAL

A. The requirements of the General Conditions, Special Provisions and Division 1 of the specifications apply to the work of this section.

B. Provide all labor and materials necessary for the completion of the work of this section as specified or shown on the drawings.

1.02 SUMMARY

A. This Section includes the following:

1. Continuous Fencing and Gates.
2. Excavation and concrete foundations for post bases.
3. Sorting Area Gate Hardware.

1.03 SUBMITTALS

A. Product Data: Per Section 01 33 00.

B. Material List: Provide a complete materials list of products and manufacturers to be furnished and installed under this section.

1.04 QUALITY CONTROL

A. Contractor shall make the following items part of the Contractor’s Quality Control Plan.

1. Contractor shall verify that all shop drawings, samples and other submittals are complete and have been reviewed and approved prior to starting chain link fencing and gate work.

2. Manufacturer: Company specializing in manufacturing the products specified in this section with a minimum three years experience.

B. Warranty: Manufacturer’s standard form in which installer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within the specified warranty period.

C. Warranty Period: 15 Years from Date of Substantial Completion.
PART 2 PRODUCTS

2.01 MATERIALS

A. Framing (Steel): ASTM F1043 Schedule 40 galvanized steel pipe. Height and diameter as indicated. Metallic coating for steel framing to be Type A per ASTM A 123/A 123M. Provide steel caps on posts.

B. Fabric Wire (Steel): Fixed knot, heavy duty galvanized wire fabric.
   1. Boundary Fencing: Stay-Tuff, #2096-3 or approved equal.
   2. Perimeter Fencing: Stay-Tuff, 6” mesh or approved equal.
   3. Provide 7 gauge steel, single strand tension wire – top and bottom at both fences.

C. Swing Gates: Comply with ASTM F 900 for gate posts and single/double swing gate types. Pipe and tubing to comply with ASTM F 1043 and ASTM F 1083. Framed corner construction to be welded.

D. Fittings: Comply with ASTM F 626. Provide all fittings as recommended by the manufacturer for a complete installation.

C. Concrete: ASTM C 94; Normal Portland Cement, Type II, 3000 psi strength at 28 days, 3 inch slump; nominal sized coarse aggregate.

2.02 COMPONENTS

A. Terminal and Gate Posts: As indicated and recommended by manufacturer.

B. Gate Types: As indicated.

C. Gate Hardware: As indicated and noted below. Keyed padlocks to be provided by Owner.
   1. Bulldog Hinges: Size as recommended by manufacturer for condition indicated.
   2. Two Way Gate Latch: Powerfields #P-GL2 or approved equal.
   3. Double Gate Latch: Fulcrum #CL-CDL or approved equal.
   4. Gate Flip Latch: Crown Bolt #20474 or approved equal.
   5. Steel Pull Handle: 6-1/2” x 2-1/2” galvanized pull.
PART 3  EXECUTION

3.01 INSTALLATION

A. Examine areas and conditions for compliance with requirements for clearing, earthwork, and other conditions affecting performance of the Work.

B. Stake location for lines, gates and terminal posts. Indicate locations of utilities, underground structures, benchmarks and property monuments. Review with WSU project manager prior to proceeding with fencing installation.

C. Install fencing to comply with ASTM F 567.

D. Post excavation: Drill or hand-excavate holes for post to diameters and spacings indicated, in firm, undisturbed soil.

E. Post setting: Set posts in concrete as indicated. Verify that posts are set plumb, aligned and correct height and spacing, and hold in position during setting. Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation.

F. Fasteners: Steel, install per manufacturer’s recommendations.

G. Install gates level, plumb and secure for full opening without interference. Attach hardware per manufacturer’s recommendations. Adjust hardware or smooth operation.

H. Install gate with fabric to match fence. Install two hinges per leaf (minimum), latch and catches.

END OF SECTION 32 31 15
PART 1 GENERAL

1.01 RELATED DOCUMENTS
   A. The other Contract Documents complement the requirements of this section.
   B. Other sections of this Specification may relate, and impose additional work and/or additional materials upon this section. Contractor to coordinate any cross-referencing of Specification sections.
   C. Other sections of this Specification may relate, and may impose additional work and/or additional materials upon this section. Contractor to coordinate any cross-referencing of Specification sections.

1.02 DESCRIPTION OF WORK
   A. This Section includes water piping, fittings, appurtenances, accessories, trenching, bedding, backfill, and surface restoration, as shown on the Drawings and specified herein

1.03 STANDARD SPECIFICATIONS
   A. Standard specifications referenced herein shall be the 2018 edition of the WSDOT/APWA Standard Specifications as prepared by the Washington State Department of Transportation and the American Public Works Association, Washington State Chapter. Technical specifications only, Division 1 and measurement and payment portions of the Standard Specifications do not apply.
   C. Additional reference specification shall be the latest edition of the Uniform Plumbing Code as amended by the State of Washington.

1.04 QUALITY ASSURANCE
   A. Sterilization: Water mains shall be sterilized before placing in service in accordance with the Standard Specifications.
   B. All deficiencies revealed in the testing of the system as indicated above will be corrected and re-tested for approval of the systems.

1.05 SUBMITTALS
   A. Materials Certificates: materials certificates shall be signed by material supplier and Contractor, certifying that the materials comply with or exceed Specifications.

1.06 SCHEDULING
   A. Coordinate connection to the existing public water system with the WSU Facilities Department.
PART 2 MATERIALS

2.01 MATERIALS

A. Water system materials for the private site water system shall meet the requirements of the Uniform Plumbing Code unless noted otherwise herein or on the plans.

B. Materials for surface restoration, including crushed rock and asphalt, shall conform to the specifications indicated on the plans.

PART 3 EXECUTION

3.01 WET WEATHER CONSTRUCTION

A. The contractor is responsible for all additional measures required in the event of wet weather construction. This includes additional granular working blankets, additional erosion control, varied construction techniques, additional dewatering, and other items and methods needed to account for the impacts of wet weather.

3.02 PIPE INSTALLATION

A. General. Install pipe and fittings in accordance with the manufacturer's requirements.

B. Alignment. Lay pipe on a uniform grade with no sag or over bends between high and low points. Maintain a continuous positive slope from the lowest to the highest points in the line. Maintain minimum 48" cover over pipe unless indicated otherwise on the plans.

C. Tracer Wire. Bury with the pipe a continuous ribbon of tracer wire and blue color code ribbon over the full length of all non-metallic pipe with two wraps per each joint.

3.03 SERVICE CONNECTIONS

A. Service connections shall be installed per Section 7-15.3 of the Standard Specifications.

3.04 STERILIZATION

A. General. Water mains shall be sterilized before placing in service. Sterilizing procedures shall conform to the requirements of Section 7-09.3(24) of the Standard Specifications.

B. All valves, hydrants, and other appurtenances connected to the water main shall be operated during sterilization to assure that the sterilizing mixture is dispersed into all parts of the line, including dead ends, new services, and similar areas that otherwise may not receive the treated water.

C. After sterilization, flush the water from the line until the water through the line has the same chemical and bacterial quality as the permanent source of supply.
D. Disposal of Sterilizing Water. Dispose of sterilizing water by discharging to a storm drain or approved drainage way. Dilute the sterilized water by mixing with equal parts of fresh water prior to disposal.

3.05 COORDINATION AND SCHEDULING

A. General. The Contractor shall coordinate shutdown and connection work with the WSU facilities.

3.06 ABANDONMENT OF EXISTING UTILITIES

A. Utilities to be abandoned under new building footprint shall be removed.

B. Utilities to be abandoned outside of new building footprint shall be plugged and abandoned in place, or removed as necessary to allow for new construction. Plug all cut or abandoned ends of pipe.

C. Abandonment of water lines shall be per W.S.D.O.T. and WSU Design and Construction Standards.

3.07 AS-BUILTS

A. Contractor shall be responsible for supplying reproducible water system “as-built” drawings along with record documents under provisions of the Contract.

END OF SECTION